

Monitoring Variables

Monitoring Overview

Monitoring variables are grouped according to the following criteria:

Monitoring Variable groups	Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)
Monitoring of faults	450 to 454	68 : 01 : 01 to 68 : 01 : 05
Monitoring of status	455 to 459	68 : 01 : 06 to 68 : 01 : 0A
Monitoring of warnings	460 to 464	68 : 01 : 0B to 68 : 01 : 0F
Monitoring of measurements	465 to 539	68 : 01 : 10 to 68 : 01 : 5A
Extended monitoring for communication	2000 to 2099	82 : 01 : 01 to 82 : 01 : 64

Monitoring of Faults

Variables for monitoring of faults are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, page 383
450	68 : 01 : 01	UInt	Minimum wait time (s)	
451	68 : 01 : 02	UInt	Fault code (code of the last fault, or of the fault that takes priority) (See <i>DT_FaultCode</i> , page 388 .)	
452	68 : 01 : 03	Word	Fault register 1	
			<i>bits 0-1 (Reserved)</i>	
			bit 2 Ground current fault	
			bit 3 Thermal overload fault	
			bit 4 Long start fault	
			bit 5 Jam fault	
			bit 6 Current phase imbalance fault	
			bit 7 Undercurrent fault	
			<i>bit 8 (Reserved)</i>	
			bit 9 Test fault	
			bit 10 HMI port fault	
			bit 11 Controller internal fault	
			bit 12 Internal port fault	
			<i>bit 13 (Not significant)</i>	
			bit 14 Network port config fault	
bit 15 Network port fault				

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
453	68 : 01 : 04	Word	Fault register 2	
			bit 0 External system fault	
			bit 1 Diagnostic fault	
			bit 2 Wiring fault	
			bit 3 Overcurrent fault	
			bit 4 Current phase loss fault	
			bit 5 Current phase reversal fault	
			bit 6 Motor temperature sensor fault	1
			bit 7 Voltage phase imbalance fault	1
			bit 8 Voltage phase loss fault	1
			bit 9 Voltage phase reversal fault	1
			bit 10 Undervoltage fault	1
			bit 11 Overvoltage fault	1
			bit 12 Underpower fault	1
			bit 13 Overpower fault	1
bit 14 Under power factor fault	1			
bit 15 Over power factor fault	1			
454	68 : 01 : 05	Word	Fault register 3	
			bit 0 LTM E configuration fault	
			<i>bits 1-15 (Reserved)</i>	

Monitoring of Status

Variables for monitoring of status are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
455	68 : 01 : 06	Word	System status register 1	
			bit 0 System ready	
			bit 1 System on	
			bit 2 System fault	
			bit 3 System warning	
			bit 4 System tripped	
			bit 5 Fault reset authorized	
			bit 6 Controller power	
			bit 7 Motor running (with detection of a current, if greater than 10% FLC)	
			bits 8-13 Motor average current ratio 32 = 100% FLC - 63 = 200% FLC	
			bit 14 Control via HMI	
			bit 15 Motor starting (start in progress) 0 = descending current is less than 150% FLC 1 = ascending current is greater than 10% FLC	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
456	68 : 01 : 07	Word	System status register 2	
			bit 0 Auto-reset active	
			<i>bit 1 (Not significant)</i>	
			bit 2 Fault power cycle requested	
			bit 3 Motor restart time undefined	
			bit 4 Rapid cycle lockout	
			bit 5 Load shedding	1
			bit 6 Motor speed 0 = FLC1 setting is used 1 = FLC2 setting is used	
			bit 7 HMI port comm loss	
			bit 8 Network port comm loss	
			bit 9 Motor transition lockout	
<i>bits 10-15 (Not significant)</i>				
457	68 : 01 : 08	Word	Logic inputs status	
			bit 0 Logic input 1	
			bit 1 Logic input 2	
			bit 2 Logic input 3	
			bit 3 Logic input 4	
			bit 4 Logic input 5	
			bit 5 Logic input 6	
			bit 6 Logic input 7	
			bit 7 Logic input 8	1
			bit 8 Logic input 9	1
			bit 9 Logic input 10	1
			bit 10 Logic input 11	1
			bit 11 Logic input 12	1
			bit 12 Logic input 13	1
			bit 13 Logic input 14	1
			bit 14 Logic input 15	1
bit 15 Logic input 16	1			
458	68 : 01 : 09	Word	Logic outputs status	
			bit 0 Logic output 1	
			bit 1 Logic output 2	
			bit 2 Logic output 3	
			bit 3 Logic output 4	
			bit 4 Logic output 5	1
			bit 5 Logic output 6	1
			bit 6 Logic output 7	1
			bit 7 Logic output 8	1
<i>bits 8-15 (Reserved)</i>				

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
459	68 : 01 : 0A	Word	I/O status	
			bit 0 Input 1	
			bit 1 Input 2	
			bit 2 Input 3	
			bit 3 Input 4	
			bit 4 Input 5	
			bit 5 Input 6	
			bit 6 Input 7	
			bit 7 Input 8	
			bit 8 Input 9	
			bit 9 Input 10	
			bit 10 Input 11	
			bit 11 Input 12	
			bit 12 Output 1 (13-14)	
			bit 13 Output 2 (23-24)	
			bit 14 Output 3 (33-34)	
bit 15 Output 4 (95-96, 97-98)				

Monitoring of Warnings

Variables for monitoring of warnings are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
460	68 : 01 : 0B	UInt	Warning code (See <i>DT_WarningCode</i> , <i>page 390</i> .)	
461	68 : 01 : 0C	Word	Warning register 1	
			<i>bits 0-1 (Not significant)</i>	
			bit 2 Ground current warning	
			bit 3 Thermal overload warning	
			<i>bit 4 (Not significant)</i>	
			bit 5 Jam warning	
			bit 6 Current phase imbalance warning	
			bit 7 Undercurrent warning	
			<i>bits 8-9 (Not significant)</i>	
			bit 10 HMI port warning	
			bit 11 Controller internal temperature warning	
			<i>bits 12-14 (Not significant)</i>	
bit 15 Network port warning				

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, page 383
462	68 : 01 : 0D	Word	Warning register 2	
			<i>bit 0 (Not significant)</i>	
			bit 1 Diagnostic warning	
			<i>bit 2 (Reserved)</i>	
			bit 3 Overcurrent warning	
			bit 4 Current phase loss warning	
			bit 5 Current phase reversal warning	
			bit 6 Motor temperature sensor warning	
			bit 7 Voltage phase imbalance warning	1
			bit 8 Voltage phase loss warning	1
			<i>bit 9 (Not significant)</i>	
			bit 10 Undervoltage warning	1
			bit 11 Overvoltage warning	1
			bit 12 Underpower warning	1
			bit 13 Overpower warning	1
bit 14 Under power factor warning	1			
bit 15 Over power factor warning	1			
463	68 : 01 : 0E	Word	Warning register 3	
			bit 0 LTM E configuration warning	
			<i>bits 1-15 (Reserved)</i>	
464	68 : 01 : 0F	UInt	Motor temperature sensor degree (°C)	

Monitoring of Measurements

Variables for monitoring of measurements are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, page 383
465	68 : 01 : 10	UInt	Thermal capacity level (% trip level)	
466	68 : 01 : 11	UInt	Average current ratio (% FLC)	
467	68 : 01 : 12	UInt	L1 current ratio (% FLC)	
468	68 : 01 : 13	UInt	L2 current ratio (% FLC)	
469	68 : 01 : 14	UInt	L3 current ratio (% FLC)	
470	68 : 01 : 15	UInt	Ground current ratio (x 0.1 % FLC min)	
471	68 : 01 : 16	UInt	Current phase imbalance (%)	
472	68 : 01 : 17	Int	Controller internal temperature (°C)	
473	68 : 01 : 18	UInt	Controller config checksum	
474	68 : 01 : 19	UInt	Frequency (x 0.01 Hz)	2
475	68 : 01 : 1A	UInt	Motor temperature sensor (x 0.1 Ω)	
476	68 : 01 : 1B	UInt	Average voltage (V)	1
477	68 : 01 : 1C	UInt	L3-L1 voltage (V)	1
478	68 : 01 : 1D	UInt	L1-L2 voltage (V)	1
479	68 : 01 : 1E	UInt	L2-L3 voltage (V)	1
480	68 : 01 : 1F	UInt	Voltage phase imbalance (%)	1
481	68 : 01 : 20	UInt	Power factor (x 0.01)	1
482	68 : 01 : 21	UInt	Active power (x 0.1 kW)	1
483	68 : 01 : 22	UInt	Reactive power (x 0.1 kVAR)	1

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
484	68 : 01 : 23	Word	Auto restart status register	
			bit 0 Voltage dip occurred	
			bit 1 Voltage dip detection	
			bit 2 Auto restart immediate condition	
			bit 3 Auto restart delayed condition	
			bit 4 Auto restart manual condition	
			<i>bits 5-15 (Not significant)</i>	
485	68 : 01 : 24	Word	Controller last power off duration	
486-489	68 : 01 : 25 - 68 : 01 : 28		<i>(Not significant)</i>	
490	68 : 01 : 29	Word	Network port monitoring	
			bit 0 Network port communicating	
			bit 1 Network port connected	
			bit 2 Network port self-testing	
			bit 3 Network port self-detecting	
			bit 4 Network port bad config	
			<i>bits 5-15 (Not significant)</i>	
491	68 : 01 : 2A	UInt	Network port baud rate (See <i>DT_ExtBaudRate</i> , <i>page 388</i> .)	
492	68 : 01 : 2B		<i>(Not significant)</i>	
493	68 : 01 : 2C	UInt	Network port parity (See <i>DT_ExtParity</i> , <i>page 388</i> .)	
494-499	68 : 01 : 2D - 68 : 01 : 32		<i>(Not significant)</i>	
500-501	68 : 01 : 33 - 68 : 01 : 34	UDInt	Average current (x 0.01 A)	
502-503	68 : 01 : 35 - 68 : 01 : 36	UDInt	L1 current (x 0.01 A)	
504-505	68 : 01 : 37 - 68 : 01 : 38	UDInt	L2 current (x 0.01 A)	
506-507	68 : 01 : 39 - 68 : 01 : 3A	UDInt	L3 current (x 0.01 A)	
508-509	68 : 01 : 3B - 68 : 01 : 3C	UDInt	Ground current (mA)	
510	68 : 01 : 3D	UInt	Controller port ID	
511	68 : 01 : 3E	UInt	Time to trip (x 1 s)	
512	68 : 01 : 3F	UInt	Motor last start current ratio (% FLC)	
513	68 : 01 : 40	UInt	Motor last start duration (s)	
514	68 : 01 : 41	UInt	Motor starts per hour count	
515	68 : 01 : 42	Word	Phase imbalances register	
			bit 0 L1 current highest imbalance	
			bit 1 L2 current highest imbalance	
			bit 2 L3 current highest imbalance	
			bit 3 L1-L2 voltage highest imbalance	1
			bit 4 L2-L3 voltage highest imbalance	1
			bit 5 L3-L1 voltage highest imbalance	1
			<i>bits 6-15 (Not significant)</i>	
516-523	68 : 01 : 43 - 68 : 01 : 5A		<i>(Reserved)</i>	
524-539	68 : 01 : 4B - 68 : 01 : 5A		<i>(Forbidden)</i>	

