Programmable logic controllers

PROMPOWER

PMP20 series

HMI&PLC Connection Manual

PROM
POWER

Contents

The connection of PLC and HMI

This manual will introduce the connection between PLC and HMI.

Please don't pull out or plug the cable when power on, the serial port may be damaged.

When the software version of the touch screen is upgraded, the address range of the communication protocol equipment will be partially changed, and the address range of the equipment in the software shall prevail.

1. PMP20 Modbus RTU Slave (Panel is Master)

1.1 Device type

Series	Port	Cable	PLC model in PROMPOWER HMI Studio
Devices support Modbus RTU protocol	RS485	Fig 1-1	Modbus RTU (Panel is Master)
	RS232	Fig 1-2	
	RS422	Fig 1-3	

1.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Modbus RTU (panel is Master)		
Port	RS485	RS485/RS232/RS422	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

(1) Please choose Modbus RTU Slave (All Function) in the software.
(2) Make sure that the settings of both COM ports in the PLC project and HMI project are the same.
(3) Press OK and write the new settings to the HMI.

PLC:

Please choose Modbus RTU (Slave) in the software.

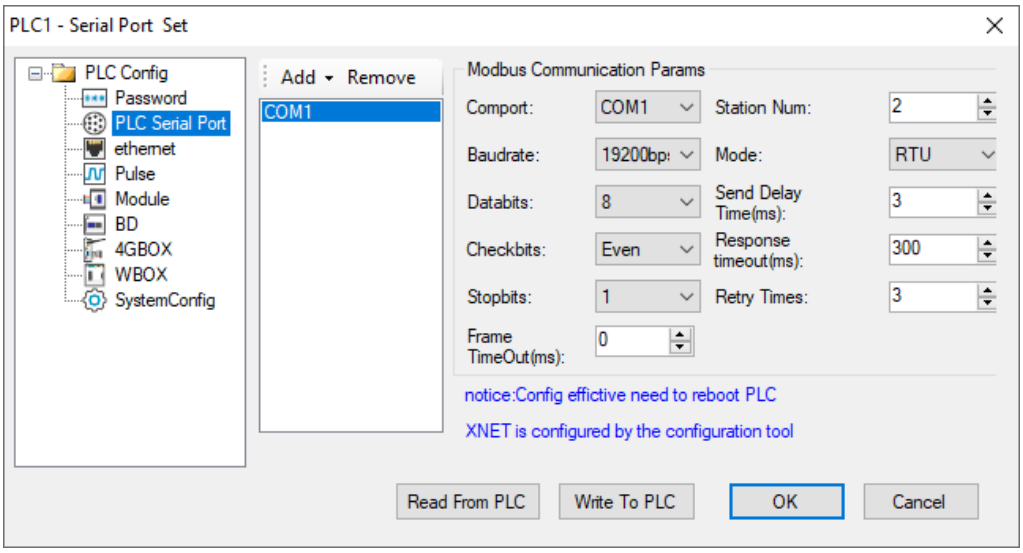
(1) PLC protocol type selecting: Modbus RTU (panel is master).

Note:

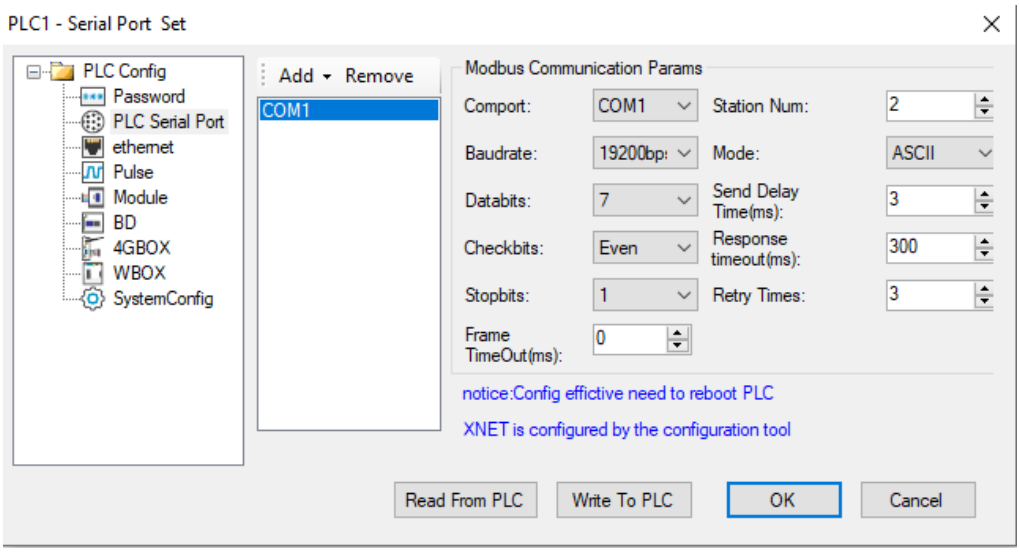
PLC station number: sn = 1 (PLC is master) and other if PLC is slave.

Port No.: It refers to Port of PLC, COM1 refers to Port 1 (RS232), COM2 refers to Port 2 (RS485) or Port 2-RS232 (RS485) or Port 2-RS485 (RS485), COM3 refers to Port 3 (left extended ED port), COM4 refers to Port 4 (upper extended BD port 1).

The **baud rate**, **data bit**, **parity bit**, **stop bit** should be same to the communication device.



(2) PLC protocol type selecting: Modbus ASCII (panel is master) (if ASCII).



(3) Click the "Write to PLC" button.

(4) PLC protocol type selecting: Modbus RTU (panel is master).

1.3 Cable making

Modbus RS485:

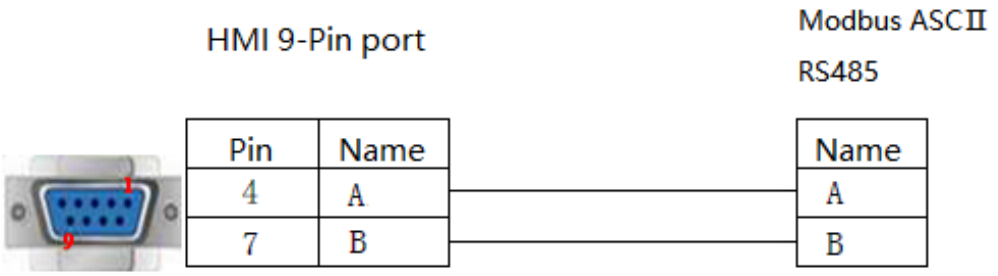


Fig 1-1

Modbus RS232:

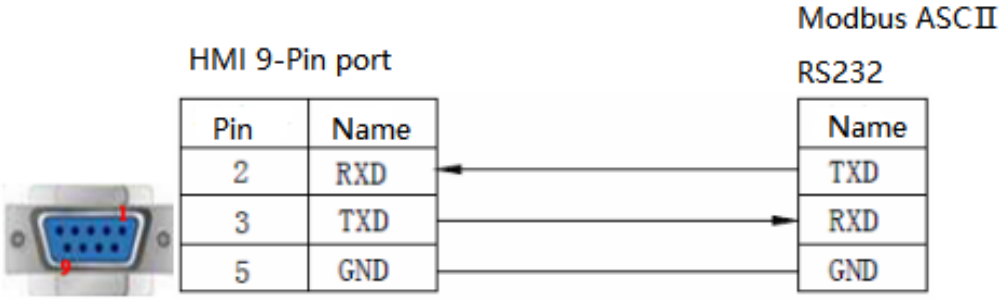


Fig 1-2

Modbus RS422:

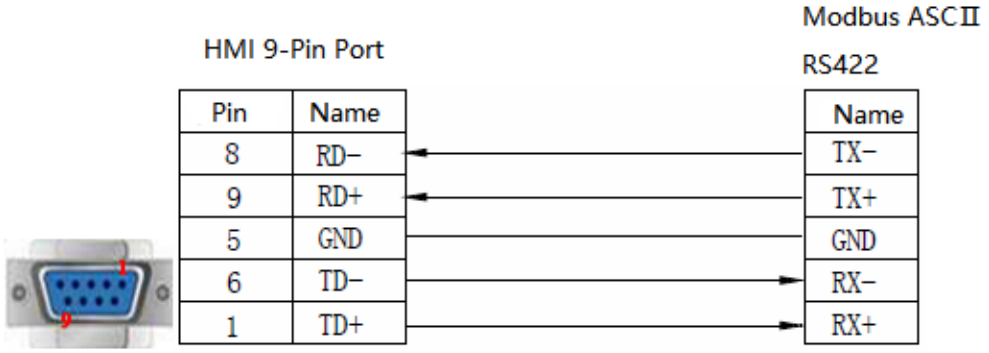


Fig 1-3

1.4 Modbus function code

Type	Range	Register Function code & Description
Word	3	04 (read input register: read current binary value in one or more input registers)
		06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses)
	4	03 (read holding register: read current binary value in one or more holding registers)
		06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses)
	W6	03 (read holding register: read current binary value in one or more holding registers)
		06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses)
	W16	03 (read holding register: read current binary value in one or more holding registers)
		10 (write values to multiple addresses)
Bit	0	01 (Read coil state)
		05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits, ie write continuously)
	1	02 (Read the input state)
		05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits)
	W5	01 (Read coil state to obtain the current state of a set of logic coils)
		05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits)
	W15	01 (Read coil state to obtain the current state of a set of logic coils)
		0F (Write multiple bits)

