

PowerLogic™ P5

User Manual

Communication

05/2023

Version: P5/EN M/44D



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Safety information and password protection

Important information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in death or serious injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Failure to follow these instructions will result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, can result in death or serious injury.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, can result in minor or moderate injury, or equipment damage.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

NOTICE is used to address practices not related to physical injury.

Failure to follow these instructions can result in equipment damage.

Introduction

Protocols used and data exchanged

The PowerLogic™ P5 protection relays have been designed for easy data exchange and integration in any system architecture with serial links (daisy chain) or Ethernet.

The protocols used for exchange of data on the PowerLogic P5 protection relay are as follows:

- IEC 61850
- DNP3
- IEC 60870-5-101
- IEC 60870-5-103
- EtherNet/IP
- Modbus slave
- Modbus master

The data types that can be exchanged through these protocols are listed:

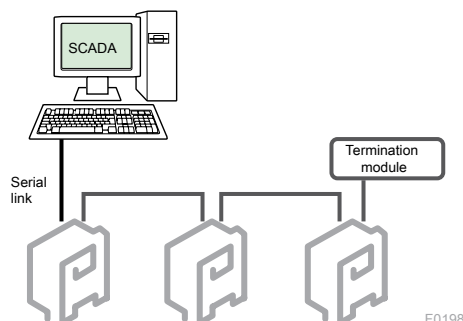
| Port | Ethernet | | | | | |
|--------------------------------|-----------|-------------|------|------|--------------|--------|
| Protocol | IEC 61850 | EtherNet/IP | sFTP | DNP3 | Modbus slave | GetSet |
| Real time data | | | | | | |
| Measurement | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Alarms and status | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Controls | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Time-stamped events | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Logged data | | | | | | |
| Disturbance records | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Sequence of event record files | | | | | | ✓ |
| Device management | | | | | | |
| Setting group change | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Settings | ✓ | ✓ | | | ✓ | ✓ |

| Port | Serial | | | | |
|--------------------------------|--------|--------------|---------------|-----------------|-----------------|
| Protocol | DNP3 | Modbus slave | Modbus master | IEC 60870-5-103 | IEC 60870-5-101 |
| Real time data | | | | | |
| Measurement | ✓ | ✓ | ✓ | ✓ | ✓ |
| Alarms and status | ✓ | ✓ | ✓ | ✓ | ✓ |
| Controls | ✓ | ✓ | ✓ | ✓ | ✓ |
| Time-stamped events | ✓ | ✓ | ✓ | ✓ | ✓ |
| Logged data | | | | | |
| Disturbance records | ✓ | ✓ | | ✓ | |
| Sequence of event record files | | | | | |
| Device management | | | | | |
| Setting group change | ✓ | ✓ | | ✓ | ✓ |
| Settings | | ✓ | | ✓ | |

Architecture

Serial network architecture

This architecture allows the connection of HMI/SCADA to a set of PowerLogic P5 protection relays using a multi-drop serial communication link with master-slave communication.



Ethernet network architectures

This architecture allows the connection of a set of PowerLogic P5 protection relays directly on an Ethernet network.

NOTE: It is possible to mix any three of four Ethernet protocols, including the IEC 61850 protocol, on the same Ethernet network.

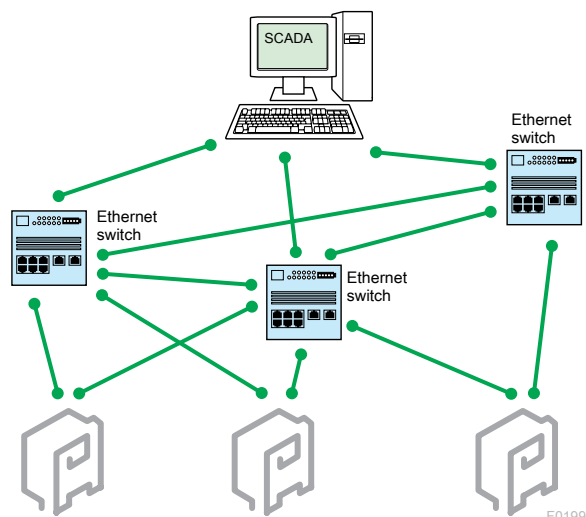
This allows to use the Generic Object Oriented Substation Event (GOOSE) messages between relays together with another protocol for communication to Supervisory Control and Data Acquisition (SCADA).

It is also possible to connect PowerLogic P5 protection relays to more than one control system, using the same Ethernet communication port with one of the chosen protocols.

PowerLogic P5 protection relays handle the IEC 61850 station bus, in compliance with standards IEC 61850-6, 7-1, 7-2, 7-3, 7-4 and 8-1 Edition 1 or Edition 2, according to configuration.

Other supported protocols:

- Secured File Transfer Protocol (sFTP) for file transfer
- Simple Network Time Protocol (SNTP) for time synchronisation
- Secured Hypertext Transfer Protocol (HTTPS) for Web HMI
- GetSet, which is an ASCII protocol used by eSetup Easergy Pro, which is secured by TLS



Connections

The PowerLogic P5 protection relays can be connected to an Ethernet switch or a router by using:

- 10/100BASE-T copper wire (radial connection).
- 100BASE-FX multi-mode fibre optic (radial or ring connection).

NOTE: Only one of the three IP addresses can connect to the router. The other two IP gateways should be set to 255.255.255.255.

To optimise system performance, Schneider Electric recommends:

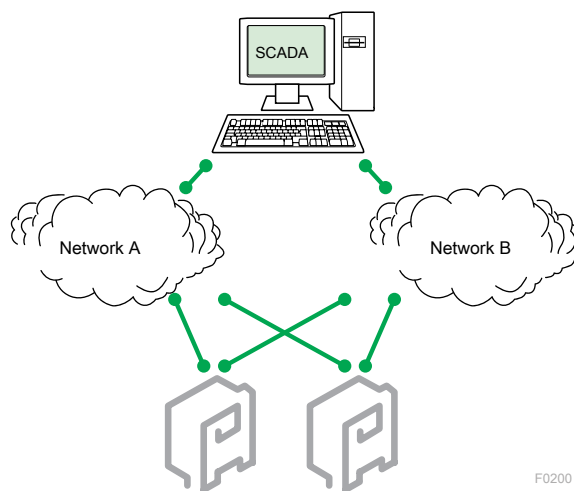
- to build a fault-tolerant communications backbone by implementing a fibre optic ring
- to use IEC 61850 compatible managed switches
- to use VLANs for prioritised messages
- to configure meaningful destination MAC address and APPID to enable network filtering
- to minimise the content of GOOSE datasets

Parallel Redundancy Protocol (PRP)

The principle of Parallel Redundancy Protocol (PRP) is to transmit frames in parallel on two independent network infrastructures: A and B.

The receiving device is in charge of discarding the second (redundant) frame once it is received.

PRP provides a 0 ms recovery time in case of a communication failure, but this quality is achieved at the cost of a double communication network.

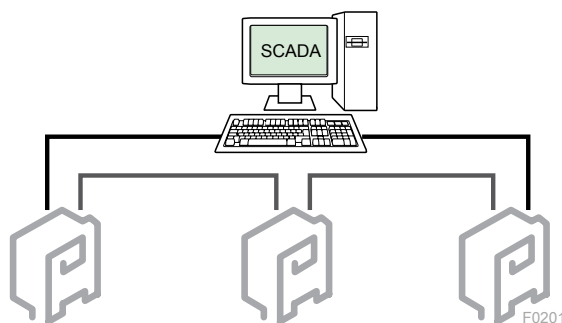


High-availability Seamless Redundancy (HSR)

High-availability Seamless Redundancy (HSR) is typically used in ring architectures.

Frames are transmitted on the ring on both directions and the receiving device discards the redundant frames.

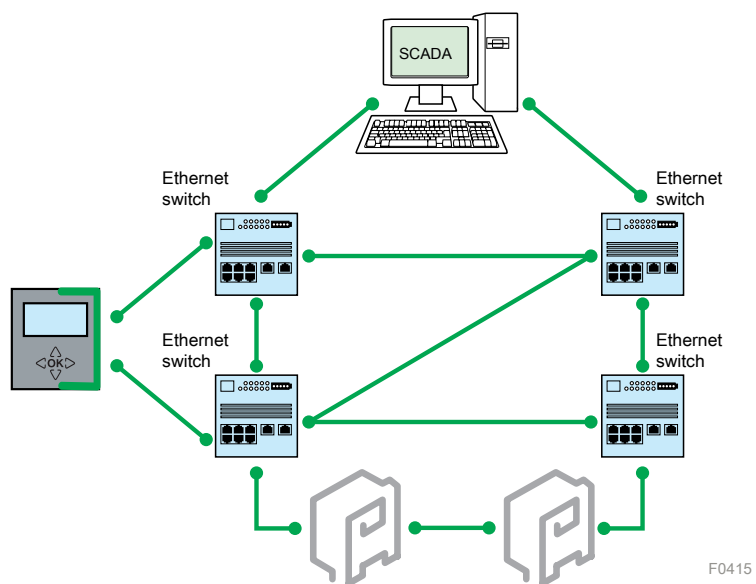
HSR provides a 0 ms recovery time and is a cheaper alternative compared to PRP.



Rapid Spanning Tree Protocol (RSTP)

The principle of Rapid Spanning Tree Protocol (RSTP) is to virtually switch off all links that are not necessary at a given time, changing the meshed topology into a tree topology.

The main advantage of RSTP is that it is widespread, and works on any network topology. On the other hand, RSTP may take a considerable time to reconfigure the network in case of a network failure, which may exceed the requirements of automations.



Communication ports

Ethernet communication slot

The Ethernet communication slot can accommodate one of the following options:

- Dual port copper (RJ45) Ethernet module with RSTP redundancy management.
- Dual port fibre optic (multimode glass fibre) Ethernet module with RSTP redundancy management.
- Dual port fibre optic (multimode glass fibre) Ethernet module with PRP/HSR advanced redundancy management (this option is a double width module which spans over the serial slot space and is therefore not compatible with the use of a serial communication module).

| Communication module | IP selection | |
|------------------------------------------------------------|--------------|---------------|
| | RSTP = 1 | RSTP = 0 |
| 1 Ethernet module (Slot M) | IP1 | IP1, IP2 |
| 1 Ethernet module (Slot L) | IP3 | |
| 2 Ethernet modules (Slot M, Slot L) | IP1, IP3 | IP1, IP2, IP3 |
| 1 PRP/HSR module (Slot M and N) | IP1 | |
| 1 PRP/HSR module, 1 Ethernet module (Slot M and N, Slot L) | IP1, IP3 | |

Each IP address includes network number and host number. For example, when IP = 192.168.1.21, the network number is 192.168.1 and the host number is 21. The network number of IP1, IP2 and IP3 shall not be the same for PowerLogic P5 communication configuration. For example, IP1 = 192.168.1.21, IP2 = 192.168.2.31 and IP3 = 192.168.10.31 are workable, while IP1 = 192.168.1.21 and IP2 = 192.168.1.31 are incorrect.

Ethernet port configuration

The parameters for the port can be configured from the front panel, from the **COMMUNICATION** menu/**Protocol configuration** sub-menu of the eSetup Easergy Pro, or from the Web HMI. Up to 3 different protocols can be used simultaneously, using the same IP address and MAC address but different IP port numbers.

Table 1 - Ethernet protocol 1 configuration parameters

| Parameter | Value | Description | Note |
|------------------------|--------------------------------------------------------|------------------------------------------|------|
| Ethernet port protocol | None ModBus TCP DNP3 IEC-61850 EtherNet/IP | Select the protocol of the Ethernet port | Set |
| IP port for protocol 1 | | Set the IP port number of the protocol 1 | Set |

Table 1 - Ethernet protocol 1 configuration parameters (Continued)

| Parameter | Value | Description | Note |
|------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------|
| Set protocol default IP port | – Default | Select the default IP port number: 502 for ModBus TCP 20000 for DNP3 102 for IEC 61850 44818 for EtherNet/IP | Set |
| IP address selection | IP1 IP2 IP3 | Choose the Ethernet module to be used ¹ | Set |

Set = an editable parameter (password needed)

1. IP1/IP2 means to select the Ethernet module to be used on Slot M; IP3 means to select the Ethernet module to be used on Slot L. If Slot M is used as RSTP mode or PRP/HSR module is selected, then IP2 is invisible.

Table 2 - Ethernet port configuration parameters

| Parameter | Value | Description | Note |
|-------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| MAC address | | Display the MAC address | |
| Enable DHCP service | Yes / No | If enabled, the IP address of the device is defined by the DHCP server of the network. NOTE: DHCP service can only support IP3 configured with ModBusTCPs. | Set |
| IP Address | n.n.n.n | IP address | Set ² |
| Network mask | n.n.n.n | Network mask | Set ² |
| Gateway | n.n.n.n | Gateway IP address | Set ² |
| Ethernet port 1 status | Link on / Link off | Display the link status of Ethernet Port 1 | |
| Ethernet port 2 status | Link on / Link off | Display the link status of Ethernet Port 2 | |
| Enable HTTPS server | Yes / No | If this option is enabled, HTTP server can be used | Set |
| IP address selection | IP1 IP2 IP3 | Choose the Ethernet module to be used ³ | Set |
| NTP server | n.n.n.n | Network time protocol server | Set |
| NTP server (Backup) | n.n.n.n | Network time protocol server to be used if NTP server does not respond | Set |
| IP address selection | IP1 IP2 IP3 | Choose the Ethernet module to be used ³ | Set |
| TCP keep alive interval | 0 - 20 s | TCP keepalive interval in seconds | Set ⁴ |

If Ethernet module with PRP/HSR is selected, then additional parameters are shown.

Table 3 - Additional Ethernet port configuration parameters for channel redundancy

| Parameter | Value | Description | Note |
|--------------|-----------|---------------------------------------------------------------------------------|------|
| FPGA version | | Display the Field Programmable Gate Array (FPGA) version of the Ethernet module | |
| Get mode | | Display the used protocol | |
| Mode Switch | PRP / HSR | Switch the protocol to be used | Set |

Serial communication slot

The Serial communication slot can accommodate one of the following options:

- Cannot be set when DHCP service is enabled.
- IP1/IP2 means to select the Ethernet module to be used on Slot M; IP3 means to select the Ethernet module to be used on Slot L. If Slot M is used as RSTP mode or PRP/HSR module is selected, then IP2 is invisible.
- Keepalive: The Keepalive parameter sets the time in seconds between two keepalive packets which are sent from the IED. The setting range for this parameter is between zero (0) and 20 seconds; with the exception that zero (0) means actually 120 seconds (2 minutes). The purpose of a keep alive's packet is to send a probe packet to a connected client for checking the status of the TCP-connection when no other packet is being sent, e.g. the client does not poll data from the IED. If the keepalive packet is not acknowledged, the packet continues to be transmitted 10 times with an interval of 2 seconds. If still not acknowledged, IED will close the TCP connection. For example, if the "TCP keep alive interval" is set to 10s, the time to drop the connection to PowerLogic P5 is 10s + 2s * 10 = 30s. The connection must be restarted from the client side.

- RS-485 (two and four wires) serial communication module, with RJ45 connection
- Fibre optic serial communication module

Serial port configuration

The parameters for the remote port can be configured from the front panel or via protocol, using the **COMMUNICATION** menu/**Protocol configuration** sub-menu of the eSetup Easergy Pro or the Web HMI.

Only one serial port can be used and one serial communication protocol can be selected.

Table 4 - Serial port configuration parameters

| Parameter | Value | Description | Note |
|----------------------|------------------------------------------------------------|----------------------------------------|------|
| Remote port protocol | None ModBusSlv IEC-103 MdbSstr DNP3 IEC-101 | Select the protocol of the serial port | Set |

Port hardening configuration

It is possible to disable a communication port – either via the front panel or via protocol, using the **COMMUNICATION** menu/**Protocol configuration** sub-menu of the eSetup Easergy Pro or the Web HMI with the correct access rights. This allows the user to take control of the physical ports limiting the exposure of ports to only those that are needed.

If the ports or the protocols on Ethernet module are disabled or enabled, then a reboot is needed.

Communication protocols

NOTICE

CYBER SECURITY

- Except for private GetSet protocol via secured communication (SSH), the device does not have the capability to transmit data encrypted using the following protocols: IEC 61850, DNP3 over Ethernet, Modbus slave over Ethernet, EtherNet/IP, IEC 60870-5-103 serial, IEC 60870-5-101 serial, DNP3 serial, Modbus slave serial, Modbus master serial, IEEE 1588 and SNTP.
- If other users gained access to your network, transmitted information can be disclosed or subject to tampering.
- For transmitting data over an internal network, physically or logically segment the network. The access to the internal network needs to be restricted by using standard controls, such as firewalls, and other relevant features supported by your device, such as IP Table whitelisting.
- For transmitting data over an external network, encrypt protocol transmissions over all external connections using an encrypted tunnel, TLS wrapper or a similar solution.

Failure to follow these instructions can increase the risk of unauthorised access.

IEC 61850 communication

Presentation

IEC 61850 is a series of standards for communication networks and systems of power utility automation. PowerLogic P5 protection relays, used as a server, can be connected to an IEC 61850 station bus according to Edition 1 and Edition 2 of:

- IEC 61850-6
- IEC 61850-7-1 to 7-4
- IEC 61850-8-1

Based on the Ethernet protocol, the IEC 61850 communication standard helps ensure:

- High communication speeds and versatile communication architectures
- Interoperability between manufacturers

Capability

PowerLogic P5 protection relays provide a built-in solution for demanding IEC 61850 applications:

- IEC 61850 logical nodes and configurable data sets to fit the needs of the Edge control system/SCADA system
- Peer-to-peer communication capabilities on PowerLogic P5 protection relays using GOOSE messages to enhance the protection and control system without the need of additional wiring
- Up to 8 simultaneous IEC 61850 client-server associations

The IEC 61850 protocol can be used to read/write static data from/to the PowerLogic P5 protection relays, to receive events, to send controls, and to receive/send GOOSE messages to other relays.

The IEC 61850 server interface is capable of:

- Configurable pre-defined data sets
- Dynamic data sets created by clients, which can be assigned to Buffered and Unbuffered Report Control Blocks
- Reporting function with Buffered and Unbuffered Report Control Blocks
- Supported control models:
 - Status-only
 - Direct control with normal security
 - Direct control with enhanced security
 - Select before operate with normal security
 - Select before operate with enhanced security
- Supported horizontal communication with GOOSE
 - Configurable GOOSE publisher data sets
 - Configurable filters for GOOSE subscriber inputs (i.e. MAC Address, APPID....)
- Sending and receiving analogue or binary values over GOOSE
- Setting modification
 - Editing a setting value in the setting group
 - Changing the active setting group

Setting groups are selectable using the Setting Group Control Block class, (SGCB). The Active Setting Group can be selected using the Relay/LLN0.SP.SGCB.ActSG data attribute in Logical Device 'Relay'.
- File transfer
 - Extracting disturbance records from PowerLogic P5 relays by file transfer, as ASCII format COMTRADE files
 - All disturbance record files are accessible from the folder /COMTRADE/DR.
 - Deleting files in the /COMTRADE/DR folder is not supported.
- Multiple access point

Regardless of the number IPs, IEC 61850 supports maximum three access points in PowerLogic P5 for P5F30 and P5M30 and maximum two access points for P5V20 and P5U20. This feature is only valid for Ed.2.

For GOOSE publishing, each GoCB can be allocated to any of the access points: AP1 or AP2 or AP3. GOOSE frames are sent only to the configured logical port: IP1, IP2 or IP3.

For GOOSE subscribing, P5 listens for GOOSE frame on all configured access points. The CID doesn't include information on the AP used for a given incoming GOOSE Frame. So P5 handled the GOOSE event if the GOOSE arrives on an AP different from the one assigning at SCD level.

Each GOOSE control block (GoCB) can be allocated to any one of the supported access point. The GoCB shall only be visible on the access point where it is configured to. GOOSE subscribe frame can be listened from all supported access point.

- Simulation GOOSE

The PowerLogic P5 protection relay can be set to subscribe to simulation GOOSE. The relay provides the control “Receive simulated GOOSE”, which is mapped to the P5LPHD1.SIM in the IEC 61850 data model, to activate this feature. When its value is TRUE, the PowerLogic P5 can respond to the simulation GOOSE. This setting is effective for the whole relay.

The simulation flag in the message header of the GOOSE message from the simulation device is TRUE, while the simulation flag in the message header of the GOOSE message from the normal device is FALSE.

When the value of the “Receive simulated GOOSE” is TRUE, at first each subscription (network input) still responds to those GOOSE messages whose simulation flag is FALSE from the normal device. However, once the PowerLogic P5 protection relay receives a GOOSE message whose simulation flag is TRUE, it will respond to the messages whose simulation flag is TRUE, and ignore the messages whose simulation flag is FALSE. When the value of the “Receive simulated GOOSE” is FALSE, the PowerLogic P5 protection relay will only respond to the GOOSE messages whose simulation flag is FALSE from the normal device.

- Test mode

The test mode of IEC 61850 in P5 is implemented following the IEC 61850-7-4:2010+AMD1:2020 directives. This is used for managing the test bit within the quality descriptor in GOOSE subscriber frame. For PowerLogic P5, only mode On, Test and Test/Blocked are available. P5 simplifies the global Validity bit within the quality descriptor by reducing the allowed value to Good or Invalid; Questionable is treated as Invalid.

PowerLogic P5 provides the private DO “deValOnQTest” to let users define the expected value when the Incoming data test bit is TRUE. This DO can only be configured via CET850 configuration tool.

Table 5 - Mode/Behaviour simplified view

| Mode/Behaviour | On | Test | Test/Blocked |
|--------------------------------------------------------------------------|----------------------|----------------------|----------------------|
| Incoming data with Validity=Good and Test=False | Processed as valid | Processed as valid | Processed as valid |
| Incoming data with Validity=Good and Test=True | Processed as invalid | Processed as valid | Processed as valid |
| Incoming data with Validity=Invalid (or Questionable) and Test=Any value | Processed as invalid | Processed as invalid | Processed as invalid |

Configuration of IEC 61850 communication

Configuration tools

The PowerLogic P5 protection relays IEC 61850 solution can be configured with:

- eSetup Easergy Pro used as a setting and operating software to help ensure configuration and to send IEC 61850 configuration to PowerLogic P5 protection relays
- CET850 software used as a configuration tool to adapt the communication profile of PowerLogic P5 protection relays to the precise needs of the system

Configuration files

The IEC 61850 configuration process uses and generates several types of System Configuration description Language (SCL) files:

- ICD - IED (Intelligent Electronic Device) Capability Description

An ICD file exists for each type of PowerLogic P5 protection relay. It describes the data model and communication services available in the referred-to PowerLogic P5 device model.

ICD files are provided in a library together with the CET850 configuration tool, and are used as template models in the configuration process.

Exporting ICD files are supported for both online mode and offline mode.

- For online mode:
After connecting to the real P5 IED online, select **Device > Export > Export ICD/SCL file...** from the eSetup EasergyPro.
- For offline mode:
After creating setting file, select **File > Export > Export ICD/SCL file...** from the eSetup EasergyPro.

ICD file for Edition 2: the optional element "*PhysConn*" in ConnectedAP is used to describe the physical connections to the access point. And the "*Port*" of P type is used to indicate the IP address selected, the possible choices are: IP1, IP2, IP3. For more information, refer to the [codeblock](#) section. The IEC 61850 data model discovered for all clients from different IP address will be same. All the data model information is defined in the first 'AccessPoint' element. For Ed.2, ServerAt element is used for the 2nd, and 3rd access point (AP).

ICD file for Edition 1: there is only one AP defined in ICD file, and only IP address can be used for IEC 61850. The reasons for this limitation for Ed.1 are that:

- There is no ServerAt element definition in standard. And it is not reasonable to duplicate all data model to different access point in ICD file. Different data model for different AP is not supported by IEC 61850.
- There is no Port element defined in PhysConn to select IP address.

- IID - Instantiated IED Description

The IID file describes the project-specific configuration of a single IED in a system.

It is used as an exchange file between the CET850 configuration tool and other IEC 61850 system configuration tools to exchange the configuration data of a single IED instantiated specifically for a project.

- CID - Configured IED Description

For every configured PowerLogic P5 protection relay, there is a CID file which describes the IEC 61850 configuration of the device.

A CID file is created by the IED configuration tools. The CID file is then loaded into the device to configure it.

- SCD - System Configuration Description

An SCD file contains the configuration data for the IEC 61850 system including the communication configuration settings for all related IEC 61850 devices.

```
<Communicaiton>
<SubNetwork name="NONE">
<ConnectedAp iedName="TEMPLATE" apName="AP1">
  <Address>
    <p type="OSI-AP-Qualifier">12</p>
    <p type="OSI-PSEL">00000001</p>
    <p type="OSI-SSEL">0001</p>
    <p type="OSI-TSEL">0001</p>
    <p type="IP">192.168.1.21</p>
    <p type="IP-SUBNET">255.255.255.0</p>
    <p type="IP-GATEWAY">0.0.0.0</p>
  </Adress>
```

```

    <PhysConn type="Connection">
      <p type="Port">IP1</P>
    </PhysConn>
  </ConnectedAP>
  <ConnectedAp iedName="TEMPLATE" apName="AP2">
    <Adress>
      <PhysConn type="Connection">
        <p type="Port">IP2</P>
      </PhysConn>
    </ConnectedAP>
    <ConnectedAp iedName="TEMPLATE" apName="AP3">
      <Adress>
        <PhysConn type="Connection">
          <p type="Port">IP3</P>
        </PhysConn>
      </ConnectedAP>
    </SubNetwork>
  </Communication>

```

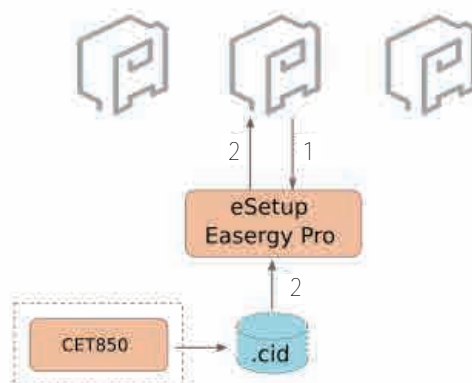
eSetup Easergy Pro for IEC 61850 configuration

The PowerLogic P5 protection relays setting and operating software, eSetup Easergy Pro, is used to create and to send IEC 61850 configuration to the PowerLogic P5 protection relay.

eSetup Easergy Pro is used to:

1. Get the information from PowerLogic P5 protection relays connected to the IEC 61850 network. This can be done automatically by the eSetup Easergy Pro polling the network to find connected devices (with IP address and port number).
2. Import a CID file to the PowerLogic P5 protection relay through eSetup Easergy Pro(see eSetup Easergy Pro user manual).

NOTE: The CID file name shall not include any whitespace or non-latin characters. Its length is restricted to a maximum of 64 characters.



IEC 61850 main configuration

The IEC 61850 protocol is activated by setting it as the port protocol for an Ethernet port on the device. This setting can be found by navigating to the **COMMUNICATION** menu.

Table 6 - IEC 61850 main configuration parameters

| Parameter | Description | Note |
|---------------|-------------------------------------------------------------------------------------|------|
| CID file name | Displays current file name of CID. Displays None if there is no CID file. | |
| Edition | IEC 61850 standard edition to be used (1 or 2), Edition 2 is the default. | Set |

Table 6 - IEC 61850 main configuration parameters (Continued)

| Parameter | Description | Note |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Receive simulated GOOSE | If true, IED will be using simulated GOOSE value as soon as they are received. By default, it is "false". | Set |
| Control model | Selects the control model to be used with the controllable Objects. <ul style="list-style-type: none"> • Status-only (StatusOnly) • Direct control with normal security (DirNorSec) • Select before operate with normal security (SBONorSec) • Direct control with enhanced security (DirEnhSec) • Select before operate with enhanced security (SBOEnhSec) | Set |
| Deviation-time integ calculation | Indicates for Deviation-time integral calculation for deadband: <ul style="list-style-type: none"> • Yes: for Deviation-time integral calculation • No: for normal calculation | Set |
| Min supervision time | Minimum timeout for indicating invalid status of GOOSE network inputs due to no incoming GOOSE messages (exceeded supervision time or time allowed to live from the last GOOSE message, whichever is greater). | Set |
| Network input event | Indicates whether the network input event will be generated or not for GOOSE subscriber | Set |
| Active connections | The number of active connections. | |
| Client x | The IP addresses of the IEC 61850 clients with active connection | |
| Auth. control from multi-levels | Selects mode of authority for local control, which impacts the value of LLN0.MitLev | set |
| Control source defined by | Defines four types of control source as below: <ul style="list-style-type: none"> • Automation System • Physical DI • Local HMI • GOOSE NI | set |
| DI for local station key switch | Selects one of available digital inputs. This parameter is showed when 'Physical DI' is selected for 'Control source defined by'. | set |
| GOOSE NI | Selects one of GOOSE Network Input (NI). This parameter is showed when 'GOOSE NI' is selected for 'Control source defined by'. | set |

When the setting "Deviation-time integ calculation" is not selected, regular formula is executed. The deadband value is calculated as below:

- For magnitude: **deadband = db × (rangeC.max – rangeC.min)/100000**
- For angle: **deadband = dbAng × (rangeAngC.max – rangeAngC.min)/100000**

The data change in the IEC 61850 is generated with the following condition:

$$\text{abs (value2 – value1)} > \text{deadband}$$

When the setting "Deviation-time integ calculation" is selected, additional condition to update analog values is applied. The value of 'db' or 'dbAng' shall be represented as 0.001% s.

The data change in the IEC 61850 is generated with the following condition:

- For magnitude: **abs (value2 – value1) × (t2 – t1) > db × (rangeC.max – rangeC.min) × 1s/100000**
- For angle: **abs (value2 – value1) × (t2 – t1) > dbAng × (rangeAngC.max – rangeAngC.min) × 1s/100000**

Here value2 means the current value, value1 means the last report value; t2 means the current time, t1 means the time of the last report value changed. The unit for t2 and t1 are seconds.

The DAs, “db”, “dbAng”, “rangeC.max”, “rangeC.min”, “rangeAngC.min” and “rangeAngC.max”, can be configured in the cid file. Other DAs like “hhLim”, “hLim”, “lLim” and “lLim” cannot be edited and their default values are set to zero.

For the selection items of “Control source defined by”, please refer to the following table:

Table 7 - The selection items of “Control source defined by”

| NO. | Values | Description | IED rules |
|-----|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 0 | Automation System | 'P5CTLITC11.LocSubst' is set via operator access using ACSI service control from substation HMI. Value of LN.LocSta are following the value of 'P5CTLITC11.LocSubst'. | Leader IED |
| 1 | Physical DI | The value of 'P5CTLITC11.LocSubst' is defined by the status of a physical digital input, to which a physical key switch is wired. The status of this digital input is modelled as 'P5CTLITC11.LocStaKey'. Values of LN.LocSta and P5CTLITC11.LocSubst are following the value of 'P5CTLITC11.LocStaKey'. | Leader IED |
| 2 | Local HMI | 'P5CTLITC11.LocSubst' is set via operator access from device front panel HMI. Values of LN.LocSta and P5CTLITC11.LocSubst are following the value of setting "Authority at station level" under General->IEC61850 on local HMI. | Leader IED |
| 3 | GOOSE NI | The value of 'P5CTLITC11.LocSubst' is defined by a leader IED. The value of the Leader 'P5CTLITC11.LocSubst.stVal' is received via GOOSE subscription and is copied to the Follower 'P5CTLITC11.LocSubst.stVal', the data quality likewise. Values of LN.LocSta and P5CTLITC11.LocSubst are following the value of the selected GOOSE NI. | Follower IED |

NOTE:

Please make sure there is only one leader IED in substation, and all others are follower IEDs using the configuration parameter “Control source defined by”.

The user shall be able to configure the Control source for the value of 'P5CTLITC11.LocSubst'. One of the four options can be selected (Automation system/Physical DI/Local HMI/GOOSE NI).

If the IED is connected via LocSubst exchange with other IEDs, then using this parameter it is defined whether the IED is the Leader IED (options 0, 1, 2) or a Follower IED (option 3).

If the IED is not connected for LocSubst exchange, then options 0, 1, 2 define the behaviour of the IED individually.

For a publishing of the value of 'P5CTLITC11.LocSubst' by the Leader IED, the user has to include 'P5CTLITC11.LocSubst.stVal' and 'P5CTLITC11.LocSubst.q' in a data set which is referenced by a GOOSE control block of the Leader IED.

For each follower IED, the user has to configure the subscription of 'P5CTLITC11.LocSubst.stVal' and 'P5CTLITC11.LocSubst.q' published by the Leader IED.

Please note that there are some restrictions made for the P5 model:

- 'Loc' status is common for all CSWI LN instances, that means there is no way to manage 'CSWI.Loc' independently for each CSWI LN instance
- The value of 'CSWI.LocSta' is always same as the value of 'LLN0.LocSta'. That means LLN0/CSWI/XSWI/XCBR.LocSta share one common value.
- 'Loc' status is common for all XCBR/XSWI LN instances, that means there is no way to manage 'Loc' independently. And 'Loc' is hardcoded as 'false' (remote) for all XCBR/XSWI LN instances.

- Single 'LLN0.LockKey' common for the complete IED

IEC 61850 generic events

Regardless from the modelling of information in IEC 61850-7-4, generic events can be configured via navigating to the **COMMUNICATION** menu/**IEC 61850 generic events** sub-menu of the eSetup Easergy Pro or the Web HMI. This provides means to map any events (i.e. protection trip, digital input change, port hardening change, ...) of the relay to maximum 8 indication data objects of the P5EVTGGIO1 logical node of the IEC 61850 interface. The status of the indication data object is determined by ON and OFF events set for the corresponding index.

Table 8 - IEC 61850 generic events

| Parameter | Description | Note |
|-------------------|---------------------------------------|------|
| Ind idx | Index of the LN P5EVTGGIO1 indication | |
| ON event channel | Channel number of the ON event | Set |
| ON event code | Event code of state ON | Set |
| OFF event channel | Channel number of the OFF event | Set |
| OFF event code | Event code of state OFF | Set |

IEC 61850 generic events

| Index | ON event channel ↕ | ON event code ↕ | OFF event channel ↕ | OFF event code ↕ |
|-------|--------------------|-----------------|---------------------|------------------|
| 1 | 69 | 1 | 69 | 2 |
| 2 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 |

The above screenshot features an example, where the status of Virtual Input 1 (event channel 69) is mapped to the generic events table. If the value of Virtual Input 1 is changed, then the value stored in the IEC 61850 address P5EVTGGIO1.lnd1.stVal indicates the current value of the Virtual Input 1.

For more information about channel number and ON/OFF event code, refer to Event code list , page 129 in Modbus slave section.

If only an “ON event” is defined for an indication then the transition to OFF state is generated automatically after reporting the ON state (momentary ON state). And the same applies if only an “OFF event” is defined for an indication (momentary OFF state).

GOOSE configuration

The publisher configuration GCB 1-4 and subscriber configuration can be found by navigating to the COMMUNICATION menu and GOOSE configuration view in eSetup Easergy Pro or Web HMI.

Table 9 - GOOSE configuration parameters

| Parameter | Description | Note |
|--------------------------------------|-------------------|-----------|
| Publisher configuration GCB x | | |
| GCB name | The name of GCB x | Read only |

Table 9 - GOOSE configuration parameters (Continued)

| Parameter | Description | Note |
|---------------------|----------------------------------------------------------------------------------------------------------------------------|-----------|
| Enable | Enable/disable the publishing of data defined by GCB x | Read only |
| Needs Commissioning | A flag which can be used to indicate that some change has been done in the configuration and a new commissioning is needed | Read only |
| Fixed length GOOSE | Disable/enable sending the GOOSE messages in flexible or fixed format (fixed length is a feature defined by Edition 2) | Read only |

GOOSE subscriber: data points

The GOOSE subscriber 250 binary data and 8 analog data can be monitored by navigating to the **COMMUNICATION** menu/**GOOSE Subscriber: data points** sub-menu of the eSetup Easergy Pro or the Web HMI.

Table 10 - GOOSE subscriber: data points for NI

| Parameter | Description |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GOOSE NI Global Error | Global error status of GOOSE NI |
| Network Input | Index of GOOSE network input for the received GOOSE data point (can be binary or analog). Binary NIs can be used as inputs for the user-defined logic blocks or as control inputs in the other functions of the relay (e.g. the output matrix). |
| Value | Data value received in the GOOSE data packet |
| Status | Status of the GOOSE data (NO DATA/OLD/OK) |
| InvOnNoOrBad-Frame | If the Goose Frame associated with the NI is available? Yes is True, no is False |
| InvOnQInv | If the q.Valid is set to good? Yes is True, no is False |
| InvOnQTest | If the q.Test is set to true and and Relay.LLNO.Beh == on? Yes is True, no is False |
| defValIfNoOrBad-Frame | Define how the value is computed, if no valid frame are available. (Last/On/Off) |
| defValIfQInv | Define how the value is computed, if the associated quality is Invalid OR Questionable |
| defValOnQTest | Define how the value is computed, if the associated quality q.test is set and the Relay.Mod == "on" |

NI = Network Input

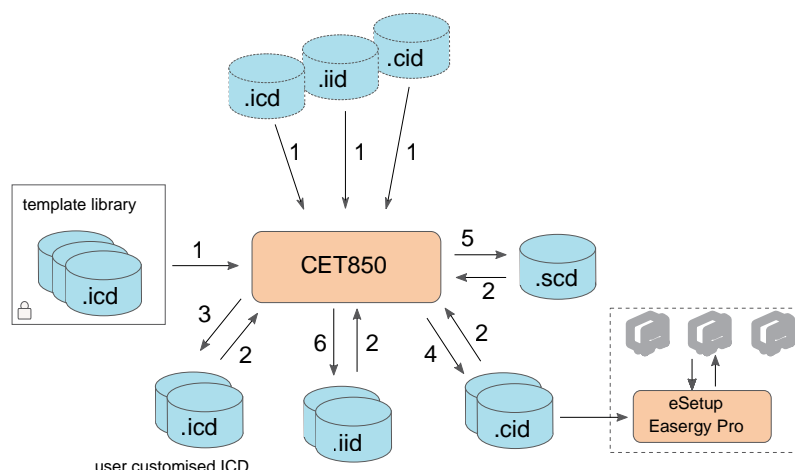
Table 11 - GOOSE subscriber: data points for ANI

| Parameter | Description |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network input | Index of the GOOSE data points. Input data can be binary or analogue. Binary NIs can be used as inputs for the user-defined logic blocks or as control inputs in the other functions of the relay (e.g. the output matrix). |
| Value | Data value received in the GOOSE data packet |
| Status | Status of the GOOSE data (OK/OLD/BAD TYPE/NO DATA/NEEDS COM/TEST/NDSCM TEST) |
| Unit | Unit of the incoming analogue data |

ANI = Analogue Network Input

CET850 for IEC 61850 configuration

IEC 61850 configuration software CET850 is used to create, display, modify or optimise an IEC 61850 configuration.



CET850 can be used to:

- Create an IEC 61850 configuration using an ICD, SCD, IID or CID file as an input.
- Edit an existing CID, SCD, IID or user-customised ICD file to modify its contents by :
 - Adding or removing PowerLogic P5 protection relays, in case of SCD
 - Displaying the configuration
 - Modifying communication parameter values
 - Optimising configuration by creating or modifying datasets and Report Control Blocks
 - Configuring or optimising the GOOSE communication by creating or modifying the GOOSE messages publication and subscription
- Generate a user-customised ICD file using an PowerLogic P5 protection relays IED template from the factory ICD library.
- Generate a CID file for storing the configuration of one device which can then be uploaded to the PowerLogic P5 protection relays using eSetup Easergy Pro.
- Generate SCD file for storing the configuration of an IEC 61850 system which can then be used by other IEC 61850 configuration tools.
- Generate an IID file for storing the specific configuration of an instantiated IED which can then be used by other IEC 61850 system configuration tools.

Graphical SCL editor

CET850 is a graphical tool that enables to browse an SCL file using a tree view that displays the content of the file in a hierarchical format.

Tree view

The following main sections are displayed in the tree view:

- Header and history

The Header section identifies the SCL configuration file and its version.
- Communication

This section contains the definition of all sub-networks defined in the IEC 61850 system, with the list of the connected IEDs. Both Client/Server and peer-to-peer communication access points are displayed.

- List of IEDs

This section contains the definition of all IEDs defined in the IEC 61850 system. Each IED is displayed with all its contents:

- Logical Devices (LD)
- Logical Nodes (LN)
- Datasets (DS)
- Report Control Blocks (RCB)
- GOOSE Control Blocks (GoCB)
- GOOSE subscription

Property view

When an item is selected in the tree view, the property view displays details of the selected item. The user can activate editing operations from the tool bar and contextual menu. There are also specific dialogue interfaces to guide you.

Device configuration

Adding and removing a device in an IEC 61850 system consists of making the change in the associated SCD file.

Adding an IED

CET850 enables the addition of an IED to an IEC 61850 system using its ICD description file, or the addition of a device already defined by a CID file. A specific dialog interface requests a name for the IED and then its description. The description is provided from an ICD file, a CID file or from an IID file.

Procedure:

- Create a new SCL file for a substation system (e.g. My Substation.scd).
- From the tree view, select the SCL root element
- In the menu bar or in the contextual menu, click Add > IED
- Set the IED Identification and optionally the address parameters according to the following descriptions
- Click OK to validate the operation

IED identification:

- ICD/CID file

Select the IEC 61850 description of the IED to add to an ICD or a CID. The user can select a device from a library or an other device with an external ICD file.

- IED name

Assign a name to the IED. The name of the IED must be unique in the IEC 61850 system. Its length is restricted to a maximum of 64 characters, and consists of alphanumeric and underscore (_) characters, beginning with a letter. It must not include a space character.

- IED description

This is a free ASCII string where the user can write comments about the device.

Address:

Address parameters are set to connect to the IED in the communication network. Connecting the IED can be done at this stage or later using the Add > Connected Access Point menu.

Removing an IED

An IED can be removed from an SCD file. This function is available when an IED is selected in the tree view. After confirming that the IED is to be deleted, the tree view and the content of the SCD file are updated.

Connecting a device in IEC 61850

An IEC 61850 IED uses an Access Point (AP) to communicate. This AP is connected to a subnetwork. CET850 provides the following set of functions to manage the communication architecture of an IEC 61850 System:

- Adding or removing a Subnet to the system
- Adding or removing an Access Point on a Subnet

IED configuration

The configuration of an IED described in an ICD, CID or SCD file can be modified so that its communication profile and behaviour are adjusted to the needs of the system. Refer to the CET850 user manual for more information.

Create, modify or delete a dataset

With PowerLogic P5 protection relays, a dataset is a collection of references to Data Attributes (DA) grouped together to increase communication efficiency for reports and GOOSE messages.

Datasets can be modified by the user and new dataset can be added, depending on the capabilities of the IED.

Any data produced by PowerLogic P5 protection relays may be referred-to in a dataset to be sent via a GOOSE message. Nevertheless, only data from the following types are applicable for GOOSE communication between PowerLogic P5 protection relays: Single Point Status (SPS), Double Point Status (DPS), Double Point Control (DPC), Complex Measured Value (CMV), and Measured Value (MV).

CET850 provides an easy way to create or edit a dataset inside LLN0. When creating a dataset, CET850 prompts the user for its name and description. A specific dialog interface allows the user to select which data is to be added to, or removed from the dataset.

The available data that can be selected is displayed in a hierarchical tree with collapse and expand facilities, from their host Logical Node down to the data attributes. Individual and multiple selections are possible.

After completing the definition of the dataset in the dialog interface, the changes to the dataset are reflected in the current SCL file and the CET850 display is updated: A newly created dataset is displayed in the tree view; a deleted dataset is removed from the tree view. The content of the dataset is updated in the property view.

Modify Report Control Block (RCB)

PowerLogic P5 protection relays provide up to 16 buffered and 8 unbuffered RCBs inside LLN0.

To allow multiple clients to receive the same values of data object, multiple instances of the report control classes are available. The maximum number of instances for buffered report control block (BRCB) is 16, and 8 for unbuffered report control block (URCB). It is configurable by CET850.

CET850 provides a specific dialog interface for creating or modifying a Report Control Block. When creating an RCB, CET850 prompts the user for the name and description of the RCB. A specific dialog interface allows the user to select the dataset to be associated with the RCB and to define all settings concerning the report generation.

The most common trigger options for an RCB instance are:

- Data Change : the Report is triggered by changes to the value of the data which are referenced in the dataset
- Quality Change: the Report is triggered by changes to the quality of the data which are referenced in the dataset
- Integrity: the Report is triggered periodically, according to an Integrity period specified

Modify GOOSE Control Block (GoCB)

The GOOSE message service is an efficient real-time communication service for peer-to-peer exchanges between IEDs.

A GOOSE Control Block (GoCB) manages how information referenced in a dataset is transmitted in a GOOSE message. A GoCB can only be created inside the Logical Node 0 (LLN0). The PowerLogic P5 protection relay provides up to 4 GoCBs.

CET850 provides a specific dialog interface for modifying a GOOSE Control Block. A specific dialog interface allows the user to select the dataset whose referenced information shall be transmitted as a GOOSE message. Then, the user needs to enter the settings for publishing the GOOSE message.

This includes:

- Multicast MAC address to which the GOOSE message is transmitted to
- Time for the first retransmission of the GOOSE message (the fastest retransmission is after 4 ms)
- Maximum retransmission interval (heartbeat cycle time)

After completing the definition of the GoCB in the dialog interface, the changes to the GoCB are reflected in the current SCL file and the CET850 display is updated: A newly created GoCB is displayed in the tree view; a deleted GoCB is removed from the tree view. The GoCB settings are displayed in the property view.

The four private DOs, GoEnaCB1-4, which can be edited by SCT/ICT freely, are defined under LN LLN0. When importing a cid file, the value of GoCB Enabled in the firmware will be updated to the same value as GoEnaCB1-4 in the cid file. The default value of GoEnaCB1-4 in the cid file is true.

GoCB disabled/enabled initial state can be modified in the cid file. Related DO "GoEnCbx" is dedicated for every published GoCB. After importing the cid file to the P5 relay, GoCB status can be changed via IEC 61850 or the local panel HMI. This change will be preserved after relay power cycle.

Subscribe to GOOSE messages and assign GOOSE inputs

The capability of the PowerLogic P5 protection relay to receive GOOSE messages is defined in the ICD file. If GOOSE messages are to be subscribed to, a GOOSE Receive element is defined at the beginning of the IED section, in the tree view displayed by CET850.

Editing the GOOSE Receive element allows the user to:

- Select the GOOSE messages and the data to which the IED subscribes
- Assign the subscribed data to PowerLogic P5 protection relays GOOSE inputs

CET850 provides a specific dialog interface to edit the GOOSE Receive. The dialog is organised in two parts:

- GOOSE message and data subscription
- GOOSE Inputs assignment

Refer to [Configuring the subscriber side](#), page 35 for a detailed description.

Deadband configuration in the cid file

The DAs, “db”, “dbAng”, “rangeC.max”, “rangeC.min”, “rangeAngC.min” and “rangeAngC.max”, can be configured in the cid file. Other DAs like “hhLim”, “hLim”, “lLim” and “lLim” cannot be edited and their default values are set to zero.

SNTP server IP address configuration in the cid file

The DO “TmSrcSet1” defines the main IP address of SNTP. “TmSrcSet2” defines the backup IP address of SNTP. The default values for “TmSrcSet1” and “TmSrcSet2” are “0.0.0.0”.

Generating, editing, validating of an SCL file

Generating CID files

When an SCD file is opened in the tool, CET850 can generate the CID file of a specific IED or all the CID files for all IEDs defined in the SCD file.

Generating a CID file is available when an IED is selected from the tree view and if this IED is connected to a subnet. A specific dialog interface box asks the user to enter the location and the name of the output CID file. By default, the name of the CID file is based on the name of the IED.

Generating all CID files is available if the SCD file includes at least one IED that is connected to a subnet. A specific dialog interface box asks the user to enter the location of the output CID files. The name of each CID file is based on the name of the IED.

Editing CID files

CET850 allows the editing of an existing CID file. This CID file is an advanced configuration file generated during a previous use of CET850, or a standard configuration file generated by eSetup Easergy Pro.

Validating SCL files

The validate function includes two kinds of verification:

- Verification of the structure and content of the SCL file

The System Configuration description Language is based on Extensible Markup Language (XML). The structure and the content of an SCL file is fully specified by the IEC 61850 standard using an XML Schema (XSD files). CET850 is delivered with the set of XSD files defined by the IEC 61850 standard. Using the XercesTM parser, CET850 checks the validity of SCL files against the IEC 61850 XML Schema.

- Verification of the consistency of the GOOSE communication.

The following checks are made:

- The dataset defined for a GOOSE messages meets a specific size constraint.
- The data sent by a publishing IED is consistent with the data expected and subscribed by the subscribing IED.

CET850 provides two ways to validate an SCL file:

- Schema validation
- Check XML syntax at file saving

Automatic validation is enabled or disabled using a specific option in the CET850 User Preferences.

Configuration of Flexible Product Naming (FPN)

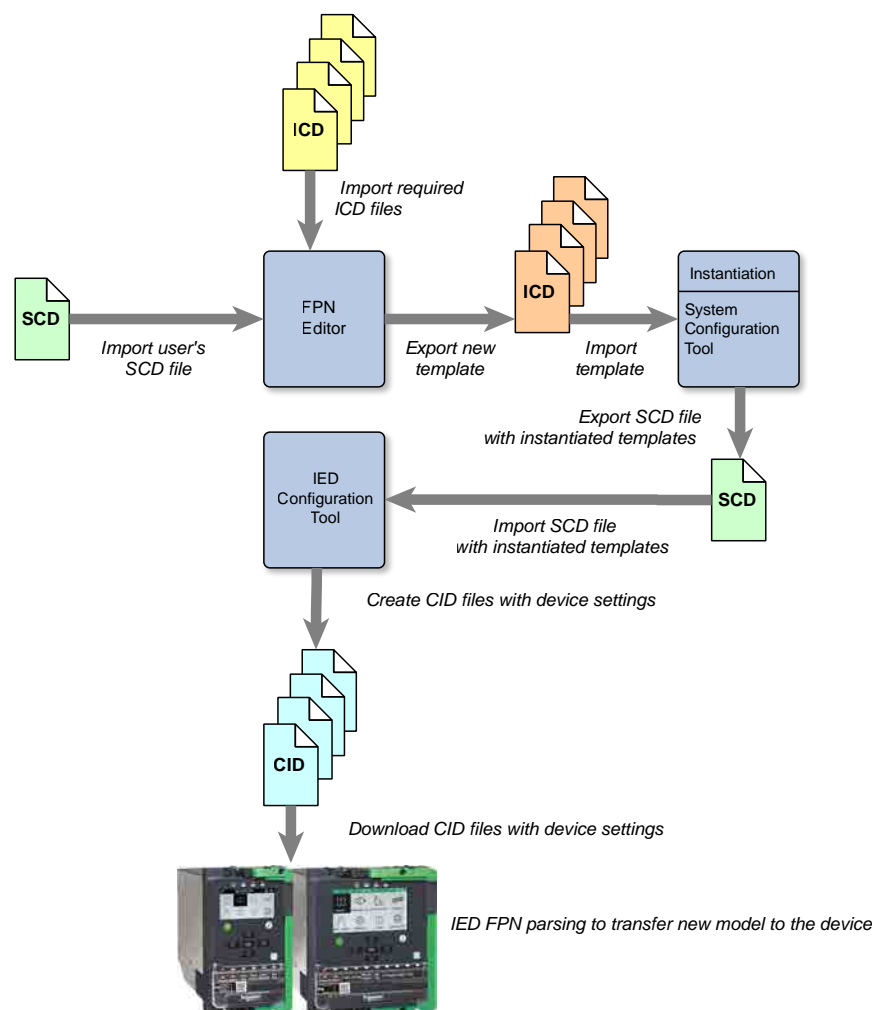
There is a general need for IEDs to operate on the same networks and communication paths to be interoperable. This is true not just for IEDs from the same manufacturer, but also for compatible IEDs from other manufacturers. For this to happen, the IEDs need to share the same information and use the same commands so they can communicate with one another. The Schneider Electric solution to this problem is called Flexible Product Naming (FPN). This works by using a virtualization layer for the IEC 61850-based communication of an IED. This means that Logical Nodes and Data Objects of the physical IED can be mapped to the Virtual Nodes and Data Objects (DOs) to match the communication requirements of the substation.

The main functions of PowerLogic P5 FPN are as follows:

- Renaming LDs
- Adding new LDs (up to 16)
- Removing LDs
- Relocating LNs to LDs
- Renaming LNs (prefix and inst)
- Creating new LNs (the DOs under these LNs must be those under other LNs in PowerLogic P5)
- Removing unused LNs
- Relocating DOs to LNs for Measurement LNs
- Renaming DOs
- Renaming Control Blocks and Datasets
- Relocating Control Blocks and Datasets

NOTE: The mapped SCL version information must be included in the cid filename. For example, the mapped SCL version is V1.0.2, then the cid filename is P5F30-17DI_16DO-WD_VSI_3ARC_V01.400_ED2-V102.CID.

A diagram which illustrates the general concept of FPN is shown here:

Figure 1 - Concept of FPN diagram

P533OQB

Tools required to build a FPN project

The tools required to build a FPN project are listed as follows:

- An System Configuration Tool (SCT) to manage virtual IED
- The FPN Editor

To start the FPN Editor, open the Easergy Studio, and select Tools.

The Easergy Studio is supplied directly through the Schneider Electric website www.se.com.

- CET850
- eSetup Easergy Pro

How to build a new FPN project

The procedure to create a new FPN project:

- Create an individual, adapted model of the virtual system in the System Specification Editor (SCD/SSD).
- In the FPN Editor, select a virtual IED from the system and create links between the objects of the virtual IED and the product-specific logical nodes of the physical IED. “FPN Editor” (see *Configuration of Flexible Product Naming (FPN)*, page 30) is used for the creation of “FPN Templates”. It allows to import a data model of a virtual IED as part of a system configuration SCD file. It also provides import of a device ICD file with the physical IED model of a real device. It allows to map objects of both models to re-arrange the hierarchy and view for the user. Then the new FPN model gets exported as an ICD file to be used by a System Configuration Tool for the instantiation in a complete system or IED Configuration Tool (CET850).
- Instantiate the new template in the IED Configuration Tool (CET850): IED name, IP address, used functions and datasets. Then a CID file with the instantiated template(s) is exported.
- Then CID files with the actual configuration settings can be exported and downloaded to every physical PowerLogic P5 device through eSetup Easergy Pro.

Using FPN with the FPN Editor

The main part of the FPN activities shown in the *Configuration of Flexible Product Naming (FPN)*, page 30 consists in creating a mapping between the required Logical Nodes and Data Objects (DOs) of the virtual device and the Logical Nodes and Data Objects that are actually available from the physical PowerLogic P5 device. This is done using a dedicated FPN panel of the FPN Editor tool.

Preconditions

There are certain files which must be available before the mapping can be started. These are:

- An SCD file representing the virtual IED
The SCD file must describe the present substation/network configuration by means of Logical Devices (LDs), which consist of Logical Nodes (LNs), which contain Data Objects (DOs) and Data Attributes (DAs) according to IEC 61850 Edition 2 standards.
- An ICD file describing the physical IED

Procedure

For the following procedure, it is assumed that the **Preconditions** have been met (mainly that a complete SCD file describing the virtual IED as well as the ICD file(s) describing the physical IED(s) already exist). Then the user needs to map the Logical Nodes and Data Objects of a virtual device to the Logical Nodes and Data Objects of a physical device. To do this:

- Start the FPN Editor, and select File > New Project menu option.
NOTE: There are also menu items such as Save Project, Save Project As... and Open Project which work in the usual way. These mean that you can store and archive all mappings in separate files. These mapping projects get the filename extension “.fpn” by default.
- The New Project menu item opens the “Select Virtual and Physical IEDs” window. The SCD file and the ICD file must be specified.
- To do this, click on the “Browse SCD” button to select the SCD file that describes the substation/network configuration including the required virtual IED.

- A typical SCD file contains and describes several (virtual) IEDs. Immediately after selecting the SCD file, another dialog box that lists all the (virtual) IEDs it contains will be displayed. Select the one that is required for the current FPN/mapping project and click the OK button.
- Then continue by clicking the “Browse ICD” button, and select the ICD file describing the physical IED.
- At this stage, the user can still switch to another virtual IED (from the currently selected SCD file), by expanding the “Select Virtual IED” list.

To see a more detailed comparison between the virtual LN structure and the physical LN structure click the “Compare IEDs” button. This shows the “FPN Compare View” which lets you expand any elements forming the internal structure of either the virtual and physical device. The corresponding element in the other structure is expanded automatically and shown side-by-side. Whilst this “Compare View” is read-only, it does let you define any mapping between the virtual elements and the physical elements.

NOTE: The user can toggle between the “Compare View” and the “Map View”, by clicking the “View Mode” button on the right-hand side of the window. Clicking on a “Map Mode” button takes you to the same dialog box as if you had clicked the “Map IEDs” button directly in the initial dialog box.

The right-hand side of the “Map View”, includes buttons (similar to the “Compare View”) which let you toggle the “View Mode”, or to select different virtual or physical IEDs.

The left-hand panel lets you create the mapping. It is split in an upper part (“Virtual+Physical IED”) and a lower part (“Mapped Output SCL”). The upper part is vertically split into areas for the virtual IED and the physical IED, where each of these two panels shows an expandable tree structure and a small description field below.

The user can browse through the tree structures and navigate to the Data Objects that are mapped together. If you hover your mouse pointer over a Data Object, its Common Data Class (CDC) information is shown.

- To map a Virtual IED to a Physical IED, click on the Logical Nodes of the SCD (virtual IED structure) and the ICD (physical IED structure) that you want to link together. The xml-path and description from the SCD/ICD files are then shown in the fields below the map.
- The user then needs to link Data Objects (DO) which match one another. When the user clicks on a DO in the “Virtual IED” tree, the IED Configurator finds any matching DO in the “Physical IED”. The matching ones are shown in a black color, whereas all non-matching ones are “grayed out”. Now click on whichever one of the matching Physical DO that you want to map to the Virtual DO. Again, the xml-path and description from the SCD/ICD files are then shown in the fields below the map. To record the linked DOs, make sure they are still highlighted, then click the Map button. The “FPN - Mapping View” frame will then change to show a green-coloured tick against each of the two DOs which are mapped together. At the same time, the Virtual LN + DO is added to the “Mapped Output SCL” panel; and the right-hand panel shows the “Mapping” progress bar. The progress bar also changes to show the percentage of DOs that have been mapped.
- The user now needs to repeat this process to map all the others accordingly to the requirements of the individual application.
- To map a single Product Naming object to multiple signals of the Virtual IED, select the option “Allow multiple signal mapping”.
- Support Mapping of full measurement objects including SDO and BDA objects. Only SDOs under the DO can be rearranged to the internal ones of the virtual IED.
- Once all the mappings have been completed, update the “Mapped SCL Version” information before saving the file. For example, update the “Mapped SCL Version” from V1.0.0 to V1.0.1.

Saving the FPN mappings

Having completed all the mappings needed to link the Data Objects (DOs) in the Virtual IED and the Physical IED, one or more of the File operations can be used to save the completed mapping. The options include:

- To save the whole FPN project, open the main menu and click FPN > Save Project or FPN > Save Project As... menu option.
- To create a new ICD file of all the mapped LNs and DOs, click the “Generate ICD” button to save the ICD Configurator file.
- To re-import the freshly generated ICD file into the CET850, click the Generate ICD button.
- The user can now inspect the settings in the CID, create datasets and so on. The CET850 lets you connect to a physical PowerLogic P5 and transfer the CID settings to it. This option is independent of the FPN feature, so this includes all the IEC61850-related configuration information.

Configuration of GOOSE communication

To configure the GOOSE communication, CET850 software is used to configure GOOSE communication in the IEC 61850 system.

Configuring GOOSE communication involves first configuring the publisher that multicasts the messages and then configuring the subscriber that needs the message. The GOOSE communication configuration is saved in an SCD file.

CET850 provides a specific dialog interface for modifying a GOOSE Control Block and editing the GOOSE Receive. This dialog allows the user to configure the GOOSE publisher side and subscriber side.

All GOOSE publishers must be configured in the same AP, while Manufacturing Message Specification (MMS) frames can be configured in different APs.

One AP is based on only one IP address. One IP address can be used by multiple APs. Thus, the parameter “AE qualifier” of each AP configured must be different.

For parameters “P selector”, “S selector” and “T selector” of an AP, at least one of them must be different.

These parameters should be configured on both the server side and the client side.

Configuring the GOOSE publisher side

To configure the GOOSE publisher side, the user needs to:

- Create a dataset (refer to IED configuration, page 26.)
- Configure a GOOSE Control Block to define the publishing of the data referenced in the dataset as a GOOSE message on the communication network

Any dataset may be attached to a GOOSE Control Block, provided its size is compatible with the size of one Ethernet frame. When creating a dataset, CET850 calculates the size of the dataset and informs the user if it is GOOSE compatible or not. When creating a GOOSE Control Block, CET850 allows the selection of GOOSE compatible datasets only.

Configuring the subscriber side

Procedure

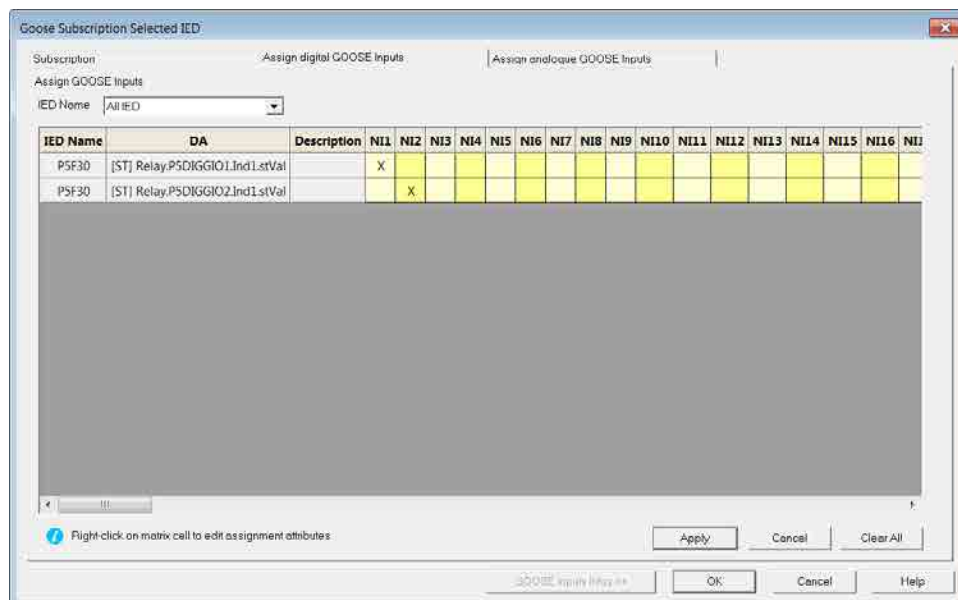
1. Select from the published GOOSE messages which Data Attributes (DAs) the device shall subscribe to.
2. Assign subscribed DAs to GOOSE network inputs.

The PowerLogic P5 protection relay provides 250 digital GOOSE inputs and 8 analogue GOOSE inputs that can be used by control logic functions.

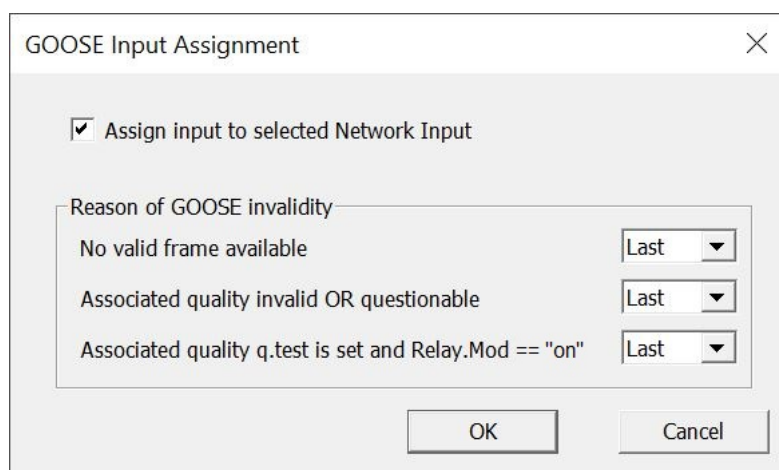
Assignment table

The subscribed DAs are assigned to PowerLogic P5 protection relays GOOSE network inputs in an assignment table. The assignment table gives in rows the list of all the subscribed DAs and in columns the list of the PowerLogic P5 protection relays GOOSE network inputs to which the DAs can be assigned/de-assigned. Assignment/de-assignment is done by selecting the appropriate cells in the table. One DA can be assigned to one or multi-GOOSE network input.

The below figure shows the assignment of subscribed DAs to PowerLogic P5 protection relays GOOSE digital network inputs.



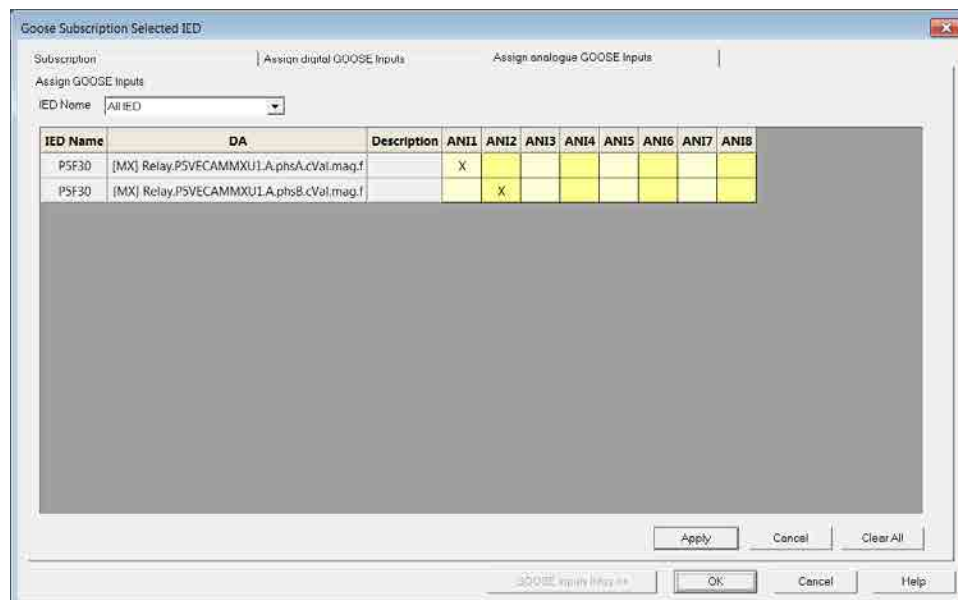
Right-click on matrix cell to edit assignment attributes, **GOOSE Input Assignment** window pops up as shown below.



Parameter descriptions for the three options are listed below.

| Parameter | Description |
|----------------------|-------------------------------------------------------------------------------------------------------------|
| defValIfNoOrBadFrame | Define how the Boolean value is computed, if no valid frame are available. |
| defValIfQInv | Define how the Boolean value is computed, if the associated quality is Invalid or Questionable. |
| defValOnQTest | Define how the Boolean value is computed, if the associated quality g.test is set and the Relay.Mod == "on" |

The below figure shows the assignment of subscribed DAs to PowerLogic P5 protection relays GOOSE analog inputs.



GOOSE matrix

All PowerLogic P5 protection relays GOOSE network inputs NI 1-250 can be mapped to NI or Virtual inputs VI 1-50 in the **COMMUNICATION** menu/**GOOSE matrix** sub-menu of the eSetup Easergy Pro or the Web HMI.

Using the GOOSE matrix the user is able to map the GOOSE network inputs to Virtual inputs which can be processed by the relay applications. The same network input can be mapped to more than one Virtual input and it is also possible to map more than one GOOSE network input to the same Virtual input. PowerLogic P5 protection relays apply a wired-OR logic operation on these mappings.

GOOSE performance

According to IEC 61850-5 and IEC 61850-10 Edition 2, the GOOSE performance of PowerLogic P5 protection relays is compliant with Class P2 (< 10 ms). For more information, visit www.se.com.

Conformance statements

This manual includes, in its appendix, two conformance statement documents that describe the conformity to IEC 61850 edition 1 and IEC 61850 edition 2. They do not describe the standard itself, but indicate the choices that have been made when implementing the standard in the PowerLogic P5 protection relay, in terms of services, modeling, exceptions, extensions and adaptations.

The conformance statement documents are:

- Conformance Statement with IEC 61850 Edition 1 (Appendix 2)
- Conformance Statement with IEC 61850 Edition 2 (Appendix 3)

Each conformance statement document is made up of the following chapters:

- Protocol Implementation Conformance Statement (PICS):
Describes choices made in protocol implementation.
- Model Implementation Conformance Statement (MICS):
Describes how the information model is implemented.

- Protocol Implementation Extra Information for Testing (PIXIT):
Gives any additional implementation specific information not found in the previous standardised documents. Despite the name, this information is useful for operation of the devices.
- Tissues Conformance Statement (TICS):
Describes which Technical Issues (TISSUES) are considered in the device implementation.

DNP3

Presentation

DNP3 communication enables PowerLogic P5 protection relay units to be connected to a supervisor or other device featuring a DNP3 communication channel.

Communication is based on the master/slave principle:

- PowerLogic P5 protection relay is always a slave device.
- The master is the supervisor, which is another device.

The DNP3 protocol specifies the coding of data and the rules for exchanging this data between a slave device and a master device (supervision and control device or RTU). DNP3 is an open (non-proprietary) protocol, which can be implemented by any communicating device without any restrictions.

The DNP3 protocol was developed from the basic standards prepared by IEC Technical Committee 57 (Power systems management and associated communications).

DNP3 was chosen by IEEE Task Force C.2 as the IEEE Recommendation for communication between RTUs and IEDs.

For more information on the Intelligent Electronic Device protocol can be obtained from the DNP3 User Group (www.dnp.org).

The following data types from the DNP3 protocol are supported:

- Binary input
- Binary input change
- Double-bit input
- Binary output
- Analog input
- Counter

PowerLogic P5 protection relays also support the division of data into classes.

Function description

Transmission mode

PowerLogic P5 protection relays can communicate using DNP, in two transmission modes:

- Serial port mode
- TCP/IP mode

The maximum number of clients for DNP3 is 8. The client and master can be connected by either:

- a serial port connection
- a TCP connection via an Ethernet port

The PowerLogic P5 protection relays can be configured to support the serial port mode and TCP/IP mode together at the same time and work at maximum 3 IP addresses.

Status polling

PowerLogic P5 protection relays allow the polling of current status values on master request with class 0.

The contents of binary input for polling, group number and variation number are configurable.

The function code for polling is 1 [READ].

Status reporting

PowerLogic P5 protection relays allow the reporting of data change events which are derived from:

- Polled value status change
- Control command status change

The status to be reported is configurable.

The event class can be configured as class 1, class 2 or class 3.

Status report entries are stored in a circular buffer with access provided to the most recent ones.

It is possible for a master to query the availability of status reports, in order that the master can determine whether it is necessary to read the available status reports from the slave.

PowerLogic P5 protection relays may be configured to support unsolicited responses.

Measurement polling

PowerLogic P5 protection relays support the polling of static measurement values on master request with class 0.

The list of measurement values for polling, group number and variation number are configurable.

The function code for polling is 1[READ].

The data type of each measurement value is configurable.

Measurement event polling (Reporting)

PowerLogic P5 protection relays support the polling of measurements event values on master request.

The list of measurement event values for polling is configurable.

The function code for polling is 1[READ].

The data type of each measurement event value is configurable.

The deadband values for managing measurement events reported by PowerLogic P5 protection relays are configurable.

Remote control

PowerLogic P5 protection relays support both remote control command requests and polling command status requests from a master.

Remote control command requests can be used with data types: binary output.

The remote control commands supported are listed below:

- Select
- Operate
- Direct operate

- Direct operate with no ACK

Both DC (Direct Control) and SBO (Select Before Operate) control models are supported. The DNP3 checks whether the point to be controlled has been configured only. DNP3 doesn't check whether the value is correct or not.

PowerLogic P5 protection relays implement an SBO timeout of 60s.

PowerLogic P5 protection relays send response frame to client according to the real control command response.

Counter management

PowerLogic P5 protection relays support the polling of counter values on master request.

The list of the counter values for polling is configurable.

The function code for polling is 1[READ].

General interrogation

The general interrogation functions for PowerLogic P5 protection relays mean to poll class 0 data for DNP3 master.

When PowerLogic P5 protection relays receive the general interrogation command from DNP3 master, the PowerLogic P5 protection relays report all the point's static data values (except for the point's class is not assigned to one of the four classes) in one frame or multi-frame.

Generally, the group number 60 and variation number 1 is used for general interrogation for all profiles.

Time synchronisation

The time of PowerLogic P5 protection relays corresponds to Universal Coordinated Time (UTC).

PowerLogic P5 protection relays support time synchronisation command requests and the polling of current date and time information from a DNP3 master.

It's possible for master to verify the correctness of system time.

The function code for actioning the time synchronisation command is 2 [WRITE].

The function code for polling the current date and time information is 1 [READ].

The time synchronisation procedure for TCP and serial is different.

PowerLogic P5 protection relays do not retry time synchronisation messages at either the Application or Data Link layers for these application layer function codes.

- DELAY_MEASURE request from master and corresponding response (RESPONSE function code) from outstation
- WRITE requests from master with an Absolute Time object, group 50, variation 1
- WRITE requests from master with a Last Recorded Time object, group 50, variation 3

When PowerLogic P5 protection relays detect that the time synchronisation request has not been received within the configured timeout, the IIN1.4 [NEED_TIME] bit is set in the response message. The master must send the time synchronisation request after receiving a response with this bit set.

Application identifier

The application identifier uses the function code 16[INITIALIZE_APPL], 17[START_APPL], 18[STOP_APPL].

When PowerLogic P5 protection relays receive a request related with application identifier, nothing internally is performed.

Cold restart and warm restart

When an PowerLogic P5 relay receives a cold or warm restart request, it immediately triggers the cold/warm restart sequence. A response frame containing the Delay Time DNP3 object, with a value of 10 seconds is generated. The response indicates the time when the relay will be available again. Hence during this period the PowerLogic P5 relay does not respond to requests from the DNP3 client.

IED file extraction

The PowerLogic P5 protection relay supports IED file extraction, which can be used to transfer the disturbance record file to clients. The file operations of the PowerLogic P5 protection relay include:

- Open file
- Close file
- Get file/folder information
- Read file
- Abort file

File authentication is not supported. The PowerLogic P5 can only have one file open at a time.

The file operations above can act on the folder '/COMTRADE' and all its sub-folders.

Device profile document

| | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------|----------|-----------------------|
| DNP 3.0 | | | | |
| Device Profile Document | | | | |
| Vendor Name: Schneider Electric | | | | |
| Device Name: PowerLogic P5 Protection Relay | | | | |
| Highest DNP Level Supported: | | Device Function: | | |
| For Requests: Level 2 | | Master | | |
| For Responses: Level 2 | | ✓ Slave | | |
| Notable objects, functions, and/or qualifiers supported in addition to the Highest DNP Levels Supported (the complete list is described in the DNP Implementation table): | | | | |
| Maximum Data Link Frame Size (octets): | | Maximum Application Fragment Size (octets): | | |
| Transmitted: 292 | | Transmitted: 2048 | | |
| Received: 292 | | Received: 2048 | | |
| Maximum Data Link Re-tries: | | Maximum Application Layer Re-tries: | | |
| None | | None | | |
| Fixed | | ✓ Configurable | | |
| ✓ Configurable from 0 to 255 | | | | |
| Requires Data Link Layer Confirmation: | | | | |
| Never | | | | |
| Always | | | | |
| Sometimes | | | | |
| ✓ Configurable with confirmation type selector, default NO ACK | | | | |
| Requires Application Layer Confirmation: | | | | |
| Never | | | | |
| Always | | | | |
| Sometimes | | | | |
| ✓ When reporting Event Data (Slave devices only) | | | | |
| ✓ When sending multi-fragment responses (Slave devices only) | | | | |
| Sometimes | | | | |
| ✓ Configurable as: "Only when reporting event data", or "When reporting event data or multi-fragment messages." | | | | |
| Timeouts while waiting for: | | | | |
| Data Link Confirm: | None | Fixed at | Variable | ✓ Configurable |
| Complete Appl. Fragment: | ✓ None | Fixed at | Variable | Configurable |
| Application Confirm: | None | Fixed at | Variable | ✓ Configurable |
| Complete Appl. Response: | ✓ None | Fixed at | Variable | Configurable |

DNP 3.0**Device Profile Document**Vendor Name: **Schneider Electric**

Device Name: PowerLogic P5 Protection Relay

Sends/Executes Control Operations:

| | | | | |
|-------------------------|----------------|-----------------|-----------|--------------|
| WRITE Binary Outputs | ✓ Never | Always | Sometimes | Configurable |
| SELECT/OPERATE | Never | ✓ Always | Sometimes | Configurable |
| DIRECT OPERATE | Never | ✓ Always | Sometimes | Configurable |
| DIRECT OPERATE – NO ACK | Never | ✓ Always | Sometimes | Configurable |
| Count > 1 | ✓ Never | Always | Sometimes | Configurable |
| Pulse On | Never | ✓ Always | Sometimes | Configurable |
| Pulse Off | Never | ✓ Always | Sometimes | Configurable |
| Latch On | Never | ✓ Always | Sometimes | Configurable |
| Latch Off | Never | ✓ Always | Sometimes | Configurable |
| Queue | ✓ Never | Never | Sometimes | Configurable |
| Clear Queue | ✓ Never | Never | Sometimes | Configurable |

Reports Binary Input Change Events when no specific variation requested:

- Never
- Only time-tagged
- Only non-time-tagged
- ✓ **Configurable to send one or the other**

Reports time-tagged Binary Input Change Events when no specific variation requested:

- Never
- ✓ **Binary Input Change With Time**
- Binary Input Change With Relative Time
- Configurable

Sends Unsolicited Responses:

- Never
- ✓ **Configuration**
- Only certain Objects
- Sometimes
- ✓ **ENABLE/DISABLE UNSOLICITED**
- Function codes supported**

Sends Static Data in Unsolicited Responses:

- ✓ **Never**
- When Device Restarts
- When Status Flags Change
- No other options are permitted.

Default Counter Object/Variation:

- No Counters Reported
- Configurable
- ✓ **Default Object: 20**
- ✓ **Default Variation: 1**
- Point-by-point list attached

Counters Roll Over at:

- No Counters Reported
- Configurable
- ✓ **16 Bits, but roll-over bits not used**
- 32 Bits
- Other Value: _____
- Point-by-point list attached

Sends Multi-Fragment Responses:

- ✓ **Yes**
- No
- Configuration

Sequential File Transfer Support:

| | | |
|-------------------------------|--------------|-------------|
| Append File Mode | Yes | ✓ No |
| Custom Status Code Strings | Yes | ✓ No |
| Permissions Field | ✓ Yes | No |
| File Events Assigned to Class | Yes | ✓ No |
| File Events Send Immediately | ✓ Yes | No |
| Multiple Blocks in a Fragment | Yes | ✓ No |
| Max Number of Files Open | 1 | |

Implementation table

| DNP Object Group and Variation | | | Request (Master may issue Outstation parses) | | Response (Master parses Outstation may issue) | |
|--------------------------------|---------|----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|-----------------------|
| Group Num | Var Num | Description | Function Codes (dec) | Qualifier Codes (hex) | Function Codes (dec) | Qualifier Codes (dec) |
| 1 | 0 | Binary Input – Any Variation | 1 (read) | 00, 01 (start-stop) 06 (no range, or all) | | |
| 1 | 1 | Binary Input – Packed format | 1 (read) | 00, 01 (start-stop) 06 (no range, or all) | 129 (response) | 00, 01, 17,28 |
| 1 | 2 | Binary Input – With flags | 1 (read) | 00, 01 (start-stop) 06 (no range, or all) | 129 (response) | 00, 01, 17,28 |
| 2 | 0 | Binary Input Event – Any Variation | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | | |
| 2 | 1 | Binary Input Event – Without time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 2 | 2 | Binary Input Event – With absolute time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 3 | 0 | Double-bit Binary Input – Any Variation | 1 (read) | 00, 01, 06 | | |
| 3 | 1 | Double-bit Binary Input – Packed format | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 3 | 2 | Double-bit Binary Input – With flags | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 4 | 0 | Double-bit Binary Input – Any Variation | 1 (read) | 00, 01, 06 | | |
| 4 | 1 | Double-bit Binary Input Event – Without time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 4 | 2 | Double-bit Binary Input Event – With absolute time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 10 | 0 | Binary Output – Any Variation | 1 (read) | 00, 01, 06 | | |
| 10 | 2 | Binary Output – Output status with flags | | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| | | | 3 (select) | | | |
| 12 | 1 | Binary Command – Control relay output block (CROB) | 4 (operate) 5 (direct op) 6 (dir. op, no ack) | 00, 01, 17, 28 | 129 (response) | 00, 01, 17, 28 |
| 20 | 0 | Counter – Any Variation | 1 (read) | 00, 01, 06 | | |
| 20 | 1 | Counter – 32-bit with flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 20 | 2 | Counter – 16-bit with flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 20 | 5 | Counter – 32-bit without flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 20 | 6 | Counter – 16-bit without flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |

| DNP Object Group and Variation | | | Request (Master may issue Outstation parses) | | Response (Master parses Outstation may issue) | |
|--------------------------------|---------|---------------------------------------------------------|----------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|-------------------------------|
| Group Num | Var Num | Description | Function Codes (dec) | Qualifier Codes (hex) | Function Codes (dec) | Qualifier Codes (dec) |
| 30 | 0 | Analog Input – Any Variation | 1 (read) | 06 (no range, or all) | | |
| 30 | 1 | Analog Input – 32-bit with flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 30 | 2 | Analog Input – 16-bit with flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 30 | 3 | Analog Input – 32-bit without flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 30 | 4 | Analog Input – 16-bit without flag | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 30 | 5 | Analog Input – Short float | 1 (read) | 00, 01, 06 | 129 (response) | 00, 01, 17, 28 |
| 32 | 0 | Analog Input Event – Any Variation | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | | |
| 32 | 1 | Analog Input Event – 32-bit without time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 32 | 2 | Analog Input Event – 16-bit without time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 32 | 3 | Analog Input Event – 32-bit with time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 32 | 4 | Analog Input Event – 16-bit with time | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 32 | 5 | Short Float Ana. Change Ev. without Time | 1 | 6, 7, 8 | 129 (response) 130 (unsol. resp) | 17, 28 (index) |
| 50 | 0 | Time and Date | 1 (read) | 06, 07, 08 | 129 (response) | 17, 28 |
| 50 | 1 | Time and Date – Absolute time | 1 (read) 2 (write) | 06, 07, 08 07, 08 | 129 (response) 129 (response) | 17, 28 |
| 52 | 2 | Time Delay – Fine | 23 | 07 | 129 (response) | 07 (limited qty) (qty = 1) |
| 60 | 0 | Class Objects – Class 0, 1, 2, 3 | 1 (read) | 06 | | |
| 60 | 1 | Class Objects – Class 0 data | 1 (read) | 06 (no range, or all) | | |
| 60 | 2 | Class Objects – Class 1 data | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | | |
| 60 | 3 | Class Objects – Class 2 data | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | | |
| 60 | 4 | Class Objects – Class 3 data | 1 (read) | 06 (no range, or all) 07, 08 (limited qty) | | |
| 70 | 3 | File Command Object -initiate Open or Delete operations | 25, 27 | 5b | | |
| 70 | 4 | File Command Status Object | 26, 30 | 5b | 129, 130 | 5b |
| 70 | 5 | File Transport Object | 1 | 5b | 129, 130 | 5b |
| 70 | 6 | File Transport Status Object | | | 129, 130 | 5b |
| 70 | 7 | File Description Object | 28 | 5b | 129, 130 | 5b |
| 80 | 1 | Internal Indications – Packed format | 2 (write) | 00 (start-stop) index=7 | 129 | |
| 90 | 1 | Application Identifier | 16, 17, 18 | 0 | 129 | |
| | | No Object (function code only) | 13 (cold restart) | | | |
| | | No Object (function code only) | 14 (warm restart) | | | |

Supported function codes

The table below is the application layer function codes that DNP3 slave supported.

| Code | Function | Description | Supported |
|--------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------|-----------|
| Transfer function codes | | | |
| 0 | Confirm | Message fragment confirmation No response | Yes |
| 1 | Read | Request objects from outstation Response with requested objects | Yes |
| 2 | Write | Store specified objects to outstation Respond with status of operation | Yes |
| Control function codes | | | |
| 3 | Select | Select output point of outstation Respond with status of control point | Yes |
| 4 | Operate | Set output that has previously selected Respond with status of control point | Yes |
| 5 | Direct operate | Set output directly Respond with status of control point | Yes |
| 6 | Direct operate | Set output directly No response | Yes |
| Freeze function codes | | | |
| 7 | Immediate freeze | Copy specified objects to freeze buffer Respond with status of operation | No |
| 8 | Immediate freeze | Copy specified objects to freeze buffer No respond | No |
| 9 | Freeze and clear | Copy specified objects to freeze buffer and clear objects Respond with status of operation | No |
| 10 | Freeze and clear -NO ACK | Copy specified objects to freeze buffer and clear objects No respond | No |
| 11 | Freeze with time | Copy specified objects to freeze buffer at specified time Respond with status of operation | No |
| 12 | Freeze with time -NO ACK | Copy specified objects to freeze buffer at specified time No respond | No |

| Code | Function | Description | Supported |
|--------------------------------------------|------------------------------|----------------------------------------------------------------------------|-----------|
| Application control function codes | | | |
| 13 | Cold restart | Perform desired reset sequence Respond with a time object | Yes |
| 14 | Warm restart | Perform desired partial reset operation Respond with a time object | Yes |
| 16 | Initialize application | Ready the specified application to run Respond with status of operation | No |
| 17 | Start application | Start the specified application to run Respond with status of operation | Yes |
| 18 | Stop application | Stop the specified application to run Respond with status of operation | Yes |
| Configuration function codes | | | |
| 19 | Save configuration | Save configuration Respond with status of operation | No |
| 20 | Enable unsolicited messages | Enable unsolicited messages Respond with status of operation | Yes |
| 21 | Disable unsolicited messages | Disable unsolicited messages Respond with status of operation | Yes |
| 22 | Assign class | Assign specified objects to a class Respond with status of operation | No |
| Time synchronization function codes | | | |
| 23 | Delay measurement | Perform propagation delay measurement | Yes |
| 24 | Record current time | For LAN networks only | No |
| File transfer | | | |
| 25 | Open file | | Yes |
| 26 | Close file | | Yes |
| 27 | Delete file | | No |
| 28 | get file information | | Yes |
| 29 | Authenticate file | | No |
| 30 | Abort file | | Yes |
| 31 | Activate configuration | | No |
| Response function codes | | | |
| 0 | Confirm | Message fragment confirmation | Yes |
| 129 | Response | Response to request message | Yes |
| 130 | Unsolicited message | Spontaneous message without request | Yes |

Configuration parameters

| Parameter | Value | Description |
|---------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bit rate | 1200, 4800, 9600, 19200, 38400, 57600, 115200 bps | The communication speed, bits per second. |
| Parity | None, Even, Odd | The type of parity bit used. |
| Wire number | 2, 4 | The wires number for serial port. |
| Poll line | False, True | Polarized line. |
| Frame Gap | 10...500 | Specifies the amount of time (calculated by bits) to determine that a frame has been completed. |
| Slave unit | 1...65519 | The address of the device (slave address). |
| Master unit | 1...65519 | The address of the master. |
| Linklayer Confirmation Timeout | 0 ms 1...65535 ms | Link layer confirmation disabled. Timeout for link layer confirmation. |
| Linklayer Retry Count | 1...255 | Link layer retries if Link layer confirmation is enabled. |
| Appl.layer Confirmation Timeout | 0...65535 ms | Timeout for application layer confirmation. |
| Appl.layer Confirmation Mode | EvOnly All | Confirmation requested for application layer messages containing event information only. Confirmation requested for all application layer messages. |
| Double-Bit Input Support | No Yes | Double-Bit input is not supported. Double-Bit input is supported. |
| ClockSync Mode | 0 1...64000 s | Clock synchronisation is requested only at startup. Interval for clock synchronisation request. |
| Deadband calculation method | Disabled Fixed Integrated | No deadband, no AI events generated. An Event is generated when the AI value change exceeds given deadband. Integrating deadband used. |
| Deadband integrating time | 1...200 s | Integrating time setting used when the Deadband calculation method is Integrated. |
| Unsolicited resp. mode | Disabled +Empty&Ena +Empty Enabled | Unsolicited responses not in use. Unsolicited response enabled, empty UR sent first, waiting for Enable UR from master. Unsolicited response enabled, empty UR sent first, not waiting for master Enable UR before proceeding. Unsolicited response enabled, starts sending UR's directly. |
| | | |

| Parameter | Value | Description |
|----------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsolicited resp. event delay | 0...200 s | Unsolicited responses are delayed by this amount of seconds from first event. |
| Unsolicited resp. event count | 1...10 | Unsolicited responses are delayed until this many events are available. Used together with previous parameter. |
| Unsolicited resp. max event cnt | 1...100 | Maximum number of events in one unsolicited response. |
| Collision avoidance enable flag | No, Yes | Collision avoidance off/on. |
| Collision avoidance fixed delay | 1...200 s | Delay setting used in next parameter. |
| Collision avoidance slots number | 1...255 | Number of bus access slots available for random bus access. If the line is busy, the slave waits for: fixed delay + random (slots), after the bus becomes idle before accessing the bus. |
| File Handle timeout | Range: 1 to 3600 second | Timeout for no activity references a file handle to close the file and send a File Transport Status Object (group 70 var 6) using a status code value of file handle expired (0x02). Range: 1 to 3600 second. Default 60 s. |
| Default Variation BI | 1, 2 | 1: Single-bit packed. 2: Single-bit with flag. |
| Default Variation BI event | 1, 2 | 1: Without time. 2: With absolute time. |
| Default Variation BO | 2 | 2: Binary output status. |
| Default Variation DBI | 1, 2 | 1: Without flag. 2: With flag. |
| Default Variation DBI event | 1, 2 | 1: Without time. 2: With absolute time. |
| Default Variation Counter | 1...6 | 1: 32-bit with flag. 2: 16-bit with flag. 3: Not supported. 4: Not supported. 5: 32-bit without flag. 6: 16-bit without flag. |
| Default Variation AI | 1...5 | 1: 32-bit with flag. 2: 16-bit with flag. 3: 32-bit without flag. 4: 16-bit without flag. 5: Single precision, floating point without time. |
| Default Variation AI event | 1...5 | 1: 32-bit without time. 2: 16-bit without time. 3: 32-bit with time. 4: 16-bit with time. 5: Single precision, floating point without time. |

Data configuration

In PowerLogic P5 protection relays, data is mapped to five different categories:

- Binary inputs (BI)
- Double-bit inputs (DBI)
- Analog inputs (AI)
- Counters (CNTRS)
- Binary outputs (BO)

The configuration of these is described in the following subsections.

Binary inputs

Binary inputs are found in the **COMMUNICATION** menu/**DNP3: data points - BI** sub-menu of the eSetup Easergy Pro or the Web HMI.

Table 12 - DNP3 data points – BI

| Parameter | Description |
|-----------|-------------------------------------------------------------------------------------------------|
| Index | The index of the data item in the list. |
| Class | Which class the data point belongs to. (Class 1, 2 or 3). |
| UR | Controls whether changes in the value of the data point generates unsolicited responses or not. |
| Item | The data point. |

Double-bit inputs

The **COMMUNICATION** menu/**DNP3: data points - DBI** sub-menu contains the configuration of Double-bit Inputs.

The configuration of these points is analogous to that of Binary Inputs, see DNP3 data points – BI, page 51.

Analog inputs

Analog inputs are configured from the **COMMUNICATION** menu/**DNP3: data points - AI** sub-menu.

Table 13 - DNP3 data points – AI

| Parameter | Description |
|-----------|------------------------------------------------------------------------------------------------------------------|
| Index | The index of the data item in the list. |
| Class | Which class the data point belongs to. (Class 1, 2 or 3). |
| UR | Controls whether changes in the value of the data point generates unsolicited responses or not. |
| Deadband | The amount of change in value needed before a change is registered. The range of this setting is 1...4200000000. |
| Item | The data point. |

8 fault values for measurement should be specially noted here, because their behavior is special compared with the others. The 8 points are:

- Fault Rec. IL1
- Fault Rec. IL2
- Fault Rec. IL3

- Fault Rec. UL1
- Fault Rec. UL2
- Fault Rec. UL3
- Fault Rec. Io
- Fault Rec. Freq.

Their report events with float 32 type fault value and time stamp. The events format will not change by variation.

Counters

The configuration of counters is found in the **COMMUNICATION** menu/**DNP3: data points - CNTRS** sub-menu.

Binary outputs

Binary outputs are found in the **COMMUNICATION** menu/**DNP3: data points - BO** sub-menu.

The structure of this configuration table is simple: only an index for the data items (data points) and an Item field, which determines which data point is found at the corresponding index. The data points are edited by clicking on an element in the Item column and selecting the desired output.

Data model of DNP3

The default Binary Inputs, Double-bit Inputs, Analog Inputs, Counts and Binary Outputs of PowerLogic P5 protection relays pre-configured in DNP3 can be found in following tables.

Binary inputs

| Default Index | Default Class | Item |
|---------------|---------------|-----------------|
| 0 | 1 | DI1(B) |
| 1 | 1 | DI2(B) |
| 2 | 1 | DI3(B) |
| 3 | 1 | DI4(B) |
| 4 | 1 | Setting group 1 |
| 5 | 1 | Setting group 2 |
| 6 | 1 | Setting group 3 |
| 7 | 1 | Setting group 4 |
| 8 | 1 | TCS alarm |
| 9 | 1 | Logic2 |
| 10 | 1 | Logic3 |
| 11 | 1 | Logic4 |
| 12 | 1 | Logic5 |
| 13 | 1 | Logic6 |
| 14 | 1 | VI1 |
| 15 | 1 | VI2 |
| 16 | 1 | VI3 |
| 17 | 1 | VI4 |
| 18 | 1 | VI5 |
| 19 | 1 | VI6 |

Double-bit inputs

| Default Index | Default Class | Item |
|---------------|---------------|---------|
| 0 | 1 | Object1 |
| 1 | 1 | Object2 |
| 2 | 1 | Object3 |
| 3 | 1 | Object4 |
| 4 | 1 | Object5 |
| 5 | 1 | Object6 |
| 6 | 1 | Object7 |
| 7 | 1 | Object8 |

Analog inputs

| Default Index | Default Class | Item |
|---------------|---------------|-----------------|
| 0 | 2 | PS1 fault value |
| 1 | 2 | PS2 fault value |
| 2 | 2 | PS3 fault value |
| 3 | 2 | PS4 fault value |
| 4 | 2 | PS5 fault value |
| 5 | 2 | PS6 fault value |
| 6 | 2 | PS7 fault value |
| 7 | 2 | PS8 fault value |

Counters

| Default Index | Item |
|---------------|------|
| 0 | DI1 |
| 1 | DI2 |
| 2 | DI3 |
| 3 | DI4 |

Binary outputs

| Default Index | Item |
|---------------|---------|
| 0 | Object1 |
| 1 | Object2 |
| 2 | Object3 |
| 3 | Object4 |
| 4 | Object5 |
| 5 | Object6 |

IEC 60870-5-101

Presentation

IEC 60870-5-101 is an accompanying standard for the standards in the IEC 60870-5 series. It defines communication between protection devices and the various devices in a control system (supervisor or RTU) in a substation.

PowerLogic P5 protection relays using IEC 60870-5-101 work as controlled outstation (slave) units in unbalanced mode. Supported application functions include:

- Process data transmission
- Event transmission
- Command transmission
- General interrogation
- Clock synchronisation
- Transmission of integrated totals
- Acquisition of transmission delay

The IEC 60870-5-101 communication in PowerLogic P5 protection relays is only command and event driven. Therefore only Class 1 data is reported. Class 2 is not be used.

Class 1 data is handled in the following priority order:

- Command responses
- Events (binary events, analog events, counter value change events)

The event buffer size of IEC 60870-5-101 is 250.

- General Interrogation data

Chronology between events and requested data are always maintained. For lists of default data mappings in PowerLogic P5 protection relays, refer to [Data model of IEC 60870-5-101](#), page 60.

IEC 60870-5-101 configuration

This section explains how to configure PowerLogic P5 protection relays to use the IEC 60870-5-101 protocol.

General configuration

The IEC 60870-5-101 protocol is activated by setting it as the port protocol for a serial port on the device. This setting can be found by navigating to the **COMMUNICATION** menu/**Protocol configuration** sub-menu of the eSetup Easergy Pro or the Web HMI.

The IEC 60870-5-101 protocol is activated on the Remote port.

NOTE: Setting a protocol to any port requires a reboot of the device for the changes to take effect. eSetup Easergy Pro will prompt for a reboot.

Once the protocol has been activated, it can be configured. This is done with the eSetup Easergy Pro in the **COMMUNICATION** menu/**IEC 60870-5-101 main config** sub-menu. All values shown are defaults.

Table 14 - IEC 60870-5-101 main configuration parameters

| Parameter | Value | Description |
|----------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Bit rate | 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps | Communication speed |
| Parity | None, Even, Odd | Parity used for serial communication |
| WireNum | 2, 4 | Number of wire connection |
| PolLine | False, True | Polarity of the wire connection |
| FrameGap | 10...500 | Specifies the amount of time (calculated by bits) to use to determine that a frame has been completed |
| Link layer address | 1 byte: 1...254 2 bytes: 1...65534 | Device address |
| Link layer address size | 1 or 2 bytes | Size of the device address |
| ASDU address | 1 byte: 1...254 2 bytes: 1...65534 | Address of data segment on the same device address |
| ASDU address size | 1 or 2 bytes | Size of the ASDU |
| IO address size | 2 or 3 bytes | Size of Information Object address |
| Cause of transmission size | 1 byte | Size of the code for the reason why a message is sent |
| Time tag format | Short, Full | Determines the time tag format: 3-octet time tag of 7- octet time tag |
| Measurements format | Scaled, Normalised, Float | Determines the data format for measurements, float, normalised or scaled values |
| Deadband enable flag | On, Off | Enabling of deadband measurements and event generation |
| Deadband cycle | 100...10000 ms | The interval of deadband calculations |

Data configuration

Data and commands are mapped to six different tables: Single point information (SPI), Double point information (DPI), Analog inputs (AI), Analog events (AE), Integrated totals (IT) and Commands (CMD). The settings for these categories are described in the following subsections.

Single and double point information

Single point information (SPI) objects are one-bit data items (range 0...1). Double point information objects are two-bit data items (range 0...3).

A description of the column elements for SPI and DPI objects is given in the table.

Table 15 - SPI and DPI mapping table

| Parameter | Description |
|-----------|-------------------------------------------------------------------------------------------------------------------|
| Index | Information object address |
| GI | Determines whether the object is included in response to General Interrogation request message (Enabled/Disabled) |
| Event | Determines whether change events for the object are put into Class 1 buffer (Enabled/Disabled) |
| Item | The data item which is configured on the row (for instance, DI1) |

NOTE: Information object address (Index) 1 is reserved for an SPI object: Class 1 buffer overflow indication (BOV1).

Analog inputs

Analog inputs are measurement values that are float, scaled or normalised. Scaling is done according to the scaling settings found under the list item Modbus and IEC 60870-5-101 specific scalings in eSetup Easergy Pro or Web HMI (it applies to IEC 60870-5-101 if the protocol is configured to use scaled values). When using float for measurement values, no scaling is needed.

NOTE: Measurement values have no time tags when read upon request. Change events (based on deadband supervision) are sent with time tags with cause of transmission spontaneous in Class 1. The time tag format is determined by the interface configuration (general time tag format selection parameter).

Table 16 - AI mapping table

| Parameter | Description |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Index | Information object address |
| GI | Determines whether the object is included in response to General Interrogation request message (Enabled/Disabled) |
| Event | Determines whether change events for the object are put into Class 1 buffer (Enabled/Disabled) |
| Deadband | Deadband value for change supervision and change event generation (valid only if Event is Enabled). |
| Max | Maximum value for defining the value range as –Max...+Max. This range is transformed to the range -1...+1 if the protocol measurement format is set to “Normalised” |
| Item | The data item which is configured on the row |

Analog events

These analog values are fault event and are sent with time tags. The values are float, normalised or scaled measured values.

Table 17 - AE mapping table

| Parameter | Description |
|-----------|------------------------------------------------------------------------------------------------|
| Index | Information object address |
| Event | Determines whether change events for the object are put into Class 1 buffer (Enabled/Disabled) |
| Item | The data item which is configured on the row |

Integrated totals

Integrated totals are energy and pulse counter values.

Table 18 - Integrated totals mapping table

| Parameter | Description |
|--------------------------|-------------------------------------------------------------------------------------------------------------|
| Index | Information object address |
| CI Counter Interrogation | Determines whether the object is included in responses to Counter Interrogation messages (Enabled/Disabled) |
| Item | The data item which is configured on the row |

Command items

The commands are divided into two categories: Select Before Operate and Direct Operate.

Table 19 - Description of command items

| Parameter | Description |
|-----------|----------------------------------------------|
| Index | Information object address |
| Item | The data item which is configured on the row |

Scaling

Measured values that transferred as signed integers of 16 bits are in the range: $-2^{15} \dots 2^{15} - 1 = -32768 \dots 32767$. Thus values that exceed this range are scaled in order to be successfully sent over an IEC 101 data link.

The scaling is determined by the float value of corresponding specific scalings. It is common to use scaling factors with base ten (0.100, 1.000, 10.000, 100.000...). In such cases, only the decimals are removed from the original measurements and such values are easy to read and rescale to actual values on the client side after transmission. Different settings for scaling can be used for the power-, power factor-, tan phi-, voltage- and frequency scaling. These settings for scaling can be set by navigating to the Modbus and IEC 60870-5-101 specific scalings view in the COMMUNICATION menu in eSetup Easergy Pro or Web HMI.

A short example: The frequency is internally (in the PowerLogic P5 protection relays) stored as an integer value which also holds three decimal places, that is, 50.000 Hz is represented as 50000. This is a value too large to be represented with 16 bits (signed integer). However, frequency is multiplied by default scaled value 0.1, enabling it to be sent over the data line.

Thus, the value on the receiving side (the scaled value) is:

$$\text{valueScaled} = k \cdot \text{valueInternal} = 0.1 \cdot 50000 = 5000$$

NOTE: It is highly recommended to scale values so that they are kept in the interval 0 – 32768 to avoid overflow.

Normalisation

When using normalisation for measured values, the normalised value is calculated using the Max parameter, which determines the range for the data (- Max ... + Max).

An example:

The frequency is internally (in the PowerLogic P5 protection relays) stored as an integer value which also holds three decimal places, that is, 50.000 Hz is represented as 50000. If normalisation is activated and the Max value set to 100000, the value sent over the data link is (in the ideal case):

$$\text{value Normalised} = \text{valueInternal}/\text{Max} = 50000/100000 = 0.5$$

Currently, however, the scaling is also performed before normalisation. This means that the scaling is always active.

The equation is therefore:

$$\text{value Normalised} = \text{valueScaled}/\text{Max} = 0.1 \times 50000/100000 = 0.05$$

Float

When using Float for measured values, no scaling will be used. An example: 50.000 Hz is represented as 50, just use the raw value to transfer.

Event buffer size

The event buffer size is defined as 250. That means IEC 60870-5-101 can store maximum 250 events internally.

Data model of IEC 60870-5-101

The default Single Point Information, Double Point Information, Analog Inputs, Analog Events, Intergrated Totals and Command of PowerLogic P5 protection relays pre-configured in IEC 60870-5-101 can be found in following tables.

Default single and double point information

Table 20 - Single point information

| Default Index | Item |
|---------------|-----------------|
| 2 | DI1 |
| 3 | DI2 |
| 4 | DI3 |
| 5 | DI4 |
| 6 | Setting group 1 |
| 7 | Setting group 2 |
| 8 | Setting group 3 |
| 9 | Setting group 4 |
| 10 | TCS alarm |
| 11 | Logic2 |
| 12 | Logic3 |
| 13 | Logic4 |
| 14 | Logic5 |
| 15 | Logic6 |

Table 21 - Double point information

| Default Index | Item |
|---------------|---------|
| 4097 | Object1 |
| 4098 | Object2 |
| 4099 | Object3 |
| 4100 | Object4 |
| 4101 | Object5 |
| 4102 | Object6 |
| 4103 | Object7 |
| 4104 | Object8 |

Analog inputs

| Default Index | Deadband | Max | Item |
|---------------|----------|------|-----------------|
| 16385 | 1.000 | 1000 | PS1 fault value |
| 16386 | 1.000 | 1000 | PS2 fault value |
| 16387 | 1.000 | 1000 | PS3 fault value |
| 16388 | 1.000 | 1000 | PS4 fault value |
| 16389 | 1.000 | 1000 | PS5 fault value |
| 16390 | 1.000 | 1000 | PS6 fault value |

| Default Index | Deadband | Max | Item |
|---------------|----------|------|-----------------|
| 16391 | 1.000 | 1000 | PS7 fault value |
| 16392 | 1.000 | 1000 | PS8 fault value |

Analog events

| Default Index | Item |
|---------------|-----------------|
| 18433 | PS1 fault value |
| 18434 | PS2 fault value |
| 18435 | PS3 fault value |
| 18436 | PS4 fault value |
| 18437 | PS5 fault value |
| 18438 | PS6 fault value |
| 18439 | PS7 fault value |
| 18440 | PS8 fault value |

Integrated totals

| Default Index | Item |
|---------------|------|
| 20481 | DI1 |
| 20482 | DI2 |
| 20483 | DI3 |
| 20484 | DI4 |

Default command

Table 22 - Select Before Operate table

| Default | Item |
|---------|---------|
| 34817 | Object1 |
| 34818 | Object2 |
| 34819 | Object3 |
| 34820 | Object4 |
| 34821 | Object5 |
| 34822 | Object6 |

Table 23 - Digital Output table

| Default Index | Item |
|---------------|-----------------|
| 32769 | Setting group 1 |
| 32770 | Setting group 2 |
| 32771 | Setting group 3 |
| 32772 | Setting group 4 |
| 32773 | Object1 |
| 32774 | Object2 |
| 32775 | Object3 |
| 32776 | Object4 |

Table 23 - Digital Output table (Continued)

| Default Index | Item |
|---------------|---------|
| 32777 | Object5 |
| 32778 | Object6 |

IEC 60870-5-103

Presentation

IEC 60870-5-103 is an accompanying standard for the standards in the IEC 60870-5 series. It defines communication between protection devices and the various devices in a control system (supervisor or RTU) in a substation.

The unbalanced transmission mode of the protocol is used, and the device functions as a secondary station (slave) in the communication. Data is transferred to the primary system using the "data acquisition by polling" principle.

The PowerLogic P5 protection relay supports the following IEC 61870-5-103 application functions:

- Data acquisition by polling
- General initialisation
- Station initialisation
- General interrogation
- Clock synchronisation
- Command transmission
- Transmission of disturbance data
- Read and write setting data

The following functions are not supported:

- Generic services
- Test mode
- Blocking in monitoring direction

The following ASDU (Application Service Data Unit) types are used in communication from the PowerLogic P5 protection relays:

- ASDU 1: Time tagged message
- ASDU 3: Measurands I
- ASDU 4: Time-tagged measurands with relative time
- ASDU 5: Identification message
- ASDU 6: Time synchronisation
- ASDU 8: Termination of general interrogation
- ASDU 9: Measurands II

PowerLogic P5 protection relays accept:

- ASDU 6: Time synchronisation
- ASDU 7: Initiation of general interrogation
- ASDU 20: General command

The ASDUs from 23 to 31 are used for disturbance data transmission.

The ASDU 140, ASDU 144, ASDU 17, ASDU 201, ASDU 169, ASDU 49 are used to write and read setting data.

The ASDU 135, which is related with SPA-bus, is not supported.

The data in a message frame is identified by:

- Type identification
- Function type (TYP)
- Information number (INF)

For more information on the IEC 60870-5-103 protocol, visit www.iec.ch.

IEC 60870-5-103 configuration

This section explains how to configure PowerLogic P5 protection relays to use the IEC 60870-5-103 protocol.

General configuration

The IEC 60870-5-103 protocol is activated by setting it as the port protocol for a serial port on the device. This setting can be found by navigating to the **COMMUNICATION** menu/**Protocol configuration** sub-menu in the eSetup Easergy Pro or the Web HMI. IEC 60870-5-103 protocol is activated on the Remote port.

NOTE: Setting a protocol to any port will require a reboot of the device for the changes to take effect. The eSetup Easergy Pro will prompt for a reboot.

Once the protocol has been activated, it can be configured. This is done with the eSetup Easergy Pro in the **COMMUNICATION** menu/**IEC 60870-5-103 main config** sub-menu. All values shown are defaults.

Table 24 - IEC 60870-5-103 main configuration parameters

| Parameter | Value | Description |
|---------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| IEC-103 slave number | 1 ... 254 | A unique address within the system setup |
| Speed of transmission | 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps | Communication speed |
| Wire number | 2, 4 | Number of wire connection |
| Poll line | False, True | Polarity of the wire connection |
| Frame Gap (bits) | 10 ... 500 | Specifies the amount of time (calculated by bits) to use to determine that a frame has been completed |
| Measure sending interval | 200 ... 10000 ms | Minimum measurement response interval |
| ASDU6 response time mode | Sync; | The time in the slave's response = the master's time. |
| | Sync + Proc; | The time in the slave's response = the master's time + internal processing time (standard). |
| | Msg; | The time in the slave's response = the slave's time at the moment when the clock sync message arrived. |
| | Msg + Proc | The time in the slave's response = the slave's time at the moment when the clock sync message arrived + internal processing time. |
| Include start and restart | On, Off | |

Table 25 - IEC 60870-5-103 disturbance recorder parameter

| Parameter | Value | Description |
|-------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable record info message | On, Off | Enable record information messages |
| Record samples in message | 1 ... 25 | Record samples in one message |
| Record reading timeout | 10 ... 10000 s | Record reading timeout |
| Fault number of active record | (not editable) | The fault number of the current record. This is a number which is given by PowerLogic P5 protection relays, incrementally and is what identifies faults. |
| Tags read position | (not editable) | Tags are indications of change in the value of digital data. The current tag read |

Table 25 - IEC 60870-5-103 disturbance recorder parameter (Continued)

| Parameter | Value | Description |
|-----------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | position shows which such item is being read. |
| Active channel | (not editable) | "Channel" refers to the channels in PowerLogic P5 protection relays Disturbance recorder, which can be found in the DISTURBANCE RECORDER view in eSetup Easergy Pro. The active channel indicates which channel is being read. |
| Channel read position | (not editable) | A channel contains sampled analog values. The current read position indicates which of these entries in the active channel is being read. |

Data configuration

The data points available through the IEC 60870-5-103 protocol interface in PowerLogic P5 protection relays can be configured in the IEC 60870-5-103: Data config view. It is divided into two categories, Digital data points (1-bit values) and Analog data points.

Digital data

The parameters, by which digital data points are defined, are explained below. In order to change the value of an existing data item, click on the row. This brings up an item configuration window, in which the parameters can be set. Pressing Save in the window will save the item set, pressing Remove will remove the item from the list and pressing Cancel will close the popup window without making any changes to the digital item configuration.

In order to add new items to the list, press the ADD Item row furthest down in the list. Doing so will add a new item at the end of the list. New items will be set to Digital Input 1 by default. The new item is configured as explained in the previous paragraph.

Table 26 - Description of digital data configuration parameters

| Parameter | Description |
|-----------|-------------------------------------------------------------------------------------------|
| Index | Index of the data item in the list |
| FUN | Function type |
| INF | Information number |
| GI | Item included in General Interrogation (Enabled/Disabled) and data acquisition by polling |
| EVENT | Events enabled for change of item value (Enabled/Disabled) |
| CONTROL | Item value can be set by command (Enabled/Disabled) |
| Item | The data item which is configured on the row (for instance, Digital Input 1) |

NOTE: Changes will not take effect if they are not explicitly written to the device using the Write changes to device button in eSetup Easergy Pro. This will require a reboot.

NOTE: The read command for digital data according to FUN and INF is not supported. If the GI parameter is disabled, the item value will not be included in response message by GI command. The value changing event is reported only by polling command.

Analog data

The parameters, by which analog data points are defined, are explained below. In order to change the value of an existing data item, click on the row. This brings up an item configuration window, in which the parameters can be set. Pressing Save in the window will save the item set, pressing Remove will remove the item from the list and pressing Cancel will close the popup window without making any changes to the analog item configuration.

In order to add new items to the list, press the ADD Item row furthest down in the list. Doing so will add a new item at the end of the list. The new item is configured as explained in the previous paragraph.

Table 27 - Description of analog data configuration parameters

| Parameter | Description |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Index | Index of the data item in the list |
| FUN | Function type |
| INF | Information number |
| ASDU | Application service data unit to be used to send the data item: ASDU 3.1: analog data 1 value ASDU 3.2: analog data 2 values ASDU 3.3: analog data 4 values ASDU 3.4: analog data 2 values ASDU 4: analog data floating point value ASDU 9: analog data 9 values |
| Items | The data item which is configured on the row |

NOTE: Changes will not take effect if they are not explicitly written to the device using the Write changes to device button in eSetup Easergy Pro. This will require a reboot.

Measurement data

Analog measurements are transferred in two different formats, as integers and as floating point values. The value format depends on the application message type, ASDU. The following ASDU types are available for measurement values:

Table 28 - ASDU types for measurement values

| ASDU | Number of measurements in one message | Format |
|------|---------------------------------------|---------|
| 3.1 | 1 | Integer |
| 3.2 | 2 | |
| 3.3 | 4 | |
| 3.4 | 2 | |
| 9 | 9 | |
| 4 | 1 | Float |

Integer value scaling

Integer scaled values in ASDU 3.x and 9 are transferred in 12 bit + sign integer format. The raw 12 bit values (-4096 ... +4095) are relative to 2.4 x nominal values. The following table shows the scaling for different measurements. The values of scaling settings can be found in the SCALING view in eSetup Easergy Pro.

NOTE:

- Integer RTD value is specially relative to 1:1.
- I% load value is specially relative to 2.4 x nominal values (100000%/Basic current setting[A]).
- Motor thermal level and feeder thermal level value is specially relative to 2.4 x nominal values(100%).
- Differential current I_d and bias current I_b is specially relative to 2.4 x nominal values (10 pu)

Table 29 - Integer scaled values

| Type | Measurement | Scaling |
|-----------------|------------------------------------|-----------------------------------------------------|
| Current | $I_A... I_C$ I_{oCalc} | $2.4 \times I_{nom}$ |
| Neutral current | I_r | $2.4 \times I_{rN}$ |
| | I_{rvs} | $2.4 \times I_{rvsN}$ |
| Voltage | $V_A... V_C$ $V_{AB}... V_{AC}$ | $2.4 \times V_{nom}$ |
| Neutral voltage | U_r | $2.4 \times U_{rN}$ |
| Power | P, Q, S | $2.4 \times I_{nom} \times V_{nom} \times \sqrt{3}$ |
| Other | DI counters | 1:1 |
| | PF, Cos Phi | 2.4:1 |

An example:

The device transfers phase 1 current, I_A , with ASDU 3.1.

The scaling setting is as follows: CT primary = 500 A.

The measured value $M = 321$ A.

Thus, the value sent, $B = M \times (4096 / (2.4 \times 500)) = 321 \times (4096 / (2.4 \times 500)) = 1095$

The protocol master receives the value: $B = 1095$

OVF (Overflow bit in frame): No

Valid: Yes

This value is converted back to the measured value:

$$M = B \times ((2.4 \times 500)/4096) = 1095 \times ((2.4 \times 500)/4096) = 320.8 \approx 321 \text{ A}$$

An example:

The device transfers phase 1 current, I_A , with ASDU 3.1.

The scaling setting is as follows: CT primary = 500 A.

The measured value $M = 1321 \text{ A}$.

Thus, the value sent, $B = M \times (4096/(2.4 \times 500)) = 1321 \times (4096/(2.4 \times 500)) = 4509$, is too large a value to fit into twelve bits. Thus, the value is sent as $B = 4095$ (the largest value that can be sent with twelve bits) and the OVF (Overflow flag) set.

The protocol master receives the value: $B = 4095$

OVF (Overflow bit in frame): Yes

Valid: Yes

This value is converted back to the measured value: $M \geq 2.4 \times 500 \text{ A}$, so $M \geq 1200 \text{ A}$

Floating point values

Values transferred in ASDU 4 need not be scaled. Most of the measurements are sent as primary scaled values, but some values can be sent as per unit (PU) values. This setting can be changed via the local panel on the PowerLogic P5 protection relays.

| Measurement | Format |
|--------------------------|----------|
| Fault current $I >$ | PU or A |
| Fault current $I >>$ | PU or A |
| Fault current $I >>>$ | PU or A |
| Fault reactance | Ω |
| Exported energy | MWh |
| Exported reactive energy | Mvarh |

Write and read setting data

ASDU types description

These are the ASDU types available:

- ASDU 140 in the control direction – setting read request
- ASDU 143 in the control direction – setting write request (8 bits)
- ASDU 144 in the control direction – setting write request (16 bits)
- ASDU 201 in the control direction – setting write request (32 bits)
- ASDU 49 in the monitor direction – reject setting read/write request (8 bits)
- ASDU 168 in the monitor direction – answer to setting read/write request (8 bits)
- ASDU 17 in the monitor direction – answer to setting read/write request (16 bits)
- ASDU 169 in the monitor direction – answer to setting read/write request (32 bits)

ASDU 140 (8CH): Control Direction**Table 30 - ASDU 140 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|----------------------------------------|
| Type identification | 8CH (Read protection parameter) |
| Variable Struct. Qualifier | 81H |
| Cause of Transmission | 14H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |

ASDU 143 (8FH): Control Direction**Table 31 - ASDU 143 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|------------------------------------------------|
| Type identification | 8FH (Write analog protection parameter) |
| Variable Struct. Qualifier | 81H |
| Cause of transmission | 14H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |
| Value byte | byte |

ASDU 144 (90H): Control Direction**Table 32 - ASDU 144 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|------------------------------------------------|
| Type identification | 90H (Write analog protection parameter) |
| Variable Struct. Qualifier | 81H |
| Cause of transmission | 14H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |
| Value low-byte | word (low) |
| Value high-byte | word (high) |

ASDU 201 (C9H): Control Direction**Table 33 - ASDU 201 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|------------------------------------------------|
| Type identification | C9H (Write analog protection parameter) |
| Variable Struct. Qualifier | 81H |
| Cause of transmission | 14H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |
| Byte 1 | Low word (low) |
| Byte 2 | Low word (high) |
| Byte 3 | High word (low) |
| Byte 4 | High word (high) |

Type identification 49 (31H): Monitor direction**Table 34 - ASDU 49 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|---------------------------------------|
| Type identification | 31H (Analog protection signal) |
| Variable Struct. Qualifier | 81H |
| Cause of transmission | 15H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |
| Value low-byte | MW (low) |
| Value high-byte | MW (high) |
| TT (Time tag) | ms low |
| | ms high |
| | IV 0 m m m m m m |
| | SU 0 h h h h h h |

Reject the read request or write request with special Fun and INF values as below.

Special values **Function byte (FUN)** = 7FH and **Information number (INF)** = FFH shall be used as a negative response on a command message ("Rejection telegram"): in this case MW contains the error code, so the cause of rejection.

The list of causes of rejection possibly used is as follows:

| Cause of rejection | Meaning |
|--------------------|---------------------------|
| 80H 00H | OK |
| 80H 07H | Unknown parameter address |
| 80H 08H | Wrong data |
| 80H 09H | Wrong frame data length |
| 80H 30H | Wrong data in message |

ASDU 168 (A8H): Monitor direction**Table 35 - ASDU 168 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|------------------------------------------|
| Type identification | A8H (Analog protection parameter) |
| Variable Struct. Qualifier | 81H |
| Cause of transmission (COT) | 14H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |
| Byte 1 | byte |
| TT (Time tag) | ms low |
| | ms high |
| | IV 0 m m m m m m |
| | SU 0 h h h h h |

ASDU 17 (11H): Monitor direction**Table 36 - ASDU 17 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|------------------------------------------|
| Type identification | 11H (Analog protection parameter) |
| Variable Struct. Qualifier | 81H |
| Cause of Transmission | 14H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |
| Value low-byte | word (low) |
| Value high-byte | word (high) |
| TT (Time tag) | ms low |
| | ms high |
| | IV 0 m m m m m m |
| | SU 0 h h h h h |

ASDU 169 (A9H): Monitor direction**Table 37 - ASDU 169 for IEC 60870-5-103 setting**

| Item | Value |
|-----------------------------------|------------------------------------------|
| Type identification | A9H (Analog protection parameter) |
| Variable Struct. Qualifier | 81H |
| Cause of transmission (COT) | 14H |
| Device address | Common address of ASDU |
| Function byte (FUN) | Parameter y-Value |
| Information number (INF) | Parameter x-Value |
| Byte 1 | Low word (low) |
| Byte 2 | Low word (high) |
| Byte 3 | High word (low) |
| Byte 4 | High word (high) |
| TT (Time tag) | ms low |
| | ms high |
| | IV 0 m m m m m m |
| | SU 0 h h h h h h |

COT Meaning (Cause of Transmission):

In a response to a write command only:

= 14H - Positive acknowledge to a read/write command.

= 15H - Negative acknowledge to a write command.

(All the frame structure may be changed according to last design.)

Setting data addressing

All setting data are addressed by y-Value (FUN) / x-Value (INF) corresponding to each protection and item.

The list of setting parameters displayed on eSetup Easergy Pro for each function are not editable. The user can select setting items by using the parameters FUN, INF and ASDU (for writing different types). Each item's FUN and INF can't be changed. The Master uses ASDU140 for all value types' reading requests.

The setting data can be found in the **COMMUNICATION** menu/**IEC 60870-5-103: Data setting** sub-menu.

Table 38 - IEC 60870-5-103 setting parameters

| Parameter | Description |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item | Db item |
| FUN | Function type(y-Value) |
| INF | Information number(x-Value) |
| ASDU | Application service data unit to be used to send the data item: ASDU 140: read request for master ASDU 143: write 8 bits type request for master ASDU 144: write 16 bits type request for master ASDU 201: write 32 bits type request for master |

Data model of IEC 60870-5-103

The default digital and analog data of PowerLogic P5 protection relays preconfigured in IEC 60870-5-103 can be found in following tables.

Default digital configuration

| Default Index | FUN | INF | Item |
|---------------|-----|-----|------------------------|
| 000 | 55 | 161 | Digital input 1 |
| 001 | 55 | 162 | Digital input 2 |
| 002 | 55 | 163 | Digital input 3 |
| 003 | 55 | 164 | Digital input 4 |
| 004 | 55 | 181 | Object1 state |
| 005 | 55 | 182 | Object2 state |
| 006 | 55 | 183 | Object3 state |
| 007 | 55 | 184 | Object4 state |
| 008 | 55 | 185 | Object5 state |
| 009 | 55 | 186 | Object6 state |
| 010 | 55 | 187 | Object7 state |
| 011 | 55 | 188 | Object8 state |
| 012 | 160 | 20 | Logic output status 1 |
| 013 | 160 | 21 | Logic output status 2 |
| 014 | 160 | 22 | Logic output status 3 |
| 015 | 160 | 23 | Logic output status 4 |
| 016 | 160 | 24 | Logic output status 5 |
| 017 | 160 | 25 | Logic output status 6 |
| 018 | 160 | 26 | Logic output status 7 |
| 019 | 160 | 27 | Logic output status 8 |
| 020 | 160 | 28 | Logic output status 9 |
| 021 | 160 | 29 | Logic output status 10 |
| 022 | 160 | 130 | Virtual input 1 |
| 023 | 160 | 131 | Virtual input 2 |
| 024 | 160 | 132 | Virtual input 3 |
| 025 | 160 | 133 | Virtual input 4 |
| 026 | 160 | 134 | Virtual input 5 |
| 027 | 160 | 135 | Virtual input 6 |
| 028 | 160 | 136 | Virtual input 7 |
| 029 | 160 | 137 | Virtual input 8 |
| 030 | 160 | 138 | Virtual input 9 |
| 031 | 160 | 139 | Virtual input 10 |
| 032 | 160 | 140 | CB Fail 1 Trip On |
| 033 | 160 | 141 | CB Fail 2 Trip On |
| 034 | 55 | 23 | Setting group 1 |
| 035 | 55 | 24 | Setting group 2 |

| Default Index | FUN | INF | Item |
|---------------|-----|-----|-----------------|
| 036 | 55 | 25 | Setting group 3 |
| 037 | 55 | 26 | Setting group 4 |
| 038 | 160 | 103 | Prg1 start |
| 039 | 160 | 105 | Prg1 trip |
| 040 | 160 | 98 | Prg2 start |
| 041 | 160 | 100 | Prg2 trip |
| 042 | 160 | 99 | Prg3 start |
| 043 | 160 | 101 | Prg3 trip |
| 044 | 160 | 180 | Prg4 start |
| 045 | 160 | 181 | Prg4 trip |
| 046 | 160 | 69 | Prg5 start |
| 047 | 160 | 70 | Prg5 trip |
| 048 | 160 | 71 | Prg6 start |
| 049 | 160 | 19 | Prg6 trip |

Default analog configuration parameters

| Default Index | FUN | INF | ASDU | Item |
|---------------|-----|-----|------|-----------|
| 050 | 160 | 65 | 4 | Frequency |

Setting data

The setting values that can be configured in IEC 60870-5-103 on the PowerLogic P5 protection relay is listed in the table below:

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------------|-----|-----|------|---------------|------------------------|-------|-------|-------|-------|-------|
| ARC setting items | | | | | | | | | | |
| I>int. pick-up value | 1 | 0 | 201 | 1.00 pu = 100 | | | | ■ | ■ | ■ |
| IN>int. pick-up value | 1 | 1 | 201 | 1.00 pu = 100 | | | | ■ | ■ | ■ |
| Enable for Arc stage 1 | 1 | 2 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |
| Enable for Arc stage 2 | 1 | 3 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |
| Enable for Arc stage 3 | 1 | 4 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |
| Enable for Arc stage 4 | 1 | 5 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |
| Enable for Arc stage 5 | 1 | 6 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |
| Enable for Arc stage 6 | 1 | 7 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |
| Enable for Arc stage 7 | 1 | 8 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |
| Enable for Arc stage 8 | 1 | 9 | 143 | Off=0;On=1 | | | | ■ | ■ | ■ |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|----------------------------|-----|-----|------|-------------------------|------------------------|-------|-------|-------|-------|-------|
| Stage 1 Mode | 1 | 10 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Stage 2 Mode | 1 | 11 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Stage 3 Mode | 1 | 12 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Stage 4 Mode | 1 | 13 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Stage 5 Mode | 1 | 14 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Stage 6 Mode | 1 | 15 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Stage 7 Mode | 1 | 16 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Stage 8 Mode | 1 | 17 | 143 | Light=0;Light&Current=1 | | | | ■ | ■ | ■ |
| Trip 1 delay [x1ms] | 1 | 18 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Trip 2 delay [x1ms] | 1 | 19 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Trip 3 delay [x1ms] | 1 | 20 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Trip 4 delay [x1ms] | 1 | 21 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Trip 5 delay [x1ms] | 1 | 22 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Trip 6 delay [x1ms] | 1 | 23 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Trip 7 delay [x1ms] | 1 | 24 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Trip 8 delay [x1ms] | 1 | 25 | 143 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time [x1ms] | 1 | 26 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time2 [x1ms] | 1 | 27 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time3 [x1ms] | 1 | 28 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time4 [x1ms] | 1 | 29 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time5 [x1ms] | 1 | 30 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time6 [x1ms] | 1 | 31 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time7 [x1ms] | 1 | 32 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| Min. hold time8 [x1ms] | 1 | 33 | 201 | 1 = 1 | | | | ■ | ■ | ■ |
| CT input | 1 | 34 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| Inrush setting | | | | | | | | | | |
| Enable for Inrush 1 | 2 | 0 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Max inrush current | 2 | 1 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Pickup for 2nd harmonic | 2 | 2 | 201 | 1 % = 1 | ■ | ■ | | ■ | ■ | ■ |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------|-----|---------|------|---------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Inrush operating mode | 2 | 3 | 143 | Phase block=0;Cross block=1 | | | | ■ | ■ | ■ |
| CT input | 2 | 4 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| OverCurrent I>1 setting | | | | | | | | | | |
| Pick-up value | 3 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 3 | 13...16 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| TMS | 3 | 17...20 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 3 | 21...24 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Inrush blocking | 3 | 25...28 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| SOL status | 3 | 29...32 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | ■ | | ■ | ■ | ■ |
| SOL operate delay | 3 | 33...36 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| SOL TMS | 3 | 37...40 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic mode | 3 | 41...44 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic threshold | 3 | 45...48 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic operate delay | 3 | 49...52 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic TMS | 3 | 53...56 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 3 | 58...61 | 143 | DT=0;IDMT=1;Prg1=2;Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 3 | 62...65 | 143 | Value ⁵ | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 3 | 66...69 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Enable for I>1 | 3 | 70...73 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Direction mode | 3 | 74...77 | 143 | Non-directional=0;Forward=1;Reverse=2 | ■ | ■ | | ■ | ■ | ■ |
| Characteristic angle | 3 | 78...81 | 144 | 1 ° = 1 | ■ | ■ | | ■ | ■ | ■ |
| VTS blocking | 3 | 82...85 | 143 | Blocked=0;Non-directional=1 | ■ | ■ | | ■ | ■ | ■ |
| Tripping logic | 3 | 86...89 | 143 | 1 out of 3=0;2 out of 3=1 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 3 | 90...93 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 3 | 94...97 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| OverCurrent I>2 setting | | | | | | | | | | |
| Pick-up value | 4 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 4 | 13...16 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| TMS | 4 | 17...20 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Inrush blocking | 4 | 21...24 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| SOL status | 4 | 25...28 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | ■ | | ■ | ■ | ■ |
| SOL operate delay | 4 | 29...32 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |

5. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------|-----|---------|------|-------------------------------------------|------------------------|-------|-------|-------|-------|-------|
| SOL TMS | 4 | 33...36 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic mode | 4 | 37...40 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic threshold | 4 | 41...44 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic operate delay | 4 | 45...48 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic TMS | 4 | 49...52 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 4 | 54...57 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 4 | 58...61 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 4 | 62...65 | 143 | Value ⁶ | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 4 | 66...69 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Enable for I>2 | 4 | 70...73 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Direction mode | 4 | 74...77 | 143 | Non-directional=0; Forward=1;Reverse=2 | ■ | ■ | | ■ | ■ | ■ |
| Characteristic angle | 4 | 78...81 | 144 | 1 ° = 1 | ■ | ■ | | ■ | ■ | ■ |
| VTS blocking | 4 | 82...85 | 143 | Blocked=0;Non-directional=1 | ■ | ■ | | ■ | ■ | ■ |
| Tripping logic | 4 | 86...89 | 143 | 1 out of 3=0;2 out of 3=1 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 4 | 90...93 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 4 | 94...97 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| OverCurrent I>3 setting | | | | | | | | | | |
| Pick-up value | 5 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 5 | 5...8 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Inrush blocking | 5 | 9...12 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| SOL status | 5 | 13...16 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | ■ | | ■ | ■ | ■ |
| SOL operate delay | 5 | 17...20 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic mode | 5 | 21...24 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic threshold | 5 | 25...28 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic operate delay | 5 | 29...32 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Enable for I>3 | 5 | 33...36 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 5 | 37...40 | 143 | Value ⁶ | ■ | ■ | | ■ | ■ | ■ |
| TMS | 5 | 41...44 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 5 | 45...48 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 5 | 49...52 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Direction mode | 5 | 53...56 | 143 | Non-directional=0; Forward=1;Reverse=2 | ■ | ■ | | ■ | ■ | ■ |

6. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|----------------------------------|------------------------|-------|-------|-------|-------|-------|
| Characteristic angle | 5 | 57...60 | 144 | 1 ° = 1 | ■ | ■ | | ■ | ■ | ■ |
| VTS blocking | 5 | 61...64 | 143 | Blocked=0;Non-directional=1 | ■ | ■ | | ■ | ■ | ■ |
| Tripping logic | 5 | 65...68 | 143 | 1 out of 3=0;2 out of 3=1 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 5 | 69...72 | 143 | DT=0;IDMT=1;Prg1=2;Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 5 | 73...76 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| SOL TMS | 5 | 77...80 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic TMS | 5 | 81...84 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 5 | 85...88 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| SOTF setting | | | | | | | | | | |
| Enable for SOTF | 6 | 0 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | |
| Pick-up value | 6 | 1 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | |
| Dead line detection delay | 6 | 2 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | |
| SOTF active Timer | 6 | 3 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | |
| Dead line detection input | 6 | 4 | 144 | Value ⁷ | ■ | ■ | | ■ | ■ | |
| P<1 setting | | | | | | | | | | |
| Pick-up value | 11 | 1...4 | 201 | 1.0 %Sn = 10 | ■ | | | ■ | ■ | |
| Operate delay | 11 | 5...8 | 201 | 1.0 s = 10 | ■ | | | ■ | ■ | |
| Enable for P<1 | 11 | 9...12 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | |

7. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------------|-----|---------|------|--------------------------------------|------------------------|-------|-------|-------|-------|-------|
| P<2 setting | | | | | | | | | | |
| Pick-up value | 12 | 1...4 | 201 | 1.0 %Sn = 10 | ■ | | | ■ | ■ | |
| Operate delay | 12 | 5...8 | 201 | 1.0 s = 10 | ■ | | | ■ | ■ | |
| Enable for P<2 | 12 | 9...12 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | |
| I<1 setting | | | | | | | | | | |
| Pick-up value | 13 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | |
| Operate delay | 13 | 5...8 | 201 | 1.0 s = 10 | ■ | ■ | | ■ | ■ | |
| Enable for I< | 13 | 9...12 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | |
| I< block limit | 13 | 13...16 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | |
| I2/I1> setting | | | | | | | | | | |
| Pick-up value | 14 | 1...4 | 201 | 1 % = 1 | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 14 | 5...8 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Enable for I2/ I1>1 | 14 | 9...12 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 14 | 13...16 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| I2>2 setting | | | | | | | | | | |
| Pick-up value | 15 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 15 | 5...8 | 143 | Value ⁸ | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 15 | 9...12 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| TMS | 15 | 13...16 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 15 | 17...20 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 15 | 21...24 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 15 | 25...28 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 15 | 29...32 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Enable for I2>2 | 15 | 33...36 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 15 | 37...40 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| I2>1 setting | | | | | | | | | | |
| Pick-up value | 16 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 16 | 13...16 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| TMS | 16 | 17...20 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 16 | 21...24 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 16 | 25...28 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 16 | 29...32 | 143 | Value ⁸ | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 16 | 33...36 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 16 | 37...40 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Enable for I2>1 | 16 | 41...44 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |

8. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|----------------------------------|-----|---------|------|---------------------|------------------------|-------|-------|-------|-------|-------|
| CT input | 16 | 45...48 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| Ist> setting | | | | | | | | | | |
| Enable for Ist> | 17 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Operating curve | 17 | 1 | 143 | DT=0;INV=1 | ■ | ■ | | | ■ | |
| Motor start time | 17 | 2 | 201 | 1.0 s = 10 | ■ | ■ | | | ■ | |
| Ilr> setting | | | | | | | | | | |
| Enable for Ilr> | 18 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Pick-up value | 18 | 1 | 201 | 1.0 % = 10 | ■ | ■ | | | ■ | |
| Operating curve | 18 | 2 | 143 | DT=0;INV=1 | ■ | ■ | | | ■ | |
| Operate delay | 18 | 3 | 201 | 1.0 s = 10 | ■ | ■ | | | ■ | |
| N> setting | | | | | | | | | | |
| Enable for N> | 19 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Max motor Hot starts | 19 | 1 | 201 | 1 = 1 | ■ | ■ | | | ■ | |
| Max motor cold starts | 19 | 2 | 201 | 1 = 1 | ■ | ■ | | | ■ | |
| Min time between motor starts | 19 | 3 | 201 | 1.0 min = 10 | ■ | ■ | | | ■ | |
| Reference period | 19 | 4 | 201 | 1.0 min = 10 | ■ | ■ | | | ■ | |
| Hot Status Limit | 19 | 5 | 201 | 1.0 % = 10 | ■ | ■ | | | ■ | |
| Motor T> setting | | | | | | | | | | |
| Basic current setting | 20 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | | ■ | |
| Max permissive I factor | 20 | 5...8 | 201 | 1.00 = 100 | ■ | ■ | | | ■ | |
| Heating time constant | 20 | 9...12 | 201 | 1.0 min = 10 | ■ | ■ | | | ■ | |
| Time constant for motor starting | 20 | 13...16 | 201 | 1.0 min = 10 | ■ | ■ | | | ■ | |
| Cooling time constant | 20 | 17...20 | 201 | 1.0 min = 10 | ■ | ■ | | | ■ | |
| Unbalance factor | 20 | 21...24 | 201 | 1.0 = 10 | ■ | ■ | | | ■ | |
| Thermal alarm value | 20 | 25...28 | 201 | 1 % = 1 | ■ | ■ | | | ■ | |
| Reserve time thermal alarm | 20 | 29...32 | 201 | 1.0 min = 10 | ■ | ■ | | | ■ | |
| Operating mode | 20 | 33...36 | 143 | Current=0;Ambient=1 | ■ | ■ | | | ■ | |
| Nominal ambient temperature | 20 | 37...40 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | | ■ | |
| Max object temperature | 20 | 41...44 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | | ■ | |
| Alarm temperature | 20 | 45...48 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | | ■ | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------------|-----|---------|------|-------------------------------|------------------------|-------|-------|-------|-------|-------|
| Min ambient temperature | 20 | 49...52 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | | ■ | |
| Default ambient temperature | 20 | 53...56 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | | ■ | |
| Enable for 49M> | 20 | 57...60 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Feeder T> setting | | | | | | | | | | |
| Basic current setting | 21 | 1...4 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | | ■ |
| Max permissive I factor | 21 | 5...8 | 201 | 1.00 = 100 | ■ | ■ | | ■ | | ■ |
| Heating time constant | 21 | 9...12 | 201 | 1.0 min = 10 | ■ | ■ | | ■ | | ■ |
| Thermal alarm value | 21 | 13...16 | 201 | 1 % = 1 | ■ | ■ | | ■ | | ■ |
| Reserve time thermal alarm | 21 | 17...20 | 201 | 1.0 min = 10 | ■ | ■ | | ■ | | ■ |
| Operating mode | 21 | 21...24 | 143 | Current=0;Ambient=1 | ■ | ■ | | ■ | | ■ |
| Nominal ambient temperature | 21 | 25...28 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | ■ | | ■ |
| Max object temperature | 21 | 29...32 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | ■ | | ■ |
| Alarm temperature | 21 | 33...36 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | ■ | | ■ |
| Min ambient temperature | 21 | 37...40 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | ■ | | ■ |
| Default ambient temperature | 21 | 41...44 | 144 | 1 °C = 1 / 1 °F = 1 | ■ | ■ | | ■ | | ■ |
| Enable for 49F | 21 | 45...48 | 143 | Off=0;On=1 | ■ | ■ | | ■ | | ■ |
| CT input | 21 | 49...52 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| Icap>1 setting | | | | | | | | | | |
| Pick-up value | 24 | 1...4 | 201 | 1.00 pu = 100 | | ■ | | ■ | | |
| Operate delay | 24 | 5...8 | 201 | 1.00 s = 100 | | ■ | | ■ | | |
| Enable for Icap>1 | 24 | 39...42 | 143 | Off=0;On=1 | | ■ | | ■ | | |
| Compensation mode | 24 | 43 | 143 | Off=0;On=1 | | ■ | | ■ | | |
| Compensation current | 24 | 44 | 201 | 1.000 pu = 1000 | | ■ | | ■ | | |
| Icap>2 setting | | | | | | | | | | |
| Pick-up value | 25 | 1...4 | 201 | 1.00 pu = 100 | | ■ | | ■ | | |
| Operate delay | 25 | 5...8 | 201 | 1.00 s = 100 | | ■ | | ■ | | |
| Enable for Icap>2 | 25 | 39...42 | 143 | Off=0;On=1 | | ■ | | ■ | | |
| Compensation mode | 25 | 43 | 143 | Off=0;Normal=1; Location=2 | | ■ | | ■ | | |
| Compensation current | 25 | 44 | 201 | 1.000 pu = 1000 | | ■ | | ■ | | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|--------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Max allowed faults | 25 | 45 | 144 | 1 = 1 | | ■ | | ■ | | |
| IN>1 setting | | | | | | | | | | |
| Direction mode | 27 | 1...4 | 143 | Non-dir=0;Sector=1; ResCap=2 | ■ | | | ■ | ■ | ■ |
| Char ctrl. in ResCap mode | 27 | 5...8 | 144 | Value ⁹ | ■ | | | ■ | ■ | ■ |
| IN pick-up value | 27 | 9...12 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| VN pick-up value | 27 | 13...16 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| Angle offset | 27 | 17...20 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Pick up sector size | 27 | 21...24 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Operate delay | 27 | 33...36 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| TMS | 27 | 37...40 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Reset curve | 27 | 41...44 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | | | ■ | ■ | ■ |
| Reset delay | 27 | 45...48 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Operating curve | 27 | 49...52 | 143 | Value ¹⁰ | ■ | | | ■ | ■ | ■ |
| DT adder | 27 | 53...56 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Minimum operate delay | 27 | 57...60 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Enable for IN>1 | 27 | 61...64 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| VN input mode | 27 | 65...68 | 143 | Measured=0; Calculated=1 | ■ | | | ■ | ■ | ■ |
| VTS blocking | 27 | 69...72 | 143 | Blocked=0;Non-directional=1 | ■ | | | ■ | ■ | ■ |
| SOL status | 27 | 73...76 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | | | ■ | ■ | ■ |
| SOL operate delay | 27 | 77...80 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |

9. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
10. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|-----|------------|------|----------------------------------|------------------------|-------|-------|-------|-------|-------|
| SOL TMS | 27 | 81...84 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic mode | 27 | 85...88 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Dynamic threshold | 27 | 89...92 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic operate delay | 27 | 93...96 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Dynamic TMS | 27 | 97...1-00 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Enable faulty phase detection | 27 | 101 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Phase currents change limit | 27 | 102 | 143 | 1 % = 1 | ■ | | | ■ | ■ | ■ |
| Inrush blocking | 27 | 103...-106 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| CT input | 27 | 107...-110 | 143 | EFCT-1=0;EFCT-2=1 | | | | | | ■ |
| IN>2 setting | | | | | | | | | | |
| Direction mode | 28 | 1...4 | 143 | Non-dir=0;Sector=1;ResCap=2 | ■ | | | ■ | ■ | ■ |
| Char ctrl. in ResCap mode | 28 | 5...8 | 144 | Value ¹¹ | ■ | | | ■ | ■ | ■ |
| IN pick-up value | 28 | 9...12 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| VN Pick-up value | 28 | 13...16 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| Angle offset | 28 | 17...20 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Pick up sector size | 28 | 21...24 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Operate delay | 28 | 33...36 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| TMS | 28 | 37...40 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Reset curve | 28 | 41...44 | 143 | DT=0;IDMT=1;Prg1=2;Prg2=3;Prg3=4 | ■ | | | ■ | ■ | ■ |
| Reset delay | 28 | 45...48 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |

11. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|-----|----------------|------|---------------------------------|------------------------|-------|-------|-------|-------|-------|
| Operating curve | 28 | 49...52 | 143 | Value ¹² | ■ | | | ■ | ■ | ■ |
| DT adder | 28 | 53...56 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Minimum operate delay | 28 | 57...60 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Enable for IN>2 | 28 | 61...64 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| VN input mode | 28 | 65...68 | 143 | Measured=0; Calculated=1 | ■ | | | ■ | ■ | ■ |
| VTs blocking | 28 | 69...72 | 143 | Blocked=0;Non- directional=1 | ■ | | | ■ | ■ | ■ |
| SOL status | 28 | 73...76 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | | | ■ | ■ | ■ |
| SOL operate delay | 28 | 77...80 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| SOL TMS | 28 | 81...84 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic mode | 28 | 85...88 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Dynamic threshold | 28 | 89...92 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic operate delay | 28 | 93...96 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Dynamic TMS | 28 | 97...1- 00 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Enable faulty phase detection | 28 | 101 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Phase currents change limit | 28 | 102 | 143 | 1 % = 1 | ■ | | | ■ | ■ | ■ |
| Inrush blocking | 28 | 103...- 106 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| CT input | 28 | 107...- 110 | 143 | EFCT-1=0;EFCT-2=1 | | | | | | ■ |
| IN>3 setting | | | | | | | | | | |
| Direction mode | 29 | 1...4 | 143 | Non-dir=0;Sector=1; ResCap=2 | ■ | | | ■ | ■ | ■ |

12. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|--------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Char ctrl. in ResCap mode | 29 | 5...8 | 144 | Value ¹³ | ■ | | | ■ | ■ | ■ |
| IN pick-up value | 29 | 9...12 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| VN pick-up value | 29 | 13...16 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| Angle offset | 29 | 17...20 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Pick up sector size | 29 | 21...24 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Operate delay | 29 | 33...36 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| TMS | 29 | 37...40 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Reset curve | 29 | 41...44 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | | | ■ | ■ | ■ |
| Reset delay | 29 | 45...48 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Operating curve | 29 | 49...52 | 143 | Value ¹⁴ | ■ | | | ■ | ■ | ■ |
| DT adder | 29 | 53...56 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Minimum operate delay | 29 | 57...60 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Enable for IN>3 | 29 | 61...64 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| VN input mode | 29 | 65...68 | 143 | Measured=0; Calculated=1 | ■ | | | ■ | ■ | ■ |
| VTS blocking | 29 | 69...72 | 143 | Blocked=0;Non-directional=1 | ■ | | | ■ | ■ | ■ |
| SOL status | 29 | 73...76 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | | | ■ | ■ | ■ |
| SOL operate delay | 29 | 77...80 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| SOL TMS | 29 | 81...84 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic mode | 29 | 85...88 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Dynamic threshold | 29 | 89...92 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |

13. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
14. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|-----|------------|------|--------------------------------|------------------------|-------|-------|-------|-------|-------|
| Dynamic operate delay | 29 | 93...96 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Dynamic TMS | 29 | 97...1-00 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Enable faulty phase detection | 29 | 101 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Phase currents change limit | 29 | 102 | 143 | 1 % = 1 | ■ | | | ■ | ■ | ■ |
| Inrush blocking | 29 | 103...-106 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| CT input | 29 | 107...-110 | 143 | EFCT-1=0;EFCT-2=1 | | | | | | ■ |
| INVN>1 setting | | | | | | | | | | |
| Direction mode | 30 | 1...4 | 143 | Forward=0;Reverse=1 | | | | ■ | ■ | |
| Inhibit control | 30 | 5...8 | 144 | Value ¹⁵ | | | | ■ | ■ | |
| Timer instant delay ctrl. | 30 | 9...12 | 144 | Value ¹⁵ | | | | | ■ | |
| Pick-up value | 30 | 13...16 | 201 | 1.00 %Pno = 100 | | | | ■ | ■ | |
| VN pick-up value | 30 | 17...20 | 201 | 1.000 pu = 1000 | | | | ■ | ■ | |
| Pick-up sector size | 30 | 21...24 | 144 | 1 ° = 1 | | | | ■ | ■ | |
| Operate delay | 30 | 25...28 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL status | 30 | 29...32 | 143 | Off=0;SOL1=1;SOL2=2 | | | | | ■ | |
| SOL operate delay | 30 | 33...36 | 201 | 1.00 s = 100 | | | | | ■ | |
| Memory Mode | 30 | 37...40 | 143 | None=0;Voltage=1;Time=2;Both=3 | | | | ■ | ■ | |

15. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|------------------------------------|------------------------|-------|-------|-------|-------|-------|
| VN memory value | 30 | 41...44 | 201 | 1.000 pu = 1000 | | | | ■ | ■ | |
| Memory time | 30 | 45...48 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Enable for INVN>1 | 30 | 50...53 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Reset delay | 30 | 54...57 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Evaluation VN | 30 | 58...61 | 143 | Measured=0; Calculated=1 | | | | ■ | ■ | |
| INVN>2 setting | | | | | | | | | | |
| Direction mode | 31 | 1...4 | 143 | Forward=0;Reverse=1 | | | | ■ | ■ | |
| Inhibit control | 31 | 5...8 | 144 | Value ¹⁶ | | | | ■ | ■ | |
| Timer instant delay ctrl. | 31 | 9...12 | 144 | Value ¹⁶ | | | | ■ | ■ | |
| Pick-up value | 31 | 13...16 | 201 | 1.00 %Pno = 100 | | | | ■ | ■ | |
| VN pick-up value | 31 | 17...20 | 201 | 1.000 pu = 1000 | | | | ■ | ■ | |
| Pick-up sector size | 31 | 21...24 | 144 | 1 ° = 1 | | | | ■ | ■ | |
| Operate delay | 31 | 25...28 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL status | 31 | 29...32 | 143 | Off=0;SOL1=1;SOL2=2 | | | | ■ | ■ | |
| SOL operate delay | 31 | 33...36 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Memory Mode | 31 | 37...40 | 143 | None=0;Voltage=1; Time=2;Both=3 | | | | ■ | ■ | |
| VN memory value | 31 | 41...44 | 201 | 1.000 pu = 1000 | | | | ■ | ■ | |
| Memory time | 31 | 45...48 | 201 | 1.00 s = 100 | | | | ■ | ■ | |

16. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------|-----|---------|------|------------------------------|------------------------|-------|-------|-------|-------|-------|
| Enable for INVN>2 | 31 | 50...53 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Reset delay | 31 | 54...57 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Evaluation VN | 31 | 58...61 | 143 | Measured=0; Calculated=1 | | | | ■ | ■ | |
| V>1 setting | | | | | | | | | | |
| Pick-up value | 32 | 1...4 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Operate delay | 32 | 5...8 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V>1 | 32 | 11...14 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Measurement mode | 32 | 15...18 | 143 | Phase-phase=0;Phase-ground=1 | ■ | | ■ | ■ | ■ | |
| Operating curve | 32 | 19...22 | 143 | Value ¹⁷ | ■ | | ■ | ■ | ■ | |
| Tripping logic | 32 | 23...26 | 143 | Any phase=0;Three phases=1 | ■ | | ■ | ■ | ■ | |
| Reset delay | 32 | 27...30 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Hysteresis | 32 | 31...34 | 201 | 1.0 % = 10 | ■ | | ■ | ■ | ■ | |
| V>2 setting | | | | | | | | | | |
| Pick-up value | 33 | 1...4 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Operate delay | 33 | 5...8 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V>2 | 33 | 10...13 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Measurement mode | 33 | 14...17 | 143 | Phase-phase=0;Phase-ground=1 | ■ | | ■ | ■ | ■ | |
| Operating curve | 33 | 18...21 | 143 | Value ¹⁷ | ■ | | ■ | ■ | ■ | |
| Tripping logic | 33 | 22...25 | 143 | Any phase=0;Three phases=1 | ■ | | ■ | ■ | ■ | |
| Reset delay | 33 | 26...29 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Hysteresis | 33 | 30...33 | 201 | 1.0 % = 10 | ■ | | ■ | ■ | ■ | |
| V>3 setting | | | | | | | | | | |
| Pick-up value | 34 | 1...4 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Operate delay | 34 | 5...8 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V>3 | 34 | 10...13 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Measurement mode | 34 | 14...17 | 143 | Phase-phase=0;Phase-ground=1 | ■ | | ■ | ■ | ■ | |
| Operating curve | 34 | 18...21 | 143 | Value ¹⁷ | ■ | | ■ | ■ | ■ | |
| Tripping logic | 34 | 22...25 | 143 | Any phase=0;Three phases=1 | ■ | | ■ | ■ | ■ | |
| Reset delay | 34 | 26...29 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Hysteresis | 34 | 30...33 | 201 | 1.0 % = 10 | ■ | | ■ | ■ | ■ | |
| V<1 setting | | | | | | | | | | |
| Pick-up value | 35 | 1...4 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |

17. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|----------------------------------|------------------------|-------|-------|-------|-------|-------|
| Operate delay | 35 | 5...8 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V<1 | 35 | 11...14 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| CB open blocking | 35 | 15...18 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Measurement mode | 35 | 19...22 | 143 | Phase-phase=0;Phase-ground=1 | ■ | | ■ | ■ | ■ | |
| Operating curve | 35 | 23...26 | 143 | DT=0;IDMT=1;Prg1=2;Prg2=3;Prg3=4 | ■ | | ■ | ■ | ■ | |
| Tripping logic | 35 | 27...30 | 143 | Any phase=0;Three phases=1 | ■ | | ■ | ■ | ■ | |
| Reset delay | 35 | 31...34 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Hysteresis | 35 | 35...38 | 201 | 1.0 % = 10 | ■ | | ■ | ■ | ■ | |
| V<2 setting | | | | | | | | | | |
| Pick-up value | 36 | 1...4 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Operate delay | 36 | 5...8 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V<2 | 36 | 10...13 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| CB open blocking | 36 | 14...17 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Measurement mode | 36 | 18...21 | 143 | Phase-phase=0;Phase-ground=1 | ■ | | ■ | ■ | ■ | |
| Operating curve | 36 | 22...25 | 143 | DT=0;IDMT=1;Prg1=2;Prg2=3;Prg3=4 | ■ | | ■ | ■ | ■ | |
| Tripping logic | 36 | 26...29 | 143 | Any phase=0;Three phases=1 | ■ | | ■ | ■ | ■ | |
| Reset delay | 36 | 30...33 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Hysteresis | 36 | 34...37 | 201 | 1.0 % = 10 | ■ | | ■ | ■ | ■ | |
| V<3 setting | | | | | | | | | | |
| Pick-up value | 37 | 1...4 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Operate delay | 37 | 5...8 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V<3 | 37 | 10...13 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| CB open blocking | 37 | 14...17 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Measurement mode | 37 | 18...21 | 143 | Phase-phase=0;Phase-ground=1 | ■ | | ■ | ■ | ■ | |
| Operating curve | 37 | 22...25 | 143 | DT=0;IDMT=1;Prg1=2;Prg2=3;Prg3=4 | ■ | | ■ | ■ | ■ | |
| Tripping logic | 37 | 26...29 | 143 | Any phase=0;Three phases=1 | ■ | | ■ | ■ | ■ | |
| Reset delay | 37 | 30...33 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Hysteresis | 37 | 34...37 | 201 | 1.0 % = 10 | ■ | | ■ | ■ | ■ | |
| V1<1 setting | | | | | | | | | | |
| Pick-up value | 38 | 1...4 | 201 | 1.00 pu = 100 | | | ■ | | ■ | |
| Operate delay | 38 | 5...8 | 201 | 1.00 s = 100 | | | ■ | | ■ | |
| Undervoltage blocking | 38 | 9 | 201 | 1.00 pu = 100 | | | ■ | | ■ | |
| Enable for V1<1 | 38 | 10...13 | 143 | Off=0;On=1 | | | ■ | | ■ | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|-----------------------------|------------------------|-------|-------|-------|-------|-------|
| V1<2 setting | | | | | | | | | | |
| Pick-up value | 39 | 1...4 | 201 | 1.00 pu = 100 | | | ■ | | ■ | |
| Operate delay | 39 | 5...8 | 201 | 1.00 s = 100 | | | ■ | | ■ | |
| Undervoltage blocking | 39 | 9 | 201 | 1.00 pu = 100 | | | ■ | | ■ | |
| Enable for V1<2 | 39 | 10...13 | 143 | Off=0;On=1 | | | ■ | | ■ | |
| VN>1 setting | | | | | | | | | | |
| Enable for VN>1 | 40 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | ■ |
| Evaluation VN | 40 | 4...7 | 143 | Measured=0; Calculated=1 | ■ | | ■ | ■ | ■ | ■ |
| Pick-up value | 40 | 8...11 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | ■ |
| Operate delay | 40 | 12...15 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | ■ |
| Reset delay | 40 | 16...19 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | ■ |
| VN>2 setting | | | | | | | | | | |
| Enable for VN>2 | 41 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | ■ |
| Evaluation VN | 41 | 4...7 | 143 | Measured=0; Calculated=1 | ■ | | ■ | ■ | ■ | ■ |
| Pick-up value | 41 | 8...11 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | ■ |
| Operate delay | 41 | 12...15 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | ■ |
| Reset delay | 41 | 16...19 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | ■ |
| VN>3 setting | | | | | | | | | | |
| Enable for VN>3 | 42 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | ■ |
| Evaluation VN | 42 | 4...7 | 143 | Measured=0; Calculated=1 | ■ | | ■ | ■ | ■ | ■ |
| Pick-up value | 42 | 8...11 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | ■ |
| Operate delay | 42 | 12...15 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | ■ |
| Reset delay | 42 | 16...19 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | ■ |
| f>1 setting | | | | | | | | | | |
| Enable for f>1 | 43 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 43 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 43 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 43 | 12...15 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f>2 setting | | | | | | | | | | |
| Enable for f>2 | 44 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 44 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 44 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 44 | 12...15 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f<1 setting | | | | | | | | | | |
| Enable for f<1 | 45 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 45 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------------|-----|---------|------|------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Operate delay | 45 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 45 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 45 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f<2 setting | | | | | | | | | | |
| Enable for f<2 | 46 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 46 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 46 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 46 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 46 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| CB Fail setting | | | | | | | | | | |
| Enable for CB fail 1 | 47 | 0 | 143 | Off=0;On=1 | ■ | ■ | ■ | ■ | ■ | ■ |
| Enable CBF timer1 | 47 | 1 | 143 | Off=0;On=1 | ■ | ■ | ■ | ■ | ■ | ■ |
| Timer1 operate delay | 47 | 2 | 201 | 1.00 s = 100 | ■ | ■ | ■ | ■ | ■ | ■ |
| Enable CBF timer2 | 47 | 3 | 143 | Off=0;On=1 | ■ | ■ | ■ | ■ | ■ | ■ |
| Timer2 operate delay | 47 | 4 | 201 | 1.00 s = 100 | ■ | ■ | ■ | ■ | ■ | ■ |
| Noncurrent CBF reset mode | 47 | 5 | 143 | I<Only=0;Pole dead=1; ProtRst=2 | ■ | ■ | ■ | ■ | ■ | ■ |
| Ext CBF reset mode | 47 | 6 | 143 | I<Only=0;Pole dead=1; ProtRst=2 | ■ | ■ | ■ | ■ | ■ | ■ |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------------|-----|-----|------|------------------------------|------------------------|-------|-------|-------|-------|-------|
| I< current set | 47 | 7 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| INN | 47 | 8 | 201 | 1.000 pu = 1000 | ■ | ■ | | ■ | ■ | ■ |
| IN.sensN. sens | 47 | 9 | 201 | 1.000 pu = 1000 | | ■ | | ■ | ■ | ■ |
| lh5>1 setting | | | | | | | | | | |
| Enable for lh5>1 | 49 | 0 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | |
| Pick-up value | 49 | 1 | 201 | 1 % = 1 | ■ | ■ | | ■ | ■ | |
| Operate delay | 49 | 2 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | |
| CTS 1 setting | | | | | | | | | | |
| Enable for CTS 1 | 50 | 0 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| CTS operating mode | 50 | 1 | 143 | 3I only=0;IN&VN=1; Both=2 | ■ | ■ | | ■ | ■ | ■ |
| CTS reset input | 50 | 2 | 144 | Value ¹⁸ | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 50 | 3 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| IN> | 50 | 4 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| VN< | 50 | 5 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| Evaluation VN | 50 | 6 | 143 | Measured=0; Calculated=1 | ■ | | | ■ | ■ | ■ |
| CT input | 50 | 7 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| VTS setting | | | | | | | | | | |
| Enable for VTS | 51 | 0 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| V2> setting | 51 | 1 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | |

18. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------------|-----|---------|------|------------------------------------|------------------------|-------|-------|-------|-------|-------|
| I2< setting | 51 | 2 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | |
| Operate delay | 51 | 3 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | |
| Inhibit ctrl | 51 | 4 | 144 | Value ¹⁹ | ■ | | | ■ | ■ | |
| DI for mcb | 51 | 5 | 144 | Value ²⁰ | ■ | | ■ | ■ | ■ | |
| I>(min) setting | 51 | 6 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | |
| I<(max) setting | 51 | 7 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | |
| Delta VN> setting | 51 | 8 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | |
| Enable for VN compare | 51 | 9 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | |
| Vcap>1 setting | | | | | | | | | | |
| Pick-up value | 55 | 1...4 | 201 | 1.00 xUcLn = 100 | | ■ | | ■ | | |
| Operate delay | 55 | 5...8 | 201 | 1.0 s = 10 | | ■ | | ■ | | |
| Enable for Vcap>1 | 55 | 9...12 | 143 | Off=0;On=1 | | ■ | | ■ | | |
| df/dt>1 setting | | | | | | | | | | |
| Direction mode | 56 | 1...4 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Pick-up value | 56 | 5...8 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 56 | 9...12 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| Enable for f +df/dt>1 | 56 | 14...17 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Operating Mode | 56 | 18...21 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |

19. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510
20. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;DI21=21;DI22=22;DI23=23;DI24=24;DI25=25;DI26=26;DI27=27;DI28=28;DI29=29;DI30=30;DI31=31;DI32=32;DI33=33;DI34=34;DI35=35;DI36=36;DI37=37;DI38=38;DI39=39;DI40=40

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Frequency threshold | 56 | 22...25 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 56 | 26...29 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 56 | 30...33 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 56 | 34...37 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 56 | 38...41 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| df/dt>2 setting | | | | | | | | | | |
| Direction mode | 57 | 1...4 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Pick-up value | 57 | 5...8 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 57 | 9...12 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| Enable for f +df/dt>2 | 57 | 14...17 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Operating Mode | 57 | 18...21 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 57 | 22...25 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 57 | 26...29 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 57 | 30...33 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 57 | 34...37 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 57 | 38...41 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| IN int> setting | | | | | | | | | | |
| Direction mode | 58 | 1...4 | 143 | Forward=0;Reverse=1 | | | | ■ | | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------------------|-----|---------|------|---------------------|------------------------|-------|-------|-------|-------|-------|
| VN pick-up value | 58 | 5...8 | 201 | 1.00 pu = 100 | | | | ■ | | |
| Operate delay | 58 | 9...12 | 201 | 1.00 s = 100 | | | | ■ | | |
| Min number of peaks | 58 | 13...16 | 143 | 1 = 1 | | | | ■ | | |
| Reset delay | 58 | 17...20 | 201 | 1.00 s = 100 | | | | ■ | | |
| Intermittent time | 58 | 21 | 201 | 1.00 s = 100 | | | | ■ | | |
| Enable for IN int> | 58 | 22...25 | 143 | Off=0;On=1 | | | | ■ | | |
| Feeder Fault Locator setting | | | | | | | | | | |
| Pick-up value | 59 | 0 | 201 | 1.00 pu = 100 | | | | ■ | | |
| Triggering digital input | 59 | 1 | 144 | Value ²¹ | | | | ■ | | |
| Line reactance/unit | 59 | 2 | 201 | 1.000 ohm = 1000 | | | | ■ | | |
| Earth factor | 59 | 3 | 201 | 1.000 = 1000 | | | | ■ | | |
| Earth factor angle | 59 | 4 | 144 | 1 ° = 1 | | | | ■ | | |
| Event enabling | 59 | 5 | 143 | Off=0;On=1 | | | | ■ | | |
| Average voltage limit | 59 | 6 | 201 | 1.00 pu = 100 | | | | ■ | | |
| Io limit | 59 | 7 | 201 | 1.00 pu = 100 | | | | ■ | | |
| DI timeout | 59 | 8 | 201 | 1.00 s = 100 | | | | ■ | | |
| Release timeout | 59 | 9 | 201 | 1.00 s = 100 | | | | ■ | | |
| Sync check 1 setting | | | | | | | | | | |

21. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------------|-----|---------|------|---------------------------------------------------------------------------|------------------------|-------|-------|-------|-------|-------|
| CB object 1 | 60 | 1 | 143 | Object 1=1;Object 2=2; Object 3=3;Object 4=4; Object 5=5;Object 6=6 | ■ | | ■ | ■ | ■ | |
| CB object 2 | 60 | 2 | 143 | Object 1=1;Object 2=2; Object 3=3;Object 4=4; Object 5=5;Object 6=6 | ■ | | ■ | ■ | ■ | |
| BI for selecting object2 | 60 | 3 | 144 | Value ²² | ■ | | ■ | ■ | ■ | |
| Inhibit closing unselected CB | 60 | 4 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Synchroniza- tion mode | 60 | 5 | 143 | Off=0;Async=1;Sync=2 | ■ | | ■ | ■ | ■ | |
| Voltage check mode | 60 | 6 | 143 | DD=1;DL=2;LD=3;DD/ DL=4;DD/LD=5;DL/LD=6; DD/DL/LD=7 | ■ | | ■ | ■ | ■ | |
| CB close time | 60 | 7 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Bypass input | 60 | 8 | 144 | Value ²² | ■ | | ■ | ■ | ■ | |
| Bypass | 60 | 9 | 143 | 1 = 1 | ■ | | ■ | ■ | ■ | |
| Ok pulse length | 60 | 10 | 144 | 1 ms = 1 | ■ | | ■ | ■ | ■ | |
| Vdead limit setting | 60 | 11...14 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Vlive limit setting | 60 | 15...18 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Frequency difference | 60 | 19...22 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Voltage difference | 60 | 23...26 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Phase angle difference | 60 | 27...30 | 144 | 1 ° = 1 | ■ | | ■ | ■ | ■ | |

22. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------------|-----|---------|------|----------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Request timeout | 60 | 31...34 | 201 | 1.0 s = 10 | ■ | | ■ | ■ | ■ | |
| Enable for Sync check 1 | 60 | 35...38 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| CB Monitoring setting | | | | | | | | | | |
| Enable for CB monitoring | 61 | 0 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Alarm level | 61 | 1...2 | 201 | 1.00 kA = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operation limit | 61 | 3...4 | 201 | 1000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| High limit (primary value) | 61 | 5...8 | 201 | 1.0 kA = 10 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 61 | 9 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| Motor status | | | | | | | | | | |
| Enable for Motor status | 62 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Nom motor start current | 62 | 1 | 201 | 1.00 pu = 100 | ■ | ■ | | | ■ | |
| Motor start detection current | 62 | 2 | 201 | 1.00 pu = 100 | ■ | ■ | | | ■ | |
| Motor start detection mode | 62 | 3 | 143 | CB Position=0;Current=1;CB & Current=2 | ■ | ■ | | | ■ | |
| Enable motor speed detection | 62 | 4 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Motor speed input | 62 | 5 | 144 | Slot C DI1=0;Slot D DI1=1;Slot E DI1=2 | ■ | ■ | | | ■ | |
| Rated motor speed Ω_n | 62 | 6 | 201 | 1 rpm = 1 | ■ | ■ | | | ■ | |
| Pulse per rotation R | 62 | 7 | 201 | 1 = 1 | ■ | ■ | | | ■ | |
| Zero speed confirm time | 62 | 8 | 201 | 1 s = 1 | ■ | ■ | | | ■ | |
| SOL setting | | | | | | | | | | |
| Enable for SOL | 63 | 0 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Number of SOL signals used | 63 | 1 | 143 | 1=0;2=1 | ■ | ■ | | ■ | ■ | ■ |
| CB Trip Clearing time | 63 | 2 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Admittance E/F ALL YN>1 setting | | | | | | | | | | |
| IN input | 64 | 1 | 143 | IN.meas=0;IN.CSH=1;IN.calc=2;IN.sens=3 | | | | | ■ | |
| VN pick-up value | 64 | 2...5 | 201 | 1.000 pu = 1000 | | | | ■ | ■ | |
| Correction angle | 64 | 6...9 | 144 | 1 ° = 1 | | | | ■ | ■ | |
| Enable for All YN>1 | 64 | 10...13 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Evaluation VN | 64 | 14...17 | 143 | Measured=0;Calculated=1 | | | | ■ | ■ | |
| Admittance E/F YN>1 | | | | | | | | | | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|-----------------------------------|------------------------|-------|-------|-------|-------|-------|
| Pick-up value | 65 | 1...4 | 201 | 1.0 Yn% = 10 | | | | ■ | ■ | |
| Input for inhibit control | 65 | 5...8 | 144 | Value ²³ | | | | ■ | ■ | |
| Operate delay | 65 | 9...12 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Reset delay | 65 | 13...16 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL1 | 65 | 17...20 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| SOL operate delay | 65 | 21...24 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Enable for YN>1 | 65 | 25...28 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Admittance E/F GN>1 | | | | | | | | | | |
| Pick-up value | 66 | 1...4 | 201 | 1.0 Gn% = 10 | | | | ■ | ■ | |
| Input for inhibit control | 66 | 5...8 | 144 | Value ²³ | | | | ■ | ■ | |
| Direction mode | 66 | 9...12 | 143 | Non-dir=0;Forward=1; Reverse=2 | | | | ■ | ■ | |
| Operate delay | 66 | 13...16 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Reset delay | 66 | 17...20 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL1 | 66 | 21...24 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| SOL operate delay | 66 | 25...28 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Enable for GN>1 | 66 | 29...32 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Admittance E/F BN>1 | | | | | | | | | | |
| Pick-up value | 67 | 1...4 | 201 | 1.0 Bn% = 10 | | | | ■ | ■ | |
| Input for inhibit control | 67 | 5...8 | 144 | Value ²³ | | | | ■ | ■ | |

23. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------------|-----|---------|------|--------------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Direction mode | 67 | 9...12 | 143 | Non-dir=0;Forward=1; Reverse=2 | | | | ■ | ■ | |
| Operate delay | 67 | 13...16 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Reset delay | 67 | 17...20 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL1 | 67 | 21...24 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| SOL operate delay | 67 | 25...28 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Enable for BN>1 | 67 | 29...32 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Admittance E/F ALL YN>2 setting | | | | | | | | | | |
| IN input | 68 | 1 | 143 | IN.meas=0;IN.CSH=1; IN.calc=2;IN.sens=3 | | | | | ■ | |
| VN pick-up value | 68 | 2...5 | 201 | 1.000 pu = 1000 | | | | ■ | ■ | |
| Correction angle | 68 | 6...9 | 144 | 1 ° = 1 | | | | ■ | ■ | |
| Enable for All YN>2 | 68 | 10...13 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Evaluation VN | 68 | 14...17 | 143 | Measured=0; Calculated=1 | | | | ■ | ■ | |
| Admittance E/F YN>2 | | | | | | | | | | |
| Pick-up value | 69 | 1...4 | 201 | 1.0 Yn% = 10 | | | | ■ | ■ | |
| Input for inhibit control | 69 | 5...8 | 144 | Value ²⁴ | | | | ■ | ■ | |
| Operate delay | 69 | 9...12 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Reset delay | 69 | 13...16 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL1 | 69 | 17...20 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| SOL operate delay | 69 | 21...24 | 201 | 1.00 s = 100 | | | | ■ | ■ | |

24. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|-----------------------------------|------------------------|-------|-------|-------|-------|-------|
| Enable for YN>2 | 69 | 25...28 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Admittance E/F GN>2 | | | | | | | | | | |
| Pick-up value | 70 | 1...4 | 201 | 1.0 Gn% = 10 | | | | ■ | ■ | |
| Input for inhibit control | 70 | 5...8 | 144 | Value ²⁵ | | | | ■ | ■ | |
| Direction mode | 70 | 9...12 | 143 | Non-dir=0;Forward=1; Reverse=2 | | | | ■ | ■ | |
| Operate delay | 70 | 13...16 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Reset delay | 70 | 17...20 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL1 | 70 | 21...24 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| SOL operate delay | 70 | 25...28 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Enable for GN>2 | 70 | 29...32 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| Admittance E/F BN>2 | | | | | | | | | | |
| Pick-up value | 71 | 1...4 | 201 | 1.0 Bn% = 10 | | | | ■ | ■ | |
| Input for inhibit control | 71 | 5...8 | 144 | Value ²⁵ | | | | ■ | ■ | |
| Direction mode | 71 | 9...12 | 143 | Non-dir=0;Forward=1; Reverse=2 | | | | ■ | ■ | |
| Operate delay | 71 | 13...16 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Reset delay | 71 | 17...20 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| SOL1 | 71 | 21...24 | 143 | Off=0;On=1 | | | | ■ | ■ | |
| SOL operate delay | 71 | 25...28 | 201 | 1.00 s = 100 | | | | ■ | ■ | |
| Enable for BN>2 | 71 | 29...32 | 143 | Off=0;On=1 | | | | ■ | ■ | |

25. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------------|-----|---------|------|----------------------------|------------------------|-------|-------|-------|-------|-------|
| V2>1 setting | | | | | | | | | | |
| VTS Operating Mode | 72 | 1...4 | 143 | NO ACTION=0; BLOCKING=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 72 | 5...8 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Operating curve | 72 | 9...12 | 143 | DT=0;IDMT=1 | ■ | | ■ | ■ | ■ | |
| Operate delay | 72 | 13...16 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Reset delay | 72 | 17...20 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V2>1 | 72 | 21...24 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| V2>2 setting | | | | | | | | | | |
| VTS Operating Mode | 73 | 1...4 | 143 | NO ACTION=0; BLOCKING=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 73 | 5...8 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| Operating curve | 73 | 9...12 | 143 | DT=0;IDMT=1 | ■ | | ■ | ■ | ■ | |
| Operate delay | 73 | 13...16 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Reset delay | 73 | 17...20 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| Enable for V2>2 | 73 | 21...24 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Motor overspeed $\Omega>1$ | | | | | | | | | | |
| Enable for $\Omega>1$ | 74 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Pick-up value | 74 | 1 | 201 | 1 % Ω_n = 1 | ■ | ■ | | | ■ | |
| Operate delay | 74 | 2 | 201 | 1 s = 1 | ■ | ■ | | | ■ | |
| Motor overspeed $\Omega>2$ | | | | | | | | | | |
| Enable for $\Omega>2$ | 75 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Pick-up value | 75 | 1 | 201 | 1 % Ω_n = 1 | ■ | ■ | | | ■ | |
| Operate delay | 75 | 2 | 201 | 1 s = 1 | ■ | ■ | | | ■ | |
| Motor underspeed $\Omega<1$ | | | | | | | | | | |
| Enable for $\Omega<1$ | 76 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Pick-up value | 76 | 1 | 201 | 1 % Ω_n = 1 | ■ | ■ | | | ■ | |
| Operate delay | 76 | 2 | 201 | 1 s = 1 | ■ | ■ | | | ■ | |
| Motor underspeed $\Omega<2$ | | | | | | | | | | |
| Enable for $\Omega<2$ | 77 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Pick-up value | 77 | 1 | 201 | 1 % Ω_n = 1 | ■ | ■ | | | ■ | |
| Operate delay | 77 | 2 | 201 | 1 s = 1 | ■ | ■ | | | ■ | |
| Motor Anti-backspin ABS | | | | | | | | | | |
| Enable for Anti-backspin | 78 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Measured Zero Speed Mode | 78 | 1 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Zero speed external mode | 78 | 2 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------------|-----|---------|------|---------------------|------------------------|-------|-------|-------|-------|-------|
| Zero speed input DI | 78 | 3 | 144 | Value ²⁶ | ■ | ■ | | | ■ | |
| Anti-backspin Time | 78 | 4 | 201 | 1 s = 1 | ■ | ■ | | | ■ | |
| Cold load pick-up CLPU | | | | | | | | | | |
| Enable for CLPU | 79 | 0 | 143 | Off=0;On=1 | ■ | ■ | | | ■ | |
| Idle current | 79 | 1 | 201 | 1.00 pu = 100 | ■ | ■ | | | ■ | |
| Pickup current | 79 | 2 | 201 | 1.00 pu = 100 | ■ | ■ | | | ■ | |
| CLPU dead time | 79 | 3 | 201 | 1.00 s = 100 | ■ | ■ | | | ■ | |
| CLPU time delay | 79 | 4 | 201 | 1.00 s = 100 | ■ | ■ | | | ■ | |
| f<3 setting | | | | | | | | | | |
| Enable for f<3 | 80 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 80 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 80 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 80 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 80 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f<4 setting | | | | | | | | | | |
| Enable for f<4 | 81 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 81 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 81 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 81 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |

26. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|---------------------|------------------------|-------|-------|-------|-------|-------|
| Undervoltage blocking | 81 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f<5 setting | | | | | | | | | | |
| Enable for f<5 | 82 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 82 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 82 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 82 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 82 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f<6 setting | | | | | | | | | | |
| Enable for f<6 | 83 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 83 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 83 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 83 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 83 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f<7 setting | | | | | | | | | | |
| Enable for f<7 | 84 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 84 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 84 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 84 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 84 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| f<8 setting | | | | | | | | | | |
| Enable for f<8 | 85 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | ■ | |
| Pick-up value | 85 | 4...7 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | ■ | |
| Operate delay | 85 | 8...11 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | ■ | |
| f+df/dt blocking | 85 | 12...15 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | ■ | |
| Undervoltage blocking | 85 | 16...19 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | ■ | |
| I>4 setting | | | | | | | | | | |
| Enable for I>4 | 86 | 0...3 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Pick-up value | 86 | 4...7 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 86 | 8...11 | 143 | Value ²⁷ | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 86 | 12...15 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| TMS | 86 | 16...19 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 86 | 20...23 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 86 | 24...27 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |

27. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|-------------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Direction mode | 86 | 28...31 | 143 | Non-directional=0; Forward=1;Reverse=2 | ■ | ■ | | ■ | ■ | ■ |
| Characteristic angle | 86 | 32...35 | 144 | 1 ° = 1 | ■ | ■ | | ■ | ■ | ■ |
| VTS blocking | 86 | 36...39 | 143 | Blocked=0;Non-directional=1 | ■ | ■ | | ■ | ■ | ■ |
| Tripping logic | 86 | 40...43 | 143 | 1 out of 3=0;2 out of 3=1 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 86 | 44...47 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 86 | 48...51 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Inrush blocking | 86 | 52...55 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| SOL status | 86 | 56...59 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | ■ | | ■ | ■ | ■ |
| SOL operate delay | 86 | 60...63 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| SOL TMS | 86 | 64...67 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic mode | 86 | 68...71 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic threshold | 86 | 72...75 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic operate delay | 86 | 76...79 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic TMS | 86 | 80...83 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 86 | 84...87 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| I>5 setting | | | | | | | | | | |
| Enable for I>5 | 87 | 0...3 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Pick-up value | 87 | 4...7 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 87 | 8...11 | 143 | Value ²⁸ | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 87 | 12...15 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| TMS | 87 | 16...19 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 87 | 20...23 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 87 | 24...27 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Direction mode | 87 | 28...31 | 143 | Non-directional=0; Forward=1;Reverse=2 | ■ | ■ | | ■ | ■ | ■ |
| Characteristic angle | 87 | 32...35 | 144 | 1 ° = 1 | ■ | ■ | | ■ | ■ | ■ |
| VTS blocking | 87 | 36...39 | 143 | Blocked=0;Non-directional=1 | ■ | ■ | | ■ | ■ | ■ |
| Tripping logic | 87 | 40...43 | 143 | 1 out of 3=0;2 out of 3=1 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 87 | 44...47 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 87 | 48...51 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Inrush blocking | 87 | 52...55 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |

28. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|-------------------------------------------|------------------------|-------|-------|-------|-------|-------|
| SOL status | 87 | 56...59 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | ■ | | ■ | ■ | ■ |
| SOL operate delay | 87 | 60...63 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| SOL TMS | 87 | 64...67 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic mode | 87 | 68...71 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic threshold | 87 | 72...75 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic operate delay | 87 | 76...79 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic TMS | 87 | 80...83 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 87 | 84...87 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| I>6 setting | | | | | | | | | | |
| Enable for I>6 | 88 | 0...3 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Pick-up value | 88 | 4...7 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Operating curve | 88 | 8...11 | 143 | Value ²⁹ | ■ | ■ | | ■ | ■ | ■ |
| Operate delay | 88 | 12...15 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| TMS | 88 | 16...19 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| DT adder | 88 | 20...23 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Minimum operate delay | 88 | 24...27 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Direction mode | 88 | 28...31 | 143 | Non-directional=0; Forward=1;Reverse=2 | ■ | ■ | | ■ | ■ | ■ |
| Characteristic angle | 88 | 32...35 | 144 | 1 ° = 1 | ■ | ■ | | ■ | ■ | ■ |
| VTS blocking | 88 | 36...39 | 143 | Blocked=0;Non-directional=1 | ■ | ■ | | ■ | ■ | ■ |
| Tripping logic | 88 | 40...43 | 143 | 1 out of 3=0;2 out of 3=1 | ■ | ■ | | ■ | ■ | ■ |
| Reset curve | 88 | 44...47 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | ■ | | ■ | ■ | ■ |
| Reset delay | 88 | 48...51 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Inrush blocking | 88 | 52...55 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| SOL status | 88 | 56...59 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | ■ | | ■ | ■ | ■ |
| SOL operate delay | 88 | 60...63 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| SOL TMS | 88 | 64...67 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic mode | 88 | 68...71 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic threshold | 88 | 72...75 | 201 | 1.00 pu = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic operate delay | 88 | 76...79 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| Dynamic TMS | 88 | 80...83 | 201 | 1.000 = 1000 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 88 | 84...87 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |

29. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|----------------------------------|------------------------|-------|-------|-------|-------|-------|
| IN>4 setting | | | | | | | | | | |
| Direction mode | 89 | 1...4 | 143 | Non-dir=0;Sector=1;ResCap=2 | ■ | | | ■ | ■ | ■ |
| Char ctrl. in ResCap mode | 89 | 5...8 | 144 | Value ³⁰ | ■ | | | ■ | ■ | ■ |
| IN pick-up value | 89 | 9...12 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| VN pick-up value | 89 | 13...16 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| Angle offset | 89 | 17...20 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Pick up sector size | 89 | 21...24 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Operating curve | 89 | 25...28 | 143 | Value ³¹ | ■ | | | ■ | ■ | ■ |
| Operate delay | 89 | 29...32 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| TMS | 89 | 33...36 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| DT adder | 89 | 37...40 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Minimum operate delay | 89 | 41...44 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Reset curve | 89 | 45...48 | 143 | DT=0;IDMT=1;Prg1=2;Prg2=3;Prg3=4 | ■ | | | ■ | ■ | ■ |
| Reset delay | 89 | 49...52 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Enable for IN>4 | 89 | 53...56 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| VN input mode | 89 | 57...60 | 143 | Measured=0;Calculated=1 | ■ | | | ■ | ■ | ■ |
| VTS blocking | 89 | 61...64 | 143 | Blocked=0;Non-directional=1 | ■ | | | ■ | ■ | ■ |
| SOL status | 89 | 65...68 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | | | ■ | ■ | ■ |
| SOL operate delay | 89 | 69...72 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| SOL TMS | 89 | 73...76 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |

30. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
31. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|-----|-----------|------|-----------------------------|------------------------|-------|-------|-------|-------|-------|
| Dynamic mode | 89 | 77...80 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Dynamic threshold | 89 | 81...84 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic operate delay | 89 | 85...88 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Dynamic TMS | 89 | 89...92 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Enable faulty phase detection | 89 | 93 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Phase currents change limit | 89 | 94 | 143 | 1 % = 1 | ■ | | | ■ | ■ | ■ |
| Inrush blocking | 89 | 95...98 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| CT input | 89 | 99...1-02 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| IN>5 setting | | | | | | | | | | |
| Direction mode | 90 | 1...4 | 143 | Non-dir=0;Sector=1;ResCap=2 | ■ | | | ■ | ■ | ■ |
| Char ctrl. in ResCap mode | 90 | 5...8 | 144 | Value ³² | ■ | | | ■ | ■ | ■ |
| IN pick-up value | 90 | 9...12 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| VN pick-up value | 90 | 13...16 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| Angle offset | 90 | 17...20 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Pick up sector size | 90 | 21...24 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Operating curve | 90 | 25...28 | 143 | Value ³³ | ■ | | | ■ | ■ | ■ |
| Operate delay | 90 | 29...32 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| TMS | 90 | 33...36 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| DT adder | 90 | 37...40 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |

32. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
33. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|-----|-----------|------|--------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Minimum operate delay | 90 | 41...44 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Reset curve | 90 | 45...48 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | | | ■ | ■ | ■ |
| Reset delay | 90 | 49...52 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Enable for IN>5 | 90 | 53...56 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| VN input mode | 90 | 57...60 | 143 | Measured=0; Calculated=1 | ■ | | | ■ | ■ | ■ |
| VTs blocking | 90 | 61...64 | 143 | Blocked=0;Non-directional=1 | ■ | | | ■ | ■ | ■ |
| SOL status | 90 | 65...68 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | | | ■ | ■ | ■ |
| SOL operate delay | 90 | 69...72 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| SOL TMS | 90 | 73...76 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic mode | 90 | 77...80 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Dynamic threshold | 90 | 81...84 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic operate delay | 90 | 85...88 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Dynamic TMS | 90 | 89...92 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Enable faulty phase detection | 90 | 93 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Phase currents change limit | 90 | 94 | 143 | 1 % = 1 | ■ | | | ■ | ■ | ■ |
| Inrush blocking | 90 | 95...98 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| CT input | 90 | 99...1-02 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| IN>6 setting | | | | | | | | | | |
| Direction mode | 91 | 1...4 | 143 | Non-dir=0;Sector=1; ResCap=2 | ■ | | | ■ | ■ | ■ |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|--------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Char ctrl. in ResCap mode | 91 | 5...8 | 144 | Value ³⁴ | ■ | | | ■ | ■ | ■ |
| IN pick-up value | 91 | 9...12 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |
| VN pick-up value | 91 | 13...16 | 201 | 1.00 pu = 100 | ■ | | | ■ | ■ | ■ |
| Angle offset | 91 | 17...20 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Pick up sector size | 91 | 21...24 | 144 | 1 ° = 1 | ■ | | | ■ | ■ | ■ |
| Operating curve | 91 | 25...28 | 143 | Value ³⁵ | ■ | | | ■ | ■ | ■ |
| Operate delay | 91 | 29...32 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| TMS | 91 | 33...36 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| DT adder | 91 | 37...40 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Minimum operate delay | 91 | 41...44 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Reset curve | 91 | 45...48 | 143 | DT=0;IDMT=1;Prg1=2; Prg2=3;Prg3=4 | ■ | | | ■ | ■ | ■ |
| Reset delay | 91 | 49...52 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Enable for IN>6 | 91 | 53...56 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| VN input mode | 91 | 57...60 | 143 | Measured=0; Calculated=1 | ■ | | | ■ | ■ | ■ |
| VTS blocking | 91 | 61...64 | 143 | Blocked=0;Non-directional=1 | ■ | | | ■ | ■ | ■ |
| SOL status | 91 | 65...68 | 143 | Off=0;SOL1=1;SOL2=2 | ■ | | | ■ | ■ | ■ |
| SOL operate delay | 91 | 69...72 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| SOL TMS | 91 | 73...76 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Dynamic mode | 91 | 77...80 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Dynamic threshold | 91 | 81...84 | 201 | 1.000 pu = 1000 | ■ | | | ■ | ■ | ■ |

34. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
35. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|-----|-----------|------|--------------------------------|------------------------|-------|-------|-------|-------|-------|
| Dynamic operate delay | 91 | 85...88 | 201 | 1.00 s = 100 | ■ | | | ■ | ■ | ■ |
| Dynamic TMS | 91 | 89...92 | 201 | 1.000 = 1000 | ■ | | | ■ | ■ | ■ |
| Enable faulty phase detection | 91 | 93 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| Phase currents change limit | 91 | 94 | 143 | 1 % = 1 | ■ | | | ■ | ■ | ■ |
| Inrush blocking | 91 | 95...98 | 143 | Off=0;On=1 | ■ | | | ■ | ■ | ■ |
| CT input | 91 | 99...1-02 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| REF 1 setting | | | | | | | | | | |
| Enable for REF 1 | 92 | 0...3 | 143 | Off=0;On=1 | | ■ | | ■ | ■ | ■ |
| IG input | 92 | 4...7 | 143 | Value ³⁶ | | ■ | | ■ | ■ | ■ |
| 5 CT application | 92 | 8...11 | 143 | Off=0;On=1 | | ■ | | ■ | ■ | ■ |
| Operating mode | 92 | 12...15 | 143 | Sum(IP) bias=0;Max (IP) bias=1 | | ■ | | ■ | ■ | ■ |
| Low set Id1 | 92 | 16...19 | 201 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ |
| Operate delay | 92 | 20...23 | 201 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ |
| Min measured IG | 92 | 24...27 | 201 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ |
| Slope k1 | 92 | 28...31 | 201 | 1 % = 1 | | ■ | | ■ | ■ | ■ |
| Bias current Ib | 92 | 32...35 | 201 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ |
| Slope k2 | 92 | 36...39 | 201 | 1 % = 1 | | ■ | | ■ | ■ | ■ |

36. IN.meas=0;IN.CSH=1;IN.calc=2;IN.sens=3;IN peak value=4;IN.CSH peak =5;IN.sens peak=6

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-----|---------|------|---------------------------------------|------------------------|-------|-------|-------|-------|-------|
| High set mode | 92 | 40...43 | 143 | Off=0;On=1 | | ■ | | ■ | ■ | ■ |
| High set Id2 | 92 | 44...47 | 201 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ |
| CTS operating mode | 92 | 48...51 | 143 | Indication=0;Blocking=1;Restraining=2 | | ■ | | ■ | ■ | ■ |
| CTS low set Id1 | 92 | 52...55 | 201 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------------|-----|---------|------|---------------------|------------------------|-------|-------|-------|-------|-------|
| Inhibit REF | 92 | 56 | 144 | Value ³⁷ | | ■ | | ■ | ■ | ■ |
| CT input | 92 | 57...60 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| I2/I1>2 setting | | | | | | | | | | |
| Enable for I2/ I1>2 | 93 | 0...3 | 143 | Off=0;On=1 | ■ | ■ | | ■ | ■ | ■ |
| Pick-up value | 93 | 4...7 | 201 | 1 % = 1 | ■ | ■ | | ■ | ■ | ■ |

37. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|---------------------------------|------------------------|-------|-------|-------|-------|-------|
| Operate delay | 93 | 8...11 | 201 | 1.00 s = 100 | ■ | ■ | | ■ | ■ | ■ |
| CT input | 93 | 12...15 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| EMRE setting | | | | | | | | | | |
| Enable for EMRE | 95 | 0 | 143 | Off=0;On=1 | | ■ | | | ■ | |
| EMRE input | 95 | 1 | 144 | Value ³⁸ | | ■ | | | ■ | |
| df/dt>3 setting | | | | | | | | | | |
| Enable for f +df/dt>3 | 96 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Direction mode | 96 | 4...7 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Operating Mode | 96 | 8...11 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 96 | 12...15 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 96 | 16...19 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| Pick-up value | 96 | 20...23 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 96 | 24...27 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 96 | 28...31 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 96 | 32...35 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 96 | 36...39 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| df/dt>4 setting | | | | | | | | | | |
| Enable for f +df/dt>4 | 97 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |

38. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI7(C)=11;DI8(C)=12;DI9(C)=13;DI10(C)=14;DI11(C)=15;DI12(C)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-----|---------|------|------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Direction mode | 97 | 4...7 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Operating Mode | 97 | 8...11 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 97 | 12...15 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 97 | 16...19 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| Pick-up value | 97 | 20...23 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 97 | 24...27 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 97 | 28...31 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 97 | 32...35 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 97 | 36...39 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| df/dt>5 setting | | | | | | | | | | |
| Enable for f +df/dt>5 | 98 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Direction mode | 98 | 4...7 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Operating Mode | 98 | 8...11 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 98 | 12...15 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 98 | 16...19 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| Pick-up value | 98 | 20...23 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 98 | 24...27 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 98 | 28...31 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 98 | 32...35 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 98 | 36...39 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| df/dt>6 setting | | | | | | | | | | |
| Enable for f +df/dt>6 | 99 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Direction mode | 99 | 4...7 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Operating Mode | 99 | 8...11 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 99 | 12...15 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 99 | 16...19 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| Pick-up value | 99 | 20...23 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 99 | 24...27 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 99 | 28...31 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 99 | 32...35 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 99 | 36...39 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| df/dt>7 setting | | | | | | | | | | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------------|-----|---------|------|------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Enable for f +df/dt>7 | 100 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Direction mode | 100 | 4...7 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Operating Mode | 100 | 8...11 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 100 | 12...15 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 100 | 16...19 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| Pick-up value | 100 | 20...23 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 100 | 24...27 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 100 | 28...31 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 100 | 32...35 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 100 | 36...39 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| df/dt>8 setting | | | | | | | | | | |
| Enable for f +df/dt>8 | 101 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Direction mode | 101 | 4...7 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Operating Mode | 101 | 8...11 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 101 | 12...15 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 101 | 16...19 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| Pick-up value | 101 | 20...23 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 101 | 24...27 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 101 | 28...31 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 101 | 32...35 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |
| Reset delay | 101 | 36...39 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| df/dt>9 setting | | | | | | | | | | |
| Enable for f +df/dt>9 | 102 | 0...3 | 143 | Off=0;On=1 | ■ | | ■ | ■ | | |
| Direction mode | 102 | 4...7 | 143 | Negative=0;Positive=1; Either=2 | ■ | | ■ | ■ | | |
| Operating Mode | 102 | 8...11 | 143 | f+RoCoF=0; Frequency=1 | ■ | | ■ | ■ | | |
| Frequency threshold | 102 | 12...15 | 201 | 50.00 Hz = 5000 | ■ | | ■ | ■ | | |
| Measuring window | 102 | 16...19 | 201 | 1.000 s = 1000 | ■ | | ■ | ■ | | |
| Pick-up value | 102 | 20...23 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Operate delay | 102 | 24...27 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| f+df/dt blocking | 102 | 28...31 | 201 | 1.00 Hz/s = 100 | ■ | | ■ | ■ | | |
| Undervoltage blocking | 102 | 32...35 | 201 | 1.00 pu = 100 | ■ | | ■ | ■ | | |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|----------------------------------|-----|---------|------|---------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Reset delay | 102 | 36...39 | 201 | 1.00 s = 100 | ■ | | ■ | ■ | | |
| T-Diff setting | | | | | | | | | | |
| Enable for T-Diff | 103 | 0...3 | 143 | Off=0;On=1 | | | | | | ■ |
| Vector group | 103 | 4...7 | 143 | 0;1;2;3;4;5;6;7;8;9;10;-11 | | | | | | ■ |
| Zero-seq. current filtering CT-1 | 103 | 8...11 | 143 | Off=0;On=1 | | | | | | ■ |
| Zero-seq. current filtering CT-2 | 103 | 12...15 | 143 | Off=0;On=1 | | | | | | ■ |
| Low set Id | 103 | 16...19 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Slope 1 | 103 | 20...23 | 201 | 1 % = 1 | | | | | | ■ |
| Ib for start of slope 2 | 103 | 24...27 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Slope 2 | 103 | 28...31 | 201 | 1 % = 1 | | | | | | ■ |
| High set mode | 103 | 32...35 | 143 | Off=0;On=1 | | | | | | ■ |
| High set Id | 103 | 36...39 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Bias calculation mode | 103 | 40...43 | 143 | Diff. of phasors=0;Sum of abs. val.=1 | | | | | | ■ |
| Operate delay | 103 | 44...47 | 201 | 1.00 s = 100 | | | | | | ■ |
| Inrush blocking | 103 | 48...51 | 143 | Off=0;On=1 | | | | | | ■ |
| Inrush blocking ratio | 103 | 52...55 | 201 | 1 % = 1 | | | | | | ■ |

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------|-----|---------|------|---------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Inrush cross block | 103 | 56...59 | 143 | Off=0;On=1 | | | | | | ■ |
| Max inrush Id | 103 | 60...63 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Overflux blocking | 103 | 64...67 | 143 | Off=0;On=1 | | | | | | ■ |
| Overflux blocking ratio | 103 | 68...71 | 201 | 1 % = 1 | | | | | | ■ |
| Overflux cross block | 103 | 72...75 | 143 | Off=0;On=1 | | | | | | ■ |
| CTS operating mode | 103 | 76...79 | 143 | Indication=0;Blocking=1;Restraining=2 | | | | | | ■ |
| CTS low set Id | 103 | 80...83 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Inhibit T-Diff | 103 | 84...87 | 144 | Value ³⁹ | | | | | | ■ |
| Inrush 2 setting | | | | | | | | | | |
| Enable for Inrush 2 | 104 | 0 | 143 | Off=0;On=1 | | | | | | ■ |
| Pickup for 2nd harmonic | 104 | 1 | 201 | 1 % = 1 | | | | | | ■ |
| Max inrush current | 104 | 2 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Inrush operating mode | 104 | 3 | 143 | Phase block=0;Cross block=1 | | | | | | ■ |
| CT input | 104 | 4 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| CTS 2 setting | | | | | | | | | | |
| Enable for CTS 2 | 105 | 0 | 143 | Off=0;On=1 | | | | | | ■ |

39. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------------------|-----|---------|------|--------------------------------|------------------------|-------|-------|-------|-------|-------|
| CTS operating mode | 105 | 1 | 143 | 3I only=0;IN&VN=1; Both=2 | | | | | | ■ |
| IN> | 105 | 2 | 201 | 1.00 pu = 100 | | | | | | ■ |
| VN< | 105 | 3 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Operate delay | 105 | 4 | 201 | 1.00 s = 100 | | | | | | ■ |
| CTS reset input | 105 | 5 | 144 | Value ⁴⁰ | | | | | | ■ |
| CT input | 105 | 6 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| CTS-DIFF setting | | | | | | | | | | |
| Enable for CT supervision Diff | 106 | 0 | 143 | Off=0;On=1 | | | | | | ■ |
| I1> | 106 | 1 | 201 | 1.00 pu = 100 | | | | | | ■ |
| I2/I1 low | 106 | 2 | 201 | 1 % = 1 | | | | | | ■ |
| I2/I1 high | 106 | 3 | 201 | 1 % = 1 | | | | | | ■ |
| Operate delay | 106 | 4 | 201 | 1.00 s = 100 | | | | | | ■ |
| CTS reset input | 106 | 5 | 144 | Value ⁴⁰ | | | | | | ■ |
| REF 2 setting | | | | | | | | | | |
| Enable for REF 2 | 107 | 0...3 | 143 | Off=0;On=1 | | | | | | ■ |
| Operating mode | 107 | 4...7 | 143 | Sum(IP) bias=0;Max (IP) bias=1 | | | | | | ■ |
| Low set Id1 | 107 | 8...11 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Operate delay | 107 | 12...15 | 201 | 1.00 s = 100 | | | | | | ■ |

40. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------|-----|---------|------|---------------------------------------|------------------------|-------|-------|-------|-------|-------|
| Min measured IG | 107 | 16...19 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Slope k1 | 107 | 20...23 | 201 | 1 % = 1 | | | | | | ■ |
| Bias current Ib | 107 | 24...27 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Slope k2 | 107 | 28...31 | 201 | 1 % = 1 | | | | | | ■ |
| High set mode | 107 | 32...35 | 143 | Off=0;On=1 | | | | | | ■ |
| High set Id2 | 107 | 36...39 | 201 | 1.00 pu = 100 | | | | | | ■ |
| CTS operating mode | 107 | 40...43 | 143 | Indication=0;Blocking=1;Restraining=2 | | | | | | ■ |
| CTS low set Id1 | 107 | 44...47 | 201 | 1.00 pu = 100 | | | | | | ■ |
| Inhibit REF | 107 | 48 | 144 | Value ⁴¹ | | | | | | ■ |
| CT input | 107 | 49...52 | 143 | CT-1=0;CT-2=1 | | | | | | ■ |
| CB fail 2 | | | | | | | | | | |
| Enable for CB failure 2 | 108 | 0 | 143 | Off=0;On=1 | | | | | | ■ |
| Enable CBF timer1 | 108 | 1 | 143 | Off=0;On=1 | | | | | | ■ |
| Timer1 operate delay | 108 | 2 | 201 | 1.00 s = 100 | | | | | | ■ |
| Enable CBF timer2 | 108 | 3 | 143 | Off=0;On=1 | | | | | | ■ |
| Timer2 operate delay | 108 | 4 | 201 | 1.00 s = 100 | | | | | | ■ |
| Noncurrent CBF reset mode | 108 | 5 | 143 | I<Only=0;Pole dead=1;ProtRst=2 | | | | | | ■ |

41. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Name | FUN | INF | ASDU | Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------------|-----|---------|------|-----------------------------------|------------------------|-------|-------|-------|-------|-------|
| Ext CBF reset mode | 108 | 6 | 143 | <Only=0;Pole dead=1; ProtRst=2 | | | | | | ■ |
| I< current set | 108 | 7 | 201 | 1.00 pu = 100 | | | | | | ■ |
| IN< | 108 | 8 | 201 | 1.000 pu = 1000 | | | | | | ■ |
| TRMON 1 setting | | | | | | | | | | |
| Enable for Transformer monitoring 1 | 109 | 0 | 143 | Off=0;On=1 | | | | | | ■ |
| TRMON 2 setting | | | | | | | | | | |
| Enable for Transformer monitoring 2 | 110 | 0 | 143 | Off=0;On=1 | | | | | | ■ |
| V/f Alarm setting | | | | | | | | | | |
| Enable for V/f Alarm | 111 | 0...3 | 143 | Off=0;On=1 | | | | | | ■ |
| Pick-up value | 111 | 4...7 | 201 | 1.00 = 100 | | | | | | ■ |
| Operate delay | 111 | 8...11 | 201 | 1.0 s = 10 | | | | | | ■ |
| V/f>1 setting | | | | | | | | | | |
| Enable for V/f>1 | 112 | 0...3 | 143 | Off=0;On=1 | | | | | | ■ |
| Operating curve | 112 | 4...7 | 143 | Value ⁴² | | | | | | ■ |
| Pick-up value | 112 | 8...11 | 201 | 1.00 = 100 | | | | | | ■ |
| Operate delay | 112 | 12...15 | 201 | 1.0 s = 10 | | | | | | ■ |
| Reset delay | 112 | 16...19 | 201 | 1.0 s = 10 | | | | | | ■ |
| V/f>2 setting | | | | | | | | | | |
| Enable for V/f>2 | 113 | 0...3 | 143 | Off=0;On=1 | | | | | | ■ |
| Pick-up value | 113 | 4...7 | 201 | 1.00 = 100 | | | | | | ■ |
| Operate delay | 113 | 8...11 | 201 | 1.0 s = 10 | | | | | | ■ |

42. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

Modbus slave

Presentation

The Modbus interface is a master/slave protocol defined by the Modbus organisation.

For more information on the Modbus protocol, visit www.modbus.org.

It is used to exchange information between a master and one or more slave units, identified by a number. It implements request-reply dialog, where requests are always initiated by the master. Modbus exists in ASCII and binary (RTU mode) formats. Data is exchanged in the form of 16-bit words (also called registers⁴³) or simply bits. Each piece of information (bit or register) has a 16-bit address. Modbus is a data-transmission protocol in charge of communication using serial link or Ethernet links.

Modbus TCP/IP offers the same functionality as Modbus over a serial link, as well as compatibility with multi-master architectures. Each TCP/IP can be configured as Modbus slave mode. The maximum number of Modbus slaves in the device is 4 (3 Modbus TCP/IP plus 1 Modbus over a serial link). All the connections are on the same Modbus slave address.

Function description

The Modbus slave can communicate with masters using either of two transmission modes:

- Serial RTU mode
- TCP/IP mode

The Modbus slave can communicate with the master through the serial port and Ethernet port at the same time.

The Modbus slave can be configured to work at max. 3 IP addresses.

The maximal number of clients for Modbus slave is 8. The client and master can be connected by either:

- a serial port connection
- a TCP connection via an Ethernet port

The Modbus slave supports the following functions and services:

- Binary status
- Measurement values
- Remote control
- Time synchronisation
- Event record
- Diagnostics
- Setting
- File transfer

Modbus protocol data unit

Every Modbus request or response frame includes a Modbus PDU (protocol data unit) made up of 2 fields.

- Function code (1 byte): indicates the type of request (1 to 127)
- Data (0 to n bytes): depends on the function code

43. The register address sent via Modbus is one less than that indicated by a PowerLogic P5 protection relay.

The function codes in the reply and in the request are identical.

Function codes

The function codes listed in the table below are supported.

Table 39 - Modbus function codes

| Function Codes | Address Space |
|------------------|-------------------------------|
| 03 | Read Holding Registers |
| 04 | Read Input Registers |
| 06 | Write single register |
| 07 ⁴⁴ | Read Exception Status |
| 08 ⁴⁴ | Diagnostic |
| 11 | Get Comm Event Counter |
| 16 | Write multiple registers |
| 23 | Read/Write multiple registers |
| 43/14 | Read Device Identification |

The following function codes are not supported, as the binary status value are treated as register and there is no area for them.

- 1 - Read coils
- 2 - Read discrete inputs
- 5 - Write single coil
- 15 - Write multiple coils

The sub-function of diagnostic supported are listing below:

- 0 - Return Query Data (Only the first two bytes' data are returned)
- 1 - Restart Communications Option
- 2 - Return Diagnostic Register (always zero)
- 4 - Force Listen Only Mode

Modbus serial link frames

All the frames exchanged have the same structure, made up of 3 parts:

- Slave address (1 byte): from 1 to 247 (0 for broadcasting)
- Modbus PDU: as previously described
- Check (2 bytes): CRC16 used to check frame integrity

The slave addresses in the reply and in the request are identical.

The maximum size of a frame is 256 bytes.

Synchronisation of exchanges

Any character that is received after a silence of more than 3.5 characters is considered as the beginning of a new frame. A minimum silence of 3.5 characters is always observed between two frames.

A slave disregards all frames:

- Received with a physical error for 1 or more characters (format error, parity error, etc.)

⁴⁴. This function code is only available for serial communication.

- With an incorrect CRC16 result
- For which it is not the recipient.

The slave addresses in the reply and in the request are identical.

The maximum size of a frame is 256 bytes.

Broadcasting

The master can also address all slaves using the conventional address 0. This type of exchange is called broadcasting. Slaves do not respond to broadcast messages. As a result, only messages that do not require the transmission of data by the slaves can be broadcast.

Response time

The communication coupler response time (T_r) is less than 15 ms, including a 3-character silence (approximately 3 ms at 9600 bauds).

This time is given with the following parameters:

- 9600 bauds
- Format: 8 bits, odd parity, 1 stop bit

Modbus serial RTU mode configuration

The Modbus RTU protocol is activated by selecting the 'ModBusSlv' option for the 'Remote port protocol' of the PowerLogic P5 protection relay serial port. This setting can be found by navigating to the **COMMUNICATION** menu/**Protocol configuration** sub-menu in the eSetup Easergy Pro.

The protocol can also be enabled via the front panel or Web HMI.

Once the protocol has been activated, it can be configured. This is done in the **COMMUNICATION** menu/**Modbus main configuration** sub-menu. In the **Modbus main configuration** element view, the Modbus Slave Address (or number), the bit rate, the parity of the connection, the wire number and polling line can be set. The frame gap is fixed.

Table 40 - Modbus slave main configuration parameters

| Parameter | Value | Description |
|-----------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Slave number | 1...247 | The Modbus slave address |
| Speed of transmission | 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps | The communication speed, bits per second |
| Parity | None, Even, Odd | The type of parity bit used |
| Number of wires | 2, 4 | The number of wire connection |
| Poll line activation | False, True | The polarity of the wire connection |
| Frame Gap | | Specifies the amount of time (calculated by bits) to use to determine that a frame has been completed. For Modbus RTU this value is fixed at 38 bits. |
| Enable legacy points | On, Off | The standard point list will show-up once checked. |

NOTE: The parity and bit rate are set to the same value on all devices connected to the same data link.

Modbus TCP mode configuration

Modbus TCP (or Modbus TCP/IP) is simply the Modbus RTU protocol with a TCP interface that runs on Ethernet. TCP/IP refers to the Transmission Control Protocol and Internet Protocol which provide the transmission medium for Modbus TCP/IP messaging. In practice, Modbus TCP embeds a standard Modbus data frame into a TCP frame.

One advantage over serial Modbus (RTU or ASCII) is that the number of nodes is not limited to 247 on one data link, since the addressing of nodes is done with the Internet Protocol. Furthermore, several devices can be connected to one IP address, provided the appropriate equipment is used (some Modbus TCP-to-Modbus RTU bridge). These devices are differentiated from each other with a Unit Identifier, in the TCP frame, which corresponds to the Slave ID. The range of the Unit Identifier is also 1-247. In PowerLogic P5 protection relays the Modbus Slave ID corresponds to the Unit Identifier when Modbus TCP is used, see [Modbus serial RTU mode configuration](#), page 124.

The Modbus TCP protocol is activated by first configuring the Ethernet port settings in the **Ethernet (Slot M)** element view which can be found in the **COMMUNICATION** menu/**Protocol configuration** sub-menu via eSetup Easergy Pro. First, the IP address, Subnet mask and Gateway are set, and require a static IP address to be configured. This is considered before connecting a relay to an existing network, so that no conflicts emerge.

Once these settings have been configured, one of the Ethernet port protocol selections can be set to “ModBusTCPs” (Modbus TCP, slave). Before the protocol is activated, a device reboot is required.

NOTE: There are three Ethernet protocols, “Ethernet Protocol 1”, “Ethernet Protocol 2” and “Ethernet Protocol 3”, that is, three independent sockets for three different protocols. The default TCP IP port for Modbus TCP is 502.

Data access, such as reading and writing to holding registers, event reading, clock synchronisation and scaling work, with the addition that clock synchronisation also can be done by using Simple Network Time Protocol (SNTP). This requires a NTP server, the address of which is set in the Protocol configuration view in eSetup Easergy Pro or Web HMI.

Disturbance Recorder transfer

Modbus slave supports Disturbance Recorder (DR) (including two COMTRADE files, .cfg and .dat) transfer to Modbus master. These two files are downloaded by SCADA with the file read function (Modbus function code 20).

Steps for how to read the waveforms are as follows:

1. Check at regular intervals the waveform header register.
2. Read header registers to determine the file number(s) of the new waveform (s) to be downloaded.
3. Download the waveform files with the file read method.

NOTE:

The maximum number of registers that can be read in a Modbus file record is 124 and the first register is reserved for recording the metadata. The maximum number of records in a file is 65536 and each register is 2 bytes. Therefore, the maximum file size is $65536 \times 123 \times 2 = 16,121,856$ bytes = 15.375 MB. So Modbus slave will refuse to transfer any COMTRADE file whose size is larger than 15.375 MB.

The PDM interface supports multiple clients, and these clients can read the same file at the same time.

Read exception status

This function code 7 is used to read the contents of eight exception status. Eight bits make up one byte.

The following table shows the status supported:

Table 41 - Read exception status

| Bit | Status | Description |
|-------|----------------------|-----------------------------------------------------|
| 0 | Test Mode | If test mode is not in normal, set bit 0. |
| 1 | Time Synchronisation | If the synchronising source is internal, set bit 1. |
| 2 | New Event | If a new event is generated, set bit 2. |
| 3 | Hardware Status | If the hardware has problem, set bit 3. |
| 4...7 | Reserved | |

Read device identification

Both basic and regular device identification are supported though function code 43 and 14. The Modbus slave will respond with the exception code 3 if receive the unsupported category.

Table 42 - Read device identification

| Object ID | Object Name | Value |
|-----------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0x00 | VendorName | Schneider Electric |
| 0x01 | ProductCode | If P5U20: 16700 If P5V20: 16701 If P5M30: 16702 If P5F30: 16703 If P5U20 LPCT/LPVT: 16707 |
| 0x02 | MajorMinorRevision | 11 chars, e.g. 001.300.003 |
| 0x03 | VendorUrl | http://www.se.com |
| 0x04 | ProductName (product range) | PowerLogic P5 |
| 0x05 | ModelName | P5U20 / P5V20 / P5F30 / P5M30 / P5U20 LPCT/LPVT depending on type |
| 0x06 | UserApplicationName | If P5U20: Universal current protection If P5V20: Voltage and Frequency protection If P5F30: Directional Feeder and Transformer protection If P5M30: Motor protection If P5U20 LPCT/LPVT: Universal current protection with LPCT/LPVT |

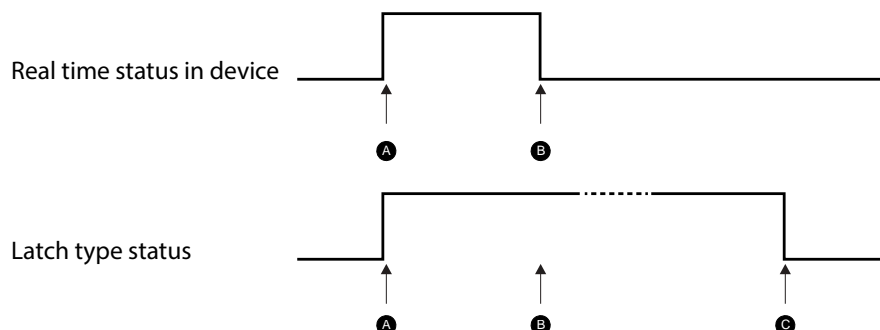
Latch status feature for PDM Modbus

Because of the latch type status registers, the user can see the status of the trip signal until the register is reset.

Latch type status registers remain in active when the real status of the trip signal is true or the latch status registers are not released. When the real time status in the P5 device is inactive, latch status registers can be released in two ways:

- Release all the latch status registers by writing “0” to the register named “release all latch status”.
- Release individual latch status by writing “0” to the individual latch status register.

Latch statuses registers are not stored in Non-Volatile Memory. They will be reset after the reboot.



P533P9A

A Trip occurs

B Trip condition is false

C User releases latched status

Events

Events for standard Modbus

The event buffer of PowerLogic P5 protection relays can be read via the Modbus Protocol. This is done by reading one event at a time, from holding registers 2101...2105. The event registers contain the latest event, and are cleared when they are read. Only 49 latest events can be extracted via the Modbus Protocol. The registers are then updated to contain the following event from the event buffer. A description of the registers is shown in the table. The Event buffer view can be found by navigating to LOGS menu in eSetup Easergy Pro.

Table 43 - Description of events in holding registers

| Holding Register ⁴⁵ | Content |
|--------------------------------|-------------------------------------------------------------------|
| 2101 | Event code Refer to event code list table for details. |
| 2102 | Event timestamp Bits 15-6 = milliseconds Bits 5-0 = seconds |
| 2103 | Event timestamp Upper byte = minute Lower byte = hour |
| 2104 | Event timestamp Upper byte = day Lower byte = month |
| 2105 | Event timestamp, year |

45. The register address sent via Modbus is one less than that indicated by a PowerLogic P5 protection relay. To clarify: if the holding register address 2101 is sent over a Modbus data link, the frame will indicate that the address of the holding register is 2100.

Events for PDM Modbus

Power Data Model (PDM) needs specific format to record event logs and maintains a table to memory event logs. The table contains a table descriptor and a list of events. PDM defines 100 logs for the events as First Input First Output (FIFO). Each event log has 12 registers. The user can poll the table descriptor registers to check whether a new event is created.

Table 44 - Description of events in holding registers

| Holding Register ⁴⁶ | Content |
|--------------------------------|-----------------------------------------------------------------------------------|
| 23401 | Event log version |
| 23402 | Event buffer size |
| 23403 | Actual number of events Starts from 0 and increases up to the maximum capacity |
| 23404 | Most recent event entry number |
| 23405 | Most recent event entry position |
| 23406 | Oldest event position |
| 23407-24606 | Events |

The format of the event log is as below:

Table 45 - The structure of an event log

| Address | Size | Field description |
|---------|------|----------------------------|
| Word1 | 1 | Entry number (log index) |
| Word2 | 4 | Date and time of the event |
| Word3 | | |
| Word4 | | |
| Word5 | | |
| Word6 | 1 | Reserved |
| Word7 | 1 | Event code |
| Word8 | 4 | Reserved |
| Word9 | | |
| Word10 | | |
| Word11 | | |
| Word12 | 1 | Reserved |

An event record is defined by three elements:

- Entry number

This is a log index that is incremented by one at each time there is a new event. It is an unsigned 16 bits integer. It will return to 0x0000 after reaching 0xFFFF.

- Timestamp

This identifies the occurrence of this event. The format is consistent with above date/time format.

- Event code

This identifies the event code of this event.

46. The register address sent via Modbus is one less than that indicated by a PowerLogic P5 protection relay. To clarify: if the holding register address 2101 is sent over a Modbus data link, the frame will indicate that the address of the holding register is 2100.

Event code list

The event code list indicates the events of PowerLogic P5 protection relays sent via Modbus. The event code is shown in Event buffer view of eSetup Easergy Pro with the format of xEy. The decimal value of event code sent via Modbus is: $x * 64 + y$.

For example, the event “DI5 on” is generated in PowerLogic P5 protection relay. The event code is 00E9, so the code value 9 ($00 * 64 + 9 = 9$) is sent via Modbus.

The following list applies to both standard Modbus and PDM Modbus.

NOTE: For the value of Event code column in the table, digit before E is channel number and digit after E is event code.

