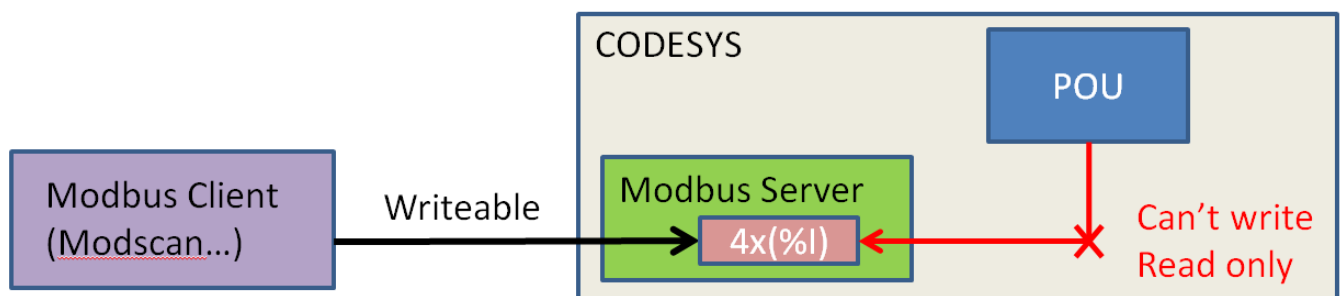


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|------------------|--|-----------------|----------|--------------|
| Date | 2019 / 04/ 27 | Related Product | CODESYS | |
| Category | ■FAQ □SOP □ Driver Tech Note | | | |
| Abstract | How to make CODESYS Modbus holding registers writable? | | | |
| Keyword | Holding Registers, CODESYS, Modbus Server | | | |
| Related OS | Windows | | | |
| Revision History | | | | |
| Date | Version | Author | Reviewer | Description |
| 2020/04/27 | V1.0 | Owen.Chang | Nick.Liu | CODESYS SP15 |
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| | | | | |

■ Problem Description & Architecture:

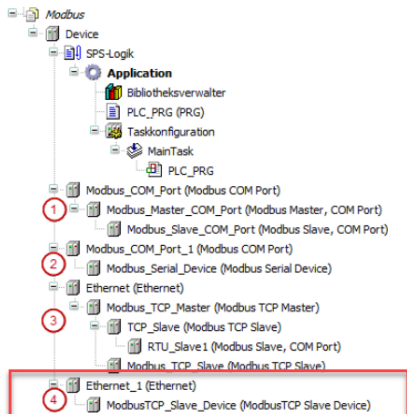
Originally, Modbus address 4x on CODESYS Modbus Server could only be written by Modbus client. In the new CODESYS version, CODESYS allow programming in CODESYS could write variable mapping to address 4x. This SOP shows you how to do that.



■ Brief Solution - Step by Step:

- Please create the Modbus server by following the instruction:
https://help.codesys.com/webapp/mod_f_configurator;product=core_modbus_configuration_editor;version=3.5.15.0

A Modbus network consists of a Modbus master and one or more Modbus slaves. A maximum of 32 slaves can be attached to a master. The Modbus devices can be linked via serial port or Ethernet.



Modbus devices, linked via serial port using of the device in use: *Modbus COM Port*

- (1): The CODESYS runtime acts as a Modbus master.
- (2): The CODESYS runtime acts as a Modbus slave. This Modbus slave is named "Modbus Device" in the following text.
- For Modbus serial, the operating type "Modbus RTU" is supported.

Modbus devices, linked via Ethernet network using the *Ethernet Adapter* device

- (3): The CODESYS runtime acts as a Modbus master (client).

A Modbus TCP slave can also act as a gateway for serial Modbus slaves.

- (4): The CODESYS runtime acts as a Modbus slave (server).

2. Double click "ModbusTCP_Slave_Device". Please click "general" to show configured parameters. Originally, you will notice that the memory type of holding registers is %IW. It means that the variable mapped to holding register only could be written by the Modbus client.

ModbusTCP_Slave_Device

General

Modbus TCP Slave Device I/O Mapping

Modbus TCP Slave Device IEC Objects

Information

Configured Parameters

☐ Watchdog

500 (ms)

Slave port

502

Unit ID

Holding registers

20 (%IW)

☐ Writeable

Input registers

20 (%QW)

Data Model

StartAddresses

Coils

0

Discrete inputs

0

Holding register

0

Input register

0

☐ Holding- and input register data areas overlay

- Check "Writeable", you will notice that the memory type of holding registers become %QW. It means that the program in CODESYS also could write 4x/0x address.

ModbusTCP_Slave_Device

General

Modbus TCP Slave Device I/O Mapping

Modbus TCP Slave Device IEC Objects

Information

Configured Parameters

☐ Watchdog 500 (ms)

Slave port 502

Unit ID

Holding registers 20 (%QW) ☒ Writeable

Input registers 20 (%QW)

Data Model

StartAddresses

Coils 0

Discrete inputs 0

Holding register 0

Input register 0

☐ Holding- and input register data areas overlay

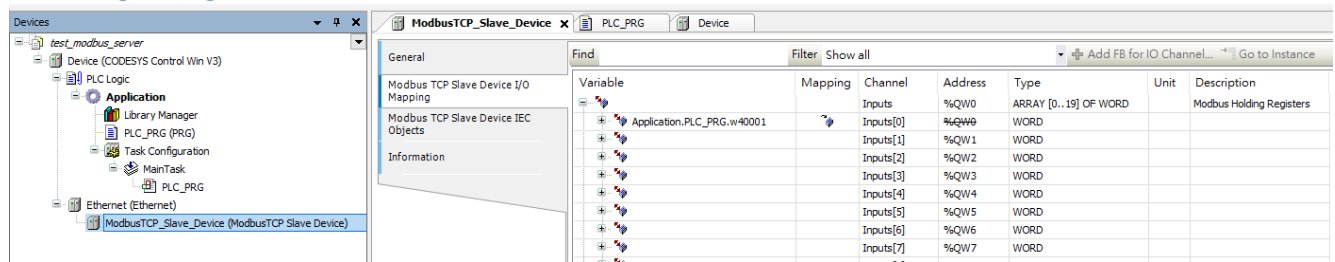
- Create a variable which map to address 4x. Set a flag to ensure that CODESYS will not write this variable every task cycle. Moreover, please make sure that your Modbus client will not keep writing value to this address.

ModbusTCP_Slave_Device **PLC_PRG**

```

1  PROGRAM PLC_PRG
2  VAR
3      w40001: WORD := 0;
4      xFlag: BOOL := FALSE;
5  END_VAR

1  IF xFlag THEN
2      w40001 := 100;
3      xFlag := FALSE;
4  END_IF
    
```



Reference:

https://help.codesys.com/webapp/mod_edt_slave_device_com;product=core_modbus_configuration_editor;version=3.5.15.0