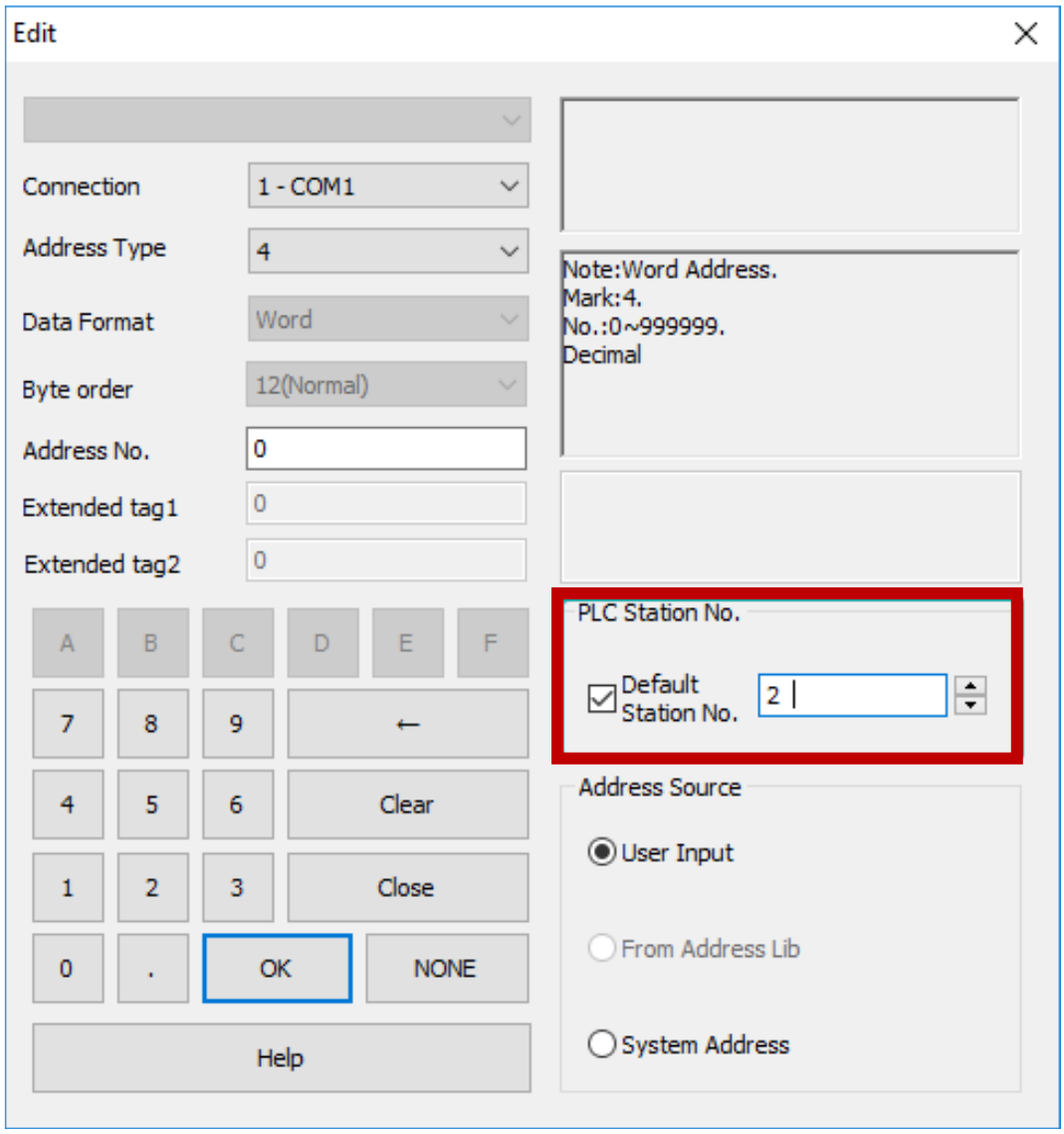
Note:

Modbus can also support getting bit from the word, which could access the address such as 100.1 and other formats.

The function codes sent out are the same as those that read and write words.

Station number for more than one slaves

If there are more than one slaves connected to HMI, please set slave station number during editing address, as below shows.


Edit
Connection
1 - COM1
Address Type
4
Data Format
Word
Byte order
12(Normal)
Address No.
0
Extended tag1
0
Extended tag2
0
Note:Word Address.
Mark:4.
No.:0~999999.
Decimal
A
B
C
D
E
F
7
8
9
←
4
5
6
Clear
1
2
3
Close
0
.
OK
NONE
Help
PLC Station No.
Default Station No.
2
Address Source
User Input
From Address Lib
System Address

1.5 Modbus address and internal soft component table

Type	Compo-nent	Address	Numbers	Modbus address (hex)	Modbus address (decimal)
Coil bit	M	M0~M20479	20480	0~4FFF	0~20479
	X	X0~X77 (main unit)	64	5000~503F	20480~20543
		X10000~X10077 (#1 module)	64	5100~513F	20736~20799
		X10100~X10177 (#2 module)	64	5140~517F	20800~20863
		X10200~X10277 (#3 module)	64	5180~51BF	20864~20927
		X10300~X10377 (#4 module)	64	51C0~51FF	20928~20991
		X10400~X10477 (#5 module)	64	5200~523F	20992~21055
		X10500~X10577 (#6 module)	64	5240~527F	21056~21119
		X10600~X10677 (#7 module)	64	5280~52BF	21120~21183
		X10700~X10777 (#8 module)	64	52C0~52FF	21184~21247
		X11000~X11077 (#9 module)	64	5300~533F	21248~21311
		X11100~X11177 (#10 module)	64	5340~537F	21312~21375
		X11200~X11277 (#11 module)	64	5380~53BF	21376~21439
		X11300~X11377 (#12 module)	64	53C0~53FF	21440~21503
		X11400~X11477 (#13 module)	64	5400~543F	21504~21567
		X11500~X11577 (#14 module)	64	5440~547F	21568~21631
		X11600~X11677 (#15 module)	64	5480~54BF	21632~21695
		X11700~X11777 (#16 module)	64	54C0~54FF	21696~21759
		X20000~X20077 (#1 BD)	64	58D0~590F	22736~22799
	Y	Y0~77 (main unit)	64	6000~603F	24576~24639
		Y10000~Y10077 (#1 module)	640	6100~613F	24832~24895
		Y10100~Y10177 (#2 module)	64	6140~617F	24896~24959
		Y10200~Y10277 (#3 module)	64	6180~61BF	24960~25023

Type	Compo-nent	Address	Numbers	Modbus address (hex)	Modbus address (decimal)
		Y10300~Y10377 (#4 module)	64	61C0~61FF	25024~25087
		Y10400~Y10477 (#5 module)	64	6200~623F	25088~25151
		Y10500~Y10577 (#6 module)	64	6240~627F	25152~25215
		Y10600~Y10677 (#7 module)	64	6280~62BF	25216~25279
		Y10700~Y10777 (#8 module)	64	62C0~62FF	25280~25343
		Y11000~Y11077 (#9 module)	64	6300~633F	25344~25407
		Y11100~Y11177 (#10 module)	64	6340~637F	25408~25471
		Y11200~Y11277 (#11 module)	64	6380~63BF	25472~25535
		Y11300~Y11377 (#12 module)	64	63C0~63FF	25536~25599
		Y11400~Y11477 (#13 module)	64	6400~643F	25600~25663
		Y11500~Y11577 (#14 module)	64	6440~647F	25664~25727
		Y11600~Y11677 (#15 module)	64	6480~64BF	25728~25791
		Y11700~Y11777 (#16 module)	64	64C0~64FF	25792~25855
		Y20000~Y20077 (#1 BD)	64	68D0~690F	26832~26895
	S	S0~S7999	8000	7000~8F3F	28672~36671
	SM	SM0~SM4095	4096	9000~9FFF	36864~40959
	T	T0~T4095	4096	A000~AFFF	40960~45055
	C	C0~C4095	4096	B000~BFFF	45056~45151
	ET	ET0~ET39	40	C000~C027	49152~49191
	SEM	SEM0~SEM127	128	C080~C0FF	49280~49407
	HM※1	HM0~HM6143	6144	C100~D8FF	49408~55551
	HS※1	HS0~HS999	1000	D900~DCEF	55552~56551
	HT※1	HT0~HT1023	1024	E100~E4FF	57600~58623
	HC※1	HC0~HC1023	1024	E500~E8FF	58624~59647
	HSC※1	HSC0~HSC36	40	E900~E927	59648~59687
Register word	D	D0~D20479	20480	0~4FFF	0~20479
	ID	ID0~ID99 (main unit)	100	5000~5063	20480~20579
		ID10000~ID10099 (#1 module)	100	5100~5163	20736~20835

