Modbus

Modbus ASCII

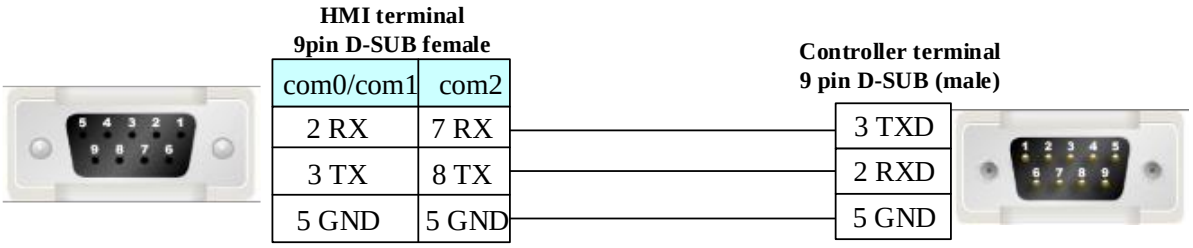
Directory

❖ 1.Introduction to Drive

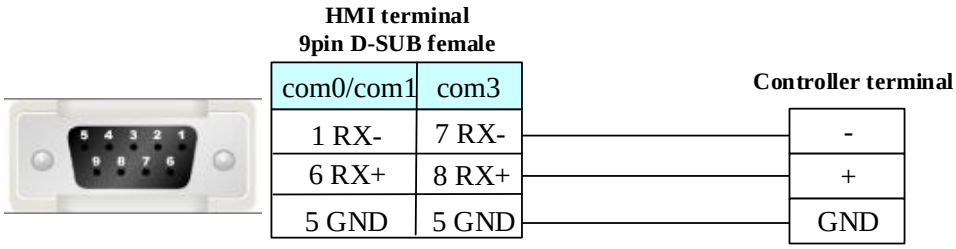
Drive Protocol	Modbus ASCII
PLC Model	Modbus ASCII
Communication method	1:1, n:1 (the number of connected HMI depends on the external controller)
PLC interface	Serial port
Serial port parameters	Default baud rate 9600, data bit 8, odd/even/no check, stop bit 1
Online simulation	support
HMI Model	G/F full series (with serial port)

Hardware wiring method:

RS232 Communication Cable

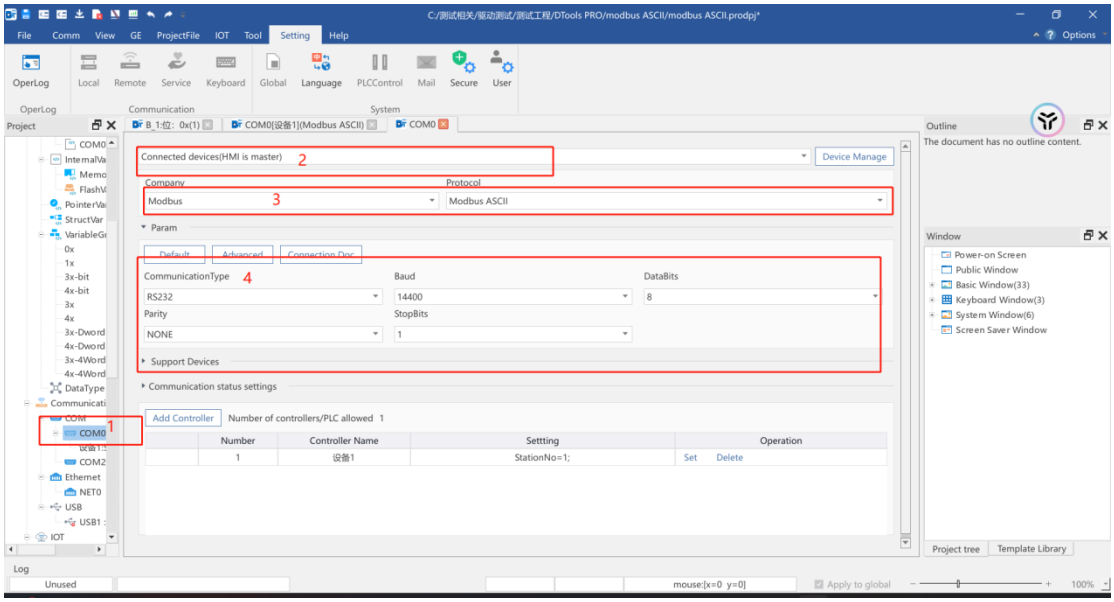


RS485 Communication Cable



❖ 2.HMI configure

➢ Configure communication connections



(1)Engineering-Communication connection-serial port, select the serial port that needs to add drivers;

