



# **HMI connection manual**

WUXI XINJE ELECTRIC CO., LTD.

Data No. : HC 01 20130123

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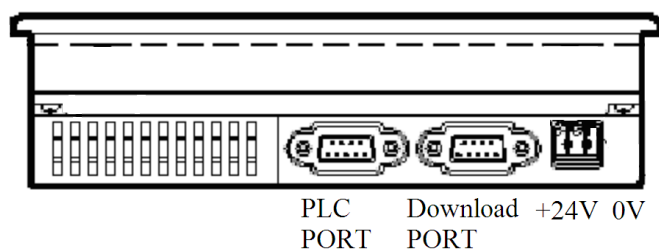


# 1 Serial port of HMI

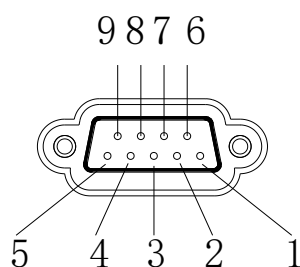
This chapter will introduce the serial port of HMI.

## 1.1 Download port

The HMI of XINJE TP and TH series are configured PLC port and download port. Next, it will introduce the port and function. The following diagram is the port of TP460-L.



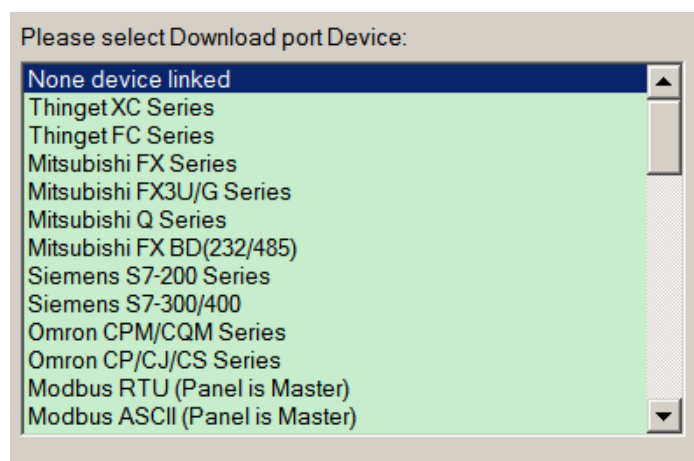
Download port:



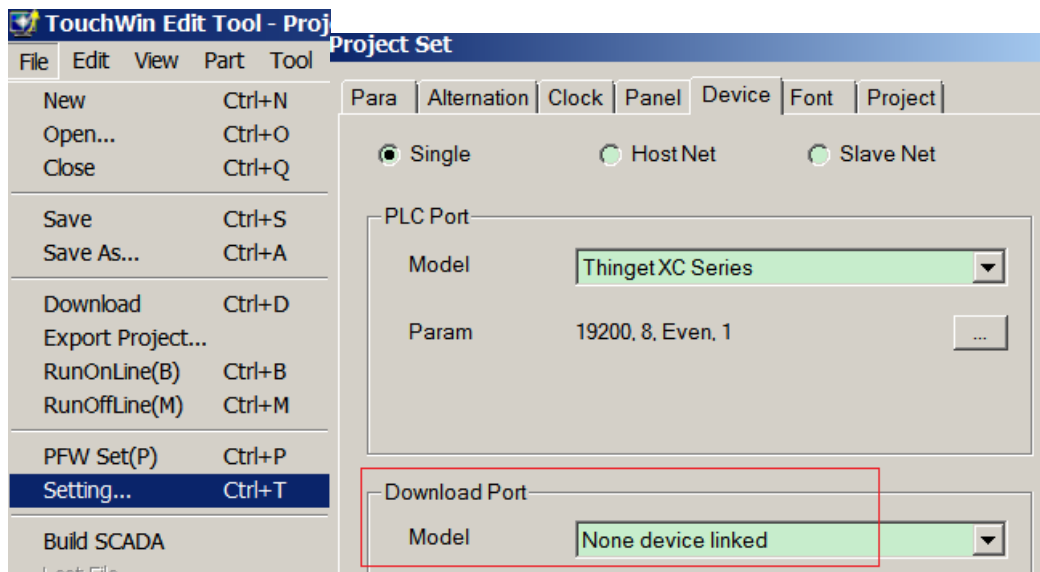
Pin	Name	Explanation
1	NC	Vacant
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 +
5	GND	Ground
6	NC	Vacant
7	B	RS485 -
8	NC	Vacant
9	NC	Vacant

1. Choose the device to communicate with download port

(a) Build a new project in Touchwin software, choose download port device



(b) For current project, please set it in the Touchwin software:



## 2. Mode switching for download port

The default mode of TH series download port is communication. But it is download mode for TP series. If the download port of TP series needs to switch to communication mode, two pins of the download port must be shorted. Please see the following diagram.

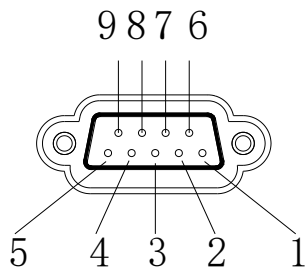
- (1) Cut off the power of TP series HMI, connect pin5 and pin6 of TP download port.
- (2) Power on the HMI, take away the connection cable, the download port will be in communication mode.

pin	name
1	NC
2	FXD
3	TXD
4	A
5	GND
6	BUSY
7	B
8	NC
9	NC

**Note: 1. if the HMI needs to download program, please restart the HMI.**  
**2. Please connect the pin 5 and 6 directly.**

## 1.2 PLC port

PLC port:



Pin	Name	Explanation
1	TD+	RS422 send -
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 +
5	GND	Ground
6	TD-	RS422 send -
7	B	RS485 -
8	RDD-	RS422 receive -
9	RDD+	RS422 receive +

For real application, please refer to chapter 2 for cable making. Refer to chapter 1.1 for download port settings.

## 1.3 Expand port

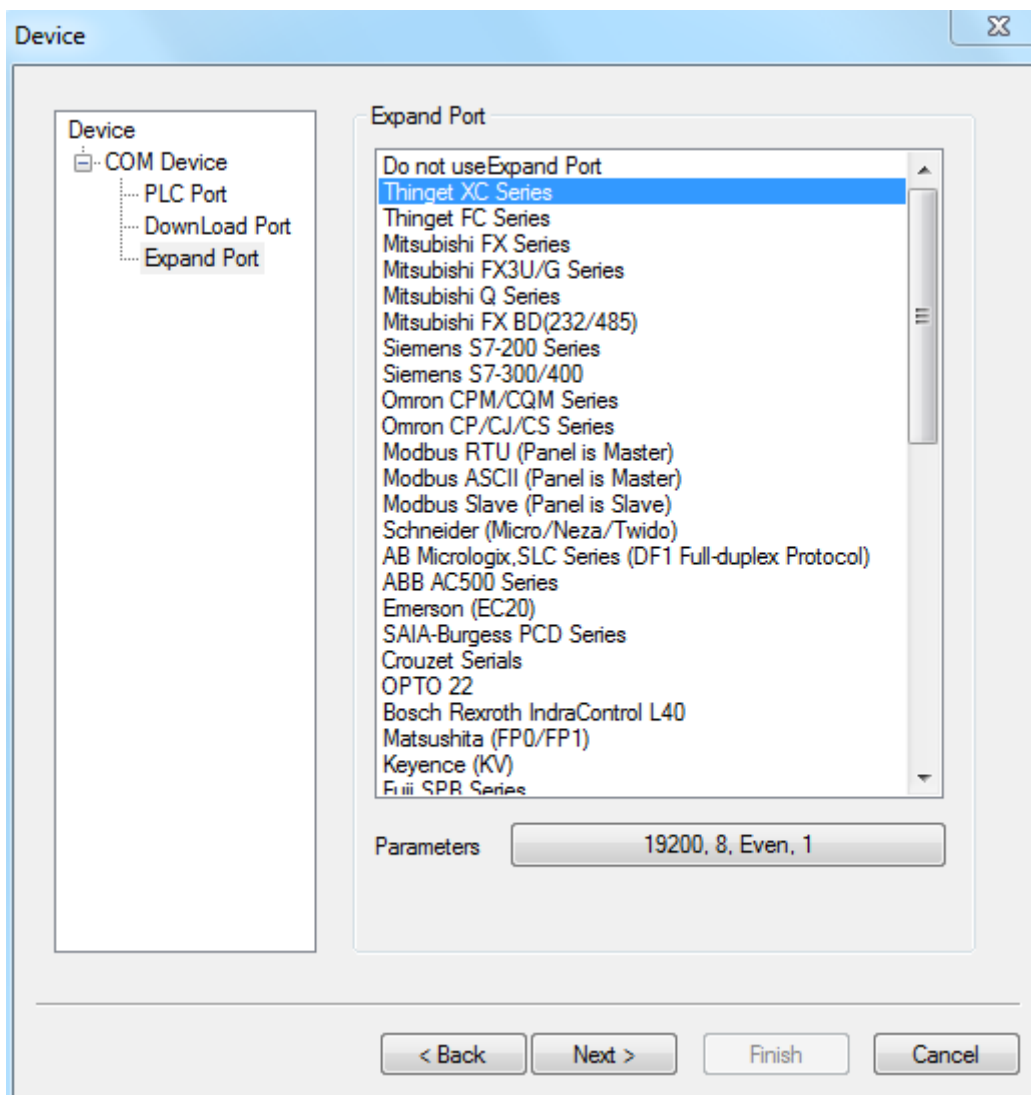
Expand port:

	Pin	Definition	Explanation
	1	A	RS485 +
	2		
	3		
	4		
	5		
	6	B	RS485 -
	7		
	8		
	9		

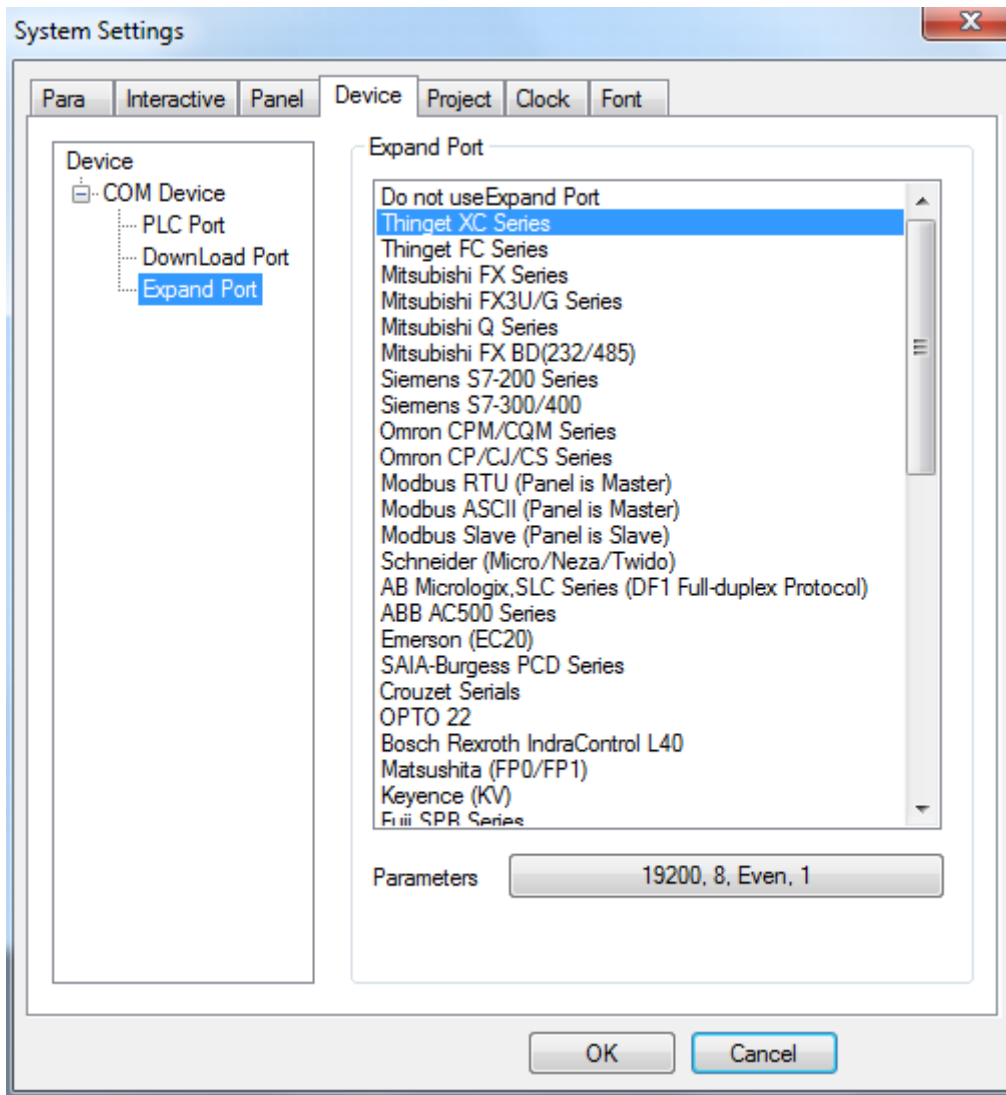
**Note:** only TH765-NT3/NU3 has this expand port.

1. choose expand port device

(1) Build a new project, click expand port, and choose the device

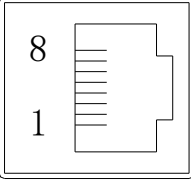


(2) For existed project, click File/setting/device/expand port to set the PLC model.



## 1.4 Ethernet port

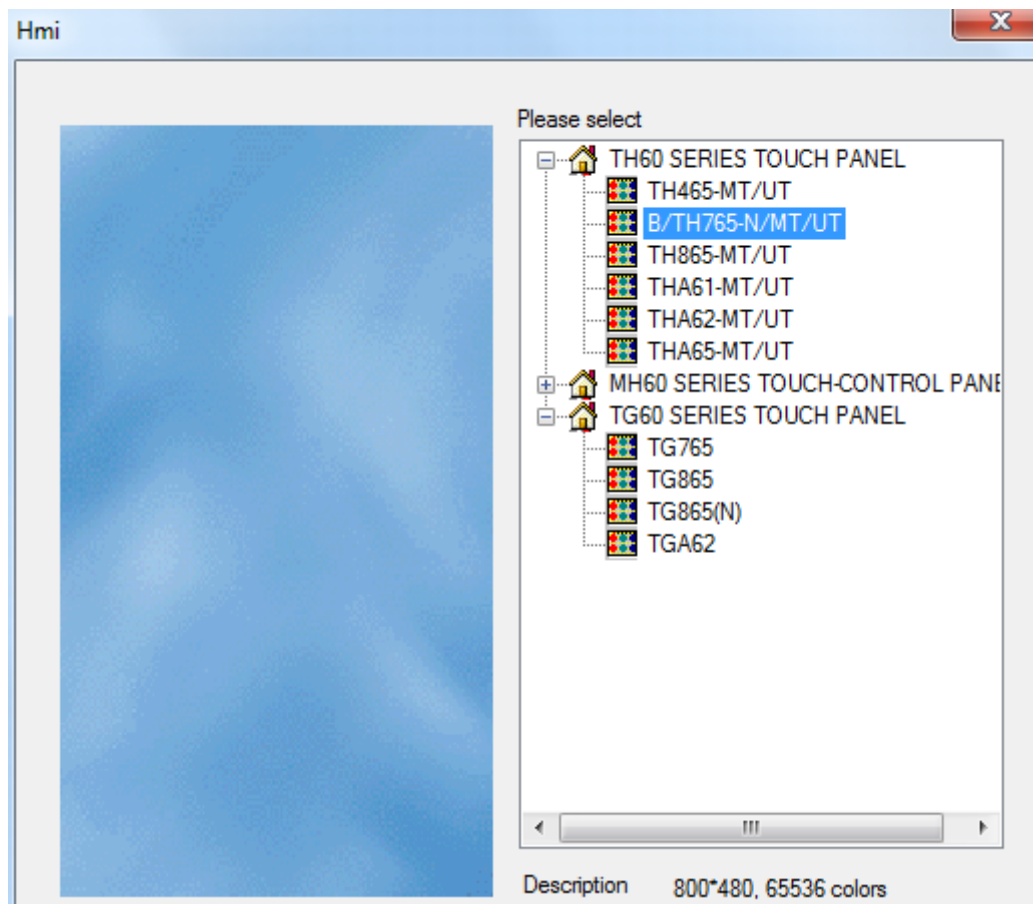
RJ45 Ethernet port:

	Pin	Color	Definition	Explanation
	1	Orange white	TXD+	Data send +
	2	Orange	TXD-	Data send -
	3	Green white	RXD+	Data receive +
	4	Blue	-	-
	5	Blue white	-	-
	6	Green	RXD-	Data receive -
	7	Brown	-	-

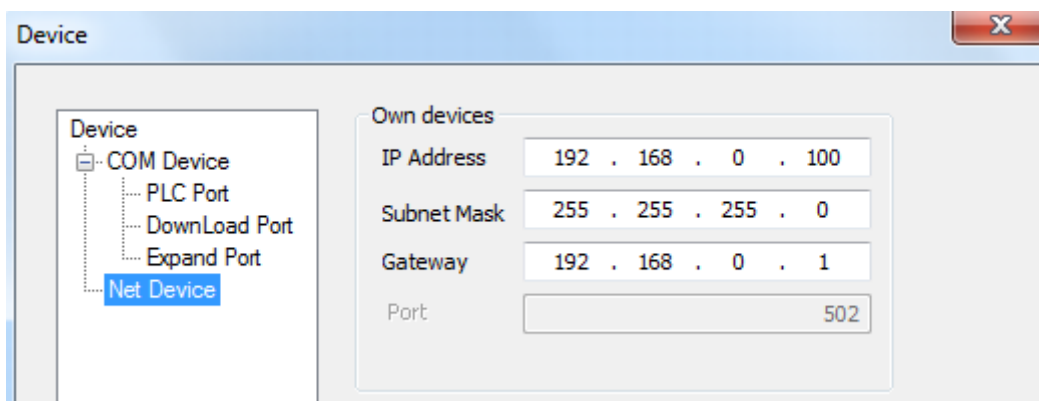
		white		
	8	Brown	-	-

**Note: only TG765-ET/TG865-ET/TGA62-ET/TGC65-ET has Ethernet port.**

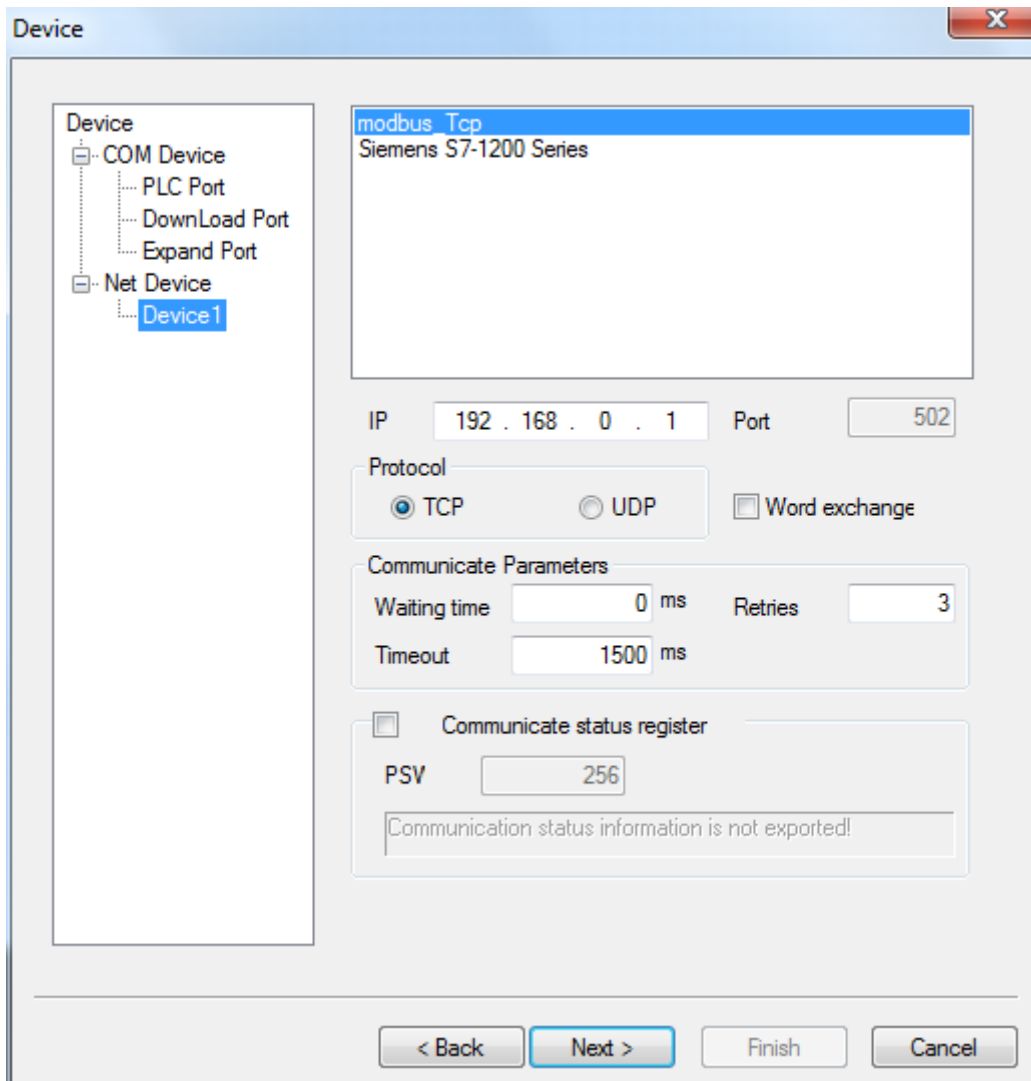
1. Build a new project, choose TG model in the list.



2. Click next, choose net device. Set the IP address of TG series HMI.



3. Right click net device, build a new Ethernet device.



**Note: this function support local area network, but not support wide area network**

# 2 The connection of PLC and HMI

This chapter 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.

## 2.1 XINJE FC series PLC

### 2.1.1 Model

Series	CPU	Connected module	Port	Cable making	Device
FC	XC32V2-CPU030427-R5	CPU direct connection	RS232	Fig1	Xinje FC series
			RS485	Fig2	

### 2.1.2 Parameters

HMI parameters:

Parameters	Settings	Choices for settings	Item
PLC type	FC series		
Port	RS232	RS232or RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Odd parity	Odd/even/no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station No.	0	0~255	

The default communication parameters of FC: 9600, 8, 1, odd parity, station No.0.

### 2.1.3 Cable making

(a) Connect to FC series CPU (RS232 port)

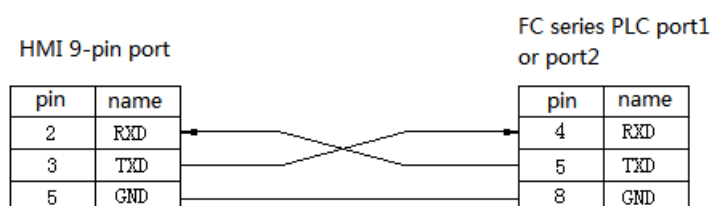


Fig1

(b) Connect to FC series PLC CPU (RS485 port)



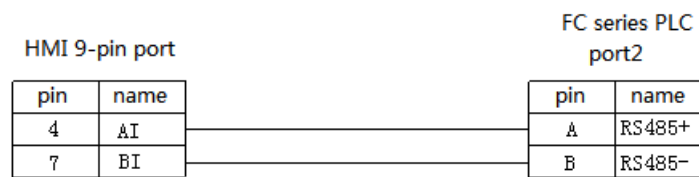


Fig2

## 2.1.4 Device address

PLC address	Range	Data type	Explanation
X	0~337	Bit	External input coil
Y	0~337	Bit	External output coil
M	0~383	Bit	Internal coil
SM	0~96	Bit	Special coil
T	0~128	Bit	Timer
C	0~128	Bit	Counter
W	0~2047	Word/DWord	Data register
FW	0~191	Word/DWord	FlashROM register
TW	0~127	Word/	Timer register
CW	0~127	Word/	Counter register
SW	0~111	Word//DWord	Special register
WX	0~13	Word//DWord	Input coil register
WY	0~13	Word//DWord	Output coil register
WM	0~23	Word//DWord	Interla coil register

## 2.2 XINJE XC series PLC

### 2.2.1 Model

Series	CPU	Connected module	Port	Cable making	Device
XC	XC1\XC2\ XC3\XC5	CPU direct connection	<b>RS232</b>	Fig1	Xinje XC series
			<b>RS485</b>	Fig 2	
		XC-RS485-BD (communication extension board)	<b>RS232</b>	Fig 3	
			<b>RS485</b>	Fig 4	

### 2.2.2 Parameters

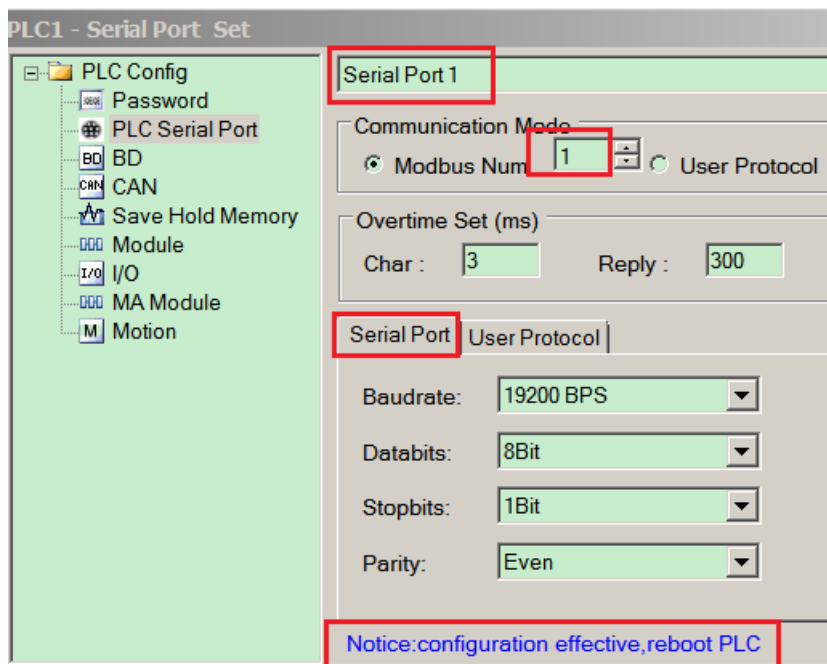
HMI parameters:

Parameter	Recommend settings	Choices of settings	Item
PLC type	XC series	FC/XC series	
Port	RS232	RS232 or RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station No.	1	0~255	

The default communication parameters of XC: 19200, 8, 1, even, station No.1.