Extended Monitoring for Communication

Variables for extended monitoring for communication are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
2000-2001	82 : 01 : 01 - 82 : 01 : 02	Word[2]	Ethernet Basic HW Diag Validity	
			Register 2000:	
			bit 0: Ethernet services available (1=Yes)	
			bit 1: Ethernet global status available (1=Yes)	
			bits 2 to 14: <i>(Reserved)</i>	
			bit 15: Ethernet field extended 1 available (1=Yes)	
			Register 2001:	
			bit 0: Ethernet IP assignment mode available (1=Yes)	
			bit 1: Ethernet device name available (1=Yes)	
			bit 2: Ethernet MB messages received counter available (1=Yes)	
			bit 3: Ethernet MB messages sent counter available (1=Yes)	
			bit 4: Ethernet MB error messages sent counter available (1=Yes)	
			bit 5: Ethernet opened servers counter available (1=Yes)	
			bit 6: Ethernet opened clients counter available (1=Yes)	
			bit 7: Ethernet transmitted correct frames counter available (1=Yes)	
bit 8: Ethernet received correct frames counter available (1=Yes)				
bit 9: Ethernet frame format available (1=Yes)				
bit 10: Ethernet MAC address available (1=Yes)				
bit 11: Ethernet gateway available (1=Yes)				
bit 12: Ethernet subnet mask available (1=Yes)				
bit 13: Ethernet IP address available (1=Yes)				
bit 14: Ethernet services status available (1=Yes)				
bit 15: Ethernet field extended 2 available (1=Yes)				
2002	82 : 01 : 03	Word	Ethernet global status bits 0-1: Ethernet global status 1 = at least 1 enabled service is operating with an unresolved error 2 = all enabled services are operating without error bits 2-15: <i>(Reserved)</i>	
2003	82 : 01 : 04	Word	Ethernet services validity bit 0: Ethernet port 502 messaging available (1=Yes) bits 1-15: <i>(Reserved)</i>	
2004	82 : 01 : 05	Word	Ethernet services status bits 0-2: Ethernet port 502 messaging 1 = idle 2 = operational bits 3-15: <i>(Reserved)</i>	
2005 - 2006	82 : 01 : 06 - 82 : 01 : 07	UDInt	Ethernet IP address Register 2005: bits 0-7: first byte bits 8-15: second byte Register 2006: bits 0-7: third byte bits 8-15: fourth byte	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
2007 - 2008	82 : 01 : 08 - 82 : 01 : 09	UDInt	Ethernet subnet mask	
			Register 2007:	
			bits 0-7: first byte	
			bits 8-15: second byte	
			Register 2008:	
			bits 0-7: third byte	
2009 - 2010	82 : 01 : 0A - 82 : 01 : 0B	UDInt	Ethernet gateway address	
			Register 2009:	
			bits 0-7: first byte	
			bits 8-15: second byte	
			Register 2010:	
			bits 0-7: third byte	
2011 - 2013	82 : 01 : 0C - 82 : 01 : 0E	Word[3]	Ethernet MAC Address	
			Register 2011:	
			bits 0-7: first hex byte	
			bits 8-15: second hex byte	
			Register 2012:	
			bits 0-7: third hex byte	
			bits 8-15: fourth hex byte	
			Register 2013:	
2014 - 2016	82 : 01 : 0F- 82 : 01 : 11	Word[3]	Ethernet II framing registers	
			Register 2014:	
			bit 0: Ethernet II framing supported (1=Yes)	
			bit 1: Ethernet II framing receiver supported (1=Yes)	
			bit 2: Ethernet II framing sender supported (1=Yes)	
			bit 3: Ethernet auto-detection supported (1=Yes)	
			bits 4-15: <i>(Reserved)</i>	
			Register 2015:	
			bit 0: Ethernet II framing configured (1=Yes)	
			bit 1: Ethernet II framing receiver configured (1=Yes)	
			bit 2: Ethernet II framing sender configured (1=Yes)	
			bit 3: Ethernet auto-detection configured (1=Yes)	
			bits 4-15: <i>(Reserved)</i>	
			Register 2016:	
			bit 0: Ethernet II framing operational (1=Yes)	
			bit 1: Ethernet II framing receiver operational (1=Yes)	
bit 2: Ethernet II framing sender operational (1=Yes)				
bit 3: Ethernet auto-detection operational (1=Yes)				
bits 4-15: <i>(Reserved)</i>				
2017 - 2018	82 : 01 : 12 - 82 : 01 : 13	UDInt	Ethernet received correct frames counter	
2019 - 2020	82 : 01 : 14 - 82 : 01 : 15	UDInt	Ethernet transmitted correct frames counter	
2021	82 : 01 : 16	UInt	Ethernet opened clients counter	
2022	82 : 01 : 17	UInt	Ethernet opened servers counter	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
2023 - 2024	82 : 01 : 18	UDInt	Ethernet MB error messages sent counter	
2025 - 2026	82 : 01 : 1A - 82 : 01 : 1B	UDInt	Ethernet MB messages sent counter	
2027 - 2028	82 : 01 : 1C - 82 : 01 : 1D	UDInt	Ethernet MB messages received counter	
2029 - 2036	82 : 01 : 1E - 82 : 01 : 25	Word[8]	Ethernet device name	
2037	82 : 01 : 26	Word	Ethernet IP assignment capability	
			bit 0: Ethernet IP served by name available (1=Yes)	
			bit 1: Ethernet IP served by MAC BootP available (1=Yes)	
			bit 2: Ethernet IP served by MAC DHCP available (1=Yes)	
			bit 3: Ethernet IP served by stored assignment available (1=Yes)	
			bits 4-15: <i>(Reserved)</i>	
2038	82 : 01 : 27	Word	Ethernet IP assignment operational	
			bit 0: Ethernet IP served by name available (1=Yes)	
			bit 1: Ethernet IP served by MAC BootP available (1=Yes)	
			bit 2: Ethernet IP served by MAC DHCP available (1=Yes)	
			bit 3: Ethernet IP served by stored assignment available (1=Yes)	
			bits 4-15: <i>(Reserved)</i>	
2039 - 2099	82 : 01 : 28 - 82 : 01 : 64		<i>(Reserved)</i>	

Configuration Variables

Configuration Overview

Configuration variables are grouped according to the following criteria

Configuration variable groups	Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)
Configuration	540 to 649	69 : 01 : 01 to 6A : 01 : 32
Setting	650 to 699	6B : 01 : 01 to 6B : 01 : 32
Extended settings for communication	3000 to 3120	96 : 01 : 01 to 96 : 01 : 79

Configuration Variables

The configuration variables are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, page 383
540	69 : 01 : 01	UInt	Motor operating mode 2 = 2-wire overload 3 = 3-wire overload 4 = 2-wire independent 5 = 3-wire independent 6 = 2-wire reverser 7 = 3-wire reverser 8 = 2-wire 2-step 9 = 3-wire 2-step 10 = 2-wire 2-speed 11 = 3-wire 2-speed 256-511 = Custom logic program (0-255)	B
541	69 : 01 : 02	UInt	Motor transition timeout (s)	
542-544	69 : 01 : 03 - 69 : 01 : 05		(Reserved)	
545	69 : 01 : 06	Word	Controller AC inputs setting register bits 0-3 Controller AC logic inputs configuration (See <i>DT_ACInputSetting</i> , page 386) bits 4-15 (Reserved)	
546	69 : 01 : 07	UInt	Thermal overload setting bits 0-2 Motor temperature sensor type: 0 = None 1 = PTC binary 2 = PT100 3 = PTC analog 4 = NTC analog bits 3-4 Thermal overload mode: 0 = Definite 2 = Inverse thermal bits 5-15 (Reserved)	B
547	69 : 01 : 08	UInt	Thermal overload fault definite timeout (s)	
548	69 : 01 : 09		(Reserved)	
549	69 : 01 : 0A	UInt	Motor temperature sensor fault threshold (x 0.1 Ω)	
550	69 : 01 : 0B	UInt	Motor temperature sensor warning threshold (x 0.1 Ω)	
551	69 : 01 : 0C	UInt	Motor temperature sensor fault threshold degree (°C)	
552	69 : 01 : 0D	UInt	Motor temperature sensor warning threshold degree (°C)	
553	69 : 01 : 0E	UInt	Rapid cycle lockout timeout (s)	
554	69 : 01 : 0F		(Reserved)	
555	69 : 01 : 10	UInt	Current phase loss timeout (x 0.1 s)	
556	69 : 01 : 11	UInt	Overcurrent fault timeout (s)	
557	69 : 01 : 12	UInt	Overcurrent fault threshold (% FLC)	
558	69 : 01 : 13	UInt	Overcurrent warning threshold (% FLC)	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
559	69 : 01 : 14	Word	Ground current fault configuration	B
			bit 0 Ground current mode	
			bits 1-15 (<i>Reserved</i>)	
560	69 : 01 : 15	UInt	Ground CT primary	
561	69 : 01 : 16	UInt	Ground CT secondary	
562	69 : 01 : 17	UInt	External ground current fault timeout (x 0.01 s)	
563	69 : 01 : 18	UInt	External ground current fault threshold (x 0.01 A)	
564	69 : 01 : 19	UInt	External ground current warning threshold (x 0.01 A)	
565	69 : 01 : 1A	UInt	Motor nominal voltage (V)	1
566	69 : 01 : 1B	UInt	Voltage phase imbalance fault timeout starting (x 0.1 s)	1
567	69 : 01 : 1C	UInt	Voltage phase imbalance fault timeout running (x 0.1 s)	1
568	69 : 01 : 1D	UInt	Voltage phase imbalance fault threshold (% imb)	1
569	69 : 01 : 1E	UInt	Voltage phase imbalance warning threshold (% imb)	1
570	69 : 01 : 1F	UInt	Overvoltage fault timeout (x 0.1 s)	1
571	69 : 01 : 20	UInt	Overvoltage fault threshold (% Vnom)	1
572	69 : 01 : 21	UInt	Overvoltage warning threshold (% Vnom)	1
573	69 : 01 : 22	UInt	Undervoltage fault timeout (x 0.1 s)	1
574	69 : 01 : 23	UInt	Undervoltage fault threshold (% Vnom)	1
575	69 : 01 : 24	UInt	Undervoltage warning threshold (% Vnom)	1
576	69 : 01 : 25	UInt	Voltage phase loss fault timeout (x 0.1 s)	1
577	69 : 01 : 26	Word	Voltage dip setting	1
			bit 0 Load shedding enable	
			bit 1 Auto-restart enable	
			bits 2-15 (<i>Reserved</i>)	
578	69 : 01 : 27	UInt	Load shedding timeout (s)	1
579	69 : 01 : 28	UInt	Voltage dip threshold (% Vnom)	1
580	69 : 01 : 29	UInt	Voltage dip restart timeout (s)	1
581	69 : 01 : 2A	UInt	Voltage dip restart threshold (% Vnom)	1
582	69 : 01 : 2B	UInt	Auto restart immediate timeout (x 0.1 s)	
583	69 : 01 : 2C	UInt	Motor nominal power (x 0.1 kW)	1
584	69 : 01 : 2D	UInt	Overpower fault timeout (s)	1
585	69 : 01 : 2E	UInt	Overpower fault threshold (% Pnom)	1
586	69 : 01 : 2F	UInt	Overpower warning threshold (% Pnom)	1
587	69 : 01 : 30	UInt	Underpower fault timeout (s)	1
588	69 : 01 : 31	UInt	Underpower fault threshold (% Pnom)	1
589	69 : 01 : 32	UInt	Underpower warning threshold (% Pnom)	1
590	69 : 01 : 33	UInt	Under power factor fault timeout (x 0.1 s)	1
591	69 : 01 : 34	UInt	Under power factor fault threshold (x 0.01 PF)	1
592	69 : 01 : 35	UInt	Under power factor warning threshold (x 0.01 PF)	1
593	69 : 01 : 36	UInt	Over power factor fault timeout (x 0.1 s)	1
594	69 : 01 : 37	UInt	Over power factor fault threshold (x 0.01 PF)	1
595	69 : 01 : 38	UInt	Over power factor warning threshold (x 0.01 PF)	1
596	69 : 01 : 39	UInt	Auto restart delayed timeout (s)	
597-599	69 : 01 : 3A - 69 : 01 : 3C		(<i>Reserved</i>)	
600	6A : 01 : 01		(<i>Not significant</i>)	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, page 383
601	6A : 01 : 02	Word	General configuration register 1	
			bit 0 Controller system config required: 0 = exit the configuration menu 1 = go to the configuration menu	A
			bits 1-7 (<i>Reserved</i>)	
			Control mode configuration, bits 8-10 (one bit is set to 1):	
			bit 8 Config via HMI keypad enable	
			bit 9 Config via HMI engineering tool enable	
			bit 10 Config via network port enable	
			bit 11 Motor star-delta	B
			bit 12 Motor phases sequence: 0 = A B C 1 = A C B	
			bits 13-14 Motor phases (See DT_PhaseNumber , page 390)	B
bit 15 Motor auxiliary fan cooled (factory setting = 0)				
602	6A : 01 : 03	Word	General configuration register 2	
			bits 0-2 Fault reset mode (See DT_ResetMode , page 390)	C
			bit 3 HMI port parity setting: 0 = none 1 = even (factory setting)	
			bits 4-8 (<i>Reserved</i>)	
			bit 9 HMI port endian setting	
			bit 10 Network port endian setting	
			bit 11 HMI motor status LED color	
			bits 12-15 (<i>Reserved</i>)	
603	6A : 01 : 04	UInt	HMI port address setting	
604	6A : 01 : 05	UInt	HMI port baud rate setting (Baud)	
605	6A : 01 : 06		(<i>Reserved</i>)	
606	6A : 01 : 07	UInt	Motor trip class (s)	
607	6A : 01 : 08		(<i>Reserved</i>)	
608	6A : 01 : 09	UInt	Thermal overload fault reset threshold (% trip level)	
609	6A : 01 : 0A	UInt	Thermal overload warning threshold (% trip level)	
610	6A : 01 : 0B	UInt	Internal ground current fault timeout (x 0.1 s)	
611	6A : 01 : 0C	UInt	Internal ground current fault threshold (% FLCmin)	
612	6A : 01 : 0D	UInt	Internal ground current warning threshold (% FLCmin)	
613	6A : 01 : 0E	UInt	Current phase imbalance fault timeout starting (x 0.1 s)	
614	6A : 01 : 0F	UInt	Current phase imbalance fault timeout running (x 0.1 s)	
615	6A : 01 : 10	UInt	Current phase imbalance fault threshold (% imb)	
616	6A : 01 : 11	UInt	Current phase imbalance warning threshold (% imb)	
617	6A : 01 : 12	UInt	Jam fault timeout (s)	
618	6A : 01 : 13	UInt	Jam fault threshold (% FLC)	
619	6A : 01 : 14	UInt	Jam warning threshold (% FLC)	
620	6A : 01 : 15	UInt	Undercurrent fault timeout (s)	
621	6A : 01 : 16	UInt	Undercurrent fault threshold (% FLC)	
622	6A : 01 : 17	UInt	Undercurrent warning threshold (% FLC)	
623	6A : 01 : 18	UInt	Long start fault timeout (s)	
624	6A : 01 : 19	UInt	Long start fault threshold (% FLC)	
625	6A : 01 : 1A		(<i>Reserved</i>)	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
626	6A : 01 : 1B	UInt	HMI display contrast setting	
			bits 0-7 HMI display contrast setting	
			HMI display brightness setting	
627	6A : 01 : 1C	UInt	Contactor rating (0.1 A)	
628	6A : 01 : 1D	UInt	Load CT primary	B
629	6A : 01 : 1E	UInt	Load CT secondary	B
630	6A : 01 : 1F	UInt	Load CT multiple passes (passes)	B
631	6A : 01 : 20	Word	Fault enable register 1	
			bits 0-1 (<i>Reserved</i>)	
			bit 2 Ground current fault enable	
			bit 3 Thermal overload fault enable	
			bit 4 Long start fault enable	
			bit 5 Jam fault enable	
			bit 6 Current phase imbalance fault enable	
			bit 7 Undercurrent fault enable	
			bit 8 (<i>Reserved</i>)	
			bit 9 Self test enable 0 = disable 1 = enable (factory setting)	
			bit 10 HMI port fault enable	
			bits 11-14 (<i>Reserved</i>)	
			bit 15 Network port fault enable	
632	6A : 01 : 21	Word	Warning enable register 1	
			bit 0 (<i>Not significant</i>)	
			bit 1 (<i>Reserved</i>)	
			bit 2 Ground current warning enable	
			bit 3 Thermal overload warning enable	
			bit 4 (<i>Reserved</i>)	
			bit 5 Jam warning enable	
			bit 6 Current phase imbalance warning enable	
			bit 7 Undercurrent warning enable	
			bits 8-9 (<i>Reserved</i>)	
			bit 10 HMI port warning enable	
			bit 11 Controller internal temperature warning enable	
			bits 12-14 (<i>Reserved</i>)	
bit 15 Network port warning enable				