Table 46 - Event code list

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------|-------|----------------------|
| 00E1 | DI1 on | | 1 |
| 00E2 | DI1 off | | 2 |
| 00E3 | DI2 on | | 3 |
| 00E4 | DI2 off | | 4 |
| 00E5 | DI3 on | | 5 |
| 00E6 | DI3 off | | 6 |
| 00E7 | DI4 on | | 7 |
| 00E8 | DI4 off | | 8 |
| 00E9 | DI5 on | | 9 |
| 00E10 | DI5 off | | 10 |
| 00E11 | DI6 on | | 11 |
| 00E12 | DI6 off | | 12 |
| 00E13 | DI7 on | | 13 |
| 00E14 | DI7 off | | 14 |
| 00E15 | DI8 on | | 15 |
| 00E16 | DI8 off | | 16 |
| 00E17 | DI9 on | | 17 |
| 00E18 | DI9 off | | 18 |
| 00E19 | DI10 on | | 19 |
| 00E20 | DI10 off | | 20 |
| 00E21 | DI11 on | | 21 |
| 00E22 | DI11 off | | 22 |
| 00E23 | DI12 on | | 23 |
| 00E24 | DI12 off | | 24 |
| 00E25 | DI13 on | | 25 |
| 00E26 | DI13 off | | 26 |
| 00E27 | DI14 on | | 27 |
| 00E28 | DI14 off | | 28 |
| 00E29 | DI15 on | | 29 |
| 00E30 | DI15 off | | 30 |
| 00E31 | DI16 on | | 31 |
| 00E32 | DI16 off | | 32 |
| 00E33 | DI17 on | | 33 |
| 00E34 | DI17 off | | 34 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------------------------|-------|----------------------|
| 00E35 | DI18 on | | 35 |
| 00E36 | DI18 off | | 36 |
| 00E37 | DI19 on | | 37 |
| 00E38 | DI19 off | | 38 |
| 00E39 | DI20 on | | 39 |
| 00E40 | DI20 off | | 40 |
| 00E42 | COMTRADE file ready | | 42 |
| 00E43 | Disturbance rec. deleted | | 43 |
| 00E44 | Disturbance rec. overwritten | | 44 |
| 00E45 | LED state changed | | 45 |
| 00E46 | Disturbance rec. memory freed | | 46 |
| 00E47 | Disturbance rec. memory full | | 47 |
| 00E48 | Disturbance recording | | 48 |
| 00E49 | Incomer fault at distance | Yes | 49 |
| 00E50 | Device restart | | 50 |
| 00E55 | Internal memory issue | | 55 |
| 00E56 | SelfDiag alarm | | 56 |
| 00E57 | SelfDiag alarm off | | 57 |
| 00E58 | Phase A trip | | 58 |
| 00E59 | Phase A trip off | | 59 |
| 00E60 | Phase B trip | | 60 |
| 00E61 | Phase B trip off | | 61 |
| 00E62 | Phase C trip | | 62 |
| 00E63 | Phase C trip off | | 63 |
| 01E01 | I>1 Start On | | 65 |
| 01E02 | I>1 Trip On | Yes | 66 |
| 01E03 | I>1 Start Off | | 67 |
| 01E04 | I>1 Trip off | | 68 |
| 01E11 | I>1 phase A start on | | 75 |
| 01E12 | I>1 phase A start off | | 76 |
| 01E13 | I>1 phase A trip on | Yes | 77 |
| 01E14 | I>1 phase A trip off | | 78 |
| 01E15 | I>1 phase B start on | | 79 |
| 01E16 | I>1 phase B start off | | 80 |
| 01E17 | I>1 phase B trip on | Yes | 81 |
| 01E18 | I>1 phase B trip off | | 82 |
| 01E19 | I>1 phase C start on | | 83 |
| 01E20 | I>1 phase C start off | | 84 |
| 01E21 | I>1 phase C trip on | Yes | 85 |
| 01E22 | I>1 phase C trip off | | 86 |
| 02E01 | I>2 Start On | | 129 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 02E02 | I>2 Trip On | Yes | 130 |
| 02E03 | I>2 Start Off | | 131 |
| 02E04 | I>2 Trip off | | 132 |
| 02E11 | I>2 phase A start on | | 139 |
| 02E12 | I>2 phase A start off | | 140 |
| 02E13 | I>2 phase A trip on | Yes | 141 |
| 02E14 | I>2 phase A trip off | | 142 |
| 02E15 | I>2 phase B start on | | 143 |
| 02E16 | I>2 phase B start off | | 144 |
| 02E17 | I>2 phase B trip on | Yes | 145 |
| 02E18 | I>2 phase B trip off | | 146 |
| 02E19 | I>2 phase C start on | | 147 |
| 02E20 | I>2 phase C start off | | 148 |
| 02E21 | I>2 phase C trip on | Yes | 149 |
| 02E22 | I>2 phase C trip off | | 150 |
| 03E01 | I>3 Start On | | 193 |
| 03E02 | I>3 Trip On | Yes | 194 |
| 03E03 | I>3 Start Off | | 195 |
| 03E04 | I>3 Trip off | | 196 |
| 03E11 | I>3 phase A start on | | 203 |
| 03E12 | I>3 phase A start off | | 204 |
| 03E13 | I>3 phase A trip on | Yes | 205 |
| 03E14 | I>3 phase A trip off | | 206 |
| 03E15 | I>3 phase B start on | | 207 |
| 03E16 | I>3 phase B start off | | 208 |
| 03E17 | I>3 phase B trip on | Yes | 209 |
| 03E18 | I>3 phase B trip off | | 210 |
| 03E19 | I>3 phase C start on | | 211 |
| 03E20 | I>3 phase C start off | | 212 |
| 03E21 | I>3 phase C trip on | Yes | 213 |
| 03E22 | I>3 phase C trip off | | 214 |
| 05E01 | I2/I1 Start On | | 321 |
| 05E02 | I2/I1 Trip On | Yes | 322 |
| 05E03 | I2/I1 Start Off | | 323 |
| 05E04 | I2/I1 Trip off | | 324 |
| 241E01 | I2/I1>> Start On | | 15425 |
| 241E02 | I2/I1>> Trip On | Yes | 15426 |
| 241E03 | I2/I1>> Start Off | | 15427 |
| 241E04 | I2/I1>> Trip off | | 15428 |
| 13E01 | I< Start On | | 833 |
| 13E02 | I< Trip On | Yes | 834 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------|-------|----------------------|
| 13E03 | I< Start Off | | 835 |
| 13E04 | I< Trip off | | 836 |
| 14E01 | T> Start On | | 897 |
| 14E02 | T>Trip On | Yes | 898 |
| 14E03 | T> Start Off | | 899 |
| 14E04 | T> Trip off | | 900 |
| 14E11 | Thm.level feeder alarm | Yes | 907 |
| 14E12 | Thm.level feeder alarm off | | 908 |
| 14E13 | Thm.rsv feeder alarm | Yes | 909 |
| 14E14 | Thm.rsv feeder alarm off | | 910 |
| 14E15 | Feeder heating alarm | Yes | 911 |
| 14E16 | Feeder heating alarm off | | 912 |
| 16E01 | Ist> Start On | | 1025 |
| 16E02 | Ist>Trip On | Yes | 1026 |
| 16E03 | Ist> Start Off | | 1027 |
| 16E04 | Ist> Trip off | | 1028 |
| 16E20 | Stalled rotor on | | 1044 |
| 16E21 | Stalled rotor off | | 1045 |
| 19E1 | O/C alarm | | 1217 |
| 19E2 | O/C trip | | 1218 |
| 19E3 | O/C alarm off | | 1219 |
| 19E4 | O/C trip off | | 1220 |
| 19E5 | E/F alarm | | 1221 |
| 19E6 | E/F trip | | 1222 |
| 19E7 | E/F alarm off | | 1223 |
| 19E8 | E/F trip off | | 1224 |
| 19E10 | Phase A alarm | | 1226 |
| 19E11 | Phase A alarm off | | 1227 |
| 19E12 | Phase B alarm | | 1228 |
| 19E13 | Phase B alarm off | | 1229 |
| 19E14 | Phase C alarm | | 1230 |
| 19E15 | Phase C alarm off | | 1231 |
| 23E01 | IN>1 Start On | | 1473 |
| 23E02 | IN>1 Trip On | Yes | 1474 |
| 23E03 | IN>1 Start Off | | 1475 |
| 23E04 | IN>1 Trip off | | 1476 |
| 24E01 | IN>2 Start On | | 1537 |
| 24E02 | IN>2 Trip On | Yes | 1538 |
| 24E03 | IN>2 Start Off | | 1539 |
| 24E04 | IN>2 Trip off | | 1540 |
| 25E01 | Icap>1 Start On | | 1601 |
| 25E02 | Icap>1 Trip On | Yes | 1602 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 25E03 | Icap>1 Start Off | | 1603 |
| 25E04 | Icap>1 Trip off | | 1604 |
| 26E01 | Icap>2 Start On | | 1665 |
| 26E02 | Icap>2 Trip On | Yes | 1666 |
| 26E03 | Icap>2 Start Off | | 1667 |
| 26E04 | Icap>2 Trip off | | 1668 |
| 30E01 | V>1 Start On | | 1921 |
| 30E02 | V>1 Trip On | Yes | 1922 |
| 30E03 | V>1 Start Off | | 1923 |
| 30E04 | V>1 Trip off | | 1924 |
| 30E11 | V>1 phase A start on | | 1931 |
| 30E12 | V>1 phase A start off | | 1932 |
| 30E13 | V>1 phase A trip on | Yes | 1933 |
| 30E14 | V>1 phase A trip off | | 1934 |
| 30E15 | V>1 phase B start on | | 1935 |
| 30E16 | V>1 phase B start off | | 1936 |
| 30E17 | V>1 phase B trip on | Yes | 1937 |
| 30E18 | V>1 phase B trip off | | 1938 |
| 30E19 | V>1 phase C start on | | 1939 |
| 30E20 | V>1 phase C start off | | 1940 |
| 30E21 | V>1 phase C trip on | Yes | 1941 |
| 30E22 | V>1 phase C trip off | | 1942 |
| 31E01 | V>2 Start On | | 1985 |
| 31E02 | V>2 Trip On | Yes | 1986 |
| 31E03 | V>2 Start Off | | 1987 |
| 31E04 | V>2 Trip off | | 1988 |
| 31E11 | V>2 phase A start on | | 1995 |
| 31E12 | V>2 phase A start off | | 1996 |
| 31E13 | V>2 phase A trip on | Yes | 1997 |
| 31E14 | V>2 phase A trip off | | 1998 |
| 31E15 | V>2 phase B start on | | 1999 |
| 31E16 | V>2 phase B start off | | 2000 |
| 31E17 | V>2 phase B trip on | Yes | 2001 |
| 31E18 | V>2 phase B trip off | | 2002 |
| 31E19 | V>2 phase C start on | | 2003 |
| 31E20 | V>2 phase C start off | | 2004 |
| 31E21 | V>2 phase C trip on | Yes | 2005 |
| 31E22 | V>2 phase C trip off | | 2006 |
| 32E01 | V<1 Start On | | 2049 |
| 32E02 | V<1 Trip On | Yes | 2050 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 32E03 | V<1 Start Off | | 2051 |
| 32E04 | V<1 Trip off | | 2052 |
| 32E11 | V<1 phase A start on | | 2059 |
| 32E12 | V<1 phase A start off | | 2060 |
| 32E13 | V<1 phase A trip on | Yes | 2061 |
| 32E14 | V<1 phase A trip off | | 2062 |
| 32E15 | V<1 phase B start on | | 2063 |
| 32E16 | V<1 phase B start off | | 2064 |
| 32E17 | V<1 phase B trip on | Yes | 2065 |
| 32E18 | V<1 phase B trip off | | 2066 |
| 32E19 | V<1 phase C start on | | 2067 |
| 32E20 | V<1 phase C start off | | 2068 |
| 32E21 | V<1 phase C trip on | Yes | 2069 |
| 32E22 | V<1 phase C trip off | | 2070 |
| 33E01 | V<2 Start On | | 2113 |
| 33E02 | V<2 Trip On | Yes | 2114 |
| 33E03 | V<2 Start Off | | 2115 |
| 33E04 | V<2 Trip off | | 2116 |
| 33E11 | V<2 phase A start on | | 2123 |
| 33E12 | V<2 phase A start off | | 2124 |
| 33E13 | V<2 phase A trip on | Yes | 2125 |
| 33E14 | V<2 phase A trip off | | 2126 |
| 33E15 | V<2 phase B start on | | 2127 |
| 33E16 | V<2 phase B start off | | 2128 |
| 33E17 | V<2 phase B trip on | Yes | 2129 |
| 33E18 | V<2 phase B trip off | | 2130 |
| 33E19 | V<2 phase C start on | | 2131 |
| 33E20 | V<2 phase C start off | | 2132 |
| 33E21 | V<2 phase C trip on | Yes | 2133 |
| 33E22 | V<2 phase C trip off | | 2134 |
| 34E01 | V1<1 Start On | | 2177 |
| 34E02 | V1<1 Trip On | Yes | 2178 |
| 34E03 | V1<1 Start Off | | 2179 |
| 34E04 | V1<1 Trip off | | 2180 |
| 35E01 | V1<2 Start On | | 2241 |
| 35E02 | V1<2 Trip On | Yes | 2242 |
| 35E03 | V1<2 Start Off | | 2243 |
| 35E04 | V1<2 Trip off | | 2244 |
| 36E01 | VN>1 Start On | | 2305 |
| 36E02 | VN>1 Trip On | Yes | 2306 |
| 36E03 | VN>1 Start Off | | 2307 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 36E04 | VN>1 Trip off | | 2308 |
| 37E01 | VN>2 Start On | | 2369 |
| 37E02 | VN>2 Trip On | Yes | 2370 |
| 37E03 | VN>2 Start Off | | 2371 |
| 37E04 | VN>2 Trip off | | 2372 |
| 38E01 | V>3 Start On | | 2433 |
| 38E02 | V>3 Trip On | Yes | 2434 |
| 38E03 | V>3 Start Off | | 2435 |
| 38E04 | V>3 Trip off | | 2436 |
| 38E11 | V>3 phase A start on | | 2443 |
| 38E12 | V>3 phase A start off | | 2444 |
| 38E13 | V>3 phase A trip on | Yes | 2445 |
| 38E14 | V>3 phase A trip off | | 2446 |
| 38E15 | V>3 phase B start on | | 2447 |
| 38E16 | V>3 phase B start off | | 2448 |
| 38E17 | V>3 phase B trip on | Yes | 2449 |
| 38E18 | V>3 phase B trip off | | 2450 |
| 38E19 | V>3 phase C start on | | 2451 |
| 38E20 | V>3 phase C start off | | 2452 |
| 38E21 | V>3 phase C trip on | Yes | 2453 |
| 38E22 | V>3 phase C trip off | | 2454 |
| 39E01 | V<3 Start On | | 2497 |
| 39E02 | V<3 Trip On | Yes | 2498 |
| 39E03 | V<3 Start Off | | 2499 |
| 39E04 | V<3 Trip off | | 2500 |
| 39E11 | V<3 phase A start on | | 2507 |
| 39E12 | V<3 phase A start off | | 2508 |
| 39E13 | V<3 phase A trip on | Yes | 2509 |
| 39E14 | V<3 phase A trip off | | 2510 |
| 39E15 | V<3 phase B start on | | 2511 |
| 39E16 | V<3 phase B start off | | 2512 |
| 39E17 | V<3 phase B trip on | Yes | 2513 |
| 39E18 | V<3 phase B trip off | | 2514 |
| 39E19 | V<3 phase C start on | | 2515 |
| 39E20 | V<3 phase C start off | | 2516 |
| 39E21 | V<3 phase C trip on | Yes | 2517 |
| 39E22 | V<3 phase C trip off | | 2518 |
| 40E01 | P<1 Start On | | 2561 |
| 40E02 | P<1 Trip On | Yes | 2562 |
| 40E03 | P<1 Start Off | | 2563 |
| 40E04 | P<1 Trip off | | 2564 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 41E01 | P<2 Start On | | 2625 |
| 41E02 | P<2 Trip On | Yes | 2626 |
| 41E03 | P<2 Start Off | | 2627 |
| 41E04 | P<2 Trip off | | 2628 |
| 46E01 | Prog1 Start On | | 2945 |
| 46E02 | Prog1 Trip On | Yes | 2946 |
| 46E03 | Prog1 Start Off | | 2947 |
| 46E04 | Prog1 Trip off | | 2948 |
| 46E33 | Control authority at station lev | | 2977 |
| 46E34 | Control authority from remote | | 2978 |
| 46E35 | LocSubst on | | 2979 |
| 46E36 | LocSubst off | | 2980 |
| 46E37 | Local station key on | | 2981 |
| 46E38 | Local station key off | | 2982 |
| 47E01 | Prog2 Start On | | 3009 |
| 47E02 | Prog2 Trip On | Yes | 3010 |
| 47E03 | Prog2 Start Off | | 3011 |
| 47E04 | Prog2 Trip off | | 3012 |
| 48E01 | Prog3 Start On | | 3073 |
| 48E02 | Prog3 Trip On | Yes | 3074 |
| 48E03 | Prog3 Start Off | | 3075 |
| 48E04 | Prog3 Trip off | | 3076 |
| 49E01 | Prog4 Start On | | 3137 |
| 49E02 | Prog4 Trip On | Yes | 3138 |
| 49E03 | Prog4 Start Off | | 3139 |
| 49E04 | Prog4 Trip off | | 3140 |
| 50E01 | f>1 Start On | | 3201 |
| 50E02 | f>1 Trip On | Yes | 3202 |
| 50E03 | f>1 Start Off | | 3203 |
| 50E04 | f>1 Trip off | | 3204 |
| 51E01 | f>2 Start On | | 3265 |
| 51E02 | f>2 Trip On | Yes | 3266 |
| 51E03 | f>2 Start Off | | 3267 |
| 51E04 | f>2 Trip off | | 3268 |
| 52E01 | f<1 Start On | | 3329 |
| 52E02 | f<1 Trip On | Yes | 3330 |
| 52E03 | f<1 Start Off | | 3331 |
| 52E04 | f<1 Trip off | | 3332 |
| 53E01 | f<2 Start On | | 3393 |
| 53E02 | f<2 Trip On | Yes | 3394 |
| 53E03 | f<2 Start Off | | 3395 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------|-------|----------------------|
| 53E04 | f<2 Trip off | | 3396 |
| 54E01 | f+df/dt>1 Start On | | 3457 |
| 54E02 | f+df/dt>1 Trip On | Yes | 3458 |
| 54E03 | f+df/dt>1 Start Off | | 3459 |
| 54E04 | f+df/dt>1 Trip off | | 3460 |
| 54E11 | Overfrequency start on | | 3467 |
| 54E12 | Overfrequency start off | | 3468 |
| 54E13 | Underfrequency start on | | 3469 |
| 54E14 | Underfrequency start off | | 3470 |
| 54E15 | Overfrequency trip on | | 3471 |
| 54E16 | Overfrequency trip off | | 3472 |
| 54E17 | Underfrequency trip on | | 3473 |
| 54E18 | Underfrequency trip off | | 3474 |
| 56E01 | Prog5 Start On | | 3585 |
| 56E02 | Prog5 Trip On | Yes | 3586 |
| 56E03 | Prog5 Start Off | | 3587 |
| 56E04 | Prog5 Trip off | | 3588 |
| 57E01 | Prog6 Start On | | 3649 |
| 57E02 | Prog6 Trip On | Yes | 3650 |
| 57E03 | Prog6 Start Off | | 3651 |
| 57E04 | Prog6 Trip off | | 3652 |
| 58E01 | Prog7 Start On | | 3713 |
| 58E02 | Prog7 Trip On | Yes | 3714 |
| 58E03 | Prog7 Start Off | | 3715 |
| 58E04 | Prog7 Trip off | | 3716 |
| 59E01 | Prog8 Start On | | 3777 |
| 59E02 | Prog8 Trip On | Yes | 3778 |
| 59E03 | Prog8 Start Off | | 3779 |
| 59E04 | Prog8 Trip off | | 3780 |
| 60E1 | CBF1 trip1 on | Yes | 3841 |
| 60E2 | CBF1 trip2 on | Yes | 3842 |
| 60E3 | CBF1 trip1 off | | 3843 |
| 60E4 | CBF1 trip2 off | | 3844 |
| 61E1 | AR request 1 | Yes | 3905 |
| 61E2 | AR request 2 | Yes | 3906 |
| 61E3 | AR request 3 | Yes | 3907 |
| 61E4 | AR request 4 | Yes | 3908 |
| 61E5 | AR request 5 | | 3909 |
| 61E6 | AR shot 1 start | Yes | 3910 |
| 61E7 | AR shot 2 start | Yes | 3911 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------|-------|----------------------|
| 61E8 | AR shot 3 start | Yes | 3912 |
| 61E9 | AR shot 4 start | Yes | 3913 |
| 61E10 | AR shot 5 start | | 3914 |
| 61E11 | AR direct trip | Yes | 3915 |
| 61E12 | AR locked | Yes | 3916 |
| 61E13 | AR running | Yes | 3917 |
| 61E14 | AR final trip | Yes | 3918 |
| 61E15 | AR1 req end | Yes | 3919 |
| 61E16 | AR2 req end | Yes | 3920 |
| 61E17 | AR3 req end | Yes | 3921 |
| 61E18 | AR4 req end | Yes | 3922 |
| 61E19 | AR5 req end | | 3923 |
| 61E20 | AR shot 1 end | Yes | 3924 |
| 61E21 | AR shot 2 end | Yes | 3925 |
| 61E22 | AR shot 3 end | Yes | 3926 |
| 61E23 | AR shot 4 end | Yes | 3927 |
| 61E24 | AR shot 5 end | Yes | 3928 |
| 61E25 | Direct final AR end | Yes | 3929 |
| 61E26 | Auto-Recloser unlocked | Yes | 3930 |
| 61E27 | Auto-Recloser stopped | Yes | 3931 |
| 61E28 | Final trip end | Yes | 3932 |
| 61E29 | AR on | Yes | 3933 |
| 61E30 | AR off | Yes | 3934 |
| 61E31 | AR direct trip | Yes | 3935 |
| 61E32 | AR1 final trip | Yes | 3936 |
| 61E33 | AR2 final trip | Yes | 3937 |
| 61E34 | AR3 final trip | Yes | 3938 |
| 61E35 | AR4 final trip | Yes | 3939 |
| 61E36 | Crit. final trip off | | 3940 |
| 61E37 | AR1 final trip off | Yes | 3941 |
| 61E38 | AR2 final trip off | Yes | 3942 |
| 61E39 | AR3 final trip off | Yes | 3943 |
| 61E40 | AR4 final trip off | Yes | 3944 |
| 62E1 | N> alarm on | | 3969 |
| 62E2 | Motor start inhibited on | | 3970 |
| 62E3 | N> alarm off | | 3971 |
| 62E4 | Motor start inhibited off | | 3972 |
| 63E1 | Motor starting | | 4033 |
| 63E2 | Motor running | | 4034 |
| 63E3 | Motor zero speed | | 4035 |
| 63E4 | Motor stopped | | 4036 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------|-------|----------------------|
| 63E5 | Motor zero speed Off | | 4037 |
| 64E1 | Voltage int. on | | 4097 |
| 64E2 | Voltage int. off | | 4098 |
| 64E10 | Voltage sag on | | 4106 |
| 64E11 | Voltage sag off | | 4107 |
| 64E12 | Voltage swell on | | 4108 |
| 64E13 | Voltage swell off | | 4109 |
| 64E14 | Voltage sag timeout | | 4110 |
| 64E15 | Voltage swell timeout | | 4111 |
| 64E28 | Start of DST | | 4124 |
| 64E29 | End of DST | | 4125 |
| 64E30 | EF Distance on | | 4126 |
| 64E31 | EFD calc. ready | Yes | 4127 |
| 64E32 | Feeder fault at distance | Yes | 4128 |
| 64E40 | Manual timer control | | 4136 |
| 64E41 | Manual timer ctrl off | | 4137 |
| 64E42 | Timer 1 on | | 4138 |
| 64E43 | Timer 1 off | | 4139 |
| 64E44 | Timer 2 on | | 4140 |
| 64E45 | Timer 2 off | | 4141 |
| 64E46 | Timer 3 on | | 4142 |
| 64E47 | Timer 3 off | | 4143 |
| 64E48 | Timer 4 on | | 4144 |
| 64E49 | Timer 4 off | | 4145 |
| 64E50 | CS basic on | | 4146 |
| 64E51 | CS advanced on | | 4147 |
| 65E1 | TCS alarm on | | 4161 |
| 65E2 | TCS alarm off | | 4162 |
| 65E3 | Logic output 2 on | | 4163 |
| 65E4 | Logic output 2 off | | 4164 |
| 65E5 | Logic output 3 on | | 4165 |
| 65E6 | Logic output 3 off | | 4166 |
| 65E7 | Logic output 4 on | | 4167 |
| 65E8 | Logic output 4 off | | 4168 |
| 65E9 | Logic output 5 on | | 4169 |
| 65E10 | Logic output 5 off | | 4170 |
| 65E11 | Logic output 6 on | | 4171 |
| 65E12 | Logic output 6 off | | 4172 |
| 65E13 | Logic output 7 on | | 4173 |
| 65E14 | Logic output 7 off | | 4174 |
| 65E15 | Logic output 8 on | | 4175 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 65E16 | Logic output 8 off | | 4176 |
| 65E17 | Logic output 9 on | | 4177 |
| 65E18 | Logic output 9 off | | 4178 |
| 65E19 | Logic output 10 on | | 4179 |
| 65E20 | Logic output 10 off | | 4180 |
| 65E21 | Logic output 11 on | | 4181 |
| 65E22 | Logic output 11 off | | 4182 |
| 65E23 | Logic output 12 on | | 4183 |
| 65E24 | Logic output 12 off | | 4184 |
| 65E25 | Logic output 13 on | | 4185 |
| 65E26 | Logic output 13 off | | 4186 |
| 65E27 | Logic output 14 on | | 4187 |
| 65E28 | Logic output 14 off | | 4188 |
| 65E29 | Logic output 15 on | | 4189 |
| 65E30 | Logic output 15 off | | 4190 |
| 65E31 | Logic output 16 on | | 4191 |
| 65E32 | Logic output 16 off | | 4192 |
| 65E33 | Logic output 17 on | | 4193 |
| 65E34 | Logic output 17 off | | 4194 |
| 65E35 | Logic output 18 on | | 4195 |
| 65E36 | Logic output 18 off | | 4196 |
| 65E37 | Logic output 19 on | | 4197 |
| 65E38 | Logic output 19 off | | 4198 |
| 65E39 | Logic output 20 on | | 4199 |
| 65E40 | Logic output 20 off | | 4200 |
| 71E23 | CB1 invalid position timeout | | 4567 |
| 71E24 | CB1 ready timeout | | 4568 |
| 71E25 | CB1 open timeout | | 4569 |
| 71E26 | CB1 close timeout | | 4570 |
| 71E27 | CB1 open | | 4571 |
| 71E28 | CB1 closed | | 4572 |
| 71E29 | CB1 jammed | | 4573 |
| 71E30 | CB1 running | | 4574 |
| 71E31 | CB1 open blocking on | | 4575 |
| 71E32 | CB1 open blocking off | | 4576 |
| 71E33 | CB1 close blocking on | | 4577 |
| 71E34 | CB1 close blocking off | | 4578 |
| 71E35 | CB1 Opening on | | 4579 |
| 71E36 | CB1 Opening off | | 4580 |
| 71E37 | Command is refused | | 4581 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------------|-------|----------------------|
| 71E38 | CB2 invalid position timeout | | 4582 |
| 71E39 | CB2 ready timeout | | 4583 |
| 71E40 | CB2 open timeout | | 4584 |
| 71E41 | CB2 close timeout | | 4585 |
| 71E42 | CB2 open | | 4586 |
| 71E43 | CB2 closed | | 4587 |
| 71E44 | CB2 jammed | | 4588 |
| 71E45 | CB2 running | | 4589 |
| 71E46 | CB2 open blocking on | | 4590 |
| 71E47 | CB2 open blocking off | | 4591 |
| 71E48 | CB2 close blocking on | | 4592 |
| 71E49 | CB2 close blocking off | | 4593 |
| 71E50 | CB2 opening on | | 4594 |
| 71E51 | CB2 opening off | | 4595 |
| 163E01 | Watt EF>1 Start On | | 10433 |
| 163E02 | Watt EF>1 Trip On | Yes | 10434 |
| 163E03 | Watt EF>1 Start Off | | 10435 |
| 163E04 | Watt EF>1 Trip off | | 10436 |
| 163E11 | Watt EF>1 Alarm operation on | | 10443 |
| 163E12 | Watt EF>1 Alarm operation off | | 10444 |
| 163E13 | Watt EF>1 Alarm non operation on | | 10445 |
| 163E14 | Watt EF>1 Alarm non operation off | | 10446 |
| 163E15 | Watt EF>1 Inhibit on | | 10447 |
| 163E16 | Watt EF>1 Inhibit off | | 10448 |
| 164E01 | Watt EF>2 Start On | | 10497 |
| 164E02 | Watt EF>2 Trip On | Yes | 10498 |
| 164E03 | Watt EF>2 Start Off | | 10499 |
| 164E04 | Watt EF>2 Trip off | | 10500 |
| 164E11 | Watt EF>2 Alarm operation on | | 10507 |
| 164E12 | Watt EF>2 Alarm operation off | | 10508 |
| 164E13 | Watt EF>2 Alarm non operation on | | 10509 |
| 164E14 | Watt EF>2 Alarm non operation off | | 10510 |
| 164E15 | Watt EF>2 Inhibit on | | 10511 |
| 164E16 | Watt EF>2 Inhibit off | | 10512 |
| 189E01 | YN>1 Start On | | 12097 |
| 189E02 | YN>1 Trip On | Yes | 12098 |
| 189E03 | YN>1 Start Off | | 12099 |
| 189E04 | YN>1 Trip off | | 12100 |
| 189E11 | YN>1 Inhibit On | | 12107 |
| 189E12 | YN>1 Inhibit off | | 12108 |
| 190E01 | GN>1 Start On | | 12161 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------|-------|----------------------|
| 190E02 | GN>1 Trip On | Yes | 12162 |
| 190E03 | GN>1 Start Off | | 12163 |
| 190E04 | GN>1 Trip off | | 12164 |
| 190E11 | GN>1 Inhibit On | | 12171 |
| 190E12 | GN>1 Inhibit off | | 12172 |
| 191E01 | BN>1 Start On | | 12225 |
| 191E02 | BN>1 Trip On | Yes | 12226 |
| 191E03 | BN>1 Start Off | | 12227 |
| 191E04 | BN>1 Trip off | | 12228 |
| 191E11 | BN>1 Inhibit On | | 12235 |
| 191E12 | BN>1 Inhibit off | | 12236 |
| 193E01 | YN>2 Start On | | 12353 |
| 193E02 | YN>2 Trip On | Yes | 12354 |
| 193E03 | YN>2 Start Off | | 12355 |
| 193E04 | YN>2 Trip off | | 12356 |
| 193E11 | YN>2 Inhibit on | | 12363 |
| 193E12 | YN>2 Inhibit off | | 12364 |
| 194E01 | GN>2 Start On | | 12417 |
| 194E02 | GN>2 Trip On | Yes | 12418 |
| 194E03 | GN>2 Start Off | | 12419 |
| 194E04 | GN>2 Trip off | | 12420 |
| 194E11 | GN>2 Inhibit on | | 12427 |
| 194E12 | GN>2 Inhibit off | | 12428 |
| 195E01 | BN>2 Start On | | 12481 |
| 195E02 | BN>2 Trip On | Yes | 12482 |
| 195E03 | BN>2 Start Off | | 12483 |
| 195E04 | BN>2 Trip off | | 12484 |
| 195E11 | BN>2 Inhibit on | | 12491 |
| 195E12 | BN>2 Inhibit off | | 12492 |
| 187E1 | SOL1 trip on | Yes | 11969 |
| 187E2 | SOL2 trip on | Yes | 11970 |
| 187E3 | SOL1 trip off | | 11971 |
| 187E4 | SOL2 trip off | | 11972 |
| 79E1 | Cold load pickup on | | 5057 |
| 79E2 | Cold load pickup off | | 5058 |
| 79E3 | CLPU enabled | | 5059 |
| 79E4 | CLPU disabled | | 5060 |
| 198E1 | Inrush 1 on | | 12673 |
| 198E2 | Inrush 1 off | | 12674 |
| 198E3 | Inrush 1 enabled | | 12675 |
| 198E4 | Inrush 1 disabled | | 12676 |
| 198E5 | Phase A Inrush 1 on | | 12677 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------------|-------|----------------------|
| 198E6 | Phase A Inrush 1 off | | 12678 |
| 198E7 | Phase B Inrush 1 on | | 12679 |
| 198E8 | Phase B Inrush 1 off | | 12680 |
| 198E9 | Phase C Inrush 1 on | | 12681 |
| 198E10 | Phase C Inrush 1 off | | 12682 |
| 197E1 | Inrush 2 on | | 12609 |
| 197E2 | Inrush 2 off | | 12610 |
| 197E3 | Inrush 2 enabled | | 12611 |
| 197E4 | Inrush 2 disabled | | 12612 |
| 197E5 | Inrush 2 phase A on | | 12613 |
| 197E6 | Inrush 2 phase A off | | 12614 |
| 197E7 | Inrush 2 phase B on | | 12615 |
| 197E8 | Inrush 2 phase B off | | 12616 |
| 197E9 | Inrush 2 phase C on | | 12617 |
| 197E10 | Inrush 2 phase C off | | 12618 |
| 196E1 | CB op. number alarm 1 on | Yes | 12545 |
| 196E2 | CB op. number alarm 1 off | | 12546 |
| 196E3 | CB op. number alarm 2 on | Yes | 12547 |
| 196E4 | CB op. number alarm 2 off | | 12548 |
| 196E5 | CB broken curr. alarm on | Yes | 12549 |
| 196E6 | CB broken curr. alarm off | | 12550 |
| 196E7 | CB mon. open log updated | | 12551 |
| 196E8 | CB mon. close log updated | | 12552 |
| 196E9 | CB mon. charge log updated | | 12553 |
| 201E1 | Maint. event triggered | | 12865 |
| 201E2 | Port 1 link up on COM | Yes | 12866 |
| 201E3 | Port 1 link down on COM | Yes | 12867 |
| 201E4 | Port 2 Link up on COM | Yes | 12868 |
| 201E5 | Port 2 Link down on COM | Yes | 12869 |
| 201E6 | IP conflict on COM | Yes | 12870 |
| 201E7 | IP conflict on COM1 IP | Yes | 12871 |
| 201E10 | File system error in CAN board | Yes | 12874 |
| 201E11 | Internal Temperature on | | 12875 |
| 201E12 | Internal Temperature off | | 12876 |
| 210E01 | $\Omega > 1$ Start On | | 13441 |
| 210E02 | $\Omega > 1$ Trip On | Yes | 13442 |
| 210E03 | $\Omega > 1$ Start Off | | 13443 |
| 210E04 | $\Omega > 1$ Trip off | | 13444 |
| 211E01 | $\Omega > 2$ Start On | | 13505 |
| 211E02 | $\Omega > 2$ Trip On | Yes | 13506 |
| 211E03 | $\Omega > 2$ Start Off | | 13507 |
| 211E04 | $\Omega > 2$ Trip off | | 13508 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------|-------|----------------------|
| 212E01 | $\Omega < 1$ Start On | | 13569 |
| 212E02 | $\Omega < 1$ Trip On | Yes | 13570 |
| 212E03 | $\Omega < 1$ Start Off | | 13571 |
| 212E04 | $\Omega < 1$ Trip off | | 13572 |
| 213E01 | $\Omega < 2$ Start On | | 13633 |
| 213E02 | $\Omega < 2$ Trip On | Yes | 13634 |
| 213E03 | $\Omega < 2$ Start Off | | 13635 |
| 213E04 | $\Omega < 2$ Trip off | | 13636 |
| 216E01 | $f < 4$ Start On | | 13825 |
| 216E02 | $f < 4$ Trip On | Yes | 13826 |
| 216E03 | $f < 4$ Start Off | | 13827 |
| 216E04 | $f < 4$ Trip off | | 13828 |
| 217E01 | $f < 5$ Start On | | 13889 |
| 217E02 | $f < 5$ Trip On | Yes | 13890 |
| 217E03 | $f < 5$ Start Off | | 13891 |
| 217E04 | $f < 5$ Trip off | | 13892 |
| 218E01 | $f < 6$ Start On | | 13953 |
| 218E02 | $f < 6$ Trip On | Yes | 13954 |
| 218E03 | $f < 6$ Start Off | | 13955 |
| 218E04 | $f < 6$ Trip off | | 13956 |
| 219E01 | $f < 7$ Start On | | 14017 |
| 219E02 | $f < 7$ Trip On | Yes | 14018 |
| 219E03 | $f < 7$ Start Off | | 14019 |
| 219E04 | $f < 7$ Trip off | | 14020 |
| 220E01 | $f < 8$ Start On | | 14081 |
| 220E02 | $f < 8$ Trip On | Yes | 14082 |
| 220E03 | $f < 8$ Start Off | | 14083 |
| 220E04 | $f < 8$ Trip off | | 14084 |
| 222E01 | $IN > 4$ Start On | | 14209 |
| 222E02 | $IN > 4$ Trip On | Yes | 14210 |
| 222E03 | $IN > 4$ Start Off | | 14211 |
| 222E04 | $IN > 4$ Trip off | | 14212 |
| 225E1 | Alarm 1 AI17 on | Yes | 14401 |
| 225E2 | Alarm 1 AI17 off | Yes | 14402 |
| 225E3 | Alarm 1 AI18 on | Yes | 14403 |
| 225E4 | Alarm 1 AI18 off | Yes | 14404 |
| 225E5 | Alarm 1 AI19 on | Yes | 14405 |
| 225E6 | Alarm 1 AI19 off | Yes | 14406 |
| 225E7 | Alarm 1 AI20 on | Yes | 14407 |
| 225E8 | Alarm 1 AI20 off | Yes | 14408 |
| 225E9 | Alarm 1 AI21 on | Yes | 14409 |
| 225E10 | Alarm 1 AI21 off | Yes | 14410 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------|-------|----------------------|
| 225E11 | Alarm 1 AI22 on | Yes | 14411 |
| 225E12 | Alarm 1 AI22 off | Yes | 14412 |
| 225E13 | Alarm 1 AI23 on | Yes | 14413 |
| 225E14 | Alarm 1 AI23 off | Yes | 14414 |
| 225E15 | Alarm 1 AI24 on | Yes | 14415 |
| 225E16 | Alarm 1 AI24 off | Yes | 14416 |
| 225E17 | Alarm 1 AI25 on | Yes | 14417 |
| 225E18 | Alarm 1 AI25 off | Yes | 14418 |
| 225E19 | Alarm 1 AI26 on | Yes | 14419 |
| 225E20 | Alarm 1 AI26 off | Yes | 14420 |
| 225E21 | Alarm 1 AI27 on | Yes | 14421 |
| 225E22 | Alarm 1 AI27 off | Yes | 14422 |
| 225E23 | Alarm 1 AI28 on | Yes | 14423 |
| 225E24 | Alarm 1 AI28 off | Yes | 14424 |
| 225E25 | Alarm 1 AI29 on | Yes | 14425 |
| 225E26 | Alarm 1 AI29 off | Yes | 14426 |
| 225E27 | Alarm 1 AI30 on | Yes | 14427 |
| 225E28 | Alarm 1 AI30 off | Yes | 14428 |
| 225E29 | Alarm 1 AI31 on | Yes | 14429 |
| 225E30 | Alarm 1 AI31 off | Yes | 14430 |
| 225E31 | Alarm 1 AI32 on | Yes | 14431 |
| 225E32 | Alarm 1 AI32 off | Yes | 14432 |
| 227E1 | Alarm 1 AI33 on | Yes | 14529 |
| 227E2 | Alarm 1 AI33 off | Yes | 14530 |
| 227E3 | Alarm 1 AI34 on | Yes | 14531 |
| 227E4 | Alarm 1 AI34 off | Yes | 14532 |
| 227E5 | Alarm 1 AI35 on | Yes | 14533 |
| 227E6 | Alarm 1 AI35 off | Yes | 14534 |
| 227E7 | Alarm 1 AI36 on | Yes | 14535 |
| 227E8 | Alarm 1 AI36 off | Yes | 14536 |
| 227E9 | Alarm 1 AI37 on | Yes | 14537 |
| 227E10 | Alarm 1 AI37 off | Yes | 14538 |
| 227E11 | Alarm 1 AI38 on | Yes | 14539 |
| 227E12 | Alarm 1 AI38 off | Yes | 14540 |
| 227E13 | Alarm 1 AI39 on | Yes | 14541 |
| 227E14 | Alarm 1 AI39 off | Yes | 14542 |
| 227E15 | Alarm 1 AI40 on | Yes | 14543 |
| 227E16 | Alarm 1 AI40 off | Yes | 14544 |
| 227E17 | Alarm 1 AI41 on | Yes | 14545 |
| 227E18 | Alarm 1 AI41 off | Yes | 14546 |
| 227E19 | Alarm 1 AI42 on | Yes | 14547 |
| 227E20 | Alarm 1 AI42 off | Yes | 14548 |
| 227E21 | Alarm 1 AI43 on | Yes | 14549 |
| 227E22 | Alarm 1 AI43 off | Yes | 14550 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------|-------|----------------------|
| 227E23 | Alarm 1 AI44 on | Yes | 14551 |
| 227E24 | Alarm 1 AI44 off | Yes | 14552 |
| 227E25 | Alarm 1 AI45 on | Yes | 14553 |
| 227E26 | Alarm 1 AI45 off | Yes | 14554 |
| 227E27 | Alarm 1 AI46 on | Yes | 14555 |
| 227E28 | Alarm 1 AI46 off | Yes | 14556 |
| 227E29 | Alarm 1 AI47 on | Yes | 14557 |
| 227E30 | Alarm 1 AI47 off | Yes | 14558 |
| 227E31 | Alarm 1 AI48 on | Yes | 14559 |
| 227E32 | Alarm 1 AI48 off | Yes | 14560 |
| 226E1 | Alarm 2 AI17 on | Yes | 14465 |
| 226E2 | Alarm 2 AI17 off | Yes | 14466 |
| 226E3 | Alarm 2 AI18 on | Yes | 14467 |
| 226E4 | Alarm 2 AI18 off | Yes | 14468 |
| 226E5 | Alarm 2 AI19 on | Yes | 14469 |
| 226E6 | Alarm 2 AI19 off | Yes | 14470 |
| 226E7 | Alarm 2 AI20 on | Yes | 14471 |
| 226E8 | Alarm 2 AI20 off | Yes | 14472 |
| 226E9 | Alarm 2 AI21 on | Yes | 14473 |
| 226E10 | Alarm 2 AI21 off | Yes | 14474 |
| 226E11 | Alarm 2 AI22 on | Yes | 14475 |
| 226E12 | Alarm 2 AI22 off | Yes | 14476 |
| 226E13 | Alarm 2 AI23 on | Yes | 14477 |
| 226E14 | Alarm 2 AI23 off | Yes | 14478 |
| 226E15 | Alarm 2 AI24 on | Yes | 14479 |
| 226E16 | Alarm 2 AI24 off | Yes | 14480 |
| 226E17 | Alarm 2 AI25 on | Yes | 14481 |
| 226E18 | Alarm 2 AI25 off | Yes | 14482 |
| 226E19 | Alarm 2 AI26 on | Yes | 14483 |
| 226E20 | Alarm 2 AI26 off | Yes | 14484 |
| 226E21 | Alarm 2 AI27 on | Yes | 14485 |
| 226E22 | Alarm 2 AI27 off | Yes | 14486 |
| 226E23 | Alarm 2 AI28 on | Yes | 14487 |
| 226E24 | Alarm 2 AI28 off | Yes | 14488 |
| 226E25 | Alarm 2 AI29 on | Yes | 14489 |
| 226E26 | Alarm 2 AI29 off | Yes | 14490 |
| 226E27 | Alarm 2 AI30 on | Yes | 14491 |
| 226E28 | Alarm 2 AI30 off | Yes | 14492 |
| 226E29 | Alarm 2 AI31 on | Yes | 14493 |
| 226E30 | Alarm 2 AI31 off | Yes | 14494 |
| 226E31 | Alarm 2 AI32 on | Yes | 14495 |
| 226E32 | Alarm 2 AI32 off | Yes | 14496 |
| 228E1 | Alarm 2 AI33 on | Yes | 14593 |
| 228E2 | Alarm 2 AI33 off | Yes | 14594 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------|-------|----------------------|
| 228E3 | Alarm 2 AI34 on | Yes | 14595 |
| 228E4 | Alarm 2 AI34 off | Yes | 14596 |
| 228E5 | Alarm 2 AI35 on | Yes | 14597 |
| 228E6 | Alarm 2 AI35 off | Yes | 14598 |
| 228E7 | Alarm 2 AI36 on | Yes | 14599 |
| 228E8 | Alarm 2 AI36 off | Yes | 14600 |
| 228E9 | Alarm 2 AI37 on | Yes | 14601 |
| 228E10 | Alarm 2 AI37 off | Yes | 14602 |
| 228E11 | Alarm 2 AI38 on | Yes | 14603 |
| 228E12 | Alarm 2 AI38 off | Yes | 14604 |
| 228E13 | Alarm 2 AI39 on | Yes | 14605 |
| 228E14 | Alarm 2 AI39 off | Yes | 14606 |
| 228E15 | Alarm 2 AI40 on | Yes | 14607 |
| 228E16 | Alarm 2 AI40 off | Yes | 14608 |
| 228E17 | Alarm 2 AI41 on | Yes | 14609 |
| 228E18 | Alarm 2 AI41 off | Yes | 14610 |
| 228E19 | Alarm 2 AI42 on | Yes | 14611 |
| 228E20 | Alarm 2 AI42 off | Yes | 14612 |
| 228E21 | Alarm 2 AI43 on | Yes | 14613 |
| 228E22 | Alarm 2 AI43 off | Yes | 14614 |
| 228E23 | Alarm 2 AI44 on | Yes | 14615 |
| 228E24 | Alarm 2 AI44 off | Yes | 14616 |
| 228E25 | Alarm 2 AI45 on | Yes | 14617 |
| 228E26 | Alarm 2 AI45 off | Yes | 14618 |
| 228E27 | Alarm 2 AI46 on | Yes | 14619 |
| 228E28 | Alarm 2 AI46 off | Yes | 14620 |
| 228E29 | Alarm 2 AI47 on | Yes | 14621 |
| 228E30 | Alarm 2 AI47 off | Yes | 14622 |
| 228E31 | Alarm 2 AI48 on | Yes | 14623 |
| 228E32 | Alarm 2 AI48 off | Yes | 14624 |
| 229E1 | Alarm 1 AI49 on | Yes | 14657 |
| 229E2 | Alarm 1 AI49 off | Yes | 14658 |
| 229E3 | Alarm 1 AI50 on | Yes | 14659 |
| 229E4 | Alarm 1 AI50 off | Yes | 14660 |
| 229E5 | Alarm 1 AI51 on | Yes | 14661 |
| 229E6 | Alarm 1 AI51 off | Yes | 14662 |
| 229E7 | Alarm 1 AI52 on | Yes | 14663 |
| 229E8 | Alarm 1 AI52 off | Yes | 14664 |
| 229E9 | Alarm 1 AI53 on | Yes | 14665 |
| 229E10 | Alarm 1 AI53 off | Yes | 14666 |
| 229E11 | Alarm 1 AI54 on | Yes | 14667 |
| 229E12 | Alarm 1 AI54 off | Yes | 14668 |
| 229E13 | Alarm 1 AI55 on | Yes | 14669 |
| 229E14 | Alarm 1 AI55 off | Yes | 14670 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------|-------|----------------------|
| 229E15 | Alarm 1 AI56 on | Yes | 14671 |
| 229E16 | Alarm 1 AI56 off | Yes | 14672 |
| 229E17 | Alarm 1 AI57 on | Yes | 14673 |
| 229E18 | Alarm 1 AI57 off | Yes | 14674 |
| 229E19 | Alarm 1 AI58 on | Yes | 14675 |
| 229E20 | Alarm 1 AI58 off | Yes | 14676 |
| 229E21 | Alarm 1 AI59 on | Yes | 14677 |
| 229E22 | Alarm 1 AI59 off | Yes | 14678 |
| 229E23 | Alarm 1 AI60 on | Yes | 14679 |
| 229E24 | Alarm 1 AI60 off | Yes | 14680 |
| 229E25 | Alarm 1 AI61 on | Yes | 14681 |
| 229E26 | Alarm 1 AI61 off | Yes | 14682 |
| 229E27 | Alarm 1 AI62 on | Yes | 14683 |
| 229E28 | Alarm 1 AI62 off | Yes | 14684 |
| 229E29 | Alarm 1 AI63 on | Yes | 14685 |
| 229E30 | Alarm 1 AI63 off | Yes | 14686 |
| 229E31 | Alarm 1 AI64 on | Yes | 14687 |
| 229E32 | Alarm 1 AI64 off | Yes | 14688 |
| 230E1 | Alarm 2 AI49 on | Yes | 14721 |
| 230E2 | Alarm 2 AI49 off | Yes | 14722 |
| 230E3 | Alarm 2 AI50 on | Yes | 14723 |
| 230E4 | Alarm 2 AI50 off | Yes | 14724 |
| 230E5 | Alarm 2 AI51 on | Yes | 14725 |
| 230E6 | Alarm 2 AI51 off | Yes | 14726 |
| 230E7 | Alarm 2 AI52 on | Yes | 14727 |
| 230E8 | Alarm 2 AI52 off | Yes | 14728 |
| 230E9 | Alarm 2 AI53 on | Yes | 14729 |
| 230E10 | Alarm 2 AI53 off | Yes | 14730 |
| 230E11 | Alarm 2 AI54 on | Yes | 14731 |
| 230E12 | Alarm 2 AI54 off | Yes | 14732 |
| 230E13 | Alarm 2 AI55 on | Yes | 14733 |
| 230E14 | Alarm 2 AI55 off | Yes | 14734 |
| 230E15 | Alarm 2 AI56 on | Yes | 14735 |
| 230E16 | Alarm 2 AI56 off | Yes | 14736 |
| 230E17 | Alarm 2 AI57 on | Yes | 14737 |
| 230E18 | Alarm 2 AI57 off | Yes | 14738 |
| 230E19 | Alarm 2 AI58 on | Yes | 14739 |
| 230E20 | Alarm 2 AI58 off | Yes | 14740 |
| 230E21 | Alarm 2 AI59 on | Yes | 14741 |
| 230E22 | Alarm 2 AI59 off | Yes | 14742 |
| 230E23 | Alarm 2 AI60 on | Yes | 14743 |
| 230E24 | Alarm 2 AI60 off | Yes | 14744 |
| 230E25 | Alarm 2 AI61 on | Yes | 14745 |
| 230E26 | Alarm 2 AI61 off | Yes | 14746 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------|-------|----------------------|
| 230E27 | Alarm 2 AI62 on | Yes | 14747 |
| 230E28 | Alarm 2 AI62 off | Yes | 14748 |
| 230E29 | Alarm 2 AI63 on | Yes | 14749 |
| 230E30 | Alarm 2 AI63 off | Yes | 14750 |
| 230E31 | Alarm 2 AI64 on | Yes | 14751 |
| 230E32 | Alarm 2 AI64 off | Yes | 14752 |
| 231E1 | DO1(B) on | | 14785 |
| 231E2 | DO1(B) off | | 14786 |
| 231E3 | DO2(B) on | | 14787 |
| 231E4 | DO2(B) off | | 14788 |
| 231E5 | DO3(B) on | | 14789 |
| 231E6 | DO3(B) off | | 14790 |
| 231E7 | DO4(B) on | | 14791 |
| 231E8 | DO4(B) off | | 14792 |
| 231E9 | DO1(C) on | | 14793 |
| 231E10 | DO1(C) off | | 14794 |
| 231E11 | DO2(C) on | | 14795 |
| 231E12 | DO2(C) off | | 14796 |
| 231E13 | DO3(C) on | | 14797 |
| 231E14 | DO3(C) off | | 14798 |
| 231E15 | DO4(C) on | | 14799 |
| 231E16 | DO4(C) off | | 14800 |
| 231E17 | DO5(C) on | | 14801 |
| 231E18 | DO5(C) off | | 14802 |
| 231E19 | DO1(D) on | | 14803 |
| 231E20 | DO1(D) off | | 14804 |
| 231E21 | DO2(D) on | | 14805 |
| 231E22 | DO2(D) off | | 14806 |
| 231E23 | DO3(D) on | | 14807 |
| 231E24 | DO3(D) off | | 14808 |
| 231E25 | DO4(D) on | | 14809 |
| 231E26 | DO4(D) off | | 14810 |
| 231E27 | DO5(D) on | | 14811 |
| 231E28 | DO5(D) off | | 14812 |
| 231E29 | DO1(E) on | | 14813 |
| 231E30 | DO1(E) off | | 14814 |
| 231E31 | DO2(E) on | | 14815 |
| 231E32 | DO2(E) off | | 14816 |
| 231E33 | DO3(E) on | | 14817 |
| 231E34 | DO3(E) off | | 14818 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------------------------|-------|----------------------|
| 231E35 | DO4(E) on | | 14819 |
| 231E36 | DO4(E) off | | 14820 |
| 231E37 | DO5(E) on | | 14821 |
| 231E38 | DO5(E) off | | 14822 |
| 231E39 | CB trip on | | 14823 |
| 231E40 | CB trip off | | 14824 |
| 231E41 | Protection active on | | 14825 |
| 231E42 | Protection active off | | 14826 |
| 231E43 | LED reset on | | 14827 |
| 231E44 | All latched DO & LED reset on | | 14828 |
| 231E45 | R-button short-time press on | | 14829 |
| 231E46 | R-button long-time press on | | 14830 |
| 231E47 | SampErr Alarm | | 14831 |
| 231E48 | GooseTxErr | | 14832 |
| 231E49 | GooseTxRestore | | 14833 |
| 231E50 | PRP Board Err | | 14834 |
| 231E51 | Mode Set Err | | 14835 |
| 231E52 | CPU board is missing | | 14836 |
| 231E53 | Slot A board is missing | | 14837 |
| 231E54 | Slot B board is missing | | 14838 |
| 231E55 | Slot C board is missing | | 14839 |
| 231E56 | Slot D board is missing | | 14840 |
| 231E57 | Slot E board is missing | | 14841 |
| 232E1 | Logic output 1(t) on | | 14849 |
| 232E2 | Logic output 1(t) off | | 14850 |
| 232E3 | Logic output 2(t) on | | 14851 |
| 232E4 | Logic output 2(t) off | | 14852 |
| 232E5 | Logic output 3(t) on | | 14853 |
| 232E6 | Logic output 3(t) off | | 14854 |
| 232E7 | Logic output 4(t) on | | 14855 |
| 232E8 | Logic output 4(t) off | | 14856 |
| 232E9 | Logic output 5(t) on | | 14857 |
| 232E10 | Logic output 5(t) off | | 14858 |
| 232E11 | Logic output 6(t) on | | 14859 |
| 232E12 | Logic output 6(t) off | | 14860 |
| 232E13 | Logic output 7(t) on | | 14861 |
| 232E14 | Logic output 7(t) off | | 14862 |
| 232E15 | Logic output 8(t) on | | 14863 |
| 232E16 | Logic output 8(t) off | | 14864 |
| 232E17 | Logic output 9(t) on | | 14865 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------|-------|----------------------|
| 232E18 | Logic output 9(t) off | | 14866 |
| 232E19 | Logic output 10(t) on | | 14867 |
| 232E20 | Logic output 10(t) off | | 14868 |
| 232E21 | Logic output 11(t) on | | 14869 |
| 232E22 | Logic output 11(t) off | | 14870 |
| 232E23 | Logic output 12(t) on | | 14871 |
| 232E24 | Logic output 12(t) off | | 14872 |
| 232E25 | Logic output 13(t) on | | 14873 |
| 232E26 | Logic output 13(t) off | | 14874 |
| 232E27 | Logic output 14(t) on | | 14875 |
| 232E28 | Logic output 14(t) off | | 14876 |
| 232E29 | Logic output 15(t) on | | 14877 |
| 232E30 | Logic output 15(t) off | | 14878 |
| 232E31 | Logic output 16(t) on | | 14879 |
| 232E32 | Logic output 16(t) off | | 14880 |
| 232E33 | Logic output 17(t) on | | 14881 |
| 232E34 | Logic output 17(t) off | | 14882 |
| 232E35 | Logic output 18(t) on | | 14883 |
| 232E36 | Logic output 18(t) off | | 14884 |
| 232E37 | Logic output 19(t) on | | 14885 |
| 232E38 | Logic output 19(t) off | | 14886 |
| 232E39 | Logic output 20(t) on | | 14887 |
| 232E40 | Logic output 20(t) off | | 14888 |
| 66E1 | CBF2 trip1 on | | 4225 |
| 66E2 | CBF2 trip2 on | | 4226 |
| 66E3 | CBF2 trip1 off | | 4227 |
| 66E4 | CBF2 trip2 off | | 4228 |
| 67E2 | Latched CTS1 alarm on | Yes | 4290 |
| 67E4 | Latched CTS1 alarm off | | 4292 |
| 67E3 | Fast CTS1 alarm on | Yes | 4291 |
| 67E5 | Fast CTS1 alarm off | | 4293 |
| 68E2 | VT supervisor on | Yes | 4354 |
| 68E4 | VT supervisor off | | 4356 |
| 68E3 | Instantaneous VTS on | | 4355 |
| 68E5 | Instantaneous VTS off | | 4357 |
| 68E15 | VTS Inhibit On | | 4367 |
| 68E16 | VTS Inhibit Off | | 4368 |
| 69E1 | VI1 on | | 4417 |
| 69E2 | VI1 off | | 4418 |
| 69E3 | VI2 on | | 4419 |
| 69E4 | VI2 off | | 4420 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------|-------|----------------------|
| 69E5 | VI3 on | | 4421 |
| 69E6 | VI3 off | | 4422 |
| 69E7 | VI4 on | | 4423 |
| 69E8 | VI4 off | | 4424 |
| 69E9 | VI5 on | | 4425 |
| 69E10 | VI5 off | | 4426 |
| 69E11 | VI6 on | | 4427 |
| 69E12 | VI6 off | | 4428 |
| 69E13 | VI7 on | | 4429 |
| 69E14 | VI7 off | | 4430 |
| 69E15 | VI8 on | | 4431 |
| 69E16 | VI8 off | | 4432 |
| 69E17 | VO1 on | | 4433 |
| 69E18 | VO1 off | | 4434 |
| 69E19 | VO2 on | | 4435 |
| 69E20 | VO2 off | | 4436 |
| 69E21 | VO3 on | | 4437 |
| 69E22 | VO3 off | | 4438 |
| 69E23 | VO4 on | | 4439 |
| 69E24 | VO4 off | | 4440 |
| 69E25 | VO5 on | | 4441 |
| 69E26 | VO5 off | | 4442 |
| 69E27 | VO6 on | | 4443 |
| 69E28 | VO6 off | | 4444 |
| 69E29 | VO7 on | | 4445 |
| 69E30 | VO7 off | | 4446 |
| 69E31 | VO8 on | | 4447 |
| 69E32 | VO8 off | | 4448 |
| 69E33 | VO9 on | | 4449 |
| 69E34 | VO9 off | | 4450 |
| 69E35 | VO10 on | | 4451 |
| 69E36 | VO10 off | | 4452 |
| 69E37 | VO11 on | | 4453 |
| 69E38 | VO11 off | | 4454 |
| 69E39 | VO12 on | | 4455 |
| 69E40 | VO12 off | | 4456 |
| 69E41 | VO13 on | | 4457 |
| 69E42 | VO13 off | | 4458 |
| 69E43 | VO14 on | | 4459 |
| 69E44 | VO14 off | | 4460 |
| 69E45 | VO15 on | | 4461 |
| 69E46 | VO15 off | | 4462 |
| 69E47 | VO16 on | | 4463 |
| 69E48 | VO16 off | | 4464 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------------------------|-------|----------------------|
| 69E49 | VO17 on | | 4465 |
| 69E50 | VO17 off | | 4466 |
| 69E51 | VO18 on | | 4467 |
| 69E52 | VO18 off | | 4468 |
| 69E53 | VO19 on | | 4469 |
| 69E54 | VO19 off | | 4470 |
| 69E55 | VO20 on | | 4471 |
| 69E56 | VO20 off | | 4472 |
| 69E57 | Receive simulated GOOSE On | | 4473 |
| 69E58 | Receive simulated GOOSE Off | | 4474 |
| 69E59 | IEC 61850: cid file mismatch | | 4475 |
| 69E60 | IEC 61850: cid file missing | | 4476 |
| 70E1 | Remote | | 4481 |
| 70E2 | Local | | 4482 |
| 70E3 | Password open Panel | | 4483 |
| 70E4 | Password close Panel | | 4484 |
| 70E5 | Password open PC serial port | | 4485 |
| 70E6 | Password close PC serial port | | 4486 |
| 70E7 | Setting change Panel | Yes | 4487 |
| 70E8 | Setting change PC serial port | Yes | 4488 |
| 70E9 | Firmware update successful | | 4489 |
| 70E10 | Comm. active REMOTE | Yes | 4490 |
| 70E11 | Comm. inactive REMOTE | Yes | 4491 |
| 70E12 | Comm. active EXTENSION | | 4492 |
| 70E13 | Comm. inactive EXTENSION | | 4493 |
| 70E14 | Comm. active slot M | | 4494 |
| 70E15 | Comm. inactive slot M | | 4495 |
| 70E16 | Comm. active slot N | | 4496 |
| 70E17 | Comm. inactive slot N | | 4497 |
| 70E18 | Comm. active slot L | | 4498 |
| 70E19 | Comm. inactive slot L | | 4499 |
| 70E20 | Comm. active COM4 | | 4500 |
| 70E21 | Comm. inactive COM4 | | 4501 |
| 70E22 | Comm. active COM5 | | 4502 |
| 70E23 | Comm. inactive COM5 | | 4503 |
| 70E24 | Comm. active COM6 | | 4504 |
| 70E25 | Comm. inactive COM6 | | 4505 |
| 70E26 | Firmware update failed | | 4506 |
| 70E27 | Fault recorder cleared | | 4507 |
| 71E1 | Object1 open | | 4545 |
| 71E2 | Object1 closed | | 4546 |
| 71E3 | Object1 jammed | | 4547 |
| 71E4 | Object1 running | | 4548 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 71E5 | Object1 open output on | | 4549 |
| 71E6 | Object1 open output off | | 4550 |
| 71E7 | Object1 close output on | | 4551 |
| 71E8 | Object1 close output off | | 4552 |
| 71E9 | Object1 interlocked | | 4553 |
| 71E10 | Object1 open timeout | | 4554 |
| 71E11 | Object1 close timeout | | 4555 |
| 71E12 | Object1 ready timeout | | 4556 |
| 71E13 | Object1 final trip | | 4557 |
| 71E14 | Object1 final trip off | | 4558 |
| 71E15 | Object1 open blocking on | | 4559 |
| 71E16 | Object1 open blocking off | | 4560 |
| 71E17 | Object1 close blocking on | | 4561 |
| 71E18 | Object1 close blocking off | | 4562 |
| 71E19 | Object1 inactivity alarm on | | 4563 |
| 71E20 | Object1 inactivity alarm off | | 4564 |
| 71E21 | Object1 control fail | | 4565 |
| 71E22 | Object1 invalid position timeout | | 4566 |
| 72E1 | Object2 open | | 4609 |
| 72E2 | Object2 closed | | 4610 |
| 72E3 | Object2 jammed | | 4611 |
| 72E4 | Object2 running | | 4612 |
| 72E5 | Object2 open output on | | 4613 |
| 72E6 | Object2 open output off | | 4614 |
| 72E7 | Object2 close output on | | 4615 |
| 72E8 | Object2 close output off | | 4616 |
| 72E9 | Object2 interlocked | | 4617 |
| 72E10 | Object2 open timeout | | 4618 |
| 72E11 | Object2 close timeout | | 4619 |
| 72E12 | Object2 ready timeout | | 4620 |
| 72E13 | Object2 final trip | | 4621 |
| 72E14 | Object2 final trip off | | 4622 |
| 72E15 | Object2 open blocking on | | 4623 |
| 72E16 | Object2 open blocking off | | 4624 |
| 72E17 | Object2 close blocking on | | 4625 |
| 72E18 | Object2 close blocking off | | 4626 |
| 72E19 | Object2 inactivity alarm on | | 4627 |
| 72E20 | Object2 inactivity alarm off | | 4628 |
| 72E21 | Object2 control fail | | 4629 |
| 72E22 | Object2 invalid position timeout | | 4630 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 73E1 | Object3 open | | 4673 |
| 73E2 | Object3 closed | | 4674 |
| 73E3 | Object3 jammed | | 4675 |
| 73E4 | Object3 running | | 4676 |
| 73E5 | Object3 open output on | | 4677 |
| 73E6 | Object3 open output off | | 4678 |
| 73E7 | Object3 close output on | | 4679 |
| 73E8 | Object3 close output off | | 4680 |
| 73E9 | Object3 interlocked | | 4681 |
| 73E10 | Object3 open timeout | | 4682 |
| 73E11 | Object3 close timeout | | 4683 |
| 73E12 | Object3 ready timeout | | 4684 |
| 73E13 | Object3 final trip | | 4685 |
| 73E14 | Object3 final trip off | | 4686 |
| 73E15 | Object3 open blocking on | | 4687 |
| 73E16 | Object3 open blocking off | | 4688 |
| 73E17 | Object3 close blocking on | | 4689 |
| 73E18 | Object3 close blocking off | | 4690 |
| 73E19 | Object3 inactivity alarm on | | 4691 |
| 73E20 | Object3 inactivity alarm off | | 4692 |
| 73E21 | Object3 control fail | | 4693 |
| 73E22 | Object3 invalid position timeout | | 4694 |
| 74E1 | Object4 open | | 4737 |
| 74E2 | Object4 closed | | 4738 |
| 74E3 | Object4 jammed | | 4739 |
| 74E4 | Object4 running | | 4740 |
| 74E5 | Object4 open output on | | 4741 |
| 74E6 | Object4 open output off | | 4742 |
| 74E7 | Object4 close output on | | 4743 |
| 74E8 | Object4 close output off | | 4744 |
| 74E9 | Object4 interlocked | | 4745 |
| 74E10 | Object4 open timeout | | 4746 |
| 74E11 | Object4 close timeout | | 4747 |
| 74E12 | Object4 ready timeout | | 4748 |
| 74E13 | Object4 final trip | | 4749 |
| 74E14 | Object4 final trip off | | 4750 |
| 74E15 | Object4 open blocking on | | 4751 |
| 74E16 | Object4 open blocking off | | 4752 |
| 74E17 | Object4 close blocking on | | 4753 |
| 74E18 | Object4 close blocking off | | 4754 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 74E19 | Object4 inactivity alarm on | | 4755 |
| 74E20 | Object4 inactivity alarm off | | 4756 |
| 74E21 | Object4 control fail | | 4757 |
| 74E22 | Object4 invalid position timeout | | 4758 |
| 75E1 | Object5 open | | 4801 |
| 75E2 | Object5 closed | | 4802 |
| 75E3 | Object5 jammed | | 4803 |
| 75E4 | Object5 running | | 4804 |
| 75E5 | Object5 open output on | | 4805 |
| 75E6 | Object5 open output off | | 4806 |
| 75E7 | Object5 close output on | | 4807 |
| 75E8 | Object5 close output off | | 4808 |
| 75E9 | Object5 interlocked | | 4809 |
| 75E10 | Object5 open timeout | | 4810 |
| 75E11 | Object5 close timeout | | 4811 |
| 75E12 | Object5 ready timeout | | 4812 |
| 75E13 | Object5 final trip | | 4813 |
| 75E14 | Object5 final trip off | | 4814 |
| 75E15 | Object5 open blocking on | | 4815 |
| 75E16 | Object5 open blocking off | | 4816 |
| 75E17 | Object5 close blocking on | | 4817 |
| 75E18 | Object5 close blocking off | | 4818 |
| 75E19 | Object5 inactivity alarm on | | 4819 |
| 75E20 | Object5 inactivity alarm off | | 4820 |
| 75E21 | Object5 control fail | | 4821 |
| 75E22 | Object5 invalid position timeout | | 4822 |
| 76E1 | Object6 open | | 4865 |
| 76E2 | Object6 closed | | 4866 |
| 76E3 | Object6 jammed | | 4867 |
| 76E4 | Object6 running | | 4868 |
| 76E5 | Object6 open output on | | 4869 |
| 76E6 | Object6 open output off | | 4870 |
| 76E7 | Object6 close output on | | 4871 |
| 76E8 | Object6 close output off | | 4872 |
| 76E9 | Object6 interlocked | | 4873 |
| 76E10 | Object6 open timeout | | 4874 |
| 76E11 | Object6 close timeout | | 4875 |
| 76E12 | Object6 ready timeout | | 4876 |
| 76E13 | Object6 final trip | | 4877 |
| 76E14 | Object6 final trip off | | 4878 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 76E15 | Object6 open blocking on | | 4879 |
| 76E16 | Object6 open blocking off | | 4880 |
| 76E17 | Object6 close blocking on | | 4881 |
| 76E18 | Object6 close blocking off | | 4882 |
| 76E19 | Object6 inactivity alarm on | | 4883 |
| 76E20 | Object6 inactivity alarm off | | 4884 |
| 76E21 | Object6 control fail | | 4885 |
| 76E22 | Object6 invalid position timeout | | 4886 |
| 77E1 | Object7 open | | 4929 |
| 77E2 | Object7 closed | | 4930 |
| 77E3 | Object7 jammed | | 4931 |
| 77E4 | Object7 running | | 4932 |
| 77E22 | Object7 invalid position timeout | | 4950 |
| 78E1 | Object8 open | | 4993 |
| 78E2 | Object8 closed | | 4994 |
| 78E3 | Object8 jammed | | 4995 |
| 78E4 | Object8 running | | 4996 |
| 78E22 | Object8 invalid position timeout | | 5014 |
| 81E1 | External DI1 on | Yes | 5185 |
| 81E2 | External DI1 off | Yes | 5186 |
| 81E3 | External DI2 on | Yes | 5187 |
| 81E4 | External DI2 off | Yes | 5188 |
| 81E5 | External DI3 on | Yes | 5189 |
| 81E6 | External DI3 off | Yes | 5190 |
| 81E7 | External DI4 on | Yes | 5191 |
| 81E8 | External DI4 off | Yes | 5192 |
| 81E9 | External DI5 on | Yes | 5193 |
| 81E10 | External DI5 off | Yes | 5194 |
| 81E11 | External DI6 on | Yes | 5195 |
| 81E12 | External DI6 off | Yes | 5196 |
| 81E13 | External DI7 on | Yes | 5197 |
| 81E14 | External DI7 off | Yes | 5198 |
| 81E15 | External DI8 on | Yes | 5199 |
| 81E16 | External DI8 off | Yes | 5200 |
| 81E17 | External DI9 on | Yes | 5201 |
| 81E18 | External DI9 off | Yes | 5202 |
| 81E19 | External DI10 on | Yes | 5203 |
| 81E20 | External DI10 off | Yes | 5204 |
| 81E21 | External DI11 on | Yes | 5205 |
| 81E22 | External DI11 off | Yes | 5206 |
| 81E23 | External DI12 on | Yes | 5207 |
| 81E24 | External DI12 off | Yes | 5208 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------------|-------|----------------------|
| 81E25 | External DI13 on | Yes | 5209 |
| 81E26 | External DI13 off | Yes | 5210 |
| 81E27 | External DI14 on | Yes | 5211 |
| 81E28 | External DI14 off | Yes | 5212 |
| 81E29 | External DI15 on | Yes | 5213 |
| 81E30 | External DI15 off | Yes | 5214 |
| 81E31 | External DI16 on | Yes | 5215 |
| 81E32 | External DI16 off | Yes | 5216 |
| 81E33 | External DI17 on | Yes | 5217 |
| 81E34 | External DI17 off | Yes | 5218 |
| 81E35 | External DI18 on | Yes | 5219 |
| 81E36 | External DI18 off | Yes | 5220 |
| 82E1 | Alarm 1 AI1 on | Yes | 5249 |
| 82E2 | Alarm 1 AI1 off | Yes | 5250 |
| 82E3 | Alarm 1 AI2 on | Yes | 5251 |
| 82E4 | Alarm 1 AI2 off | Yes | 5252 |
| 82E5 | Alarm 1 AI3 on | Yes | 5253 |
| 82E6 | Alarm 1 AI3 off | Yes | 5254 |
| 82E7 | Alarm 1 AI4 on | Yes | 5255 |
| 82E8 | Alarm 1 AI4 off | Yes | 5256 |
| 82E9 | Alarm 1 AI5 on | Yes | 5257 |
| 82E10 | Alarm 1 AI5 off | Yes | 5258 |
| 82E11 | Alarm 1 AI6 on | Yes | 5259 |
| 82E12 | Alarm 1 AI6 off | Yes | 5260 |
| 82E13 | Alarm 1 AI7 on | Yes | 5261 |
| 82E14 | Alarm 1 AI7 off | Yes | 5262 |
| 82E15 | Alarm 1 AI8 on | Yes | 5263 |
| 82E16 | Alarm 1 AI8 off | Yes | 5264 |
| 82E17 | Alarm 1 AI9 on | Yes | 5265 |
| 82E18 | Alarm 1 AI9 off | Yes | 5266 |
| 82E19 | Alarm 1 AI10 on | Yes | 5267 |
| 82E20 | Alarm 1 AI10 off | Yes | 5268 |
| 82E21 | Alarm 1 AI11 on | Yes | 5269 |
| 82E22 | Alarm 1 AI11 off | Yes | 5270 |
| 82E23 | Alarm 1 AI12 on | Yes | 5271 |
| 82E24 | Alarm 1 AI12 off | Yes | 5272 |
| 82E25 | Alarm 1 AI13 on | Yes | 5273 |
| 82E26 | Alarm 1 AI13 off | Yes | 5274 |
| 82E27 | Alarm 1 AI14 on | Yes | 5275 |
| 82E28 | Alarm 1 AI14 off | Yes | 5276 |
| 82E29 | Alarm 1 AI15 on | Yes | 5277 |
| 82E30 | Alarm 1 AI15 off | Yes | 5278 |
| 82E31 | Alarm 1 AI16 on | Yes | 5279 |
| 82E32 | Alarm 1 AI16 off | Yes | 5280 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------|-------|----------------------|
| 83E1 | Alarm 2 AI1 on | Yes | 5313 |
| 83E2 | Alarm 2 AI1 off | Yes | 5314 |
| 83E3 | Alarm 2 AI2 on | Yes | 5315 |
| 83E4 | Alarm 2 AI2 off | Yes | 5316 |
| 83E5 | Alarm 2 AI3 on | Yes | 5317 |
| 83E6 | Alarm 2 AI3 off | Yes | 5318 |
| 83E7 | Alarm 2 AI4 on | Yes | 5319 |
| 83E8 | Alarm 2 AI4 off | Yes | 5320 |
| 83E9 | Alarm 2 AI5 on | Yes | 5321 |
| 83E10 | Alarm 2 AI5 off | Yes | 5322 |
| 83E11 | Alarm 2 AI6 on | Yes | 5323 |
| 83E12 | Alarm 2 AI6 off | Yes | 5324 |
| 83E13 | Alarm 2 AI7 on | Yes | 5325 |
| 83E14 | Alarm 2 AI7 off | Yes | 5326 |
| 83E15 | Alarm 2 AI8 on | Yes | 5327 |
| 83E16 | Alarm 2 AI8 off | Yes | 5328 |
| 83E17 | Alarm 2 AI9 on | Yes | 5329 |
| 83E18 | Alarm 2 AI9 off | Yes | 5330 |
| 83E19 | Alarm 2 AI10 on | Yes | 5331 |
| 83E20 | Alarm 2 AI10 off | Yes | 5332 |
| 83E21 | Alarm 2 AI11 on | Yes | 5333 |
| 83E22 | Alarm 2 AI11 off | Yes | 5334 |
| 83E23 | Alarm 2 AI12 on | Yes | 5335 |
| 83E24 | Alarm 2 AI12 off | Yes | 5336 |
| 83E25 | Alarm 2 AI13 on | Yes | 5337 |
| 83E26 | Alarm 2 AI13 off | Yes | 5338 |
| 83E27 | Alarm 2 AI14 on | Yes | 5339 |
| 83E28 | Alarm 2 AI14 off | Yes | 5340 |
| 83E29 | Alarm 2 AI15 on | Yes | 5341 |
| 83E30 | Alarm 2 AI15 off | Yes | 5342 |
| 83E31 | Alarm 2 AI16 on | Yes | 5343 |
| 83E32 | Alarm 2 AI16 off | Yes | 5344 |
| 83E33 | Ext AI short circuit on | Yes | 5345 |
| 83E34 | Ext AI short circuit off | Yes | 5346 |
| 83E35 | Ext AI open circuit on | Yes | 5347 |
| 83E36 | Ext AI open circuit off | Yes | 5348 |
| 87E1 | Sync check 1 request | | 5569 |
| 87E2 | Sync check 1 request off | | 5570 |
| 87E3 | Sync check 1 OK on | | 5571 |
| 87E4 | Sync check 1 OK off | | 5572 |
| 87E5 | Sync check 1 bypass | | 5573 |
| 87E6 | Sync check 1 bypass off | | 5574 |
| 87E7 | Sync check 1 Failed | | 5575 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 87E8 | Sync check 1 Fail off | | 5576 |
| 89E1 | Set group 1 on | | 5697 |
| 89E2 | Set group 1 off | | 5698 |
| 89E3 | Set group 2 on | | 5699 |
| 89E4 | Set group 2 off | | 5700 |
| 89E5 | Set group 3 on | | 5701 |
| 89E6 | Set group 3 off | | 5702 |
| 89E7 | Set group 4 on | | 5703 |
| 89E8 | Set group 4 off | | 5704 |
| 90E1 | DI21 on | | 5761 |
| 90E2 | DI21 off | | 5762 |
| 90E3 | DI22 on | | 5763 |
| 90E4 | DI22 off | | 5764 |
| 90E5 | DI23 on | | 5765 |
| 90E6 | DI23 off | | 5766 |
| 90E7 | DI24 on | | 5767 |
| 90E8 | DI24 off | | 5768 |
| 90E9 | DI25 on | | 5769 |
| 90E10 | DI25 off | | 5770 |
| 90E11 | DI26 on | | 5771 |
| 90E12 | DI26 off | | 5772 |
| 90E13 | DI27 on | | 5773 |
| 90E14 | DI27 off | | 5774 |
| 90E15 | DI28 on | | 5775 |
| 90E16 | DI28 off | | 5776 |
| 90E17 | DI29 on | | 5777 |
| 90E18 | DI29 off | | 5778 |
| 90E19 | DI30 on | | 5779 |
| 90E20 | DI30 off | | 5780 |
| 90E21 | DI31 on | | 5781 |
| 90E22 | DI31 off | | 5782 |
| 90E23 | DI32 on | | 5783 |
| 90E24 | DI32 off | | 5784 |
| 90E25 | DI33 on | | 5785 |
| 90E26 | DI33 off | | 5786 |
| 90E27 | DI34 on | | 5787 |
| 90E28 | DI34 off | | 5788 |
| 90E29 | DI35 on | | 5789 |
| 90E30 | DI35 off | | 5790 |
| 90E31 | DI36 on | | 5791 |
| 90E32 | DI36 off | | 5792 |
| 90E33 | DI37 on | | 5793 |
| 90E34 | DI37 off | | 5794 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------|-------|----------------------|
| 90E35 | DI38 on | | 5795 |
| 90E36 | DI38 off | | 5796 |
| 90E37 | DI39 on | | 5797 |
| 90E38 | DI39 off | | 5798 |
| 90E39 | DI40 on | | 5799 |
| 90E40 | DI40 off | | 5800 |
| 96E01 | Uc> Start On | | 6145 |
| 96E02 | Uc> Trip On | Yes | 6146 |
| 96E03 | Uc> Start Off | | 6147 |
| 96E04 | Uc> Trip off | | 6148 |
| 107E01 | IN int> Start On | | 6849 |
| 107E02 | IN int> Trip On | Yes | 6850 |
| 107E03 | IN int> Start Off | | 6851 |
| 107E04 | IN int> Trip off | | 6852 |
| 116E01 | VN>3 Start On | | 7425 |
| 116E02 | VN>3 Trip On | Yes | 7426 |
| 116E03 | VN>3 Start Off | | 7427 |
| 116E04 | VN>3 Trip off | | 7428 |
| 118E01 | f<3 Start On | | 7553 |
| 118E02 | f<3 Trip On | Yes | 7554 |
| 118E03 | f<3 Start Off | | 7555 |
| 118E04 | f<3 Trip off | | 7556 |
| 121E01 | V2>1 Start On | | 7745 |
| 121E02 | V2>1 Trip On | Yes | 7746 |
| 121E03 | V2>1 Start Off | | 7747 |
| 121E04 | V2>1 Trip off | | 7748 |
| 122E01 | V2>2 Start On | | 7809 |
| 122E02 | V2>2 Trip On | Yes | 7810 |
| 122E03 | V2>2 Start Off | | 7811 |
| 122E04 | V2>2 Trip off | | 7812 |
| 125E1 | Arc stage 1 act on | Yes | 8001 |
| 125E2 | Arc stage 1 act off | | 8002 |
| 126E1 | Arc stage 2 act on | Yes | 8065 |
| 126E2 | Arc stage 2 act off | | 8066 |
| 127E1 | Arc stage 3 act on | Yes | 8129 |
| 127E2 | Arc stage 3 act off | | 8130 |
| 128E1 | Arc stage 4 act on | Yes | 8193 |
| 128E2 | Arc stage 4 act off | | 8194 |
| 129E1 | Arc stage 5 act on | Yes | 8257 |
| 129E2 | Arc stage 5 act off | | 8258 |
| 130E1 | Arc stage 6 act on | Yes | 8321 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 130E2 | Arc stage 6 act off | | 8322 |
| 131E1 | Arc stage 7 act on | Yes | 8385 |
| 131E2 | Arc stage 7 act off | | 8386 |
| 132E1 | Arc stage 8 act on | Yes | 8449 |
| 132E2 | Arc stage 8 act off | | 8450 |
| 133E1 | Local Arc sensor 1 on | Yes | 8513 |
| 133E11 | Local Arc sensor 1 off | Yes | 8523 |
| 133E2 | Local Arc sensor 2 on | Yes | 8514 |
| 133E12 | Local Arc sensor 2 off | Yes | 8524 |
| 133E3 | Local Arc sensor 3 on | Yes | 8515 |
| 133E13 | Local Arc sensor 3 off | Yes | 8525 |
| 133E4 | Local Arc sensor 4 on | Yes | 8516 |
| 133E14 | Local Arc sensor 4 off | Yes | 8526 |
| 133E5 | Local Arc sensor 5 on | Yes | 8517 |
| 133E15 | Local Arc sensor 5 off | Yes | 8527 |
| 133E6 | Local Arc sensor 6 on | Yes | 8518 |
| 133E16 | Local Arc sensor 6 off | Yes | 8528 |
| 133E31 | Arc I>int. on | | 8543 |
| 133E33 | Arc I>int. off | | 8545 |
| 133E32 | Arc IN>int. on | | 8544 |
| 133E34 | Arc IN>int. off | | 8546 |
| 134E1 | Arc sensor 1 not conn. error | | 8577 |
| 134E11 | Arc sensor 1 not conn. err off | | 8587 |
| 134E2 | Arc sensor 2 not conn. error | | 8578 |
| 134E12 | Arc sensor 2 not conn. err off | | 8588 |
| 134E3 | Arc sensor 3 not conn. error | | 8579 |
| 134E13 | Arc sensor 3 not conn. err off | | 8589 |
| 134E4 | Arc sensor 4 not conn. error | | 8580 |
| 134E14 | Arc sensor 4 not conn. err off | | 8590 |
| 134E5 | Arc sensor 5 not conn. error | | 8581 |
| 134E15 | Arc sensor 5 not conn. err off | | 8591 |
| 134E6 | Arc sensor 6 not conn. error | | 8582 |
| 134E16 | Arc sensor 6 not conn. err off | | 8592 |
| 134E21 | Arc sensor 1 short circuit error | | 8597 |
| 134E31 | Arc sensor 1 short circ. err off | | 8607 |
| 134E22 | Arc sensor 2 short circuit error | | 8598 |
| 134E32 | Arc sensor 2 short circ. err off | | 8608 |
| 134E23 | Arc sensor 3 short circuit error | | 8599 |
| 134E33 | Arc sensor 3 short circ. err off | | 8609 |
| 134E24 | Arc sensor 4 short circuit error | | 8600 |
| 134E34 | Arc sensor 4 short circ. err off | | 8610 |
| 134E25 | Arc sensor 5 short circuit error | | 8601 |
| 134E35 | Arc sensor 5 short circ. err off | | 8611 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 134E26 | Arc sensor 6 short circuit error | | 8602 |
| 134E36 | Arc sensor 6 short circ. err off | | 8612 |
| 134E41 | Arc sensor 1 daylight error | | 8617 |
| 134E51 | Arc sensor 1 daylight error off | | 8627 |
| 134E42 | Arc sensor 2 daylight error | | 8618 |
| 134E52 | Arc sensor 2 daylight error off | | 8628 |
| 134E43 | Arc sensor 3 daylight error | | 8619 |
| 134E53 | Arc sensor 3 daylight error off | | 8629 |
| 134E44 | Arc sensor 4 daylight error | | 8620 |
| 134E54 | Arc sensor 4 daylight error off | | 8630 |
| 134E45 | Arc sensor 5 daylight error | | 8621 |
| 134E55 | Arc sensor 5 daylight error off | | 8631 |
| 134E46 | Arc sensor 6 daylight error | | 8622 |
| 134E56 | Arc sensor 6 daylight error off | | 8632 |
| 135E41 | Arc sensor 1 not inst. error | | 8681 |
| 135E51 | Arc sensor 1 not inst. error off | | 8691 |
| 135E42 | Arc sensor 2 not inst. error | | 8682 |
| 135E52 | Arc sensor 2 not inst. error off | | 8692 |
| 135E43 | Arc sensor 3 not inst. error | | 8683 |
| 135E53 | Arc sensor 3 not inst. error off | | 8693 |
| 135E44 | Arc sensor 4 not inst. error | | 8684 |
| 135E54 | Arc sensor 4 not inst. error off | | 8694 |
| 135E45 | Arc sensor 5 not inst. error | | 8685 |
| 135E55 | Arc sensor 5 not inst. error off | | 8695 |
| 135E46 | Arc sensor 6 not inst. error | | 8686 |
| 135E56 | Arc sensor 6 not inst. error off | | 8696 |
| 138E1 | 5. Harm Start On | | 8833 |
| 138E2 | 5. Harm Trip On | Yes | 8834 |
| 138E3 | 5. Harm Start Off | | 8835 |
| 138E4 | 5. Harm Trip Off | | 8836 |
| 139E1 | Ethernet port1 link up | | 8897 |
| 139E2 | Ethernet port1 link down | | 8898 |
| 139E3 | Ethernet port2 link up | | 8899 |
| 139E4 | Ethernet port2 link down | | 8900 |
| 139E5 | Ethernet re-init | | 8901 |
| 139E10 | RSTP Bridge not root | | 8906 |
| 139E11 | RSTP bridge root | | 8907 |
| 139E20 | RSTP Port1 role disabled | | 8916 |
| 139E21 | RSTP Port1 role designated | | 8917 |
| 139E22 | RSTP Port1 role root | | 8918 |
| 139E23 | RSTP Port1 role alternate | | 8919 |
| 139E24 | RSTP Port1 role backup | | 8920 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------|-------|----------------------|
| 139E30 | RSTP Port1 state link down | | 8926 |
| 139E31 | RSTP Port1 state blocked | | 8927 |
| 139E32 | RSTP Port1 state forwarding | | 8928 |
| 139E33 | RSTP Port1 state learning | | 8929 |
| 139E34 | RSTP Port1 State ForLearn | | 8930 |
| 139E35 | RSTP Port1 state Unknown | | 8931 |
| 139E40 | RSTP Port2 role disabled | | 8936 |
| 139E41 | RSTP Port2 role designated | | 8937 |
| 139E42 | RSTP Port2 role root | | 8938 |
| 139E43 | RSTP Port2 role alternate | | 8939 |
| 139E44 | RSTP Port2 role backup | | 8940 |
| 139E50 | RSTP Port2 state link down | | 8946 |
| 139E51 | RSTP Port2 state blocked | | 8947 |
| 139E52 | RSTP Port2 state forwarding | | 8948 |
| 139E53 | RSTP Port2 state learning | | 8949 |
| 139E54 | RSTP Port2 State ForLearn | | 8950 |
| 139E55 | RSTP Port2 state unknown | | 8951 |
| 139E58 | PRP Port1 state link down | | 8954 |
| 139E59 | PRP Port1 state conn. OK | | 8955 |
| 139E60 | PRP Port1 state wrong LAN | | 8956 |
| 139E61 | PRP Port2 state link down | | 8957 |
| 139E62 | PRP Port2 state conn. OK | | 8958 |
| 139E63 | PRP Port2 state wrong LAN | | 8959 |
| 144E1 | NI1 Change | | 9217 |
| 144E2 | NI2 Change | | 9218 |
| 144E3 | NI3 Change | | 9219 |
| 144E4 | NI4 Change | | 9220 |
| 144E5 | NI5 Change | | 9221 |
| 144E6 | NI6 Change | | 9222 |
| 144E7 | NI7 Change | | 9223 |
| 144E8 | NI8 Change | | 9224 |
| 144E9 | NI9 Change | | 9225 |
| 144E10 | NI10 Change | | 9226 |
| 144E11 | NI11 Change | | 9227 |
| 144E12 | NI12 Change | | 9228 |
| 144E13 | NI13 Change | | 9229 |
| 144E14 | NI14 Change | | 9230 |
| 144E15 | NI15 Change | | 9231 |
| 144E16 | NI16 Change | | 9232 |
| 144E17 | NI17 Change | | 9233 |
| 144E18 | NI18 Change | | 9234 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------|-------|----------------------|
| 144E19 | NI19 Change | | 9235 |
| 144E20 | NI20 Change | | 9236 |
| 144E21 | NI21 Change | | 9237 |
| 144E22 | NI22 Change | | 9238 |
| 144E23 | NI23 Change | | 9239 |
| 144E24 | NI24 Change | | 9240 |
| 144E25 | NI25 Change | | 9241 |
| 144E26 | NI26 Change | | 9242 |
| 144E27 | NI27 Change | | 9243 |
| 144E28 | NI28 Change | | 9244 |
| 144E29 | NI29 Change | | 9245 |
| 144E30 | NI30 Change | | 9246 |
| 144E31 | NI31 Change | | 9247 |
| 144E32 | NI32 Change | | 9248 |
| 144E33 | NI33 Change | | 9249 |
| 144E34 | NI34 Change | | 9250 |
| 144E35 | NI35 Change | | 9251 |
| 144E36 | NI36 Change | | 9252 |
| 144E37 | NI37 Change | | 9253 |
| 144E38 | NI38 Change | | 9254 |
| 144E39 | NI39 Change | | 9255 |
| 144E40 | NI40 Change | | 9256 |
| 144E41 | NI41 Change | | 9257 |
| 144E42 | NI42 Change | | 9258 |
| 144E43 | NI43 Change | | 9259 |
| 144E44 | NI44 Change | | 9260 |
| 144E45 | NI45 Change | | 9261 |
| 144E46 | NI46 Change | | 9262 |
| 144E47 | NI47 Change | | 9263 |
| 144E48 | NI48 Change | | 9264 |
| 144E49 | NI49 Change | | 9265 |
| 144E50 | NI50 Change | | 9266 |
| 144E51 | NI51 Change | | 9267 |
| 144E52 | NI52 Change | | 9268 |
| 144E53 | NI53 Change | | 9269 |
| 144E54 | NI54 Change | | 9270 |
| 144E55 | NI55 Change | | 9271 |
| 144E56 | NI56 Change | | 9272 |
| 144E57 | NI57 Change | | 9273 |
| 144E58 | NI58 Change | | 9274 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------|-------|----------------------|
| 144E59 | NI59 Change | | 9275 |
| 144E60 | NI60 Change | | 9276 |
| 144E61 | NI61 Change | | 9277 |
| 144E62 | NI62 Change | | 9278 |
| 144E63 | NI63 Change | | 9279 |
| 145E1 | NI64 Change | | 9281 |
| 145E2 | NI65 Change | | 9282 |
| 145E3 | NI66 Change | | 9283 |
| 145E4 | NI67 Change | | 9284 |
| 145E5 | NI68 Change | | 9285 |
| 145E6 | NI69 Change | | 9286 |
| 145E7 | NI70 Change | | 9287 |
| 145E8 | NI71 Change | | 9288 |
| 145E9 | NI72 Change | | 9289 |
| 145E10 | NI73 Change | | 9290 |
| 145E11 | NI74 Change | | 9291 |
| 145E12 | NI75 Change | | 9292 |
| 145E13 | NI76 Change | | 9293 |
| 145E14 | NI77 Change | | 9294 |
| 145E15 | NI78 Change | | 9295 |
| 145E16 | NI79 Change | | 9296 |
| 145E17 | NI80 Change | | 9297 |
| 145E18 | NI81 Change | | 9298 |
| 145E19 | NI82 Change | | 9299 |
| 145E20 | NI83 Change | | 9300 |
| 145E21 | NI84 Change | | 9301 |
| 145E22 | NI85 Change | | 9302 |
| 145E23 | NI86 Change | | 9303 |
| 145E24 | NI87 Change | | 9304 |
| 145E25 | NI88 Change | | 9305 |
| 145E26 | NI89 Change | | 9306 |
| 145E27 | NI90 Change | | 9307 |
| 145E28 | NI91 Change | | 9308 |
| 145E29 | NI92 Change | | 9309 |
| 145E30 | NI93 Change | | 9310 |
| 145E31 | NI94 Change | | 9311 |
| 145E32 | NI95 Change | | 9312 |
| 145E33 | NI96 Change | | 9313 |
| 145E34 | NI97 Change | | 9314 |
| 145E35 | NI98 Change | | 9315 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 145E36 | NI99 Change | | 9316 |
| 145E37 | NI100 Change | | 9317 |
| 145E38 | NI101 Change | | 9318 |
| 145E39 | NI102 Change | | 9319 |
| 145E40 | NI103 Change | | 9320 |
| 145E41 | NI104 Change | | 9321 |
| 145E42 | NI105 Change | | 9322 |
| 145E43 | NI106 Change | | 9323 |
| 145E44 | NI107 Change | | 9324 |
| 145E45 | NI108 Change | | 9325 |
| 145E46 | NI109 Change | | 9326 |
| 145E47 | NI110 Change | | 9327 |
| 145E48 | NI111 Change | | 9328 |
| 145E49 | NI112 Change | | 9329 |
| 145E50 | NI113 Change | | 9330 |
| 145E51 | NI114 Change | | 9331 |
| 145E52 | NI115 Change | | 9332 |
| 145E53 | NI116 Change | | 9333 |
| 145E54 | NI117 Change | | 9334 |
| 145E55 | NI118 Change | | 9335 |
| 145E56 | NI119 Change | | 9336 |
| 145E57 | NI120 Change | | 9337 |
| 145E58 | NI121 Change | | 9338 |
| 145E59 | NI122 Change | | 9339 |
| 145E60 | NI123 Change | | 9340 |
| 145E61 | NI124 Change | | 9341 |
| 145E62 | NI125 Change | | 9342 |
| 145E63 | NI126 Change | | 9343 |
| 155E01 | I>4 Start On | | 9921 |
| 155E02 | I>4 Trip On | Yes | 9922 |
| 155E03 | I>4 Start Off | | 9923 |
| 155E04 | I>4 Trip off | | 9924 |
| 155E11 | I>4 phase A start on | | 9931 |
| 155E12 | I>4 phase A start off | | 9932 |
| 155E13 | I>4 phase A trip on | Yes | 9933 |
| 155E14 | I>4 phase A trip off | | 9934 |
| 155E15 | I>4 phase B start on | | 9935 |
| 155E16 | I>4 phase B start off | | 9936 |
| 155E17 | I>4 phase B trip on | Yes | 9937 |
| 155E18 | I>4 phase B trip off | | 9938 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 155E19 | I>4 phase C start on | | 9939 |
| 155E20 | I>4 phase C start off | | 9940 |
| 155E21 | I>4 phase C trip on | Yes | 9941 |
| 155E22 | I>4 phase C trip off | | 9942 |
| 160E1 | NI127 Change | | 10241 |
| 160E2 | NI128 Change | | 10242 |
| 160E3 | NI129 Change | | 10243 |
| 160E4 | NI130 Change | | 10244 |
| 160E5 | NI131 Change | | 10245 |
| 160E6 | NI132 Change | | 10246 |
| 160E7 | NI133 Change | | 10247 |
| 160E8 | NI134 Change | | 10248 |
| 160E9 | NI135 Change | | 10249 |
| 160E10 | NI136 Change | | 10250 |
| 160E11 | NI137 Change | | 10251 |
| 160E12 | NI138 Change | | 10252 |
| 160E13 | NI139 Change | | 10253 |
| 160E14 | NI140 Change | | 10254 |
| 160E15 | NI141 Change | | 10255 |
| 160E16 | NI142 Change | | 10256 |
| 160E17 | NI143 Change | | 10257 |
| 160E18 | NI144 Change | | 10258 |
| 160E19 | NI145 Change | | 10259 |
| 160E20 | NI146 Change | | 10260 |
| 160E21 | NI147 Change | | 10261 |
| 160E22 | NI148 Change | | 10262 |
| 160E23 | NI149 Change | | 10263 |
| 160E24 | NI150 Change | | 10264 |
| 160E25 | NI151 Change | | 10265 |
| 160E26 | NI152 Change | | 10266 |
| 160E27 | NI153 Change | | 10267 |
| 160E28 | NI154 Change | | 10268 |
| 160E29 | NI155 Change | | 10269 |
| 160E30 | NI156 Change | | 10270 |
| 160E31 | NI157 Change | | 10271 |
| 160E32 | NI158 Change | | 10272 |
| 161E1 | NI190 Change | | 10305 |
| 161E2 | NI191 Change | | 10306 |
| 161E3 | NI192 Change | | 10307 |
| 161E4 | NI193 Change | | 10308 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------|-------|----------------------|
| 161E5 | NI194 Change | | 10309 |
| 161E6 | NI195 Change | | 10310 |
| 161E7 | NI196 Change | | 10311 |
| 161E8 | NI197 Change | | 10312 |
| 161E9 | NI198 Change | | 10313 |
| 161E10 | NI199 Change | | 10314 |
| 161E11 | NI200 Change | | 10315 |
| 161E12 | NI201 Change | | 10316 |
| 161E13 | NI202 Change | | 10317 |
| 161E14 | NI203 Change | | 10318 |
| 161E15 | NI204 Change | | 10319 |
| 161E16 | NI205 Change | | 10320 |
| 161E17 | NI206 Change | | 10321 |
| 161E18 | NI207 Change | | 10322 |
| 161E19 | NI208 Change | | 10323 |
| 161E20 | NI209 Change | | 10324 |
| 161E21 | NI210 Change | | 10325 |
| 161E22 | NI211 Change | | 10326 |
| 161E23 | NI212 Change | | 10327 |
| 161E24 | NI213 Change | | 10328 |
| 161E25 | NI214 Change | | 10329 |
| 161E26 | NI215 Change | | 10330 |
| 161E27 | NI216 Change | | 10331 |
| 161E28 | NI217 Change | | 10332 |
| 161E29 | NI218 Change | | 10333 |
| 161E30 | NI219 Change | | 10334 |
| 161E31 | NI220 Change | | 10335 |
| 161E32 | NI221 Change | | 10336 |
| 160E33 | NI159 Change | | 10273 |
| 160E34 | NI160 Change | | 10274 |
| 160E35 | NI161 Change | | 10275 |
| 160E36 | NI162 Change | | 10276 |
| 160E37 | NI163 Change | | 10277 |
| 160E38 | NI164 Change | | 10278 |
| 160E39 | NI165 Change | | 10279 |
| 160E40 | NI166 Change | | 10280 |
| 160E41 | NI167 Change | | 10281 |
| 160E42 | NI168 Change | | 10282 |
| 160E43 | NI169 Change | | 10283 |
| 160E44 | NI170 Change | | 10284 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------|-------|----------------------|
| 160E45 | NI171 Change | | 10285 |
| 160E46 | NI172 Change | | 10286 |
| 160E47 | NI173 Change | | 10287 |
| 160E48 | NI174 Change | | 10288 |
| 160E49 | NI175 Change | | 10289 |
| 160E50 | NI176 Change | | 10290 |
| 160E51 | NI177 Change | | 10291 |
| 160E52 | NI178 Change | | 10292 |
| 160E53 | NI179 Change | | 10293 |
| 160E54 | NI180 Change | | 10294 |
| 160E55 | NI181 Change | | 10295 |
| 160E56 | NI182 Change | | 10296 |
| 160E57 | NI183 Change | | 10297 |
| 160E58 | NI184 Change | | 10298 |
| 160E59 | NI185 Change | | 10299 |
| 160E60 | NI186 Change | | 10300 |
| 160E61 | NI187 Change | | 10301 |
| 160E62 | NI188 Change | | 10302 |
| 160E63 | NI189 Change | | 10303 |
| 161E33 | NI222 Change | | 10337 |
| 161E34 | NI223 Change | | 10338 |
| 161E35 | NI224 Change | | 10339 |
| 161E36 | NI225 Change | | 10340 |
| 161E37 | NI226 Change | | 10341 |
| 161E38 | NI227 Change | | 10342 |
| 161E39 | NI228 Change | | 10343 |
| 161E40 | NI229 Change | | 10344 |
| 161E41 | NI230 Change | | 10345 |
| 161E42 | NI231 Change | | 10346 |
| 161E43 | NI232 Change | | 10347 |
| 161E44 | NI233 Change | | 10348 |
| 161E45 | NI234 Change | | 10349 |
| 161E46 | NI235 Change | | 10350 |
| 161E47 | NI236 Change | | 10351 |
| 161E48 | NI237 Change | | 10352 |
| 161E49 | NI238 Change | | 10353 |
| 161E50 | NI239 Change | | 10354 |
| 161E51 | NI240 Change | | 10355 |
| 161E52 | NI241 Change | | 10356 |
| 161E53 | NI242 Change | | 10357 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 161E54 | NI243 Change | | 10358 |
| 161E55 | NI244 Change | | 10359 |
| 161E56 | NI245 Change | | 10360 |
| 161E57 | NI246 Change | | 10361 |
| 161E58 | NI247 Change | | 10362 |
| 161E59 | NI248 Change | | 10363 |
| 161E60 | NI249 Change | | 10364 |
| 161E61 | NI250 Change | | 10365 |
| 146E1 | GOOSE NI Group 1 OK | | 9345 |
| 146E2 | GOOSE NI Group 1 Error | | 9346 |
| 146E3 | GOOSE NI Group 2 OK | | 9347 |
| 146E4 | GOOSE NI Group 2 Error | | 9348 |
| 146E37 | GCB1 Needs commissioning On | | 9381 |
| 146E38 | GCB1 Needs commissioning Off | | 9382 |
| 146E39 | GCB2 Needs commissioning On | | 9383 |
| 146E40 | GCB2 Needs commissioning Off | | 9384 |
| 146E41 | VAI1 Quality | | 9385 |
| 146E42 | VAI2 Quality | | 9386 |
| 146E43 | VAI3 Quality | | 9387 |
| 146E44 | VAI4 Quality | | 9388 |
| 146E45 | VAI5 Quality | | 9389 |
| 146E46 | VAI6 Quality | | 9390 |
| 146E47 | VAI7 Quality | | 9391 |
| 146E48 | VAI8 Quality | | 9392 |
| 146E50 | Global trip On | | 9394 |
| 146E51 | Global trip Off | | 9395 |
| 146E56 | GCB3 Needs commissioning On | | 9400 |
| 146E57 | GCB3 Needs commissioning Off | | 9401 |
| 146E58 | GCB4 Needs commissioning On | | 9402 |
| 146E59 | GCB4 Needs commissioning Off | | 9403 |
| 148E1 | Software diagnostic | | 9473 |
| 150E01 | IN>3 Start On | | 9601 |
| 150E02 | IN>3 Trip On | Yes | 9602 |
| 150E03 | IN>3 Start Off | | 9603 |
| 150E04 | IN>3 Trip off | | 9604 |
| 151E01 | IIr Start On | | 9665 |
| 151E02 | IIr Trip On | Yes | 9666 |
| 151E03 | IIr Start Off | | 9667 |
| 151E04 | IIr Trip off | | 9668 |
| 151E20 | Locked rotor on | | 9684 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------|-------|----------------------|
| 151E21 | Locked rotor off | | 9685 |
| 154E1 | VI9 on | | 9857 |
| 154E2 | VI9 off | | 9858 |
| 154E3 | VI10 on | | 9859 |
| 154E4 | VI10 off | | 9860 |
| 154E5 | VI11 on | | 9861 |
| 154E6 | VI11 off | | 9862 |
| 154E7 | VI12 on | | 9863 |
| 154E8 | VI12 off | | 9864 |
| 154E9 | VI13 on | | 9865 |
| 154E10 | VI13 off | | 9866 |
| 154E11 | VI14 on | | 9867 |
| 154E12 | VI14 off | | 9868 |
| 154E13 | VI15 on | | 9869 |
| 154E14 | VI15 off | | 9870 |
| 154E15 | VI16 on | | 9871 |
| 154E16 | VI16 off | | 9872 |
| 154E17 | VI17 on | | 9873 |
| 154E18 | VI17 off | | 9874 |
| 154E19 | VI18 on | | 9875 |
| 154E20 | VI18 off | | 9876 |
| 154E21 | VI19 on | | 9877 |
| 154E22 | VI19 off | | 9878 |
| 154E23 | VI20 on | | 9879 |
| 154E24 | VI20 off | | 9880 |
| 154E25 | Frequency out of range | Yes | 9881 |
| 154E26 | Frequency OK | Yes | 9882 |
| 156E02 | SOTF Trip On | Yes | 9986 |
| 156E04 | SOTF Trip off | | 9988 |
| 162E01 | Overfluxing V/f>2 Start On | | 10369 |
| 162E02 | Overfluxing V/f>2 Trip On | Yes | 10370 |
| 162E03 | Overfluxing V/f>2 Start Off | | 10371 |
| 162E04 | Overfluxing V/f>2 Trip off | | 10372 |
| 165E01 | Overfluxing V/f>1 Start On | | 10561 |
| 165E02 | Overfluxing V/f>1 Trip On | Yes | 10562 |
| 165E03 | Overfluxing V/f>1 Start Off | | 10563 |
| 165E04 | Overfluxing V/f>1 Trip off | | 10564 |
| 166E01 | Overfluxing V/f Alarm on | | 10625 |
| 166E02 | Overfluxing V/f Alarm off | Yes | 10626 |
| 167E01 | I2>1 Start On | | 10689 |
| 167E02 | I2>1 Trip On | Yes | 10690 |
| 167E03 | I2>1 Start Off | | 10691 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 167E04 | I2>1 Trip off | | 10692 |
| 168E01 | Motor T> Start On | | 10753 |
| 168E02 | Motor T> Trip On | Yes | 10754 |
| 168E03 | Motor T> Start Off | | 10755 |
| 168E04 | Motor T> Trip off | | 10756 |
| 168E11 | Therm level motor alarm | Yes | 10763 |
| 168E12 | Therm level motor alarm off | | 10764 |
| 168E13 | Therm Rsv motor alarm | Yes | 10765 |
| 168E14 | Therm Rsv motor alarm off | | 10766 |
| 168E15 | Therm T°motor alarm | Yes | 10767 |
| 168E16 | Therm T°motor alarm off | | 10768 |
| 168E17 | Block CB close on | Yes | 10769 |
| 168E18 | Block CB close off | | 10770 |
| 168E19 | r1 active | | 10771 |
| 168E20 | r1 inactive | | 10772 |
| 168E21 | r2 active | | 10773 |
| 168E22 | r2 inactive | | 10774 |
| 168E23 | Hot status | Yes | 10775 |
| 168E24 | Cold status | | 10776 |
| 169E01 | I2>2 Start On | | 10817 |
| 169E02 | I2>2 Trip On | Yes | 10818 |
| 169E03 | I2>2 Start Off | | 10819 |
| 169E04 | I2>2 Trip off | | 10820 |
| 200E1 | PowerLogic P5 mode in Normal | | 12801 |
| 200E2 | PowerLogic P5 mode in Test | | 12802 |
| 200E3 | PowerLogic P5 mode in Test Block | | 12803 |
| 200E52 | VM Status is Idle | | 12852 |
| 200E53 | VM Status is Data Off | | 12853 |
| 200E54 | VM Status is Data On | | 12854 |
| 200E55 | VM Status is Data Error | | 12855 |
| 170E1 | T°1 alarm on | Yes | 10881 |
| 170E2 | T°1 alarm off | | 10882 |
| 170E3 | T°1 operate on | Yes | 10883 |
| 170E4 | T°1 operate off | | 10884 |
| 170E5 | RTD1 open-circuit fault on | Yes | 10885 |
| 170E6 | RTD1 short-circuit fault on | Yes | 10886 |
| 170E7 | RTD1 fault off | | 10887 |
| 170E20 | RTD alarm on | | 10900 |
| 170E21 | RTD alarm off | | 10901 |
| 170E22 | RTD operate on | | 10902 |
| 170E23 | RTD operate off | | 10903 |
| 171E1 | T°2 alarm on | Yes | 10945 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------|-------|----------------------|
| 171E2 | T°2 alarm off | | 10946 |
| 171E3 | T°2 operate on | Yes | 10947 |
| 171E4 | T°2 operate off | | 10948 |
| 171E5 | RTD2 open-circuit fault on | Yes | 10949 |
| 171E6 | RTD2 short-circuit fault on | Yes | 10950 |
| 171E7 | RTD2 fault off | | 10951 |
| 172E1 | T°3 alarm on | Yes | 11009 |
| 172E2 | T°3 alarm off | | 11010 |
| 172E3 | T°3 operate on | Yes | 11011 |
| 172E4 | T°3 operate off | | 11012 |
| 172E5 | RTD3 open-circuit fault on | Yes | 11013 |
| 172E6 | RTD3 short-circuit fault on | Yes | 11014 |
| 172E7 | RTD3 fault off | | 11015 |
| 173E1 | T°4 alarm on | Yes | 11073 |
| 173E2 | T°4 alarm off | | 11074 |
| 173E3 | T°4 operate on | Yes | 11075 |
| 173E4 | T°4 operate off | | 11076 |
| 173E5 | RTD4 open-circuit fault on | Yes | 11077 |
| 173E6 | RTD4 short-circuit fault on | Yes | 11078 |
| 173E7 | RTD4 fault off | | 11079 |
| 174E1 | T°5 alarm on | Yes | 11137 |
| 174E2 | T°5 alarm off | | 11138 |
| 174E3 | T°5 operate on | Yes | 11139 |
| 174E4 | T°5 operate off | | 11140 |
| 174E5 | RTD5 open-circuit fault on | Yes | 11141 |
| 174E6 | RTD5 short-circuit fault on | Yes | 11142 |
| 174E7 | RTD5 fault off | | 11143 |
| 175E1 | T°6 alarm on | Yes | 11201 |
| 175E2 | T°6 alarm off | | 11202 |
| 175E3 | T°6 operate on | Yes | 11203 |
| 175E4 | T°6 operate off | | 11204 |
| 175E5 | RTD6 open-circuit fault on | Yes | 11205 |
| 175E6 | RTD6 short-circuit fault on | Yes | 11206 |
| 175E7 | RTD6 fault off | | 11207 |
| 176E1 | T°7 alarm on | Yes | 11265 |
| 176E2 | T°7 alarm off | | 11266 |
| 176E3 | T°7 operate on | Yes | 11267 |
| 176E4 | T°7 operate off | | 11268 |
| 176E5 | RTD7 open-circuit fault on | Yes | 11269 |
| 176E6 | RTD7 short-circuit fault on | Yes | 11270 |
| 176E7 | RTD7 fault off | | 11271 |
| 177E1 | T°8 alarm on | Yes | 11329 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 177E2 | T°8 alarm off | | 11330 |
| 177E3 | T°8 operate on | Yes | 11331 |
| 177E4 | T°8 operate off | | 11332 |
| 177E5 | RTD8 open-circuit fault on | Yes | 11333 |
| 177E6 | RTD8 short-circuit fault on | Yes | 11334 |
| 177E7 | RTD8 fault off | | 11335 |
| 178E1 | T°9 alarm on | Yes | 11393 |
| 178E2 | T°9 alarm off | | 11394 |
| 178E3 | T°9 operate on | Yes | 11395 |
| 178E4 | T°9 operate off | | 11396 |
| 178E5 | RTD9 open-circuit fault on | Yes | 11397 |
| 178E6 | RTD9 short-circuit fault on | Yes | 11398 |
| 178E7 | RTD9 fault off | | 11399 |
| 179E1 | T°10 alarm on | Yes | 11457 |
| 179E2 | T°10 alarm off | | 11458 |
| 179E3 | T°10 operate on | Yes | 11459 |
| 179E4 | T°10 operate off | | 11460 |
| 179E5 | RTD10 open-circuit fault on | Yes | 11461 |
| 179E6 | RTD10 short-circuit fault on | Yes | 11462 |
| 179E7 | RTD10 fault off | | 11463 |
| 180E1 | T°11 alarm on | Yes | 11521 |
| 180E2 | T°11 alarm off | | 11522 |
| 180E3 | T°11 operate on | Yes | 11523 |
| 180E4 | T°11 operate off | | 11524 |
| 180E5 | RTD11 open-circuit fault on | Yes | 11525 |
| 180E6 | RTD11 short-circuit fault on | Yes | 11526 |
| 180E7 | RTD11 fault off | | 11527 |
| 181E1 | T°12 alarm on | Yes | 11585 |
| 181E2 | T°12 alarm off | | 11586 |
| 181E3 | T°12 operate on | Yes | 11587 |
| 181E4 | T°12 operate off | | 11588 |
| 181E5 | RTD12 open-circuit fault on | Yes | 11589 |
| 181E6 | RTD12 short-circuit fault on | Yes | 11590 |
| 181E7 | RTD12 fault off | | 11591 |
| 182E1 | T°13 alarm on | Yes | 11649 |
| 182E2 | T°13 alarm off | | 11650 |
| 182E3 | T°13 operate on | Yes | 11651 |
| 182E4 | T°13 operate off | | 11652 |
| 182E5 | RTD13 open-circuit fault on | Yes | 11653 |
| 182E6 | RTD13 short-circuit fault on | Yes | 11654 |
| 182E7 | RTD13 fault off | | 11655 |
| 183E1 | T°14 alarm on | Yes | 11713 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------------|-------|----------------------|
| 183E2 | T°14 alarm off | | 11714 |
| 183E3 | T°14 operate on | Yes | 11715 |
| 183E4 | T°14 operate off | | 11716 |
| 183E5 | RTD14 open-circuit fault on | Yes | 11717 |
| 183E6 | RTD14 short-circuit fault on | Yes | 11718 |
| 183E7 | RTD14 fault off | | 11719 |
| 184E1 | T°15 alarm on | Yes | 11777 |
| 184E2 | T°15 alarm off | | 11778 |
| 184E3 | T°15 operate on | Yes | 11779 |
| 184E4 | T°15 operate off | | 11780 |
| 184E5 | RTD15 open-circuit fault on | Yes | 11781 |
| 184E6 | RTD15 short-circuit fault on | Yes | 11782 |
| 184E7 | RTD15 fault off | | 11783 |
| 185E1 | T°16 alarm on | Yes | 11841 |
| 185E2 | T°16 alarm off | | 11842 |
| 185E3 | T°16 operate on | Yes | 11843 |
| 185E4 | T°16 operate off | | 11844 |
| 185E5 | RTD16 open-circuit fault on | Yes | 11845 |
| 185E6 | RTD16 short-circuit fault on | Yes | 11846 |
| 185E7 | RTD16 fault off | | 11847 |
| 186E01 | f+df/dt>2 Start On | | 11905 |
| 186E02 | f+df/dt>2 Trip On | Yes | 11906 |
| 186E03 | f+df/dt>2 Start Off | | 11907 |
| 186E04 | f+df/dt>2 Trip Off | | 11908 |
| 215E2 | Anti back spin alarm on | Yes | 13762 |
| 215E4 | Anti back spin alarm off | | 13764 |
| 200E6 | Port USB Disabled | | 12806 |
| 200E7 | Port USB Enabled | | 12807 |
| 200E8 | Port mini USB Disabled | | 12808 |
| 200E9 | Port mini USB Enabled | | 12809 |
| 200E10 | Serial Port Disabled | | 12810 |
| 200E11 | Serial Port Enabled | | 12811 |
| 200E12 | Ethernet Port1 slot M Disabled | | 12812 |
| 200E13 | Ethernet Port1 slot M Enabled | | 12813 |
| 200E14 | Ethernet Port slot L Disabled | | 12814 |
| 200E15 | Ethernet Port slot L Enabled | | 12815 |
| 200E16 | Ethernet Protocol 1 Disabled | | 12816 |
| 200E17 | Ethernet Protocol 1 Enabled | | 12817 |
| 200E18 | Ethernet Protocol 2 Disabled | | 12818 |
| 200E19 | Ethernet Protocol 2 Enabled | | 12819 |
| 200E20 | Extersion Port Disabled | | 12820 |
| 200E21 | Extersion Port Enabled | | 12821 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 200E22 | Time Sync Source is IEEE1588 | | 12822 |
| 200E23 | Time Sync Source is IRIG-B | | 12823 |
| 200E24 | Time Sync Source is SNTP | | 12824 |
| 200E25 | Time Sync Source is SNTP Backup | | 12825 |
| 200E26 | Time Sync Source is Pulse Signal | | 12826 |
| 200E27 | Time Sync Source is 1 PPS | | 12827 |
| 200E28 | Time Sync Source is Modbus | | 12828 |
| 200E29 | Time Sync Source is IEC101 | | 12829 |
| 200E30 | Time Sync Source is IEC103 | | 12830 |
| 200E31 | Time Sync Source is DNP3 | | 12831 |
| 200E32 | Time Sync Source is Internal | | 12832 |
| 200E33 | LPCT cable is connected | Yes | 12833 |
| 200E34 | LPCT cable is disconnected | Yes | 12834 |
| 200E35 | LPVT1 cable is connected | Yes | 12835 |
| 200E36 | LPVT1 cable is disconnected | Yes | 12836 |
| 200E37 | LPVT2 cable is connected | Yes | 12837 |
| 200E38 | LPVT2 cable is disconnected | Yes | 12838 |
| 200E39 | Software error | | 12839 |
| 200E40 | Slot L mismatch | Yes | 12840 |
| 200E41 | Slot L board is missing | Yes | 12841 |
| 200E42 | Slot L is not configured | Yes | 12842 |
| 200E43 | Slot M mismatch | Yes | 12843 |
| 200E44 | Slot M board is missing | Yes | 12844 |
| 200E45 | Slot M is not configured | Yes | 12845 |
| 200E46 | Slot N mismatch | Yes | 12846 |
| 200E47 | Slot N board is missing | Yes | 12847 |
| 200E48 | Slot N is not configured | Yes | 12848 |
| 200E49 | Slot P mismatch | Yes | 12849 |
| 200E50 | Slot P board is missing | Yes | 12850 |
| 200E51 | Slot P is not configured | Yes | 12851 |
| 200E56 | Reset CS to factory OK | | 12856 |
| 200E57 | Reset CS to factory fail | | 12857 |
| 200E58 | Eth. protocol 3 disabled | | 12858 |
| 200E59 | Eth. protocol 3 enabled | | 12859 |
| 200E60 | Ethernet Port2 slot M Enabled | | 12860 |
| 200E61 | Ethernet Port2 slot M Disabled | | 12861 |
| 209E1 | VI21 on | | 13377 |
| 209E2 | VI21 off | | 13378 |
| 209E3 | VI22 on | | 13379 |
| 209E4 | VI22 off | | 13380 |
| 209E5 | VI23 on | | 13381 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------|-------|----------------------|
| 209E6 | VI23 off | | 13382 |
| 209E7 | VI24 on | | 13383 |
| 209E8 | VI24 off | | 13384 |
| 209E9 | VI25 on | | 13385 |
| 209E10 | VI25 off | | 13386 |
| 209E11 | VI26 on | | 13387 |
| 209E12 | VI26 off | | 13388 |
| 209E13 | VI27 on | | 13389 |
| 209E14 | VI27 off | | 13390 |
| 209E15 | VI28 on | | 13391 |
| 209E16 | VI28 off | | 13392 |
| 209E17 | VI29 on | | 13393 |
| 209E18 | VI29 off | | 13394 |
| 209E19 | VI30 on | | 13395 |
| 209E20 | VI30 off | | 13396 |
| 209E21 | VI31 on | | 13397 |
| 209E22 | VI31 off | | 13398 |
| 209E23 | VI32 on | | 13399 |
| 209E24 | VI32 off | | 13400 |
| 209E25 | VI33 on | | 13401 |
| 209E26 | VI33 off | | 13402 |
| 209E27 | VI34 on | | 13403 |
| 209E28 | VI34 off | | 13404 |
| 209E29 | VI35 on | | 13405 |
| 209E30 | VI35 off | | 13406 |
| 209E31 | VI36 on | | 13407 |
| 209E32 | VI36 off | | 13408 |
| 209E33 | VI37 on | | 13409 |
| 209E34 | VI37 off | | 13410 |
| 209E35 | VI38 on | | 13411 |
| 209E36 | VI38 off | | 13412 |
| 209E37 | VI39 on | | 13413 |
| 209E38 | VI39 off | | 13414 |
| 209E39 | VI40 on | | 13415 |
| 209E40 | VI40 off | | 13416 |
| 209E41 | VI41 on | | 13417 |
| 209E42 | VI41 off | | 13418 |
| 209E43 | VI42 on | | 13419 |
| 209E44 | VI42 off | | 13420 |
| 209E45 | VI43 on | | 13421 |
| 209E46 | VI43 off | | 13422 |
| 209E47 | VI44 on | | 13423 |
| 209E48 | VI44 off | | 13424 |
| 209E49 | VI45 on | | 13425 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------|-------|----------------------|
| 209E50 | VI45 off | | 13426 |
| 209E51 | VI46 on | | 13427 |
| 209E52 | VI46 off | | 13428 |
| 209E53 | VI47 on | | 13429 |
| 209E54 | VI47 off | | 13430 |
| 209E55 | VI48 on | | 13431 |
| 209E56 | VI48 off | | 13432 |
| 209E57 | VI49 on | | 13433 |
| 209E58 | VI49 off | | 13434 |
| 209E59 | VI50 on | | 13435 |
| 209E60 | VI50 off | | 13436 |
| 223E01 | I>5 Start On | | 14273 |
| 223E02 | I>5 Trip On | Yes | 14274 |
| 223E03 | I>5 Start Off | | 14275 |
| 223E04 | I>5 Trip Off | | 14276 |
| 223E11 | I>5 phase A start on | | 14283 |
| 223E12 | I>5 phase A start off | | 14284 |
| 223E13 | I>5 phase A trip on | Yes | 14285 |
| 223E14 | I>5 phase A trip off | | 14286 |
| 223E15 | I>5 phase B start on | | 14287 |
| 223E16 | I>5 phase B start off | | 14288 |
| 223E17 | I>5 phase B trip on | Yes | 14289 |
| 223E18 | I>5 phase B trip off | | 14290 |
| 223E19 | I>5 phase C start on | | 14291 |
| 223E20 | I>5 phase C start off | | 14292 |
| 223E21 | I>5 phase C trip on | Yes | 14293 |
| 223E22 | I>5 phase C trip off | | 14294 |
| 224E01 | I>6 Start On | | 14337 |
| 224E02 | I>6 Trip On | Yes | 14338 |
| 224E03 | I>6 Start Off | | 14339 |
| 224E04 | I>6 Trip Off | | 14340 |
| 224E11 | I>6 phase A start on | | 14347 |
| 224E12 | I>6 phase A start off | | 14348 |
| 224E13 | I>6 phase A trip on | Yes | 14349 |
| 224E14 | I>6 phase A trip off | | 14350 |
| 224E15 | I>6 phase B start on | | 14351 |
| 224E16 | I>6 phase B start off | | 14352 |
| 224E17 | I>6 phase B trip on | Yes | 14353 |
| 224E18 | I>6 phase B trip off | | 14354 |
| 224E19 | I>6 phase C start on | | 14355 |
| 224E20 | I>6 phase C start off | | 14356 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 224E21 | I>6 phase C trip on | Yes | 14357 |
| 224E22 | I>6 phase C trip off | | 14358 |
| 233E1 | Invalid adv logic input channel | | 14913 |
| 233E2 | Invalid adv logic output channel | | 14914 |
| 233E3 | Invalid adv logic resource name | | 14915 |
| 233E4 | Invalid adv logic channel number | | 14916 |
| 233E5 | Invalid adv logic IO device | | 14917 |
| 233E6 | Invalid adv logic input signal | | 14918 |
| 233E7 | Invalid adv logic output signal | | 14919 |
| 233E8 | New adv logic file uploaded | | 14920 |
| 233E9 | Advanced logic bandwidth alarm | | 14921 |
| 234E1 | Advanced logic output 1 on | | 14977 |
| 234E2 | Advanced logic output 1 off | | 14978 |
| 234E3 | Advanced logic output 2 on | | 14979 |
| 234E4 | Advanced logic output 2 off | | 14980 |
| 234E5 | Advanced logic output 3 on | | 14981 |
| 234E6 | Advanced logic output 3 off | | 14982 |
| 234E7 | Advanced logic output 4 on | | 14983 |
| 234E8 | Advanced logic output 4 off | | 14984 |
| 234E9 | Advanced logic output 5 on | | 14985 |
| 234E10 | Advanced logic output 5 off | | 14986 |
| 234E11 | Advanced logic output 6 on | | 14987 |
| 234E12 | Advanced logic output 6 off | | 14988 |
| 234E13 | Advanced logic output 7 on | | 14989 |
| 234E14 | Advanced logic output 7 off | | 14990 |
| 234E15 | Advanced logic output 8 on | | 14991 |
| 234E16 | Advanced logic output 8 off | | 14992 |
| 234E17 | Advanced logic output 9 on | | 14993 |
| 234E18 | Advanced logic output 9 off | | 14994 |
| 234E19 | Advanced logic output 10 on | | 14995 |
| 234E20 | Advanced logic output 10 off | | 14996 |
| 234E21 | Advanced logic output 11 on | | 14997 |
| 234E22 | Advanced logic output 11 off | | 14998 |
| 234E23 | Advanced logic output 12 on | | 14999 |
| 234E24 | Advanced logic output 12 off | | 15000 |
| 234E25 | Advanced logic output 13 on | | 15001 |
| 234E26 | Advanced logic output 13 off | | 15002 |
| 234E27 | Advanced logic output 14 on | | 15003 |
| 234E28 | Advanced logic output 14 off | | 15004 |
| 234E29 | Advanced logic output 15 on | | 15005 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 234E30 | Advanced logic output 15 off | | 15006 |
| 234E31 | Advanced logic output 16 on | | 15007 |
| 234E32 | Advanced logic output 16 off | | 15008 |
| 234E33 | Advanced logic output 17 on | | 15009 |
| 234E34 | Advanced logic output 17 off | | 15010 |
| 234E35 | Advanced logic output 18 on | | 15011 |
| 234E36 | Advanced logic output 18 off | | 15012 |
| 234E37 | Advanced logic output 19 on | | 15013 |
| 234E38 | Advanced logic output 19 off | | 15014 |
| 234E39 | Advanced logic output 20 on | | 15015 |
| 234E40 | Advanced logic output 20 off | | 15016 |
| 234E41 | Advanced logic output 21 on | | 15017 |
| 234E42 | Advanced logic output 21 off | | 15018 |
| 234E43 | Advanced logic output 22 on | | 15019 |
| 234E44 | Advanced logic output 22 off | | 15020 |
| 234E45 | Advanced logic output 23 on | | 15021 |
| 234E46 | Advanced logic output 23 off | | 15022 |
| 234E47 | Advanced logic output 24 on | | 15023 |
| 234E48 | Advanced logic output 24 off | | 15024 |
| 234E49 | Advanced logic output 25 on | | 15025 |
| 234E50 | Advanced logic output 25 off | | 15026 |
| 234E51 | Advanced logic output 26 on | | 15027 |
| 234E52 | Advanced logic output 26 off | | 15028 |
| 234E53 | Advanced logic output 27 on | | 15029 |
| 234E54 | Advanced logic output 27 off | | 15030 |
| 234E55 | Advanced logic output 28 on | | 15031 |
| 234E56 | Advanced logic output 28 off | | 15032 |
| 234E57 | Advanced logic output 29 on | | 15033 |
| 234E58 | Advanced logic output 29 off | | 15034 |
| 234E59 | Advanced logic output 30 on | | 15035 |
| 234E60 | Advanced logic output 30 off | | 15036 |
| 234E61 | Advanced logic output 31 on | | 15037 |
| 234E62 | Advanced logic output 31 off | | 15038 |
| 235E1 | Advanced logic output 32 on | | 15041 |
| 235E2 | Advanced logic output 32 off | | 15042 |
| 235E3 | Advanced logic output 33 on | | 15043 |
| 235E4 | Advanced logic output 33 off | | 15044 |
| 235E5 | Advanced logic output 34 on | | 15045 |
| 235E6 | Advanced logic output 34 off | | 15046 |
| 235E7 | Advanced logic output 35 on | | 15047 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 235E8 | Advanced logic output 35 off | | 15048 |
| 235E9 | Advanced logic output 36 on | | 15049 |
| 235E10 | Advanced logic output 36 off | | 15050 |
| 235E11 | Advanced logic output 37 on | | 15051 |
| 235E12 | Advanced logic output 37 off | | 15052 |
| 235E13 | Advanced logic output 38 on | | 15053 |
| 235E14 | Advanced logic output 38 off | | 15054 |
| 235E15 | Advanced logic output 39 on | | 15055 |
| 235E16 | Advanced logic output 39 off | | 15056 |
| 235E17 | Advanced logic output 40 on | | 15057 |
| 235E18 | Advanced logic output 40 off | | 15058 |
| 235E19 | Advanced logic output 41 on | | 15059 |
| 235E20 | Advanced logic output 41 off | | 15060 |
| 235E21 | Advanced logic output 42 on | | 15061 |
| 235E22 | Advanced logic output 42 off | | 15062 |
| 235E23 | Advanced logic output 43 on | | 15063 |
| 235E24 | Advanced logic output 43 off | | 15064 |
| 235E25 | Advanced logic output 44 on | | 15065 |
| 235E26 | Advanced logic output 44 off | | 15066 |
| 235E27 | Advanced logic output 45 on | | 15067 |
| 235E28 | Advanced logic output 45 off | | 15068 |
| 235E29 | Advanced logic output 46 on | | 15069 |
| 235E30 | Advanced logic output 46 off | | 15070 |
| 235E31 | Advanced logic output 47 on | | 15071 |
| 235E32 | Advanced logic output 47 off | | 15072 |
| 235E33 | Advanced logic output 48 on | | 15073 |
| 235E34 | Advanced logic output 48 off | | 15074 |
| 235E35 | Advanced logic output 49 on | | 15075 |
| 235E36 | Advanced logic output 49 off | | 15076 |
| 235E37 | Advanced logic output 50 on | | 15077 |
| 235E38 | Advanced logic output 50 off | | 15078 |
| 235E39 | Advanced logic output 51 on | | 15079 |
| 235E40 | Advanced logic output 51 off | | 15080 |
| 235E41 | Advanced logic output 52 on | | 15081 |
| 235E42 | Advanced logic output 52 off | | 15082 |
| 235E43 | Advanced logic output 53 on | | 15083 |
| 235E44 | Advanced logic output 53 off | | 15084 |
| 235E45 | Advanced logic output 54 on | | 15085 |
| 235E46 | Advanced logic output 54 off | | 15086 |
| 235E47 | Advanced logic output 55 on | | 15087 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 235E48 | Advanced logic output 55 off | | 15088 |
| 235E49 | Advanced logic output 56 on | | 15089 |
| 235E50 | Advanced logic output 56 off | | 15090 |
| 235E51 | Advanced logic output 57 on | | 15091 |
| 235E52 | Advanced logic output 57 off | | 15092 |
| 235E53 | Advanced logic output 58 on | | 15093 |
| 235E54 | Advanced logic output 58 off | | 15094 |
| 235E55 | Advanced logic output 59 on | | 15095 |
| 235E56 | Advanced logic output 59 off | | 15096 |
| 235E57 | Advanced logic output 60 on | | 15097 |
| 235E58 | Advanced logic output 60 off | | 15098 |
| 235E59 | Advanced logic output 61 on | | 15099 |
| 235E60 | Advanced logic output 61 off | | 15100 |
| 235E61 | Advanced logic output 62 on | | 15101 |
| 235E62 | Advanced logic output 62 off | | 15102 |
| 236E1 | Advanced logic output 63 on | | 15105 |
| 236E2 | Advanced logic output 63 off | | 15106 |
| 236E3 | Advanced logic output 64 on | | 15107 |
| 236E4 | Advanced logic output 64 off | | 15108 |
| 236E5 | Advanced logic output 65 on | | 15109 |
| 236E6 | Advanced logic output 65 off | | 15110 |
| 236E7 | Advanced logic output 66 on | | 15111 |
| 236E8 | Advanced logic output 66 off | | 15112 |
| 236E9 | Advanced logic output 67 on | | 15113 |
| 236E10 | Advanced logic output 67 off | | 15114 |
| 236E11 | Advanced logic output 68 on | | 15115 |
| 236E12 | Advanced logic output 68 off | | 15116 |
| 236E13 | Advanced logic output 69 on | | 15117 |
| 236E14 | Advanced logic output 69 off | | 15118 |
| 236E15 | Advanced logic output 70 on | | 15119 |
| 236E16 | Advanced logic output 70 off | | 15120 |
| 236E17 | Advanced logic output 71 on | | 15121 |
| 236E18 | Advanced logic output 71 off | | 15122 |
| 236E19 | Advanced logic output 72 on | | 15123 |
| 236E20 | Advanced logic output 72 off | | 15124 |
| 236E21 | Advanced logic output 73 on | | 15125 |
| 236E22 | Advanced logic output 73 off | | 15126 |
| 236E23 | Advanced logic output 74 on | | 15127 |
| 236E24 | Advanced logic output 74 off | | 15128 |
| 236E25 | Advanced logic output 75 on | | 15129 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 236E26 | Advanced logic output 75 off | | 15130 |
| 236E27 | Advanced logic output 76 on | | 15131 |
| 236E28 | Advanced logic output 76 off | | 15132 |
| 236E29 | Advanced logic output 77 on | | 15133 |
| 236E30 | Advanced logic output 77 off | | 15134 |
| 236E31 | Advanced logic output 78 on | | 15135 |
| 236E32 | Advanced logic output 78 off | | 15136 |
| 236E33 | Advanced logic output 79 on | | 15137 |
| 236E34 | Advanced logic output 79 off | | 15138 |
| 236E35 | Advanced logic output 80 on | | 15139 |
| 236E36 | Advanced logic output 80 off | | 15140 |
| 236E37 | Advanced logic output 81 on | | 15141 |
| 236E38 | Advanced logic output 81 off | | 15142 |
| 236E39 | Advanced logic output 82 on | | 15143 |
| 236E40 | Advanced logic output 82 off | | 15144 |
| 236E41 | Advanced logic output 83 on | | 15145 |
| 236E42 | Advanced logic output 83 off | | 15146 |
| 236E43 | Advanced logic output 84 on | | 15147 |
| 236E44 | Advanced logic output 84 off | | 15148 |
| 236E45 | Advanced logic output 85 on | | 15149 |
| 236E46 | Advanced logic output 85 off | | 15150 |
| 236E47 | Advanced logic output 86 on | | 15151 |
| 236E48 | Advanced logic output 86 off | | 15152 |
| 236E49 | Advanced logic output 87 on | | 15153 |
| 236E50 | Advanced logic output 87 off | | 15154 |
| 236E51 | Advanced logic output 88 on | | 15155 |
| 236E52 | Advanced logic output 88 off | | 15156 |
| 236E53 | Advanced logic output 89 on | | 15157 |
| 236E54 | Advanced logic output 89 off | | 15158 |
| 236E55 | Advanced logic output 90 on | | 15159 |
| 236E56 | Advanced logic output 90 off | | 15160 |
| 236E57 | Advanced logic output 91 on | | 15161 |
| 236E58 | Advanced logic output 91 off | | 15162 |
| 236E59 | Advanced logic output 92 on | | 15163 |
| 236E60 | Advanced logic output 92 off | | 15164 |
| 236E61 | Advanced logic output 93 on | | 15165 |
| 236E62 | Advanced logic output 93 off | | 15166 |
| 237E1 | Advanced logic output 94 on | | 15169 |
| 237E2 | Advanced logic output 94 off | | 15170 |
| 237E3 | Advanced logic output 95 on | | 15171 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------------------------|-------|----------------------|
| 237E4 | Advanced logic output 95 off | | 15172 |
| 237E5 | Advanced logic output 96 on | | 15173 |
| 237E6 | Advanced logic output 96 off | | 15174 |
| 237E7 | Advanced logic output 97 on | | 15175 |
| 237E8 | Advanced logic output 97 off | | 15176 |
| 237E9 | Advanced logic output 98 on | | 15177 |
| 237E10 | Advanced logic output 98 off | | 15178 |
| 237E11 | Advanced logic output 99 on | | 15179 |
| 237E12 | Advanced logic output 99 off | | 15180 |
| 237E13 | Advanced logic output 100 on | | 15181 |
| 237E14 | Advanced logic output 100 off | | 15182 |
| 237E15 | Advanced logic output 101 on | | 15183 |
| 237E16 | Advanced logic output 101 off | | 15184 |
| 237E17 | Advanced logic output 102 on | | 15185 |
| 237E18 | Advanced logic output 102 off | | 15186 |
| 237E19 | Advanced logic output 103 on | | 15187 |
| 237E20 | Advanced logic output 103 off | | 15188 |
| 237E21 | Advanced logic output 104 on | | 15189 |
| 237E22 | Advanced logic output 104 off | | 15190 |
| 237E23 | Advanced logic output 105 on | | 15191 |
| 237E24 | Advanced logic output 105 off | | 15192 |
| 237E25 | Advanced logic output 106 on | | 15193 |
| 237E26 | Advanced logic output 106 off | | 15194 |
| 237E27 | Advanced logic output 107 on | | 15195 |
| 237E28 | Advanced logic output 107 off | | 15196 |
| 237E29 | Advanced logic output 108 on | | 15197 |
| 237E30 | Advanced logic output 108 off | | 15198 |
| 237E31 | Advanced logic output 109 on | | 15199 |
| 237E32 | Advanced logic output 109 off | | 15200 |
| 237E33 | Advanced logic output 110 on | | 15201 |
| 237E34 | Advanced logic output 110 off | | 15202 |
| 237E35 | Advanced logic output 111 on | | 15203 |
| 237E36 | Advanced logic output 111 off | | 15204 |
| 237E37 | Advanced logic output 112 on | | 15205 |
| 237E38 | Advanced logic output 112 off | | 15206 |
| 237E39 | Advanced logic output 113 on | | 15207 |
| 237E40 | Advanced logic output 113 off | | 15208 |
| 237E41 | Advanced logic output 114 on | | 15209 |
| 237E42 | Advanced logic output 114 off | | 15210 |
| 237E43 | Advanced logic output 115 on | | 15211 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------------|-------|----------------------|
| 237E44 | Advanced logic output 115 off | | 15212 |
| 237E45 | Advanced logic output 116 on | | 15213 |
| 237E46 | Advanced logic output 116 off | | 15214 |
| 237E47 | Advanced logic output 117 on | | 15215 |
| 237E48 | Advanced logic output 117 off | | 15216 |
| 237E49 | Advanced logic output 118 on | | 15217 |
| 237E50 | Advanced logic output 118 off | | 15218 |
| 237E51 | Advanced logic output 119 on | | 15219 |
| 237E52 | Advanced logic output 119 off | | 15220 |
| 237E53 | Advanced logic output 120 on | | 15221 |
| 237E54 | Advanced logic output 120 off | | 15222 |
| 237E55 | Advanced logic output 121 on | | 15223 |
| 237E56 | Advanced logic output 121 off | | 15224 |
| 237E57 | Advanced logic output 122 on | | 15225 |
| 237E58 | Advanced logic output 122 off | | 15226 |
| 237E59 | Advanced logic output 123 on | | 15227 |
| 237E60 | Advanced logic output 123 off | | 15228 |
| 237E61 | Advanced logic output 124 on | | 15229 |
| 237E62 | Advanced logic output 124 off | | 15230 |
| 238E1 | Advanced logic output 125 on | | 15233 |
| 238E2 | Advanced logic output 125 off | | 15234 |
| 238E3 | Advanced logic output 126 on | | 15235 |
| 238E4 | Advanced logic output 126 off | | 15236 |
| 238E5 | Advanced logic output 127 on | | 15237 |
| 238E6 | Advanced logic output 127 off | | 15238 |
| 238E7 | Advanced logic output 128 on | | 15239 |
| 238E8 | Advanced logic output 128 off | | 15240 |
| 158E1 | REF1 start on | | 10113 |
| 158E2 | REF1 trip on | Yes | 10114 |
| 158E3 | REF1 start off | | 10115 |
| 158E4 | REF1 trip off | | 10116 |
| 158E11 | REF1 matching factor error on | | 10123 |
| 158E12 | REF1 matching factor error off | | 10124 |
| 239E01 | IN>5 start on | | 15297 |
| 239E02 | IN>5 trip on | Yes | 15298 |
| 239E03 | IN>5 start off | | 15299 |
| 239E04 | IN>5 trip off | | 15300 |
| 240E01 | IN>6 start on | | 15361 |
| 240E02 | IN>6 trip on | Yes | 15362 |
| 240E03 | IN>6 start off | | 15363 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------------|-------|----------------------|
| 240E04 | IN>6 trip off | | 15364 |
| 242E2 | EMRE alarm on | | 15490 |
| 242E4 | EMRE alarm off | | 15492 |
| 159E01 | REF2 start on | | 10177 |
| 159E02 | REF2 trip on | Yes | 10178 |
| 159E03 | REF2 start off | | 10179 |
| 159E04 | REF2 trip off | | 10180 |
| 159E11 | REF2 matching factor error on | | 10187 |
| 159E12 | REF2 matching factor error off | | 10188 |
| 246E1 | GOOSE Subscriber1 status True | | 15745 |
| 246E2 | GOOSE Subscriber2 status True | | 15746 |
| 246E3 | GOOSE Subscriber3 status True | | 15747 |
| 246E4 | GOOSE Subscriber4 status True | | 15748 |
| 246E5 | GOOSE Subscriber5 status True | | 15749 |
| 246E6 | GOOSE Subscriber6 status True | | 15750 |
| 246E7 | GOOSE Subscriber7 status True | | 15751 |
| 246E8 | GOOSE Subscriber8 status True | | 15752 |
| 246E9 | GOOSE Subscriber9 status True | | 15753 |
| 246E10 | GOOSE Subscriber10 status True | | 15754 |
| 246E11 | GOOSE Subscriber11 status True | | 15755 |
| 246E12 | GOOSE Subscriber12 status True | | 15756 |
| 246E13 | GOOSE Subscriber13 status True | | 15757 |
| 246E14 | GOOSE Subscriber14 status True | | 15758 |
| 246E15 | GOOSE Subscriber15 status True | | 15759 |
| 246E16 | GOOSE Subscriber16 status True | | 15760 |
| 246E17 | GOOSE Subscriber17 status True | | 15761 |
| 246E18 | GOOSE Subscriber18 status True | | 15762 |
| 246E19 | GOOSE Subscriber19 status True | | 15763 |
| 246E20 | GOOSE Subscriber20 status True | | 15764 |
| 246E21 | GOOSE Subscriber21 status True | | 15765 |
| 246E22 | GOOSE Subscriber22 status True | | 15766 |
| 246E23 | GOOSE Subscriber23 status True | | 15767 |
| 246E24 | GOOSE Subscriber24 status True | | 15768 |
| 246E25 | GOOSE Subscriber25 status True | | 15769 |
| 246E26 | GOOSE Subscriber26 status True | | 15770 |
| 246E27 | GOOSE Subscriber27 status True | | 15771 |
| 246E28 | GOOSE Subscriber28 status True | | 15772 |
| 246E29 | GOOSE Subscriber29 status True | | 15773 |
| 246E30 | GOOSE Subscriber30 status True | | 15774 |
| 246E31 | GOOSE Subscriber31 status True | | 15775 |
| 246E32 | GOOSE Subscriber32 status True | | 15776 |
| 246E33 | GOOSE Subscriber33 status True | | 15777 |
| 246E34 | GOOSE Subscriber34 status True | | 15778 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 246E35 | GOOSE Subscriber35 status True | | 15779 |
| 246E36 | GOOSE Subscriber36 status True | | 15780 |
| 246E37 | GOOSE Subscriber37 status True | | 15781 |
| 246E38 | GOOSE Subscriber38 status True | | 15782 |
| 246E39 | GOOSE Subscriber39 status True | | 15783 |
| 246E40 | GOOSE Subscriber40 status True | | 15784 |
| 246E41 | GOOSE Subscriber41 status True | | 15785 |
| 246E42 | GOOSE Subscriber42 status True | | 15786 |
| 246E43 | GOOSE Subscriber43 status True | | 15787 |
| 246E44 | GOOSE Subscriber44 status True | | 15788 |
| 246E45 | GOOSE Subscriber45 status True | | 15789 |
| 246E46 | GOOSE Subscriber46 status True | | 15790 |
| 246E47 | GOOSE Subscriber47 status True | | 15791 |
| 246E48 | GOOSE Subscriber48 status True | | 15792 |
| 246E49 | GOOSE Subscriber49 status True | | 15793 |
| 246E50 | GOOSE Subscriber50 status True | | 15794 |
| 246E51 | GOOSE Subscriber51 status True | | 15795 |
| 246E52 | GOOSE Subscriber52 status True | | 15796 |
| 246E53 | GOOSE Subscriber53 status True | | 15797 |
| 246E54 | GOOSE Subscriber54 status True | | 15798 |
| 246E55 | GOOSE Subscriber55 status True | | 15799 |
| 246E56 | GOOSE Subscriber56 status True | | 15800 |
| 246E57 | GOOSE Subscriber57 status True | | 15801 |
| 246E58 | GOOSE Subscriber58 status True | | 15802 |
| 246E59 | GOOSE Subscriber59 status True | | 15803 |
| 246E60 | GOOSE Subscriber60 status True | | 15804 |
| 246E61 | GOOSE Subscriber61 status True | | 15805 |
| 246E62 | GOOSE Subscriber62 status True | | 15806 |
| 246E63 | GOOSE Subscriber63 status True | | 15807 |
| 247E1 | GOOSE Subscriber1 status False | | 15809 |
| 247E2 | GOOSE Subscriber2 status False | | 15810 |
| 247E3 | GOOSE Subscriber3 status False | | 15811 |
| 247E4 | GOOSE Subscriber4 status False | | 15812 |
| 247E5 | GOOSE Subscriber5 status False | | 15813 |
| 247E6 | GOOSE Subscriber6 status False | | 15814 |
| 247E7 | GOOSE Subscriber7 status False | | 15815 |
| 247E8 | GOOSE Subscriber8 status False | | 15816 |
| 247E9 | GOOSE Subscriber9 status False | | 15817 |
| 247E10 | GOOSE Subscriber10 status False | | 15818 |
| 247E11 | GOOSE Subscriber11 status False | | 15819 |
| 247E12 | GOOSE Subscriber12 status False | | 15820 |
| 247E13 | GOOSE Subscriber13 status False | | 15821 |
| 247E14 | GOOSE Subscriber14 status False | | 15822 |
| 247E15 | GOOSE Subscriber15 status False | | 15823 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 247E16 | GOOSE Subscriber16 status False | | 15824 |
| 247E17 | GOOSE Subscriber17 status False | | 15825 |
| 247E18 | GOOSE Subscriber18 status False | | 15826 |
| 247E19 | GOOSE Subscriber19 status False | | 15827 |
| 247E20 | GOOSE Subscriber20 status False | | 15828 |
| 247E21 | GOOSE Subscriber21 status False | | 15829 |
| 247E22 | GOOSE Subscriber22 status False | | 15830 |
| 247E23 | GOOSE Subscriber23 status False | | 15831 |
| 247E24 | GOOSE Subscriber24 status False | | 15832 |
| 247E25 | GOOSE Subscriber25 status False | | 15833 |
| 247E26 | GOOSE Subscriber26 status False | | 15834 |
| 247E27 | GOOSE Subscriber27 status False | | 15835 |
| 247E28 | GOOSE Subscriber28 status False | | 15836 |
| 247E29 | GOOSE Subscriber29 status False | | 15837 |
| 247E30 | GOOSE Subscriber30 status False | | 15838 |
| 247E31 | GOOSE Subscriber31 status False | | 15839 |
| 247E32 | GOOSE Subscriber32 status False | | 15840 |
| 247E33 | GOOSE Subscriber33 status False | | 15841 |
| 247E34 | GOOSE Subscriber34 status False | | 15842 |
| 247E35 | GOOSE Subscriber35 status False | | 15843 |
| 247E36 | GOOSE Subscriber36 status False | | 15844 |
| 247E37 | GOOSE Subscriber37 status False | | 15845 |
| 247E38 | GOOSE Subscriber38 status False | | 15846 |
| 247E39 | GOOSE Subscriber39 status False | | 15847 |
| 247E40 | GOOSE Subscriber40 status False | | 15848 |
| 247E41 | GOOSE Subscriber41 status False | | 15849 |
| 247E42 | GOOSE Subscriber42 status False | | 15850 |
| 247E43 | GOOSE Subscriber43 status False | | 15851 |
| 247E44 | GOOSE Subscriber44 status False | | 15852 |
| 247E45 | GOOSE Subscriber45 status False | | 15853 |
| 247E46 | GOOSE Subscriber46 status False | | 15854 |
| 247E47 | GOOSE Subscriber47 status False | | 15855 |
| 247E48 | GOOSE Subscriber48 status False | | 15856 |
| 247E49 | GOOSE Subscriber49 status False | | 15857 |
| 247E50 | GOOSE Subscriber50 status False | | 15858 |
| 247E51 | GOOSE Subscriber51 status False | | 15859 |
| 247E52 | GOOSE Subscriber52 status False | | 15860 |
| 247E53 | GOOSE Subscriber53 status False | | 15861 |
| 247E54 | GOOSE Subscriber54 status False | | 15862 |
| 247E55 | GOOSE Subscriber55 status False | | 15863 |
| 247E56 | GOOSE Subscriber56 status False | | 15864 |
| 247E57 | GOOSE Subscriber57 status False | | 15865 |
| 247E58 | GOOSE Subscriber58 status False | | 15866 |
| 247E59 | GOOSE Subscriber59 status False | | 15867 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 247E60 | GOOSE Subscriber60 status False | | 15868 |
| 247E61 | GOOSE Subscriber61 status False | | 15869 |
| 247E62 | GOOSE Subscriber62 status False | | 15870 |
| 247E63 | GOOSE Subscriber63 status False | | 15871 |
| 248E1 | GOOSE Subscriber1 NdsCom True | | 15873 |
| 248E2 | GOOSE Subscriber2 NdsCom True | | 15874 |
| 248E3 | GOOSE Subscriber3 NdsCom True | | 15875 |
| 248E4 | GOOSE Subscriber4 NdsCom True | | 15876 |
| 248E5 | GOOSE Subscriber5 NdsCom True | | 15877 |
| 248E6 | GOOSE Subscriber6 NdsCom True | | 15878 |
| 248E7 | GOOSE Subscriber7 NdsCom True | | 15879 |
| 248E8 | GOOSE Subscriber8 NdsCom True | | 15880 |
| 248E9 | GOOSE Subscriber9 NdsCom True | | 15881 |
| 248E10 | GOOSE Subscriber10 NdsCom True | | 15882 |
| 248E11 | GOOSE Subscriber11 NdsCom True | | 15883 |
| 248E12 | GOOSE Subscriber12 NdsCom True | | 15884 |
| 248E13 | GOOSE Subscriber13 NdsCom True | | 15885 |
| 248E14 | GOOSE Subscriber14 NdsCom True | | 15886 |
| 248E15 | GOOSE Subscriber15 NdsCom True | | 15887 |
| 248E16 | GOOSE Subscriber16 NdsCom True | | 15888 |
| 248E17 | GOOSE Subscriber17 NdsCom True | | 15889 |
| 248E18 | GOOSE Subscriber18 NdsCom True | | 15890 |
| 248E19 | GOOSE Subscriber19 NdsCom True | | 15891 |
| 248E20 | GOOSE Subscriber20 NdsCom True | | 15892 |
| 248E21 | GOOSE Subscriber21 NdsCom True | | 15893 |
| 248E22 | GOOSE Subscriber22 NdsCom True | | 15894 |
| 248E23 | GOOSE Subscriber23 NdsCom True | | 15895 |
| 248E24 | GOOSE Subscriber24 NdsCom True | | 15896 |
| 248E25 | GOOSE Subscriber25 NdsCom True | | 15897 |
| 248E26 | GOOSE Subscriber26 NdsCom True | | 15898 |
| 248E27 | GOOSE Subscriber27 NdsCom True | | 15899 |
| 248E28 | GOOSE Subscriber28 NdsCom True | | 15900 |
| 248E29 | GOOSE Subscriber29 NdsCom True | | 15901 |
| 248E30 | GOOSE Subscriber30 NdsCom True | | 15902 |
| 248E31 | GOOSE Subscriber31 NdsCom True | | 15903 |
| 248E32 | GOOSE Subscriber32 NdsCom True | | 15904 |
| 248E33 | GOOSE Subscriber33 NdsCom True | | 15905 |
| 248E34 | GOOSE Subscriber34 NdsCom True | | 15906 |
| 248E35 | GOOSE Subscriber35 NdsCom True | | 15907 |
| 248E36 | GOOSE Subscriber36 NdsCom True | | 15908 |
| 248E37 | GOOSE Subscriber37 NdsCom True | | 15909 |
| 248E38 | GOOSE Subscriber38 NdsCom True | | 15910 |
| 248E39 | GOOSE Subscriber39 NdsCom True | | 15911 |
| 248E40 | GOOSE Subscriber40 NdsCom True | | 15912 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 248E41 | GOOSE Subscriber41 NdsCom True | | 15913 |
| 248E42 | GOOSE Subscriber42 NdsCom True | | 15914 |
| 248E43 | GOOSE Subscriber43 NdsCom True | | 15915 |
| 248E44 | GOOSE Subscriber44 NdsCom True | | 15916 |
| 248E45 | GOOSE Subscriber45 NdsCom True | | 15917 |
| 248E46 | GOOSE Subscriber46 NdsCom True | | 15918 |
| 248E47 | GOOSE Subscriber47 NdsCom True | | 15919 |
| 248E48 | GOOSE Subscriber48 NdsCom True | | 15920 |
| 248E49 | GOOSE Subscriber49 NdsCom True | | 15921 |
| 248E50 | GOOSE Subscriber50 NdsCom True | | 15922 |
| 248E51 | GOOSE Subscriber51 NdsCom True | | 15923 |
| 248E52 | GOOSE Subscriber52 NdsCom True | | 15924 |
| 248E53 | GOOSE Subscriber53 NdsCom True | | 15925 |
| 248E54 | GOOSE Subscriber54 NdsCom True | | 15926 |
| 248E55 | GOOSE Subscriber55 NdsCom True | | 15927 |
| 248E56 | GOOSE Subscriber56 NdsCom True | | 15928 |
| 248E57 | GOOSE Subscriber57 NdsCom True | | 15929 |
| 248E58 | GOOSE Subscriber58 NdsCom True | | 15930 |
| 248E59 | GOOSE Subscriber59 NdsCom True | | 15931 |
| 248E60 | GOOSE Subscriber60 NdsCom True | | 15932 |
| 248E61 | GOOSE Subscriber61 NdsCom True | | 15933 |
| 248E62 | GOOSE Subscriber62 NdsCom True | | 15934 |
| 248E63 | GOOSE Subscriber63 NdsCom True | | 15935 |
| 249E1 | GOOSE Subscriber1 NdsCom False | | 15937 |
| 249E2 | GOOSE Subscriber2 NdsCom False | | 15938 |
| 249E3 | GOOSE Subscriber3 NdsCom False | | 15939 |
| 249E4 | GOOSE Subscriber4 NdsCom False | | 15940 |
| 249E5 | GOOSE Subscriber5 NdsCom False | | 15941 |
| 249E6 | GOOSE Subscriber6 NdsCom False | | 15942 |
| 249E7 | GOOSE Subscriber7 NdsCom False | | 15943 |
| 249E8 | GOOSE Subscriber8 NdsCom False | | 15944 |
| 249E9 | GOOSE Subscriber9 NdsCom False | | 15945 |
| 249E10 | GOOSE Subscriber10 NdsCom False | | 15946 |
| 249E11 | GOOSE Subscriber11 NdsCom False | | 15947 |
| 249E12 | GOOSE Subscriber12 NdsCom False | | 15948 |
| 249E13 | GOOSE Subscriber13 NdsCom False | | 15949 |
| 249E14 | GOOSE Subscriber14 NdsCom False | | 15950 |
| 249E15 | GOOSE Subscriber15 NdsCom False | | 15951 |
| 249E16 | GOOSE Subscriber16 NdsCom False | | 15952 |
| 249E17 | GOOSE Subscriber17 NdsCom False | | 15953 |
| 249E18 | GOOSE Subscriber18 NdsCom False | | 15954 |
| 249E19 | GOOSE Subscriber19 NdsCom False | | 15955 |
| 249E20 | GOOSE Subscriber20 NdsCom False | | 15956 |
| 249E21 | GOOSE Subscriber21 NdsCom False | | 15957 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 249E22 | GOOSE Subscriber22 NdsCom False | | 15958 |
| 249E23 | GOOSE Subscriber23 NdsCom False | | 15959 |
| 249E24 | GOOSE Subscriber24 NdsCom False | | 15960 |
| 249E25 | GOOSE Subscriber25 NdsCom False | | 15961 |
| 249E26 | GOOSE Subscriber26 NdsCom False | | 15962 |
| 249E27 | GOOSE Subscriber27 NdsCom False | | 15963 |
| 249E28 | GOOSE Subscriber28 NdsCom False | | 15964 |
| 249E29 | GOOSE Subscriber29 NdsCom False | | 15965 |
| 249E30 | GOOSE Subscriber30 NdsCom False | | 15966 |
| 249E31 | GOOSE Subscriber31 NdsCom False | | 15967 |
| 249E32 | GOOSE Subscriber32 NdsCom False | | 15968 |
| 249E33 | GOOSE Subscriber33 NdsCom False | | 15969 |
| 249E34 | GOOSE Subscriber34 NdsCom False | | 15970 |
| 249E35 | GOOSE Subscriber35 NdsCom False | | 15971 |
| 249E36 | GOOSE Subscriber36 NdsCom False | | 15972 |
| 249E37 | GOOSE Subscriber37 NdsCom False | | 15973 |
| 249E38 | GOOSE Subscriber38 NdsCom False | | 15974 |
| 249E39 | GOOSE Subscriber39 NdsCom False | | 15975 |
| 249E40 | GOOSE Subscriber40 NdsCom False | | 15976 |
| 249E41 | GOOSE Subscriber41 NdsCom False | | 15977 |
| 249E42 | GOOSE Subscriber42 NdsCom False | | 15978 |
| 249E43 | GOOSE Subscriber43 NdsCom False | | 15979 |
| 249E44 | GOOSE Subscriber44 NdsCom False | | 15980 |
| 249E45 | GOOSE Subscriber45 NdsCom False | | 15981 |
| 249E46 | GOOSE Subscriber46 NdsCom False | | 15982 |
| 249E47 | GOOSE Subscriber47 NdsCom False | | 15983 |
| 249E48 | GOOSE Subscriber48 NdsCom False | | 15984 |
| 249E49 | GOOSE Subscriber49 NdsCom False | | 15985 |
| 249E50 | GOOSE Subscriber50 NdsCom False | | 15986 |
| 249E51 | GOOSE Subscriber51 NdsCom False | | 15987 |
| 249E52 | GOOSE Subscriber52 NdsCom False | | 15988 |
| 249E53 | GOOSE Subscriber53 NdsCom False | | 15989 |
| 249E54 | GOOSE Subscriber54 NdsCom False | | 15990 |
| 249E55 | GOOSE Subscriber55 NdsCom False | | 15991 |
| 249E56 | GOOSE Subscriber56 NdsCom False | | 15992 |
| 249E57 | GOOSE Subscriber57 NdsCom False | | 15993 |
| 249E58 | GOOSE Subscriber58 NdsCom False | | 15994 |
| 249E59 | GOOSE Subscriber59 NdsCom False | | 15995 |
| 249E60 | GOOSE Subscriber60 NdsCom False | | 15996 |
| 249E61 | GOOSE Subscriber61 NdsCom False | | 15997 |
| 249E62 | GOOSE Subscriber62 NdsCom False | | 15998 |
| 249E63 | GOOSE Subscriber63 NdsCom False | | 15999 |
| 250E1 | GOOSE Subscriber1 SimSt True | | 16001 |
| 250E2 | GOOSE Subscriber2 SimSt True | | 16002 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-------------------------------|-------|----------------------|
| 250E3 | GOOSE Subscriber3 SimSt True | | 16003 |
| 250E4 | GOOSE Subscriber4 SimSt True | | 16004 |
| 250E5 | GOOSE Subscriber5 SimSt True | | 16005 |
| 250E6 | GOOSE Subscriber6 SimSt True | | 16006 |
| 250E7 | GOOSE Subscriber7 SimSt True | | 16007 |
| 250E8 | GOOSE Subscriber8 SimSt True | | 16008 |
| 250E9 | GOOSE Subscriber9 SimSt True | | 16009 |
| 250E10 | GOOSE Subscriber10 SimSt True | | 16010 |
| 250E11 | GOOSE Subscriber11 SimSt True | | 16011 |
| 250E12 | GOOSE Subscriber12 SimSt True | | 16012 |
| 250E13 | GOOSE Subscriber13 SimSt True | | 16013 |
| 250E14 | GOOSE Subscriber14 SimSt True | | 16014 |
| 250E15 | GOOSE Subscriber15 SimSt True | | 16015 |
| 250E16 | GOOSE Subscriber16 SimSt True | | 16016 |
| 250E17 | GOOSE Subscriber17 SimSt True | | 16017 |
| 250E18 | GOOSE Subscriber18 SimSt True | | 16018 |
| 250E19 | GOOSE Subscriber19 SimSt True | | 16019 |
| 250E20 | GOOSE Subscriber20 SimSt True | | 16020 |
| 250E21 | GOOSE Subscriber21 SimSt True | | 16021 |
| 250E22 | GOOSE Subscriber22 SimSt True | | 16022 |
| 250E23 | GOOSE Subscriber23 SimSt True | | 16023 |
| 250E24 | GOOSE Subscriber24 SimSt True | | 16024 |
| 250E25 | GOOSE Subscriber25 SimSt True | | 16025 |
| 250E26 | GOOSE Subscriber26 SimSt True | | 16026 |
| 250E27 | GOOSE Subscriber27 SimSt True | | 16027 |
| 250E28 | GOOSE Subscriber28 SimSt True | | 16028 |
| 250E29 | GOOSE Subscriber29 SimSt True | | 16029 |
| 250E30 | GOOSE Subscriber30 SimSt True | | 16030 |
| 250E31 | GOOSE Subscriber31 SimSt True | | 16031 |
| 250E32 | GOOSE Subscriber32 SimSt True | | 16032 |
| 250E33 | GOOSE Subscriber33 SimSt True | | 16033 |
| 250E34 | GOOSE Subscriber34 SimSt True | | 16034 |
| 250E35 | GOOSE Subscriber35 SimSt True | | 16035 |
| 250E36 | GOOSE Subscriber36 SimSt True | | 16036 |
| 250E37 | GOOSE Subscriber37 SimSt True | | 16037 |
| 250E38 | GOOSE Subscriber38 SimSt True | | 16038 |
| 250E39 | GOOSE Subscriber39 SimSt True | | 16039 |
| 250E40 | GOOSE Subscriber40 SimSt True | | 16040 |
| 250E41 | GOOSE Subscriber41 SimSt True | | 16041 |
| 250E42 | GOOSE Subscriber42 SimSt True | | 16042 |
| 250E43 | GOOSE Subscriber43 SimSt True | | 16043 |
| 250E44 | GOOSE Subscriber44 SimSt True | | 16044 |
| 250E45 | GOOSE Subscriber45 SimSt True | | 16045 |
| 250E46 | GOOSE Subscriber46 SimSt True | | 16046 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|--------------------------------|-------|----------------------|
| 250E47 | GOOSE Subscriber47 SimSt True | | 16047 |
| 250E48 | GOOSE Subscriber48 SimSt True | | 16048 |
| 250E49 | GOOSE Subscriber49 SimSt True | | 16049 |
| 250E50 | GOOSE Subscriber50 SimSt True | | 16050 |
| 250E51 | GOOSE Subscriber51 SimSt True | | 16051 |
| 250E52 | GOOSE Subscriber52 SimSt True | | 16052 |
| 250E53 | GOOSE Subscriber53 SimSt True | | 16053 |
| 250E54 | GOOSE Subscriber54 SimSt True | | 16054 |
| 250E55 | GOOSE Subscriber55 SimSt True | | 16055 |
| 250E56 | GOOSE Subscriber56 SimSt True | | 16056 |
| 250E57 | GOOSE Subscriber57 SimSt True | | 16057 |
| 250E58 | GOOSE Subscriber58 SimSt True | | 16058 |
| 250E59 | GOOSE Subscriber59 SimSt True | | 16059 |
| 250E60 | GOOSE Subscriber60 SimSt True | | 16060 |
| 250E61 | GOOSE Subscriber61 SimSt True | | 16061 |
| 250E62 | GOOSE Subscriber62 SimSt True | | 16062 |
| 250E63 | GOOSE Subscriber63 SimSt True | | 16063 |
| 225E33 | GOOSE Subscriber1 SimSt False | | 14433 |
| 225E34 | GOOSE Subscriber2 SimSt False | | 14434 |
| 225E35 | GOOSE Subscriber3 SimSt False | | 14435 |
| 225E36 | GOOSE Subscriber4 SimSt False | | 14436 |
| 225E37 | GOOSE Subscriber5 SimSt False | | 14437 |
| 225E38 | GOOSE Subscriber6 SimSt False | | 14438 |
| 225E39 | GOOSE Subscriber7 SimSt False | | 14439 |
| 225E40 | GOOSE Subscriber8 SimSt False | | 14440 |
| 225E41 | GOOSE Subscriber9 SimSt False | | 14441 |
| 225E42 | GOOSE Subscriber10 SimSt False | | 14442 |
| 225E43 | GOOSE Subscriber11 SimSt False | | 14443 |
| 225E44 | GOOSE Subscriber12 SimSt False | | 14444 |
| 225E45 | GOOSE Subscriber13 SimSt False | | 14445 |
| 225E46 | GOOSE Subscriber14 SimSt False | | 14446 |
| 225E47 | GOOSE Subscriber15 SimSt False | | 14447 |
| 225E48 | GOOSE Subscriber16 SimSt False | | 14448 |
| 225E49 | GOOSE Subscriber17 SimSt False | | 14449 |
| 225E50 | GOOSE Subscriber18 SimSt False | | 14450 |
| 225E51 | GOOSE Subscriber19 SimSt False | | 14451 |
| 225E52 | GOOSE Subscriber20 SimSt False | | 14452 |
| 225E53 | GOOSE Subscriber21 SimSt False | | 14453 |
| 225E54 | GOOSE Subscriber22 SimSt False | | 14454 |
| 225E55 | GOOSE Subscriber23 SimSt False | | 14455 |
| 225E56 | GOOSE Subscriber24 SimSt False | | 14456 |
| 225E57 | GOOSE Subscriber25 SimSt False | | 14457 |
| 225E58 | GOOSE Subscriber26 SimSt False | | 14458 |
| 225E59 | GOOSE Subscriber27 SimSt False | | 14459 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 225E60 | GOOSE Subscriber28 SimSt False | | 14460 |
| 225E61 | GOOSE Subscriber29 SimSt False | | 14461 |
| 225E62 | GOOSE Subscriber30 SimSt False | | 14462 |
| 225E63 | GOOSE Subscriber31 SimSt False | | 14463 |
| 226E33 | GOOSE Subscriber32 SimSt False | | 14497 |
| 226E34 | GOOSE Subscriber33 SimSt False | | 14498 |
| 226E35 | GOOSE Subscriber34 SimSt False | | 14499 |
| 226E36 | GOOSE Subscriber35 SimSt False | | 14500 |
| 226E37 | GOOSE Subscriber36 SimSt False | | 14501 |
| 226E38 | GOOSE Subscriber37 SimSt False | | 14502 |
| 226E39 | GOOSE Subscriber38 SimSt False | | 14503 |
| 226E40 | GOOSE Subscriber39 SimSt False | | 14504 |
| 226E41 | GOOSE Subscriber40 SimSt False | | 14505 |
| 226E42 | GOOSE Subscriber41 SimSt False | | 14506 |
| 226E43 | GOOSE Subscriber42 SimSt False | | 14507 |
| 226E44 | GOOSE Subscriber43 SimSt False | | 14508 |
| 226E45 | GOOSE Subscriber44 SimSt False | | 14509 |
| 226E46 | GOOSE Subscriber45 SimSt False | | 14510 |
| 226E47 | GOOSE Subscriber46 SimSt False | | 14511 |
| 226E48 | GOOSE Subscriber47 SimSt False | | 14512 |
| 226E49 | GOOSE Subscriber48 SimSt False | | 14513 |
| 226E50 | GOOSE Subscriber49 SimSt False | | 14514 |
| 226E51 | GOOSE Subscriber50 SimSt False | | 14515 |
| 226E52 | GOOSE Subscriber51 SimSt False | | 14516 |
| 226E53 | GOOSE Subscriber52 SimSt False | | 14517 |
| 226E54 | GOOSE Subscriber53 SimSt False | | 14518 |
| 226E55 | GOOSE Subscriber54 SimSt False | | 14519 |
| 226E56 | GOOSE Subscriber55 SimSt False | | 14520 |
| 226E57 | GOOSE Subscriber56 SimSt False | | 14521 |
| 226E58 | GOOSE Subscriber57 SimSt False | | 14522 |
| 226E59 | GOOSE Subscriber58 SimSt False | | 14523 |
| 226E60 | GOOSE Subscriber59 SimSt False | | 14524 |
| 226E61 | GOOSE Subscriber60 SimSt False | | 14525 |
| 226E62 | GOOSE Subscriber61 SimSt False | | 14526 |
| 226E63 | GOOSE Subscriber62 SimSt False | | 14527 |
| 227E33 | GOOSE Subscriber63 SimSt False | | 14561 |
| 227E34 | GOOSE Subscriber64 status True | | 14562 |
| 227E35 | GOOSE Subscriber64 status False | | 14563 |
| 227E36 | GOOSE Subscriber64 NdsCom True | | 14564 |
| 227E37 | GOOSE Subscriber64 NdsCom False | | 14565 |
| 227E38 | GOOSE Subscriber64 SimSt True | | 14566 |
| 227E39 | GOOSE Subscriber64 SimSt False | | 14567 |
| 106E01 | f+df/dt>3 start on | | 6785 |
| 106E02 | f+df/dt>3 trip on | Yes | 6786 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------|-------|----------------------|
| 106E03 | f+df/dt>3 start off | | 6787 |
| 106E04 | f+df/dt>3 trip off | | 6788 |
| 199E01 | f+df/dt>4 start on | | 12737 |
| 199E02 | f+df/dt>4 trip on | Yes | 12738 |
| 199E03 | f+df/dt>4 start off | | 12739 |
| 199E04 | f+df/dt>4 trip off | | 12740 |
| 202E01 | f+df/dt>5 start on | | 12929 |
| 202E02 | f+df/dt>5 trip on | Yes | 12930 |
| 202E03 | f+df/dt>5 start off | | 12931 |
| 202E04 | f+df/dt>5 trip off | | 12932 |
| 203E01 | f+df/dt>6 start on | | 12993 |
| 203E02 | f+df/dt>6 trip on | Yes | 12994 |
| 203E03 | f+df/dt>6 start off | | 12995 |
| 203E04 | f+df/dt>6 trip off | | 12996 |
| 208E01 | f+df/dt>7 start on | | 13313 |
| 208E02 | f+df/dt>7 trip on | Yes | 13314 |
| 208E03 | f+df/dt>7 start off | | 13315 |
| 208E04 | f+df/dt>7 trip off | | 13316 |
| 243E01 | f+df/dt>8 start on | | 15553 |
| 243E02 | f+df/dt>8 trip on | Yes | 15554 |
| 243E03 | f+df/dt>8 start off | | 15555 |
| 243E04 | f+df/dt>8 trip off | | 15556 |
| 244E01 | f+df/dt>9 start on | | 15617 |
| 244E02 | f+df/dt>9 trip on | Yes | 15618 |
| 244E03 | f+df/dt>9 start off | | 15619 |
| 244E04 | f+df/dt>9 trip off | | 15620 |
| 93E2 | Latched CTS2 alarm on | | 5954 |
| 93E4 | Latched CTS2 alarm off | | 5955 |
| 93E3 | Fast CTS2 alarm on | | 5956 |
| 93E5 | Fast CTS2 alarm off | | 5957 |
| 94E2 | Latched CTS-Diff alarm on | | 6018 |
| 94E4 | Latched CTS-Diff alarm off | | 6019 |
| 94E3 | Fast CTS-Diff alarm on | | 6020 |
| 94E5 | Fast CTS-Diff alarm off | | 6021 |
| 94E6 | Fast CTS-Diff CT-1 alarm on | | 6022 |
| 94E8 | Fast CTS-Diff CT-1 alarm off | | 6023 |
| 94E7 | Fast CTS-Diff CT-2 alarm on | | 6024 |
| 94E9 | Fast CTS-Diff CT-2 alarm off | | 6025 |
| 162E1 | Overfluxing V/f>2 start on | | 10369 |
| 162E2 | Overfluxing V/f>2 trip on | | 10370 |
| 162E3 | Overfluxing V/f>2 start off | | 10371 |
| 162E4 | Overfluxing V/f>2 trip off | | 10372 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 165E1 | Overfluxing V/f>1 start on | | 10561 |
| 165E2 | Overfluxing V/f>1 trip on | | 10562 |
| 165E3 | Overfluxing V/f>1 start off | | 10563 |
| 165E4 | Overfluxing V/f>1 trip off | | 10564 |
| 166E11 | Overfluxing V/f Alarm on | | 10635 |
| 166E12 | Overfluxing V/f Alarm off | | 10636 |
| 204E1 | Env severity degree1 event on | | 13057 |
| 204E2 | Env severity degree1 event off | | 13058 |
| 204E3 | Env severity degree2 event on | | 13059 |
| 204E4 | Env severity degree2 event off | | 13060 |
| 204E5 | Maintenance date soon on | | 13061 |
| 204E6 | Maintenance date soon off | | 13062 |
| 204E7 | High degree of severity on | Yes | 13063 |
| 204E8 | High degree of severity off | Yes | 13064 |
| 204E9 | Maintenance date overpassed on | Yes | 13065 |
| 204E10 | Maintenance date overpassed off | Yes | 13066 |
| 204E11 | High temperature alarm on | Yes | 13067 |
| 204E12 | High temperature alarm off | Yes | 13068 |
| 204E13 | High humidity alarm on | Yes | 13069 |
| 204E14 | High humidity alarm off | Yes | 13070 |
| 205E1 | CB upper-A T red alarm on | Yes | 13121 |
| 205E2 | CB upper-A T red alarm off | Yes | 13122 |
| 205E3 | CB upper-B T red alarm on | Yes | 13123 |
| 205E4 | CB upper-B T red alarm off | Yes | 13124 |
| 205E5 | CB upper-C T red alarm on | Yes | 13125 |
| 205E6 | CB upper-C T red alarm off | Yes | 13126 |
| 205E7 | CB lower-A T red alarm on | Yes | 13127 |
| 205E8 | CB lower-A T red alarm off | Yes | 13128 |
| 205E9 | CB lower-B T red alarm on | Yes | 13129 |
| 205E10 | CB lower-B T red alarm off | Yes | 13130 |
| 205E11 | CB lower-C T red alarm on | Yes | 13131 |
| 205E12 | CB lower-C T red alarm off | Yes | 13132 |
| 205E13 | Cable 1-A T red alarm on | Yes | 13133 |
| 205E14 | Cable 1-A T red alarm off | Yes | 13134 |
| 205E15 | Cable 1-B T red alarm on | Yes | 13135 |
| 205E16 | Cable 1-B T red alarm off | Yes | 13136 |
| 205E17 | Cable 1-C T red alarm on | Yes | 13137 |
| 205E18 | Cable 1-C T red alarm off | Yes | 13138 |
| 205E19 | Cable 2-A T red alarm on | Yes | 13139 |
| 205E20 | Cable 2-A T red alarm off | Yes | 13140 |
| 205E21 | Cable 2-B T red alarm on | Yes | 13141 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------|-------|----------------------|
| 205E22 | Cable 2-B T red alarm off | Yes | 13142 |
| 205E23 | Cable 2-C T red alarm on | Yes | 13143 |
| 205E24 | Cable 2-C T red alarm off | Yes | 13144 |
| 205E25 | Busbar 1-A T red alarm on | Yes | 13145 |
| 205E26 | Busbar 1-A T red alarm off | Yes | 13146 |
| 205E27 | Busbar 1-B T red alarm on | Yes | 13147 |
| 205E28 | Busbar 1-B T red alarm off | Yes | 13148 |
| 205E29 | Busbar 1-C T red alarm on | Yes | 13149 |
| 205E30 | Busbar 1-C T red alarm off | Yes | 13150 |
| 205E31 | Busbar 2-A T red alarm on | Yes | 13151 |
| 205E32 | Busbar 2-A T red alarm off | Yes | 13152 |
| 205E33 | Busbar 2-B T red alarm on | Yes | 13153 |
| 205E34 | Busbar 2-B T red alarm off | Yes | 13154 |
| 205E35 | Busbar 2-C T red alarm on | Yes | 13155 |
| 205E36 | Busbar 2-C T red alarm off | Yes | 13156 |
| 206E1 | CB upper-A T orange alm on | Yes | 13185 |
| 206E2 | CB upper-A T orange alm off | Yes | 13186 |
| 206E3 | CB upper-B T orange alm on | Yes | 13187 |
| 206E4 | CB upper-B T orange alm off | Yes | 13188 |
| 206E5 | CB upper-C T orange alm on | Yes | 13189 |
| 206E6 | CB upper-C T orange alm off | Yes | 13190 |
| 206E7 | CB lower-A T orange alm on | Yes | 13191 |
| 206E8 | CB lower-A T orange alm off | Yes | 13192 |
| 206E9 | CB lower-B T orange alm on | Yes | 13193 |
| 206E10 | CB lower-B T orange alm off | Yes | 13194 |
| 206E11 | CB lower-C T orange alm on | Yes | 13195 |
| 206E12 | CB lower-C T orange alm off | Yes | 13196 |
| 206E13 | Cable 1-A T orange alm on | Yes | 13197 |
| 206E14 | Cable 1-A T orange alm off | Yes | 13198 |
| 206E15 | Cable 1-B T orange alm on | Yes | 13199 |
| 206E16 | Cable 1-B T orange alm off | Yes | 13200 |
| 206E17 | Cable 1-C T orange alm on | Yes | 13201 |
| 206E18 | Cable 1-C T orange alm off | Yes | 13202 |
| 206E19 | Cable 2-A T orange alm on | Yes | 13203 |
| 206E20 | Cable 2-A T orange alm off | Yes | 13204 |
| 206E21 | Cable 2-B T orange alm on | Yes | 13205 |
| 206E22 | Cable 2-B T orange alm off | Yes | 13206 |
| 206E23 | Cable 2-C T orange alm on | Yes | 13207 |
| 206E24 | Cable 2-C T orange alm off | Yes | 13208 |
| 206E25 | Busbar 1-A T orange alm on | Yes | 13209 |
| 206E26 | Busbar 1-A T orange alm off | Yes | 13210 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------|-------|----------------------|
| 206E27 | Busbar 1-B T orange alm on | Yes | 13211 |
| 206E28 | Busbar 1-B T orange alm off | Yes | 13212 |
| 206E29 | Busbar 1-C T orange alm on | Yes | 13213 |
| 206E30 | Busbar 1-C T orange alm off | Yes | 13214 |
| 206E31 | Busbar 2-A T orange alm on | Yes | 13215 |
| 206E32 | Busbar 2-A T orange alm off | Yes | 13216 |
| 206E33 | Busbar 2-B T orange alm on | Yes | 13217 |
| 206E34 | Busbar 2-B T orange alm off | Yes | 13218 |
| 206E35 | Busbar 2-C T orange alm on | Yes | 13219 |
| 206E36 | Busbar 2-C T orange alm off | Yes | 13220 |
| 206E37 | CB upper T orange alarm on | Yes | 13221 |
| 206E38 | CB upper T orange alarm off | Yes | 13222 |
| 206E39 | CB lower T orange alarm on | Yes | 13223 |
| 206E40 | CB lower T orange alarm off | Yes | 13224 |
| 206E41 | Cable 1 T orange alarm on | Yes | 13225 |
| 206E42 | Cable 1 T orange alarm off | Yes | 13226 |
| 206E43 | Cable 2 T orange alarm on | Yes | 13227 |
| 206E44 | Cable 2 T orange alarm off | Yes | 13228 |
| 206E45 | Busbar 1 T orange alarm on | Yes | 13229 |
| 206E46 | Busbar 1 T orange alarm off | Yes | 13230 |
| 206E47 | Busbar 2 T orange alarm on | Yes | 13231 |
| 206E48 | Busbar 2 T orange alarm off | Yes | 13232 |
| 206E49 | Zigbee network is ok | | 13233 |
| 206E50 | Zigbee network is not ok | | 13234 |
| 207E1 | CB upper A T overpass on | | 13249 |
| 207E2 | CB upper A T overpass off | | 13250 |
| 207E3 | CB upper B T overpass on | | 13251 |
| 207E4 | CB upper B T overpass off | | 13252 |
| 207E5 | CB upper C T overpass on | | 13253 |
| 207E6 | CB upper C T overpass off | | 13254 |
| 207E7 | CB lower A T overpass on | | 13255 |
| 207E8 | CB lower A T overpass off | | 13256 |
| 207E9 | CB lower B T overpass on | | 13257 |
| 207E10 | CB lower B T overpass off | | 13258 |
| 207E11 | CB lower C T overpass on | | 13259 |
| 207E12 | CB lower C T overpass off | | 13260 |
| 207E13 | Cable 1-A T overpass on | | 13261 |
| 207E14 | Cable 1-A T overpass off | | 13262 |
| 207E15 | Cable 1-B T overpass on | | 13263 |
| 207E16 | Cable 1-B T overpass off | | 13264 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------|-------|----------------------|
| 207E17 | Cable 1-C T overpass on | | 13265 |
| 207E18 | Cable 1-C T overpass off | | 13266 |
| 207E19 | Cable 2-A T overpass on | | 13267 |
| 207E20 | Cable 2-A T overpass off | | 13268 |
| 207E21 | Cable 2-B T overpass on | | 13269 |
| 207E22 | Cable 2-B T overpass off | | 13270 |
| 207E23 | Cable 2-C T overpass on | | 13271 |
| 207E24 | Cable 2-C T overpass off | | 13272 |
| 207E25 | Busbar 1-A T overpass on | | 13273 |
| 207E26 | Busbar 1-A T overpass off | | 13274 |
| 207E27 | Busbar 1-B T overpass on | | 13275 |
| 207E28 | Busbar 1-B T overpass off | | 13276 |
| 207E29 | Busbar 1-C T overpass on | | 13277 |
| 207E30 | Busbar 1-C T overpass off | | 13278 |
| 207E31 | Busbar 2-A T overpass on | | 13279 |
| 207E32 | Busbar 2-A T overpass off | | 13280 |
| 207E33 | Busbar 2-B T overpass on | | 13281 |
| 207E34 | Busbar 2-B T overpass off | | 13282 |
| 207E35 | Busbar 2-C T overpass on | | 13283 |
| 207E36 | Busbar 2-C T overpass off | | 13284 |
| 207E37 | CB upper T overpass on | | 13285 |
| 207E38 | CB upper T overpass off | | 13286 |
| 207E39 | CB lower T overpass on | | 13287 |
| 207E40 | CB lower T overpass off | | 13288 |
| 207E41 | Cable 1 T overpass on | | 13289 |
| 207E42 | Cable 1 T overpass off | | 13290 |
| 207E43 | Cable 2 T overpass on | | 13291 |
| 207E44 | Cable 2 T overpass off | | 13292 |
| 207E45 | Busbar 1 T overpass on | | 13293 |
| 207E46 | Busbar 1 T overpass off | | 13294 |
| 207E47 | Busbar 2 T overpass on | | 13295 |
| 207E48 | Busbar 2 T overpass off | | 13296 |
| 245E1 | T-Diff start on | | 15681 |
| 245E2 | T-Diff trip on | | 15682 |
| 245E3 | T-Diff start off | | 15683 |
| 245E4 | T-Diff trip off | | 15684 |
| 245E11 | T-Diff phase A start on | | 15691 |
| 245E12 | T-Diff phase A start off | | 15692 |
| 245E13 | T-Diff phase A trip on | | 15693 |
| 245E14 | T-Diff phase A trip off | | 15694 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 245E15 | T-Diff phase B start on | | 15695 |
| 245E16 | T-Diff phase B start off | | 15696 |
| 245E17 | T-Diff phase B trip on | | 15697 |
| 245E18 | T-Diff phase B trip off | | 15698 |
| 245E19 | T-Diff phase C start on | | 15699 |
| 245E20 | T-Diff phase C start off | | 15700 |
| 245E21 | T-Diff phase C trip on | | 15701 |
| 245E22 | T-Diff phase C trip off | | 15702 |
| 245E23 | T-Diff matching factor error on | | 15703 |
| 245E24 | T-Diff matching factor error off | | 15704 |
| 245E25 | T-Diff inrush block on | | 15705 |
| 245E26 | T-Diff inrush block off | | 15706 |
| 245E27 | T-Diff inrush A block on | | 15707 |
| 245E28 | T-Diff inrush A block off | | 15708 |
| 245E29 | T-Diff inrush B block on | | 15709 |
| 245E30 | T-Diff inrush B block off | | 15710 |
| 245E31 | T-Diff inrush C block on | | 15711 |
| 245E32 | T-Diff inrush C block off | | 15712 |
| 97E1 | Smart CB BMM online | Yes | 6209 |
| 97E2 | Smart CB BMM offline | Yes | 6210 |
| 97E3 | CB alarm: No.(op) <> range on | | 6211 |
| 97E4 | CB alarm: No.(op) <> range off | | 6212 |
| 97E5 | CB alarm: No.(op) > limit on | | 6213 |
| 97E6 | CB alarm: No.(op) > limit off | | 6214 |
| 97E7 | CB alarm: No.(op) at limit on | | 6215 |
| 97E8 | CB alarm: No.(op) at limit off | | 6216 |
| 97E9 | CB alarm: t(open) <> range on | | 6217 |
| 97E10 | CB alarm: t(open) <> range off | | 6218 |
| 97E11 | CB alarm: t(open) > limit on | | 6219 |
| 97E12 | CB alarm: t(open) > limit off | | 6220 |
| 97E13 | CB alarm: t(close) <> range on | | 6221 |
| 97E14 | CB alarm: t(close) <> range off | | 6222 |
| 97E15 | CB alarm: t(close) > limit on | | 6223 |
| 97E16 | CB alarm: t(close) > limit off | | 6224 |
| 97E17 | CB alarm: El.wear <> range on | | 6225 |
| 97E18 | CB alarm: El.wear <> range off | | 6226 |
| 97E19 | CB alarm: El.wear at limit on | | 6227 |
| 97E20 | CB alarm: El.wear at limit off | | 6228 |
| 97E21 | Mech. alm: Shaft t(open)>> on | | 6229 |
| 97E22 | Mech. alm: Shaft t(open)>> off | | 6230 |
| 97E23 | Mech. alm: Shaft t(open)> on | | 6231 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------------|-------|----------------------|
| 97E24 | Mech. alarm: Shaft t(open)> off | | 6232 |
| 97E25 | Mech. alarm: Shaft t(trav)>> on | | 6233 |
| 97E26 | Mech. alarm: Shaft t(trav)>> off | | 6234 |
| 97E27 | Mech. alarm: Shaft t(trav)> on | | 6235 |
| 97E28 | Mech. alarm: Shaft t(trav)> off | | 6236 |
| 97E29 | Mech. alarm: Shaft t(close)>> on | | 6237 |
| 97E30 | Mech. alarm: Shaft t(close)>> off | | 6238 |
| 97E31 | Mech. alarm: Shaft t(close)> on | | 6239 |
| 97E32 | Mech. alarm: Shaft t(close)> off | | 6240 |
| 97E33 | Mech. alarm: Mech.wear<>range on | | 6241 |
| 97E34 | Mech. alarm: Mech.wear<>range off | | 6242 |
| 97E35 | Mech. alarm: Mech.wear >limit on | | 6243 |
| 97E36 | Mech. alarm: Mech.wear >limit off | | 6244 |
| 97E37 | Mech. alarm: Open stroke >lim on | | 6245 |
| 97E38 | Mech. alarm: Open stroke >lim off | | 6246 |
| 97E39 | Mech. alarm: Gap <> range on | | 6247 |
| 97E40 | Mech. alarm: Gap <> range off | | 6248 |
| 97E41 | Trip coil 1: t(activation)>> on | | 6249 |
| 97E42 | Trip coil 1: t(activation)>> off | | 6250 |
| 97E43 | Trip coil 1: t(activation)> on | | 6251 |
| 97E44 | Trip coil 1: t(activation)> off | | 6252 |
| 97E45 | Trip coil 1: Number(op)> on | | 6253 |
| 97E46 | Trip coil 1: Number(op)> off | | 6254 |
| 97E47 | Trip coil 1: Charact.<>range on | | 6255 |
| 97E48 | Trip coil 1: Charact.<>range off | | 6256 |
| 97E49 | Trip coil 1: Charact. >limit on | | 6257 |
| 97E50 | Trip coil 1: Charact. >limit off | | 6258 |
| 97E51 | Trip coil 1: I(coil)>> on | | 6259 |
| 97E52 | Trip coil 1: I(coil)>> off | | 6260 |
| 97E53 | Trip coil 1: I(coil)> on | | 6261 |
| 97E54 | Trip coil 1: I(coil)> off | | 6262 |
| 97E55 | Trip coil 2: t(activation)>> on | | 6263 |
| 97E56 | Trip coil 2: t(activation)>> off | | 6264 |
| 97E57 | Trip coil 2: t(activation)> on | | 6265 |
| 97E58 | Trip coil 2: t(activation)> off | | 6266 |
| 97E59 | Trip coil 2: Number(op)> on | | 6267 |
| 97E60 | Trip coil 2: Number(op)> off | | 6268 |
| 97E61 | Trip coil 2: Charact.<>range on | | 6269 |
| 97E62 | Trip coil 2: Charact.<>range off | | 6270 |
| 97E63 | Trip coil 2: Charact. >limit on | | 6271 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 98E1 | Trip coil 2: Charact. >limit off | | 6273 |
| 98E2 | Trip coil 2: I(coil)>> on | | 6274 |
| 98E3 | Trip coil 2: I(coil)>> off | | 6275 |
| 98E4 | Trip coil 2: I(coil)> on | | 6276 |
| 98E5 | Trip coil 2: I(coil)> off | | 6277 |
| 98E6 | Close coil: t(activation)>> on | | 6278 |
| 98E7 | Close coil: t(activation)>> off | | 6279 |
| 98E8 | Close coil: t(activation)> on | | 6280 |
| 98E9 | Close coil: t(activation)> off | | 6281 |
| 98E10 | Close coil: Number(op)> on | | 6282 |
| 98E11 | Close coil: Number(op)> off | | 6283 |
| 98E12 | Close coil: Charact. <>range on | | 6284 |
| 98E13 | Close coil: Charact. <>range off | | 6285 |
| 98E14 | Close coil: Charact. > limit on | | 6286 |
| 98E15 | Close coil: Charact. > limit off | | 6287 |
| 98E16 | Close coil: I(coil)>> on | | 6288 |
| 98E17 | Close coil: I(coil)>> off | | 6289 |
| 98E18 | Close coil: I(coil)> on | | 6290 |
| 98E19 | Close coil: I(coil)> off | | 6291 |
| 98E20 | Charg. alm: Motor disfunc. on | | 6292 |
| 98E21 | Charg. alm: Motor disfunc. off | | 6293 |
| 98E22 | Charg. alm: Motor too slow on | | 6294 |
| 98E23 | Charg. alm: Motor too slow off | | 6295 |
| 98E24 | VI alarm: Egap A <> range on | | 6296 |
| 98E25 | VI alarm: Egap A <> range off | | 6297 |
| 98E26 | VI alarm: Egap A > limit on | | 6298 |
| 98E27 | VI alarm: Egap A > limit off | | 6299 |
| 98E28 | VI alarm: Egap B <> range on | | 6300 |
| 98E29 | VI alarm: Egap B <> range off | | 6301 |
| 98E30 | VI alarm: Egap B > limit on | | 6302 |
| 98E31 | VI alarm: Egap B > limit off | | 6303 |
| 98E32 | VI alarm: Egap C <> range on | | 6304 |
| 98E33 | VI alarm: Egap C <> range off | | 6305 |
| 98E34 | VI alarm: Egap C > limit on | | 6306 |
| 98E35 | VI alarm: Egap C > limit off | | 6307 |
| 98E36 | VI alarm: Cont async open on | | 6308 |
| 98E37 | VI alarm: Cont async open off | | 6309 |
| 98E38 | VI alarm: Cont async close on | | 6310 |
| 98E39 | VI alarm: Cont async close off | | 6311 |
| 98E40 | Truck alarm: Distance<>range on | | 6312 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 98E41 | Truck alarm: Distance<>range off | | 6313 |
| 98E42 | Truck alarm: Incorr.distance on | | 6314 |
| 98E43 | Truck alarm: Incorr.distance off | | 6315 |
| 98E44 | Truck alarm: Number(op)> on | | 6316 |
| 98E45 | Truck alarm: Number(op)> off | | 6317 |
| 98E46 | SCB MainXCBR1 error on | | 6318 |
| 98E47 | SCB MainXCBR1 error off | | 6319 |
| 98E48 | SCB VISCBR1 error on | | 6320 |
| 98E49 | SCB VISCBR1 error off | | 6321 |
| 98E50 | SCB CoilSCBR1 error on | | 6322 |
| 98E51 | SCB CoilSCBR1 error off | | 6323 |
| 98E52 | SCB CoilSCBR2 error on | | 6324 |
| 98E53 | SCB CoilSCBR2 error off | | 6325 |
| 98E54 | SCB CoilSCBR3 error on | | 6326 |
| 98E55 | SCB CoilSCBR3 error off | | 6327 |
| 98E56 | SCB SpringSOPM1 error on | | 6328 |
| 98E57 | SCB SpringSOPM1 error off | | 6329 |
| 98E58 | SCB LPHD error on | | 6330 |
| 98E59 | SCB LPHD error off | | 6331 |
| 98E60 | SCB TruckXSWI error on | | 6332 |
| 98E61 | SCB TruckXSWI error off | | 6333 |
| 98E62 | Sensor alm: CB sensor incoh. on | | 6334 |
| 98E63 | Sensor alm: CB sensor incoh. off | | 6335 |
| 99E1 | Sensor alm: CB movement t> on | | 6337 |
| 99E2 | Sensor alm: CB movement t> off | | 6338 |
| 99E3 | Sensor alm: Disc. pos. incoh on | | 6339 |
| 99E4 | Sensor alm: Disc. pos. incoh off | | 6340 |
| 99E5 | Sensor alm: Spring pos error on | | 6341 |
| 99E6 | Sensor alm: Spring pos error off | | 6342 |
| 99E7 | Sensor alm: Sprng l-sens def on | | 6343 |
| 99E8 | Sensor alm: Sprng l-sens def off | | 6344 |
| 99E9 | Sensor alm: Stroke sens def on | | 6345 |
| 99E10 | Sensor alm: Stroke sens def off | | 6346 |
| 99E11 | Sensor alm: Speed sensor inc on | | 6347 |
| 99E12 | Sensor alm: Speed sensor inc off | | 6348 |
| 99E13 | Sensor alm: Half moon t> on | | 6349 |
| 99E14 | Sensor alm: Half moon t> off | | 6350 |
| 99E15 | Sensor alm: Truck move t> on | | 6351 |
| 99E16 | Sensor alm: Truck move t> off | | 6352 |
| 99E17 | Sensor alm: Speed sensor t> on | | 6353 |
| 99E18 | Sensor alm: Speed sensor t> off | | 6354 |
| 99E19 | Sensor alm: Speed sens puls> on | | 6355 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|------------------------------------|-------|----------------------|
| 99E20 | Sensor alm: Speed sens puls> off | | 6356 |
| 99E21 | Sensor alm: Egap A not plug. on | | 6357 |
| 99E22 | Sensor alm: Egap A not plug. off | | 6358 |
| 99E23 | Sensor alm: Egap A int error on | | 6359 |
| 99E24 | Sensor alm: Egap A int error off | | 6360 |
| 99E25 | Sensor alm: Egap A disfunct. on | | 6361 |
| 99E26 | Sensor alm: Egap A disfunct. off | | 6362 |
| 99E27 | Sensor alm: Egap B not plug. on | | 6363 |
| 99E28 | Sensor alm: Egap B not plug. off | | 6364 |
| 99E29 | Sensor alm: Egap B int error on | | 6365 |
| 99E30 | Sensor alm: Egap B int error off | | 6366 |
| 99E31 | Sensor alm: Egap B disfunct. on | | 6367 |
| 99E32 | Sensor alm: Egap B disfunct. off | | 6368 |
| 99E33 | Sensor alm: Egap C not plug. on | | 6369 |
| 99E34 | Sensor alm: Egap C not plug. off | | 6370 |
| 99E35 | Sensor alm: Egap C int error on | | 6371 |
| 99E36 | Sensor alm: Egap C int error off | | 6372 |
| 99E37 | Sensor alm: Egap C disfunct. on | | 6373 |
| 99E38 | Sensor alm: Egap C disfunct. off | | 6374 |
| 99E39 | BMM alarm: power fail on | | 6375 |
| 99E40 | BMM alarm: power fail off | | 6376 |
| 99E41 | BMM alarm: FRAM CRC error on | | 6377 |
| 99E42 | BMM alarm: FRAM CRC error off | | 6378 |
| 99E43 | BMM alarm: EEPROM inaccessible on | | 6379 |
| 99E44 | BMM alarm: EEPROM inaccessible off | | 6380 |
| 99E45 | BMM alarm: CPU rate too high on | | 6381 |
| 99E46 | BMM alarm: CPU rate too high off | | 6382 |
| 99E47 | BMM cfg: orange alarm on | | 6383 |
| 99E48 | BMM cfg: orange alarm off | | 6384 |
| 99E49 | BMM cfg: red alarm on | | 6385 |
| 99E50 | BMM cfg: red alarm off | | 6386 |
| 99E51 | BMM: orange alarm on | Yes | 6387 |
| 99E52 | BMM: orange alarm off | Yes | 6388 |
| 99E53 | BMM: red alarm on | Yes | 6389 |
| 99E54 | BMM: red alarm off | Yes | 6390 |
| 99E55 | CB: orange alarm on | Yes | 6391 |
| 99E56 | CB: orange alarm off | Yes | 6392 |
| 99E57 | CB red alarm on | Yes | 6393 |
| 99E58 | CB: red alarm off | Yes | 6394 |
| 99E59 | Trip coil 1: orange alarm on | | 6395 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------------|-------|----------------------|
| 99E60 | Trip coil 1: orange alarm off | | 6396 |
| 99E61 | Trip coil 1: red alarm on | | 6397 |
| 99E62 | Trip coil 1: red alarm off | | 6398 |
| 99E63 | Trip coil 2: orange alarm on | | 6399 |
| 100E1 | Trip coil 2: orange alarm off | | 6401 |
| 100E2 | Trip coil 2: red alarm on | | 6402 |
| 100E3 | Trip coil 2: red alarm off | | 6403 |
| 100E4 | Close coil: orange alarm on | | 6404 |
| 100E5 | Close coil: orange alarm off | | 6405 |
| 100E6 | Close coil: red alarm on | | 6406 |
| 100E7 | Close coil: red alarm off | | 6407 |
| 100E8 | Mech: orange alarm on | | 6408 |
| 100E9 | Mech: orange alarm off | | 6409 |
| 100E10 | Mech: red alarm on | | 6410 |
| 100E11 | Mech: red alarm off | | 6411 |
| 100E12 | VI: orange alarm on | | 6412 |
| 100E13 | VI: orange alarm off | | 6413 |
| 100E14 | VI: red alarm on | | 6414 |
| 100E15 | VI: red alarm off | | 6415 |
| 100E16 | ChargMot: orange alarm on | | 6416 |
| 100E17 | ChargMot: orange alarm off | | 6417 |
| 100E18 | ChargMot: red alarm on | | 6418 |
| 100E19 | ChargMot: red alarm off | | 6419 |
| 100E20 | Smart CB moving | | 6420 |
| 100E21 | Smart CB open | | 6421 |
| 100E22 | Smart CB close | | 6422 |
| 100E23 | Smart CB bad pos | | 6423 |
| 100E24 | Truck moving | | 6424 |
| 100E25 | Truck racked-out | | 6425 |
| 100E26 | Truck racked-in | | 6426 |
| 100E27 | Truck bad pos | | 6427 |
| 101E1 | Smart CB MCM online | Yes | 6465 |
| 101E2 | Smart CB MCM offline | Yes | 6466 |
| 101E3 | MCM power fail power fail on | | 6467 |
| 101E4 | MCM power fail power fail off | | 6468 |
| 101E5 | Sys alarm: MCM FRAM problem on | | 6469 |
| 101E6 | Sys alarm: MCM FRAM problem off | | 6470 |
| 101E7 | Sys alarm: MCM EEPROM problem on | | 6471 |
| 101E8 | Sys alarm: MCM EEPROM problem off | | 6472 |
| 101E9 | Sys alarm: selftest failed on | | 6473 |
| 101E10 | Sys alarm: selftest failed off | | 6474 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 101E11 | Glob alm: inco. between pos. on | | 6475 |
| 101E12 | Glob alm: inco. between pos. off | | 6476 |
| 101E13 | Motor voltage <> on | | 6477 |
| 101E14 | Motor voltage <> off | | 6478 |
| 101E15 | Configuration alarm on | | 6479 |
| 101E16 | Configuration alarm off | | 6480 |
| 101E17 | CB alarm: No.(op) > limit on | | 6481 |
| 101E18 | CB alarm: No.(op) > limit off | | 6482 |
| 101E19 | CB alarm: t(open) > limit on | | 6483 |
| 101E20 | CB alarm: t(open) > limit off | | 6484 |
| 101E21 | CB alarm: t(close) <> range on | | 6485 |
| 101E22 | CB alarm: t(close) <> range off | | 6486 |
| 101E23 | MSW1 alarm: No.(op) > limit on | | 6487 |
| 101E24 | MSW1 alarm: No.(op) > limit off | | 6488 |
| 101E25 | MSW1 alarm: t(open) > limit on | | 6489 |
| 101E26 | MSW1 alarm: t(open) > limit off | | 6490 |
| 101E27 | MSW1 alarm: t(close) > limit on | | 6491 |
| 101E28 | MSW1 alarm: t(close) > limit off | | 6492 |
| 101E29 | MSW1 alarm: protection I> on | | 6493 |
| 101E30 | MSW1 alarm: protection I> off | | 6494 |
| 101E31 | MSW1 alarm: V(Hb) missing on | | 6495 |
| 101E32 | MSW1 alarm: V(Hb) missing off | | 6496 |
| 101E33 | MSW1 alarm: H-bridge error on | | 6497 |
| 101E34 | MSW1 alarm: H-bridge error off | | 6498 |
| 101E35 | MSW1 alarm: motor disfunct. on | | 6499 |
| 101E36 | MSW1 alarm: motor disfunct. off | | 6500 |
| 101E37 | MSW1 alarm: motor low HI on | | 6501 |
| 101E38 | MSW1 alarm: motor low HI off | | 6502 |
| 101E39 | MSW1 alarm: current > limit on | | 6503 |
| 101E40 | MSW1 alarm: current > limit off | | 6504 |
| 101E41 | MSW2 alarm: No.(op) > limit on | | 6505 |
| 101E42 | MSW2 alarm: No.(op) > limit off | | 6506 |
| 101E43 | MSW2 alarm: t(open) > limit on | | 6507 |
| 101E44 | MSW2 alarm: t(open) > limit off | | 6508 |
| 101E45 | MSW2 alarm: t(close) > limit on | | 6509 |
| 101E46 | MSW2 alarm: t(close) > limit off | | 6510 |
| 101E47 | MSW2 alarm: protection I> on | | 6511 |
| 101E48 | MSW2 alarm: protection I> off | | 6512 |
| 101E49 | MSW2 alarm: V(Hb) missing on | | 6513 |
| 101E50 | MSW2 alarm: V(Hb) missing off | | 6514 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 101E51 | MSW2 alarm: H-bridge error on | | 6515 |
| 101E52 | MSW2 alarm: H-bridge error off | | 6516 |
| 101E53 | MSW2 alarm: motor disfunct. on | | 6517 |
| 101E54 | MSW2 alarm: motor disfunct. off | | 6518 |
| 101E55 | MSW2 alarm: motor low HI on | | 6519 |
| 101E56 | MSW2 alarm: motor low HI off | | 6520 |
| 101E57 | MSW2 alarm: current > limit on | | 6521 |
| 101E58 | MSW2 alarm: current > limit off | | 6522 |
| 101E59 | MSW3 alarm: No.(op) > limit on | | 6523 |
| 101E60 | MSW3 alarm: No.(op) > limit off | | 6524 |
| 101E61 | MSW3 alarm: t(open) > limit on | | 6525 |
| 101E62 | MSW3 alarm: t(open) > limit off | | 6526 |
| 101E63 | MSW3 alarm: t(close) > limit on | | 6527 |
| 102E1 | MSW3 alarm: t(close) > limit off | | 6529 |
| 102E2 | MSW3 alarm: protection I> on | | 6530 |
| 102E3 | MSW3 alarm: protection I> off | | 6531 |
| 102E4 | MSW3 alarm: V(Hb) missing on | | 6532 |
| 102E5 | MSW3 alarm: V(Hb) missing off | | 6533 |
| 102E6 | MSW3 alarm: H-bridge error on | | 6534 |
| 102E7 | MSW3 alarm: H-bridge error off | | 6535 |
| 102E8 | MSW3 alarm: motor disfunct. on | | 6536 |
| 102E9 | MSW3 alarm: motor disfunct. off | | 6537 |
| 102E10 | MSW3 alarm: motor low HI on | | 6538 |
| 102E11 | MSW3 alarm: motor low HI off | | 6539 |
| 102E12 | MSW3 alarm: current > limit on | | 6540 |
| 102E13 | MSW3 alarm: current > limit off | | 6541 |
| 102E14 | MSW4 alarm: No.(op) > limit on | | 6542 |
| 102E15 | MSW4 alarm: No.(op) > limit off | | 6543 |
| 102E16 | MSW4 alarm: t(open) > limit on | | 6544 |
| 102E17 | MSW4 alarm: t(open) > limit off | | 6545 |
| 102E18 | MSW4 alarm: t(close) > limit on | | 6546 |
| 102E19 | MSW4 alarm: t(close) > limit off | | 6547 |
| 102E20 | MSW4 alarm: protection I> on | | 6548 |
| 102E21 | MSW4 alarm: protection I> off | | 6549 |
| 102E22 | MSW4 alarm: V(Hb) missing on | | 6550 |
| 102E23 | MSW4 alarm: V(Hb) missing off | | 6551 |
| 102E24 | MSW4 alarm: H-bridge error on | | 6552 |
| 102E25 | MSW4 alarm: H-bridge error off | | 6553 |
| 102E26 | MSW4 alarm: motor disfunct. on | | 6554 |
| 102E27 | MSW4 alarm: motor disfunct. off | | 6555 |
| 102E28 | MSW4 alarm: motor low HI on | | 6556 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|---------------------------------|-------|----------------------|
| 102E29 | MSW4 alarm: motor low HI off | | 6557 |
| 102E30 | MSW4 alarm: current > limit on | | 6558 |
| 102E31 | MSW4 alarm: current > limit off | | 6559 |
| 102E32 | MCM cfg: red alarm on | | 6560 |
| 102E33 | MCM cfg: red alarm off | | 6561 |
| 102E34 | MCM cfg: orange alarm on | | 6562 |
| 102E35 | MCM cfg: orange alarm off | | 6563 |
| 102E36 | MCM: red alarm on | Yes | 6564 |
| 102E37 | MCM: red alarm off | Yes | 6565 |
| 102E38 | MCM: orange alarm on | Yes | 6566 |
| 102E39 | MCM: orange alarm off | Yes | 6567 |
| 102E40 | MSW1: red alarm on | Yes | 6568 |
| 102E41 | MSW1: red alarm off | Yes | 6569 |
| 102E42 | MSW1: orange alarm on | Yes | 6570 |
| 102E43 | MSW1: orange alarm off | Yes | 6571 |
| 102E44 | MSW2: red alarm on | Yes | 6572 |
| 102E45 | MSW2: red alarm off | Yes | 6573 |
| 102E46 | MSW2: orange alarm on | Yes | 6574 |
| 102E47 | MSW2: orange alarm off | Yes | 6575 |
| 102E48 | MSW3: red alarm on | Yes | 6576 |
| 102E49 | MSW3: red alarm off | Yes | 6577 |
| 102E50 | MSW3: orange alarm on | Yes | 6578 |
| 102E51 | MSW3: orange alarm off | Yes | 6579 |
| 102E52 | MSW4: red alarm on | Yes | 6580 |
| 102E53 | MSW4: red alarm off | Yes | 6581 |
| 102E54 | MSW4: orange alarm on | Yes | 6582 |
| 102E55 | MSW4: orange alarm off | Yes | 6583 |
| 102E56 | CB swapped | | 6584 |
| 102E57 | MCM: Global input 1 active | | 6585 |
| 102E58 | MCM: Global input 1 inactive | | 6586 |
| 102E59 | MCM: Global input 2 active | | 6587 |
| 102E60 | MCM: Global input 2 inactive | | 6588 |
| 102E61 | MCM: Global output 1 active | | 6589 |
| 102E62 | MCM: Global output 1 inactive | | 6590 |
| 102E63 | MCM: Global output 2 active | | 6591 |
| 103E1 | MCM: Global output 2 inactive | | 6593 |
| 103E2 | MCM: CB command open active | | 6594 |
| 103E3 | MCM: CB command open inactive | | 6595 |
| 103E4 | MCM: CB command close active | | 6596 |
| 103E5 | MCM: CB command close inactive | | 6597 |
| 103E6 | MCM: CB output open active | | 6598 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------------|-------|----------------------|
| 103E7 | MCM: CB output open inactive | | 6599 |
| 103E8 | MCM: CB output close active | | 6600 |
| 103E9 | MCM: CB output close inactive | | 6601 |
| 103E10 | MCM: MSW1 command open active | | 6602 |
| 103E11 | MCM: MSW1 command open inactive | | 6603 |
| 103E12 | MCM: MSW1 command close active | | 6604 |
| 103E13 | MCM: MSW1 command close inactive | | 6605 |
| 103E14 | MCM: MSW1 power mot. open act. | | 6606 |
| 103E15 | MCM: MSW1 power mot. open inact. | | 6607 |
| 103E16 | MCM: MSW1 power mot. close act. | | 6608 |
| 103E17 | MCM: MSW1 power mot. close inact. | | 6609 |
| 103E18 | MCM: MSW2 command open active | | 6610 |
| 103E19 | MCM: MSW2 command open inactive | | 6611 |
| 103E20 | MCM: MSW2 command close active | | 6612 |
| 103E21 | MCM: MSW2 command close inactive | | 6613 |
| 103E22 | MCM: MSW2 power mot. open act. | | 6614 |
| 103E23 | MCM: MSW2 power mot. open inact. | | 6615 |
| 103E24 | MCM: MSW2 power mot. close act. | | 6616 |
| 103E25 | MCM: MSW2 power mot. close inact. | | 6617 |
| 103E26 | MCM: MSW3 command open active | | 6618 |
| 103E27 | MCM: MSW3 command open inactive | | 6619 |
| 103E28 | MCM: MSW3 command close active | | 6620 |
| 103E29 | MCM: MSW3 command close inactive | | 6621 |
| 103E30 | MCM: MSW3 power mot. open act. | | 6622 |
| 103E31 | MCM: MSW3 power mot. open inact. | | 6623 |
| 103E32 | MCM: MSW3 power mot. close act. | | 6624 |
| 103E33 | MCM: MSW3 power mot. close inact. | | 6625 |
| 103E34 | MCM: MSW4 command open active | | 6626 |
| 103E35 | MCM: MSW4 command open inactive | | 6627 |
| 103E36 | MCM: MSW4 command close active | | 6628 |
| 103E37 | MCM: MSW4 command close inactive | | 6629 |
| 103E38 | MCM: MSW4 power mot. open act. | | 6630 |
| 103E39 | MCM: MSW4 power mot. open inact. | | 6631 |
| 103E40 | MCM: MSW4 power mot. close act. | | 6632 |
| 103E41 | MCM: MSW4 power mot. close inact. | | 6633 |
| 103E42 | MCM: reset alarms | | 6634 |
| 103E43 | MCM: reset measurements | | 6635 |
| 103E44 | MCM: reset settings | | 6636 |
| 103E45 | MCM: reset CB counters | | 6637 |
| 103E46 | MCM: reset MSW1 counters | | 6638 |
| 103E47 | MCM: reset MSW2 counters | | 6639 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|-----------------------------------|-------|----------------------|
| 103E48 | MCM: reset MSW3 counters | | 6640 |
| 103E49 | MCM: reset MSW4 counters | | 6641 |
| 100E28 | MSW1 moving | | 6428 |
| 100E29 | MSW1 open | | 6429 |
| 100E30 | MSW1 close | | 6430 |
| 100E31 | MSW1 bad pos | | 6431 |
| 100E32 | MSW2 moving | | 6432 |
| 100E33 | MSW2 open | | 6433 |
| 100E34 | MSW2 close | | 6434 |
| 100E35 | MSW2 bad pos | | 6435 |
| 100E36 | MSW3 moving | | 6436 |
| 100E37 | MSW3 open | | 6437 |
| 100E38 | MSW3 close | | 6438 |
| 100E39 | MSW3 bad pos | | 6439 |
| 100E40 | MSW4 moving | | 6440 |
| 100E41 | MSW4 open | | 6441 |
| 100E42 | MSW4 close | | 6442 |
| 100E43 | MSW4 bad pos | | 6443 |
| 85E11 | TRMON 1 insulation alarm on | | 5451 |
| 85E12 | TRMON 1 insulation alarm off | | 5452 |
| 85E13 | TRMON 1 oil temperature alarm on | | 5453 |
| 85E14 | TRMON 1 oil temperature alarm off | | 5454 |
| 85E15 | TRMON 1 gas alarm on | | 5455 |
| 85E16 | TRMON 1 gas alarm off | | 5456 |
| 85E17 | TRMON 1 gas trip on | | 5457 |
| 85E18 | TRMON 1 gas trip off | | 5458 |
| 85E19 | TRMON 1 oil flow trip on | | 5459 |
| 85E20 | TRMON 1 oil flow trip off | | 5460 |
| 85E21 | TRMON 1 oil at minimum level on | | 5461 |
| 85E22 | TRMON 1 oil at minimum level off | | 5462 |
| 85E23 | TRMON 1 oil at maximum level on | | 5463 |
| 85E24 | TRMON 1 oil at maximum level off | | 5464 |
| 85E25 | TRMON 1 blocking on | | 5465 |
| 85E26 | TRMON 1 blocking off | | 5466 |
| 86E11 | TRMON 2 insulation alarm on | | 5515 |
| 86E12 | TRMON 2 insulation alarm off | | 5516 |
| 86E13 | TRMON 2 oil temperature alarm on | | 5517 |
| 86E14 | TRMON 2 oil temperature alarm off | | 5518 |
| 86E15 | TRMON 2 gas alarm on | | 5519 |
| 86E16 | TRMON 2 gas alarm off | | 5520 |
| 86E17 | TRMON 2 gas trip on | | 5521 |

Table 46 - Event code list (Continued)

| Event code | Description | Alarm | Code value (decimal) |
|------------|----------------------------------|-------|----------------------|
| 86E18 | TRMON 2 gas trip off | | 5522 |
| 86E19 | TRMON 2 oil flow trip on | | 5523 |
| 86E20 | TRMON 2 oil flow trip off | | 5524 |
| 86E21 | TRMON 2 oil at minimum level on | | 5525 |
| 86E22 | TRMON 2 oil at minimum level off | | 5526 |
| 86E23 | TRMON 2 oil at maximum level on | | 5527 |
| 86E24 | TRMON 2 oil at maximum level off | | 5528 |
| 86E25 | TRMON 2 blocking on | | 5529 |
| 86E26 | TRMON 2 blocking off | | 5530 |

Clock synchronisation

The internal clock of PowerLogic P5 protection relays can be synchronised via the Modbus protocol. Note this is not a native feature of the Modbus protocol. Therefore, this is an PowerLogic P5 protection relay specific feature. The accuracy of the clock synchronisation is in the scale of a few hundred milliseconds.