PLC settings:

Open XCPpro software:



## 2.2.3 Cable making

### (a) Connect to XC series PLC CPU (RS232 port)

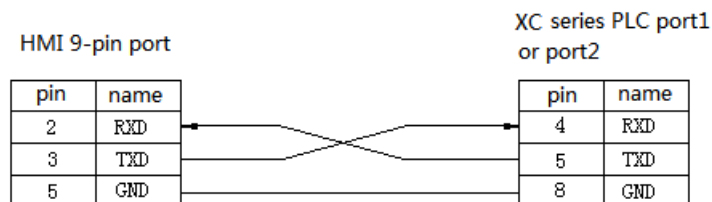


Fig1

### (b) Connect to XC series PLC CPU (RS485 port)

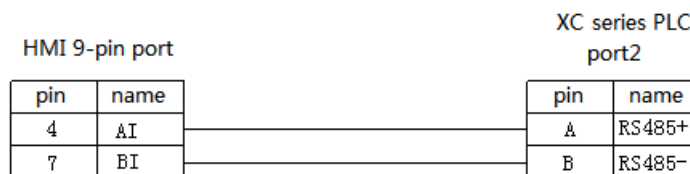


Fig2

### (c) Connect via XC-RS485-BD (RS232)

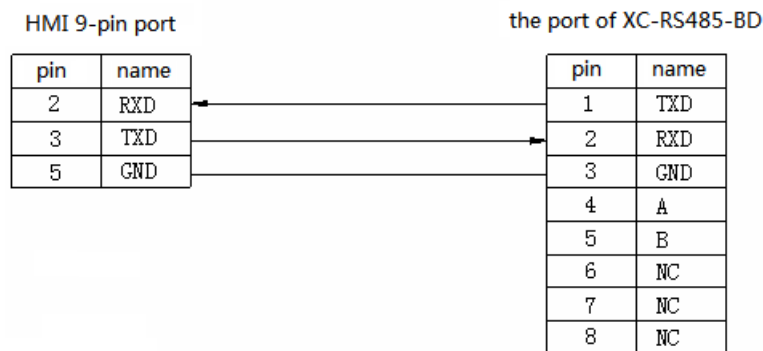


Fig3

**(d) Connect via XC-RS485-BD (RS485)**

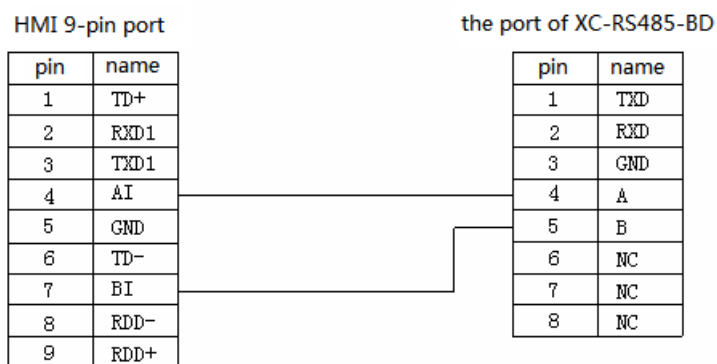


Fig4

## 2.2.4 Device address

PLC address	Range	Data type	Explanation
X	0~543	Bit	External input coil
Y	0~543	Bit	External input coil
M	0~7999	Bit	Internal coil
S	0~1023	Bit	Internal coil
M8XXX	0~511	Bit	Internal special register
T	0~639	Bit	Timer
C	0~639	Bit	Counter
D	0~7999	Word//DWord	Data register
TD	0~639	Word//DWord	Timer register
CD	0~639	Word//DWord	Counter register
D8XXX	0~511	Word//DWord	Special register
FD	0~1535	Word//DWord	FlashROM register
FD8XXX	0~511	Word//DWord	Output register
ED	0~36862	Word//DWord	Extend register
DM	7984	Word	Data register

DX	0~52	Word	Data register
DY	0~52	Word	Data register
DS	0~1008	Word	Data register
DM8XXX	0~496	Word	Data register
DT	0~603	Word	Data register
DC	0~619	Word	Data register
ID	0~9999	Word//DWord	Analog input
QD	0~9999	Word//DWord	Analog output

## 2.3 Mitsubishi FXseries PLC

### 2.3.1 Model

Series	CPU	Connected module	Port	Cable making	Device
FX	FX0N FX1N	CPU direct connection	<b>RS422</b>	Fig1	Mitsubishi FX series PLC
	FX2N	RS232-BD	<b>RS232</b>	Fig 2	Mitsubishi FXBD(232\485)
	FX1S	RS485\422-BD	<b>RS485</b>	Fig 3	
	FX3U		<b>RS422</b>		
	FX3G FX0 FX1	CPU direct connection	<b>RS422</b>	Fig 1	Mitsubishi FX series PLC
	FX2	CPU direct connection	<b>RS422</b>	Fig 4	Mitsubishi FX series PLC

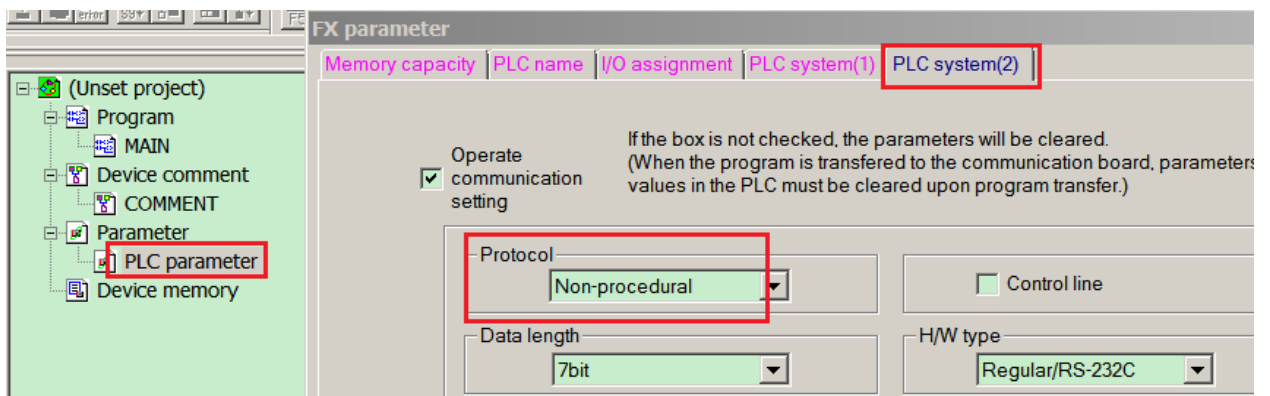
### 2.3.2 Parameters

HMI settings:

Parameter	Recommend settings	Choices of settings	Item
PLC type	FX series		
Dat bit	7	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	9600	4800/9600/19200/38400/56000/57600/115200/187500	
Station No.	0	0~255	

The default parameters of Mitsubishi FX series PLC: 9600, 7, 1, even, station No.0.

PLC settings:



### 2.3.3 Cable making

#### (a) FX1N\2N\3U\3G\1S series PLC, RS422 port:

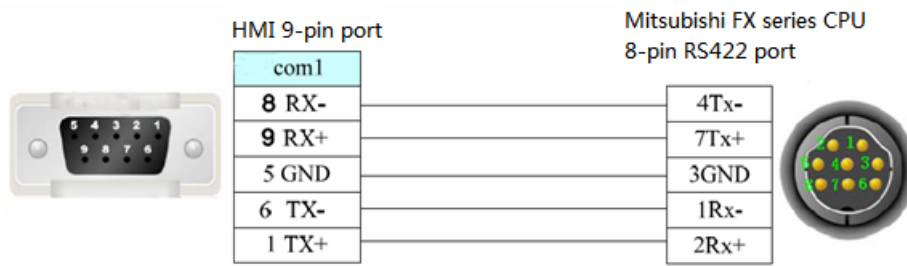


Fig1

#### (b) FX series PLC uses RS232-BD:

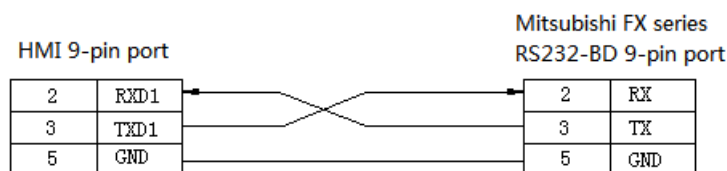


Fig2

#### (c) FX series PLC uses RS485BD:

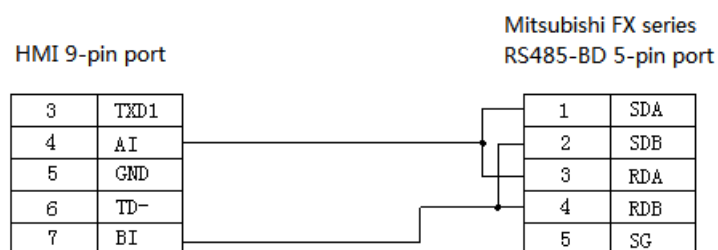


Fig3

**(d) FX2 series PLC:**

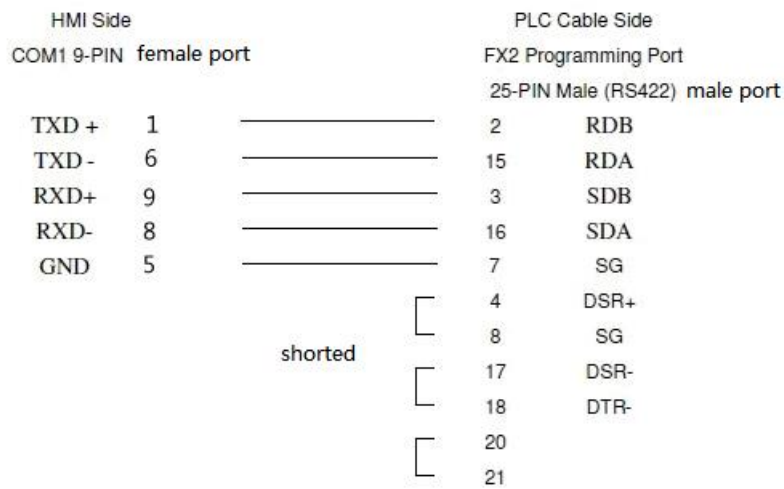


Fig4

### 2.3.4 Device address

PLC address	Range	Data type	Explanation
X	0~177	Bit	External input coil
Y	0~177	Bit	External output coil
M	0~8255	Bit	Internal coil
S	0~999	Bit	Stepper coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter
C16	0~199	Word/DWord	16-bit counter
C32	200~255	DWord	32-bit counter
D	0~8255	Word/DWord	Data register
T	0~255	Word/DWord	Current value
X	0~177	Word/DWord	Data register
Y	0~177	Word/DWord	Data register
M	0~8255	Word/DWord	Data register
S	0~999	Word/DWord	Data register



## 2.4 Mitsubishi FX3U/G series PLC

### 2.4 .1 Model

Series	CPU	Connected module	Port	Cable	Choose PLC type in Touchwin software
FX	FX3U FX3G	CPU	<b>RS422</b>	Fig 1	Mitsubishi FX3U/G

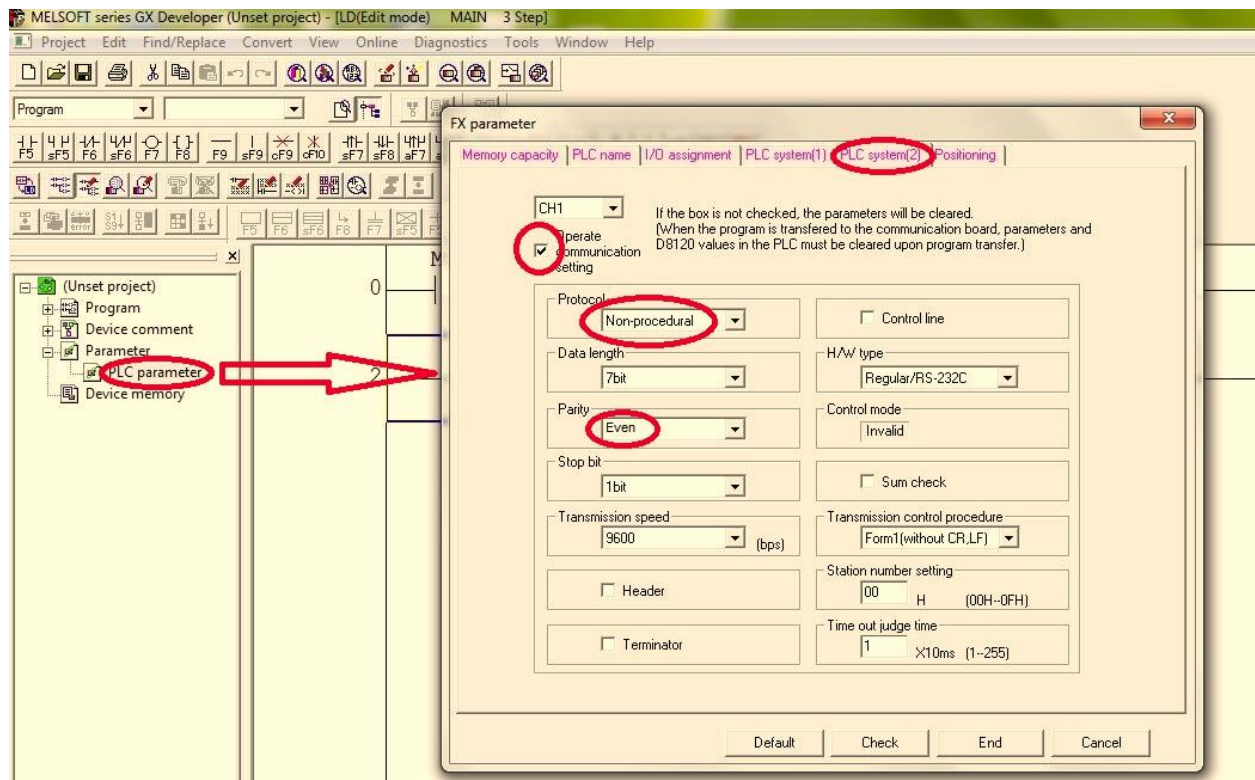
### 2.4 .2 Parameters

HMI settings:

Parameter	Recommended settings	Choices of settings	Notes
PLC type	Mitsubishi FX3U/G series		
Data bit	7		
Stop bit	1		
Parity	Even parity		
Baud rate	9600	4800/9600/19200/38400/56000/57600/115200/187500	
Station no.	0		

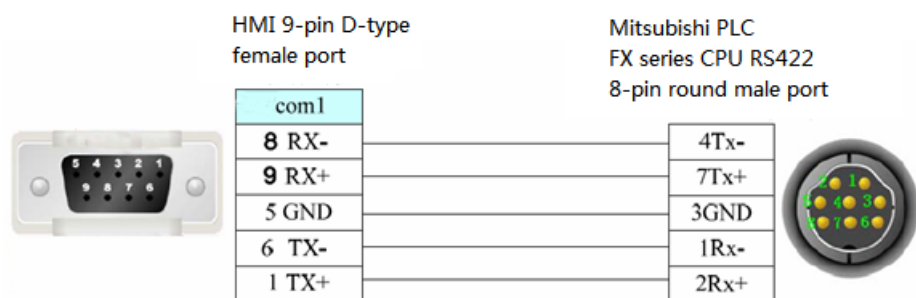
The default parameters of Mitsubishi FX3U/G series PLC: 9600, 7, 1, even parity, station no.0

PLC settings:



## 2.4 .3 Cable making

(a) FX3U\3G series PLC RS422:



## 2.4 .4 Device address

PLC address	Range	Type	Explanation
X	0~177	Bit	External input terminal
Y	0~177	Bit	External output terminal
M	0~8255	Bit	Internal auxiliary coil

S	0~999	Bit	Stepper coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter
C16	0~199	Word/DWord	16-bit counter
C32	200~255	DWord	32-bit counter
D	0~8255	Word/DWord	Data register
T	0~255	Word/DWord	Timer current value
X	0~177	Word/DWord	Used as data register
Y	0~177	Word/DWord	Used as data register
M	0~8255	Word/DWord	Used as data register
S	0~999	Word/DWord	Used as data register

## 2.5 Mitsubishi FX BD series PLC (RS232/485)

### 2.5.1 Device type

Series	CPU	Connected module	Port	Cable	PLC type in Touchwin software
FX	FX0N/1N/2N	232-BD	<b>RS232</b>	Fig1	Mitsubishi FX BD(232\485)
	FX1S FX3U/3G	485-BD	<b>RS485</b>	Fig2	

**Note:**

1. Do not hot plug the device!
2. The driver of 485-BD supports multi-station.

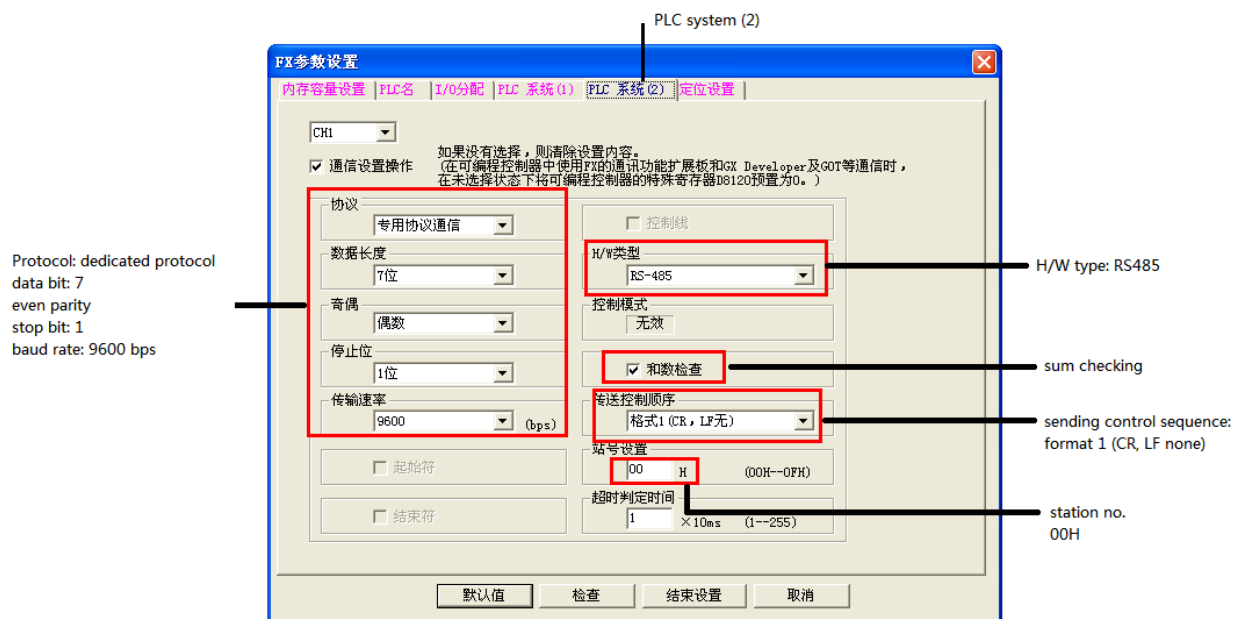
### 2.5.2 Parameters

HMI settings:

Parameters	Recommend settings	Choices of settings	Notes
PLC type	Mitsubishi FX BD(232\485)		
Data bit	7		
Stop bit	1		
Parity	Even parity		
Baud rate	9600	9600/19200/38400/56000/57600/ 115200/187500	
Station no.	0	0~255	

The default parameters of Mitsubishi FX BD (232/485): 9600, 7, 1, even parity, station no.0

PLC settings:



Note:

1. Please choose RS232 as H/W type when using 232-BD.
2. Please re-power on the PLC after changing the parameters.

## 2.5.3 Cable making

(a) FX series PLC RS232-BD:

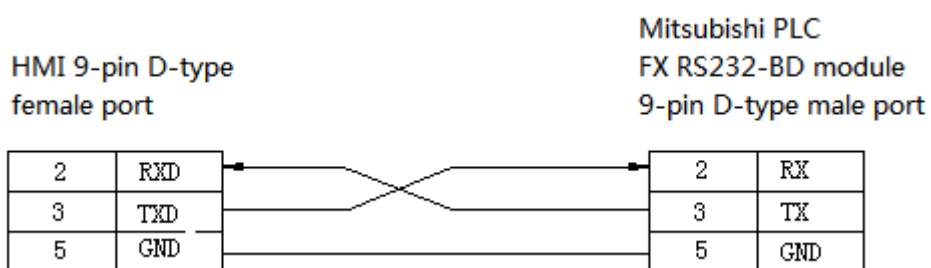


Fig1

(b) FX series PLC RS485-BD:

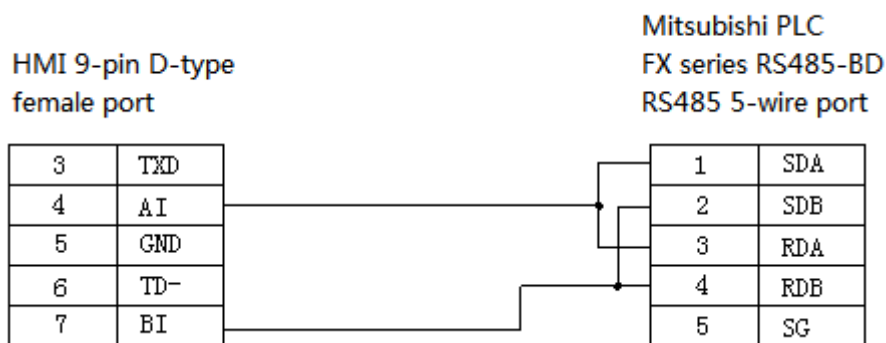


Fig2

### 2.5.3 Device address

PLC address	Range	Data type	Explanation
X	0~177	Bit	External input terminal
Y	0~177	Bit	External output terminal
M	0~8255	Bit	Internal auxiliary coil
S	0~999	Bi	Stepper coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter
C16	0~199	Word/DWord	16-bit counter
C32	200~255	DWord	32-bit counter
D	0~8255	Word/DWord	Data register
T	0~255	Word/DWord	Current value
X	0~177	Word/DWord	Used as data register
Y	0~177	Word/DWord	Used as data register
M	0~8255	Word/DWord	Used as data register
S	0~999	Word/DWord	Used as data register

## 2.6 Mitsubishi Q series PLC

### 2.6 .1 Model

MELSEC-Q series include the CPU unit of Q00, Q01, Q00U and so on. They can connect to the HMI via programmable port or communication module (QJ71C24N).

Series	CPU	Connected module	Port	Cable making	Device
Q	Q00 Q01 Q00U	CPU direct connection	<b>RS232</b>	Fig 1	Mitsubishi Q series
	Q00J, Q00, Q01, Q02H, Q06H, Q12H, Q25H, Q12PH, Q25PH	Serial communication module QJ71C24	<b>RS232</b>	Fig 2	Mitsubishi Q series
			<b>RS422</b>	Fig 3	

### 2.6.2 Parameters

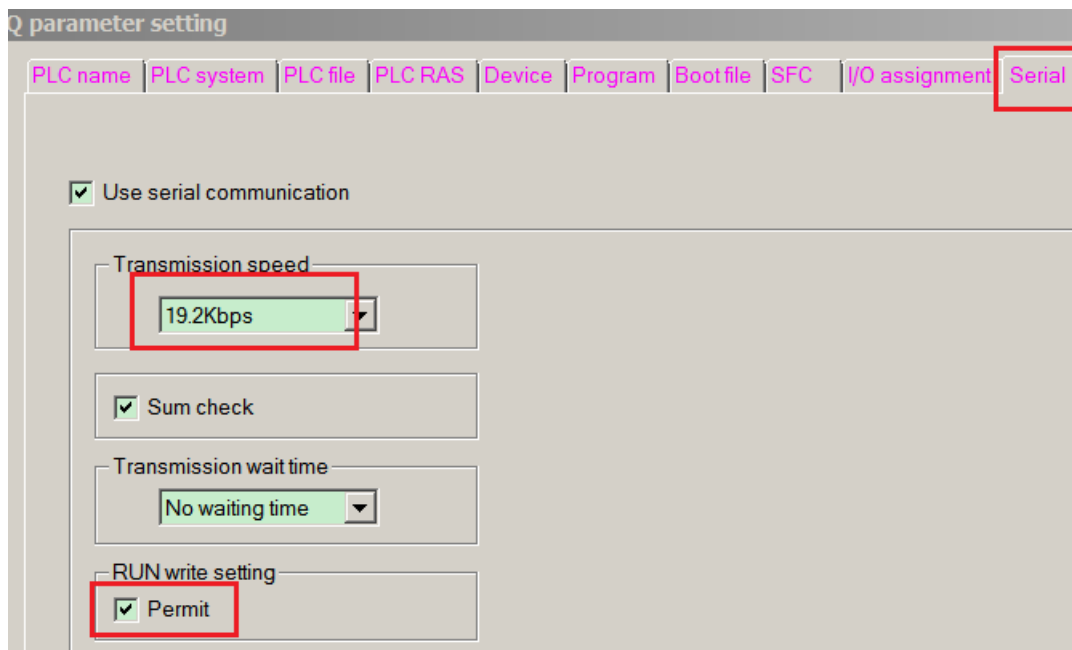
HMI settings:

Parameter	Recommend setting	Choices of settings	Item
PLC type	Q series		
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Odd parity	Even/odd/no parity	
Baud rate	19200	4800/9600/19200/38400/56000/57600/115200/187500	
Station No.	0	0~255	

The default parameter of Q series PLC: 19200, 8, 1, odd parity, station No.0.

PLC settings:

#### 1. Q01\Q00 PLC:

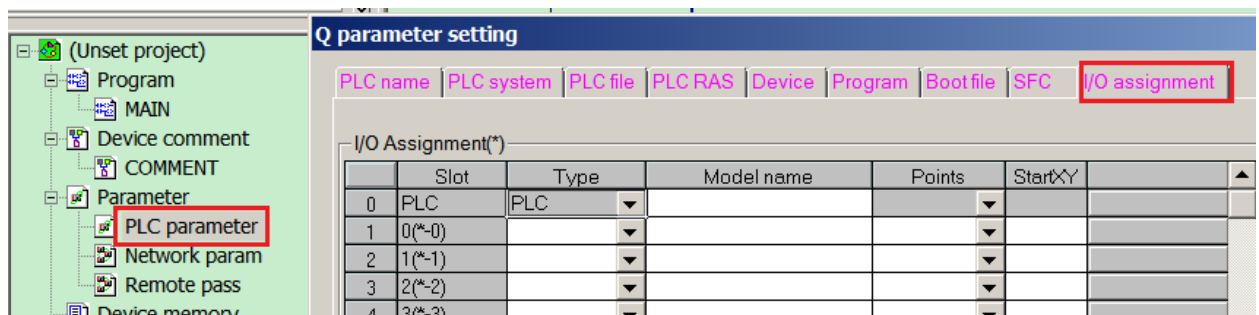


## 2. QJ71C24N serial port module

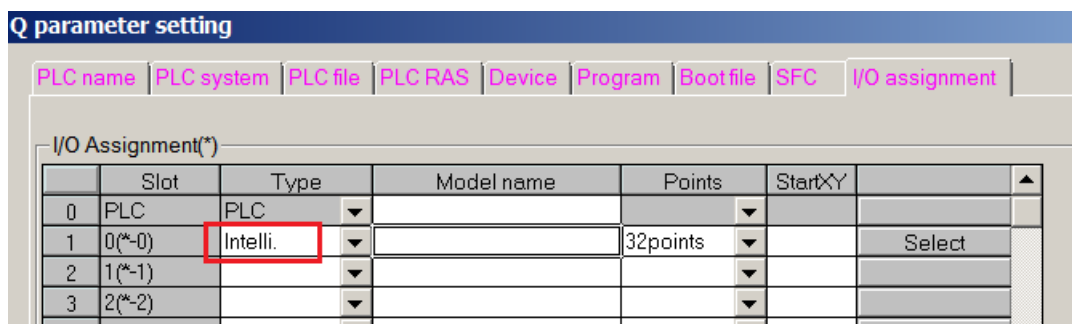
QJ71C24N can connect to CPU and communicate with other devices. Such as Q02CPU, the settings are as the following:

PLC software version v8.26

(a) Double click PLC parameter, choose I/O assignment:



(b) Change the type of item1 to intelli.



(c) Click “switch setting” :



**Q parameter setting**

PLC name | PLC system | PLC file | PLC RAS | Device | Program | Boot file | SFC | I/O assignment

I/O Assignment(\*)

	Slot	Type	Model name	Points	StartXY	
0	PLC	PLC				
1	0(*-0)	Intelli.		32points		Select
2	1(*-1)					
3	2(*-2)					

Switch setting  
Detailed setting

(d) Set the parameter as the following window:

**Switch setting for I/O and intelligent function module**

Input format: HEX

	Slot	Type	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5
0	PLC	PLC						
1	0(*-0)	Intelli.		07E6	0004			0000
2	1(*-1)							

(e) Click End button to finish the settings, then repower on the PLC.