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
633	6A : 01 : 22	Word	Fault enable register 2	
			bit 0 (<i>Reserved</i>)	
			bit 1 Diagnostic fault enable	
			bit 2 Wiring fault enable	
			bit 3 Overcurrent fault enable	
			bit 4 Current phase loss fault enable	
			bit 5 Current phase reversal fault enable	
			bit 6 Motor temperature sensor fault enable	
			bit 7 Voltage phase imbalance fault enable	1
			bit 8 Voltage phase loss fault enable	1
			bit 9 Voltage phase reversal fault enable	1
			bit 10 Undervoltage fault enable	1
			bit 11 Overvoltage fault enable	1
			bit 12 Underpower fault enable	1
			bit 13 Overpower fault enable	1
bit 14 Under power factor fault enable	1			
bit 15 Over power factor fault enable	1			
634	6A : 01 : 23	Word	Warning enable register 2	
			bit 0 (<i>Reserved</i>)	
			bit 1 Diagnostic warning enable	
			bit 2 (<i>Reserved</i>)	
			bit 3 Overcurrent warning enable	
			bit 4 Current phase loss warning enable	
			bit 5 (<i>Reserved</i>)	
			bit 6 Motor temperature sensor warning enable	
			bit 7 Voltage phase imbalance warning enable	1
			bit 8 Voltage phase loss warning enable	1
			bit 9 (<i>Reserved</i>)	1
			bit 10 Undervoltage warning enable	1
			bit 11 Overvoltage warning enable	1
			bit 12 Underpower warning enable	1
			bit 13 Overpower warning enable	1
bit 14 Under power factor warning enable	1			
bit 15 Over power factor warning enable	1			
635-636	6A : 01 : 24 - 6A : 01 : 25		(<i>Reserved</i>)	
637	6A : 01 : 26	UInt	Auto-reset attempts group 1 setting	
638	6A : 01 : 27	UInt	Auto-reset group 1 timeout	
639	6A : 01 : 28	UInt	Auto-reset attempts group 2 setting	
640	6A : 01 : 29	UInt	Auto-reset group 2 timeout	
641	6A : 01 : 2A	UInt	Auto-reset attempts group 3 setting	
642	6A : 01 : 2B	UInt	Auto-reset group 3 timeout	
643	6A : 01 : 2C	UInt	Motor step 1 to 2 timeout	
644	6A : 01 : 2D	UInt	Motor step 1 to 2 threshold	
645	6A : 01 : 2E	UInt	HMI port fallback setting (See <i>DT_OutputFallbackStrategy</i> , <i>page 390</i>)	
646-649	6A : 01 : 2F - 6A : 01 : 32		(<i>Reserved</i>)	

Setting Variables

The setting variables are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, page 383
650	6B : 01 : 01	Word	HMI language setting register:	
			bit 0-4 HMI language setting (See <i>DT_Language5</i> , page 390)	
			bits 5-15 (Not significant)	
651	6B : 01 : 02	Word	HMI display items register 1	
			bit 0 HMI display average current enable	
			bit 1 HMI display thermal capacity level enable	
			bit 2 HMI display L1 current enable	
			bit 3 HMI display L2 current enable	
			bit 4 HMI display L3 current enable	
			bit 5 HMI display ground current enable	
			bit 6 HMI display motor status enable	
			bit 7 HMI display current phase imbalance enable	
			bit 8 HMI display operating time enable	
			bit 9 HMI display I/O status enable	
			bit 10 HMI display reactive power enable	
			bit 11 HMI display frequency enable	
			bit 12 HMI display starts per hour enable	
			bit 13 HMI display control mode enable	
			bit 14 HMI display start statistics enable	
bit 15 HMI motor temperature sensor enable				
652	6B : 01 : 03	UInt	Motor full load current ratio, FLC1 (% FLCmax)	
653	6B : 01 : 04	UInt	Motor high speed full load current ratio, FLC2 (% FLCmax)	
654	6B : 01 : 05	Word	HMI display items register 2	
			bit 0 HMI display L1-L2 voltage enable	1
			bit 1 HMI display L2-L3 voltage enable	1
			bit 2 HMI display L3-L1 voltage enable	1
			bit 3 HMI display average voltage enable	1
			bit 4 HMI display active power enable	1
			bit 5 HMI display power consumption enable	1
			bit 6 HMI display power factor enable	1
			bit 7 HMI display average current ratio enable	
			bit 8 HMI display L1 current ratio enable	1
			bit 9 HMI display L2 current ratio enable	1
			bit 10 HMI display L3 current ratio enable	1
			bit 11 HMI display thermal capacity remaining enable	
			bit 12 HMI display time to trip enable	
			bit 13 HMI display voltage phase imbalance enable	1
			bit 14 HMI display date enable	
bit 15 HMI display time enable				
655-658	6B : 01 : 06 - 6B : 01 : 09	Word[4]	Date and time setting (See <i>DT_DateTime</i> , page 387)	
659	6B : 01 : 0A	Word[4]	HMI display items register 3	
			bit 0 HMI display temperature sensor degree CF	
			bits 1-15 (Reserved)	
660-681	6B : 01 : 0B - 6B : 01 : 20		(Reserved)	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
682	6B : 01 : 21	UInt	Network port fallback setting (See <i>DT_OutputFallbackStrategy</i> , <i>page 390</i>)	
683	6B : 01 : 22	Word	Control setting register (<i>see page 155</i>)	
			bits 0-1 (<i>Reserved</i>)	
			bits 2 Control remote local default mode (with LTM CU) 0 = remote 1 = local	
			bit 3 (<i>Reserved</i>)	
			bit 4 Control remote local buttons enable (with LTM CU) 0 = disable 1 = enable	
			bits 5-6 Control remote channel setting (with LTM CU) 0 = network 1 = terminal strip 2 = HMI	
			bit 7 (<i>Reserved</i>)	
			bit 8 Control local channel setting 0 = terminal strip 1 = HMI	
			bit 9 Control direct transition 0 = stop required during transition 1 = stop not required during transition	
			bit 10 Control transfer mode 0 = bump 1 = bumpless	
			bit 11 Stop terminal strip disable 0 = enable 1 = disable	
bit 12 Stop HMI disable 0 = enable 1 = disable				
bits 13-15 (<i>Reserved</i>)				
684-694	6B : 01 : 23 - 6B : 01 : 2D		(<i>Reserved</i>)	
695	6B : 01 : 2E	UInt	Network port baud rate setting (Baud) (See <i>DT_ExtBaudRate</i> , <i>page 388</i>)	
696	6B : 01 : 2F	UInt	Network port address setting	
697-699	6B : 01 : 30 - 6B : 01 : 32		(<i>Not significant</i>)	