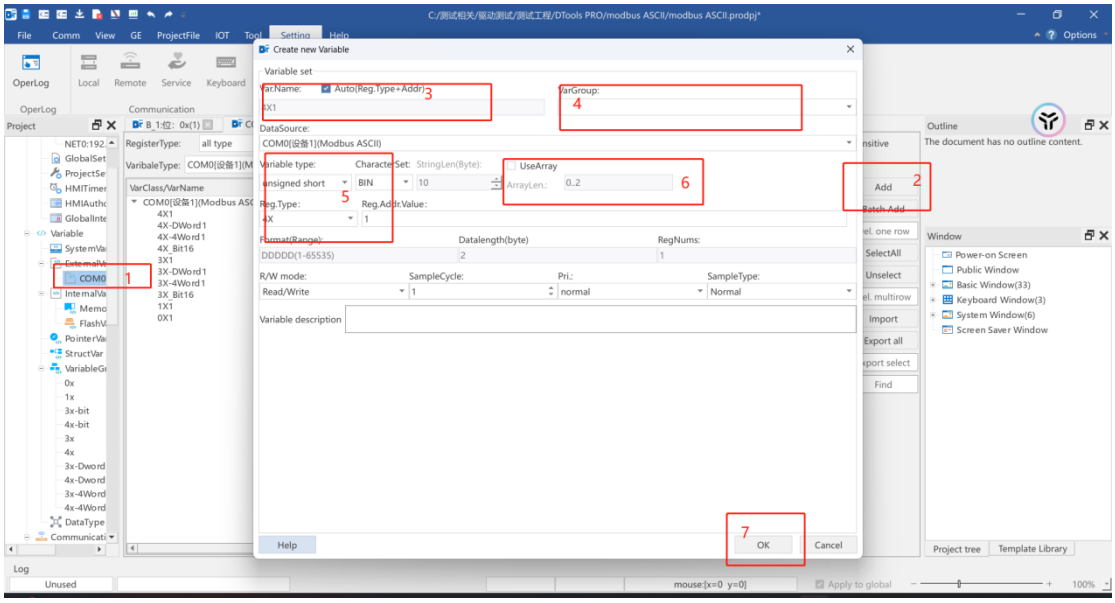
(2)Click to connect the device (HMI master device);

(3)The input field after the word "company" is to select the manufacturer; the input field after the word "agreement" is to select the corresponding communication protocol. Select the external controller brand Modbus here; select Modbus ASCII protocol for communication protocol;

(4)Set the communication method, station number, baud rate, check bit, data bit, etc. of the controller. You can select setting parameters by clicking the "drop-down" button;

(5)After confirming that the parameters are correct, you can complete the configuration of the communication connection.

➢ add a variable

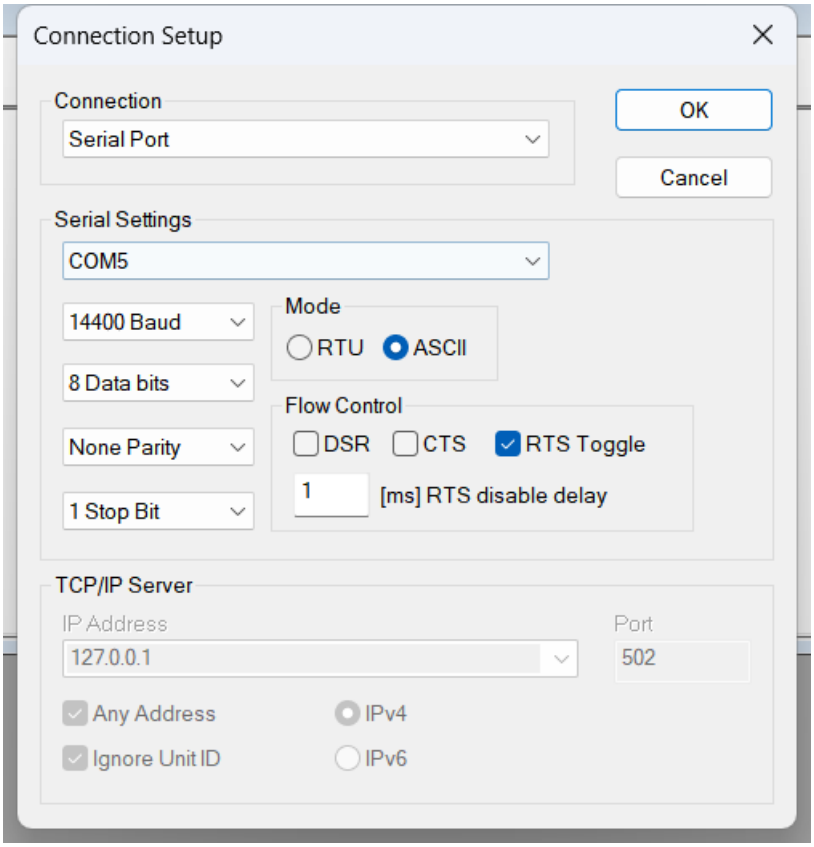


(1)Variables-External variables Select Modbus ASCII to create variables;