PLC software version v8.8:

For QJ71C24 module RS232, please set the parameter of CH1:

**Q parameter setting**

PLC name | PLC system | PLC file | PLC RAS | Device | Program | Boot file | SFC | I/O assignment

I/O Assignment(\*)

	Slot	Type	Model name	Points	StartXY	
0	PLC	PLC				
1	0(*-0)	Intelli.	QJ71C24N	32points		Select
2	1(*-1)					
3	2(*-2)					
4	3(*-3)					
5	4(*-4)					
6	5(*-5)					
7	6(*-6)					

Assigning the I/O a Leaving this setting

Base setting(\*)

Main

Ext.Base1

Ext.Base2

Ext.Base3

Ext.Base4

Ext.Base5

**Switch SettingNo set:QJ71C24N**

Item	CH1	CH2
Operation setting	Independence	Independence
Data Bit	8	8
Parity Bit	Exist	Exist
Odd/Even Parity	Odd	Odd
Stop Bit	1	1
Sum Check Code	Exist	Exist
Online Change	Enable	Enable
Change	Enable	Enable
Communication rate setting	19200bps	19200bps
Communication protocol setting	MC protocol (Type4)	MC protocol (Type4)
Station number setting (0 to 31)	0	

For QJ71C24 module RS422, please set the parameter of CH2:

Q parameter setting

PLC name | PLC system | PLC file | PLC RAS | Device | Program | Boot file | SFC | I/O assignment

I/O Assignment(\*)

Slot	Type	Model name	Points	StartXY
0	PLC			
1	0(*-0)	Intelli.	QJ71C24N	32points
2	1(*-1)			
3	2(*-2)			
4	3(*-3)			
5	4(*-4)			
6	5(*-5)			
7	6(*-6)			

Assigning the I/O a  
Leaving this setting

Base setting(\*)

Base mod
Main
Ext.Base1
Ext.Base2
Ext.Base3
Ext.Base4

Switch SettingNo set:QJ71C24N

Item	CH1	CH2
Operation setting	Independence	Independence
Data Bit	8	8
Parity Bit	Exist	Exist
Odd/Even Parity	Odd	Odd
Stop Bit	1	1
Sum Check Code	Exist	Exist
Online Change	Enable	Enable
Change	Enable	Enable
Communication rate setting	19200bps	19200bps
Communication protocol setting	MC protocol (Type4)	MC protocol (Type4)
Station number setting (0 to 31)	0	

Switch setting

Detailed setting

### 2.6.3 Cable making

(a) Q series PLC CPU unit, RS232 port:

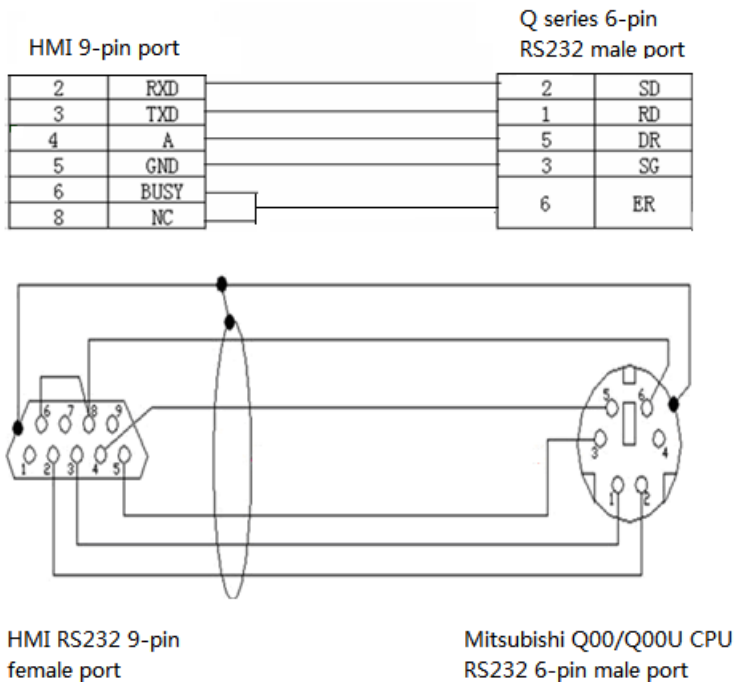


Fig1

(b) Q series PLC uses QJ71C24N module RS232:

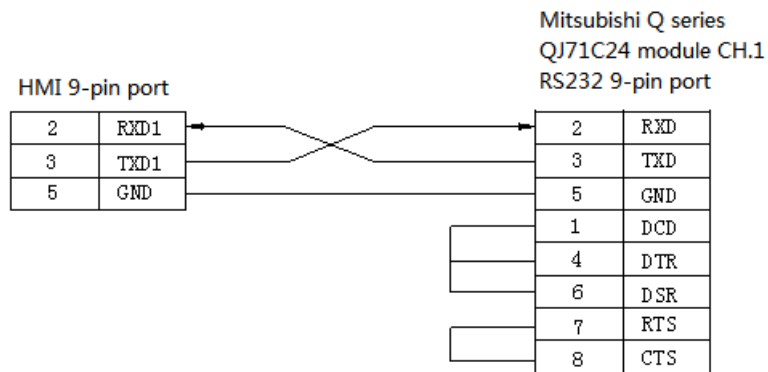


Fig2

(c) Q series PLC uses QJ71C24 module RS422:

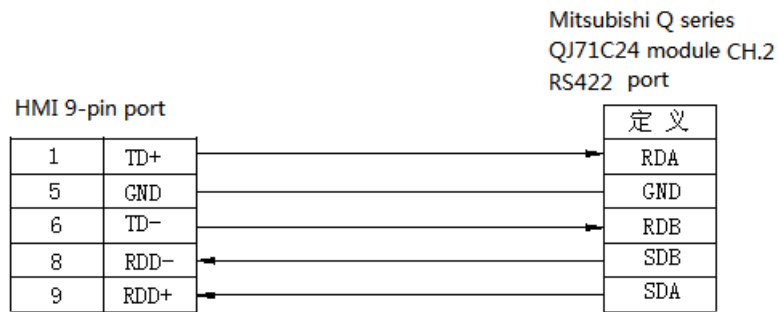


Fig3

## 2.6.4 Device address

PLC address	Range	Data type	Explanation
X	0~177	Bit	External input coil
Y	0~177	Bit	External output coil
M	0~8255	Bit	Internal coil
S	0~999	Bit	Stepper coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter
C16	0~199	Word/DWord	16-bit counter
C32	200~255	DWord	32-bit counter
D	0~8255	Word/DWord	Data register
T	0~255	Word/DWord	Current value
X	0~177	Word/DWord	Data register

Y	0~177	Word/DWord	Data register
M	0~8255	Word/DWord	Data register
S	0~999	Word/DWord	Data register

## 2.7 Siemens S7-200 series PLC

### 2.7.1 Model

Seris	CPU	Connected module	Port	Cable	Device
S7-200	CPU212, CPU221, CPU222, CPU224, CPU226	Connect CPU RS485 port directly	<b>RS485</b>	Fig 1	Siemens S7-200
S7-200 smart	Smart series	CPU directly connect	<b>RS485</b>	Fig1	Siemens S7-200

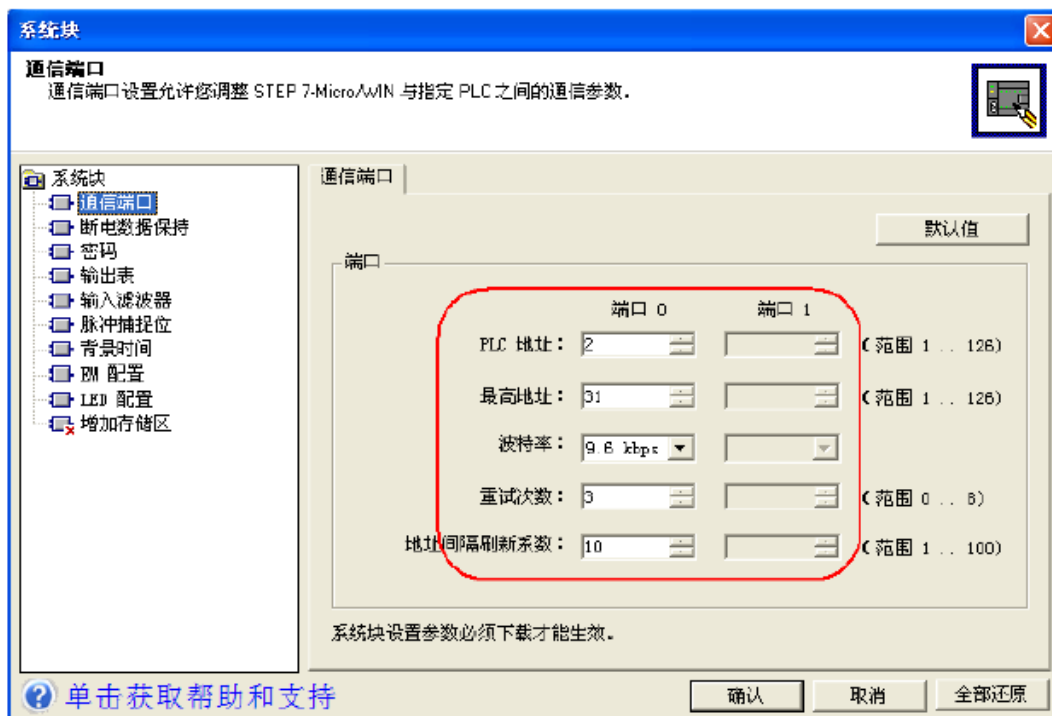
### 2.7.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Item
PLC type	S7-200		
Port	RS485		
Data bit	8		
Stop	1		
Parity	Even parity		
Baud rate	9600	9600/19200/187500	
Station no.	2		Must use recommend settings

The default communication parameters of Siemens S7-200 series PLC: 9600, 8, even parity, station No.2.

PLC settings:



Notes:

1. Siemens PLC has 3 kinds of registers: 8-bit VB, 16-bit VW and 32-bit VD.
2. The space of registers are overlapped, the address of VW must be even numbers, for example: VW0, VW2, ..., the address of VD must be the multiple of 4, such as VD0, VD4, VD8, ...
3. For Data block PSW single word → VW single word: as the high byte and low byte problem, the received data maybe dislocated, please use register copy function.
4. For data block PSW single word → VD double words: as the unit is different, cannot transfer the data like this, please use register copy function.

### 2.7.3 Cable making

HMI connects to S7-200 via RS485:

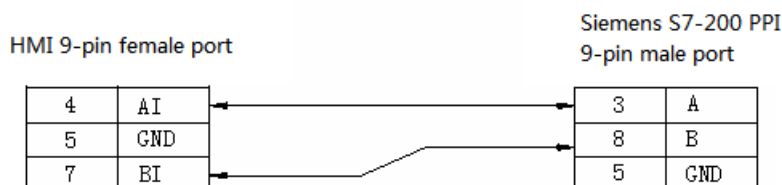


Fig1

### 2.7.4 Device address

SIMATIC S7-200 series

PLC address	Range	Data type	Explanation
VB	0~4095	Byte	variable byte data register
VW	0~4095	Word	variable word data register
VD	0~4095	DWord	variable double word data register
IB	0~15	Byte	External input byte reflection register
IW	0~15	Word	External input word reflection register
ID	0~15	DWord	External input double words reflection register
QB	0~15	Byte	External output byte reflection register
QW	0~15	Word	External output word reflection register
QD	0~15	DWord	External output double words reflection register
MB	0~31	Byte	Internal auxiliary byte register
MW	0~31	Word	Internal auxiliary word register
MD	0~31	DWord	Internal auxiliary double words register
SMB	0~299	Byte	Internal special auxiliary byte register
SMW	0~299	Word	Internal special auxiliary word register
SMD	0~299	DWord	Internal special auxiliary double words register
SB	0~31	Byte	Special auxiliary byte register
SW	0~31	Word	Special auxiliary word register
SD	0~31	DWord	Special auxiliary double words register
T	0~255	Word	Register
C	0~255	Word	Register
M	0~31	Bit	Bit register
V	0~4095	Bit	Variable register
I	0~15	Bit	External input coil
Q	0~15	Bit	External output coil
SM	0~299	Bit	Special relay
S	0~31	Bit	Sequence relay
T	0~255	Bit	Timer
C	0~255	Bit	Counter

## 2.8 Siemens S7-300/400 series PLC

### 2.8.1 Model

SIMATIC S7-300/400 PLC (connect to CPU directly)

Series	CPU	Connected module	Port	Cable	Device
S7-300	CPU312, CPU314, CPU315	RS485 port of CPU	<b>RS485</b>	fig 1	Siemens SIMATIC S7-300/400 PLC
S7-400	CPU412-1, CPU412-2, CPU414-2,				

### 2.8.2 Parameters

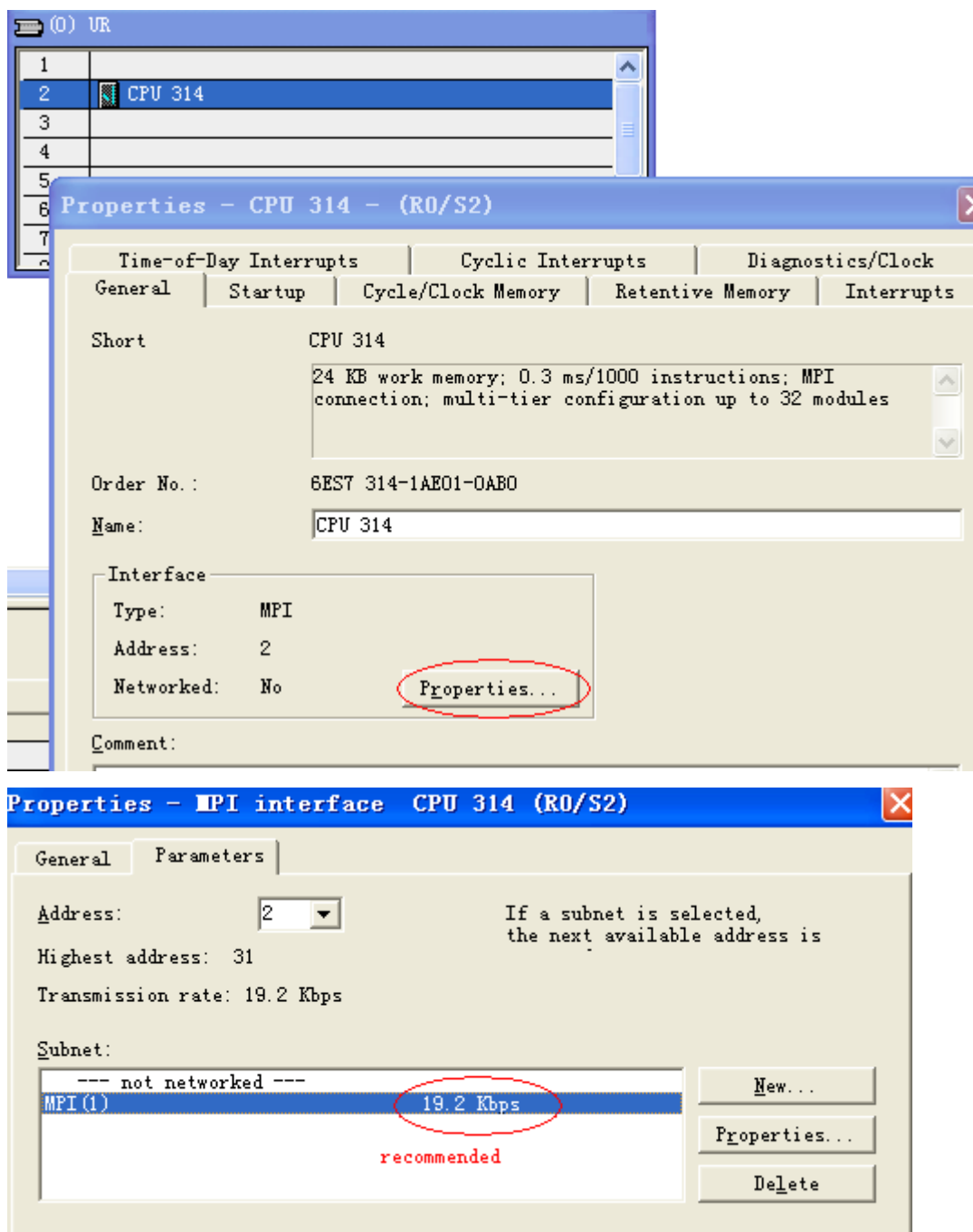
HMI settings:

Parameter	Recommend settings	Choice of settings	Note
PLC type	S7-300/400		
Port	RS485		
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	2		Please use recommend settings

The default parameters of Siemens S7-300\400: 19200, 8, even parity, station No.2.

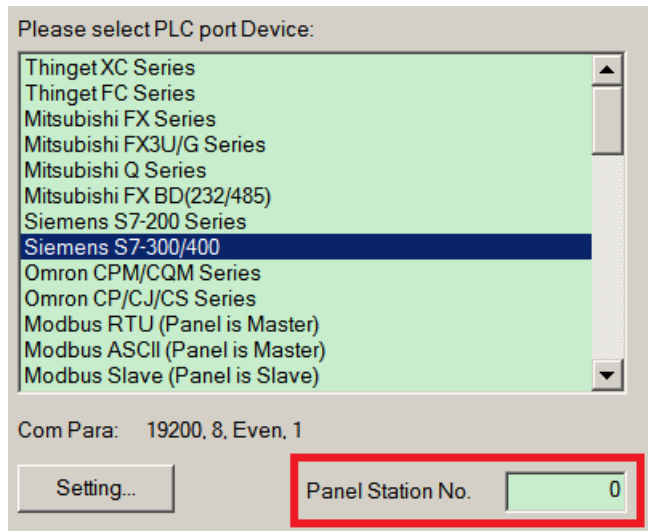
PLC settings:





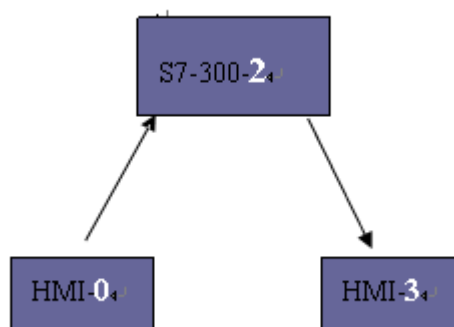
Communication notes for S7-300:

1. Siemens baud rate must set to 19200 kbps; don't set the parameters of PG/PC adapter.
2. Don't modify the "panel station no." in the Touchwin software.



3. Cable: no need PG/PC adapter;
4. Please define the DB register in the PLC when testing the communication.
5. Please note that the port will be operated in PLC program by accident.
6. The default station No. of S7-300 is 2, please don't modify it.

Example: MPI port of S7-300 connects to HMI, the PLC connects to SCADA software via Ethernet module, PLC station no. is 8, module station no. is 3, HMI station no. is 0. The result is that communication between SCADA and PLC will be cut off. Because the HMI cannot find other devices and modules cannot be inserted in. please change the PLC station no. to 2. These devices can form a loop:



### 2.8.3 Cable making

HMI connects to S7-300/400 via RS485:

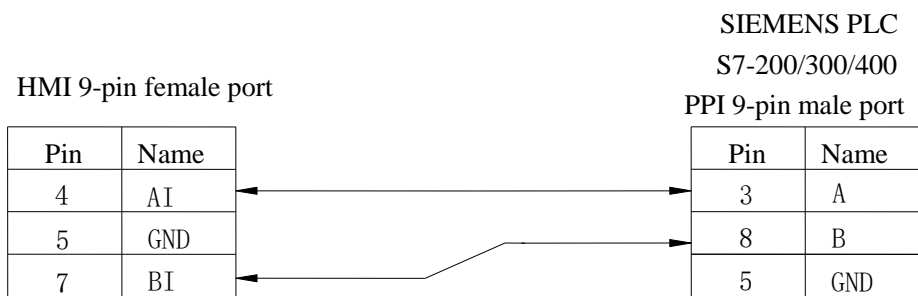


Fig1

## 2.8.4 Device address

SIMATIC S7-300/400

PLC type	Range	Data type	Explanation
I	0~9999	Byte/Word/DWord	External input register
Q	0~9999	Byte/Word/DWord	External output register
M	0~9999	Byte/Word/DWord	Internal auxiliary register
DB0~DB20	0~9999	Byte/Word/DWord	Data register
I	0~9999	Bit	External input coil
Q	0~9999	Bit	External output coil
M	0~9999	Bit	Internal auxiliary relay
DB0~DB20	0~9999	Bit	Internal auxiliary relay

## 2.9 OMRON SYSMAC series PLC

OMRON CPM1A, CQM1-CPU series CPU cannot support RS232. It can connect to the Touchwin HMI via CPM1-CIF01 adapter and modules including C500-LK203, C120-LK201-V1, C500-LK201-V1. The PLC uses Hostlink protocol when communicating. Please change the PLC startup choice to MONITOR RUN.

### 2.9.1 Device model

Series	CPU	Connected module	Communication mode	Cable	The PLC device in TouchWin
CP	CP1E-30N CP1H CP1L	CPU direct connection	RS232	Fig 1	Omron CP/CJ/CS
		Module CP1W-CIF11	RS485	Fig 2	
		Module CP1W-CIF11	RS422	Fig 3	
CJ	CJ1 CJ1G-CPU44 CJ1G-CPU45 CJ2M-CPU11	CPU direct connection	RS232	Fig 1	
CS1	CS1H-CPU63/64/65/66/67 CS1G-CPU42/43/44/45 CS1G-CPU42H CS1G-CPU43H CS1G-CPU44H CS1G-CPU45H CS1H-CPU63H CS1H-CPU64H CS1H-CPU65H CS1H-CPU66H CS1H-CPU67H	CPU direct connection	RS232	Fig 1	

Series	CPU	Connected module	Communication mode	Cable	The PLC device in TouchWin
C	C200HE C200HX	CPU direct connection	RS232	Fig 1	Omron CPM/CQM
	C1000HF	C500-LK203 (communication module)			

	C2000	C120-LK201-V1(communication module)			
		C500-LK201-V1(communication module)			
		C500-LK203(communication module)			
CPM	CPM2A CPM2AE CPM2AH-40CDR-A CPM1H	CPU direct connection			
	CPM1A	OMRON CIF01 (RS232) Communication adapter	RS232	Fig 1	
CQM	CQM1H-CPU21	CPU direct connection			
	CQM1-CPU	OMRON CIF01 (RS232) Communication adapter			

## 2.9.2 Parameters

HMI:

The default parameters of OMRON CP/CJ/CS series PLC: 9600, 7, 2, even parity, station no.0.

The default parameters of OMRON CPM/CQM series PLC: 9600, 7, 2, even parity, station no.0.

Parameter	Recommended settings	Choices of settings	Notes
PLC type	OMRON CPM/CQM series OMRON CP/CJ/CS series	OMRON CP/CJ/CS series OMRON CPM/CQM series	
Port	RS232	RS232/RS485	
Data bit	7	7 or 8	
Stop bit	2	1 or 2	
Parity	Even parity	Even/odd/ no parity	
Baud rate	9600	4800/38400/9600/115200 /19200/187500	
Station no.	0	0~255	

## 2.9.3 Cable making

(a) CPU RS232 port:

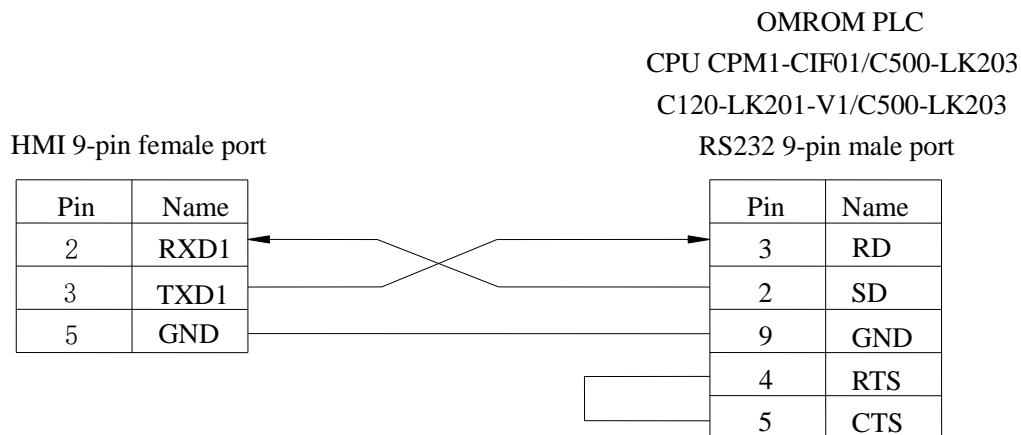


Fig1

(b) Through module CP1W-CIF11 RS485:

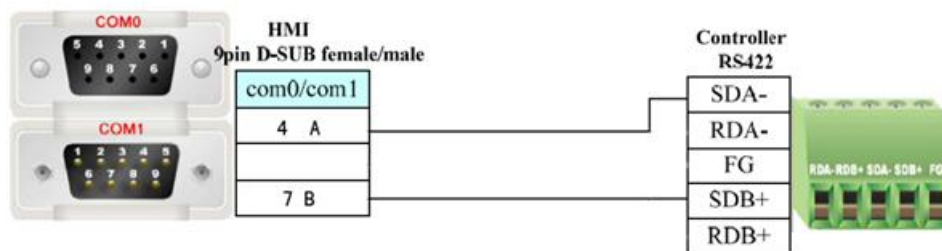


Fig2

**Note: If OMRON RS485 module CPIW-CIF11 uses 485-2 connection mode, turn OFF the SW1 switch on the module, turn ON SW2, 3, 5, 6. SW4 is selectable.**

(c) Through the module CP1W-CIF11 RS422:

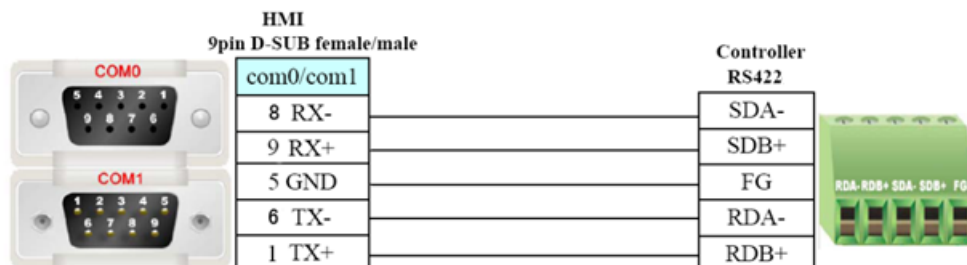


Fig3

**Note: If OMRON RS485 module CP1W-CIF11 uses RS422 connection mode, turn OFF the SW1~6 on the module.**

## 2.9.4 Device address

### (a) SYSMAC CPM/CQM series

PLC address	Range	Data type	Explanation
IR	0~65535	Bit	I/O and internal relay
SR	244~65535	Bit	Relay
HR	0~65535	Bit	Holding relay
AR	0~65535	Bit	Auxiliary relay
LR	0~65535	Bit	Link relay
PV	0~65535	Bit	Current value of timer and counter
TC	0~65535	Bit	Timer and counter
IR	0~65535	Word/DWord	Register
SR	244~65535	Word/DWord	Register
HR	0~65535	Word/DWord	Register
AR	0~65535	Word/DWord	Register
LR	0~65535	Word/DWord	Register
PV	0~65535	Word/DWord	Register
TC	0~65535	Word/DWord	Register
DM	0~65535	Word/DWord	Data register (single/double words)

### (b) SYSMAC CP/CJ/CS series

PLC address	Range	Data type	Explanation
CIO	0~9999	Bit	
D	0~99999	Bit	
H	0~9999	Bit	
W	0~9999	Bit	
A	0~9999	Bit	
T	0~9999	Bit	Timer
C	0~9999	Bit	Counter
CIO	0~9999	Word/DWord	Register
D	0~99999	Word/DWord	Register
H	0~9999	Word/DWord	Register
W	0~9999	Word/DWord	Register
A	0~9999	Word/DWord	Register
T	0~9999	Word/DWord	Register
C	0~9999	Word/DWord	Register

## 2.10 Koyo S series PLC

Koyo KOSTA-S and Direct-Logic series PLC

### 2.10.1 Device model

(a) Kostac S series SH\SM\SN PLC (direct connect to the CPU module)

Series	CPU	Connected module	Port	Cable	Device	
SH series	SH-48RS	CPU	RS232	Fig1	Koyo S series	
SM series	SM24-T					
SN series						
SU-6		CPU	RS232	Fig1		
SU-6B			RS232	Fig1		
			RS422	Fig3		

**Note:** Koyo SH-48RS doesn't have Run, Stop switch, but only have one AMP port.

(b) Koyo Kostac S series SG-8, SU-5, SU-6, SR-21, SR-22... PLC (use communication module)

CPU	Connected module	Port	Cable	Device
SG-8	G01-DM communication unit	RS232	Fig 1	Koyo S series
		RS422	Fig 3	
SU-5	U01-DM communication unit	RS232	Fig 1	
SU-6	U01-DM communication unit			
SR-21	E-02DM-R1 communication unit	RS422	Fig 3	
SR-22				

(c) Koyo Direct Logic series DL05, DL250...PLC (connect to CPU directly)

Series	CPU	Connected module	Port	Cable	Device
Direct Logic	DL05 DL105 DL230 DL240 DL250 DL350 DL450	Connect to RJ-11port(RS232) of CPU	RS232	Fig 2	Koyo S series
	DL250	Connect to the port of CPU	RS422	Fig 3	



	DL430	Connect to the port of CPU			
	DL440				
	DL450				
	DL350		RS232	Fig 2	

**Note:** port2 of DL250CPU has RS232 and RS422; please identify them when making the cable.

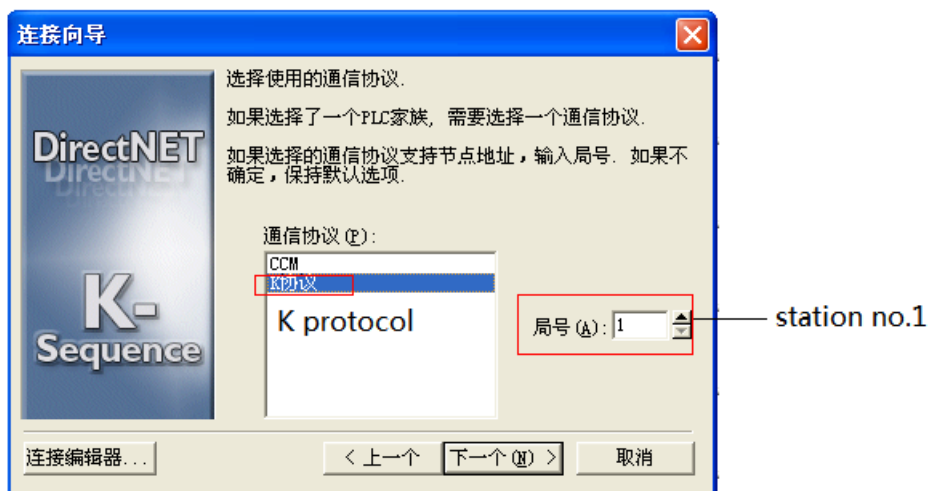
## 2.10.2 Parameters

HMI:

Parameter	Recommend settings	Choices of settings	Notes
PLC	Koyo S series PLC		
Port	RS232	RS232 or RS422	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Odd parity	Even/odd/no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	0	0~255	

The default communication parameters of Koyo S series PLC: 9600, 8, 1, odd parity, station no.0.