Extended Configuration Variables for Communication

The extended configuration variables are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
3000-3001	96 : 01 : 01 - 96 : 01 : 02	UDInt	Ethernet IP address setting	
3002-3003	96 : 01 : 03 - 96 : 01 : 04	UDInt	Ethernet subnet mask setting	
3004-3005	96 : 01 : 05 - 96 : 01 : 06	UDInt	Ethernet gateway address setting	
3006-3009	96 : 01 : 07 - 96 : 01 : 09		(<i>Reserved</i>)	
3010-3011	96 : 01 : 0B - 96 : 01 : 0C	UDInt	Ethernet master IP address setting	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
3012-3013	96 : 01 : 0D - 96 : 01 : 0E	UDInt	Ethernet SNMP manager address 1 setting	
3014-3015	96 : 01 : 0F - 96 : 01 : 10	UDInt	Ethernet SNMP manager address 2 setting	
3016-3031	96 : 01 : 11 - 96 : 01 : 20	Word[16]	Ethernet SNMP system name setting	
3032-3047	96 : 01 : 21 - 96 : 01 : 30	Word[16]	Ethernet SNMP system location setting	
3048-3063	96 : 01 : 31 - 96 : 01 : 40	Word[16]	Ethernet SNMP system contact setting	
3064-3071	96 : 01 : 41 - 96 : 01 : 48	Word[8]	Ethernet SNMP community name get setting	
3072-3079	96 : 01 : 49 - 96 : 01 : 50	Word[8]	Ethernet SNMP community name set setting	
3080-3087	96 : 01 : 51 - 96 : 01 : 58	Word[8]	Ethernet SNMP community name trap setting	
3088	96 : 01 : 59		<i>(Reserved)</i>	
3089	96 : 01 : 5A	Word	Ethernet RSTP bridge priority	
3090	96 : 01 : 5B	Word	Ethernet RSTP hello time	
3091	96 : 01 : 5C	Word	Ethernet RSTP max age time	
3092	96 : 01 : 5D	Word	Ethernet RSTP transmit count	
3093	96 : 01 : 5E	Word	Ethernet RSTP forward delay	
3094	96 : 01 : 5F	Word	Ethernet RSTP port count	
3095	96 : 01 : 60	Word	Ethernet RSTP port 1 priority	
3096-3097	96 : 01 : 61 - 96 : 01 : 62	UDInt	Ethernet RSTP port 1 past cost	
3098	96 : 01 : 63	Word	Ethernet RSTP port 1 select	
3099	96 : 01 : 64	Word	Ethernet RSTP port 2 priority	
3100-3101	96 : 01 : 65 - 96 : 01 : 66	UDInt	Ethernet RSTP port 2 path cost	
3102	96 : 01 : 67	Word	Ethernet RSTP port 2 select	
3103	96 : 01 : 68	Word	Ethernet extended configuration control	
3104	96 : 01 : 69	Word	Ethernet broadcast storm protection	
3105	96 : 01 : 6A	Word	Ethernet QoS control	
3106	96 : 01 : 6B	Word	Ethernet QoS CIP class 0/1 urgent bits 0-3 Ethernet QoS CIP class 0/1 urgent queue priority bits 4-7 Ethernet QoS CIP class 0/1 urgent 8021 priority bits 8-11 Ethernet QoS CIP class 0/1 urgent DSCP bits 12-15 <i>(Reserved)</i>	
3107	96 : 01 : 6C	Word	Ethernet QoS CIP class 0/1 scheduled bits 0-3 Ethernet QoS CIP class 0/1 scheduled queue priority bits 4-7 Ethernet QoS CIP class 0/1 scheduled 8021 priority bits 8-11 Ethernet QoS CIP class 0/1 scheduled DSCP bits 12-15 <i>(Reserved)</i>	
3108	96 : 01 : 6D	Word	Ethernet QoS CIP class 0/1 high bits 0-3 Ethernet QoS CIP class 0/1 high queue priority bits 4-7 Ethernet QoS CIP class 0/1 high 8021 priority bits 8-11 Ethernet QoS CIP class 0/1 high DSCP bits 12-15 <i>(Reserved)</i>	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
3109	96 : 01 : 6E	Word	Ethernet QoS CIP class 0/1 low	
			bits 0-3 Ethernet QoS CIP class 0/1 low queue priority	
			bits 4-7 Ethernet QoS CIP class 0/1 low 8021 priority	
			bits 8-11 Ethernet QoS CIP class 0/1 low DSCP	
			bits 12-15 (<i>Reserved</i>)	
3110	96 : 01 : 6F	Word	Ethernet QoS CIP UCMM class 3	
			bits 0-3 Ethernet QoS CIP UCMM class 3 queue priority	
			bits 4-7 Ethernet QoS CIP UCMM class 3 8021 priority	
			bits 8-11 Ethernet QoS CIP UCMM class 3 DSCP	
			bits 12-15 (<i>Reserved</i>)	
3111	96 : 01 : 70	Word	Ethernet QoS PTP general	
			bits 0-3: Ethernet QoS PTP general queue priority	
			bits 4-7: Ethernet QoS PTP general 8021 priority	
			bits 8-11: Ethernet QoS PTP general DSCP	
			bits 12-15 (<i>Reserved</i>)	
3112	96 : 01 : 71	Word	Ethernet QoS PTP event	
			bits 0-3: Ethernet QoS PTP event queue priority	
			bits 4-7: Ethernet QoS PTP event 8021 priority	
			bits 8-11: Ethernet QoS PTP event DSCP	
			bits 12-15 (<i>Reserved</i>)	
3113	96 : 01 : 72	Word	Ethernet QoS default outbound priority	
3114	96 : 01 : 73	Word	Ethernet QoS number of ports	
3115	96 : 01 : 74	Word	Ethernet QoS port 1 default inbound priority	
3116	96 : 01 : 75	Word	Ethernet QoS port 2 default inbound priority	
3117	96 : 01 : 76	Word	Ethernet QoS device control	
3118	96 : 01 : 77	UDInt	Ethernet/IP capabilities control	

Command Variables

Command Variables

Command variables are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
700	6C : 01 : 01	Word	Logic outputs command register	
			bit 0 Logic output 1 command	
			bit 1 Logic output 2 command	
			bit 2 Logic output 3 command	
			bit 3 Logic output 4 command	
			bit 4 Logic output 5 command	1
			bit 5 Logic output 6 command	1
			bit 6 Logic output 7 command	1
			bit 7 Logic output 8 command	1
			<i>bits 8-15 (Reserved)</i>	
701-703	6C : 01 : 02 - 6C : 01 : 04		<i>(Reserved)</i>	
704	6C : 01 : 05	Word	Control register 1	
			bit 0 Motor run forward command	
			bit 1 Motor run reverse command	
			bit 2 (Reserved)	
			bit 3 Fault reset command	
			bit 4 (Reserved)	
			bit 5 Self test command	
			bit 6 Motor low speed command	
			<i>bits 7-15 (Reserved)</i>	
705	6C : 01 : 06	Word	Control register 2	
			bit 0 Clear all command Clear all parameters, except:	
			<ul style="list-style-type: none"> ● Motor LO1 closings count ● Motor LO2 closings count ● Controller internal temperature max ● Thermal capacity level 	
			bit 1 Clear statistics command	
			bit 2 Clear thermal capacity level command	
			bit 3 Clear controller settings command	
			bit 4 Clear network port settings command	
			<i>bits 5-15 (Reserved)</i>	
706-709	6C : 01 : 07 - 6C : 01 : 0A		<i>(Reserved)</i>	
710-799	6C : 01 : 08 - 6C : 01 : 64		<i>(Forbidden)</i>	

User Map Variables

Overview

User Map variables are designed to optimize the access to several non-contiguous registers in one single request.

You can define several read and write areas.

The user map can be defined via:

- a PC running SoMove with TeSys T DTM
- a PLC via the network port

User Map Variables

User Map Variables are described below:

User map variable groups	Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)
User Map addresses	800 - 899	6D : 01 : 01 - 6D : 01 : 64
User Map values	900 - 999	6E : 01 : 01 - 6E : 01 : 64

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, page 383
800-898	6D : 01 : 01 - 6D : 01 : 63	Word[99]	User map addresses setting	
899	6D : 01 : 64	Word	(Reserved)	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, page 383
900-998	6E : 01 : 01 - 6E : 01 : 63	Word[99]	User map values	
999	6E : 01 : 64	Word	(Reserved)	

The User Map Address group is used to select a list of addresses to read or write. It can be considered as a configuration area.

The User Map Value group is used to read or write values associated to addresses configured in the User Map Address area:

- Read or write of register 900 allows to read or write the register address defined in register 800
- Read or write of register 901 allows to read or write the register address defined in register 801,...

Example of Use

The User Map Address configuration below gives an example of user map address configuration to access non-contiguous registers:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Value configured	Read/Write variables
800	6D : 01 : 01	452	Fault register 1
801	6D : 01 : 02	453	Fault register 2
802	6D : 01 : 03	461	Warning register 1
803	6D : 01 : 04	462	Warning register 2
804	6D : 01 : 05	450	Minimum wait time
805	6D : 01 : 06	500	Average current (0.01 A) MSW
806	6D : 01 : 07	501	Average current (0.01 A) LSW

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Value configured	Read/Write variables
850	6D : 01 : 51	651	HMI display items register 1
851	6D : 01 : 52	654	HMI display items register 2
852	6D : 01 : 53	705	Control register 2

With this configuration, monitoring information is accessible with one single read request through register addresses 900 to 906.

Configuration and command can be written with one single write using register addresses 950 to 952.

Custom Logic Variables

Custom Logic Variables

Custom logic variables are described below:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, page 383
1250	71 : 01 : 33	Word	Custom logic setting register 1	
			<i>bit 0 (Reserved)</i>	
			bit 1 Logic input 3 external ready enable	
			<i>bits 2-15 (Reserved)</i>	
1251-1269	71 : 01 : 34 - 71 : 01 : 46		<i>(Reserved)</i>	
1270	71 : 01 : 47	Word	Custom logic command register 1	
			bit 0 Custom logic external fault command	
			<i>bits 1-15 (Reserved)</i>	
1271-1279	71 : 01 : 48 - 71 : 01 : 50		<i>(Reserved)</i>	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, page 383
1280	71 : 01 : 51	Word	Custom logic monitoring register 1	
			<i>bit 0 (Reserved)</i>	
			bit 1 Custom logic system ready	
			<i>bits 2-15 (Reserved)</i>	
1281-1300	71 : 01 : 52 - 71 : 01 : 65		<i>(Reserved)</i>	

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, page 383
1301-1399	71 : 01 : 66 - 71 : 01 : C8	Word[99]	General purpose registers for logic functions	

Mirroring Variables

Mirroring Variables

Mirroring variables are updated to present—in a series of contiguous registers—the values of other high priority status, I/O and control registers, as follows:

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
2500	8C : 01 : 01	Word	Mirror status register	
			bit 0 Input table freshness 0 = table has been read within 100ms 1 = table has not been read within 100ms	
			bit 1 Input table validity 0 = table data is invalid 1 = table data is valid	
			bit 2 Input table changed 0 = table data is unchanged from last read 1 = table data is changed from last read	
			<i>bits 3 - 7 (Reserved)</i>	
			bit 8 Output table freshness 0 = table has been read within 100ms 1 = table has not been read within 100ms	
			bit 9 Output table validity 0 = table data is invalid 1 = table data is valid	
			bit 10 Output table changed 0 = table data is unchanged from last read 1 = table data is changed from last read	
			<i>bits 11 - 15 (Reserved)</i>	
2501	8C : 01 : 02	Word	<i>(Reserved)</i>	
2502	8C : 01 : 03	Word	Mirrors System Status Register 1 (register 455 or object 68 : 01 : 06)	
			bit 0 mirrors System Ready	
			bit 1 mirrors System On	
			bit 2 mirrors System Fault	
			bit 3 mirrors System Warning	
			bit 4 mirrors System Tripped	
			bit 5 mirrors Fault Reset Authorized	
			bit 6 mirrors Controller Power	
			bit 7 mirrors Motor Running (with detection of a current, if greater than 10% FLC)	
			bits 8-13 mirrors Motor Average Current Ratio 32 = 100% FLC - 63 = 200% FLC	
bit 14 mirrors Control via HMI				
bit 15 mirrors Motor Starting (start in progress) 0 = descending current is less than 150% FLC 1 = ascending current is greater than 10% FLC				