Type	Compo-nent	Address	Numbers	Modbus address (hex)	Modbus address (decimal)
		ID10100~ID10199 (#2 module)	100	5164~51C7	20836~20935
		ID10200~ID10299 (#3 module)	100	51C8~522B	20936~21035
		ID10300~ID10399 (#4 module)	100	522C~528F	21036~21135
		ID10400~ID10499 (#5 module)	100	5290~52F3	21136~21235
		ID10500~ID10599 (#6 module)	100	52F4~5357	21236~21335
		ID10600~ID10699 (#7 module)	100	5358~53BB	21336~21435
		ID10700~ID10799 (#8 module)	100	53BC~541F	21436~21535
		ID10800~ID10899 (#9 module)	100	5420~5483	21536~21635
		ID10900~ID10999 (#10 module)	100	5484~54E7	21636~21735
		ID11000~ID11099 (#11 module)	100	54E8~554B	21736~21835
		ID11100~ID11199 (#12 module)	100	554C~55AF	21836~21935
		ID11200~ID11299 (#13 module)	100	55B0~5613	21936~22035
		ID11300~ID11399 (#14 module)	100	5614~5677	22036~22135
		ID11400~ID11499 (#15 module)	100	5678~56DB	22136~22235
		ID11500~ID11599 (#16 module)	100	56DC~573F	22236~22335
		ID20000~ID20099 (#1 BD)	100	58D0~5933	22736~22835
	QD	QD0~QD99 (main unit)	100	6000~6063	24576~24675
		QD10000~QD10099 (#1 module)	100	6100~6163	24832~24931
		QD10100~QD10199 (#2 module)	100	6164~61C7	24932~25031
		QD10200~QD10299 (#3 module)	100	61C8~622B	25032~25131
		QD10300~QD10399 (#4 module)	100	622C~628F	25132~25231
		QD10400~QD10499 (#5 module)	100	6290~62F3	25232~25331

Type	Compo-nent	Address	Numbers	Modbus address (hex)	Modbus address (decimal)
		QD10500~QD10599 (#6 module)	100	62F4~6357	25332~25431
		QD10600~QD10699 (#7 module)	100	6358~63BB	25432~25531
		QD10700~QD10799 (#8 module)	100	63BC~641F	25532~25631
		QD10800~QD10899 (#9 module)	100	6420~6483	25632~25731
		QD10900~QD10999 (#10 module)	100	6484~64E7	25732~25831
		QD11000~QD11099 (#11 module)	100	64E8~654B	25832~25931
		QD11100~QD11199 (#12 module)	100	654C~65AF	25932~26031
		QD11200~QD11299 (#13 module)	100	65B0~6613	26032~26131
		QD11300~QD11399 (#14 module)	100	6614~6677	26132~26231
		QD11400~QD11499 (#15 module)	100	6678~66DB	26232~26331
		QD11500~QD11599 (#16 module)	100	66DC~673F	26332~26431
		QD20000~QD20099 (#1 BD)	100	68D0~6933	26832~26931
	SD	SD0~SD4095	4096	7000~7FFF	28672~32767
	TD	TD0~TD4095	4096	8000~8FFF	32768~36863
	CD	CD0~CD4095	4096	9000~9FFF	36864~40959
	ETD	ETD0~ETD39	40	A000~A027	40960~40999
	HD※1	HD0~HD6143	6144	A080~B87F	41088~47231
	HSD※1	HSD0~HSD1023	1024	B880~BC7F	47232~48255
	HTD※1	HTD0~HTD1023	1024	BC80~C07F	48256~49279
	HCD※1	HCD0~HCD1023	1024	C080~C47F	49280~40303
	HSCD※1	HSCD0~HSCD39	40	C480~C4A7	50304~50343
	FD※2	FD0~FD8191	8192	C4C0~E4BF	50368~58559
	SFD※2	SFD0~SFD5999	6000	E4C0~FC2F	58560~64559
	FS※2	FS0~FS47	48	F4C0~F4EF	62656~62703

2. PMP20 Modbus RTU Master (Panel is Slave)

Note:

The address in [All function] start from 0, the address in [All function One-BaseAddress] start from 1 (offset 1).

2.1 Device type

Series	Port	Cable	PLC model in PROMPOWER HMI Studio
The device support Modbus protocol	RS485	Fig 2-1	Modbus slave (Panel is Slave)
	RS232	Fig 2-2	
	RS422	Fig 2-3	

2.2 Parameters

Parameters	Recommend settings	Choices of settings	Note
PLC type	Modbus slave (panel is slave)		
Port	RS485	RS485/RS232/RS422	
Data bit	8	7 / 8	
Stop bit	1	1 / 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

Note: PLC station number = 1 (PLC is master) and any other PLC is slave.

2.3 Cable making

Modbus RS485:

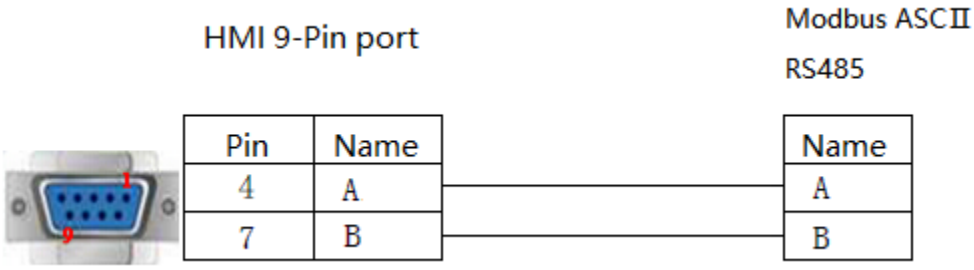


Fig 2-1

Modbus RS232:

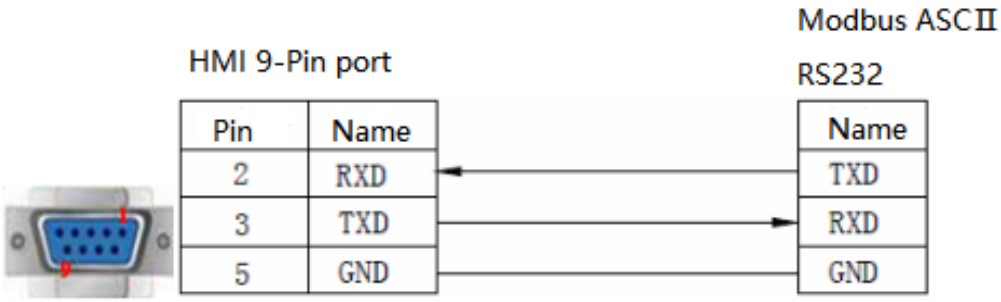


Fig 2-2

Modbus RS422:

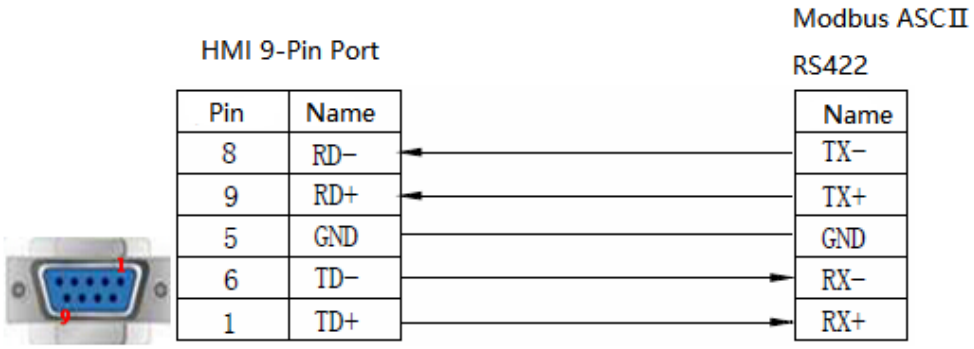


Fig 2-3

2.4 Device address

Type	HMI address	Modbus code	Range
Bit	HDX3000.0~HDX3499.15	0	0~7999
Word	HDW3500~HDW7999	4	0~4499

3. PMP20 Modbus-TCP Slave (All function)

3.1 Ethernet concepts

Before the Ethernet communication, let's understand some Ethernet concepts such as IP address allocation, PC network address and settings.