PLC:





serial port: COM1  
 baud rate: 9600  
 odd parity

PLC: SH/SH1  
 K protocol  
 station no.1

Note: 1. Koyo K protocol cannot modify station no., the station no. is 0 in the HMI.

2. The register address starts from R2000.

## 2.10.3 Cable making

(a) RS232 25-pin port on CPU or communication unit:

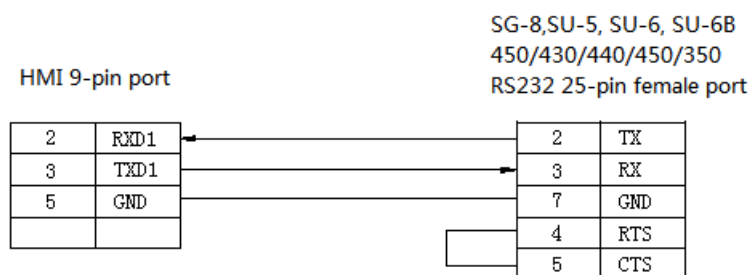


Fig1

RJ-11 6-pin RS232 female port on the CPU:

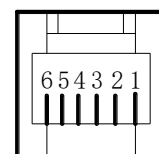
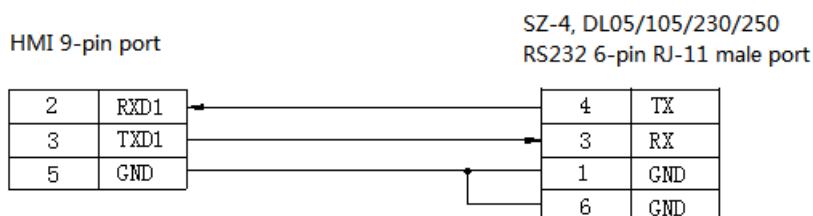


Fig2

RS422 connection:

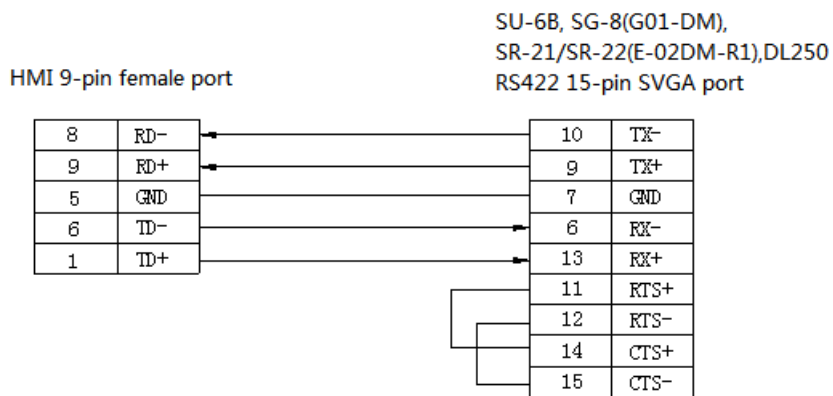


Fig3

## 2.10.4 Device address

PLC address	Range	Data type	Explanation
M	0~777	Bit	Internal auxiliary coil
I	0~777	Bit	External input coil
Q	0~777	Bit	External output coil
SP	0~777	Bit	Internal auxiliary coil
T	0~777	Bit	Timer
C	0~777	Bit	Counter
S	0~777	Bit	Stepper coil
R	0~41200	Word/DWord	Data register

## 2.11 Koyo DL series PLC

### 2.11.1 Device type

Koyo Direct Logic series DL05, DL250 PLC (direct connect to CPU)

Series	CPU	Connected module	Port	Cable	Choose PLC type in Touchwin software
Direct Logic	DL05	Connect to CPU RJ-11 port	RS232	Fig 1	Koyo DL series
	DL105				
	DL230				
	DL240				
	DL250	Connect to CPU com port	RS422	Fig 2	
	DL350				
	DL430				
	DL440				
DL450					

**Note:** the port2 of DL250 has RS232 and RS422, please indentify the cable connection for them.

### 2.11.2 Parameters

HMI settings:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Koyo DL series		
Port	RS232	RS232/RS422	
Data bit	8	7/8	
Stop bit	1	1/2	
Parity	Odd parity	Even /odd /no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	0	0-255	

### 2.11.3 Cable making

RS232 Connection:

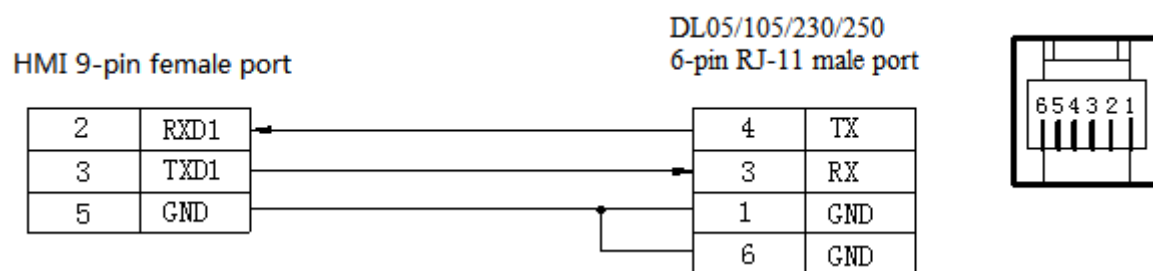


Fig1

RS422 connection:

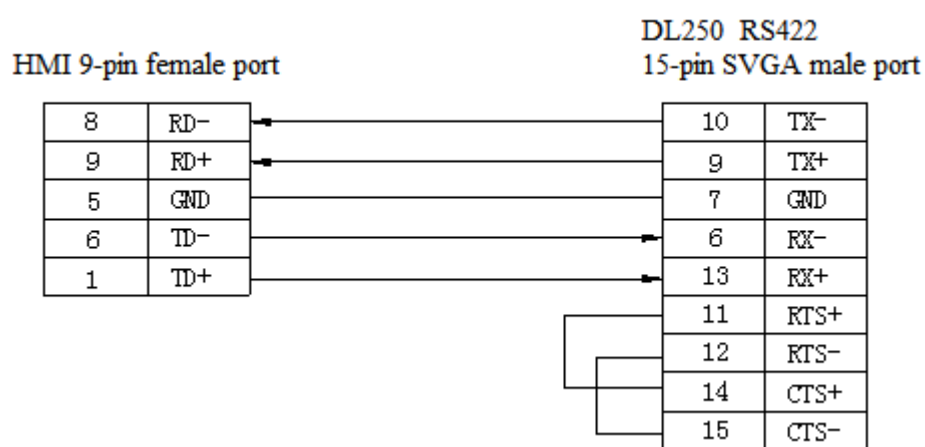


Fig2

## 2.11.4 Device address

Device address	Range	Data type	Explanation
V	0~41200	Word/DWord	Data register
C	0~777	Bit	Counter
X	0~777	Bit	Input
Y	0~777	Bit	Output
SP	0~777	Bit	Auxiliary relay
T	0~777	Bit	Timer
CT	0~777	Bit	Counter
S	0~777	Bit	Auxiliary relay
V	0.0~41200.15	Bit	Auxiliary relay

## 2.12 Delta DVP series PLC

### 2.12.1 Model

Delta DVP series	CPU	Connected module	Port	Cable	Deivce
ES\EH\EX		Direct connect to the CPU	RS232	Fig 1	Delta DVP series
			RS485	Fig 2	
SS\SA\SC\SX			RS232	Fig 1	
			RS485	Fig 2	

### 2.12.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Notes
PLC type	Delta DVP series		
Port	RS232	RS232 or RS485	
Data bit	7	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	

The default communication parameters of Delta DVP series PLC: 9600, 7, 1, even parity, station no.1.

### 2.12.3 Cable making

(a) The RS232 port on CPU:

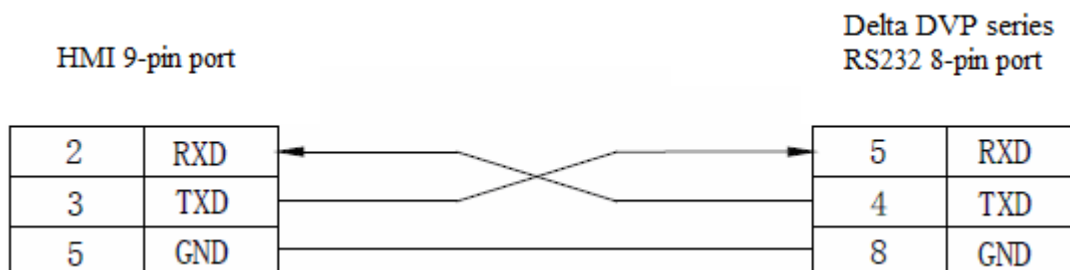


Fig 1

**(b) RS485 port on the CPU:**

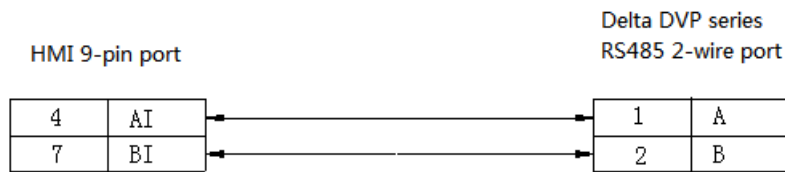


Fig2

## 2.12.4 Device address

PLC address	Range	Data type	Explanation
X	0~377	Bit	External input coil
Y	0~377	Bit	External output coil
M	0~1279	Bit	Internal auxiliary relay
S	0~1023	Bit	Stepper coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter
D	0~1279	Word/DWord	Data register
TD	0~255	Word/DWord	Current value of timer
CD	0~255	Word/DWord	Current value of counter
S	0~1023	Word/DWord	Data register
X	0~377	Word/DWord	Data register
Y	0~377	Word/DWord	Data register
M	0~127	Word/DWord	Data register

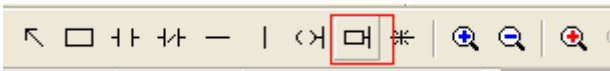
### 2.13 LG Master-K(CPU Direct) series PLC

LG Master-K series PLC support CPU(RS232) and Cnet module communication mode. This chapter will introduce CPU mode.

#### 2.13.1 Device model

Series	Connected module	Port	Cable	Device
K80 K120	CPU	RS232	Fig 1	LG Master-K80/120 series

**Note:** before communicating, please write “END” instruction to the PLC. Otherwise, the PLC will report an error and the ERR LED will light.



#### 2.13.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Notes
PLC type	LG Master-K80/120 series PLC		
Port	RS232	RS232	
Dat bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	No parity	Even/odd/no parity	
Baud rate	38400	4800/38400/9600/115200/19200/187500	
Station no.	0	0~255	

The default communication parameters of LG Master K: 38400, 8, 1, no parity, station no.0.

PLC:





### 2.13.3 Cable making

Master-K 80\120 RS232:

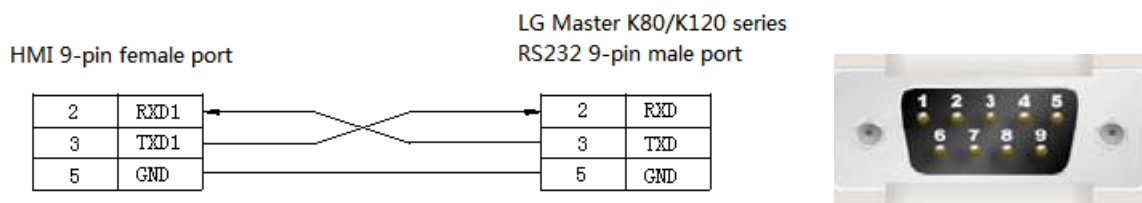


Fig1

### 2.13.4 Device address

LGMaster-K80/120 series PLC

PLC address	Range	Data type	Explanation
M	0~9999F	Bit	Internal auxiliary relay
L	0~9999F	Bit	Link relay
K	0~9999F	Bit	Holding relay
T	0~9999	Bit	Timer
C	0~9999	Bit	Counter
P	0~9999F	Bit	I/O coil
D	0~9999	Word/DWord	Data register
TD	0~9999	Word/DWord	Current value of timer

CD	0~9999	Word/DWord	Current value of counter
S	0~9999	Word/DWord	Used as register
K	0~9999	Word/DWord	Used as register
M	0~9999	Word/DWord	Used as register
L	0~9999	Word/DWord	Used as register
F	0~9999	Word/DWord	Used as register
P	0~9999	Word/DWord	Used as register

## 2.14 LG Master-K(Cnet) series PLC

LG Master-K80/120 series PLC Cnet communication module

LG Master-K series PLC support CPU(RS232) and Cnet expansion port communication mode. This chapter will introduce Cnet mode.

### 2.14.1 Device model

Series	Connected module	Port	Cable	Device
K80	Cnet communication module	<b>RS232</b>	Fig 1	LG Master-K80/120 (Cnet) series
K120		<b>RS485</b>	Fig 2	

**Note:**

- 1. For Master K-cnet communication, turn ON DIP switch 2, turn OFF DIP switch 1. For LG Master KxxxS communication, keep the DIP switch to default settings.**
- 2. LG Master KxxxS CPU only supports RS232 connection. Cnet communication module supports RS232 and RS485 connection.**

### 2.14.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Notes
PLC type	LG Master-K80/120 (Cnet) series PLC		
Port	RS232	RS232	
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	

The default parameters of LG Master K-cnet : 9600, 8, 1, even parity, station no.1.

PLC:

Notes:

- 1. Turn on the switch BUILT-IN CNET on the PLC.**
- 2. Choose the correct channel, protocol and mode.**

**0-RS232 communication:**



### 1-RS485 communication:



## 2.14.3 Cable making

(a) Master K-cnet protocol RS232:

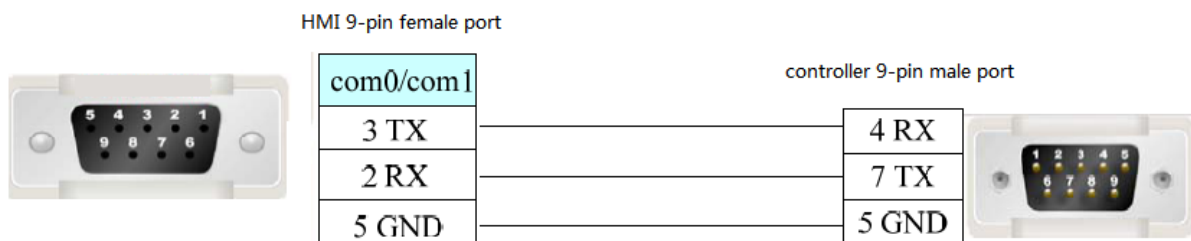


Fig 1

(b) Master K-cnet protocol RS485-2:

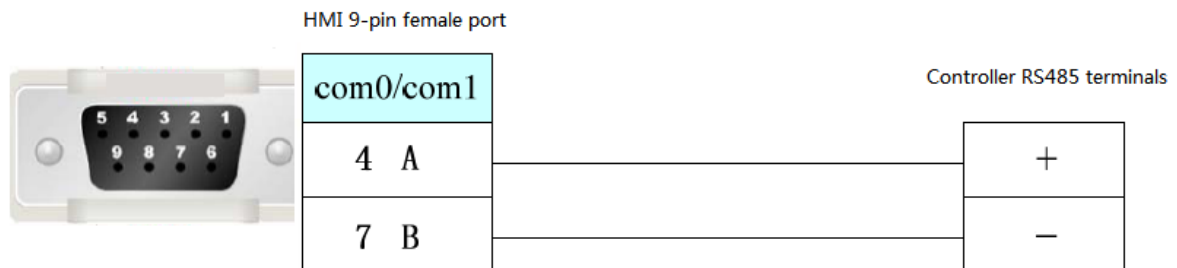


Fig 2

## 2.14.4 Device address

LGMaster-K80/120 (Cnet) series PLC

PLC address	Range	Data type	Explanation
M	0~9999F	Bit	Internal auxiliary relay
L	0~9999F	Bit	Link relay
K	0~9999F	Bit	Holding relay
T	0~9999	Bit	Timer
C	0~9999	Bit	Counter
P	0~9999F	Bit	I/O coil
D	0~9999	Word/DWord	Data register
TD	0~9999	Word/DWord	Current value of timer
CD	0~9999	Word/DWord	Current value of counter
S	0~9999	Word/DWord	Used as register
K	0~9999	Word/DWord	Used as register
M	0~9999	Word/DWord	Used as register
L	0~9999	Word/DWord	Used as register
F	0~9999	Word/DWord	Used as register
P	0~9999	Word/DWord	Used as register

## 2.15 LG Glofa(Cnet) series PLC

### 2.15.1 Device model

Series	CPU	Connected module	Port	Cable	Device
Glofa	G7M-DR20A	CPU RS232	<b>RS232</b>	Fig 1	LG Glofa (Cnet) series

**Note:** please turn on DIP switch2 and turn off switch1 for LG Glofa -cnet communication.

### 2.15.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	<b>LG Glofa (cnet)</b>		
Port	RS232	RS232	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	No parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	0	0~255	

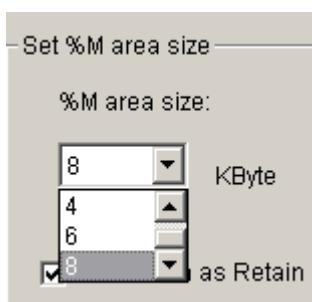
The default parameters of LG Glofa –Cnet: 19200, 8, 1, no parity, station no.0

PLC:

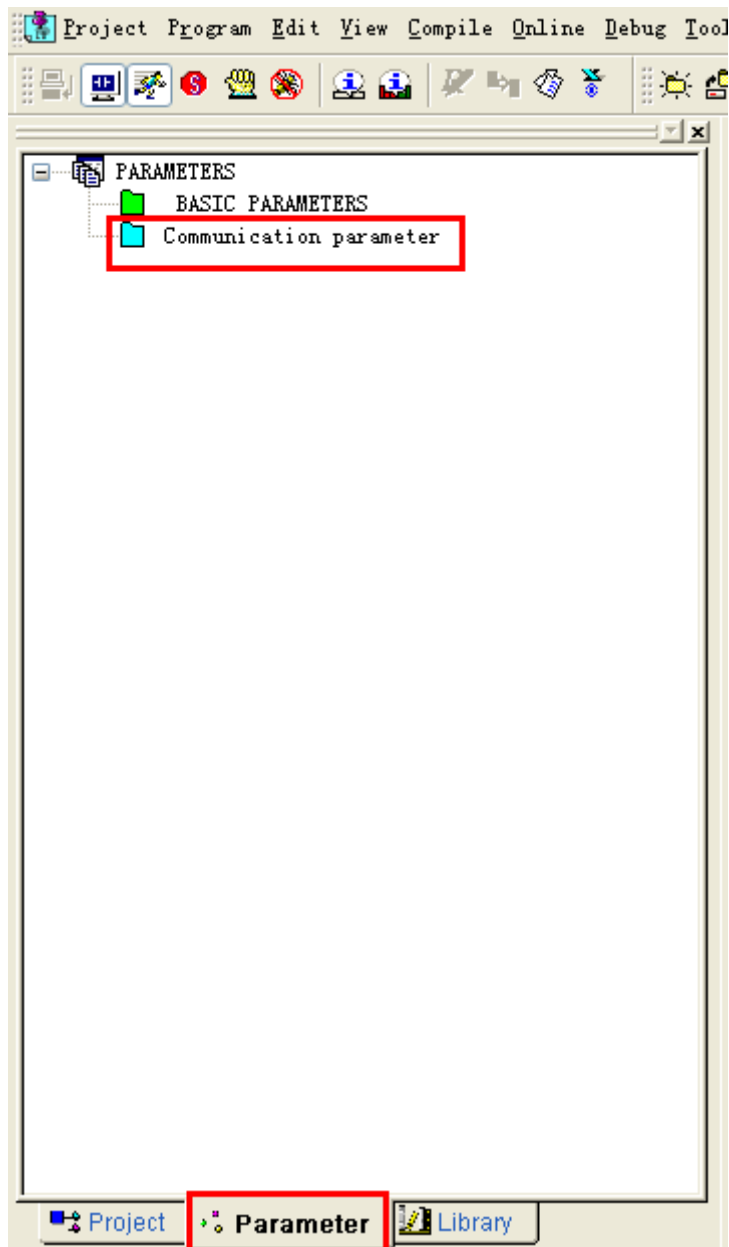
Note:

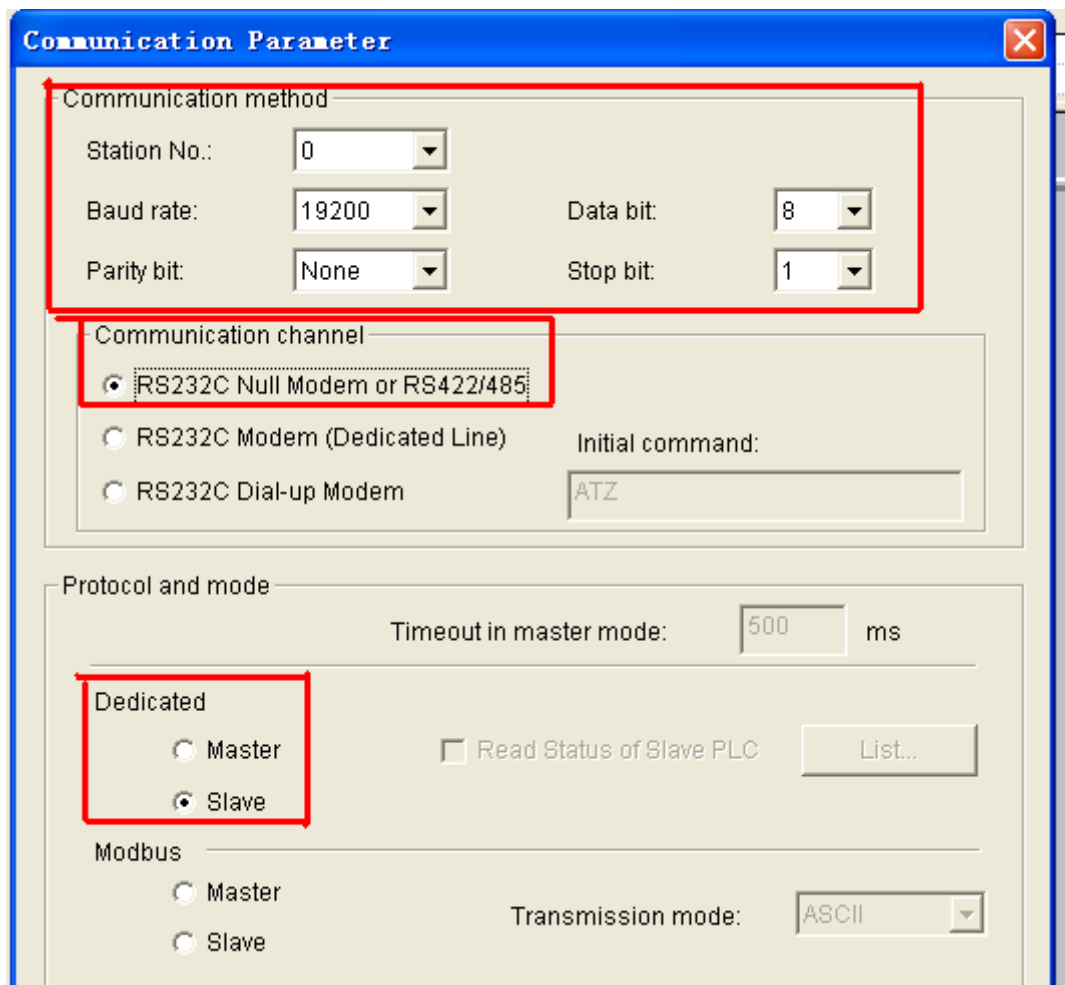
1. Turn on the switch **BUILT-IN CNET** on the PLC.
2. “Dedicated-slave” must be choosed in the PLC programming software.
3. The communication area of M must be set in the PLC programming software.