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read-only variables	Note, <i>page 383</i>
2503	8C : 01 : 04	Word	Mirrors System Status Register 2 (register 456 or object 68 : 01 : 07)	
			bit 0 mirrors Auto-reset Active	
			bit 1 (<i>Not significant</i>)	
			bit 2 mirrors Fault Power Cycle Requested	
			bit 3 mirrors Motor Restart Time Undefined	
			bit 4 mirrors Rapid Cycle Lockout	
			bit 5 mirrors Load Shedding	1
			bit 6 mirrors Motor Speed 0 = FLC1 setting is used 1 = FLC2 setting is used	
			bit 7 mirrors HMI Port Comm Loss	
			bit 8 mirrors Network Port Comm Loss	
			bit 9 mirrors Motor Transition Lockout	
			<i>bits 10-15 (Not significant)</i>	
2504	8C : 01 : 05	Word	Mirrors Logic Inputs Status (register 457 or object 68 : 01 : 08)	
			bit 0 mirrors Logic Input 1	
			bit 1 mirrors Logic Input 2	
			bit 2 mirrors Logic Input 3	
			bit 3 mirrors Logic Input 4	
			bit 4 mirrors Logic Input 5	
			bit 5 mirrors Logic Input 6	
			bit 6 mirrors Logic Input 7	
			bit 7 mirrors Logic Input 8	1
			bit 8 mirrors Logic Input 9	1
			bit 9 mirrors Logic Input 10	1
			bit 10 mirrors Logic Input 11	1
			bit 11 mirrors Logic Input 12	1
			bit 12 mirrors Logic Input 13	1
			bit 13 mirrors Logic Input 14	1
			bit 14 mirrors Logic Input 15	1
bit 15 mirrors Logic Input 16	1			
2505	8C : 01 : 06	Word	Logic outputs status (register 458 or object 68 : 01 : 09)	
			bit 0 mirrors Logic Output 1	
			bit 1 mirrors Logic Output 2	
			bit 2 mirrors Logic Output 3	
			bit 3 mirrors Logic Output 4	
			bit 4 mirrors Logic Output 5	1
			bit 5 mirrors Logic Output 6	1
			bit 6 mirrors Logic Output 7	1
			bit 7 mirrors Logic Output 8	1

Modbus/TCP (Register addresses)	EtherNet/IP (Object addresses)	Variable type	Read/Write variables	Note, <i>page 383</i>
2506	8C : 01 : 07	Word	Logic Outputs Command Register (register 700 or object 6C : 01 : 01)	
			bit 0 mirrors Logic Output 1 Command	
			bit 1 mirrors Logic Output 2 Command	
			bit 2 mirrors Logic Output 3 Command	
			bit 3 mirrors Logic Output 4 Command	
			bit 4 mirrors Logic Output 5 Command	1
			bit 5 mirrors Logic Output 6 Command	1
			bit 6 mirrors Logic Output 7 Command	1
			bit 7 mirrors Logic Output 8 Command	1
				<i>bits 8-15 (Reserved)</i>
2507	8C : 01 : 08	Word	Control Register 1 (register 704 or object 6C : 01 : 05)	
			bit 0 mirrors Motor Run Forward Command	
			bit 1 mirrors Motor Run Reverse Command	
			<i>bit 2 (Reserved)</i>	
			bit 3 mirrors Fault Reset Command	
			<i>bit 4 (Reserved)</i>	
			bit 5 mirrors Self Test Command	
			bit 6 mirrors Motor Low Speed Command	
	<i>bits 7-15 (Reserved)</i>			
2508	8C : 01 : 09	Word	Analog Output 1 Command (register 706 or object 6C : 01 : 07)	
2509 - 2599	8C : 01 : 0A - 8C : 01 : 64	–	<i>(Reserved)</i>	

Section 7.10

Using the Standard Web Server User Interface

Overview

This section describes the functions of the standard Web server pages and how to use the data to operate an LTM R controller with or without an LTM E expansion module.

What Is in This Section?

This section contains the following topics:

Topic	Page
Description of the Standard Web Server User Interface	426
Home Page	430
Login Page	432
Documentation Page	433
Monitoring Page	434
Product Status Page	435
Metering Page	437
Diagnostics Page	438
Ethernet Basic Page	439
Ethernet Extended Diagnostics Page	440
RSTP Bridge Statistics Page	441
RSTP Port Statistics Page	442
Faults & Warnings Page	443
Fault History Page	444
Maintenance Page	446
Counters Page	447
Setup Page	448
Product Thermal Settings Page	449
Product Current Settings Page	450
Product Voltage Settings Page	451
Product Power Settings Page	452
RSTP Configuration Page	453
Communication Page	454
Password Page	455

Description of the Standard Web Server User Interface

Overview

The standard Web server pages provide an LTM R embedded HMI which can be accessed using a standard Web browser supported by:

- MS Internet Explorer version 8 or later
- Mozilla Firefox version 13 or later
- Google Chrome version 19 or later

Java Free Web Pages

The latest version of web pages are developed on a technology called as Light weight Web App (LWA). The web pages are independent from Java backbone, works under any environment (XP, Windows 7, Windows 8, and so on), and also on all web browsers (MS Internet Explorer, Mozilla Firefox, and Google Chrome). TeSys T new web pages works on PC without Java installation.

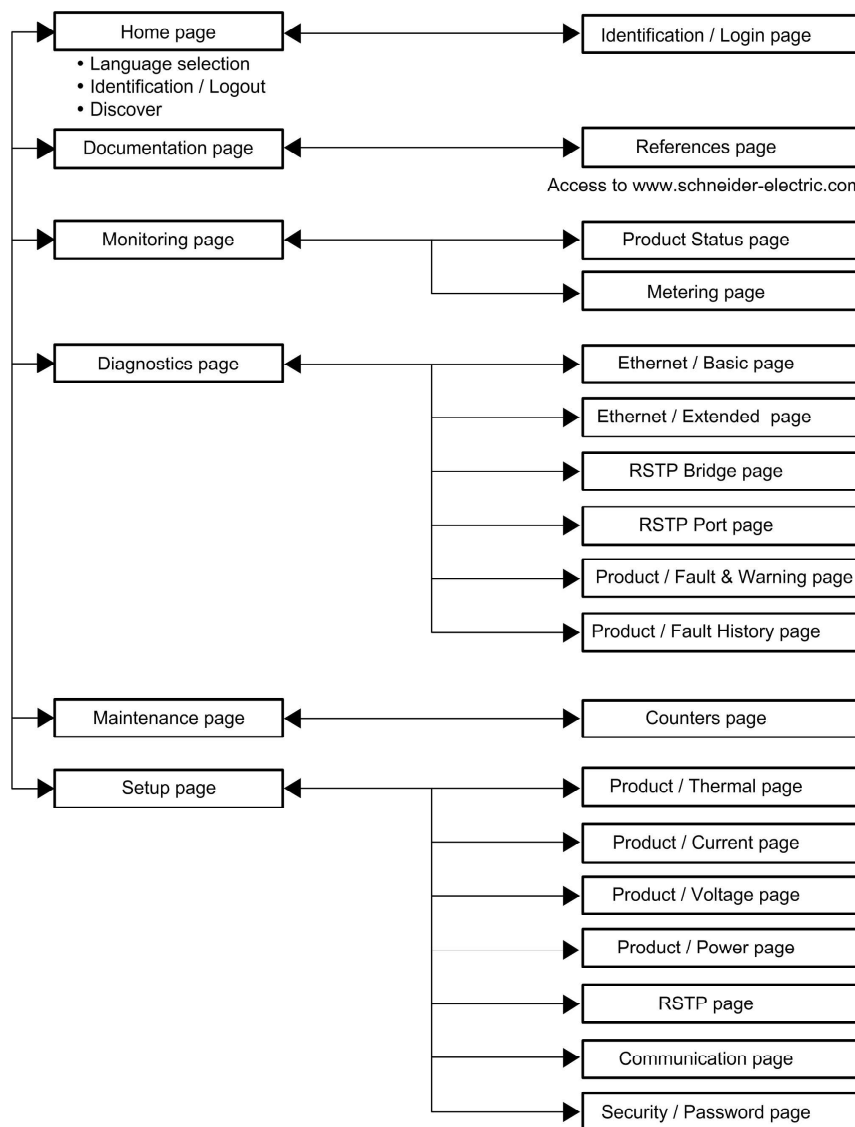
Functions of the Web Server User Interface

The following table describes all the functions of the Web server pages. Some functions are available according to the configuration (for example functions available only if LTM E is connected).

Menu	Information displayed	Function
HOME	Home page	Identification of the connected product: LTM R controller with/without LTM E expansion module
	Language	Display of the pages in the selected language
	Identification	Activation and deactivation of data modification mode
DOCUMENTATION	References	Link to the http://www.schneider-electric.com website
MONITORING	Product status	Display of information from input/output status and the internal product status
	Metering	Display of measured data with numerical value and graphical representation
DIAGNOSTICS	Ethernet basic diagnostics	Display of information on the IP parameters, FDR, device name and the protocol
	Ethernet extended diagnostics	Display and reset (password-protected) of communication statistics for each port
	RSTP bridge	Display and reset (password-protected) of statistics
	RSTP port	Display and reset (password-protected) of statistics and status for the ports 1 and 2
	Faults and warnings	Display of fault and warning status and fault count, if any, for each data, and reset (password-protected) of fault count
	Fault history	Display and reset (password-protected) of the thermal, current, voltage, and power fault history
MAINTENANCE	Counters	Display and reset (password-protected) of statistics
SETUP	Thermal settings	Display and modification (password-protected) of editable thermal settings
	Current settings	Display and modification (password-protected) of editable current settings
	Voltage settings	Display and modification (password-protected) of editable voltage settings
	Power settings	Display and modification (password-protected) of editable power settings
	RSTP settings	Display and modification (password-protected) of editable RSTP settings
	Communication	Display and modification (password-protected) of editable communication settings
	Password	Modification of the password used to edit data

Standard Web Server Structure

The diagram below shows the navigation in the standard Web server pages:

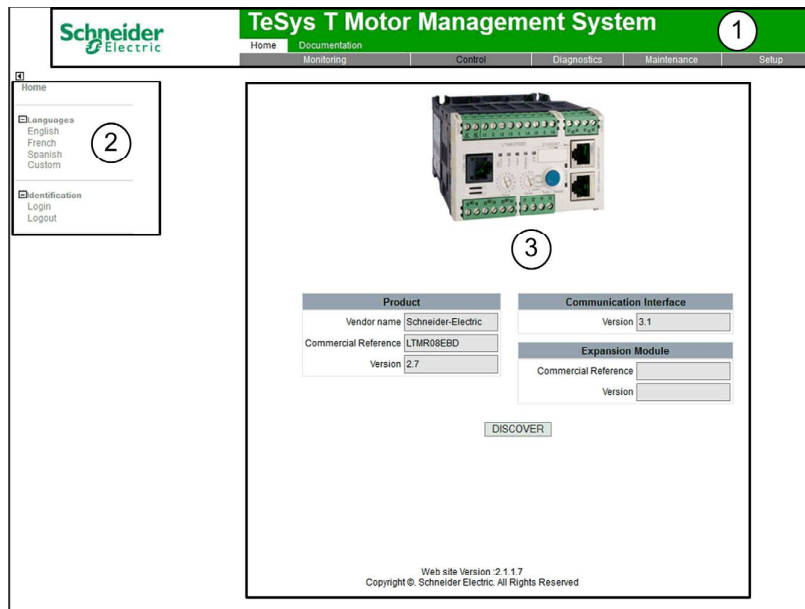


Access to the Standard Web Server

Step	Action
1	Connect the LTM RModbus/TCP controller to your PC.
2	Open a Web browser.
3	In the address bar, enter the IP address assigned to the LTM R controller. If necessary, refer to the LTM R IP addressing procedure (see page 312).
4	If connection is accepted, the Home page displays. You can navigate in the different pages via menus and sub-menus.
5	If you want to modify parameter values, enter your password by clicking Login on the Home menu. For information about <ul style="list-style-type: none"> entering the password, refer to the Login page (see page 432), changing the password, refer to the Password page (see page 455).