3.1.1 IP allocation

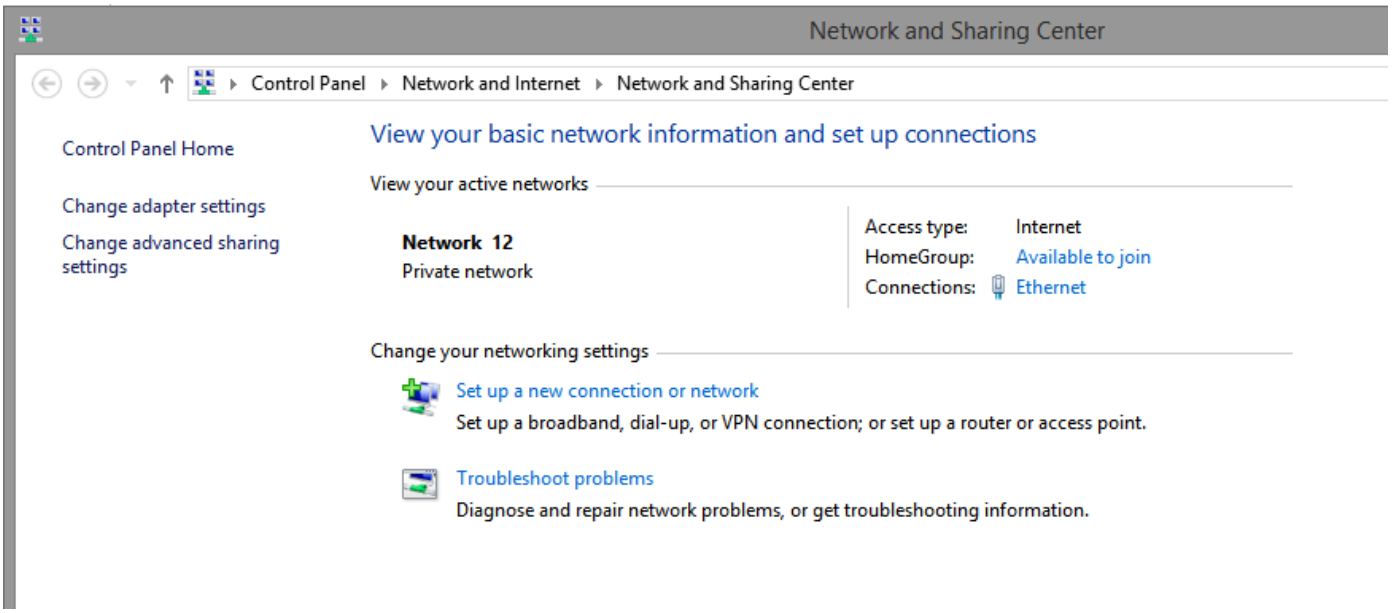
If programmable devices (such as PC) using LAN network card to connect to the factory (or the Internet), the PLC and programming device must be in the same subnet. Combination of IP address and subnet mask can be specified subnet of the equipment.

Network ID is the IP address of the first part, the top three 8-bit groups (such as IP addresses for 211.154.184.16, 211.154.184 represents network ID) decided the user's IP network. The value of the subnet mask is usually 255.255.255.0. However, because of your computer is in the local area network (LAN), subnet mask (for example, 255.255.254.0) may have different values to set the unique subnet. Subnet mask and the equipment IP address will do logic AND operation to define the boundary of the IP subnet.

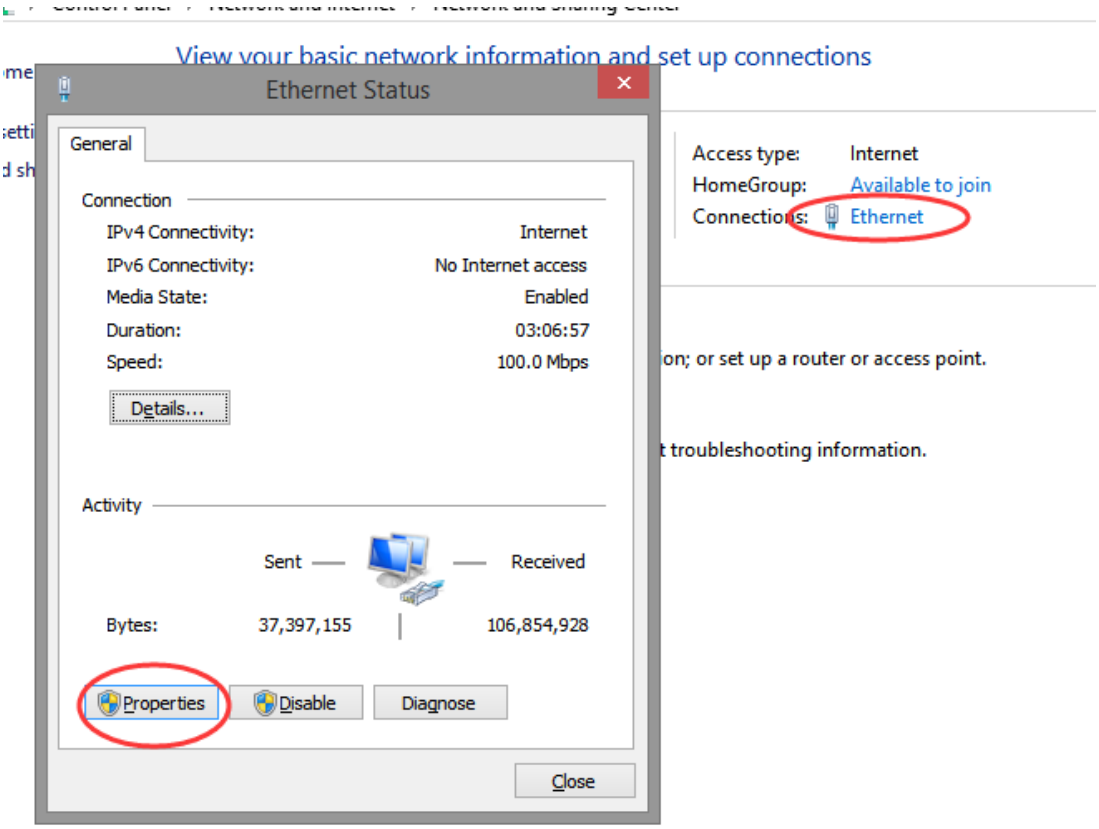
3.1.2 PC network address

Please check your programming device IP address as the following steps.