The clock can be synchronised either completely (all fields: seconds, minutes, hours, days, month and year) or by synchronising only the minutes, which in turn will set the seconds and milliseconds to zero.

An example of how minute synchronisation can be done: when the reference clock (the clock which is assumed to be correct) is exactly seven minutes past (any hour), a minute synchronisation is performed. The result will be that the internal clock of the PowerLogic P5 protection relays will be set to HH:07:00.000 ("Hours: Minutes:Seconds.Milliseconds") "HH" will not be changed.

These two ways of synchronising the clock are denoted "Set RTC", where "RTC" stands for "Real-Time Clock" and "Synchronise Minutes" in the data map.

Clock synchronisation for standard Modbus

The holding registers allocated to the Set RTC synchronisation for standard Modbus are:

Table 47 - Description of holding registers allocated to Set RTC synchronisation for standard Modbus

| Holding Register | Content |
|------------------|------------------------------------------------|
| 2504 | Lower byte: seconds, milliseconds will be zero |
| 2505 | Upper byte: minutes Lower byte: hours |
| 2506 | Upper byte: day Lower byte: month |
| 2507 | Year |

Clock synchronisation for PDM Modbus

The holding registers allocated to the Set RTC synchronisation for PDM Modbus are:

Table 48 - Description of holding registers allocated to Set RTC synchronisation for PDM Modbus

| Holding Register | Content |
|------------------|------------------------------------------------------|
| 22591 | Bit 0 to bit 6: year (from 2000-01-01 to 2127-12-31) |
| 22592 | Bit 0 to bit 4: date Bit 8 to bit 11: month |
| 22593 | Bit 0 to bit 5: minutes Bit 8 to bit 12: hours |
| 22594 | Milliseconds |

Point list

Point list for standard Modbus

By default, only PDM point list is available. If the user wants to use the standard point list, the setting “Enable legacy points”, which can be configured in the **Communication** menu/**Modbus slave main configuration** sub-menu via the eSetup Easergy Pro, needs to be enabled.

Scalings

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|----------------------------------|------|-------|----|---------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 1001 | CT primary | 1 | 0 | 3 | 1 A = 1 | | | ■ | | ■ | ■ | |
| 1002 | CT secondary | 1 | 0 | 3 | 1 A = 1 | | | ■ | | ■ | ■ | |
| 1003 | Nominal current | 1 | 0 | 3 | 1.00 A = 100 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1004 | LPCT rated primary current | 1 | 0 | 3 | 1 A = 1 | | ■ | | | ■ | ■ | |
| 1005 | Current factor | 1 | 0 | 3 | Value ⁴⁷ | | ■ | | | ■ | ■ | |
| 1006 | EF CT primary | 1 | 0 | 3 | 1 A = 1 | | | ■ | | ■ | ■ | |
| 1007 | EF CT secondary | 1 | 0 | 3 | 1.0 A = 10 | | | ■ | | ■ | ■ | |
| 1008 | CSH CT primary | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 1009 | CSH CT secondary | 1 | 0 | 3 | 1.0 A = 10 | | ■ | ■ | | ■ | ■ | |
| 1010 | Nominal IN. CSH | 1 | 0 | 3 | 1.0 A = 10 | | ■ | ■ | | ■ | ■ | |
| 1011 | Sensitive IN CT primary | 1 | 0 | 3 | 1 A = 1 | | | ■ | | ■ | ■ | |
| 1012 | Sensitive IN CT secondary | 1 | 0 | 3 | 1.0 A = 10 | | | ■ | | ■ | ■ | |
| 1013 | VT primary | 1 | 0 | 3 | 1000 V = 1000 | VT primary scaling | | | ■ | ■ | ■ | |
| 1014 | Nominal voltage | 1 | 0 | 3 | 1.00 V = 100 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1015 | LPVT or VT rated primary voltage | 1 | 0 | 3 | 1000 V = 1000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1016 | VT secondary | 1 | 0 | 3 | 1 V = 1 | | | | ■ | ■ | ■ | |
| 1017 | VTy secondary | 1 | 0 | 3 | 1 V = 1 | | | | ■ | ■ | | |
| 1018 | VN primary | 1 | 0 | 3 | 1 V = 1 | VT primary scaling | | | ■ | ■ | ■ | ■ |

47. 0.25=0;0.5=1;1=2;1.25=3;1.33=4;2=5;2.5=6;3.2=7;4=8;5=9;6.3=10;6.66=11;10=12;16=13;20=14;25=15;31.5=16

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|----------------------------|------|-------|----|------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 1019 | VN secondary | 1 | 0 | 3 | 1.000 V = 1000 | VTo secondary scaling | | | ■ | ■ | ■ | ■ |
| 1020 | Voltage factor | 1 | 0 | 3 | 1.000 = 1000 | | ■ | | | ■ | ■ | |
| 1021 | Phase rotation | 1 | 0 | 3 | A-B-C=0; A-C-B=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 1022 | Voltage mode | 1 | 0 | 3 | Value ⁴⁸ | | ■ | | ■ | ■ | ■ | ■ |
| 1023 | Nominal frequency | 1 | 0 | 3 | 50 Hz = 50 | | ■ | ■ | ■ | ■ | ■ | |
| 1024 | Power direction | 1 | 0 | 3 | Outgoing=0; Incoming=1 | | ■ | | | ■ | ■ | |
| 1025 | Number connected phase CTs | 1 | 0 | 3 | A/B/C=0; A/C=1 | | | ■ | | ■ | ■ | |
| 1026 | VA magnitude correction | 1 | 0 | 3 | 1.000 = 10000 | | ■ | | | ■ | ■ | |
| 1027 | VB magnitude correction | 1 | 0 | 3 | 1.000 = 10000 | | ■ | | | ■ | ■ | |
| 1028 | VC magnitude correction | 1 | 0 | 3 | 1.000 = 10000 | | ■ | | | ■ | ■ | |
| 1029 | VA angle correction | 1 | 0 | 3 | 1.000 ° = 10000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1030 | VB angle correction | 1 | 0 | 3 | 1.000 ° = 10000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1031 | VC angle correction | 1 | 0 | 3 | 1.000 ° = 10000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1032 | VAy magnitude correction | 1 | 0 | 3 | 1.000 = 10000 | | ■ | | | ■ | ■ | |
| 1033 | VAy angle correction | 1 | 0 | 3 | 1.000 ° = 10000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1034 | VBy magnitude correction | 1 | 0 | 3 | 1.000 = 10000 | | ■ | | | ■ | ■ | |
| 1035 | VBy angle correction | 1 | 0 | 3 | 1.000 ° = 10000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1036 | VT type | 1 | 0 | 3 | VT +Adapter=0; LPVT=1 | | ■ | | | ■ | ■ | |
| 1037 | VT adapter secondary | 1 | 0 | 3 | 1 V = 1 | | ■ | | | ■ | ■ | |
| 1038 | VA adapter mag correction | 1 | 0 | 3 | 1.000 = 1000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |

48. 2VPP+VN=0; 3VP=1; 1VPP=5; 1VP=6; 3VP/VPy=9; 3VP/VPPy=10; 2VPP+VN+VPPy=12; 3VP+VN=13; VPP/VPPy=16; 1VN=18

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|----------------------------|------|-------|----|--------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 1039 | VB adapter mag correction | 1 | 0 | 3 | 1.000 = 1000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1040 | VC adapter mag correction | 1 | 0 | 3 | 1.000 = 1000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1041 | VTy secondary | 1 | 0 | 3 | 1 V = 1 | | ■ | | | ■ | ■ | |
| 1042 | VAY adapter mag correction | 1 | 0 | 3 | 1.000 = 1000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |
| 1044 | VN adapter secondary | 1 | 0 | 3 | 1 V = 1 | | ■ | | | ■ | ■ | |
| 1045 | VN adapter mag correction | 1 | 0 | 3 | 1.000 = 1000 | LPCT/ VT scaling | ■ | | | ■ | ■ | |

Read and command

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|-----------------------------|------|-------|------|--------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 2001 | Alive indicator | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2006 | digital inputs 01...16 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2007 | digital inputs 17...32 | 1 | 0 | 3 | 1 = 1 | | | | | ■ | ■ | ■ |
| 2008 | digital inputs 33...40 | 1 | 0 | 3 | 1 = 1 | | | | | ■ | ■ | ■ |
| 2042 | Object1 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2043 | Object2 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2044 | Object3 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2045 | Object4 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2046 | Object5 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2047 | Object6 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2048 | Object7 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2049 | Object8 state | 1 | 0 | 3 | Value ⁴⁹ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2057 | Run hours/ 10 ⁰ | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2058 | Run hours/ 10 ⁴ | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2059 | Engine running (in seconds) | 1 | 1 | 3, 6 | 1 s = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2060 | Start counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 210-1...2-105 | Events | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2301 | Mode of use | 1 | 0 | 3 | Normal=0; Test=1; Test block=2 | | ■ | ■ | ■ | ■ | ■ | ■ |

49. Open=0;Closed=1;Undef=2

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|--------------------------|------|-------|----|-----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 2302 | Remote/Local State | 1 | 0 | 3 | Remote=0; LO-CAL=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2303 | Port 1 status (Slot M) | 1 | 0 | 3 | Link off=0; Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2304 | Port 2 status (Slot M) | 1 | 0 | 3 | Link off=0; Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2305 | Port 1 status (Slot L) | 1 | 0 | 3 | Link off=0; Link on=1 | | | | | ■ | ■ | ■ |
| 2306 | Port 2 status (Slot L) | 1 | 0 | 3 | Link off=0; Link on=1 | | | | | ■ | ■ | ■ |
| 2307 | Port 1 status (Slot M&N) | 1 | 0 | 3 | Link off=0; Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2308 | Port 2 status (Slot M&N) | 1 | 0 | 3 | Link off=0; Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2351 | External AI1 | 1 | 0 | 3 | Value ⁵⁰ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2352 | External AI2 | 1 | 0 | 3 | Value ⁵¹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2353 | External AI3 | 1 | 0 | 3 | Value ⁵² | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2354 | External AI4 | 1 | 0 | 3 | Value ⁵³ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2355 | External AI5 | 1 | 0 | 3 | Value ⁵⁴ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2356 | External AI6 | 1 | 0 | 3 | Value ⁵⁵ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2357 | External AI7 | 1 | 0 | 3 | Value ⁵⁶ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2358 | External AI8 | 1 | 0 | 3 | Value ⁵⁷ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |

50. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 100$

51. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 101$

52. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 102$

53. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 103$

54. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 104$

55. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 105$

56. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 106$

57. $1.00\text{ }^{\circ}\text{C} = 100 / 1.00\text{ F} = 100 / 1.00\text{ K} = 100 / 1.00\text{ V/A} = 100 / 1.00\text{ mA} = 100 / 1.00\text{ Ohm} = 100 / 1.00\text{ A} = 100 / 1.00\text{ V} = 100 / 1.00\text{ kW} = 100 / 1.00\text{ kVA} = 100 / 1.00\text{ kVAr} = 100 / 1.00 - = 107$

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|---------------|------|-------|----|---------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 2372 | External AI22 | 1 | 0 | 3 | Value ⁷¹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2373 | External AI23 | 1 | 0 | 3 | Value ⁷² | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2374 | External AI24 | 1 | 0 | 3 | Value ⁷³ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2375 | External AI25 | 1 | 0 | 3 | Value ⁷⁴ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2376 | External AI26 | 1 | 0 | 3 | Value ⁷⁵ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2377 | External AI27 | 1 | 0 | 3 | Value ⁷⁶ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2378 | External AI28 | 1 | 0 | 3 | Value ⁷⁷ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2379 | External AI29 | 1 | 0 | 3 | Value ⁷⁸ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2380 | External AI30 | 1 | 0 | 3 | Value ⁷⁹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2381 | External AI31 | 1 | 0 | 3 | Value ⁸⁰ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2382 | External AI32 | 1 | 0 | 3 | Value ⁸¹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2383 | External AI33 | 1 | 0 | 3 | Value ⁸² | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2384 | External AI34 | 1 | 0 | 3 | Value ⁸³ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |

71. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 121

72. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 122

73. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 123

74. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 124

75. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 125

76. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 126

77. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 127

78. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 128

79. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 129

80. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 130

81. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 131

82. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 132

83. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 133

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|---------------|------|-------|----|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 2398 | External AI48 | 1 | 0 | 3 | Value ⁹⁷ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2399 | External AI49 | 1 | 0 | 3 | Value ⁹⁸ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2400 | External AI50 | 1 | 0 | 3 | Value ⁹⁹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2401 | External AI51 | 1 | 0 | 3 | Value ¹⁰⁰ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2402 | External AI52 | 1 | 0 | 3 | Value ¹⁰¹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2403 | External AI53 | 1 | 0 | 3 | Value ¹⁰² | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2404 | External AI54 | 1 | 0 | 3 | Value ¹⁰³ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2405 | External AI55 | 1 | 0 | 3 | Value ¹⁰⁴ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2406 | External AI56 | 1 | 0 | 3 | Value ¹⁰⁵ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2407 | External AI57 | 1 | 0 | 3 | Value ¹⁰⁶ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2408 | External AI58 | 1 | 0 | 3 | Value ¹⁰⁷ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2409 | External AI59 | 1 | 0 | 3 | Value ¹⁰⁸ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2410 | External AI60 | 1 | 0 | 3 | Value ¹⁰⁹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |

97. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 147

98. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 148

99. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 149

100. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 150

101. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 151

102. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 152

103. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 153

104. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 154

105. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 155

106. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 156

107. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 157

108. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 158

109. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 159

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|----------------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 2411 | External AI61 | 1 | 0 | 3 | Value ¹¹⁰ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2412 | External AI62 | 1 | 0 | 3 | Value ¹¹¹ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2413 | External AI63 | 1 | 0 | 3 | Value ¹¹² | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2414 | External AI64 | 1 | 0 | 3 | Value ¹¹³ | External AI scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2415 | External DI1 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2416 | External DI2 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2417 | External DI3 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2418 | External DI4 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2419 | External DI5 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2420 | External DI6 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2421 | External DI7 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2422 | External DI8 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2423 | External DI9 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2424 | External DI10 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2425 | External DI11 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2426 | External DI12 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2427 | External DI13 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2428 | External DI14 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2429 | External DI15 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2430 | External DI16 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2431 | External DI17 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2432 | External DI18 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2501 | Release latches | 1 | 1 | 3, 6 | Release=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2502 | Synchronize minutes | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 250-4...2-507 | Set Real Time Clock (RTC) | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2508 | Open select object 1 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2509 | Close select object 1 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2510 | Execute operation Object1 | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2511 | Max ctrl pulse length of Object1 | 1 | 1 | 3, 6 | 1.00 s = 100 | MaxCtrl- | ■ | ■ | ■ | ■ | ■ | ■ |

110. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 160

111. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 161

112. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 162

113. 1.00 °C = 100 / 1.00 F = 100 / 1.00 K = 100 / 1.00 V/A = 100 / 1.00 mA = 100 / 1.00 Ohm = 100 / 1.00 A = 100 / 1.00 V = 100 / 1.00 kW = 100 / 1.00 kVA = 100 / 1.00 kVAr = 100 / 1.00 - = 163

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|----------------------------------|------|-------|------|--------------|------------------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | | Pulse-Length scaling | | | | | | |
| 2512 | Open select object 2 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2513 | Close select object 2 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2514 | Execute operation Object2 | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2515 | Max ctrl pulse length of Object2 | 1 | 1 | 3, 6 | 1.00 s = 100 | MaxCtrl-Pulse-Length scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2516 | Cancel selected operation | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2517 | Open select object 3 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2518 | Close select object 3 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2519 | Execute operation Object3 | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2520 | Max ctrl pulse length of Object3 | 1 | 1 | 3, 6 | 1.00 s = 100 | MaxCtrl-Pulse-Length scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2521 | Open select object 4 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2522 | Close select object 4 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2523 | Execute operation Object4 | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2524 | Max ctrl pulse length of Object4 | 1 | 1 | 3, 6 | 1.00 s = 100 | MaxCtrl-Pulse-Length scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2525 | Open select object 5 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2526 | Close select object 5 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2527 | Execute operation Object5 | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2528 | Max ctrl pulse length of Object5 | 1 | 1 | 3, 6 | 1.00 s = 100 | MaxCtrl-Pulse-Length scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 2529 | Open select object 6 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2530 | Close select object 6 | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2531 | Execute operation Object6 | 0 | 1 | 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2532 | Max ctrl pulse length of Object6 | 1 | 1 | 3, 6 | 1.00 s = 100 | MaxCtrl- | ■ | ■ | ■ | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|----------------------|------|-------|------|-----------------|----------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | | Pulse-Length scaling | | | | | | |
| 2534 | Setting group | 1 | 1 | 3, 6 | 1=0;2=1;3=2;4=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 2536 | Clear min/max/demand | 1 | 1 | 3, 6 | Clear=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Measurement

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|------------------------|------|-------|------|-----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3001 | Positive sequence I1 | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3002 | Negative sequence I2 | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3003 | Current ratio I2/I1 | 1 | 0 | 3 | 1.0 % = 10 | | ■ | ■ | | ■ | ■ | |
| 3004 | Current phase sequence | 1 | 0 | 3 | ??=0; OK=1; Reverse=2 | | ■ | ■ | | ■ | ■ | |
| 3005 | Phase current THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | ■ | | ■ | ■ | |
| 3006 | Phase current IA THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | ■ | | ■ | ■ | |
| 3007 | Phase current IB THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | ■ | | ■ | ■ | |
| 3008 | Phase current IC THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | ■ | | ■ | ■ | |
| 3009 | Phase current | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3010 | Min of IA IB IC | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 3011 | Max of IA IB IC | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 3012 | Phase current Iph rms | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3015 | Phase current IA rms | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3016 | Phase current IB rms | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3017 | Phase current IC rms | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3019 | Ambient temperature | 1 | 0 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | | ■ |
| 3020 | IA demand | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3021 | IB demand | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|---------------------------------------------------------|------|-------|----|------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3022 | IC demand | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3031 | Positive sequence V1 | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3032 | Negative sequence V2 | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3033 | V2/V1 | 1 | 0 | 3 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| 3034 | Voltage phase sequence | 1 | 0 | 3 | ??=0; OK=1; Re-verse=2 | | ■ | | ■ | ■ | ■ | |
| 3035 | Voltage THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| 3036 | VA THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| 3037 | VB THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| 3038 | VC THD | 1 | 0 | 3 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| 3039 | VPP average | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3040 | VPP min | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3041 | VPP max | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3042 | VPN average | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3043 | VPN min | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3044 | VPN max | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3045 | Avg rms voltage | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3048 | Phase-Phase voltage VABRMS / Phase-Earth voltage VARMS | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3049 | Phase-Phase voltage VBCRMS / Phase-Earth voltage VBRMS | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3050 | Phase-Earth voltage VCRMS / Phase-Phase voltage VAByRMS | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3058 | Cosφ | 1 | 0 | 3 | 1.00 = 100 | PF and cos scaling | ■ | | | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|---------------------------|------|-------|----|------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3059 | Tangent ϕ | 1 | 0 | 3 | 1.000 = 1000 | Tan ϕ scaling | ■ | | | ■ | ■ | |
| 3060 | Power angle | 1 | 0 | 3 | 1 ° = 1 | | ■ | | | ■ | ■ | |
| 3061 | Active power rms | 1 | 0 | 3 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3062 | Reactive power rms | 1 | 0 | 3 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3063 | Apparent power rms | 1 | 0 | 3 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3066 | Active power demand | 1 | 0 | 3 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3067 | Reactive power demand | 1 | 0 | 3 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3068 | Apparent power demand | 1 | 0 | 3 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3069 | Power factor demand | 1 | 0 | 3 | 1.00 = 100 | PF and cos scaling | ■ | | | ■ | ■ | |
| 3071 | Active power rms demand | 1 | 0 | 3 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3072 | Reactive power rms demand | 1 | 0 | 3 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3073 | Apparent power rms demand | 1 | 0 | 3 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3081 | Phase A active power | 1 | 0 | 3 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3082 | Phase B active power | 1 | 0 | 3 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3083 | Phase C active power | 1 | 0 | 3 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3084 | Phase A reactive power | 1 | 0 | 3 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3085 | Phase B reactive power | 1 | 0 | 3 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3086 | Phase C reactive power | 1 | 0 | 3 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3087 | Phase A apparent power | 1 | 0 | 3 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3088 | Phase B apparent power | 1 | 0 | 3 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3089 | Phase C apparent power | 1 | 0 | 3 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|-----------------------------|------|-------|----|------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3090 | Cosφ of phase A | 1 | 0 | 3 | 1.00 = 100 | PF and cos scaling | ■ | | | ■ | ■ | |
| 3091 | Cosφ of phase B | 1 | 0 | 3 | 1.00 = 100 | PF and cos scaling | ■ | | | ■ | ■ | |
| 3092 | Cosφ of phase C | 1 | 0 | 3 | 1.00 = 100 | PF and cos scaling | ■ | | | ■ | ■ | |
| 3101 | Frequency fy | 1 | 0 | 3 | 50.000 Hz = 5000 | Frequency scaling | ■ | | ■ | ■ | | |
| 3102 | Phase-to-phase voltage VABy | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | | |
| 3103 | Phase angle difference | 1 | 0 | 3 | 1.0 ° = 10 | - | ■ | | ■ | ■ | | |
| 3151 | Positive sequence I1-2 | 1 | 0 | 3 | 1 A = 1 | | | | | | | ■ |
| 3152 | Negative sequence I2-2 | 1 | 0 | 3 | 1 A = 1 | | | | | | | ■ |
| 3207 | IN.calc | 1 | 0 | 3 | 1.00 A = 100 | IN.meas scaling | ■ | ■ | | ■ | ■ | |
| 3208 | IN.CSH | 1 | 0 | 3 | 1.00 A = 100 | IN.CSH scaling | ■ | ■ | | ■ | ■ | |
| 3209 | Phase current IA | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3210 | Phase current IB | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3211 | Phase current IC | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3212 | IN.meas | 1 | 0 | 3 | 1.00 A = 100 | IN.meas scaling | | ■ | | ■ | ■ | |
| 3213 | IN.sens | 1 | 0 | 3 | 1.000 A = 1000 | IN.sens scaling | | ■ | | ■ | ■ | |
| 3214 | Phase-to-phase voltage VAB | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3215 | Phase-to-phase voltage VBC | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3216 | Phase-to-phase voltage VCA | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3217 | Phase-to-ground voltage VA | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3218 | Phase-to-ground voltage VB | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3219 | Phase-to-ground voltage VC | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3220 | VN | 1 | 0 | 3 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|------------------------------------|------|-------|----|---------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3221 | Frequency | 1 | 0 | 3 | 50.000 Hz = 5000 | Frequency scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 3222 | Active power | 1 | 0 | 3 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3223 | Reactive power | 1 | 0 | 3 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3224 | Apparent power | 1 | 0 | 3 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 3225 | Power factor | 1 | 0 | 3 | 1.00 = 100 | PF and cos scaling | ■ | | | ■ | ■ | |
| 3226 | Energy Eexp | 1 | 0 | 3 | 1 = 1 | | ■ | | | ■ | ■ | |
| 3227 | Eexp/10 ⁴ | 1 | 0 | 3 | 10 ⁴ = 1 | | ■ | | | ■ | ■ | |
| 3228 | Eexp/10 ⁸ | 1 | 0 | 3 | 10 ⁸ = 1 | | ■ | | | ■ | ■ | |
| 3229 | Energy EqExp | 1 | 0 | 3 | 1 = 1 | | ■ | | | ■ | ■ | |
| 3230 | EqExp/10 ⁴ | 1 | 0 | 3 | 10 ⁴ = 1 | | ■ | | | ■ | ■ | |
| 3231 | EqExp/10 ⁸ | 1 | 0 | 3 | 10 ⁸ = 1 | | ■ | | | ■ | ■ | |
| 3232 | Energy Eimp | 1 | 0 | 3 | 1 = 1 | | ■ | | | ■ | ■ | |
| 3233 | Eimp/10 ⁴ | 1 | 0 | 3 | 10 ⁴ = 1 | | ■ | | | ■ | ■ | |
| 3234 | Eimp/10 ⁸ | 1 | 0 | 3 | 10 ⁸ = 1 | | ■ | | | ■ | ■ | |
| 3235 | Energy EqImp | 1 | 0 | 3 | 1 = 1 | | ■ | | | ■ | ■ | |
| 3236 | EqImp/10 ⁴ | 1 | 0 | 3 | 10 ⁴ = 1 | | ■ | | | ■ | ■ | |
| 3237 | EqImp/10 ⁸ | 1 | 0 | 3 | 10 ⁸ = 1 | | ■ | | | ■ | ■ | |
| 3238 | Tangent φ | 1 | 0 | 3 | 1.000 = 1000 | Tanφ scaling | ■ | | | ■ | ■ | |
| 3239 | Phase current | 1 | 0 | 3 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 3240 | VPP average | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 3241 | VPN average | 1 | 0 | 3 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 325-6...3-271 | Harmonics of IA | 1 | 0 | 3 | 1 % = 1 | | ■ | ■ | | ■ | ■ | |
| 327-6...3-291 | Harmonics of IB | 1 | 0 | 3 | 1 % = 1 | | ■ | ■ | | ■ | ■ | |
| 329-6...3-311 | Harmonics of IC | 1 | 0 | 3 | 1 % = 1 | | ■ | ■ | | ■ | ■ | |
| 331-6...3-331 | Harmonics of VAB / Harmonics of VA | 1 | 0 | 3 | 1 % = 1 | | ■ | | ■ | ■ | ■ | |
| 333-6...3-351 | Harmonics of VBC / | 1 | 0 | 3 | 1 % = 1 | | ■ | | ■ | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|-------------------------------------|------|-------|------|-------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| | Harmonics of VB | | | | | | | | | | | |
| 335-6...3-371 | Harmonics of VC / Harmonics of VABY | 1 | 0 | 3 | 1 % = 1 | | ■ | | ■ | ■ | ■ | |
| 3381 | Temperature 1 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3382 | Temperature 2 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3383 | Temperature 3 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3384 | Temperature 4 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3385 | Temperature 5 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3386 | Temperature 6 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3387 | Temperature 7 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3388 | Temperature 8 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3389 | Temperature 9 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3390 | Temperature 10 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3391 | Temperature 11 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3392 | Temperature 12 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3393 | Temperature 13 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3394 | Temperature 14 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3395 | Temperature 15 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3396 | Temperature 16 | 1 | 0 | 3 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | ■ | |
| 3410 | Last fault value | 1 | 1 | 3, 6 | 1.00 xIn = 100 / 1.00 A = 100 | Fault value scaling | ■ | ■ | | ■ | ■ | ■ |
| 3411 | I>1 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | ■ | | ■ | ■ | ■ |
| 3412 | I>2 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | ■ | | ■ | ■ | ■ |
| 3413 | I>3 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | ■ | | ■ | ■ | ■ |
| 3415 | Fault reactance | 1 | 0 | 3 | 1.00 ohm = 100 | | | | | ■ | | |
| 3416 | Algorithm condition | 1 | 0 | 3 | Value ¹¹⁴ | | | | | ■ | | |

114. OK=0;NegX=1;BigX=2;Long fault=3;No BI=4;No pre-fault=5;No post-fault=6;Fault too short=7;Pre-fault unstable=8;Fault unstable=9; Post-fault unstable=10;Blocked=11;Off=12

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|---------------------------------------|------|-------|----|-----------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3417 | Fault value $\Omega > 1$ | 1 | 0 | 3 | 1.0 % Ω_n = 10 / 1 rpm = 1 | | ■ | ■ | | | ■ | |
| 3418 | Fault value $\Omega > 2$ | 1 | 0 | 3 | 1.0 % Ω_n = 10 / 1 rpm = 1 | | ■ | ■ | | | ■ | |
| 3419 | Fault value $\Omega < 1$ | 1 | 0 | 3 | 1.0 % Ω_n = 10 / 1 rpm = 1 | | ■ | ■ | | | ■ | |
| 3420 | Fault value $\Omega < 2$ | 1 | 0 | 3 | 1.0 % Ω_n = 10 / 1 rpm = 1 | | ■ | ■ | | | ■ | |
| 3430 | Last fault I _{cap} current | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | | ■ | | ■ | | |
| 3433 | Fault current I _{cap} > 1 | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | | ■ | | ■ | | |
| 3434 | Fault current I _{cap} > 2 | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | | ■ | | ■ | | |
| 3436 | Last fault I _N > 1 current | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | | | ■ | ■ | ■ |
| 3437 | I _N > 1 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | | | ■ | ■ | ■ |
| 3438 | I _N > 2 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | | | ■ | ■ | ■ |
| 3439 | I _N > 3 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | | | ■ | ■ | ■ |
| 3440 | SOTF fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | ■ | | ■ | ■ | |
| 3441 | V _N > 1 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1 V = 1 | Fault value scaling | ■ | | ■ | ■ | ■ | ■ |
| 3442 | V _N > 2 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1 V = 1 | Fault value scaling | ■ | | ■ | ■ | ■ | ■ |
| 3443 | V _N > 3 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1 V = 1 | Fault value scaling | ■ | | ■ | ■ | ■ | ■ |
| 3447 | INV _N > 1 fault value | 1 | 0 | 3 | 1.00 % P _{no} = 100 / 1 kW = 1 | Fault value scaling | | | | ■ | ■ | |
| 3448 | INV _N > 2 fault value | 1 | 0 | 3 | 1.00 % P _{no} = 100 / 1 kW = 1 | Fault value scaling | | | | ■ | ■ | |
| 3449 | I ₂ > 1 fault value | 1 | 0 | 3 | 1.00 pu = 100 / 1.00 A = 100 | Fault value scaling | ■ | ■ | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|-----------------------|------|-------|----|--------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3452 | CLP operation | 1 | 0 | 3 | Start=1; Timeout=2 | | ■ | ■ | | ■ | ■ | |
| 3453 | Inrush 1 detection | 1 | 0 | 3 | Start=1; Timeout=2 | | ■ | ■ | | ■ | ■ | ■ |
| 3454 | f+df/dt>1 fault value | 1 | 0 | 3 | 1.00 Hz/s = 100 | Fault value scaling | ■ | | ■ | ■ | | |
| 3455 | f+df/dt>2 fault value | 1 | 0 | 3 | 1.00 Hz/s = 100 | Fault value scaling | ■ | | ■ | ■ | | |
| 3456 | Motor speed | 1 | 0 | 3 | 1 rpm = 1 | | ■ | ■ | | | ■ | |

Statistics and virtual Input/Output

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|--------------|------|-------|------|---------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3501 | DI1 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3502 | DI2 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3503 | DI3 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3504 | DI4 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3505 | DI5 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3506 | DI6 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3507 | DI7 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3508 | DI8 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3509 | DI9 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3510 | DI10 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3511 | DI11 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3512 | DI12 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3513 | DI13 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3514 | DI14 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3515 | DI15 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3516 | DI16 counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3517 | DI17 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3518 | DI18 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3519 | DI19 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|---------------------|------|-------|------|---------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3520 | DI20 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3521 | DI21 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3522 | DI22 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3523 | DI23 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3524 | DI24 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3525 | DI25 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3526 | DI26 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3527 | DI27 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3528 | DI28 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3529 | DI29 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3530 | DI30 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3531 | DI31 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3532 | DI32 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3533 | DI33 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3534 | DI34 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3535 | DI35 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3536 | DI36 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3537 | DI37 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3538 | DI38 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3539 | DI39 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3540 | DI40 counter | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 3571 | Shot1 start counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3572 | Shot2 start counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3573 | Shot3 start counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3574 | Shot4 start counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3575 | Shot5 start counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3576 | AR start counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | ■ | | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|-----------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3577 | AR fail counter | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3578 | AR shot number | 1 | 0 | 3 | 1;2;3;4-5; END=6 | | ■ | ■ | | ■ | | |
| 3579 | AR direct trip | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3580 | AR locked | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3581 | AR running | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3582 | AR final trip | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3583 | AR on | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | | |
| 3611 | Motor starting | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | | ■ | |
| 3612 | Motor running | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | | ■ | |
| 3613 | Voltage interrupt | 1 | 0 | 3 | Low=0; ok=1 | | ■ | | ■ | ■ | ■ | ■ |
| 3614 | Voltage status | 1 | 0 | 3 | Value ¹¹⁵ | | ■ | | ■ | ■ | ■ | |
| 3615 | Timer 1 status | 1 | 1 | 3, 6 | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3616 | Timer 2 status | 1 | 1 | 3, 6 | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3617 | Timer 3 status | 1 | 1 | 3, 6 | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3618 | Timer 4 status | 1 | 1 | 3, 6 | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3619 | CB monitoring alarm 1 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 3620 | CB monitoring alarm 2 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 3621 | Logic output status 1...8 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3622 | Logic output status 9...16 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3623 | Logic output status 17...20 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3626 | Virtual outputs 1...10 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3627 | Virtual outputs 11...20 | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | ■ | ■ | ■ | ■ |

115. OK=0;Low=1;High=2;Low/High=3;(OK)=4;(Low)=5;(High)=6;(Low)/High=7

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|------------------|------|-------|------|---------|---------------------|------------------|-------|-------|-------|-------|-------|
| 3631 | Sync1 request | 1 | 0 | 3 | 1 = 1 | | ■ | | ■ | ■ | | |
| 3632 | Sync1 OK | 1 | 0 | 3 | 1 = 1 | | ■ | | ■ | ■ | | |
| 3633 | Bypass | 1 | 1 | 3, 6 | 1 = 1 | | ■ | | ■ | ■ | | |
| 3634 | Sync1 fail | 1 | 0 | 3 | 1 = 1 | | ■ | | ■ | ■ | | |
| 3657 | Virtual input 1 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3658 | Virtual input 2 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3659 | Virtual input 3 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3660 | Virtual input 4 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3661 | Virtual input 5 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3662 | Virtual input 6 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3663 | Virtual input 7 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3664 | Virtual input 8 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3665 | Virtual input 9 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3666 | Virtual input 10 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3667 | Virtual input 11 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3668 | Virtual input 12 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3669 | Virtual input 13 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3670 | Virtual input 14 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3671 | Virtual input 15 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3672 | Virtual input 16 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3673 | Virtual input 17 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3674 | Virtual input 18 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3675 | Virtual input 19 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 3676 | Virtual input 20 | 1 | 1 | 3, 6 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Minimum value, maximum value, ARC and circuit breaker

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|-----------------------------|------|-------|------|------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 4001 | Minimum frequency | 1 | 1 | 3, 6 | 50.000 Hz = 5000 | Frequency scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 4002 | Minimum active power | 1 | 1 | 3, 6 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4003 | Minimum react. power | 1 | 1 | 3, 6 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4004 | Minimum apparent power | 1 | 1 | 3, 6 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4005 | Min power factor | 1 | 1 | 3, 6 | 1.000 = 1000 | PF and cos scaling | ■ | | | ■ | ■ | |
| 4006 | IN.meas min | 1 | 1 | 3, 6 | 1.0 % = 10 | IN. meas scaling | ■ | ■ | | ■ | ■ | |
| 4007 | IN.sens min | 1 | 1 | 3, 6 | 1.0 % = 10 | IN.sens scaling | ■ | ■ | | ■ | ■ | |
| 4008 | Demand minimum active power | 1 | 1 | 3, 6 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4009 | Demand min. reactive power | 1 | 1 | 3, 6 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4010 | Demand min. apparent power | 1 | 1 | 3, 6 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4011 | Demand minimum power factor | 1 | 1 | 3, 6 | 1.000 = 1000 | PF and cos scaling | ■ | | | ■ | ■ | |
| 4012 | RMS Demand min active power | 1 | 1 | 3, 6 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4013 | RMS demand min react. power | 1 | 1 | 3, 6 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4014 | RMS demand min. app. power | 1 | 1 | 3, 6 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4015 | IA min | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4016 | IB min | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4017 | IC min | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4018 | IA rms min | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4019 | IB rms min | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4020 | IC rms min | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4021 | IA min demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|-----------------------------|------|-------|------|------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 4022 | IB min demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4023 | IC min demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4024 | IA rms min demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4025 | IB rms min demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4026 | IC rms min demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4027 | IN.CSH min | 1 | 1 | 3, 6 | 1.0 pu = 10 | IN.CSH scaling | ■ | ■ | | ■ | ■ | |
| 4028 | VN min | 1 | 1 | 3, 6 | 1.0 % = 10 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4030 | VAB min | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4031 | VBC min | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4032 | VCA min | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4033 | VAB rms min / VA rms min | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4034 | VBC rms min / VB rms min | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4035 | VC rms min / VABy rms min | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4101 | Maximum frequency | 1 | 1 | 3, 6 | 50.000 Hz = 5000 | Frequency scaling | ■ | ■ | ■ | ■ | ■ | ■ |
| 4102 | Maximum active power | 1 | 1 | 3, 6 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4103 | Maximum react. power | 1 | 1 | 3, 6 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4104 | Maximum apparent power | 1 | 1 | 3, 6 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4105 | Max power factor | 1 | 1 | 3, 6 | 1.000 = 1000 | PF and cos scaling | ■ | | | ■ | ■ | |
| 4106 | IN.meas max | 1 | 1 | 3, 6 | 1.0 % = 10 | IN. meas scaling | ■ | ■ | | ■ | ■ | |
| 4107 | IN.sens max | 1 | 1 | 3, 6 | 1.0 % = 10 | IN.sens scaling | ■ | ■ | | ■ | ■ | |
| 4108 | Demand maximum active power | 1 | 1 | 3, 6 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4109 | Demand max. reactive power | 1 | 1 | 3, 6 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|-----------------------------|------|-------|------|------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 4110 | Demand max. apparent power | 1 | 1 | 3, 6 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4111 | Demand maximum power factor | 1 | 1 | 3, 6 | 1.000 = 1000 | PF and cos scaling | ■ | | | ■ | ■ | |
| 4112 | RMS Demand max active power | 1 | 1 | 3, 6 | 1000 kW = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4113 | RMS demand max react. power | 1 | 1 | 3, 6 | 1000 kVAr = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4114 | RMS demand max. app. power | 1 | 1 | 3, 6 | 1000 kVA = 1000 | Power scaling | ■ | | | ■ | ■ | |
| 4115 | IA max | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4116 | IB max | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4117 | IC max | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4118 | IA rms max | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4119 | IB rms max | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4120 | IC rms max | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4121 | IA max demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4122 | IB max demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4123 | IC max demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4124 | IA rms max demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4125 | IB rms max demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4126 | IC rms max demand | 1 | 1 | 3, 6 | 1 A = 1 | | ■ | ■ | | ■ | ■ | |
| 4127 | IN.CSH max | 1 | 1 | 3, 6 | 1.0 pu = 10 | IN.CSH scaling | ■ | ■ | | ■ | ■ | |
| 4128 | VN max | 1 | 1 | 3, 6 | 1.0 % = 10 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4130 | VAB max | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4131 | VBC max | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4132 | VCA max | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4133 | VAB rms max / VA rms max | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|------------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 4134 | VBC rms max / VB rms max | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4135 | VC rms max / VABrms max | 1 | 1 | 3, 6 | 1000 V = 1000 | Voltage scaling | ■ | | ■ | ■ | ■ | |
| 4299 | Arc Io state | 1 | 0 | 3 | 1 = 1 | | | | | ■ | ■ | |
| 4300 | Arc I state | 1 | 0 | 3 | 1 = 1 | | | | | ■ | ■ | |
| 4302 | Release all latches | 1 | 1 | 3, 6 | Re-lease=1 | | | | | ■ | ■ | |
| 4303 | ARC stages | 1 | 0 | 3 | 1 = 1 | | | | | ■ | ■ | |
| 4304.- ..4309 | Arc sensor status | 1 | 0 | 3 | Value ¹¹⁶ | | | | | ■ | ■ | |
| 4349 | Minimum global trip cmd time | 1 | 1 | 3, 6 | 1.0 s = 10 | | ■ | ■ | | ■ | ■ | ■ |
| 4351.- ..4355 | Low limit (primary value) | 1 | 0 | 3 | 1.0 kA = 10 | | ■ | ■ | | ■ | ■ | ■ |
| 4356.- ..4359 | High limit (xIn) | 1 | 0 | 3 | 1.0 xIn = 10 | | ■ | ■ | | ■ | ■ | ■ |
| 4360.- ..4361 | Cumul broken current IA1 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |
| 4362.- ..4363 | Cumul broken current IA2 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |
| 4364.- ..4365 | Cumul broken current IA3 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |
| 4366.- ..4367 | Cumul broken current IA4 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |
| 4368.- ..4369 | Cumul broken current IA5 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |
| 4370.- ..4374 | Broken IA counter | 1 | 0 | 3 | 1000 = 1000 | CB Count scaling | ■ | ■ | | ■ | ■ | ■ |
| 4375.- ..4376 | Cumul broken current IB1 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |
| 4377.- ..4378 | Cumul broken current IB2 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |
| 4379.- ..4380 | Cumul broken current IB3 | 1 | 0 | 3 | Value ¹¹⁷ | | ■ | ■ | | ■ | ■ | ■ |

116. OK=1;Active=2;Not conn=3;Shrt circ=4;Daylight=5;Not Inst.=6

117. neighbouring two register combine to a float32 value

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|--------------------------|------|-------|----|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 4381.- ..4382 | Cumul broken current IB4 | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4383.- ..4384 | Cumul broken current IB5 | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4385.- ..4389 | Broken IB counter | 1 | 0 | 3 | 1000 = 1000 | CB Count scaling | ■ | ■ | | ■ | ■ | ■ |
| 4390.- ..4391 | Cumul broken current IC1 | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4392.- ..4393 | Cumul broken current IC2 | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4394.- ..4395 | Cumul broken current IC3 | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4396.- ..4397 | Cumul broken current IC4 | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4398.- ..4399 | Cumul broken current IC5 | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4400.- ..4404 | Broken IC counter | 1 | 0 | 3 | 1000 = 1000 | CB Count scaling | ■ | ■ | | ■ | ■ | ■ |
| 4405.- ..4406 | Cumulative broken IA | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4407.- ..4408 | Cumulative broken IB | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4409.- ..4410 | Cumulative broken IC | 1 | 0 | 3 | Value ¹¹⁸ | | ■ | ■ | | ■ | ■ | ■ |
| 4411 | CB open counter | 1 | 0 | 3 | 1 = 1 | CB Count scaling | ■ | ■ | | ■ | ■ | ■ |
| 4412 | Protection trip counter | 1 | 0 | 3 | 1000 = 1000 | CB Count scaling | ■ | ■ | | ■ | ■ | ■ |
| 4413 | Rack out counter | 1 | 0 | 3 | 1000 = 1000 | CB Count scaling | ■ | ■ | | ■ | ■ | ■ |
| 4414.- ..4453 | CB opening time | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 4455.- ..4494 | CB Closing time | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 4496.- ..4535 | Spring charging times | 1 | 0 | 3 | 1 = 1 | | ■ | ■ | | ■ | ■ | ■ |

118. neighbouring two register combine to a float32 value

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|---------|------|-------|----|----------------|-----------------------------------|------------------|-------|-------|-------|-------|-------|
| 4536.- ..4538 | Alarm 1 | 1 | 0 | 3 | 1000 = 1000 | Limit for oper.left scaling | ■ | ■ | | ■ | ■ | ■ |
| 4539.- ..4541 | Alarm 2 | 1 | 0 | 3 | 1000 = 1000 | Limit for oper.left scaling | ■ | ■ | | ■ | ■ | ■ |

Settings

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|------------------------|------|-------|------|---------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| ARC setting items: | | | | | | | | | | | | |
| 5001 | I>int. pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | ■ | ■ | ■ |
| 5002 | IN>int. pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | ■ | ■ | ■ |
| 5003 | Enable for Arc stage 1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5004 | Enable for Arc stage 2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5005 | Enable for Arc stage 3 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5006 | Enable for Arc stage 4 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5007 | Enable for Arc stage 5 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5008 | Enable for Arc stage 6 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5009 | Enable for Arc stage 7 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5010 | Enable for Arc stage 8 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | ■ |
| 5011 | Stage 1 mode | 1 | 1 | 3, 6 | Light=0; Light&- cur- rent=1 | | | | | ■ | ■ | ■ |
| 5012 | Stage 2 mode | 1 | 1 | 3, 6 | Light=0; Light&- cur- rent=2 | | | | | ■ | ■ | ■ |
| 5013 | Stage 3 mode | 1 | 1 | 3, 6 | Light=0; Light&- cur- rent=3 | | | | | ■ | ■ | ■ |
| 5014 | Stage 4 mode | 1 | 1 | 3, 6 | Light=0; Light&- cur- rent=4 | | | | | ■ | ■ | ■ |
| 5015 | Stage 5 mode | 1 | 1 | 3, 6 | Light=0; Light&- cur- rent=5 | | | | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------|------------------------|------|-------|------|---------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 5016 | Stage 6 mode | 1 | 1 | 3, 6 | Light=0; Light&-current=6 | | | | | ■ | ■ | ■ |
| 5017 | Stage 7 mode | 1 | 1 | 3, 6 | Light=0; Light&-current=7 | | | | | ■ | ■ | ■ |
| 5018 | Stage 8 mode | 1 | 1 | 3, 6 | Light=0; Light&-current=8 | | | | | ■ | ■ | ■ |
| 5019 | Trip 1 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5020 | Trip 2 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5021 | Trip 3 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5022 | Trip 4 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5023 | Trip 5 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5024 | Trip 6 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5025 | Trip 7 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5026 | Trip 8 delay [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5027 | Min. hold time [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5028 | Min. hold time2 [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5029 | Min. hold time3 [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5030 | Min. hold time4 [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5031 | Min. hold time5 [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5032 | Min. hold time6 [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5033 | Min. hold time7 [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |
| 5034 | Min. hold time8 [x1ms] | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------------|-------------------------|------|-------|------|------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 5035 | CT input | 1 | 1 | 3, 6 | CT-1=0;CT-2=1 | | | | | | | ■ |
| Inrush setting: | | | | | | | | | | | | |
| 5101 | Enable for Inrush 1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5102 | Max inrush current | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5103 | Pickup for 2nd harmonic | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 5108 | Inrush operating mode | 1 | 1 | 3, 6 | Phase block=0; Cross block=1 | | | | | ■ | ■ | ■ |
| 5109 | CT input | 1 | 1 | 3, 6 | CT-1=0;CT-2=1 | | | | | | | ■ |
| Inrush 2 setting: | | | | | | | | | | | | |
| 15301 | Enable for Inrush 2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 15302 | Pickup for 2nd harmonic | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 15303 | Max inrush current | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 15304 | Inrush operating mode | 1 | 1 | 3, 6 | Phase block=0; Cross block=1 | | | | | ■ | ■ | ■ |
| 15305 | CT input | 1 | 0 | 3 | CT-1=0;CT-2=1 | | | | | | | ■ |
| OverCurrent I>1 setting: | | | | | | | | | | | | |
| 5152...-5155 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5164...-5167 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5168...-5171 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 5172...-5175 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5176...-5179 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5180...-5183 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | ■ | | ■ | ■ | ■ |
| 5184...-5187 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5188...-5191 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------------|-----------------------|------|-------|------|-----------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 5192...-5195 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5196...-5199 | Dynamic threshold | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5200...-5203 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5204...-5207 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 5209...-5212 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | ■ | | ■ | ■ | ■ |
| 5213...-5216 | Operating curve | 1 | 1 | 3, 6 | Value ¹¹⁹ | | ■ | ■ | | ■ | ■ | ■ |
| 5217...-5220 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5221...-5224 | Enable for I>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5225...-5228 | Direction mode | 1 | 1 | 3, 6 | Non-directional=0; Forward=1; Reverse=2 | | ■ | ■ | | ■ | ■ | ■ |
| 5229...-5232 | Characteristic angle | 1 | 1 | 3, 6 | 1° = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 5233...-5236 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5237...-5240 | Tripping logic | 1 | 1 | 3, 6 | 1 out of 3=0; 2 out of 3=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5241...-5244 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5245...-5248 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| OverCurrent I>2 setting: | | | | | | | | | | | | |
| 5252...-5255 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5264...-5267 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5268...-5271 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |

119. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------|-----------------------|------|-------|------|-----------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 5272...-5275 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5276...-5279 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | ■ | | ■ | ■ | ■ |
| 5280...-5283 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5284...-5287 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 5288...-5291 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5292...-5295 | Dynamic threshold | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5296...-5299 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5300...-5303 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 5305...-5308 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | ■ | | ■ | ■ | ■ |
| 5309...-5312 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5313...-5316 | Operating curve | 1 | 1 | 3, 6 | Value ¹²⁰ | | ■ | ■ | | ■ | ■ | ■ |
| 5317...-5320 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5321...-5324 | Enable for I>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5325...-5328 | Direction mode | 1 | 1 | 3, 6 | Non-directional=0; Forward=1; Reverse=2 | | ■ | ■ | | ■ | ■ | ■ |
| 5329...-5332 | Characteristic angle | 1 | 1 | 3, 6 | 1° = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 5333...-5336 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5337...-5340 | Tripping logic | 1 | 1 | 3, 6 | 1 out of 3=0; 2 out of 3=1 | | ■ | ■ | | ■ | ■ | ■ |

120. DT=0; IEC_SI=1; IEC_VI=2; IEC_EI=3; IEC_LTI=4; IEC_UTI=5; UK_Rectifier=6; FR_STI=7; RI=8; IEEE_MI=9; IEEE_VI=10; IEEE_EI=11; STI_CO2=12; LTI_CO5=13; MI_CO7=14; NI_CO8=15; VI_CO9=16; EI_CO11=17; BPN=18; ANSI_NI=19; ANSI_STI=20; ANSI_LTI=21; Prg1=22; Prg2=23; Prg3=24; IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------------|-----------------------|------|-------|------|-----------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 5341...-5344 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5345...-5348 | CT input | 1 | 1 | 3, 6 | CT-1=0;CT-2=1 | | | | | | | ■ |
| OverCurrent I>3 setting: | | | | | | | | | | | | |
| 5352...-5355 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5356...-5359 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5360...-5363 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5364...-5367 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | ■ | | ■ | ■ | ■ |
| 5368...-5371 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5372...-5375 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5376...-5379 | Dynamic threshold | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5380...-5383 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5384...-5387 | Enable for I>3 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5388...-5391 | Operating curve | 1 | 1 | 3, 6 | Value ¹²¹ | | ■ | ■ | | ■ | ■ | ■ |
| 5392...-5395 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 5396...-5399 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9651...-9654 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9655...-9658 | Direction mode | 1 | 1 | 3, 6 | Non-directional=0; Forward=1; Reverse=2 | | ■ | ■ | | ■ | ■ | ■ |
| 9659...-9662 | Characteristic angle | 1 | 1 | 3, 6 | 1° = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 9663...-9666 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | ■ | | ■ | ■ | ■ |

121. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|---------------------------|------|-------|------|--------------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 9667...- 9670 | Tripping logic | 1 | 1 | 3, 6 | 1 out of 3=0;2 out of 3=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9671...- 9674 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | ■ | | ■ | ■ | ■ |
| 9675...- 9678 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9679...- 9682 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9683...- 9686 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9687...- 9690 | CT input | 1 | 1 | 3, 6 | CT-1=0;CT-2=1 | | | | | | | ■ |
| SOTF setting: | | | | | | | | | | | | |
| 5401 | Enable for SOTF | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | |
| 5402 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | |
| 5403 | Dead line detection delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | |
| 5404 | SOTF active timer | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | |
| 5405 | Dead line detection input | 1 | 1 | 3, 6 | Value ¹²² | | ■ | ■ | | ■ | ■ | |

122. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------|-----------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| P<1 setting: | | | | | | | | | | | | |
| 5652...-5655 | Pick-up value | 1 | 1 | 3, 6 | 1.0 % Sn = 10 | | ■ | | | ■ | ■ | |
| 5656...-5659 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | | ■ | | | ■ | ■ | |
| 5660...-5663 | Enable for P<1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | |
| P<2 setting: | | | | | | | | | | | | |
| 5702...-5705 | Pick-up value | 1 | 1 | 3, 6 | 1.0 % Sn = 10 | | ■ | | | ■ | ■ | |
| 5706...-5709 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | | ■ | | | ■ | ■ | |
| 5710...-5713 | Enable for P<2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | |
| I< setting: | | | | | | | | | | | | |
| 5752...-5755 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | |
| 5756...-5759 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | | ■ | ■ | | ■ | ■ | |
| 5760...-5763 | Enable for I< | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | |
| 5764...-5767 | I< block limit | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | |
| I2/I1> setting: | | | | | | | | | | | | |
| 5802...-5805 | Pick-up value | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 5806...-5809 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5810...-5813 | Enable for I2/I1>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5814...-5817 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| I2>2 setting: | | | | | | | | | | | | |
| 5852...-5855 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5856...-5859 | Operating curve | 1 | 1 | 3, 6 | Value ¹²³ | | ■ | ■ | | ■ | ■ | ■ |
| 5860...-5863 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5864...-5867 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 5868...-5871 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5872...-5875 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5876...-5879 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT= | | ■ | ■ | | ■ | ■ | ■ |

123. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|-----------------------|------|-------|------|--------------------------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | 1; Prg1= 2; Prg2= 3; Prg3=4 | | | | | | | |
| 5880...- 5883 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5884...- 5887 | Enable for I2>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5888...- 5891 | CT input | 1 | 1 | 3, 6 | CT-1= 0;CT- 2=1 | | | | | | | ■ |
| I2>1 setting: | | | | | | | | | | | | |
| 5902...- 5905 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5914...- 5917 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5918...- 5921 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 5922...- 5925 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT= 1; Prg1= 2; Prg2= 3; Prg3=4 | | ■ | ■ | | ■ | ■ | ■ |
| 5926...- 5929 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5930...- 5933 | Operating curve | 1 | 1 | 3, 6 | Val- ue ¹²⁴ | | ■ | ■ | | ■ | ■ | ■ |
| 5934...- 5937 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5938...- 5941 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 5942...- 5945 | Enable for I2>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 5946...- 5949 | CT input | 1 | 1 | 3, 6 | CT-1= 0;CT- 2=1 | | | | | | | ■ |
| Ist> setting: | | | | | | | | | | | | |
| 5951 | Enable for Ist> | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 5952 | Operating curve | 1 | 1 | 3, 6 | DT=0; INV=1 | | ■ | ■ | | | ■ | |
| 5953 | Motor start time | 1 | 1 | 3, 6 | 1.0 s = 10 | | ■ | ■ | | | ■ | |
| Ilr> setting: | | | | | | | | | | | | |
| 6001 | Enable for Ilr> | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 6002 | Pick-up value | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | ■ | | | ■ | |
| 6003 | Operating curve | 1 | 1 | 3, 6 | DT=0; INV=1 | | ■ | ■ | | | ■ | |

124. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|----------------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 6004 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | | ■ | ■ | | | ■ | |
| N> setting: | | | | | | | | | | | | |
| 6051 | Enable for N> | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 6052 | Max motor Hot starts | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | | ■ | |
| 6053 | Max motor cold starts | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | | ■ | |
| 6054 | Min time between motor starts | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | | ■ | |
| 6055 | Reference period | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | | ■ | |
| 6056 | Hot Status Limit | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | ■ | | | ■ | |
| Motor T°> setting: | | | | | | | | | | | | |
| 6102...-6105 | Basic current setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | | ■ | |
| 6106...-6109 | Max permissive I factor | 1 | 1 | 3, 6 | 1.00 = 100 | | ■ | ■ | | | ■ | |
| 6110...-6113 | Heating time constant | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | | ■ | |
| 6114...-6117 | Time constant for motor starting | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | | ■ | |
| 6118...-6121 | Cooling time constant | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | | ■ | |
| 6130...-6133 | Unbalance factor | 1 | 1 | 3, 6 | 1.0 = 10 | | ■ | ■ | | | ■ | |
| 6134...-6137 | Thermal alarm value | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | ■ | | | ■ | |
| 6138...-6141 | Reserve time thermal alarm | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | | ■ | |
| 6142...-6145 | Operating mode | 1 | 1 | 3, 6 | Current=0; Ambient=1 | | ■ | ■ | | | ■ | |
| 6146...-6149 | Nominal ambient temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | | ■ | |
| 6150...-6153 | Max object temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | | ■ | |
| 6154...-6157 | Alarm temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | | ■ | |
| 6158...-6161 | Min ambient temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------|-----------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 6162...-6165 | Default ambient temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | | ■ | |
| 6166...-6169 | Enable for 49M> | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| Feeder T°> setting: | | | | | | | | | | | | |
| 6202...-6205 | Basic current setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | | ■ |
| 6206...-6209 | Max permissive I factor | 1 | 1 | 3, 6 | 1.00 = 100 | | ■ | ■ | | ■ | | ■ |
| 6210...-6213 | Heating time constant | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | ■ | | ■ |
| 6214...-6217 | Thermal alarm value | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | ■ | | ■ | | ■ |
| 6218...-6221 | Reserve time thermal alarm | 1 | 1 | 3, 6 | 1.0 min = 10 | | ■ | ■ | | ■ | | ■ |
| 6222...-6225 | Operating mode | 1 | 1 | 3, 6 | Current=0; Ambient=1 | | ■ | ■ | | ■ | | ■ |
| 6226...-6229 | Nominal ambient temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | | ■ |
| 6230...-6233 | Max object temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | | ■ |
| 6234...-6237 | Alarm temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | | ■ |
| 6238...-6241 | Min ambient temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | | ■ |
| 6242...-6245 | Default ambient temperature | 1 | 1 | 3, 6 | 1 °C = 1 / 1 °F = 1 | | ■ | ■ | | ■ | | ■ |
| 6246...-6249 | Enable for 49F | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | | ■ |
| 6250...-6253 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| Icap>1 setting: | | | | | | | | | | | | |
| 6402...-6405 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | ■ | | ■ | | |
| 6406...-6409 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | ■ | | ■ | | |
| 6440...-6443 | Enable for Icap>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | ■ | | |
| 6444 | Compensation mode | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | ■ | | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------|---------------------------|------|-------|------|--------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 6445 | Compensation current | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | ■ | | ■ | | |
| Icap>2 setting: | | | | | | | | | | | | |
| 6452...-6455 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | ■ | | ■ | | |
| 6456...-6459 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | ■ | | ■ | | |
| 6490...-6493 | Enable for Icap>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | ■ | | |
| 6494 | Compensation mode | 1 | 1 | 3, 6 | Off=0; Normal=1; Location=2 | | | ■ | | ■ | | |
| 6495 | Compensation current | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | ■ | | ■ | | |
| 6496 | Max allowed faults | 1 | 1 | 3, 6 | 1 = 1 | | | ■ | | ■ | | |
| IN>1 setting: | | | | | | | | | | | | |
| 6552...-6555 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Sector=1; Res-Cap=2 | | ■ | | | ■ | ■ | ■ |
| 6556...-6559 | Char ctrl. in ResCap mode | 1 | 1 | 3, 6 | Value ¹²⁵ | | ■ | | | ■ | ■ | ■ |
| 6560...-6563 | IN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 6564...-6567 | VN pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 6568...-6571 | Angle offset | 1 | 1 | 3, 6 | 1° = 1 | | ■ | | | ■ | ■ | ■ |
| 6572...-6575 | Pick up sector size | 1 | 1 | 3, 6 | 1° = 1 | | ■ | | | ■ | ■ | ■ |

125. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------|-------------------------------|------|-------|------|--------------------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 6584...-6587 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 6588...-6591 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 6592...-6595 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | | | ■ | ■ | ■ |
| 6596...-6599 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9851...-9854 | Operating curve | 1 | 1 | 3, 6 | Value ¹²⁶ | | ■ | | | ■ | ■ | ■ |
| 9855...-9858 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9859...-9862 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9863...-9866 | Enable for IN>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 9867...-9870 | VN input mode | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | | ■ | ■ | ■ |
| 9871...-9874 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | | | ■ | ■ | ■ |
| 9875...-9878 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | | | ■ | ■ | ■ |
| 9879...-9882 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9883...-9886 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 9887...-9890 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 9891...-9894 | Dynamic threshold | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 9895...-9898 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9899...-9902 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 9903 | Enable faulty phase detection | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 9904 | Phase currents | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | | | ■ | ■ | ■ |

126. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scal- ing | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|---------------------------------|------|-------|------|--------------------------------------------------------------|-----------------------------|------------------------|-------|-------|-------|-------|-------|
| | change limit | | | | | | | | | | | |
| 9905...- 9908 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 9909...- 9912 | CT input | 1 | 1 | 3, 6 | CT-1= 0;CT- 2=1 | | | | | | | ■ |
| IN>2 setting: | | | | | | | | | | | | |
| 6602...- 6605 | Direction mode | 1 | 1 | 3, 6 | Non- dir=0; Sec- tor=1; Res- Cap=2 | | ■ | | | ■ | ■ | ■ |
| 6606...- 6609 | Char ctrl. in ResCap mode | 1 | 1 | 3, 6 | Val- ue ¹²⁷ | | ■ | | | ■ | ■ | ■ |
| 6610...- 6613 | IN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 6614...- 6617 | VN Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 6618...- 6621 | Angle offset | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | | | ■ | ■ | ■ |
| 6622...- 6625 | Pick up sector size | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | | | ■ | ■ | ■ |
| 6634...- 6637 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 6638...- 6641 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 6642...- 6645 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT= 1; Prg1= 2; Prg2= 3; Prg3=4 | | ■ | | | ■ | ■ | ■ |
| 6646...- 6649 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |

127. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-------------------------------|------|-------|------|--------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 11151..- .11154 | Operating curve | 1 | 1 | 3, 6 | Value ¹²⁸ | | ■ | | | ■ | ■ | ■ |
| 11155..- .11158 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11159..- .11162 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11163..- .11166 | Enable for IN>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11167..- .11170 | VN input mode | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | | ■ | ■ | ■ |
| 11171..- .11174 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | | | ■ | ■ | ■ |
| 11175..- .11178 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | | | ■ | ■ | ■ |
| 11179..- .11182 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11183..- .11186 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11187..- .11190 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11191..- .11194 | Dynamic threshold | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 11195..- .11198 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11199..- .11202 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11203 | Enable faulty phase detection | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11204 | Phase currents change limit | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | | | ■ | ■ | ■ |
| 11205..- .11208 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11209..- .11212 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| IN>3 setting: | | | | | | | | | | | | |
| 6652...- 6655 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Sector=1; Res-Cap=2 | | ■ | | | ■ | ■ | ■ |

128. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------|---------------------------|------|-------|------|--------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 6656...-6659 | Char ctrl. in ResCap mode | 1 | 1 | 3, 6 | Value ¹²⁹ | | ■ | | | ■ | ■ | ■ |
| 6660...-6663 | IN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 6664...-6667 | VN pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 6668...-6671 | Angle offset | 1 | 1 | 3, 6 | 1° = 1 | | ■ | | | ■ | ■ | ■ |
| 6672...-6675 | Pick up sector size | 1 | 1 | 3, 6 | 1° = 1 | | ■ | | | ■ | ■ | ■ |
| 6684...-6687 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 6688...-6691 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 6692...-6695 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | | | ■ | ■ | ■ |
| 6696...-6699 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11301.-...11304 | Operating curve | 1 | 1 | 3, 6 | Value ¹³⁰ | | ■ | | | ■ | ■ | ■ |
| 11305.-...11308 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11309.-...11312 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11313.-...11316 | Enable for IN>3 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11317.-...11320 | VN input mode | 1 | 1 | 3, 6 | Measured=0; | | ■ | | | ■ | ■ | ■ |

129. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
130. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-------------------------------|------|-------|------|---------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | Calculated=1 | | | | | | | |
| 11321.- ..11324 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | | | ■ | ■ | ■ |
| 11325.- ..11328 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | | | ■ | ■ | ■ |
| 11329.- ..11332 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11333.- ..11336 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11337.- ..11340 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11341.- ..11344 | Dynamic threshold | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 11345.- ..11348 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11349.- ..11352 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11353 | Enable faulty phase detection | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11354 | Phase currents change limit | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------|---------------------------|------|-------|------|-------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 11355.- ...11358 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11359.- ...11362 | CT input | 1 | 1 | 3, 6 | CT-1= 0;CT- 2=1 | | | | | | | ■ |
| INVN>1 setting: | | | | | | | | | | | | |
| 6702....- 6705 | Direction mode | 1 | 1 | 3, 6 | Forward= 0; Reverse= 1 | | | | | ■ | ■ | |
| 6706....- 6709 | Inhibit control | 1 | 1 | 3, 6 | Value ¹³¹ | | | | | ■ | ■ | |
| 6710....- 6713 | Timer instant delay ctrl. | 1 | 1 | 3, 6 | Value ¹³¹ | | | | | ■ | ■ | |
| 6714....- 6717 | Pick-up value | 1 | 1 | 3, 6 | 1.00 % Pno = 100 | Pick-up value scaling | | | | ■ | ■ | |
| 6718....- 6721 | VN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | | | ■ | ■ | |
| 6722....- 6725 | Pick-up sector size | 1 | 1 | 3, 6 | 1 ° = 1 | | | | | ■ | ■ | |
| 6726....- 6729 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 6730....- 6733 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1= 1; SOL2= 2 | | | | | ■ | ■ | |
| 6734....- 6737 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |

131. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------|---------------------------|------|-------|------|-----------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 6738...-6741 | Memory mode | 1 | 1 | 3, 6 | None=0; Voltage=1; Time=2; Both=3 | | | | | ■ | ■ | |
| 6742...-6745 | VN memory value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | | | ■ | ■ | |
| 6746...-6749 | Memory time | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 11901.-..11904 | Enable for INVN>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 11905.-..11908 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 11909.-..11912 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | | | | ■ | ■ | |
| INVN>2 setting: | | | | | | | | | | | | |
| 6752...-6755 | Direction mode | 1 | 1 | 3, 6 | Forward=0; Reverse=1 | | | | | ■ | ■ | |
| 6756...-6759 | Inhibit control | 1 | 1 | 3, 6 | Value ¹³² | | | | | ■ | ■ | |
| 6760...-6763 | Timer instant delay ctrl. | 1 | 1 | 3, 6 | Value ¹³² | | | | | ■ | ■ | |
| 6764...-6767 | Pick-up value | 1 | 1 | 3, 6 | 1.00 % Pno = 100 | Pick-up value scaling | | | | ■ | ■ | |

132. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|----------------|---------------------|------|-------|------|-----------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 6768...-6771 | VN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | | | ■ | ■ | |
| 6772...-6775 | Pick-up sector size | 1 | 1 | 3, 6 | 1° = 1 | | | | | ■ | ■ | |
| 6776...-6779 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 6780...-6783 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | | | | ■ | ■ | |
| 6784...-6787 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 6788...-6791 | Memory mode | 1 | 1 | 3, 6 | None=0; Voltage=1; Time=2; Both=3 | | | | | ■ | ■ | |
| 6792...-6795 | VN memory value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | | | ■ | ■ | |
| 6796...-6799 | Memory time | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 12051...-12054 | Enable for INVN>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 12055...-12058 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 12059...-12062 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | | | | ■ | ■ | |
| V>1 setting: | | | | | | | | | | | | |
| 6802...-6805 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 6806...-6809 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 6812...-6815 | Enable for V>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 6816...-6819 | Measurement mode | 1 | 1 | 3, 6 | Phase-phase=0; Phase-ground=1 | | ■ | | ■ | ■ | ■ | |
| 6820...-6823 | Operating curve | 1 | 1 | 3, 6 | Value ¹³³ | | ■ | | ■ | ■ | ■ | |
| 6824...-6827 | Tripping logic | 1 | 1 | 3, 6 | Any phase=0; Three phases=1 | | ■ | | ■ | ■ | ■ | |

133. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------|------------------|------|-------|------|-------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 6828...-6831 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 6832...-6835 | Hysteresis | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| V>2 setting: | | | | | | | | | | | | |
| 6852...-6855 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 6856...-6859 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 6861...-6864 | Enable for V>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 6865...-6868 | Measurement mode | 1 | 1 | 3, 6 | Phase-Phase=0; Phase-Ground=1 | | ■ | | ■ | ■ | ■ | |
| 6869...-6872 | Operating curve | 1 | 1 | 3, 6 | Value ¹³⁴ | | ■ | | ■ | ■ | ■ | |
| 6873...-6876 | Tripping logic | 1 | 1 | 3, 6 | Any Phase=0; Three Phases=1 | | ■ | | ■ | ■ | ■ | |
| 6877...-6880 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 6881...-6884 | Hysteresis | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| V>3 setting: | | | | | | | | | | | | |
| 6902...-6905 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 6906...-6909 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 6911...-6914 | Enable for V>3 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 6915...-6918 | Measurement mode | 1 | 1 | 3, 6 | Phase-phase=0; Phase-ground=1 | | ■ | | ■ | ■ | ■ | |
| 6919...-6922 | Operating curve | 1 | 1 | 3, 6 | Value ¹³⁴ | | ■ | | ■ | ■ | ■ | |
| 6923...-6926 | Tripping logic | 1 | 1 | 3, 6 | Any phase=0; Three phases=1 | | ■ | | ■ | ■ | ■ | |
| 6927...-6930 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 6931...-6934 | Hysteresis | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |

134. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------|------------------|------|-------|------|--------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| V<1 setting: | | | | | | | | | | | | |
| 6952...-6955 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 6956...-6959 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 6962...-6965 | Enable for V<1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 6966...-6969 | CB open blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 6970...-6973 | Measurement mode | 1 | 1 | 3, 6 | Phase-phase=0; Phase-ground=1 | | ■ | | ■ | ■ | ■ | |
| 6974...-6977 | Operating curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | | ■ | ■ | ■ | |
| 6978...-6981 | Tripping logic | 1 | 1 | 3, 6 | Any phase=0; Three phases=1 | | ■ | | ■ | ■ | ■ | |
| 6982...-6985 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 6986...-6989 | Hysteresis | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| V<2 setting: | | | | | | | | | | | | |
| 7002...-7005 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 7006...-7009 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 7011...-7014 | Enable for V<2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7015...-7018 | CB open blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7019...-7022 | Measurement mode | 1 | 1 | 3, 6 | Phase-phase=0; Phase-ground=1 | | ■ | | ■ | ■ | ■ | |
| 7023...-7026 | Operating curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | | ■ | ■ | ■ | |
| 7027...-7030 | Tripping logic | 1 | 1 | 3, 6 | Any phase=0; Three phases=1 | | ■ | | ■ | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|-----------------------|------|-------|------|--------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 7031...-7034 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 7035...-7038 | Hysteresis | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| V<3 setting: | | | | | | | | | | | | |
| 7052...-7055 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 7056...-7059 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 7061...-7064 | Enable for V<3 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7065...-7068 | CB open blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7069...-7072 | Measurement mode | 1 | 1 | 3, 6 | Phase-phase=0; Phase-ground=1 | | ■ | | ■ | ■ | ■ | |
| 7073...-7076 | Operating curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | | ■ | ■ | ■ | |
| 7077...-7080 | Tripping logic | 1 | 1 | 3, 6 | Any phase=0; Three phases=1 | | ■ | | ■ | ■ | ■ | |
| 7081...-7084 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 7085...-7088 | Hysteresis | 1 | 1 | 3, 6 | 1.0 % = 10 | | ■ | | ■ | ■ | ■ | |
| V1<1 setting: | | | | | | | | | | | | |
| 7102...-7105 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | ■ | | ■ | |
| 7106...-7109 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | ■ | | ■ | |
| 7110 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | ■ | | ■ | |
| 7114...-7117 | Enable for V1<1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | ■ | | ■ | |
| V1<2 setting: | | | | | | | | | | | | |
| 7152...-7155 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | ■ | | ■ | |
| 7156...-7159 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | ■ | | ■ | |
| 7160 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | ■ | | ■ | |
| 7164...-7167 | Enable for V1<2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | ■ | | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|-----------------------|------|-------|------|--------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| VN>1 setting: | | | | | | | | | | | | |
| 7201...-7204 | Enable for VN>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 7205...-7208 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | ■ | ■ | ■ | ■ |
| 7209...-7212 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | ■ |
| 7213...-7216 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | ■ |
| 7217...-7220 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | ■ |
| VN>2 setting: | | | | | | | | | | | | |
| 7251...-7254 | Enable for VN>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 7255...-7258 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | ■ | ■ | ■ | ■ |
| 7259...-7262 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | ■ |
| 7263...-7266 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | ■ |
| 7267...-7270 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | ■ |
| VN>3 setting: | | | | | | | | | | | | |
| 7301...-7304 | Enable for VN>3 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 7305...-7308 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | ■ | ■ | ■ | ■ |
| 7309...-7312 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | ■ |
| 7313...-7316 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | ■ |
| 7317...-7320 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | ■ |
| f>1 setting: | | | | | | | | | | | | |
| 7351...-7354 | Enable for f>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7355...-7358 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | ■ | |
| 7359...-7362 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 7363...-7366 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|---------------------------|------|-------|------|-----------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| f>2 setting: | | | | | | | | | | | | |
| 7401...-7404 | Enable for f>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7405...-7408 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | ■ | |
| 7409...-7412 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 7413...-7416 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| f<1 setting: | | | | | | | | | | | | |
| 7451...-7454 | Enable for f<1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7455...-7458 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | ■ | |
| 7459...-7462 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 7463...-7466 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | ■ | |
| 7467...-7470 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| f<2 setting: | | | | | | | | | | | | |
| 7501...-7504 | Enable for f<2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7505...-7508 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | ■ | |
| 7509...-7512 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | ■ | ■ | ■ | |
| 7513...-7516 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | ■ | |
| 7517...-7520 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| CB Fail 1 setting: | | | | | | | | | | | | |
| 7551 | Enable for CB failure 1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 7552 | Enable CBF timer1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 7553 | Timer1 operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 7554 | Enable CBF timer2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 7555 | Timer2 operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 7556 | Noncurrent CBF reset mode | 1 | 1 | 3, 6 | l<On-ly=0; Pole dead= | | ■ | ■ | ■ | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|---------------------------|------|-------|------|----------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | 1; ProtR- st=2 | | | | | | | |
| 7557 | Ext CBF reset mode | 1 | 1 | 3, 6 | I<On-ly=0; Pole dead=1; ProtR- st=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 7558 | I< current set | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 7559 | INN | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 7560 | IN.sensN.sens | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | ■ | | ■ | ■ | ■ |
| CB Fail 2 setting: | | | | | | | | | | | | |
| 16201 | Enable for CB failure 2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 16202 | Enable CBF timer1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 16203 | Timer1 operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | | | ■ |
| 16204 | Enable CBF timer2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 16205 | Timer2 operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | | | ■ |
| 16206 | Noncurrent CBF reset mode | 1 | 1 | 3, 6 | I<On-ly=0; Pole dead=1; ProtR- st=2 | | | | | | | ■ |
| 16207 | Ext CBF reset mode | 1 | 1 | 3, 6 | I<On-ly=0; Pole dead=1; ProtR- st=2 | | | | | | | ■ |
| 16208 | I< current set | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 16209 | IN< | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | | | | | ■ |
| Ih5>1 setting: | | | | | | | | | | | | |
| 7651 | Enable for Ih5>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | |
| 7652 | Pick-up value | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | ■ | | ■ | ■ | |
| 7653 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | |
| CTS 1 setting: | | | | | | | | | | | | |
| 7701 | Enable for CTS 1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|----------------|--------------------|------|-------|------|-----------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 7702 | CTS operating mode | 1 | 1 | 3, 6 | 3I only=0; IN&V-N=1; Both=2 | | ■ | ■ | | ■ | ■ | ■ |
| 7703 | CTS reset input | 1 | 1 | 3, 6 | Value ¹³⁵ | | ■ | ■ | | ■ | ■ | ■ |
| 7704 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 7705 | CT input | 1 | 0 | 3 | CT-1=0;CT-2=1 | | | | | | | ■ |
| 7721 | IN> | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 7722 | VN< | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 7723 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | | ■ | ■ | ■ |
| CTS 2 setting: | | | | | | | | | | | | |
| 15501 | Enable for CTS 2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15502 | CTS operating mode | 1 | 1 | 3, 6 | 3I only=0; IN&V-N=1; Both=2 | | | | | | | ■ |
| 15503 | IN> | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |

135. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------|--------------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 15504 | VN< | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15505 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | | | ■ |
| 15506 | CTS reset input | 1 | 1 | 3, 6 | Value ¹³⁶ | | | | | | | ■ |
| 15507 | CT input | 1 | 0 | 3 | CT-1=0; CT-2=1 | | | | | | | ■ |
| CTS-DIFF setting: | | | | | | | | | | | | |
| 15601 | Enable for CT supervision Diff | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15602 | I1> | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15603 | I2/I1 low | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |
| 15604 | I2/I1 high | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |
| 15605 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | | | ■ |
| 15606 | CTS reset input | 1 | 1 | 3, 6 | Value ¹³⁶ | | | | | | | ■ |
| VTS setting: | | | | | | | | | | | | |
| 7751 | Enable for VTS | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| 7752 | V2> setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | |

136. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------|-----------------------|------|-------|------|----------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 7753 | I2< setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | |
| 7754 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | | | ■ | ■ | |
| 7755 | Inhibit ctrl | 1 | 1 | 3, 6 | Value ¹³⁷ | | ■ | | ■ | ■ | ■ | |
| 7756 | DI for mcb | 1 | 1 | 3, 6 | Value ¹³⁸ | | ■ | | ■ | ■ | ■ | |
| 7757 | I>(min) setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | |
| 7758 | I<(max) setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | |
| 7759 | Delta VN> setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | |
| 7760 | Enable for VN compare | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | |
| Vcap>1 setting: | | | | | | | | | | | | |
| 7952...-7955 | Pick-up value | 1 | 1 | 3, 6 | 1.00 xUcLN = 100 | | | ■ | | ■ | | |
| 7956...-7959 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | | | ■ | | ■ | | |
| 7960...-7963 | Enable for Vcap>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | ■ | | |

137. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTI=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510
138. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;DI21=21;DI22=22;DI23=23;DI24=24;DI25=25;DI26=26;DI27=27;DI28=28;DI29=29;DI30=30;DI31=31;DI32=32;DI33=33;DI34=34;DI35=35;DI36=36;DI37=37;DI38=38;DI39=39;DI40=40

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|-----------------------|------|-------|------|----------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| df/dt>1 setting: | | | | | | | | | | | | |
| 8002...-8005 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 8006...-8009 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 8010...-8013 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 8015...-8018 | Enable for f +df/dt>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 8019...-8022 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |
| 8023...-8026 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 8027...-8030 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 8031...-8034 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 8035...-8038 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 8039...-8042 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| df/dt>2 setting: | | | | | | | | | | | | |
| 8052...-8055 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 8056...-8059 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 8060...-8063 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 8065...-8068 | Enable for f +df/dt>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 8069...-8072 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |
| 8073...-8076 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 8077...-8080 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 8081...-8084 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|--------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 8085...-8088 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 8089...-8092 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| IN int> setting: | | | | | | | | | | | | |
| 8102...-8105 | Direction mode | 1 | 1 | 3, 6 | Forward=0; Reverse=1 | | | | | ■ | | |
| 8106...-8109 | VN pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | ■ | | |
| 8110...-8113 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | | |
| 8114...-8117 | Min number of peaks | 1 | 1 | 3, 6 | 1 = 1 | | | | | ■ | | |
| 8118...-8121 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | | |
| 8122 | Intermittent time | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | | |
| 8123...-8126 | Enable for IN int> | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | | |
| Feeder Fault Locator setting: | | | | | | | | | | | | |
| 8152 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | ■ | | |
| 8153 | Triggering digital input | 1 | 1 | 3, 6 | Value ¹³⁹ | | | | | ■ | | |

139. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------|-------------------------------|------|-------|------|----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 8154 | Line reactance/unit | 1 | 1 | 3, 6 | 1.000 ohm = 1000 | | | | | ■ | | |
| 8155 | Earth factor | 1 | 1 | 3, 6 | 1.000 = 1000 | | | | | ■ | | |
| 8156 | Earth factor angle | 1 | 1 | 3, 6 | 1 ° = 1 | | | | | ■ | | |
| 8157 | Event enabling | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | | |
| 8158 | Average voltage limit | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | ■ | | |
| 8159 | Io limit | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | ■ | | |
| 8160 | DI timeout | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | | |
| 8161 | Release timeout | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | | |
| Synchro-check 1 setting | | | | | | | | | | | | |
| 8202 | CB object 1 | 1 | 1 | 3, 6 | Value ¹⁴⁰ | | ■ | | ■ | ■ | | |
| 8203 | CB object 2 | 1 | 1 | 3, 6 | Value ¹⁴⁰ | | ■ | | ■ | ■ | | |
| 8204 | BI for selecting object2 | 1 | 1 | 3, 6 | Value ¹⁴¹ | | ■ | | ■ | ■ | | |
| 8205 | Inhibit closing unselected CB | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | |

140. Object 1=1;Object 2=2;Object 3=3;Object 4=4;Object 5=5;Object 6=6

141. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------|------------------------|------|-------|------|------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 8206 | Synchronization mode | 1 | 1 | 3, 6 | Off=0; Async=1; Sync=2 | | ■ | | | ■ | ■ | |
| 8207 | Voltage check mode | 1 | 1 | 3, 6 | Value ¹⁴² | | ■ | | | ■ | ■ | |
| 8208 | CB close time | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 8209 | Bypass input | 1 | 1 | 3, 6 | Value ¹⁴³ | | ■ | | ■ | ■ | | |
| 8210 | Bypass | 1 | 1 | 3, 6 | 1 = 1 | | ■ | | ■ | ■ | | |
| 8211 | Ok pulse length | 1 | 1 | 3, 6 | 1 ms = 1 | | ■ | | ■ | ■ | | |
| 8212...-8215 | Vdead limit setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 8216...-8219 | Vlive limit setting | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 8220...-8223 | Frequency difference | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 8224...-8227 | Voltage difference | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 8228...-8231 | Phase angle difference | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | | ■ | ■ | | |
| 8232...-8235 | Request timeout | 1 | 1 | 3, 6 | 1.0 s = 10 | | ■ | | ■ | ■ | | |

142. DD=1;DL=2;LD=3;DD/DL=4;DD/LD=5;DL/LD=6;DD/DL/LD=7

143. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-----------------------|-------------------------------|------|-------|------|------------------------------------------|-----------------------------|------------------|-------|-------|-------|-------|-------|
| 8236...-8239 | Enable for Sync check 1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| CB Monitoring setting | | | | | | | | | | | | |
| 8251 | Enable for CB monitoring | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 8252...-8253 | Alarm level | 1 | 1 | 3, 6 | 1.00 kA = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 8254...-8255 | Operation limit | 1 | 1 | 3, 6 | 1000 = 1000 | Limit for oper.left scaling | ■ | ■ | | ■ | ■ | ■ |
| 8261...-8264 | High limit (primary value) | 1 | 1 | 3, 6 | 1.0 kA = 10 | | ■ | ■ | | ■ | ■ | ■ |
| 8265 | CT input | 1 | 0 | 3 | CT-1=0; CT-2=1 | | | | | | | ■ |
| Motor status setting | | | | | | | | | | | | |
| 8301 | Enable for Motor status | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8302 | Nom motor start current | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | | ■ | |
| 8303 | Motor start detection current | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | | ■ | |
| 8304 | Motor start detection mode | 1 | 1 | 3, 6 | CB position=0; Current=1; CB & current=2 | | ■ | ■ | | | ■ | |
| 8305 | Enable motor speed detection | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8306 | Motor speed input | 1 | 1 | 3, 6 | Slot C DI1=0; Slot D DI1=1; Slot E DI1=2 | | ■ | ■ | | | ■ | |
| 8307 | Rated motor speed Ω_n | 1 | 1 | 3, 6 | 1 rpm = 1 | | ■ | ■ | | | ■ | |
| 8308 | Pulse per rotation R | 1 | 1 | 3, 6 | 1 = 1 | | ■ | ■ | | | ■ | |
| 8309 | Zero speed confirm time | 1 | 1 | 3, 6 | 1 s = 1 | | ■ | ■ | | | ■ | |
| SOL setting | | | | | | | | | | | | |
| 8351 | Enable for SOL | 1 | 1 | 3, 6 | off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 8352 | Number of SOL signals used | 1 | 1 | 3, 6 | 1=0; 2=1 | | ■ | ■ | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------------|---------------------------|------|-------|------|-----------------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 8353 | CB trip clearing time | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| Admittance E/F ALL YN>1 setting | | | | | | | | | | | | |
| 8362 | IN input | 1 | 1 | 3, 6 | IN. meas=0; IN. CSH=1; IN. calc=2; IN. sens=3 | | | | | ■ | ■ | |
| 8363...-8366 | VN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | | | ■ | ■ | |
| 8367...-8370 | Correction angle | 1 | 1 | 3, 6 | 1° = 1 | | | | | ■ | ■ | |
| 12301...-12304 | Enable for All YN>1 | 1 | 1 | 3, 6 | off=0; On=1 | | | | | ■ | ■ | |
| 12305...-12308 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | | | | ■ | ■ | |
| Admittance E/F YN> | | | | | | | | | | | | |
| 8373...-8376 | Pick-up value | 1 | 1 | 3, 6 | 1.0 Yn % = 10 | Pick-up value scaling | | | | ■ | ■ | |
| 8377...-8380 | Input for inhibit control | 1 | 1 | 3, 6 | Value ¹⁴⁴ | | | | | ■ | ■ | |
| 8381...-8384 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8385...-8388 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |

144. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|---------------------------|------|-------|------|---------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 8389...-8392 | SOL1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 8393...-8396 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8397...-8400 | Enable for YN>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| Admittance E/F GN> | | | | | | | | | | | | |
| 8413...-8416 | Pick-up value | 1 | 1 | 3, 6 | 1.0 Gn % = 10 | Pick-up value scaling | | | | ■ | ■ | |
| 8417...-8420 | Input for inhibit control | 1 | 1 | 3, 6 | Value ¹⁴⁵ | | | | | ■ | ■ | |
| 8421...-8424 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Forward=1; Reverse=2 | | | | | ■ | ■ | |
| 8425...-8428 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8429...-8432 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8433...-8436 | SOL1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 8437...-8440 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8441...-8444 | Enable for GN>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| Admittance E/F BN> | | | | | | | | | | | | |

145. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------------------|---------------------------|------|-------|------|-----------------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 8463...-8466 | Pick-up value | 1 | 1 | 3, 6 | 1.0 Bn % = 10 | Pick-up value scaling | | | | ■ | ■ | |
| 8467...-8470 | Input for inhibit control | 1 | 1 | 3, 6 | Value ¹⁴⁶ | | | | | ■ | ■ | |
| 8471...-8474 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Forward=1; Reverse=2 | | | | | ■ | ■ | |
| 8475...-8478 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8479...-8482 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8483...-8486 | SOL1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 8487...-8490 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8491...-8494 | Enable for BN>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| Admittance E/F ALL YN>2 setting | | | | | | | | | | | | |
| 8512 | IN input | 1 | 1 | 3, 6 | IN. meas=0; IN. CSH=1; IN. calc=2; IN. sens=3 | | | | | ■ | ■ | |

146. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------|---------------------------|------|-------|------|--------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 8513...-8516 | VN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | | | | | ■ | ■ | |
| 8517...-8520 | Correction angle | 1 | 1 | 3, 6 | 1 ° = 1 | | | | | ■ | ■ | |
| 12401.-...12404 | Enable for All YN>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 12405.-...12408 | Evaluation VN | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | | | | ■ | ■ | |
| Admittance E/F YN>2 | | | | | | | | | | | | |
| 8523...-8526 | Pick-up value | 1 | 1 | 3, 6 | 1.0 Yn % = 10 | Pick-up value scaling | | | | ■ | ■ | |
| 8527...-8530 | Input for inhibit control | 1 | 1 | 3, 6 | Value ¹⁴⁷ | | | | | ■ | ■ | |
| 8531...-8534 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8535...-8538 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8539...-8542 | SOL1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 8543...-8546 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8547...-8550 | Enable for YN>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| Admittance E/F GN>2 | | | | | | | | | | | | |

147. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------------|---------------------------|------|-------|------|---------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 8563...-8566 | Pick-up value | 1 | 1 | 3, 6 | 1.0 Gn % = 10 | Pick-up value scaling | | | | ■ | ■ | |
| 8567...-8570 | Input for inhibit control | 1 | 1 | 3, 6 | Value ¹⁴⁸ | | | | | ■ | ■ | |
| 8571...-8574 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Forward=1; Reverse=2 | | | | | ■ | ■ | |
| 8575...-8578 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8579...-8582 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8583...-8586 | SOL1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 8587...-8590 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8591...-8594 | Enable for GN>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| Admittance E/F BN>2 | | | | | | | | | | | | |
| 8613...-8616 | Pick-up value | 1 | 1 | 3, 6 | 1.0 Bn % = 10 | Pick-up value scaling | | | | ■ | ■ | |
| 8617...-8620 | Input for inhibit control | 1 | 1 | 3, 6 | Value ¹⁴⁸ | | | | | ■ | ■ | |
| 8621...-8624 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Forward= | | | | | ■ | ■ | |

148. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|----------------------------|-----------------------|------|-------|------|------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | 1; Re-verse= 2 | | | | | | | |
| 8625...- 8628 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8629...- 8632 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8633...- 8636 | SOL1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| 8637...- 8640 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | ■ | ■ | |
| 8641...- 8644 | Enable for BN>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | ■ | ■ | |
| V2>1 setting | | | | | | | | | | | | |
| 8662...- 8665 | VTS operating mode | 1 | 1 | 3, 6 | No action= 0; Block-ing=1 | | ■ | | ■ | ■ | ■ | |
| 8666...- 8669 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 8670...- 8673 | Operating curve | 1 | 1 | 3, 6 | DT=0; IDMT= 1 | | ■ | | ■ | ■ | ■ | |
| 8674...- 8677 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 8678...- 8681 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 8682...- 8685 | Enable for V2>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| V2>2 setting | | | | | | | | | | | | |
| 8702...- 8705 | VTS operating mode | 1 | 1 | 3, 6 | No action= 0; Block-ing=1 | | ■ | | ■ | ■ | ■ | |
| 8706...- 8709 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | ■ | |
| 8710...- 8713 | Operating curve | 1 | 1 | 3, 6 | DT=0; IDMT= 1 | | ■ | | ■ | ■ | ■ | |
| 8714...- 8717 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 8718...- 8721 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | ■ | |
| 8722...- 8725 | Enable for V2>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | ■ | |
| Motor overspeed $\Omega>1$ | | | | | | | | | | | | |
| 8751 | Enable for $\Omega>1$ | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8752 | Pick-up value | 1 | 1 | 3, 6 | 1 % Ω_n = 1 | | ■ | ■ | | | ■ | |
| 8753 | Operate delay | 1 | 1 | 3, 6 | 1 s = 1 | | ■ | ■ | | | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------------------------------|--------------------------|------|-------|------|-----------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| Motor overspeed $\Omega > 2$ | | | | | | | | | | | | |
| 8801 | Enable for $\Omega > 2$ | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8802 | Pick-up value | 1 | 1 | 3, 6 | 1 % Ω_n = 1 | | ■ | ■ | | | ■ | |
| 8803 | Operate delay | 1 | 1 | 3, 6 | 1 s = 1 | | ■ | ■ | | | ■ | |
| Motor underspeed $\Omega < 1$ | | | | | | | | | | | | |
| 8851 | Enable for $\Omega < 1$ | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8852 | Pick-up value | 1 | 1 | 3, 6 | 1 % Ω_n = 1 | | ■ | ■ | | | ■ | |
| 8853 | Operate delay | 1 | 1 | 3, 6 | 1 s = 1 | | ■ | ■ | | | ■ | |
| Motor underspeed $\Omega < 2$ | | | | | | | | | | | | |
| 8901 | Enable for $\Omega < 2$ | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8902 | Pick-up value | 1 | 1 | 3, 6 | 1 % Ω_n = 1 | | ■ | ■ | | | ■ | |
| 8903 | Operate delay | 1 | 1 | 3, 6 | 1 s = 1 | | ■ | ■ | | | ■ | |
| Motor Anti-backspin (ABS) | | | | | | | | | | | | |
| 8951 | Enable for Anti-backspin | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8952 | Measured zero speed mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 8953 | Zero speed external mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------------|---------------------|------|-------|------|----------------------|------------------------|------------------|-------|-------|-------|-------|-------|
| 8954 | Zero speed input DI | 1 | 1 | 3, 6 | Value ¹⁴⁹ | | ■ | ■ | | | ■ | |
| 8955 | Anti-backspin time | 1 | 1 | 3, 6 | 1 s = 1 | | ■ | ■ | | | ■ | |
| Cold load pick-up CLPU | | | | | | | | | | | | |
| 9001 | Enable for CLPU | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | |
| 9002 | Idle current | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | |
| 9003 | Pickup current | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | |
| 9004 | CLPU dead time | 1 | 1 | 3, 6 | 1.00 s = 100 | CLPU dead time scaling | ■ | ■ | | ■ | ■ | |
| 9005 | CLPU time delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | |
| f<3 setting: | | | | | | | | | | | | |
| 9051...-9054 | Enable for f<3 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 9055...-9058 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | ■ | ■ | ■ | ■ | |
| 9059...-9062 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | ■ | ■ | ■ | ■ | |
| 9063...-9066 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | ■ | ■ | ■ | ■ | |

149. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------|-----------------------|------|-------|------|-----------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 9067...-9070 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | ■ | ■ | ■ | |
| f<4 setting: | | | | | | | | | | | | |
| 9101...-9104 | Enable for f<4 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 9105...-9108 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | ■ | ■ | ■ | ■ | |
| 9109...-9112 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | ■ | ■ | ■ | ■ | |
| 9113...-9116 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | ■ | ■ | ■ | ■ | |
| 9117...-9120 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | ■ | ■ | ■ | |
| f<5 setting: | | | | | | | | | | | | |
| 9151...-9154 | Enable for f<5 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 9155...-9158 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | ■ | ■ | ■ | ■ | |
| 9159...-9162 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | ■ | ■ | ■ | ■ | |
| 9163...-9166 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | ■ | ■ | ■ | ■ | |
| 9167...-9170 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | ■ | ■ | ■ | |
| f<6 setting: | | | | | | | | | | | | |
| 9201...-9204 | Enable for f<6 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 9205...-9208 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | ■ | ■ | ■ | ■ | |
| 9209...-9212 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | ■ | ■ | ■ | ■ | |
| 9213...-9216 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | ■ | ■ | ■ | ■ | |
| 9217...-9220 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | ■ | ■ | ■ | |
| f<7 setting: | | | | | | | | | | | | |
| 9251...-9254 | Enable for f<7 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 9255...-9258 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | ■ | ■ | ■ | ■ | |
| 9259...-9262 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | ■ | ■ | ■ | ■ | |
| 9263...-9266 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | ■ | ■ | ■ | ■ | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------|-----------------------|------|-------|------|-----------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 9267...-9270 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | ■ | ■ | ■ | |
| f<8 setting: | | | | | | | | | | | | |
| 9301...-9304 | Enable for f<8 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 9305...-9308 | Pick-up value | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | ■ | ■ | ■ | ■ | |
| 9309...-9312 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | Operate delay scaling | ■ | ■ | ■ | ■ | ■ | |
| 9313...-9316 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | ■ | ■ | ■ | ■ | |
| 9317...-9320 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | ■ | ■ | ■ | |
| I>4 setting: | | | | | | | | | | | | |
| 9351...-9354 | Enable for I>4 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9355...-9358 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9359...-9362 | Operating curve | 1 | 1 | 3, 6 | Value ¹⁵⁰ | | ■ | ■ | | ■ | ■ | ■ |
| 9363...-9366 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9367...-9370 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9371...-9374 | DTadder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9375...-9378 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9379...-9382 | Direction mode | 1 | 1 | 3, 6 | Non-directional=0; Forward=1; Reverse=2 | | ■ | ■ | | ■ | ■ | ■ |
| 9383...-9386 | Characteristic angle | 1 | 1 | 3, 6 | 1° = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 9387...-9390 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9391...-9394 | Tripping logic | 1 | 1 | 3, 6 | 1 out of 3=0; 2 out of 3=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9395...-9398 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT= | | ■ | ■ | | ■ | ■ | ■ |

150. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|-----------------------|------|-------|------|------------------------------------------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | 1; Prg1= 2; Prg2= 3; Prg3=4 | | | | | | | |
| 9399...- 9402 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9403...- 9406 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9407...- 9410 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1= 1; SOL2= 2 | | ■ | ■ | | ■ | ■ | ■ |
| 9411...- 9414 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9415...- 9418 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9419...- 9422 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9423...- 9426 | Dynamic threshold | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9427...- 9430 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9431...- 9434 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9435...- 9438 | CT input | 1 | 1 | 3, 6 | CT-1= 0;CT- 2=1 | | | | | | | ■ |
| I>5 setting: | | | | | | | | | | | | |
| 9451...- 9454 | Enable for I>5 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9455...- 9458 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9459...- 9462 | Operating curve | 1 | 1 | 3, 6 | Value ¹⁵¹ | | ■ | ■ | | ■ | ■ | ■ |
| 9463...- 9466 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9467...- 9470 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9471...- 9474 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9475...- 9478 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9479...- 9482 | Direction mode | 1 | 1 | 3, 6 | Non- direc- tional= 0; For- ward= 1; Re- verse= 2 | | ■ | ■ | | ■ | ■ | ■ |

151. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|-----------------------|------|-------|------|--------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 9483...-9486 | Characteristic angle | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 9487...-9490 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9491...-9494 | Tripping logic | 1 | 1 | 3, 6 | 1 out of 3=0; 2 out of 3=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9495...-9498 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | ■ | | ■ | ■ | ■ |
| 9499...-9502 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9503...-9506 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9507...-9510 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | ■ | | ■ | ■ | ■ |
| 9511...-9514 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9515...-9518 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9519...-9522 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9523...-9526 | Dynamic threshold | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9527...-9530 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9531...-9534 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9535...-9538 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| I> 6 setting: | | | | | | | | | | | | |
| 9551...-9554 | Enable for I>6 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9555...-9558 | Pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9559...-9562 | Operating curve | 1 | 1 | 3, 6 | Value ¹⁵² | | ■ | ■ | | ■ | ■ | ■ |
| 9563...-9566 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9567...-9570 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |

152. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|-----------------------|------|-------|------|--------------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 9571...- 9574 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9575...- 9578 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9579...- 9582 | Direction mode | 1 | 1 | 3, 6 | Non-directional=0; Forward=1; Reverse=2 | | ■ | ■ | | ■ | ■ | ■ |
| 9583...- 9586 | Characteristic angle | 1 | 1 | 3, 6 | 1° = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 9587...- 9590 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9591...- 9594 | Tripping logic | 1 | 1 | 3, 6 | 1 out of 3=0; 2 out of 3=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9595...- 9598 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | ■ | | ■ | ■ | ■ |
| 9599...- 9602 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9603...- 9606 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9607...- 9610 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | ■ | | ■ | ■ | ■ |
| 9611...- 9614 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9615...- 9618 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9619...- 9622 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 9623...- 9626 | Dynamic threshold | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9627...- 9630 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 9631...- 9634 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | ■ | | ■ | ■ | ■ |
| 9635...- 9638 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| IN>4 setting: | | | | | | | | | | | | |
| 9702...- 9705 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; | | ■ | | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|---------------------------|------|-------|------|--------------------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | Sector=1; Res-Cap=2 | | | | | | | |
| 9706...- 9709 | Char ctrl. in ResCap mode | 1 | 1 | 3, 6 | Value ¹⁵³ | | ■ | | | ■ | ■ | ■ |
| 9710...- 9713 | IN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 9714...- 9717 | VN pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 9718...- 9721 | Angle offset | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | | | ■ | ■ | ■ |
| 9722...- 9725 | Pick up sector size | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | | | ■ | ■ | ■ |
| 9726...- 9729 | Operating curve | 1 | 1 | 3, 6 | Value ¹⁵⁴ | | ■ | | | ■ | ■ | ■ |
| 9730...- 9733 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9734...- 9737 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 9738...- 9741 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9742...- 9745 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9746...- 9749 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | | | ■ | ■ | ■ |
| 9750...- 9753 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9754...- 9757 | Enable for IN>4 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |

153. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511

154. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|------------------|-------------------------------|------|-------|------|---------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 9758...- 9761 | VN input mode | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | | ■ | ■ | ■ |
| 9762...- 9765 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | | | ■ | ■ | ■ |
| 9766...- 9769 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | | | ■ | ■ | ■ |
| 9770...- 9773 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9774...- 9777 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 9778...- 9781 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 9782...- 9785 | Dynamic threshold | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 9786...- 9789 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 9790...- 9793 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 9794 | Enable faulty phase detection | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 9795 | Phase currents change limit | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | | | ■ | ■ | ■ |
| 9796...- 9799 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|----------------|---------------------------|------|-------|------|--------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 9800...-9803 | CT input | 1 | 1 | 3, 6 | CT-1=0;CT-2=1 | | | | | | | ■ |
| IN>5 setting: | | | | | | | | | | | | |
| 11502.-..11505 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Sector=1; Res-Cap=2 | | ■ | | | ■ | ■ | ■ |
| 11506.-..11509 | Char ctrl. in ResCap mode | 1 | 1 | 3, 6 | Value ¹⁵⁵ | | ■ | | | ■ | ■ | ■ |
| 11510.-..11513 | IN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 11514.-..11517 | VN pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 11518.-..11521 | Angle offset | 1 | 1 | 3, 6 | 1° = 1 | | ■ | | | ■ | ■ | ■ |
| 11522.-..11525 | Pick up sector size | 1 | 1 | 3, 6 | 1° = 1 | | ■ | | | ■ | ■ | ■ |
| 11526.-..11529 | Operating curve | 1 | 1 | 3, 6 | Value ¹⁵⁶ | | ■ | | | ■ | ■ | ■ |
| 11530.-..11533 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11534.-..11537 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11538.-..11541 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11542.-..11545 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11546.-..11549 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2= | | ■ | | | ■ | ■ | ■ |

155. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
156. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-------------------------------|------|-------|------|---------------------------------|-----------------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | 3; Prg3=4 | | | | | | | |
| 11550.- ..11553 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11554.- ..11557 | Enable for IN>5 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11558.- ..11561 | VN input mode | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | | ■ | ■ | ■ |
| 11562.- ..11565 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | | | ■ | ■ | ■ |
| 11566.- ..11569 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | | | ■ | ■ | ■ |
| 11570.- ..11573 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11574.- ..11577 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11578.- ..11581 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11582.- ..11585 | Dynamic threshold | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 11586.- ..11589 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11590.- ..11593 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11594 | Enable faulty phase detection | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-----------------------------|------|-------|------|--------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 11595 | Phase currents change limit | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | | | ■ | ■ | ■ |
| 11596.- ..11599 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11600.- ..11603 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| IN>6 setting: | | | | | | | | | | | | |
| 11702.- ..11705 | Direction mode | 1 | 1 | 3, 6 | Non-dir=0; Sector=1; Res-Cap=2 | | ■ | | | ■ | ■ | ■ |
| 11706.- ..11709 | Char ctrl. in ResCap mode | 1 | 1 | 3, 6 | Value ¹⁵⁷ | | ■ | | | ■ | ■ | ■ |
| 11710.- ..11713 | IN pick-up value | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 11714.- ..11717 | VN pick-up value | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | | ■ | ■ | ■ |
| 11718.- ..11721 | Angle offset | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | | | ■ | ■ | ■ |
| 11722.- ..11725 | Pick up sector size | 1 | 1 | 3, 6 | 1 ° = 1 | | ■ | | | | ■ | ■ |
| 11726.- ..11729 | Operating curve | 1 | 1 | 3, 6 | Value ¹⁵⁸ | | ■ | | | ■ | ■ | ■ |
| 11730.- ..11733 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11734.- ..11737 | TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11738.- ..11741 | DT adder | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |

157. Res=0;Cap=1;DI1=2;DI2=3;DI3=4;DI4=5;DI5=6;DI6=7;DI7=8;DI8=9;DI9=10;DI10=11;DI11=12;DI12=13;DI13=14;DI14=15;DI15=16;DI16=17;DI17=18;DI18=19;DI19=20;DI20=21;Arc1=26;Arc2=27;BI=28;VI1=30;VI2=31;VI3=32;VI4=33;DI21=66;DI22=67;DI23=68;DI24=69;DI25=70;DI26=71;DI27=72;DI28=73;DI29=74;DI30=75;DI31=76;DI32=77;DI33=78;DI34=79;DI35=80;DI36=81;DI37=82;DI38=83;DI39=84;DI40=85;VI5=226;VI6=227;VI7=228;VI8=229;VI9=230;VI10=231;VI11=232;VI12=233;VI13=234;VI14=235;VI15=236;VI16=237;VI17=238;VI18=239;VI19=240;VI20=241;VO7=258;VO8=259;VO9=260;VO10=261;VO11=262;VO12=263;VO13=264;VO14=265;VO15=266;VO16=267;VO17=268;VO18=269;VO19=270;VO20=271;NI65=290;NI66=291;NI67=292;NI68=293;NI69=294;NI70=295;NI71=296;NI72=297;NI73=298;NI74=299;NI75=300;NI76=301;NI77=302;NI78=303;NI79=304;NI80=305;NI81=306;NI82=307;NI83=308;NI84=309;NI85=310;NI86=311;NI87=312;NI88=313;NI89=314;NI90=315;NI91=316;NI92=317;NI93=318;NI94=319;NI95=320;NI96=321;NI97=322;NI98=323;NI99=324;NI100=325;NI101=326;NI102=327;NI103=328;NI104=329;NI105=330;NI106=331;NI107=332;NI108=333;NI109=334;NI110=335;NI111=336;NI112=337;NI113=338;NI114=339;NI115=340;NI116=341;NI117=342;NI118=343;NI119=344;NI120=345;NI121=346;NI122=347;NI123=348;NI124=349;NI125=350;NI126=351;NI127=352;NI128=353;NI129=354;NI130=355;NI131=356;NI132=357;NI133=358;NI134=359;NI135=360;NI136=361;NI137=362;NI138=363;NI139=364;NI140=365;NI141=366;NI142=367;NI143=368;NI144=369;NI145=370;NI146=371;NI147=372;NI148=373;NI149=374;NI150=375;NI151=376;NI152=377;NI153=378;NI154=379;NI155=380;NI156=381;NI157=382;NI158=383;NI159=384;NI160=385;NI161=386;NI162=387;NI163=388;NI164=389;NI165=390;NI166=391;NI167=392;NI168=393;NI169=394;NI170=395;NI171=396;NI172=397;NI173=398;NI174=399;NI175=400;NI176=401;NI177=402;NI178=403;NI179=404;NI180=405;NI181=406;NI182=407;NI183=408;NI184=409;NI185=410;NI186=411;NI187=412;NI188=413;NI189=414;NI190=415;NI191=416;NI192=417;NI193=418;NI194=419;NI195=420;NI196=421;NI197=422;NI198=423;NI199=424;NI200=425;NI201=426;NI202=427;NI203=428;NI204=429;NI205=430;NI206=431;NI207=432;NI208=433;NI209=434;NI210=435;NI211=436;NI212=437;NI213=438;NI214=439;NI215=440;NI216=441;NI217=442;NI218=443;NI219=444;NI220=445;NI221=446;NI222=447;NI223=448;NI224=449;NI225=450;NI226=451;NI227=452;NI228=453;NI229=454;NI230=455;NI231=456;NI232=457;NI233=458;NI234=459;NI235=460;NI236=461;NI237=462;NI238=463;NI239=464;NI240=465;NI241=466;NI242=467;NI243=468;NI244=469;NI245=470;NI246=471;NI247=472;NI248=473;NI249=474;NI250=475;VI21=482;VI22=483;VI23=484;VI24=485;VI25=486;VI26=487;VI27=488;VI28=489;VI29=490;VI30=491;VI31=492;VI32=493;VI33=494;VI34=495;VI35=496;VI36=497;VI37=498;VI38=499;VI39=500;VI40=501;VI41=502;VI42=503;VI43=504;VI44=505;VI45=506;VI46=507;VI47=508;VI48=509;VI49=510;VI50=511
158. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-------------------------------|------|-------|------|--------------------------------------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| 11742.- ..11745 | Minimum operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11746.- ..11749 | Reset curve | 1 | 1 | 3, 6 | DT=0; IDMT=1; Prg1=2; Prg2=3; Prg3=4 | | ■ | | | ■ | ■ | ■ |
| 11750.- ..11753 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11754.- ..11757 | Enable for IN>6 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11758.- ..11761 | VN input mode | 1 | 1 | 3, 6 | Measured=0; Calculated=1 | | ■ | | | ■ | ■ | ■ |
| 11762.- ..11765 | VTS blocking | 1 | 1 | 3, 6 | Blocked=0; Non-directional=1 | | ■ | | | ■ | ■ | ■ |
| 11766.- ..11769 | SOL status | 1 | 1 | 3, 6 | Off=0; SOL1=1; SOL2=2 | | ■ | | | ■ | ■ | ■ |
| 11770.- ..11773 | SOL operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11774.- ..11777 | SOL TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11778.- ..11781 | Dynamic mode | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11782.- ..11785 | Dynamic threshold | 1 | 1 | 3, 6 | 1.000 pu = 1000 | Pick-up value scaling | ■ | | | ■ | ■ | ■ |
| 11786.- ..11789 | Dynamic operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | | ■ | ■ | ■ |
| 11790.- ..11793 | Dynamic TMS | 1 | 1 | 3, 6 | 1.000 = 1000 | | ■ | | | ■ | ■ | ■ |
| 11794 | Enable faulty phase detection | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11795 | Phase currents change limit | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | | | ■ | ■ | ■ |
| 11796.- ..11799 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | | ■ | ■ | ■ |
| 11800.- ..11803 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| REF 1 setting: | | | | | | | | | | | | |
| 12501.- ..12504 | Enable for REF 1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | ■ | ■ | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|--------------------|------|-------|------|-------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 12505.- ..12508 | IG input | 1 | 1 | 3, 6 | Value ¹⁵⁹ | | | ■ | | ■ | ■ | ■ |
| 12509.- ..12512 | 5 CT application | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | ■ | ■ | ■ |
| 12513.- ..12516 | Operating mode | 1 | 1 | 3, 6 | Sum (IP) bias=0; Max (IP) bias=1 | | | ■ | | ■ | ■ | ■ |
| 12517.- ..12520 | Low set Id1 | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | ■ | | ■ | ■ | ■ |
| 12521.- ..12524 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | ■ | | ■ | ■ | ■ |
| 12525.- ..12528 | Min measured IG | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | ■ | | ■ | ■ | ■ |
| 12529.- ..12532 | Slope k1 | 1 | 1 | 3, 6 | 1 % = 1 | | | ■ | | ■ | ■ | ■ |
| 12533.- ..12536 | Bias current Ib | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | ■ | | ■ | ■ | ■ |
| 12537.- ..12540 | Slope k2 | 1 | 1 | 3, 6 | 1 % = 1 | | | ■ | | ■ | ■ | ■ |
| 12541.- ..12544 | High set mode | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | ■ | ■ | ■ |
| 12545.- ..12548 | High set Id2 | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | ■ | | ■ | ■ | ■ |
| 12549.- ..12552 | CTS operating mode | 1 | 1 | 3, 6 | Indication=0; Blocking=1; | | | ■ | | ■ | ■ | ■ |

159. IN.meas=0;IN.CSH=1;IN.calc=2;IN.sens=3;IN peak value=4;IN.CSH peak =5;IN.sens peak=6

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|------------------|------|-------|------|----------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| | | | | | Re-straining=2 | | | | | | | |
| 12553.- ..12556 | CTS low set Id1 | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | ■ | | ■ | ■ | ■ |
| 12557 | Inhibit REF | 1 | 1 | 3, 6 | Value ¹⁶⁰ | | | ■ | | ■ | ■ | ■ |
| 12558 | CT input | 1 | 1 | 3, 6 | CT-1=0;CT-2=1 | | | | | | | ■ |
| REF 2 setting: | | | | | | | | | | | | |
| 15801.- ..15804 | Enable for REF 2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15805.- ..15808 | Operating mode | 1 | 1 | 3, 6 | Sum (IP) bias=0; Max (IP) bias=1 | | | | | | | ■ |
| 15809.- ..15812 | Low set Id1 | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15813.- ..15816 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | | | ■ |
| 15817.- ..15820 | Min measured IG | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15821.- ..15824 | Slope k1 | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |
| 15825.- ..15828 | Bias current Ib | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15829.- ..15832 | Slope k2 | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |

160. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|--------------------|------|-------|------|-----------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 15833.- ..15836 | High set mode | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15837.- ..15840 | High set Id2 | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15841.- ..15844 | CTS operating mode | 1 | 1 | 3, 6 | Indication=0; Blocking=1; Restraining=2 | | | | | | | ■ |
| 15845.- ..15848 | CTS low set Id1 | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15849 | Inhibit REF | 1 | 1 | 3, 6 | Value ¹⁶¹ | | | | | | | ■ |
| 15850 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| I2/I1>2 setting: | | | | | | | | | | | | |
| 12701.- ..12704 | Enable for I2/I1>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 12705.- ..12708 | Pick-up value | 1 | 1 | 3, 6 | 1 % = 1 | | ■ | ■ | | ■ | ■ | ■ |
| 12709.- ..12712 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | ■ | | ■ | ■ | ■ |
| 12713.- ..12716 | CT input | 1 | 1 | 3, 6 | CT-1=0; CT-2=1 | | | | | | | ■ |
| EMRE setting: | | | | | | | | | | | | |
| 13101 | Enable for EMRE | 1 | 1 | 3, 6 | Off=0; On=1 | | | ■ | | | ■ | |

161. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|--------------------------|------|-------|------|----------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 13102 | EMRE input | 1 | 1 | 3, 6 | Value ¹⁶² | | | ■ | | | ■ | |
| df/dt>3 setting: | | | | | | | | | | | | |
| 13701.- ..13704 | Enable for f +df/dt>3 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 13705.- ..13708 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 13709.- ..13712 | Operating mode | 1 | 1 | 3, 6 | f +Ro- CoF= 0; Frequency=1 | | ■ | | ■ | ■ | | |
| 13713.- ..13716 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 13717.- ..13720 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 13721.- ..13724 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 13725.- ..13728 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 13729.- ..13732 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 13733.- ..13736 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |

162. DI1=1;DI2=2;DI3=3;DI4=4;DI5=5;DI6=6;DI7=7;DI8=8;DI9=9;DI10=10;DI11=11;DI12=12;DI13=13;DI14=14;DI15=15;DI16=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;Watchdog=101;Watchdog=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-----------------------|------|-------|------|----------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 13737.- ..13740 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| df/dt>4 setting: | | | | | | | | | | | | |
| 13901.- ..13904 | Enable for f +df/dt>4 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 13905.- ..13908 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 13909.- ..13912 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |
| 13913.- ..13916 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 13917.- ..13920 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 13921.- ..13924 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 13925.- ..13928 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 13929.- ..13932 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 13933.- ..13936 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 13937.- ..13940 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| df/dt>5 setting: | | | | | | | | | | | | |
| 14101.- ..14104 | Enable for f +df/dt>5 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 14105.- ..14108 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 14109.- ..14112 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |
| 14113.- ..14116 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 14117.- ..14120 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 14121.- ..14124 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14125.- ..14128 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-----------------------|------|-------|------|----------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 14129.- ..14132 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14133.- ..14136 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 14137.- ..14140 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| df/dt>6 setting: | | | | | | | | | | | | |
| 14301.- ..14304 | Enable for f +df/dt>6 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 14305.- ..14308 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 14309.- ..14312 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |
| 14313.- ..14316 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 14317.- ..14320 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 14321.- ..14324 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14325.- ..14328 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 14329.- ..14332 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14333.- ..14336 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 14337.- ..14340 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| df/dt>7 setting: | | | | | | | | | | | | |
| 14501.- ..14504 | Enable for f +df/dt>7 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 14505.- ..14508 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 14509.- ..14512 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |
| 14513.- ..14516 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 14517.- ..14520 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-----------------------|------|-------|------|----------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 14521.- ..14524 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14525.- ..14528 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 14529.- ..14532 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14533.- ..14536 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 14537.- ..14540 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| df/dt>8 setting: | | | | | | | | | | | | |
| 14701.- ..14704 | Enable for f +df/dt>8 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 14705.- ..14708 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 14709.- ..14712 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |
| 14713.- ..14716 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 14717.- ..14720 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 14721.- ..14724 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14725.- ..14728 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 14729.- ..14732 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14733.- ..14736 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 14737.- ..14740 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| df/dt>9 setting: | | | | | | | | | | | | |
| 14901.- ..14904 | Enable for f +df/dt>9 | 1 | 1 | 3, 6 | Off=0; On=1 | | ■ | | ■ | ■ | | |
| 14905.- ..14908 | Direction mode | 1 | 1 | 3, 6 | Negative=0; Positive=1; Either=2 | | ■ | | ■ | ■ | | |
| 14909.- ..14912 | Operating mode | 1 | 1 | 3, 6 | f +Ro-CoF=0; Frequency=1 | | ■ | | ■ | ■ | | |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|----------------------------------|------|-------|------|------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 14913.- ..14916 | Frequency threshold | 1 | 1 | 3, 6 | 50.00 Hz = 5000 | | ■ | | ■ | ■ | | |
| 14917.- ..14920 | Measuring window | 1 | 1 | 3, 6 | 1.000 s = 1000 | | ■ | | ■ | ■ | | |
| 14921.- ..14924 | Pick-up value | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14925.- ..14928 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| 14929.- ..14932 | f+df/dt blocking | 1 | 1 | 3, 6 | 1.00 Hz/s = 100 | | ■ | | ■ | ■ | | |
| 14933.- ..14936 | Undervoltage blocking | 1 | 1 | 3, 6 | 1.00 pu = 100 | | ■ | | ■ | ■ | | |
| 14937.- ..14940 | Reset delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | ■ | | ■ | ■ | | |
| T-Diff setting: | | | | | | | | | | | | |
| 15101.- ..15104 | Enable for T-Diff | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15105.- ..15108 | Vector group | 1 | 1 | 3, 6 | 0;1;2;- 3;4;5;- 6;7;8;- 9;10;11 | | | | | | | ■ |
| 15109.- ..15112 | Zero-seq. current filtering CT-1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15113.- ..15116 | Zero-seq. current filtering CT-2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15117.- ..15120 | Low set Id | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15121.- ..15124 | Slope 1 | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |
| 15125.- ..15128 | Ib for start of slope 2 | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15129.- ..15132 | Slope 2 | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |
| 15133.- ..15136 | High set mode | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15137.- ..15140 | High set Id | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15141.- ..15144 | Bias calculation mode | 1 | 1 | 3, 6 | Diff. of phasors=0; Sum of abs. val.=1 | | | | | | | ■ |
| 15145.- ..15148 | Operate delay | 1 | 1 | 3, 6 | 1.00 s = 100 | | | | | | | ■ |
| 15149.- ..15152 | Inrush blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15153.- ..15156 | Inrush blocking ratio | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|-------------------------------------|------|-------|------|-----------------------------------------------|---------------------|------------------|-------|-------|-------|-------|-------|
| 15157.- ..15160 | Inrush cross block | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15161.- ..15164 | Max inrush Id | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15165.- ..15168 | Overflux blocking | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15169.- ..15172 | Overflux blocking ratio | 1 | 1 | 3, 6 | 1 % = 1 | | | | | | | ■ |
| 15173.- ..15176 | Overflux cross block | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 15177.- ..15180 | CTS operating mode | 1 | 1 | 3, 6 | Indication=0; Blocking=1; Restraining=2 | | | | | | | ■ |
| 15181.- ..15184 | CTS low set Id | 1 | 1 | 3, 6 | 1.00 pu = 100 | | | | | | | ■ |
| 15185 | Inhibit T-Diff | 1 | 1 | 3, 6 | Value ¹⁶³ | | | | | | | ■ |
| TRMON1 setting: | | | | | | | | | | | | |
| 16001 | Enable for Transformer monitoring 1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| TRMON2 setting: | | | | | | | | | | | | |
| 16101 | Enable for Transformer | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |

163. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;Watchdog=37;Watchdog=38;Watchdog=39;Watchdog=40;Watchdog=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAI=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;Watchdog=97;Watchdog=98;Watchdog=99;Watchdog=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

| Add. | Name | Read | Write | FC | Scaling | Setting for Scaling | P5U20 LPCT/ LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|--------------------|----------------------|------|-------|------|----------------------|-----------------------|------------------|-------|-------|-------|-------|-------|
| | monitoring 2 | | | | | | | | | | | |
| V/f Alarm setting: | | | | | | | | | | | | |
| 16301.- ..16304 | Enable for V/f Alarm | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 16305.- ..16308 | Pick-up value | 1 | 1 | 3, 6 | 1.00 = 100 | | | | | | | ■ |
| 16309.- ..16312 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | Operate delay scaling | | | | | | ■ |
| V/f >1 setting: | | | | | | | | | | | | |
| 16501.- ..16504 | Enable for V/f>1 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 16505.- ..16508 | Operating curve | 1 | 1 | 3, 6 | Value ¹⁶⁴ | | | | | | | ■ |
| 16509.- ..16512 | Pick-up value | 1 | 1 | 3, 6 | 1.00 = 100 | | | | | | | ■ |
| 16513.- ..16516 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | Operate delay scaling | | | | | | ■ |
| 16517.- ..16520 | Reset delay | 1 | 1 | 3, 6 | 1.0 s = 10 | Reset delay scaling | | | | | | ■ |
| V/f >2 setting: | | | | | | | | | | | | |
| 16701.- ..16704 | Enable for V/f>2 | 1 | 1 | 3, 6 | Off=0; On=1 | | | | | | | ■ |
| 16705.- ..16708 | Pick-up value | 1 | 1 | 3, 6 | 1.00 = 100 | | | | | | | ■ |
| 16709.- ..16712 | Operate delay | 1 | 1 | 3, 6 | 1.0 s = 10 | Operate delay scaling | | | | | | ■ |

Specific scalings

Since the Modbus registers are 16 bits in size, they can directly represent $2^{16} = 65535$ different values, which might not be enough to describe the values of some physical quantity such as voltage or power. Thus, values transmitted over a Modbus data link are scaled to account for this.

The scaling is determined by the float value of the corresponding specific scalings. After multiplication by a scaling value, only the decimals are removed from the original measurements, and such values are easy to read and re-scale to actual values on the client side after transmission.

These settings for scaling can be set by navigating to the **COMMUNICATION** menu/**Modbus&IEC 101 specific scalings** sub-menu in eSetup Easergy Pro or Web HMI.

A short example: The frequency is internally (in the PowerLogic P5 protection relays) stored as an integer value which also holds three decimal places, that is, 50.000 Hz is represented as 50000. This is a value too large to be represented with 16 bits (signed integer). However, frequency is multiplied by default scaled value 0.1, enabling it to be sent over Modbus.

Thus, the value on the receiving side (the Modbus value) will be:

$$value_{Modbus} = k \cdot value_{Internal} = 0.1 \cdot 50000 = 5000$$

164. DT=0;IEC_SI=1;IEC_VI=2;IEC_EI=3;IEC_LTI=4;IEC_UTI=5;UK_Rectifier=6;FR_STI=7;RI=8;IEEE_MI=9;IEEE_VI=10;IEEE_EI=11;STI_CO2=12;LTI_CO5=13;MI_CO7=14;NI_CO8=15;VI_CO9=16;EI_CO11=17;BPN=18;ANSI_NI=19;ANSI_STI=20;ANSI_LTI=21;Prg1=22;Prg2=23;Prg3=24;IDMT=25

Scaling can be checked in eSetup Easergy Pro by viewing the Scaling column for each register in the Modbus slave COMMUNICATION menu.

NOTE: It is highly recommended to scale values so that they are kept in the interval 0 –32000 to avoid overflow.

The Modbus scaling address can be found in the **COMMUNICATION** menu/**Modbus slave: measurement** sub-menu of eSetup Easergy Pro or Web HMI.

The following table shows the different values of Voltage scaling, and the values to be filled in the frame. When the client reads a 2 register value for voltage scaling, it needs to combine these 2 values together and convert them to a float 32 value.

For example, when voltage scaling value is 0.001, the values 0x126f and 0x3A83 will be merged to 4 bytes value 0x3A83126F.

Table 49 - Voltage scaling values

| Voltage scaling | IEEE 754 / Float32 | Value in address 10007 | Value in address 10008 |
|-----------------|--------------------|------------------------|------------------------|
| 1.0000 | 0x3F800000 | 0x0000 | 0x3F80 |
| 0.0010 | 0x3A83126F | 0x126F | 0x3A83 |
| 1000.0000 | 0x447A0000 | 0x0000 | 0x447A |
| 500.0000 | 0x43FA0000 | 0x0000 | 0x43FA |

The following table shows the specific scalings for standard Modbus.

Table 50 - Specific scalings

| Add. | Name | Read | Write | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|-----------------------------|------|-------|-----------------------|-------|-------|-------|-------|-------|
| 10001...10002 | Power scaling | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 10003...10004 | PF and cos scaling | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 10005...10006 | Tanφ scaling | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 10007...10008 | Voltage scaling | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 10009...10010 | VT primary scaling | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 10011...10012 | Frequency scaling | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 10013...10014 | VTo secondary scaling | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 10015...10016 | IN.meas scaling | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 10017...10018 | IN.sens scaling | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 10019...10020 | CLPU dead time scaling | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 10021...10022 | Limit for oper.left scaling | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 10025...10026 | CB Count scaling | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 10027...10028 | Operate delay scaling | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 10029...10030 | Pick-up value scaling | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 10031...10032 | Fault value scaling | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 10033...10034 | MaxCtrlPulse-Length scaling | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 10035...10036 | LPCT/VT scaling | 1 | 0 | ■ | | | ■ | ■ | |

Table 50 - Specific scalings (Continued)

| Add. | Name | Read | Write | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|---------------|---------------------|------|-------|-----------------------|-------|-------|-------|-------|-------|
| 10037...10038 | External AI scaling | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 10039...10040 | IN.CSH scaling | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 10041...10042 | Reset delay scaling | 1 | 0 | | | | | | ■ |

Point list for PDM Modbus

PDM interface only allows the client to read float32, Int32 or UInt32 data entirely. If a client requests a part of float32, Int32 or UInt32, PDM interface returns the exception code 03. If the type of the required register is reserved or unused, PDM interface returns the invalid data corresponding to the data type.

