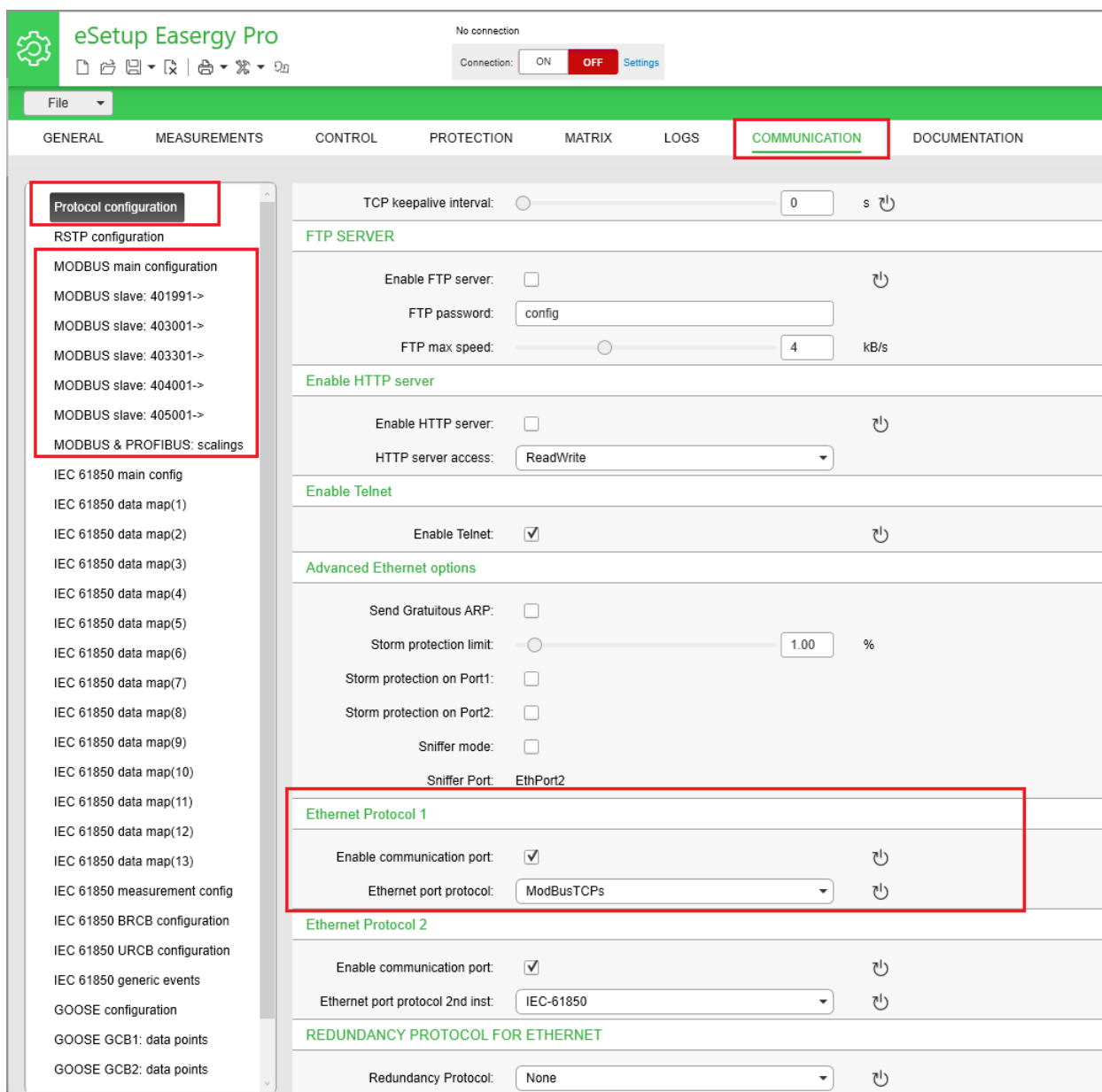


Generally speaking, all the information about Modbus Registers for the Easergy P3 relay can be seen in the Easergy pro software. One example will be provided in this file about controlling output contacts on the Easergy P3U30.

1. The first step is to ensure that the Modbus protocol is enabled for at least one port on your relay. In the example screen shot below, it has been enabled for Ethernet Port #1.

Ensure that the Modbus Main Configuration and other Modbus Slave menus are showing in your Easergy Pro Communication menu.



2. Next, as shown in the screen shot below, click on the first Modbus Slave menu, and scroll down to the bottom. You should see the writable items listed, as shown below.

You will see the Open-Select, Close-Select, and “Execute Operation” register addresses.

By linking an Object to an Output Contact on your relay, you can then control the Output Contacts. This can be done using the Matrix, or the Logic diagram.

Protocol configuration
RSTP configuration
MODBUS main configuration
MODBUS slave: 401891->
MODBUS slave: 403301->
MODBUS slave: 403301->
MODBUS slave: 404001->
MODBUS slave: 405001->
MODBUS & PROFIBUS scalings
IEC 61850 main config
IEC 61850 data map(1)
IEC 61850 data map(2)
IEC 61850 data map(3)
IEC 61850 data map(4)
IEC 61850 data map(5)
IEC 61850 data map(6)
IEC 61850 data map(7)
IEC 61850 data map(8)
IEC 61850 data map(9)
IEC 61850 data map(10)
IEC 61850 data map(11)
IEC 61850 data map(12)
IEC 61850 data map(13)
IEC 61850 measurement config
IEC 61850 BRCB configuration
IEC 61850 URCB configuration
IEC 61850 generic events
GOOSE configuration
GOOSE GCB1: data points
GOOSE GCB2: data points