M area size:



Protocol and mode settings:





### 2.15.3 Cable making

LG Glofa –Cnet RS232:

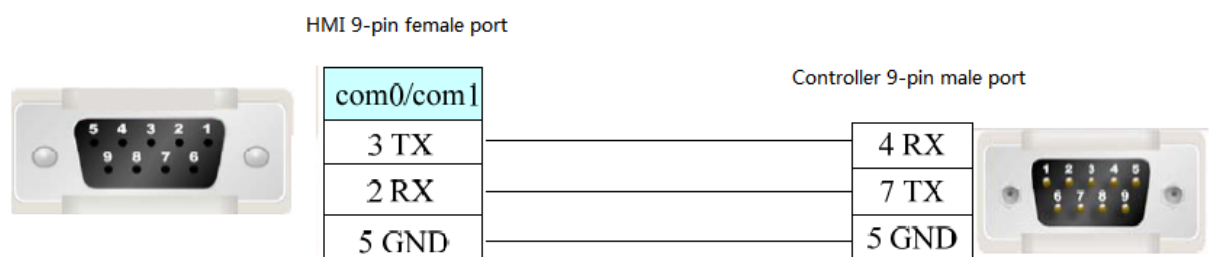


Fig 1



## 2.15.4 Device address

PLC type	Range	Data type	Explanation
M	0~16383	Bit	Internal auxiliary relay
IX	0.0.0~0.0.11	Bit	External input coil
	0.0.12~0.0.63	Bit	Internal auxiliary input coil
	0.1.0~0.1.63	Bit	Internal auxiliary input coil
	0.2.0~0.2.63	Bit	Internal auxiliary input coil
	0.3.0~0.3.63	Bit	Internal auxiliary input coil
	0.4.0~0.4.63	Bit	Internal auxiliary input coil
	0.5.0~0.5.63	Bit	Internal auxiliary input coil
	0.6.0~0.6.63	Bit	Internal auxiliary input coil
	0.7.0~0.7.63	Bit	Internal auxiliary input coil
QX	0.0.0~0.0.11	Bit	External output coil
	0.0.12~0.0.63	Bit	Internal auxiliary output coil
	0.1.0~0.1.63	Bit	Internal auxiliary output coil
	0.2.0~0.2.63	Bit	Internal auxiliary output coil
	0.3.0~0.3.63	Bit	Internal auxiliary output coil
	0.4.0~0.4.63	Bit	Internal auxiliary output coil
	0.5.0~0.5.63	Bit	Internal auxiliary output coil
	0.6.0~0.6.63	Bit	Internal auxiliary output coil
	0.7.0~0.7.63	Bit	Internal auxiliary output coil
IW	0.0.0~0.0.3	Word/DWord	Data register
	0.1.0~0.1.3	Word/DWord	Data register
	0.2.0~0.2.3	Word/DWord	Data register
	0.3.0~0.3.3	Word/DWord	Data register
	0.4.0~0.4.3	Word/DWord	Data register
	0.5.0~0.5.3	Word/DWord	Data register
	0.6.0~0.6.3	Word/DWord	Data register
	0.7.0~0.7.3	Word/DWord	Data register
QW	0.0.0~0.0.3	Word/DWord	Data register
	0.1.0~0.1.3	Word/DWord	Data register
	0.2.0~0.2.3	Word/DWord	Data register
	0.3.0~0.3.3	Word/DWord	Data register
	0.4.0~0.4.3	Word/DWord	Data register
	0.5.0~0.5.3	Word/DWord	Data register
	0.6.0~0.6.3	Word/DWord	Data register
	0.7.0~0.7.3	Word/DWord	Data register
MW	0~4095	Word	Data register
	0~4095	Regs	Data register
MD	0~2047	DWord	Data register

	0~2038	Regs	Data register
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## 2.16 LG XGT(CPU Direct) series PLC

### 2.16.1 Device model

Series	CPU	Connected module	Port	Cable	Device
XGT		CPU RS232	RS232	Fig 1	LG XGT series (CPU Direct)

### 2.16.2 Parameters

HMI:

Parameter	Recommend settings	Choices of settings	Note
PLC type	LG XGT series (CPU Direct)		
Port	RS232	RS232	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	No parity	Even/odd/no parity	
Baud rate	115200	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

The default parameters of LG XGT series PLC (CPU Direct) : 115200, 8, 1, no parity, station no.1

**Note: XGT series (CPU Direct) only supports the baud rate 115200 and cannot modify the station no.**

### 2.16.3 Cable making

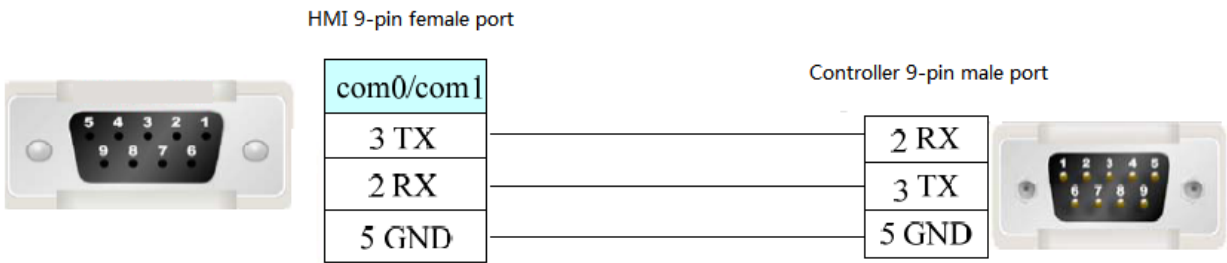


Fig1

## 2.16.4 Device address

PLC address	Range	Data type	Explanation
P	0.0~65535.F	Bit	External I/O coil
	65535	Word/DWord	Data register
M	0.0~65535.F	Bit	Internal auxiliary output coil
	65535	Word/DWord	Data register
L	0.0~65535.F	Bit	External output coil
	65535	Word/DWord	Data register
F	0.0~65535.F	Bit	Data register
	65535	Word/DWord	Data register
T	65535	Word/DWord	Data register
	65535	Bit	Counter
C	65535	Word/DWord	Data register
	65535	Bit	Counter
D	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
S	65535	Bit	Relay
K	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
Z	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
N	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
R	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
ZR	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
TS	65535	Word	Data register
CS	65535	DWord	Data register

## 2.17 Matsushita MEWNET FP series PLC

### 2.17.1 Device model

Matsushita- Mewnet FP series PLC include FP0, FP1, FP3, FP2SE, FP10SH and so on. They can communicate with Xinje HMI via the programming port or communication port on the CPU.

FP0-CXXCXX only supports RS232 connection.

Series	CPU	Connected module	Port	Cable	Device
FP	FP0	Direct connect to the CPU	RS232	Fig 1	Matsushita FP0/FP1 series
	FP—M	Direct connect to the CPU	RS232	Fig 1	
	FP—X	Direct connect to the CPU	RS232	Fig 1	
	FPΣ	Direct connect to the CPU	RS232	Fig 1	
	FP2	Direct connect to the CPU	RS232	Fig 1	
		CPU RS232 com port	RS232	Fig 2	
	FP2SH	Direct connect to the CPU	RS232	Fig 1	
		CPU RS232 com port	RS232	Fig 2	
	FP1	CPU RS232 com port	RS232	Fig 2	
		CPU RS232 programming port	RS422	Fig 3	
	FP3	CPU RS422 programming port	RS422	Fig 4	
	FP10SH FP10S	CPU RS232 com port	RS232	Fig 2	
	FP-E	Direct connect to the CPU	RS232	Fig 1	

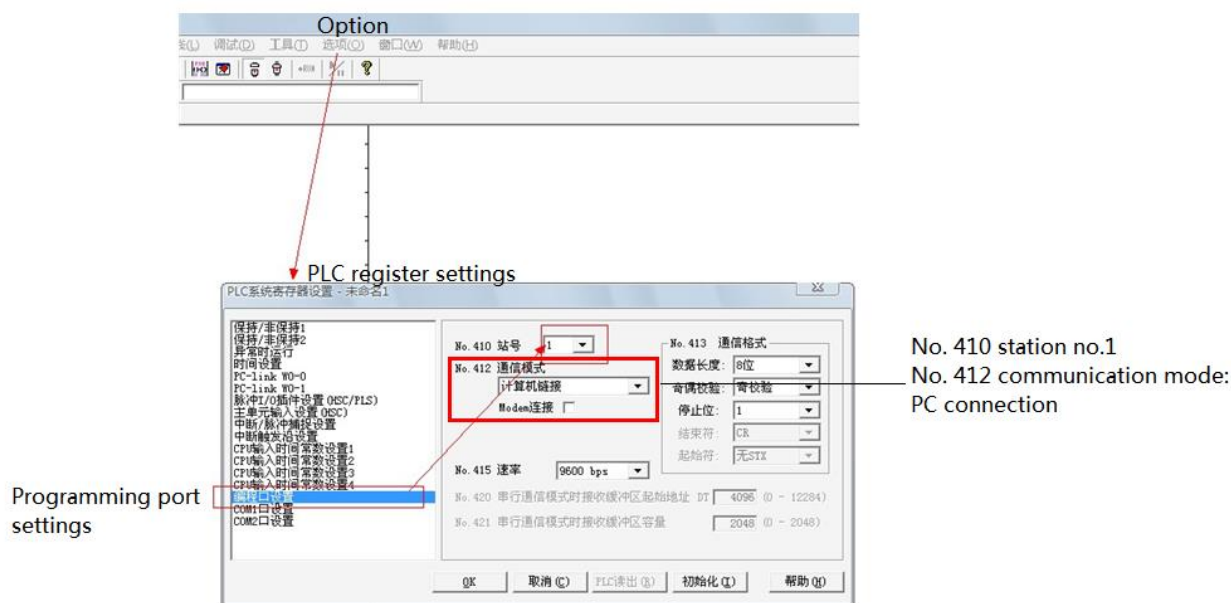
### 2.17.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	matsushita FP series PLC		
Port	RS232		
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Odd parity	Even/odd/no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

The default parameters of Matsushita FP series PLC: 9600, 8, 1, odd parity, station no.1

PLC:



Note:

#### 1. PLC soft component input example:

LC	HMI
R45	
Y1	

2. When making the PLC program, set the switch to PPOG; set the switch to RUN when communicating.

3. Do not choose <Common communication mode>, otherwise, the communication will be error.

4. FP series PLC default station no. is 1, please note FP3 series PLC station no. must set to 0.

### 2.17.3 Cable making

(a) CPU 5-pin DIN port:

Tool port:



HMI 9-pin port

com0/com1
3 TX
2 RX
5 GND

Controller 5-pin Mini Din

3 RXD
2 TXD
1 GND



Fig1

(b) CPU 9-pin port:



HMI 9-pin port

com0/com1
3 TX
2 RX
5 GND

Controller CPU RS232  
9-pin male port

3 RXD
2 TXD
7 GND
4 RTS
5 CTS
8 CD
9 ER



Fig2

(c) CPU 8-pin port:

HMI 9-pin port

1	TD+
6	TD-
5	GND
8	RDD-
9	RDD+

Matsushita Mewnet-FP series  
FP1 CPU RS422 8-pin port

6	RXD+
3	RXD-
1	GND
2	TXD-
5	TXD+

Fig3

(d) CPU 15-pin port:

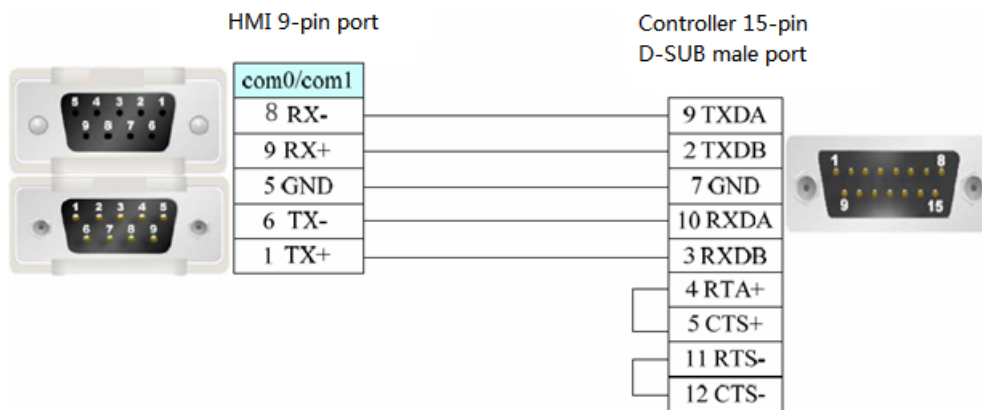


Fig4

## 2.17.4 Device address

PLC address	Range	Data type	Explanation
X	0~12 (0~F)	Bit	External input coil (bit)
WX	0~12	Word/DWord	Single/double words register
Y	0~12 (0~F)	Bit	External output coil (bit)
WY	0~12	Word/DWord	Single/double words register
R	0~62, 90~903	Bit	Internal auxiliary coil (bit)
WR	0~65535	Word/DWord	Single/double words register
T	0~99	Bit	Timer
L	65535F	Bit	Link coil
C	100~143	Bit	Counter
SV	0~143	Word/DWord	Setting register
EV	0~143	Word/DWord	Real value of counter or timer
DT	0~65535	Word/DWord	Single/double words data register



## 2.18 Schneider PLC

### 2.18.1 Device model

Series	CPU	Connected module	Port	Cable	Device
Micro	TSX 37-05 TSX 37-08 TSX 37-10 TSX 37-21/22	Direct connect to CPU	RS485	Fig 1	Schneider Micro/ NEZA/Twido Series PLC
Twido	Twido series CPU	Direct connect to CPU	RS485	Fig 1	
M	M218 M238 M258	Direct connect to CPU	RS485	Fig 2	
NEZA	TSX07 series CPU	Direct connect to CPU	RS485	Fig 1	

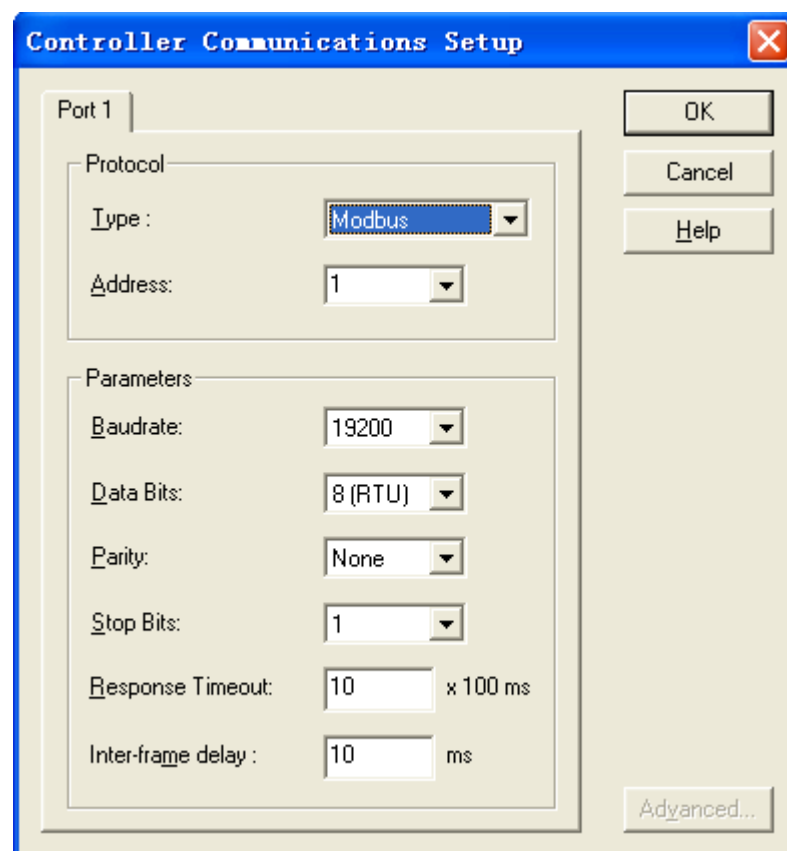
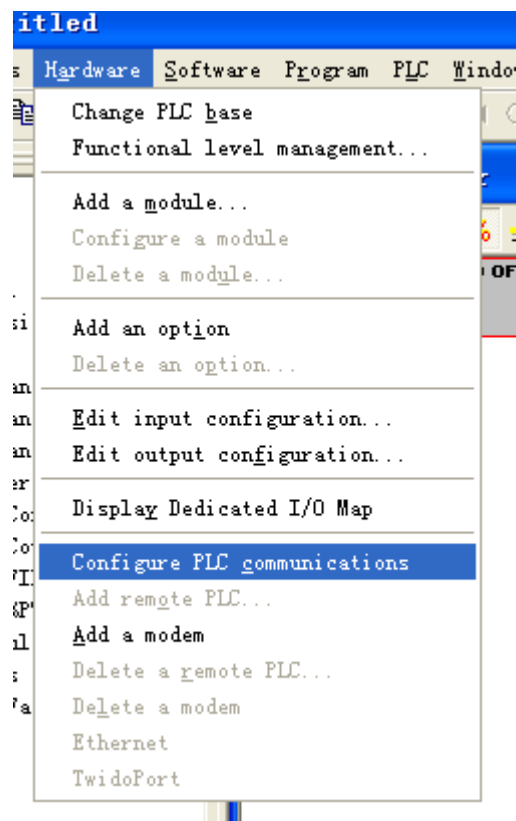
### 2.18.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Schneider Micro/NEZA /Twido series PLC		
Port	RS485		
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

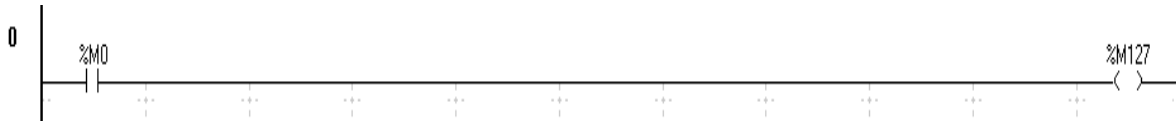
The default parameters of Schneider Micro/NEZA/ Twido series PLC: 19200, 8, 1, even parity, station no.1

PLC:



Note:

The object address of Twido PLC is dynamic and can be enlarged in the PLC programming software. Please release the max coil address in the program. For example: the max coil address is M127, please output M127 in the program.



### 2.18.3 Cable making

(a) Direct connect to CPU:

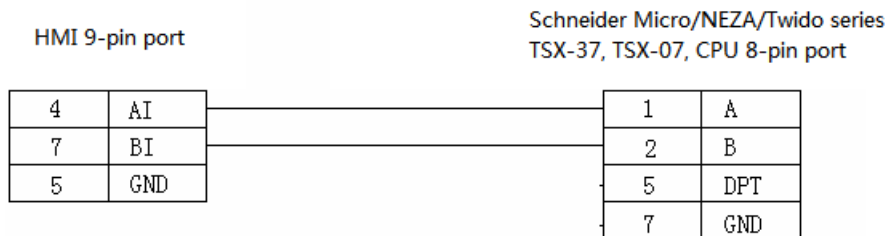


Fig1

(b) M238 RJ-45 RS485:

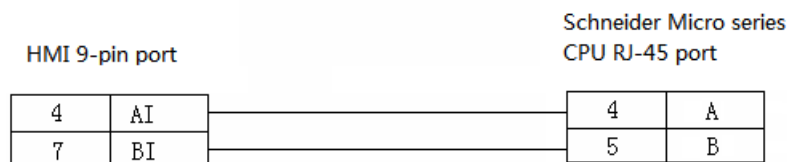


Fig2

### 2.18.4 Device address

PLC address	Range	Data type	Explanation
M	0~2047	Bit	Internal coil
MW	0.00~65535.15	Bit	Internal coil
MW	0~2047	Word/DWord	Register

## 2.19 Fatek FB series PLC

### 2.19.1 Device model

Series	CPU	Connected module	Port	Cable	Device			
FBs	FBs -20MN FBs -32MN FBs -44MN	Direct connect to CPU	RS232	Fig 1	Fatek MU /MA series			
			RS485	Fig 2				
FB -MC	20MC 28MC 40MC 19MCT 26MCT 36MCT		RS232	Fig 1				
			RS485	Fig 2				
			FB -MA	20MA 28MA 40MA		FB-DTBR/DTBR-E module	RS232	Fig 3
							RS232	Fig 4
RS485	Fig 5							

**Note:** MA series PLC needs to configure FB-DTBR or FB-DTBR-E module, uses RS232 or RS485 connection.

### 2.19.2 Parameters

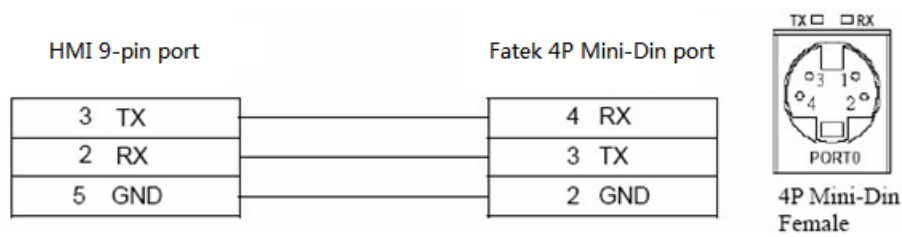
HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Fatek MC/MA/MU series PLC		
Port	RS232	RS232 or RS485	
Data bit	7	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	

The default parameters of Fatek MC/MA/MU series PLC: 9600, 7, 1, even parity, station no.1

### 2.19.3 Cable making

(a) FBs Port0 RS232:



CPU port:

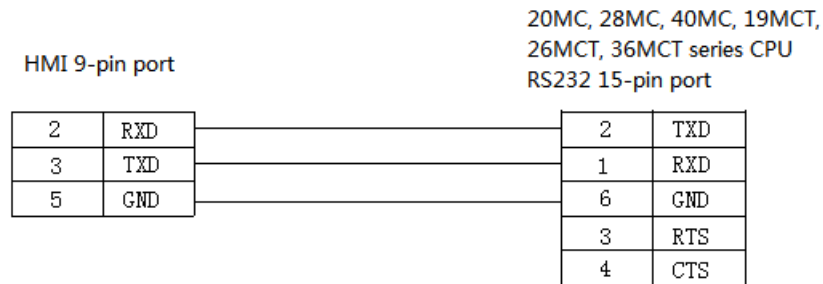


Fig1

**(b) CPU RS485:**

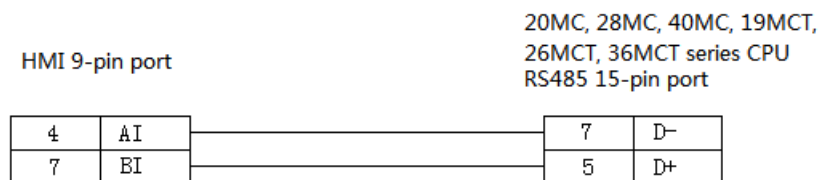


Fig2

**(c) FB-DTBR/DTBR-E module RS232:**

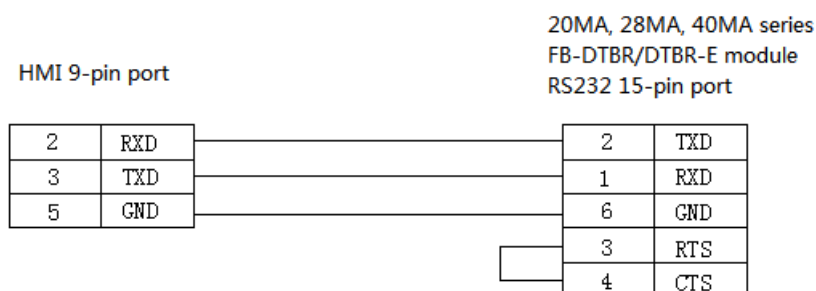


Fig3

**(d) FB-DTBR/DTBR-E module RS232:**

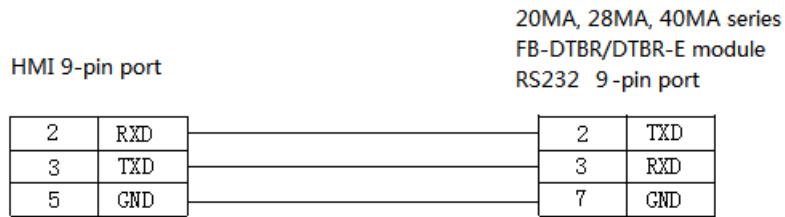


Fig4

(e) FB-DTBR/DTBR-E module RS485:

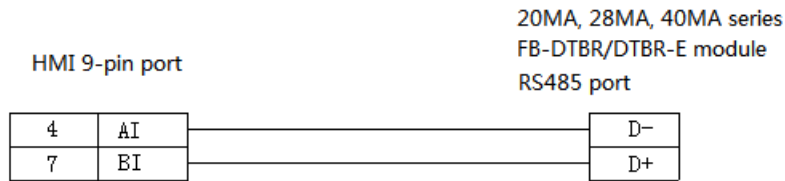


Fig5

## 2.19.4 Device address

FATEK-FB series PLC

PLC address	Range	Data type	Explanation
M	0~2001	Bit	Internal auxiliary coil
X	0~255	Bit	External input coil
Y	0~255	Bit	External output coil
S	0~999	Bit	Sequence control coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter
R	0~9000	Word/Dword	Register
X	0~255	Word/Dword	Used as register
Y	0~255	Word/Dword	Used as register
M	0~2001	Word/Dword	Used as register
S	0~999	Word/Dword	Used as register
D	0~3071	Word/Dword	Used as register
TD	0~255	Word/Dword	Used as register
C16	0~199	Word/Dword	16-bit counter
C32	200~255	Word/Dword	32-bit counter
T	0~255	Word/Dword	Timer state

## 2.20 Vigor VIGOR PLC

### 2.20.1 Device model

Series	CPU	Connected module	Port	Cable	Device
VB	VB0-14M	Direct connect to the CPU	RS232	Fig 1	Vigor VB Series PLC
	VB0-20M				
	VB0-28M				
	VB0-32M	Connect to the extension card	RS232	Fig 2	
	VB1-14MT-D				
	VB1-24MT-D		RS422	Fig 3	
	VB1-32MTMT-D				
	VB2-16M				
	VB2-32M				
VH	VH -14MR	Direct connect to the CPU	RS232	Fig 1	

### 2.20.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Vigor VB series PLC		
Port	RS232	RS232/RS485/RS422	
Data bit	7	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	0	0~255	

The default parameters of Vigor VB series PLC: 19200, 7, 1, even parity, station no.0

### 2.20.3 Cable making

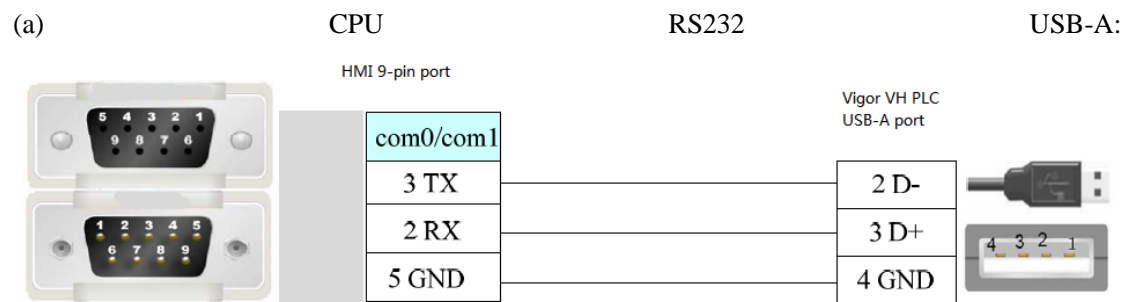


Fig1

(b) CPU direct connection or RS232 extension card:

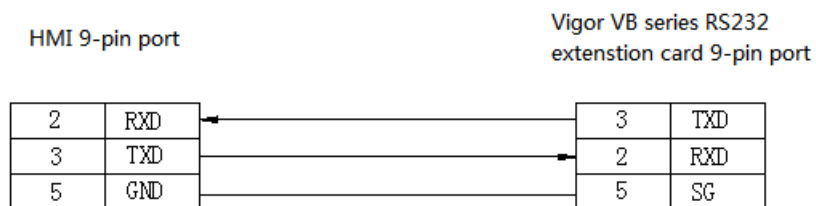


Fig2

(c) CPU direct connection or RS485 extension card:

1. RS422 connection

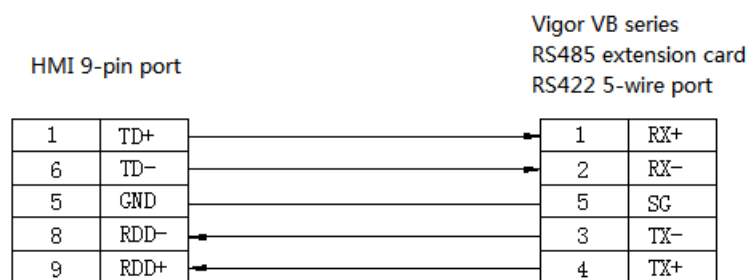
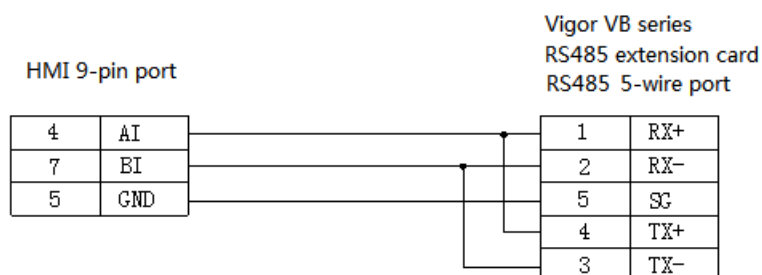


