

IO-Link Master ICE3-8IOL-G65L-V1D-Y

Modbus Read/Write Example

Technical Update

With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

1. Modbus Read/Write Example

1.1 Document Overview

This document provides an example of how to read/write the Modbus configuration using Modbus Poll, which can be adapted for use with your PLC.

1.2 Modbus Configuration Data

Modbus configuration data is written to a starting address offset of 881 (base 1) for a given port. Prefix this value with the appropriate port; for example, 8881 as displayed in the **Address** field circled in red in the following image. This example writes configuration data to Port 8. To write to Port 1, use 1881, for Port 2 use 2881, and so forth.)

There are 27 two-byte registers to provide data. It is not required to provide data for all fields. For example, you can set the **Quantity** field to 10 and not write the last 17 registers worth of Modbus configuration data.

The first register is a **Write key** that must be set to decimal 61453. If it is not set to that value then the configuration data will not be written.

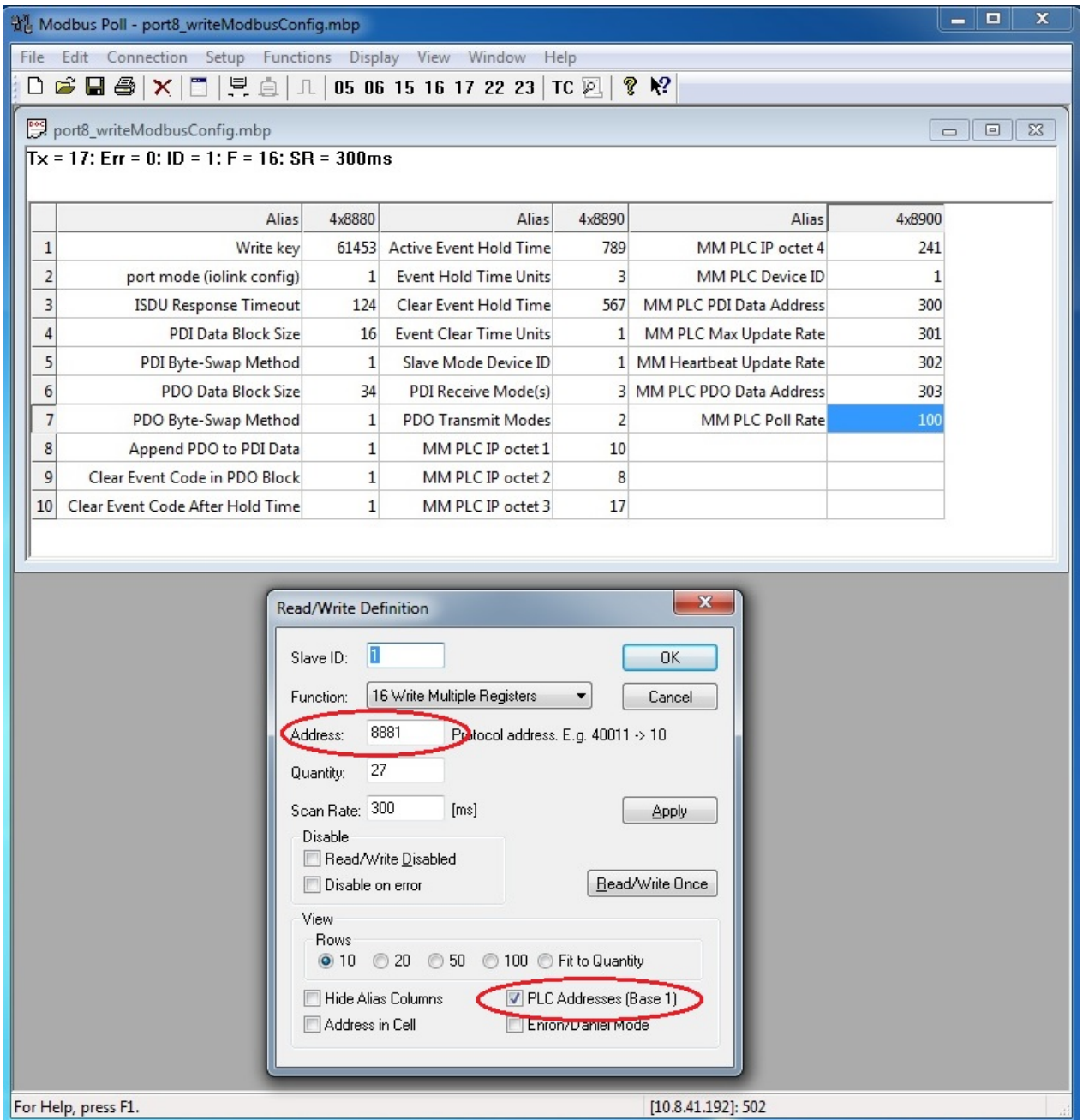
The second register is for the **IOLink config** field that sets the **Port Mode**. Any value other than the defined values are rejected and a message appears in the Modbus diagnostics.