Standard Web Server User Interface

All Web server pages have the same appearance. A window is divided into 3 areas, as follows:



Legend	Area	Description
1	Menus	Banner displayed on every page, showing links to the menus: <ul style="list-style-type: none"> • Home • Documentation • Monitoring • Diagnostics • Maintenance • Setup
2	Sub-menu treeview	Links to the pages related to the selected menu. The treeview <ul style="list-style-type: none"> • always displays the menu name in which the user is navigating, • allows the user to expand or collapse functions.
3	Page body	Information related to the contextual page selected in the menu or sub-menu.

Clear Counters Button

A Clear Counters button is displayed in the following pages:

- Ethernet Extended Diagnostics page
- RSTP Bridge Statistics page
- RSTP Port Statistics page
- Fault History page
- Counters page

When clicking this button, in the Ethernet Extended Diagnostics, Fault History or Counters page (if enabled), you perform a Clear Statistics Command and the LTM R controller's statistics are reset. Thus, the following parameters are reset on the Web server pages:

- all statistics on the Ethernet Extended Diagnostics page
- all fault counters on the Faults & Warnings Diagnostics page
- the 5 fault records on the Fault History page
- the Operating Time and Motor Start Counters on the Counters page

When clicking the Clear Counters button (if enabled) in the RSTP Bridge page it clears all the RSTP Bridge Statistics.

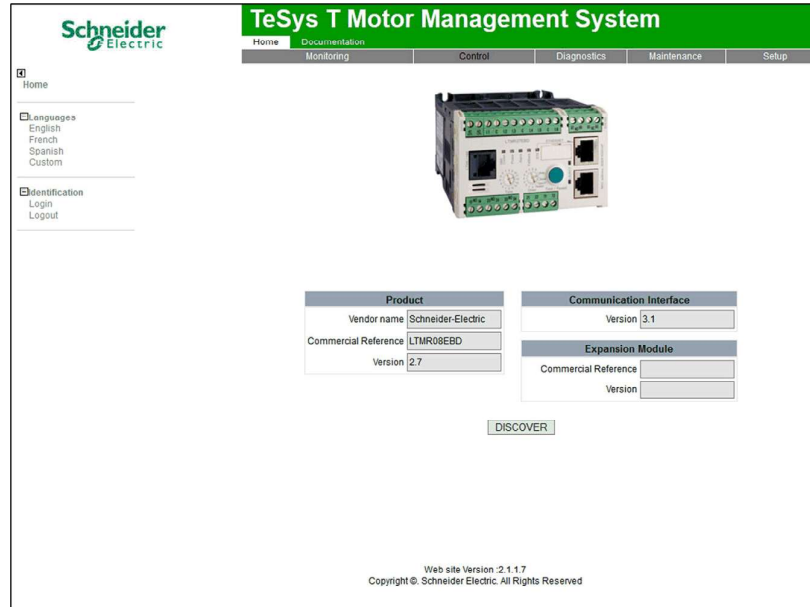
When clicking the Clear Counters button (if enabled) in the RSTP Port page it clears all the RSTP Port Statistics data on both ports.

The Clear Counters button is:

- disabled by default
- enabled in modification mode (after entering the correct password in the Login page)
- Clear counters button in RSTP port and RSTP Bridge pages are enabled in modification mode only if RSTP is enabled in the device

Home Page

Overview



Access to the Home Page

The Home page is displayed:

- after you connect to the standard Web server,
- when you click Home in the menu headers at any moment during navigation and from any page displayed.

Home Page Sub-Menu

The Home page sub-menu contains the following items:

Level 1	Level 2	Function
Languages	English	Switch the page language to English
	French	Switch the page language to French
	Spanish	Switch the page language to Spanish
	Custom	Switch the page language to the Custom language (English by default)
Identification	Login	Display the Login page to enter the password (<i>see page 432</i>)
	Logout	Deactivate the data modification mode

Language Selection

From the sub-menu zone, click one of the following languages to display the page content in this language:

- English
- French
- Spanish
- Custom (English by default)

Logout

Click **Logout** to disable the modification mode.

Home Page Body

The Home page displays the following product elements:

- A view of the LTM R controller and LTM E expansion module when connected
- LTM R controller data:
 - Vendor name: Schneider Electric
 - Commercial reference
 - Version
- Version of the communication interface
- LTM E expansion module data:
 - Commercial reference
 - Version
 - DISCOVER button

NOTE: LTM E data is blank if no LTM E is connected.

DISCOVER Button

The DISCOVER button is displayed in the following pages:

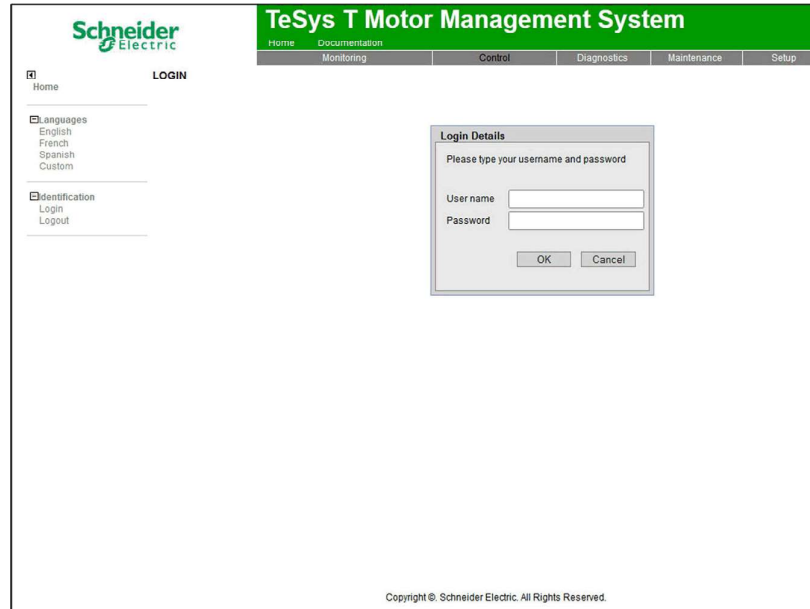
- Home page
- Documentation page
- Monitoring page
- Diagnostics page
- Maintenance page
- Setup page

When clicking this button, the Network status LED of the LTM R controller blinks 10 times alternatively red and green.

There is no visual modification on the Web page.

Login Page

Overview



Login Page Body

By default, the password protection is always enabled.

The Login page allows you to enter the user name and password required to activate the modification mode:

- the user name is "USER" (uppercase),
- the password is an integer from 0000 to 9999, the default value is 0000.

NOTE: The Web pages' password is the same as the LTM CU password.

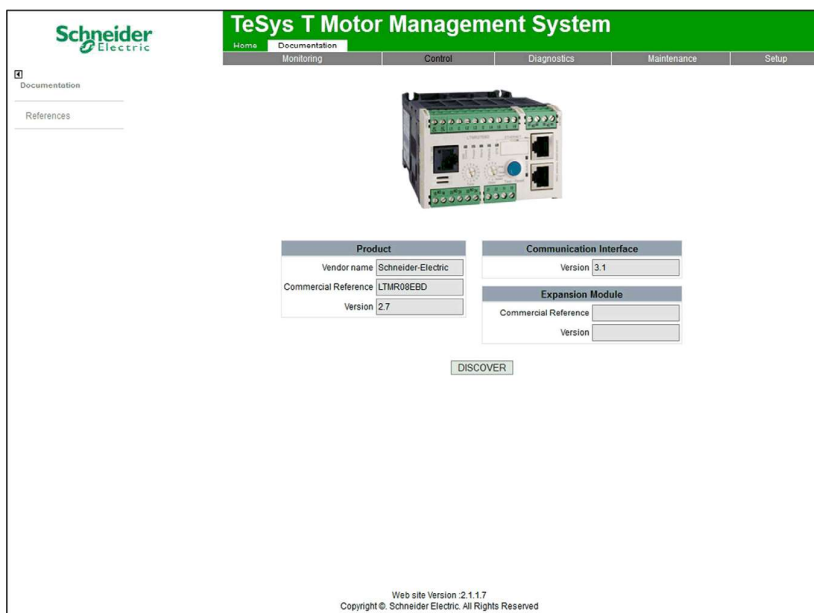
Exiting the Modification Mode

To exit the modification mode and deactivate the password

- click Logout in the Identification sub-menu of the Home page, or
- close the Web browser.

Documentation Page

Overview



Access to the Documentation Page

The Documentation page displays when you click Documentation in the menu headers at any moment during navigation and from any page displayed.

Documentation Page Sub-Menu

The Documentation page sub-menu allows you to access the References page. You can download LTM R technical publications and other technical information from our website at www.schneider-electric.com using the hyperlink on the References page.

Monitoring Page

Overview

TeSys T Motor Management System

Home Documentation **Monitoring** Control Diagnostics Maintenance Setup

Monitoring

Product Status

Metering

Product

Vendor name	Schneider-Electric
Commercial Reference	LTMRO8EBD
Version	2.7

Communication Interface

Version	3.1
---------	-----

Expansion Module

Commercial Reference	
Version	

DISCOVER

Web site Version: 2.1.1.7
Copyright © Schneider Electric. All Rights Reserved

Access to the Monitoring Page

The Monitoring page displays when you click Monitoring in the menu headers at any moment during navigation and from any page displayed.

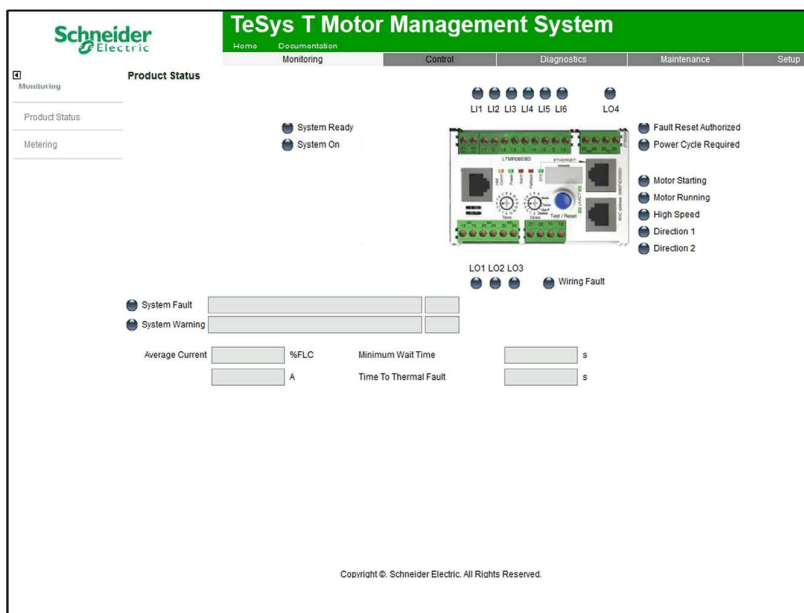
Monitoring Page Sub-Menu

The Monitoring page sub-menu allows you to access the following pages:

- Product Status (*see page 435*)
- Metering (*see page 437*)

Product Status Page

Overview



Product Status Page Body

The page displays

- the state of each I/O related to the dedicated connector pin on the product view (LTM R controller + LTM E expansion module),
- general states and values.

The state indicators depend on the following color code:

- Inactive states are in gray.
- Active states are in green, orange, or red depending on the data.