1. Open the network and sharing center:

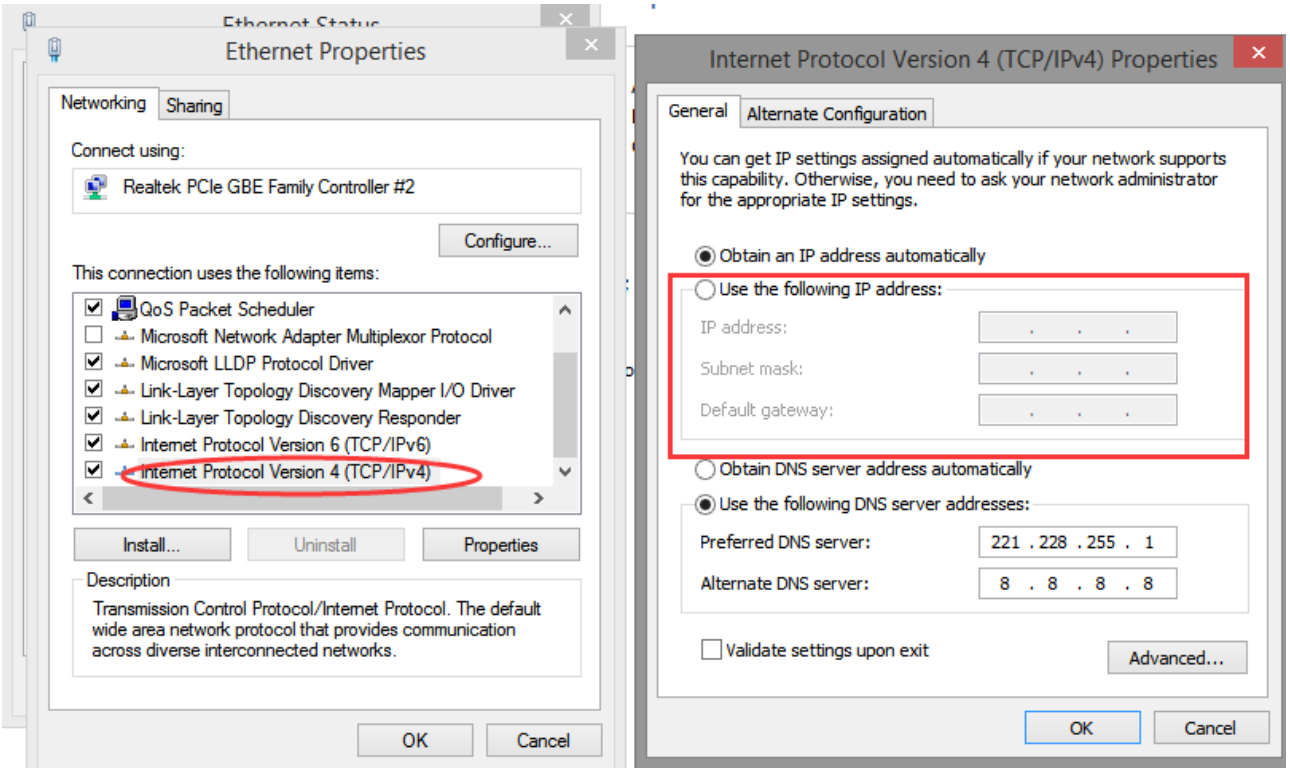


2. Click the Ethernet connections, choose properties:



3. Set the PC IP address, make it in the same subnet.

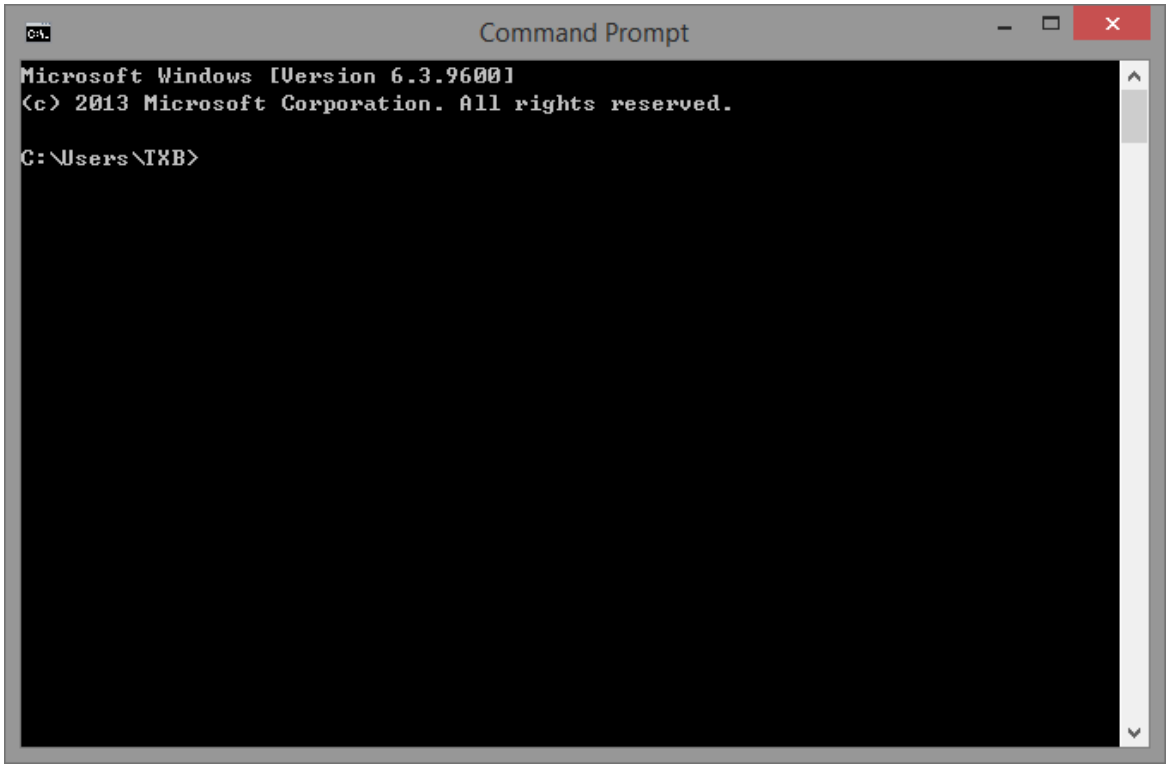
   For example, the PLC IP is 192.168.2.1, the PC IP is set to 192.168.2.200, the subnet mask is 255.255.255.0. default gateway can be vacant. Then the PC can connect to the CPU.



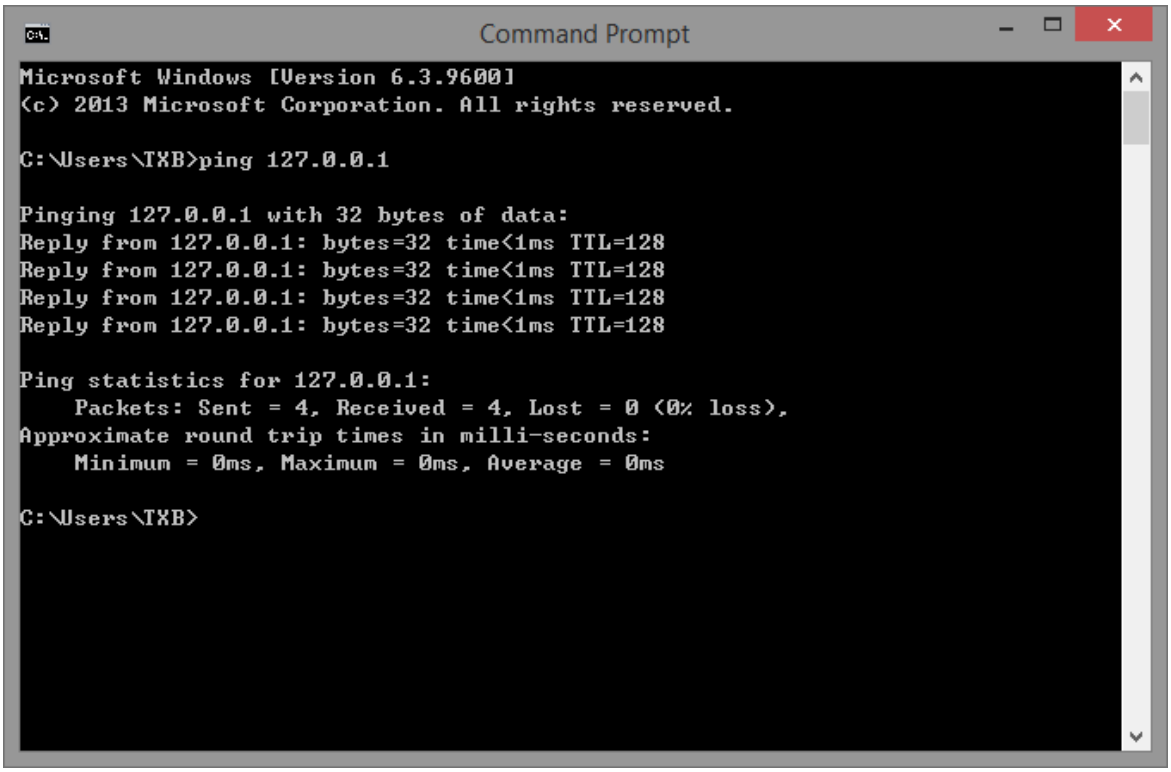
3.1.3 PING command

Through the PING command, you can check the local TCP/IP protocol, and whether it can be normal connection to other computer local area network (LAN).