- 0 = **Reset**
- 1 = **IOLink**
- 2 = **DigitalIn**
- 3 = **DigitalOut**

The remainder of the two-byte registers are for the Modbus configuration values displayed in the Web UI. The fields are expected to be in the same order as you see in the Web UI:

- ISDU Response Timeout
- PDI Data Block Size
- PDI Byte-Swap Method and so forth

Below the Modbus Poll image, you can see an image of the Web UI showing the changes written. For example, if you look in the Modbus Poll image, you can see we are using a value of 124 for **ISDU Response Timeout** and then in the Web UI image you can see **124** circled in red.

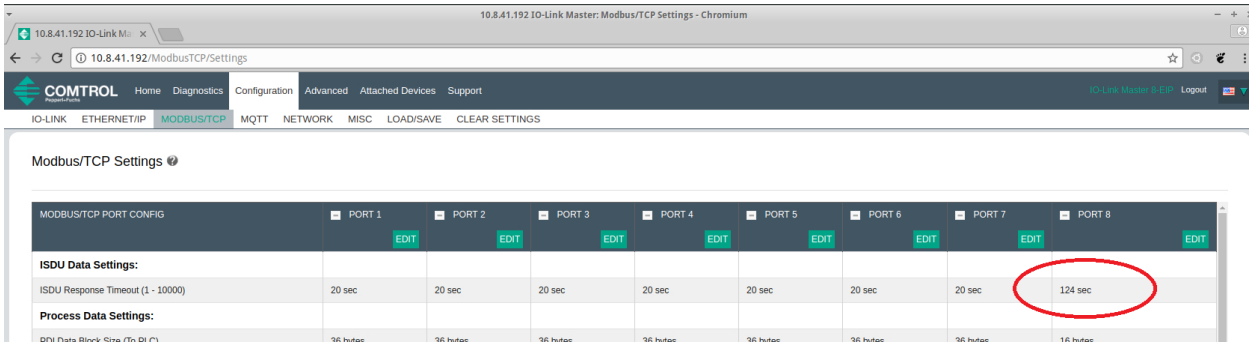


When providing data, if the field is a number, like **ISDU Response Timeout**, **PDO Data Block Size**, **Active Event Hold Time**, and so forth then provide that value. If the field is not numeric, such as **PDI Byte-Swap Method** then provide an integer correlating to your choice in the drop-down. For example:

PDI Byte-Swap Method

- 0 = no byte-swap
- 1 = word (16 bit) byte-swap
- 2 = dword (32 bit) byte-swap
- 3 = reverse registers

Remember, this is the exact order of those choices on the Web UI. Lastly, if the field is true/false, use a 0 for false and a 1 for true.



Register	Description	Legal Values
x881	Write key	61453
x882	Port Mode (IO-Link config)	0 – 3 (0 = Reset, 1 = IO-Link, 2 = DigitalIn, 3 = DigitalOut)
x883	ISDU Response Timeout	1 - 10000
x884	PDI Data Block Size	4,8,10,16,20,24,36
x885	PDI Byte-Swap Method	0 – 3 (0 = no byte-swap, 1 = word, 2 = dword, 3 = reverse registers)
x886	PDO Data Block Size	0,4,8,10,16,20,24,32,34
x887	PDO Byte-Swap Method	0 – 3 (0 = no byte-swap, 1 = word, 2 = dword, 3 = reverse registers)
x888	Append PDO to PDI Data	0 for false, everything else for true
x889	Clear Event Code in PDO Block	0 for false, everything else for true
x890	Clear Event Code After Hold Time	0 for false, everything else for true
x891	Active Event Hold Time	any 16 bit value > 0
x892	Event Hold Time Units	0 – 4 (0 = ms, sec, min, hours, 4 = days)
x893	Clear Event Hold Time	any 16 bit value > 0
x894	Event Clear Time Units	0 – 4 (0 = ms, sec, min, hours, 4 = days)
x895	Slave Mode Device ID	1 - 247

Register	Description	Legal Values
x896	PDI Receive Mode(s)	0 (<i>Slave</i>)
x897	PDO Transmit Mode(s)	0 (<i>Disabled</i>), 1 (<i>Slave</i>)
x898	PLC IP Address (octet 1)	0 - 255
x899	PLC IP Address (octet 2)	0 - 255
x900	PLC IP Address (octet 3)	0 - 255
x901	PLC IP Address (octet 4)	0 - 255
x902	PLC Device ID	
x903	PDI Data Address	1 - 65535
x904	PLC Max Update Rate	10 - 10000
x905	Heartbeat Update Rate	50 - 10000
x906	PDO Data Address	1 - 65535
x907	PLC Poll Rate	10 - 10000

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