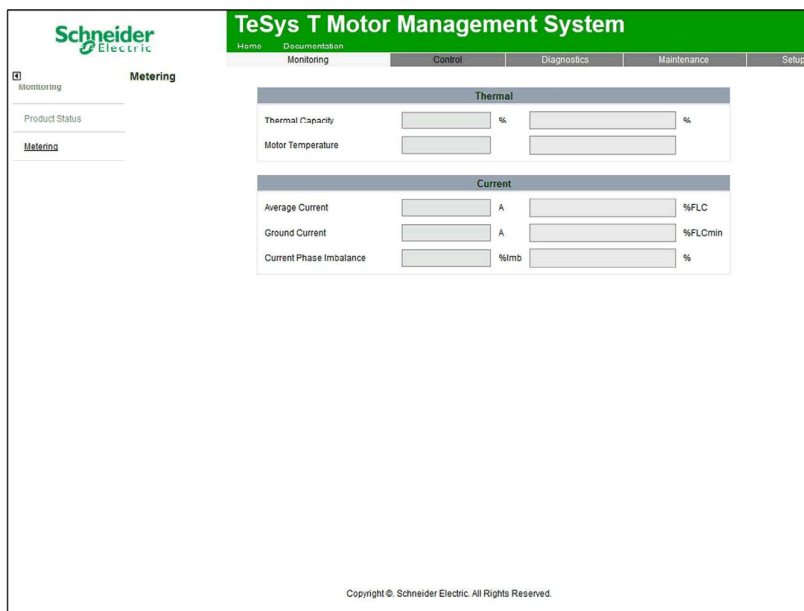
The Product Status page contains the following read-only data:

Data name	Parameter name
LI1	Logic Input 1
LI2	Logic Input 2
LI3	Logic Input 3
LI4	Logic Input 4
LI5	Logic Input 5
LI6	Logic Input 6
LI7 ⁽¹⁾	Logic Input 7
LI8 ⁽¹⁾	Logic Input 8
LI9 ⁽¹⁾	Logic Input 9
LI10 ⁽¹⁾	Logic Input 10
LO1	Logic Output 1
LO2	Logic Output 2
LO3	Logic Output 3
LO4	Logic Output 4
Wiring Fault	Wiring Fault
System Ready	System Ready
System ON	System ON
System Fault	System Fault
System Warning	System Warning

Data name	Parameter name
Fault Reset Authorized	Fault Reset Authorized
Power Cycle Required	Power Cycle Required
Minimum Wait Time	Minimum Wait Time
Time To Thermal Fault	Time To Trip
Motor Starting	Motor Starting
Motor Running	Motor Running
High Speed	High Speed
Direction 1 ⁽²⁾	Direction 1
Direction 2 ⁽²⁾	Direction 2
Average Current (%FLC)	Average Current
Average Current (A)	Average Current
(1) If no LTM E expansion module is connected, the indicator is not displayed.	
(2) The color in active state depends on the value of the HMI Motor Status LED Color parameter: red if value is 0, green if 1, gray if inactive.	

Metering Page

Overview



Metering Page Body

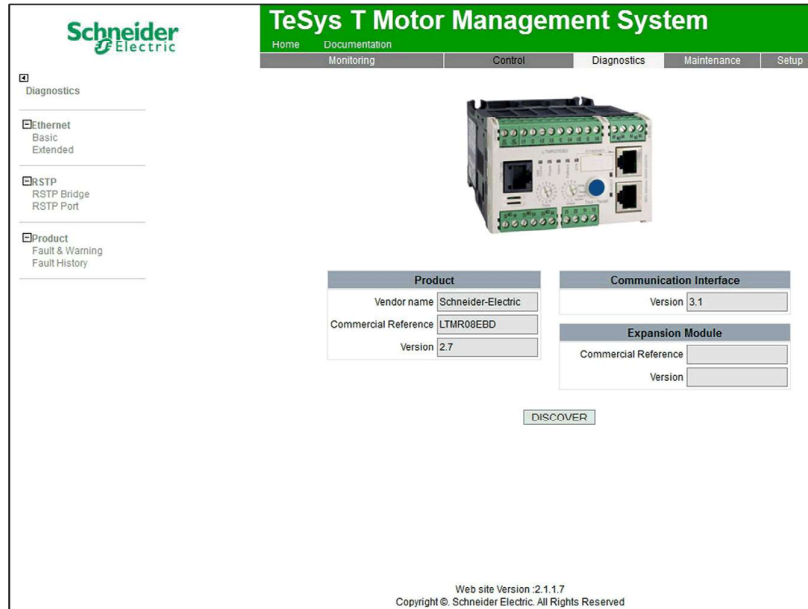
The page displays the numerical value and graphical representation next to each data name.

The Metering page contains the following read-only data:

Group name	Data name	Parameter name
Thermal	Thermal Capacity Level	Thermal Capacity Level
	Motor Temperature	<ul style="list-style-type: none"> Motor Temperature Sensor Degree: <ul style="list-style-type: none"> Motor Temperature Sensor Type is PT100 Motor temperature displayed in °C or °F according to the value of the HMI Display Temperature Sensor Degree CF parameter Motor Temperature Sensor Ohm: <ul style="list-style-type: none"> Motor Temperature Sensor Type is not PT100 Motor temperature displayed in Ohms No Motor Temperature Detected: <ul style="list-style-type: none"> Motor Temperature Data displays not connected Graph indicator shows 100%
Current	Average Current	Average Current
	Ground Current	Ground Current
	Current Phase Imbalance	Current Phase Imbalance
Voltage	Average Voltage ⁽¹⁾	Average Voltage
	Frequency ⁽¹⁾	Frequency
	Voltage Phase Imbalance ⁽¹⁾	Voltage Phase Imbalance
Power	Active Power ⁽¹⁾	Active Power
	Power Factor ⁽¹⁾	Power Factor
	Reactive Factor ⁽¹⁾	Reactive Power
(1) Not displayed if no LTM E expansion module is connected.		

Diagnostics Page

Overview



Access to the Diagnostics Page

The Diagnostics page displays when you click Diagnostics in the menu headers at any moment during navigation and from any page displayed.

Diagnostics Page Sub-Menu

The Diagnostics page sub-menu allows you to access the following pages:

Level 1	Level 2
Ethernet	Basic (<i>see page 439</i>)
	Extended (<i>see page 440</i>)
RSTP	RSTP Bridge (<i>see page 441</i>)
	RSTP Port (<i>see page 442</i>)
Product	Faults & Warnings (<i>see page 443</i>)
	Fault History (<i>see page 444</i>)

Ethernet Basic Page

Overview

Ethernet Basic Page Body

The Ethernet Basic page contains the following read-only data:

Group name	Data name	Parameter name
Address	MAC Address	Ethernet MAC Address
	IP Address	Ethernet IP Address
	Subnet Mask	Ethernet Subnet Mask
	Gateway Address	Ethernet Gateway Address
	Protocol	Ethernet Capabilities Control
Product Identification	Device Name	Ethernet Device Name
Faulty Device Replacement Status	FDR Status	Network Port FDR Status

Ethernet Extended Diagnostics Page

Overview

The screenshot shows the 'Ethernet Extended Diagnostics' page in the TeSys T Motor Management System. The page has a green header with the Schneider Electric logo and the system name. Below the header is a navigation menu with 'Diagnostics' selected. The main content area is titled 'Ethernet Extended Diagnostics' and features a 'Port Number' dropdown menu set to '1'. On the left, there are expandable sections for 'Ethernet Basic', 'Extended', 'RSTP', 'RSTP Bridge', 'RSTP Port', 'Product', 'Fault & Warning', and 'Fault History'. The main area contains two columns of statistics: 'Transmit Statistics' and 'Receive Statistics'. Each column has several data fields with input boxes. A 'Clear Counters' button is located at the bottom center of the page.

Ethernet Extended Diagnostics Page Body

In the Port Number list, select the Ethernet port to display the related diagnostics.

The Clear Counters button located at the bottom of the page can be used to reset all statistics including the Ethernet statistics counters (*see page 428*).

The Ethernet Extended Diagnostics page contains the following read-only data for each port:

Group name	Data name
Transmit Statistics	Frames Transmitted OK
	Collisions
	Excessive Collisions
	Carrier Sense Errors
	Link Speed
	Duplex Mode
Receive Statistics	Frames Received OK
	CRC Errors

RSTP Bridge Statistics Page

Overview

The screenshot displays the 'RSTP Bridge Statistics' page within the TeSys T Motor Management System. The interface includes a left-hand navigation menu with expandable sections for Diagnostics, Ethernet (Basic and Extended), RSTP (RSTP Bridge and RSTP Port), and Product (Fault & Warning and Fault History). The main content area is titled 'RSTP Bridge Statistics' and is divided into two primary sections: 'General' and 'Configured vs. learned'. The 'General' section contains input fields for Bridge Status, Bridge ID, Designated Root ID, Designated Root port, Rootpath Cost, and Total Topology Changes. The 'Configured vs. learned' section contains input fields for Configured Hello Time, Learned Hello Time, Configured Forward Delay, Learned Forward Delay, Configured Max Age, and Learned Max Age. A 'Clear Counters' button is positioned below these fields. The page footer includes the copyright notice: 'Copyright © Schneider Electric. All Rights Reserved.'

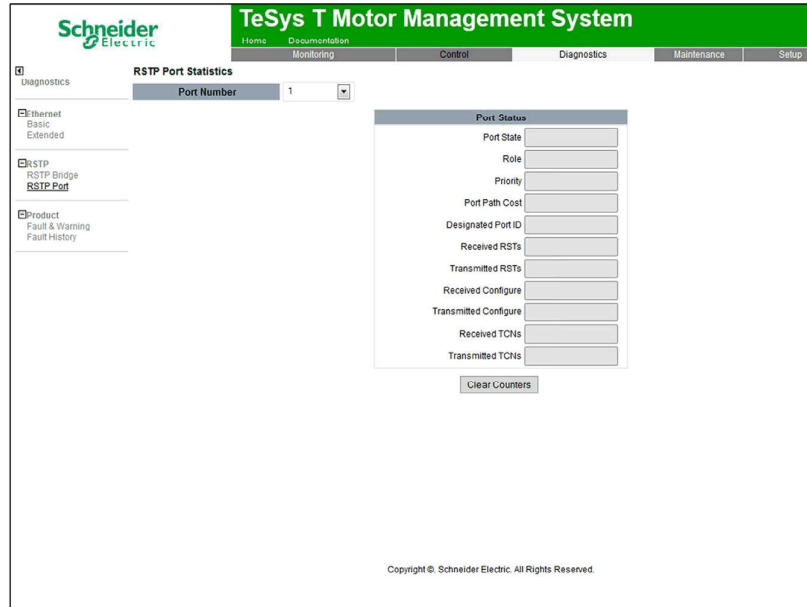
RSTP Bridge Statistics Page Body

The RSTP Bridge Statistic page contains the following data:

Group name	Data name
General	Bridge Status
	Bridge ID
	Designated Root ID
	Designated Root Port
	Rootpath Cost
	Total Topology Changes
Configured vs. learned	Configured Hello Time
	Learned Hello Time
	Configured Forward Delay
	Learned Forward Delay
	Configure Max Age
	Learned Max Age

RSTP Port Statistics Page

Overview



RSTP Port Statistics Page Body

In the Port Number list, select the RSTP port number in the field to display the related diagnostics. The RSTP Port Statistics page contains the following data for each port:

Group name	Data name
Port Status	Status
	Role
	Priority
	Port Path Cost
	Designated Port ID
	Received RSTs
	Transmitted RSTs
	Received Configure
	Transmitted Configure
	Received TCNs
	Transmitted TCNs

Faults & Warnings Page

Overview

The screenshot shows the 'Product Faults & Warnings' page in the TeSys T Motor Management System. The page is divided into two main sections: 'System Fault' and 'System Warning'. Each section has a 'Warnings' column, a 'Faults' column, and a 'FaultCount' column. The 'System Fault' section lists various faults such as Thermal Overload, Motor Temperature Sensor, Ground Current, Current Phase Imbalance, Current Phase Loss, Current Phase Reversal, Long Start, Jam, Under Current, Over Current, Voltage Phase Imbalance, Voltage Phase Loss, Voltage Phase Reversal, and Under Voltage. The 'System Warning' section lists various warnings such as Over Voltage, Under Power, Over Power, Under Power Factor, Over Power Factor, Network Port, Network Port Config, HMI Port, External Fault, Motor Diagnostic, Wiring Diagnostic, Test, Internal Controller, Internal Network Brick, and Internal Link. A 'Clear Counters and Fault History' button is located at the bottom of the table.