PDM interface allows the client to read Int64 data partly.

| Register Type | | Invalid data |
|---------------|-------------|-----------------------|
| unused | | 0x8000 |
| reserved | string | null |
| | Int16 | 0x8000 |
| | UInt16/Bool | 0xFFFF |
| | Int32 | 0x8000 0000 |
| | UInt32 | 0xFFFF FFFF |
| | Int64 | 0x8000 0000 0000 0000 |
| | UInt64 | 0xFFFF FFFF FFFF FFFF |
| float32 | | 0xFFC0 0000 |

Table 51 - Point list for PDM Modbus

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------|------|-------|-----------|------------------------------------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x4E20 | 20001.- ..20006 | Firmware version | 1 | 0 | string | V01.400.101 | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 20007.- ..20010 | unused | | | | | | | | | | | |
| 0x4E2A | 20011.- ..20040 | User Application Name | 1 | 1 | string | Value ¹⁶⁵ | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4E48 | 20041 | Product Identifier | 1 | 0 | UInt16 | Value ¹⁶⁶ | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 20042.- ..20044 | unused | | | | | | | | | | | |
| 0x4E4C | 20045.- ..20060 | Hardware Version | 1 | 0 | string | 15 digital number of module number | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4E5C | 20061.- ..20090 | Serial Number | 1 | 0 | string | Serial Number | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4E7A | 20091.- ..20120 | Product Family | 1 | 0 | string | Easergy P5 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4E98 | 20121.- ..20150 | Product Capability | 1 | 1 | string | module number | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F1A | 20251 | Object1 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F1B | 20252 | Object2 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |

165. If P5U20:Universal current protection If P5V20:Voltage and Frequency protection If P5F30:Directional Feeder and Transformer protection If P5M30:Motor protection If P5U20 LPCT/LPVT:Universal current protection with LPCT/LPVT

166. If P5U20: 16700 If P5V20: 16701 If P5M30: 16702 If P5F30: 16703 If P5L30: 16704 If P5T30: 16705 If P5G30: 16706 If P5U20 LPVT/LPCT:16707

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-----------------------|------|-------|-----------|-----------------------------------------------------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4F1C | 20253 | Object3 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F1D | 20254 | Object4 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F1E | 20255 | Object5 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F1F | 20256 | Object6 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F20 | 20257 | Object7 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F21 | 20258 | Object8 state | 1 | 0 | Enum | Open=0; Close=1; Undef=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F22 | 20259 | Remote/ Local State | 1 | 0 | Bool | Remote=0; LOCAL=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F23 | 20260 | Global trip | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F24 | 20261 | Mode of use | 1 | 0 | Enum | Normal=0; Test=1; Test Block=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F25 | 20262 | Motor starting | 1 | 0 | UInt16 | 0;1 | | ■ | ■ | | | ■ | |
| 0x4F26 | 20263 | Motor running | 1 | 0 | UInt16 | 0;1 | | ■ | ■ | | | ■ | |
| 0x4F27 | 20264 | Voltage interrupt | 1 | 0 | Bool | Low=0;ok=1 | | ■ | | ■ | ■ | ■ | ■ |
| 0x4F28 | 20265 | Voltage status | 1 | 0 | Enum | OK=0;Low=1; High=2;Low/ High=3;(OK)=4;(Low)=5; (High)=6;(Low)/ High=7 | | ■ | | ■ | ■ | ■ | |
| 0x4F29 | 20266 | CB monitoring alarm 1 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F2A | 20267 | CB monitoring alarm 2 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F2B | 20268 | Fault value scaling | 1 | 1 | Bool | PU=0;Primary=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F2C | 20269 | RTD measurement unit | 1 | 1 | Bool | °C=0;°F=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 20270 | unused | | | | | | | | | | | |
| 0x4F2E | 20271 | Digital input 1 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F2F | 20272 | Digital input 2 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F30 | 20273 | Digital input 3 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4F31 | 20274 | Digital input 4 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F32 | 20275 | Digital input 5 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F33 | 20276 | Digital input 6 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F34 | 20277 | Digital input 7 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F35 | 20278 | Digital input 8 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F36 | 20279 | Digital input 9 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F37 | 20280 | Digital input 10 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F38 | 20281 | Digital input 11 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F39 | 20282 | Digital input 12 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F3A | 20283 | Digital input 13 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F3B | 20284 | Digital input 14 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F3C | 20285 | Digital input 15 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F3D | 20286 | Digital input 16 | 1 | 0 | Bool | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x4F3E | 20287 | Digital input 17 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F3F | 20288 | Digital input 18 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F40 | 20289 | Digital input 19 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F41 | 20290 | Digital input 20 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F42 | 20291 | Digital input 21 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F43 | 20292 | Digital input 22 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F44 | 20293 | Digital input 23 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F45 | 20294 | Digital input 24 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F46 | 20295 | Digital input 25 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F47 | 20296 | Digital input 26 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F48 | 20297 | Digital input 27 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F49 | 20298 | Digital input 28 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-----------------------|------|-------|-----------|--------------------------------------------------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4F4A | 20299 | Digital input 29 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F4B | 20300 | Digital input 30 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F4C | 20301 | Digital input 31 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F4D | 20302 | Digital input 32 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F4E | 20303 | Digital input 33 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F4F | 20304 | Digital input 34 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F50 | 20305 | Digital input 35 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F51 | 20306 | Digital input 36 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F52 | 20307 | Digital input 37 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F53 | 20308 | Digital input 38 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F54 | 20309 | Digital input 39 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F55 | 20310 | Digital input 40 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F56 | 20311 | Arc Io state | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F57 | 20312 | Arc I state | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F58 | 20313 | Arc stage 1 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F59 | 20314 | Arc stage 2 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F5A | 20315 | Arc stage 3 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F5B | 20316 | Arc stage 4 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F5C | 20317 | Arc stage 5 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F5D | 20318 | Arc stage 6 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F5E | 20319 | Arc stage 7 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F5F | 20320 | Arc stage 8 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4F60 | 20321...20326 | Arc sensor status | 1 | 0 | Enum | OK=1;Active=2;Not conn=3;Shrt circ=4;Daylight=5;Not Inst.=6;Null=0 | | | | | ■ | ■ | ■ |
| unused | 20327...20330 | unused | | | | | | | | | | | |
| 0x4F6A | 20331 | Logic output status 1 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4F6B | 20332 | Logic output status 2 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F6C | 20333 | Logic output status 3 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F6D | 20334 | Logic output status 4 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F6E | 20335 | Logic output status 5 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F6F | 20336 | Logic output status 6 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F70 | 20337 | Logic output status 7 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F71 | 20338 | Logic output status 8 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F72 | 20339 | Logic output status 9 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F73 | 20340 | Logic output status 10 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F74 | 20341 | Logic output status 11 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F75 | 20342 | Logic output status 12 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F76 | 20343 | Logic output status 13 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F77 | 20344 | Logic output status 14 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F78 | 20345 | Logic output status 15 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F79 | 20346 | Logic output status 16 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F7A | 20347 | Logic output status 17 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F7B | 20348 | Logic output status 18 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F7C | 20349 | Logic output status 19 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F7D | 20350 | Logic output status 20 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F7E | 20351 | Virtual output 1 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4F7F | 20352 | Virtual output 2 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F80 | 20353 | Virtual output 3 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F81 | 20354 | Virtual output 4 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F82 | 20355 | Virtual output 5 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F83 | 20356 | Virtual output 6 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F84 | 20357 | Virtual output 7 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F85 | 20358 | Virtual output 8 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F86 | 20359 | Virtual output 9 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F87 | 20360 | Virtual output 10 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F88 | 20361 | Virtual output 11 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F89 | 20362 | Virtual output 12 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F8A | 20363 | Virtual output 13 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F8B | 20364 | Virtual output 14 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F8C | 20365 | Virtual output 15 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F8D | 20366 | Virtual output 16 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F8E | 20367 | Virtual output 17 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F8F | 20368 | Virtual output 18 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F90 | 20369 | Virtual output 19 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F91 | 20370 | Virtual output 20 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F92 | 20371 | Virtual input 1 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F93 | 20372 | Virtual input 2 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F94 | 20373 | Virtual input 3 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F95 | 20374 | Virtual input 4 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F96 | 20375 | Virtual input 5 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F97 | 20376 | Virtual input 6 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4F98 | 20377 | Virtual input 7 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F99 | 20378 | Virtual input 8 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F9A | 20379 | Virtual input 9 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F9B | 20380 | Virtual input 10 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F9C | 20381 | Virtual input 11 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F9D | 20382 | Virtual input 12 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F9E | 20383 | Virtual input 13 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4F9F | 20384 | Virtual input 14 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA0 | 20385 | Virtual input 15 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA1 | 20386 | Virtual input 16 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA2 | 20387 | Virtual input 17 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA3 | 20388 | Virtual input 18 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA4 | 20389 | Virtual input 19 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA5 | 20390 | Virtual input 20 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA6 | 20391 | Virtual input 21 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA7 | 20392 | Virtual input 22 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA8 | 20393 | Virtual input 23 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FA9 | 20394 | Virtual input 24 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FAA | 20395 | Virtual input 25 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FAB | 20396 | Virtual input 26 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FAC | 20397 | Virtual input 27 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FAD | 20398 | Virtual input 28 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FAE | 20399 | Virtual input 29 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FAF | 20400 | Virtual input 30 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB0 | 20401 | External DI1 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB1 | 20402 | External DI2 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|----------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4FB2 | 20403 | External DI3 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB3 | 20404 | External DI4 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB4 | 20405 | External DI5 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB5 | 20406 | External DI6 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB6 | 20407 | External DI7 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB7 | 20408 | External DI8 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB8 | 20409 | External DI9 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FB9 | 20410 | External DI10 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FBA | 20411 | External DI11 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FBB | 20412 | External DI12 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FBC | 20413 | External DI13 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FBD | 20414 | External DI14 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FBE | 20415 | External DI15 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FBF | 20416 | External DI16 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FC0 | 20417 | External DI17 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FC1 | 20418 | External DI18 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FC2 | 20419 | Port 1 status (Slot M) | 1 | 0 | Bool | Link off=0;Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FC3 | 20420 | Port 2 status (Slot M) | 1 | 0 | Bool | Link off=0;Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FC4 | 20421 | Port 1 status (Slot L) | 1 | 0 | Bool | Link off=0;Link on=1 | | | | | ■ | ■ | ■ |
| 0x4FC5 | 20422 | Port 2 status (Slot L) | 1 | 0 | Bool | Link off=0;Link on=1 | | | | | ■ | ■ | ■ |
| 0x4FC6 | 20423 | Port 1 status (Slot M&N) | 1 | 0 | Bool | Link off=0;Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FC7 | 20424 | Port 2 status (Slot M&N) | 1 | 0 | Bool | Link off=0;Link on=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FCE | 20431 | Virtual input 31 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FCF | 20432 | Virtual input 32 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------------------|------|-------|-----------|-------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x4FD0 | 20433 | Virtual input 33 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD1 | 20434 | Virtual input 34 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD2 | 20435 | Virtual input 35 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD3 | 20436 | Virtual input 36 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD4 | 20437 | Virtual input 37 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD5 | 20438 | Virtual input 38 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD6 | 20439 | Virtual input 39 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD7 | 20440 | Virtual input 40 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD8 | 20441 | Virtual input 41 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FD9 | 20442 | Virtual input 42 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FDA | 20443 | Virtual input 43 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FDB | 20444 | Virtual input 44 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FDC | 20445 | Virtual input 45 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FDD | 20446 | Virtual input 46 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FDE | 20447 | Virtual input 47 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FDF | 20448 | Virtual input 48 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE0 | 20449 | Virtual input 49 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE1 | 20450 | Virtual input 50 | 1 | 1 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE2 | 20451 | CB Trip command DO1(B) | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE3 | 20452 | CB Trip lockout DO2(B) | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE4 | 20453 | CB Close Command DO3(B) | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE6 | 20455 | SlotC digital output 1 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE7 | 20456 | SlotC digital output 2 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4FE8 | 20457 | SlotC digital output 3 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FE9 | 20458 | SlotC digital output 4 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FEA | 20459 | SlotC digital output 5 | 1 | 0 | Bool | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x4FEB | 20460 | SlotD digital output 1 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FEC | 20461 | SlotD digital output 2 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FED | 20462 | SlotD digital output 3 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FEE | 20463 | SlotD digital output 4 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FEF | 20464 | SlotD digital output 5 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FF0 | 20465 | SlotE digital output 1 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FF1 | 20466 | SlotE digital output 2 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FF2 | 20467 | SlotE digital output 3 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FF3 | 20468 | SlotE digital output 4 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FF4 | 20469 | SlotE digital output 5 | 1 | 0 | Bool | 0;1 | | | | | ■ | ■ | ■ |
| 0x4FF6 | 20471 | TRMON 1 insulation alarm | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FF7 | 20472 | TRMON 1 oil temperature alarm | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FF8 | 20473 | TRMON 1 gas alarm | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FF9 | 20474 | TRMON 1 gas trip | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FFA | 20475 | TRMON 1 oil flow trip | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FFB | 20476 | TRMON 1 oil at minimum level | 1 | 0 | Bool | 0;1 | | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-------------------------------|------|-------|-----------|------------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x4FFC | 20477 | TRMON 1 oil at maximum level | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FFD | 20478 | TRMON 1 blocking | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FFE | 20479 | TRMON 2 insulation alarm | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x4FFF | 20480 | TRMON 2 oil temperature alarm | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x5000 | 20481 | TRMON 2 gas alarm | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x5001 | 20482 | TRMON 2 gas trip | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x5002 | 20483 | TRMON 2 oil flow trip | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x5003 | 20484 | TRMON 2 oil at minimum level | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x5004 | 20485 | TRMON 2 oil at maximum level | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| 0x5005 | 20486 | TRMON 2 blocking | 1 | 0 | Bool | 0;1 | | | | | | | ■ |
| unused | 2048-7... 20500 | unused | | | | | | | | | | | |
| 0x5014 | 20501 | Inrush 1 detection | 1 | 0 | Enum | Start=1; Timeout=2 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5015 | 20502 | I>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5016 | 20503 | I>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5017 | 20504 | I>3 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5018 | 20505 | SOTF status | 1 | 0 | Enum | Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | |
| unused | 2050-6... 20509 | unused | | | | | | | | | | | |
| 0x501D | 20510 | P<1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | |
| 0x501E | 20511 | P<2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | |
| 0x501F | 20512 | I< status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | |
| 0x5020 | 20513 | I2/I1>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5021 | 20514 | I2>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5022 | 20515 | Ist> status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------|------|-------|-----------|---------------------------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5023 | 20516 | llr> status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | | ■ | |
| 0x5024 | 20517 | N> status | 1 | 0 | Enum | Enabled=0; OneLeft=1; Disabled=2; Blocked=3 | | ■ | ■ | | | ■ | |
| 0x5025 | 20518 | 49M overload status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3 | | ■ | ■ | | | ■ | |
| 0x5026 | 20519 | 49F overload status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | | ■ |
| 0x5029 | 20522 | lcap>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | | ■ | | ■ | | |
| 0x502A | 20523 | lcap>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | | ■ | | ■ | | |
| 0x502C | 20525 | IN>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | ■ |
| 0x502D | 20526 | IN>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | ■ |
| 0x502E | 20527 | IN>3 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | ■ |
| 0x502F | 20528 | INVN>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | | | | ■ | ■ | |
| 0x5030 | 20529 | INVN>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | | | | ■ | ■ | |
| 0x5031 | 20530 | V>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5032 | 20531 | V>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5033 | 20532 | V>3 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5034 | 20533 | V<1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5035 | 20534 | V<2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5036 | 20535 | V<3 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5037 | 20536 | V1<1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | | | ■ | | ■ | |
| 0x5038 | 20537 | V1<2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | | | ■ | | ■ | |
| 0x5039 | 20538 | VN>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | ■ |
| 0x503A | 20539 | VN>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | ■ |
| 0x503B | 20540 | VN>3 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | ■ |
| 0x503C | 20541 | f>1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x503D | 20542 | f>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x503E | 20543 | f<1 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------|------|-------|-----------|----------------------------------------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x503F | 20544 | f<2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5040 | 20545 | CBF status 1 | 1 | 0 | Enum | Trip=1 : for CBF1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5041 | 20546 | CBF status 2 | 1 | 0 | Enum | Trip=1 : for CBF1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 20547 | unused | | | | | | | | | | | |
| 0x5043 | 20548 | lh5>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | |
| 0x5044 | 20549 | CTS 1 status | 1 | 0 | Enum | Fast Alarm=1; Alarm=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5045 | 20550 | VTS status | 1 | 0 | Enum | Fast Alarm=1; Alarm=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x5049 | 20554 | Vcap>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | ■ | | ■ | | |
| 0x504A | 20555 | f+df/dt>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | | ■ | ■ | | |
| 0x504B | 20556 | f+df/dt>2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | | ■ | ■ | | |
| 0x504C | 20557 | IN int> status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | ■ | | |
| unused | 2055-8... 20559 | unused | | | | | | | | | | | |
| 0x504F | 20560 | Motor status | 1 | 0 | Enum | Stopped=0; Starting=1; Running=2 | | ■ | ■ | | | ■ | |
| 0x5050 | 20561 | SOL1 Status | 1 | 0 | Enum | Trip=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5051 | 20562 | SOL2 Status | 1 | 0 | Enum | Trip=1 | | ■ | ■ | | ■ | ■ | ■ |
| unused | 20563 | unused | | | | | | | | | | | |
| 0x5053 | 20564 | YN>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | ■ | ■ | |
| 0x5054 | 20565 | GN>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | ■ | ■ | |
| 0x5055 | 20566 | BN>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | ■ | ■ | |
| unused | 20567 | unused | | | | | | | | | | | |
| 0x5057 | 20568 | YN>2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | ■ | ■ | |
| 0x5058 | 20569 | GN>2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | ■ | ■ | |
| 0x5059 | 20570 | BN>2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | ■ | ■ | |
| 0x505A | 20571 | V2>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x505B | 20572 | V2>2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | | ■ | ■ | ■ | |
| 0x505C | 20573 | Ω>1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | | | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|------------------------------|------|-------|-----------|----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x505D | 20574 | $\Omega > 2$ status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | | | ■ | |
| 0x505E | 20575 | $\Omega < 1$ status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | | | ■ | |
| 0x505F | 20576 | $\Omega < 2$ status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | | | ■ | |
| 0x5060 | 20577 | Anti-backspin status | 1 | 0 | Enum | Alarm=2; Blocked=3 | | ■ | ■ | | | ■ | |
| 0x5061 | 20578 | CLP operation | 1 | 0 | Enum | Start=1; Timeout=2 | | ■ | ■ | | ■ | ■ | |
| 0x5062 | 20579 | f<3 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | |
| 0x5063 | 20580 | f<4 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | |
| 0x5064 | 20581 | f<5 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | |
| 0x5065 | 20582 | f<6 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | |
| 0x5066 | 20583 | f<7 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | |
| 0x5067 | 20584 | f<8 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | |
| 0x5068 | 20585 | Program-mable stage 1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5069 | 20586 | Program-mable stage 2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x506A | 20587 | Program-mable stage 3 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x506B | 20588 | Program-mable stage 4 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x506C | 20589 | Program-mable stage 5 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x506D | 20590 | Program-mable stage 6 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x506E | 20591 | Program-mable stage 7 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x506F | 20592 | Program-mable stage 8 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5070 | 20593 | GOOSE NI Global Error | 1 | 0 | Enum | Error=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-----------------------|------|-------|-----------|----------------------------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5071 | 20594 | PhA fault | 1 | 0 | Enum | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5072 | 20595 | PhB fault | 1 | 0 | Enum | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5073 | 20596 | PhC fault | 1 | 0 | Enum | 0;1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5074 | 20597 | Sync1 request | 1 | 0 | Enum | 0;1 | | ■ | | ■ | ■ | | |
| 0x5075 | 20598 | Sync1 OK | 1 | 0 | Enum | 0;1 | | ■ | | ■ | ■ | | |
| 0x5076 | 20599 | Bypass | 1 | 0 | Enum | 0;1 | | ■ | | ■ | ■ | | |
| 0x5077 | 20600 | Sync1 fail | 1 | 0 | Enum | 0;1 | | ■ | | ■ | ■ | | |
| 0x5078 | 20601 | I>4 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5079 | 20602 | I>5 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x507A | 20603 | I>6 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x507B | 20604 | IN>4 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | ■ |
| 0x507C | 20605 | I2>2 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x507D | 20606 | Good condition status | 1 | 0 | Enum | Idle state=0; Prot active=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x507E | 20607 | IN>5 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | ■ |
| 0x507F | 20608 | IN>6 status | 1 | 0 | Enum | Start=1;Trip=2; Blocked=3 | | ■ | | | ■ | ■ | ■ |
| 0x5080 | 20609 | REF 1 status | 1 | 0 | Enum | Trip=1; Blocked=2 | | | ■ | | ■ | ■ | ■ |
| 0x5081 | 20610 | RTD1 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5082 | 20611 | RTD2 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5083 | 20612 | RTD3 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5084 | 20613 | RTD4 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5085 | 20614 | RTD5 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5086 | 20615 | RTD6 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5087 | 20616 | RTD7 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5088 | 20617 | RTD8 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5089 | 20618 | RTD9 status | 1 | 0 | Enum | Alarm=1;Trip=2; Blocked=3; RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|----------------------------|------|-------|-----------|--------------------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x508A | 20619 | RTD10 status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x508B | 20620 | RTD11 status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x508C | 20621 | RTD12 status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x508D | 20622 | RTD13 status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x508E | 20623 | RTD14 status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x508F | 20624 | RTD15 status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5090 | 20625 | RTD16 status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5091 | 20626 | RTD status | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3;RTD fault=4 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5092 | 20627 | I2/I1>2 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5094 | 20629 | EMRE status | 1 | 0 | Enum | Alarm=1 | | | ■ | | | ■ | |
| 0x5095 | 20630 | f+df/dt>3 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | ■ | ■ | ■ | |
| 0x5096 | 20631 | f+df/dt>4 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | ■ | ■ | ■ | |
| 0x5097 | 20632 | f+df/dt>5 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | ■ | ■ | ■ | |
| 0x5098 | 20633 | f+df/dt>6 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | ■ | ■ | ■ | |
| 0x5099 | 20634 | f+df/dt>7 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | ■ | ■ | ■ | |
| 0x509A | 20635 | f+df/dt>8 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | ■ | ■ | ■ | |
| 0x509B | 20636 | f+df/dt>9 status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | ■ | ■ | ■ | |
| 0x509C | 20637 | T-Diff status | 1 | 0 | Enum | Start=1;Trip=2;Blocked=3 | | | | | | | ■ |
| 0x509D | 20638 | Inrush 2 detection | 1 | 0 | Enum | Start=1;Timeout=2 | | | | | | | ■ |
| 0x509E | 20639 | CTS 2 status | 1 | 0 | Enum | Fast Alarm=1;Alarm=2;Blocked=3 | | | | | | | ■ |
| 0x509F | 20640 | CT supervision Diff status | 1 | 0 | Enum | Fast Alarm=1;Alarm=2;Blocked=3 | | | | | | | ■ |
| 0x50A0 | 20641 | REF 2 status | 1 | 0 | Enum | Trip=1;Blocked=2 | | | | | | | ■ |
| 0x50A1 | 20642 | Transformer | 1 | 0 | Enum | Alarm=1;Trip=2;Blocked=3 | | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------------------|------|-------|-----------|----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| | | monitoring 1 status | | | | | | | | | | | |
| 0x50A2 | 20643 | Transformer monitoring 2 status | 1 | 0 | Enum | Alarm=1; Trip=2; Blocked=3 | | | | | | | ■ |
| 0x50A3 | 20644 | CBF status 1 | 1 | 0 | Enum | Trip=1 : for CBF2 | | | | | | | ■ |
| 0x50A4 | 20645 | CBF status 2 | 1 | 0 | Enum | Trip=1 : for CBF2 | | | | | | | ■ |
| 0x50A5 | 20646 | V/f Alarm status | 1 | 0 | Enum | Alarm=2; Blocked=3 | | | | | | | ■ |
| 0x50A6 | 20647 | V/f > 1 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | | | ■ |
| 0x50A7 | 20648 | V/f > 2 status | 1 | 0 | Enum | Start=1; Trip=2; Blocked=3 | | | | | | | ■ |
| unused | 20649... 20700 | unused | | | | | | | | | | | |
| 0x50DC | 20701 | Enable for Inrush 1 | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x50DD | 20702 | Enable for I>1 | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x50DE | 20703 | Enable for I>2 | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x50DF | 20704 | Enable for I>3 | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x50E0 | 20705 | Enable for SOTF | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | |
| unused | 20706... 20709 | unused | | | | | | | | | | | |
| 0x50E5 | 20710 | Enable for P<1 | 1 | 0 | Bool | Off=0; On=1 | | ■ | | | ■ | ■ | |
| 0x50E6 | 20711 | Enable for P<2 | 1 | 0 | Bool | Off=0; On=1 | | ■ | | | ■ | ■ | |
| 0x50E7 | 20712 | Enable for I< | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | |
| 0x50E8 | 20713 | Enable for I2/I1>1 | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x50E9 | 20714 | Enable for I2>1 | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x50EA | 20715 | Enable for Ist> | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 0x50EB | 20716 | Enable for Ilr> | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 0x50EC | 20717 | Enable for N> | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 0x50ED | 20718 | Enable for Motor 49M> | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | | ■ | |
| 0x50EE | 20719 | Enable for feeder 49F | 1 | 0 | Bool | Off=0; On=1 | | ■ | ■ | | ■ | | ■ |
| 0x50F1 | 20722 | Enable for Icap>1 | 1 | 0 | Bool | Off=0; On=1 | | | ■ | | ■ | | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------------------|------|-------|-----------|------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x50F2 | 20723 | Enable for Icap>2 | 1 | 0 | Bool | Off=0;On=1 | | | ■ | | ■ | | |
| 0x50F4 | 20725 | Enable for IN>1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x50F5 | 20726 | Enable for IN>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x50F6 | 20727 | Enable for IN>3 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x50F7 | 20728 | Enable for INVN>1 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x50F8 | 20729 | Enable for INVN>2 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x50F9 | 20730 | Enable for V>1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x50FA | 20731 | Enable for V>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x50FB | 20732 | Enable for V>3 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x50FC | 20733 | Enable for V<1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x50FD | 20734 | Enable for V<2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x50FE | 20735 | Enable for V<3 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x50FF | 20736 | Enable for V1<1 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | | ■ | |
| 0x5100 | 20737 | Enable for V1<2 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | | ■ | |
| 0x5101 | 20738 | Enable for VN>1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 0x5102 | 20739 | Enable for VN>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 0x5103 | 20740 | Enable for VN>3 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 0x5104 | 20741 | Enable for f>1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5105 | 20742 | Enable for f>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5106 | 20743 | Enable for f<1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5107 | 20744 | Enable for f<2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5108 | 20745 | Enable for CB failure 1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5109 | 20746 | Enable CBF timer1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x510A | 20747 | Enable CBF timer2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x510B | 20748 | Enable for lh5>1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | |
| 0x510C | 20749 | Enable for CTS 1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x510D | 20750 | Enable for VTS | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5111 | 20754 | Enable for Vcap>1 | 1 | 0 | Bool | Off=0;On=1 | | | ■ | | ■ | | |
| 0x5112 | 20755 | Enable for f+df/dt>1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x5113 | 20756 | Enable for f+df/dt>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x5114 | 20757 | Enable for IN int> | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | | |
| 0x5115 | 20758 | Enable for Sync check 1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x5116 | 20759 | Enable for CB monitoring | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5117 | 20760 | Enable for Motor status | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x5118 | 20761 | Enable for SOL | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| unused | 20762 | unused | | | | | | | | | | | |
| 0x511A | 20763 | Enable for All YN>1 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x511B | 20764 | Enable for YN>1 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x511C | 20765 | Enable for GN>1 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x511D | 20766 | Enable for BN>1 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x511E | 20767 | Enable for All YN>2 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x511F | 20768 | Enable for YN>2 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x5120 | 20769 | Enable for GN>2 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x5121 | 20770 | Enable for BN>2 | 1 | 0 | Bool | Off=0;On=1 | | | | | ■ | ■ | |
| 0x5122 | 20771 | Enable for V2>1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5123 | 20772 | Enable for V2>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5124 | 20773 | Enable for Ω >1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x5125 | 20774 | Enable for Ω >2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x5126 | 20775 | Enable for Ω <1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x5127 | 20776 | Enable for Ω <2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x5128 | 20777 | Enable for Anti-backspin | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x5129 | 20778 | Enable for CLPU | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------------|------|-------|-----------|------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x512A | 20779 | Enable for f<3 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x512B | 20780 | Enable for f<4 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x512C | 20781 | Enable for f<5 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x512D | 20782 | Enable for f<6 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x512E | 20783 | Enable for f<7 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x512F | 20784 | Enable for f<8 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x5130 | 20785 | Enable for Auto reclosing | 1 | 0 | Bool | Off=0;On=1 | | ■ | | | ■ | | |
| 0x5131 | 20786 | Enable for I>4 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5132 | 20787 | Enable for I>5 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5133 | 20788 | Enable for I>6 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5134 | 20789 | Enable for IN>4 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x5135 | 20790 | Enable for I2>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5136 | 20791 | Enable for IN>5 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x5137 | 20792 | Enable for IN>6 | 1 | 0 | Bool | Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x5138 | 20793 | Enable for REF 1 | 1 | 0 | Bool | Off=0;On=1 | | | ■ | | ■ | ■ | ■ |
| 0x5139 | 20794 | Enable for I2/I1>2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x513B | 20796 | Enable for EMRE | 1 | 0 | Bool | Off=0;On=1 | | | ■ | | | ■ | |
| 0x513C | 20797 | Enable for f+df/dt>3 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x513D | 20798 | Enable for f+df/dt>4 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x513E | 20799 | Enable for f+df/dt>5 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x513F | 20800 | Enable for f+df/dt>6 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x5140 | 20801 | Enable for f+df/dt>7 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x5141 | 20802 | Enable for f+df/dt>8 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x5142 | 20803 | Enable for f+df/dt>9 | 1 | 0 | Bool | Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x5143 | 20804 | Enable for T-Diff | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x5144 | 20805 | Enable for Inrush 2 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------------------------------|------|-------|-----------|--------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0X5145 | 20806 | Enable for CTS 2 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0X5146 | 20807 | Enable for CT supervision Diff | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x5147 | 20808 | Enable for REF 2 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x5148 | 20809 | Enable for Transformer monitoring 1 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x5149 | 20810 | Enable for Transformer monitoring 2 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0X514A | 20811 | Enable for CB failure 2 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x514B | 20812 | Enable CBF timer1 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x514C | 20813 | Enable CBF timer2 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x514D | 20814 | Enable for V/f Alarm | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x514E | 20815 | Enable for V/f>1 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| 0x514F | 20816 | Enable for V/f>2 | 1 | 0 | Bool | Off=0;On=1 | | | | | | | ■ |
| unused | 2081-7...20900 | unused | | | | | | | | | | | |
| 0x51A4 | 20901 | release all latch status | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x51A5 | 20902 | I>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x51A6 | 20903 | I>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x51A7 | 20904 | I>3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x51A8 | 20905 | SOTF trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | |
| unused | 2090-6...20909 | unused | | | | | | | | | | | |
| 0x51AD | 20910 | P<1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | |
| 0x51AE | 20911 | P<2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | |
| 0x51AF | 20912 | I< trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | |
| 0x51B0 | 20913 | I2/I1>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------------|------|-------|-----------|--------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x51B1 | 20914 | I2>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x51B2 | 20915 | Ist> trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51B3 | 20916 | Locked rotor trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51B4 | 20917 | N> motor start inhibition | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51B5 | 20918 | 49M trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51B6 | 20919 | 49M alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51B7 | 20920 | 49M rsv alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51B8 | 20921 | 49M T> alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51B9 | 20922 | Block motor start | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51BA | 20923 | Motor TC1 activate | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51BB | 20924 | Motor TC2 activate | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51BC | 20925 | 49F trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | ■ |
| 0x51BD | 20926 | 49F alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | ■ |
| 0x51BE | 20927 | 49F rsv alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | ■ |
| 0x51BF | 20928 | 49F T> alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | ■ |
| 0x51C2 | 20931 | Icap>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | ■ | | ■ | | |
| 0x51C3 | 20932 | Icap>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | ■ | | ■ | | |
| 0x51C5 | 20934 | IN>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x51C6 | 20935 | IN>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x51C7 | 20936 | IN>3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x51C8 | 20937 | Watt EF>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51C9 | 20938 | Watt EF>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51CA | 20939 | V>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51CB | 20940 | V>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51CC | 20941 | V>3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51CD | 20942 | V<1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-----------------------|------|-------|-----------|-----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x51CE | 20943 | V<2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51CF | 20944 | V<3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51D0 | 20945 | V1<1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | | ■ | |
| 0x51D1 | 20946 | V1<2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | | ■ | |
| 0x51D2 | 20947 | VN>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 0x51D3 | 20948 | VN>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 0x51D4 | 20949 | VN>3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | ■ |
| 0x51D5 | 20950 | f>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51D6 | 20951 | f>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51D7 | 20952 | f<1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51D8 | 20953 | f<2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51D9 | 20954 | CBF1 trip 1 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x51DA | 20955 | CBF1 trip 2 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x51DB | 20956 | lh5> trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | |
| 0x51DF | 20960 | Vcap> trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | ■ | | ■ | | |
| 0x51E0 | 20961 | f+df/dt>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x51E1 | 20962 | f+df/dt>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x51E2 | 20963 | Intermittent EF trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | | |
| 0x51E3 | 20964 | Sync check 1 request | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x51E4 | 20965 | Sync check 1 ok | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x51E5 | 20966 | Sync check 1 ok pulse | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x51E6 | 20967 | Sync check 1 fail | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | | |
| 0x51E7 | 20968 | SOL1 send signal | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x51E8 | 20969 | SOL2 send signal | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------|------|-------|-----------|-----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x51E9 | 20970 | YN>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51EA | 20971 | GN>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51EB | 20972 | BN>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51EC | 20973 | YN>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51ED | 20974 | GN>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51EE | 20975 | BN>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | |
| 0x51EF | 20976 | V2>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51F0 | 20977 | V2>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x51F1 | 20978 | Ω>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51F2 | 20979 | Ω>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51F3 | 20980 | Ω<1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51F4 | 20981 | Ω<2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | | ■ | |
| 0x51F5 | 20982 | f<3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x51F6 | 20983 | f<4 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x51F7 | 20984 | f<5 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x51F8 | 20985 | f<6 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x51F9 | 20986 | f<7 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x51FA | 20987 | f<8 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | |
| 0x51FB | 20988 | Arc I | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x51FC | 20989 | Arc IN | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x51FD | 20990 | Arc stage 1 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x51FE | 20991 | Arc stage 2 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x51FF | 20992 | Arc stage 3 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x5200 | 20993 | Arc stage 4 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x5201 | 20994 | Arc stage 5 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x5202 | 20995 | Arc stage 6 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------|------|-------|-----------|--------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5203 | 20996 | Arc stage 7 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x5204 | 20997 | Arc stage 8 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | ■ | ■ |
| 0x5205 | 20998 | Prog stage1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5206 | 20999 | Prog stage2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5207 | 21000 | Prog stage3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5208 | 21001 | Prog stage4 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5209 | 21002 | Prog stage5 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x520A | 21003 | Prog stage6 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x520B | 21004 | Prog stage7 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x520C | 21005 | Prog stage8 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x520D | 21006 | CB Open_DI1 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x520E | 21007 | CB Close_DI2 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x520F | 21008 | AR1 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5210 | 21009 | AR2 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5211 | 21010 | AR3 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5212 | 21011 | AR4 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5213 | 21012 | Direct final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5214 | 21013 | Shot1 active | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5215 | 21014 | Shot 2 active | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5216 | 21015 | Shot 3 active | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5217 | 21016 | Shot 4 active | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5218 | 21017 | Shot 5 active | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | | |
| 0x5219 | 21018 | Object 1 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x521A | 21019 | Object 2 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x521B | 21020 | Object 3 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x521C | 21021 | Object 4 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-----------------------|------|-------|-----------|-----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x521D | 21022 | Object 5 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x521E | 21023 | Object 6 final trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x521F | 21024 | Object failure | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5220 | 21025 | Incomer fault locator | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | ■ | | |
| 0x5221 | 21026 | Overcurrent alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5222 | 21027 | Overcurrent trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5223 | 21028 | Earth fault alarm | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5224 | 21029 | Earth fault trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5225 | 21030 | PhA fault | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5226 | 21031 | PhB fault | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5227 | 21032 | PhC fault | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5228 | 21033 | GOOSE NI Global Error | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5229 | 21034 | Global trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x522A | 21035 | I>1 trip A | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x522B | 21036 | I>1 trip B | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x522C | 21037 | I>1 trip C | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x522D | 21038 | I>2 trip A | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x522E | 21039 | I>2 trip B | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x522F | 21040 | I>2 trip C | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5230 | 21041 | I>3 trip A | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5231 | 21042 | I>3 trip B | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5232 | 21043 | I>3 trip C | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5233 | 21044 | I>4 trip A | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5234 | 21045 | I>4 trip B | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5235 | 21046 | I>4 trip C | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------------|------|-------|-----------|-----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5236 | 21047 | I>5 trip A | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5237 | 21048 | I>5 trip B | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5238 | 21049 | I>5 trip C | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5239 | 21050 | I>6 trip A | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x523A | 21051 | I>6 trip B | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x523B | 21052 | I>6 trip C | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x523C | 21053 | I>4 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x523D | 21054 | I>5 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x523E | 21055 | I>6 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x523F | 21056 | IN>4 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x5240 | 21057 | I2>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5241 | 21058 | V<1 trip A/ AB | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5242 | 21059 | V<1 trip B/ BC | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5243 | 21060 | V<1 trip C/ CA | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5244 | 21061 | V<2 trip A/ AB | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5245 | 21062 | V<2 trip B/ BC | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5246 | 21063 | V<2 trip C/ CA | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5247 | 21064 | V<3 trip A/ AB | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5248 | 21065 | V<3 trip B/ BC | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5249 | 21066 | V<3 trip C/ CA | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x524A | 21067 | V>1 trip A/ AB | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x524B | 21068 | V>1 trip B/ BC | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x524C | 21069 | V>1 trip C/ CA | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x524D | 21070 | V>2 trip A/ AB | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x524E | 21071 | V>2 trip B/ BC | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x524F | 21072 | V>2 trip C/ CA | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------|------|-------|-----------|-----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5250 | 21073 | V>3 trip A/AB | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5251 | 21074 | V>3 trip B/BC | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5252 | 21075 | V>3 trip C/CA | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | ■ | ■ | ■ | |
| 0x5253 | 21076 | IN>5 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x5254 | 21077 | IN>6 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | | | ■ | ■ | ■ |
| 0x5255 | 21078 | REF1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | ■ | | ■ | ■ | ■ |
| 0x5256 | 21079 | I2/I1>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x525A | 21083 | f+df/dt>3 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x525B | 21084 | f+df/dt>4 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x525C | 21085 | f+df/dt>5 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x525D | 21086 | f+df/dt>6 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x525E | 21087 | f+df/dt>7 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x525F | 21088 | f+df/dt>8 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x5260 | 21089 | f+df/dt>9 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | ■ | ■ | ■ | |
| 0x5261 | 21090 | T-Diff trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5262 | 21091 | T-Diff trip A | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5263 | 21092 | T-Diff trip B | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5264 | 21093 | T-Diff trip C | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5265 | 21094 | REF2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5266 | 21095 | CBF2 trip 1 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5267 | 21096 | CBF2 trip 2 | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5268 | 21097 | V/f>1 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| 0x5269 | 21098 | V/f>2 trip | 1 | 1 | Bool | Latch status: Off=0;On=1 | | | | | | | ■ |
| unused | 2109-9... 21100 | unused | | | | | | | | | | | |
| 0x526C | 21101 | CT primary | 1 | 0 | UIn-t16 | | A | | ■ | | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------------------|------|-------|-----------|------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x526D | 21102 | CT secondary | 1 | 0 | UInt16 | | A | | ■ | | ■ | ■ | |
| 0x526E | 21103.. ..21104 | Nominal current | 1 | 0 | float32 | | A | ■ | | | ■ | ■ | |
| 0x5270 | 21105 | LPCT rated primary current | 1 | 0 | UInt16 | | A | ■ | | | ■ | ■ | |
| 0x5271 | 21106 | Current factor | 1 | 0 | Enum | Value ¹⁶⁷ | | ■ | | | ■ | ■ | |
| 0x5272 | 21107 | EF CT primary | 1 | 0 | UInt16 | | A | | ■ | | ■ | ■ | |
| 0x5273 | 21108.. ..21109 | EF CT secondary | 1 | 0 | float32 | | A | | ■ | | ■ | ■ | |
| 0x5275 | 21110.. ..21111 | CSH CT primary | 1 | 0 | UInt32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5277 | 21112.. ..21113 | CSH CT secondary | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5279 | 21114.. ..21115 | Nominal IN.CSH | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x527B | 21116 | Sensitive IN CT primary | 1 | 0 | UInt16 | | A | | ■ | | ■ | ■ | |
| 0x527C | 21117.. ..21118 | Sensitive IN CT secondary | 1 | 0 | float32 | | A | | ■ | | ■ | ■ | |
| 0x5280 | 21121.. ..21122 | Nominal voltage | 1 | 0 | float32 | | V | ■ | | | ■ | ■ | |
| 0x5284 | 21125 | VT secondary | 1 | 0 | UInt16 | | V | | | ■ | ■ | ■ | ■ |
| 0x5285 | 21126 | VTy secondary | 1 | 0 | UInt16 | | V | | | ■ | ■ | | |
| 0x528A | 21131.. ..21132 | Voltage factor | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x528C | 21133 | Phase rotation | 1 | 0 | Enum | 1-2-3=0;1-3-2=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x528D | 21134 | Voltage mode | 1 | 0 | Enum | Value ¹⁶⁸ | | ■ | | ■ | ■ | ■ | ■ |
| 0x528E | 21135 | Nominal frequency | 1 | 0 | UInt16 | | Hz | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x528F | 21136 | Power direction | 1 | 0 | Enum | Outgoing=0; Incoming=1 | | ■ | | | ■ | ■ | |
| 0x5290 | 21137 | Number connected phase CTs | 1 | 0 | Enum | A/B/C=0;A/C=1 | | | ■ | | ■ | ■ | |
| 0x5291 | 21138.. ..21139 | VA magnitude correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x5293 | 21140.. ..21141 | VB magnitude correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |

167. 0.25=0;0.5=1;1=2;1.25=3;1.33=4;2=5;2.5=6;3.2=7;4=8;5=9;6.3=10;6.66=11;10=12;16=13;20=14;25=15;31.5=16

168. 2VPP+VN=0;3VP=1;1VPP=5;1VP=6;3VP/VPy=9;3VP/VPy=10;2VPP+VN+VPPy=12;3VP+VN=13;VPP/VPy=16; 1VN=18

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------------------------|------|-------|-----------|-------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5295 | 21142.- ..21143 | VC magnitude correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x5297 | 21144.- ..21145 | VA angle correction | 1 | 0 | float32 | | ° | ■ | | | ■ | ■ | |
| 0x5299 | 21146.- ..21147 | VB angle correction | 1 | 0 | float32 | | ° | ■ | | | ■ | ■ | |
| 0x529B | 21148.- ..21149 | VC angle correction | 1 | 0 | float32 | | ° | ■ | | | ■ | ■ | |
| 0x529D | 21150.- ..21151 | VAY magnitude correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x529F | 21152.- ..21153 | VAY angle correction | 1 | 0 | float32 | | ° | ■ | | | ■ | ■ | |
| 0x52A1 | 21154.- ..21155 | VBY magnitude correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x52A3 | 21156.- ..21157 | VBY angle correction | 1 | 0 | float32 | | ° | ■ | | | ■ | ■ | |
| 0x52A5 | 21158 | VT type | 1 | 0 | Enum | VT+Adapter=0; LPVT=1 | | ■ | | | ■ | ■ | |
| 0x52A6 | 21159 | VT adapter secondary | 1 | 0 | UInt16 | valid in LPCT/ LPVT | V | | | ■ | ■ | ■ | |
| 0x52A7 | 21160.- ..21161 | VA adapter mag correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x52A9 | 21162.- ..21163 | VB adapter mag correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x52AB | 21164.- ..21165 | VC adapter mag correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x52AD | 21166 | VTy secondary | 1 | 0 | UInt16 | valid in LPCT/ LPVT | V | | | ■ | ■ | ■ | |
| 0x52AE | 21167.- ..21168 | VAY adapter mag correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x52B0 | 21169 | VN adapter secondary | 1 | 0 | UInt16 | valid in LPCT/ LPVT | V | | | ■ | ■ | ■ | |
| 0x52B1 | 21170.- ..21171 | VN adapter mag correction | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x52B5 | 21174.- ..21175 | VT primary | 1 | 0 | UInt32 | | V | | | ■ | ■ | ■ | ■ |
| 0x52B7 | 21176.- ..21177 | VN primary | 1 | 0 | UInt32 | | V | | | ■ | ■ | ■ | ■ |
| 0x52B9 | 21178.- ..21179 | LPVT or VT rated primary voltage | 1 | 0 | UInt32 | | V | ■ | | | ■ | | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-----------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x52BB | 21180.- ..21181 | VN nominal primary | 1 | 0 | UInt32 | | V | ■ | | | ■ | | |
| 0x52BD | 21182.- ..21183 | VN secondary | 1 | 0 | float32 | | V | | | ■ | ■ | ■ | ■ |
| 0x52BF | 21184 | Phase CT polarity | 1 | 0 | Enum | Standard =0; Opposite=1 | | | | | ■ | ■ | |
| 0x52C0 | 21185 | IN CT polarity | 1 | 0 | Enum | Standard =0; Opposite=1 | | | | | ■ | ■ | |
| 0x52C1 | 21186 | IN.sens CT polarity | 1 | 0 | Enum | Standard =0; Opposite=1 | | | | | ■ | ■ | |
| 0x52C2 | 21187.- ..21188 | Reference power | 1 | 0 | float32 | | MVA | | | | | | ■ |
| 0x52C4 | 21189.- ..21190 | CT-1 end rated voltage | 1 | 0 | float32 | | kV | | | | | | ■ |
| 0x52C6 | 21191.- ..21192 | CT-2 end rated voltage | 1 | 0 | float32 | | kV | | | | | | ■ |
| 0x52C8 | 21193 | CT-1 primary | 1 | 0 | UInt16 | | A | | | | | | ■ |
| 0x52C9 | 21194 | CT-1 secondary | 1 | 0 | UInt16 | | A | | | | | | ■ |
| 0x52CA | 21195 | IN CT-1 primary | 1 | 0 | UInt16 | | A | | | | | | ■ |
| 0x52CB | 21196.- ..21197 | IN CT-1 secondary | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x52CD | 21198 | Phase CT-1 polarity | 1 | 0 | Enum | Standard=0; Opposite=1 | | | | | | | ■ |
| 0x52CE | 21199 | IN CT-1 polarity | 1 | 0 | Enum | Standard=0; Opposite=1 | | | | | | | ■ |
| 0x52CF | 21200 | CT-1 phase swap | 1 | 0 | Enum | No Swap=0;A-B=1;B-C=2;C-A=3 | | | | | | | ■ |
| 0x52D0 | 21201 | CT-2 primary | 1 | 0 | UInt16 | | A | | | | | | ■ |
| 0x52D1 | 21202 | CT-2 secondary | 1 | 0 | UInt16 | | A | | | | | | ■ |
| 0x52D2 | 21203 | IN CT-2 primary | 1 | 0 | UInt16 | | A | | | | | | ■ |
| 0x52D3 | 21204.- ..21205 | IN CT-2 secondary | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x52D5 | 21206 | Phase CT-2 polarity | 1 | 0 | Enum | Standard=0; Opposite=1 | | | | | | | ■ |
| 0x52D6 | 21207 | IN CT-2 polarity | 1 | 0 | Enum | Standard=0; Opposite=1 | | | | | | | ■ |
| 0x52D7 | 21208 | CT-2 phase swap | 1 | 0 | Enum | No Swap=0;A-B=1;B-C=2;C-A=3 | | | | | | | ■ |
| 0x52D8 | 21209 | VT location | 1 | 0 | Enum | CT-1=0;CT-2=1 | | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------------|------|-------|-------------|----------------------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x52D9 | 21210 | Phase swap activation input | 1 | 0 | Enum | Value ¹⁶⁹ | | | | | | | ■ |
| 0x52DA | 21211 | Enable CSH30 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | |
| 0x53DB | 21212.- ..21213 | EF CT primary | 1 | 0 | Uln- t32 | for Enable for CSH30 is On | A | ■ | ■ | | ■ | ■ | |
| 0x53DD | 21214.- ..21215 | EF CT secondary | 1 | 0 | float32 | for Enable for CSH30 is On | A | ■ | ■ | | ■ | ■ | |
| 0x53DF | 21216 | IN CT polarity | 1 | 0 | Enum | valid in CSH30: Standard=0; Opposite=1 | | ■ | ■ | | ■ | ■ | |
| 0x53E0 | 21217 | CSH CT polarity | 1 | 0 | Enum | valid in CSH30: Standard=0; Opposite=1 | | ■ | ■ | | ■ | ■ | |
| unused | 21218.- ..21350 | unused | | | | | | | | | | | |
| 0x5366 | 21351.- ..21352 | Phase-to-ground voltage VA | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x5368 | 21353.- ..21354 | Phase-to-ground voltage VB | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x536A | 21355.- ..21356 | Phase-to-ground voltage VC | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x536C | 21357.- ..21358 | Phase-to-phase | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |

169. DI1(B)=1;DI2(B)=2;DI3(B)=3;DI4(B)=4;DI1(C)=5;DI2(C)=6;DI3(C)=7;DI4(C)=8;DI5(C)=9;DI6(C)=10;DI1(E)=11;DI2(E)=12;DI3(E)=13;DI4(E)=14;DI5(E)=15;DI6(E)=16;DI17=17;DI18=18;DI19=19;DI20=20;Arc1=25;Arc2=26;BI=27;VI1=29;VI2=30;VI3=31;VI4=32;DO1(B)=33;DO2(B)=34;DO3(B)=35;Watchdog=36;SF=37;SF=38;SF=39;SF=40;SF=41;BO=42;DO1(C)=43;DO2(C)=44;DO3(C)=45;DO4(C)=46;LedAl=49;LedTr=50;LedA=51;LedB=52;LedC=53;LedDR=54;VO1=55;VO2=56;VO3=57;VO4=58;VO5=59;VO6=60;DI21=65;DI22=66;DI23=67;DI24=68;DI25=69;DI26=70;DI27=71;DI28=72;DI29=73;DI30=74;DI31=75;DI32=76;DI33=77;DI34=78;DI35=79;DI36=80;DI37=81;DI38=82;DI39=83;DI40=84;F1=85;F2=86;F3=87;F4=88;F5=89;F6=90;F7=91;SF=97;SF=98;SF=99;SF=100;DO1(E)=101;DO2(E)=102;NI1=129;NI2=130;NI3=131;NI4=132;NI5=133;NI6=134;NI7=135;NI8=136;NI9=137;NI10=138;NI11=139;NI12=140;NI13=141;NI14=142;NI15=143;NI16=144;NI17=145;NI18=146;NI19=147;NI20=148;NI21=149;NI22=150;NI23=151;NI24=152;NI25=153;NI26=154;NI27=155;NI28=156;NI29=157;NI30=158;NI31=159;NI32=160;NI33=161;NI34=162;NI35=163;NI36=164;NI37=165;NI38=166;NI39=167;NI40=168;NI41=169;NI42=170;NI43=171;NI44=172;NI45=173;NI46=174;NI47=175;NI48=176;NI49=177;NI50=178;NI51=179;NI52=180;NI53=181;NI54=182;NI55=183;NI56=184;NI57=185;NI58=186;NI59=187;NI60=188;NI61=189;NI62=190;NI63=191;NI64=192;POC1=193;POC2=194;POC3=195;POC4=196;POC5=197;POC6=198;POC7=199;POC8=200;POC9=201;POC10=202;POC11=203;POC12=204;POC13=205;POC14=206;POC15=207;POC16=208;VI5=225;VI6=226;VI7=227;VI8=228;VI9=229;VI10=230;VI11=231;VI12=232;VI13=233;VI14=234;VI15=235;VI16=236;VI17=237;VI18=238;VI19=239;VI20=240;VO7=257;VO8=258;VO9=259;VO10=260;VO11=261;VO12=262;VO13=263;VO14=264;VO15=265;VO16=266;VO17=267;VO18=268;VO19=269;VO20=270;NI65=289;NI66=290;NI67=291;NI68=292;NI69=293;NI70=294;NI71=295;NI72=296;NI73=297;NI74=298;NI75=299;NI76=300;NI77=301;NI78=302;NI79=303;NI80=304;NI81=305;NI82=306;NI83=307;NI84=308;NI85=309;NI86=310;NI87=311;NI88=312;NI89=313;NI90=314;NI91=315;NI92=316;NI93=317;NI94=318;NI95=319;NI96=320;NI97=321;NI98=322;NI99=323;NI100=324;NI101=325;NI102=326;NI103=327;NI104=328;NI105=329;NI106=330;NI107=331;NI108=332;NI109=333;NI110=334;NI111=335;NI112=336;NI113=337;NI114=338;NI115=339;NI116=340;NI117=341;NI118=342;NI119=343;NI120=344;NI121=345;NI122=346;NI123=347;NI124=348;NI125=349;NI126=350;NI127=351;NI128=352;NI129=353;NI130=354;NI131=355;NI132=356;NI133=357;NI134=358;NI135=359;NI136=360;NI137=361;NI138=362;NI139=363;NI140=364;NI141=365;NI142=366;NI143=367;NI144=368;NI145=369;NI146=370;NI147=371;NI148=372;NI149=373;NI150=374;NI151=375;NI152=376;NI153=377;NI154=378;NI155=379;NI156=380;NI157=381;NI158=382;NI159=383;NI160=384;NI161=385;NI162=386;NI163=387;NI164=388;NI165=389;NI166=390;NI167=391;NI168=392;NI169=393;NI170=394;NI171=395;NI172=396;NI173=397;NI174=398;NI175=399;NI176=400;NI177=401;NI178=402;NI179=403;NI180=404;NI181=405;NI182=406;NI183=407;NI184=408;NI185=409;NI186=410;NI187=411;NI188=412;NI189=413;NI190=414;NI191=415;NI192=416;NI193=417;NI194=418;NI195=419;NI196=420;NI197=421;NI198=422;NI199=423;NI200=424;NI201=425;NI202=426;NI203=427;NI204=428;NI205=429;NI206=430;NI207=431;NI208=432;NI209=433;NI210=434;NI211=435;NI212=436;NI213=437;NI214=438;NI215=439;NI216=440;NI217=441;NI218=442;NI219=443;NI220=444;NI221=445;NI222=446;NI223=447;NI224=448;NI225=449;NI226=450;NI227=451;NI228=452;NI229=453;NI230=454;NI231=455;NI232=456;NI233=457;NI234=458;NI235=459;NI236=460;NI237=461;NI238=462;NI239=463;NI240=464;NI241=465;NI242=466;NI243=467;NI244=468;NI245=469;NI246=470;NI247=471;NI248=472;NI249=473;NI250=474;VI21=481;VI22=482;VI23=483;VI24=484;VI25=485;VI26=486;VI27=487;VI28=488;VI29=489;VI30=490;VI31=491;VI32=492;VI33=493;VI34=494;VI35=495;VI36=496;VI37=497;VI38=498;VI39=499;VI40=500;VI41=501;VI42=502;VI43=503;VI44=504;VI45=505;VI46=506;VI47=507;VI48=508;VI49=509;VI50=510

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| | | voltage VAB | | | | | | | | | | | |
| 0x536E | 21359.- ..21360 | Phase-to-phase voltage VBC | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x5370 | 21361.- ..21362 | Phase-to-phase voltage VCA | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x5372 | 21363.- ..21364 | Phase current IA | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5374 | 21365.- ..21366 | Phase current IB | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5376 | 21367.- ..21368 | Phase current IC | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5378 | 21369.- ..21370 | IN.meas | 1 | 0 | float32 | | A | | ■ | | ■ | ■ | |
| 0x537A | 21371.- ..21372 | IN.sens | 1 | 0 | float32 | | A | | ■ | | ■ | ■ | |
| 0x537C | 21373.- ..21374 | IN.CSH | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x537E | 21375.- ..21376 | Power factor | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x5380 | 21377.- ..21378 | Frequency | 1 | 0 | float32 | | Hz | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5382 | 21379.- ..21380 | Active power | 1 | 0 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x5384 | 21381.- ..21382 | Reactive power | 1 | 0 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x5386 | 21383.- ..21384 | Apparent power | 1 | 0 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x5388 | 21385.- ..21386 | Phase A active power | 1 | 0 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x538A | 21387.- ..21388 | Phase B active power | 1 | 0 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x538C | 21389.- ..21390 | Phase C active power | 1 | 0 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x538E | 21391.- ..21392 | Phase A reactive power | 1 | 0 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x5390 | 21393.- ..21394 | Phase B reactive power | 1 | 0 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x5392 | 21395.- ..21396 | Phase C reactive power | 1 | 0 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x5394 | 21397.- ..21398 | Phase A apparent power | 1 | 0 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x5396 | 21399.- ..21400 | Phase B apparent power | 1 | 0 | float32 | | kVA | ■ | | | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-------------------------|---------|--------------------|--------|--------|--------|--------|--------|
| 0x5398 | 21401.- ..21402 | Phase C apparent power | 1 | 0 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x539A | 21403.- ..21404 | Measured VN | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | ■ |
| 0x539C | 21405.- ..21406 | Calculated VN | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x539E | 21407.- ..21408 | Positive sequence I1 | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53A0 | 21409.- ..21410 | Negative sequence I2 | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53A2 | 21411.- ..21412 | Current ratio I2/I1 | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x53A4 | 21413 | Current phase sequence | 1 | 0 | Enum | ??=0;OK=1; Reverse=2 | | ■ | ■ | | ■ | ■ | |
| 0x53A5 | 21414.- ..21415 | Phase current THD | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x53A7 | 21416.- ..21417 | Phase current IA THD | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x53A9 | 21418.- ..21419 | Phase current IB THD | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x53AB | 21420.- ..21421 | Phase current IC THD | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x53AD | 21422.- ..21423 | Phase current | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53AF | 21424.- ..21425 | VN | 1 | 0 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x53B1 | 21426.- ..21427 | Tangent ϕ | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x53B3 | 21428.- ..21429 | Phase current Iph rms | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53B5 | 21430.- ..21431 | Phase current IA rms | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53B7 | 21432.- ..21433 | Phase current IB rms | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53B9 | 21434.- ..21435 | Phase current IC rms | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53BB | 21436.- ..21437 | Ambient temperature | 1 | 0 | Int32 | Value ¹⁷⁰ | °C / °F | ■ | ■ | | ■ | | |
| 0x53BD | 21438.- ..21439 | Positive sequence V1 | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x53BF | 21440.- ..21441 | Negative sequence V2 | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |

170. Unit of this value is mathc with RTD unit configured value.

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------------|------|-------|-----------|----------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x53C1 | 21442.- ..21443 | V2/V1 | 1 | 0 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x53C3 | 21444 | Voltage phase sequence | 1 | 0 | Enum | ??=0;OK=1; Reverse=2 | | ■ | | ■ | ■ | ■ | |
| 0x53C4 | 21445.- ..21446 | Voltage THD | 1 | 0 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x53C6 | 21447.- ..21448 | VA THD | 1 | 0 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x53C8 | 21449.- ..21450 | VB THD | 1 | 0 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x53CA | 21451.- ..21452 | VC THD | 1 | 0 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x53CC | 21453.- ..21454 | Phase-Earth voltage VARMS | 1 | 0 | float32 | Value ¹⁷¹ | V | ■ | | ■ | ■ | ■ | |
| 0x53CE | 21455.- ..21456 | Phase-Earth voltage VBRMS | 1 | 0 | float32 | Value ¹⁷¹ | V | ■ | | ■ | ■ | ■ | |
| 0x53D0 | 21457.- ..21458 | Phase-Earth voltage VCRMS | 1 | 0 | float32 | Value ¹⁷¹ | V | ■ | | ■ | ■ | ■ | |
| 0x53D2 | 21459.- ..21460 | Cosφ | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| unused | 21461... 21462 | unused | | | | | | | | | | | |
| 0x53D6 | 21463 | Power angle | 1 | 0 | Int16 | | ° | ■ | | | ■ | ■ | |
| unused | 21464 | unused | | | | | | | | | | | |
| 0x53D8 | 21465.- ..21466 | Active power rms | 1 | 0 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x53DA | 21467.- ..21468 | Reactive power rms | 1 | 0 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x53DC | 21469.- ..21470 | Apparent power rms | 1 | 0 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x53DE | 21471.- ..21472 | Cosφ of phase A | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x53E0 | 21473.- ..21474 | Cosφ of phase B | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x53E2 | 21475.- ..21476 | Cosφ of phase C | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x53E4 | 21477.- ..21478 | Frequency | 1 | 0 | float32 | | Hz | ■ | | ■ | ■ | | |
| 0x53E6 | 21479.- ..21480 | Phase-to-phase voltage VABy | 1 | 0 | float32 | | V | ■ | | ■ | ■ | | |
| 0x53E8 | 21481.- ..21482 | Phase angle difference | 1 | 0 | float32 | | ° | ■ | | ■ | ■ | | |

171. valid when Voltage measurement mode is 3VP, 3VP/VPy, 3VP/VPPy or 3VP+VN

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------------------|------|-------|--------------------|----------------------|-----------|--------------------|--------|--------|--------|--------|--------|
| 0x53EA | 21483.- ..21484 | IN.calc | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x53EC | 21485 | Algorithm condition | 1 | 0 | Enum | Value ¹⁷² | | | | | ■ | | |
| 0x53ED | 21486.- ..21487 | Motor speed | 1 | 0 | UInt32 | | rpm | ■ | ■ | | | ■ | |
| 0x53EF | 21488.- ..21489 | Last fault value | 1 | 1 | float32 | Value ¹⁷³ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x53F1 | 21490.- ..21491 | I>1 fault value | 1 | 0 | float32 | Value ¹⁷³ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x53F3 | 21492.- ..21493 | I>2 fault value | 1 | 0 | float32 | Value ¹⁷³ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x53F5 | 21494.- ..21495 | I>3 fault value | 1 | 0 | float32 | Value ¹⁷³ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x53F7 | 21496.- ..21497 | Fault reactance | 1 | 0 | float32 | | ohm | | | | ■ | | |
| 0x53F9 | 21498.- ..21499 | Fault value Ω>1 | 1 | 0 | UInt32/ float32 | Value ¹⁷⁴ | %Ωn / rpm | ■ | ■ | | | ■ | |
| 0x53FB | 21500.- ..21501 | Fault value Ω>2 | 1 | 0 | UInt32/ float33 | Value ¹⁷⁴ | %Ωn / rpm | ■ | ■ | | | ■ | |
| 0x53FD | 21502.- ..21503 | Fault value Ω<1 | 1 | 0 | UInt32/ float34 | Value ¹⁷⁴ | %Ωn / rpm | ■ | ■ | | | ■ | |
| 0x53FF | 21504.- ..21505 | Fault value Ω<2 | 1 | 0 | UInt32/ float35 | Value ¹⁷⁴ | %Ωn / rpm | ■ | ■ | | | ■ | |
| 0x5401 | 21506.- ..21507 | Last EF current | 1 | 0 | float32 | | xIn | ■ | ■ | | ■ | ■ | ■ |
| 0x5407 | 21512.- ..21513 | Fault current I _{cap} >1 | 1 | 0 | float32 | Value ¹⁷³ | pu / A | | ■ | | ■ | | |
| 0x5409 | 21514.- ..21515 | Fault current I _{cap} >2 | 1 | 0 | float32 | Value ¹⁷³ | pu / A | | ■ | | ■ | | |
| 0x540F | 21520.- ..21521 | IN>1 fault value | 1 | 0 | float32 | Value ¹⁷³ | pu / A | ■ | | | ■ | ■ | ■ |
| 0x5411 | 21522.- ..21523 | IN>2 fault value | 1 | 0 | float32 | Value ¹⁷³ | pu / A | ■ | | | ■ | ■ | ■ |
| 0x5413 | 21524.- ..21525 | IN>3 fault value | 1 | 0 | float32 | Value ¹⁷³ | pu / A | ■ | | | ■ | ■ | ■ |
| 0x5415 | 21526.- ..21527 | SOTF fault value | 1 | 0 | float32 | Value ¹⁷⁵ | pu / A | ■ | ■ | | ■ | ■ | |
| 0x5417 | 21528.- ..21529 | VN>1 fault value | 1 | 0 | float32 | Value ¹⁷⁶ | pu / V | ■ | | ■ | ■ | ■ | ■ |

172. OK=0;NegX=1;BigX=2;Long fault=3;No DI=4;No pre-fault=5;No post-fault=6;ShrtFlt=7;PreUns=8;FltUns=9;PostUns=10;Blocked=11; Off=12

173. when "Fault value scaling" configured with Primary, then uint is A. when "Fault value scaling" configured with PU, then uint is pu.

174. when "Fault value scaling" configured with Primary, then uint is rpm. when "Fault value scaling" configured with PU, then uint is %Ωn. When unit is rpm, value type is UInt32. When unit is %Ωn, value type is float32.

175. when "Fault value scaling" configured with Primary, then uint is A. when "Fault value scaling" configured with PU, then uint is xIn.

176. when "Fault value scaling" configured with Primary, then uint is kV. when "Fault value scaling" configured with PU, then uint is pu.

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------------|------|-------|-------------------|----------------------|------------|--------------------|--------|--------|--------|--------|--------|
| 0x5419 | 21530.- ..21531 | VN>2 fault value | 1 | 0 | float32 | Value ¹⁷⁷ | pu / V | ■ | | ■ | ■ | ■ | ■ |
| 0x541B | 21532.- ..21533 | VN>3 fault value | 1 | 0 | float32 | Value ¹⁷⁷ | pu / V | ■ | | ■ | ■ | ■ | ■ |
| 0x5423 | 21540.- ..21541 | INVN>1 fault value | 1 | 0 | Int32/ float32 | Value ¹⁷⁸ | % Pno / kW | | | | ■ | ■ | |
| 0x5425 | 21542.- ..21543 | INVN>2 fault value | 1 | 0 | Int32/ float32 | Value ¹⁷⁹ | % Pno / kW | | | | ■ | ■ | |
| 0x5427 | 21544.- ..21545 | I2>1 fault value | 1 | 0 | float32 | Value ¹⁸⁰ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x5429 | 21546.- ..21547 | f+df/dt>1 fault value | 1 | 0 | float32 | | Hz/s | ■ | | ■ | ■ | | |
| 0x542B | 21548.- ..21549 | f+df/dt>2 fault value | 1 | 0 | float32 | | Hz/s | ■ | | ■ | ■ | | |
| 0x542D | 21550.- ..21551 | Phase-Phase voltage VABRMS | 1 | 0 | float32 | Value ¹⁸¹ | V | ■ | | ■ | ■ | ■ | |
| 0x542F | 21552.- ..21553 | Phase-Phase voltage VBCRMS | 1 | 0 | float32 | Value ¹⁸¹ | V | ■ | | ■ | ■ | ■ | |
| 0x5431 | 21554.- ..21555 | Phase-Earth voltage VABYRMS | 1 | 0 | float32 | Value ¹⁸² | V | ■ | | ■ | ■ | ■ | |
| 0x5433 | 21556.- ..21557 | Phase-Earth voltage VNRMS | 1 | 0 | float32 | Value ¹⁸³ | V | ■ | | ■ | ■ | ■ | |
| 0x5435 | 21558.- ..21559 | Phase-Earth voltage VAYRMS | 1 | 0 | float32 | Value ¹⁸⁴ | V | ■ | | ■ | ■ | ■ | |
| 0x5437 | 21560.- ..21561 | I>4 fault value | 1 | 0 | float32 | Value ¹⁸⁰ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x5439 | 21562.- ..21563 | I>5 fault value | 1 | 0 | float32 | Value ¹⁸⁰ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x543B | 21564.- ..21565 | I>6 fault value | 1 | 0 | float32 | Value ¹⁸⁰ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x543D | 21566.- ..21567 | IN>4 fault value | 1 | 0 | float32 | Value ¹⁸⁰ | pu / A | ■ | | | ■ | ■ | ■ |
| 0x543F | 21568.- ..21569 | I2>2 fault value | 1 | 0 | float32 | Value ¹⁸⁰ | pu / A | ■ | ■ | | ■ | ■ | ■ |
| 0x5441 | 21570.- ..21571 | IN>5 fault value | 1 | 0 | float32 | Value ¹⁸⁰ | pu / A | ■ | | | ■ | ■ | ■ |

177. when "Fault value scaling" configured with Primary, then unit is kV. when "Fault value scaling" configured with PU, then unit is pu.

178. when "Fault value scaling" configured with Primary, then unit is kW. when "Fault value scaling" configured with PU, then unit is %Pno.

When unit is kW, value type is Int32. When unit is %Pno, value type is float32.

179. when "Fault value scaling" configured with Primary, then unit is kW. when "Fault value scaling" configured with PU, then unit is %Pno.

When unit is kW, value type is Int32. When unit is %Pno, value type is float32.

180. when "Fault value scaling" configured with Primary, then unit is A. when "Fault value scaling" configured with PU, then unit is pu.

181. valid when Voltage measurement mode is 2VPP+VN, 2VPP+VN+VPPy or VPP/VPPy

182. valid when Voltage measurement mode is VPP/VPPy or 2VPP+VN+VPPy

183. valid when Voltage measurement mode is 2VPP+VN or 2VPP+VN+VPPy or 3VP+VN

184. valid when Voltage measurement mode is 3VP/Vpy

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------------------|------|-------|-----------|----------------------|--------|--------------------|--------|--------|--------|--------|--------|
| 0x5443 | 21572.- ..21573 | IN>6 fault value | 1 | 0 | float32 | Value ¹⁸⁵ | pu / A | ■ | | | ■ | ■ | ■ |
| 0x5445 | 21574.- ..21575 | REF 1 differential curr. | 1 | 0 | float32 | | pu | | ■ | | ■ | ■ | ■ |
| 0x5447 | 21576.- ..21577 | Motor thermal level | 1 | 0 | float32 | | % | ■ | ■ | | | ■ | |
| 0x5449 | 21578.- ..21579 | Feeder thermal level | 1 | 0 | float32 | | % | ■ | ■ | | ■ | | ■ |
| 0x544B | 21580.- ..21581 | Estimated time to trip | 1 | 0 | UInt32 | for 49F | min | ■ | ■ | | ■ | | ■ |
| 0x544D | 21582.- ..21583 | Estimated time to trip | 1 | 0 | UInt32 | for 49M | min | ■ | ■ | | | ■ | |
| 0x544F | 21584.- ..21585 | Estimated time to restart | 1 | 0 | float32 | | min | ■ | ■ | | | ■ | |
| 0x5451 | 21586.- ..21587 | Motor running time | 1 | 0 | float32 | | min | ■ | ■ | | | ■ | |
| 0x5453 | 21588.- ..21589 | I% load | 1 | 0 | float32 | | % | ■ | ■ | | | ■ | |
| 0x5455 | 21590.- ..21591 | f+df/dt>3 fault value | 1 | 0 | float32 | | Hz/s | | | ■ | ■ | ■ | |
| 0x5457 | 21592.- ..21593 | f+df/dt>4 fault value | 1 | 0 | float32 | | Hz/s | | | ■ | ■ | ■ | |
| 0x5459 | 21594.- ..21595 | f+df/dt>5 fault value | 1 | 0 | float32 | | Hz/s | | | ■ | ■ | ■ | |
| 0x545B | 21596.- ..21597 | f+df/dt>6 fault value | 1 | 0 | float32 | | Hz/s | | | ■ | ■ | ■ | |
| 0x545D | 21598.- ..21599 | f+df/dt>7 fault value | 1 | 0 | float32 | | Hz/s | | | ■ | ■ | ■ | |
| 0x545F | 21600.- ..21601 | f+df/dt>8 fault value | 1 | 0 | float32 | | Hz/s | | | ■ | ■ | ■ | |
| 0x5461 | 21602.- ..21603 | f+df/dt>9 fault value | 1 | 0 | float32 | | Hz/s | | | ■ | ■ | ■ | |
| 0x5463 | 21604.- ..21605 | REF 2 differential curr. | 1 | 0 | float32 | | pu | | | | | | ■ |
| 0x5464 | 21606.- ..21607 | Differential current Id1 | 1 | 0 | float32 | | pu | | | | | | ■ |
| 0x5465 | 21608.- ..21609 | Differential current Id2 | 1 | 0 | float32 | | pu | | | | | | ■ |
| 0x5466 | 21610.- ..21611 | Differential current Id3 | 1 | 0 | float32 | | pu | | | | | | ■ |
| 0x5467 | 21612.- ..21613 | Bias current Ib1 | 1 | 0 | float32 | | pu | | | | | | ■ |
| 0x5468 | 21614.- ..21615 | Bias current Ib2 | 1 | 0 | float32 | | pu | | | | | | ■ |
| 0x5469 | 21616.- ..21617 | Bias current Ib3 | 1 | 0 | float32 | | pu | | | | | | ■ |

185. when "Fault value scaling" configured with Primary, then unit is A. when "Fault value scaling" configured with PU, then unit is pu.

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|----------------------|------|-------|-----------|----------------------|---------|--------------------|--------|--------|--------|--------|--------|
| unused | 2161-8...21636 | unused | | | | | | | | | | | |
| 0x5484 | 21637-..21668 | Harmonics of VAB | 1 | 0 | float32 | Value ¹⁸⁶ | % | ■ | ■ | | ■ | ■ | |
| 0x54A4 | 21669-..21700 | Harmonics of VBC | 1 | 0 | float32 | Value ¹⁸⁷ | % | ■ | ■ | | ■ | ■ | |
| 0x54C4 | 21701-..21732 | Harmonics of IA | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x54E4 | 21733-..21764 | Harmonics of IB | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x5504 | 21765-..21796 | Harmonics of IC | 1 | 0 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x5524 | 21797-..21828 | Harmonics of VA | 1 | 0 | float32 | Value ¹⁸⁸ | % | ■ | | ■ | ■ | ■ | |
| 0x5544 | 21829-..21860 | Harmonics of VB | 1 | 0 | float32 | Value ¹⁸⁸ | % | ■ | | ■ | ■ | ■ | |
| 0x5564 | 21861-..21892 | Harmonics of VC | 1 | 0 | float32 | Value ¹⁸⁸ | % | ■ | | ■ | ■ | ■ | |
| 0x5584 | 21893-..21924 | Harmonics of VN | 1 | 0 | float32 | Value ¹⁸⁹ | % | ■ | | ■ | ■ | ■ | |
| 0x55A4 | 21925-..21956 | Harmonics of VABy | 1 | 0 | float32 | Value ¹⁹⁰ | % | ■ | | ■ | ■ | ■ | |
| 0x55C4 | 21957-..21988 | Harmonics of VAy | 1 | 0 | float32 | Value ¹⁹¹ | % | ■ | | ■ | ■ | ■ | |
| unused | 2198-9...22000 | unused | | | | | | | | | | | |
| 0x55F0 | 22001-..22004 | Exported energy | 1 | 0 | Int64 | | KWh | ■ | | | ■ | ■ | |
| 0x55F4 | 22005-..22008 | Exp. reactive energy | 1 | 0 | Int64 | | KVA-rh | ■ | | | ■ | ■ | |
| 0x55F8 | 22009-..22012 | Imported energy | 1 | 0 | Int64 | | KWh | ■ | | | ■ | ■ | |
| 0x55FC | 22013-..22016 | Imp. reactive energy | 1 | 0 | Int64 | | KVA-rh | ■ | | | ■ | ■ | |
| unused | 2201-7...22050 | unused | | | | | | | | | | | |
| 0x5622 | 22051 | Temperature 1 | 1 | 0 | Int16 | Value ¹⁹² | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5623 | 22052 | Temperature 2 | 1 | 0 | Int16 | Value ¹⁹² | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5624 | 22053 | Temperature 3 | 1 | 0 | Int16 | Value ¹⁹² | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5625 | 22054 | Temperature 4 | 1 | 0 | Int16 | Value ¹⁹² | °C / °F | ■ | ■ | | ■ | ■ | |

186. valid when Voltage measurement mode is 2VPP+VN, 2VPP+VN+VPPy or VPP/VPPy

187. valid when Voltage measurement mode is 2VPP+VN or 2VPP+VN+VPPy

188. valid when Voltage measurement mode is 3VP, 3VP/VPy, 3VP/VPPy or 3VP+VN

189. valid when Voltage measurement mode is 2VPP+VN or 2VPP+VN+VPPy or 3VP+VN

190. valid when Voltage measurement mode is 2VPP+VN+VPPy or VPP/VPPy or 3VP/VPPy

191. valid when Voltage measurement mode is 3VP/VPy

192. Unit of this value is mathc with RTD unit configured value.

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|----------------------|---------|--------------------|--------|--------|--------|--------|--------|
| 0x5626 | 22055 | Temperature 5 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5627 | 22056 | Temperature 6 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5628 | 22057 | Temperature 7 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5629 | 22058 | Temperature 8 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x562A | 22059 | Temperature 9 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x562B | 22060 | Temperature 10 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x562C | 22061 | Temperature 11 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x562D | 22062 | Temperature 12 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x562E | 22063 | Temperature 13 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x562F | 22064 | Temperature 14 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5630 | 22065 | Temperature 15 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| 0x5631 | 22066 | Temperature 16 | 1 | 0 | Int16 | Value ¹⁹³ | °C / °F | ■ | ■ | | ■ | ■ | |
| unused | 22067...22088 | unused | | | | | | | | | | | |
| 0x5648 | 22089...22090 | VAB rms min | 1 | 1 | float32 | Value ¹⁹⁴ | V | ■ | | ■ | ■ | ■ | |
| 0x564A | 22091...22092 | VBC rms min | 1 | 1 | float32 | Value ¹⁹⁵ | V | ■ | | ■ | ■ | ■ | |
| 0x564C | 22093...22094 | VAB _y rms min | 1 | 1 | float32 | Value ¹⁹⁶ | V | ■ | | ■ | ■ | ■ | |
| 0x564E | 22095...22096 | VAB rms max | 1 | 1 | float32 | Value ¹⁹⁴ | V | ■ | | ■ | ■ | ■ | |
| 0x5650 | 22097...22098 | VBC rms max | 1 | 1 | float32 | Value ¹⁹⁵ | V | ■ | | ■ | ■ | ■ | |
| 0x5652 | 22099...22100 | VAB _y rms max | 1 | 1 | float32 | Value ¹⁹⁶ | V | ■ | | ■ | ■ | ■ | |
| 0x5654 | 22101...22102 | VA rms min | 1 | 1 | float32 | Value ¹⁹⁷ | V | ■ | | ■ | ■ | ■ | |
| 0x5656 | 22103...22104 | VB rms min | 1 | 1 | float32 | Value ¹⁹⁷ | V | ■ | | ■ | ■ | ■ | |
| 0x5658 | 22105...22106 | VC rms min | 1 | 1 | float32 | Value ¹⁹⁷ | V | ■ | | ■ | ■ | ■ | |
| 0x565A | 22107...22108 | VA rms max | 1 | 1 | float32 | Value ¹⁹⁷ | V | ■ | | ■ | ■ | ■ | |
| 0x565C | 22109...22110 | VB rms max | 1 | 1 | float32 | Value ¹⁹⁷ | V | ■ | | ■ | ■ | ■ | |

193. Unit of this value is mathc with RTD unit configured value.

194. valid when Voltage measurement mode is 2VPP+VN, 2VPP+VN+VPPy or VPP/VPPy

195. valid when Voltage measurement mode is 2VPP+VN or 2VPP+VN+VPPy

196. valid when Voltage measurement mode is VPP/VPPy or 2VPP+VN+VPPy

197. valid when Voltage measurement mode is 3VP, 3VP/VPy, 3VP/VPPy or 3VP+VN

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------------|------|-------|-----------|----------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x565E | 22111.- ..22112 | VC rms max | 1 | 1 | float32 | Value ¹⁹⁸ | V | ■ | | ■ | ■ | ■ | |
| 0x5660 | 22113.- ..22114 | VAB min | 1 | 1 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x5662 | 22115.- ..22116 | VBC min | 1 | 1 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x5664 | 22117.- ..22118 | VCA min | 1 | 1 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x5666 | 22119.- ..22120 | VAB max | 1 | 1 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x5668 | 22121.- ..22122 | VBC max | 1 | 1 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x566A | 22123.- ..22124 | VCA max | 1 | 1 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x566C | 22125.- ..22126 | IA min | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x566E | 22127.- ..22128 | IB min | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5670 | 22129.- ..22130 | IC min | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5672 | 22131.- ..22132 | IA max | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5674 | 22133.- ..22134 | IB max | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5676 | 22135.- ..22136 | IC max | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5678 | 22137.- ..22138 | IN.meas min | 1 | 1 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x567A | 22139.- ..22140 | IN.sens min | 1 | 1 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x567C | 22141.- ..22142 | IN.CSH min | 1 | 1 | float32 | | pu | ■ | ■ | | ■ | ■ | |
| 0x567E | 22143.- ..22144 | IN.meas max | 1 | 1 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x5680 | 22145.- ..22146 | IN.sens max | 1 | 1 | float32 | | % | ■ | ■ | | ■ | ■ | |
| 0x5682 | 22147.- ..22148 | IN.CSH max | 1 | 1 | float32 | | pu | ■ | ■ | | ■ | ■ | |
| 0x5684 | 22149.- ..22150 | Min power factor | 1 | 1 | float32 | | | ■ | | | ■ | ■ | |
| 0x5686 | 22151.- ..22152 | Max power factor | 1 | 1 | float32 | | | ■ | | | ■ | ■ | |
| 0x5688 | 22153.- ..22154 | Minimum frequency | 1 | 1 | float32 | | Hz | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x568A | 22155.- ..22156 | Maximum frequency | 1 | 1 | float32 | | Hz | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x568C | 22157.- ..22158 | Minimum active power | 1 | 1 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x568E | 22159.- ..22160 | Minimum react. power | 1 | 1 | float32 | | kVAr | ■ | | | ■ | ■ | |

198. valid when Voltage measurement mode is 3VP, 3VP/VPy, 3VP/PPy or 3VP+VN

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5690 | 22161.- ..22162 | Minimum apparent power | 1 | 1 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x5692 | 22163.- ..22164 | Maximum active power | 1 | 1 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x5694 | 22165.- ..22166 | Maximum react. power | 1 | 1 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x5696 | 22167.- ..22168 | Maximum apparent power | 1 | 1 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x5698 | 22169.- ..22170 | Min of IA IB IC | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | ■ |
| 0x569A | 22171.- ..22172 | Max of IA IB IC | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | ■ |
| 0x569C | 22173.- ..22174 | VPP min | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x569E | 22175.- ..22176 | VPP max | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x56A0 | 22177.- ..22178 | VPN min | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x56A2 | 22179.- ..22180 | VPN max | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x56A4 | 22181.- ..22182 | IA rms min | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56A6 | 22183.- ..22184 | IB rms min | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56A8 | 22185.- ..22186 | IC rms min | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56AA | 22187.- ..22188 | VN min | 1 | 1 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x56AC | 22189.- ..22190 | VN max | 1 | 1 | float32 | | % | ■ | | ■ | ■ | ■ | |
| 0x56AE | 22191.- ..22192 | IA rms max | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56B0 | 22193.- ..22194 | IB rms max | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56B2 | 22195.- ..22196 | IC rms max | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| unused | 22197... 22200 | unused | | | | | | | | | | | |
| 0x56B8 | 22201.- ..22202 | Demand minimum active power | 1 | 1 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x56BA | 22203.- ..22204 | Demand min. reactive power | 1 | 1 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x56BC | 22205.- ..22206 | Demand min. apparent power | 1 | 1 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x56BE | 22207.- ..22208 | Demand maximum | 1 | 1 | float32 | | kW | ■ | | | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| | | active power | | | | | | | | | | | |
| 0x56C0 | 22209.- ..22210 | Demand max. reactive power | 1 | 1 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x56C2 | 22211.- ..22212 | Demand max. apparent power | 1 | 1 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x56C4 | 22213.- ..22214 | VPN average | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x56C6 | 22215.- ..22216 | VPP average | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x56C8 | 22217.- ..22218 | IA demand | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56CA | 22219.- ..22220 | IB demand | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56CC | 22221.- ..22222 | IC demand | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56CE | 22223.- ..22224 | Power factor demand | 1 | 0 | float32 | | | ■ | | | ■ | ■ | |
| 0x56D0 | 22225.- ..22226 | Active power demand | 1 | 0 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x56D2 | 22227.- ..22228 | Reactive power demand | 1 | 0 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x56D4 | 22229.- ..22230 | Apparent power demand | 1 | 0 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x56D6 | 22231.- ..22232 | Avg rms voltage | 1 | 0 | float32 | | V | ■ | | ■ | ■ | ■ | |
| 0x56D8 | 22233.- ..22234 | Active power rms demand | 1 | 0 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x56DA | 22235.- ..22236 | Reactive power rms demand | 1 | 0 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x56DC | 22237.- ..22238 | Apparent power rms demand | 1 | 0 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x56DE | 22239.- ..22240 | Demand minimum power factor | 1 | 1 | float32 | | | ■ | | | ■ | ■ | |
| 0x56E0 | 22241.- ..22242 | RMS Demand min active power | 1 | 1 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x56E2 | 22243.- ..22244 | RMS demand min react. power | 1 | 1 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x56E4 | 22245.- ..22246 | RMS demand min. app. power | 1 | 1 | float32 | | kVA | ■ | | | ■ | ■ | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------------------|------|-------|-----------|--------------------------------------|------------------|--------------------|--------|--------|--------|--------|--------|
| 0x56E6 | 22247.- ..22248 | IA min demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56E8 | 22249.- ..22250 | IB min demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56EA | 22251.- ..22252 | IC min demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56EC | 22253.- ..22254 | IA rms min demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56EE | 22255.- ..22256 | IB rms min demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56F0 | 22257.- ..22258 | IC rms min demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56F2 | 22259.- ..22260 | Demand maximum power factor | 1 | 1 | float32 | | | ■ | | | ■ | ■ | |
| 0x56F4 | 22261.- ..22262 | RMS Demand max active power | 1 | 1 | float32 | | kW | ■ | | | ■ | ■ | |
| 0x56F6 | 22263.- ..22264 | RMS demand max react. power | 1 | 1 | float32 | | kVAr | ■ | | | ■ | ■ | |
| 0x56F8 | 22265.- ..22266 | RMS demand max. app. power | 1 | 1 | float32 | | kVA | ■ | | | ■ | ■ | |
| 0x56FA | 22267.- ..22268 | IA max demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56FC | 22269.- ..22270 | IB max demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x56FE | 22271.- ..22272 | IC max demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5700 | 22273.- ..22274 | IA rms max demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5702 | 22275.- ..22276 | IB rms max demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5704 | 22277.- ..22278 | IC rms max demand | 1 | 1 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5706 | 22279.- ..22280 | 3ph average current | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x5708 | 22281.- ..22282 | IA rms demand | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x570A | 22283.- ..22284 | IB rms demand | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| 0x570C | 22285.- ..22286 | IC rms demand | 1 | 0 | float32 | | A | ■ | ■ | | ■ | ■ | |
| unused | 22287... 22300 | unused | | | | | | | | | | | |
| 0x571C | 22301.- ..22302 | External AI1 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|--------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------|--------|--------|--------|--------|--------|
| | | | | | | | / mA / Ohm / A / V / kW / kVA / kvar | | | | | | |
| 0x571E | 22303.- ..22304 | External AI2 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5720 | 22305.- ..22306 | External AI3 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5722 | 22307.- ..22308 | External AI4 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5724 | 22309.- ..22310 | External AI5 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5726 | 22311.- ..22312 | External AI6 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5728 | 22313.- ..22314 | External AI7 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------------|----------------------------------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| | | | | | | | kW / kVA / kvar | | | | | | |
| 0x572A | 22315.- ..22316 | External AI8 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x572C | 22317.- ..22318 | External AI9 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x572E | 22319.- ..22320 | External AI10 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5730 | 22321.- ..22322 | External AI11 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5732 | 22323.- ..22324 | External AI12 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5734 | 22325.- ..22326 | External AI13 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| 0x5736 | 22327- ..22328 | External AI14 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5738 | 22329- ..22330 | External AI15 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x573A | 22331- ..22332 | External AI16 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x573C | 22333- ..22334 | External AI17 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x573E | 22335- ..22336 | External AI18 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5740 | 22337- ..22338 | External AI19 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5742 | 22339- ..22340 | External AI20 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| | | | | | | | Ohm / A / V / kW / kVA / kvar | | | | | | |
| 0x5744 | 22341.- ..22342 | External AI21 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5746 | 22343.- ..22344 | External AI22 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5748 | 22345.- ..22346 | External AI23 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x574A | 22347.- ..22348 | External AI24 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x574C | 22349.- ..22350 | External AI25 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x574E | 22351.- ..22352 | External AI26 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| | | | | | | | kVA / kvar | | | | | | |
| 0x5750 | 22353.- ..22354 | External AI27 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5752 | 22355.- ..22356 | External AI28 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5754 | 22357.- ..22358 | External AI29 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5756 | 22359.- ..22360 | External AI30 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5758 | 22361.- ..22362 | External AI31 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x575A | 22363.- ..22364 | External AI32 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| 0x575C | 22365.- ..22366 | External AI33 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x575E | 22367.- ..22368 | External AI34 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5760 | 22369.- ..22370 | External AI35 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5762 | 22371.- ..22372 | External AI36 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5764 | 22373.- ..22374 | External AI37 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5766 | 22375.- ..22376 | External AI38 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5768 | 22377.- ..22378 | External AI39 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| | | | | | | | Ohm / A / V / kW / kVA / kvar | | | | | | |
| 0x576A | 22379.- ..22380 | External AI40 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x576C | 22381.- ..22382 | External AI41 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x576E | 22383.- ..22384 | External AI42 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5770 | 22385.- ..22386 | External AI43 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5772 | 22387.- ..22388 | External AI44 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5774 | 22389.- ..22390 | External AI45 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| | | | | | | | kVA / kvar | | | | | | |
| 0x5776 | 22391.- ..22392 | External AI46 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5778 | 22393.- ..22394 | External AI47 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x577A | 22395.- ..22396 | External AI48 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x577C | 22397.- ..22398 | External AI49 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x577E | 22399.- ..22400 | External AI50 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5780 | 22401.- ..22402 | External AI51 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| 0x5782 | 22403.- ..22404 | External AI52 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5784 | 22405.- ..22406 | External AI53 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5786 | 22407.- ..22408 | External AI54 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5788 | 22409.- ..22410 | External AI55 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x578A | 22411.- ..22412 | External AI56 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x578C | 22413.- ..22414 | External AI57 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x578E | 22415.- ..22416 | External AI58 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------|------|-------|-----------|--------------------------------------|-------------------------------------------------------|--------------------|--------|--------|--------|--------|--------|
| | | | | | | | Ohm / A / V / kW / kVA / kvar | | | | | | |
| 0x5790 | 22417.- ..22418 | External AI59 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5792 | 22419.- ..22420 | External AI60 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5794 | 22421.- ..22422 | External AI61 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5796 | 22423.- ..22424 | External AI62 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5798 | 22425.- ..22426 | External AI63 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / kVA / kvar | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x579A | 22427.- ..22428 | External AI64 | 1 | 0 | float32 | set by user itself in modbus master. | °C / F / K / V/A / mA / Ohm / A / V / kW / | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------------|------|-------|-----------|-------|------------|--------------------|--------|--------|--------|--------|--------|
| | | | | | | | kVA / kvar | | | | | | |
| unused | 2242-9...22500 | unused | | | | | | | | | | | |
| 0x57E4 | 22501 | Open select object 1 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57E5 | 22502 | Close select object 1 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57E6 | 22503 | Execute operation Object1 | 0 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57E7 | 22504 | Open select object 2 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57E8 | 22505 | Close select object 2 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57E9 | 22506 | Execute operation Object2 | 0 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57EA | 22507 | Cancel selected operation | 0 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57EB | 22508 | Open select object 3 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57EC | 22509 | Close select object 3 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57ED | 22510 | Execute operation Object3 | 0 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57EE | 22511 | Open select object 4 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57EF | 22512 | Close select object 4 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F0 | 22513 | Execute operation Object4 | 0 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F1 | 22514 | Open select object 5 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F2 | 22515 | Close select object 5 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F3 | 22516 | Execute operation Object5 | 0 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F4 | 22517 | Open select object 6 | 1 | 1 | UInt16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------------------------|------|-------|-----------|-----------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x57F5 | 22518 | Close select object 6 | 1 | 1 | Uln-t16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F6 | 22519 | Execute operation Object6 | 0 | 1 | Uln-t16 | 0;1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F7 | 22520.- ..22521 | Max ctrl pulse length of Object1 | 1 | 1 | float32 | | s | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57F9 | 22522.- ..22523 | Max ctrl pulse length of Object2 | 1 | 1 | float32 | | s | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57FB | 22524.- ..22525 | Max ctrl pulse length of Object3 | 1 | 1 | float32 | | s | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57FD | 22526.- ..22527 | Max ctrl pulse length of Object4 | 1 | 1 | float32 | | s | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x57FF | 22528.- ..22529 | Max ctrl pulse length of Object5 | 1 | 1 | float32 | | s | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5801 | 22530.- ..22531 | Max ctrl pulse length of Object6 | 1 | 1 | float32 | | s | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5803 | 22532 | Timer 1 status | 1 | 1 | Enum | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5804 | 22533 | Timer 2 status | 1 | 1 | Enum | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5805 | 22534 | Timer 3 status | 1 | 1 | Enum | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5806 | 22535 | Timer 4 status | 1 | 1 | Enum | 0=1;1=2 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5807 | 22536 | Sync1 request | 1 | 0 | Uln-t16 | | | ■ | | ■ | ■ | | |
| 0x5808 | 22537 | Sync1 OK | 1 | 0 | Uln-t16 | | | ■ | | ■ | ■ | | |
| 0x5809 | 22538 | Bypass | 1 | 1 | Uln-t16 | 0;1 | | ■ | | ■ | ■ | | |
| 0x580A | 22539 | Sync1 fail | 1 | 0 | Uln-t16 | | | ■ | | ■ | ■ | | |
| unused | 22540... 22549 | unused | | | | | | | | | | | |
| 0x5815 | 22550 | Release LED latches | 1 | 1 | Bool | Release=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5816 | 22551 | Release latches | 1 | 1 | Bool | Release=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5817 | 22552 | Setting group | 1 | 1 | Enum | 1=0;2=1;3=2;4=3 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------------|------|-------|-----------|-----------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5818 | 22553 | Clear min/max/demand | 1 | 1 | Bool | Clear=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5819 | 22554 | Release all latches | 1 | 1 | Bool | Release=1 | | | | | ■ | ■ | ■ |
| 0x581A | 22555- ...22556 | Minimum global trip cmd time | 1 | 1 | float32 | | s | ■ | ■ | | ■ | ■ | |
| unused | 22557- ...22590 | unused | | | | | | | | | | | |
| 0x583E | 22591- ...22594 | RTC of Partner Data Model | 1 | 1 | Date-Time | | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 22595- ...22600 | unused | | | | | | | | | | | |
| 0x5848 | 22601- ...22602 | Engine running hours | 1 | 1 | Int32 | | h | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x584A | 22603- ...22604 | Engine running (in seconds) | 1 | 1 | Int32 | | s | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x584C | 22605 | Start counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 22606- ...22700 | unused | | | | | | | | | | | |
| 0x58AC | 22701 | DI1 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58AD | 22702 | DI2 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58AE | 22703 | DI3 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58AF | 22704 | DI4 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B0 | 22705 | DI5 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B1 | 22706 | DI6 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B2 | 22707 | DI7 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B3 | 22708 | DI8 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B4 | 22709 | DI9 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B5 | 22710 | DI10 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B6 | 22711 | DI11 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B7 | 22712 | DI12 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B8 | 22713 | DI13 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58B9 | 22714 | DI14 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------|------|-------|-----------|-------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x58BA | 22715 | DI15 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58BB | 22716 | DI16 counter | 1 | 1 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x58BC | 22717 | DI17 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58BD | 22718 | DI18 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58BE | 22719 | DI19 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58BF | 22720 | DI20 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C0 | 22721 | DI21 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C1 | 22722 | DI22 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C2 | 22723 | DI23 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C3 | 22724 | DI24 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C4 | 22725 | DI25 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C5 | 22726 | DI26 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C6 | 22727 | DI27 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C7 | 22728 | DI28 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C8 | 22729 | DI29 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58C9 | 22730 | DI30 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58CA | 22731 | DI31 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58CB | 22732 | DI32 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58CC | 22733 | DI33 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58CD | 22734 | DI34 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58CE | 22735 | DI35 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58CF | 22736 | DI36 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58D0 | 22737 | DI37 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58D1 | 22738 | DI38 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58D2 | 22739 | DI39 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58D3 | 22740 | DI40 counter | 1 | 1 | UInt16 | | | | | | ■ | ■ | ■ |
| 0x58D4 | 22741 | Shot1 start counter | 1 | 1 | UInt16 | | | ■ | ■ | | ■ | | |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------------------|------|-------|-----------|-----------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x58D5 | 22742 | Shot2 start counter | 1 | 1 | UInt16 | | | ■ | ■ | | ■ | | |
| 0x58D6 | 22743 | Shot3 start counter | 1 | 1 | UInt16 | | | ■ | ■ | | ■ | | |
| 0x58D7 | 22744 | Shot4 start counter | 1 | 1 | UInt16 | | | ■ | ■ | | ■ | | |
| 0x58D8 | 22745 | Shot5 start counter | 1 | 1 | UInt16 | | | ■ | ■ | | ■ | | |
| 0x58D9 | 22746 | AR start counter | 1 | 1 | UInt16 | | | ■ | ■ | | ■ | | |
| 0x58DA | 22747 | AR fail counter | 1 | 1 | UInt16 | | | ■ | ■ | | ■ | | |
| 0x58DB | 22748 | AR shot number | 1 | 0 | Enum | 1;2;3;4;5;END=6 | | ■ | ■ | | ■ | | |
| 0x58E1 | 22754 | Motor start counter | 1 | 1 | UInt16 | | | ■ | ■ | | | ■ | |
| 0x58E2 | 22755 | Cold starts in refer time | 1 | 0 | UInt16 | | | ■ | ■ | | | ■ | |
| 0x58E3 | 22756 | Hot starts in refer time | 1 | 0 | UInt16 | | | ■ | ■ | | | ■ | |
| unused | 2275-7... 22900 | unused | | | | | | | | | | | |
| 0x5974 | 22901.- ..22910 | Low limit (primary value) | 1 | 0 | float32 | | kA | ■ | ■ | | ■ | ■ | ■ |
| 0x597E | 22911.- ..22918 | High limit (xIn) | 1 | 0 | float32 | | xIn | ■ | ■ | | ■ | ■ | ■ |
| 0x5986 | 22919.- ..22920 | Cumul broken current IA1 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x5988 | 22921.- ..22922 | Cumul broken current IA2 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x598A | 22923.- ..22924 | Cumul broken current IA3 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x598C | 22925.- ..22926 | Cumul broken current IA4 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x598E | 22927.- ..22928 | Cumul broken current IA5 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x5990 | 22929.- ..22933 | Broken IA counter | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5995 | 22934.- ..22935 | Cumul broken current IB1 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|--------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5997 | 22936.- ..22937 | Cumul broken current IB2 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x5999 | 22938.- ..22939 | Cumul broken current IB3 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x599B | 22940.- ..22941 | Cumul broken current IB4 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x599D | 22942.- ..22943 | Cumul broken current IB5 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x599F | 22944.- ..22948 | Broken IB counter | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x59A4 | 22949.- ..22950 | Cumul broken current IC1 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x59A6 | 22951.- ..22952 | Cumul broken current IC2 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x59A8 | 22953.- ..22954 | Cumul broken current IC3 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x59AA | 22955.- ..22956 | Cumul broken current IC4 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x59AC | 22957.- ..22958 | Cumul broken current IC5 | 1 | 0 | float32 | | kA2 | ■ | ■ | | ■ | ■ | ■ |
| 0x59AE | 22959.- ..22963 | Broken IC counter | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x59B3 | 22964.- ..22965 | Cumulative broken IA | 1 | 0 | float32 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x59B5 | 22966.- ..22967 | Cumulative broken IB | 1 | 0 | float32 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x59B7 | 22968.- ..22969 | Cumulative broken IC | 1 | 0 | float32 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x59B9 | 22970 | CB open counter | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x59BA | 22971 | Protection trip counter | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x59BB | 22972 | Rack out counter | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|------------------------|-------------------------------|------|-------|-----------|----------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x59BC | 22973- ..23012 | CB opening time | 1 | 0 | UInt16 | Value ¹⁹⁹ | | ■ | ■ | | ■ | ■ | ■ |
| 0x59E4 | 23013- ..23052 | CB Closing time | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5A0C | 23053- ..23092 | Spring charging times | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5A34 | 23093- ..23095 | Alarm 1 | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5A37 | 23096- ..23098 | Alarm 2 | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| unused | 2309- 9... 23200 | unused | | | | | | | | | | | |
| 0x5AA0 | 23201 | Logging status | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5AA1 | 23202 | Waveform Counter | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| unused | 23203 | unused | | | | | | | | | | | |
| 0x5AA3 | 23204 | Record Size | 1 | 0 | UInt16 | 120 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5AA4 | 23205 | Record Management Method | 1 | 0 | Bool | FIFO=0 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5AA5 | 23206 | File Status | 1 | 0 | Bool | failed=0;ok=1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5AA6 | 23207 | WFC files currently available | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5AA7 | 23208 | First file Number | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5AA8 | 23209 | Oldest file Number | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5AA9 | 23210 | Latest file Number | 1 | 0 | UInt16 | | | ■ | ■ | | ■ | ■ | ■ |
| unused | 2321- 1... 23230 | unused | | | | | | | | | | | |
| 0x5ABE | 23231 | Advanced logic output 1 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ABF | 23232 | Advanced logic output 2 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC0 | 23233 | Advanced logic output 3 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC1 | 23234 | Advanced logic output 4 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

199. Modbus can remember 8 logs. Every log use 5 registers. Register structure is as below: register1: Op time register2&0xFF: year register3 & 0xFF: day register3 >> 8: month register4 & 0xFF: minutes register4 >> 8: hours register5: milliseconds

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|------------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x5AC2 | 23235 | Advanced logic output 5 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC3 | 23236 | Advanced logic output 6 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC4 | 23237 | Advanced logic output 7 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC5 | 23238 | Advanced logic output 8 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC6 | 23239 | Advanced logic output 9 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC7 | 23240 | Advanced logic output 10 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC8 | 23241 | Advanced logic output 11 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AC9 | 23242 | Advanced logic output 12 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ACA | 23243 | Advanced logic output 13 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ACB | 23244 | Advanced logic output 14 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ACC | 23245 | Advanced logic output 15 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ACD | 23246 | Advanced logic output 16 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ACE | 23247 | Advanced logic output 17 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ACF | 23248 | Advanced logic output 18 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD0 | 23249 | Advanced logic output 19 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD1 | 23250 | Advanced logic output 20 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD2 | 23251 | Advanced logic output 21 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD3 | 23252 | Advanced logic output 22 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD4 | 23253 | Advanced logic output 23 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|------------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x5AD5 | 23254 | Advanced logic output 24 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD6 | 23255 | Advanced logic output 25 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD7 | 23256 | Advanced logic output 26 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD8 | 23257 | Advanced logic output 27 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AD9 | 23258 | Advanced logic output 28 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ADA | 23259 | Advanced logic output 29 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ADB | 23260 | Advanced logic output 30 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ADC | 23261 | Advanced logic output 31 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ADD | 23262 | Advanced logic output 32 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ADE | 23263 | Advanced logic output 33 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5ADF | 23264 | Advanced logic output 34 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE0 | 23265 | Advanced logic output 35 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE1 | 23266 | Advanced logic output 36 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE2 | 23267 | Advanced logic output 37 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE3 | 23268 | Advanced logic output 38 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE4 | 23269 | Advanced logic output 39 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE5 | 23270 | Advanced logic output 40 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE6 | 23271 | Advanced logic output 41 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE7 | 23272 | Advanced logic output 42 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5AE8 | 23273 | Advanced logic output 43 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AE9 | 23274 | Advanced logic output 44 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AEA | 23275 | Advanced logic output 45 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AEB | 23276 | Advanced logic output 46 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AEC | 23277 | Advanced logic output 47 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AED | 23278 | Advanced logic output 48 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AEE | 23279 | Advanced logic output 49 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AEF | 23280 | Advanced logic output 50 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF0 | 23281 | Advanced logic output 51 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF1 | 23282 | Advanced logic output 52 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF2 | 23283 | Advanced logic output 53 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF3 | 23284 | Advanced logic output 54 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF4 | 23285 | Advanced logic output 55 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF5 | 23286 | Advanced logic output 56 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF6 | 23287 | Advanced logic output 57 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF7 | 23288 | Advanced logic output 58 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF8 | 23289 | Advanced logic output 59 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AF9 | 23290 | Advanced logic output 60 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AFA | 23291 | Advanced logic output 61 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5AFB | 23292 | Advanced logic output 62 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AFC | 23293 | Advanced logic output 63 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AFD | 23294 | Advanced logic output 64 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AFE | 23295 | Advanced logic output 65 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5AFF | 23296 | Advanced logic output 66 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B00 | 23297 | Advanced logic output 67 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B01 | 23298 | Advanced logic output 68 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B02 | 23299 | Advanced logic output 69 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B03 | 23300 | Advanced logic output 70 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B04 | 23301 | Advanced logic output 71 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B05 | 23302 | Advanced logic output 72 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B06 | 23303 | Advanced logic output 73 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B07 | 23304 | Advanced logic output 74 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B08 | 23305 | Advanced logic output 75 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B09 | 23306 | Advanced logic output 76 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B0A | 23307 | Advanced logic output 77 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B0B | 23308 | Advanced logic output 78 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B0C | 23309 | Advanced logic output 79 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B0D | 23310 | Advanced logic output 80 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------|------|-------|-----------|------------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x5B0E | 23311 | Advanced logic output 81 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B0F | 23312 | Advanced logic output 82 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B10 | 23313 | Advanced logic output 83 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B11 | 23314 | Advanced logic output 84 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B12 | 23315 | Advanced logic output 85 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B13 | 23316 | Advanced logic output 86 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B14 | 23317 | Advanced logic output 87 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B15 | 23318 | Advanced logic output 88 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B16 | 23319 | Advanced logic output 89 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B17 | 23320 | Advanced logic output 90 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B18 | 23321 | Advanced logic output 91 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B19 | 23322 | Advanced logic output 92 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B1A | 23323 | Advanced logic output 93 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B1B | 23324 | Advanced logic output 94 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B1C | 23325 | Advanced logic output 95 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B1D | 23326 | Advanced logic output 96 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B1E | 23327 | Advanced logic output 97 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B1F | 23328 | Advanced logic output 98 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B20 | 23329 | Advanced logic output 99 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|---------------------------|------|-------|-----------|------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5B21 | 23330 | Advanced logic output 100 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B22 | 23331 | Advanced logic output 101 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B23 | 23332 | Advanced logic output 102 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B24 | 23333 | Advanced logic output 103 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B25 | 23334 | Advanced logic output 104 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B26 | 23335 | Advanced logic output 105 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B27 | 23336 | Advanced logic output 106 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B28 | 23337 | Advanced logic output 107 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B29 | 23338 | Advanced logic output 108 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B2A | 23339 | Advanced logic output 109 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B2B | 23340 | Advanced logic output 110 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B2C | 23341 | Advanced logic output 111 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B2D | 23342 | Advanced logic output 112 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B2E | 23343 | Advanced logic output 113 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B2F | 23344 | Advanced logic output 114 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B30 | 23345 | Advanced logic output 115 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B31 | 23346 | Advanced logic output 116 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B32 | 23347 | Advanced logic output 117 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B33 | 23348 | Advanced logic output 118 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------------|------|-------|-----------|------------|------|--------------------|--------|--------|--------|--------|--------|
| 0x5B34 | 23349 | Advanced logic output 119 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B35 | 23350 | Advanced logic output 120 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B36 | 23351 | Advanced logic output 121 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B37 | 23352 | Advanced logic output 122 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B38 | 23353 | Advanced logic output 123 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B39 | 23354 | Advanced logic output 124 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B3A | 23355 | Advanced logic output 125 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B3B | 23356 | Advanced logic output 126 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B3C | 23357 | Advanced logic output 127 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x5B3D | 23358 | Advanced logic output 128 | 1 | 0 | Bool | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 2335-9...23400 | unused | | | | | | | | | | | |
| 0x5B68 | 23401 | Event Log Version | 1 | 0 | Uln-t16 | 1 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5B69 | 23402 | Event Buffer Size | 1 | 0 | Uln-t16 | 100 | | ■ | ■ | | ■ | ■ | ■ |
| 0x5B6A | 23403 | Actual Number Of Event | 1 | 0 | Uln-t16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5B6B | 23404 | Most Recent Event Entry Number | 1 | 0 | Uln-t16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5B6C | 23405 | Most Recent Event Postion | 1 | 0 | Uln-t16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5B6D | 23406 | Oldest Event Postion | 1 | 0 | Uln-t16 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x5B6E | 23407-...24606 | Events | 1 | 0 | Uln-t16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6144 | 24901-...24902 | Fault rec. IA | 1 | 0 | floa-t32 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x6146 | 24903-...24904 | Fault rec. IB | 1 | 0 | floa-t32 | | | ■ | ■ | | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6148 | 24905.- ..24906 | Fault rec. IC | 1 | 0 | float32 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x614A | 24907.- ..24908 | Fault rec. VA | 1 | 0 | float32 | | | ■ | | ■ | ■ | ■ | |
| 0x614C | 24909.- ..24910 | Fault rec. VB | 1 | 0 | float32 | | | ■ | | ■ | ■ | ■ | |
| 0x614E | 24911.- ..24912 | Fault rec. VC | 1 | 0 | float32 | | | ■ | | ■ | ■ | ■ | |
| 0x6150 | 24913.- ..24914 | Fault rec. IN | 1 | 0 | float32 | | | ■ | ■ | | ■ | ■ | ■ |
| 0x6152 | 24915.- ..24916 | Fault rec. freq | 1 | 0 | float32 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6154 | 24917.- ..24920 | Fault rec. time | 1 | 0 | Date-Time | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6158 | 24921.- ..24922 | Fault rec. VN | 1 | 0 | float32 | | | ■ | | ■ | ■ | ■ | |
| 0x615A | 24923.- ..24924 | Clearing time | 1 | 0 | float32 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 24925... 25000 | unused | | | | | | | | | | | |
| 0x61A8 | 25001.- ..25016 | Label(DI1) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x61B8 | 25017.- ..25032 | Label(DI2) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x61C8 | 25033.- ..25048 | Label(DI3) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x61D8 | 25049.- ..25064 | Label(DI4) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x61E8 | 25065.- ..25080 | Label(DI5) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x61F8 | 25081.- ..25096 | Label(DI6) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6208 | 25097.- ..25112 | Label(DI7) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6218 | 25113.- ..25128 | Label(DI8) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6228 | 25129.- ..25144 | Label(DI9) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6238 | 25145.- ..25160 | Label (DI10) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6248 | 25161.- ..25176 | Label (DI11) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6258 | 25177.- ..25192 | Label (DI12) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6268 | 25193.- ..25208 | Label (DI13) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6278 | 25209.- ..25224 | Label (DI14) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6288 | 25225.- ..25240 | Label (DI15) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6298 | 25241.- ..25256 | Label (DI16) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------|------|-------|-----------|-------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x62A8 | 25257.- ..25272 | Label (DI17) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x62B8 | 25273.- ..25288 | Label (DI18) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x62C8 | 25289.- ..25304 | Label (DI19) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x62D8 | 25305.- ..25320 | Label (DI20) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x62E8 | 25321.- ..25336 | Label (DI21) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x62F8 | 25337.- ..25352 | Label (DI22) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6308 | 25353.- ..25368 | Label (DI23) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6318 | 25369.- ..25384 | Label (DI24) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6328 | 25385.- ..25400 | Label (DI25) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6338 | 25401.- ..25416 | Label (DI26) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6348 | 25417.- ..25432 | Label (DI27) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6358 | 25433.- ..25448 | Label (DI28) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6368 | 25449.- ..25464 | Label (DI29) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6378 | 25465.- ..25480 | Label (DI30) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6388 | 25481.- ..25496 | Label (DI31) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6398 | 25497.- ..25512 | Label (DI32) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x63A8 | 25513.- ..25528 | Label (DI33) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x63B8 | 25529.- ..25544 | Label (DI34) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x63C8 | 25545.- ..25560 | Label (DI35) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x63D8 | 25561.- ..25576 | Label (DI36) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x63E8 | 25577.- ..25592 | Label (DI37) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x63F8 | 25593.- ..25608 | Label (DI38) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6408 | 25609.- ..25624 | Label (DI39) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6418 | 25625.- ..25640 | Label (DI40) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6428 | 25641.- ..25656 | Label (DO1(B)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6438 | 25657.- ..25672 | Label (DO2(B)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6448 | 25673.- ..25688 | Label (DO3(B)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6458 | 25689.- ..25704 | Label (DO4(B)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6468 | 25705.- ..25720 | Label (DO1(C)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6478 | 25721.- ..25736 | Label (DO2(C)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6488 | 25737.- ..25752 | Label (DO3(C)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6498 | 25753.- ..25768 | Label (DO4(C)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64A8 | 25769.- ..25784 | Label (DO1(D)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x64B8 | 25785.- ..25800 | Label (DO2(D)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x64C8 | 25801.- ..25816 | Label (DO3(D)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x64D8 | 25817.- ..25832 | Label (DO4(D)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x64E8 | 25833.- ..25848 | Label (DO1(E)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x64F8 | 25849.- ..25864 | Label (DO2(E)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6508 | 25865.- ..25880 | Label (DO3(E)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6518 | 25881.- ..25896 | Label (DO4(E)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6528 | 25897.- ..25912 | Label (DO5(C)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6538 | 25913.- ..25928 | Label (DO5(D)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| 0x6548 | 25929.- ..25944 | Label (DO5(E)) | 1 | 0 | string | | | | | | ■ | ■ | ■ |
| reserved | 25945.- ..26232 | reserved | | | | | | | | | | | |
| 0x6678 | 26233.- ..26248 | Label(VI1) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6688 | 26249.- ..26264 | Label(VI2) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6698 | 26265.- ..26280 | Label(VI3) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66A8 | 26281.- ..26296 | Label(VI4) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66B8 | 26297.- ..26312 | Label(VI5) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66C8 | 26313.- ..26328 | Label(VI6) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66D8 | 26329.- ..26344 | Label(VI7) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|--------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x66E8 | 26345.- ..26360 | Label(VI8) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66F8 | 26361.- ..26376 | Label(VI9) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6708 | 26377.- ..26392 | Label (VI10) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6718 | 26393.- ..26408 | Label (VI11) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6728 | 26409.- ..26424 | Label (VI12) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6738 | 26425.- ..26440 | Label (VI13) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6748 | 26441.- ..26456 | Label (VI14) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6758 | 26457.- ..26472 | Label (VI15) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6768 | 26473.- ..26488 | Label (VI16) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6778 | 26489.- ..26504 | Label (VI17) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6788 | 26505.- ..26520 | Label (VI18) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6798 | 26521.- ..26536 | Label (VI19) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x67A8 | 26537.- ..26552 | Label (VI20) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x67B8 | 26553.- ..26568 | Label (VO1) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x67C8 | 26569.- ..26584 | Label (VO2) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x67D8 | 26585.- ..26600 | Label (VO3) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x67E8 | 26601.- ..26616 | Label (VO4) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x67F8 | 26617.- ..26632 | Label (VO5) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6808 | 26633.- ..26648 | Label (VO6) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6818 | 26649.- ..26664 | Label (VO7) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6828 | 26665.- ..26680 | Label (VO8) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6838 | 26681.- ..26696 | Label (VO9) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6848 | 26697.- ..26712 | Label (VO10) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6858 | 26713.- ..26728 | Label (VO11) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6868 | 26729.- ..26744 | Label (VO12) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-----------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6878 | 26745.- ..26760 | Label (VO13) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6888 | 26761.- ..26776 | Label (VO14) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6898 | 26777.- ..26792 | Label (VO15) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68A8 | 26793.- ..26808 | Label (VO16) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68B8 | 26809.- ..26824 | Label (VO17) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68C8 | 26825.- ..26840 | Label (VO18) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68D8 | 26841.- ..26856 | Label (VO19) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68E8 | 26857.- ..26872 | Label (VO20) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68F8 | 26873.- ..26888 | Label (Logic1) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6908 | 26889.- ..26904 | Label (Logic2) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6918 | 26905.- ..26920 | Label (Logic3) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6928 | 26921.- ..26936 | Label (Logic4) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6938 | 26937.- ..26952 | Label (Logic5) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6948 | 26953.- ..26968 | Label (Logic6) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6958 | 26969.- ..26984 | Label (Logic7) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6968 | 26985.- ..27000 | Label (Logic8) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6978 | 27001.- ..27016 | Label (Logic9) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6988 | 27017.- ..27032 | Label (Logic10) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6998 | 27033.- ..27048 | Label (Logic11) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69A8 | 27049.- ..27064 | Label (Logic12) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69B8 | 27065.- ..27080 | Label (Logic13) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69C8 | 27081.- ..27096 | Label (Logic14) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69D8 | 27097.- ..27112 | Label (Logic15) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69E8 | 27113.- ..27128 | Label (Logic16) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69F8 | 27129.- ..27144 | Label (Logic17) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|--------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6A08 | 27145.- ..27160 | Label (Logic18) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A18 | 27161.- ..27176 | Label (Logic19) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A28 | 27177.- ..27192 | Label (Logic20) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A38 | 27193.- ..27208 | Label (logic1(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A48 | 27209.- ..27224 | Label (logic2(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A58 | 27225.- ..27240 | Label (logic3(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A68 | 27241.- ..27256 | Label (logic4(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A78 | 27257.- ..27272 | Label (logic5(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A88 | 27273.- ..27288 | Label (logic6(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6A98 | 27289.- ..27304 | Label (logic7(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6AA8 | 27305.- ..27320 | Label (logic8(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6AB8 | 27321.- ..27336 | Label (logic9(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6AC8 | 27337.- ..27352 | Label (logic10(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6AD8 | 27353.- ..27368 | Label (logic11(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6AE8 | 27369.- ..27384 | Label (logic12(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6AF8 | 27385.- ..27400 | Label (logic13(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B08 | 27401.- ..27416 | Label (logic14(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B18 | 27417.- ..27432 | Label (logic15(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B28 | 27433.- ..27448 | Label (logic16(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B38 | 27449.- ..27464 | Label (logic17(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B48 | 27465.- ..27480 | Label (logic18(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B58 | 27481.- ..27496 | Label (logic19(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B68 | 27497.- ..27512 | Label (logic20(t)) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B78 | 27513.- ..27528 | Label (Object1) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6B88 | 27529.- ..27544 | Label (Object2) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6B98 | 27545.- ..27560 | Label (Object3) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6BA8 | 27561.- ..27576 | Label (Object4) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6BB8 | 27577.- ..27592 | Label (Object5) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6BC8 | 27593.- ..27608 | Label (Object6) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6BD8 | 27609.- ..27624 | Label (Object7) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6BE8 | 27625.- ..27640 | Label (Object8) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6BF8 | 27641.- ..27656 | Label (AdvLogic-Out1) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C08 | 27657.- ..27672 | Label (AdvLogic-Out2) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C18 | 27673.- ..27688 | Label (AdvLogic-Out3) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C28 | 27689.- ..27704 | Label (AdvLogic-Out4) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C38 | 27705.- ..27720 | Label (AdvLogic-Out5) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C48 | 27721.- ..27736 | Label (AdvLogic-Out6) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C58 | 27737.- ..27752 | Label (AdvLogic-Out7) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C68 | 27753.- ..27768 | Label (AdvLogic-Out8) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C78 | 27769.- ..27784 | Label (AdvLogic-Out9) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C88 | 27785.- ..27800 | Label (AdvLogic-Out10) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6C98 | 27801.- ..27816 | Label (AdvLogic-Out11) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6CA8 | 27817.- ..27832 | Label (AdvLogic-Out12) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6CB8 | 27833.- ..27848 | Label (AdvLogic-Out13) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6CC8 | 27849.- ..27864 | Label (AdvLogic-Out14) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6CD8 | 27865.- ..27880 | Label (AdvLogic-Out15) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6CE8 | 27881.- ..27896 | Label (AdvLogic-Out16) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6CF8 | 27897.- ..27912 | Label (AdvLogic-Out17) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D08 | 27913.- ..27928 | Label (AdvLogic-Out18) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D18 | 27929.- ..27944 | Label (AdvLogic-Out19) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D28 | 27945.- ..27960 | Label (AdvLogic-Out20) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D38 | 27961.- ..27976 | Label (AdvLogic-Out21) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D48 | 27977.- ..27992 | Label (AdvLogic-Out22) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D58 | 27993.- ..28008 | Label (AdvLogic-Out23) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D68 | 28009.- ..28024 | Label (AdvLogic-Out24) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D78 | 28025.- ..28040 | Label (AdvLogic-Out25) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D88 | 28041.- ..28056 | Label (AdvLogic-Out26) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6D98 | 28057.- ..28072 | Label (AdvLogic-Out27) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6DA8 | 28073.- ..28088 | Label (AdvLogic-Out28) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6DB8 | 28089.- ..28104 | Label (AdvLogic-Out29) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6DC8 | 28105.- ..28120 | Label (AdvLogic-Out30) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6DD8 | 28121.- ..28136 | Label (AdvLogic-Out31) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6DE8 | 28137.- ..28152 | Label (AdvLogic-Out32) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6DF8 | 28153.- ..28168 | Label (AdvLogic-Out33) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6E08 | 28169.- ..28184 | Label (AdvLogic-Out34) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E18 | 28185.- ..28200 | Label (AdvLogic-Out35) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E28 | 28201.- ..28216 | Label (AdvLogic-Out36) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E38 | 28217.- ..28232 | Label (AdvLogic-Out37) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E48 | 28233.- ..28248 | Label (AdvLogic-Out38) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E58 | 28249.- ..28264 | Label (AdvLogic-Out39) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E68 | 28265.- ..28280 | Label (AdvLogic-Out40) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E78 | 28281.- ..28296 | Label (AdvLogic-Out41) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E88 | 28297.- ..28312 | Label (AdvLogic-Out42) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6E98 | 28313.- ..28328 | Label (AdvLogic-Out43) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6EA8 | 28329.- ..28344 | Label (AdvLogic-Out44) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6EB8 | 28345.- ..28360 | Label (AdvLogic-Out45) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6EC8 | 28361.- ..28376 | Label (AdvLogic-Out46) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6ED8 | 28377.- ..28392 | Label (AdvLogic-Out47) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6EE8 | 28393.- ..28408 | Label (AdvLogic-Out48) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6EF8 | 28409.- ..28424 | Label (AdvLogic-Out49) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F08 | 28425.- ..28440 | Label (AdvLogic-Out50) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F18 | 28441.- ..28456 | Label (AdvLogic-Out51) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F28 | 28457.- ..28472 | Label (AdvLogic-Out52) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x6F38 | 28473.- ..28488 | Label (AdvLogic-Out53) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F48 | 28489.- ..28504 | Label (AdvLogic-Out54) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F58 | 28505.- ..28520 | Label (AdvLogic-Out55) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F68 | 28521.- ..28536 | Label (AdvLogic-Out56) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F78 | 28537.- ..28552 | Label (AdvLogic-Out57) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F88 | 28553.- ..28568 | Label (AdvLogic-Out58) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6F98 | 28569.- ..28584 | Label (AdvLogic-Out59) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6FA8 | 28585.- ..28600 | Label (AdvLogic-Out60) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6FB8 | 28601.- ..28616 | Label (AdvLogic-Out61) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6FC8 | 28617.- ..28632 | Label (AdvLogic-Out62) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6FD8 | 28633.- ..28648 | Label (AdvLogic-Out63) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6FE8 | 28649.- ..28664 | Label (AdvLogic-Out64) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6FF8 | 28665.- ..28680 | Label (AdvLogic-Out65) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7008 | 28681.- ..28696 | Label (AdvLogic-Out66) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7018 | 28697.- ..28712 | Label (AdvLogic-Out67) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7028 | 28713.- ..28728 | Label (AdvLogic-Out68) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7038 | 28729.- ..28744 | Label (AdvLogic-Out69) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7048 | 28745.- ..28760 | Label (AdvLogic-Out70) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7058 | 28761.- ..28776 | Label (AdvLogic-Out71) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|------------------|-------------------------------|------|-------|-----------|-------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x7068 | 28777.. 28792 | Label (AdvLogic- Out72) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7078 | 28793.. 28808 | Label (AdvLogic- Out73) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7088 | 28809.. 28824 | Label (AdvLogic- Out74) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7098 | 28825.. 28840 | Label (AdvLogic- Out75) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x70A8 | 28841.. 28856 | Label (AdvLogic- Out76) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x70B8 | 28857.. 28872 | Label (AdvLogic- Out77) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x70C8 | 28873.. 28888 | Label (AdvLogic- Out78) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x70D8 | 28889.. 28904 | Label (AdvLogic- Out79) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x70E8 | 28905.. 28920 | Label (AdvLogic- Out80) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x70F8 | 28921.. 28936 | Label (AdvLogic- Out81) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7108 | 28937.. 28952 | Label (AdvLogic- Out82) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7118 | 28953.. 28968 | Label (AdvLogic- Out83) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7128 | 28969.. 28984 | Label (AdvLogic- Out84) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7138 | 28985.. 29000 | Label (AdvLogic- Out85) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7148 | 29001.. 29016 | Label (AdvLogic- Out86) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7158 | 29017.. 29032 | Label (AdvLogic- Out87) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7168 | 29033.. 29048 | Label (AdvLogic- Out88) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7178 | 29049.. 29064 | Label (AdvLogic- Out89) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7188 | 29065.. 29080 | Label (AdvLogic- Out90) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x7198 | 29081.- ..29096 | Label (AdvLogic-Out91) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71A8 | 29097.- ..29112 | Label (AdvLogic-Out92) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71B8 | 29113.- ..29128 | Label (AdvLogic-Out93) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71C8 | 29129.- ..29144 | Label (AdvLogic-Out94) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71D8 | 29145.- ..29160 | Label (AdvLogic-Out95) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71E8 | 29161.- ..29176 | Label (AdvLogic-Out96) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71F8 | 29177.- ..29192 | Label (AdvLogic-Out97) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7208 | 29193.- ..29208 | Label (AdvLogic-Out98) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7218 | 29209.- ..29224 | Label (AdvLogic-Out99) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7228 | 29225.- ..29240 | Label (AdvLogic-Out100) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7238 | 29241.- ..29256 | Label (AdvLogic-Out101) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7248 | 29257.- ..29272 | Label (AdvLogic-Out102) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7258 | 29273.- ..29288 | Label (AdvLogic-Out103) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7268 | 29289.- ..29304 | Label (AdvLogic-Out104) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7278 | 29305.- ..29320 | Label (AdvLogic-Out105) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7288 | 29321.- ..29336 | Label (AdvLogic-Out106) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7298 | 29337.- ..29352 | Label (AdvLogic-Out107) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x72A8 | 29353.- ..29368 | Label (AdvLogic-Out108) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x72B8 | 29369.- ..29384 | Label (AdvLogic-Out109) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|------------------|--------------------------------|------|-------|-----------|-------|------|--------------------------|--------|--------|--------|--------|--------|
| 0x72C8 | 29385.. 29400 | Label (AdvLogic- Out110) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x72D8 | 29401.. 29416 | Label (AdvLogic- Out111) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x72E8 | 29417.. 29432 | Label (AdvLogic- Out112) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x72F8 | 29433.. 29448 | Label (AdvLogic- Out113) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7308 | 29449.. 29464 | Label (AdvLogic- Out114) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7318 | 29465.. 29480 | Label (AdvLogic- Out115) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7328 | 29481.. 29496 | Label (AdvLogic- Out116) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7338 | 29497.. 29512 | Label (AdvLogic- Out117) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7348 | 29513.. 29528 | Label (AdvLogic- Out118) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7358 | 29529.. 29544 | Label (AdvLogic- Out119) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7368 | 29545.. 29560 | Label (AdvLogic- Out120) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7378 | 29561.. 29576 | Label (AdvLogic- Out121) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7388 | 29577.. 29592 | Label (AdvLogic- Out122) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7398 | 29593.. 29608 | Label (AdvLogic- Out123) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73A8 | 29609.. 29624 | Label (AdvLogic- Out124) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73B8 | 29625.. 29640 | Label (AdvLogic- Out125) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73C8 | 29641.. 29656 | Label (AdvLogic- Out126) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73D8 | 29657.. 29672 | Label (AdvLogic- Out127) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73E8 | 29673.. 29688 | Label (AdvLogic- Out128) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|--------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x73F8 | 29689.- ..29704 | Label (VI21) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7408 | 29705.- ..29720 | Label (VI22) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7418 | 29721.- ..29736 | Label (VI23) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7428 | 29737.- ..29752 | Label (VI24) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7438 | 29753.- ..29768 | Label (VI25) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7448 | 29769.- ..29784 | Label (VI26) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7458 | 29785.- ..29800 | Label (VI27) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7468 | 29801.- ..29816 | Label (VI28) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7478 | 29817.- ..29832 | Label (VI29) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7488 | 29833.- ..29848 | Label (VI30) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7498 | 29849.- ..29864 | Label (VI31) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x74A8 | 29865.- ..29880 | Label (VI32) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x74B8 | 29881.- ..29896 | Label (VI33) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x74C8 | 29897.- ..29912 | Label (VI34) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x74D8 | 29913.- ..29928 | Label (VI35) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x74E8 | 29929.- ..29944 | Label (VI36) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x74F8 | 29945.- ..29960 | Label (VI37) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7508 | 29961.- ..29976 | Label (VI38) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7518 | 29977.- ..29992 | Label (VI39) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7528 | 29993.- ..30008 | Label (VI40) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7538 | 30009.- ..30024 | Label (VI41) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7548 | 30025.- ..30040 | Label (VI42) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7558 | 30041.- ..30056 | Label (VI43) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7568 | 30057.- ..30072 | Label (VI44) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7578 | 30073.- ..30088 | Label (VI45) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x7588 | 30089.- ..30104 | Label (VI46) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x7598 | 30105.- ..30120 | Label (VI47) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x75A8 | 30121.- ..30136 | Label (VI48) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x75B8 | 30137.- ..30152 | Label (VI49) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x75C8 | 30153.- ..30168 | Label (VI50) | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 30169... 35000 | unused | | | | | | | | | | | |
| 0x88B8 | 35001.- ..35002 | Phase current IA-1 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88BA | 35003.- ..35004 | Phase current IB-1 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88BC | 35005.- ..35006 | Phase current IC-1 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88BE | 35007.- ..35008 | Phase current IA-2 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88C0 | 35009.- ..35010 | Phase current IB-2 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88C2 | 35011.- ..35012 | Phase current IC-2 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88C4 | 35013.- ..35014 | IN-1.meas | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88C6 | 35015.- ..35016 | IN-1.calc | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88C8 | 35017.- ..35018 | Voltage V | 1 | 0 | float32 | | V | | | | | | ■ |
| 0x88CA | 35019.- ..35020 | IN-2.meas | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88CC | 35021.- ..35022 | IN-2.calc | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88CE | 35023.- ..35024 | Phase current IA-1 THD | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x88D0 | 35025.- ..35026 | Phase current IB-1 THD | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x88D2 | 35027.- ..35028 | Phase current IC-1 THD | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x88D4 | 35029.- ..35030 | Phase current IA-2 THD | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x88D6 | 35031.- ..35032 | Phase current IB-2 THD | 1 | 0 | float32 | | % | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x88D8 | 35033.- ..35034 | Phase current IC-2 THD | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x88DA | 35035.- ..35036 | Voltage V THD | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x88DC | 35037.- ..35038 | Phase current IP-1 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88DE | 35039.- ..35040 | Phase current IA-1 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88E0 | 35041.- ..35042 | Phase current IB-1 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88E2 | 35043.- ..35044 | Phase current IC-1 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88E4 | 35045.- ..35046 | Phase current IP-2 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88E6 | 35047.- ..35048 | Phase current IA-2 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88E8 | 35049.- ..35050 | Phase current IB-2 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88EA | 35051.- ..35052 | Phase current IC-2 rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88EC | 35053.- ..35054 | Voltage V rms | 1 | 0 | float32 | | V | | | | | | ■ |
| 0x88EE | 35055.- ..35056 | IA-1 min | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88F0 | 35057.- ..35058 | IA-1 max | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88F2 | 35059.- ..35060 | IB-1 min | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88F4 | 35061.- ..35062 | IB-1 max | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88F6 | 35063.- ..35064 | IC-1 min | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88F8 | 35065.- ..35066 | IC-1 max | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88FA | 35067.- ..35068 | IA-2 min | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88FC | 35069.- ..35070 | IA-2 max | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x88FE | 35071.- ..35072 | IB-2 min | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8900 | 35073.- ..35074 | IB-2 max | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8902 | 35075.- ..35076 | IC-2 min | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8904 | 35077.- ..35078 | IC-2 max | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8906 | 35079.- ..35080 | IA-1 min rms | 1 | 0 | float32 | | A | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|-------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x8908 | 35081.- ..35082 | IA-1 max rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x890A | 35083.- ..35084 | IB-1 min rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x890C | 35085.- ..35086 | IB-1 max rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x890E | 35087.- ..35088 | IC-1 min rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8910 | 35089.- ..35090 | IC-1 max rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8912 | 35091.- ..35092 | IA-2 min rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8914 | 35093.- ..35094 | IA-2 max rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8916 | 35095.- ..35096 | IB-2 min rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8918 | 35097.- ..35098 | IB-2 max rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x891A | 35099.- ..35100 | IC-2 min rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x891C | 35101.- ..35102 | IC-2 max rms | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x891E | 35103.- ..35104 | IN-1.meas min | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8920 | 35105.- ..35106 | IN-1.meas max | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8922 | 35107.- ..35108 | IN-2.meas min | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8924 | 35109.- ..35110 | IN-2.meas max | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8926 | 35111.- ..35112 | Voltage V min | 1 | 0 | float32 | | V | | | | | | ■ |
| 0x8928 | 35113.- ..35114 | Voltage V max | 1 | 0 | float32 | | V | | | | | | ■ |
| 0x892A | 35115.- ..35116 | Voltage V rms min | 1 | 0 | float32 | | V | | | | | | ■ |
| 0x892C | 35117.- ..35118 | Voltage V rms max | 1 | 0 | float32 | | V | | | | | | ■ |
| 0x892E | 35119.- ..35120 | IA-1 demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8930 | 35121.- ..35122 | IA-1 max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8932 | 35123.- ..35124 | IA-1 min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8934 | 35125.- ..35126 | IB-1 demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8936 | 35127.- ..35128 | IB-1 max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8938 | 35129.- ..35130 | IB-1 min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x893A | 35131.- ..35132 | IC-1 demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x893C | 35133.- ..35134 | IC-1 max demand | 1 | 0 | float32 | | A | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x893E | 35135.- ..35136 | IC-1 min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8940 | 35137.- ..35138 | IA-2 demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8942 | 35139.- ..35140 | IA-2 max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8944 | 35141.- ..35142 | IA-2 min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8946 | 35143.- ..35144 | IB-2 demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8948 | 35145.- ..35146 | IB-2 max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x894A | 35147.- ..35148 | IB-2 min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x894C | 35149.- ..35150 | IC-2 demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x894E | 35151.- ..35152 | IC-2 max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8950 | 35153.- ..35154 | IC-2 min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8952 | 35155.- ..35156 | IA-1 rms demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8954 | 35157.- ..35158 | IA-1 rms max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8956 | 35159.- ..35160 | IA-1 rms min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8958 | 35161.- ..35162 | IB-1 rms demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x895A | 35163.- ..35164 | IB-1 rms max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x895C | 35165.- ..35166 | IB-1 rms min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x895E | 35167.- ..35168 | IC-1 rms demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8960 | 35169.- ..35170 | IC-1 rms max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8962 | 35171.- ..35172 | IC-1 rms min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8964 | 35173.- ..35174 | IA-2 rms demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8966 | 35175.- ..35176 | IA-2 rms max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8968 | 35177.- ..35178 | IA-2 rms min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x896A | 35179.- ..35180 | IB-2 rms demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x896C | 35181.- ..35182 | IB-2 rms max demand | 1 | 0 | float32 | | A | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|--------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0x896E | 35183.- ..35184 | IB-2 rms min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8970 | 35185.- ..35186 | IC-2 rms demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8972 | 35187.- ..35188 | IC-2 rms max demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8974 | 35189.- ..35190 | IC-2 rms min demand | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8976 | 35191.- ..35192 | CT-1 average current | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8978 | 35193.- ..35194 | CT-2 average current | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x897A | 35195.- ..35196 | Phase current IP-1 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x897C | 35197.- ..35198 | Phase current IP-2 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x897E | 35199.- ..35200 | Positive sequence I1-1 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8980 | 35201.- ..35202 | Negative sequence I2-1 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8982 | 35203.- ..35204 | Current ratio I2-1/ I1-1 | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8984 | 35205 | CT-1 phase sequence | 1 | 0 | Enum | | | | | | | | ■ |
| 0x8985 | 35206.- ..35207 | Positive sequence I1-2 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8987 | 35208.- ..35209 | Negative sequence I2-2 | 1 | 0 | float32 | | A | | | | | | ■ |
| 0x8989 | 35210.- ..35211 | Current ratio I2-2/ I1-2 | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x898B | 35212 | CT-2 phase sequence | 1 | 0 | Enum | | | | | | | | ■ |
| 0x8AAC | 35501.- ..35532 | Harmonics of IA-1 | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8ACC | 35533.- ..35564 | Harmonics of IB-1 | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8AEC | 35565.- ..35596 | Harmonics of IC-1 | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8B0C | 35597.- ..35628 | Harmonics of IA-2 | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8B2C | 35629.- ..35660 | Harmonics of IB-2 | 1 | 0 | float32 | | % | | | | | | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------------------------|------|-------|-----------|------------|-------|--------------------|--------|--------|--------|--------|--------|
| 0x8B4C | 35661.- ..35692 | Harmonics of IC-2 | 1 | 0 | float32 | | % | | | | | | ■ |
| 0x8B6C | 35693.- ..35724 | Harmonics of voltage V | 1 | 0 | float32 | | % | | | | | | ■ |
| 0xC350 | 50001 | Environmental monitoring | 1 | 1 | UInt8 | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC351 | 50002 | Pollution level | 1 | 1 | UInt8 | PL=0;PH=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC352 | 50003 | Maintenance period | 1 | 1 | UInt8 | | month | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC353 | 50004.- ..50008 | Last maintenance date | 1 | 1 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC358 | 50009 | Humidity threshold | 1 | 1 | UInt8 | | % | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC359 | 50010 | Temperature threshold | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC382 | 50051 | Enable thermal monitoring | 1 | 1 | UInt8 | Off=0;On=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| unused | 50052.- ..50053 | unused | | | | | | | | | | | |
| 0xC385 | 50054 | Rated current of CB | 1 | 1 | UInt16 | | A | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC386 | 50055 | Rated current of cubicle | 1 | 1 | UInt16 | | A | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC387 | 50056 | Abs. temp. rise limit of busbar | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC388 | 50057 | Abs. temp. rise limit of CB | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC389 | 50058 | Abs. temp. rise limit of cable | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC38A | 50059 | Maximum ambient temperature | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC38B | 50060 | Temp. unbalance alarm level | 1 | 1 | UInt8 | | % | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC38C | 50061 | Relative temp. alarm level 1 | 1 | 1 | UInt8 | | % | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC38D | 50062 | Relative temp. alarm level 2 | 1 | 1 | UInt8 | | % | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|---------------------------------|------|-------|-----------|------------------------|------|--------------------|--------|--------|--------|--------|--------|
| 0xC38E | 50063 | Thermal time constant | 1 | 1 | UInt16 | | mn | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC38F | 50064 | Thermal monitoring mode | 1 | 1 | UInt8 | Standard=0; Advanced=1 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC390 | 50065 | Temp. unbalance limit of busbar | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC391 | 50066 | Temp. unbalance limit of CB | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC392 | 50067 | Temp. unbalance limit of cable | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC393 | 50068 | Rel. temp. rise limit of busbar | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC394 | 50069 | Rel. temp. rise limit of CB | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC395 | 50070 | Rel. temp. rise limit of cable | 1 | 1 | UInt8 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9C2 | 51651.- ..51652 | Ambient conditions temp | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9C4 | 51653.- ..51654 | Ambient conditions humidity | 1 | 0 | float32 | | % | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9C6 | 51655.- ..51656 | Cold point conditions | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9C8 | 51657 | Environmental monitoring status | 1 | 0 | Enum | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9C9 | 51658 | Severity degree | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9CA | 51659 | Aging pace factor | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9CB | 51660.- ..51664 | Next maintenance date | 1 | 0 | string | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9D0 | 51665.- ..51666 | Days at severity degree 0 | 1 | 1 | UInt32 | | days | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9D2 | 51667.- ..51668 | Days at severity degree 1 | 1 | 1 | UInt32 | | days | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9D4 | 51669.- ..51670 | Days at severity degree 2 | 1 | 1 | UInt32 | | days | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9D6 | 51671.- ..51672 | Days at severity degree 3 | 1 | 1 | UInt32 | | days | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|--------------------|----------------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0xC9D8 | 51673 | Environ alarm and event validity | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9D9 | 51674 | Environment alarm and event | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9EA | 51691 | Zigbee network status | 1 | 0 | Int16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9EB | 51692.- ..51693 | CB upper arm A | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9ED | 51694.- ..51695 | CB upper arm B | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9EF | 51696.- ..51697 | CB upper arm C | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9F1 | 51698.- ..51699 | CB upper arms discrepancy | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9F3 | 51700.- ..51701 | CB lower arm A | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9F5 | 51702.- ..51703 | CB lower arm B | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9F7 | 51704.- ..51705 | CB lower arm C | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9F9 | 51706.- ..51707 | CB lower arms discrepancy | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9FB | 51708.- ..51709 | Busbar 1 connection A | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9FD | 51710.- ..51711 | Busbar 1 connection B | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xC9FF | 51712.- ..51713 | Busbar 1 connection C | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA01 | 51714.- ..51715 | Busbar 1 discrepancy | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA03 | 51716.- ..51717 | Busbar 2 connection A | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA05 | 51718.- ..51719 | Busbar 2 connection B | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA07 | 51720.- ..51721 | Busbar 2 connection C | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA09 | 51722.- ..51723 | Busbar 2 discrepancy | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA0B | 51724.- ..51725 | Cable 1 connection A | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|------------------|--------------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0xCA0D | 51726.. 51727 | Cable 1 connection B | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA0F | 51728.. 51729 | Cable 1 connection C | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA11 | 51730.. 51731 | Cable 1 discrepancy | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA13 | 51732.. 51733 | Cable 2 connection A | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA15 | 51734.. 51735 | Cable 2 connection B | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA17 | 51736.. 51737 | Cable 2 connection C | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA19 | 51738.. 51739 | Cable 2 discrepancy | 1 | 0 | float32 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA1B | 51740 | Ambient sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA1C | 51741 | Coldpoint sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA1D | 51742 | CB upper arm A sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA1E | 51743 | CB upper arm B sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA1F | 51744 | CB upper arm C sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA20 | 51745 | CB lower arm A sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA21 | 51746 | CB lower arm B sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA22 | 51747 | CB lower arm C sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA23 | 51748 | Busbar 1 phase A sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA24 | 51749 | Busbar 1 phase B sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA25 | 51750 | Busbar 1 phase C | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|--------------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| | | sensor status | | | | | | | | | | | |
| 0xCA26 | 51751 | Busbar 2 phase A sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA27 | 51752 | Busbar 2 phase B sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA28 | 51753 | Busbar 2 phase C sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA29 | 51754 | Cable 1 phase A sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA2A | 51755 | Cable 1 phase B sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA2B | 51756 | Cable 1 phase C sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA2C | 51757 | Cable 2 phase A sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA2D | 51758 | Cable 2 phase B sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA2E | 51759 | Cable 2 phase C sensor status | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA2F | 51760 | Ambient sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA30 | 51761 | Coldpoint sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA31 | 51762 | CB upper arms A sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA32 | 51763 | CB upper arms B sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA33 | 51764 | CB upper arms C sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA34 | 51765 | CB lower arms A sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA35 | 51766 | CB lower arms B | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|-------------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| | | sensor RSII | | | | | | | | | | | |
| 0xCA36 | 51767 | CB lower arms C sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA37 | 51768 | Busbar 1 A sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA38 | 51769 | Busbar 1 B sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA39 | 51770 | Busbar 1 C sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA3A | 51771 | Busbar 2 A sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA3B | 51772 | Busbar 2 B sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA3C | 51773 | Busbar 2 C sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA3D | 51774 | Cable 1 A sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA3E | 51775 | Cable 1 B sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA3F | 51776 | Cable 1 C sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA40 | 51777 | Cable 2 A sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA41 | 51778 | Cable 2 B sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA42 | 51779 | Cable 2 C sensor RSII | 1 | 0 | Int16 | | dBm | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA43 | 51780 | Red alarm limit of CB | 1 | 0 | UInt16 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA44 | 51781 | Red alarm limit of busbar | 1 | 0 | UInt16 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA45 | 51782 | Red alarm limit of cable | 1 | 0 | UInt16 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA46 | 51783 | Orange alarm limit of CB | 1 | 0 | UInt16 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA47 | 51784 | Orange alarm limit of cable | 1 | 0 | UInt16 | | °C | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA48 | 51785 | CB temperature alarm validity | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |

Table 51 - Point list for PDM Modbus (Continued)

| First Register Address | Register Number | Description | Read | Write | Data type | Value | Unit | P5-U20 LPC-T LPV-T | P5-U20 | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|------------------------|-----------------|----------------------------------|------|-------|-----------|-------|------|--------------------|--------|--------|--------|--------|--------|
| 0xCA49 | 51786 | CB temperature alarm | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA4A | 51787 | CB temperature event validity | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA4B | 51788 | CB temperature event | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA4C | 51789 | Busbar temp. alarm validity | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA4D | 51790 | Busbar temperature alarm | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA4E | 51791 | Busbar temp. event validity | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA4F | 51792 | Busbar temperature event | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA50 | 51793 | Cable temperature alarm validity | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA51 | 51794 | Cable temperature alarm | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA52 | 51795 | Cable temperature event validity | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |
| 0xCA53 | 51796 | Cable temperature event | 1 | 0 | UInt16 | | | ■ | ■ | ■ | ■ | ■ | ■ |

Modbus master

External analog inputs and digital inputs or outputs can be added to the PowerLogic P5 protection relay via external Modbus I/O. This protocol is based on Modbus RTU master and RS-485 bus structure. User can configure and read external AI/DI/DO through eSetup Easergy Pro. User can also read these external AI/DI/DO through the HMI.

Function description

The PowerLogic P5 protection relay supports application functions include:

- Modbus master: analog inputs and alarms
- Modbus master: digital inputs
- Modbus master: digital outputs

- Modbus master: DO matrix
- Modbus master: names config

Main configuration parameters

The table below explains how to configure an PowerLogic P5 protection relay to use the Modbus master protocol. This is configured in the **COMMUNICATION** menu/**Modbus master main configuration** sub-menu of the eSetup Easergy Pro.

Table 52 - Modbus master main configuration parameters

| Parameter | Value | Description |
|---------------------------|--------------------------------------------------------------------------|------------------------------------------|
| External I/O speed transm | 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 | The communication speed, bits per second |
| Parity | None, Even, Odd | The type of parity bit used |

Modbus master analog inputs

Find the **Modbus master: analog inputs** and **Modbus master: analog input alarm** sub-menus in the **Communication** menu of eSetup Easergy Pro. Up to 64 points of External AI can be configured. All External AI can be read through HMI control / ExtAI.

Refer to the table below for the proper values to the parameters "AI Enabled", "AI Unit", "AI slave address", "AI Modbus address", "AI register type" and "AI signed".

Table 53 - Modbus master: analog inputs configuration parameters

| Parameter | Value | Description |
|-----------------------|----------------------------------------------------------------|-------------------------------------|
| AI Enabled | On, Off | Enable or disable this AI. |
| AI Unit | °C, F, K, V/A, mA, A, V, kW, kVA, kvar | Unit of this AI |
| AI slave address | 1-247 | Modbus slave address |
| AI Modbus address | 1-9999 | Modbus register address |
| AI register type | InputR, HoldingR | AI Modbus register type |
| AI signed | On, Off | Signed interger or Unsigned integer |
| AI offset | -32768 - 32767 | Offset of AI Meas |
| AI scale | 0.001-1000.000 | Scale of AI Meas |
| Alarm 1 pick-up value | float | Threshold for this AI alarm1 |
| Alarm 2 pick-up value | float | Threshold for this AI alarm2 |
| Alarm hysteresis | 0.0-10000.0 | Hysteresis for alarms |

Since holding registers are 16 bits in size, the external analog inputs menu give proper values to AI specific scaling. AI Meas is the product of the received value multiplied by the AI scale. The scaling is determined by the float value of AI scale. It is common to use scaling factors with base ten (0.100, 1.000, 10.000, 100.000...). In such cases, the original measurements only lose decimals and such values are easy to read and re-scale to actual values on the client side after transmission.

Modbus master digital inputs

Find the **Modbus master: digital inputs** sub-menu in the **Communication** menu of eSetup Easergy Pro. Up to 18 points of External DI can be configured. All External DI can be read through HMI control / ExtDI.

Refer to the table below for a more detailed explanation on the values that can be assigned to the parameters of this menu.

Table 54 - Modbus master: digital inputs configuration parameters

| Parameter | Value | Description |
|-------------------|------------------------------------------|---------------------------------------|
| DI Enabled | On, Off | Enable or disable this DI.60870-5-101 |
| DI slave address | 1-247 | Modbus slave address |
| DI Modbus address | 1-9999 | Modbus register/coil address |
| DI register type | InputR, HoldingR, CoilS, InputS | AI Modbus register type |
| DI selected bit | 1-16 | Select DI bit for DI state |

Modbus master digital outputs

Find the **Modbus master: digital outputs** sub-menu in the **Communication** menu of eSetup Easergy Pro. Up to 16 points of External DO can be configured. All External DO can be read through HMI control / ExtDO.

Refer to the table below for a more detailed explanation on the values that can be assigned to the parameters of this menu.

Table 55 - Modbus master: digital outputs configuration parameters

| Parameter | Value | Description |
|-------------------|------------|---------------------------|
| DO Enabled | On, Off | Enable or disable this DO |
| DO slave address | 1-247 | Modbus slave address |
| DO Modbus address | 1-9999 | Modbus coil address |

The **Modbus master: DO matrix** sub-menu in the **Communication** menu of eSetup Easergy Pro is used to link protection Events (e.g. I> start, External AI alarm/trip,) or External DI states to DO.

Measurements

The external AI can be obtained by mimic in the **General** menu/**Mimic** sub-menu of the eSetup Easergy Pro or the HMI. Six or eight measurements can be shown in the main display of the PowerLogic P5 protection relay with small LCD screen or large one, respectively.

Modbus master names configuration

The user can configure the labels and descriptions of Modbus master AI, DI and DO through eSetup Easergy Pro. Corresponding description in Mimic, Matrix and events log will be updated too.

EtherNet/IP

Presentation

The PowerLogic P5 protection relays support communication using EtherNet/IP protocol which is a part of Common Industrial Protocol (CIP) family. EtherNet/IP protocol is available with the optional inbuilt Ethernet port. The protocol can be used to read/write data from/to the PowerLogic P5 protection relays using request/response communication or via cyclic messages transporting data assigned to assemblies (data sets).

Messaging

EtherNet/IP supports two modes of messaging, unconnected and connected messaging.

- Unconnected messaging refers to peer-to-peer communication, where opening and closing of connections is allowed via unconnected messaging. This is handled by the UnConnected Message Manager (UCMM). Messages are sent over TCP/IP.
- Connected messaging, on the other hand, is dedicated to a particular purpose, such as frequent explicit message transactions or real-time I/O data transfers. Connection resources are reserved and configured using communication services available via the UCMM. Messages are sent over TCP/IP and User Datagram Protocol (UDP).

EtherNet/IP specifies a special encapsulation protocol to carry CIP messages over TCP/IP and UDP.

There are two types of connections, explicit and implicit.

- Explicit connections refer to request-response connections which are general purpose connections. Explicit connections use TCP/IP and use either unconnected messaging via UCMM (one-time request/response) or Class 3 connections (cyclic request /response).
- In implicit connections, only application data is contained within the messages. Implicit data may be polled, cyclic or Change of State (COS) messages. Implicit connections are either point-to-point (unicast) or one-to-many (multicast) connections. Implicit connections use UDP/IP.

Devices

There are two classes of devices in a CIP network, adapters and scanners.

- Adapters are targets of real-time I/O data connection. Adapters cannot send or receive real-time data unless requested to do so by a scanner device. Adapters can exchange data using explicit messages with any class of devices but cannot originate a connection.
- Scanners are originators of I/O data connection requests and originators or targets of explicit connection requests.

Objects

Objects in CIP (and thereby EtherNet/IP) are defined by:

- A description – a description of an object being specified.
- A class code (Class ID) – hexadecimal identifier assigned to each CIP object
- Attributes – data elements associated with the object.
- Common services – list of the common services defined for the object.
- Object-specific Services – the full specifications of any services unique to the object

- Connections – connections supported by the object.
- Behaviour – the relationship between attribute values and services.

The CIP also includes an Object Library, which is a set of standardised objects that covers protocol objects such as the Identity Object, Assembly Object, etc. as well as Application Objects. The Object Library covers basic automation blocks and some more complex devices, including Digital Input, Digital Output, etc.

Figure 2 - CIP object model

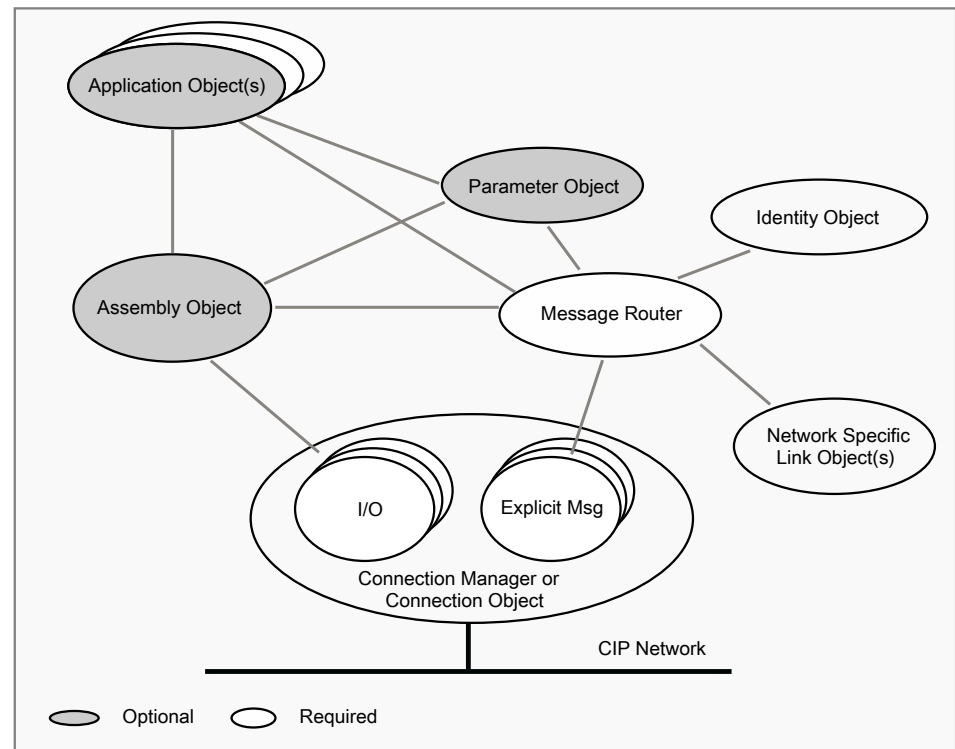


Table 56 - CIP object description

| Object | Description |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection object | The CIP Communication Object manages and provides the runtime exchange of messages. |
| Message router | The Message Router Object provides a messaging connection point through which a Client may address a service to any object class or instance residing in the physical device. It routes explicit messages over requested paths. |
| Assembly object | <p>The Assembly Object binds attributes of multiple objects, which in allows data to or from each of these objects to be sent or received over a single connection (like a data set).</p> <p>Assembly objects can be used to group input data (producing instance of an Assembly Object – information transmitted to the network) or output data (consuming instance of an Assembly Object – information received from the network).</p> <p>I/O connections are established between Assembly Object instances of the devices – between inputs and outputs.</p> <p>Assembly object instances are accessible via explicit messaging.</p> |
| Identity object | <p>Provides device identification and general information about the device, such as vendor identifier, product code, name, status, etc.</p> <p>The Identity Object shall be present in all CIP products.</p> |

Application Objects are based on the standard objects from the Object Library if possible, if not, vendors can define their own, private (vendor specific) Application Objects. CIP specifies the Class ID ranges for that purpose.

Table 57 - CIP Class ID ranges

| Range (hexadecimal) | Meaning | Quantity |
|---------------------|--------------------------------|----------|
| 0x00...0x63 | Open | 100 |
| 0x64...0xC7 | Vendor specific | 100 |
| 0xC8...0xEF | Reserved by CIP for future use | 40 |
| 0xF0...0x2FF | Open | 528 |
| 0x300...0x4FF | Vendor specific | 512 |
| 0x500...0xFFFF | Reserved by CIP for future use | 64256 |

Device profile

The series of application objects for PowerLogic P5 is known as the device profile. A large number of profiles for many device types have been defined. An example of a device profile is shown in [Objects and messaging](#), page 404.

EtherNet/IP main features

EtherNet/IP main features:

- Static data model:
 - Standard objects (Overload and Control Supervisor)
 - Private objects
 - Configuration objects for configuration of protection functions
- Two configurable assemblies (one producing and one consuming) with the maximum capacity of 128 bytes. Each configuration is described in an Electronic Data Sheet (EDS) file. Each EDS file that can be fed to any client supporting EDS files and can be generated at any time, all changes to EtherNet/IP configuration or to assemblies' content require generating of the new EDS file, see [Generating an EDS File with eSetup Easergy Pro](#), page 417.
- Three types of communications are supported:
 - UCMM (one time request / response)
 - Class 3 connection (cyclic request / response)
 - Class 1 connection (cyclic IO messages containing assemblies' data)

Function description

EtherNet/IP protocol is available on PowerLogic P5 protection relays with an optional embedded Ethernet card. PowerLogic P5 protection relays with the EtherNet/IP protocol selected on the Ethernet port serves as an adapter which means that it is not able to initiate communication with other devices on the network.

Objects and messaging

The EtherNet/IP implementation on PowerLogic P5 protection relays supports all required standard objects with their required attributes. A list of PowerLogic P5 device objects and their classes is shown in the table below.

Table 58 - Device profile

| Class | Object | Object Category | |
|-------|--------------------|-----------------|------------------------------|
| 0x01 | Identity | Protocol | Standard |
| 0x02 | Message Router | | |
| 0x04 | Assembly | | |
| 0x06 | Connection Manager | | |
| 0xF5 | TCP/IP Interface | | |
| 0xF6 | Ethernet Link | | |
| 0x29 | Control Supervisor | Application | Private (vendor specific) |
| 0x2C | Overload | | |
| 0x64 | digital 1 | | |
| 0x65 | digital 2 | | |
| 0x66 | digital 3 | | |
| 0x68 | status | | |
| 0x69 | protection status | | |
| 0x6A | activation status | | |
| 0x6B | scaling | | |
| 0x6C | measurment 1 | | |
| 0x6D | measurment 2 | | |
| 0x6E | measurment 3 | | |
| 0x70 | harmonic 1 | | |
| 0x71 | statistic | | |
| 0x72 | CB monitor | | |
| 0x73 | command | | |
| 0x76 | last fault | | |
| 0x80 | special | | |
| 0x320 | arc setting | | |
| 0x321 | Inrush setting | | |
| 0x322 | I>1 setting | | |
| 0x323 | I>2 setting | | |
| 0x324 | I>3 setting | | |
| 0x325 | I>4 setting | | |
| 0x326 | I>5 setting | | |
| 0x327 | I>6 setting | | |
| 0x328 | SOTF setting | | |
| 0x329 | P<1 setting | | |
| 0x32A | P<2 setting | | |
| 0x32B | I<1 setting | | |
| 0x32C | I2>I1 setting | | |
| 0x32D | I2>2 setting | | |
| 0x32E | I2>1 setting | | |
| 0x32F | Ist> setting | | |
| 0x330 | IIr> setting | | |
| 0x331 | N> setting | | |

Table 58 - Device profile (Continued)

| Class | Object | Object Category | |
|-------|--------------------|-----------------|--|
| 0x332 | Motor T°> setting | | |
| 0x333 | Feeder T°> setting | | |
| 0x334 | Icap>1 setting | | |
| 0x335 | Icap>2 setting | | |
| 0x336 | IN>1 setting | | |
| 0x337 | IN>2 setting | | |
| 0x338 | IN>3 setting | | |
| 0x339 | IN>4 setting | | |
| 0x33A | IN>5 setting | | |
| 0x33B | IN>6 setting | | |
| 0x33C | INVN>1 setting | | |
| 0x33D | INVN>2 setting | | |
| 0x33E | V>1 setting | | |
| 0x33F | V>2 setting | | |
| 0x340 | V>3 setting | | |
| 0x341 | V<1 setting | | |
| 0x342 | V<2 setting | | |
| 0x343 | V<3 setting | | |
| 0x344 | V1<1 setting | | |
| 0x345 | V1<2 setting | | |
| 0x346 | VN>1 setting | | |
| 0x347 | VN>2 setting | | |
| 0x348 | VN>3 setting | | |
| 0x349 | f>1 setting | | |
| 0x34A | f>2 setting | | |
| 0x34B | f<1 setting | | |
| 0x34C | f<2 setting | | |
| 0x34D | f<3 setting | | |
| 0x34E | f<4 setting | | |
| 0x34F | f<5 setting | | |
| 0x350 | f<6 setting | | |
| 0x351 | f<7 setting | | |
| 0x352 | f<8 setting | | |
| 0x353 | CBFail setting | | |
| 0x354 | Ih5>1 setting | | |
| 0x355 | CTS setting | | |
| 0x356 | VTS setting | | |
| 0x357 | Vcap>1 setting | | |
| 0x358 | df/dt>1 setting | | |
| 0x359 | df/dt>2 setting | | |
| 0x35A | IN int> setting | | |

Table 58 - Device profile (Continued)

| Class | Object | Object Category | |
|-------|---------------------------------|-----------------|--|
| 0x35B | Feeder Fault Locator setting | | |
| 0x35C | Synchro-check 1 setting | | |
| 0x35D | CB Monitoring setting | | |
| 0x35E | Motor status setting | | |
| 0x35F | SOL setting | | |
| 0x360 | Admittance E/F ALL YN>1 setting | | |
| 0x361 | Admittance E/F YN>1 | | |
| 0x362 | Admittance E/F GN>1 | | |
| 0x363 | Admittance E/F BN>1 | | |
| 0x364 | Admittance E/F ALL YN>2 setting | | |
| 0x365 | Admittance E/F YN>2 | | |
| 0x366 | Admittance E/F GN>2 | | |
| 0x367 | Admittance E/F BN>2 | | |
| 0x368 | V2>1 setting | | |
| 0x369 | V2>2 setting | | |
| 0x36A | Motor overspeed Ω >1 | | |
| 0x36B | Motor overspeed Ω >2 | | |
| 0x36C | Motor underspeed Ω <1 | | |
| 0x36E | Motor underspeed Ω <2 | | |
| 0x36F | Motor Anti-backspin (ABS) | | |
| 0x370 | Cold load pick-up CLPU | | |
| 0x371 | REF setting | | |
| 0x372 | I2/I1>2 setting | | |
| 0x373 | EMRE setting | | |
| 0x374 | df/dt>3 setting | | |
| 0x375 | df/dt>4 setting | | |
| 0x376 | df/dt>5 setting | | |
| 0x377 | df/dt>6 setting | | |
| 0x378 | df/dt>7 setting | | |
| 0x379 | df/dt>8 setting | | |
| 0x37A | df/dt>9 setting | | |

The EtherNet/IP implementation in PowerLogic P5 protection relays supports three types of communication:

- Unconnected Explicit Requests and Responses – used mainly for establishing explicit and I/O connections, but can also be used for one time requests to attributes of data model objects.
- Explicit Messaging (Class 3) connections – these are strictly point-to-point connections used to cyclically query the adapter for some data or to cyclically write data to the adapter. Transmitted using TCP.