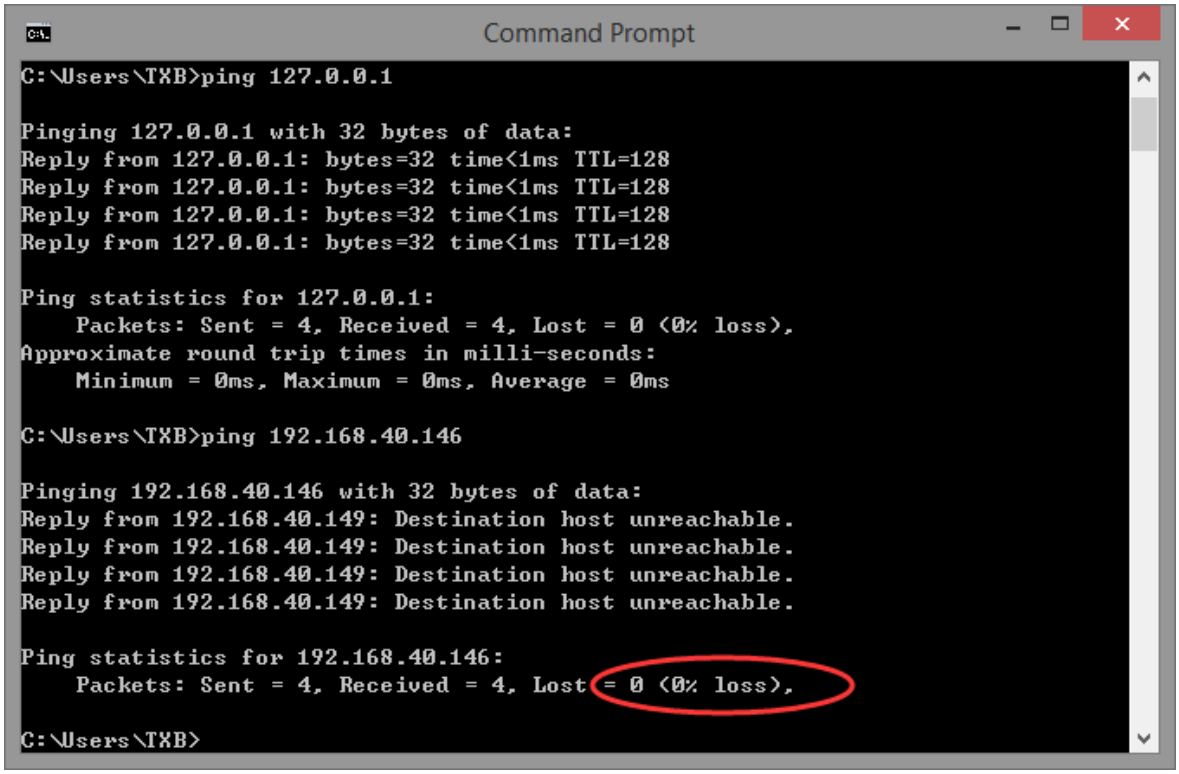
1. Open the command prompt



2. Input “ping 127.0.0.1” to check the local TCP/IP protocol, it is normal when the receiving and sending data are same.



3. Input ‘ping network device ip” command to check whether the PC can connect to other PC in the LAN.
4. Input the command “ping 192.168.40.146”, if the result shows “0% loss”, this PC can connect the PC with IP 192.168.40.146.



5. Input the command “ping 192.168.40.127”, it shows “100% loss”, which means cannot connect to the PC with IP 192.168.40.127.

Note: in the ping statistics information, only 0% loss means communication normal.

3.2 Modbus TCP/IP protocol

3.2.1 Modbus TCP overview

Modbus TCP combined standard TCP/IP, Ethernet physical network and Modbus as the data representation method of data application protocol. Modbus TCP communication message is encapsulated in Ethernet TCP/IP packets, Modbus protocol one frame maximum length is 256 bytes.

Modbus TCP/IP has two types of devices: Modbus TCP/IP client and server.

3.2.2 Modbus client:

Client (TCP Client) launched a connection request to the Server (TCP Server), the connection is established successfully, it only allows the Client to initiate communication request.

When the Ethernet model is the Modbus TCP client, it establishes a TCP connection through S_OPEN instruction, initiates Modbus request by M_TCP instruction (For more detailed information please refer to the PMP20 series PLC instruction user manual).

3.2.3 Modbus server:

The server listened to port 502, waited for the client connection request, after the connection was established successfully, it response to the data communication request in accordance with the Modbus TCP protocol specification.

Ethernet devices defaulted open this service when power on, the maximum response is no more than four TCP connections.

3.2.4 Modbus address

When the programmable controller is seemed as the Modbus server, internal soft component number and its corresponding Modbus address number can refer to PMP20 PLC programming manual “PMP20 series PLC instruction user manual”.

3.2.5 Modbus function code

Ethernet model PLC supports the following Modbus communication function codes:

Function code	Function	Descriptions
01H	Read coil	Read 0X address, max quantity is 2000
02H	Read input coil	Read 1X address, max quantity is 2000
03H	Read holding register	Read 4X address, max quantity is 120
04H	Read input register	Read 3X address, max quantity is 120
05H	Write single coil	Write single 0X address
06H	Write single register	Write single 4X address
0FH	Write multiple coils	Write 0X address, max quantity is 2000
10H	Write multiple registers	Write 4X address, max quantity is 120

3.2.6 Free format protocol

Freedom communication based on Ethernet is divided into two categories: TCP and UDP, Ethernet model using TCP communication can be used as a TCP client (TCP client), can also be used as a TCP server (TCP server).

1. As a TCP client, take the initiative to establish a TCP connection with the TCP server, and bind socket ID.
2. As the TCP server, waiting for the TCP client and establish a TCP connection, and bind socket ID.
3. Using UDP, listening to the specified local port, and bind socket ID.

Based on the above three forms, which can realize the freedom of Ethernet communication. Freeform communication in the form of a block of data to transmit data, restricted by PLC cache, a single to send and receive data volume of 1000 bytes.

Based on the above three forms, it can realize the free communication of Ethernet. Free format communication transfers the data in the form of data block, be restricted by PLC cache, single-time sending and receiving data volume is 1000 bytes.

Free format communication parameters:

Data buffer mode: 8-bit, 16-bit

1. 8-bit buffer communication: the high byte of the register is invalid, PLC only uses the low byte of the register to send and receive data.
2. 16-bit buffer communication: for the received data, PLC saves the low byte first, then saves the high byte; for the sending data, PLC sends the low byte first, then sends the high byte.
3. When the received data package length is larger than setting length, data will be stored as 16-bit buffer mode.

3.3 Cable making

RJ45 straight through cable (connected to hub) or RJ45 crossover cable:

pin	colour	pin	colour
1	white orange	1	white orange
2	orange	2	orange
3	white green	3	white green
4	blue	4	blue
5	white blue	5	white blue
6	green	6	green
7	white brown	7	white brown
8	brown	8	brown

Fig. 3-1

pin	colour	pin	colour
1	white orange	1	white green
2	orange	2	green
3	white green	3	white orange
4	blue	4	blue
5	white blue	5	white blue
6	green	6	orange
7	white brown	7	white brown
8	brown	8	brown