Faults & Warnings Page Body

The following items are displayed next to each data name: the warning or fault status and the faults counter value, if any.

The color code of the indicators is as follows:

In case of...	The indicator is...
warning	orange
fault	red
inactive warning or fault	gray

The Clear Counters button located at the bottom of the page can be used to reset all statistics and fault counters ([see page 428](#)).

The Faults & Warnings page contains read-only data.

Fault History Page

Overview

The screenshot displays the 'Fault History' page in the TeSys T Motor Management System. The page is organized into several sections:

- Navigation:** A top menu bar includes 'Home', 'Documentation', 'Monitoring', 'Control', 'Diagnostics', 'Maintenance', and 'Setup'. A left sidebar lists 'Diagnostics' (selected), 'Ethernet' (Basic, Extended), 'RSTP' (RSTP Bridge, RSTP Port), and 'Product' (Fault & Warning, Fault History).
- Fault Selection:** A dropdown menu is set to '0'. Below it are input fields for 'Date-Time' and 'Fault Code'.
- Current Parameters:**
 - FLCmax (A)
 - FLC ratio (%FLCmax)
 - Average Current (A)
 - L1 Current (A)
 - L2 Current (A)
 - L3 Current (A)
 - Ground Current (A)
 - Average Current Ratio (%FLC)
 - L1 Current ratio (%FLC)
 - L2 Current ratio (%FLC)
 - L3 Current ratio (%FLC)
 - Ground Current ratio (%FLCmin)
 - Current Phase Imbalance (%)
- Thermal Parameters:**
 - Thermal Capacity (%)
 - Motor Temp Sensor
- Voltage Parameters:**
 - Average Voltage (V)
 - L1-L2 Voltage (V)
 - L2-L3 Voltage (V)
 - L3-L1 Voltage (V)
 - Voltage Phase Imbalance (%)
 - Frequency (Hz)
- Power Parameters:**
 - Active Power (kW)
 - Power Factor
- Clear Counters and Fault History:** A button located at the bottom center of the page.

Fault History Page Body

In the Fault History list, select a fault number to display the history of LTM R controller data recorded at the time of the last 5 detected faults. Fault N0 contains the most recent fault record, and fault N4 contains the oldest retained fault record.

The Clear Counters and Fault History button located at the bottom of the page can be used to reset all statistics including the 5 fault records ([see page 428](#)).

The Fault History page contains the following read-only parameters for fault N0:

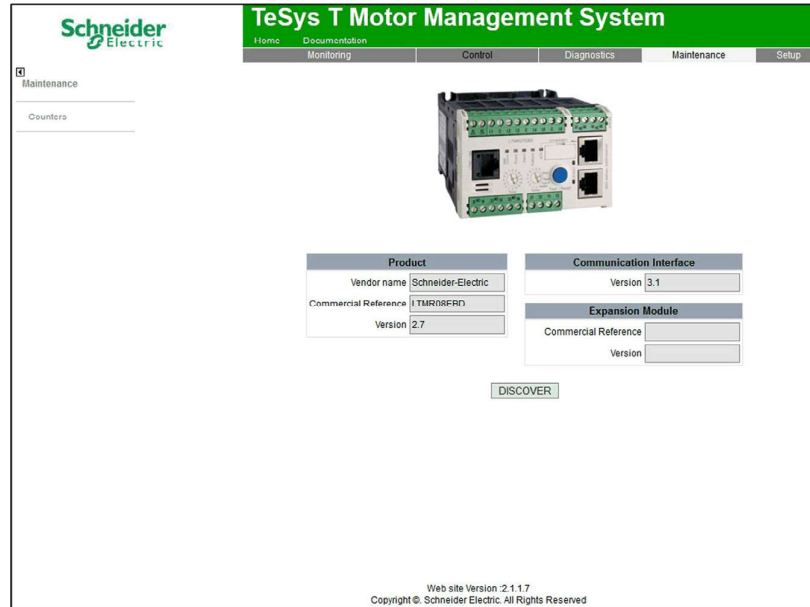
Group name	Data name	Parameter name
Fault Selection	Date-Time	Date and Time N0
	Fault Code	Fault Code N0
Current	FLC max	Full Load Current max
	FLC Ratio	Motor Full Load Current Ratio
	Average Current	Average Current N0
	L1 Current	L1 Current N0
	L2 Current	L2 Current N0
	L3 Current	L3 Current N0
	Ground Current	Ground Current N0
	Average Current Ratio	Average Current ratio N0
	L1 Current Ratio	L1 Current Ratio N0
	L2 Current Ratio	L2 Current Ratio N0
	L3 Current Ratio	L3 Current Ratio N0
	Ground Current Ratio	Ground Current Ratio N0
Current Phase Imbalance	Current Phase Imbalance N0	
Thermal	Thermal Capacity	Thermal Capacity Level N0
	Motor Temp Sensor	Motor Temperature Sensor Degree N0

Group name	Data name	Parameter name
Voltage	Average Voltage	Average Voltage N0
	L1-L2 Voltage	L1L2 Voltage N0
	L2-L3 Voltage	L2L3 Voltage N0
	L3-L1 Voltage	L3L1 Voltage N0
	Voltage Phase Imbalance	Voltage Phase Imbalance N0
	Frequency	Frequency N0
Power	Active Power	Active Power N0
	Power Factor	Power Factor N0

Faults N1–N4 fault record information in the same way as Fault N0. See corresponding N1–N4 parameters.

Maintenance Page

Overview



Access to the Maintenance Page

The Maintenance page displays when you click Maintenance in the menu headers at any moment during navigation and from any page displayed.

Maintenance Page Sub-Menu

The Maintenance page sub-menu allows you to access the Counters page.

Counters Page

Overview

The screenshot shows the 'Counters' page in the TeSys T Motor Management System. The page is divided into three main sections: Control Unit Statistics, Motor Statistics, and Last Start. Each section contains several data fields with input boxes and units. A 'Clear Counters' button is located at the bottom center of the page.

Group name	Data name	Parameter name
Control Unit Statistics	MaxTemperature	Controller Internal Temperature Maximum
	LO1 Closing Count	Motor LO1 Closings Count
	LO2 Closing Count	Motor LO2 Closings Count
	Last Power Off Duration	Controller Last Power Off Duration
Motor Statistics	Operation Time	Operating Time
	Starts Count	Motor Starts Count
	Starts Per Hour	Motor Starts Per Hour Count
Last Start	Level	Motor Last Start Current Ratio
	Duration	Motor Last Start Duration

Counters Page Body

The Clear Counters button located at the bottom of the page can be used to reset the operating time, the motor starts counters, and statistics on other pages (see page 428). The other parameters displayed on the Counters page are not reset.

The Counters page contains the following read-only data:

Group name	Data name	Parameter name
Control Unit Statistics	MaxTemperature	Controller Internal Temperature Maximum
	LO1 Closing Count	Motor LO1 Closings Count
	LO2 Closing Count	Motor LO2 Closings Count
	Last Power Off Duration	Controller Last Power Off Duration
Motor Statistics	Operation Time	Operating Time
	Starts Count	Motor Starts Count
	Starts Per Hour	Motor Starts Per Hour Count
Last Start	Level	Motor Last Start Current Ratio
	Duration	Motor Last Start Duration

Setup Page

Overview

Access to the Setup Page

The Setup page displays when you click Setup in the menu headers at any moment during navigation and from any page displayed.

Setup Page Sub-Menu

The Setup page sub-menu allows you to access the following pages:

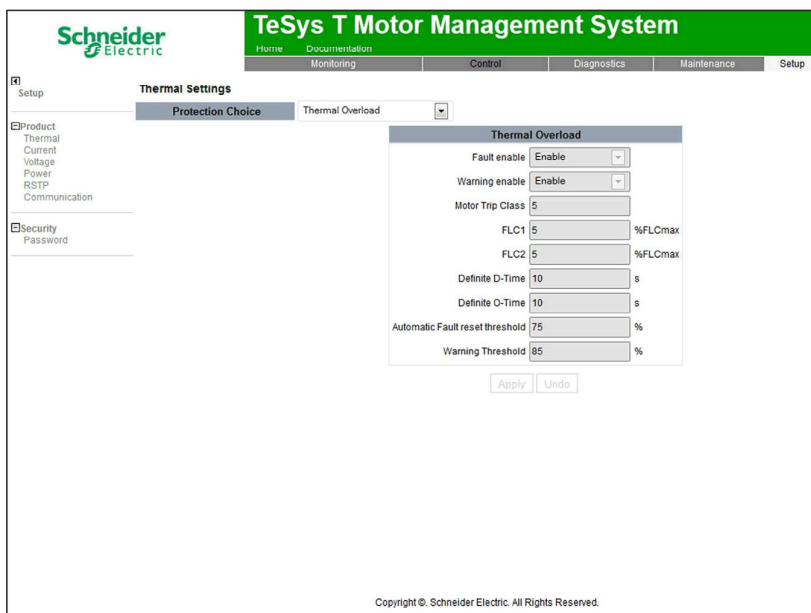
Level 1	Level 2
Product	Thermal (see page 449)
	Current (see page 450)
	Voltage (see page 451)
	Power (see page 452)
	RSTP Configuration (see page 453)
	Communication (see page 454)
Security	Password (see page 455)

Modifying Values in the Settings Pages

To modify setting values in the 6 pages of the Product sub-menu, you must have entered the modification mode ([see page 432](#)), otherwise the parameter values remain grayed.

Product Thermal Settings Page

Overview



TeSys T Motor Management System

Home Documentation Monitoring Control Diagnostics Maintenance Setup

Thermal Settings

Protection Choice Thermal Overload

Thermal Overload

Fault enable	Enable	
Warning enable	Enable	
Motor Trip Class	5	
FLC1	5	%FLCmax
FLC2	5	%FLCmax
Definite D-Time	10	s
Definite O-Time	10	s
Automatic Fault reset threshold	75	%
Warning Threshold	85	%

Apply Undo

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Thermal Settings Page Body

In the Protection Choice list, select the name of the desired protection group.

The modification of settings is allowed only after entry of the correct password on the Login page ([see page 432](#)).

Apply button sets the LTM R configuration with the entered data. The data entered must be valid.

Undo button retrieves the current values of the LTM R configuration.

The Thermal Settings page contains the editable data.

Product Current Settings Page

Overview

The screenshot shows the 'Current Settings' page for the TeSys T Motor Management System. The page is titled 'TeSys T Motor Management System' and has a navigation bar with 'Home', 'Documentation', 'Monitoring', 'Control', 'Diagnostics', 'Maintenance', and 'Setup'. The 'Setup' menu is expanded, showing 'Product', 'Security', and 'Communication'. The 'Product' menu is further expanded to show 'Thermal', 'Current', 'Voltage', 'Power', 'RSTP', and 'Communication'. The 'Current' settings are selected, and the 'Ground Current' settings are displayed in a table.

Ground Current	
Fault enable	Enable
Warning enable	Enable
Internal Fault Threshold	50 %FLCmin
Internal Fault Timeout	1.0 s
External Fault Threshold	1.0 A
External Fault Timeout	0.5 s
Internal Warning Threshold	50 %FLCmin
External Warning Threshold	1.0 A

Apply Undo

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Current Settings Page Body

In the Protection Choice list, select the name of the desired protection group.

The modification of settings is allowed only after entry of the correct password on the Login page ([see page 432](#)).

Apply button sets the LTM R configuration with the entered data. The data entered must be valid.

Undo button retrieves the current values of the LTM R configuration.

The Current Settings page contains editable data.