- I/O Messaging (Class 1) connections – can be point-to-point or multicast. Used for very frequent exchange of process data. PowerLogic P5 protection relays support only cyclic I/O connections. Transmitted using UDP.

Connection limits:

- For Class 3 connections – there can be maximum six Class 3 connections at the same time.
- For Class 1 connections – there can be only one Class 1 connection at the same time.

Supported services

PowerLogic P5 protection relays support following services for objects:

- GAA = Get Attribute All
- GAS = Get Attribute Single
- SAS = Set Attribute Single

GAS service is available for all attributes with the GET or GET (to access) | SET (to modify) access type and the SAS service is available for all attributes with the GET | SET or SET access type.

A list of PowerLogic P5 device services for objects is shown in the table below.

Table 59 - Supported services for objects

| Class | Object | Object Category | |
|-------|--------------------|-----------------|-----|
| | | Get | Set |
| 0x01 | Identity | GAA, GAS | – |
| 0x02 | Message router | – | – |
| 0x04 | Assembly | GAS | SAS |
| 0x06 | Connection manager | – | – |
| 0xF5 | TCP/IP interface | GAA, GAS | – |
| 0xF6 | Ethernet link | GAA, GAS | – |
| 0x29 | Control Supervisor | GAS | SAS |
| 0x2C | Overload | GAS | SAS |
| 0x64 | digital 1 | GAS | SAS |
| 0x65 | digital 2 | GAS | SAS |
| 0x66 | digital 3 | GAS | SAS |
| 0x68 | status | GAS | SAS |
| 0x69 | protection status | GAS | SAS |
| 0x6A | activation status | GAS | SAS |
| 0x6B | scaling | GAS | SAS |
| 0x6C | measurment 1 | GAS | SAS |
| 0x6D | measurment 2 | GAS | SAS |
| 0x6E | measurment 3 | GAS | SAS |
| 0x70 | harmonic 1 | GAS | SAS |
| 0x71 | statistic | GAS | SAS |
| 0x72 | CB monitor | GAS | SAS |
| 0x73 | command | GAS | SAS |
| 0x76 | last fault | GAS | SAS |
| 0x80 | special | GAS | SAS |
| 0x320 | arc setting | GAS | SAS |

Table 59 - Supported services for objects (Continued)

| Class | Object | Object Category | |
|-------|--------------------|-----------------|-----|
| | | Get | Set |
| 0x321 | Inrush setting | GAS | SAS |
| 0x322 | I>1 setting | GAS | SAS |
| 0x323 | I>2 setting | GAS | SAS |
| 0x324 | I>3 setting | GAS | SAS |
| 0x325 | I>4 setting | GAS | SAS |
| 0x326 | I>5 setting | GAS | SAS |
| 0x327 | I>6 setting | GAS | SAS |
| 0x328 | SOTF setting | GAS | SAS |
| 0x329 | P<1 setting | GAS | SAS |
| 0x32A | P<2 setting | GAS | SAS |
| 0x32B | I<1 setting | GAS | SAS |
| 0x32C | I2>I1 setting | GAS | SAS |
| 0x32D | I2>2 setting | GAS | SAS |
| 0x32E | I2>1 setting | GAS | SAS |
| 0x32F | Ist> setting | GAS | SAS |
| 0x330 | Ilr> setting | GAS | SAS |
| 0x331 | N> setting | GAS | SAS |
| 0x332 | Motor T°> setting | GAS | SAS |
| 0x333 | Feeder T°> setting | GAS | SAS |
| 0x334 | Icap>1 setting | GAS | SAS |
| 0x335 | Icap>2 setting | GAS | SAS |
| 0x336 | IN>1 setting | GAS | SAS |
| 0x337 | IN>2 setting | GAS | SAS |
| 0x338 | IN>3 setting | GAS | SAS |
| 0x339 | IN>4 setting | GAS | SAS |
| 0x33A | IN>5 setting | GAS | SAS |
| 0x33B | IN>6 setting | GAS | SAS |
| 0x33C | INVN>1 setting | GAS | SAS |
| 0x33D | INVN>2 setting | GAS | SAS |
| 0x33E | V>1 setting | GAS | SAS |
| 0x33F | V>2 setting | GAS | SAS |
| 0x340 | V>3 setting | GAS | SAS |
| 0x341 | V<1 setting | GAS | SAS |
| 0x342 | V<2 setting | GAS | SAS |
| 0x343 | V<3 setting | GAS | SAS |
| 0x344 | V1<1 setting | GAS | SAS |
| 0x345 | V1<2 setting | GAS | SAS |
| 0x346 | VN>1 setting | GAS | SAS |
| 0x347 | VN>2 setting | GAS | SAS |
| 0x348 | VN>3 setting | GAS | SAS |

Table 59 - Supported services for objects (Continued)

| Class | Object | Object Category | |
|-------|-------------------------------------|-----------------|-----|
| | | Get | Set |
| 0x349 | f>1 setting | GAS | SAS |
| 0x34A | f>2 setting | GAS | SAS |
| 0x34B | f<1 setting | GAS | SAS |
| 0x34C | f<2 setting | GAS | SAS |
| 0x34D | f<3 setting | GAS | SAS |
| 0x34E | f<4 setting | GAS | SAS |
| 0x34F | f<5 setting | GAS | SAS |
| 0x350 | f<6 setting | GAS | SAS |
| 0x351 | f<7 setting | GAS | SAS |
| 0x352 | f<8 setting | GAS | SAS |
| 0x353 | CBFail setting | GAS | SAS |
| 0x354 | lh5>1 setting | GAS | SAS |
| 0x355 | CTS setting | GAS | SAS |
| 0x356 | VTS setting | GAS | SAS |
| 0x357 | Vcap>1 setting | GAS | SAS |
| 0x358 | df/dt>1 setting | GAS | SAS |
| 0x359 | df/dt>2 setting | GAS | SAS |
| 0x35A | IN int> setting | GAS | SAS |
| 0x35B | Feeder Fault Locator setting | GAS | SAS |
| 0x35C | Synchro-check 1 setting | GAS | SAS |
| 0x35D | CB Monitoring setting | GAS | SAS |
| 0x35E | Motor status setting | GAS | SAS |
| 0x35F | SOL setting | GAS | SAS |
| 0x360 | Admittance E/F ALL YN>1 setting | GAS | SAS |
| 0x361 | Admittance E/F YN>1 setting | GAS | SAS |
| 0x362 | Admittance E/F GN>1 setting | GAS | SAS |
| 0x363 | Admittance E/F BN>1 setting | GAS | SAS |
| 0x364 | Admittance E/F ALL YN>2 setting | GAS | SAS |
| 0x365 | Admittance E/F YN>2 setting | GAS | SAS |
| 0x366 | Admittance E/F GN>2 setting | GAS | SAS |
| 0x367 | Admittance E/F BN>2 setting | GAS | SAS |
| 0x368 | V2>1 setting | GAS | SAS |
| 0x369 | V2>2 setting | GAS | SAS |
| 0x36A | Motor overspeed Ω >1 setting | GAS | SAS |

Table 59 - Supported services for objects (Continued)

| Class | Object | Object Category | |
|-------|---------------------------------------|-----------------|-----|
| | | Get | Set |
| 0x36B | Motor overspeed $\Omega > 2$ setting | GAS | SAS |
| 0x36C | Motor underspeed $\Omega < 1$ setting | GAS | SAS |
| 0x36E | Motor underspeed $\Omega < 2$ setting | GAS | SAS |
| 0x36F | Motor Anti-backspin (ABS) | GAS | SAS |
| 0x370 | Cold load pick-up CLPU | GAS | SAS |
| 0x371 | REF setting | GAS | SAS |
| 0x372 | I2/I1 > 2 setting | GAS | SAS |
| 0x373 | EMRE setting | GAS | SAS |
| 0x374 | df/dt > 3 setting | GAS | SAS |
| 0x375 | df/dt > 4 setting | GAS | SAS |
| 0x376 | df/dt > 5 setting | GAS | SAS |
| 0x377 | df/dt > 6 setting | GAS | SAS |
| 0x378 | df/dt > 7 setting | GAS | SAS |
| 0x379 | df/dt > 8 setting | GAS | SAS |
| 0x37A | df/dt > 9 setting | GAS | SAS |

I/O messaging assemblies

EtherNet/IP implementation on PowerLogic P5 protection relays includes a total of two producing assemblies (Tx, Target → Originator) and two consuming assemblies (Rx, Target → Originator); see table below.

Table 60 - Available assemblies

| Instance no. | Type | Description |
|--------------|-----------|-------------------------------------|
| 2 | Producing | Static Basic Output Image |
| 50 | Consuming | Static Basic Image |
| 100 | Producing | Configurable Output Image (dynamic) |
| 150 | Consuming | Configurable Input Image (dynamic) |

Additionally, a zero-length configuration assembly with instance number “199” is available.

Assemblies have to be configured during the device setup. Configuring assemblies involve selecting the producing and consuming instances to be used.

If dynamic assemblies (instance numbers 100 and 150) are used it is also needed to configure the contents of both assemblies. By default both assemblies are configured with one byte of data each. By default producing assembly is configured with “Control Supervisor Object” / “Faulted attribute” and consuming assembly with “Control Supervisor Object” / “FaultRst”.

I/O connections with PowerLogic P5 protection relays are opened with the Requested Packet Interval (RPI) no less than 50 ms and not greater than 5 s. The default Value is 100 ms.

Electronic data sheet (EDS)

Every change to main configuration parameters or assemblies configuration requires a new EDS file to be generated (once all changes are made and the device is about to be used in the network).

Some of the configuration tools are capable of simplifying device configuration based on the EDS file. In the current implementation the EDS file can only be generated from eSetup Easergy Pro – EDS file extraction over the EtherNet/IP network is not supported in the PowerLogic P5 protection relay.

EDS file cannot be extracted from the PowerLogic P5 protection relay over the EtherNet/IP network, rather, it must be generated with eSetup Easergy Pro. This operation is explained in [Generating an EDS File with eSetup Easergy Pro](#), page 417.

Events

PowerLogic P5 protection relay events are available under the following attributes of Digital Object (0x64)

- Attribute 147 – Event code (bits 0-5: code, bits 6-15: channel)
- Attribute 148 – Event milliseconds and seconds (bits 0-5: seconds, bits 6-15: milliseconds)
- Attribute 149 – Event min and hour (bits 0-7: hour, bits 8-15: minutes)
- Attribute 150 – Event day and month (bits 0-7: month, bits 8-15: day)
- Attribute 151 – Event year

Events are read starting from the oldest one in the Event Buffer of the PowerLogic P5 protection relay. Events are read sequentially, the next event is read when the previous one is acknowledged. Acknowledgement is done by setting attribute 152 of the Digital Object (0x64) – Event Ack. When all events have been read and the event buffer is thus empty, the attributes will contain zero-data (zeroes). This zero-data will automatically be replaced with the data of a new event when one is registered.

Reading of events is the same for all communication types. The PowerLogic P5 protection relay sends the oldest available event. The next oldest event will be read only after setting the Event Ack parameter (the one previously read is not available any more) or after the event buffer has been cleared and a new event is generated later on.

Fault codes

The table below contains a translation of PowerLogic P5 protection relay stages to EtherNet/IP Fault Codes.

Table 61 - EtherNet/IP fault code

| EtherNet/IP fault code | Description | Protection stage | ANSI |
|------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 20 | Current trip | Phase overcurrent I>1 Phase overcurrent I>2 Phase overcurrent I>3 Phase overcurrent I>4 Phase overcurrent I>5 Phase overcurrent I>6 Switch on to fault SOTF | |
| 21 | Thermal overload | Thermal Overload Thermal Overload | 49F 49M |
| 26 | Phase unbalance | Negative seq. overcurrent I2>1 Negative seq. overcurrent I2>2 Broken conductor I2/I1>1 Broken conductor I2/I1>2 | 46 46 46BC 46BC |
| 27 | Earth/ground fault | E/F overcurrent IN>1 E/F overcurrent IN>2 | |

Table 61 - EtherNet/IP fault code (Continued)

| EtherNet/IP fault code | Description | Protection stage | ANSI |
|------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| | | E/F overcurrent IN>3 E/F overcurrent IN>4 E/F overcurrent IN>5 E/F overcurrent IN>6 Capacitor unbalance I _{cap} >1 Capacitor unbalance I _{cap} >2 Wattmetric E/F INVN>1 Wattmetric E/F INVN>2 Admittance E/F YN>1 Admittance E/F YN>2 Transient intermittent E/F Restricted earth-fault REF> | 51C 51C 32N 32N 21YN 21YN 67NI 64REF |
| 29 | Underload | Phase undercurrent I< | 37 |
| 31 | Stall | Motor Start-up Supervision Ist> Locked rotor I _{lr} > | 48 51LR |
| 51 | Undervoltage | Undervoltage V<1 Undervoltage V<2 Undervoltage V<3 Positive seq. undervoltage V1<1 Positive seq. undervoltage V1<2 | 27 27 27 27P 27P |
| 52 | Overvoltage | Overvoltage V>1 59 Overvoltage V>2 59 Overvoltage V>3 59 Neutral overvoltage VN>1 59N Neutral overvoltage VN>2 59N Neutral overvoltage VN>3 59N Capacitor overvoltage V _{cap} >1 59C Negative seq overvoltage V2>1 47 Negative seq overvoltage V2>2 47 | 59 |
| 55 | Frequency | Over frequency f>1 Over frequency f>2 Under frequency f<1 Under frequency f<2 Under frequency f<3 Under frequency f<4 Under frequency f<5 Under frequency f<6 Under frequency f<7 Under frequency f<8 ROCOF df/dt>1 ROCOF df/dt>2 ROCOF df/dt>4 ROCOF df/dt>5 ROCOF df/dt>6 ROCOF df/dt>7 ROCOF df/dt>8 ROCOF df/dt>9 | 81 81 81U 81U 81U 81U 81U 81U 81U 81U 81U 81R 81R 81R 81R 81R 81R 81R 81R |
| 57 | Underpower | Directional power P<1 Directional power P<2 | 32 32 |
| 72 | Fail to open | Circuit breaker failure | 50BF |
| 73 | Start/Hours Exceeded | Motor restart inhibition N> | 66 |
| 88 | Rotational unbalance | Motor status Motor anti-backspin ABS Motor overspeed Ω>1 Motor overspeed Ω>2 Motor underspeed Ω<1 Motor underspeed Ω<2 | 12 12 12 12 |
| 91 | High harmonic distortion | 5 th harmonic detection I _{h5} > | 68H5 |
| 101 | Sync-check (private defined) | Sync check 1 | 25 |

EtherNet/IP main configuration

The configuration of the EtherNet/IP settings is done in the EtherNet/IP main configuration view of the COMMUNICATION menu in eSetup Easergy Pro or Web HMI.

EtherNet/IP main configuration parameters are listed in the table below:

Table 62 - Description of the EtherNet/IP main configuration parameters

| Parameter | Value | Editable | Description |
|-------------------------------------|------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IP address | | Yes | IP protocol address identifying device in the network |
| Multicast IP | 239.0.0.0...239.-255.255.255 | Yes | Multicast IP address used for sending IO messages |
| Multicast TTL | 1...100 | Yes | Time to live of the IO messages sent to multicast address |
| Vendor ID | 243 | No | Fixed as 243 |
| Device Type | 43 | No | Fixed as 43 |
| Product Code | 16700...16707 | No | Identification of product P5U20: 16700 P5V20: 16701 P5M30: 16702 P5F30: 16703 P5L30: 16704 P5L30: 16704 P5T30: 16705 P5G30: 16706 P5U20 LPVT/LPCT:16707 |
| Major Revision | 5...9 | No | eg: will be 5, if firmware version is V01.5XX.XXX |
| Minor Revision | 1...9 | No | eg: will be 1, if firmware version is V01.XXX.1XX |
| Serial Number | 0...999999999 | No | Last 9 numbers of device serial number |
| Product Name | PowerLogic P5 | No | Fixed as "PowerLogic P5" |
| Auto/Manual Header Detection | Manual Auto (default) | Yes | Include Run/Idle Header parameters are used to define whether Run/Idle Header should be used Run/Idle Headers are detected automatically |
| I/O assembly instances in use | 2+50, (default) 100+150 | Yes | Instance numbers of producing and consuming assemblies being used |
| | | | |
| Producing Instance | 2, 100 | No | Instance number of producing assembly* |
| Include Run/Idle Header (Producing) | On/Off | Yes | Include or exclude Run/Idle Header in an outgoing IO messages |
| Producing Instance Size | [bytes] | No | The size of the producing assembly** |
| | | | |
| Consuming Instance | 50, 150 | No | Instance number of consuming assembly* |
| Include Run/Idle Header (Consuming) | On/Off | Yes | Expect presence or absence of Run/Idle Header in an incoming IO messages |
| Consuming Instance Size | [bytes] | No | The size of the consuming** |
| | | | |
| Configuration Instance | 199 | No | Instance number of configuration instance, fixed as 199 |
| Configuration Instance Size | 0 | No | The size of the consuming assembly, fixed as 0. |

NOTE:

* Automatically updated according to the value of I/O assembly instances in use parameter.

** Automatically updated as the assemblies are configured.

Multicast IP

Multicast IP address is a parameter used by the device to send EtherNet/IP multicast packets, if requested to do so by the scanner. Multicast IP is a valid Class D IP address. In device there is only one possible I/O connection at a time and therefore only single Multicast IP is used.

Multicast IP parameter is ignored when scanner requested T → O (target-to-originator, i.e. adapter to scanner) communication to be point-to-point. The default value of this parameter is 239.0.0.1.

Multicast TTL

Multicast TTL value is used for the IP header Time-to-live field when sending EtherNet/IP multicast packets. This value is ignored for the unicast packets and TTL as configured for the TCP/IP stack is used instead.

The default value of this parameter is 1 (the number of network hops over which the multicast packet is propagated – datagrams limited to the local subnet).

Auto/Manual header detection

When this parameter is set to “Manual”, user needs to define manually the presence of Run/Idle header in the I/O messaging. This is done by configuring parameters “Include Run/Idle Header” for more information, see Include Run/Idle header (producing), page 415 and Include Run/Idle header (consuming), page 416.

When “Auto” is selected, PowerLogic P5 protection relays automatically detect whether Run/Idle header is used in the I/O messaging. The default value of this parameter is “Auto”.

I/O assembly instances in use

Selection of producing and consuming instances to be used. The values of producing and consuming assemblies are available in the EDS file (see Generating an EDS File with eSetup Easergy Pro, page 417) and are used by the configuration tool as a reference path during I/O connection opening.

Every change to this parameter requires restarting the device and generation of a new EDS file.

Include Run/Idle header (producing)

An I/O connection can be established with or without the Run/Idle Header in the Target → Originator direction (adapter to scanner). Including Run/Idle Header in the producing assembly adds additional 4 bytes to the beginning of the data part of an I/O message. Run bit is always set in the outgoing messages if PowerLogic P5 protection relays are configured to send I/O messages with the Run/Idle Header. Information about whether the Run/Idle Header is included in the outgoing messages is available in the EDS file and can be used by the eSetup Easergy Pro to properly establish communication.

Every change to this parameter requires generation of a new EDS file.

The default value of this parameter is “Off”.

Include Run/Idle header (consuming)

An I/O connection can be established with or without the Run/Idle Header in the Target ← Originator direction (scanner to adapter). Setting this value to "On" inform the eSetup Easergy Pro that PowerLogic P5 protection relays expect the consuming assembly to contain additional 4 bytes of data. If the Run/Idle Header is included and the Run bit is set in the incoming I/O messages then PowerLogic P5 protection relays process received data, and if the Run bit is cleared then P5 device ignores received data. If the Run/Idle Header is not included in the incoming I/O messages then the received data is always processed. Information about whether the Run/Idle Header is expected in the incoming I/O messages is available in the EDS file and can be used by the eSetup Easergy Pro to properly establish communication.

Every change to this parameter requires generation of a new EDS file. The default value of this parameter is "On".

NOTE:

Changing of both "Include Run/Idle Header" parameters while the I/O connection is running is not allowed by PowerLogic P5 protection relays.

Data point configuration

Available data items, that is, the contents of the Producing Assembly and the Consuming Assembly can be viewed/configured in the following eSetup Easergy Pro menus:

- EtherNet/IP I/O 2+50 (static)
- EtherNet/IP I/O 100+150 (dynamic)

Assembly 2+50 is static, meaning user cannot make changes to the contents of assembly. Assembly 100+150 is dynamic, meaning user can select data items to the assembly by clicking on a row and selecting a desired data point. An example of data point configuration is shown below.

Figure 3 - EtherNet IP data point configuration

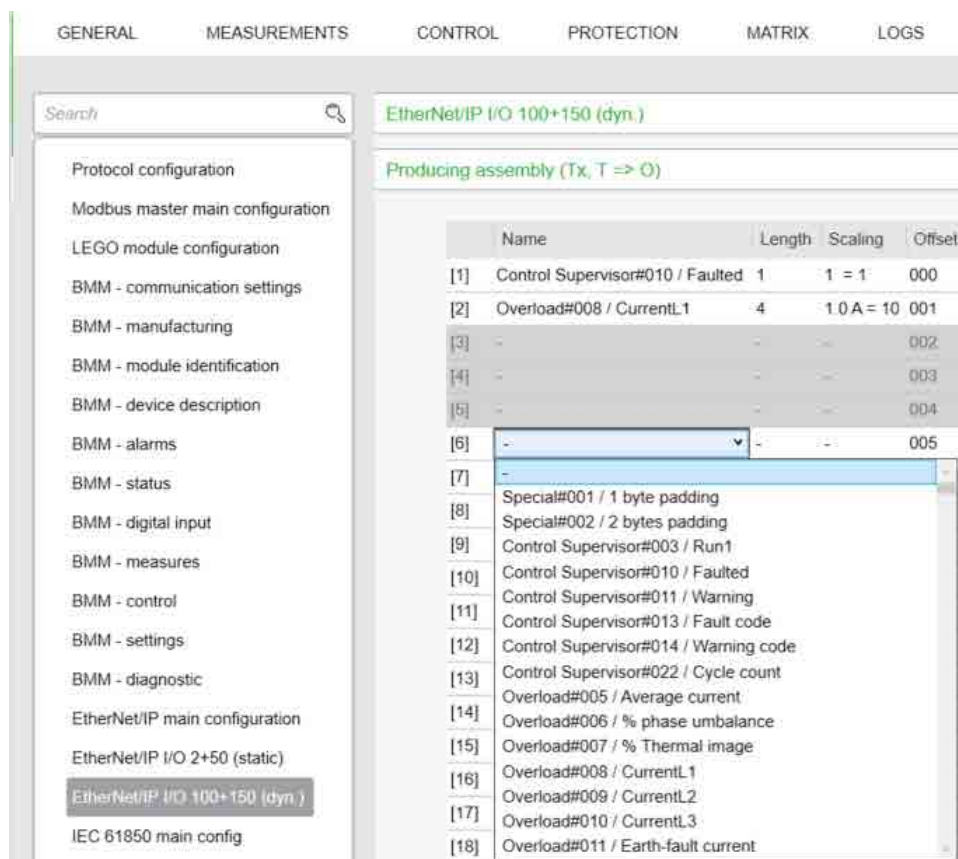


Table 63 - Description of assembly configuration parameters table contents

| Attribute | Description |
|-----------|---------------------------------------------|
| Name | Type and name of the data item |
| Length | Length of the data item in bytes |
| Scaling | The scaling used for the data item |
| Offset | The offset of the data item in the assembly |

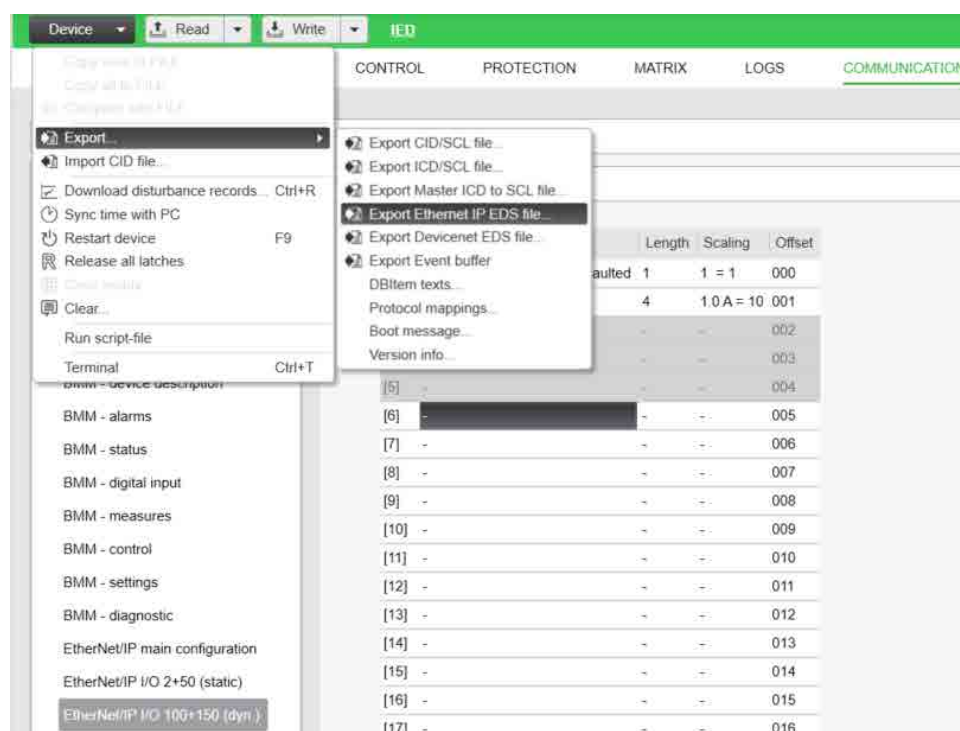
NOTE: Making changes to the assemblies will require a device reboot for the changes to take effect.

A list of the set of available data items in EtherNet/IP, see Data model of EtherNet/IP, page 418.

Generating an EDS File with eSetup Easergy Pro

Changes to main configuration parameters or the configuration of assemblies requires a new EDS file to be generated (once all changes are made and the device is about to be used in the network).

An EDS file can be generated with eSetup Easergy Pro or Web HMI in the **COMMUNICATION** menu. Click the **Device > Export > Export EthernetIP EDS file...**, EDS file will be generated and a window will pop up asking where to save the generated file. After clicking **Save**, the generated EDS file will be stored at the selected location.

Figure 4 - Export EDS file

Data model of EtherNet/IP

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x80 | Special#001/1 byte padding | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x80 | Special#002/2 bytes padding | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x29 | Control Supervisor#003/Run1 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x29 | Control Supervisor#010/Faulted | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x29 | Control Supervisor#011/Warning | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x29 | Control Supervisor#012/Fault reset | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x29 | Control Supervisor#013/Fault code | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x29 | Control Supervisor#014/Warning code | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x2c | Overload#005/Average current | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x2c | Overload#006/% phase unbalance | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x2c | Overload#007/% Thermal image | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x2c | Overload#008/CurrentL1 | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x2c | Overload#009/CurrentL2 | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x2c | Overload#010/CurrentL3 | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x2c | Overload#011/Earth-fault current | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#001/Digital input 1 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#002/Digital input 2 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#003/Digital input 3 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#004/Digital input 4 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#005/Digital input 5 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#006/Digital input 6 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#007/Digital input 7 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#008/Digital input 8 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#009/Digital input 9 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#010/Digital input 10 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#011/Digital input 11 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x64 | Digital 1#012/Digital input 12 | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x64 | Digital 1#013/Digital input 13 | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x64 | Digital 1#014/Digital input 14 | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x64 | Digital 1#015/Digital input 15 | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x64 | Digital 1#016/Digital input 16 | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x64 | Digital 1#017/Digital input 17 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#018/Digital input 18 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#019/Digital input 19 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#020/Digital input 20 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#021/Digital input 21 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#022/Digital input 22 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#023/Digital input 23 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#024/Digital input 24 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#025/Digital input 25 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#026/Digital input 26 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#027/Digital input 27 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#028/Digital input 28 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#029/Digital input 29 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#030/Digital input 30 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#031/Digital input 31 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#032/Digital input 32 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#033/Digital input 33 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#034/Digital input 34 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#035/Digital input 35 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#036/Digital input 36 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#037/Digital input 37 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#038/Digital input 38 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x64 | Digital 1#039/Digital input 39 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#040/Digital input 40 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#041/Arc lo state | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#042/Arc l state | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#043/Arc stage 1 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#044/Arc stage 2 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#045/Arc stage 3 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#046/Arc stage 4 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#047/Arc stage 5 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#048/Arc stage 6 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#049/Arc stage 7 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#050/Arc stage 8 | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#051/Arc sensor status | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#052/Arc sensor status | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#053/Arc sensor status | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#054/Arc sensor status | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#055/Arc sensor status | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#056/Arc sensor status | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x64 | Digital 1#057/Logic output status 1 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#058/Logic output status 2 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#059/Logic output status 3 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#060/Logic output status 4 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#061/Logic output status 5 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#062/Logic output status 6 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#063/Logic output status 7 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#064/Logic output status 8 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#065/Logic output status 9 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#066/Logic output status 10 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x64 | Digital 1#067/Logic output status 11 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#068/Logic output status 12 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#069/Logic output status 13 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#070/Logic output status 14 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#071/Logic output status 15 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#072/Logic output status 16 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#073/Logic output status 17 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#074/Logic output status 18 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#075/Logic output status 19 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#076/Logic output status 20 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#077/Virtual output 1 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#078/Virtual output 2 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#079/Virtual output 3 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#080/Virtual output 4 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#081/Virtual output 5 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#082/Virtual output 6 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#083/Virtual output 7 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#084/Virtual output 8 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#085/Virtual output 9 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#086/Virtual output 10 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#087/Virtual output 11 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#088/Virtual output 12 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#089/Virtual output 13 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#090/Virtual output 14 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#091/Virtual output 15 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#092/Virtual output 16 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#093/Virtual output 17 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x64 | Digital 1#094/Virtual output 18 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#095/Virtual output 19 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#096/Virtual output 20 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#147/Event code | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#148/Event milli-sec and sec | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#149/Event min and hour | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#150/Event Day and Month | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#151/Event Year | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#152/Event acknowledge | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x64 | Digital 1#153/TRMON 1 insulation alarm | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#154/TRMON 1 oil temperature alarm | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#155/TRMON 1 gas alarm | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#156/TRMON 1 gas trip | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#157/TRMON 1 oil flow trip | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#158/TRMON 1 oil at minimum level | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#159/TRMON 1 oil at maximum level | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#160/TRMON 1 blocking | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#161/TRMON 2 insulation alarm | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#162/TRMON 2 oil temperature alarm | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#163/TRMON 2 gas alarm | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#164/TRMON 2 gas trip | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#165/TRMON 2 oil flow trip | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#166/TRMON 2 oil at minimum level | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#167/TRMON 2 oil at maximum level | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x64 | Digital 1#168/TRMON 2 blocking | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x65 | Digital 2#001/Virtual input 1 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#002/Virtual input 2 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#003/Virtual input 3 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x65 | Digital 2#004/Virtual input 4 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#005/Virtual input 5 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#006/Virtual input 6 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#007/Virtual input 7 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#008/Virtual input 8 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#009/Virtual input 9 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#010/Virtual input 10 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#011/Virtual input 11 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#012/Virtual input 12 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#013/Virtual input 13 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#014/Virtual input 14 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#015/Virtual input 15 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#016/Virtual input 16 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#017/Virtual input 17 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#018/Virtual input 18 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#019/Virtual input 19 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#020/Virtual input 20 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#021/Virtual input 21 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#022/Virtual input 22 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#023/Virtual input 23 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#024/Virtual input 24 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#025/Virtual input 25 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#026/Virtual input 26 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#027/Virtual input 27 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#028/Virtual input 28 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#029/Virtual input 29 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#030/Virtual input 30 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x65 | Digital 2#031/Virtual input 31 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#032/Virtual input 32 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#033/Virtual input 33 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#034/Virtual input 34 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#035/Virtual input 35 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#036/Virtual input 36 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#037/Virtual input 37 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#038/Virtual input 38 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#039/Virtual input 39 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#040/Virtual input 40 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#041/Virtual input 41 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#042/Virtual input 42 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#043/Virtual input 43 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#044/Virtual input 44 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#045/Virtual input 45 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#046/Virtual input 46 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#047/Virtual input 47 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#048/Virtual input 48 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#049/Virtual input 49 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#050/Virtual input 50 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#051/External DI1 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#052/External DI2 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#053/External DI3 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#054/External DI4 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#055/External DI5 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#056/External DI6 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#057/External DI7 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#058/External DI8 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x65 | Digital 2#059/External DI9 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#060/External DI10 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#061/External DI11 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#062/External DI12 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#063/External DI13 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#064/External DI14 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#065/External DI15 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#066/External DI16 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#067/External DI17 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#068/External DI18 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#069/Port 1 status (Slot M) | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#070/Port 2 status (Slot M) | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#071/Port 1 status (Slot L) | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#072/Port 2 status (Slot L) | 1 | 1 | 0 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#073/Port 1 status (Slot M&N) | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#074/Port 2 status (Slot M&N) | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#075/CB Trip command_DO1(B) | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#076/CB Trip lockout_DO2(B) | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#077/CB Close Command_DO3(B) | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#078/SlotC digital output 1 | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#079/SlotC digital output 2 | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#080/SlotC digital output 3 | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#081/SlotC digital output 4 | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#082/SlotC digital output 5 | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x65 | Digital 2#078/SlotD digital output 1 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#079/SlotD digital output 2 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#080/SlotD digital output 3 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#081/SlotD digital output 4 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x65 | Digital 2#082/SlotD digital output 5 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#078/SlotE digital output 1 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#079/SlotE digital output 2 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#080/SlotE digital output 3 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#081/SlotE digital output 4 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x65 | Digital 2#082/SlotE digital output 5 | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x66 | Digital 3#001/Advanced logic output 1 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#002/Advanced logic output 2 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#003/Advanced logic output 3 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#004/Advanced logic output 4 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#005/Advanced logic output 5 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#006/Advanced logic output 6 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#007/Advanced logic output 7 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#008/Advanced logic output 8 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#009/Advanced logic output 9 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#010/Advanced logic output 10 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#011/Advanced logic output 11 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#012/Advanced logic output 12 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#013/Advanced logic output 13 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#014/Advanced logic output 14 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#015/Advanced logic output 15 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#016/Advanced logic output 16 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#017/Advanced logic output 17 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#018/Advanced logic output 18 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#019/Advanced logic output 19 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#020/Advanced logic output 20 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#021/Advanced logic output 21 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x66 | Digital 3#022/Advanced logic output 22 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#023/Advanced logic output 23 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#024/Advanced logic output 24 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#025/Advanced logic output 25 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#026/Advanced logic output 26 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#027/Advanced logic output 27 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#028/Advanced logic output 28 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#029/Advanced logic output 29 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#030/Advanced logic output 30 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#031/Advanced logic output 31 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#032/Advanced logic output 32 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#033/Advanced logic output 33 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#034/Advanced logic output 34 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#035/Advanced logic output 35 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#036/Advanced logic output 36 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#037/Advanced logic output 37 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#038/Advanced logic output 38 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#039/Advanced logic output 39 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#040/Advanced logic output 40 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#041/Advanced logic output 41 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#042/Advanced logic output 42 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#043/Advanced logic output 43 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#044/Advanced logic output 44 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#045/Advanced logic output 45 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#046/Advanced logic output 46 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#047/Advanced logic output 47 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#048/Advanced logic output 48 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x66 | Digital 3#049/Advanced logic output 49 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#050/Advanced logic output 50 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#051/Advanced logic output 51 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#052/Advanced logic output 52 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#053/Advanced logic output 53 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#054/Advanced logic output 54 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#055/Advanced logic output 55 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#056/Advanced logic output 56 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#057/Advanced logic output 57 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#058/Advanced logic output 58 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#059/Advanced logic output 59 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#060/Advanced logic output 60 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#061/Advanced logic output 61 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#062/Advanced logic output 62 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#063/Advanced logic output 63 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#064/Advanced logic output 64 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#065/Advanced logic output 65 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#066/Advanced logic output 66 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#067/Advanced logic output 67 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#068/Advanced logic output 68 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#069/Advanced logic output 69 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#070/Advanced logic output 70 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#071/Advanced logic output 71 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#072/Advanced logic output 72 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#073/Advanced logic output 73 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#074/Advanced logic output 74 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#075/Advanced logic output 75 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x66 | Digital 3#076/Advanced logic output 76 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#077/Advanced logic output 77 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#078/Advanced logic output 78 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#079/Advanced logic output 79 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#080/Advanced logic output 80 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#081/Advanced logic output 81 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#082/Advanced logic output 82 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#083/Advanced logic output 83 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#084/Advanced logic output 84 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#085/Advanced logic output 85 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#086/Advanced logic output 86 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#087/Advanced logic output 87 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#088/Advanced logic output 88 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#089/Advanced logic output 89 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#090/Advanced logic output 90 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#091/Advanced logic output 91 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#092/Advanced logic output 92 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#093/Advanced logic output 93 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#094/Advanced logic output 94 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#095/Advanced logic output 95 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#096/Advanced logic output 96 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#097/Advanced logic output 97 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#098/Advanced logic output 98 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#099/Advanced logic output 99 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#100/Advanced logic output 100 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#101/Advanced logic output 101 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#102/Advanced logic output 102 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x66 | Digital 3#103/Advanced logic output 103 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#104/Advanced logic output 104 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#105/Advanced logic output 105 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#106/Advanced logic output 106 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#107/Advanced logic output 107 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#108/Advanced logic output 108 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#109/Advanced logic output 109 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#110/Advanced logic output 110 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#111/Advanced logic output 111 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#112/Advanced logic output 112 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#113/Advanced logic output 113 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#114/Advanced logic output 114 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#115/Advanced logic output 115 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#116/Advanced logic output 116 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#117/Advanced logic output 117 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#118/Advanced logic output 118 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#119/Advanced logic output 119 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#120/Advanced logic output 120 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#121/Advanced logic output 121 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#122/Advanced logic output 122 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#123/Advanced logic output 123 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#124/Advanced logic output 124 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#125/Advanced logic output 125 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#126/Advanced logic output 126 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#127/Advanced logic output 127 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x66 | Digital 3#128/Advanced logic output 128 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#001/Object1 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x68 | Status#002/Object2 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#003/Object3 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#004/Object4 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#005/Object5 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#006/Object6 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#007/Object7 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#008/Object8 state | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#009/Remote/ Local State | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#010/Global trip | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#011/Mode of use | 2 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#012/Motor starting | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x68 | Status#013/Motor running | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x68 | Status#014/Voltage interrupt | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |
| 0x68 | Status#015/Voltage status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x68 | Status#016/CB monitoring alarm 1 | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x68 | Status#017/CB monitoring alarm 2 | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x68 | Status#018/Fault value scaling | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x68 | Status#019/RTD measurement unit | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#001/ Inrush 1 detection | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#002/ I>1 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#003/ I>2 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#004/ I>3 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#005/ I>4 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#006/ I>5 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#007/ I>6 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#008/ SOTF status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x69 | protection status#009/ P<1 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x69 | protection status#010/ P<2 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x69 | protection status#011/I< status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x69 | protection status#012/ I2/I1>1 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#013/ I2>1 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#014/ I2>2 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#015/ Ist> status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#016/ Ilr> status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#017/ N> status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#018/ 49M overload status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#019/ 49F overload status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | | ■ |
| 0x69 | protection status#020/ Icap>1 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x69 | protection status#021/ Icap>2 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x69 | protection status#022/ IN>1 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x69 | protection status#023/ IN>2 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x69 | protection status#024/ IN>3 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x69 | protection status#025/ IN>4 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x69 | protection status#026/ IN>5 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x69 | protection status#027/ IN>6 status | 1 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x69 | protection status#028/ INVN>1 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#029/ INVN>2 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#030/ V>1 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#031/ V>2 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#032/ V>3 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#033/ V<1 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#034/ V<2 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#035/ V<3 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#036/ V1<1 status | 1 | 1 | 0 | 1 | | | ■ | | ■ | |
| 0x69 | protection status#037/ V1<2 status | 1 | 1 | 0 | 1 | | | ■ | | ■ | |
| 0x69 | protection status#038/ VN>1 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |
| 0x69 | protection status#039/ VN>2 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |
| 0x69 | protection status#040/ VN>3 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x69 | protection status#041/ f>1 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#042/ f>2 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#043/ f<1 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#044/ f<2 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#045/ f<3 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#046/ f<4 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#047/ f<5 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#048/ f<6 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#049/ f<7 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#050/ f<8 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#051/ CBF status 1 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#052/ CBF status 2 | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#053/ lh5>1 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x69 | protection status#054/ CTS 1 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#055/ VTS status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#056/ Vcap>1 status | 1 | 1 | 0 | 1 | | ■ | | ■ | | |
| 0x69 | protection status#057/f +df/dt>1 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#058/f +df/dt>2 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#059/ IN int> status | 1 | 1 | 0 | 1 | | | | ■ | | |
| 0x69 | protection status#060/ Motor status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#061/ SOL1 Status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#062/ SOL2 Status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#063/ YN>1 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#064/ GN>1 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#065/ BN>1 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#066/ YN>2 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#067/ GN>2 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#068/ BN>2 status | 1 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x69 | protection status#069/ V2>1 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x69 | protection status#070/ V2>2 status | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x69 | protection status#071/ Ω>1 status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#072/ Ω>2 status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#073/ Ω<1 status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#074/ Ω<2 status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#075/ Anti-backspin status | 1 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x69 | protection status#076/ CLP operation | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x69 | protection status#077/ Programmable stage 1 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#078/ Programmable stage 2 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#079/ Programmable stage 3 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#080/ Programmable stage 4 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#081/ Programmable stage 5 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#082/ Programmable stage 6 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#083/ Programmable stage 7 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#084/ Programmable stage 8 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#085/ GOOSE NI Global Error | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#086/ PhA fault | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#087/ PhB fault | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#088/ PhC fault | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#089/ Sync1 request | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x69 | protection status#090/ Sync1 OK | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x69 | protection status#091/ Bypass | 1 | 1 | 1 | 1 | ■ | | ■ | ■ | | |
| 0x69 | protection status#092/ Sync1 fail | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x69 | protection status#093/ Good condition status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#094/ REF 1 status | 1 | 1 | 0 | 1 | | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#095/ RTD1 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x69 | protection status#096/ RTD2 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#097/ RTD3 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#098/ RTD4 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#099/ RTD5 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#100/ RTD6 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#101/ RTD7 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#102/ RTD8 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#103/ RTD9 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#104/ RTD10 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#105/ RTD11 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#106/ RTD12 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#107/ RTD13 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#108/ RTD14 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#109/ RTD15 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#110/ RTD16 status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#111/ RTD status | 1 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x69 | protection status#112/ I2/I1>2 status | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x69 | protection status#114/ EMRE status | 1 | 1 | 0 | 1 | | ■ | | | ■ | |
| 0x69 | protection status#115/f +df/dt>3 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#116/f +df/dt>4 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#117/f +df/dt>5 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#118/f +df/dt>6 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#119/f +df/dt>7 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#120/f +df/dt>8 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#121/f +df/dt>9 status | 1 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x69 | protection status#122/T- Diff status | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#123/ Inrush 2 detection | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#124/ CTS 2 status | 1 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x69 | protection status#125/ CT supervision Diff status | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#126/ REF 2 status | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#127/ Transformer monitoring 1 status | 1 | 1 | 1 | 1 | | | | | | ■ |
| 0x69 | protection status#128/ Transformer monitoring 2 status | 1 | 1 | 1 | 1 | | | | | | ■ |
| 0x69 | protection status#129/ CBF status 1 | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#130/ CBF status 2 | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#131/ V/f Alarm status | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#132/ V/f>1 status | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x69 | protection status#133/ V/f>2 status | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x6a | activation status#001/ Enable for Inrush 1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#002/ Enable for I>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#003/ Enable for I>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#004/ Enable for I>3 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#005/ Enable for I>4 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#006/ Enable for I>5 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#007/ Enable for I>6 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#008/ Enable for SOTF | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6a | activation status#009/ Enable for P<1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x6a | activation status#010/ Enable for P<2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x6a | activation status#011/ Enable for I< | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#012/ Enable for I2/I1>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#013/ Enable for I2>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#014/ Enable for I2>2 | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | ■ |
| 0x6a | activation status#015/ Enable for Ist> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#016/ Enable for Ilr> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#017/ Enable for N> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#018/ Enable for Motor 49M> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#019/ Enable for feeder 49F | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6a | activation status#020/ Enable for lcap>1 | 1 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x6a | activation status#021/ Enable for lcap>2 | 1 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x6a | activation status#022/ Enable for lN>1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x6a | activation status#023/ Enable for lN>2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x6a | activation status#024/ Enable for lN>3 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x6a | activation status#025/ Enable for lN>4 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x6a | activation status#026/ Enable for lN>5 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x6a | activation status#027/ Enable for lN>6 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x6a | activation status#028/ Enable for lNVN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#029/ Enable for lNVN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#030/ Enable for V>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#031/ Enable for V>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#032/ Enable for V>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#033/ Enable for V<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#034/ Enable for V<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#035/ Enable for V<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#036/ Enable for V1<1 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x6a | activation status#037/ Enable for V1<2 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x6a | activation status#038/ Enable for VN>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x6a | activation status#039/ Enable for VN>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x6a | activation status#040/ Enable for VN>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x6a | activation status#041/ Enable for f>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#042/ Enable for f>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#043/ Enable for f<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#044/ Enable for f<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#045/ Enable for f<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#046/ Enable for f<4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#047/ Enable for f<5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#048/ Enable for f<6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6a | activation status#049/ Enable for f<7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#050/ Enable for f<8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#051/ Enable for CB failure 1 | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6a | activation status#052/ Enable CBF timer1 | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6a | activation status#053/ Enable CBF timer2 | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6a | activation status#054/ Enable for lh5>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6a | activation status#055/ Enable for CTS 1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#056/ Enable for VTS | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#057/ Enable for Vcap>1 | 1 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x6a | activation status#058/ Enable for f+df/dt>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x6a | activation status#059/ Enable for f+df/dt>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x6a | activation status#060/ Enable for IN int> | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x6a | activation status#061/ Enable for Sync check 1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x6a | activation status#062/ Enable for CB monitoring | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#063/ Enable for Motor status | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#064/ Enable for SOL | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#065/ Enable for All YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#066/ Enable for YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#067/ Enable for GN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#068/ Enable for BN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#069/ Enable for All YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#070/ Enable for YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#071/ Enable for GN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#072/ Enable for BN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x6a | activation status#073/ Enable for V2>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#074/ Enable for V2>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x6a | activation status#075/ Enable for Q>1 | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#076/ Enable for Q>2 | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6a | activation status#077/ Enable for $\Omega < 1$ | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#078/ Enable for $\Omega < 2$ | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#079/ Enable for Anti-backspin | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x6a | activation status#080/ Enable for CLPU | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6a | activation status#081/ Enable for Auto reclosing | 1 | 1 | 1 | 0 | ■ | | | ■ | | |
| 0x6a | activation status#082/ Enable for REF 1 | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#083/ Enable for I2/I1 > 2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x6a | activation status#084/ Enable for EMRE | 1 | 1 | 1 | 0 | | ■ | | | ■ | |
| 0x6a | activation status#085/ Enable for f+df/dt > 3 | 1 | 1 | 1 | 0 | | | ■ | ■ | ■ | |
| 0x6a | activation status#086/ Enable for f+df/dt > 4 | 1 | 1 | 1 | 0 | | | ■ | ■ | ■ | |
| 0x6a | activation status#087/ Enable for f+df/dt > 5 | 1 | 1 | 1 | 0 | | | ■ | ■ | ■ | |
| 0x6a | activation status#088/ Enable for f+df/dt > 6 | 1 | 1 | 1 | 0 | | | ■ | ■ | ■ | |
| 0x6a | activation status#089/ Enable for f+df/dt > 7 | 1 | 1 | 1 | 0 | | | ■ | ■ | ■ | |
| 0x6a | activation status#090/ Enable for f+df/dt > 8 | 1 | 1 | 1 | 0 | | | ■ | ■ | ■ | |
| 0x6a | activation status#091/ Enable for f+df/dt > 9 | 1 | 1 | 1 | 0 | | | ■ | ■ | ■ | |
| 0x6a | activation status#092/ Enable for T-Diff | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#093/ Enable for Inrush 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#094/ Enable for CTS 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#095/ Enable for CT supervision Diff | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#096/ Enable for REF 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#097/ Enable for Transformer monitoring 1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#098/ Enable for Transformer monitoring 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#099/ Enable for CB failure 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#100/ Enable CBF timer1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#101/ Enable CBF timer2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#102/ Enable for V/f Alarm | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6a | activation status#103/ Enable for V/f > 1 | 1 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6a | activation status#104/ Enable for V/f>2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x6b | Scaling#001/CT primary | 4 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#002/CT secondary | 2 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#003/Number connected phase CTs | 1 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#004/EF CT primary | 4 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#005/EF CT secondary | 4 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#006/Sensitive IN CT primary | 4 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#007/Sensitive IN CT secondary | 4 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#008/CSH CT primary | 4 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#009/CSH CT secondary | 4 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#010/Nominal IN.CSH | 4 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#011/VT primary | 4 | 1 | 0 | 0 | | | ■ | ■ | ■ | |
| 0x6b | Scaling#012/VT secondary | 2 | 1 | 0 | 0 | | | ■ | ■ | ■ | ■ |
| 0x6b | Scaling#013/VN primary | 4 | 1 | 0 | 0 | | | ■ | ■ | ■ | |
| 0x6b | Scaling#014/VTy secondary | 2 | 1 | 0 | 0 | | | ■ | ■ | | |
| 0x6b | Scaling#015/VN secondary | 4 | 1 | 0 | 0 | | | ■ | ■ | ■ | ■ |
| 0x6b | Scaling#016/VT adapter secondary | 2 | 1 | 0 | 0 | | | ■ | ■ | ■ | |
| 0x6b | Scaling#017/VT type | 1 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#018/LPVT or VT rated primary voltage | 4 | 1 | 0 | 0 | ■ | | | ■ | | |
| 0x6b | Scaling#019/VN nominal primary | 4 | 1 | 0 | 0 | ■ | | | ■ | | |
| 0x6b | Scaling#020/Nominal current | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#021/Nominal voltage | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#022/LPCT rated primary current | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#023/Current factor | 1 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#024/Voltage factor | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#025/Phase rotation | 1 | 1 | 0 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6b | Scaling#026/Voltage mode | 1 | 1 | 0 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x6b | Scaling#027/Nominal frequency | 4 | 1 | 0 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6b | Scaling#028/Power direction | 1 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#029/VA magnitude correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#030/VB magnitude correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#031/VC magnitude correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#032/VA angle correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#033/VB angle correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#034/VC angle correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#035/VA adapter mag correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#036/VB adapter mag correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#037/VC adapter mag correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#038/VaY magnitude correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#039/VaY angle correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#040/VbY magnitude correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#041/VbY angle correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#042/VTy secondary | 2 | 1 | 0 | 0 | | | ■ | ■ | ■ | |
| 0x6b | Scaling#043/VaY adapter mag correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#044/VN adapter secondary | 2 | 1 | 0 | 0 | | | ■ | ■ | ■ | |
| 0x6b | Scaling#045/VN adapter mag correction | 4 | 1 | 0 | 0 | ■ | | | ■ | ■ | |
| 0x6b | Scaling#046/Phase CT polarity | 1 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#047/IN CT polarity | 1 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#048/IN.sens CT polarity | 1 | 1 | 0 | 0 | | ■ | | ■ | ■ | |
| 0x6b | Scaling#049/Reference power | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#050/CT-1 end rated voltage | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#051/CT-2 end rated voltage | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#052/CT-1 primary | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#053/CT-1 secondary | 2 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#054/IN CT-1 primary | 4 | 1 | 0 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6b | Scaling#055/IN CT-1 secondary | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#056/Phase CT-1 polarity | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#057/IN CT-1 polarity | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#058/CT-1 phase swap | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#059/CT-2 primary | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#060/CT-2 secondary | 2 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#061/IN CT-2 primary | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#062/IN CT-2 secondary | 4 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#063/Phase CT-2 polarity | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#064/IN CT-2 polarity | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#065/CT-2 phase swap | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#066/VT location | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#067/Phase swap activation input | 2 | 1 | 0 | 0 | | | | | | ■ |
| 0x6b | Scaling#068/Enable CSH30 | 1 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#069/EF CT primary | 4 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#070/EF CT secondary | 4 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6b | Scaling#071/CSH CT polarity | 1 | 1 | 0 | 0 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#001/Phase current | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#002/Phase current IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#003/Phase current IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#004/Phase current IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#005/Phase-to-phase voltage VAB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#006/Phase-to-phase voltage VBC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#007/Phase-to-phase voltage VCA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#008/Phase-to-ground voltage VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#009/Phase-to-ground voltage VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6c | measurement 1#010/ Phase-to-ground voltage VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#011/IN. meas | 4 | 1 | 0 | 1 | | ■ | | ■ | ■ | |
| 0x6c | measurement 1#012/IN. sens | 4 | 1 | 0 | 1 | | ■ | | ■ | ■ | |
| 0x6c | measurement 1#013/IN. CSH residual current | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#014/IN. calc | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#015/ Measured VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |
| 0x6c | measurement 1#016/ Calculated VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#017/ Phase current THD | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#018/ Phase current IA THD | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#019/ Phase current IB THD | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#020/ Phase current IC THD | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#021/ Voltage THD | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#022/VA THD | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#023/ VB THD | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#024/ VC THD | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#025/ Cosφ | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#026/ Tangent φ | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#027/ Power angle | 2 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#028/ Frequency | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6c | measurement 1#029/ Phase A active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#030/ Phase B active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#031/ Phase C active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#032/ Phase A reactive power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#033/ Phase B reactive power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#034/ Phase C reactive power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#035/ Phase A apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#036/ Phase B apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6c | measurement 1#037/ Phase C apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#038/ Cosφ of phase A | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#039/ Cosφ of phase B | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#040/ Cosφ of phase C | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#041/ Positive sequence I1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#042/ Negative sequence I2 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#043/ Current ratio I2/I1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#044/ Current phase sequence | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#045/ Voltage phase sequence | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#046/ Active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#047/ Reactive power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#048/ Apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#049/ Power factor | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x6c | measurement 1#050/ VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#051/ Active power rms | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#052/ Reactive power rms | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#053/ Apparent power rms | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#054/ Phase current Iph rms | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#055/ Phase current IA rms | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#056/ Phase current IB rms | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#057/ Phase current IC rms | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#058/ Avg rms voltage | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#059/ Phase-Earth voltage VARMS | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#060/ Phase-Earth voltage VBRMS | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#061/ Phase-Earth voltage VCRMS | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6c | measurement 1#062/ Phase-Earth voltage VNRMS | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#063/ Ambient temperature | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | | |
| 0x6c | measurement 1#064/ Positive sequence V1 | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#065/ Negative sequence V2 | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#066/ V2/V1 | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#067/ Frequency fy | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x6c | measurement 1#068/ Phase-to-phase voltage VABy | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x6c | measurement 1#069/ Phase angle difference | 2 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x6c | measurement 1#070/IA min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#071/IB min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#072/IC min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#073/IA max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#074/IB max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#075/IC max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#076/IN. meas min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#077/IN. sens min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#078/IN. meas max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#079/IN. sens max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#080/IA rms min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#081/IB rms min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#082/IC rms min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#083/IA rms max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#084/IB rms max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#085/IC rms max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#086/IN. CSH min | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#087/IN. CSH max | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#088/ VAB min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#089/ VBC min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6c | measurement 1#090/ VCA min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#091/ VAB max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#092/ VBC max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#093/ VCA max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#094/ VPP min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#095/ VPP max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#096/ VPN min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#097/ VPN max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#098/ VN min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#099/ VN max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#100/ VPN average | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#101/ VPP average | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#102/VA rms min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#103/ VB rms min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#104/ VC rms min | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#105/VA rms max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#106/ VB rms max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#107/ VC rms max | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x6c | measurement 1#108/ Min power factor | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#109/ Max power factor | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#110/ Minimum frequency | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6c | measurement 1#111/ Maximum frequency | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6c | measurement 1#112/ Minimum active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#113/ Minimum react. power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#114/ Minimum apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#115/ Maximum active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#116/ Maximum react. power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6c | measurement 1#117/ Maximum apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#118/ Min of IA IB IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#119/ Max of IA IB IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#120/IA demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#121/IA max demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#122/IA min demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#123/IB demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#124/IB max demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#125/IB min demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#126/IC demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#127/IC max demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#128/IC min demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#129/ Active power demand | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#130/ Demand maximum active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#131/ Demand minimum active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#132/ Reactive power demand | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#133/ Demand max. reactive power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#134/ Demand min. reactive power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#135/ Apparent power demand | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#136/ Demand max. apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#137/ Demand min. apparent power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#138/ Power factor demand | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#139/ Demand maximum power factor | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#140/ Demand minimum power factor | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#141/IA rms max demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x6c | measurement 1#142/IA rms min demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#143/IB rms max demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#144/IB rms min demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#145/IC rms max demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#146/IC rms min demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#147/Active power rms demand | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#148/RMS Demand max active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#149/RMS Demand min active power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#150/Reactive power rms demand | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#151/RMS demand max react. power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#152/RMS demand min react. power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#153/Apparent power rms demand | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#154/RMS demand max. app. power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#155/RMS demand min. app. power | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6c | measurement 1#156/3ph average current | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#157/IA rms demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#158/IB rms demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6c | measurement 1#159/IC rms demand | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#001/Exported energy | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6d | measurement 2#002/Exp. reactive energy | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6d | measurement 2#003/Imported energy | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6d | measurement 2#004/Imp. reactive energy | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | |
| 0x6d | measurement 2#005/Temperature 1 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#006/Temperature 2 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#007/Temperature 3 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6d | measurement 2#008/ Temperature 4 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#009/ Temperature 5 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#010/ Temperature 6 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#011/ Temperature 7 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#012/ Temperature 8 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#013/ Temperature 9 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#014/ Temperature 10 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#015/ Temperature 11 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#016/ Temperature 12 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#017/ Temperature 13 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#018/ Temperature 14 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#019/ Temperature 15 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#020/ Temperature 16 | 2 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6d | measurement 2#021/ External AI1 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#022/ External AI2 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#023/ External AI3 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#024/ External AI4 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#025/ External AI5 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#026/ External AI6 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#027/ External AI7 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#028/ External AI8 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#029/ External AI9 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#030/ External AI10 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#031/ External AI11 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#032/ External AI12 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#033/ External AI13 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#034/ External AI14 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#035/ External AI15 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6d | measurement 2#036/ External AI16 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#037/ External AI17 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#038/ External AI18 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#039/ External AI19 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#040/ External AI20 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#041/ External AI21 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#042/ External AI22 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#043/ External AI23 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#044/ External AI24 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#045/ External AI25 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#046/ External AI26 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#047/ External AI27 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#048/ External AI28 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#049/ External AI29 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#050/ External AI30 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#051/ External AI31 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#052/ External AI32 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#053/ External AI33 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#054/ External AI34 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#055/ External AI35 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#056/ External AI36 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#057/ External AI37 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#058/ External AI38 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#059/ External AI39 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#060/ External AI40 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#061/ External AI41 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#062/ External AI42 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#063/ External AI43 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#064/ External AI44 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6d | measurement 2#065/ External AI45 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#066/ External AI46 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#067/ External AI47 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#068/ External AI48 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#069/ External AI49 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#070/ External AI50 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#071/ External AI51 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#072/ External AI52 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#073/ External AI53 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#074/ External AI54 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#075/ External AI55 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#076/ External AI56 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#077/ External AI57 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#078/ External AI58 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#079/ External AI59 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#080/ External AI60 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#081/ External AI61 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#082/ External AI62 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#083/ External AI63 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6d | measurement 2#084/ External AI64 | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | |
| 0x6e | measurement 3#001/ Algorithm condition | 1 | 1 | 0 | 1 | | | | ■ | | |
| 0x6e | measurement 3#002/ Motor speed | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#003/ Last fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#004/ I>1 fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#005/ I>2 fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#006/ I>3 fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#007/ Fault reactance | 4 | 1 | 0 | 1 | | | | ■ | | |
| 0x6e | measurement 3#008/ Fault value $\Omega > 1$ | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#009/ Fault value $\Omega > 2$ | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6e | measurement 3#010/ Fault value $\Omega < 1$ | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#011/ Fault value $\Omega < 2$ | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#012/ Last EF current | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#013/ Fault current $I_{cap} > 1$ | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6e | measurement 3#014/ Fault current $I_{cap} > 2$ | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6e | measurement 3#015/ $I_N > 1$ fault value | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x6e | measurement 3#016/ $I_N > 2$ fault value | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x6e | measurement 3#017/ $I_N > 3$ fault value | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x6e | measurement 3#018/ SOTF fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x6e | measurement 3#019/ $V_N > 1$ fault value | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |
| 0x6e | measurement 3#020/ $V_N > 2$ fault value | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |
| 0x6e | measurement 3#021/ $V_N > 3$ fault value | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | ■ |
| 0x6e | measurement 3#022/ $I_{NVN} > 1$ fault value | 4 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x6e | measurement 3#023/ $I_{NVN} > 2$ fault value | 4 | 1 | 0 | 1 | | | | ■ | ■ | |
| 0x6e | measurement 3#024/ $I_2 > 1$ fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#025/f +df/dt>1 fault value | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x6e | measurement 3#026/f +df/dt>2 fault value | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x6e | measurement 3#027/ $I > 4$ fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#028/ $I > 5$ fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#029/ $I > 6$ fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#030/ $I_N > 4$ fault value | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x6e | measurement 3#031/ $I_2 > 2$ fault value | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#032/ $I_N > 5$ fault value | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x6e | measurement 3#033/ $I_N > 6$ fault value | 4 | 1 | 0 | 1 | ■ | | | ■ | ■ | ■ |
| 0x6e | measurement 3#034/ REF 1 differential curr. | 4 | 1 | 0 | 1 | | ■ | | ■ | ■ | ■ |
| 0x6e | measurement 3#035/ Motor thermal level | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#036/ Feeder thermal level | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | | ■ |
| 0x6e | measurement 3#037/ Estimated time to trip | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | | ■ |
| 0x6e | measurement 3#038/ Estimated time to trip | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6e | measurement 3#039/ Estimated time to restart | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#040/ Motor running time | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#041/I% load | 4 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x6e | measurement 3#042/f +df/dt>3 fault value | 4 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x6e | measurement 3#043/f +df/dt>4 fault value | 4 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x6e | measurement 3#044/f +df/dt>5 fault value | 4 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x6e | measurement 3#045/f +df/dt>6 fault value | 4 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x6e | measurement 3#046/f +df/dt>7 fault value | 4 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x6e | measurement 3#047/f +df/dt>8 fault value | 4 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x6e | measurement 3#048/f +df/dt>9 fault value | 4 | 1 | 0 | 1 | | | ■ | ■ | ■ | |
| 0x6e | measurement 3#049/ REF 2 differential curr. | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6e | measurement 3#050/ Differential current Id1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6e | measurement 3#051/ Differential current Id2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6e | measurement 3#052/ Differential current Id3 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6e | measurement 3#053/ Bias current Ib1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6e | measurement 3#054/ Bias current Ib2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6e | measurement 3#055/ Bias current Ib3 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x70 | harmonic 1#001/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#002/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#003/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#004/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#005/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#006/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#007/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#008/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#009/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#010/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#011/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x70 | harmonic 1#012/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#013/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#014/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#015/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#016/ Harmonics of IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#017/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#018/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#019/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#020/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#021/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#022/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#023/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#024/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#025/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#026/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#027/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#028/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#029/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#030/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#031/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#032/ Harmonics of IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#033/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#034/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#035/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#036/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#037/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#038/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#039/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#040/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x70 | harmonic 1#041/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#042/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#043/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#044/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#045/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#046/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#047/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#048/ Harmonics of IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | |
| 0x70 | harmonic 1#049/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#050/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#051/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#052/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#053/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#054/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#055/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#056/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#057/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#058/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#059/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#060/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#061/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#062/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#063/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#064/ Harmonics of VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#065/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#066/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#067/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#068/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#069/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x70 | harmonic 1#070/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#071/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#072/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#073/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#074/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#075/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#076/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#077/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#078/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#079/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#080/ Harmonics of VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#081/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#082/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#083/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#084/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#085/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#086/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#087/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#088/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#089/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#090/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#091/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#092/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#093/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#094/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#095/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#096/ Harmonics of VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#097/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#098/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x70 | harmonic 1#099/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#100/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#101/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#102/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#103/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#104/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#105/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#106/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#107/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#108/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#109/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#110/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#111/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x70 | harmonic 1#112/ Harmonics of VN | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x71 | static#001/Engine running hours | 4 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#002/Engine running (in seconds) | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#003/Start counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#004/DI1 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#005/DI2 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#006/DI3 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#007/DI4 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#008/DI5 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#009/DI6 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#010/DI7 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#011/DI8 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#012/DI9 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#013/DI10 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#014/DI11 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#015/DI12 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#016/DI13 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#017/DI14 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#018/DI15 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#019/DI16 counter | 2 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x71 | static#020/DI17 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#021/DI18 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x71 | static#022/DI19 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#023/DI20 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#024/DI21 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#025/DI22 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#026/DI23 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#027/DI24 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#028/DI25 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#029/DI26 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#030/DI27 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#031/DI28 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#032/DI29 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#033/DI30 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#034/DI31 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#035/DI32 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#036/DI33 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#037/DI34 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#038/DI35 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#039/DI36 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#040/DI37 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#041/DI38 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#042/DI39 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#043/DI40 counter | 2 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x71 | static#044/Shot1 start counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#045/Shot2 start counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#046/Shot3 start counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#047/Shot4 start counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#048/Shot5 start counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#049/AR start counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#050/AR fail counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#051/AR shot number | 1 | 1 | 0 | 1 | ■ | ■ | | ■ | | |
| 0x71 | static#052/Motor start counter | 2 | 1 | 1 | 1 | ■ | ■ | | | ■ | |
| 0x71 | static#053/Cold starts in refer time | 2 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x71 | static#054/Hot starts in refer time | 2 | 1 | 0 | 1 | ■ | ■ | | | ■ | |
| 0x72 | CB monitor#001/Low limit (primary value) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#002/Low limit (primary value) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#003/Low limit (primary value) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x72 | CB monitor#004/Low limit (primary value) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#005/Low limit (primary value) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#006/High limit (xIn) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#007/High limit (xIn) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#008/High limit (xIn) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#009/High limit (xIn) | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#010/Cumul broken current IA 1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#011/Cumul broken current IA 2 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#012/Cumul broken current IA 3 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#013/Cumul broken current IA 4 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#014/Cumul broken current IA 5 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#015/Broken IA counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#016/Broken IA counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#017/Broken IA counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#018/Broken IA counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#019/Broken IA counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#020/Cumul broken current IB 1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#021/Cumul broken current IB 2 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#022/Cumul broken current IB 3 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#023/Cumul broken current IB 4 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#024/Cumul broken current IB 5 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#025/Broken IB counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#026/Broken IB counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#027/Broken IB counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#028/Broken IB counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#029/Broken IB counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#030/Cumul broken current IC 1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#031/Cumul broken current IC 2 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x72 | CB monitor#032/Cumul broken current IC 3 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#033/Cumul broken current IC 4 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#034/Cumul broken current IC 5 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#035/Broken IC counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#036/Broken IC counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#037/Broken IC counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#038/Broken IC counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#039/Broken IC counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#040/Cumulative broken IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#041/Cumulative broken IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#042/Cumulative broken IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#043/CB open counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#044/Protection trip counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#045/Rack out counter | 2 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#046/Alarm 1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#047/Alarm 1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#048/Alarm 1 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#049/Alarm 2 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#050/Alarm 2 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x72 | CB monitor#051/Alarm 2 | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x73 | command#001/Open select object 1 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#002/Close select object 1 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#003/Execute operation Object1 | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#004/Open select object 2 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#005/Close select object 2 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#006/Execute operation Object2 | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#007/Cancel selected operation | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#008/Open select object 3 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x73 | command#009/Close select object 3 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#010/Execute operation Object3 | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#011/Open select object 4 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#012/Close select object 4 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#013/Execute operation Object4 | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#014/Open select object 5 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#015/Close select object 5 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#016/Execute operation Object5 | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#017/Open select object 6 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#018/Close select object 6 | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#019/Execute operation Object6 | 1 | 0 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#020/Max control pulse length Object1 | 4 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#021/Max control pulse length Object2 | 4 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#022/Max control pulse length Object3 | 4 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#023/Max control pulse length Object4 | 4 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#024/Max control pulse length Object5 | 4 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#025/Max control pulse length Object6 | 4 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#026/Timer 1 status | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#027/Timer 2 status | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#028/Timer 3 status | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#029/Timer 4 status | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#030/Sync1 request | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x73 | command#031/Sync1 OK | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x73 | command#032/Bypass | 1 | 1 | 1 | 1 | ■ | | ■ | ■ | | |
| 0x73 | command#033/Sync1 fail | 1 | 1 | 0 | 1 | ■ | | ■ | ■ | | |
| 0x73 | command#034/Release LED latches | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x73 | command#035/Release latches | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#036/Setting group | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#037/Clear min/max/demand | 1 | 1 | 1 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x73 | command#038/Release all latches | 1 | 1 | 1 | 1 | | | | ■ | ■ | ■ |
| 0x73 | command#039/Minimum global trip cmd time | 4 | 1 | 1 | 1 | ■ | ■ | | ■ | ■ | |
| 0x76 | last fault#001/Fault recorder IA | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x76 | last fault#002/Fault recorder IB | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x76 | last fault#003/Fault recorder IC | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x76 | last fault#004/Fault recorder VA | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x76 | last fault#005/Fault recorder VB | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x76 | last fault#006/Fault recorder VC | 4 | 1 | 0 | 1 | ■ | | ■ | ■ | ■ | |
| 0x76 | last fault#007/Fault recorder IN | 4 | 1 | 0 | 1 | ■ | ■ | | ■ | ■ | ■ |
| 0x76 | last fault#008/Fault recorder frequency | 4 | 1 | 0 | 1 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x6f | measurement 4#001/Phase current IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#002/Phase current IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#003/Phase current IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#004/Phase current IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#005/Phase current IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#006/Phase current IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#007/IN-1.meas | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#008/IN-1.calc | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#009/Voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#010/IN-2.meas | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#011/IN-2.calc | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#012/Phase current IA-1 THD | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#013/Phase current IB-1 THD | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#014/Phase current IC-1 THD | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#015/Phase current IA-2 THD | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6f | measurement 4#016/ Phase current IB-2 THD | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#017/ Phase current IC-2 THD | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#018/ Voltage V THD | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#019/ Phase current IP-1 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#020/ Phase current IA-1 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#021/ Phase current IB-1 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#022/ Phase current IC-1 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#023/ Phase current IP-2 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#024/ Phase current IA-2 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#025/ Phase current IB-2 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#026/ Phase current IC-2 rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#027/ Voltage V rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#028/IA- 1 min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#029/IA- 1 max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#030/IB- 1 min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#031/IB- 1 max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#032/ IC-1 min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#033/ IC-1 max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#034/IA- 2 min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#035/IA- 2 max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#036/IB- 2 min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#037/IB- 2 max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#038/ IC-2 min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#039/ IC-2 max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#040/IA- 1 min rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#041/IA- 1 max rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#042/IB- 1 min rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#043/IB- 1 max rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#044/ IC-1 min rms | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6f | measurement 4#045/ IC-1 max rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#046/IA- 2 min rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#047/IA- 2 max rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#048/IB- 2 min rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#049/IB- 2 max rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#050/ IC-2 min rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#051/ IC-2 max rms | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#052/ IN-1.meas min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#053/ IN-1.meas max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#054/ IN-2.meas min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#055/ IN-2.meas max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#056/ Voltage V min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#057/ Voltage V max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#058/ Voltage V rms min | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#059/ Voltage V rms max | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#060/IA- 1 demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#061/IA- 1 max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#062/IA- 1 min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#063/IB- 1 demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#064/IB- 1 max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#065/IB- 1 min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#066/ IC-1 demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#067/ IC-1 max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#068/ IC-1 min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#069/IA- 2 demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#070/IA- 2 max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#071/IA- 2 min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#072/IB- 2 demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#073/IB- 2 max demand | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6f | measurement 4#074/IB-2 min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#075/IC-2 demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#076/IC-2 max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#077/IC-2 min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#078/IA-1 rms demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#079/IA-1 rms max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#080/IA-1 rms min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#081/IB-1 rms demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#082/IB-1 rms max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#083/IB-1 rms min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#084/IC-1 rms demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#085/IC-1 rms max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#086/IC-1 rms min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#087/IA-2 rms demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#088/IA-2 rms max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#089/IA-2 rms min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#090/IB-2 rms demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#091/IB-2 rms max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#092/IB-2 rms min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#093/IC-2 rms demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#094/IC-2 rms max demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#095/IC-2 rms min demand | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#096/CT-1 average current | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#097/CT-2 average current | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#098/Phase current IP-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#099/Phase current IP-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#100/Positive sequence I1-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#101/Negative sequence I2-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#102/Current ratio I2-1/I1-1 | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x6f | measurement 4#103/ CT-1 phase sequence | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#104/ Positive sequence I1-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#105/ Negative sequence I2-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#106/ Current ratio I2-2/I1-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x6f | measurement 4#107/ CT-2 phase sequence | 1 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#001/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#002/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#003/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#004/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#005/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#006/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#007/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#008/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#009/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#010/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#011/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#012/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#013/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#014/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#015/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#016/ Harmonics of IA-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#017/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#018/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#019/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#020/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#021/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#022/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#023/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#024/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x74 | harmonic 2#025/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#026/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#027/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#028/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#029/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#030/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#031/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#032/ Harmonics of IB-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#033/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#034/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#035/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#036/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#037/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#038/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#039/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#040/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#041/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#042/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#043/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#044/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#045/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#046/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#047/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#048/ Harmonics of IC-1 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#049/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#050/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#051/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#052/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#053/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x74 | harmonic 2#054/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#055/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#056/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#057/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#058/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#059/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#060/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#061/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#062/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#063/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#064/ Harmonics of IA-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#065/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#066/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#067/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#068/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#069/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#070/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#071/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#072/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#073/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#074/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#075/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#076/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#077/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#078/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#079/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#080/ Harmonics of IB-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#081/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#082/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x74 | harmonic 2#083/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#084/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#085/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#086/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#087/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#088/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#089/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#090/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#091/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#092/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#093/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#094/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#095/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#096/ Harmonics of IC-2 | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#097/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#098/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#099/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#100/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#101/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#102/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#103/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#104/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#105/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#106/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#107/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#108/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#109/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#110/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x74 | harmonic 2#111/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x74 | harmonic 2#112/ Harmonics of voltage V | 4 | 1 | 0 | 1 | | | | | | ■ |
| 0x320 | arc setting#001/I>int. pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#002/IN>int. pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#003/Enabel for Arc stage 1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#004/Enabel for Arc stage 2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#005/Enabel for Arc stage 3 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#006/Enabel for Arc stage 4 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#007/Enabel for Arc stage 5 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#008/Enabel for Arc stage 6 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#009/Enabel for Arc stage 7 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#010/Enabel for Arc stage 8 | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#011/Stage 1 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#012/Stage 2 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#013/Stage 3 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#014/Stage 4 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#015/Stage 5 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#016/Stage 6 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#017/Stage 7 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#018/Stage 8 mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#019/Trip 1 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#020/Trip 2 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#021/Trip 3 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#022/Trip 4 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#023/Trip 5 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#024/Trip 6 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#025/Trip 7 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#026/Trip 8 delay [x1ms] | 1 | 1 | 1 | 0 | | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x320 | arc setting#027/Min. hold time [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#028/Min. hold time2 [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#029/Min. hold time3 [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#030/Min. hold time4 [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#031/Min. hold time5 [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#032/Min. hold time6 [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#033/Min. hold time7 [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#034/Min. hold time8 [x1ms] | 4 | 1 | 1 | 0 | | | | ■ | ■ | ■ |
| 0x320 | arc setting#035/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x321 | Inrush setting#001/Enable for Inrush 1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x321 | Inrush setting#002/Max inrush current | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x321 | Inrush setting#003/Pickup for 2nd harmonic | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x321 | Inrush setting#004/Inrush operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x321 | Inrush setting#005/CT input | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x322 | I>1 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#009/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#010/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#011/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#012/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#013/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#014/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#015/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x322 | I>1 setting#016/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#017/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#018/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#019/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#020/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#021/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#022/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#023/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#024/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#025/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#026/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#027/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#028/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#029/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#030/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#031/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#032/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#033/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#034/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#035/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#036/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#037/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#038/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#039/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#040/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#041/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#042/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#043/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x322 | I>1 setting#044/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#045/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#046/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#047/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#048/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#049/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#050/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#051/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#052/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#053/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#054/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#055/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#056/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#057/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#058/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#059/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#060/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#061/Enable for I>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#062/Enable for I>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#063/Enable for I>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#064/Enable for I>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#065/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#066/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#067/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#068/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#069/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#070/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#071/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x322 | I>1 setting#072/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#073/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#074/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#075/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#076/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#077/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#078/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#079/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#080/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#081/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#082/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#083/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#084/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x322 | I>1 setting#085/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x322 | I>1 setting#086/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x322 | I>1 setting#087/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x322 | I>1 setting#088/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x323 | I>2 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#009/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#010/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#011/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x323 | I>2 setting#012/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#013/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#014/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#015/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#016/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#017/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#018/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#019/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#020/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#021/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#022/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#023/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#024/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#025/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#026/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#027/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#028/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#029/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#030/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#031/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#032/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#033/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#034/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#035/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#036/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#037/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#038/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#039/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x323 | I>2 setting#040/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#041/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#042/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#043/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#044/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#045/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#046/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#047/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#048/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#049/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#050/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#051/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#052/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#053/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#054/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#055/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#056/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#057/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#058/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#059/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#060/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#061/Enable for I>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#062/Enable for I>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#063/Enable for I>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#064/Enable for I>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#065/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#066/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#067/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x323 | I>2 setting#068/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#069/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#070/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#071/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#072/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#073/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#074/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#075/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#076/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#077/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#078/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#079/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#080/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#081/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#082/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#083/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#084/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x323 | I>2 setting#085/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x323 | I>2 setting#086/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x323 | I>2 setting#087/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x323 | I>2 setting#088/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x324 | I>3 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x324 | I>3 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#009/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#010/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#011/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#012/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#013/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#014/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#015/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#016/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#017/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#018/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#019/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#020/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#021/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#022/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#023/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#024/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#025/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#026/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#027/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#028/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#029/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#030/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#031/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#032/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#033/Enable for I>3 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x324 | I>3 setting#034/Enable for I>3 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#035/Enable for I>3 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#036/Enable for I>3 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#037/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#038/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#039/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#040/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#041/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#042/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#043/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#044/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#045/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#046/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#047/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#048/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#049/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#050/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#051/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#052/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#053/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#054/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#055/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#056/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#057/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#058/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#059/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#060/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#061/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#062/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x324 | I>3 setting#063/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#064/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#065/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#066/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#067/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#068/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#069/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#070/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#071/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#072/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#073/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#074/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#075/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#076/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#077/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#078/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#079/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#080/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#081/Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#082/Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#083/Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#084/Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x324 | I>3 setting#085/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x324 | I>3 setting#086/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x324 | I>3 setting#087/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x324 | I>3 setting#088/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x325 | I>4 setting#001/Enable for I>4 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#002/Enable for I>4 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x325 | I>4 setting#003/Enable for I>4 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#004/Enable for I>4 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#009/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#010/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#011/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#012/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#013/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#014/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#015/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#016/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#017/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#018/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#019/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#020/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#021/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#022/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#023/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#024/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#025/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#026/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#027/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#028/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#029/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#030/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#031/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x325 | I>4 setting#032/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#033/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#034/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#035/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#036/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#037/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#038/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#039/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#040/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#041/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#042/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#043/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#044/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#045/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#046/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#047/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#048/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#049/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#050/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#051/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#052/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#053/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#054/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#055/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#056/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#057/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#058/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#059/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x325 | I>4 setting#060/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#061/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#062/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#063/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#064/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#065/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#066/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#067/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#068/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#069/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#070/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#071/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#072/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#073/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#074/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#075/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#076/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#077/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#078/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#079/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#080/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#081/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#082/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#083/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#084/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x325 | I>4 setting#085/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x325 | I>4 setting#086/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x325 | I>4 setting#087/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x325 | I>4 setting#088/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x326 | I>5 setting#001/Enable for I>5 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#002/Enable for I>5 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#003/Enable for I>5 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#004/Enable for I>5 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#009/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#010/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#011/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#012/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#013/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#014/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#015/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#016/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#017/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#018/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#019/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#020/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#021/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#022/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#023/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#024/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#025/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#026/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#027/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x326 | I>5 setting#028/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#029/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#030/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#031/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#032/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#033/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#034/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#035/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#036/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#037/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#038/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#039/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#040/VTs blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#041/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#042/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#043/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#044/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#045/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#046/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#047/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#048/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#049/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#050/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#051/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#052/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#053/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#054/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#055/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x326 | I>5 setting#056/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#057/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#058/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#059/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#060/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#061/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#062/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#063/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#064/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#065/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#066/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#067/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#068/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#069/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#070/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#071/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#072/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#073/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#074/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#075/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#076/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#077/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#078/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#079/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#080/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#081/Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#082/Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#083/Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x326 | I>5 setting#084/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x326 | I>5 setting#085/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x326 | I>5 setting#086/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x326 | I>5 setting#087/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x326 | I>5 setting#088/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x327 | I>6 setting#001/Enable for I>6 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#002/Enable for I>6 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#003/Enable for I>6 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#004/Enable for I>6 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#009/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#010/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#011/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#012/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#013/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#014/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#015/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#016/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#017/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#018/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#019/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#020/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#021/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#022/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#023/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#024/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x327 | I>6 setting#025/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#026/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#027/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#028/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#029/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#030/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#031/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#032/ Direction mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#033/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#034/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#035/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#036/ Characteristic angle | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#037/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#038/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#039/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#040/VTS blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#041/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#042/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#043/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#044/Tripping logic | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#045/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#046/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#047/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#048/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#049/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#050/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#051/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#052/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x327 | I>6 setting#053/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#054/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#055/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#056/Inrush blocking | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#057/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#058/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#059/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#060/SOL status | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#061/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#062/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#063/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#064/SOL operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#065/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#066/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#067/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#068/SOL TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#069/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#070/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#071/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#072/Dynamic mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#073/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#074/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#075/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#076/Dynamic threshold | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#077/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#078/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#079/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#080/Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x327 | I>6 setting#081/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#082/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#083/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#084/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x327 | I>6 setting#085/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x327 | I>6 setting#086/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x327 | I>6 setting#087/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x327 | I>6 setting#088/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x328 | SOFT setting#001/ Enable for SOTF | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x328 | SOFT setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x328 | SOFT setting#003/Dead line detection delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x328 | SOFT setting#004/ SOTF active timer | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x328 | SOFT setting#005/Dead line detection input | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x329 | P<1 setting#001/Pick- up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#003/Pick- up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#004/Pick- up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#009/Enable for P<1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#010/Enable for P<1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#011/Enable for P<1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x329 | P<1 setting#012/Enable for P<1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#001/Pick- up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x32a | P<2 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#009/Enable for P<2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#010/Enable for P<2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#011/Enable for P<2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32a | P<2 setting#012/Enable for P<2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x32b | I<1 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#009/Enable for I< | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#010/Enable for I< | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#011/Enable for I< | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#012/Enable for I< | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#013/I< block limit | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#014/I< block limit | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#015/I< block limit | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32b | I<1 setting#016/I< block limit | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x32c | I2>I1 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x32c | I2>I1 setting#009/Enable for I2/I1>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32c | I2>I1 setting#010/Enable for I2/I1>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32c | I2>I1 setting#011/Enable for I2/I1>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32c | I2>I1 setting#012/Enable for I2/I1>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32c | I2>I1 setting#013/CT input | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32c | I2>I1 setting#014/CT input | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32c | I2>I1 setting#015/CT input | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32c | I2>I1 setting#016/CT input | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#005/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#006/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#007/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#008/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#013/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#014/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x32d | I2>2 setting#015/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#016/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#017/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#018/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#019/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#020/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#021/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#022/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#023/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#024/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#025/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#026/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#027/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#028/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#029/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#030/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#031/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#032/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#033/ Enable for I2>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#034/ Enable for I2>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#035/ Enable for I2>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#036/ Enable for I2>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32d | I2>2 setting#037/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32d | I2>2 setting#038/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32d | I2>2 setting#039/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32d | I2>2 setting#040/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32e | I2>1 setting#001/Pick- up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#003/Pick- up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x32e | I2>1 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#009/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#010/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#011/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#012/TMS | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#013/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#014/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#015/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#016/Reset curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#017/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#018/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#019/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#020/Reset delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#021/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#022/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#023/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#024/Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#025/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#026/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#027/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#028/DT adder | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#029/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#030/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#031/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#032/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x32e | I2>1 setting#033/ Enable for I2>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#034/ Enable for I2>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#035/ Enable for I2>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#036/ Enable for I2>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x32e | I2>1 setting#037/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32e | I2>1 setting#038/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32e | I2>1 setting#039/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32e | I2>1 setting#040/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x32f | Ist> setting#001/Enable for Ist> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x32f | Ist> setting#002/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x32f | Ist> setting#003/Motor start time | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x330 | Ilr> setting#001/Enable for Ilr> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x330 | Ilr> setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x330 | Ilr> setting#003/ Operating curve | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x330 | Ilr> setting#004/Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x331 | N> setting#001/Enable for N> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x331 | N> setting#002/Max motor Hot starts | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x331 | N> setting#003/Max motor cold starts | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x331 | N> setting#004/Min time between motor starts | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x331 | N> setting#005/ Reference period | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x331 | N> setting#006/Hot Status Limit | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#001/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#002/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#003/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#004/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#005/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#006/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#007/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x332 | Motor T> setting#008/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#009/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#010/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#011/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#012/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#013/ Time constant for motor starting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#014/ Time constant for motor starting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#015/ Time constant for motor starting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#016/ Time constant for motor starting | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#017/ Cooling time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#018/ Cooling time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#019/ Cooling time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#020/ Cooling time constant | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#021/ Unbalance factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#022/ Unbalance factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#023/ Unbalance factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#024/ Unbalance factor | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#025/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#026/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#027/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#028/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#029/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#030/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#031/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#032/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x332 | Motor T> setting#033/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#034/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#035/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#036/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#037/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#038/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#039/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#040/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#041/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#042/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#043/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#044/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#045/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#046/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#047/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#048/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#049/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#050/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#051/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#052/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#053/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#054/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#055/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x332 | Motor T> setting#056/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#057/ Enable for 49M> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#058/ Enable for 49M> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#059/ Enable for 49M> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x332 | Motor T> setting#060/ Enable for 49M> | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x333 | Feeder T> setting#001/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#002/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#003/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#004/ Basic current setting | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#005/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#006/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#007/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#008/ Max permissive I factor | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#009/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#010/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#011/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#012/ Heating time constant | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#013/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#014/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#015/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#016/ Thermal alarm value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#017/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#018/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#019/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#020/ Reserve time thermal alarm | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#021/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x333 | Feeder T> setting#022/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#023/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#024/ Operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#025/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#026/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#027/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#028/ Nominal ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#029/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#030/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#031/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#032/ Max object temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#033/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#034/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#035/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#036/ Alarm temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#037/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#038/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#039/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#040/ Min ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#041/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#042/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#043/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#044/ Default ambient temperature | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x333 | Feeder T> setting#045/ Enable for 49F | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#046/ Enable for 49F | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#047/ Enable for 49F | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#048/ Enable for 49F | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | | ■ |
| 0x333 | Feeder T> setting#049/ CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x333 | Feeder T> setting#050/ CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x333 | Feeder T> setting#051/ CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x333 | Feeder T> setting#052/ CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x334 | Icap>1 setting#001/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#002/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#003/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#004/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#009/ Enable for Icap>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#010/ Enable for Icap>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#011/ Enable for Icap>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#012/ Enable for Icap>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#013/ Compensation mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x334 | Icap>1 setting#017/ Compensation current | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#001/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#002/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#003/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#004/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x335 | Icap>2 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#009/ Enable for Icap>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#010/ Enable for Icap>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#011/ Enable for Icap>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#012/ Enable for Icap>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#013/ Compensation mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#017/ Compensation current | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x335 | Icap>2 setting#021/Max allowed faults | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x336 | IN>1 setting#001/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#002/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#003/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#004/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#005/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#006/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#007/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#008/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#009/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#010/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#011/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#012/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#013/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#014/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#015/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#016/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#017/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#018/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x336 | IN>1 setting#019/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#020/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#021/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#022/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#023/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#024/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#029/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#030/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#031/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#032/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#033/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#034/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#035/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#036/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#037/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#038/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#039/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#040/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#041/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#042/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#043/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#044/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#045/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#046/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#047/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x336 | IN>1 setting#048/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#049/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#050/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#051/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#052/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#053/ Enable for IN>1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#054/ Enable for IN>1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#055/ Enable for IN>1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#056/ Enable for IN>1 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#057/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#058/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#059/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#060/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#061/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#062/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#063/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#064/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#065/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#066/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#067/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#068/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#069/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#070/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#071/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#072/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#073/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#074/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#075/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x336 | IN>1 setting#076/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#077/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#078/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#079/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#080/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#081/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#082/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#083/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#084/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#085/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#086/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#087/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#088/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#089/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#090/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#091/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#092/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#093/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#094/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#095/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#096/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#097/ Enable faulty phase detection | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#098/Phase currents change limit | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x336 | IN>1 setting#099/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x336 | IN>1 setting#100/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x336 | IN>1 setting#101/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x336 | IN>1 setting#102/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x337 | IN>2 setting#001/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#002/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#003/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#004/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#005/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#006/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#007/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#008/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#009/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#010/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#011/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#012/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#013/VN Pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#014/VN Pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#015/VN Pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#016/VN Pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#017/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#018/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#019/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#020/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#021/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#022/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#023/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#024/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x337 | IN>2 setting#029/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#030/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#031/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#032/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#033/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#034/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#035/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#036/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#037/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#038/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#039/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#040/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#041/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#042/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#043/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#044/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#045/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#046/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#047/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#048/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#049/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#050/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#051/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#052/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#053/Enable for IN>2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#054/Enable for IN>2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#055/Enable for IN>2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#056/Enable for IN>2 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#057/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x337 | IN>2 setting#058/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#059/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#060/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#061/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#062/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#063/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#064/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#065/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#066/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#067/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#068/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#069/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#070/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#071/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#072/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#073/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#074/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#075/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#076/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#077/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#078/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#079/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#080/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#081/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#082/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#083/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#084/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#085/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x337 | IN>2 setting#086/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#087/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#088/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#089/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#090/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#091/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#092/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#093/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#094/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#095/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#096/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#097/ Enable faulty phase detection | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#098/Phase currents change limit | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x337 | IN>2 setting#099/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x337 | IN>2 setting#100/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x337 | IN>2 setting#101/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x337 | IN>2 setting#102/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x338 | IN>3 setting#001/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#002/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#003/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#004/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#005/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#006/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#007/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#008/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#009/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#010/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x338 | IN>3 setting#011/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#012/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#013/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#014/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#015/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#016/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#017/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#018/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#019/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#020/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#021/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#022/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#023/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#024/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#025/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#026/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#027/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#028/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#029/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#030/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#031/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#032/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#033/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#034/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#035/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#036/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#037/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#038/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#039/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x338 | IN>3 setting#040/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#041/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#042/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#043/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#044/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#045/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#046/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#047/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#048/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#049/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#050/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#051/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#052/Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#053/Enable for IN>3 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#054/Enable for IN>3 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#055/Enable for IN>3 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#056/Enable for IN>3 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#057/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#058/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#059/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#060/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#061/VTs blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#062/VTs blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#063/VTs blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#064/VTs blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#065/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#066/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#067/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x338 | IN>3 setting#068/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#069/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#070/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#071/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#072/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#073/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#074/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#075/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#076/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#077/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#078/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#079/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#080/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#081/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#082/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#083/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#084/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#085/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#086/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#087/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#088/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#089/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#090/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#091/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#092/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#093/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#094/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x338 | IN>3 setting#095/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#096/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#097/ Enable faulty phase detection | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#098/Phase currents change limit | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x338 | IN>3 setting#099/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x338 | IN>3 setting#100/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x338 | IN>3 setting#101/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x338 | IN>3 setting#102/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x339 | IN>4 setting#001/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#002/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#003/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#004/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#005/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#006/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#007/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#008/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#009/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#010/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#011/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#012/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#013/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#014/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#015/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#016/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#017/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#018/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#019/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x339 | IN>4 setting#020/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#021/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#022/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#023/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#024/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#025/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#026/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#027/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#028/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#029/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#030/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#031/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#032/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#033/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#034/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#035/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#036/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#037/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#038/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#039/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#040/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#041/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#042/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#043/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#044/Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#045/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#046/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#047/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#048/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x339 | IN>4 setting#049/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#050/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#051/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#052/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#053/ Enable for IN>4 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#054/ Enable for IN>4 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#055/ Enable for IN>4 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#056/ Enable for IN>4 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#057/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#058/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#059/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#060/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#061/VT blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#062/VT blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#063/VT blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#064/VT blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#065/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#066/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#067/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#068/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#069/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#070/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#071/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#072/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#073/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#074/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#075/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#076/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x339 | IN>4 setting#077/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#078/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#079/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#080/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#081/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#082/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#083/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#084/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#085/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#086/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#087/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#088/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#089/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#090/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#091/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#092/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#093/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#094/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#095/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#096/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#097/ Enable faulty phase detection | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#098/Phase currents change limit | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x339 | IN>4 setting#099/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x339 | IN>4 setting#100/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x339 | IN>4 setting#101/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x339 | IN>4 setting#102/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33a | IN>5 setting#001/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33a | IN>5 setting#002/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#003/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#004/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#005/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#006/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#007/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#008/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#009/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#010/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#011/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#012/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#013/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#014/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#015/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#016/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#017/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#018/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#019/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#020/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#021/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#022/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#023/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#024/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#029/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33a | IN>5 setting#030/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#031/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#032/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#033/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#034/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#035/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#036/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#037/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#038/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#039/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#040/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#041/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#042/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#043/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#044/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#045/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#046/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#047/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#048/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#049/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#050/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#051/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#052/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#053/ Enable for IN>5 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#054/ Enable for IN>5 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#055/ Enable for IN>5 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#056/ Enable for IN>5 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#057/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#058/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33a | IN>5 setting#059/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#060/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#061/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#062/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#063/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#064/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#065/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#066/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#067/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#068/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#069/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#070/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#071/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#072/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#073/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#074/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#075/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#076/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#077/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#078/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#079/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#080/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#081/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#082/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#083/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#084/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#085/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#086/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33a | IN>5 setting#087/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#088/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#089/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#090/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#091/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#092/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#093/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#094/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#095/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#096/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#097/ Enable faulty phase detection | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#098/Phase currents change limit | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33a | IN>5 setting#099/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33a | IN>5 setting#100/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33a | IN>5 setting#101/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33a | IN>5 setting#102/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33b | IN>6 setting#001/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#002/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#003/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#004/ Direction mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#005/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#006/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#007/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#008/Char ctrl. in ResCap mode | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#009/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#010/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#011/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33b | IN>6 setting#012/IN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#013/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#014/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#015/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#016/VN pick-up value | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#017/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#018/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#019/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#020/Angle offset | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#021/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#022/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#023/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#024/Pick up sector size | 2 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#025/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#026/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#027/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#028/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#029/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#030/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#031/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#032/TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#033/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#034/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#035/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#036/Reset curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#037/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#038/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#039/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#040/Reset delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33b | IN>6 setting#041/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#042/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#043/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#044/ Operating curve | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#045/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#046/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#047/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#048/DT adder | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#049/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#050/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#051/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#052/ Minimum operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#053/ Enable for IN>6 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#054/ Enable for IN>6 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#055/ Enable for IN>6 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#056/ Enable for IN>6 | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#057/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#058/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#059/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#060/VN input mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#061/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#062/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#063/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#064/VTS blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#065/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#066/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#067/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#068/SOL status | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x33b | IN>6 setting#069/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#070/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#071/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#072/SOL operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#073/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#074/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#075/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#076/SOL TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#077/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#078/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#079/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#080/ Dynamic mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#081/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#082/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#083/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#084/ Dynamic threshold | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#085/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#086/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#087/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#088/ Dynamic operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#089/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#090/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#091/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#092/ Dynamic TMS | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#093/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#094/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#095/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33b | IN>6 setting#096/Inrush blocking | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#097/ Enable faulty phase detection | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#098/Phase currents change limit | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x33b | IN>6 setting#099/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33b | IN>6 setting#100/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33b | IN>6 setting#101/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33b | IN>6 setting#102/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x33c | INVN>1 setting#001/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#002/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#003/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#004/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#005/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#006/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#007/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#008/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#009/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#010/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#011/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#012/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#013/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#014/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#015/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#016/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#017/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#018/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#019/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#020/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33c | INVN>1 setting#021/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#022/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#023/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#024/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#025/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#026/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#027/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#028/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#029/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#030/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#031/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#032/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#033/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#034/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#035/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#036/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#037/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#038/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#039/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#040/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#041/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#042/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#043/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#044/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#045/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#046/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#047/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33c | INVN>1 setting#048/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#049/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#050/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#051/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#052/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#053/ Enable for INVN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#054/ Enable for INVN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#055/ Enable for INVN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#056/ Enable for INVN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#057/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#058/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#059/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33c | INVN>1 setting#060/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#001/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#002/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#003/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#004/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#005/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#006/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#007/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#008/ Inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#009/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#010/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#011/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#012/ Timer instant delay ctrl. | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#013/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#014/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#015/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33d | INVN>2 setting#016/ Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#017/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#018/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#019/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#020/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#021/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#022/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#023/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#024/ Pick-up sector size | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#025/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#026/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#027/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#028/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#029/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#030/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#031/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#032/ SOL status | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#033/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#034/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#035/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#036/ SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#037/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#038/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#039/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#040/ Memory mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#041/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#042/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33d | INVN>2 setting#043/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#044/VN memory value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#045/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#046/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#047/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#048/ Memory time | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#049/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#050/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#051/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#052/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#053/ Enable for INVN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#054/ Enable for INVN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#055/ Enable for INVN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#056/ Enable for INVN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#057/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#058/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#059/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33d | INVN>2 setting#060/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x33e | V>1 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#009/Enable for V>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#010/Enable for V>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33e | V>1 setting#011/Enable for V>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#012/Enable for V>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#013/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#014/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#015/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#016/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#017/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#018/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#019/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#020/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#021/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#022/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#023/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#024/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#025/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#026/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#027/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#028/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#029/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#030/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#031/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33e | V>1 setting#032/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#001/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x33f | V>2 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#009/Enable for V>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#010/Enable for V>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#011/Enable for V>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#012/Enable for V>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#013/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#014/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#015/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#016/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#017/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#018/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#019/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#020/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#021/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#022/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#023/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#024/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#025/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#026/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#027/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#028/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#029/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#030/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#031/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x33f | V>2 setting#032/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#001/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x340 | V>3 setting#002/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#003/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#004/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#005/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#006/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#007/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#008/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#009/Enable for V>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#010/Enable for V>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#011/Enable for V>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#012/Enable for V>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#013/Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#014/Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#015/Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#016/Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#017/Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#018/Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#019/Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#020/Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#021/Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#022/Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#023/Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#024/Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#025/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#026/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#027/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#028/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#029/Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x340 | V>3 setting#030/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#031/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x340 | V>3 setting#032/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#001/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#003/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#004/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#009/Enable for V<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#010/Enable for V<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#011/Enable for V<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#012/Enable for V<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#013/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#014/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#015/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#016/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#017/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#018/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#019/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#020/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#021/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#022/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#023/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#024/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#025/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x341 | V<1 setting#026/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#027/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#028/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#029/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#030/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#031/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#032/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#033/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#034/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#035/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x341 | V<1 setting#036/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#001/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#003/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#004/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#009/Enable for V<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#010/Enable for V<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#011/Enable for V<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#012/Enable for V<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#013/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#014/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#015/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#016/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x342 | V<2 setting#017/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#018/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#019/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#020/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#021/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#022/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#023/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#024/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#025/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#026/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#027/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#028/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#029/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#030/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#031/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#032/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#033/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#034/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#035/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x342 | V<2 setting#036/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#001/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#003/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#004/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#005/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#006/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#007/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x343 | V<3 setting#008/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#009/Enable for V<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#010/Enable for V<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#011/Enable for V<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#012/Enable for V<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#013/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#014/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#015/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#016/CB open blocking | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#017/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#018/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#019/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#020/ Measurement mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#021/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#022/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#023/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#024/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#025/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#026/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#027/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#028/ Tripping logic | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#029/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#030/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#031/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#032/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#033/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#034/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x343 | V<3 setting#035/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x343 | V<3 setting#036/ Hysteresis | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x344 | V1<1 setting#001/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#002/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#003/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#004/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#005/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#006/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#007/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#008/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#009/ Enable for V1<1 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#010/ Enable for V1<1 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#011/ Enable for V1<1 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#012/ Enable for V1<1 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x344 | V1<1 setting#013/ Undervoltage blocking | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#001/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#002/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#003/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#004/Pick-up value | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#005/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#006/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#007/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#008/ Operate delay | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#009/ Enable for V1<2 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#010/ Enable for V1<2 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#011/ Enable for V1<2 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#012/ Enable for V1<2 | 1 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x345 | V1<2 setting#013/ Undervoltage blocking | 4 | 1 | 1 | 0 | | | ■ | | ■ | |
| 0x346 | VN>1 setting#001/ Enable for VN>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x346 | VN>1 setting#002/ Enable for VN>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#003/ Enable for VN>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#004/ Enable for VN>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#005/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#006/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#007/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#008/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#009/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#010/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#011/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#012/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#013/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#014/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#015/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#016/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#017/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#018/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#019/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x346 | VN>1 setting#020/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#001/ Enable for VN>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#002/ Enable for VN>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#003/ Enable for VN>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#004/ Enable for VN>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#005/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#006/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#007/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#008/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#009/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x347 | VN>2 setting#010/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#011/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#012/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#013/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#014/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#015/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#016/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#017/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#018/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#019/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x347 | VN>2 setting#020/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#001/Enable for VN>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#002/Enable for VN>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#003/Enable for VN>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#004/Enable for VN>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#005/Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#006/Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#007/Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#008/Evaluation VN | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#009/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#010/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#011/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#012/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#013/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#014/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#015/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#016/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#017/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x348 | VN>3 setting#018/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#019/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x348 | VN>3 setting#020/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | ■ |
| 0x349 | f>1 setting#001/Enable for f>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#002/Enable for f>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#003/Enable for f>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#004/Enable for f>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#013/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#014/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#015/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x349 | f>1 setting#016/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#001/Enable for f>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#002/Enable for f>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#003/Enable for f>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#004/Enable for f>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x34a | f>2 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#013/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#014/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#015/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34a | f>2 setting#016/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#001/Enable for f<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#002/Enable for f<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#003/Enable for f<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#004/Enable for f<1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#017/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#018/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#019/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34b | f<1 setting#020/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#001/Enable for f<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x34c | f<2 setting#002/Enable for f<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#003/Enable for f<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#004/Enable for f<2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#017/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#018/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#019/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34c | f<2 setting#020/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#001/Enable for f<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#002/Enable for f<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#003/Enable for f<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#004/Enable for f<3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x34d | f<3 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#017/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#018/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#019/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34d | f<3 setting#020/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#001/Enable for f<4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#002/Enable for f<4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#003/Enable for f<4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#004/Enable for f<4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#017/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x34e | f<4 setting#018/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#019/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34e | f<4 setting#020/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#001/Enable for f<5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#002/Enable for f<5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#003/Enable for f<5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#004/Enable for f<5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#017/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#018/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#019/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x34f | f<5 setting#020/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#001/Enable for f<6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#002/Enable for f<6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#003/Enable for f<6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#004/Enable for f<6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x350 | f<6 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#017/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#018/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#019/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x350 | f<6 setting#020/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#001/Enable for f<7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#002/Enable for f<7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#003/Enable for f<7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#004/Enable for f<7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x351 | f<7 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#017/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#018/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#019/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x351 | f<7 setting#020/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#001/Enable for f<8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#002/Enable for f<8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#003/Enable for f<8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#004/Enable for f<8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#006/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#007/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#008/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#009/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#010/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#011/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#012/Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#013/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#014/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#015/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#016/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#017/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#018/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#019/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x352 | f<8 setting#020/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x353 | CBFail setting#001/ Enable for CB failure 1 | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x353 | CBFail setting#002/ Enable CBF timer1 | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x353 | CBFail setting#003/ Timer1 operate delay | 4 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x353 | CBFail setting#004/ Enable CBF timer2 | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x353 | CBFail setting#005/ Timer2 operate delay | 4 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x353 | CBFail setting#006/ Noncurrent CBF reset mode | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x353 | CBFail setting#007/Ext CBF reset mode | 1 | 1 | 1 | 0 | ■ | ■ | ■ | ■ | ■ | ■ |
| 0x353 | CBFail setting#008/I< current set | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x353 | CBFail setting#009/ INBFail setting#009/IN | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x353 | CBFail setting#010/IN. sensBFail setting#010/ IN.sens | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x380 | CB2Fail setting#001/ Enable for CB failure 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#002/ Enable CBF timer1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#003/ Timer1 operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#004/ Enable CBF timer2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#005/ Timer2 operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#006/ Noncurrent CBF reset mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#007/Ext CBF reset mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#008/I< current set | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x380 | CB2Fail setting#009/ IN< | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x354 | Ih5>1 setting#001/ Enable for Ih5>1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x354 | Ih5>1 setting#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x354 | Ih5>1 setting#003/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x355 | CTS setting#001/ Enable for CTS 1 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x355 | CTS setting#002/CTS operating mode | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x355 | CTS setting#003/CTS reset input | 2 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x355 | CTS setting#004/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x355 | CTS setting#005/IN> | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x355 | CTS setting#006/VN< | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |
| 0x355 | CTS setting#007/ Evaluation VN | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x355 | CTS setting#008/CT input | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x356 | VTs setting#001/Enable for VTs | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x356 | VTs setting#002/V2> setting | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x356 | VTs setting#003/I2< setting | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x356 | VTs setting#004/Operate delay | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x356 | VTs setting#005/Inhibit ctrl | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x356 | VTs setting#006/DI for mcb | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x356 | VTs setting#007/I> (min) setting | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x356 | VTs setting#008/I< (max) setting | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x356 | VTs setting#009/Delta VN> setting | 4 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x356 | VTs setting#010/Enable for VN compare | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x357 | Vcap>1 setting#001/Pick-up value | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#002/Pick-up value | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#003/Pick-up value | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#004/Pick-up value | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#005/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#006/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#007/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#008/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#009/Enable for Vcap>1 | 1 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#010/Enable for Vcap>1 | 1 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#011/Enable for Vcap>1 | 1 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x357 | Vcap>1 setting#012/Enable for Vcap>1 | 1 | 1 | 1 | 0 | | ■ | | ■ | | |
| 0x358 | f+df/dt>1 setting#001/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#002/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#003/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#004/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#005/Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x358 | f+df/dt>1 setting#006/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#007/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#008/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#009/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#010/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#011/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#012/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#013/ Enable for f+df/dt>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#014/ Enable for f+df/dt>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#015/ Enable for f+df/dt>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#016/ Enable for f+df/dt>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#017/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#018/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#019/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#020/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#021/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#022/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#023/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#024/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#025/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#026/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#027/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#028/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#031/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#032/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x358 | f+df/dt>1 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x358 | f+df/dt>1 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#001/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#002/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#003/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#004/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#005/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#006/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#007/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#008/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#009/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#010/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#011/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#012/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#013/ Enable for f+df/dt>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#014/ Enable for f+df/dt>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#015/ Enable for f+df/dt>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#016/ Enable for f+df/dt>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#017/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#018/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#019/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#020/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x359 | f+df/dt>2 setting#021/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#022/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#023/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#024/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#025/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#026/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#027/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#028/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#031/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#032/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x359 | f+df/dt>2 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35a | IN int> setting#001/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#002/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#003/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#004/ Direction mode | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#005/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#006/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#007/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x35a | IN int> setting#008/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#009/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#010/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#011/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#012/ Operate delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#013/Min number of peaks | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#014/Min number of peaks | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#015/Min number of peaks | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#016/Min number of peaks | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#017/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#018/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#019/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#020/ Reset delay | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#021/ Enable for IN int> | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#022/ Enable for IN int> | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#023/ Enable for IN int> | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#024/ Enable for IN int> | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35a | IN int> setting#025/ Intermittent time | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#001/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#002/Triggering digital input | 2 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#003/Line reactance/unit | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#004/Earth factor | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#005/Earth factor angle | 2 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#006/Event enabling | 1 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#007/Average voltage limit | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#008/Io limit | 4 | 1 | 1 | 0 | | | | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x35b | Feeder Fault Locator setting#009/DI timeout | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35b | Feeder Fault Locator setting#010/Release timeout | 4 | 1 | 1 | 0 | | | | ■ | | |
| 0x35c | Synchro-check 1 setting#001/CB object 1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#002/CB object 2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#003/BI for selecting object2 | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#004/Inhibit closing unselected CB | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x35c | Synchro-check 1 setting#005/Synchronization mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x35c | Synchro-check 1 setting#006/Voltage check mode | 1 | 1 | 1 | 0 | ■ | | | ■ | ■ | |
| 0x35c | Synchro-check 1 setting#007/CB close time | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#008/Bypass input | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#009/Bypass | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#010/Ok pulse length | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#011/Vdead limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#012/Vdead limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#013/Vdead limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#014/Vdead limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#015/Vlive limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#016/Vlive limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#017/Vlive limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#018/Vlive limit setting | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#019/Frequency difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x35c | Synchro-check 1 setting#020/Frequency difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#021/Frequency difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#022/Frequency difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#023/Voltage difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#024/Voltage difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#025/Voltage difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#026/Voltage difference | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#027/Phase angle difference | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#028/Phase angle difference | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#029/Phase angle difference | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#030/Phase angle difference | 2 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#031/Request timeout | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#032/Request timeout | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#033/Request timeout | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#034/Request timeout | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#035/Enable for Sync check 1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#036/Enable for Sync check 1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#037/Enable for Sync check 1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35c | Synchro-check 1 setting#038/Enable for Sync check 1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x35d | CB Monitoring setting#001/Enable for CB monitoring | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#002/Alarm level | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x35d | CB Monitoring setting#003/Alarm level | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#004/Operation limit | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#005/Operation limit | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#006/High limit (primary value) | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#007/High limit (primary value) | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#008/High limit (primary value) | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#009/High limit (primary value) | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35d | CB Monitoring setting#010/CT input | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x35e | Motor status setting#001/Enable for Motor status | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#002/Nom motor start current | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#003/Motor start detection current | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#004/Motor start detection mode | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#005/Enable motor speed detection | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#006/Motor speed input | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#007/Rated motor speed Ω_n | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#008/Pulse per rotation R | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35e | Motor status setting#009/Zero speed confirm time | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x35f | SOL setting#001/Enable for SOL | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35f | SOL setting#002/Number of SOL signals used | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x35f | SOL setting#003/CB trip clearing time | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x360 | Admittance E/F ALL YN>1 setting#001/IN input | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#002/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x360 | Admittance E/F ALL YN>1 setting#003/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#004/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#005/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#006/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#007/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#008/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#009/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#010/ Enable for All YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#011/ Enable for All YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#012/ Enable for All YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#013/ Enable for All YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#014/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#015/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#016/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x360 | Admittance E/F ALL YN>1 setting#017/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#001/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#002/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#003/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#004/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#005/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#006/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#007/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x361 | Admittance E/F YN>#008/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#009/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#010/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#011/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#012/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#013/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#014/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#015/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#016/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#017/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#018/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#019/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#020/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#021/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#022/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#023/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#024/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#025/Enable for YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#026/Enable for YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#027/Enable for YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x361 | Admittance E/F YN>#028/Enable for YN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#001/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#002/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#003/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#004/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x362 | Admittance E/F GN>#005/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#006/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#007/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#008/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#009/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#010/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#011/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#012/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#013/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#014/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#015/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#016/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#017/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#018/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#019/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#020/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#021/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#022/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#023/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#024/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#025/Enable for GN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#026/Enable for GN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#027/Enable for GN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x362 | Admittance E/F GN>#028/Enable for GN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#029/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#030/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#031/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x362 | Admittance E/F GN>#032/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#001/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#002/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#003/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#004/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#005/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#006/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#007/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#008/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#009/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#010/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#011/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#012/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#013/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#014/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#015/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#016/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#017/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#018/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#019/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#020/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x363 | Admittance E/F BN>#021/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#022/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#023/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#024/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#025/Enable for BN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#026/Enable for BN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#027/Enable for BN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#028/Enable for BN>1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#029/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#030/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#031/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x363 | Admittance E/F BN>#032/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#001/IN input | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#002/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#003/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#004/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#005/VN pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#006/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#007/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#008/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#009/ Correction angle | 2 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x364 | Admittance E/F ALL YN>2 setting#010/ Enable for All YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#011/ Enable for All YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#012/ Enable for All YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#013/ Enable for All YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#014/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#015/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#016/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x364 | Admittance E/F ALL YN>2 setting#017/ Evaluation VN | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#001/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#002/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#003/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#004/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#005/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#006/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#007/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#008/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#009/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#010/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#011/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#012/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#013/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x365 | Admittance E/F YN>>#014/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#015/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#016/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#017/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#018/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#019/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#020/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#021/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#022/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#023/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#024/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#025/Enable for YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#026/Enable for YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#027/Enable for YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x365 | Admittance E/F YN>>#028/Enable for YN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#001/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#002/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#003/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#004/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#005/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#006/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#007/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#008/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x366 | Admittance E/F GN>>#009/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#010/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#011/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#012/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#013/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#014/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#015/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#016/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#017/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#018/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#019/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#020/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#021/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#022/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#023/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#024/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#025/Enable for GN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#026/Enable for GN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#027/Enable for GN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#028/Enable for GN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#029/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#030/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x366 | Admittance E/F GN>>#031/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x366 | Admittance E/F GN>>#032/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#001/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#002/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#003/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#004/Pick-up value | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#005/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#006/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#007/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#008/Input for inhibit control | 2 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#009/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#010/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#011/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#012/Operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#013/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#014/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#015/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#016/Reset delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#017/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#018/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#019/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#020/SOL1 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#021/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#022/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x367 | Admittance E/F BN>>#023/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#024/SOL operate delay | 4 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#025/Enable for BN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#026/Enable for BN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#027/Enable for BN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#028/Enable for BN>2 | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#029/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#030/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#031/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x367 | Admittance E/F BN>>#032/Direction mode | 1 | 1 | 1 | 0 | | | | ■ | ■ | |
| 0x368 | V2>1 setting#001/VTS operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#002/VTS operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#003/VTS operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#004/VTS operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#005/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#006/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#007/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#008/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#009/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#010/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#011/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#012/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#013/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#014/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x368 | V2>1 setting#015/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#016/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#017/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#018/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#019/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#020/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#021/ Enable for V2>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#022/ Enable for V2>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#023/ Enable for V2>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x368 | V2>1 setting#024/ Enable for V2>1 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#001/VTs operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#002/VTs operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#003/VTs operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#004/VTs operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#005/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#006/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#007/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#008/Pick- up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#009/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#010/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#011/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#012/ Operating curve | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#013/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#014/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#015/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#016/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#017/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x369 | V2>2 setting#018/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#019/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#020/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#021/ Enable for V2>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#022/ Enable for V2>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#023/ Enable for V2>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x369 | V2>2 setting#024/ Enable for V2>2 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | ■ | |
| 0x36a | Motor overspeed>1#001/ Enable for Ω >1 | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36a | Motor overspeed>1#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36a | Motor overspeed>1#003/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36b | Motor overspeed>2#001/ Enable for Ω >2 | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36b | Motor overspeed>2#002/Pick- up value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36b | Motor overspeed>2#003/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36c | Motor underspeed<1#001/ Enable for Ω <1 | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36c | Motor underspeed<1#002/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36c | Motor underspeed<1#003/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36e | Motor underspeed<2#001/ Enable for Ω <2 | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36e | Motor underspeed<2#002/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36e | Motor underspeed<2#003/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36f | Motor Anti-backspin (ABS)#001/Enable for Anti-backspin | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36f | Motor Anti-backspin (ABS)#002/Measured zero speed mode | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36f | Motor Anti-backspin (ABS)#003/Zero speed external mode | 1 | 1 | 1 | 0 | ■ | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x36f | Motor Anti-backspin (ABS)#004/Zero speed input DI | 2 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x36f | Motor Anti-backspin (ABS)#005/Anti-backspin time | 4 | 1 | 1 | 0 | ■ | ■ | | | ■ | |
| 0x370 | Cold load pick-up CLPU#001/Enable for CLPU | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x370 | Cold load pick-up CLPU#002/Idle current | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x370 | Cold load pick-up CLPU#003/Pickup current | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x370 | Cold load pick-up CLPU#004/CLPU dead time | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x370 | Cold load pick-up CLPU#005/CLPU time delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | |
| 0x371 | REF setting#001/Enable for REF 1 | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#002/Enable for REF 1 | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#003/Enable for REF 1 | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#004/Enable for REF 1 | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#005/IG input | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#006/IG input | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#007/IG input | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#008/IG input | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#009/5 CT application | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#010/5 CT application | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#011/5 CT application | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#012/5 CT application | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#013/Operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#014/Operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#015/Operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#016/Operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#017/Low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#018/Low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#019/Low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x371 | REF setting#020/Low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#021/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#022/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#023/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#024/Operate delay | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#025/Min measured IG | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#026/Min measured IG | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#027/Min measured IG | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#028/Min measured IG | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#029/Slope k1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#030/Slope k1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#031/Slope k1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#032/Slope k1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#033/Bias current Ib | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#034/Bias current Ib | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#035/Bias current Ib | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#036/Bias current Ib | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#037/Slope k2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#038/Slope k2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#039/Slope k2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#040/Slope k2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#041/High set mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#042/High set mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#043/High set mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#044/High set mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#045/High set Id2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#046/High set Id2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#047/High set Id2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#048/High set Id2 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x371 | REF setting#049/CTS operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#050/CTS operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#051/CTS operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#052/CTS operating mode | 1 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#053/CTS low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#054/CTS low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#055/CTS low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#056/CTS low set Id1 | 4 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#057/Inhibit REF | 2 | 1 | 1 | 0 | | ■ | | ■ | ■ | ■ |
| 0x371 | REF setting#058/CT input | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x372 | I2/I1>2 setting#001/ Enable for I2/I1>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#002/ Enable for I2/I1>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#003/ Enable for I2/I1>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#004/ Enable for I2/I1>2 | 1 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#005/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#006/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#007/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#008/ Pick-up value | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#009/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#010/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#011/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#012/ Operate delay | 4 | 1 | 1 | 0 | ■ | ■ | | ■ | ■ | ■ |
| 0x372 | I2/I1>2 setting#013/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x372 | I2/I1>2 setting#014/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x372 | I2/I1>2 setting#015/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x372 | I2/I1>2 setting#016/CT input | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x373 | EMRE setting#001/ Enable for EMRE | 1 | 1 | 1 | 0 | | ■ | | | ■ | |
| 0x373 | EMRE setting#002/ EMRE input | 2 | 1 | 1 | 0 | | ■ | | | ■ | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x374 | f+df/dt>3 setting#001/ Enable for f+df/dt>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#002/ Enable for f+df/dt>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#003/ Enable for f+df/dt>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#004/ Enable for f+df/dt>3 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#005/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#006/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#007/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#008/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#009/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#010/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#011/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#012/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#013/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#014/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#015/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#016/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#017/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#018/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#019/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#020/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#021/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#022/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#023/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#024/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x374 | f+df/dt>3 setting#029/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#030/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#031/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#032/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#033/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#034/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#035/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#036/Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#037/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#038/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#039/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x374 | f+df/dt>3 setting#040/Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#001/Enable for f+df/dt>4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#002/Enable for f+df/dt>4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#003/Enable for f+df/dt>4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#004/Enable for f+df/dt>4 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#005/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#006/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#007/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#008/Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#009/Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#010/Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#011/Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#012/Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#013/Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#014/Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#015/Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#016/Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x375 | f+df/dt>4 setting#017/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#018/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#019/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#020/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#021/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#022/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#023/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#024/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#031/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#032/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x375 | f+df/dt>4 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#001/ Enable for f+df/dt>5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#002/ Enable for f+df/dt>5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#003/ Enable for f+df/dt>5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x376 | f+df/dt>5 setting#004/ Enable for f+df/dt>5 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#005/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#006/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#007/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#008/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#009/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#010/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#011/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#012/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#013/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#014/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#015/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#016/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#017/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#018/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#019/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#020/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#021/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#022/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#023/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#024/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x376 | f+df/dt>5 setting#031/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#032/f+df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x376 | f+df/dt>5 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#001/ Enable for f+df/dt>6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#002/ Enable for f+df/dt>6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#003/ Enable for f+df/dt>6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#004/ Enable for f+df/dt>6 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#005/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#006/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#007/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#008/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#009/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#010/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#011/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#012/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#013/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#014/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#015/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#016/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#017/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#018/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x377 | f+df/dt>6 setting#019/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#020/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#021/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#022/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#023/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#024/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#031/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#032/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x377 | f+df/dt>6 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#001/ Enable for f+df/dt>7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#002/ Enable for f+df/dt>7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#003/ Enable for f+df/dt>7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#004/ Enable for f+df/dt>7 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#005/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x378 | f+df/dt>7 setting#006/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#007/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#008/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#009/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#010/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#011/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#012/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#013/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#014/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#015/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#016/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#017/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#018/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#019/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#020/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#021/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#022/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#023/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#024/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#031/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#032/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x378 | f+df/dt>7 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x378 | f+df/dt>7 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#001/ Enable for f+df/dt>8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#002/ Enable for f+df/dt>8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#003/ Enable for f+df/dt>8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#004/ Enable for f+df/dt>8 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#005/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#006/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#007/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#008/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#009/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#010/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#011/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#012/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#013/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#014/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#015/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#016/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#017/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#018/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#019/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#020/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x379 | f+df/dt>8 setting#021/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#022/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#023/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#024/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#031/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#032/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x379 | f+df/dt>8 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#001/ Enable for f+df/dt>9 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#002/ Enable for f+df/dt>9 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#003/ Enable for f+df/dt>9 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#004/ Enable for f+df/dt>9 | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#005/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#006/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#007/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#008/ Direction mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x37a | f+df/dt>9 setting#009/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#010/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#011/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#012/ Operating mode | 1 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#013/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#014/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#015/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#016/ Frequency threshold | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#017/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#018/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#019/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#020/ Measuring window | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#021/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#022/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#023/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#024/ Pick-up value | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#025/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#026/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#027/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#028/ Operate delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#029/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#030/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#031/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#032/f +df/dt blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#033/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#034/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#035/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-------------------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x37a | f+df/dt>9 setting#036/ Undervoltage blocking | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#037/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#038/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#039/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37a | f+df/dt>9 setting#040/ Reset delay | 4 | 1 | 1 | 0 | ■ | | ■ | ■ | | |
| 0x37b | T-Diff setting#001/ Enable for T-Diff | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#002/ Enable for T-Diff | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#003/ Enable for T-Diff | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#004/ Enable for T-Diff | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#005/ Vector group | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#006/ Vector group | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#007/ Vector group | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#008/ Vector group | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#009/Zero- seq. current filtering CT- 1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#010/Zero- seq. current filtering CT- 1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#011/Zero- seq. current filtering CT- 1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#012/Zero- seq. current filtering CT- 1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#013/Zero- seq. current filtering CT- 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#014/Zero- seq. current filtering CT- 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#015/Zero- seq. current filtering CT- 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#016/Zero- seq. current filtering CT- 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#017/Low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#018/Low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#019/Low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#020/Low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|--------------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x37b | T-Diff setting#021/Slope 1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#022/Slope 1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#023/Slope 1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#024/Slope 1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#025/lb for start of slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#026/lb for start of slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#027/lb for start of slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#028/lb for start of slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#029/Slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#030/Slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#031/Slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#032/Slope 2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#033/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#034/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#035/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#036/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#037/High set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#038/High set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#039/High set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#040/High set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#041/Bias calculation mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#042/Bias calculation mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#043/Bias calculation mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#044/Bias calculation mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#045/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#046/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#047/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#048/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x37b | T-Diff setting#049/ Inrush blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#050/ Inrush blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#051/ Inrush blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#052/ Inrush blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#053/ Inrush blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#054/ Inrush blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#055/ Inrush blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#056/ Inrush blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#057/ Inrush cross block | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#058/ Inrush cross block | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#059/ Inrush cross block | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#060/ Inrush cross block | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#061/Max inrush Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#062/Max inrush Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#063/Max inrush Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#064/Max inrush Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#065/ Overflux blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#066/ Overflux blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#067/ Overflux blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#068/ Overflux blocking | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#069/ Overflux blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#070/ Overflux blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#071/ Overflux blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#072/ Overflux blocking ratio | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#073/ Overflux cross block | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#074/ Overflux cross block | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#075/ Overflux cross block | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#076/ Overflux cross block | 1 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------------|--------|------|-------|------------|-----------------|-------|-------|-------|-------|-------|
| 0x37b | T-Diff setting#077/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#078/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#079/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#080/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#081/CTS low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#082/CTS low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#083/CTS low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#084/CTS low set Id | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37b | T-Diff setting#085/Inhibit T-Diff | 2 | 1 | 1 | 0 | | | | | | ■ |
| 0x37c | Inrush>2 setting#001/ Enable for Inrush 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37c | Inrush>2 setting#002/ Pickup for 2nd harmonic | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37c | Inrush>2 setting#003/ Max inrush current | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37c | Inrush>2 setting#004/ Inrush operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37c | Inrush>2 setting#005/ CT input | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x37d | CTS 2 setting#001/ Enable for CTS 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37d | CTS 2 setting#002/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37d | CTS 2 setting#003/IN> | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37d | CTS 2 setting#004/VN< | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37d | CTS 2 setting#005/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37d | CTS 2 setting#006/CTS reset input | 2 | 1 | 1 | 0 | | | | | | ■ |
| 0x37d | CTS 2 setting#007/CT input | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x37e | CTS DIFF setting#001/ Enable for CT supervision Diff | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37e | CTS DIFF setting#002/ I1> | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37e | CTS DIFF setting#003/ I2/I1 low | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37e | CTS DIFF setting#004/ I2/I1 high | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37e | CTS DIFF setting#005/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37e | CTS DIFF setting#006/ CTS reset input | 2 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#001/ Enable for REF 2 | 1 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x37f | REF 2 setting#002/ Enable for REF 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#003/ Enable for REF 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#004/ Enable for REF 2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#005/ Operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#006/ Operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#007/ Operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#008/ Operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#009/Low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#010/Low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#011/Low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#012/Low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#013/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#014/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#015/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#016/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#017/Min measured IG | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#018/Min measured IG | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#019/Min measured IG | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#020/Min measured IG | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#021/ Slope k1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#022/ Slope k1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#023/ Slope k1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#024/ Slope k1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#025/Bias current Ib | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#026/Bias current Ib | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#027/Bias current Ib | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#028/Bias current Ib | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#029/ Slope k2 | 4 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|------------------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x37f | REF 2 setting#030/ Slope k2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#031/ Slope k2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#032/ Slope k2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#033/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#034/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#035/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#036/High set mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#037/High set Id2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#038/High set Id2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#039/High set Id2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#040/High set Id2 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#041/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#042/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#043/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#044/CTS operating mode | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#045/CTS low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#046/CTS low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#047/CTS low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#048/CTS low set Id1 | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#049/ Inhibit REF | 2 | 1 | 1 | 0 | | | | | | ■ |
| 0x37f | REF 2 setting#050/CT input | 1 | 1 | 0 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#001/ Enable for V/f Alarm | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#002/ Enable for V/f Alarm | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#003/ Enable for V/f Alarm | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#004/ Enable for V/f Alarm | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#005/ Pick-up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#006/ Pick-up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#007/ Pick-up value | 4 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|-----------------------------------------|--------|------|-------|------------|-----------------------|-------|-------|-------|-------|-------|
| 0x381 | V/f Alarm setting#008/ Pick-up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#009/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#010/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#011/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x381 | V/f Alarm setting#012/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#001/ Enable for V/f>1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#002/ Enable for V/f>1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#003/ Enable for V/f>1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#004/ Enable for V/f>1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#005/ Operating curve | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#006/ Operating curve | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#007/ Operating curve | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#008/ Operating curve | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#009/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#010/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#011/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#012/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#013/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#014/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#015/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#016/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#017/Reset delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#018/Reset delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#019/Reset delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x382 | V/f>1 setting#020/Reset delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#001/ Enable for V/f>2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#002/ Enable for V/f>2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#003/ Enable for V/f>2 | 1 | 1 | 1 | 0 | | | | | | ■ |

| Class | Name | Length | Read | Write | Cont. mode | P5U20 LPCT LPVT | P5U20 | P5V20 | P5F30 | P5M30 | P5T30 |
|-------|---------------------------------------------------------------|--------|------|-------|---------------|-----------------------|-------|-------|-------|-------|-------|
| 0x383 | V/f>2 setting#004/ Enable for V/f>2 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#005/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#006/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#007/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#008/Pick- up value | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#009/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#010/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#011/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x383 | V/f>2 setting#012/ Operate delay | 4 | 1 | 1 | 0 | | | | | | ■ |
| 0x384 | TRMON1 setting#001/ Enable for Transformer monitoring 1 | 1 | 1 | 1 | 0 | | | | | | ■ |
| 0x385 | TRMON2 setting#001/ Enable for Transformer monitoring 2 | 1 | 1 | 1 | 0 | | | | | | ■ |

Redundancy protocols

There are three redundancy protocols available as options of Ethernet communication in PowerLogic P5 protection relays:

- PRP (Parallel Redundancy Protocol)
- HSR (High-availability Seamless Redundancy)
- RSTP (Rapid Spanning Tree Protocol)

Parallel Redundancy Protocol (PRP)

Introduction

The Parallel Redundancy Protocol used in the PowerLogic P5 protection relays is defined in Clause 4 of the IEC 62439-3 standard. The PRP is a “redundancy in the devices” method that provides bumpless switchover in case of network failure or reintegration. Furthermore, it provides the shortest Ethernet network reconfiguration time as network reconfiguration is seamless.

The PowerLogic P5 protection relay uses two independent Ethernet ports that operate in parallel on two independent networks. Each message is replicated and sent over both networks. The first network node that receives a message will process it, all later instances of the received message will be discarded. These details of replicating and discarding messages are controlled by the low-level PRP layer of the network architecture, so that the two networks are hidden from the higher level layers. Thus, PRP-based networks provide a high degree of robustness and resilience.

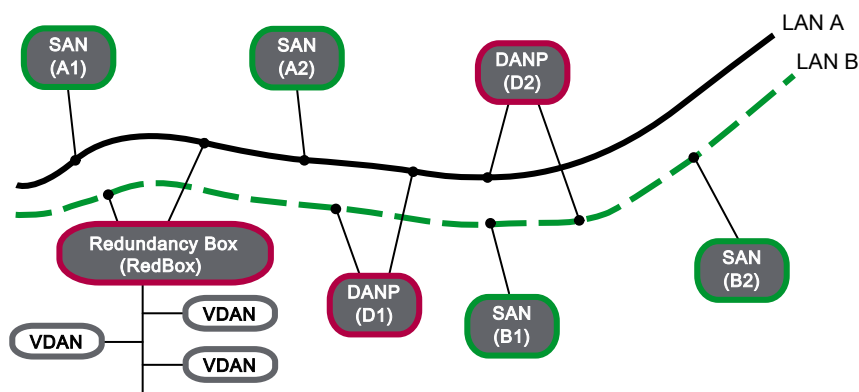
Essentially, a PRP network consists of a pair of similar Local Area Networks (LANs) which can be any topology (tree, ring or mesh). An example of a PRP network is shown in [PRP redundancy network, page 588](#).

The key features of a PRP redundancy network include:

- Each of the two LANs can have one or more “Single Attached Nodes” (SANs). These are normally non-significant devices that are attached only to a single network. SANs can communicate with each other, but only if they are attached to the same LAN.
- Matched pairs of devices have an interface to each LAN, hence they are called “Dual Attached Nodes” (DANs). DANs having the PRP implemented are called “DANs with PRP implemented” (DANP).
- To make the network messages (also known as “frames”) be transferred correctly to each device in both LANs, each DANP has to be configured with the same Media Access Control (MAC) code and Internet Protocol (IP) address for both of its ports. As a result, TCP/IP traffic will automatically communicate with both of the paired devices, so it will be unaware of any layer 2 redundancy or frame duplication issues.
- A Redundancy Box is used when a single interface node has to be connected to both LANs. The RedBox can communicate with all other nodes. So far as other nodes are concerned, the RedBox behaves like a DAN, so an IED connected via a RedBox is also called a “Virtual DAN” (VDAN). The RedBox has its own unique IP address.
- The PowerLogic P5 protection relays have to be connected to the redundant Ethernet network as a Double Attached Node (DAN) using PRP (DAN using PRP is known as DANP).
- The redundant Ethernet interface can be made using an optical fibre connection with an LC connector type (Ethernet card dependent).
- The management of the PRP redundancy is transparent to the application data provided via the Ethernet interface.
- Disconnection of one of the LANs to the device does not cause any degradation to the application data over the Ethernet interface.

- Each supervision frame includes a sequence number as defined in the IEC 62439-3 specification. This is incremented for each supervision message and the value starts from zero following a system restart.
- Received frames to provide supervision of the redundant network are not processed by PowerLogic P5 protection relays.

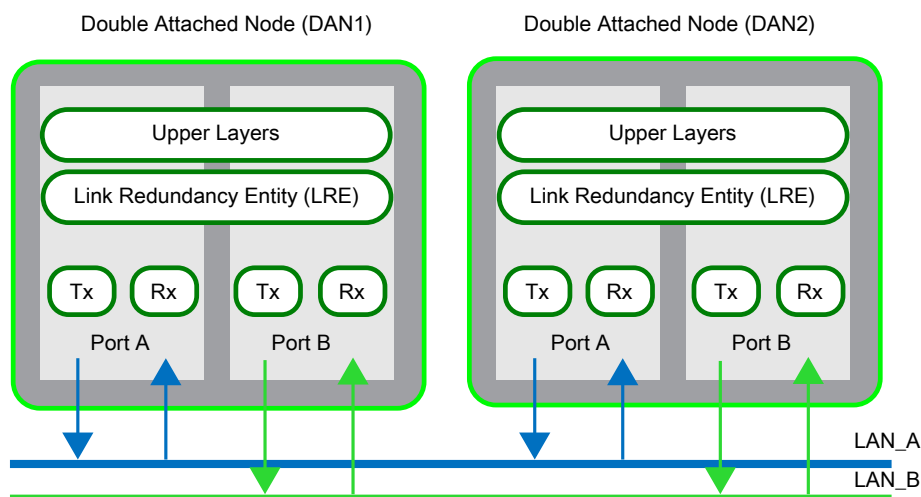
Figure 5 - PRP redundancy network



Structure of a DANP

PowerLogic P5 protection relays working in PRP mode work as a DANP each within the overall network topology. Each DANP has two ports that operate in parallel. They are attached to the upper layers of the communications stack through the Link Redundancy Entity (LRE).

Figure 6 - Communication between two DANPs



The LRE has two main tasks:

- Handling message frames
- Management of redundancy

When an upper layer sends a frame to the LRE, the LRE replicates the frame and sends it through both its ports at nearly the same time. The two frames move through the two LANs with slightly different delays, ideally arriving at the destination node within a small time window.

When receiving frames, the LRE forwards the first frame it received to its upper layers and then discards the duplicate.

As both DANP nodes have the same MAC and IP addresses, this makes redundancy transparent to the upper layers. This allows the Address Resolution

Protocol (ARP) to work in the same way as with a SAN. Accordingly, to the upper layers of a DANP, the LRE layer shows the same interface as the network adapter of a non-redundant adapter.

To manage redundancy, the LRE:

- Adds a 32-bit Redundancy Check Tag (RCT) to each frame it sends
- Removes the RCT from each frame it receives

Communication between SANs and DANs

A SAN can be connected to any LAN and can communicate with any other SAN on the same LAN or any DAN. However, a SAN which connected to one LAN can not communicate directly to a SAN which is connected to the other LAN.

A DAN is connected to both LANs and can communicate with any Redundancy Box (RedBox) or any other DANs or any SANs on either network. For communication purposes, a DAN “views” a SAN connected through a RedBox as a VDAN.

When a SAN generates a basic frame, it sends the frame only onto the LAN to which it is connected.

Main characteristics

- One VLAN tag supported
- 128 publishers supported per receiver
- Up to 100Mbit/s full duplex Ethernet
- Dynamic frame memory allocation (page manager)
- Configurable duplicate detection
- Wishbone interface for configuration and status registers
- CPU port interface — Ethernet or Wishbone
- Support for link-local protocols - CPU may send to specific ports only - CPU knows receive port
- Configurable frame memory and queue length
- Duplicate detection with configurable size and aging time
- MAC address filtering (8 filter masks for interlink, 6 for CPU)
- Support for interfaces with or without Ethernet preamble

According to the ISO/IEC/IEEE 8802-3, the Maximum Transmission Unit (MTU) (Ethernet maximum packet size) is:

- 1518 bytes without VLAN and without PRP
- 1522 bytes with VLAN and without PRP
- 1524 bytes without VLAN and with PRP
- 1528 bytes with VLAN and with PRP

NOTE: Check that the LAN switches setting for the MTU is at least 1528 bytes.

PRP parameters

The redundant Ethernet standard (IEC 62439-3) defines several parameters for the PRP protocol; these being fixed according to the table below:

Table 64 - PRP parameter values

| Parameter | Value | Description |
|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------|
| Supervision Frame Multicast Address | 01-15-4E-00-01-00 | Target MAC Address for multicast supervision frame. |
| Life Check Interval | 2 s +/- 100 ms | Period between transmission of supervision frames. |
| PRP Mode | Duplicate Discard | This is normal PRP mode, Duplicate address will not be supported. |
| Entry Forget Time | 400 ms | Duration that the received message Sequence number will be held to discard a duplicate message. |
| Node Reboot Interval | 500 ms | Duration following reboot for which no PRP frames will be transmitted. |

High-availability Seamless Redundancy (HSR)

Introduction

The High-availability Seamless Redundancy Protocol used in the PowerLogic P5 protection relays is defined in Clause 5 of the IEC 62439-3 standard.

The HSR is a “redundancy in the devices” method that provides seamless switchover and recovery in case of a single communication failure or reintegration. HSR Ethernet redundancy method is independent of any industrial Ethernet protocol and typically used in a ring topology.

PowerLogic P5 protection relays provide two redundant Ethernet ports using HSR. The redundant Ethernet interface can be made using an optical fibre connection with an LC connector type. The management of the HSR redundancy is transparent to the application data provided via the Ethernet interface.

Disconnection of one of the Nodes to the device does not cause any degradation to the application data over the Ethernet interface.

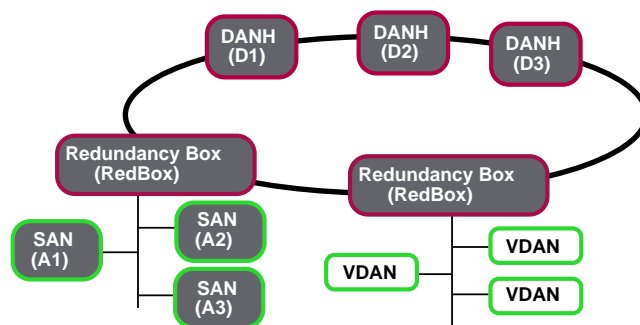
An example of a HSR network is shown in [HSR redundancy network](#), page 591.

The key features of a HSR redundancy network include:

- Nodes within the ring are restricted to be HSR-capable bridging nodes, thus avoiding the use of dedicated bridges.
- Singly Attached Nodes (SANs) such as laptops or printers cannot be attached directly to the ring, but need attachment through a RedBox.
- A simple HSR network consists of doubly attached bridging nodes, each having two ports, interconnected by full-duplex links.
- A source DANH (Double Attached Node with HSR implemented) sends a frame passed from its upper layers, prefixes it by an HSR tag to identify frame duplicates and sends the frame over each port.
- A destination DANH receives, in the fault-free state, two identical frames from each port within a certain interval, if it is a multicast frame, it instantaneously forwards it on the ring, removes the HSR tag of the first frame before passing it to its upper layers and discards any duplicate.

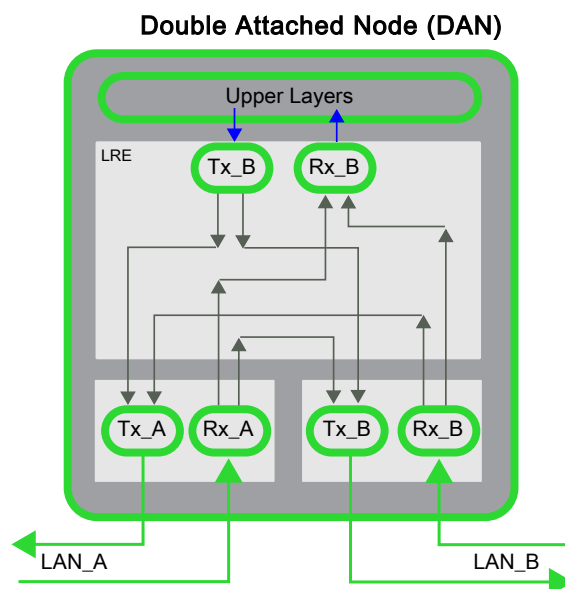
In particular, the node will not forward a frame that it injected into the ring. A destination node of a unicast frame does not forward a frame for which it is the only destination, except for testing.

- PowerLogic P5 protection relays have to be connected to the redundant Ethernet network as a Double Attached Node (DAN) using HSR (DANH).

Figure 7 - HSR redundancy network

Structure of a DAN

PowerLogic P5 protection relays working in HSR Mode work as a DAN within the overall network topology. Each DAN has two ports that operate in parallel. The two HSR ports A and B are connected by the Link Redundancy Entity (LRE), which includes a switching matrix allowing to forward frames from one port to the other. The switching matrix allows cut-through bridging. The LRE presents to the higher layers the same interface as a standard Ethernet transceiver would do.

Figure 8 - Communication between two DANs (in HSR)

DAN node is operable in HSR-tagged forwarding mode, the DAN inserts the HSR tag on behalf of its host and forwards the ring traffic, except for frames sent by the node itself. Duplicate frames and frames where the node is the unicast destination are not forwarded.

Structure of a RedBox

The RedBox has a LRE that performs the duties of the HSR protocol, in particular:

- forwards the frames received from one HSR port to the other HSR port, unless the frame receives frames addressed to its own upper protocols
- prefixes the frames sent by its own upper layers with the corresponding HSR tag before sending two copies over its HSR ports

The switching logic is incorporated into the RedBox, so interlink becomes an internal connection.

A simple RedBox is present in every node, since the LRE makes a transition to a single non-HSR host. In addition, it is usual to have more than one host in a node, since a port for maintenance often exists.

A node does not send over a port a frame that is a duplicate of a frame previously sent over that port in that same direction.

For the purpose of Duplicate Discard, a frame is identified by:

- source MAC address
- sequence number

The Duplicate Discard method forgets an entry identified by <Source MAC Address><Sequence number> after a time EntryForgetTime.

Communication between SANs, DANs and RedBoxes

Singly Attached Nodes, for instance maintenance laptops or printers cannot be inserted directly into the ring since they have only one port and cannot interpret the HSR tag in the frames. SANs communicate with ring devices through a RedBox that acts as a proxy for the SANs attached to it.