Fig. 3-2

3.4 Device address

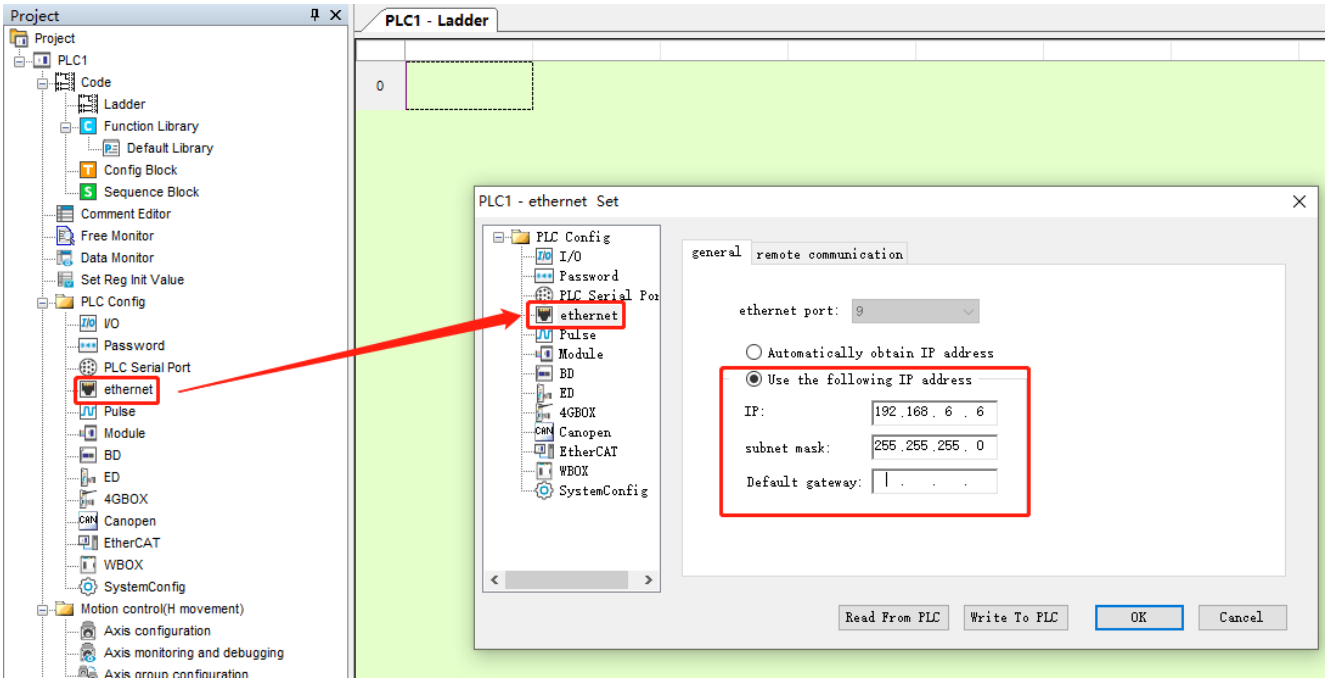
PLC address	Range	Object type	Notes
X	0~77777777	Bit	Input relay
X1 xxxx	0~77777777	Bit	Extended module input relay
X2 xxxx	0~77777777	Bit	Extended BD input relay
X3XXXX	0~77	Bit	Extended ED input relay
Y	0~77777777	Bit	Output relay
Y1 xxxx	0~77777777	Bit	Extended module output relay
Y2 xxxx	0~77777777	Bit	Extended BD output relay
Y3XXXX	0~77	Bit	Extended ED output relay
M	0~99999999	Bit	Internal relay
S	0~99999999	Bit	Flow
SM	0~99999999	Bit	Internal relay, special using
T	0~99999999	Bit	Timer
C	0~99999999	Bit	Counter
ET	0~99999999	Bit	Timer, precise timer
SE	0~99999999	Bit	Sequence block wait instruction special coil
HM	0~99999999	Bit	Internal relay, power-off retentive
HS	0~99999999	Bit	Flow, power-off retentive
HT	0~99999999	Bit	Auxiliary relay, power-off retentive
HC	0~99999999	Bit	Counter, power-off retentive
HSC	0~99999999	Bit	Counter, high speed counter
D	0~99999999	Word//DWord	Data register
ID	0~99999999	Word//DWord	Analog input
ID1xxxx	0~99999999	Word//DWord	Extended module analog input
ID2xxxx	0~99999999	Word//DWord	Extended BD analog input
ID3XXXX	0~99	Word//DWord	Extended ED analog input
QD	0~99999999	Word//DWord	Analog output
QD1xxxx	0~99999999	Word//DWord	Extended module analog output
QD2xxxx	0~99999999	Word//DWord	Extended BD analog output
QD3XXXX	0~99	Word//DWord	Extended ED analog output
SD	0~99999999	Word//DWord	Data register, special using
TD	0~99999999	Word//DWord	Timer value
CD	0~99999999	Word//DWord	Counter value
ETD	0~99999999	Word//DWord	Timer value, precise timer
HD	0~99999999	Word//DWord	Data register

PLC address	Range	Object type	Notes
HSD	0~99999999	Word//DWord	Data register, power-off retentive
HTD	0~99999999	Word//DWord	Timer value, power-off retentive
HCD	0~99999999	Word//DWord	Counter value, power-off retentive
HSCD	0~99999999	Word//DWord	Counter value, high speed counter
FD	0~99999999	Word//DWord	FlashROM register
SFD	0~99999999	Word//DWord	FlashROM register, special using
FS	0~99999999	Word//DWord	Special security register
DM	0~99999999	Word	For data register
DX	0~77777777	Word	For data register
DX1xxxx	0~77777777	Word	For data register, extended module
DX2xxxx	0~77777777	Word	For data register, extended BD
DX3XXXX	0~77777777	Word	For data register, extended ED
DY	0~77777777	Word	For data register
DY1xxxx	0~77777777	Word	For data register, extended module
DY2xxxx	0~77777777	Word	For data register, extended BD
DY3XXXX	0~77777777	Word	For data register, extended ED
DS	0~99999999	Word	For data register
DSM	0~99999999	Word	For data register, special function using
DT	0~99999999	Word	For data register
DC	0~99999999	Word	For data register
DET	0~99999999	Word	For data register, precise timer
DSE	0~99999999	Word	For data register, WAIT instruction
DHM	0~99999999	Word	For data register, power-off retentive
DHS	0~99999999	Word	For data register, power-off retentive
DHT	0~99999999	Word	For data register, power-off retentive
DHC	0~99999999	Word	For data register, power-off retentive
DHSC	0~99999999	Word	For data register, high speed counter

3.5 Parameter setting

PLC settings

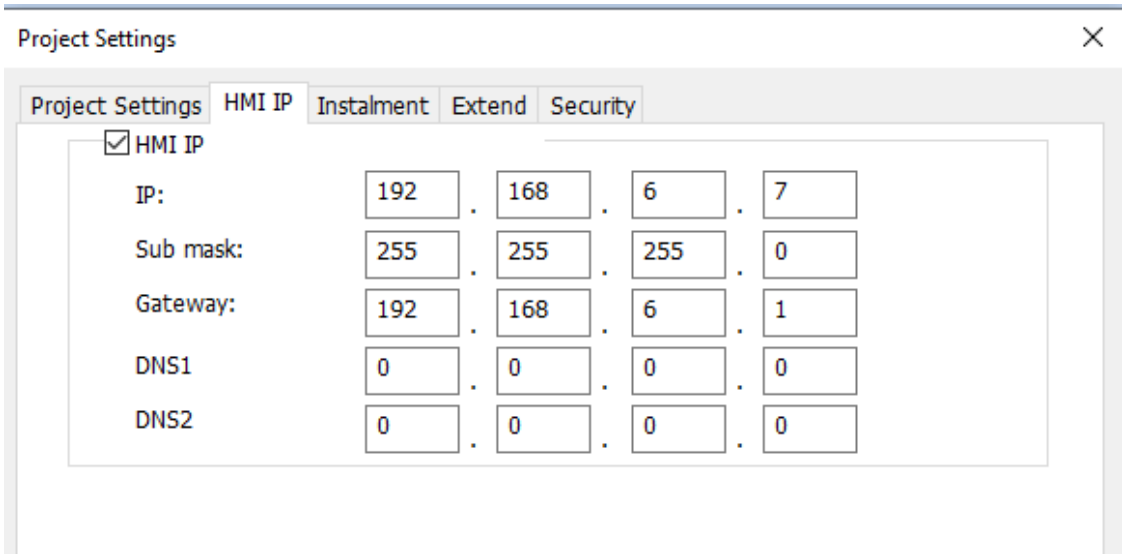
Connect the PLC to the computer, open the PLC programming software, open the PLC configuration in the engineering column on the left side of the software, double-click the “Ethernet port” below, manually set the Ethernet parameters of PLC in the pop-up configuration window, and click “write to PLC” after setting:

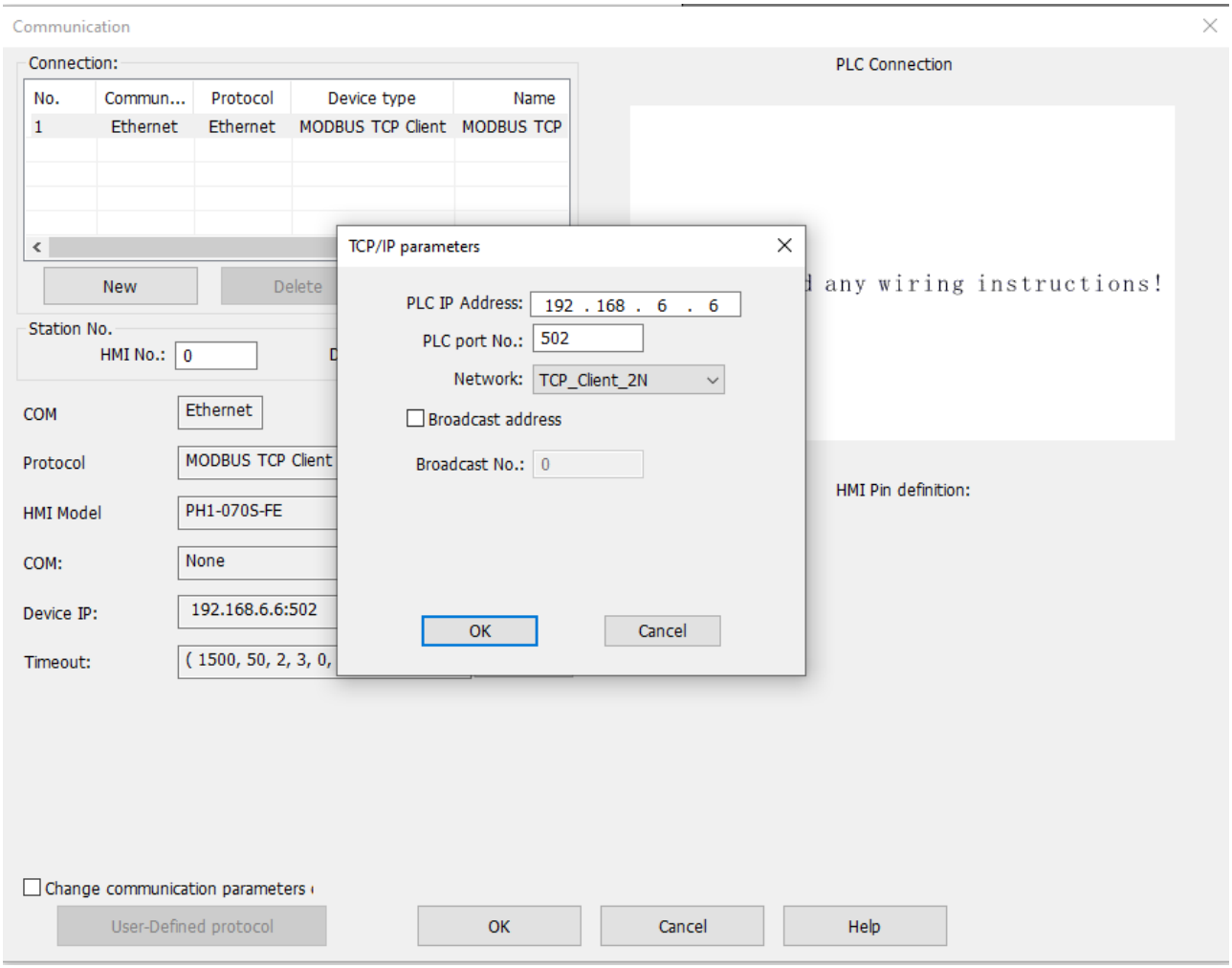


Note: After the parameter is written, the PLC needs to be restarted to take effect.

HMI settings

After selecting the HMI model, ensure that the appropriate Network ID parameters are configured and loaded into the HMI:

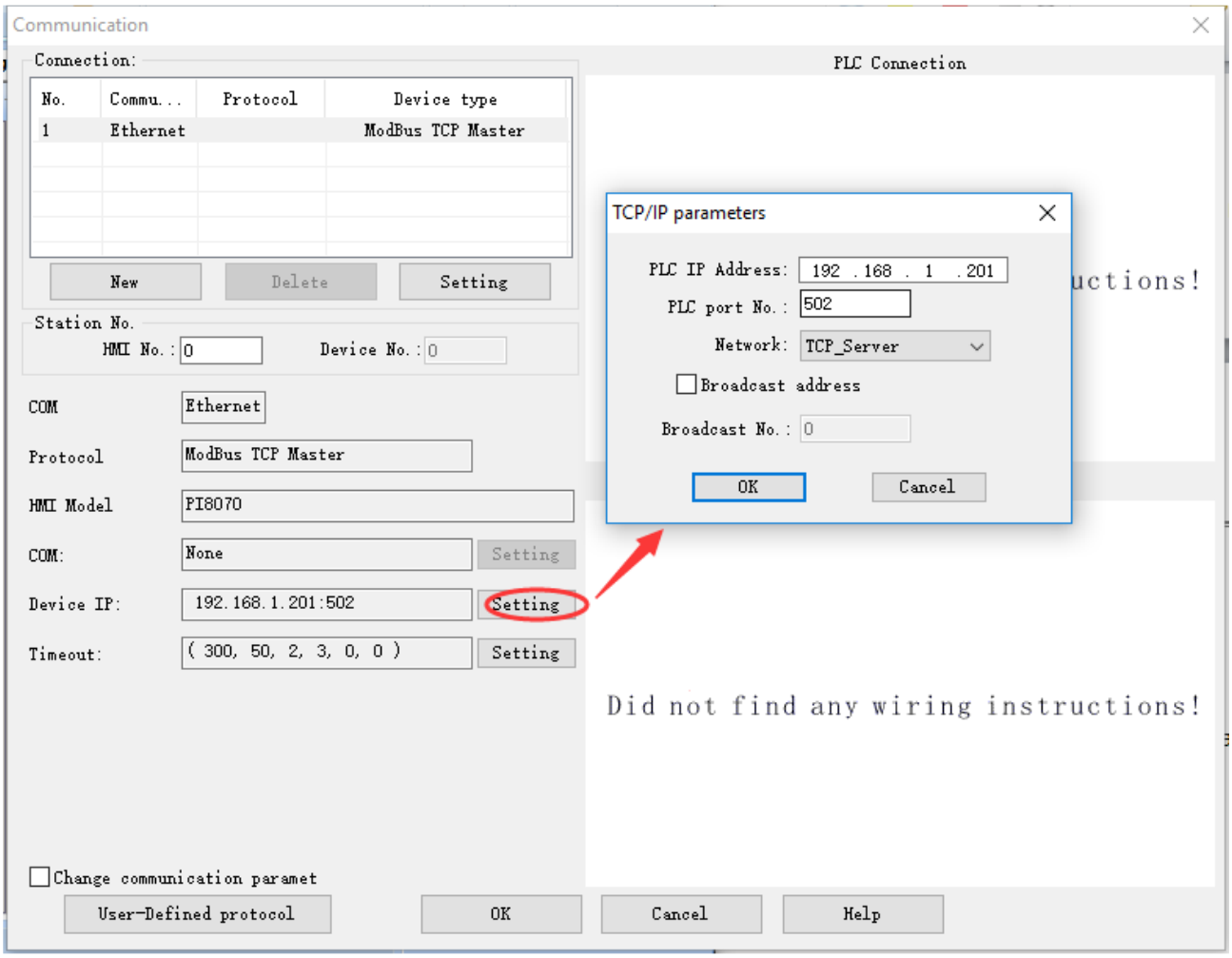




If you would like to use your HMI in TCP_Master mode, you are able to switch it in Network setting.

Set the TCP/IP parameters:

1. PLC IP Address: It is for setting the communication device's IP (salve device);
2. PLC port No.: It is for setting the communication device's port;
3. Network: It is better to use the default, but also check the real device network type;
4. Click [OK] to save the settings in TCP/IP parameters.


Communication
Connection:
No.
Commu...
Protocol
Device type
1
Ethernet
ModBus TCP Master
New
Delete
Setting
Station No.
HMI No.: 0
Device No.: 0
COM
Ethernet
Protocol
ModBus TCP Master
HMI Model
PI8070
COM:
None
Setting
Device IP:
192.168.1.201:502
Setting
Timeout:
(300, 50, 2, 3, 0, 0)
Setting
Change communication paramet
User-Defined protocol
OK
Cancel
Help
PLC Connection
uctions!
Did not find any wiring instructions!
TCP/IP parameters
PLC IP Address: 192 . 168 . 1 . 201
PLC port No.: 502
Network: TCP_Server
Broadcast address
Broadcast No.: 0
OK
Cancel

3.6 Modbus function list

Type	Range	Register Function code & Description
Word	3	04 (read input register: read current binary value in one or more input registers)
		06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses)
	4	03 (read holding register: read current binary value in one or more holding registers)
		06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses)
	W6	03 (read holding register: read current binary value in one or more holding registers)
		06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses)
	W16	03 (read holding register: read current binary value in one or more holding registers)
		10 (write values to multiple addresses)
Bit	0	01 (Read coil state)
		05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits, ie write continuously)
	1	02 (Read the input state)
		05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits)
	W5	01 (Read coil state to obtain the current state of a set of logic coils)
		05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits)
	W15	01 (Read coil state to obtain the current state of a set of logic coils)
		0F (Write multiple bits)

Note:

You can use the PMP20 Modbus TCP/IP demonstration project to test the system configuration yourself. For more information on setting up a Modbus TCP/IP network, refer to the manual PMP20 TCPIP communication based on Ethernet.

ВСЕ ДЛЯ АВТОМАТИЗАЦИИ:

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