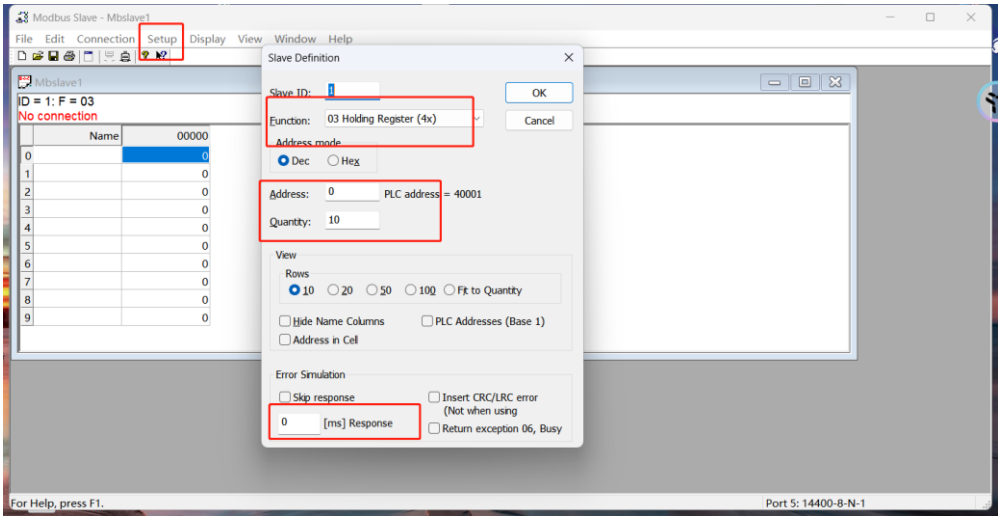
(2)Click Add on the right to create it according to the required data type;
(3)Variable names can be changed;
(4)If there is an established variable group, you can choose to store the variable in the corresponding variable group;
(5)You can use the register in this position according to the actual needs. You need to pay attention to the type of register in Modbus software and the number of symbols;
(6)After the array function is enabled, you can set the length of the variable according to the address range of the corresponding register to facilitate copying of multiple register variables of the same type;
(7)After confirming the settings, click Confirm to create a new one.

❖ 3.External controller configuration

The software version used in this manual is Modbus Slave 7.3.0.1402x64. Please refer to the relevant manual of communication equipment for relevant parameter settings. This protocol supports the standard Modbus ASCII protocol on the market



After opening the software, create a new window. The connected port needs to be searched for the connected port number in computer management. This manual mainly uses the cross-line setting for 232 connections. During connection setting, baud rate, check code, etc. need to be set, and pay attention to the consistency with the configuration software.



To set dependent definitions in the setting interface, you need to select register types 0x, 1x, 3x, and 4x. You can set the simulated plc address. At the same time, you can open the setting of the number of register subscripts in the corresponding configuration software. Finally, make a configuration for the error reporting time. If you need to view different registers, you can create multiple interfaces to view.