A source DANH sends a frame passed from its upper layers, and prefixes it by an HSR tag to identify frame duplicates and sends the frame over both ports. Each supervision frame includes a sequence number as defined in the IEC 62439- 3 specification. This is incremented for each supervision message and the value starts from zero following a system restart.

A destination DANH receives, in the fault-free state, two identical frames from each port within a certain interval, if it is a multicast frame, it instantaneously forwards it on the ring, removes the HSR tag of the first frame before passing it to its upper layers ("D"- frame) and discards any duplicate.

Main characteristics

- One VLAN tag supported
- Up to 128 devices supported
- Up to 100Mbit/s full duplex Ethernet
- Dynamic frame memory allocation (page manager)
- Configurable duplicate detection
- Wishbone interface for configuration and status registers
- CPU port interface - Wishbone
- Support for link-local protocols - CPU may send to specific ports only - CPU knows receive port
- Support for interfaces with or without Ethernet preamble
- Configurable frame memory and queue length
- Duplicate detection with configurable size and aging time
- MAC address filtering (8 filter masks for interlink port, 6 for CPU port)
- Support for interfaces with or without Ethernet preamble

Limitations:

- Number of devices on a same ring at 100 Mbit/s:
Each hop (devices or RedBox) not only carries its own messages but also all the other devices messages thus the bandwidth used is proportional to the number of device. The maximum number of hops is around 20 when the GOOSE messages are highly used or 40 if the number and importance of GOOSE messages is not high.
- When Precision Time Protocol, according IEEE1588/IEC 61588 standard, is used:
As the GPS receiver inaccuracy is 200 ns and as each hop (devices or RedBox) can add a 50 ns inaccuracy, the maximum number of hops is 16 if 1 µs accuracy is required (PMU application or Process Bus).

HSR parameters

The redundant Ethernet standard (IEC 62439-3) defines several parameters for the HSR protocol; these being fixed according to the table below:

Table 65 - HSR parameter values

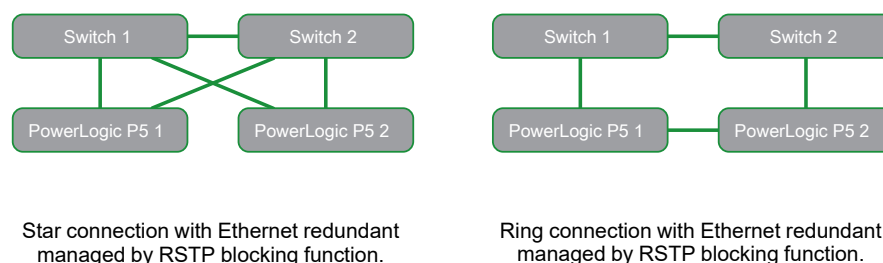
| Parameter | Value | Description |
|-------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------|
| Supervision Frame Multicast Address | 01-15-4E-00-01-00 | Target MAC Address for multicast supervision frame |
| Life Check Interval | 2 s +/- 100 ms | Period between transmission of supervision frames |
| HSR Mode | Duplicate Discard | This is normal HSR mode, Duplicate address will not be supported. |
| Entry Forget Time | 400 ms | Duration that the received message Sequence number will be held to discard a duplicate message. |
| Node Reboot Interval | 500 ms | Duration following reboot for which no PRP frames will be transmitted. |
| MulticastFilterSize | 8 Interlink and 6 Nios CPU | Number of multicast addresses to be filtered |

Rapid Spanning Tree Protocol (RSTP)

Introduction

RSTP is a standard used to quickly reconnect a network failure by finding an alternative path, allowing loop-free network topology.

Table 66 - A redundant Ethernet star or ring circuit



Although RSTP can recover network failures quickly, the recovery time depends on the number of devices and the topology. The recovery time also depends on the time taken by the devices to determine the root bridge and compute the port roles (discarding, learning, forwarding). The devices do this by exchanging Bridge Protocol Data Units (BPDUs) containing information about bridge devices and root path costs. See the IEEE 802.1w standard for further information.

The RSTP solution is based on open standards. It is therefore compatible with other manufacturers' IEDs that use the RSTP protocol. The typical RSTP recovery time is less than 50 ms for 10 IEDs in a network but it increases with the network size. Due to this recovery time it is not recommended to use RSTP in automation systems where a high availability of GOOSE is essential.

PowerLogic P5 protection relays provide two redundant Ethernet ports using RSTP. The redundant Ethernet interface can be made using RJ45 or optical fibre connections of LC connector type. The management of the RSTP is transparent to the application data provided via the Ethernet interface. One of the missed node connections to the device does not cause any degradation to the application data over the Ethernet interface.

RSTP parameters

Table 67 - RSTP parameter values

| Parameter | Default Value | Range | Description |
|-----------------|---------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable for RSTP | Yes | Yes, No | Enable/disable the use of RSTP protocol on the Ethernet port. (RSTP on Slot M can be enabled or disabled, while RSTP on Slot L is always enabled.) |
| Bridge priority | 32768 | 0...65535 (step is 4096) | Parameter used to define the RSTP root device for the network. If priorities of two or more devices are equal then the device with lowest MAC address is chosen as a root. |
| Hello Time | 2 s | 1...10 s | Setting defines how often RSTP frames (Hello BPDU) are sent. |
| Forward Delay | 15 s | 4...30 s | Time needed for the port to change its state from blocking to forwarding. |
| Max Age | 20 s | 6...40 s | The maximum age of the information transmitted by the Bridge when it is the Root Bridge. |
| Port1 Path Cost | 200000 | 1...200000 | Port Cost is related to transfer speed. This is determined according to RSTP specification. |
| Port1 Priority | 128 | 0...255 | When both Ethernet ports are set connected to the same network segment – in such a case the port with worse priority (higher value) is disabled as a backup path for that segment. |
| Port2 Path Cost | 200000 | 1...200000 | Port Cost is related to transfer speed. This is determined according to RSTP specification. |
| Port2 Priority | 128 | 0...255 | When both Ethernet ports are set connected to the same network segment – in such a case the port with worse priority (higher value) is disabled as a backup path for that segment. |

The parameters for the RSTP protocol can be configured via:

- front panel
- Protocol configuration view of COMMUNICATION menu of eSetup Easergy Pro or Web HMI

Generic functions for all redundant Ethernet modules

- **Ethernet 100Base Fx/Tx**

The fibre optic ports are full duplex 100 Mbps LC connectors.

- **Forwarding**

The devices from the families PowerLogic P5 protection relays support store and forward mode. The switch forwards messages with known addresses to the appropriate port. The messages with unknown addresses, the broadcast messages and the multicast messages are forwarded out to all ports except the source port. Switches will not forward error packets, 802.3x pause frames or local packets.

NOTE: Forwarding is active when HSR or RSTP protocol is selected.

- **Priority Tagging**

802.1p priority tagging is enabled on all ports.

Precision Time Protocol (PTP)

Precision Time Protocol (PTP) communication uses the IEEE 802.3 protocol.

PTP communication is only available with PRP/HSR module. A Transparent Clock (TC) is supported on the HSR ring. PTP provides higher time accuracy (500 us).

Introduction to the PTP standards

A protocol is provided in this standard that enables precise Synchronisation of clocks in measurement and control systems implemented with technologies such as network communication, local computing, and distributed objects. The protocol is applicable to systems communicating via packet networks. Heterogeneous systems are enabled that include clocks of various inherent precision, resolution, and stability to synchronise. System wide synchronisation accuracy and precision in the sub-microsecond range are supported with minimal network and local clock computing resources. Simple systems are installed and operated without requiring the management attention of users because the default behaviour of the protocol allows for it.

NOTE: Specific PTP compatible external equipment (switch, time synchronisation source, etc.) are needed for PowerLogic P5 PTP protocols.

PTP implementation

PTP implementation is compliant with IEC 61850-9-3 and IEC 61588/IEEE 1588-2019. Peer-to-peer mode and Best Master Clock algorithm (BMCA) are supported.

Table 68 - PTP parameter values

| Parameter | Value | Description | Note |
|--------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Enable time protocol | Yes, No | Enable/disable PTP protocol. | Set |
| Domain number | 0...255 | Define the permitted domain number of master clock. If the domainNumber in received PTP message header is different from the configuration parameter, the message will be rejected. | Set |
| Precision time state | Initial Faulty Disabled Listening Pre_master Master Passive Uncalibrated Slave | The state of PTP. | |
| Precision time deviation | Unit: μ s | The last time deviation for PTP in μ s. | |
| Offset from master | Unit: ns, μ s, ms or s | The time difference between a master and a slave computed by the slave. | |
| Peer propagation delay | Unit: ns, μ s, ms or s | An estimate of the current one-way propagation delay on the link. | |
| Steps removed | 0...255 | The number of communication paths traversed between the local clock and the grandmaster clock. | |
| Parent clock Id | xx-xx-xx-FF- FE-xx-xx-xx | The parent clock id. | |

Table 68 - PTP parameter values (Continued)

| Parameter | Value | Description | Note |
|-----------------------|-----------|---------------------------------------------------------------------------------|------|
| Parent port number | 0...255 | The number of parent port. | |
| Parent clock class | 0...255 | Parent clock attribute defining a clock's TAI traceability. | |
| Parent clock accuracy | 0...255 | Parent clock attribute defining the accuracy of a clock. | |
| Parent clock variance | 0...65535 | Parent clock attribute defining the stability of a clock. | |
| Parent priority 1 | 0...255 | The parent priority 1 used in the execution of the best master clock algorithm. | |
| Parent priority 2 | 0...255 | The parent priority 2 used in the execution of the best master clock algorithm. | |

Simple Network Time Protocol (SNTP)

Simple Network Time Protocol is supported by the PowerLogic P5 protection relay. SNTP is used to synchronise the clocks of computer systems over packet-switched, variable-latency data networks. A jitter buffer is used to reduce the effects of variable latency introduced by queuing in packet switched networks, helping ensure a continuous data stream over the network.

The PowerLogic P5 protection relays receive the synchronisation from the NTP server. This is done using the IP address of the NTP server. PowerLogic P5 supports the configuration of two NTP server IP addresses, which are defined in the cid file (see [SNTP server IP address configuration in the cid file](#)). These IP addresses can be changed from the eSetup Easergy Pro through **COMMUNICATION** menu/**Protocol configuration** sub-menu/**NTP server** element view or from the local panel HMI.

Secured File Transfer Protocol (sFTP)

Secured File Transfer Protocol is supported by the PowerLogic P5 protection relay. sFTP is used to transfer files over Ethernet TCP/IP network. PowerLogic P5 relay can transfer Disturbance Record files to sFTP-Server.

Disturbance record file compress

PowerLogic P5 generate and compress disturbance recorder COMTRADE data file with DEFLATE format (rfc1950) by using public domain zlib functions. To decompress the COMTRADE data file, please follow inflate API process defined in Zlib specification. For detail, please visit home page of zlib (<http://www.zlib.net/>).

Zlib and the instruction of decompressing

Zlib is a free, general-purpose loss less data compression library for use on any computer hardware and operating system. It's integrated in Java Development Kit (JDK), Python standard library, Linux, Windows DLL version, .NET and other development platforms.

As zlib is commonly used by different programming languages on different operating systems, we illustrate below the instructions for decompressing in C and Python languages.

Decompressing on C:

1. Download zlib binary from zlib home page if it is not installed on target OS platform (Linux/Windows/macOS/Solaris).
2. Follow the inflate routine in https://www.zlib.net/zlib_how.html to inflate the disturbance recorder data file as inflate.c

Decompressing on Python:

- Zlib is a part of the Python standard library 1.5, inflate the disturbance recorder data file as testUnzip.py

Communication SCADA

Presentation

For communication SCADA (Modbus, IEC 61850, IEC 103), PowerLogic P5 device can be configured to read only, which means users cannot change settings and send control command, no matter PowerLogic P5 in locked or unlocked state and with communication board or not. This function only works in basic cybersecurity level.

Communication SCADA configuration

The setting “Via SCADA” provides the option to forbid any setting changes and control commands from SCADA communication protocols (Modbus, IEC61850, IEC103). If the setting is disabled, PowerLogic P5 rejects all SCADA protocol setting changes and control commands. However, this setting has no effect on the local panel HMI, front USB communication port, eSetup Easergy Pro and Web HMI.

Parameter “Via SCADA” can be configured via the **Home** menu/**General Settings** sub-menu/**Cybersecurity reset** menu item/**RBAC Reset to factory** menu item/**Firmware upgrade** menu item/**Config Access** menu item from the local panel HMI.

Table 69 - Via SCADA configuration parameters

| Via SCADA | | |
|-----------------------------------------|----------|------------|
| | Disabled | Enabled |
| Access via rear comms SCADA (IEC 61850) | Read | Read/Write |
| Access via rear comms SCADA (Modbus) | Read | Read/Write |
| Access via rear comms SCADA (IEC 103) | Read | Read/Write |

Client IP address filter

The **Client IP Filter List** is presented in the **COMMUNICATION** menu/**Protocol configuration** sub-menu of the eSetup Easergy Pro. When there is no Ethernet Card in slot L and slot M, this list is hidden. The Client IP address filter, when enabled, defines the exclusive list of IP addresses that are accepted by the PowerLogic P5 relay. Connections from IP addresses, not part of this list, are rejected.

The **Client IP Filter List** is also listed in the general menu of the HMI.

Scope

The client IP address filter feature is only implemented for legacy protocols through TCP/IP.

- Modbus TCP/IP
- DNP3 TCP
- EtherNet/IP
- IEC 61850

Rules

- The feature can be enabled or disabled by clicking “Enable for IP filter”.
 - Enabled:
The PowerLogic P5 protection relay filters the client IP address as configured in the table.
 - Disabled:
Any client can connect to the PowerLogic P5 protection relay.
- This feature is common for the legacy protocols supported.
- CIDR (Classless Inter-Domain Routing) notation is used to define IP addresses range, e.g. 192.168.1.191/24, which means IP address 192.168.1.0 ~ 192.168.1.255 are all available.
- More than 8 IP addresses ranges are allowed/configured. But dynamically no more than 8 connections are active.
- Only the connection from these IP addresses which are configured in the “Client IP Address List” view can be accepted by the PowerLogic P5 protection relay.
- Any duplicated IP address is cleared and the “In use” flag is de-selected after clicking the “Implement New IP List” button. For example, if the 2nd and 5th IP address are both “192.168.1.191”, then, when clicking the “Implement” button the 5th IP address will be changed to empty, and “in use” is not selected.
- The CIDR IP address range is only active if the 'in use flag' is selected.
- When the number of connections is less than the max. allowed number, the connection from any permitted IP address is accepted.
- When there are already max. clients connected, the first connection is closed if there is new client coming from the same available IP address, otherwise the oldest connection is closed if there is new connection from available client IP.

- The parameter modified takes effect immediately after clicking the “Implement New IP List” button, the PowerLogic P5 protection relay is not required to reboot. The consequence of applying the IP Filter list (clicking the “Implement New IP List” button) is defined as:
 - Firmware reads all configuration parameters
 - Check for duplicated IP addresses
 - If “Enable for IP Filter” is not selected, all existing connections will be kept, and the communication will be running as usual.
 - If “Enable for IP Filter” is selected, the connection, whose IP address is allowed (defined in the IP address list), will be kept, and the communication will be running as usual. And all other connections, whose IP addresses are forbidden (not defined in the IP address list), will be closed.

Configuration parameters

Table 70 - Client IP filter configuration parameters

| Parameter | Value | Description |
|-----------------------|------------------------------|-------------------------------------------------------------------------------|
| Enable for IP filter | No/Yes | This flag indicates whether the client IP filter feature is supported or not. |
| IP address | Null or available IP address | Available IP address to be filtered. |
| CIDR prefix | /1 /32 | n-bits of CIDR prefix |
| In use | False/True | This flag indicates whether this CIDR notation IP address is filtered. |
| Implement New IP List | | Command to Implement New IP List |

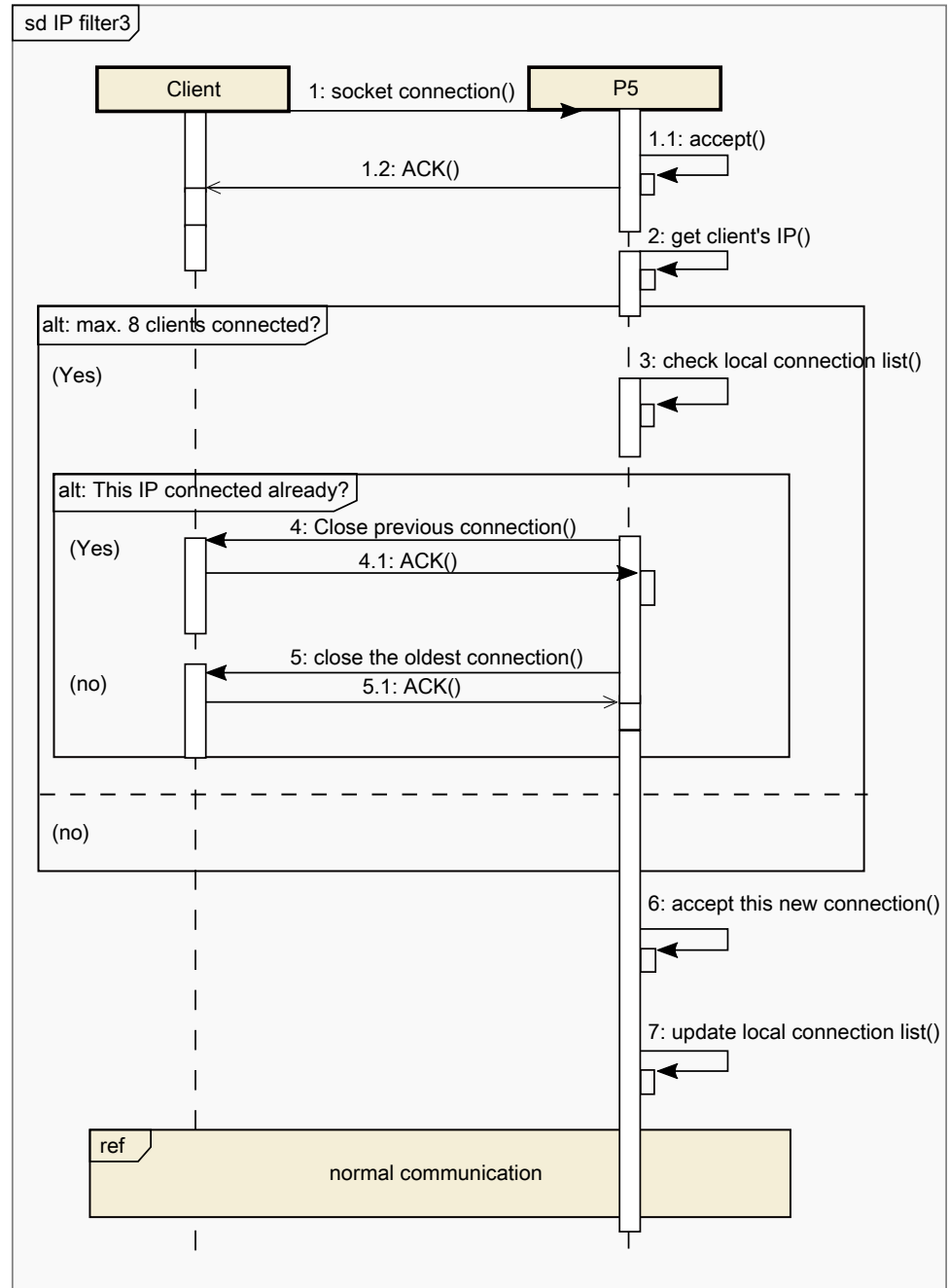
NOTE: There are 8 instances of “IP address”, “CIDR prefix” and “In use” parameters.

Process

The main sequence diagram is described as below for the condition that:

- The “Enable for IP filter” is Disable
- The “Enable for IP filter” is Enable and the client IP is configured in the filter list.

Figure 9 - Client IP filter



Secure communication with the eSetup Easergy Pro via the Ethernet interface

NOTE: The communication is done using port 22. Ensure this port is left unblocked on the network.

When PowerLogic P5 protection relays and eSetup Easergy Pro are connected via the Ethernet interface, they will communicate securely using SSH (Secure Shell).

The benefits of secure communication are:

- Help in the prevention of unwanted eavesdropping between eSetup Easergy Pro and the PowerLogic P5 protection relays.
- Help in the prevention of modification of data between eSetup Easergy Pro and the PowerLogic P5 protection relays.
- Help ensure integrity of data.
- Help prevent replay of data at a later date.

Revision history

| Document version | Description | |
|------------------|--------------------------------------------|-----------------------------------------------------------------------------------------|
| P5/EN M/11A | Original edition | |
| 2019-05 | Firmware version | V01 |
| | Release / Build | 001.029 |
| | Configuration tool | eSetup Easergy Pro V2.0.0 or later |
| | | CET850 V3.1.2 or later |
| P5/EN M/22A | Firmware version | V01 |
| 2019-11 | Release / Build | 200.008 |
| | Configuration tool | eSetup Easergy Pro V2.2.0 or later |
| | | CET850 V3.2.0 or later |
| | All protocols | Data point list updated |
| | DNP3 | File transfer function available |
| | Modbus master | Modbus master chapter available |
| | IEC 60870-5-103 | Setting data configurable in IEC 60870-5-103 available |
| | New feature | Client IP Address Filter chapter available |
| | Conformance statement | Conformance statement for IEC 61850 Edition 1 and 2 updated |
| | | |
| P5/EN M/33A | Firmware version | V01 |
| 2020-07 | Release / Build | 300.103 |
| | Configuration tool | eSetup Easergy Pro V3.0.0 or later |
| | | CET850 V3.3.0 or later |
| | PTP | Precision Time Protocol available |
| | Modbus | Modbus read exception status (FC=7) and read device identification (FC=43/14) available |
| | IEC 61850 | File transfer and setting group available |
| | All protocols | Data point list updated |
| | Conformance statement | Conformance statement for IEC 61850 Edition 1 and 2 updated |
| P5/EN M/33B | Firmware version | V01 |
| 2021-02 | Release / Build | 301.103 |
| | Configuration tool | eSetup Easergy Pro V3.1.0 or later |
| | | CET850 V3.4.0 or later |
| | Data model of Modbus | PDM Point List updated |
| | Access control through communication SCADA | Access control through communication SCADA (Modbus, IEC 61850, IEC 103) available |
| | DHCP | Dynamic Host Configuration Protocol available |
| P5/EN M/33C | Firmware version | V01 |
| 2021-07 | Release / Build | 303.101 |
| | Configuration tool | eSetup Easergy Pro V3.2.1 or later |
| | | CET850 V3.6.1 or later |

| Document version | Description | |
|------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| | IEC 61850 main configuration | The information of IEC 61850 main configuration updated |
| | GOOSE configuration | The publisher settings available on the local panel HMI |
| | Deadband configuration | The information of deadband configuration in the cid file available |
| | SNTP server IP address configuration | The information of SNTP server IP address configuration in the cid file available |
| | Modbus slave | Modbus slave updated with the PDM information |
| P5/EN M/44A 2021-10 | Firmware version | V01 |
| | Release / Build | 400.101 |
| | Configuration tool | eSetup Easergy Pro V4.0.0 or later |
| | | CET850 V4.0.0 or later |
| | | Easergy Studio V9.3.3 or later |
| | GOOSE subscriptions increased | Change NI/VI from 128 to 250 |
| | Data model of Modbus | PDM Point List updated |
| P5/EN M/44B 2022-07 | IEC 61850 | Multiple access point function available |
| | | IEC 61850 FPN function available |
| | Hardware version | A |
| | Firmware version | V01 |
| | Release / Build | 402.101 |
| | Configuration tool | eSetup Easergy Pro 4.2.0 or later |
| | | CET850 V4.2.0 or later |
| | | Easergy Studio V9.4.0 or later |
| | Data model update | Ethernet/IP protocol data model updated. |
| | | Modbus protocol data model updated. |
| | | IEC 60870-5-103 protocol data model updated. |
| | Continuous engineering | Enhancements and bug fixes in IEC 61850 fPN feature. |
| P5/EN M/44C 2022-09 | Hardware version | A |
| | Firmware version | V01 |
| | Release / Build | 402.201 |
| | Configuration tool | eSetup Easergy Pro 4.2.0 or later |
| | | CET850 V4.2.0 or later |
| | | Easergy Studio V9.4.0 or later |
| | Rebranding to PowerLogic | The product has been renamed to PowerLogic keeping its design, specification, performance, missing profile, safety and reliability unchanged. |
| P5/EN M/44D 2023-04 | Hardware version | A |
| | Firmware version | V01 |
| | Release / Build | 500.102 |
| | Configuration tool | eSetup Easergy Pro 4.3.0 or later |
| | | CET850 V4.4.2 or later |

| Document version | Description |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Easergy Studio V9.4.0 or later |
| Offer structure | P5T30 Transformer Differential protection relay introduced as new model in P5x30 platform. |
| | Settable Cybersecurity license introduced. New configuration options introduced: E - Settable CS, F - Settable CS and Advanced Logic Engine. |
| Interposing CT | New possibility for neutral current measurement introduced. CSH30 interposing CT can be used now to interface CSH neutral current inputs with standard 1A or 5A core-balance CTs. |
| Recording | Last fault record summary screen introduced. |
| | Additional sampling rate option introduced: 24 samples/cycle. |
| Cybersecurity | Compatibility with LDAP server introduced. |
| Continuous engineering | Regular package of corrections & bug-fixes introduced. |

Appendix 1: Abbreviation

| | |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AP | Access Point |
| ARP | Address Resolution Protocol |
| ASDU | Application Service Data Unit |
| CDC | Common Data Class |
| CID | The Configured IED Description (file) is a file used to have communication between an IED configuration tool to an IED. It can be considered as an SCD file stripped down to what the concerned IED need to know and contains a mandatory communication section of the addressed IED. |
| CIP | Common Industrial Protocol |
| COS | Change of State |
| DA | Data Attribute |
| DAN | Double Attached Nodes |
| DANP | Double Attached Nodes implementing PRP |
| DHCP | Dynamic Host Configuration Protocol |
| DO | Data Object |
| DR | Disturbance Recorder |
| DS | Dateset |
| FPGA | Field Programmable Gate Array |
| FPN | Flexible Product Naming |
| GoCB | GOOSE Control Block |
| GOOSE | Generic Object Oriented Substation Event |
| HTTPS | Secured Hypertext Transfer Protocol (HTTPS) is an extension of the Hypertext Transfer Protocol (HTTP) to help to secure communication over a computer network. |
| ICD | The IED Capability Description (file) completely defines the capabilities of an IED. This file needs to be supplied by each manufacturer to make the complete system configuration. The file contains a single IED section, an optional communication section and an optional substation part which denotes the physical entities corresponding to the IED. |
| IED | Intelligent Electronic Device – This is a term used to describe microprocessor-based controllers of power system equipment. Common types of IEDs include protective relaying devices, load tap changer controllers, circuit breaker controllers, capacitor bank switches, recloser controllers, voltage regulators, etc. |
| IID | The Instantiated IED Description (file) defines the configuration of one IED for a project and is used as data exchange format from the IED configurator to the system configurator. This file contains only the data for the IED being configured: one IED section, the communication section with the IED's communication parameters, the IED's data type templates, and, optionally, a substation section with the binding of functions (LNodes) to the single line diagram. |
| LAN | Local Area Network |
| LD | Logical Device |
| LN | Logical Node |
| LRE | Link Redundancy Entity |
| MAC | Media Access Control |
| MICS | Model Implementation Conformance Statement describes how the information model is implemented. |
| MMS | Manufacturing Message Specification |
| MTU | Maximum Transmission Unit |
| NI | Network Input |
| PDM | Power Data Model |
| PICS | Protocol Implementation Conformance Statement describes choices made in protocol implementation. |

| | |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PIXIT | Protocol Implementation Extra Information for Testing gives any additional implementation specific information not found in the previous standardised documents. |
| RCB | Report Control Block |
| RCT | Redundancy Check Tag |
| RedBox | Redundancy Box |
| SAN | Singly Attached Node |
| SCADA | Supervisory Control and Data Acquisition |
| SCD | The System (or Substation) Configuration Description is the file describing the complete power utility automation system details. It contains substation, communication, IED and Data type template sections. An SSD file and different ICD files contribute in making an SCD file. |
| SCT | System Configuration Tool |
| SCL | The System Configuration description Language is the language and representation format specified by IEC 61850 for the configuration of electrical substation devices. This includes representation of modeled data and communication services specified by IEC 61850-7-X standard documents. The complete SCL representation and its details are specified in IEC 61850-6 standard document. It includes data representation for substation device entities; its associated functions represented as logical nodes, communication systems and capabilities. The complete representation of data as SCL enhances the different devices of a substation to exchange the SCL files and to have a complete interoperability. |
| sFTP | Secured File Transfer Protocol (sFTP) is a network protocol that provides file access, file transfer, and file management over any reliable data stream. |
| SNTP | Simple Network Time Protocol (SNTP) is a less complex implementation of NTP, using the same protocol but without requiring the storage of state over extended periods of time. |
| SSD | System Specification Description |
| SSH | Secure Shell (SSH) is a cryptographic network protocol for operating network services securely over network communication. |
| TICS | Tissues Conformance Statement describes how the device behaves regarding identified technical issues. |
| UCMM | UnConnected Message Manager |
| UDP | User Datagram Protocol |
| VDAN | Virtual Double Attached Nodes |
| XML | Extensible Markup Language |

Appendix 2: IEC 61850 Edition 1 conformance statement

Introduction

Document purpose

The purpose of this document is to specify the communication features of the PowerLogic P5 protection relays embedded IEC 61850 server implementation mapped to IEC 61850 Edition 1 standards.

The model implementation in PowerLogic P5 protection relays varies with the functional scope provided by the different device models.

The information provided here may be still the subject of changes due to planned further extensions in the supported IEC 61850 functionality.

Terms and abbreviations

| Terms / abbreviations | Definitions |
|-----------------------|-------------------------------------------------------|
| ACSI | Abstract Communication Service Interfaces |
| BDA | Basic Data Attribute (not structured) |
| DA | Data Attributes |
| DO | DATA in IEC 61850-7-2, data object type or instance |
| FCD | Functionally Constrained Data |
| FCDA | Functionally Constrained Data Attribute |
| ID | Identifier |
| IED | Intelligent Electronic Device |
| LD | Logical Device |
| LN | Logical Node |
| MSV | Multicast Sampled Value |
| RCB | Report Control Block |
| GoCB | GOOSE Control Block or GSSE Control Block |
| SCL | Substation Configuration description Language |
| SCSM | Specific Communication Service Mapping |
| XML | Extensible Markup Language |
| GSSE | Generic Substation State Event |
| GOOSE | Generic Object Oriented Substation Event |
| SCD | Substation Configuration Description |
| ICD | IED Configuration Description |
| CID | Configured IED Description |
| PICS | Protocol Implementation Conformance Statement |
| MICS | Model Implementation Conformance Statement |
| PIXIT | Protocol Implementation eXtra Information for Testing |
| TICS | Tissue Implementation Conformance Statement |

PICS details

The PICS is based upon UCAlug PICS Template version 2.3, UCA International Users Group Testing Sub Committee, October 08, 2019.

The following ACSI conformance statements are used to provide an overview and details about following devices: P5U20, P5U20LPCT/LPVT, P5V20, P5F30, P5M30, P5T30, with firmware version V01.

- ACSI basic conformance statement
- ACSI models conformance statement
- ACSI service conformance statement

The statements specify the communication features mapped to IEC 61850-8-1 and IEC 61850-9-2, Edition 1.

ACSI basic conformance statement

The basic conformance statement is defined in the table below.

Table 71 - Basic conformance statement

| | | Client / Subscriber | Server / Publisher | Value / Comments |
|-------------------------------------------------------------------|-----------------------------------------------------------|---------------------|--------------------|------------------|
| Client–Server roles | | | | |
| B11 | Server side (of TWO-PARTY-APPLICATION-ASSOCIATION) | | Y | |
| B12 | Client side (of TWO-PARTY-APPLICATION-ASSOCIATION) | | – | |
| SCSMs supported | | | | |
| B21 | SCSM : IEC 61850-8-1 used | | Y | |
| B22 | SCSM : IEC 61850-9-1 used | | N | |
| B23 | SCSM : IEC 61850-9-2 used | | N | |
| B24 | SCSM : other | | N | |
| Generic substation event model (GSE) | | | | |
| B31 | Publisher side | | Y | |
| B32 | Subscriber side | Y | | |
| Transmission of sampled value model (SVC) | | | | |
| B41 | Publisher side | | N | |
| B42 | Subscriber side | N | | |
| – = not applicable Y = supported N or empty = not supported | | | | |

ACSI models conformance statement

The ACSI models conformance statement is defined in the table below.

Table 72 - ACSI models conformance statement

| | | Client / Subscriber | Server / Publisher | Value / Comments |
|--------------------------------------------------------------------------|----------------------------------|---------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If Server side (B11) and/or Client side (B12) is supported | | | | |
| M1 | Logical device | | Y | |
| M2 | Logical node | | Y | Only standard LN types defined in Part 7-4. |
| M3 | Data | | Y | Only standard object types defined in Part 7-3, 7-4. Mandatory objects and attributes, selected optional objects and attributes. |
| M4 | Data set | | Y | Supported pre-defined persistent data sets, configurable via SCL. Supported dynamically created data sets (persistent and non-persistent). Data set members selection restricted to FC such as ST and MX. |
| M5 | Substitution | | N | |
| M6 | Setting group control | | Y | |
| Reporting | | | | |
| M7 | Buffered report control | | Y | |
| M7-1 | sequence-number | | Y | |
| M7-2 | report-time-stamp | | Y | |
| M7-3 | reason-for-inclusion | | Y | |
| M7-4 | data-set-name | | Y | |
| M7-5 | data-reference | | Y | |
| M7-6 | buffer-overflow | | Y | |
| M7-7 | entryID | | Y | |
| M7-8 | BufTm | | Y | |
| M7-9 | IntgPd | | Y | |
| M7-10 | GI | | Y | |
| M7-11 | conf-revision | | Y | |
| M8 | Unbuffered report control | | Y | |
| M8-1 | sequence-number | | Y | |
| M8-2 | report-time-stamp | | Y | |
| M8-3 | reason-for-inclusion | | Y | |
| M8-4 | data-set-name | | Y | |
| M8-5 | data-reference | | Y | |
| M8-6 | BufTm | | Y | |
| M8-7 | IntgPd | | Y | |
| M8-8 | GI | | Y | |
| M8-9 | conf-revision | | Y | |
| Logging | | | | |

Table 72 - ACSI models conformance statement (Continued)

| | | Client / Subscriber | Server / Publisher | Value / Comments |
|---------------------------------------|------------------------------|---------------------|--------------------|---------------------------------------|
| M9 | Log control | | N | |
| M9-1 | IntgPd | | N | |
| M10 | Log | | N | |
| Other | | | | |
| M11 | Control | | Y | |
| M17 | File transfer | | Y | |
| M18 | Application association | | Y | |
| M19 | GOOSE Control Block | | Y | |
| M20 | Sampled Values Control Block | | N | |
| If GSE (B31/B32) is supported | | | | |
| M12 | GOOSE | | Y | |
| M13 | GSSE | | N | |
| If SVC (B41/B42) is supported | | | | |
| M14 | Multicast SVC | | N | |
| M15 | Unicast SVC | | N | |
| For all IEDs | | | | |
| M16 | Time | | Y | Performance class T2 (100µs accuracy) |
| Y = service is supported | | | | |
| N or empty = service is not supported | | | | |

ACSI service conformance statement

The ACSI service conformance statement is defined in the table below (depending on the statements in ACSI basic conformance statement, page 608).

Table 73 - ACSI service conformance statement

| | Ed | ACSI Service Conformance | AA: TP/MC | Client / Sub (C) | Server / Pub (S) | Comments |
|---------------------------------------------|-----|-------------------------------------|-----------|------------------|------------------|----------|
| Server | | | | | | |
| S1 | 1,2 | GetServerDirectory (LOGICAL-DEVICE) | TP | | Y | |
| Application association | | | | | | |
| S2 | 1,2 | Associate | | | Y | |
| S3 | 1,2 | Abort | | | Y | |
| S4 | 1,2 | Release | | | Y | |
| Logical device | | | | | | |
| S5 | 1,2 | LogicalDeviceDirectory | TP | | Y | |
| Logical node | | | | | | |
| S6 | 1,2 | LogicalNodeDirectory | TP | | Y | |
| S7 | 1,2 | GetAllDataValues | TP | | Y | |
| Data | | | | | | |
| S8 | 1,2 | GetDataValues | TP | | Y | |
| S9 | 1,2 | SetDataValues | TP | | Y | |
| S10 | 1,2 | GetDataDirectory | TP | | Y | |
| S11 | 1,2 | GetDataDefinition | TP | | Y | |
| Data set | | | | | | |
| S12 | 1,2 | GetDataSetValues | TP | | Y | |
| S13 | 1,2 | SetDataSetValues | TP | | N | |
| S14 | 1,2 | CreateDataSet | TP | | Y | |
| S15 | 1,2 | DeleteDataSet | TP | | Y | |
| S16 | 1,2 | GetDataSetDirectory | TP | | Y | |
| Substitution | | | | | | |
| S17 | 1 | SetDataValues | TP | | N | |
| Setting group control | | | | | | |
| S18 | 1,2 | SelectActiveSG | TP | | Y | |
| S19 | 1,2 | SelectEditSG | TP | | Y | |
| S20 | 1,2 | SetSGValues | TP | | Y | |
| S21 | 1,2 | ConfirmEditSGValues | TP | | Y | |
| S22 | 1,2 | GetSGValues | TP | | Y | |
| S23 | 1,2 | GetSGCBValues | TP | | Y | |
| Reporting | | | | | | |
| Buffered report control block (BRCB) | | | | | | |
| S24 | 1,2 | Report | TP | | Y | |
| S24-1 | 1,2 | data-change (dchg) | | | Y | |
| S24-2 | 1,2 | qchg-change (qchg) | | | Y | |

Table 73 - ACSI service conformance statement (Continued)

| | Ed | ACSI Service Conformance | AA: TP/MC | Client / Sub (C) | Server / Pub (S) | Comments |
|--------------------------------------------------|-----|--------------------------|-----------|------------------|------------------|---------------------------------------------------------------|
| S24-3 | 1,2 | data-update (dupd) | | | Y | Accepted as TrgOpt, but not functionally supported by the IED |
| S25 | 1,2 | GetBRCBValues | TP | | Y | |
| S26 | 1,2 | SetBRCBValues | TP | | Y | |
| Unbuffered report control block (URCB) | | | | | | |
| S27 | 1,2 | Report | TP | | Y | |
| S27-1 | 1,2 | data-change (dchg) | | | Y | |
| S27-2 | 1,2 | qchg-change (qchg) | | | Y | |
| S27-3 | 1,2 | data-update (dupd) | | | Y | Accepted as TrgOpt, but not functionally supported by the IED |
| S28 | 1,2 | GetURCBValues | TP | | Y | |
| S29 | 1,2 | SetURCBValues | TP | | Y | |
| Logging | | | | | | |
| Log control block | | | | | | |
| S30 | 1,2 | GetLCBValues | TP | | N | |
| S31 | 1,2 | SetLCBValues | TP | | N | |
| Log | | | | | | |
| S32 | 1,2 | QueryLogByTime | TP | | N | |
| S33 | 1,2 | QueryLogAfter | TP | | N | |
| S34 | 1,2 | GetLogStatusValues | TP | | N | |
| Generic substation event model (GSE) | | | | | | |
| S35 | 1,2 | SendGOOSEMessage | MC | | Y | |
| GOOSE Control Block | | | | | | |
| S36 | 1,2 | GetGoReference | TP | | N | |
| S37 | 1,2 | GetGOOSEElement-Number | TP | | N | |
| S38 | 1,2 | GetGoCBValues | TP | | Y | |
| S39 | 1,2 | SetGoCBValues | TP | | Y | |
| GSSE (Ed2:61850-7-2 Annex C) | | | | | | |
| S40 | 1 | SendGSSEMessage | MC | | N | |
| GSSE Control Block | | | | | | |
| S41 | 1 | GetGsReference | TP | | N | |
| S42 | 1 | GetGSSEElement-Number | TP | | N | |
| S43 | 1 | GetGsCBValues | TP | | N | |
| S44 | 1 | SetGsCBValues | TP | | N | |
| Transmission of sampled value model (SVC) | | | | | | |
| Multicast SV | | | | | | |
| S45 | 1,2 | SendMSVMessage | MC | | N | Use for IEC 61850-9-2LE guideline or IEC 61869-9 standard |
| Multicast Sampled Values Control Block | | | | | | |
| S46 | 1,2 | GetMSVCBValues | TP | | N | |

Table 73 - ACSI service conformance statement (Continued)

| | Ed | ACSI Service Conformance | AA: TP/MC | Client / Sub (C) | Server / Pub (S) | Comments |
|---------------------------------------------|-----|-----------------------------------|-----------|------------------|------------------|-----------------------------------------------------------------------------|
| S47 | 1,2 | SetMSVCBValues | TP | | N | |
| Unicast SV | | | | | | |
| S48 | 1,2 | SendUSVMMessage | TP | | N | |
| Unicast Sampled Values Control Block | | | | | | |
| S49 | 1,2 | GetUSVCBValues | TP | | N | |
| S50 | 1,2 | SetUSVCBValues | TP | | N | |
| Control | | | | | | |
| S51 | 1,2 | Select | | | Y | |
| S52 | 1,2 | SelectWithValue | TP | | Y | |
| S53 | 1,2 | Cancel | TP | | Y | |
| S54 | 1,2 | Operate | TP | | Y | |
| S55 | 1,2 | CommandTermination | TP | | Y | |
| S56 | 1,2 | TimeActivatedOperate | TP | | N | |
| File Transfer | | | | | | |
| S57 | 1,2 | GetFile | TP | | Y | |
| S58 | 1,2 | SetFile | TP | | N | |
| S59 | 1,2 | DeleteFile | TP | | N | |
| S60 | 1,2 | GetFileAttributeValues | TP | | Y | |
| S61 | 1,2 | GetServerDirectory (FILE-SYSTEM) | TP | | Y | |
| Time | | | | | | |
| T1 | 1,2 | Time resolution of internal clock | | | 14 | 14 for IEEE1588, 10 for IRIG-B, 7 for SNTP and protocols |
| T2 | 1,2 | Time accuracy of internal clock | | | T2 | Performance class T2 for IEEE1588, T1 for IRIG-B, T0 for SNTP and protocols |
| T3 | 1,2 | Supported TimeStamp resolution | - | | 20 | Nearest value of 2^{-n} in seconds (number 0 ... 24) |

MICS details

The MICS is based upon UCAIug MICS Template version 1.2, UCA International Users Group Testing Sub Committee, August 13, 2019.

This model implementation conformance statement is applicable for P5U20, P5U20LPCT/LPVT, P5V20, P5F30 and P5M30, P5T30, with firmware version V01.

This MICS document specifies the modeling extensions compared to IEC 61850 Edition 1.

Clause **Logical nodes list** contains the list of implemented logical nodes.

Clause **Logical node extensions** describes the new and extended logical nodes (if any).

Clause **Enum types extensions** describes the new and extended enum types (if any).

Logical nodes list

The following table contains the list of logical nodes implemented in the device:

Table 74 - Logical nodes implemented in the device

| | P5U20 | P5U20-LPCT/LPVT | P5V20 | P5F30 | P5-M30 | P5T30 |
|----------------------------------------------------------|-------|-----------------|-------|-------|--------|-------|
| L: System Logical Nodes | | | | | | |
| LPHD (Physical device information) | x | x | x | x | x | x |
| LLN0 (Logical node zero) | x | x | x | x | x | x |
| LTMS (Time master supervision) | x | x | x | x | x | x |
| LTIM (Time management) | x | x | x | x | x | x |
| LCCH (Physical communication channel supervision) | x | x | x | x | x | x |
| P: Logical Nodes for protection functions | | | | | | |
| PTRC (Protection trip conditioning) | x | x | x | x | x | x |
| PTOC (Time overcurrent) | x | x | | x | x | x |
| PFRC (Rate of change frequency) | x | x | x | x | | |
| PIOC (Instantaneous overcurrent) | x | x | x | x | x | x |
| PTOF (Over frequency) | x | x | x | x | x | |
| PTOV (Overvoltage) | x | x | x | x | x | x |
| PDOP (Directional overpower) | x | x | | x | x | |
| PTUC (Undercurrent) | x | x | | | x | |
| PTTR (Thermal overload) | x | x | | x | x | x |
| PTUF (Under frequency) | x | x | x | x | x | |
| PTUV (Under voltage) | x | x | x | x | x | |
| PMRI (Motor restart inhibition) | x | x | | | x | |
| PMSS (Motor starting time supervision) | x | x | | | x | |
| PTEF (Transient earth fault) | | | | x | | |
| PADM (Admittance) | | | | x | x | |

Table 74 - Logical nodes implemented in the device (Continued)

| | P5U20 | P5U20-LPCT/LPVT | P5V20 | P5F30 | P5-M30 | P5T30 |
|-----------------------------------------------------------------|-------|-----------------|-------|-------|--------|-------|
| POVS (Motor overspeed) | x | x | | | x | |
| PZSU (Motor underspeed) | x | x | | | x | |
| PHAR (Harmonic restraint) | x | x | | x | x | x |
| PDIF (Differential) | x | | | x | x | x |
| PVPH (Volts per Hz) | | | | | | x |
| R: Logical nodes for protection related functions | | | | | | |
| RREC (Auto reclosing) | x | x | | x | | |
| RDRE (Disturbance recorder) | x | x | x | x | x | x |
| RFLO (Fault locator) | x | x | x | x | x | x |
| RSYN (Synchronism-check) | | | x | x | | |
| RBRF (Breaker failure) | | | | | | x |
| G: Logical Nodes for generic references | | | | | | |
| GGIO (Generic process I/O) | x | | x | x | x | |
| GAPC (Generic automatic process control) | x | | x | x | x | |
| M: Logical Nodes for metering and measurement | | | | | | |
| MMTR (Metering) | x | x | | x | x | |
| MMXU (Measurement) | x | x | x | x | x | x |
| MHAI (Harmonics) | x | x | x | x | x | x |
| MMXN (Non-phase-related measurement) | x | | | x | x | x |
| MHAN (Non-phase-related Harmonics) | | | | | | x |
| MMET (Meteorological information) | x | x | x | x | x | x |
| MENV (Environmental information) | x | x | x | x | x | x |
| C: Logical Nodes for control | | | | | | |
| CSWI (Switch controller) | x | x | x | x | x | x |
| CILO (Interlocking) | x | x | x | x | x | x |
| T: Logical nodes for instrument transformers and sensors | | | | | | |
| TCTX (Current transformer) | x | x | | x | x | x |
| TVTX (Voltage transformer) | x | x | x | x | x | x |
| TTMP (Temperature sensor) | x | x | x | x | x | x |
| S: Logical nodes for supervision and monitoring | | | | | | |
| SCBR (Circuit breaker supervision) | x | x | | x | x | x |
| SOPM (Supervision of operating mechanism) | x | x | | x | x | x |
| SSWI (Circuit switch supervision) | x | x | x | x | x | x |
| STMP (Temperature supervision) | x | x | x | x | x | x |
| SIML (Insulation medium supervision) | | | | | | x |
| X: Logical nodes for switchgear | | | | | | |

Table 74 - Logical nodes implemented in the device (Continued)

| | P5U20 | P5U20- LPCT/ LPVT | P5V20 | P5F30 | P5- M30 | P5T30 |
|-------------------------------|-------|-------------------------|-------|-------|------------|-------|
| XCBR (Circuit breaker) | x | x | | x | x | x |
| XSWI (Circuit switch) | x | x | x | x | x | x |

Logical node extensions

The following table uses:

- M: Data is mandatory in the IEC 61850-7-4.
- O: Data is optional in the IEC 61850-7-4 and is used in the device.
- C: Data is conditional in the IEC 61850-7-4 and is used in the device.
- E: Data is an extension to the IEC 61850-7-4.

New logical nodes

Newly created logical nodes are listed in this clause, with lnNs attribute in the Name plate.

PADM Admittance

This LN shall be used for protection admittance E/F YN.

| PADM class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5EFPADM1 P5EFPADM2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| YStr | ACD | YN> Start signal | E | |
| YOp | ACT | YN> Trip signal | E | |
| GStr | ACD | GN> Start signal | E | |
| GOp | ACT | GN> Trip signal | E | |
| BStr | ACD | BN> Start signal | E | |
| BOp | ACT | BN> Trip signal | E | |
| Settings | | | | |
| FunEna | SPG | Enable All YN> | E | |
| YFunEna | SPG | Enable YN> | E | |
| GFunEna | SPG | Enable GN> | E | |
| BFunEna | SPG | Enable BN> | E | |
| VnStrVal | ASG | VN pick-up value | E | |

| PADM class | | | | |
|------------------|-------------------|-------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| CorAng | ASG | Correction angle | E | |
| YStrVal | ASG | YN> Pick-up value | E | |
| YOpDITms | ASG | Operate delay | E | |
| YRsDITms | ASG | Reset delay | E | |
| YSolMod | SPG | SOL | E | |
| YSIOpDITms | ASG | SOL operate delay | E | |
| GStrVal | ASG | GN> Pick-up value | E | |
| GDirMod | ING | Direction mode | E | |
| GOpDITms | ASG | Operate delay | E | |
| GRsDITms | ASG | Reset delay | E | |
| GSolMod | SPG | SOL | E | |
| GSIOpDITms | ASG | SOL operate delay | E | |
| BStrVal | ASG | BN> Pick-up value | E | |
| BDirMod | ING | Direction mode | E | |
| BOpDITms | ASG | Operate delay | E | |
| BRsDITms | ASG | Reset delay | E | |
| BSolMod | SPG | SOL | E | |
| BSIOpDITms | ASG | SOL operate delay | E | |
| EvVN | ING | Evaluation VN | E | |

POVS Motor overspeed

This LN shall be used for protection motor overspeed.

| POVS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MOTPOVS1 P5MOTPOVS2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | E | |
| Op | ACT | Trip signal | E | |
| Settings | | | | |
| FunEna | SPG | Enable for Ω > | E | |
| StrVal | ASG | Pick-up value | E | |
| OpDITms | ASG | Operate delay | E | |

TCTX Current transformer

This LN shall be used for protection current transformer parameters.

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5VSITCTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| | | | | |
| Measured and metered values | | | | |
| | | | | |
| Settings | | | | |
| FunEna | SPG | Enable for CTS | E | |
| CTNum | ING | Number of connected phase CT | E | |
| OpDITmms | ING | Operate delay | O | |
| PriPhs | ASG | CT primary | E | |
| PriNeut1 | ASG | EF CT primary | E | |
| PriNeut2 | ASG | Sensitive IN CT primary | E | |
| ResA | ASG | INT> | E | |
| ResV | ASG | VN< | E | |
| EvVN | ING | Evaluation VN | E | |
| CtsOpMod | ING | CTS operating mode | E | |

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPITCTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| | | | | |
| Measured and metered values | | | | |
| ExtPri | MV | Nominal current | E | |
| Settings | | | | |
| FunEna | SPG | Enable for CTS | E | |
| OpDITmms | ING | Operate delay | O | |

| TCTX class | | | | |
|------------------|-------------------|--------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| NomPri | ASG | LPCT nom primary | E | |
| ResA | ASG | IN> | E | |
| ResV | ASG | VN< | E | |
| EvVN | ING | Evaluation VN | E | |
| CtsOpMod | ING | CTS operating mode | E | |

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVSITCTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| CTIn | INS | CT input | E | |
| Settings | | | | |
| FunEna | SPG | Enable for CTS 1 | E | |
| OpDITmms | ING | Operate delay | O | |
| HiCTPri | ASG | HV CT primary | E | |
| CTPri | ASG | CT primary | E | |
| HiCTPriNeut | ASG | HV IN CT primary | E | |
| EFCTPri | ASG | EF CT primary | E | |
| ResA | ASG | IN> | E | |
| ResV | ASG | VN< | E | |
| CtsOpMod | ING | CTS operating mode | E | |
| PhDirHi | ING | HV Phase CT polarity | E | |
| SefDirHi | ING | HV IN CT polarity | E | |
| PhDirLo | ING | LV Phase CT polarity | E | |
| SefDirLo | ING | LV IN CT polarity | E | |
| PhSwpHi | ING | HV Phase Swap | E | |
| PhSwpLo | ING | LV Phase Swap | E | |

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVSITCTX3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | EM | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |

| TCTX class | | | | |
|------------------|-------------------|---------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Settings | | | | |
| FunEna | SPG | Enable for CTS DIFF | E | |
| OpDITmms | ING | Operate delay | O | |
| PsA | ASG | I1> HV | E | |
| NgPsARatLo | ASG | I2/I1 low | E | |
| NgPsARatHi | ASG | I2/I1 high | E | |

TVTX Voltage transformer

This LN shall be used for protection voltage transformer parameters.

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UTVTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| | | | | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| ImbAMinLev | ASG | I2< setting | E | |
| ImbVMaxLev | ASG | V2> setting | E | |
| OpDITmms | ING | Operate delay | O | |
| PriPhs | ASG | VT primary | E | |
| SecNeut | ASG | VN secondary | E | |
| SecPhs | ASG | VT secondary | E | |

| TVTX class | | | | |
|---------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |

| TVTX class | | | | |
|----------------------------------------|-------------------|----------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | APG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correction | E | |
| PhBAngCor | ASG | VB angle correction | E | |
| PhCAngCor | ASG | VC angle correction | E | |
| VL1yMagCor | ASG | VAy magnitude correction | E | |
| VL1yAngCor | ASG | VAy angle correction | E | |
| VL2yMagCor | ASG | VBy magnitude correction | E | |
| VL2yAngCor | ASG | VBy angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VT secondary | E | |
| PhAMagAdpt | ASG | VA adapter mag correction | E | |
| PhBMagAdpt | ASG | VB adapter mag correction | E | |
| PhCMagAdpt | ASG | VC adapter mag correction | E | |
| VISecAdpt | ASG | VTy secondary | E | |
| VL1yMagAdt | ASG | VAy adapter mag correction | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |

| TVTX class | | | | |
|------------------------------------|-------------------|--------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | ASG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correction | E | |
| PhBAngCor | ASG | VB angle correction | E | |
| PhCAngCor | ASG | VC angle correction | E | |
| VL1yMagCor | ASG | VAy magnitude correction | E | |
| VL1yAngCor | ASG | VAy angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VT secondary | E | |
| PhAMagAdpt | ASG | VA adapt mag correction | E | |
| PhBMagAdpt | ASG | VB adapt mag correction | E | |
| PhCMagAdpt | ASG | VC adapt mag correction | E | |
| ViSecAdpt | ASG | VTy secondary | E | |
| VL1yMagAdt | ASG | VAy adapt mag correction | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | ASG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |

| TVTX class | | | | |
|------------------|-------------------|---------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correction | E | |
| PhBAngCor | ASG | VB angle correctionn | E | |
| PhCAngCor | ASG | VC angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VT secondary | E | |
| PhAMagAdpt | ASG | VA adapter mag correction | E | |
| PhBMagAdpt | ASG | VB adapter mag correction | E | |
| PhCMagAdpt | ASG | VC adapter mag correction | E | |
| UoSecAdpt | ASG | VN secondary | E | |
| UoMagAdt | ASG | VN adapter mag correction | E | |
| VNPri | ASG | LPVT nominal primary | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX4 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | ASG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correctionn | E | |
| PhBAngCor | ASG | VB angle correction | E | |
| PhCAngCor | ASG | VC angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VtSecAdpt | E | |
| PhAMagAdpt | ASG | VA adapter mag correction | E | |

| TVTX class | | | | |
|------------------|-------------------|---------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PhBMagAdpt | ASG | VB adapter mag correction | E | |
| PhCMagAdpt | ASG | VC adapter mag correction | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVNTVTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Settings | | | | |
| PriNeut | ASG | VN primary | E | |
| SecNeut | ASG | VN secondary | E | |
| VTLOC | ING | VT location | E | |

LTMS Time master supervision

This LN shall be used for time master supervision with SNTP time source.

| LTMS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SNTPLTMS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| TmSrc | VSS | Current time source | E | |
| TmSrcTyp | INS | Type of the clock source | E | |
| Controls | | | | |
| | | | | |
| Settings | | | | |
| TmSrcSet1 | VSG | Time master supervision: SNTP server | E | |
| TmSrcSet2 | VSG | Time master supervision: SNTP server (Backup) | E | |

LTIM Time management

This LN shall be used for time management.

| LTIM class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LTIM1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| TmDT | SPS | Indicating if for this location daylight saving time is in effect now | E | |
| Settings | | | | |
| TmOfsTmm | ING | Offset of local time from UTC in minutes | E | |
| TmUseDT | SPG | Time management: Enable DST | E | |

SCBR Circuit breaker supervision

This LN shall be used for Circuit breaker supervision.

| SCBR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SCBR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| ColOpn | SPS | Open command of trip coil | E | |
| OpCntAlm | SPS | CB Monitoring alarm 2 signal | E | |
| OpCntWrn | SPS | CB Monitoring alarm 1 signal | E | |
| Measured values | | | | |
| OpTmOpn | MV | Operation time open | E | |
| OpTmCls | MV | Operation time close | E | |
| Controls | | | | |
| OpCntRs | INC | Resettable operation counter | O | |
| Settings | | | | |
| AbrAlmLev | ASG | Alarm level 2 | E | |
| AbrWrnLev | ASG | Alarm level 1 | E | |

| SCBR class | | | | |
|------------------|-------------------|----------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| RmnAlmNum | ING | Limit for operation left 2 | E | |
| RmnWrnNum | ING | Limit for operation left 1 | E | |

SOPM Supervision of operating mechanism

This LN shall be used for Supervision of operating mechanism.

| SOPM class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SOPM1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Measured values | | | | |
| MotTm | MV | Spring charging time | E | |

SSWI Circuit switch supervision

This LN shall be used for Supervision of operating mechanism.

| SSWI class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SSWI1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Controls | | | | |
| OpCntRs | INC | Resettable operation counter | O | |

MMET Meteorological information

This LN shall be used for Meteorological information.

| MMET class | | | | |
|---------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ENVMMET1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |

| MMET class | | | | |
|----------------------------------------|-------------------|------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| MaintNxt | VSS | Next Maintenance Date | E | |
| SevDeg1 | SPS | Severity degree 1 event | E | |
| SevDeg2 | SPS | Severity degree 2 event | E | |
| SevDeg3Alm | SPS | Severity degree 3 event | E | |
| TmpAlm | SPS | High temperature alarm | O | |
| HumAlm | SPS | High humidity alarm | E | |
| MaintDateAlm | SPS | Maintenance date reached or overpassed alarm | E | |
| MaintDateL2 | SPS | Next maintenance date less than 2 months event | E | |
| Measured values | | | | |
| EnvTmp | MV | Temperature of environment | E | |
| EnvHum | MV | Humidity of environment | E | |
| ColdPtTmp | MV | Cold Point Temperature | E | |
| CdsLev | MV | Condensation Level | E | |
| MaintFact | MV | Reduction factor for maintenance period | E | |
| CndAccm1 | MV | Service time under severity degree 0 | E | |
| CndAccm2 | MV | Service time under severity degree 1 | E | |
| CndAccm3 | MV | Service time under severity degree 2 | E | |
| CndAccm4 | MV | Service time under severity degree 3 | E | |
| Settings | | | | |
| FunEna | SPG | Enable for Environmental monitoring | E | |
| MaintPer | ASG | Maintenance period | E | |
| MaintLast | VSG | Last Maintenance Date | E | |
| HumMax | ASG | Humidity Threshold | E | |
| TmpMax | ASG | Temperature Threshold | O | |

TTMP Temperature sensor

This LN shall be used for Temperature sensor.

| TTMP class | | | | |
|----------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UPCBTTMP1 P5LOCBTTMP1 P5BUS1TTMP1 P5BUS2TTMP1 P5CAB1TTMP1 P5CAB2TTMP1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Settings | | | | |
| PhsASt | INS | Phase A sensor status | E | |
| PhsBSt | INS | Phase B sensor status | E | |
| PhsCSt | INS | Phase C sensor status | E | |

STMP Temperature supervision

This LN shall be used for Temperature supervision.

| STMPclass | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5THMSTMP1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| AUpCBRdAlm | SPS | CB upper arm phase A temperature red alarm | E | |
| BUpCBRdAlm | SPS | CB upper arm phase B temperature red alarm | E | |
| CUpCBRdAlm | SPS | CB upper arm phase C temperature red alarm | E | |
| ALoCBRdAlm | SPS | CB lower arm phase A temperature red alarm | E | |
| BLoCBRdAlm | SPS | CB lower arm phase B temperature red alarm | E | |
| CLoCBRdAlm | SPS | CB lower arm phase C temperature red alarm | E | |
| ACab1RdAlm | SPS | Cable connection1 phase A temperature red alarm | E | |

| STMPclass | | | | |
|------------------|-------------------|-----------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| BCab1RdAlm | SPS | Cable connection1 phase B temperature red alarm | E | |
| CCab1RdAlm | SPS | Cable connection1 phase C temperature red alarm | E | |
| ACab2RdAlm | SPS | Cable connection2 phase A temperature red alarm | E | |
| BCab2RdAlm | SPS | Cable connection2 phase B temperature red alarm | E | |
| CCab2RdAlm | SPS | Cable connection2 phase C temperature red alarm | E | |
| ABus1RdAlm | SPS | Busbar connection1 phase A temperature red alarm | E | |
| BBus1RdAlm | SPS | Busbar connection1 phase B temperature red alarm | E | |
| CBus1RdAlm | SPS | Busbar connection1 phase C temperature red alarm | E | |
| ABus2RdAlm | SPS | Busbar connection2 phase A temperature red alarm | E | |
| BBus2RdAlm | SPS | Busbar connection2 phase B temperature red alarm | E | |
| CBus2RdAlm | SPS | Busbar connection2 phase C temperature red alarm | E | |
| AUpCBOOrAlm | SPS | CB upper arm phase A temperature orange alarm | E | |
| BUpCBOOrAlm | SPS | CB upper arm phase B temperature orange alarm | E | |
| CUpCBOOrAlm | SPS | CB upper arm phase C temperature orange alarm | E | |
| ALoCBOOrAlm | SPS | CB lower arm phase A temperature orange alarm | E | |
| BLoCBOOrAlm | SPS | CB lower arm phase B temperature orange alarm | E | |
| CLoCBOOrAlm | SPS | CB lower arm phase C temperature orange alarm | E | |
| ACab1OrAlm | SPS | Cable connection1 phase A temperature orange alarm | E | |
| BCab1OrAlm | SPS | Cable connection1 phase B temperature orange alarm | E | |
| CCab1OrAlm | SPS | Cable connection1 phase C temperature orange alarm | E | |
| ACab2OrAlm | SPS | Cable connection2 phase A temperature orange alarm | E | |
| BCab2OrAlm | SPS | Cable connection2 phase B temperature orange alarm | E | |
| CCab2OrAlm | SPS | Cable connection2 phase C temperature orange alarm | E | |
| ABus1OrAlm | SPS | Busbar connection1 phase A temperature orange alarm | E | |
| BBus1OrAlm | SPS | Busbar connection1 phase B temperature orange alarm | E | |
| CBus1OrAlm | SPS | Busbar connection1 phase C temperature orange alarm | E | |
| ABus2OrAlm | SPS | Busbar connection2 phase A temperature orange alarm | E | |

| STMPclass | | | | |
|------------------|-------------------|-----------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| BBus2OrAlm | SPS | Busbar connection2 phase B temperature orange alarm | E | |
| CBus2OrAlm | SPS | Busbar connection2 phase C temperature orange alarm | E | |
| UpCBOOrAlm | SPS | CB upper arm temperature orange alarm | E | |
| LoCBOOrAlm | SPS | CB lower arm temperature orange alarm | E | |
| Cab1OrAlm | SPS | Cable connection1 temperature orange alarm | E | |
| Cab2OrAlm | SPS | Cable connection2 temperature orange alarm | E | |
| Bus1OrAlm | SPS | Busbar connection1 temperature orange alarm | E | |
| Bus2OrAlm | SPS | Busbar connection2 temperature orange alarm | E | |
| AUpCBWrn | SPS | CB upper arm phase A temperature overpass | E | |
| BUpCBWrn | SPS | CB upper arm phase B temperature overpass | E | |
| CUpCBWrn | SPS | CB upper arm phase C temperature overpass | E | |
| ALoCBWrn | SPS | CB lower arm phase A temperature overpass | E | |
| BLoCBWrn | SPS | CB lower arm phase B temperature overpass | E | |
| CLoCBWrn | SPS | CB lower arm phase C temperature overpass | E | |
| ACab1Wrn | SPS | Cable connection1 phase A temperature overpass | E | |
| BCab1Wrn | SPS | Cable connection1 phase B temperature overpass | E | |
| CCab1Wrn | SPS | Cable connection1 phase C temperature overpass | E | |
| ACab2Wrn | SPS | Cable connection2 phase A temperature overpass | E | |
| BCab2Wrn | SPS | Cable connection2 phase B temperature overpass | E | |
| CCab2Wrn | SPS | Cable connection2 phase C temperature overpass | E | |
| ABus1Wrn | SPS | Busbar connection1 phase A temperature overpass | E | |
| BBus1Wrn | SPS | Busbar connection1 phase B temperature overpass | E | |
| CBus1Wrn | SPS | Busbar connection1 phase C temperature overpass | E | |
| ABus2Wrn | SPS | Busbar connection2 phase A temperature overpass | E | |
| BBus2Wrn | SPS | Busbar connection2 phase B temperature overpass | E | |
| CBus2Wrn | SPS | Busbar connection2 phase C temperature overpass | E | |
| UpCBWrn | SPS | CB upper arm temperature overpass | E | |

| STMPclass | | | | |
|------------------------|-------------------|-----------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| LoCBWrn | SPS | CB lower arm temperature overpass | E | |
| Cab1Wrn | SPS | Cable connection1 temperature overpass | E | |
| Cab2Wrn | SPS | Cable connection2 temperature overpass | E | |
| Bus1Wrn | SPS | Busbar connection1 temperature overpass | E | |
| Bus2Wrn | SPS | Busbar connection2 temperature overpass | E | |
| Measured values | | | | |
| AUpCBTmp | MV | CB upper arm Phase A temperature | E | |
| BUpCBTmp | MV | CB upper arm Phase B temperature | E | |
| CUpCBTmp | MV | CB upper arm Phase C temperature | E | |
| ALoCBTmp | MV | CB lower arm Phase A temperature | E | |
| BLoCBTmp | MV | CB lower arm Phase B temperature | E | |
| CLoCBTmp | MV | CB lower arm Phase C temperature | E | |
| ABus1Tmp | MV | Busbar connection1 Phase A temperature | E | |
| BBus1Tmp | MV | Busbar connection1 Phase B temperature | E | |
| CBus1Tmp | MV | Busbar connection1 Phase C temperature | E | |
| ABus2Tmp | MV | Busbar connection2 Phase A temperature | E | |
| BBus2Tmp | MV | Busbar connection2 Phase B temperature | E | |
| CBus2Tmp | MV | Busbar connection2 Phase C temperature | E | |
| ACab1Tmp | MV | Cable connection1 Phase A temperature | E | |
| BCab1Tmp | MV | Cable connection1 Phase B temperature | E | |
| CCab1Tmp | MV | Cable connection1 Phase C temperature | E | |
| ACab2Tmp | MV | Cable connection2 Phase A temperature | E | |
| BCab2Tmp | MV | Cable connection2 Phase B temperature | E | |
| CCab2Tmp | MV | Cable connection2 Phase C temperature | E | |
| CBHiTmp | MV | High threshold value for CB | E | |
| BusHiTmp | MV | High threshold value for busbar | E | |
| CabHiTmp | MV | High threshold value for cable | E | |
| CBLoTmp | MV | Low threshold value for CB | E | |
| CabLoTmp | MV | Low threshold value for cable | E | |

| STMPclass | | | | |
|------------------|-------------------|----------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Settings | | | | |
| FunEna | SPG | Enable for thermal monitoring | E | |
| ARtgCel | ASG | Rated current of compartment | E | |
| BusTmpMax | ASG | Maximum temperature rise of busbar | E | |
| CBTmpMax | ASG | Maximum temperature rise of CB | E | |
| CabTmpMax | ASG | Maximum temperature rise of Cable | E | |
| EnvTmpMax | ASG | Maximum ambient temperature | E | |
| RatDifTmp | ASG | Threshold ratio for phase Tmp discrepancy first event or alarm | E | |
| RatFixTmp | ASG | Threshold ratio for fix relative warming first event or alarm | E | |
| RatSelfTmp | ASG | Threshold ratio for self-adapted warming first event or alarm | E | |
| ThmTm | ASG | Thermal time constant of the equipment | E | |
| ThmMode | ING | Mode of thermal monitoring | E | |
| DifTmpBusVal | ASG | Temperature threshold of phase discrepancy for busbar | E | |
| DifTmpCBVal | ASG | Temperature threshold of phase discrepancy for CB | E | |
| DifTmpCabVal | ASG | Temperature threshold of phase discrepancy for Cable | E | |
| FixTmpBusVal | ASG | Temperature threshold of fix relative Tmp rise for busbar | E | |
| FixTmpCBVal | ASG | Temperature threshold of fix relative Tmp rise for CB | E | |
| FixTmpCabVal | ASG | Temperature threshold of fix relative Tmp rise for Cable | E | |

LCCH Physical communication channel supervision

This LN shall be used for Physical communication channel supervision.

| LCCH class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ZBLCCH1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| ChLiv | SPS | Physical Channel Status | E | |

Standardised and extended DO of logical node type

The following table presents a summary of the standardised and extended DO of each Logical Node Type.

LN Type: SE_GAPC_PS_PowerLogicP5_V001

Description: Generic automatic process control

LN Class: GAPC

| GAPC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5PSGAPC1...8 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable Prog | E | |

LN Type: SE_GAPC_RTD_PowerLogicP5FMUWT_V001

Description: Generic automatic process control

LN Class: GAPC

| GAPC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5RTDGAPC1 P5RTDGAPC2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op1 | ACT | Temperature 1 trip | M | |
| Op2 | ACT | Temperature 2 trip | M | |
| Op3 | ACT | Temperature 3 trip | M | |
| Op4 | ACT | Temperature 4 trip | M | |
| Op5 | ACT | Temperature 5 trip | M | |
| Op6 | ACT | Temperature 6 trip | M | |

| GAPC class | | | | |
|------------------|-------------------|---------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Op7 | ACT | Temperature 7 trip | M | |
| Op8 | ACT | Temperature 8 trip | M | |
| Alm1 | SPS | Temperature 1 alarm | O | |
| Alm2 | SPS | Temperature 2 alarm | O | |
| Alm3 | SPS | Temperature 3 alarm | O | |
| Alm4 | SPS | Temperature 4 alarm | O | |
| Alm5 | SPS | Temperature 5 alarm | O | |
| Alm6 | SPS | Temperature 6 alarm | O | |
| Alm7 | SPS | Temperature 7 alarm | O | |
| Alm8 | SPS | Temperature 8 alarm | O | |

LN Type: SE_GAPC_LOT_PowerLogicP5_V001

Description: Generic automatic process control

LN Class: GAPC

| GAPC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LOTGAPC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | not used | M | |
| Op | ACT | not used | M | |
| Ind1 | SPS | Logical output 1 signal | O | |
| Ind2 | SPS | Logical output 2 signal | O | |
| Ind3 | SPS | Logical output 3 signal | O | |
| Ind4 | SPS | Logical output 4 signal | O | |
| Ind5 | SPS | Logical output 5 signal | O | |
| Ind6 | SPS | Logical output 6 signal | O | |
| Ind7 | SPS | Logical output 7 signal | O | |
| Ind8 | SPS | Logical output 8 signal | O | |
| Ind9 | SPS | Logical output 9 signal | O | |
| Ind10 | SPS | Logical output 10 signal | O | |
| Ind11 | SPS | Logical output 11 signal | O | |
| Ind12 | SPS | Logical output 12 signal | O | |
| Ind13 | SPS | Logical output 13 signal | O | |
| Ind14 | SPS | Logical output 14 signal | O | |

| GAPC class | | | | |
|------------------|-------------------|-----------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Ind15 | SPS | Logical output 15 signal | O | |
| Ind16 | SPS | Logical output 16 signal | O | |
| Ind17 | SPS | Logical output 17 signal | O | |
| Ind18 | SPS | Logical output 18 signal | O | |
| Ind19 | SPS | Logical output 19 signal | O | |
| Ind20 | SPS | Logical output 20 signal | O | |
| Settings | | | | |
| TmMod1 | ING | Timer mode for logic output 1(t) | E | |
| Ind1t1 | ASG | t1 for logic output 1(t) | E | |
| Ind1t2 | ASG | t2 for logic output 1(t) | E | |
| TmMod2 | ING | Timer mode for logic output 2(t) | E | |
| Ind2t1 | ASG | t1 for logic output 2(t) | E | |
| Ind2t2 | ASG | t2 for logic output 2(t) | E | |
| TmMod3 | ING | Timer mode for logic output 3(t) | E | |
| Ind3t1 | ASG | t1 for logic output 3(t) | E | |
| Ind3t2 | ASG | t2 for logic output 3(t) | E | |
| TmMod4 | ING | Timer mode for logic output 4(t) | E | |
| Ind4t1 | ASG | t1 for logic output 4(t) | E | |
| Ind4t2 | ASG | t2 for logic output 4(t) | E | |
| TmMod5 | ING | Timer mode for logic output 5(t) | E | |
| Ind5t1 | ASG | t1 for logic output 5(t) | E | |
| Ind5t2 | ASG | t2 for logic output 5(t) | E | |
| TmMod6 | ING | Timer mode for logic output 6(t) | E | |
| Ind6t1 | ASG | t1 for logic output 6(t) | E | |
| Ind6t2 | ASG | t2 for logic output 6(t) | E | |
| TmMod7 | ING | Timer mode for logic output 7(t) | E | |
| Ind7t1 | ASG | t1 for logic output 7(t) | E | |
| Ind7t2 | ASG | t2 for logic output 7(t) | E | |
| TmMod8 | ING | Timer mode for logic output 8(t) | E | |
| Ind8t1 | ASG | t1 for logic output 8(t) | E | |
| Ind8t2 | ASG | t2 for logic output 8(t) | E | |
| TmMod9 | ING | Timer mode for logic output 9(t) | E | |
| Ind9t1 | ASG | t1 for logic output 9(t) | E | |
| Ind9t2 | ASG | t2 for logic output 9(t) | E | |
| TmMod10 | ING | Timer mode for logic output 10(t) | E | |
| Ind10t1 | ASG | t1 for logic output 10(t) | E | |
| Ind10t2 | ASG | t2 for logic output 10(t) | E | |
| TmMod11 | ING | Timer mode for logic output 11(t) | E | |
| Ind11t1 | ASG | t1 for logic output 11(t) | E | |
| Ind11t2 | ASG | t2 for logic output 11(t) | E | |

| GAPC class | | | | |
|------------------|-------------------|-----------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| TmMod12 | ING | Timer mode for logic output 12(t) | E | |
| Ind12t1 | ASG | t1 for logic output 12(t) | E | |
| Ind12t2 | ASG | t2 for logic output 12(t) | E | |
| TmMod13 | ING | Timer mode for logic output 13(t) | E | |
| Ind13t1 | ASG | t1 for logic output 13(t) | E | |
| Ind13t2 | ASG | t2 for logic output 13(t) | E | |
| TmMod14 | ING | Timer mode for logic output 14(t) | E | |
| Ind14t1 | ASG | t1 for logic output 14(t) | E | |
| Ind14t2 | ASG | t2 for logic output 14(t) | E | |
| TmMod15 | ING | Timer mode for logic output 15(t) | E | |
| Ind15t1 | ASG | t1 for logic output 15(t) | E | |
| Ind15t2 | ASG | t2 for logic output 15(t) | E | |
| TmMod16 | ING | Timer mode for logic output 16(t) | E | |
| Ind16t1 | ASG | t1 for logic output 16(t) | E | |
| Ind16t2 | ASG | t2 for logic output 16(t) | E | |
| TmMod17 | ING | Timer mode for logic output 17(t) | E | |
| Ind17t1 | ASG | t1 for logic output 17(t) | E | |
| Ind17t2 | ASG | t2 for logic output 17(t) | E | |
| TmMod18 | ING | Timer mode for logic output 18(t) | E | |
| Ind18t1 | ASG | t1 for logic output 18(t) | E | |
| Ind18t2 | ASG | t2 for logic output 18(t) | E | |
| TmMod19 | ING | Timer mode for logic output 19(t) | E | |
| Ind19t1 | ASG | t1 for logic output 19(t) | E | |
| Ind19t2 | ASG | t2 for logic output 19(t) | E | |
| TmMod20 | ING | Timer mode for logic output 20(t) | E | |
| Ind20t1 | ASG | t1 for logic output 20(t) | E | |
| Ind20t2 | ASG | t2 for logic output 20(t) | E | |

LN Type: SE_GGIO_AR_PowerLogicP5FUW_V002

Description: Generic process I/O

LN Class: GGIO

| GGIO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ARGGIO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |

| GGIO class | | | | |
|---------------------------|-------------------|----------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Ind1 | SPS | AR1 final trip | O | |
| Ind2 | SPS | AR2 final trip | O | |
| Ind3 | SPS | AR3 final trip | O | |
| Ind4 | SPS | AR4 final trip | O | |
| Ind5 | SPS | AR Direct final trip | O | |
| Ind6 | SPS | AR request 1 | O | |
| Ind7 | SPS | AR request 2 | O | |
| Ind8 | SPS | AR request 3 | O | |
| Ind9 | SPS | AR request 4 | O | |
| Ind10 | SPS | AR request 5 | O | |
| Ind11 | SPS | AR shot 1 | O | |
| Ind12 | SPS | AR shot 2 | O | |
| Ind13 | SPS | AR shot 3 | O | |
| Ind14 | SPS | AR shot 4 | O | |
| Ind15 | SPS | AR shot 5 | O | |
| Settings | | | | |
| FunEna | SPG | Enable Auto-recloser | E | |

LN Type: SE_GGIO_TCBWA_PowerLogicP5T_V001

Description: Generic process I/O

LN Class: GGIO

| GGIO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TCBWGGIO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Ind1 | SPS | Alarm 1 signal | O | |
| Ind2 | SPS | Alarm 2 signal | O | |
| Alm1PhsA | INS | Alarm 1 of Phase A | E | |
| Alm1PhsB | INS | Alarm 1 of Phase B | E | |
| Alm1PhsC | INS | Alarm 1 of Phase C | E | |
| Alm2PhsA | INS | Alarm 2 of Phase A | E | |
| Alm2PhsB | INS | Alarm 2 of Phase B | E | |
| Alm2PhsC | INS | Alarm 2 of Phase C | E | |

| GGIO class | | | | |
|------------------|-------------------|--------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| CTIn | INS | CT input | E | |
| Settings | | | | |
| FunEna | SPG | Enable CB Monitoring | E | |
| CBOpenCnt | ING | CB open counter | E | |
| RackOutCnt | ING | Rack out counter | E | |
| TripCnt | ING | Protection trip counter | E | |
| AlmLev1 | ASG | Alarm level 1 | E | |
| AlmLev2 | ASG | Alarm level 2 | E | |
| LimOpNum1 | ASG | Limit for operate left 1 | E | |
| LimOpNum2 | ASG | Limit for operate left 2 | E | |

LN Type: SE_GGIO_BMM_PowerLogicP5_V001

Description: Generic process I/O

LN Class: GGIO

| GGIO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5BMMGGIO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Vendor | VSS | BM100 vendor name | E | |
| SerNum | VSS | BM100 serial number | E | |
| Model | VSS | BM100 model | E | |
| HwRev | VSS | BM100 hardware revision | E | |
| FwRev | VSS | BM100 firmware revision | E | |
| VendorUrl | VSS | BM100 vendor url | E | |
| ProductFam | VSS | BM100 product family | E | |
| ProductRng | VSS | BM100 product range | E | |
| ProductCap | VSS | BM100 product capability | E | |
| ProductId | INS | BM100 product identifier | E | |
| ProductCod | VSS | BM100 product code | E | |
| DevHealth | INS | BM100 physical health status | E | |
| CfgHealth | INS | BM100 configuration health status | E | |
| CBManuDate | VSS | CB manufacturing date | E | |
| CBManuPl | VSS | CB manufacturing plant | E | |
| CBHealth | INS | CB health status | E | |
| CBOpCntAlm | SPS | CB number of operations red alarm | E | |

| GGIO class | | | | |
|------------------------------------|-------------------|--------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| CBOpCntWrn | SPS | CB number of operations orange alarm | E | |
| CBOpCntInd | SPS | CB number of operations indication | E | |
| CBTmOpnAlm | SPS | CB opening time alarm | E | |
| CBTmOpnWrn | SPS | CB opening time warning | E | |
| CBTmClsAlm | SPS | CB closing time alarm | E | |
| CBTmClsWrn | SPS | CB closing time warning | E | |
| CBAbrAlm | SPS | CB electrical wear alarm | E | |
| CBAbrWrn | SPS | CB electrical wear warning | E | |
| MchWrAlm | SPS | CB mechanism wear alarm | E | |
| MchWrWrn | SPS | CB mechanism wear warning | E | |
| CBStkWrn | SPS | CB stroke distance warning | E | |
| MchHealth | INS | CB mechanism health status | E | |
| MchCbrSt | INS | Mechanism calibration status | E | |
| Col1Health | INS | Coil 1 health status | E | |
| Col2Health | INS | Coil 2 health status | E | |
| Col3Health | INS | Coil 3 health status | E | |
| VIHealth | INS | VI health status | E | |
| VICbrSt | INS | VI calibration status | E | |
| TkStkAlm | SPS | Truck distance alarm | E | |
| TkStkWrn | SPS | Truck distance warning | E | |
| TkOpCntWrn | SPS | Truck number of operations warning | E | |
| TruckCbrSt | INS | Truck calibration status | E | |
| MotHealth | INS | Charging motor health status | E | |
| MotCbrSt | INS | Charging motor calibration status | E | |
| Measured and metered values | | | | |
| MaxOpCnt | MV | CB max number of operations | E | |
| IcMaxOpCnt | MV | CB max number of operations @Isc | E | |
| CBARtg | MV | CB rated current (Ir) | E | |
| CBVRtg | MV | CB rated voltage | E | |
| CBIcwRtg | MV | CB rated current (Ir) @Isc | E | |
| CBHzRtg | MV | CB rated frequency | E | |
| CBOpnTmRtg | MV | CB rated opening time | E | |
| CBClstTmRtg | MV | CB rated closing time | E | |
| CBHIPct | MV | CB health index | E | |
| MchHIPct | MV | CB mechanism health index | E | |
| MchOpCnt | MV | Mechanism operation counter | E | |
| CBOpTmOpn | MV | CB opening time | E | |
| CBOpTmCls | MV | CB closing time | E | |
| CBOpSpdOpn | MV | CB opening speed | E | |
| CBOpSpdCls | MV | CB closing speed | E | |

| GGIO class | | | | |
|------------------|-------------------|------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Col1HIPct | MV | Coil 1 health index | E | |
| Col1ActvTm | MV | Coil 1 activation time | E | |
| Col2HIPct | MV | Coil 2 health index | E | |
| Col2ActvTm | MV | Coil 2 activation time | E | |
| Col3HIPct | MV | Coil 3 health index | E | |
| Col3ActvTm | MV | Coil 3 activation time | E | |
| VIHIPct | MV | VI health index | E | |
| EgpDisPhs1 | MV | Egap measure of Phase A | E | |
| EgpDisPhs2 | MV | Egap measure of Phase B | E | |
| EgpDisPhs3 | MV | Egap measure of Phase C | E | |
| TruckStk | MV | Truck distance | E | |
| MotHIPct | MV | Charging motor health index | E | |
| Controls | | | | |
| CBPos | DPC | CB position | E | |
| CBOpCnt | INC | CB resettable operation counter | E | |
| Col1OpCnt | INC | Coil 1 resettable operation counter | E | |
| Col2OpCnt | INC | Coil 2 resettable operation counter | E | |
| Col3OpCnt | INC | Coil 3 resettable operation counter | E | |
| TruckOpCnt | INC | Truck resettable operation counter | E | |
| TruckPos | DPC | Truck position | E | |
| MotOpCnt | INC | Charging motor operation counter | E | |
| Settings | | | | |
| UserAppl | VSG | BM100 user application | E | |
| CBSerNum | VSG | CB serial number | E | |
| CBMod | VSG | CB model | E | |
| CBDivDate | VSG | CB installation date | E | |
| CBWarrDate | VSG | CB warranty date | E | |
| CBLocation | VSG | CB location | E | |
| CBInstTyp | ING | CB installation type | E | |
| CBTyp | ING | CB type | E | |
| CBOpAlmNum | ING | CB number of operations red alarm threshold | E | |
| CBOpWrnNum | ING | CB number of operations orange alarm threshold | E | |
| CBOpIndNum | ING | CB number of operations indication threshold | E | |
| CBOpnAlmTm | ASG | CB opening time red alarm threshold | E | |
| CBOpnWrnTm | ASG | CB opening time orange alarm threshold | E | |
| CBClsAlmTm | ASG | CB closing time red alarm threshold | E | |
| CBClsWrnTm | ASG | CB closing time orange alarm threshold | E | |
| VIBrkAPhs1 | ASG | VI broken current of Phase A | E | |

| GGIO class | | | | |
|------------------|-------------------|------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| VIBrkAPhs2 | ASG | VI broken current of Phase B | E | |
| VIBrkAPhs3 | ASG | VI broken current of Phase C | E | |

LN Type: SE_GGIO_MCM_PowerLogicP5_V001

Description: Generic process I/O

LN Class: GGIO

| GGIO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MCMGGIO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Vendor | VSS | MCMx00 vendor name | E | |
| VendorUrl | VSS | MCMx00 vendor url | E | |
| ProductFam | VSS | MCMx00 product family | E | |
| ProductRng | VSS | MCMx00 product range | E | |
| Model | VSS | MCMx00 model | E | |
| ProductId | INS | MCMx00 product identifier | E | |
| ProductCod | VSS | MCMx00 product code | E | |
| HwRev | VSS | MCMx00 hardware revision | E | |
| FwRev | VSS | MCMx00 firmware revision | E | |
| SerNum | VSS | MCMx00 serial number | E | |
| Ind1 | SPS | Global input 1 | O | |
| Ind2 | SPS | Global input 2 | O | |
| Ind3 | SPS | Global output 1 | O | |
| Ind4 | SPS | Global output 2 | O | |
| Ind5 | SPS | CB command open | O | |
| Ind6 | SPS | CB command close | O | |
| Ind7 | SPS | CB output open | O | |
| Ind8 | SPS | CB output close | O | |
| Ind9 | SPS | MSW1 command open or sequence input 1 | O | |
| Ind10 | SPS | MSW1 command close or sequence input 2 | O | |
| Ind11 | SPS | MSW1 power output motor open | O | |
| Ind12 | SPS | MSW1 power output motor close | O | |
| Ind13 | SPS | MSW2 command open or sequence input 1 | O | |

| GGIO class | | | | |
|------------------------------------|-------------------|----------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Ind14 | SPS | MSW2 command close or sequence input 2 | O | |
| Ind15 | SPS | MSW2 power output motor open | O | |
| Ind16 | SPS | MSW2 power output motor close | O | |
| Ind17 | SPS | MSW3 command open | O | |
| Ind18 | SPS | MSW3 command close | O | |
| Ind19 | SPS | MSW3 power output motor open | O | |
| Ind20 | SPS | MSW3 power output motor close | O | |
| Ind21 | SPS | MSW4 command open | O | |
| Ind22 | SPS | MSW4 command close | O | |
| Ind23 | SPS | MSW4 power output motor open | O | |
| Ind24 | SPS | MSW4 power output motor close | O | |
| OpSt | INS | Operation status | E | |
| PanelTyp | VSS | Panel type | E | |
| FwCheckSum | VSS | FW integrity checksum | E | |
| CBOpCntAlm | SPS | CB operations exceed threshold | E | |
| CBTmOpnAlm | SPS | CB opening time exceed threshold | E | |
| CBTmClsAlm | SPS | CB closing time exceed threshold | E | |
| M1OpCntAlm | SPS | MSW1 operations exceed threshold | E | |
| M1TmOpnAlm | SPS | MSW1 opening time exceed threshold | E | |
| M1TmClsAlm | SPS | MSW1 closing time exceed threshold | E | |
| M1ProAlm | SPS | MSW1 protection I> triggered | E | |
| M2OpCntAlm | SPS | MSW2 operations exceed threshold | E | |
| M2TmOpnAlm | SPS | MSW2 opening time exceed threshold | E | |
| M2TmClsAlm | SPS | MSW2 closing time exceed threshold | E | |
| M2ProAlm | SPS | MSW2 protection I> triggered | E | |
| M3OpCntAlm | SPS | MSW3 operations exceed threshold | E | |
| M3TmOpnAlm | SPS | MSW3 opening time exceed threshold | E | |
| M3TmClsAlm | SPS | MSW3 closing time exceed threshold | E | |
| M3ProAlm | SPS | MSW3 protection I> triggered | E | |
| M4OpCntAlm | SPS | MSW4 operations exceed threshold | E | |
| M4TmOpnAlm | SPS | MSW4 opening time exceed threshold | E | |
| M4TmClsAlm | SPS | MSW4 closing time exceed threshold | E | |
| M4ProAlm | SPS | MSW4 protection I> triggered | E | |
| Measured and metered values | | | | |
| CBOpTmOpn | MV | CB opening time | E | |

| GGIO class | | | | |
|------------------|-------------------|-----------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| CBOpTmCls | MV | CB closing time | E | |
| M1OpTmOpn | MV | MSW1 opening time | E | |
| M1OpTmCls | MV | MSW1 closing time | E | |
| M1Cur | MV | MSW1 current | E | |
| M1MaxOpCur | MV | MSW1 max. running current per operation | E | |
| M1MaxOpPwr | MV | MSW1 max. power per operation | E | |
| M2OpTmOpn | MV | MSW2 opening time | E | |
| M2OpTmCls | MV | MSW2 closing time | E | |
| M2Cur | MV | MSW2 current | E | |
| M2MaxOpCur | MV | MSW2 max. running current per operation | E | |
| M2MaxOpPwr | MV | MSW2 max. power per operation | E | |
| M3OpTmOpn | MV | MSW3 opening time | E | |
| M3OpTmCls | MV | MSW3 closing time | E | |
| M3Cur | MV | MSW3 current | E | |
| M3MaxOpCur | MV | MSW3 max. running current per operation | E | |
| M3MaxOpPwr | MV | MSW3 max. power per operation | E | |
| M4OpTmOpn | MV | MSW4 opening time | E | |
| M4OpTmCls | MV | MSW4 closing time | E | |
| M4Cur | MV | MSW4 current | E | |
| M4MaxOpCur | MV | MSW4 max. running current per operation | E | |
| M4MaxOpPwr | MV | MSW4 max. power per operation | E | |
| Controls | | | | |
| CmdAlmRs | SPC | Reset alarms | E | |
| CmdMeasRs | SPC | Reset measurements" | E | |
| CmdSetRs | SPC | Reset settings | E | |
| CBPos | DPC | CB position | E | |
| CmdCBCntRs | SPC | Reset CB counter | E | |
| CBOpCntRs | INC | CB resettable operation counter | E | |
| M1Pos | DPC | MSW1 position | E | |
| CmdM1CntRs | SPC | Reset MSW1 counter | E | |
| M1OpCntRs | INC | MSW1 resettable operation counter | E | |
| M2Pos | DPC | MSW2 position | E | |
| CmdM2CntRs | SPC | Reset MSW2 counter | E | |
| M2OpCntRs | INC | MSW2 resettable operation counter | E | |
| M3Pos | DPC | MSW3 position | E | |
| CmdM3CntRs | SPC | Reset MSW3 counter | E | |
| M3OpCntRs | INC | MSW3 resettable operation counter | E | |
| M4Pos | DPC | MSW4 position | E | |

| GGIO class | | | | |
|------------------|-------------------|-------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| CmdM4CntRs | SPC | Reset MSW4 counter | E | |
| M4OpCntRs | INC | MSW4 resettable operation counter | E | |
| Settings | | | | |
| SetNum | ING | Setting number | E | |
| CBOpnAlmTm | ASG | CB opening time alarm threshold | E | |
| CBClsAlmTm | ASG | CB closing time alarm threshold | E | |
| CBOpAlmNum | ING | CB number of operations alarm threshold | E | |
| M1OpAlmNum | ING | MSW1 number of operations alarm threshold | E | |
| M1OpnAlmTm | ASG | MSW1 opening time alarm threshold | E | |
| M1ClsAlmTm | ASG | MSW1 closing time alarm threshold | E | |
| M1HoldTm | ASG | MSW1 hold time | E | |
| M1RotDir | ING | MSW1 direction of rotation | E | |
| M1MaxPwr | ASG | MSW1 maximum power | E | |
| M2OpAlmNum | ING | MSW2 number of operations alarm threshold | E | |
| M2OpnAlmTm | ASG | MSW2 opening time alarm threshold | E | |
| M2ClsAlmTm | ASG | MSW2 closing time alarm threshold | E | |
| M2HoldTm | ASG | MSW2 hold time | E | |
| M2RotDir | ING | MSW2 direction of rotation | E | |
| M2MaxPwr | ASG | MSW2 maximum power | E | |
| M3OpAlmNum | ING | MSW3 number of operations alarm threshold | E | |
| M3OpnAlmTm | ASG | MSW3 opening time alarm threshold | E | |
| M3ClsAlmTm | ASG | MSW3 closing time alarm threshold | E | |
| M3HoldTm | ASG | MSW3 hold time | E | |
| M3RotDir | ING | MSW3 direction of rotation | E | |
| M3MaxPwr | ASG | MSW3 maximum power | E | |
| M4OpAlmNum | ING | MSW4 number of operations alarm threshold | E | |
| M4OpnAlmTm | ASG | MSW4 opening time alarm threshold | E | |
| M4ClsAlmTm | ASG | MSW4 closing time alarm threshold | E | |
| M4HoldTm | ASG | MSW4 hold time | E | |
| M4RotDir | ING | MSW4 direction of rotation | E | |
| M4MaxPwr | ASG | MSW4 maximum power | E | |

LN Type: SE_MMXU_VECA_PowerLogicP5FMU_VSI_V003

Description: Measurement

LN Class: MMXU

| MMXU class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5VECAMMXU1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Measured values | | | | |
| Hz | MV | Frequency | O | |
| A | WYE | Phase currents | O | |
| AvAPhs | MV | 3ph average current | E | |
| Iovs | WYE | IN.meas.sens | E | |
| Settings | | | | |
| AvWin | ING | Average current window | E | |

LN Type: SE_PDIF_TREF_PowerLogicP5T_V001

Description: Differential

LN Class: PDIF

| PDIF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TREFPDIF1 P5TREFPDIF2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Measured values | | | | |
| ClcI0 | CMV | Neutral current IN | E | |
| MeasI0 | CMV | Ground current IG | E | |
| DifA | MV | Differential current Id | E | |
| BiasA | MV | Bias current Ib | E | |
| Settings | | | | |
| FunEna | SPG | Enable REF> | E | |
| OpDITmms | ING | Operate delay | O | |
| OpMode | ING | Operating mode | E | |

| PDIF class | | | | |
|------------------|-------------------|--------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| DifALoSet | ASG | Low set Id | E | |
| DifAHiSet | ASG | High set Id | E | |
| DifACts | ASG | CTS low set Id | E | |
| MinI0 | ASG | Min measured IG | E | |
| Slp1 | ASG | Slope k | E | |
| BiasASlp2 | ASG | Bias current Ib | E | |
| Slp2 | ASG | Slope k | E | |
| HiSetMod | SPG | High set mode | E | |
| CtsOpMod | ING | CTS operating mode | E | |
| CTIn | ING | CT input | E | |

LN Type: SE_PDIF_TFD_PowerLogicP5T_V001

Description: Differential

LN Class: PDIF

| PDIF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TFDPDIF1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Measured values | | | | |
| DifAClc | WYE | Different current Id | E | |
| BiasAClc | WYE | Bias current Ib | E | |
| H2DifA | WYE | 2.harmonic of Id | E | |
| H5DifA | WYE | 5.harmonic of Id | E | |
| Settings | | | | |
| FunEna | SPG | Enable for T-Diff | E | |
| VectGrp | ING | Vector group | E | |
| IoFilH | SPG | Zero-seq. current filtering HV | E | |
| IoFilL | SPG | Zero-seq. current filtering LV | E | |
| Slp1 | ASG | Slope 1 | E | |
| Slp2 | ASG | Slope 2 | E | |
| HiSetMod | SPG | High set mode | E | |
| BiasCalMod | ING | Bias calculation mode | E | |
| OpDiTms | ASG | Operate delay | E | |

| PDIF class | | | | |
|------------------|-------------------|-------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| InrushStat | SPG | Inrush blocking | E | |
| InrushRat | ASG | Inrush blocking ratio | E | |
| InrsCrsBlk | SPG | Inrush cross block | E | |
| OvflxBlk | SPG | Overflux blocking | E | |
| OvflBlkRat | ASG | Overflux blocking ratio | E | |
| OvflCrsBlk | SPG | Overflux cross block | E | |
| CtsOpMod | ING | CTS operating mode | E | |
| RefPwr | ASG | Reference power | E | |
| HiVol | ASG | HV Rated voltage | E | |
| LoVol | ASG | LV Rated voltage | E | |

LN Type: SE_PDOP_REVP_PowerLogicP5FMW_V002

Description: Directional overpower

LN Class: PDOP

| PDOP class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5REVPPDOP1 P5REVPPDOP2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable P< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PDOP_EF_PowerLogicP5FM_V004

Description: Directional overpower

LN Class: PDOP

| PDOP class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5EFPDOP1 P5EFPDOP2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |

| PDOP class | | | | |
|---------------------------|-------------------|---------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable INVN> | E | |
| DirMode | ING | Direction mode | E | |
| StrVal | ASG | Pick-up value | M | |
| VnStrVal | ASG | VN pick-up value | E | |
| SctrStrVal | ASG | Pick up sector size | E | |
| OpDITms | ASG | Operate delay | E | |
| SolMod | SPG | SOL status | E | |
| SolOpDITms | ASG | SOL operate delay | E | |
| MemMod | ING | Memory Mode | E | |
| MmVnStrVal | ASG | VN memory value | E | |
| MemTms | ASG | Memory time | E | |
| RsDITmms | ING | Reset delay | O | |
| EvVN | ING | Evaluation VN | E | |

LN Type: SE_PFRC_DFDT_PowerLogicP5FVW_V004

Description: Rate of change of frequency

LN Class: PFRC

| PFRC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5DFDTPFRC 1...9 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable df/dt> | E | |
| StrVal | ASG | Pick-up value | O | |
| BlkVal | ASG | df/dt blocking | O | |

| PFRC class | | | | |
|------------------|-------------------|-----------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| OpDITmms | ING | Operate delay | O | |
| RsDITmms | ING | Reset delay | O | |
| DirMode | ING | Direction mode | E | |
| OpMode | ING | Operating Mode | E | |
| HzStrVal | ASG | Frequency threshold | E | |
| MeasWinTms | ASG | Meas. time window | E | |
| UVStrVal | ASG | Undervoltage blocking | E | |

LN Type: SE_PIOC_CBFP_PowerLogicP5FMUW_V002

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CBFPPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable CB fail | E | |
| NeutStrVal | ASG | IN< primary | E | |
| PhsStrVal | ASG | I< primary | E | |
| Tm1DITms | ASG | Timer1 operate delay | E | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |
| Tm2DITms | ASG | Timer2 operate delay | E | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_PIOC_CBFP_PowerLogicP5V_V002

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CBFPPIOC2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |

| PIOC class | | | | |
|---------------------------|-------------------|----------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable CB fail | E | |
| Tm1DITms | ASG | Timer1 operate delay | E | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |
| Tm2DITms | ASG | Timer2 operate delay | E | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_PIOC_CBFP_PowerLogicP5FMUW_VSI_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CBFPPIOC3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable CB fail | E | |
| NeutStrVal | ASG | IN< primary | E | |
| PhsStrVal | ASG | I< primary | E | |
| IovsStrVal | ASG | IN.sens< primary | E | |
| Tm1DITms | ASG | Timer1 operate delay | E | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |
| Tm2DITms | ASG | Timer2 operate delay time | E | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_PIOC_ARCM_PowerLogicP5FMT_ARC_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ARCMPIOC1...8 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Arc stage 1 enabled | E | |
| MinOpTmms | ING | Min. hold time [x1ms] | E | |
| OpDITmms | ING | Trip X delay [x1ms] | E | |
| OpMode | ING | Stage X Mode | E | |

LN Type: SE_PIOC_TIARC_PowerLogicP5T_ARC_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5IARCPIOC3 P5IARCPIOC4 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| StrVal | ASG | pick-up value | O | |
| CTIn | ING | CT input | E | |

LN Type: SE_PIOC_CLP_PowerLogicP5FMUW_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CLPPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Function enable | E | |
| Idl | ASG | Idle current | E | |
| StrVal | ASG | Pickup | O | |
| DeadTms | ASG | CLPU dead time | E | |
| MaxTms | ASG | CLPU time delay | E | |

LN Type: SE_PIOC_SOL_PowerLogicP5FMUWT_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SOLPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Oprt2 | ACT | SOL trip signal | E | |
| Settings | | | | |
| FunEna | SPG | Enable for SOL | E | |
| SigNum | ING | Number of SOL signals used | E | |
| CbClrTms | ASG | CB trip clearing time | E | |

LN Type: SE_PIOC_SOTF_PowerLogicP5FMUW_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SOTFPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for SOTF | E | |
| StrVal | ASG | Pick-up value | O | |
| DetDITms | ASG | Dead line detection delay | E | |
| ActTmrTms | ASG | SOTF active timer | E | |

LN Type: SE_PMRI_MOTFST_PowerLogicP5MUW_V004**Description:** Motor restart inhibition**LN Class:** PMRI

| PMRI class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5FSTPMRI1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | O | |
| StrInh | SPS | Start inhibit signal | O | |
| StrInhTmm | INS | Restart inhibition time | O | |
| Settings | | | | |
| MaxWrmStr | ING | Max motor Hot starts | O | |
| MinStrTmm | ASG | Min time between motor starts | E | |
| HotStsLmt | ASG | Hot Status Limit | E | |
| FunEna | SPG | Function enable | E | |
| MaxCldStr | ING | Max motor cold starts | E | |
| RefPrdTmm | ASG | Reference period | E | |

LN Type: SE_PMSS_STAL_PowerLogicP5MUW_V001

Description: Motor starting time supervision
LN Class: PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5STALPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| SetA | ASG | Nom motor start current | O | |
| SetTms | ING | Motor start time | O | |
| MotStr | ASG | Motor start detection current | O | |
| FunEna | SPG | Enable Ist> | E | |
| TmAcrv | CURVE | Operating curve | E | |

LN Type: SE_PMSS_MSPD12I4O_PowerLogicP5MUW_V001
Description: Motor starting time supervision
LN Class: PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MSPDPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| ZerSpdSt | SPS | Zero Speed | E | |
| MotSpd | INS | Motor Speed | E | |
| Settings | | | | |
| FunEna | SPG | Enable motor speed detection | E | |
| SpdIn | ING | Motor speed input | E | |
| RtdMotSpd | ASG | Rated motor speed Ω_n | E | |

| PMSS class | | | | |
|------------------|-------------------|-------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PlsRot | ASG | Pulse per rotation R | E | |
| ZerSpdTms | ASG | Zero speed confirm time | E | |

LN Type: SE_PMSS_MABS_12I4O_PowerLogicP5MUW_V001

Description: Motor starting time supervision

LN Class: PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MABSPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| AbsAlm | SPS | AntiBkSpin Alarm | E | |
| Settings | | | | |
| FunEna | SPG | Enable for Anti-backspin | E | |
| MvMod | SPG | Measured zero speed mode | E | |
| SwMod | SPG | Zero speed external mode | E | |
| AbsTms | ASG | Anti-backspin time | E | |

LN Type: SE_PMSS_51LR_PowerLogicP5MUW_V001

Description: Motor starting time supervision

LN Class: PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LRPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |

| PMSS class | | | | |
|------------------|-------------------|-----------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| SetA | ASG | Pick-up value | O | |
| FunEna | SPG | Enable for IIR> | E | |
| DITyp | ING | Operating curve | E | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PTEF_IO_PowerLogicP5F_V003

Description: Transient earth fault

LN Class: PTEF

| PTEF class | | | | |
|-----------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5IOIOPTEF1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | C | |
| Op | ACT | Trip signal | C | |
| Settings | | | | |
| FunEna | SPG | Enable IN int> | E | |
| DirMode | ING | Direction mode | E | |
| GndStr | ASG | VN pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| MinPeak | ING | Min number of peaks | E | |
| RsDITms | ASG | Reset delay | E | |
| IntmtTms | ASG | Intermittent time | E | |
| Condition C: at least one of the two status information (Str, Op) shall be used. | | | | |

LN Type: SE_PTOC_STRVAL_PowerLogicP5FMUW_V002

Description: Time overcurrent

LN Class: PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5HAR5PTOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |

| PTOC class | | | | |
|---------------------------|-------------------|---------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| FunEna | SPG | Enable lh5>1 | E | |

LN Type: SE_PTOC_TUIBC_PowerLogicP5T_V001

Description: Time overcurrent

LN Class: PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UIBCPTOC3 P5UIBCPTOC4 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable I2/I1> | E | |
| StrVal | ASG | Pick-up value K2 | O | |
| OpDITms | ASG | Operate delay | E | |
| CTIn | ING | CT input | E | |

LN Type: SE_PTOC_NORMAL_PowerLogicP5FMUW_V003

Description: Time overcurrent

LN Class: PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5OCPTOC1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |

| PTOC class | | | | |
|---------------------------|-------------------|-----------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable I> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpCrv | ING | Operating curve | E | |
| OpDlTms | ASG | Operate delay | E | |
| TmMult | ASG | TMS | O | |
| RsTyp | ING | Reset curve | E | |
| RsDlTms | ASG | Reset delay | E | |
| InrushStat | SPG | Inrush blocking | E | |
| SolStat | SPG | SOL status | E | |
| SolOpDTms | ASG | SOL operate delay | E | |
| SolTmMult | ASG | SOL TMS | E | |
| ClpStat | SPG | Dynamic mode | E | |
| ClpStrVal | ASG | Dynamic threshold | E | |
| ClpOpDTms | ASG | Dynamic operate delay | E | |
| ClpTmMult | ASG | Dynamic TMS | E | |
| DirMode | ING | Direction mode | E | |
| CharAng | ASG | Characteristic angle | E | |
| VtsBlk | ING | VTS blocking | E | |
| TripLogic | ING | Tripping logic | E | |
| DtAddTmms | ING | DT adder | E | |
| MinOpTmms | ING | Minimum operate time | O | |

LN Type: SE_PTOC_DEF_PowerLogicP5FMW_V003

Description: Time overcurrent

LN Class: PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5DEFPTOC1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |

| PTOC class | | | | |
|---------------------------|-------------------|-------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for IN> | E | |
| DirMode | ING | Direction mode | E | |
| StrVal | ASG | IN pick-up value | O | |
| UoStrVal | ASG | VN pick-up value | E | |
| AngOffset | ASG | Angle offset | E | |
| SctrStrVal | ASG | Pick up sector size | E | |
| OpCrv | ING | Operating curve | E | |
| OpDITms | ASG | Operate delay | E | |
| TmMult | ASG | TMS | O | |
| RsTyp | ING | Reset curve | E | |
| RsDITms | ASG | Reset delay | E | |
| DtAddTmms | ING | DT adder | E | |
| MinOpTmms | ING | Minimum operate delay | O | |
| IoIn | ING | IN input | E | |
| UoInMod | ING | VN input mode | E | |
| VtsBlk | ING | VTS blocking | E | |
| InrushStat | SPG | Inrush blocking | E | |
| SolStat | SPG | SOL status | E | |
| SolOpDTms | ASG | SOL operate delay | E | |
| SolTmMult | ASG | SOL TMS | E | |
| ClpStat | SPG | Dynamic mode | E | |
| ClpStrVal | ASG | Dynamic threshold | E | |
| ClpOpDTms | ASG | Dynamic operate delay | E | |
| ClpTmMult | ASG | Dynamic TMS | E | |
| EnaFltPh | SPG | Enable faulty phase detection | E | |
| FltPhLim | ASG | Phase currents change limit | E | |

LN Type: SE_PTOF_OFUF_PowerLogicP5FMVW_V00V003

Description: Overfrequency

LN Class: PTOF

| PTOF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5OFUFPTOF1 P5OFUFPTOF2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |

| PTOF class | | | | |
|---------------------------|-------------------|------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for f> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ING | Operate delay | O | |
| BlkVal | ASG | Under voltage blocking | E | |

LN Type: SE_PTOV_PowerLogicP5FMVW_V003

Description: Overvoltage

LN Class: PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5OVPTOV1 P5OVPTOV2 P5OVPTOV3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable V> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| MeasMod | ING | Measurement mode | E | |
| DITyp | ING | Operating curve | E | |
| TripLogic | ING | Tripping logic | E | |
| RsDITms | ASG | Reset delay | E | |
| Hys | ASG | Hysteresis | E | |

LN Type: SE_PTOV_UO_PowerLogicP5FMVWT_V002

Description: Overvoltage

LN Class: PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UOPTOV1 P5UOPTOV2 P5UOPTOV3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable VN> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| RsDITmms | ING | Reset delay | O | |
| EvVN | ING | Evaluation VN | E | |

LN Type: SE_PTOV_NEG_PowerLogicP5FMVW_V001**Description:** Overvoltage**LN Class:** PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5NEGPTOV1 P5NEGPTOV2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable V2> | E | |
| OpMode | ING | VTS operating mode | E | |
| StrVal | ASG | Pick-up value | O | |
| DITyp | ING | Operating curve | E | |
| OpDITms | ASG | Operate delay | E | |
| RsDITms | ASG | Reset delay | E | |

LN Type: SE_PTOV_CAP_PowerLogicP5F_V001**Description:** Overvoltage**LN Class:** PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CAPPTOV1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable Vcap> | E | |
| StrVal | ASG | Pick-up value | O | |
| CapOfPhs | ASG | Ph-G capacitance of one phase | E | |
| RatUcLn | ASG | Rated Ph-G voltage Vcap | E | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PTTR_TTHF_PowerLogicP5T_V001**Description:** Thermal overload**LN Class:** PTTR

| PTTR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5THFPTTR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| AlmThm | SPS | Start state | O | |
| Settings | | | | |
| TmpMax | ASG | Max object temperature | O | |
| AlmVal | ASG | Thermal alarm value | O | |
| FunEna | SPS | Enable 49F> | E | |

| PTTR class | | | | |
|------------------|-------------------|-----------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| BasicCur | ASG | Basic current setting | E | |
| FactorK | ASG | Max permissive I factor | E | |
| HeaConsTmm | ASG | Heating time constant | O | |
| RsvVal | ASG | Reserve time thermal alarm | E | |
| TmpMod | ING | Operating mode | E | |
| TmpNom | ASG | Nominal ambient temperature | E | |
| TmpAlrm | ASG | Alarm temperature | E | |
| TmpAmbMin | ASG | Min ambient temperature | E | |
| TmpAmbDft | ASG | Default ambient temperature | E | |
| CTIn | ING | CT input | E | |

LN Type: SE_PTTR_THM_PowerLogicP5MUW_V003

Description: Thermal overload

LN Class: PTTR

| PTTR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5THMPTR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| AlmThm | SPS | Start state | O | |
| LodRsvTmm | INS | Load reserve to trip | E | |
| StrInhTmm | INS | Restart inhibit time due to thermal overload protection | E | |
| Measured values | | | | |
| ThmLev | MV | Thermal level | E | |
| Settings | | | | |
| TmpMax | ASG | Max object temperature | O | |
| AlmVal | ASG | Thermal alarm value | O | |
| FunEna | SPS | Enable 49M> | E | |
| BasicCur | ASG | Basic current setting | E | |
| FactorK | ASG | Max permissive I factor | E | |
| HeaConsTmm | ASG | Heating time constant | E | |
| ConsTmm | ASG | Time constant for motor starting | E | |
| CooConsTmm | ASG | Cooling time constant | E | |
| UnblFctr | ASG | Unbalance factor | E | |

| PTTR class | | | | |
|------------------|-------------------|-----------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| RsvVal | ASG | Reserve time thermal alarm | E | |
| TmpMod | ING | Operating mode | E | |
| TmpNom | ASG | Nominal ambient temperature | E | |
| TmpAlrm | ASG | Alarm temperature | E | |
| TmpAmbMin | ASG | Min ambient temperature | E | |
| TmpAmbDft | ASG | Default ambient temperature | E | |

LN Type: SE_PTUC_UC_PowerLogicP5FMUW_V003

Description: Undercurrent

LN Class: PTUC

| PTUC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UCPTUC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable I< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| BlkLim | ASG | I< block limit | E | |

LN Type: SE_PTUF_UF_PowerLogicP5FMVW_V003

Description: Underfrequency

LN Class: PTUF

| PTUF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UFPTUF1...8 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |

| PTUF class | | | | |
|---------------------------|-------------------|------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for f< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| DfdtBlk | ASG | df/dt blocking | E | |
| BlkVal | ASG | Under voltage blocking | O | |

LN Type: SE_PTUV_UV_PowerLogicP5FMVW_V003

Description: Undervoltage

LN Class: PTUV

| PTUV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UVPTUV1 P5UVPTUV2 P5UVPTUV3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable V< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| CBOpnBlk | SPG | CB open blocking | E | |
| MeasMod | ING | Measurement mode | E | |
| DITyp | ING | Operating curve | E | |
| TripLogic | ING | Tripping logic | E | |
| RsDITms | ASG | Reset delay | E | |
| Hys | ASG | Hysteresis | E | |

LN Type: SE_PTUV_UVPS_PowerLogicP5MV_V002

Description: Undervoltage

LN Class: PTUV

| PTUV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UVPSPTUV1 P5UVPSPTUV2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable V1< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PZSU_12I4O_PowerLogicP5MUW_V001

Description: Motor underspeed

LN Class: PZSU

| PZSU class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MOTPZSU1 P5MOTPZSU2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for Ω < | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PHAR_TID_PowerLogicP5T_V001

Description: Harmonic restraint

LN Class: PHAR

| PHAR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TIDPHAR1 P5TIDPHAR2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| CTIn | INS | CT input | E | |
| Settings | | | | |
| FunEna | SPG | Enable Inrush | E | |
| StrVal | ASG | Pickup for 2nd harmonic | E | |
| CurBlkVal | ASG | Max inrush current | E | |
| OpMod | ING | Inrush operating mode | E | |

LN Type: SE_LLNO_PowerLogicP5_V003

Description: Logical node zero

LN Class: LLNO

| LLNO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| LLNO | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Loc | SPS | Local control behaviour | O | |
| ProAct | SPS | Protection active | E | |
| Controls | | | | |
| LEDRs | SPC | LED reset | O | |
| AllRs | SPC | General reset (Release latches) | E | |
| Settings | | | | |
| GoEnaCB1 | SPG | GOOSE Enable CB1 | E | |
| GoEnaCB2 | SPG | GOOSE Enable CB2 | E | |
| GoEnaCB3 | SPG | GOOSE Enable CB3 | E | |
| GoEnaCB4 | SPG | GOOSE Enable CB4 | E | |

LN Type: SE_XCBR_BASIC_PowerLogicP5FMUWT_V002**Description:** Circuit breaker**LN Class:** XCBR

| XCBR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5XCBR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Loc | SPS | Local control behaviour | O | |
| OpCnt | INS | Operation counter | M | |
| CBOpCap | INS | Circuit breaker operating capability | O | |
| Controls | | | | |
| Pos | DPC | Switch position | M | |
| BlkOpn | SPC | Block opening | M | |
| BlkCls | SPC | Block closing | M | |
| Settings | | | | |
| ARtg | ASG | Rated Current | E | |

LN Type: SE_XSWI_BASIC_PowerLogicP5_V002**Description:** Circuit switch**LN Class:** XSWI

| XSWI class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5XSWI1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Loc | SPS | Local control behaviour | O | |
| OpCnt | INS | Operation counter | M | |
| SwTyp | INS | Switch type | M | |
| SwOpCap | INS | Switch operating capability | O | |
| Controls | | | | |

| XSWI class | | | | |
|------------------|-------------------|-----------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Pos | DPC | Switch position | M | |
| BlkOpn | SPC | Block opening | M | |
| BlkCls | SPC | Block closing | M | |

LN Type: SE_PVPH_CRV_PowerLogicP5T_V001

Description: Volts per Hz

LN Class: PVPH

| PVPH class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVFPVPH2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable V/f>1 | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| RsDITmms | ING | Reset delay | O | |
| OpCrv | ING | Operating curve | E | |

LN Type: SE_RFLO_FC_PowerLogicP5FMUWT_V002

Description: Fault locator

LN Class: RFLO

| RFLO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5FCRFLO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |

| RFLO class | | | | |
|------------------------|-------------------|----------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| ClrTmms | INS | Interval between global trip and CB open | E | |
| Measured values | | | | |
| FltZ | CMV | Not used | M | |
| FltDiskm | MV | Not used | M | |
| FltA | WYE | Fault current | E | |
| Settings | | | | |
| FltValTyp | ING | Define the calculation moment or method of the measured values | E | |

LN Type: SE_RFLO_HZ_PowerLogicP5_V002

Description: Fault locator

LN Class: RFLO

| RFLO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5FHZRFLO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| ClrTmms | INS | Interval between global trip and CB open | E | |
| Measured values | | | | |
| FltZ | CMV | Not used | M | |
| FltDiskm | MV | Not used | M | |
| FltHz | MV | Fault frequency | E | |
| Settings | | | | |
| FltValTyp | ING | Define the calculation moment or method of the measured values | E | |

LN Type: SE_RSYN_PowerLogicP5FV_V002

Description: Synchronism-check

LN Class: RSYN

| RSYN class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5RSYN1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |

| RSYN class | | | | |
|---------------------------|-------------------|--------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Rel | SPS | Release | M | |
| AngInd | SPS | Angle difference indicator | O | |
| SynPrg | SPS | Start and stop synchrocheck progress | O | |
| Controls | | | | |
| | | | | |
| Settings | | | | |
| FunEna | SPG | Enable Sync check 1 | E | |
| DeaVal | ASG | Vdead limit setting | E | |
| LivVal | ASG | Vlive limit setting | E | |
| DifHz | ASG | Frequency difference | O | |
| DifV | ASG | Voltage difference | O | |
| DifAng | ASG | Phase angle difference | O | |
| RqstTms | ASG | Request timeout | E | |

LN Type: SE_RBRF_CBFP_PowerLogicP5T_V001

Description: Breaker failure

LN Class: RBRF

| RBRF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TCBFRBRF1 P5TCBFRBRF2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| OpIn | ACT | Trip 1 signal | C | |
| OpEx | ACT | Trip 2 signal | C | |
| Settings | | | | |
| FunEna | SPG | Enable CB2 fail | E | |
| NeutStrVal | ASG | IN< primary | E | |
| PhsStrVal | ASG | I< primary | E | |
| FailTmms | ING | Timer1 operate delay | O | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |

| RBRF class | | | | |
|------------------|-------------------|----------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| TPTrTmms | ING | Timer2 operate delay | O | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_MMXN_V_PowerLogicP5T_V001

Description: Non-phase-related measurement

LN Class: MMXN

| MMXN class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVOLMMXN1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Measured values | | | | |
| Hz | MV | Frequency | O | |
| VolUd | CMV | Voltage V | E | |

LN Type: SE_SIML_STD_PowerLogicP5T_V001

Description: Insulation medium supervision

LN Class: SIML

| SIML class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TRFSIM1 P5TRFSIM2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| TmpAlm | SPS | Oil temperature alarm | C | |
| GasInsAlm | SPS | Gas alarm | O | |
| GasInsTr | SPS | Gas trip | O | |
| GasFlwTr | SPS | Oil flow trip | O | |
| InsAlm | SPS | Insulation alarm | M | |
| InsLevMax | SPS | Oil at maximum level | O | |
| InsLevMin | SPS | Oil at minimum level | O | |
| Blk | SPS | Blocking signal | E | |

| SIML class | | | | |
|------------------|-------------------|-----------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Settings | | | | |
| FunEna | SPG | Enable for transformer monitoring | E | |

Enum types extensions

New Enum types

Enum type **ARCOpMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------------|---------|
| 0 | Light | |
| 1 | Light and current | |

Enum type **DefDirMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Undir | |
| 1 | Sector | |
| 2 | ResCap | |

Enum type **DocDirMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Dir_Backup | |
| 1 | Undir | |
| 2 | Dir | |

Enum type **OpCrvType** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|----------------|---------|
| 0 | 0_DT | |
| 1 | 1_IEC_SI | |
| 2 | 2_IEC_VI | |
| 3 | 3_IEC_EI | |
| 4 | 4_IEC_LTI | |
| 5 | 5_IEC_UTI | |
| 6 | 6_UK_Rectifier | |
| 7 | 7_FR_STI | |
| 8 | 8_RI | |
| 9 | 9_IEEE_MI | |
| 10 | 10_IEEE_VI | |
| 11 | 11_IEEE_EI | |
| 12 | 12_STI_CO2 | |
| 13 | 13_LTI_CO5 | |
| 14 | 14_MI_CO7 | |

| | | |
|----|-------------|--|
| 15 | 15_NI_CO8 | |
| 16 | 16_VI_CO9 | |
| 17 | 17_EI_CO11 | |
| 18 | 18_BPN | |
| 19 | 19_ANSI_NI | |
| 20 | 20_ANSI_STI | |
| 21 | 21_ANSI_LTI | |
| 22 | 22_Prg1 | |
| 23 | 23_Prg2 | |
| 24 | 24_Prg3 | |
| 25 | 25_IDMT | |

Enum type **RsTyp** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | RsTyp_DT | |
| 1 | RsTyp_IDMT | |
| 2 | RsTyp_Prg1 | |
| 3 | RsTyp_Prg2 | |
| 4 | RsTyp_Prg3 | |

Enum type **DITyp** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | DT | |
| 1 | NI | |
| 2 | VI | |
| 3 | EI | |
| 4 | LTI | |
| 5 | LTEI | |
| 6 | LTVI | |
| 7 | MI | |
| 8 | STI | |
| 9 | STEI | |
| 10 | CO8 | |
| 11 | RI | |
| 12 | RXIDG | |
| 13 | — | |

Enum type **NegOpMode** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | No_Action | |
| 1 | Blocking | |

Enum type **NegDITyp** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | DT | |
| 1 | INV | |

Enum type **StrMod** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Negative | |
| 1 | Positive | |
| 2 | Either | |

Enum type **MemoryMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 0_None | |
| 1 | 1_Voltage | |
| 2 | 2_Time | |
| 3 | 3_Both | |

Enum type **EfDirModeKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Forward | |
| 1 | Reverse | |

Enum type **SlotDISelect** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Slot_C_DI1 | |
| 1 | Slot_D_DI1 | |
| 2 | Slot_E_DI1 | |

Enum type **VTTypeKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | VT | |
| 1 | LPVT | |

Enum type **TempModKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Current | |
| 1 | Ambient | |

Enum type **PadmDirMod** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Undir | |
| 1 | Forward | |
| 2 | Reverse | |

Enum type **SignalNum** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 1 | |
| 1 | 2 | |

Enum type **ClockSourceKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|---------------------|---------|
| 1 | Unknown | |
| 2 | SNTP | |
| 3 | PTP | |
| 4 | IRIG-B | |
| 5 | Substation internal | |

Enum type **TmrMode** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-----------------------------------|---------|
| 0 | — | |
| 1 | Oper./release delay | |
| 2 | Oper.delay/pulse duration | |
| 3 | Oper./release delay, retrig | |
| 4 | Oper.delay/pulse duration, retrig | |
| 5 | Minimum timeinternal | |

Enum type **EvaluationVN** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Measured | |
| 1 | Calculated | |

Enum type **SwOpCap** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|----------------|---------|
| 1 | None | |
| 2 | Open | |
| 3 | Close | |
| 4 | Open and Close | |

Enum type **CBOpCap** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-----------------------|---------|
| 1 | None | |
| 2 | Open | |
| 3 | Close-Open | |
| 4 | Open-Close-Open | |
| 5 | Close-Open-Close-Open | |

Enum type **SwTyp** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| -1 | Unknown | |
| 1 | Load Break | |

| Value | Description | Remarks |
|-------|----------------------------|---------|
| 2 | Disconnecter | |
| 3 | Earthing Switch | |
| 4 | High Speed Earthing Switch | |

Enum type **OcDirMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|---------------|---------|
| 0 | Non-direction | |
| 1 | Forward | |
| 2 | Reverse | |

Enum type **OcTripLogic** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 1_out_of_3 | |
| 1 | 2_out_of_3 | |

Enum type **OcVtsBlock** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-----------------|---------|
| 0 | Blocked | |
| 1 | Non-directional | |

Enum type **OcSolStat** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Off | |
| 1 | SOL1 | |
| 2 | SOL2 | |

Enum type **AvAWindow** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 1s | |
| 1 | 1min | |
| 2 | Demand Time | |

Enum type **MeasurementMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|--------------|---------|
| 0 | Phase-Phase | |
| 1 | Phase-Ground | |

Enum type **UUTripLogic** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|--------------|---------|
| 0 | Any Phase | |
| 1 | Three Phases | |

Enum type **OverVoltageDITyp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | OV_DT | |
| 1 | OV_Prg1 | |
| 2 | OV_Prg2 | |
| 3 | OV_Prg3 | |
| 4 | OV_IDMT | |

Enum type **DEF_IoInputKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | DEF_Io | |
| 1 | DEF_IoCSH | |
| 2 | DEF_localc | |
| 3 | DEF_lovs | |

Enum type **CAP_IoInputKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | CAP_Io1 | |
| 1 | CAP_Io2 | |
| 2 | CAP_localc | |

Enum type **CAP_FaultMeasuredValueTypeKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|------------------|---------|
| 1 | At Start Moment | |
| 2 | At Trip Moment | |
| 3 | Peak Fault Value | |

Enum type **CmpModKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Off | |
| 1 | Normal | |
| 2 | Location | |

Enum type **RefDirKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Standard | |
| 1 | Opposite | |

Enum type **REFOpModKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | IPhSumBias | |
| 1 | IPhMaxBias | |

Enum type **CtsOpModKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Indication | |
| 1 | Blocking | |
| 2 | Restraint | |

Enum type **CtsOpMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 3I_only | |
| 1 | IV_VN | |
| 2 | Both | |

Enum type **RocofOpMod** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | f+RoCoF | |
| 1 | Frequency | |

Enum type **CbrSt** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------------|---------|
| 0 | not started | |
| 1 | in progress | |
| 2 | calibration done | |
| 3 | calibration error | |

Enum type **SCBInstTyp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|--------------|---------|
| 0 | fixed | |
| 1 | withdrawable | |

Enum type **SCBTyp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | CB | |
| 1 | DD | |
| 2 | ED | |
| 3 | SD | |

Enum type **SCBHealthKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Ok | |
| 1 | Orange | |
| 2 | Red | |

Enum type **VectGrpType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 0 | |
| 1 | 1 | |

| Value | Description | Remarks |
|-------|-------------|---------|
| 2 | 2 | |
| 3 | 3 | |
| 4 | 4 | |
| 5 | 5 | |
| 6 | 6 | |
| 7 | 7 | |
| 8 | 8 | |
| 9 | 9 | |
| 10 | 10 | |
| 11 | 11 | |

Enum type **BiasCalModType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|----------------|---------|
| 0 | sum of phasors | |
| 1 | sum of abs. | |

Enum type **ThmMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | STANDARD | |
| 1 | ADVANCED | |

Enum type **PollLev** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | PL | |
| 1 | PH | |

Enum type **ZgbSt** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | OFFLINE | |
| 1 | ONLINE | |
| 2 | FAILURE | |

Enum type **InrushOpMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | phase block | |
| 1 | cross block | |

Enum type **CTInType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | CT_1 | |
| 1 | CT_2 | |

Enum type **VTLocation** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | HV | |
| 1 | LV | |

Enum type **PhSwp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | No Swap | |
| 1 | A-B | |
| 2 | B-C | |
| 3 | C-A | |

Enum type **OpSt** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|----------------------------|---------|
| 0 | OK | |
| 1 | Initialisation | |
| 2 | System fault | |
| 3 | Update in progress | |
| 4 | Application not configured | |

Enum type **SetNum** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | OFF | |
| 1 | AIS | |
| 2 | GIS SBB | |
| 3 | GIS DBB | |
| 4 | GP | |

Enum type **VHzCrvType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|------------------|---------|
| 0 | OverFluxing_DT | |
| 22 | OverFluxing_Prg1 | |
| 23 | OverFluxing_Prg2 | |
| 24 | OverFluxing_Prg3 | |

Extended Enum types

Enum type **SIUnit** is extended by the following enumerations:

| Value | Quantity | Unit name | Symbol |
|-------|--------------------------|-----------------------------|------------------|
| -1 | hertz per second | Rate of change of frequency | Hz/s |
| -2 | characters | Number of characters | char |
| -3 | characters per second | Baud | char/s |
| -4 | kg square meter | Turbine inertia | kgm ² |
| -5 | decibel | Sound pressure level | dB |
| -6 | Numerical tagging method | per unit | pu |
| -7 | Percent | percent | % |

| Value | Quantity | Unit name | Symbol |
|-------|----------------------|------------------------|--------|
| -8 | Relative temperature | degrees Fahrenheit | °F |
| -9 | Electric resistance | ohm (V/A) | V/A |
| -10 | Rotational Speed | Revolutions Per minute | rpm |
| -11 | Pulse per rotation | Pulse per rotation | /R |
| -13 | month | month | month |
| -14 | days | days | days |

Enum type **SIUnitKind** is extended by the following enumerations.

| Value | Quantity | Unit name | Symbol |
|-------|-----------------------------|------------------------|------------------|
| -1 | Rate of change of frequency | hertz per second | Hz/s |
| -2 | Number of characters | characters | char |
| -3 | Baud | characters per second | Char/s |
| -4 | Turbine inertia | kg square meter | kgm ² |
| -5 | Sound pressure level | decibel | dB |
| -6 | Numerical tagging method | per unit | pu |
| -7 | Percent | percent | % |
| -8 | Relative temperature | degree Fahrenheit | °F |
| -9 | Electric resistance | ohm (V/A) | V/A |
| -10 | Rotational speed | Revolutions per minute | rpm |
| -11 | Pulse per rotation | Pulse per rotation | /R |
| -12 | time | minute | min |

Enum type **AutoRecST** is extended by the following enumerations.

| Value | Symbol |
|-------|-----------|
| -1 | Reclaim |
| -2 | Ready_Ext |
| -3 | WaitOpen |
| -4 | WaitClose |
| -5 | Discrim |
| -6 | Locked |
| -7 | FinalTr |
| -8 | CBFail |
| -9 | Inhibit |
| -10 | Blocked |
| -11 | ExtOpen |
| -12 | ExClose |
| -13 | WaitSync |

PIXIT details

Introduction

This PIXIT is based upon UCAlug PIXIT Template version 15, UCA International Users Group Testing Sub Committee, October 22, 2019.

This document specifies the protocol implementation extra information for testing (PIXIT) of the IEC 61850 interface in PowerLogic P5U20, P5U20LPCT/LPVT, P5V20, P5F30, P5M30, P5T30, with firmware version V01.

Together with the PICS and MICS documents, the PIXIT document forms the basis for a conformance test according to IEC 61850-10. The PIXIT entries contain information which is not available in the PICS, MICS, TICS documents or SCL file.

Each chapter specifies the PIXIT for applicable ACSI service model as structured in IEC 61850-10. The “Ed” column indicates if the entry is applicable for IEC 61850 Edition 1 and/or Edition 2.

PIXIT for association model

The extra information for testing is given in the table below.

Table 75 - Protocol implementation extra information for testing

| ID | Ed | Description | Value / Clarification |
|-----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| As1 | 1 | Maximum number of clients that can set-up an association simultaneously | 8 |
| As2 | 1,2 | TCP_KEEPAIVE value. The recommended range is 0...20s | Configurable: from 0 to 20s |
| As3 | 1,2 | Lost connection detection time | TCP_KEEPAIVE + 2s *10 Maximum 140s (2s is retransmission interval of TCP Keep-alive message, 10 retransmissions) (0 means 120s) |
| As4 | - | Authentication is not supported yet | |
| As5 | 1,2 | What association parameters are necessary for successful association | Transport selector Calling: N Called: Y Session selector Calling: N Called: Y Presentation selector Calling: N Called: Y AP title Calling: N Called: N AE qualifier Calling: N Called: Y |
| As6 | 1,2 | If association parameters are necessary for association, describe the correct values. Association parameters are configurable, default values are | Transport selector 1 Session selector 1 Presentation selector 1 AP title 1,1,1,999,1 AE qualifier 12 |
| As7 | 1,2 | What is the maximum and minimum MMS PDU size | Max: 65535 bytes Min: In initiate request 1024 bytes |

Table 75 - Protocol implementation extra information for testing (Continued)

| ID | Ed | Description | Value / Clarification |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| As8 | 1,2 | What is the maximum start up time after a power supply interrupt | P5 relay start-up time including the server function is at average 180s; it depends on the configuration size (number and types of logical nodes) |
| As9 | 1,2 | Does this device function only as test equipment? (test equipment need not have a non-volatile configuration; but it cannot be part of the substation automation system) | N |

PIXIT for server model

| ID | Ed | Description | Value / Clarification |
|-----|-----|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sr1 | 1,2 | Which analogue value (MX) quality bits are supported (can be set by server) | Validity: Y Good, Y Invalid, N Reserved, Y Questionable N Overflow Y OutofRange N BadReference N Oscillatory N Failure N OldData N Inconsistent N Inaccurate Source: Y Process N Substituted Y Test N OperatorBlocked |
| Sr2 | 1,2 | Which status value (ST) quality bits are supported (can be set by server) | Validity: Y Good, Y Invalid, N Reserved, N Questionable N BadReference N Oscillatory N Failure N OldData N Inconsistent N Inaccurate Source: Y Process N Substituted Y Test N OperatorBlocked |
| Sr3 | - | What is the maximum number of data object references in one GetDataValues request | Deprecated |
| Sr4 | - | What is the maximum number of data object references in one SetDataValues request | Deprecated |
| Sr5 | 1 | Which Mode values are supported | On Y [On-]Blocked N Test Y Test/Blocked Y Off Y |

PIXIT for data set model

| ID | Ed | Description | Details |
|-----|----|-------------------------------------------------------------------------------------------------------------------|---------|
| Ds1 | 1 | What is the maximum number of data elements in one data set (compare ICD setting) | 500 |
| Ds2 | 1 | How many persistent data sets can be created by one or more clients (this number includes predefined datasets) | 50 |
| Ds3 | 1 | How many non-persistent data sets can be created by one or more clients | 50 |

NOTE: Arrays are not supported in dataset.

PIXIT for setting group control model

| ID | Ed | Description | Value / Clarification |
|-----|-----|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sg1 | 1 | What is the number of supported setting groups for each logical device | 4 |
| Sg2 | 1,2 | What is the effect of when and how the non-volatile storage is updated (compare IEC 61850-8-1 §16.2.4) | When: CnfEdit set to TRUE successfully. How: the setting value in edit buffer will be copied to the selected setting group, and then the new value will be updated to non-volatile storage by setting engine. |
| Sg3 | 1 | Can multiple clients edit the same setting group | N |
| Sg4 | 1 | What happens if the association is lost while editing a setting group | The SE values changes are lost, the EditSG value will not change. |
| Sg5 | 1 | Is EditSG value 0 allowed? | Y Write a value of 0 to EditSG will cancel all the setting values in the Edit buffer. |
| Sg6 | 2 | When ResvTms is not present how long is an edit setting group locked | Reserved forever except Cancel, Confirm or Disconnection. |

PIXIT for reporting model

| ID | Ed | Description | Details | |
|-----|----|-------------------------------------------------|-----------------------|---|
| Rp1 | 1 | The supported trigger conditions (compare PICS) | integrity | Y |
| | | | data change | Y |
| | | | quality change | Y |
| | | | data update | N |
| | | | general interrogation | Y |
| Rp2 | 1 | The supported optional fields are | sequence-number | Y |
| | | | report-time-stamp | Y |

| ID | Ed | Description | Details | |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---|
| | | | reason-for-inclusion | Y |
| | | | data-set-name | Y |
| | | | data-reference | Y |
| | | | buffer-overflow (not applicable to URCB) | Y |
| | | | entryID (not applicable to URCB) | Y |
| | | | conf-rev | Y |
| | | | segmentation | Y |
| Rp3 | 1,2 | Can the server send segmented reports? (when not supported the device shall refuse an association request with a smaller than minimum PDU size) | Y | |
| Rp4 | 1,2 | Mechanism on second internal data change notification of the same analogue data value within buffer period (compare IEC 61850-7-2 §14.2.2.9) | Send report immediately | |
| Rp5 | 1 | Multi client URCB approach (compare IEC 61850-7-2 §14.2.1) | Each URCB is visible to all clients | |
| Rp6 | - | What is the format of EntryID | Deprecated | |
| Rp7 | 1,2 | What is the buffer size for each BRCB or how many reports can be buffered | 100k bytes per report control block | |
| Rp8 | - | Pre-configured RCB attributes that are dynamic, compare SCL report settings | Deprecated | |
| Rp9 | 1 | May the reported data set contain: - structured data objects? - data attributes? | Y Y | |
| Rp10 | 1,2 | What is the scan cycle for binary events? Is this fixed, configurable or event-driven | 5 milliseconds Fixed | |
| Rp11 | 1 | Does the device support to pre-assign a RCB to a specific client in the SCL | N | |
| Rp12 | 2 | After restart of the server is the value of ConfRev restored from the original configuration or retained prior to restart | From the original configuration | |
| Rp13 | 1,2 | Does the server accept any client to configure / enable a BRCB with ResvTms=-1? What fields are used to do the identification? | N | |
| Rp14 | 1,2 | What is default value for BRCB. ResvTms if client does not write or ResvTms not exposed in the control block (must be >= 0) | Not support ResvTms. | |

Remarks:

For measurement value, only the DO with CDC = MV, CMV, WYE, DEL can be configured in dataset to trigger report which the deadband feature is implemented.

PIXIT for GOOSE publish model

| ID | Ed | Description | Value / Clarification |
|-----|-----|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gp1 | 1,2 | Can the test (Ed1) / simulation (Ed2) flag in the published GOOSE be set | N |
| Gp2 | 1 | What is the behaviour when the GOOSE publish configuration is incorrect | NdsCom=T DUT keeps GoEna=F |
| Gp3 | 1,2 | Published FCD supported common data classes / data types are | Common data classes: SPS, DPC, CMV, MV Data types as single attributes: BOOLEAN, CODED ENUM, FLOAT32, QUALITY Arrays are not supported. |
| Gp4 | 1,2 | What is the maximum value of TAL (maxTime)? Is it fixed or configurable? | Maximum TAL = 120000 ms (double of maximum configurable slowest retransmission cycle 60000 ms) Configurable by configuration tool |
| Gp5 | 1,2 | What is the fastest retransmission time? Is it fixed or configurable? | 4 ms Retransmission scheme: First message upon data change, followed by 4, 10, 20, 40, 80, 160, 320, 640, 1280, 2500, 5000, 10000, 20000, 40000, 60000 and finally reaching the configured slow retransmission time). TAL is set to value 2 times bigger than interval. Configurable |
| Gp6 | - | Can the GOOSE publish be turned on / off by using SetGoCBValues(GoEna) | Deprecated |
| Gp7 | 1,2 | What is initial GOOSE sqNum after restart of the device | 1 |
| Gp8 | 1 | May the GOOSE data set contain: - structured data objects (FCD) - timestamp data attributes | Y Y |
| Gp9 | 1,2 | Does Server or ICT refuse GOOSE payload dataset length greater than SCSM supports? | Y |

Remarks:

Consider the CPU load pressure, if the total number of DA in dataset for GOOSE publisher are more than 600 (1 DO can be considered as 3 DA), the fastest retransmission time will be 10ms, and retransmission scheme: First message upon data change, followed by 10,20,40,80,160,320,640, 1280,2500,5000, 10000, 20000, 40000,60000. and finally reaching the configured slow retransmission time.

PIXIT for GOOSE subscribe model

| ID | Ed | Description | Value / Clarification |
|-----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gs1 | 1,2 | <p>What elements of a subscribed GOOSE message are checked to decide the message is valid and the all Data values are accepted? If yes, describe the conditions.</p> <p>Notes:</p> <ul style="list-style-type: none"> the VLAN tag may be removed by an Ethernet switch and shall not be checked the simulation flag shall always be checked (Ed2) the ndsCom shall always be checked (Ed2) | <p>Y destination MAC address (equal to configured)</p> <p>Y APPID (equal to configured)</p> <p>N gocbRef</p> <p>N timeAllowedtoLive (see Remarks)</p> <p>N datSet</p> <p>Y gold (equal to configured)</p> <p>N t</p> <p>Y stNum (see Remarks)</p> <p>N sqNum (see Remarks)</p> <p>Y simulation/test (When P5LPHD1.Sim.stVal is false, if simulation/test is true, values not passed to application, the application data will keep last received value; if simulation/test is false, status of the network input stays valid. When P5LPHD1.Sim.stVal is true, at first if simulation/test is false, status of the network input stays valid, once simulation/test is true, status of the network input stays valid too, if simulation/test is back to false, values not passed to application, the application data will keep last received value.)</p> <p>Y confRev (equal to configured)</p> <p>Y ndsCom (if true, values not passed to application, the application data will keep last received value, and network inputs status is set to invalid as if message was never received)</p> <p>Y numDatSetEntries (see Remarks)</p> <p>N out-of-order dataset members</p> |
| Gs2 | 1,2 | <p>When is a subscribed GOOSE marked as lost</p> <p>(TAL = time allowed to live value from the last received GOOSE message)</p> | <p>Delayed messages are processed as normal.</p> <p>Internally in the relay there is a status indication to the application about GOOSE problem (data is marked as OLD if the message does not arrive prior to TAL+1s if TAL > value of setting "Min. supervision time" or prior to value of setting "Min. supervision time" if TAL < value of setting "Min. supervision time" whose range is from 100 ms to 10000 ms).</p> |
| Gs3 | 1,2 | What is the behaviour when one or more subscribed GOOSE messages isn't received or syntactically incorrect (missing GOOSE) | The subsequently received GOOSE message is accepted even if the new state number is not equal to the incremented value of the previously received state number (it is enough that it is not equal to the last received state number). |
| Gs4 | 1,2 | What is the behaviour when a subscribed GOOSE message is out-of-order | Message is treated as normal (it is assumed that previous messages have been lost). |
| Gs5 | 1,2 | What is the behaviour when a subscribed GOOSE message is duplicated | Duplicated message is ignored |
| Gs6 | 1 | Does the device subscribe to GOOSE messages with/without the VLAN tag | <p>Y with the VLAN tag</p> <p>Y without the VLAN tag</p> |
| Gs7 | 1 | <p>May the GOOSE data set contain:</p> <ul style="list-style-type: none"> structured data objects data attributes | <p>N</p> <p>Y</p> |

| ID | Ed | Description | Value / Clarification |
|------|-----|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gs8 | 1,2 | Subscribed FCD supported common data classes / data types are | Data classes: SPS, SPC, DPS, DPC, INS, INC, ENS, ENC, CMV, MV Data types as single attributes: BOOLEAN, INT8, INT16, INT32, INT8U, INT16U, INT32U, ENUMERATED, CODED ENUM, FLOAT32 Arrays are not supported |
| Gs9 | 1,2 | Are subscribed GOOSE with test=T (Ed1) / simulation=T (Ed2) accepted in test/ simulation mode | Y- Test mode is supported by the device |
| Gs10 | 1,2 | Max number of dataset members | Unlimited |
| Gs11 | 1 | Is Fixed-length encoded GOOSE supported | Y |
| Gs12 | 2 | Is IEC 62351-6 security supported | N |

TAL = Time Allowed to Live

Remarks:

A GOOSE message will be accepted and processed by the subscriber in DUT:

- Even if it is received after expiration of the time allowed to live sent in the previous message,
- Even if the new state number is not equal to the incremented value of the previously received state number - it is enough that it is not equal to the last received state number,
- If the state number differs from the previously received state number, the sequence number is accepted with any value (if the state number is equal to the previously received state number, the message is treated as retransmission),
- Even if the received message contains a dataset of the size different than the size of the previously received dataset.

A GOOSE message will NOT be accepted by the subscriber in DUT if:

- Destination MAC address is not equal to configured one
- Protocol ID is not equal to 0x88B8
- APPID is not equal to configured one for any of the network inputs
- ConfRev is not equal to configured one for any of the network inputs
- goID is not equal to configured one for any of the network inputs
- state number is the same as in the previous message (is treated as retransmission)
- ndsCom bit is set to true in received message

Note for sGosN6h (out of order dataset):

Value from GOOSE message will be accepted even if the type is different than in previous message given that:

- Type is compatible with network input type i.e. for binary network inputs accepted types are: BOOLEAN, BITSTRIG, ENUM, CODED ENUM for analog network inputs accepted types are FLOAT32 and INTEGER

All binary network input can be associated via internal logic with one validity indication. All analog network inputs can be associated via internal logic with another validity indication. If given network input is not received due to one of the reasons mentioned above this indication is activated. Validity flag for the network input will be activated also if next message with the value will not be received within the time indicated in **time to live** field contained in the previous message.