Fig3

2. RS485 connection



Fi4



## 2.20.4 Device address

PLC address	Range	Data type	Explanation
X	0~777	Bit	External input coil
Y	0~777	Bit	External output coil
M	0~9255	Bit	Internal auxiliary coil
S	0~999	Bit	Special auxiliary coil
TSTATUS	0~255	Bit	Status of timer
CSTATUS	0~255	Bit	Status of counter
TCOIL	0~255	Bit	Timer coil
CCOIL	0~255	Bit	Counter coil
C16	0~199	Word	16-bit counter
C32	200~255	DWord	32-bit counter
D	0~9255	Word/ DWord	Data register
TW	0~255	Word/ DWord	Current timer value
X	0~777	Word/ DWord	Used as register
Y	0~777	Word/ DWord	Used as register
M	0~9255	Word/ DWord	Used as register
S	0~999	Word/ DWord	Used as register

## 2.21 Fuji SPB series PLC

### 2.21.1 Device model

Fuji MICREX-SX SPB series PLC

Series	CPU	Connected module	Port	Cable	Device
SPB	NW0P20	Communication adapter NW0LA-RS2	RS232	Fig 1	Fuji SPB series PLC
	NW0P30			Fig 3	
	NW0P40	Communication adapter NW0LA-RS4	RS485	Fig 2	
				Fig 3	

### 2.21.2 Parameters

HMI:

Parameter	Recommend settings	Choices of settings	Note
PLC type	Fuji SPB series PLC		
Port	RS232	RS232/RS485	
Data bit	8	7 / 8	
Stop bit	1	1 / 2	
Parity	Odd parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	0	0~255	

### 2.21.3 Cable making

(a) NW0LA-RS2 module RS232:

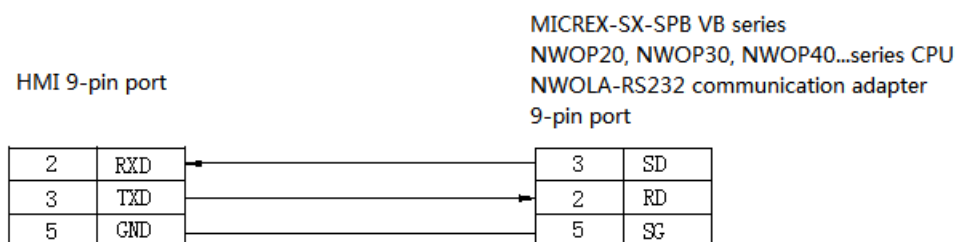


Fig1

**(b) NW0LA-RS4 module RS485:**

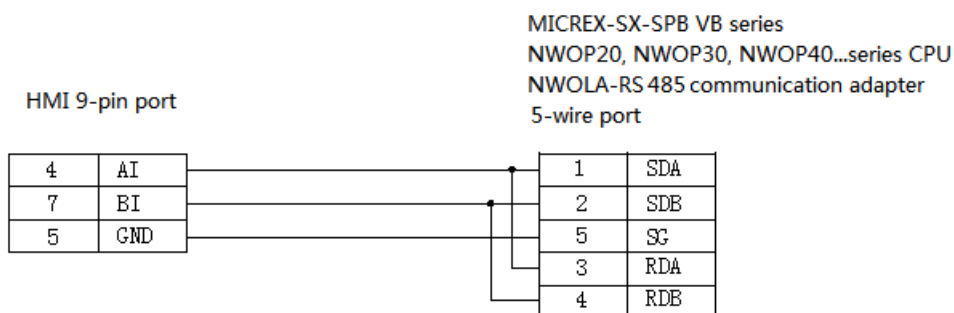


Fig2

**(c) RJ-45 RS422:**

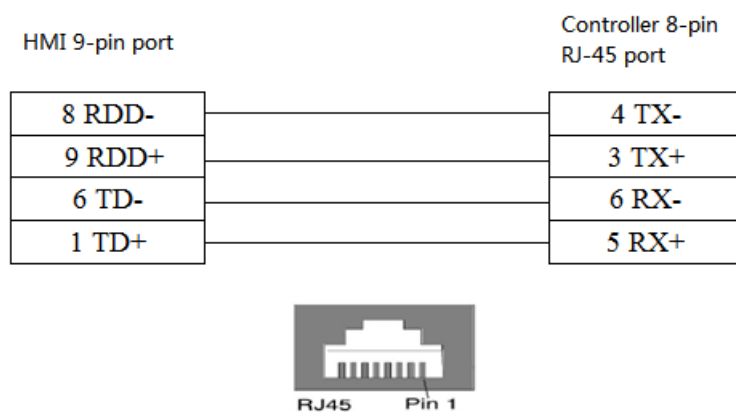


Fig3

## 2.21.4 Device address

PLC address	Range	Data type	Explanation
X	0~15	Bit	External input coil
Y	0~15	Bit	External output coil
M	0~15	Bit	Internal auxiliary coil
L	0~15	Bit	Special auxiliary coil
T	0~511	Bit	Timer
C	0~255	Bit	Counter
SM	0~15	Bit	Special auxiliary coil
WX	0~63	Word/DWord	Used as register
WY	0~63	Word/DWord	Used as register
WM	0~63	Word/DWord	Used as register
WL	0~255	Word/DWord	Used as register
WSM	32768~33023	Word/DWord	Used as register

D	0~8191	Word/DWord	Data register
TW	0~511	Word/DWord	Used as register
CW	0~255	Word/DWord	Used as register
LD	0~10000	Word/DWord	Used as register
SD	32768~33023	Word/DWord	Used as register

## 2.22 Keyence KV series PLC

### 2.22.1 Device model

CPU	Connected module	Port	Cable	Device
KV-10DR KV-24 KV-16 KV-40	Direct connect to the CPU	RS232	Fig 1	Keyence KV series
KZ-300	Serial port module KZ-L2	RS232	Fig 2, fig 3	
		RS422	Fig 4	
KV-700	Serial port module KZ-L20	RS232	Fig 5, fig 6	
		RS422	Fig 7	

### 2.22.2 Parameters

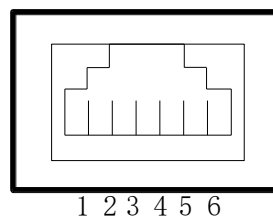
HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	keyence KV series		
Port	RS232 port	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	

The default parameters of Keyence KV series PLC: 9600, 8, 1, even parity, station no.1

### 2.22.3 Cable making

(a) CPU RS232 RJ-11:



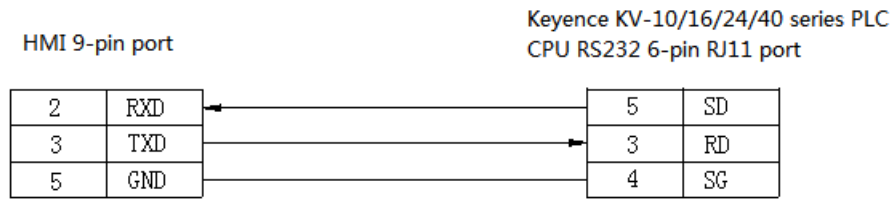


Fig1

(b) Serial port module KZ-L2 (Port1, RS232) connects to Keyence KZ-300 PLC:

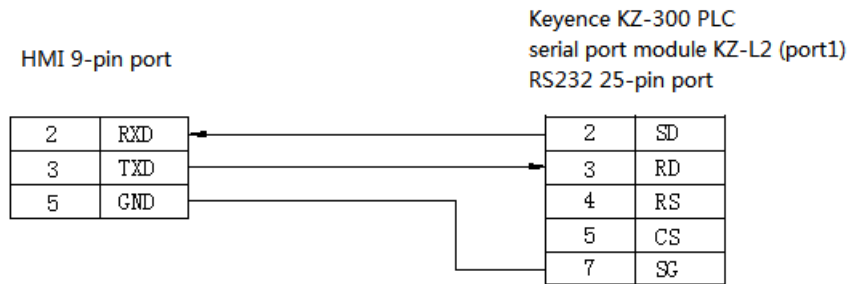


Fig2

(c) Serial port module KZ-L2 (Port2, RS232) connects to Keyence KZ-300 PLC:

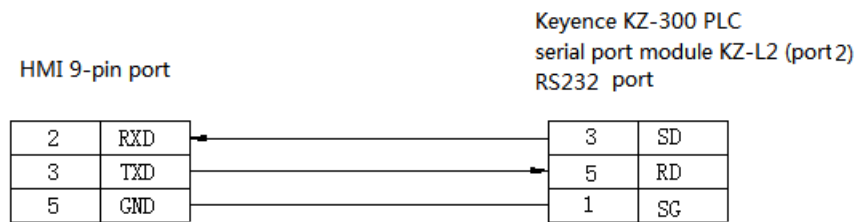


Fig3

(d) Serial port module KZ-L2 (Port2, RS422) connects to Keyence KZ-300 PLC:

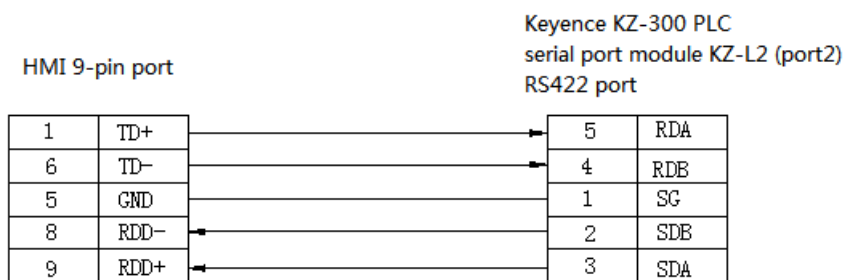


Fig4

(e) Serial port module KV-L20 (Port1, RS232) connects to Keyence KV-700 PLC:

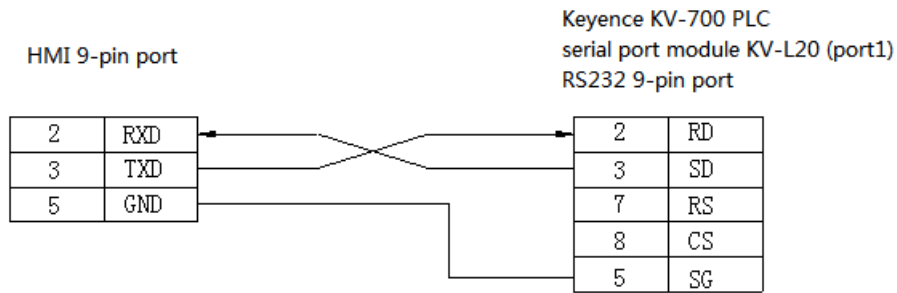


Fig5

(f) Serial port module KV-L20 (Port2, RS232) connects to Keyence KV-700 PLC:

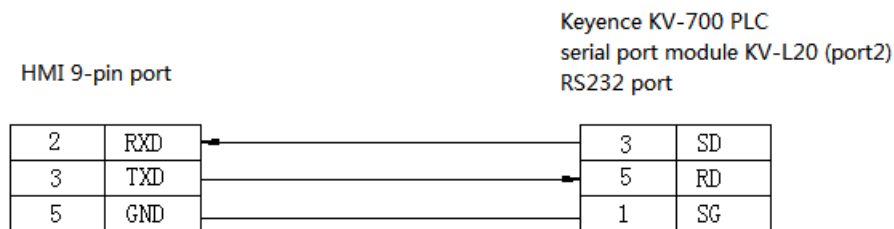


Fig6

(g) Serial port module KV-L20 (Port2, RS422) connects to Keyence KV-700 PLC:

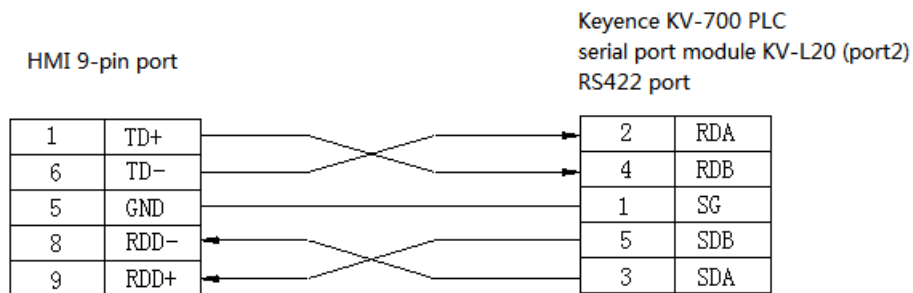


Fig7

## 2.22.4 Device address

PLC address	Range	Data type	Explanation
R	0~999	Bit	Coil
DM	0~8000	word	Data register

## 2.23 Emerson EC20 series PLC

### 2.23.1 Device model

Series	CPU	Connected module	Port	Cable	Device
EC20	EC20	COM0 port	RS232	Fig 1	Emerson EC20 Series PLC
		COM1 port	RS485	Fig 2	
			RS232	Fig 3	

### 2.23.2 Parameters

HMI:

Parameters	recommend settings	Choices of settings	Note
PLC type	Emerson EC20 series PLC		
Port	RS232	RS232/RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200 /19200/187500	
Station no.	1	0~255	

The default parameters of Emerson EC20 series PLC: 19200, 8, 1, even parity, station no.1

### 2.23.3 Cable making

(a) Emerson EC20 PLC COM0 (RS232):

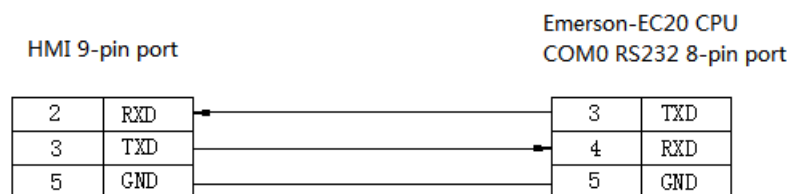


Fig1

(b) Emerson EC20 PLC COM1 (RS232):



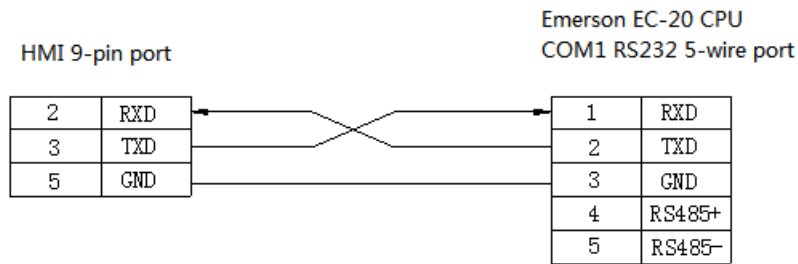


Fig2

(c) Emerson EC20 PLC COM1 (RS485):

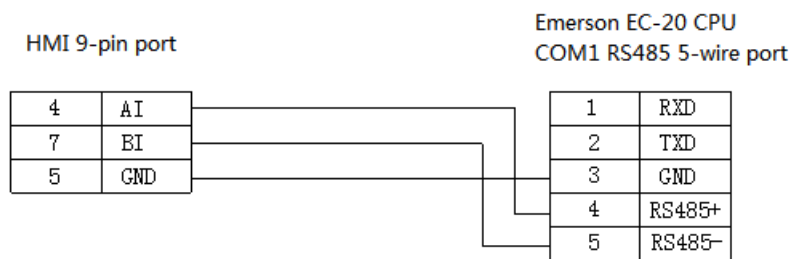


Fig3

Note: Emerson EC20 PLC COM1 supports RS232 and RS485.

## 2.23.4 Device address

PLC address	Range	Data type	Explanation
X	0~377	Bit	External input coil
Y	0~377	Bit	External output coil
M	0~2047	Bit	Internal auxiliary coil
S	0~1023	Bit	Special auxiliary coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter
SM	0~9999	Bit	Special internal auxiliary coil
D	0~7999	Word/DWord	Data register
SD	0~255	Word/DWord	Used as register
Z	0~15	Word/DWord	Used as register
T	0~255	Word/DWord	Used as register
C16	0~199	Word/DWord	16-bit counter
C32	200~255	Word/DWord	32-bit counter

## 2.24 OEMax NX7 series PLC

### 2.24.1 Device model

Series	CPU	Connected module	Port	Cable	Device
NX7	NX7	COM0 port	RS232	Fig 1	OEMax NX7 Series PLC
			RS232	Fig 2	
		COM1 port	RS485	Fig 3	
			RS232	Fig 4	

### 2.24.2 Device address

HMI:

Parameter	Recommend settings	Choices of settings	Note
PLC type	OEMax NX70 series PLC		
Port	RS232	RS232/RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	No parity	Even/odd/no parity	
Baud rate	9600	4800/38400/9600/115200 /19200/187500	
Station no.	1	0~255	

The default parameters of OEMax NX7 PLC: 9600, 8, 1, no parity, station no.1

### 2.24.3 Cable making

(a) OEMax NX7 PLC COM1 (RS232):

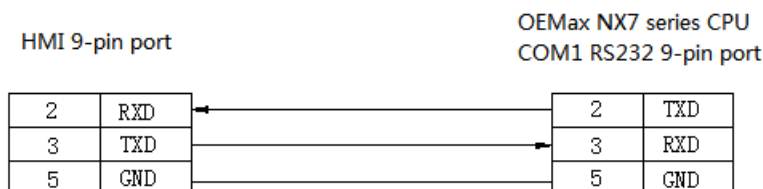


Fig1

(b) OEMax NX7 PLC COM1 (RS485):

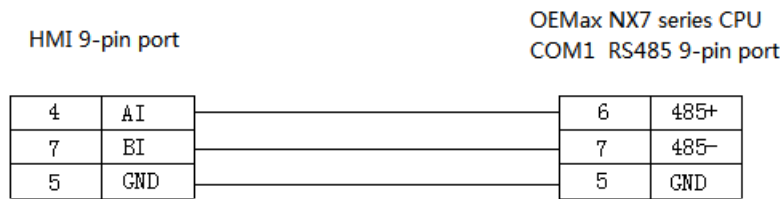


Fig2

(c) OEMax NX7 PLC COM2 RJ-45 (RS232):

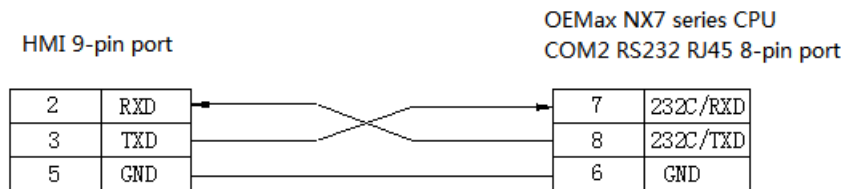
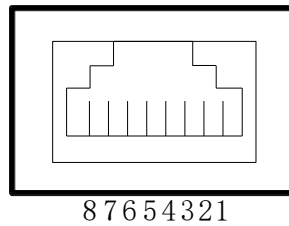


Fig3

(d) OEMax NX7 PLC COM2 is RJ-45 8-pin port, short pin1 and 3 means RS485+; short pin2 and 4 means RS485- :

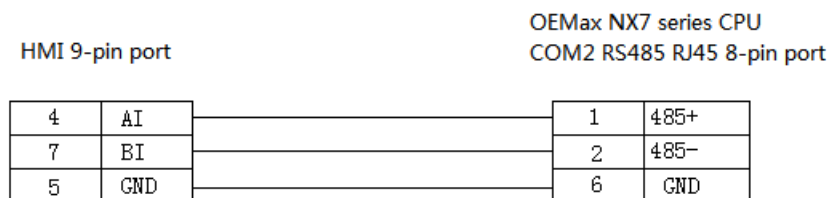


Fig4

OR

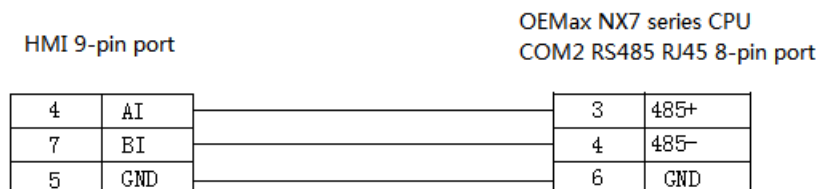


Fig5

## 2.24.4 Device address

PLC address	Range	Data type	Explanation
R	R000.00~R31.15	Bit	External I/O coil
	R32.00~R127.15	Bit	Special coil
L	L000.00~L063.15	Bit	Internal coil
M	M000.00~M127.15	Bit	Internal auxiliary coil
K	K000.00~K127.15	Bit	Internal holding coil
F	F000.00~F015.15	Bit	Special coil
TC	TC0~TC255	Bit	Timer /counter coil
W	0~6000	Word/DWord	Data register
R	0~127	Word/DWord	Used as register
L	0~63	Word/DWord	Used as register
M	0~127	Word/DWord	Used as register
K	0~127	Word/DWord	Used as register
F	0~15	Word/DWord	Used as register
SV	0~255	Word/DWord	Timer/counter settings
PV	0~255	Word/DWord	Timer/counter current value
SR	0~511	Word/DWord	Special register

## 2.25 Bosch Rexroth IndraControl L40 series PLC

### 2.25.1 Device model

Bosch Rexroth IndraControl L40 series PLC can communicate with Xinje HMI via COM0 and COM1.

CPU	Connected module	Port	Cable	Device
IndraControl L40	Direct connect to CPU	RS232	Fig 1	Bosch Rexroth IndraControlL40 Series PLC

### 2.25.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	IndraControl L40 series PLC		
Port	RS232	RS232	
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	

The default parameters of **IndraControl L40** series PLC: 9600, 8, 1, even parity, station no.1

### 2.25.3 Cable making

IndraControl L40 PLC RS232:

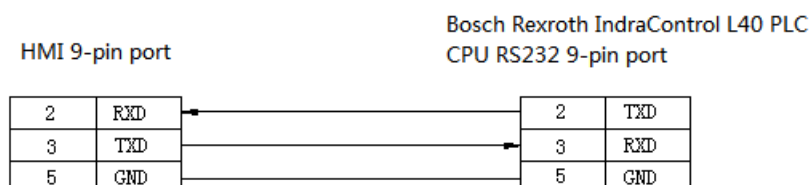


Fig1

## 2.25.4 Device address

IndraControl L40 series PLC

PLC address	Range	Data type	Explanation
X	0~9999	Bit	External I/O coil
B	0~9999	Byte	Used as register
W	0~9999	Word	Used as register
D	0~9999	DWord	Used as register
R	0~9999	DWord	Used as register
SB	0~9999	Byte	Used as register
SW	0~9999	Word	Used as register
SD	0~9999	DWord	Used as register

## 2.26 OPTO 22 SNAP series PLC

### 2.26.1 Device model

Series	CPU	Connected module	Port	Cable	Device
OPTO 22	SNAP	Direct connect to CPU	RS232	Fig 1, fig 2	OPTO 22 series
			RS485	Fig 3	

### 2.26.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	OPTO 22 series PLC		
Port	RS232	RS232/RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	No parity	Even/odd/no parity	
Baud rate	115200	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

The default parameters of OPTO 22 series PLC: 115200, 8, 1, no parity, station no.1

### 2.26.3 Cable making

(a) RS232 connection:

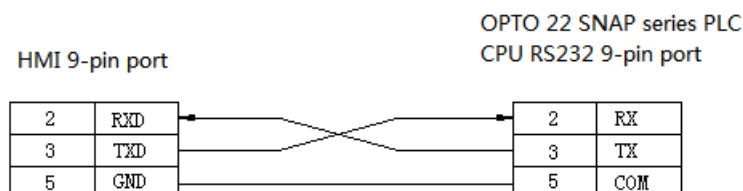


Fig1

(b) RS485 connection:

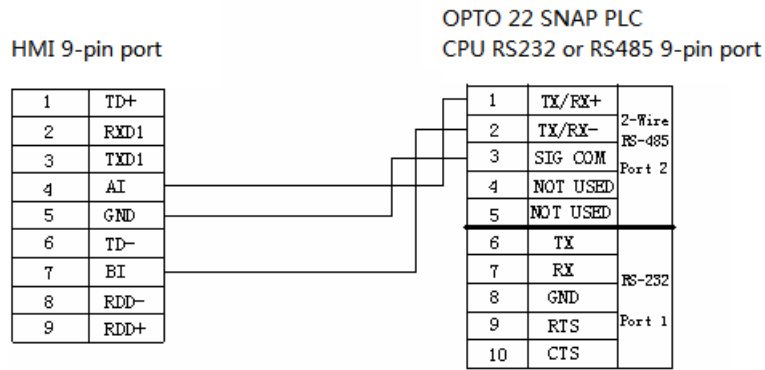


Fig2

(c) RS232 connection:

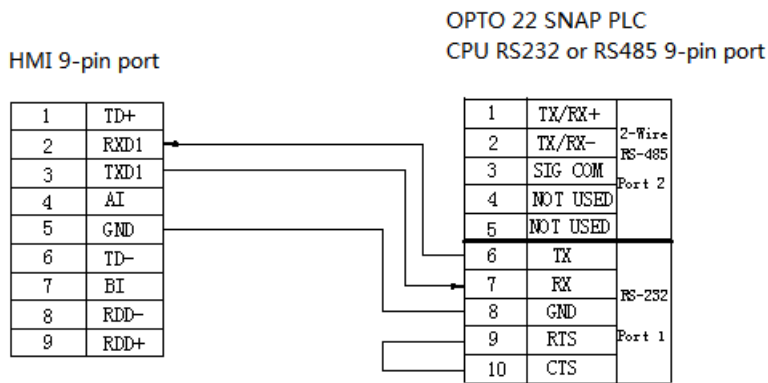


Fig3

## 2.26.4 Device address

PLC address	Range	Data type	Explanation
DI	0~9999	Bit	External input coil
DO	0~9999	Bit	External output coil
PID000~PID031	0~6	Bit	
I	0~9999	DWord	Used as register
F	0~9999	DWord	Used as register
AI	0~9999	DWord	Used as register
AO	0~9999	DWord	Used as register



## 2.27 SAIA-Burgess PCD series PLC

### 2.27.1 Device model

SAIA—Burgess PCD series PLC communicates with Xinje HMI via socket A or socket B port.