❖ 4.Supported register type

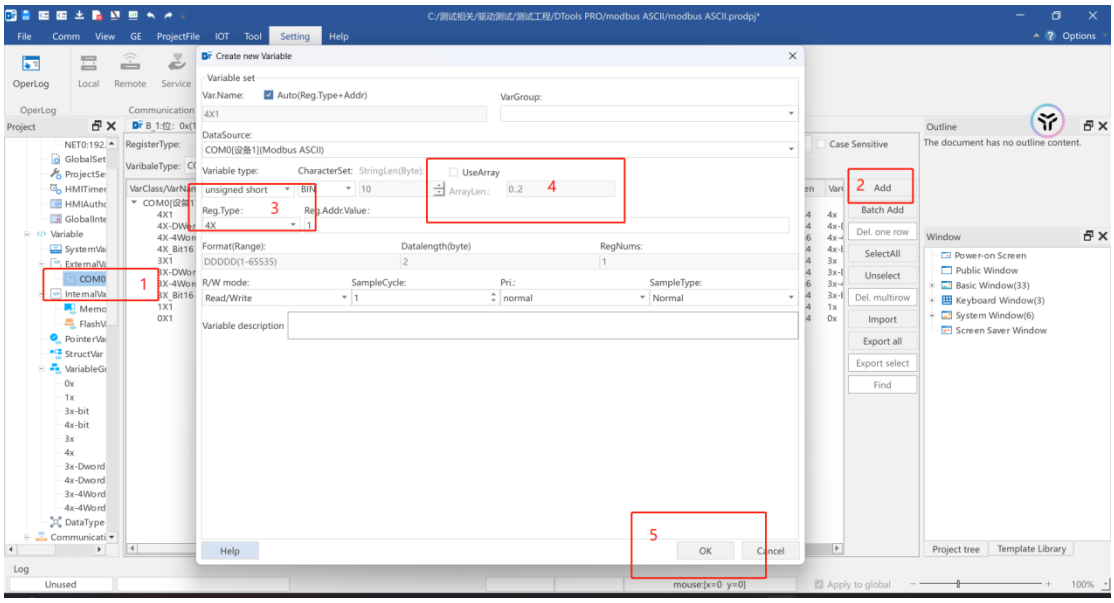
Device	Bit Address	Word Address	Format	Notes
System internal/external output node	0X 1-65535	------	DDDDD	
System internal/external input nodes	1X 1-65535	------	DDDDD	
Analog input data node (16 bits 3x bits)	3X_bit16 1-65535	------	DDDDDDD	
Data node (16 bits 4x bits)	4X_bit16 1-65535	------	DDDDDDD	
analog input data register	------	3X 1-65535	DDDDD	
data register	------	4X 1-65535	DDDDD	
analog input data register（64bits）	------	3X-4word （1-65535）	DDDDD	
data register(64bits)	------	4X-4word （1-65535）	DDDDD	
Analog input data register (double word)	------	3X-DWORD （1-65535）	DDDDD	
data register(double word)	------	4X-DWORD （1-65535）	DDDDD	

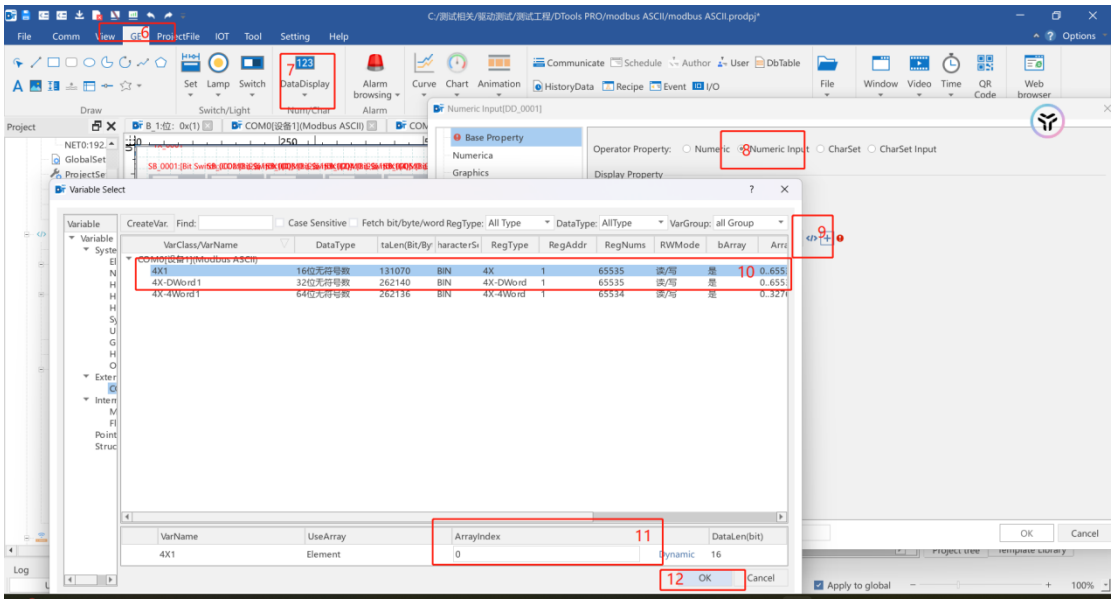
❖ 5 Advanced parameters and error messages

Reference Manual-Communication "Advanced Parameters" and "Error Message Table"

❖ 6 Software configuration

The following steps take the associated word variable as an example:





1. Click "External Variable" to select the serial port corresponding to modbus ascii;
2. Click "Add" to pop up the Create New Variable window;
3. Select the word variable in the register type;
4. Check "Array" and select the array length;
5. Click "OK" to complete the operation of creating variables;
6. Click "Component";
7. Select the "Numeric Display" component;
8. Select the "Value Display" option;
9. The binding variable can be entered directly into the register or through "..." Select a variable (you can also create a new variable here, steps are the same as 2 - 5);

10. Select the required register content and bind;
11. Select array index;
12. Click "OK" to complete the variable selection operation;
13. Click "OK" to complete the operation of the associated word variables of the numerical component;