The value of numDatSetEntries from the header determines how many data entries from the message are processed. With numDatSetEntries = 0 no data

entries are processed from the received message. If numDataSetEntries is lower than expected (source information for some network inputs is not processed or missing) those missing network inputs will be marked as invalid.

ExtRef usage in ICD file

- The ExtRef elements under Inputs shall not be added, if there is no GOOSE subscriber configured.
- If one Network Input (NI) or Analog Network Input (ANI) is configured by SCT/ICT, all these optional attributes, IcdName, IdInst, prefix, InClass, InInst, doName, daName, intAddr, shall be added with correct value under ExtRef. The acceptable value for intAddr attribute is "NIXX" for Network Input (NI) or "ANIXX" for Analog Network Input (ANI).
- The figure below shows the example of ExtRef usage.

```
<Inputs>
  <ExtRef daName="stVal" doName="Ind" IcdName="P5F30" intAddr="NI1" IdInst="Relay" InClass="GOIO" InInst="1" prefix="PSDI"/>
  <ExtRef daName="stVal" doName="Ind" IcdName="P5F30" intAddr="NI2" IdInst="Relay" InClass="GOIO" InInst="2" prefix="PSDI"/>
  <ExtRef daName="stVal" doName="Ind" IcdName="P5F30" intAddr="NI11" IdInst="Relay" InClass="GOIO" InInst="1" prefix="PSDI"/>
  <ExtRef daName="stVal" doName="Ind" IcdName="P5F30" intAddr="NI12" IdInst="Relay" InClass="GOIO" InInst="2" prefix="PSDI"/>
  <ExtRef daName="stVal" doName="Ind" IcdName="P5F30" intAddr="NI249" IdInst="Relay" InClass="GOIO" InInst="1" prefix="PSDI"/>
  <ExtRef daName="stVal" doName="Ind" IcdName="P5F30" intAddr="NI250" IdInst="Relay" InClass="GOIO" InInst="2" prefix="PSDI"/>
  <ExtRef daName="mag.f" doName="Hz" IcdName="P5F30" intAddr="ANI7" IdInst="Relay" InClass="MXOU" InInst="1" prefix="PSVECV"/>
  <ExtRef daName="mag.f" doName="Hz" IcdName="P5F30" intAddr="ANI8" IdInst="Relay" InClass="MXOU" InInst="1" prefix="PSVECV"/>
</Inputs>
```

- If an ExtRef reference a DbPos, then the next ExtRef must not be used any. It is written in the ICD :

```
<ExtRef intAddr="NI2" serviceType="GOOSE" desc="Select
BOOLEAN or Dbpos DA input. By default NI2 stores
BOOLEAN.IsTrue or Dbpos.IsOpen. Leave NI3 empty, if
Dbpos.IsClosed is needed" />
```

PIXIT for GOOSE performance

| ID | Ed | Description | Value / Clarification | |
|-----|-----|-----------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|
| Gf1 | 1,2 | Performance class | N/A | |
| Gf2 | 1,2 | GOOSE ping-pong processing method | Scan cycle based | |
| Gf3 | 1,2 | Application logic scan cycle (ms) | Max. | 3 ms for SPS, 10 ms for DPS |
| | | | Min. | 0 ms for SPS, 0 ms for DPS |
| Gf4 | 1 | Maximum number of data attributes in GOOSE dataset (value and quality has to be counted as separate attributes) | 500 | |

PIXIT for control model

| ID | Ed | Description | Value / Clarification |
|-----|-----|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ct1 | - | What control models are supported (compare PICS) | DOs: Y SBOs: Y DOes: Y SBOes: Y |
| Ct2 | 1,2 | Is the control model fixed, configurable and/or dynamic? | Configurable for CSWI & XSWI class: All controllable objects Obj1 ... Obj6 under CSWI & XSWI class are configured to use one and the same chosen control model. Objects Obj7 ... Obj8 under CSWI class have fixed control model status-only. Fixed for GGIO: All controllable objects under GGIO class the control model is fixed: direct-with-normal-security. |

| ID | Ed | Description | Value / Clarification |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ct3 | - | Is TimeActivatedOperate supported (compare PICS or SCL) | Deprecated |
| Ct4 | - | Is "operate-many" supported (compare sboClass) | N |
| Ct5 | 1 | Will the DUT activate the control output when the test attribute is set in the SelectWithValue and/or Operate request (when N test procedure Ct12 is applicable) | N |
| Ct6 | - | What are the conditions for the time (T) attribute in the SelectWithValue and/or Operate request | Deprecated |
| Ct7 | - | Is pulse configuration supported (compare pulseConfig) | Deprecated |
| Ct8 | 1 | What is the behaviour of the DUT when the check conditions are set Is this behaviour fixed, configurable, online changeable? | N synchrocheck N interlock-check DUT ignores the check value and the command is executed as usual Fixed |
| Ct9 | 1,2 | Which additional cause diagnosis are supported | N Unknown Y Not-supported Y Blocked-by-switching-hierarchy N Select-failed Y Invalid-position Y Position-reached N Step-limit Y Blocked-by-Mode N Blocked-by-process N Blocked-by-interlocking N Blocked-by-synchrocheck Y Command-already-in-execution N Blocked-by-health N 1-of-n-control N Abortion-by-cancel Y Time-limit-over N Abortion-by-trip Y Object-not-selected Y Parameter-change-in-execution |
| Ct10 | 1,2 | How to force a "test-not-ok" respond with SelectWithValue request? | Put device into local mode |
| Ct11 | 1,2 | How to force a "test-not-ok" respond with Select request? | Put device into local mode |
| Ct12 | 1,2 | How to force a "test-not-ok" respond with Operate request? | DOns: Operate with orCat out of range SBOns: Operate without Select DOes: Operate with orCat out of range SBOes: Operate without Select |

| ID | Ed | Description | Value / Clarification |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ct13 | 1,2 | Which origin categories are supported/accepted? | Y bay-control Y station-control Y remote-control Y automatic-bay Y automatic-station Y automatic-remote Y maintenance Y process |
| Ct14 | 1,2 | What happens if the orCat is not supported or invalid | DOns: Negative response SBOs: Negative response DOes: Negative response (with additional cause diagnosis code value Not-supported) SBOes: Negative response (with additional cause diagnosis code value Not-supported) |
| Ct15 | 1,2 | Does the IED accept a SelectWithValue/Operate with the same control value as the current status value? Is this behaviour configurable? | DOns: N SBOs: N DOes: N Addcause: Position-reached SBOes: N Addcause: Position-reached Configurable: N |
| Ct16 | 1 | Does the IED accept a select/operate on the same control object from 2 different clients at the same time? | DOns: Y (see Remarks) SBOs: N DOes: N SBOes: N |
| Ct17 | 1 | Does the IED accept a Select/SelectWithValue from the same client when the control object is already selected (tissue 334) | SBOs: N SBOes: N |
| Ct18 | 1 | Is for SBOes the internal validation performed during the SelectWithValue and/or Operate step? | Y During SelectWithValue and during Operate |
| Ct19 | - | Can a control operation be blocked by Mod=Off or [On-] Blocked (compare PIXIT Sr5) | Deprecated |
| Ct20 | 1,2 | Does the IED support local / remote operation? | Y |
| Ct21 | 1,2 | Does the IED send an InformationReport with LastApplError as part of the Operate response- for control with normal security? | SBOs: N DOns: N |
| Ct22 | 2 | How to force a "parameter-change-in-execution" | SBOs: N/A SBOes: N/A |
| Ct23 | 1,2 | How many SBOs/SBOes control objects can be selected at the same time? | SBOs: 1 SBOes: 1 |
| Ct24 | 1,2 | Does the DUT support any operate timeout > 0 | N |
| Ct25 | 1,2 | When CDC=DPC is supported, is it possible to have DPC (Controllable Double Point) go to the intermediate state? (00) | Y |

| ID | Ed | Description | Value / Clarification |
|--------|-----|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ct26 | 1,2 | Name an enhanced security point (if any) with a finite operate timeout specify the timeout (in milliseconds) | Relay/Obj1CSWI1.Pos Operate timeout can be configured by setting Configuration Tool, the range is 0.02 ... 600 s. For example: DOes: 10000 ms SBOes: 10000 ms |
| Ct27 | 2 | Does the IED support control objects with external signals? | DOns: Y SBOs: Y DOes: Y SBOes: Y |
| Ct_ex1 | | SBO Timeout | 60 seconds |

Remarks:

In DOns model: When two clients send Operate request within a very short interval (under 100 ms) then for processing the second command the object position is still unchanged due to the first command, thus both clients receive positive Operate response.

PIXIT for time synchronisation

| ID | Ed | Description | Value / Clarification |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tm1 | 1 | What time quality bits are supported (may be set by the IED) Ed.2 requires all 3 bits | Y LeapSecondsKnown Y ClockFailure Y ClockNotSynchronised |
| Tm2 | 1,2 | Describe the behaviour when the time server(s) ceases to respond What is the time server lost detection time | Time is taken from internal RTC The latency depends on measured drift of the internal clock. Usually it can take 400 seconds |
| Tm3 | 1,2 | How long does it take to take over the new time from time server | Depends on time difference between internal and time server. Max. 400 s is the waiting time to see Timestamp Quality transition to ClockNotSynchronised. |
| Tm4 | 1,2 | When is the time quality bit "Clock failure" set? | The time quality bit "Clock failure" is set to "one" when the P5 IED restarts from power up, or when the connection to time server is lost; the bit is reset to "zero" when the clock becomes synchronised. All available time synchronisation sources will affect the "Clock failure" bit. These time sources include SNTP and where applicable, IRIG-B. |
| Tm5 | 1 | When is the time quality bit "Clock not synchronised" set? Note: For Ed2 and up, CNS is set according to PIXIT Tm2 | The time quality bit "Clock not synchronised" is set to "one" when the P5 IED starts from power up, or when the connection to time server is lost; the bit is reset to "zero" when the clock becomes synchronised. All available time synchronisation sources will affect the "Clock not synchronised" bit. These time sources include SNTP and where applicable, IRIG-B. |
| Tm6 | - | Is the timestamp of a binary event adjusted to the configured scan cycle? | Deprecated |

| ID | Ed | Description | Value / Clarification |
|-----|-----|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tm7 | 1 | Does the device support time zone and daylight saving? | Y |
| Tm8 | 1,2 | Which attributes of the SNTP response packet are validated? | N Leap indicator not equal to 3 N Mode is equal to SERVER Y OriginateTimestamp is equal to value sent by the SNTP client as Transmit Timestamp Y RX/TX timestamp fields are checked for reasonableness Y SNTP version 3 or 4 N other |
| Tm9 | 1,2 | Do the COMTRADE files have local time or UTC time Is this configurable | Local N |

PIXIT for file transfer model

| ID | Ed | Description | Value / Clarification |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ft1 | 1 | What is structure of files and directories Where are the COMTRADE files stored Are comtrade files zipped and what files are included in each zip file | Directory structure - COMTRADE - DR - TREND COMTRADE files stored in folder / COMTRADE /DR Zipped; Each COMTRADE record includes 2 files: .cfg and .dat |
| Ft2 | 1,2 | Directory names are separated from the file name by | Separated by '/' |
| Ft3 | 1 | The maximum file name size including path (recommended 64 chars) | 255 Below are all the maximum sizes: - Full file name (including the directory path, suffix and separation characters): 255 - File name: 64 - File directory name: 32 - File name suffix: 3 |
| Ft4 | 1,2 | Are directory/file name case sensitive | Case sensitive |
| Ft5 | 1,2 | Maximum file size for SetFile | SetFile is not supported. |
| Ft6 | 1 | Is the requested file path included in the MMS fileDirectory respond file name | Y |
| Ft7 | 1 | Is the wild char supported MMS fileDirectory request | Y |
| Ft8 | 1,2 | Is it allowed that 2 clients get a file at the same time | Y (max. 8 clients are supported) |
| Ft9 | 1,2 | Which files can be deleted | None |

TICS details

Introduction

The TICS is based upon UCAIug TICS Template version 2.1, UCA International Users Group Testing Sub Committee, April 23, 2019.

This Tissues implementation conformance statement is applicable for PowerLogic P5U20, P5U20LPCT/LPVT, P5V20, P5F30, P5M30, P5T30, with firmware version V01.

Implemented Tissues

During the October 2006 meeting IEC TC57 working group 10 decided that:

- green Tissues with the category “IntOp” are mandatory for IEC 61850 Edition 1
- Tissues with the category “Ed.2” Tissues should not be implemented

The below tables give an overview of the applicable mandatory Tissues.

Table 76 - Tissues implementation conformance statement

| Part | Tissue | Description | Implemented by server | Supported by client |
|------|--------|-----------------------------------------------------|-----------------------|---------------------|
| 8-1 | 116 | GetNameList with empty response? | Y | na |
| | 165 | Improper Error Response for GetDataSetValues | Y | na |
| | 183 | GetNameList error handling | Y | na |
| | 246 | Control negative response (SBOs) with LastApplError | na | na * |
| | 545 | Skip file directories with no files | na | ni |
| 7-4 | 252 | AlmThm should have CDC SPS | Y | na |
| 7-3 | 28 | Definition of APC | na | na |
| | 54 | Point def xVal, not cVal | na | na |
| | 55 | Ineut = Ires ? | Y | ni |
| | 63 | mag in CDC CMV | Y | na |
| | 65 | Deadband calculation of a Vector and trigger option | na | na |
| | 219 | operTm in ACT | na | na |
| | 270 | WYE and DEL rms values | Y | ni |
| | 1199 | BCR | Y | na |
| 7-2 | 30 | control parameter T | Y | na * |
| | 31 | Typo | na | na * |
| | 32 | Typo in syntax | na | na* |
| | 35 | Typo Syntax Control time | na | na * |
| | 36 | Syntax parameter DSet-Ref missing | na | na |
| | 37 | Syntax GOOSE "T" type | Y | na |
| | 39 | Add DstAddr to GoCB | Y | na |
| | 40 | GOOSE Message "ApplID" to "GoID" | Y | na |
| | 41 | GsCB "ApplID" to "GsID" | na | na |
| | 42 | SV timestamp: "EntryTime" to "TimeStamp" | na | na |

Table 76 - Tissues implementation conformance statement (Continued)

| Part | Tissue | Description | Implemented by server | Supported by client |
|------|--------|------------------------------------------------------|-----------------------|---------------------|
| | 43 | Control "T" semantic | na | na |
| | 44 | AddCause - Object not sel | Y | na |
| | 45 | Missing AddCauses | na | na |
| | 46 | Synchro check cancel | na | na |
| | 47 | "." in LD Name? | Y | na |
| | 49 | BRCB TimeOfEntry (part of #453) | - | na * |
| | 50 | LNName start with number? | Y | na |
| | 51 | ARRAY [0..num] missing | Y | na * |
| | 52 | Ambiguity GOOSE SqNum | Y | na |
| | 53 | Add DstAddr to GsCB, SV | na | na |
| | 151 | Name constraint for control blocks etc. | Y | na |
| | 166 | DataRef attribute in Log | na | na * |
| | 185 | Logging - Integrity period | na | na * |
| | 189 | SV Format | na | na |
| | 190 | BRCB: EntryId and TimeOfEntry (part of #453) | - | na * |
| | 191 | BRCB: Integrity and buffering reports (part of #453) | - | na * |
| | 278 | EntryId not valid for a server (part of #453) | - | na * |
| | 297 | Sequence number | Y | na * |
| | 298 | Type of SqNum | na | na * |
| | 305 | Reporting with BufTm=0 | na | na * |
| | 322 | Write Configuration attribute of BRCBs | na | na * |
| | 329 | Reporting and BufOvl | na | na * |
| | 333 | Enabling of an incomplete GoCB | na | na |
| | 335 | Clearing of Bufovfl | na | na * |
| | 348 | URCB class and report | na | na * |
| | 349 | BRCB TimeOfEntry has two definitions | na | na * |
| | 453 | Reporting & Logging model revision | Y | na * |
| | 1281 | Default for TrgPos.GI is TRUE | na | na * |
| 6 | 1 | Syntax | na | na |
| | 5 | tExtensionAttributeNameEnum is restricted | Y | ni |
| | 8 | SIUnit enumeration for W | Y | na |
| | 10 | Base type for bitstring usage | Y | na |
| | 17 | DAI/SDI elements syntax | Y | na |
| | 169 | Ordering of enum differs from 7-3 | na | na |
| | 245 | Attribute RptId in SCL | Y | na * |
| | 529 | Replace sev - Unknown by unknown | na | na |

NOTE: Tissue 49, 190, 191, 275 and 278 are part of tissue #453, all other technical tissues in the table are mandatory if applicable.

NOTE: Editorial tissues are marked as "na".

For detailed information on the individual Tissues, connect to the TISSUE database: www.tissues.iec61850.com

Appendix 3: IEC 61850 Edition 2 conformance statement

Introduction

Document purpose

The purpose of this document is to specify the communication features of the PowerLogic P5 protection relays embedded IEC 61850 server implementation mapped to IEC 61850 Edition 2 standards.

The model implementation in PowerLogic P5 protection relays varies with the functional scope provided by the different device models.

The information provided here may be still the subject of changes due to planned further extensions in the supported IEC 61850 functionality.

Terms and abbreviations

| Terms / abbreviations | Definitions |
|-----------------------|-------------------------------------------------------|
| ACSI | Abstract Communication Service Interfaces |
| BDA | Basic Data Attribute (not structured) |
| DA | Data Attributes |
| DO | DATA in IEC 61850-7-2, data object type or instance |
| FCD | Functionally Constrained Data |
| FCDA | Functionally Constrained Data Attribute |
| ID | Identifier |
| IED | Intelligent Electronic Device |
| LD | Logical Device |
| LN | Logical Node |
| MSV | Multicast Sampled Value |
| RCB | Report Control Block |
| GoCB | GOOSE Control Block or GSSE Control Block |
| SCL | System Configuration description Language |
| SCSM | Specific Communication Service Mapping |
| XML | Extensible Markup Language |
| GSSE | Generic Substation State Event |
| GOOSE | Generic Object Oriented Substation Event |
| SCD | Substation Configuration Description |
| ICD | IED Configuration Description |
| CID | Configured IED Description |
| PICS | Protocol Implementation Conformance Statement |
| MICS | Model Implementation Conformance Statement |
| PIXIT | Protocol Implementation eXtra Information for Testing |
| TICS | Tissue Implementation Conformance Statement |

PICS details

The PICS is based upon UCAIug PICS Template version 2.3, UCA International Users Group Testing Sub Committee, October 08, 2019.

The following ACSI conformance statements are used to provide an overview and details about following devices: P5U20, P5U20LPCT/LPVT, P5V20, P5F30, P5M30, P5T30, with firmware version V01.

- ACSI basic conformance statement,
- ACSI models conformance statement,
- ACSI service conformance statement

The statements specify the communication features mapped to IEC 61850-8-1 and IEC 61850-9-2, Edition 2.

ACSI basic conformance statement

The basic conformance statement is defined in the table below.

Table 77 - Basic conformance statement

| | | Client / Subscriber | Server / Publisher | Value / Comments |
|--------------------------------------------------|-----------------------------------------------------------|---------------------|--------------------|--------------------|
| Client–Server roles | | | | |
| B11 | Server side (of TWO-PARTY-APPLICATION-ASSOCIATION) | | Y | |
| B12 | Client side (of TWO-PARTY-APPLICATION-ASSOCIATION) | | – | |
| SCSMs supported | | | | |
| B21 | SCSM: IEC 61850-8-1 used | | Y | |
| B22 | SCSM: IEC 61850-9-1 used | | | Deprecated in Ed.2 |
| B23 | SCSM: IEC 61850-9-2 used | | N | |
| B24 | SCSM: other | | N | |
| Generic substation event model (GSE) | | | | |
| B31 | Publisher side | | Y | |
| B32 | Subscriber side | Y | | |
| Transmission of sampled value model (SVC) | | | | |
| B41 | Publisher side | | N | |
| B42 | Subscriber side | N | | |
| – = not applicable | | | | |
| Y = supported | | | | |
| N or empty = not supported | | | | |

ACSI models conformance statement

The ACSI models conformance statement is defined in the table below.

Table 78 - ACSI models conformance statement

| | | Client / Subscrib- er | Server / Publisher | Value / Comments |
|-----------------------------------------------------------------------|----------------------------------|-----------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If Server side (B11) and/or Client side (B12) supported | | | | |
| M1 | Logical device | | Y | |
| M2 | Logical node | | Y | Only standard LN types defined in Part 7-4. |
| M3 | Data | | Y | Only standard object types defined in Part 7-3, 7-4. Mandatory objects and attributes, selected optional objects and attributes. |
| M4 | Data set | | Y | Supported pre-defined persistent data sets, configurable via SCL. Supported dynamically created data sets (persistent and non-persistent). Data set members selection restricted to FC such as ST and MX. |
| M5 | Substitution | | N | |
| M6 | Setting group control | | Y | |
| Reporting | | | | |
| M7 | Buffered report control | | Y | |
| M7-1 | sequence-number | | Y | |
| M7-2 | report-time-stamp | | Y | |
| M7-3 | reason-for-inclusion | | Y | |
| M7-4 | data-set-name | | Y | |
| M7-5 | data-reference | | Y | |
| M7-6 | buffer-overflow | | Y | |
| M7-7 | entryID | | Y | |
| M7-8 | BufTm | | Y | |
| M7-9 | IntgPd | | Y | |
| M7-10 | GI | | Y | |
| M7-11 | conf-revision | | Y | |
| M8 | Unbuffered report control | | Y | |
| M8-1 | sequence-number | | Y | |
| M8-2 | report-time-stamp | | Y | |
| M8-3 | reason-for-inclusion | | Y | |
| M8-4 | data-set-name | | Y | |
| M8-5 | data-reference | | Y | |
| M8-6 | BufTm | | Y | |
| M8-7 | IntgPd | | Y | |
| M8-8 | GI | | Y | |

Table 78 - ACSI models conformance statement (Continued)

| | | Client / Subscriber | Server / Publisher | Value / Comments |
|---------------------------------------|-------------------------------------|---------------------|--------------------|---------------------------------------|
| M8-9 | conf-revision | | Y | |
| Logging | | | | |
| M9 | Log control | | N | |
| M9-1 | IntgPd | | N | |
| M10 | Log | | N | |
| Other | | | | |
| M11 | Control | | Y | |
| M17 | File transfer | | Y | |
| M18 | Application association | | Y | |
| M19 | GOOSE Control Block | | Y | |
| M20 | Sampled Values Control Block | | N | |
| If GSE (B31/B32) is supported | | | | |
| M12 | GOOSE | | Y | |
| M13 | GSSE | | N | Deprecated in Ed.2 |
| If SVC (B41/B42) is supported | | | | |
| M14 | Multicast SVC | | N | |
| M15 | Unicast SVC | | N | |
| For all IEDs | | | | |
| M16 | Time | | Y | Performance class T2 (100µs accuracy) |
| Y = service is supported | | | | |
| N or empty = service is not supported | | | | |

ACSI service conformance statement

The ACSI service conformance statement is defined in the table below (depending on the statements in ACSI basic conformance statement, page 608).

Table 79 - ACSI service conformance statement

| | Ed | ACSI Service Conformance | AA: TP/MC | Client / Sub (C) | Server / Pub (S) | Comments |
|---------------------------------------------|-----|-------------------------------------|-----------|------------------|------------------|-----------------------------|
| Server | | | | | | |
| S1 | 1,2 | GetServerDirectory (LOGICAL-DEVICE) | TP | | Y | |
| Application association | | | | | | |
| S2 | 1,2 | Associate | | | Y | |
| S3 | 1,2 | Abort | | | Y | |
| S4 | 1,2 | Release | | | Y | |
| Logical device | | | | | | |
| S5 | 1,2 | LogicalDeviceDirectory | TP | | Y | |
| Logical node | | | | | | |
| S6 | 1,2 | LogicalNodeDirectory | TP | | Y | |
| S7 | 1,2 | GetAllDataValues | TP | | Y | |
| Data | | | | | | |
| S8 | 1,2 | GetDataValues | TP | | Y | |
| S9 | 1,2 | SetDataValues | TP | | Y | |
| S10 | 1,2 | GetDataDirectory | TP | | Y | |
| S11 | 1,2 | GetDataDefinition | TP | | Y | |
| Data set | | | | | | |
| S12 | 1,2 | GetDataSetValues | TP | | Y | |
| S13 | 1,2 | SetDataSetValues | TP | | N | Deprecated in Ed.2 |
| S14 | 1,2 | CreateDataSet | TP | | Y | |
| S15 | 1,2 | DeleteDataSet | TP | | Y | |
| S16 | 1,2 | GetDataSetDirectory | TP | | Y | |
| Substitution | | | | | | |
| S17 | 1 | SetDataValues | TP | | N | |
| Setting group control | | | | | | |
| S18 | 1,2 | SelectActiveSG | TP | | Y | |
| S19 | 1,2 | SelectEditSG | TP | | Y | |
| S20 | 1,2 | SetEditSGValue | TP | | Y | |
| S21 | 1,2 | ConfirmEditSGValues | TP | | Y | |
| S22 | 1,2 | GetEditSGValue | TP | | Y | |
| S23 | 1,2 | GetSGCBValues | TP | | Y | |
| Reporting | | | | | | |
| Buffered report control block (BRCB) | | | | | | |
| S24 | 1,2 | Report | TP | | Y | |
| S24-1 | 1,2 | data-change (dchg) | | | Y | |
| S24-2 | 1,2 | qchg-change (qchg) | | | Y | |
| S24-3 | 1,2 | data-update (dupd) | | | Y | Accepted as TrgOpt, but not |

Table 79 - ACSI service conformance statement (Continued)

| | Ed | ACSI Service Conformance | AA: TP/MC | Client / Sub (C) | Server / Pub (S) | Comments |
|--------------------------------------------------|-----|--------------------------|-----------|------------------|------------------|---------------------------------------------------------------|
| | | | | | | functionally supported by the IED |
| S25 | 1,2 | GetBRCBValues | TP | | Y | |
| S26 | 1,2 | SetBRCBValues | TP | | Y | |
| Unbuffered report control block (URCB) | | | | | | |
| S27 | 1,2 | Report | TP | | Y | |
| S27-1 | 1,2 | data-change (dchg) | | | Y | |
| S27-2 | 1,2 | qchg-change (qchg) | | | Y | |
| S27-3 | 1,2 | data-update (dupd) | | | Y | Accepted as TrgOpt, but not functionally supported by the IED |
| S28 | 1,2 | GetURCBValues | TP | | Y | |
| S29 | 1,2 | SetURCBValues | TP | | Y | |
| Logging | | | | | | |
| Log control block | | | | | | |
| S30 | 1,2 | GetLCBValues | TP | | N | |
| S31 | 1,2 | SetLCBValues | TP | | N | |
| Log | | | | | | |
| S32 | 1,2 | QueryLogByTime | TP | | N | |
| S33 | 1,2 | QueryLogAfter | TP | | N | |
| S34 | 1,2 | GetLogStatusValues | TP | | N | |
| Generic substation event model (GSE) | | | | | | |
| S35 | 1,2 | SendGOOSEMessage | MC | | Y | |
| GOOSE Control Block | | | | | | |
| S36 | 1,2 | GetGoReference | TP | | N | |
| S37 | 1,2 | GetGOOSEElement-Number | TP | | N | |
| S38 | 1,2 | GetGoCBValues | TP | | Y | |
| S39 | 1,2 | SetGoCBValues | TP | | Y | |
| GSSE (Ed2:61850-7-2 Annex C) | | | | | | |
| S40 | 1 | SendGSSEMessage | MC | | N | Deprecated in Ed.2 |
| GSSE Control Block | | | | | | |
| S41 | 1 | GetGsReference | TP | | N | Deprecated in Ed.2 |
| S42 | 1 | GetGSSEElementNum-ber | TP | | N | Deprecated in Ed.2 |
| S43 | 1 | GetGsCBValues | TP | | N | Deprecated in Ed.2 |
| S44 | 1 | SetGsCBValues | TP | | N | Deprecated in Ed.2 |
| Transmission of sampled value model (SVC) | | | | | | |
| Multicast SV | | | | | | |
| S45 | 1,2 | SendMSVMessage | MC | | N | Use for IEC 61850-9-2LE guideline or IEC 61869-9 standard |
| Multicast Sampled Values Control Block | | | | | | |

Table 79 - ACSI service conformance statement (Continued)

| | Ed | ACSI Service Conformance | AA: TP/MC | Client / Sub (C) | Server / Pub (S) | Comments |
|---------------------------------------------|-----|-----------------------------------|-----------|------------------|------------------|-----------------------------------------------------------------------------|
| S46 | 1,2 | GetMSVCBValues | TP | | N | |
| S47 | 1,2 | SetMSVCBValues | TP | | N | |
| Unicast SV | | | | | | |
| S48 | 1,2 | SendUSVMessage | TP | | N | |
| Unicast Sampled Values Control Block | | | | | | |
| S49 | 1,2 | GetUSVCBValues | TP | | N | |
| S50 | 1,2 | SetUSVCBValues | TP | | N | |
| Control | | | | | | |
| S51 | 1,2 | Select | | | Y | |
| S52 | 1,2 | SelectWithValue | TP | | Y | |
| S53 | 1,2 | Cancel | TP | | Y | |
| S54 | 1,2 | Operate | TP | | Y | |
| S55 | 1,2 | CommandTermination | TP | | Y | |
| S56 | 1,2 | TimeActivatedOperate | TP | | N | |
| File Transfer | | | | | | |
| S57 | 1,2 | GetFile | TP | | Y | |
| S58 | 1,2 | SetFile | TP | | N | |
| S59 | 1,2 | DeleteFile | TP | | N | |
| S60 | 1,2 | GetFileAttributeValues | TP | | Y | |
| S61 | 1,2 | GetServerDirectory (FILE-SYSTEM) | TP | | Y | |
| Time | | | | | | |
| T1 | 1,2 | Time resolution of internal clock | | | 14 | 14 for IEEE1588, 10 for IRIG-B, 7 for SNTP and protocols |
| T2 | 1,2 | Time accuracy of internal clock | | | T2 | Performance class T2 for IEEE1588, T1 for IRIG-B, T0 for SNTP and protocols |
| T3 | 1,2 | Supported TimeStamp resolution | - | | 20 | Nearest value of 2 ⁻ⁿ in seconds (number 0 ... 24) |

MICS details

The MICS is based upon UCAIug MICS Template version 1.2, UCA International Users Group Testing Sub Committee, August 13, 2019.

This model implementation conformance statement is applicable for P5U20, P5U20LPCT/LPVT, P5V20, P5F30, P5M30, P5T30, with firmware version V01.

This MICS document specifies the modeling extensions compared to IEC 61850 Edition 2.

Clause **Logical nodes list** contains the list of implemented logical nodes.

Clause **Logical node extensions** describes the new and extended logical nodes (if any).

Clause **Enum types extensions** describes the new and extended enum types (if any).

Logical nodes list

The following table contains the list of logical nodes implemented in the device:

Table 80 - Logical nodes implemented in the device

| | P5-U20 | P5-U20L-PCT/LPVT | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|----------------------------------------------------------|--------|------------------|--------|--------|--------|--------|
| L: System Logical Nodes | | | | | | |
| LPHD (Physical device information) | x | x | x | x | x | x |
| LLN0 (Logical node zero) | x | x | x | x | x | x |
| LTMS (Time master supervision) | x | x | x | x | x | x |
| LTIM (Time management) | x | x | x | x | x | x |
| LGOS (GOOSE subscription) | x | x | x | x | x | x |
| LCCH (Physical communication channel supervision) | x | x | x | x | x | x |
| P: Logical Nodes for protection functions | | | | | | |
| PTRC (Protection trip conditioning) | x | x | x | x | x | x |
| PTOC (Time overcurrent) | x | x | | x | x | x |
| PFRC (Rate of change frequency) | x | x | x | x | | |
| PIOC (Instantaneous overcurrent) | x | x | x | x | x | x |
| PTOF (Over frequency) | x | x | x | x | x | |
| PTOV (Overvoltage) | x | x | x | x | x | x |
| PDOP (Directional overpower) | x | x | | x | x | |
| PTUC (Undercurrent) | x | x | | | x | |
| PTTR (Thermal overload) | x | x | | x | x | x |
| PTUF (Under frequency) | x | x | x | x | x | |
| PTUV (Under voltage) | x | x | x | x | x | |
| PMRI (Motor restart inhibition) | x | x | | | x | |
| PMSS (Motor starting time supervision) | x | x | | | x | |
| PTEF (Transient earth fault) | | | | x | | |
| PADM (Admittance) | | | | x | x | |

Table 80 - Logical nodes implemented in the device (Continued)

| | P5-U20 | P5-U20L-PCT/LPVT | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|-----------------------------------------------------------------|--------|------------------|--------|--------|--------|--------|
| POVS (Motor overspeed) | x | x | | | x | |
| PZSU (Motor underspeed) | x | x | | | x | |
| PHAR (Harmonic restraint) | x | x | | x | x | x |
| PDIF (Differential) | x | | | x | x | x |
| PVPH (Volts per Hz) | | | | | | x |
| R: Logical nodes for protection related functions | | | | | | |
| RREC (Auto reclosing) | x | x | | x | | |
| RDRE (Disturbance recorder) | x | x | x | x | x | x |
| RFLO (Fault locator) | x | x | x | x | x | x |
| RSYN (Synchronism-check) | | | x | x | | |
| RBRF (Breaker failure) | | | | | | x |
| G: Logical Nodes for generic references | | | | | | |
| GGIO (Generic process I/O) | x | x | x | x | x | x |
| GAPC (Generic automatic process control) | x | x | x | x | x | x |
| M: Logical Nodes for metering and measurement | | | | | | |
| MMTR (Metering) | x | x | | x | x | |
| MMXU (Measurement) | x | x | x | x | x | x |
| MHAI (Harmonics) | x | x | x | x | x | x |
| MMXN (Non-phase-related measurement) | x | | | x | x | x |
| MHAN (Non-phase-related Harmonics) | | | | | | x |
| MMET (Meteorological information) | x | x | x | x | x | x |
| MENV (Environmental information) | x | x | x | x | x | x |
| C: Logical Nodes for control | | | | | | |
| CSWI (Switch controller) | x | x | x | x | x | x |
| CILO (Interlocking) | x | x | x | x | x | x |
| T: Logical nodes for instrument transformers and sensors | | | | | | |
| TCTX (Current transformer) | x | x | | x | x | x |
| TVTX (Voltage transformer) | x | x | x | x | x | x |
| TTMP (Temperature sensor) | x | x | x | x | x | x |
| S: Logical nodes for supervision and monitoring | | | | | | |
| SCBR (Circuit breaker supervision) | x | x | | x | x | x |
| SOPM (Supervision of operating mechanism) | x | x | | x | x | x |
| SSWI (Circuit switch supervision) | x | x | x | x | x | x |
| STMP (Temperature supervision) | x | x | x | x | x | x |
| SIML (Insulation medium supervision) | | | | | | x |
| X: Logical nodes for switchgear | | | | | | |
| XCBR (Circuit breaker) | x | x | | x | x | x |
| XSWI (Circuit switch) | x | x | x | x | x | x |

Table 80 - Logical nodes implemented in the device (Continued)

| | P5-U20 | P5-U20L-PCT/LPVT | P5-V20 | P5-F30 | P5-M30 | P5-T30 |
|-------------------------------------------------------|--------|------------------|--------|--------|--------|--------|
| I: Logical nodes for interfacing and archiving | | | | | | |
| ITCI (Telecontrol interface) | x | x | x | x | x | x |

Logical node extensions

The following table uses:

- M: Data is mandatory in the IEC 61850-7-4.
- O: Data is optional in the IEC 61850-7-4 and is used in the device.
- C: Data is conditional in the IEC 61850-7-4 and is used in the device.
- E: Data is an extension to the IEC 61850-7-4.

The condition below is available for all logical nodes in this chapter.
Condition C1: Mod, Health and NamPIt shall be inherited by LLN0 of the root LD of a hierarchy as mandatory and by all other LN as optional.

New logical nodes

Newly created logical nodes are listed in this clause, with InNs attribute in the Name plate.

PADM Admittance

This LN shall be used for protection admittance E/F YN.

| PADM class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5EFPADM1 P5EFPADM2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPIt | LPL | Name plate | C1 | |
| Status Information | | | | |
| YStr | ACD | YN> Start signal | E | |
| YOp | ACT | YN> Trip signal | E | |
| GStr | ACD | GN> Start signal | E | |
| GOp | ACT | GN> Trip signal | E | |
| BStr | ACD | BN> Start signal | E | |
| BOp | ACT | BN> Trip signal | E | |
| Settings | | | | |
| FunEna | SPG | Enable All YN> | E | |
| YFunEna | SPG | Enable YN> | E | |

| PADM class | | | | |
|------------------|-------------------|-------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| GFunEna | SPG | Enable GN> | E | |
| BFunEna | SPG | Enable BN> | E | |
| VnStrVal | ASG | VN pick-up value | E | |
| CorAng | ASG | Correction angle | E | |
| YStrVal | ASG | YN> Pick-up value | E | |
| YOpDITms | ASG | Operate delay | E | |
| YRsDITms | ASG | Reset delay | E | |
| YSolMod | SPG | SOL | E | |
| YSIOpDITms | ASG | SOL operate delay | E | |
| GStrVal | ASG | GN> Pick-up value | E | |
| GDirMod | ENG | Direction mode | E | |
| GOpDITms | ASG | Operate delay | E | |
| GRsDITms | ASG | Reset delay | E | |
| GSolMod | SPG | SOL | E | |
| GSIOpDITms | ASG | SOL operate delay | E | |
| BStrVal | ASG | BN> Pick-up value | E | |
| BDirMod | ENG | Direction mode | E | |
| BOpDITms | ASG | Operate delay | E | |
| BRsDITms | ASG | Reset delay | E | |
| BSolMod | SPG | SOL | E | |
| BSIOpDITms | ASG | SOL operate delay | E | |
| EvVN | ENG | Evaluation VN | E | |

POVS Motor overspeed

This LN shall be used for protection motor overspeed.

| POVS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MOTPOVS1 P5MOTPOVS2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | E | |
| Op | ACT | Trip signal | E | |
| Settings | | | | |
| FunEna | SPG | Enable for Ω > | E | |

| POVS class | | | | |
|------------------|-------------------|---------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| StrVal | ASG | Pick-up value | E | |
| OpDITms | ASG | Operate delay | E | |

TCTX Current transformer

This LN shall be used for protection current transformer parameters.

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5VSITCTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | EM | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Settings | | | | |
| FunEna | SPG | Enable for CTS | E | |
| CTNum | ING | Number of connected phase CT | E | |
| OpDITmms | ING | Operate delay | O | |
| PriPhs | ASG | CT primary | E | |
| PriNeut1 | ASG | EF CT primary | E | |
| PriNeut2 | ASG | Sensitive IN CT primary | E | |
| ResA | ASG | IN> | E | |
| ResV | ASG | VN< | E | |
| EvVN | ING | Evaluation VN | E | |
| CtsOpMod | ING | CTS operating mode | E | |

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPITCTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Measured and metered values | | | | |
| ExtPri | MV | Nominal current | E | |
| Settings | | | | |

| TCTX class | | | | |
|------------------|-------------------|--------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| FunEna | SPG | Enable for CTS | E | |
| OpDITmms | ING | Operate delay | E | |
| NomPri | ASG | LPCT nom primary | E | |
| ResA | ASG | IN> | E | |
| ResV | ASG | VN< | E | |
| EvVN | ING | Evaluation VN | E | |
| CtsOpMod | ING | CTS operating mode | E | |

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVSITCTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| CTIn | ENS | CT input | E | |
| Settings | | | | |
| FunEna | SPG | Enable for CTS 1 | E | |
| OpDITmms | ING | Operate delay | O | |
| HiCTPri | ASG | HV CT primary | E | |
| CTPri | ASG | CT primary | E | |
| HiCTPriNeut | ASG | HV IN CT primary | E | |
| EFCTPri | ASG | EF CT primary | E | |
| ResA | ASG | IN> | E | |
| ResV | ASG | VN< | E | |
| CtsOpMod | ENG | CTS operating mode | E | |
| PhDirHi | ENG | HV Phase CT polarity | E | |
| SefDirHi | ENG | HV IN CT polarity | E | |
| PhDirLo | ENG | LV Phase CT polarity | E | |
| SefDirLo | ENG | LV IN CT polarity | E | |
| PhSwpHi | ENG | HV Phase Swap | E | |
| PhSwpLo | ENG | LV Phase Swap | E | |

| TCTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVSITCTX3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Settings | | | | |
| FunEna | SPG | Enable for CTS DIFF | E | |
| OpDITmms | ING | Operate delay | O | |
| PsA | ASG | I1> HV | E | |
| NgPsARatLo | ASG | I2/I1 low | E | |
| NgPsARatHi | ASG | I2/I1 high | E | |

TVTX Voltage transformer

This LN shall be used for protection voltage transformer parameters.

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UTVTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | EM | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| | | | | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| ImbAMinLev | ASG | I2< setting | E | |
| ImbVMaxLev | ASG | V2> setting | E | |
| OpDITmms | ING | Operate delay | E | |
| PriPhs | ASG | VT primary | E | |
| PriNeut | ASG | VN primary | E | |
| SecNeut | ASG | VN secondary | E | |
| SecPhs | ASG | VT secondary | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | ASG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correction | E | |
| PhBAngCor | ASG | VB angle correction | E | |
| PhCAngCor | ASG | VC angle correction | E | |
| VL1yMagCor | ASG | VAy magnitude correction | E | |
| VL1yAngCor | ASG | VAy angle correction | E | |
| VL2yMagCor | ASG | VBy magnitude correction | E | |
| VL2yAngCor | ASG | VBy angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VT secondary | E | |
| PhAMagAdpt | ASG | VA adapter mag correction | E | |
| PhBMagAdpt | ASG | VB adapter mag correction | E | |
| PhCMagAdpt | ASG | VC adapter mag correction | E | |
| VISecAdpt | ASG | VTy secondary | E | |
| VL1yMagAdt | ASG | VAy adapter mag correction | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |

| TVTX class | | | | |
|------------------------------------|-------------------|----------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Beh | EINS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | ASG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correction | E | |
| PhBAngCor | ASG | VB angle correction | E | |
| PhCAngCor | ASG | VC angle correction | E | |
| VL1yMagCor | ASG | VAY magnitude correction | E | |
| VL1yAngCor | ASG | VAY angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VT secondary | E | |
| PhAMagAdpt | ASG | VA adapter mag correction | E | |
| PhBMagAdpt | ASG | VB adapter mag correction | E | |
| PhCMagAdpt | ASG | VC adapter mag correction | E | |
| VISecAdpt | ASG | VTy secondary | E | |
| VL1yMagAdt | ASG | VAY adapter mag correction | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |

| TVTX class | | | | |
|------------------|-------------------|----------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | ASG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correction | E | |
| PhBAngCor | ASG | VB angle correction | E | |
| PhCAngCor | ASG | VC angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VT secondary | E | |
| PhAMagAdpt | ASG | VA adapter mag correction | E | |
| PhBMagAdpt | ASG | VB adapter mag correction | E | |
| PhCMagAdpt | ASG | VC adapter mag correction | E | |
| UoSecAdpt | ASG | VN secondary | E | |
| UoMagAdt | ASG | VN adapter mag correction | E | |
| VNPri | ASG | LPVT nominal primary | E | |
| FunEna | SPG | Function enable | E | |
| NomPri | ASG | LPVT rated primary voltage | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LPUTVTX4 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| | | | | |
| Measured and Metered Values | | | | |
| ExtPri | MV | Nominal voltage | E | |
| Settings | | | | |
| FunEna | SPG | Enable for VTS | E | |
| NomPri | ASG | VT nominal primary | E | |
| PhAMagCor | ASG | VA magnitude correction | E | |
| PhBMagCor | ASG | VB magnitude correction | E | |
| PhCMagCor | ASG | VC magnitude correction | E | |
| PhAAngCor | ASG | VA angle correction | E | |
| PhBAngCor | ASG | VB angle correction | E | |

| TVTX class | | | | |
|------------------|-------------------|---------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PhCAngCor | ASG | VC angle correction | E | |
| VtTyp | ING | VT type | E | |
| VtSecAdpt | ASG | VT secondary | E | |
| PhAMagAdpt | ASG | VA adapter mag correction | E | |
| PhBMagAdpt | ASG | VB adapter mag correction | E | |
| PhCMagAdpt | ASG | VC adapter mag correction | E | |

| TVTX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVNTVTX1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | E | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Settings | | | | |
| PriNeut | ASG | VN primary | E | |
| SecNeut | ASG | VN secondary | E | |
| VTLOC | ENG | VT location | E | |

Standardised and extended DO of logical node type

The following table presents a summary of the standardised and extended DO of each Logical Node Type.

LN Type: SE_GAPC_PS_PowerLogicP5_V001

Description: Generic automatic process control

LN Class: GAPC

| GAPC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5PSGAPC1...8 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |

| GAPC class | | | | |
|------------------|-------------------|-------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable Prog | E | |

LN Type: SE_GAPC_RTD_PowerLogicP5FMUWT_V001

Description: Generic automatic process control

LN Class: GAPC

| GAPC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5RTDGAPC1 P5RTDGAPC2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Oprt1 | ACT | Temperature 1 trip | E | |
| Oprt2 | ACT | Temperature 2 trip | E | |
| Oprt3 | ACT | Temperature 3 trip | E | |
| Oprt4 | ACT | Temperature 4 trip | E | |
| Oprt5 | ACT | Temperature 5 trip | E | |
| Oprt6 | ACT | Temperature 6 trip | E | |
| Oprt7 | ACT | Temperature 7 trip | E | |
| Oprt8 | ACT | Temperature 8 trip | E | |
| Alm1 | SPS | Temperature 1 alarm | O | |
| Alm2 | SPS | Temperature 2 alarm | O | |
| Alm3 | SPS | Temperature 3 alarm | O | |
| Alm4 | SPS | Temperature 4 alarm | O | |
| Alm5 | SPS | Temperature 5 alarm | O | |
| Alm6 | SPS | Temperature 6 alarm | O | |
| Alm7 | SPS | Temperature 7 alarm | O | |
| Alm8 | SPS | Temperature 8 alarm | O | |

LN Type: SE_GAPC_LOT_PowerLogicP5_V001

Description: Generic automatic process control

LN Class: GAPC

| XXXX class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LOTGAPC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Ind1 | SPS | Logical output 1 signal | O | |
| Ind2 | SPS | Logical output 2 signal | O | |
| Ind3 | SPS | Logical output 3 signal | O | |
| Ind4 | SPS | Logical output 4 signal | O | |
| Ind5 | SPS | Logical output 5 signal | O | |
| Ind6 | SPS | Logical output 6 signal | O | |
| Ind7 | SPS | Logical output 7 signal | O | |
| Ind8 | SPS | Logical output 8 signal | O | |
| Ind9 | SPS | Logical output 9 signal | O | |
| Ind10 | SPS | Logical output 10 signal | O | |
| Ind11 | SPS | Logical output 11 signal | O | |
| Ind12 | SPS | Logical output 12 signal | O | |
| Ind13 | SPS | Logical output 13 signal | O | |
| Ind14 | SPS | Logical output 14 signal | O | |
| Ind15 | SPS | Logical output 15 signal | O | |
| Ind16 | SPS | Logical output 16 signal | O | |
| Ind17 | SPS | Logical output 17 signal | O | |
| Ind18 | SPS | Logical output 18 signal | O | |
| Ind19 | SPS | Logical output 19 signal | O | |
| Ind20 | SPS | Logical output 20 signal | O | |
| Settings | | | | |
| TmMod1 | ENG | Timer mode for logic output 1(t) | E | |
| Ind1t1 | ASG | t1 for logic output 1(t) | E | |
| Ind1t2 | ASG | t2 for logic output 1(t) | E | |
| TmMod2 | ENG | Timer mode for logic output 2(t) | E | |
| Ind2t1 | ASG | t1 for logic output 2(t) | E | |
| Ind2t2 | ASG | t2 for logic output 2(t) | E | |
| TmMod3 | ENG | Timer mode for logic output 3(t) | E | |
| Ind3t1 | ASG | t1 for logic output 3(t) | E | |
| Ind3t2 | ASG | t2 for logic output 3(t) | E | |
| TmMod4 | ENG | Timer mode for logic output 4(t) | E | |

| XXXX class | | | | |
|------------------|-------------------|-----------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Ind4t1 | ASG | t1 for logic output 4(t) | E | |
| Ind4t2 | ASG | t2 for logic output 4(t) | E | |
| TmMod5 | ENG | Timer mode for logic output 5(t) | E | |
| Ind5t1 | ASG | t1 for logic output 5(t) | E | |
| Ind5t2 | ASG | t2 for logic output 5(t) | E | |
| TmMod6 | ENG | Timer mode for logic output 6(t) | E | |
| Ind6t1 | ASG | t1 for logic output 6(t) | E | |
| Ind6t2 | ASG | t2 for logic output 6(t) | E | |
| TmMod7 | ENG | Timer mode for logic output 7(t) | E | |
| Ind7t1 | ASG | t1 for logic output 7(t) | E | |
| Ind7t2 | ASG | t2 for logic output 7(t) | E | |
| TmMod8 | ENG | Timer mode for logic output 8(t) | E | |
| Ind8t1 | ASG | t1 for logic output 8(t) | E | |
| Ind8t2 | ASG | t2 for logic output 8(t) | E | |
| TmMod9 | ENG | Timer mode for logic output 9(t) | E | |
| Ind9t1 | ASG | t1 for logic output 9(t) | E | |
| Ind9t2 | ASG | t2 for logic output 9(t) | E | |
| TmMod10 | ENG | Timer mode for logic output 10(t) | E | |
| Ind10t1 | ASG | t1 for logic output 10(t) | E | |
| Ind10t2 | ASG | t2 for logic output 10(t) | E | |
| TmMod11 | ENG | Timer mode for logic output 11(t) | E | |
| Ind11t1 | ASG | t1 for logic output 11(t) | E | |
| Ind11t2 | ASG | t2 for logic output 11(t) | E | |
| TmMod12 | ENG | Timer mode for logic output 12(t) | E | |
| Ind12t1 | ASG | t1 for logic output 12(t) | E | |
| Ind12t2 | ASG | t2 for logic output 12(t) | E | |
| TmMod13 | ENG | Timer mode for logic output 13(t) | E | |
| Ind13t1 | ASG | t1 for logic output 13(t) | E | |
| Ind13t2 | ASG | t2 for logic output 13(t) | E | |
| TmMod14 | ENG | Timer mode for logic output 14(t) | E | |
| Ind14t1 | ASG | t1 for logic output 14(t) | E | |
| Ind14t2 | ASG | t2 for logic output 14(t) | E | |
| TmMod15 | ENG | Timer mode for logic output 15(t) | E | |
| Ind15t1 | ASG | t1 for logic output 15(t) | E | |
| Ind15t2 | ASG | t2 for logic output 15(t) | E | |
| TmMod16 | ENG | Timer mode for logic output 16(t) | E | |
| Ind16t1 | ASG | t1 for logic output 16(t) | E | |
| Ind16t2 | ASG | t2 for logic output 16(t) | E | |
| TmMod17 | ENG | Timer mode for logic output 17(t) | E | |
| Ind17t1 | ASG | t1 for logic output 17(t) | E | |

| XXXX class | | | | |
|------------------|-------------------|-----------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Ind17t2 | ASG | t2 for logic output 17(t) | E | |
| TmMod18 | ENG | Timer mode for logic output 18(t) | E | |
| Ind18t1 | ASG | t1 for logic output 18(t) | E | |
| Ind18t2 | ASG | t2 for logic output 18(t) | E | |
| TmMod19 | ENG | Timer mode for logic output 19(t) | E | |
| Ind19t1 | ASG | t1 for logic output 19(t) | E | |
| Ind19t2 | ASG | t2 for logic output 19(t) | E | |
| TmMod20 | ENG | Timer mode for logic output 20(t) | E | |
| Ind20t1 | ASG | t1 for logic output 20(t) | E | |
| Ind20t2 | ASG | t2 for logic output 20(t) | E | |

LN Type: SE_GGIO_AR_PowerLogicP5FUW_V002

Description: Generic process I/O

LN Class: GGIO

| GGIO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ARGGIO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Ind1 | SPS | AR1 final trip | O | |
| Ind2 | SPS | AR2 final trip | O | |
| Ind3 | SPS | AR3 final trip | O | |
| Ind4 | SPS | AR4 final trip | O | |
| Ind5 | SPS | AR Direct final trip | O | |
| Ind6 | SPS | AR request 1 | O | |
| Ind7 | SPS | AR request 2 | O | |
| Ind8 | SPS | AR request 3 | O | |
| Ind9 | SPS | AR request 4 | O | |
| Ind10 | SPS | AR request 5 | O | |
| Ind11 | SPS | AR shot 1 | O | |
| Ind12 | SPS | AR shot 2 | O | |
| Ind13 | SPS | AR shot 3 | O | |
| Ind14 | SPS | AR shot 4 | O | |
| Ind15 | SPS | AR shot 5 | O | |

| GGIO class | | | | |
|------------------|-------------------|----------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Settings | | | | |
| FunEna | SPG | Enable Auto-recloser | E | |

LN Type: SE_GGIO_TCBWA_PowerLogicP5T_V001

Description: Generic process I/O

LN Class: GGIO

| GGIO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TCBWGGIO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Ind1 | SPS | Alarm 1 signal | O | |
| Ind2 | SPS | Alarm 2 signal | O | |
| Alm1PhsA | INS | Alarm 1 of Phase A | E | |
| Alm1PhsB | INS | Alarm 1 of Phase B | E | |
| Alm1PhsC | INS | Alarm 1 of Phase C | E | |
| Alm2PhsA | INS | Alarm 2 of Phase A | E | |
| Alm2PhsB | INS | Alarm 2 of Phase B | E | |
| Alm2PhsC | INS | Alarm 2 of Phase C | E | |
| CTIn | ENS | CT input | E | |
| Settings | | | | |
| FunEna | SPG | Enable CB Monitoring | E | |
| CBOpenCnt | ING | CB open counter | E | |
| RackOutCnt | ING | Rack out counter | E | |
| TripCnt | ING | Protection trip counter | E | |
| AlmLev1 | ASG | Alarm level 1 | E | |
| AlmLev2 | ASG | Alarm level 2 | E | |
| LimOpNum1 | ASG | Limit for operate left 1 | E | |
| LimOpNum2 | ASG | Limit for operate left 2 | E | |

LN Type: SE_MMXU_VECA_PowerLogicP5FMU_VSI_V003

Description: Measurement

LN Class: MMXU

| MMXU class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5VECAMMXU1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Measured values | | | | |
| Hz | MV | Frequency | O | |
| A | WYE | Phase currents | O | |
| AvAPhs | MV | 3ph average current | O | |
| Iovs | WYE | IN.meas.sens | E | |
| Settings | | | | |
| AvWin | ENG | Average current window | E | |

LN Type: SE_PDIF_TREF_PowerLogicP5T_V001

Description: Differential

LN Class: PDIF

| PDIF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TREFPDIF1 P5TREFPDIF2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | C1 | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Measured values | | | | |
| ClcI0 | CMV | Neutral current IN | E | |
| MeasI0 | CMV | Ground current IG | E | |
| DifA | MV | Differential current Id | E | |
| BiasA | MV | Bias current Ib | E | |
| Settings | | | | |
| FunEna | SPG | Enable REF> | E | |
| OpDITmms | ING | Operate delay | O | |
| OpMode | ENG | Operating mode | E | |

| PDIF class | | | | |
|------------------|-------------------|--------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| DifALoSet | ASG | Low set Id | E | |
| DifAHiSet | ASG | High set Id | E | |
| DifACts | ASG | CTS low set Id | E | |
| MinI0 | ASG | Min measured IG | E | |
| Slp1 | ASG | Slope k | E | |
| BiasASlp2 | ASG | Bias current Ib | E | |
| Slp2 | ASG | Slope k | E | |
| HiSetMod | SPG | High set mode | E | |
| CtsOpMod | ENG | CTS operating mode | E | |
| CTIn | ENC | CT input | E | |

LN Type: SE_PDOP_REVP_PowerLogicP5FM_V002

Description: Directional overpower

LN Class: PDOP

| PDOP class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5REVPPDOP1 P5REVPPDOP2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable P< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PDOP_EF_PowerLogicP5FM_V004

Description: Directional overpower

LN Class: PDOP

| PDOP class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5EFPDOP1 P5EFPDOP2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |

| PDOP class | | | | |
|---------------------------|-------------------|---------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable INVN> | E | |
| DirMode | ENG | Direction mode | E | |
| StrVal | ASG | Pick-up value | O | |
| VnStrVal | ASG | VN pick-up value | E | |
| SctrStrVal | ASG | Pick up sector size | E | |
| OpDITms | ASG | Operate delay | E | |
| SolMod | SPG | SOL status | E | |
| SolOpDITms | ASG | SOL operate delay | E | |
| MemMod | ENG | Memory mode | E | |
| MmVnStrVal | ASG | VN memory value | E | |
| MemTms | ASG | Memory time | E | |
| RsDITmms | ING | Reset delay | O | |
| EvVN | ENG | Evaluation VN | E | |

LN Type: SE_PFRC_DFDT_PowerLogicP5FVW_V004

Description: Rate of change of frequency

LN Class: PFRC

| PFRC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5DFDTPFRC1...9 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable df/dt> | E | |
| StrVal | ASG | Pick-up value | O | |
| BlkVal | ASG | df/dt blocking | O | |

| PFRC class | | | | |
|------------------|-------------------|-----------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| OpDITmms | ING | Operate delay | O | |
| RsDITmms | ING | Reset delay | O | |
| DirMode | ENG | Direction mode | E | |
| OpMode | ENG | Operating Mode | E | |
| HzStrVal | ASG | Frequency threshold | E | |
| MeasWinTms | ASG | Meas. time window | E | |
| UVStrVal | ASG | Undervoltage blocking | E | |

LN Type: SE_PIOC_CBFP_PowerLogicP5FMUW_V002

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CBFPPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable CB fail | E | |
| NeutStrVal | ASG | IN< primary | E | |
| PhsStrVal | ASG | I< primary | E | |
| Tm1DITms | ASG | Timer1 operate delay | E | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |
| Tm2DITms | ASG | Timer2 operate delay | E | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_PIOC_CBFP_PowerLogicP5V_V002

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CBFPPIOC2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |

| PIOC class | | | | |
|---------------------------|-------------------|----------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Start signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable CB fail | E | |
| Tm1DITms | ASG | Timer1 operate delay | E | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |
| Tm2DITms | ASG | Timer2 operate delay | E | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_PIOC_CBFP_PowerLogicP5FMUW_VSI_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CBFPPIOC3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable CB fail | E | |
| NeutStrVal | ASG | IN< primary | E | |
| PhsStrVal | ASG | I< primary | E | |
| IovsStrVal | ASG | IN.sens< primary | E | |
| Tm1DITms | ASG | Timer1 operate delay | E | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |
| Tm2DITms | ASG | Timer2 operate delay | E | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_PIOC_ARCM_PowerLogicP5FMT_ARC_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ARCMPIOC1...8 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Arc stage 1 enabled | E | |
| MinOpTmms | ING | Min. hold time [x1ms] | E | |
| OpDITmms | ING | Trip X delay [x1ms] | E | |
| OpMode | ENG | Stage X Mode | E | |

LN Type: SE_PIOC_TIARC_PowerLogicP5T_ARC_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5IARCPIOC3 P5IARCPIOC4 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| StrVal | ASG | pick-up value | O | |
| CTIn | ENG | CT input | E | |

LN Type: SE_PIOC_CLP_PowerLogicP5FMUW_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CLPPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable CLPU | E | |
| Idl | ASG | Idle current | E | |
| StrVal | ASG | Pickup | O | |
| DeadTms | ASG | CLPU dead time | E | |
| MaxTms | ASG | CLPU time delay | E | |

LN Type: SE_PIOC_SOL_PowerLogicP5FMUWT_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SOLPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Oprt2 | ACT | SOL trip signal | E | |
| Settings | | | | |
| FunEna | SPG | Enable for SOL | E | |
| SigNum | ENG | Number of SOL signals used | E | |
| CbClrTms | ASG | CB trip clearing time | E | |

LN Type: SE_PIOC_SOTF_PowerLogicP5FMUW_V001

Description: Instantaneous overcurrent

LN Class: PIOC

| PIOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SOTFPIOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for SOTF | E | |
| StrVal | ASG | Pick-up value | O | |
| DetDITms | ASG | Dead line detection delay | E | |
| ActTmrTms | ASG | SOTF active Timer | E | |

LN Type: SE_PMRI_MOTFST_PowerLogicP5MUW_V004

Description: Motor restart inhibition

LN Class: PMRI

| PMRI class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5FSTPMRI1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Op | ACT | Trip signal | O | |
| StrInh | SPS | Start inhibit signal | O | |
| StrInhTmm | INS | Restart inhibition time | O | |
| Settings | | | | |
| MaxWrmStr | ING | Max motor Hot starts | O | |
| MinStrTmm | ASG | Min time between motor starts | E | |
| HotStsLmt | ASG | Hot Status Limit | E | |
| FunEna | SPG | Enable N> | E | |
| MaxCldStr | ING | Max motor cold starts | E | |
| RefPrdTmm | ASG | Reference period | E | |

LN Type: SE_PMSS_STAL_PowerLogicP5MUW_V001

Description: Motor starting time supervision**LN Class:** PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5STALPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| SetA | ASG | Nom motor start current | O | |
| SetTms | ING | Motor start time | O | |
| MotStr | ASG | Motor start detection current | O | |
| FunEna | SPG | Enable Ist> | E | |
| TmACrv | CURVE | Operating curve | E | |

LN Type: SE_PMSS_MSPD12I4O_PowerLogicP5MUW_V001**Description:** Motor starting time supervision**LN Class:** PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MSPDPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| ZerSpdSt | SPS | Zero Speed | E | |
| MotSpd | INS | Motor Speed | E | |
| Settings | | | | |
| FunEna | SPG | Enable motor speed detection | E | |
| SpdIn | ENG | Motor speed input | E | |
| RtdMotSpd | ASG | Rated motor speed Ω_n | E | |

| PMSS class | | | | |
|------------------|-------------------|-------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PlsRot | ASG | Pulse per rotation R | E | |
| ZerSpdTms | ASG | Zero speed confirm time | E | |

LN Type: SE_PMSS_MABS_12I4O_PowerLogicP5MUW_V001

Description: Motor starting time supervision

LN Class: PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MABSPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| AbsAlm | SPS | AntiBkSpin Alarm | E | |
| Settings | | | | |
| FunEna | SPG | Enable for Anti-backspin | E | |
| MvMod | SPG | Measured zero speed mode | E | |
| SwMod | SPG | Zero speed external mode | E | |
| AbsTms | ASG | Anti-backspin time | E | |

LN Type: SE_PMSS_51LR_PowerLogicP5MUW_V001

Description: Motor starting time supervision

LN Class: PMSS

| PMSS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5LRPMSS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | O | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |

| PMSS class | | | | |
|------------------|-------------------|-----------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| SetA | ASG | Pick-up value | O | |
| FunEna | SPG | Enable for IIR> | E | |
| DITyp | ENG | Operating curve | E | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PTEF_IO_PowerLogicP5F_V003**Description:** Transient earth fault**LN Class:** PTEF

| PTEF class | | | | |
|-----------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5IOIOPTEF1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | C | |
| Op | ACT | Trip signal | C | |
| Settings | | | | |
| FunEna | SPG | Enable IN int> | E | |
| DirMode | ENG | Direction mode | E | |
| GndStr | ASG | VN pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| MinPeak | ING | Min number of peaks | E | |
| RsDITms | ASG | Reset delay | E | |
| IntmtTms | ASG | Intermittent time | E | |
| Condition C: at least one of the two status information (Str, Op) shall be used. | | | | |

LN Type: SE_PTOC_STRVAL_PowerLogicP5FMUW_V002**Description:** Time overcurrent**LN Class:** PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5HAR5PTOC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |

| PTOC class | | | | |
|---------------------------|-------------------|---------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| FunEna | SPG | Enable lh5>1 | E | |

LN Type: SE_PTOC_TUIBC_PowerLogicP5T_V001

Description: Time overcurrent

LN Class: PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UIBCPTOC1 P5UIBCPTOC2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable I2/I1> | E | |
| StrVal | ASG | Pick-up value K2 | O | |
| OpDITms | ASG | Operate delay | E | |
| CTIn | ENG | CT input | E | |

LN Type: SE_PTOC_NORMAL_PowerLogicP5FMUW_V003

Description: Time overcurrent

LN Class: PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5OCP TOC1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |

| PTOC class | | | | |
|---------------------------|-------------------|-----------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable I> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpCrv | ENG | Operating curve | E | |
| OpDITms | ASG | Operate delay | E | |
| TmMult | ASG | TMS | O | |
| RsTyp | ENG | Reset curve | E | |
| RsDITms | ASG | Reset delay | E | |
| InrushStat | SPG | Inrush blocking | E | |
| SolStat | SPG | SOL status | E | |
| SolOpDTms | ASG | SOL operate delay | E | |
| SolTmMult | ASG | SOL TMS | E | |
| ClpStat | SPG | Dynamic mode | E | |
| ClpStrVal | ASG | Dynamic threshold | E | |
| ClpOpDTms | ASG | Dynamic operate delay | E | |
| ClpTmMult | ASG | Dynamic TMS | E | |
| DirMode | ENG | Direction mode | E | |
| CharAng | ASG | Characteristic angle | E | |
| VtsBlk | ENG | VTS blocking | E | |
| TripLogic | ENG | Tripping logic | E | |
| DtAddTmms | ING | DT adder | E | |
| MinOpTmms | ING | Minimum operate delay | O | |

LN Type: SE_PTOC_DEF_PowerLogicP5FMW_V003**Description:** Time overcurrent**LN Class:** PTOC

| PTOC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5DEFPTOC1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |

| PTOC class | | | | |
|---------------------------|-------------------|-------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable IN> | E | |
| DirMode | ENG | Direction mode | E | |
| StrVal | ASG | IN pick-up value | O | |
| UoStrVal | ASG | VN pick-up value | E | |
| AngOffset | ASG | Angle offset | E | |
| SctrStrVal | ASG | Pick up sector size | E | |
| OpCrv | ENG | Operating curve | E | |
| OpDITms | ASG | Operate delay | E | |
| TmMult | ASG | TMS | O | |
| RsTyp | ENG | Reset curve | E | |
| RsDITms | ASG | Reset delay | E | |
| DtAddTmms | ING | DT adder | E | |
| MinOpTmms | ING | Minimum operate delay | O | |
| IoIn | ENG | IN input | E | |
| UoInMod | ENG | VN input mode | E | |
| VtsBlk | ENG | VTS blocking | E | |
| InrushStat | SPG | Inrush blocking | E | |
| SolStat | SPG | SOL status | E | |
| SolOpDTms | ASG | SOL operate delay | E | |
| SolTmMult | ASG | SOL TMS | E | |
| ClpStat | SPG | Dynamic mode | E | |
| ClpStrVal | ASG | Dynamic threshold | E | |
| ClpOpDTms | ASG | Dynamic operate delay | E | |
| ClpTmMult | ASG | Dynamic TMS | E | |
| EnaFltPh | SPG | Enable faulty phase detection | E | |
| FltPhLim | ASG | Phase currents change limit | E | |

LN Type: SE_PTOF_OFUF_PowerLogicP5FMVW_V00V003

Description: Overfrequency

LN Class: PTOF

| PTOF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5OFUFPTOF1 P5OFUFPTOF2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |

| PTOF class | | | | |
|---------------------------|-------------------|------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Mod | ENC | Mode | M | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for f> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| BlkVal | ASG | Under voltage blocking | E | |

LN Type: SE_PTOV_PowerLogicP5FMVW_V003

Description: Overvoltage

LN Class: PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5OVPTOV1 P5OVPTOV2 P5OVPTOV3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable V> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| MeasMod | ENG | Measurement mode | E | |
| DITyp | ENG | Operating curve | E | |
| TripLogic | ENG | Tripping logic | E | |
| RsDITms | ASG | Reset delay | E | |
| Hys | ASG | Hysteresis | E | |

LN Type: SE_PTOV_UO_PowerLogicP5FMVWT_V002

Description: Overvoltage

LN Class: PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UOPTOV1 P5UOPTOV2 P5UOPTOV3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable VN> | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| RsDITmms | ING | Reset delay | O | |
| EvVN | ENG | Evaluation VN | E | |

LN Type: SE_PTOV_NEG_PowerLogicP5FMVW_V001

Description: Overvoltage

LN Class: PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5NEGPTOV1 P5NEGPTOV2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | M | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable V2> | E | |
| OpMode | ENG | VTs operating mode | E | |
| StrVal | ASG | Pick-up value | O | |
| DITyp | ENG | Operating curve | E | |
| OpDITms | ASG | Operate delay | E | |
| RsDITms | ASG | Reset delay | E | |

LN Type: SE_PTOV_CAP_PowerLogicP5F_V001**Description:** Overvoltage**LN Class:** PTOV

| PTOV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CAPPTOV1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | O | |
| Settings | | | | |
| FunEna | SPG | Enable Vcap> | E | |
| StrVal | ASG | Pick-up value | O | |
| CapOfPhs | ASG | Ph-G capacitance of one phase | E | |
| RatUcLn | ASG | Rated Ph-G voltage Vcap | E | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PTTR_TTHF_PowerLogicP5T_V001**Description:** Thermal overload**LN Class:** PTTR

| PTTR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5THFPTTR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | C1 | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| AlmThm | SPS | Start state | O | |
| Settings | | | | |
| TmpMax | ASG | Max object temperature | O | |
| AlmVal | ASG | Thermal alarm value | O | |
| FunEna | SPG | Enable 49F> | E | |

| PTTR class | | | | |
|------------------|-------------------|-----------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| BasicCur | ASG | Basic current setting | E | |
| FactorK | ASG | Max permissive I factor | E | |
| HeaConsTmm | ASG | Heating time constant | E | |
| RsvVal | ASG | Reserve time thermal alarm | E | |
| TmpMod | ENG | Operating mode | E | |
| TmpNom | ASG | Nominal ambient temperature | E | |
| TmpAlrm | ASG | Alarm temperature | E | |
| TmpAmbMin | ASG | Min ambient temperature | E | |
| TmpAmbDft | ASG | Default ambient temperature | E | |
| CTIn | ENG | CT input | E | |

LN Type: SE_PTTR_THM_PowerLogicP5MU_V003

Description: Thermal overload

LN Class: PTTR

| PTTR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5THMPTR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Op | ACT | Trip signal | M | |
| AlmThm | SPS | Start state | O | |
| LodRsvTmm | INS | Load reserve to trip | E | |
| StrInhTmm | INS | Restart inhibit time due to thermal overload protection | E | |
| Measured values | | | | |
| ThmLev | MV | Thermal level | E | |
| Settings | | | | |
| TmpMax | ASG | Max object temperature | O | |
| AlmVal | ASG | Thermal alarm value | O | |
| FunEna | SPG | Enable 49M> | E | |
| BasicCur | ASG | Basic current setting | E | |
| FactorK | ASG | Max permissive I factor | E | |
| HeaConsTmm | ASG | Heating time constant | E | |
| ConsTmm | ASG | Time constant for motor starting | E | |
| CooConsTmm | ASG | Cooling time constant | E | |
| UnblFctr | ASG | Unbalance factor | E | |

| PTTR class | | | | |
|------------------|-------------------|-----------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| RsvVal | ASG | Reserve time thermal alarm | E | |
| TmpMod | ENG | Operating mode | E | |
| TmpNom | ASG | Nominal ambient temperature | E | |
| TmpAlrm | ASG | Alarm temperature | E | |
| TmpAmbMin | ASG | Min ambient temperature | E | |
| TmpAmbDft | ASG | Default ambient temperature | E | |

LN Type: SE_PTUC_UC_PowerLogicP5FMUW_V003

Description: Undercurrent

LN Class: PTUC

| PTUC class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UCPTUC1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable I< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| BlkLim | ASG | I< block limit | E | |

LN Type: SE_PTUF_UF_PowerLogicP5FMVW_V003

Description: Underfrequency

LN Class: PTUF

| PTUF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UFPTUF1...8 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | M | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | M | |

| PTUF class | | | | |
|---------------------------|-------------------|------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| NamPlt | LPL | Name plate | M | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for f< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ING | Operate delay | O | |
| DfdtBlk | ASG | df/dt blocking | E | |
| BlkVal | ASG | Under voltage blocking | O | |

LN Type: SE_PTUV_UV_PowerLogicP5FMVW_V003

Description: Undervoltage

LN Class: PTUV

| PTUV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UVPTUV1 P5UVPTUV2 P5UVPTUV3 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable V< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |
| CBOpnBlk | SPG | CB open blocking | E | |
| MeasMod | ENG | Measurement mode | E | |
| DITyp | ENG | Operating curve | E | |
| TripLogic | ENG | Tripping logic | E | |
| RsDITms | ASG | Reset delay | E | |
| Hys | ASG | Hysteresis | E | |

LN Type: SE_PTUV_UVPS_PowerLogicP5MV_V002

Description: Undervoltage

LN Class: PTUV

| PTUV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UVPSPTUV1 P5UVPSPTUV2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | C1 | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable V1< | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PZSU_12I4O_PowerLogicP5MUW_V001

Description: Motor underspeed

LN Class: PZSU

| PZSU class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5MOTPZSU1 P5MOTPZSU2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable for Ω < | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITms | ASG | Operate delay | E | |

LN Type: SE_PHAR_TID_PowerLogicP5T_V001

Description: Harmonic restraint

LN Class: PHAR

| PHAR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TIDPHAR1 P5TIDPHAR2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| CTIn | ENS | CT input | E | |
| Settings | | | | |
| FunEna | SPG | Enable Inrush | E | |
| StrVal | ASG | Pickup for 2nd harmonic | E | |
| CurBlkVal | ASG | Max inrush current | E | |
| OpMod | ENG | Inrush operating mode | E | |

LN Type: SE_LLNO_PowerLogicP5_V004

Description: Logical node zero

LN Class: LLNO

| LLNO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| LLNO | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | INC | Mode | C1 | Status-only |
| Beh | INS | Behaviour | M | |
| Health | INS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Loc | SPS | Local control behaviour | O | |
| LocKey | SPS | Local operation for complete logical device | O | |
| ProAct | SPS | Protection active | E | |
| Controls | | | | |
| LEDRs | SPC | LED reset | O | |
| LocSta | SPC | Switching authority at station level | O | |
| AIIRs | SPC | General reset (Release latches) | E | |
| Settings | | | | |
| GoEnaCB1 | SPG | GOOSE Enable CB1 | E | |
| GoEnaCB2 | SPG | GOOSE Enable CB2 | E | |

| LLN0 class | | | | |
|------------------|-------------------|--------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| GoEnaCB3 | SPG | GOOSE Enable CB3 | E | |
| GoEnaCB4 | SPG | GOOSE Enable CB4 | E | |
| MltLev | SPG | Select mode of authority for local control | O | |

LN Type: SE_LTMS_BASIC_PowerLogicP5_V001

Description: Time master supervision

LN Class: LTMS

| LTMS class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SNTPLTMS1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| TmSrc | VSS | Current time source | M | |
| TmSrcTyp | ENS | Type of the clock source | E | |
| Controls | | | | |
| | | | | |
| Settings | | | | |
| TmSrcSet1 | VSG | SNTP server | O | |
| TmSrcSet2 | VSG | SNTP server (Backup) | O | |

LN Type: SE_SCBR_BASIC_PowerLogicP5FMUW_V001

Description: Circuit breaker supervision

LN Class: SCBR

| SCBR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SCBR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| ColOpn | SPS | CB opening | M | |

| SCBR class | | | | |
|------------------------|-------------------|------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| RmnAlmOp | SPS | CB Monitoring alarm 2 signal | O | |
| RmnWrnOp | SPS | CB Monitoring alarm 1 signal | O | |
| Measured values | | | | |
| OpTmOpn | MV | Operation time open | O | |
| OpTmCls | MV | Operation time close | O | |
| Controls | | | | |
| OpCntRs | INC | Resettable operation counter | O | |
| Settings | | | | |
| AbrAlmLev | ASG | Alarm level 2 | O | |
| AbrWrnLev | ASG | Alarm level 1 | O | |
| RmnAlmNum | ING | Limit for operation left 2 | O | |
| RmnWrnNum | ING | Limit for operation left 1 | O | |

LN Type: SE_SOPM_BASIC_PowerLogicP5FMUW_V001

Description: Supervision of operating mechanism

LN Class: SOPM

| SOPM class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SOPM1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Measured values | | | | |
| MotTm | MV | Spring charging time | O | |

LN Type: SE_SSWI_BASIC_PowerLogicP5_V001

Description: Circuit switch supervision

LN Class: SSWI

| SOPM class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5SSWI1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |

| SOPM class | | | | |
|------------------------|-------------------|------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| NamPlt | LPL | Name plate | C1 | |
| Measured values | | | | |
| OpCntRs | INC | Resettable operation counter | O | |

LN Type: SE_XCBR_BASIC_PowerLogicP5FMUW_V001

Description: Circuit breaker

LN Class: XCBR

| XCBR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5XCBR1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Loc | SPS | Local control behaviour | M | |
| OpCnt | INS | Operation counter | M | |
| CBOpCap | ENS | Circuit breaker operating capability | O | |
| Controls | | | | |
| Pos | DPC | Switch position | M | |
| BlkOpn | SPC | Block opening | M | |
| BlkCls | SPC | Block closing | M | |
| LocSta | SPC | Switching authority at station level | O | |
| Settings | | | | |
| ARtg | ASG | Rated Current | E | |

LN Type: SE_XSWI_BASIC_PowerLogicP5_V002

Description: Circuit switch

LN Class: XSWI

| XCBR class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5XSWI1...6 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |

| XCBR class | | | | |
|---------------------------|-------------------|--------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Loc | SPS | Local control behaviour | M | |
| OpCnt | INS | Operation counter | M | |
| SwTyp | ENS | Switch type | M | |
| SwOpCap | ENS | Switch operating capability | O | |
| Controls | | | | |
| Pos | DPC | Switch position | M | |
| BlkOpn | SPC | Block opening | M | |
| BlkCls | SPC | Block closing | M | |
| LocSta | SPC | Switching authority at station level | O | |

LN Type: SE_PVPH_CRV_PowerLogicP5T_V001

Description: Volts per Hz

LN Class: GGIO

| PVPH class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVFPVPH2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Str | ACD | Start signal | M | |
| Op | ACT | Trip signal | M | |
| Settings | | | | |
| FunEna | SPG | Enable V/f > 1 | E | |
| StrVal | ASG | Pick-up value | O | |
| OpDITmms | ING | Operate delay | O | |
| RsDITmms | ING | Reset delay | O | |
| OpCrv | ENG | Operating curve | E | |

LN Type: SE_RFLO_FC_PowerLogicP5FMUWT_V002

Description: Fault locator

LN Class: RFLO

| RFLO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5FCRFLO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| ClrTmms | INS | Interval between global trip and CB open | E | |
| Measured values | | | | |
| FitZ | CMV | Not used | M | |
| FitDiskm | MV | Not used | O | |
| FitA | WYE | Fault current | E | |
| Settings | | | | |
| FitValTyp | ENG | Define the calculation moment or method of the measured values | E | |

LN Type: SE_RFLO_FV_PowerLogicP5FMVW_V002**Description:** Fault locator**LN Class:** RFLO

| RFLO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5FVRFLO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| ClrTmms | INS | Interval between global trip and CB open | E | |
| Measured values | | | | |
| FitZ | CMV | Not used | M | |
| FitDiskm | MV | Not used | O | |
| FitPhV | WYE | Fault voltage | E | |
| Settings | | | | |
| FitValTyp | ENG | Define the calculation moment or method of the measured values | E | |

LN Type: SE_RFLO_HZ_PowerLogicP5_V002

Description: Fault locator
LN Class: RFLO

| RFLO class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5FHZRFLO1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| ClrTmms | INS | Interval between global trip and CB open | E | |
| Measured values | | | | |
| FltZ | CMV | Not used | M | |
| FltDiskm | MV | Not used | O | |
| FltHz | MV | Fault frequency | E | |
| Settings | | | | |
| FltValTyp | ENG | Define the calculation moment or method of the measured values | E | |

LN Type: SE_RSYN_PowerLogicP5FV_V002
Description: Synchronism-check
LN Class: RSYN

| RSYN class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5RSYN1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| Rel | SPS | Release | M | |
| Anglnd | SPS | Angle difference indicator | O | |
| Controls | | | | |
| SynPrg | SPC | Start and stop synchrocheck progress | O | |
| Settings | | | | |
| FunEna | SPG | Enable Sync check 1 | E | |
| DeaVal | ASG | Vdead limit setting | E | |

| RSYN class | | | | |
|------------------|-------------------|------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| LivVal | ASG | Vlive limit setting | E | |
| DifHz | ASG | Frequency difference | O | |
| DifV | ASG | Voltage difference | O | |
| DifAng | ASG | Phase angle difference | O | |
| RqstTms | ASG | Request timeout | E | |

LN Type: SE_RBRF_CBFP_PowerLogicP5T_V001**Description:** Breaker failure**LN Class:** RBRF

| RBRF class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TCBFRBRF1 P5TCBFRBRF2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| OpIn | ACT | Trip 1 signal | C | |
| OpEx | ACT | Trip 2 signal | C | |
| Settings | | | | |
| FunEna | SPG | Enable CB2 fail | E | |
| NeutStrVal | ASG | IN< primary | E | |
| PhsStrVal | ASG | I< primary | E | |
| FailTmms | ING | Timer1 operate delay | O | |
| Tm1Ena | SPG | Enable CBF timer1 | E | |
| TPTrTmms | ING | Timer2 operate delay | O | |
| Tm2Ena | SPG | Enable CBF timer2 | E | |

LN Type: SE_MMXN_V_PowerLogicP5T_V001**Description:** Non-phase-related measurement**LN Class:** MMXN

| MMXN class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TVOLMMXN1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |

| MMXN class | | | | |
|------------------------|-------------------|-------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Measured values | | | | |
| Hz | MV | Frequency | O | |
| VolUd | CMV | Voltage V | E | |

LN Type: SE_MMET_ENV_PowerLogicP5_V001

Description: Meteorological information

LN Class: MMET

| MMET class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ENVMMET1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| MaintNxt | VSS | Next Maintenance Date | E | |
| SevDeg1 | SPS | Severity degree 1 event | E | |
| SevDeg2 | SPS | Severity degree 2 event | E | |
| SevDeg3Alm | SPS | Severity degree 3 event | E | |
| TmpAlm | SPS | High temperature alarm | O | |
| HumAlm | SPS | High humidity alarm | E | |
| MaintDateAlm | SPS | Maintenance date reached or overpassed alarm | E | |
| MaintDateL2 | SPS | Next maintenance date less than 2 months event | E | |
| Measured values | | | | |
| EnvTmp | MV | Temperature of environment | O | |
| EnvHum | MV | Humidity of environment | O | |
| ColdPtTmp | MV | Cold Point Temperature | E | |
| CdsLev | MV | Condensation Level | E | |
| MaintFact | MV | Reduction factor for maintenance period | E | |
| CndAccm1 | MV | Service time under severity degree 0 | E | |
| CndAccm2 | MV | Service time under severity degree 1 | E | |
| CndAccm3 | MV | Service time under severity degree 2 | E | |
| CndAccm4 | MV | Service time under severity degree 3 | E | |

| MMET class | | | | |
|------------------|-------------------|-------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| Settings | | | | |
| FunEna | SPG | Enable for Environmental monitoring | E | |
| MaintPer | ASG | Maintenance period | E | |
| MaintLast | VSG | Last Maintenance Date | E | |
| HumMax | ASG | Humidity Threshold | E | |
| TmpMax | ASG | Temperature Threshold | O | |

LN Type: SE_MENV_ENV_PowerLogicP5_V001

Description: Environmental information

LN Class: MENV

| MENV class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5ENVMENV1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| PollLev | ENG | The pollution level of environment | E | |

LN Type: SE_TTMP_THM_PowerLogicP5_V001

Description: Temperature sensor

LN Class: TTMP

| TTMP class | | | | |
|----------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5UPCBTTMP1 P5LOCBTTMP1 P5BUS1TTMP1 P5BUS2TTMP1 P5CAB1TTMP1 P5CAB2TTMP1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Settings | | | | |

| TTMP class | | | | |
|------------------|-------------------|-----------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PhsASt | ENS | Phase A sensor status | E | |
| PhsBSt | ENS | Phase B sensor status | E | |
| PhsCSt | ENS | Phase C sensor status | E | |

LN Type: SE_STMP_THM_PowerLogicP5_V001

Description: Temperature supervision

LN Class: STMP

| STMP class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5THMSTMP1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| AUpCBRdAlm | SPS | CB upper arm phase A temperature red alarm | E | |
| BUpCBRdAlm | SPS | CB upper arm phase B temperature red alarm | E | |
| CUpCBRdAlm | SPS | CB upper arm phase C temperature red alarm | E | |
| ALoCBRdAlm | SPS | CB lower arm phase A temperature red alarm | E | |
| BLoCBRdAlm | SPS | CB lower arm phase B temperature red alarm | E | |
| CLoCBRdAlm | SPS | CB lower arm phase C temperature red alarm | E | |
| ACab1RdAlm | SPS | Cable connection1 phase A temperature red alarm | E | |
| BCab1RdAlm | SPS | Cable connection1 phase B temperature red alarm | E | |
| CCab1RdAlm | SPS | Cable connection1 phase C temperature red alarm | E | |
| ACab2RdAlm | SPS | Cable connection2 phase A temperature red alarm | E | |
| BCab2RdAlm | SPS | Cable connection2 phase B temperature red alarm | E | |
| CCab2RdAlm | SPS | Cable connection2 phase C temperature red alarm | E | |
| ABus1RdAlm | SPS | Busbar connection1 phase A temperature red alarm | E | |
| BBus1RdAlm | SPS | Busbar connection1 phase B temperature red alarm | E | |
| CBus1RdAlm | SPS | Busbar connection1 phase C temperature red alarm | E | |

| STMP class | | | | |
|------------------|-------------------|-----------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| ABus2RdAlm | SPS | Busbar connection2 phase A temperature red alarm | E | |
| BBus2RdAlm | SPS | Busbar connection2 phase B temperature red alarm | E | |
| CBus2RdAlm | SPS | Busbar connection2 phase C temperature red alarm | E | |
| AUpCBOOrAlm | SPS | CB upper arm phase A temperature orange alarm | E | |
| BUpCBOOrAlm | SPS | CB upper arm phase B temperature orange alarm | E | |
| CUpCBOOrAlm | SPS | CB upper arm phase C temperature orange alarm | E | |
| ALoCBOOrAlm | SPS | CB lower arm phase A temperature orange alarm | E | |
| BLoCBOOrAlm | SPS | CB lower arm phase B temperature orange alarm | E | |
| CLoCBOOrAlm | SPS | CB lower arm phase C temperature orange alarm | E | |
| ACab1OrAlm | SPS | Cable connection1 phase A temperature orange alarm | E | |
| BCab1OrAlm | SPS | Cable connection1 phase B temperature orange alarm | E | |
| CCab1OrAlm | SPS | Cable connection1 phase C temperature orange alarm | E | |
| ACab2OrAlm | SPS | Cable connection2 phase A temperature orange alarm | E | |
| BCab2OrAlm | SPS | Cable connection2 phase B temperature orange alarm | E | |
| CCab2OrAlm | SPS | Cable connection2 phase C temperature orange alarm | E | |
| ABus1OrAlm | SPS | Busbar connection1 phase A temperature orange alarm | E | |
| BBus1OrAlm | SPS | Busbar connection1 phase B temperature orange alarm | E | |
| CBus1OrAlm | SPS | Busbar connection1 phase C temperature orange alarm | E | |
| ABus2OrAlm | SPS | Busbar connection2 phase A temperature orange alarm | E | |
| BBus2OrAlm | SPS | Busbar connection2 phase B temperature orange alarm | E | |
| CBus2OrAlm | SPS | Busbar connection2 phase C temperature orange alarm | E | |
| UpCBOOrAlm | SPS | CB upper arm temperature orange alarm | E | |
| LoCBOOrAlm | SPS | CB lower arm temperature orange alarm | E | |
| Cab1OrAlm | SPS | Cable connection1 temperature orange alarm | E | |
| Cab2OrAlm | SPS | Cable connection2 temperature orange alarm | E | |
| Bus1OrAlm | SPS | Busbar connection1 temperature orange alarm | E | |
| Bus2OrAlm | SPS | Busbar connection2 temperature orange alarm | E | |

| STMP class | | | | |
|------------------------|-------------------|-------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PhsAUpCBWrn | SPS | CB upper arm phase A temperature overpass | E | |
| PhsBUpCBWrn | SPS | CB upper arm phase B temperature overpass | E | |
| PhsCUpCBWrn | SPS | CB upper arm phase C temperature overpass | E | |
| PhsALoCBWrn | SPS | CB lower arm phase A temperature overpass | E | |
| PhsBLoCBWrn | SPS | CB lower arm phase B temperature overpass | E | |
| PhsCLoCBWrn | SPS | CB lower arm phase C temperature overpass | E | |
| PhsACab1Wrn | SPS | Cable connection1 phase A temperature overpass | E | |
| PhsBCab1Wrn | SPS | Cable connection1 phase B temperature overpass | E | |
| PhsCCab1Wrn | SPS | Cable connection1 phase C temperature overpass | E | |
| PhsACab2Wrn | SPS | Cable connection2 phase A temperature overpass | E | |
| PhsBCab2Wrn | SPS | Cable connection2 phase B temperature overpass | E | |
| PhsCCab2Wrn | SPS | Cable connection2 phase C temperature overpass | E | |
| PhsABus1Wrn | SPS | Busbar connection1 phase A temperature overpass | E | |
| PhsBBus1Wrn | SPS | Busbar connection1 phase B temperature overpass | E | |
| PhsCBus1Wrn | SPS | Busbar connection1 phase C temperature overpass | E | |
| PhsABus2Wrn | SPS | Busbar connection2 phase A temperature overpass | E | |
| PhsBBus2Wrn | SPS | Busbar connection2 phase B temperature overpass | E | |
| PhsCBus2Wrn | SPS | Busbar connection2 phase C temperature overpass | E | |
| UpCBWrn | SPS | CB upper arm temperature overpass | E | |
| LoCBWrn | SPS | CB lower arm temperature overpass | E | |
| Cab1Wrn | SPS | Cable connection1 temperature overpass | E | |
| Cab2Wrn | SPS | Cable connection2 temperature overpass | E | |
| Bus1Wrn | SPS | Busbar connection1 temperature overpass | E | |
| Bus2Wrn | SPS | Busbar connection2 temperature overpass | E | |
| Measured values | | | | |
| PhsAUpCBTmp | MV | CB upper arm Phase A temperature | E | |
| PhsBUpCBTmp | MV | CB upper arm Phase B temperature | E | |

| STMP class | | | | |
|------------------|-------------------|----------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| PhsCUpCBTmp | MV | CB upper arm Phase C temperature | E | |
| PhsALoCBTmp | MV | CB lower arm Phase A temperature | E | |
| PhsBLoCBTmp | MV | CB lower arm Phase B temperature | E | |
| PhsCLoCBTmp | MV | CB lower arm Phase C temperature | E | |
| PhsABus1Tmp | MV | Busbar connection1 Phase A temperature | E | |
| PhsBBus1Tmp | MV | Busbar connection1 Phase B temperature | E | |
| PhsCBus1Tmp | MV | Busbar connection1 Phase C temperature | E | |
| PhsABus2Tmp | MV | Busbar connection2 Phase A temperature | E | |
| PhsBBus2Tmp | MV | Busbar connection2 Phase B temperature | E | |
| PhsCBus2Tmp | MV | Busbar connection2 Phase C temperature | E | |
| PhsACab1Tmp | MV | Cable connection1 Phase A temperature | E | |
| PhsBCab1Tmp | MV | Cable connection1 Phase B temperature | E | |
| PhsCCab1Tmp | MV | Cable connection1 Phase C temperature | E | |
| PhsACab2Tmp | MV | Cable connection2 Phase A temperature | E | |
| PhsBCab2Tmp | MV | Cable connection2 Phase B temperature | E | |
| PhsCCab2Tmp | MV | Cable connection2 Phase C temperature | E | |
| CBHiTmp | MV | High threshold value for CB | E | |
| BusHiTmp | MV | High threshold value for busbar | E | |
| CabHiTmp | MV | High threshold value for cable | E | |
| CBLoTmp | MV | Low threshold value for CB | E | |
| CabLoTmp | MV | Low threshold value for cable | E | |
| Settings | | | | |
| FunEna | SPG | Enable for thermal monitoring | E | |
| ARtgCel | ASG | Rated current of compartment | E | |
| BusTmpMax | ASG | Maximum temperature rise of busbar | E | |
| CBTmpMax | ASG | Maximum temperature rise of CB | E | |
| CabTmpMax | ASG | Maximum temperature rise of Cable | E | |
| EnvTmpMax | ASG | Maximum ambient temperature | E | |
| RatDifTmp | ASG | Threshold ratio for phase Tmp discrepancy first event or alarm | E | |
| RatFixTmp | ASG | Threshold ratio for fix relative warming first event or alarm | E | |

| STMP class | | | | |
|------------------|-------------------|---------------------------------------------------------------|---------|---------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| RatSelfTmp | ASG | Threshold ratio for self-adapted warming first event or alarm | E | |
| ThmTm | ASG | Thermal time constant of the equipment | E | |
| ThmMode | ENG | Mode of thermal monitoring | E | |
| DifTmpBusVal | ASG | Temperature threshold of phase discrepancy for busbar | E | |
| DifTmpCBVal | ASG | Temperature threshold of phase discrepancy for CB | E | |
| DifTmpCabVal | ASG | Temperature threshold of phase discrepancy for Cable | E | |
| FixTmpBusVal | ASG | Temperature threshold of fix relative Tmp rise for busbar | E | |
| FixTmpCBVal | ASG | Temperature threshold of fix relative Tmp rise for CB | E | |
| FixTmpCabVal | ASG | Temperature threshold of fix relative Tmp rise for Cable | E | |

LN Type: SE_SIML_STD_PowerLogicP5T_V001

Description: Insulation medium supervision

LN Class: SIML

| SIML class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5TRFSIM1 P5TRFSIM2 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| TmpAlm | SPS | Oil temperature alarm | O | |
| GasInsAlm | SPS | Gas alarm | O | |
| GasInsTr | SPS | Gas trip | O | |
| GasFlwTr | SPS | Oil flow trip | O | |
| InsAlm | SPS | Insulation alarm | M | |
| InsLevMax | SPS | Oil at maximum level | O | |
| InsLevMin | SPS | Oil at minimum level | O | |
| Blk | SPS | Blocking signal | E | |
| Settings | | | | |
| FunEna | SPG | Enable for transformer monitoring | E | |

LN Type: SE_ITCI_BASIC_PowerLogicP5_V001

Description: Telecontrol interface

LN Class: ITCI

| ITCI class | | | | |
|----------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Data object name | Common data class | Explanation | M/O/C/E | Remarks |
| P5CTLITCI1 | | The name shall be composed of the class name, the LN-Prefix and LN-Instance-ID according to IEC 61850-7-2, Clause 22. | M | |
| Data Objects | | | | |
| Common Logical Node Information | | | | |
| Mod | ENC | Mode | C1 | Status-only |
| Beh | ENS | Behaviour | M | |
| Health | ENS | Health | C1 | |
| NamPlt | LPL | Name plate | C1 | |
| Status Information | | | | |
| LocStaKey | SPS | Local station level key | E | |
| Controls | | | | |
| LocSubst | SPC | Local control authority at station level | E | |

Enum types extensions

New Enum types

Enum type **ARCOpMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------------|---------|
| 0 | Light | |
| 1 | Light and current | |

Enum type **DefDirMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Undir | |
| 1 | Sector | |
| 2 | ResCap | |

Enum type **DocDirMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Dir_Backup | |
| 1 | Undir | |
| 2 | Dir | |

Enum type **OpCrvType** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 0_DT | |
| 1 | 1_IEC_SI | |
| 2 | 2_IEC_VI | |
| 3 | 3_IEC_EI | |

| | | |
|----|----------------|--|
| 4 | 4_IEC_LTI | |
| 5 | 5_IEC_UTI | |
| 6 | 6_UK_Rectifier | |
| 7 | 7_FR_STI | |
| 8 | 8_RI | |
| 9 | 9_IEEE_MI | |
| 10 | 10_IEEE_VI | |
| 11 | 11_IEEE_EI | |
| 12 | 12_STI_CO2 | |
| 13 | 13_LTI_CO5 | |
| 14 | 14_MI_CO7 | |
| 15 | 15_NI_CO8 | |
| 16 | 16_VI_CO9 | |
| 17 | 17_EI_CO11 | |
| 18 | 18_BPN | |
| 19 | 19_ANSI_NI | |
| 20 | 20_ANSI_STI | |
| 21 | 21_ANSI_LTI | |
| 22 | 22_Prg1 | |
| 23 | 23_Prg2 | |
| 24 | 24_Prg3 | |
| 25 | 25_IDMT | |

Enum type **RsTyp** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | RsTyp_DT | |
| 1 | RsTyp_IDMT | |
| 2 | RsTyp_Prg1 | |
| 3 | RsTyp_Prg2 | |
| 4 | RsTyp_Prg3 | |

Enum type **DITyp** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | DT | |
| 1 | NI | |
| 2 | VI | |
| 3 | EI | |
| 4 | LTI | |
| 5 | LTEI | |
| 6 | LTVI | |
| 7 | MI | |
| 8 | STI | |
| 9 | STEI | |
| 10 | CO8 | |

| | | |
|----|-------|--|
| 11 | RI | |
| 12 | RXIDG | |
| 13 | — | |

Enum type **NegOpMode** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | No_Action | |
| 1 | Blocking | |

Enum type **NegDITyp** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | DT | |
| 1 | INV | |

Enum type **StrMod** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Negative | |
| 1 | Positive | |
| 2 | Either | |

Enum type **MemoryMode** is one of new added types defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 0_None | |
| 1 | 1_Voltage | |
| 2 | 2_Time | |
| 3 | 3_Both | |

Enum type **EfDirModeKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Forward | |
| 1 | Reverse | |

Enum type **SlotDISelect** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Slot_C_DI1 | |
| 1 | Slot_D_DI1 | |
| 2 | Slot_E_DI1 | |

Enum type **VTTypeKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | VT | |
| 1 | LPVT | |

Enum type **TempModKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Current | |
| 1 | Ambient | |

Enum type **PadmDirMod** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Undir | |
| 1 | Forward | |
| 2 | Reverse | |

Enum type **SignalNum** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 1 | |
| 1 | 2 | |

Enum type **ClockSourceKind** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|---------------------|---------|
| 1 | Unknown | |
| 2 | SNTP | |
| 3 | PTP | |
| 4 | IRIG-B | |
| 5 | Substation internal | |

Enum type **TmrMode** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-----------------------------------|---------|
| 0 | — | |
| 1 | Oper./release delay | |
| 2 | Oper.delay/pulse duration | |
| 3 | Oper./release delay, retrig | |
| 4 | Oper.delay/pulse duration, retrig | |
| 5 | Minimum timeinterval | |

Enum type **EvaluationVN** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Measured | |
| 1 | Calculated | |

Enum type **SwOpCap** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|----------------|---------|
| 1 | None | |
| 2 | Open | |
| 3 | Close | |
| 4 | Open and Close | |

Enum type **CBOpCap** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|----------------------------|---------|
| 1 | None | |
| 2 | Open | |
| 3 | Close-Open | |
| 4 | Open-Close-Open | |
| 5 | Close-Open-Close-Open | |
| 6 | Open-Close-Open-Close-Open | |
| 7 | More | |

Enum type **SwTyp** is one of new added type defined as below.

| Value | Description | Remarks |
|-------|----------------------------|---------|
| -1 | Unknown | |
| 1 | Load Break | |
| 2 | Disconnecter | |
| 3 | Earthing Switch | |
| 4 | High Speed Earthing Switch | |

Enum type **OcDirMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|---------------|---------|
| 0 | Non-direction | |
| 1 | Forward | |
| 2 | Reverse | |

Enum type **OcTripLogic** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 1_out_of_3 | |
| 1 | 2_out_of_3 | |

Enum type **OcVtsBlock** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-----------------|---------|
| 0 | Blocked | |
| 1 | Non-directional | |

Enum type **OcSolStat** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Off | |
| 1 | SOL1 | |
| 2 | SOL2 | |

Enum type **AvWindow** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 1s | |
| 1 | 1min | |
| 2 | Demand Time | |

Enum type **MeasurementMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|--------------|---------|
| 0 | Phase-Phase | |
| 1 | Phase-Ground | |

Enum type **UUTripLogic** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|--------------|---------|
| 0 | Any Phase | |
| 1 | Three Phases | |

Enum type **OverVoltageDITyp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | OV_DT | |
| 1 | OV_Prg1 | |
| 2 | OV_Prg2 | |
| 3 | OV_Prg3 | |
| 4 | OV_IDMT | |

Enum type **DEF_IoInputKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | DEF_Io | |
| 1 | DEF_IoCSH | |
| 2 | DEF_localc | |
| 3 | DEF_lovs | |

Enum type **CAP_IoInputKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | CAP_Io1 | |
| 1 | CAP_Io2 | |
| 2 | CAP_localc | |

Enum type **CAP_FaultMeasuredValueTypeKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|------------------|---------|
| 1 | At Start Moment | |
| 2 | At Trip Moment | |
| 3 | Peak Fault Value | |

Enum type **CmpModKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Off | |
| 1 | Normal | |
| 2 | Location | |

Enum type **RefDirKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Standard | |
| 1 | Opposite | |

Enum type **REFOpModKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | IPhSumBias | |
| 1 | IPhMaxBias | |

Enum type **CtsOpModKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Indication | |
| 1 | Blocking | |
| 2 | Restraint | |

Enum type **CtsOpMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 3I_only | |
| 1 | IV_VN | |
| 2 | Both | |

Enum type **RocoOpMod** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | f+RoCoF | |
| 1 | Frequency | |

Enum type **CbrSt** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------------|---------|
| 0 | not started | |
| 1 | in progress | |
| 2 | calibration done | |
| 3 | calibration error | |

Enum type **SCBInstTyp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|--------------|---------|
| 0 | fixed | |
| 1 | withdrawable | |

Enum type **SCBTyp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | CB | |
| 1 | DD | |
| 2 | ED | |
| 3 | SD | |

Enum type **SCBHealthKind** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | Ok | |
| 1 | Orange | |
| 2 | Red | |

Enum type **VectGrpType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | 0 | |
| 1 | 1 | |
| 2 | 2 | |
| 3 | 3 | |
| 4 | 4 | |
| 5 | 5 | |
| 6 | 6 | |
| 7 | 7 | |
| 8 | 8 | |
| 9 | 9 | |
| 10 | 10 | |
| 11 | 11 | |

Enum type **BiasCalModType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|----------------|---------|
| 0 | sum of phasors | |
| 1 | sum of abs. | |

Enum type **ThmMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | STANDARD | |
| 1 | ADVANCED | |

Enum type **PolILev** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | PL | |
| 1 | PH | |

Enum type **ZgbSt** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | OFFLINE | |
| 1 | ONLINE | |
| 2 | FAILURE | |

Enum type **InrushOpMode** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | phase block | |
| 1 | cross block | |

Enum type **CTInType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | CT_1 | |
| 1 | CT_2 | |

Enum type **VTLocation** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | HV | |
| 1 | LV | |

Enum type **PhSwp** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | No Swap | |
| 1 | A-B | |
| 2 | B-C | |
| 3 | C-A | |

Enum type **OpSt** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|----------------------------|---------|
| 0 | OK | |
| 1 | Initialisation | |
| 2 | System fault | |
| 3 | Update in progress | |
| 4 | Application not configured | |

Enum type **SetNum** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|-------------|---------|
| 0 | OFF | |
| 1 | AIS | |
| 2 | GIS SBB | |
| 3 | GIS DBB | |
| 4 | GP | |

Enum type **VHzCrvType** is one of new added type defined as below:

| Value | Description | Remarks |
|-------|------------------|---------|
| 0 | OverFluxing_DT | |
| 22 | OverFluxing_Prg1 | |
| 23 | OverFluxing_Prg2 | |
| 24 | OverFluxing_Prg3 | |

Extended Enum types

Enum type **SIUnitKind** is extended by the following enumerations.

| Value | Quantity | Unit name | Symbol |
|-------|--------------------------|-----------|--------|
| -6 | Numerical tagging method | per unit | pu |
| -7 | Percent | percent | % |

| Value | Quantity | Unit name | Symbol |
|-------|----------------------|------------------------|--------|
| -8 | Relative temperature | degree Fahrenheit | °F |
| -9 | Electric resistance | ohm (V/A) | V/A |
| -10 | Rotational speed | Revolutions per minute | rmp |
| -11 | Pulse per rotation | Pulse per rotation | /R |
| -13 | month | month | month |
| -14 | days | days | days |

Enum type **AutoReclosingKind** is extended by the following enumerations.

| Value | Symbol |
|-------|-----------|
| -1 | Reclaim |
| -2 | Ready_Ext |
| -3 | WaitOpen |
| -4 | WaitClose |
| -5 | Discrim |
| -6 | Locked |
| -7 | FinalTr |
| -8 | CBFail |
| -9 | Inhibit |
| -10 | Blocked |
| -11 | ExtOpen |
| -12 | ExClose |
| -13 | WaitSync |

PIXIT details

Introduction

This PIXIT is based upon UCAlug PIXIT Template version 15, UCA International Users Group Testing Sub Committee, October 22, 2019.

This document specifies the protocol implementation extra information for testing (PIXIT) of the IEC 61850 interface in P5U20, P5U20LPCT/LPVT, P5V20, P5F30, P5M30, , with firmware version V01.

Together with the PICS and the MICS the PIXIT document forms the basis for a conformance test according to IEC 61850-10. The PIXIT entries contain information which is not available in the PICS, MICS, TICS documents or SCL file.

Each chapter specifies the PIXIT for applicable ACSI service model as structured in IEC 61850-10. The “Ed” column indicates if the entry is applicable for IEC 61850 Edition 1 and/or Edition 2.

PIXIT for documentation

| ID | Ed | Description | Value / Clarification |
|-----|----|------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Do1 | 2 | How to expose required firmware versions not present in the data model | Information included in the ICD file and in the data model (LLN0.NamePit.swRev) |

PIXIT for association model

The extra information for testing is given in the table below.

Table 81 - Protocol implementation extra information for testing

| ID | Ed | Description | Value / Clarification |
|-----|-----|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| As1 | 1 | Maximum number of clients that can set-up an association simultaneously | 8 |
| As2 | 1,2 | TCP_KEEPALIVE value. The recommended range is 0...20s | Configurable: from 0 to 20s |
| As3 | 1,2 | Lost connection detection time | TCP_KEEPALIVE + 2s *10 Maximum 140s (2s is retransmission interval of TCP Keep-alive message, 10 retransmissions) (0 means 120s) |
| As4 | - | Authentication is not supported yet | |
| As5 | 1,2 | What association parameters are necessary for successful association | Transport selector Calling: N Called: Y Session selector Calling: N Called: Y Presentation selector Calling: N Called: Y AP title Calling: N Called: N AE qualifier Calling: N Called: Y |

Table 81 - Protocol implementation extra information for testing (Continued)

| ID | Ed | Description | Value / Clarification |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| As6 | 1,2 | If association parameters are necessary for association, describe the correct values. Association parameters are configurable, default values are | Transport selector 1 Session selector 1 Presentation selector 1 AP title 1,1,1,999,1 AE qualifier 12 |
| As7 | 1,2 | What is the maximum and minimum MMS PDU size | Max: 65535 bytes Min: In initiate request 1024 bytes |
| As8 | 1,2 | What is the maximum start up time after a power supply interrupt | P5 relay start-up time including the server function is at average 180s; it depends on the configuration size (number and types of logical nodes) |
| As9 | 1,2 | Does this device function only as test equipment? (test equipment need not have a non-volatile configuration; but it cannot be part of the substation automation system) | N |

PIXIT for server model

| ID | Ed | Description | Value / Clarification |
|-----|-----|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sr1 | 1,2 | Which analogue value (MX) quality bits are supported (can be set by server) | Validity: Y Good, Y Invalid, N Reserved, Y Questionable N Overflow Y OutofRange N BadReference N Oscillatory N Failure N OldData N Inconsistent N Inaccurate Source: Y Process N Substituted Y Test N OperatorBlocked |
| Sr2 | 1,2 | Which status value (ST) quality bits are supported (can be set by server) | Validity: Y Good, Y Invalid, N Reserved, N Questionable N BadReference N Oscillatory N Failure N OldData N Inconsistent N Inaccurate Source: Y Process N Substituted Y Test N OperatorBlocked |
| Sr3 | - | What is the maximum number of data object references in one GetDataValues request | Deprecated |

| ID | Ed | Description | Value / Clarification |
|-----|----|-----------------------------------------------------------------------------------|-------------------------------------------------------------|
| Sr4 | - | What is the maximum number of data object references in one SetDataValues request | Deprecated |
| Sr5 | 1 | Which Mode values are supported | On Y [On-]Blocked N Test Y Test/Blocked Y Off Y |

PIXIT for data set model

| ID | Ed | Description | Details |
|-----|----|-----------------------------------------------------------------------------------------------------------------|---------|
| Ds1 | 1 | What is the maximum number of data elements in one data set (compare ICD setting) | 500 |
| Ds2 | 1 | How many persistent data sets can be created by one or more clients (this number includes predefined data sets) | 50 |
| Ds3 | 1 | How many non-persistent data sets can be created by one or more clients | 50 |

NOTE: Arrays are not supported in dataset.

PIXIT for setting group control model

| ID | Ed | Description | Value / Clarification |
|-----|-----|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sg1 | 1 | What is the number of supported setting groups for each logical device | 4 |
| Sg2 | 1,2 | What is the effect of when and how the non-volatile storage is updated (compare IEC 61850-8-1 §16.2.4) | When: CnfEdit set to TRUE successfully. How: the setting value in edit buffer will be copied to the selected setting group, and then the new value will be updated to non-volatile storage by setting engine. |
| Sg3 | 1 | Can multiple clients edit the same setting group | N |
| Sg4 | 1 | What happens if the association is lost while editing a setting group | The SE values changes are lost, the EditSG value will not change. |
| Sg5 | 1 | Is EditSG value 0 allowed | Y Write a value of 0 to EditSG will cancel all the setting values in the Edit buffer. |
| Sg6 | 2 | When ResvTms is not present how long is an edit setting group locked | Reserved forever except Cancel, Confirm or Disconnection. |

PIXIT for reporting model

| ID | Ed | Description | Details | |
|-----|----|-------------------------------------------------|-------------|---|
| Rp1 | 1 | The supported trigger conditions (compare PICS) | integrity | Y |
| | | | data change | Y |

| ID | Ed | Description | Details | |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---|
| | | | quality change | Y |
| | | | data update | N |
| | | | general interrogation | Y |
| Rp2 | 1 | The supported optional fields are | sequence-number | Y |
| | | | report-time-stamp | Y |
| | | | reason-for-inclusion | Y |
| | | | data-set-name | Y |
| | | | data-reference | Y |
| | | | buffer-overflow (not applicable to URCB) | Y |
| | | | entryID (not applicable to URCB) | Y |
| | | | conf-rev | Y |
| | | | segmentation | Y |
| Rp3 | 1,2 | Can the server send segmented reports? (when not supported the device shall refuse an association request with a smaller than minimum PDU size) | Y | |
| Rp4 | 1,2 | Mechanism on second internal data change notification of the same analogue data value within buffer period (compare IEC 61850-7-2 §14.2.2.9) | Send report immediately | |
| Rp5 | 1 | Multi client URCB approach (compare IEC 61850-7-2 §14.2.1) | Each URCB is visible to all clients | |
| Rp6 | - | What is the format of EntryID | Deprecated | |
| Rp7 | 1,2 | What is the buffer size for each BRCB or how many reports can be buffered | 100k bytes per report control block | |
| Rp8 | - | Pre-configured RCB attributes that are dynamic, compare SCL report settings | Deprecated | |
| Rp9 | 1 | May the reported data set contain: - structured data objects? - data attributes? | Y | |
| | | | Y | |
| Rp10 | 1,2 | What is the scan cycle for binary events? Is this fixed, configurable or event-driven | 5 milliseconds | |
| | | | Fixed | |
| Rp11 | 1 | Does the device support to pre-assign a RCB to a specific client in the SCL | N | |
| Rp12 | 2 | After restart of the server is the value of ConfRev restored from the original configuration or retained prior to restart | from the original configuration | |
| Rp13 | 1,2 | Does the server accept any client to configure / enable a BRCB with ResvTms=-1? What fields are used to do the identification? | N | |
| Rp14 | 2 | When BRCB.ResvTms is exposed, what is default value for BRCB.ResvTms if client does not write (must be > 0) or When BRCB.ResvTms is not exposed, what is the internal reservation time (must be >= 0) | 1s | |
| | | | 1s | |

Remarks:

For measurement value, only the DO with CDC = MV, CMV, WYE, DEL can be configured in dataset to trigger report which the deadband feature is implemented.

PIXIT for GOOSE publish model

| ID | Ed | Description | Value / Clarification |
|-----|-----|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gp1 | 1,2 | Can the test (Ed1) / simulation (Ed2) flag in the published GOOSE be set | N |
| Gp2 | 1 | What is the behaviour when the GOOSE publish configuration is incorrect | NdsCom=T DUT keeps GoEna=F |
| Gp3 | 1,2 | Published FCD supported common data classes / data types are | Common data classes: SPS, DPC, CMV, MV Data types as single attributes: BOOLEAN, CODED ENUM, FLOAT32, QUALITY Arrays are not supported. |
| Gp4 | 1,2 | What is the maximum value of TAL (maxTime) Is it fixed or configurable | Maximum TAL = 120000 ms (double of maximum configurable slowest retransmission cycle 60000 ms) Configurable by configuration tool |
| Gp5 | 1,2 | What is the fastest retransmission time Is it fixed or configurable | 4 ms Retransmission scheme: First message upon data change, followed by 4, 10, 20, 40, 80, 160, 320, 640, 1280, 2500, 5000, 10000, 20000, 40000, 60000 and finally reaching the configured slow retransmission time). TAL is set to value 2 times bigger than interval. Configurable |
| Gp6 | - | Can the GOOSE publish be turned on / off by using SetGoCBValues(GoEna) | Deprecated |
| Gp7 | 1,2 | What is initial GOOSE sqNum after restart of the device | 1 |
| Gp8 | 1 | May the GOOSE data set contain: - structured data objects (FCD) - timestamp data attributes | Y Y |
| Gp9 | 1,2 | Does Server or ICT check GOOSE payload data set length | Y |

Remarks:

Consider the CPU load pressure, if the total number of DA in dataset for GOOSE publisher are more than 600 (1 DO can be considered as 3 DA), the fastest retransmission time will be 10ms, and retransmission scheme: First message upon data change, followed by 10,20,40,80,160,320,640, 1280,2500,5000, 10000, 20000, 40000,60000. and finally reaching the configured slow retransmission time.

PIXIT for GOOSE subscribe model

| ID | Ed | Description | Value / Clarification |
|-----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gs1 | 1,2 | <p>What elements of a subscribed GOOSE message are checked to decide the message is valid and the all Data values are accepted? If yes, describe the conditions.</p> <p>Notes:</p> <ul style="list-style-type: none"> the VLAN tag may be removed by an ethernet switch and shall not be checked the simulation flag shall always be checked (Ed2) | <p>Y destination MAC address (equal to configured)</p> <p>Y APPID (equal to configured)</p> <p>N gocbRef</p> <p>N timeAllowedtoLive (see Remarks)</p> <p>N dataSet</p> <p>Y gold (equal to configured, checking can be set off)</p> <p>N t</p> <p>Y stNum (see Remarks)</p> <p>N sqNum (see Remarks)</p> <p>Y simulation/test (When P5LPHD1.Sim.stVal is false, if simulation/test is true, values not passed to application, the application data will keep last received value; if simulation/test is false, status of the network input stays valid. When P5LPHD1.Sim.stVal is true, at first if simulation/test is false, status of the network input stays valid, once simulation/test is true, status of the network input stays valid too, if simulation/test is back to false, values not passed to application, the application data will keep last received value.)</p> <p>Y confRev (equal to configured)</p> <p>Y ndsCom (if true, values not passed to application, the application data will keep last received value, and network inputs status is set to invalid as if message was never received)</p> <p>Y numDataSetEntries (see Remarks)</p> <p>N out-of-order dataset members</p> |
| Gs2 | 1,2 | <p>When is a subscribed GOOSE marked as lost</p> <p>(TAL = time allowed to live value from the last received GOOSE message)</p> | <p>Message does not arrive by TAL+1s</p> <p>Internally in the relay there is a status indication to the application about GOOSE problem (data is marked as OLD if the message does not arrive prior to TAL+1s if TAL>value of setting "Min. supervision time" or prior to value of setting "Min. supervision time" if TAL< value of setting "Min. supervision time" whose range is from 100 ms to 10000 ms).</p> |
| Gs3 | 1,2 | What is the behaviour when one or more subscribed GOOSE messages isn't received or syntactically incorrect (missing GOOSE) | The subsequently received GOOSE message is accepted even if the new state number is not equal to the incremented value of the previously received state number (it is enough that it is not equal to the last received state number). |
| Gs4 | 1,2 | What is the behaviour when a subscribed GOOSE message is out-of-order | Message is treated as normal (it is assumed that previous messages have been lost). |
| Gs5 | 1,2 | What is the behaviour when a subscribed GOOSE message is duplicated | Duplicated message is ignored |
| Gs6 | 1 | Does the device subscribe to GOOSE messages with/without the VLAN tag | <p>Y with the VLAN tag</p> <p>Y without the VLAN tag</p> |
| Gs7 | 1 | <p>May the GOOSE data set contain:</p> <ul style="list-style-type: none"> structured data objects data attributes | <p>N</p> <p>Y</p> |

| ID | Ed | Description | Value / Clarification |
|------|-----|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Gs8 | 1,2 | Subscribed FCD supported common data classes / data types are | Data classes: SPS, SPC, DPS, DPC, CMV, MV Data types as single attributes: Boolean, ENUMERATED, CODED ENUM, FLOAT32 Arrays are not supported |
| Gs9 | 1,2 | Are subscribed GOOSE with test=T (Ed1) / simulation=T (Ed2) accepted in test/ simulation mode | Y- Simulation mode is supported by the device |
| Gs10 | 1,2 | Max number of dataset members | Unlimited |
| Gs11 | 1 | Is Fixed-length encoded GOOSE supported | Y |

TAL = Time Allowed to Live

Remarks:

A GOOSE message will be accepted and processed by the subscriber in DUT:

- Even if it is received after expiration of the time allowed to live sent in the previous message,
- Even if the new state number is not equal to the incremented value of the previously received state number - it is enough that it is not equal to the last received state number,
- If the state number differs from the previously received state number, the sequence number is accepted with any value (if the state number is equal to the previously received state number, the message is treated as retransmission),
- Even if the received message contains a dataset of the size different than the size of the previously received dataset.

A GOOSE message will NOT be accepted by the subscriber in DUT if:

- Destination MAC address is not equal to configured one
- Protocol ID is not equal to 0x88B8
- APPID is not equal to configured one for any of the network inputs
- ConfRev is not equal to configured one for any of the network inputs
- goID is not equal to configured one for any of the network inputs
- state number is the same as in the previous message (is treated as retransmission)
- ndsCom bit is set to true in received message

Note for sGosN6h (out of order dataset):

Value from GOOSE message will be accepted even if the type is different than in previous message given that:

- Type is compatible with network input type i.e. for binary network inputs accepted types are: BOOLEAN, BITSTRIG, ENUM, CODED ENUM for analog network inputs accepted types are FLOAT32 and INTEGER

All binary network input can be associated via internal logic with one validity indication. All analog network inputs can be associated via internal logic with another validity indication. If given network input is not received due to one of the reasons mentioned above this indication is activated. Validity flag for the network input will be activated also if next message with the value will not be received within the time indicated in **time to live** field contained in the previous message.

The value of numDatSetEntries from the header determines how many data entries from the message are processed. With numDatSetEntries = 0 no data entries are processed from the received message. If numDatSetEntries is lower than expected (source information for some network inputs is not processed or missing) those missing network inputs will be marked as invalid.

ExtRef usage in ICD file

- All these 258 ExtRef elements under Inputs in ICD file shall not be removed or edit, including intAddr attribute, if there is no GOOSE subscriber configured. As the value of intAddr attribute is key information for P5 firmware.
- If one Network Input (NI) or Analog Network Input (ANI) is configured by SCT/ ICT, all these optional attributes, iedName, IdInst, prefix, InClass, InInst, doName, daName(optional), shall be added with correct value under ExtRef. The intAddr attribute shall be kept as well.
- The sequence of ExtRef elements shall not be changed whatever there is GOOSE subscriber configured or not.
- The picture below shows the example of ExtRef usage.

```
<Inputs>
<ExtRef daName="stVal" doName="Ind1" iedName="PSM30_ED2" intAddr="NI1" IdInst="Relay" InClass="GOIO" InInst="1" prefix="PSDI" serviceType="GOOSE"
  secIDName="gob1"/>
<ExtRef daName="stVal" doName="Ind1" iedName="PSM30_ED2" intAddr="NI2" IdInst="Relay" InClass="GOIO" InInst="2" prefix="PSDI" serviceType="GOOSE"
  secIDName="gob1"/>
<ExtRef intAddr="NI3" serviceType="GOOSE"/>
<ExtRef intAddr="NI5" serviceType="GOOSE"/>
<ExtRef intAddr="NI6" serviceType="GOOSE"/>
<ExtRef intAddr="NI7" serviceType="GOOSE"/>
<ExtRef intAddr="NI8" serviceType="GOOSE"/>
<ExtRef intAddr="NI9" serviceType="GOOSE"/>
<ExtRef intAddr="NI10" serviceType="GOOSE"/>
<ExtRef daName="stVal" doName="Ind1" iedName="PSM30_ED2" intAddr="NI11" IdInst="Relay" InClass="GOIO" InInst="1" prefix="PSDI" serviceType="GOOSE"
  secIDName="gob1"/>
<ExtRef daName="stVal" doName="Ind1" iedName="PSM30_ED2" intAddr="NI12" IdInst="Relay" InClass="GOIO" InInst="2" prefix="PSDI" serviceType="GOOSE"
  secIDName="gob1"/>
<ExtRef intAddr="NI13" serviceType="GOOSE"/>

<ExtRef daName="stVal" doName="Ind1" iedName="PSM30_ED2" intAddr="NI250" IdInst="Relay" InClass="GOIO" InInst="2" prefix="PSDI" serviceType="GOOSE"
  secIDName="gob1"/>
<ExtRef intAddr="ANI2" serviceType="GOOSE"/>
<ExtRef intAddr="ANI3" serviceType="GOOSE"/>
<ExtRef intAddr="ANI4" serviceType="GOOSE"/>
<ExtRef intAddr="ANI5" serviceType="GOOSE"/>
<ExtRef intAddr="ANI6" serviceType="GOOSE"/>
<ExtRef daName="Mag.E" doName="Hs" iedName="PSM30_ED2" intAddr="ANI7" IdInst="Relay" InClass="MGOU" InInst="1" prefix="PSVECV" serviceType="GOOSE"
  secIDName="gob1"/>
<ExtRef daName="Mag.E" doName="Hs" iedName="PSM30_ED2" intAddr="ANI8" IdInst="Relay" InClass="MGOU" InInst="1" prefix="PSVECV" serviceType="GOOSE"
  secIDName="gob1"/>
```

- If an ExtRef reference a DbPos, then the next ExtRef must not be used any. It is written in the ICD:

```
<ExtRef intAddr="NI2" serviceType="GOOSE" desc="Select
BOOLEAN or Dbpos DA input. By default NI2 stores
BOOLEAN.IsTrue or Dbpos.IsOpen. Leave NI3 empty, if
Dbpos.IsClosed is needed" />
```

PIXIT for GOOSE performance

| ID | Ed | Description | Value / Clarification | |
|-----|-----|-----------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|
| Gf1 | 1,2 | Performance class | P2 | |
| Gf2 | 1,2 | GOOSE ping-pong processing method | Scan cycle based | |
| Gf3 | 1,2 | Application logic scan cycle (ms) | Max. | 3 ms for SPS, 10 ms for DPS |
| | | | Min. | 0 ms for SPS, 0 ms for DPS |
| Gf4 | 1 | Maximum number of data attributes in GOOSE dataset (value and quality has to be counted as separate attributes) | 500 | |

PIXIT for control model

| ID | Ed | Description | Value / Clarification |
|-----|-----|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ct1 | 1 | What control models are supported (compare PICS) | DOs: Y SBOs: Y DOes: Y SBOes: Y |
| Ct2 | 1,2 | Is the control model fixed, configurable and/or dynamic? | Configurable for CSWI & XSWI class: All controllable objects Obj1 ... Obj6 under CSWI & XSWI class are configured to use one and the same chosen control model. |

| ID | Ed | Description | Value / Clarification |
|-----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | <p>Objects Obj7 ... Obj8 under CSWI class have fixed control model status-only.</p> <p>Fixed for GGIO: All controllable objects under GGIO class the control model is fixed: direct-with-normal-security.</p> |
| Ct3 | - | Is TimeActivatedOperate supported (compare PICS or SCL) | Deprecated |
| Ct4 | - | Is "operate-many" supported (compare sboClass) | Deprecated |
| Ct5 | 1 | Will the DUT activate the control output when the test attribute is set in the SelectWithValue and/or Operate request (when N test procedure Ctl2 is applicable) | N |
| Ct6 | - | What are the conditions for the time (T) attribute in the SelectWithValue and/or Operate request | Deprecated |
| Ct7 | - | Is pulse configuration supported (compare pulseConfig) | Deprecated |
| Ct8 | 1 | <p>What is the behaviour of the DUT when the check conditions are set</p> <p>Is this behaviour fixed, configurable, online changeable?</p> | <p>N synchrocheck</p> <p>N interlock-check</p> <p>DUT ignores the check value and the command is executed as usual</p> <p>Fixed</p> |
| Ct9 | 1,2 | Which additional cause diagnosis are supported | <p>N Unknown</p> <p>Y Not-supported</p> <p>Y Blocked-by-switching-hierarchy</p> <p>N Select-failed</p> <p>Y Invalid-position</p> <p>Y Position-reached</p> <p>N Step-limit</p> <p>Y Blocked-by-Mode</p> <p>N Blocked-by-process</p> <p>N Blocked-by-interlocking</p> <p>N Blocked-by-synchrocheck</p> <p>Y Command-already-in-execution</p> <p>N Blocked-by-health</p> <p>N 1-of-n-control</p> <p>N Abortion-by-cancel</p> <p>Y Time-limit-over</p> <p>N Abortion-by-trip</p> <p>Y Object-not-selected</p> <p>Y Object-already-selected</p> <p>N No-access-authority</p> <p>N Ended-with-overshoot</p> <p>N Abortion-due-to-deviation</p> |

| ID | Ed | Description | Value / Clarification |
|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | N Abortion-by-communication-loss N Blocked-by-command N None Y Inconsistent-parameters Y Locked-by-other-client N Parameter-change-in-execution |
| Ct10 | 1,2 | How to force a "test-not-ok" respond with SelectWithValue request? | Put device into local mode |
| Ct11 | 1,2 | How to force a "test-not-ok" respond with Select request? | Put device into local mode |
| Ct12 | 1,2 | How to force a "test-not-ok" respond with Operate request? | DOns: Operate with orCat out of range SBOs: Operate without Select DOes: Operate with orCat out of range SBOes: Operate without Select |
| Ct13 | 1,2 | Which origin categories are supported/accepted? | Y bay-control Y station-control Y remote-control Y automatic-bay Y automatic-station Y automatic-remote Y maintenance Y process |
| Ct14 | 1,2 | What happens if the orCat is not supported or invalid | DOns: Negative response SBOs: Negative response DOes: Negative response (with additional cause diagnosis code value Not-supported) SBOes: Negative response (with additional cause diagnosis code value Not-supported) |
| Ct15 | 1,2 | Does the IED accept a SelectWithValue/ Operate with the same control value as the current status value? Is this behaviour configurable? | DOns: N SBOs: N DOes: N Addcause: Position-reached SBOes: N Addcause: Position-reached Configurable: N |
| Ct16 | 1 | Does the IED accept a select/operate on the same control object from 2 different clients at the same time? | DOns: Y (see Remarks) SBOs: N DOes: N SBOes: N |
| Ct17 | 1 | Does the IED accept a Select/SelectWithValue from the same client when the control object is already selected (tissue 334) | SBOs: N SBOes: N |
| Ct18 | 1 | Is for SBOes the internal validation performed during the SelectWithValue and/or Operate step? | Y During SelectWithValue and during Operate |

| ID | Ed | Description | Value / Clarification |
|--------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ct19 | - | Can a control operation be blocked by Mod=Off or [On-]Blocked (compare PIXIT Sr5) | Deprecated |
| Ct20 | 1,2 | Does the IED support local / remote operation? | Y |
| Ct21 | 1,2 | Does the IED send an InformationReport with LastApplError as part of the Operate response for control with normal security? | SBOns: N DOns: N |
| Ct22 | 2 | How to force a "parameter-change-in-execution" | SBOns: N/A SBOes: N/A |
| Ct23 | 1,2 | How many SBOns/ SBOes control objects can be selected at the same time? | SBOns: 1 SBOes: 1 |
| Ct24 | 1,2 | Can a controllable object be forced to keep its old state e.g. Internal Controllable Objects may not be accessible to force this, whereas a switch like Circuit Breaker outside the DUT can? | Y |
| Ct25 | 1,2 | When CDC=DPC is supported, is it possible to have DPC (Controllable Double Point) go to the intermediate state? (00) | Y |
| Ct26 | 1,2 | Name a DOes point (if any) with a finite operate timeout and specify the timeout (in milliseconds) | Relay/Obj1CSW11.Pos Operate timeout can be configured by setting Configuration Tool, the range is 0.02 ... 600 s. For example: DOes: 10000 ms SBOes: 10000 ms |
| Ct27 | 2 | Does the IED support control objects with external signals? | DOns: Y SBOns: Y DOes: Y SBOes: Y |
| Ct_ex1 | | SBO Timeout | 60 seconds |

Remarks:

In DOns model: When two clients send Operate request within a very short interval (under 100 ms) then for processing the second command the object position is still unchanged due to the first command, thus both clients receive positive Operate response.

PIXIT for time synchronisation

| ID | Ed | Description | Value / Clarification |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tm1 | 1 | What time quality bits are supported (may be set by the IED) Ed.2 requires all 3 bits | Y LeapSecondsKnown Y ClockFailure Y ClockNotSynchronized |
| Tm2 | 1,2 | Describe the behaviour when the time server(s) ceases to respond What is the time server lost detection time | Time is taken from internal RTC The latency depends on measured drift of the internal clock. Usually it can take 400 seconds |
| Tm3 | 1,2 | How long does it take to take over the new time from time server | Depends on time difference between internal and time server. Max. 400 s is the waiting time to see Timestamp Quality transition to ClockNotSynchronised. |
| Tm4 | 1,2 | When is the time quality bit "Clock failure" set? | The time quality bit "Clock failure" is set to "one" when the P5 IED restarts from power up, or when the connection to time server is lost; the bit is reset to "zero" when the clock becomes synchronised. All available time synchronisation sources will affect the "Clock failure" bit. These time sources include SNTP and where applicable, IRIG-B. |
| Tm5 | 1 | When is the time quality bit "Clock not synchronised" set? Note: For Ed2 and up, CNS is set according to PIXIT Tm2 | The time quality bit "Clock not synchronised" is set to "one" when the P5 IED starts from power up, or when the connection to time server is lost; the bit is reset to "zero" when the clock becomes synchronised. All available time synchronisation sources will affect the "Clock not synchronised" bit. These time sources include SNTP and where applicable, IRIG-B. |
| Tm6 | - | Is the timestamp of a binary event adjusted to the configured scan cycle? | Deprecated |
| Tm7 | 1 | Does the device support time zone and daylight saving? | Y |
| Tm8 | 1,2 | Which attributes of the SNTP response packet are validated? | N Leap indicator not equal to 3 N Mode is equal to SERVER Y OriginateTimestamp is equal to value sent by the SNTP client as Transmit Timestamp Y RX/TX timestamp fields are checked for reasonableness Y SNTP version 3 or 4 N other |
| Tm9 | 1,2 | Do the COMTRADE files have local time or UTC time Is this configurable | Local N |

PIXIT for file transfer model

| ID | Ed | Description | Value / Clarification |
|-----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ft1 | 1 | <p>What is structure of files and directories</p> <p>Where are the COMTRADE files stored</p> <p>Are comtrade files zipped and what files are included in each zip file</p> | <p>Directory structure</p> <ul style="list-style-type: none"> - COMTRADE - DR - TREND <p>COMTRADE files stored in folder / COMTRADE /DR</p> <p>Zipped;</p> <p>Each COMTRADE record includes 2 files:</p> <p>.cfg and .dat</p> |
| Ft2 | 1,2 | Directory names are separated from the file name by | Separated by '/' |
| Ft3 | 1 | The maximum file name size including path (recommended 64 chars) | <p>255</p> <p>Below are all the maximum sizes:</p> <ul style="list-style-type: none"> - Full file name (including the directory path, suffix and separation characters): 255 - File name: 64 - File directory name: 32 - File name suffix: 3 |
| Ft4 | 1,2 | Are directory/file name case sensitive | Case sensitive |
| Ft5 | 1,2 | Maximum file size for SetFile | SetFile is not supported. |
| Ft6 | 1 | Is the requested file path included in the MMS fileDirectory respond file name | Y |
| Ft7 | 1 | Is the wild char supported MMS fileDirectory request | Y |
| Ft8 | 1,2 | Is it allowed that 2 clients get a file at the same time | Y (max. 8 clients are supported) |
| Ft9 | 1,2 | Which files can be deleted | None |

TICS details

Introduction

The TICS is based upon UCAIug TICS Template version 2.1, UCA International Users Group Testing Sub Committee, April 23, 2019.

This document is applicable for P5U20, P5U20LPCT/LPVT, P5V20, P5F30, P5M30, P5T30, with firmware version V01.

Mandatory Edition 2 Tissues

The below tables give an overview of the applicable mandatory Tissues.

The original TISSUE should be consulted for details of changes.

Implemented by server:

Y: means that the server has implemented the respective tissue

ni: no impact on testing

na: not applicable if the server does not support the corresponding ACSI service(s)

Supported by client:

Y: means that the client supports servers that have implemented the respective tissue

ni: no impact on testing

na: not applicable if the client does not support the corresponding ACSI service(s)

Table 82 - Tissues implementation conformance statement

| Part 6 Tissue | Description | Implemented Y/na |
|---------------|---------------------------------------------------------------------------|------------------|
| 658 | Tracking related features | na |
| 663 | FCDA element cannot be a "functionally constrained logical node" | Y |
| 668 | Autotransformer modeling | na |
| 687 | SGCB ResvTms | na |
| 719 | ConfDataSet - maxAttributes definition is confusing | Y |
| 721 | Log element name | na |
| 768 | bType VisString65 is missing | na |
| 779 | Object references | na |
| 788 | SICS S56 from optional to mandatory | na |
| 789 | ConfLdName as services applies to both server and client | na |
| 804 | valKind and IED versus System configuration | na |
| 806 | Max length of log name inconsistent between IEC 61850-6 and IEC 61850-7-2 | na |
| 807 | Need a way to indicate if "Owner" present in RCB | Y |
| 823 | ValKind for structured data attributes | na |
| 824 | Short addresses on structured data attributes | na |
| 825 | Floating point value | na |
| 845 | SGCB ResvTms | na |
| 853 | SBO and ProtNs | Y |

Table 82 - Tissues implementation conformance statement (Continued)

| Part 6 Tissue | Description | Implemented Y/na |
|---------------|----------------------------------------------------------------------|------------------|
| 855 | Recursive SubFunction | na |
| 856 | VoltageLevel frequency and phases | na |
| 857 | Function/SubFunction for ConductingEquipment | na |
| 886 | Missing IEC 61850-8-1 P-types | na |
| 901 | tServices as AP or as IED element | Y |
| 936 | SupSubscription parameter usage is difficult | na |
| 1147 | tServices - FileHandling not consistent with IEC 61850-7-2 | Y |
| 1185 | Valkind value Conf for EX FC data valKind=Conf is allowed for dataNs | na |
| 1284 | SCSM mapping may require a communication section in an ICD file | Y |
| 1328 | Limitation on the size of data type templates identifiers | Y |
| 1395 | Client LN attributes | na |
| 1402 | ExtRef during engineering | na |
| 1415 | SICS-S110 IID import mandatory for Edition2 | na |
| 1419 | Support of IdName on other IEDs SICS I212 is now mandatory | Y |
| 1444 | Need to support fixed and SCT controlled datasets | na |
| 1445 | ConfReportControl and a fixed ReportSettings | na |
| 1450 | OriginalSclXxx computation rules | Y |
| 1485 | Need to supercede Tissue 1398 to clarify SCT behaviour | na |

| Part 7-1 Tissue | Description | Implemented Y/na |
|-----------------|----------------------------------------------------------------------|------------------|
| 828 | Data model namespace revision IEC 61850-7-4:2007[A] | Y |
| 948 | Enumeration (string) values format | na |
| 1151 | Simulated GOOSE disappears after 1st appearance when LPHD.Sim = TRUE | na |
| 1396 | The use and configuration flow of LGOS and LSVS is unclear | na |
| 1447 | Restriction on ENUMtypes in SCL | na |
| 1457 | Multiple DOI nodes with the same name | na |
| 1468 | Re-use DO from other LN | Y |
| 1491 | CmdBk blocks itself | na |

| Part 7-2 Tissue | Description | Implemented Y/na |
|-----------------|---------------------------------------------------------|------------------|
| 728 | BRCB: could PurgeBuf be set when RptEna = TRUE | Y |
| 778 | AddCause values – add value not-supported | na |
| 780 | What are unsupported trigger options at a control block | Y |
| 783 | TimOper Resp- ; add authorisation check | na |
| 786 | AddCause values 26 and 27 are switched | Y |
| 820 | Mandatory ACSI services (use for PICS template) | Y |
| 858 | Typo in enumeration ServiceType | na |
| 861 | Dchg of ConfRev attribute | na |
| 1050 | GTS Phycomaddr definition in SCL | Y |
| 1071 | Length of DO name | Y |

| Part 7-2 Tissue | Description | Implemented Y/na |
|--------------------|---------------------------------------------------|---------------------|
| 1127 | Missing owner attribute in BTS and UTS | Y |
| 1202 | GI not optional | Y |
| 1232 | EntryID needs clarification | Y |
| 1242 | NTS definition | N |
| 1307 | Segmented report with Buffer overflow | Y |
| 1428 | MTS and NTS should use svOptFlds | N |
| 1630 | Attributes in CDC=LTS do not match 8-1 definition | Y |

| Part 7-3 Tissue | Description | Implemented Y/na |
|--------------------|------------------------------------------------------------------------|---------------------|
| 697 | Persistent command / PulseConfig | na |
| 698 | Wrong case is BAC.dB attribute | na |
| 711 | blkEna freeze data update while setting its quality to operatorBlocked | na |
| 722 | Units for 'h' and 'min' not in UnitKind enumeration. | Y |
| 919 | Presence Condition for sVC | na |
| 925 | Presence of i or f attribute - Problem with writing | na |
| 926 | Presence Conditions within RangeConfig | na |
| 954 | Data attributes with FC=CF should have trgOp=dchg | na |
| 1078 | CMV.t update if rangeAng changed | na |
| 1565 | db = 0 behaviour | Y |
| 1578 | DataAttribute NameSpace content | N |

| Part 7-4 Tissue | Description | Implemented Y/na |
|--------------------|---------------------------------------------------------------|---------------------|
| 671 | Mistake in definition of Mod & Beh | na |
| 674 | CDC of ZRRC.LocSta is wrong | na |
| 676 | Same data object name used with different CDC | na |
| 677 | MotStr is used with different CDC in PMMS and SOPM LN classes | na |
| 679 | Remove CycTrMod Enum | na |
| 680 | SI unit for MHYD.Cndct | na |
| 681 | Enum PIDAlg | na |
| 682 | ANCR.ParColMod | na |
| 683 | Enum QVVR.IntrDetMth | na |
| 685 | Enum ParTraMod | na |
| 686 | New annex H - enums types in XML | na |
| 694 | Data object CmdBlk | na |
| 696 | LSVS.St (Status of subscription) | na |
| 712 | Interpretation of quality operatorBlocked | na |
| 713 | DO Naming of time constants in FFIL | na |
| 714 | Enums for ShOpCap and SwOpCap | na |
| 715 | RBDR.ChNum1 | na |
| 716 | TAXD text for condition | na |
| 724 | ANCR.Auto | na |
| 725 | Loc in LN A-group | na |

| Part 7-4 Tissue | Description | Implemented Y/na |
|-----------------|--------------------------------------------------------------------|------------------|
| 734 | LLN0.OpTmh vs. LPHD.OpTmh | na |
| 736 | PFSign | na |
| 742 | GAPC.Str, GAPC.Op and GAPC.StrVal | Y |
| 743 | CCGR.PmpCtl and CCGR.FanCtl | na |
| 744 | LN STMP, EEHealth and EENAME | na |
| 772 | LPHD.PwrUp/PwrDn should be transient | na |
| 773 | Loc, LockKey and LocSta YPSH and YLTC | na |
| 774 | ITCI.LockKey | na |
| 776 | LPHD.OutOv/InOv and LCCH.OutOv/InOv | na |
| 800 | Misspelling in CSYN | na |
| 802 | CCGR and Harmonized control authority | na |
| 808 | Presence condition of ZMOT.DExt and new Dos | na |
| 831 | Setting of ConfRevNum in LGOS | na |
| 838 | Presence condition of ZMOT.DExt and new Dos | na |
| 844 | MFLK.PhPiMax, MFLK.PhPiLoFil, MFLK.PhPiRoot DEL->WYE | na |
| 877 | QVUB -settings should be optional | na |
| 908 | ARIS.StrSeq – transient | na |
| 909 | Remove ANCR.ColOpR and ColOpL | na |
| 912 | Clarification of PwrRtg/VARtg | na |
| 920 | Resetable Counter is NOT resetable | na |
| 932 | Rename AVCO.SptVol to AVCO.VolSpt | na |
| 933 | Presence of LCCH.RedFerCh and RedRxCnt | na |
| 939 | Change CDC for ANCR.FixCol | na |
| 991 | LGOS: GoCBRef (as well as LSVS.SvCBRef) should be mandatory | na |
| 1007 | PTRC as fault indicator - Update of description required | Y |
| 1044 | TapChg in AVCO | na |
| 1077 | Rename DOnames within LTIM | na |
| 1256 | New DO for LTIM to set time "manually" | na |
| 1331 | Mod, Beh and Health with q=TEST, client can't receive their states | na |
| 1426 | Add two DO for leap seconds in LTIM | na |
| 1456 | Annex A and Mod/Beh/Health | na |
| 1568 | ISAF.AlmReset ->transient | na |

NOTE: Tissues 675, 735, 772, 775, 776, 878 are not relevant for conformance testing.

| Part 8-1 Tissue | Description | Implemented Y/na |
|-----------------|-------------------------------------------------------------------|------------------|
| 770 | GoID type mismatch 18.1.1 and 18.1.2.5.2 | Y |
| 784 | Tracking of control (CTS) | na |
| 817 | Fixed-length GOOSE float encoding | Y |
| 827 | Mandatory ACSI services (Part of IEC 61850-7-2 TISSUE resolution) | Y |
| 834 | File dir name length 64 | na |

| Part 8-1 Tissue | Description | Implemented Y/na |
|--------------------|----------------------------------------------------------------------------------|---------------------|
| 951 | Encoding of Owner attribute | Y |
| 1040 | More associate error codes | na |
| 1178 | Select Response+ is non-null value | na |
| 1324 | The response- for DeleteNamedVariableList is not defined | Y |
| 1345 | Fixed-length GOOSE ASN.1 length encoding | na |
| 1441 | Optional fields in buffered reports | Y |
| 1442 | Journal variableTag for ReasonCode | na |
| 1453 | Purge buffer on write to BRCB | Y |
| 1454 | Reports can be transmitted before write (RptEna=true) is confirmed | na |
| 1495 | GetVariableAccessAttributes error code | Y |
| 1500 | The response for DeleteNamedVariableList with a non-existent LN is not specified | Y |
| 1626 | PICs For Information Report is incorrect | na |

For detailed information on the individual Tissues, connect to the TISSUE database: www.tissues.iec61850.com

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