#### (a) Direct connect to CPU

CPU	Connected module	Port	Cable	Device
PCD1.M110 PCD1.M125 PCD1.M135	CPU PORT #0	RS232	Fig 1	<b>SAIA—Burgess PCD</b> series
PCD2.M120 PCD2.M150 PCD2.M170	CPU PORT #0	RS485	Fig 2	
PCD2.M480	CPU PORT #6			

#### (b) Through serial port

CPU	Connected module	Port	Cable	Device
PCD1.M125 PCD1.M135 PCD1.M110 PCD1.M120 PCD2.M480 PCD2.M170 PCD2.M150 Socket A	PCD7.F110	RS485	Fig 4	<b>SAIA—Burgess PCD</b> series
		RS422	Fig 5	
	PCD7.F120	RS232	Fig 3	
PCD2.M170	Socket B1 PCD2.F520 PCD7.F772/F802	RS232	Fig 6	
		RS485	Fig 7	
		RS422	Fig 10	
	Socket B2 PCD2.F520/F530 PCD7.F772/F802	RS232	Fig 6	
		RS485	Fig 7	
		RS485	Fig 8	
PCD2.M480	Socket A PCD2.F520/F522	RS232	Fig 9 or fig 11	
		RS422	Fig 10	

## 2.27.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	SAIA—Burgess PCD Series PLC		
Port	RS232	RS232/RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	No parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	0	0~255	

SAIA—Burgess PCD series PLC: 19200, 8, 1, no parity, station no.0

## 2.27.3 Cable making

(a) Direct connect to PGU RS232:

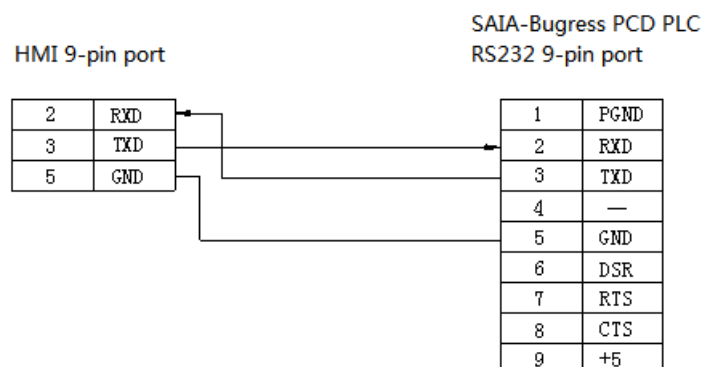


Fig1

(b) Direct PGU RS485:

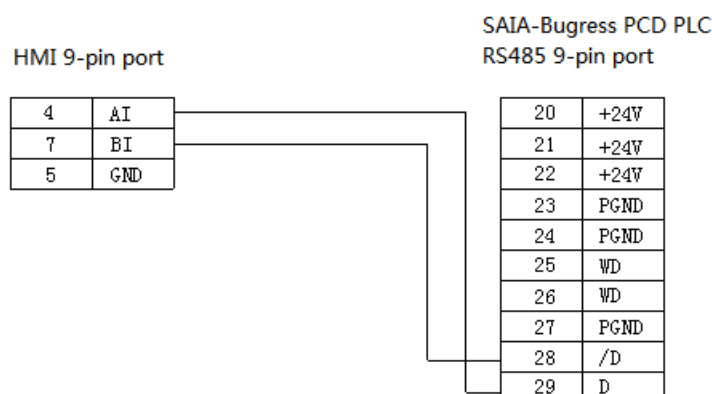


Fig2

(c) Socket A port (PCD7.F120):

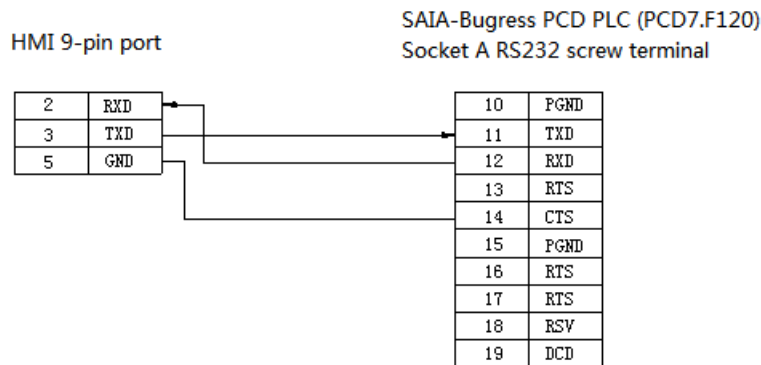


Fig3

(d) Through Socket A port (PCD7.F110):

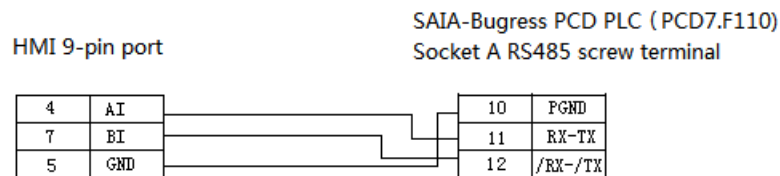


Fig4

(e) Socket A port (PCD7.F110):

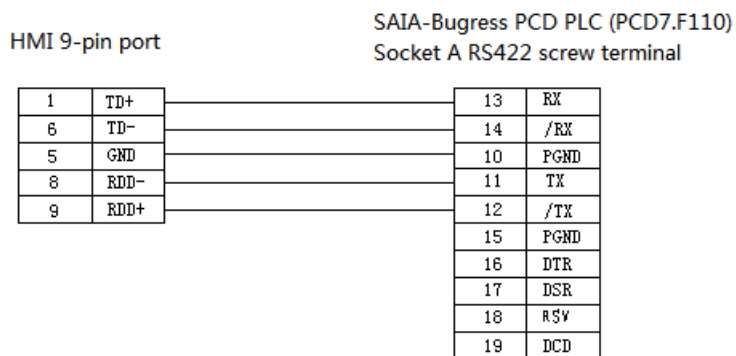


Fig5

(f) Socket B/B1 and B2 port (PCD2.F520/F530):

SAIA-Bugress PCD PLC (PCD2.F520/F530)  
Socket B/B1 and B2 RS232 screw terminal

HMI 9-pin port

2	RXD
3	TXD
5	GND

B/B1	B2	name
30	40	PGND
31	41	TXD
32	42	RXD
33	43	RTS
34	44	CTS
35	45	PGND
36	46	RX-TX
37	47	/RX-/TX
38	48	
39	49	

Fig6

(g) Socket B/B1 and B2 port (PCD2.F520/F530):

SAIA-Bugress PCD PLC (PCD2.F520/F530)  
Socket B/B1 and B2 RS485 screw terminals

HMI 9-pin port

4	AI
7	BI
5	GND

B/B1	B2	name
30	40	PGND
31	41	TXD
32	42	RXD
33	43	RTS
34	44	CTS
35	45	PGND
36	46	RX-TX
37	47	/RX-/TX
38	48	
39	49	

Fig7

(h) Socket B/B1&B2 port (PCD7.F772/F802):

SAIA-Bugress PCD PLC (PCD7.F772/F802)  
Socket B/B1&B2 RS485 screw terminals

HMI 9-pin port

4	AI
7	BI
5	GND

B/B1	B2	name
31	41	RX-TX
32	42	/RX-/TX
30	40	PGND

Fig8

(i) Socket B/B1&B2 port (PCD2.520/F530):

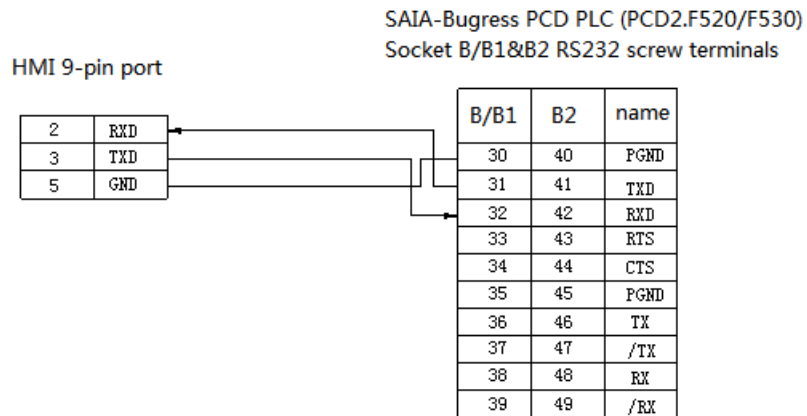


Fig9

(j) Socket B/B1&B2 port (PCD2.F520/F530):

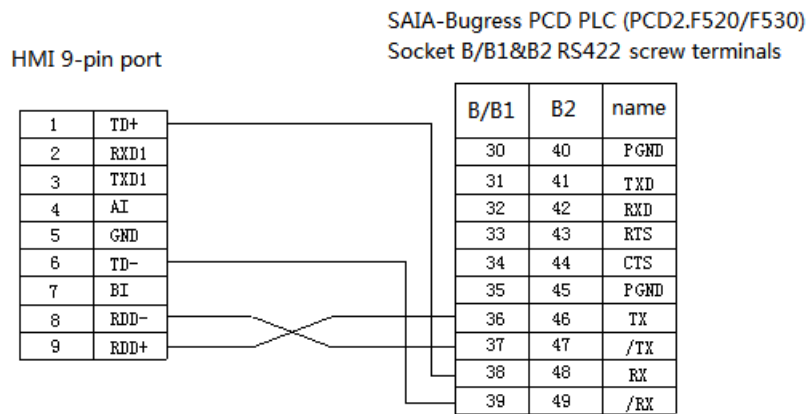


Fig10

(k) Socket B/B1&B2 port (PCD2.F520/F530):

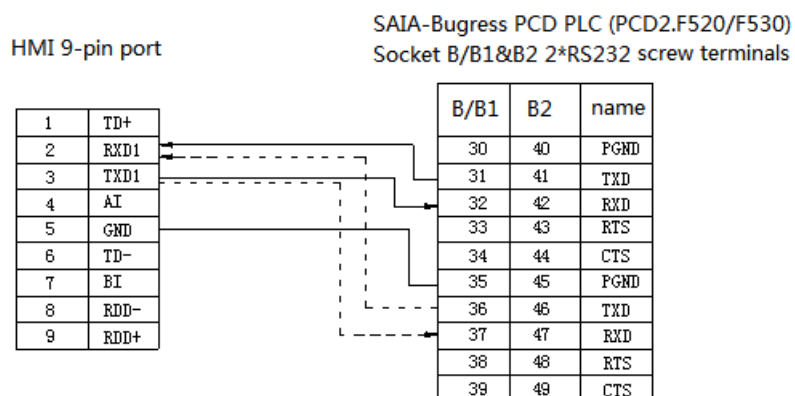


Fig11

## 2.27.4 Device address

PLC address	Range	Data type	Explanation
R	0~4095	DWord	Used as register
T	0~1599	DWord	Used as register
C	0~1599	DWord	Used as register
F	0~8000	Bit	Auxiliary coil
I	0~1023	Bit	External input coil
O	0~1023	Bit	External output coil

## 2.28 Allen-Bradley series PLC

### 2.28.1 Device model

Series	CPU	Connected module	Port	Cable	Device
Micrologix	Micrologix1000 Micrologix1200 Micrologix1500 (1762-L40BWA) (1764-LSP,1764-LRP)	CPU RS232	RS232	Fig 1	AB Micrologix, SLC series (DF1 Full duplex protocol)
	Micrologix1400 (1766-L32BWAA)				
	Micrologix1500 (1764-LRP)				
SLC 500	SLC5/03 SLC5/04 SLC5/05	CPU RS232	RS232	Fig 2	
Mcicro830	2080-LC30	CPU RS232	RS232	Fig 1	Modbus RTU (panel is master)

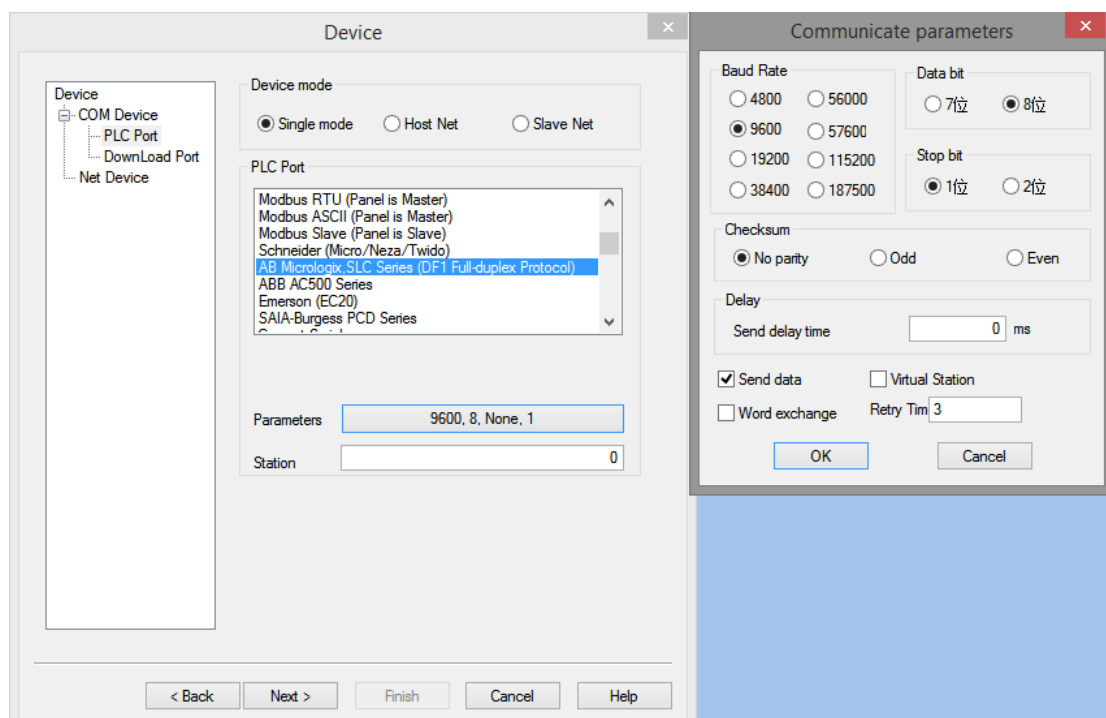
### 2.28.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	AB Micrologix, SLC series (DF1	AB Micrologix, SLC series (DF1 full-duplex)/Modbus	

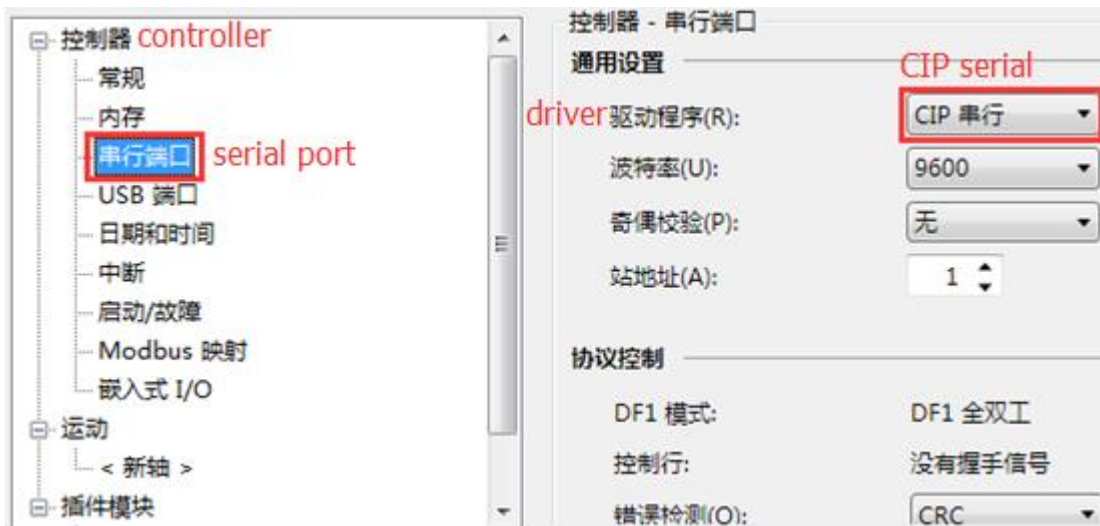
	full-duplex)	RTU(panel is master)	
Port	RS232	RS232	
Data bit	8		
Stop bit	1		
Parity	No parity		
Baud rate	9600	9600/19200/38400	
Station no.	1	0~255	

The default parameters of AB Mircrologix SLC series (DF1 full-duplex): 9600, 8, 1, no parity, station no.0.



PLC setting:

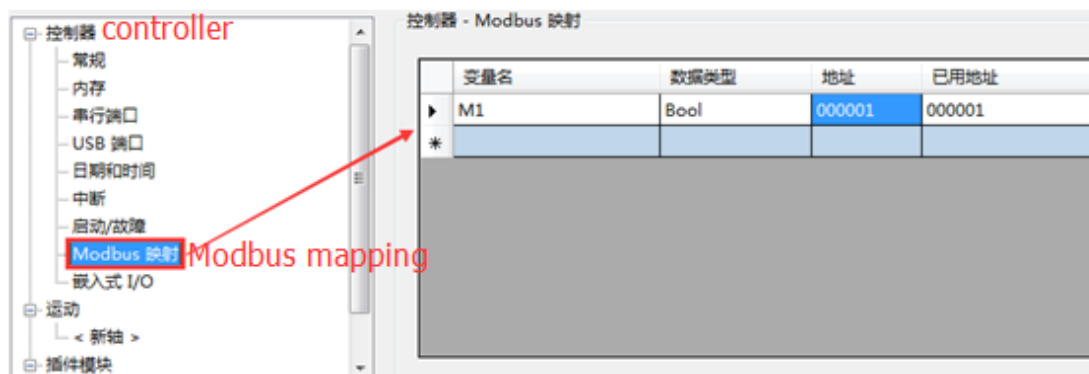
Condition A: in touchwin software, the PLC protocol is AB Mircrologix, SLC series:



Condition B: in touchwin software, the PLC protocol is Modbus RTU (panel is master):



Note: for Modbus RTU communication, the address must set the mapping, PLC address 1 corresponds to Modbus address 0, PLC address 2 corresponds to Modbus address 1...





### 2.28.3 Cable making

(a) AB Micrologix series RS232:

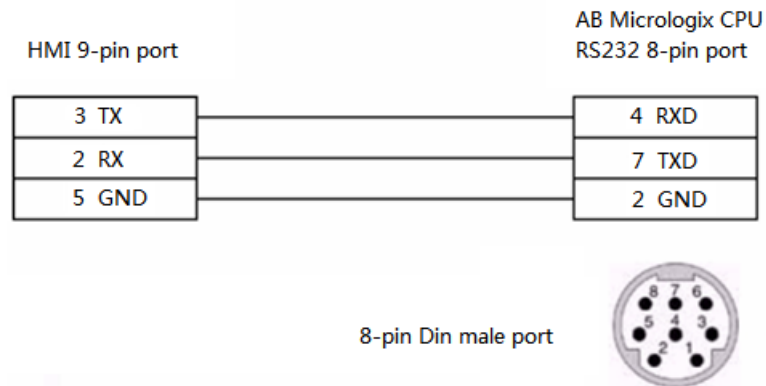


Fig1

(b) SLC500 RJ8 modular plug:

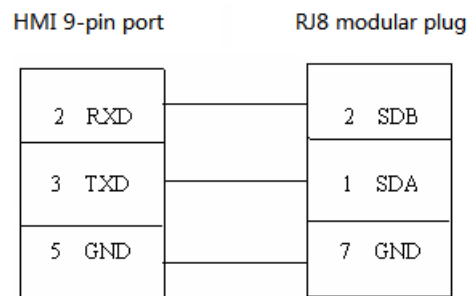


Fig2

### 2.28.4 Device address

Device address type	Range	Object type	Explanation
T4DN	0~999	Bit	Timer
C5DN	0~999	Bit	Counter
O	0.00~999.15	Bit	Output
I	0.00~999.15	Bit	Input
S	0.00~999.15	Bit	
B3	0.00~999.15	Bit	
R6	0.00~999.15	Bit	
N7	0.00~999.15	Bit	
O	0~999	Word	Used as register
I	0~999	Word	Used as register
S	0~999	Word	Used as register
B3	0~999	Word	Used as register
T4PRE	0~999	Word	Timer preset value
T4ACC	0~999	Word	Timer actual value

C5PRE	0~999	Word	Counter preset value
C5ACC	0~999	Word	Counter preset value
R6	0~999	Word	Data register
N7	0~999	Word/Dword	Data register
F8	0~999	Dword	Floating number register
R6LEN	0~999	Word	
P6POS	0~999	Word	

## 2.29 Xinje V5 series inverter

### 2.29.1 Device model

Series	Connected module	Port	Cable	Device
V5	CPU RS485 port	RS485	Fig 1	Thinget V5 series inverter

### 2.29.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Thinget V5 series inverter		
Port	RS485	RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

Note: please set the communication wait time if the connection is error.

Inverter:

Function code	Name	Range	Meaning
---------------	------	-------	---------

P0.01	Frequency setting channel	4	Serial port setting
P0.03	Run command channel	2	Run via serial port
P3.09	Communication settings	054	The unit:19200 Decade: 1-8-1, even parity Hundred: no definition

### 2.29.3 Cable making

RS485:

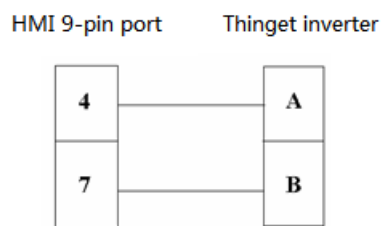


Fig1

## 2.30 SHIMADEN

### 2.30.1 Device model

Series	Connected module	Port	Cable	Device
SRS10(SRS11/SRS13/SRS14) Digital adjustor	RS485 on the cpu unit	RS485	Fig 1	Modbus RTU (panel is Master)

**Note: all the devices support Modbus protocol can communicate with Touchwin HMI.**

### 2.30.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Modbus RTU (panel is Master)		
Port	RS485	RS485	
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	

Note:

1. The parameters of device and HMI must be same.
2. Some devices need to add terminal resistor (such as SRS10 digital adjustor)
3. Meter parameter 018C must set to 1 (COM LED is ON), please use the “function filed”(the button in the Touchwin software) to set the value of 018C(4x396=1).

### 2.30.3 Cable making

RS485 connection:

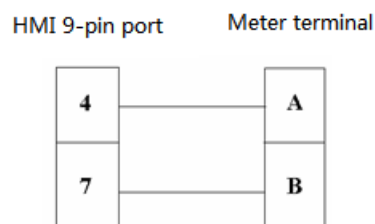


Fig1

## 2.30.4 Device address

PLC address (Hex)	Parameters	Read/write	Meaning
0100	PV	Read	Measured value
0101	SV	Read	Setting value
0102	OUT1	Read	Output 1
0103	OUT2	Read	Output 2
0104	EXE_FLG	Read	Status sign
0105	EV_FLG	Read	event output sign
0300	FIX SV1	Read/write	Fixed value 1
0301	FIX SV2	Read/write	Fixed value 2
0302	FIX SV3	Read/write	Fixed value 3
030A	SV_L	Read/write	Lower limit of settings
030B	SV_H	Read/write	Upper limit of settings

## 2.31 Modbus RTU (panel is Master)

### 2.31.1 Device model

Series	Port	Cable	Device
Devices support Modbus RTU protocol	RS485	Fig 1	Modbus RTU (panel is Master)
	RS232	Fig 2	
	RS422	Fig 3	

### 2.31.2 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	

Note:

1. Modbus RTU protocol supports broadcast function, station no is 0.
2. How to use the broadcast function in the HMI?

The broadcast function only sends command but not receives. It sends command by “function field”, “function button” or “function block” in Touchwin software. The operand must has no feedback command, such as “set on coil”, “setting data”, “reset coil”.

PLC:

Please choose Modbus RTU (Slave) in the software.

### 2.31.3 Cable making

(a) Modbus RS485:

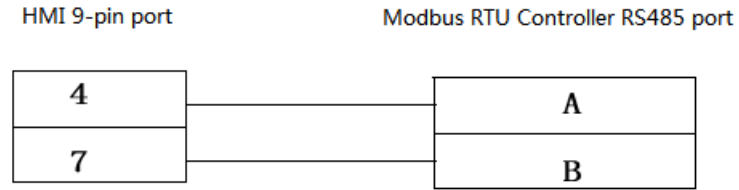


Fig1

(b) Modbus RS232:

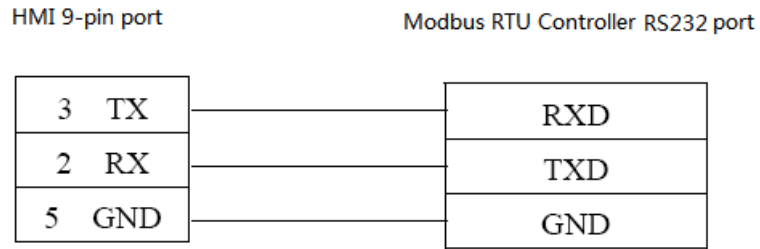


Fig2

(c) Modbus RS422:

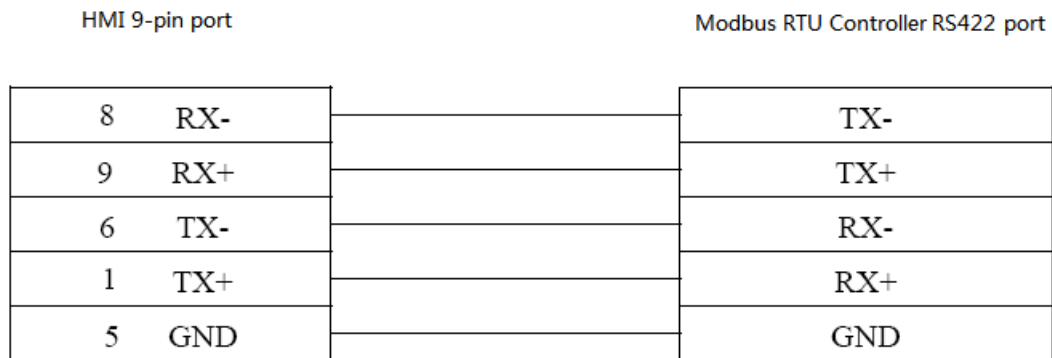


Fig3

## 2.31.4 Device address

Device address	Range	Data type	Feature	Explanation
0x	0~65535	Bit	R/W	External I/O /internal coil
1x	0~65535	Bit	R	External I/O /internal coil
4x	0~65535(0~15)	Bit	R/W	External I/O /internal coil
4x	0~65535	Word/Dword	R/W	Used as data register
3x	0~65535	Word/Dword	R	Used as data register



## 2.32 Modbus ASCII (Panel is Master)

### 2.32.1 Device model

Series	Port	Cable	Device
The device support Modbus ASCII protocol	RS485	Fig 1	Modbus ASCII (panel is Master)
	RS232	Fig 2	
	RS422	Fig 3	

### 2.32.2 Parameters

HMI

Parameters	Recommend settings	Choices of settings	Note
PLC type	Modbus ASCII (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	

PLC:

Please choose Modbus ASCII (Slave) protocol in the software.