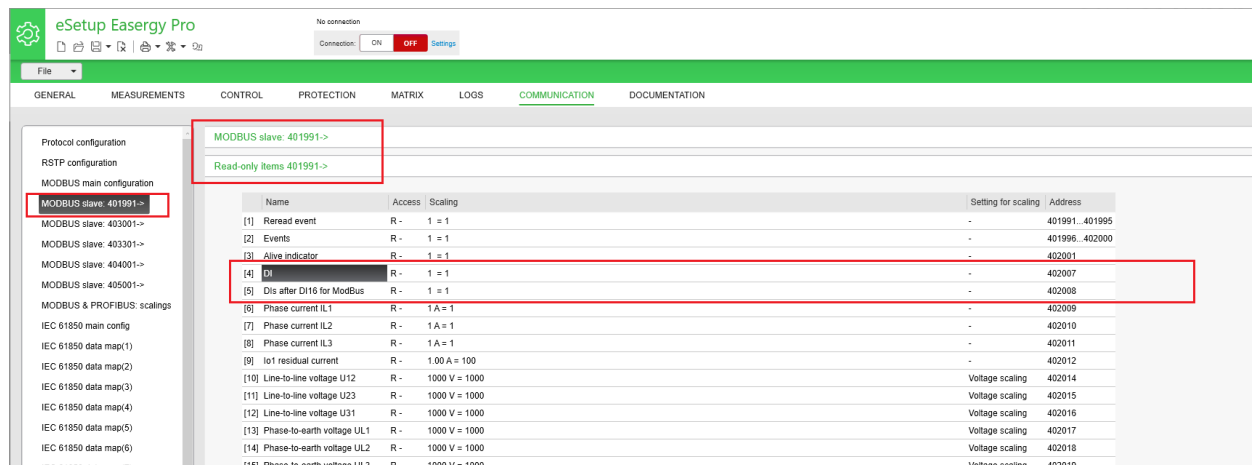
Name	Access	Scaling	Setting for scaling	Address
[1] Release latches	R W	Release=1	-	402501
[2] Synchronize minutes	R W	1 s = 1	-	402502
[3] Set RTC	- W	1 s = 1	-	402504, 402507
[4] Open select Obj1	R W	1 s = 1	-	402508
[5] Close select Obj1	R W	1 s = 1	-	402509
[6] Execute operation Obj1	- W	1 s = 1	-	402510
[7] Max ctrl pulse length of Obj1	R W	1.00 s = 100	-	402511
[8] Open select Obj2	R W	1 s = 1	-	402512
[9] Close select Obj2	R W	1 s = 1	-	402513
[10] Execute operation Obj2	- W	1 s = 1	-	402514
[11] Max ctrl pulse length of Obj2	R W	1.00 s = 100	-	402515
[12] Cancel selected operation	- W	1 s = 1	-	402516
[13] Open select Obj3	R W	1 s = 1	-	402517
[14] Close select Obj3	R W	1 s = 1	-	402518
[15] Execute operation Obj3	- W	1 s = 1	-	402519
[16] Max ctrl pulse length of Obj3	R W	1.00 s = 100	-	402520
[17] Open select Obj4	R W	1 s = 1	-	402521
[18] Close select Obj4	R W	1 s = 1	-	402522
[19] Execute operation Obj4	- W	1 s = 1	-	402523
[20] Max ctrl pulse length of Obj4	R W	1.00 s = 100	-	402524
[21] Ambient temperature	R W	1 °C = 1	-	402525
[22] SetGp common change	R W	1=0,2=1,3=2,4=3	-	402526
[23] Open select Obj5	R W	1 s = 1	-	402527

Here we can see the Open Select, Close Select & Execute registers for various Objects.
These can be linked to output contacts on the relay.

Scroll down

3. Regarding the Digital Inputs, the states are readable, but not writable. As shown in the screen shot below, the Modbus Holding Register 2007 (decimal) contains the first set of status values for the Digital Inputs 1 through 16.

Also, the status of the Logic Outputs can be read, but not written directly.



4. So, for this example, we will create a very simple Logic Diagram to control Trip Relay 1.

Let us use Object 1, and remember that the Open-Select, Close-Select, and Execute register addresses (decimal) are 2508, 2509, and 2510, respectively.

As shown below, we will use an AND function and link the output to Trip Relay 1. So, by controlling the status of Object 1, we can control the TR1.

In this example, we link the “Object 1 Close” to the Trip Relay 1 output.

To test this, you need to connect with Modbus to your relay, and send the following commands.

a) Write the value 0x0001 to the Holding Register 2509 (decimal). This selects the Object 1 “Close” operation.

b) Next, write the value 0x0001 to Holding Registers 2510 (decimal). This executes the previously select command for Object 1.

If you add a very simple Logic Diagram like the one shown below, you should hear the Trip Relay 1 contact click.

The purpose here is just to show that the Logic Diagram can be used to link the Objects to the digital outputs.

You can add a more practical logic diagram, or use the Matrix to make the link.

eSetup Easergy Pro

File

Measurements

Control

Protection

Matrix

Logs

Communication

Documentation

Device info

LED names

Disturbance recorder

Timers

Objects

Release latches

Names for logic outputs

Logic

Mimic

Local panel cent

Scaling

System clock

Clock sync

Diagnosis

Object1 close

&

Logic output 1

Trip relay 1

Element properties

Type: AND

☐ Inverted

ON delay: 0 ms

OFF delay: 0 ms

Inputs: 1

Comment:

[3% 2% 5%]

A very basic diagram is shown here with Object 1 linked to Trip relay 1 through an AND function.

You could add more practical conditions & also TON or TOF timers , if necessary

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