

Advantech SE Technical Share Document

Date	2019 /11 /13					
Category	■□FAQ □ SOP	Related Product	CODESYS			
	Driver Tech Note					
Abstract	How to make CODESYS Modbus address more than 4096					
Keyword	motion control, resolution					
Related OS	N/A					
Revision History						
Date	Version	Author	Reviewer	Description		
2019/11/12	V1.0 0	wen.Chang	Nick.Liu			

Problem Description & Architecture:

For CODESYS Modbus server, the address is only up to 4096. However, sometime tags are more than 4096.

Holding registers (%IW)	Number of holding registers: possible values are 1–4096. The maximum number can be limited in the device description.
	<i>Writable</i> : For the holding register, writable I/O mappings (%QW addresses) are generated instead of read-only I/O mappings (%IW addresses). This allows the holding registers to be set by the Modbus device application (= server application) by means of the usual I/O mapping.
Input registers (%QW)	Number of input registers: possible values are 1-4096. The maximum number can be limited in the device description.

There are two ways you could provide to customers:

- 1. Could HMI support OPC UA? If yes, actually OPC more convenience for customers.
- 2. Use the Function Block to import the address array.

This FAQ will show you how to use this Function Block.

Brief Solution - Step by Step:

1. Add ModbusTCP Slave Library

Name	Namespace	Effective version
🗉 🕑 3SLicense = 3SLicense, 3.5.14.0 (3S - Smart Software Solutions GmbH)	_3S_LICENSE	3.5.14.0
BreakpointLogging = Breakpoint Logging Functions, 3.5.5.0 (3S - Smart Software Solutions GmbH)	BPLog	3.5.5.0
CAA Device Diagnosis = CAA Device Diagnosis, 3.5.15.0 (CAA Technical Workgroup)	DED	3.5.15.0
IoDrvEthernet = IoDrvEthernet, 3.5.15.0 (3S - Smart Software Solutions GmbH)	IoDrvEthernet	3.5.15.0
	IoDrvModbusTCPSlaveLibrary	3.5.15.0
IoStandard = IoStandard, 3.5.15.0 (System)	ToStandard	3 5 15 0
ModbusTCP Slave, 3.5.15.0 (3S - Smart Software Solutions GmbH)	ModbusTCP_Slave	3.5.15.0
💷 💟 3SLicense = 3SLicense, 3.5.14.0 (3S - Smart Software Solutions GmbH)	_3S_LICENSE	3.5.14.0
CAA Types = CAA Types Extern, 3.5.13.0 (CAA Technical Workgroup)	CAA	3.5.13.0
🣙 CmpErrors2 Interfaces, * (System)	CmpErrors	3.5.15.0
Standard = Standard, 3.5.15.0 (System)	Standard	3.5.15.0
🖲 📙 SysCpuHandling = SysCpuHandling, 3.5. 13.0 (System) 📐	SysCpuHandling	3.5.13.0

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2. Write the below program as the picture
PROGRAM POU
VAR
     fbMbTcpDevice : ModbusTCP Slave.ModbusServer;
    awInputData : ARRAY [0..9998] OF WORD;
    awOutputData : ARRAY [0..9] OF WORD;
    xBusy
                                             : BOOL;
    xError
                                              : BOOL;
    byConnections : BYTE;
    xEnable
                                            : BOOL;
END_VAR
awInputData[9998] := 1234;
fbMbTcpDevice(
                 wPort:= 502,
                 pInputData:= ADR (awInputData),
                 pOutputData:= ADR (awOutputData),
                 uiInputDataSize:= 9999,
                 uiOutputDataSize:= 10,
                xEnable:= xEnable,
             //xReset:= ,
                tTimeout:=10000,
                 xBusy=> xBusy,
                xError=> xError,
                byClientConnections=> byConnections
);
```

fbMbTcpDevice();

3. Test Modbus server by Modbus client

ModSca1		
Address: 9990 Length: 10	Device Id: 1 MODBUS Point Type 04: INPUT REGISTER	Number of Polls: 1120 Valid Slave Responses: 936 Reset Ctrs
39990: <00000> 39991: <00000> 39992: <00000> 39993: <00000> 39994: <00000> 39994: <00000> 39995: <00000> 39996: <00000> 39997: <00000> 39997: <00000> 39997: <00000>		