### 2.32.3 Cable making

Modbus RS485:

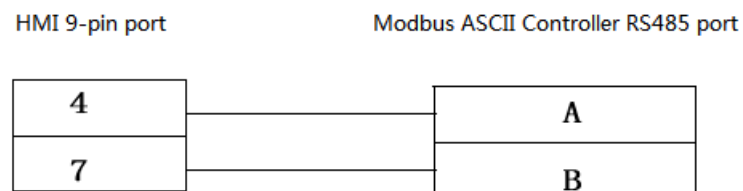


Fig1

Modbus RS232:

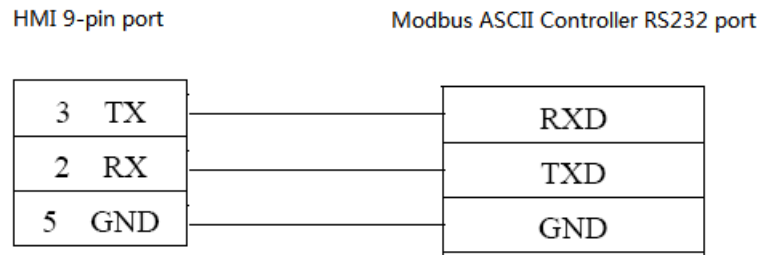


Fig2

Modbus RS422:

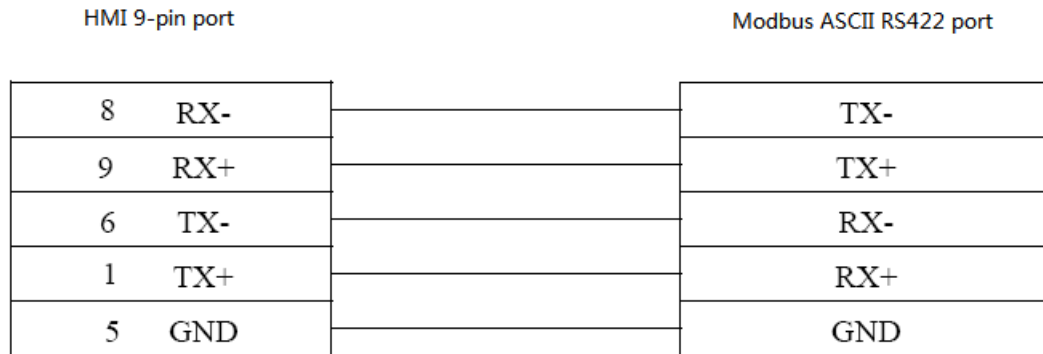


Fig3

#### 2.32.4 Device address

Device address	Range	Data type	Explanation
0x	0~65535	Bit	External I/O/internal coil
1x	0~65535	Bit	External I/O/internal coil
4x	0~65535	Word/Dword	Used as data register
3x	0~65535	Word/Dword	Used as data register

## 2.33 Modbus slave (panel is Slave)

### 2.33.1 Device model

Series	Port	Cable	Device
The device support Modbus protocol	RS485	Fig 1	Modbus slave (panel is Slave)
	RS232	Fig 2	
	RS422	Fig 3	

### 2.33.2 Parameters

HMI:

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	Parity	Even/odd/no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

### 2.33.3 Cable making

Modbus RS485:

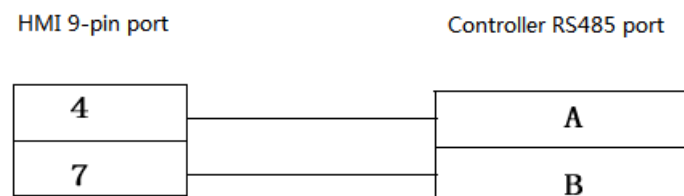


Fig1

Modbus RS232:

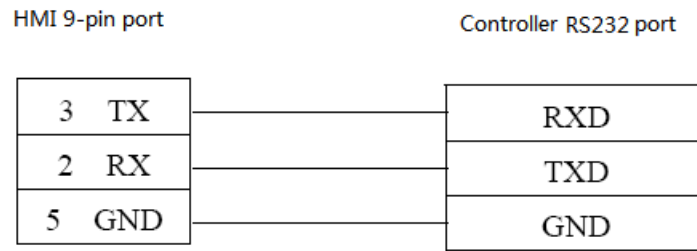


Fig2

Modbus RS422:

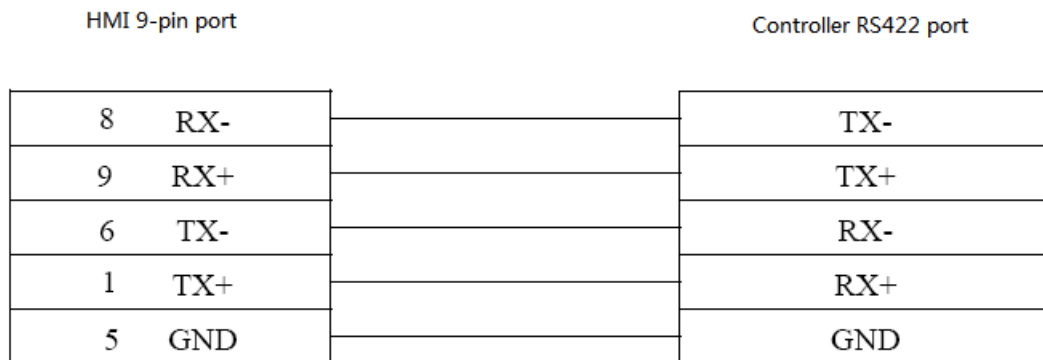


Fig3

## 2.33.4 Device address

Device address	Range	Data type	Features	Explanation
0x	0~65535	Bit	R/W	External I/O/internal coil
1x	0~65535	Bit	R	External I/O/internal coil
4x	0~65535	Word/Dword	R/W	Used as data register
3x	0~65535	Word/Dword	R	Used as data register

## 2.34 ABB PLC

### 2.34.1 Device model

ABB PLC can communicate with Touchwin HMI by Modbus protocol.

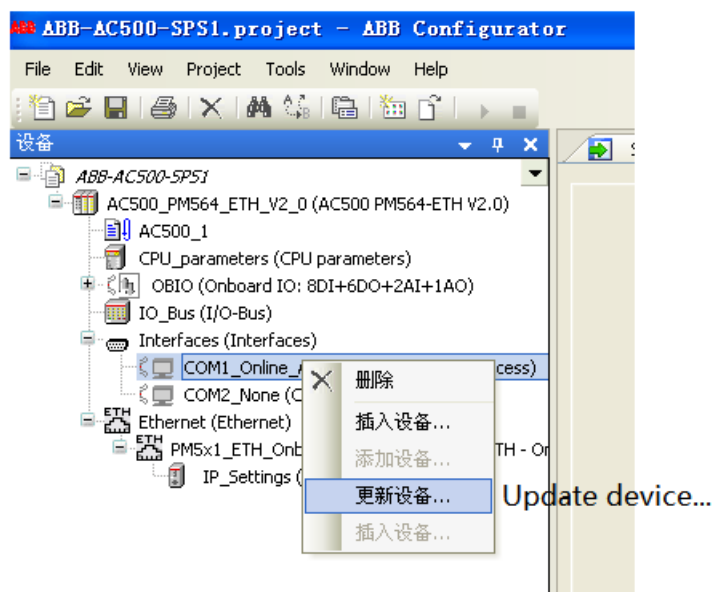
Series	Port	Cable	Device
AC500	PM564-T-ETH	Fig 1	ABB (AC500)

### 2.34.2 Parameters

HMI:

Parameters	Recommend settings	Choices of settings	Note
PLC type	ABB AC500		
Port	RS485	RS485	
Data bit	8	7 or 8	
Stop bit	1	1 or 2	
Parity	Even parity	Even/odd/no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

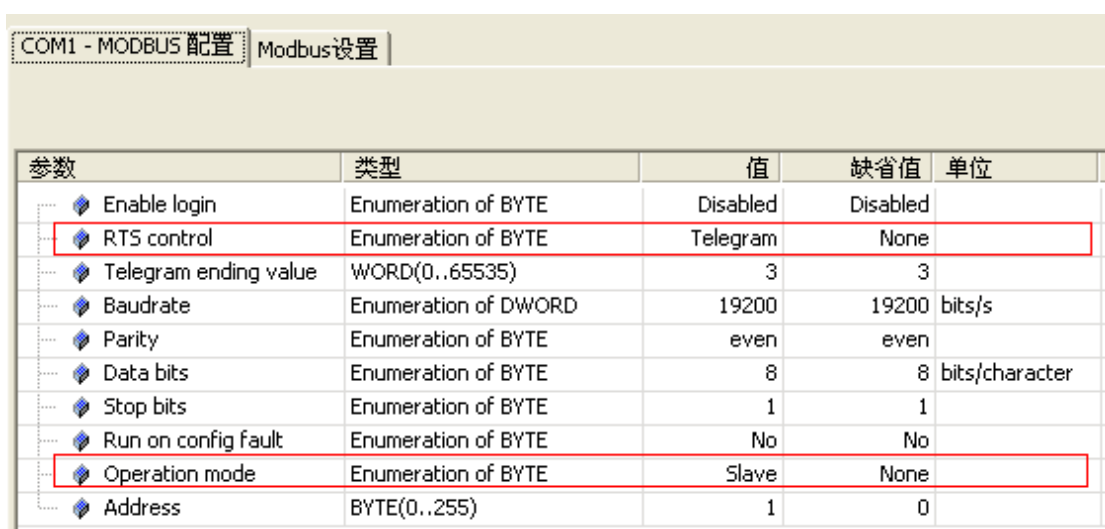
PLC:



1. Choose Modbus in ABB AC500 PLC serial port:

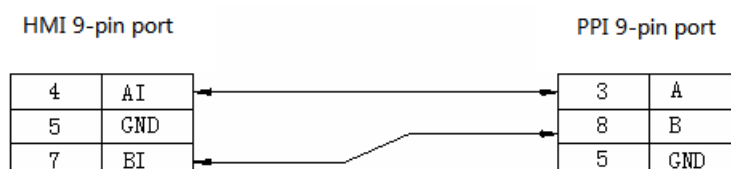


2. Choose COM1 MODBUS, then set the operation mode to slave. Other parameters should be the same to HMI.



### 2.34.3 Cable making

ABB COM1 (RS-485):



## 2.34.4 Device address

PLC address	Range	Data type	Explanation
MX0	0.0.0~0.65535.7	Bit	External I/O/internal coil
MX1	0.0.0~0.65535.7	Bit	External I/O/internal coil
MW0	0~32767	Word//DWord	Data register
MW1	0~32767	Word//DWord	Data register
MD0	0~32767	Word//DWord	Data register
MD1	0~32767	Word//DWord	Data register

## 2.35 IDEC

### 2.35.1 Device type

Series	Connected module	Port	Cable	Choose PLC type in Touchwin software
MicroSmart	RS232 on the cpu unit	RS485	Fig 1	IDEC MicroSmart

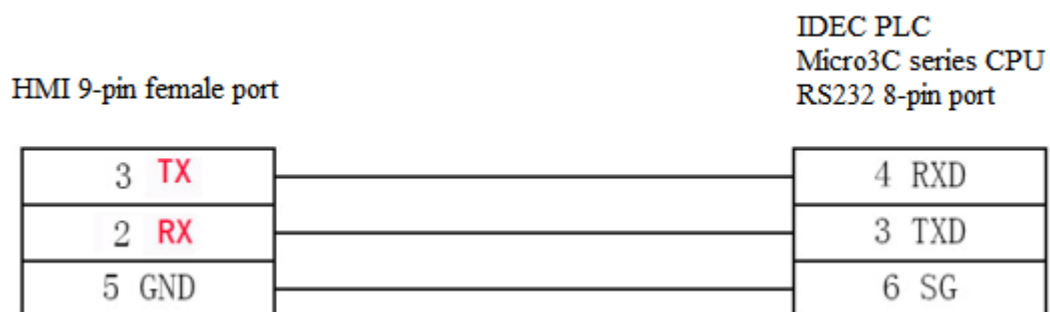
### 2.35.2 Parameters

HMI settings:

Parameters	Recommend settings	Choices of settings	Note
PLC type	IDEC MicroSmart		
Port	RS232	RS232	
Data bit	7	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.	0		

### 2.35.3 Cable making

RS232 connection:





## 2.35.4 Device address

Device address	Range	Data type	Explanation
D	0~8199	Word/DWord	Data register
W	0~6	Word	Data register
T	0~99	Word	Timer
t	0~99	Word	Timer
C	0~99	Word	Counter
c	0~99	Word	Counter
R	0~127	Word	Data register
x	0.0~30.7	Bit	Input
y	0.0~30.7	Bit	Output
m	0.0~807.7	Bit	Auxiliary relay
r	127	Bit	Auxiliary relay

## 2.36 TAIAN

### 2.36.1 Device type

Series	CPU	Connected module	Port	Cable	Choose PLC type in Touchwin software
TAIAN	TP03-20HR-A	RS232 on the CPU Unit	RS232	Fig 1	TAIAN TP03 series
	TP03-30HR-A	RS485 on the CPU Unit	RS485	Fig 2	

## 2.36.2 Parameters

HMI settings:

Parameters	Recommend settings	Choices of settings	Note
PLC type	TAIAN TP03 series		
Port	RS232	RS232/RS485	
Data bit	8	7/8	
Stop bit	2	1/2	
Parity	No parity	Even /odd /no parity	
Baud rate	19200	4800/38400/9600/115200/19200/187500	
Station no.	1	0-255	

## 2.36.3 Cable making

RS232 connection:

HMI 9-pin D-type female port      PLC 8-pin round male port

RXD	2	4	TXD
TXD	3	1	RXD
GND	5	3	GND



Fig1

RS485 connection:

HMI 9-pin D-type female port      PLC RS485 terminal

A	4	A+
B	7	B-
GND	5	SG

Fig2

## 2.36.4 Device address

Device address	Range	Data type	Explanation
D	0~8511	Word/DWord	Data register
T	0~511	Word/DWord	Timer
C	0~255	Word/DWord	Counter
X	0~377	Bit	Input
Y	0~377	Bit	Output
M	0~1535	Bit	Auxiliary relay
S	0~1023	Bit	Auxiliary relay
T	0~511	Bit	Timer
M8xxx	0~511	Bit	Auxiliary relay
C	0~255	Bit	Counter
S expansion	1024~4095	Bit	Auxiliary relay
M expansion	1536~7679	Bit	Auxiliary relay

## 2.37 YuDian AI

### 2.37.1 Device address

Series	Connected module	Port	Cable	Choose PLC type in Touchwin software
AI	RS485 on the cpu unit	RS485	Fig 1	AI series instrument

### 2.37.2 Parameters

HMI settings:

Parameters	Recommend settings	Choices of settings	Note
PLC type	AI series instrument		
Port	RS485	RS485	
Data bit	8	7/8	
Stop bit	1	1/2	
Parity	No parity	Even /odd /no parity	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	129		

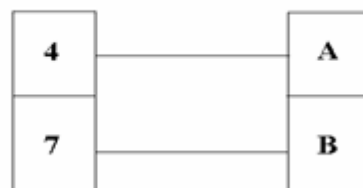
**Note:**

1. The parameters of HMI and meter must be the same.
2. How to set the station no. of meters?  
HMI→129      meter→ 1+80H  
HMI→130      meter→ 2+80H

### 2.37.3 Cable making

RS485 connection:

HMI 9-pin D-type female port    meter terminal



## 2.37.4 Device address

Device address	Range	Data type	Explanation
PV	0~100	Read	Measure value
SV	0	read\write	Set value
MV	0	Read	Output value
Flow meter MV	0	Read	Output value of flow meter
S	0/1	Read	Status bit

## 2.38 Inovance PLC

### 2.38.1 Device type

Series	CPU	Connected module	Port	Cable	PLC type in touchwin software
H1U	H1U-0806MR\T H1U-1410MR\T H1U-1614MR\T	CPU	<b>RS422</b>	Fig 1	Mitsubishi FX series PLC
H2U	H2U-1616MR\T H2U-2416MR\T H2U-3624MR\T				

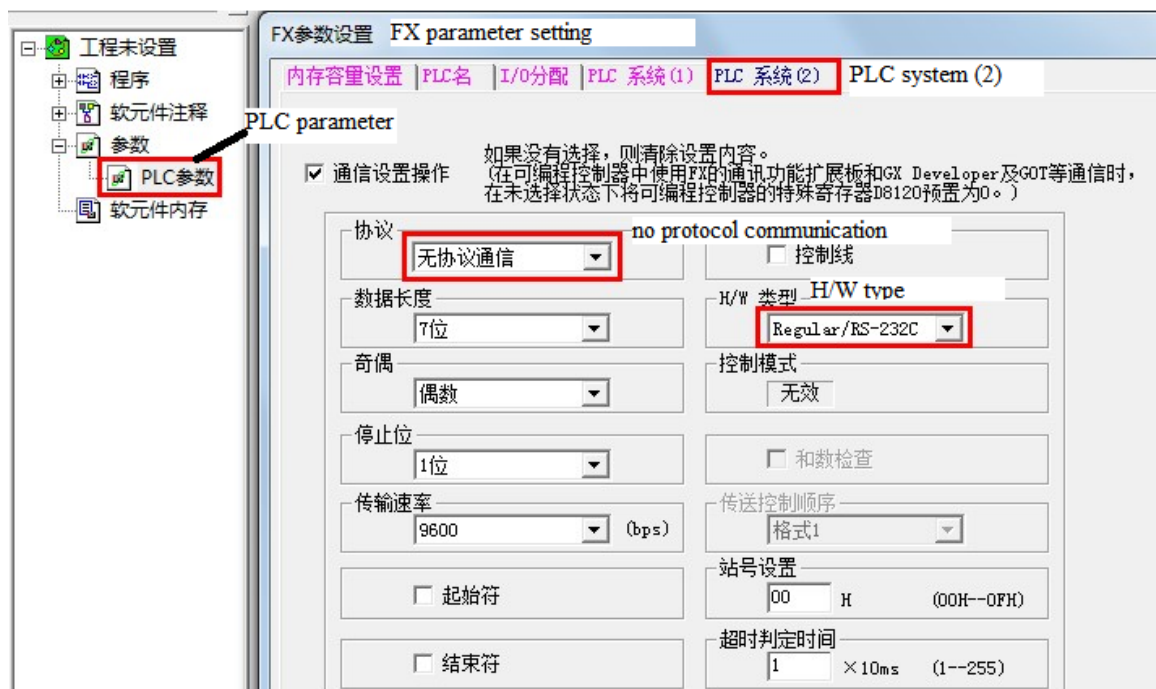
### 2.38.2 Parameter

HMI settings

Parameter	Recommended settings	Choices of settings	Notes
PLC type	FX series	-	-
Data bit	7	-	
Stop bit	1	-	
Parity	Even parity	Even/odd/no parity	
Baud rate	9600	4800/9600/19200/38400/56000/ 57600/ 115200/187500	
Station no.	0	-	

Inovance H1U\2U series default communication parameters: 9600, 7, 1, even, statio no.0

PLC settings:



### 2.38.3 Cable making

(a) HIU\2U series PLC RS422 port:

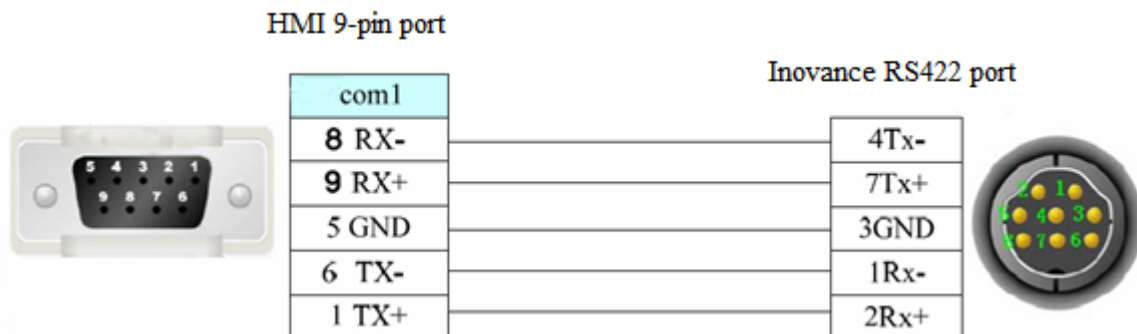


Fig1

### 2.38.4 Device address

PLC address	Range	Object	Explanation
X	0~177	Bit	External input terminal
Y	0~177	Bit	External output terminal
M	0~8255	Bit	Internal auxiliary coil
S	0~999	Bit	Stepper coil
T	0~255	Bit	Timer
C	0~255	Bit	Counter



C16	0~199	Word/DWord	16-bit counter
C32	200~255	DWord	32-bit counter
D	0~8255	Word/DWord	Data register
T	0~255	Word/DWord	Current value
X	0~177	Word/DWord	Used as data register
Y	0~177	Word/DWord	Used as data register
M	0~8255	Word/DWord	Used as data register
S	0~999	Word/DWord	Used as data register

## 2.39 HaiWell PLC

### 2.39.1 Device type

Series	CPU	Connected module	Port	Cable	PLC type in Touchwin software
E\S	HW-S16ZR220R	CPU	RS232	Fig 1	Modbus RTU (panel is master)
			RS485	Fig 2	

### 2.39.2 Parameters

HMI settings:

Parameter	Recommend settings	Choices of settings	Notes
PLC type	Modbus RTU (panel is master)	-	
Data bit	8	-	
Stop bit	1	-	
Parity	Odd	Even/odd/no parity	
Baud rate	9600	4800/9600/19200/38400/56000/57600/115200/187500	
Station no.	1	-	

Haiwell E\S series default communication parameters: 9600, 8, 1, odd, station no.1

PLC settings:

Communication protocol: Modbus RTU.

### 2.39.3 Cable making

(a) E\S series PLC RS232:


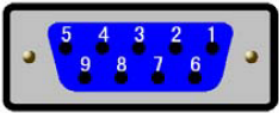
Haiwell PLC port	RS232 connection	HMI port
 <p>4-pin S-type male port (same to programming cable)</p>	<p>TX 2 ——— 2 RXD</p> <p>RX 1 ——— 3 TXD</p> <p>GND 3 ——— 5 GND</p>	 <p>9-pin D-type female port</p>

Fig 1

(b) E\S series PLC RS485:

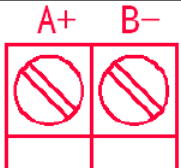
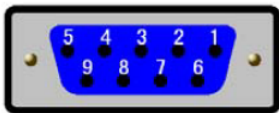
Haiwell PLC port	RS485 connection	HMI port
 <p>A+ B-</p>	<p>A+ ——— 4 AI</p> <p>B- ——— 7 BI</p>	 <p>9-pin D-type female port</p>

Fig 2

## 2.39.4 Device address

PLC address	Range	Modbus address	Read/write	Explanation
X	X0~X1023	0~1023	Read	Input
Y	Y0~Y1023	1536~2559	Read/write	Output
M	M0~M12287	3072~15359	Read/write	Internal coil
T	T0~T1023	15360~16383	Read/write	Timer
C	C0~C255	16384~16639	Read/write	Counter
SM	SM0~SM215	16896~17111	Read/write partly	System state bit
S	S0~S2047	28672~30719	Read/write	Stepper state bit
CR		00~4F	Read/write partly	Register for analog and special module
AI	AI0~AI255	0000~00FF	Read	Input register for analog
AQ	AQ0~AQ255	0100~01FF	Read/write	Output register for analog
V	V0~V14847	0200~3BFF	Read/write	Internal register
TCV	TCV0~TCV1023	3C00~3FFF	Read/write	Timer
CCV	CCV0~CCV255	4000~40FF	Read/write	Counter
SV	SV0~SV154	4400~448B	Read/write partly	System register

## 2.40 Hollias PLC

### 2.40.1 Device type

Series	CPU	Connected module	Port	Cable making	PLC type in Touchwin software
LM	LM3109	CPU	RS232	Fig 1	Modbus RTU (panel is master)
	LM3107		RS485	Fig 2	

### 2.40.2 Parameters

HMI settings:

Parameters	Recommend settings	Choices of settings	Note
PLC type	Modbus RTU (panel is master)	-	-
Data bit	8	-	
Stop bit	1	-	
Parity	No parity	Even/odd/no parity	
Baud rate	38400	4800/9600/19200/38400/56000/57600/115200/187500	
Station no.	51	-	

Hollias LM series PLC default parameters: 38400, 8, 1, no parity, station no.51

### 2.40.3 Cable making

(a) LM series PLC RS232:

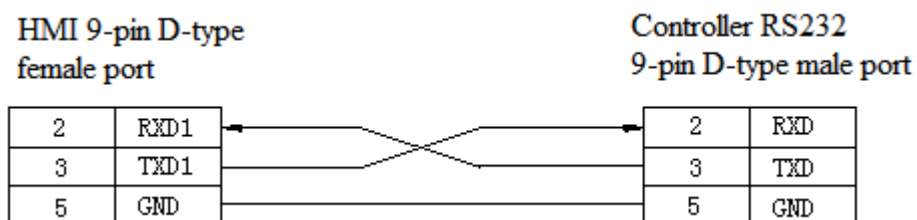


Fig1

(b) LM series PLC RS485:

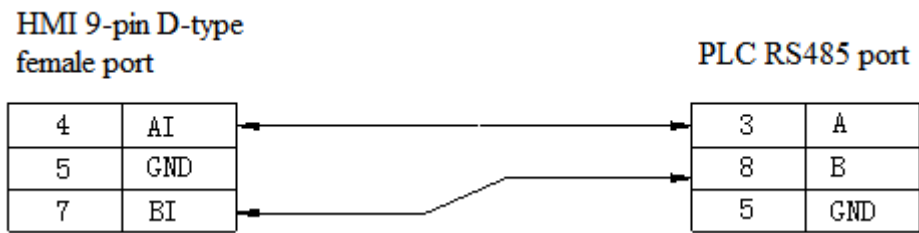


Fig2

## 2.40.4 Device address

Please refer to Hollias PLC Modbus address list.

The address is decimal value in HMI.

0x: read/write coil    1x: only read coil    4x: read/write register    3x: only read register

## 2.41 Delta (temperature controller)

### 2.41.1 Device type

Series	CPU	Connected module	Port	Cable	PLC type in Touchwin software
DVP	DTA4848 DTA9696VR DTC1000 DTC2000	CPU	RS485	Fig 1	Modbus RTU (panel is master)

### 2.41.2 Parameters

HMI settings:

Parameters		Choices of settings	Notes
PLC type	Modbus RTU (panel is master)	-	-
Data bit	7	-	
Stop bit	1	-	
Parity	Even parity	Even/odd/no parity	
Baud rate	9600	4800/9600/19200/38400/56000/57600/ 115200/187500	
Station no.	1	-	

Delta (temperature controller) default parameters: 9600, 7, 1, even parity, station no.1

### 2.41.3 Cable making

(a) DVP RS485

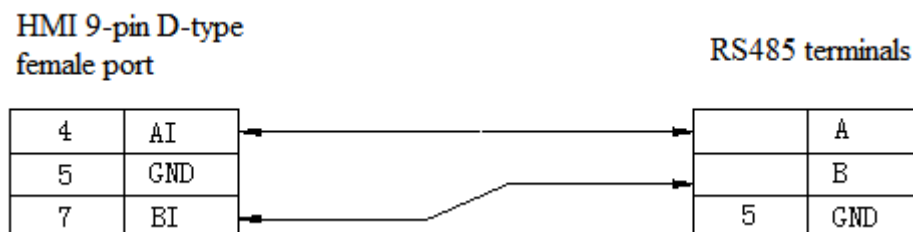


Fig1

## **2.41.4 Device address**

Please refer to Delta temperature controller Modbus address list.

The address is decimal in HMI.

0x: read/write coil    1x: only read coil    4x: read/write register    3x: only read register

## 2.42 Siemens S7-1200

### 2.42.1 Device type

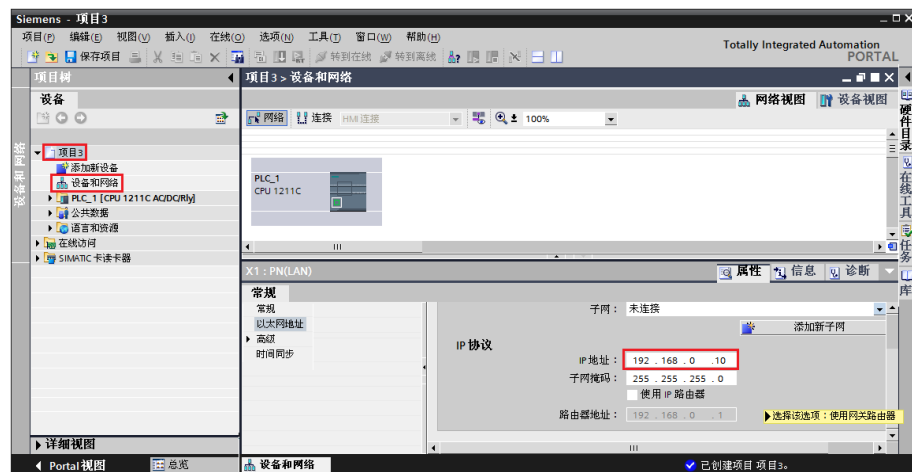
Series	Communication type	Connection diagram	PLC type in Touchwin software
Siemens S7-1200	RJ45	Diagram 1 or 2	Siemens S7-1200 series

### 2.42.2 Parameters

We take Siemens S7-1200 CPU1211C 6ES7 211-1BD30-0XB0 PLC as an example to explain the settings.

PLC software settings:

1. Open project-devices&networks-normal-Ethernet IP, set the PLC IP address:

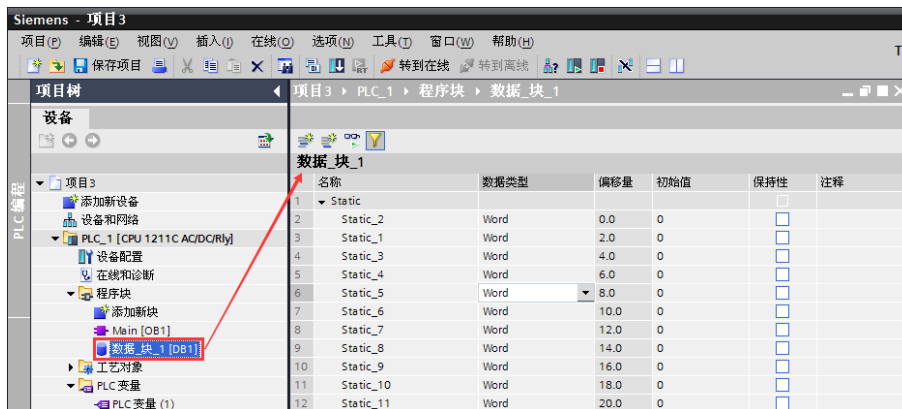


2. PLC DB, M must be defined in the PLC before using. Click project-program block-add new block, choose data block (DB), the type is global DB, not choose only sign visit. DB number can be auto or manual.



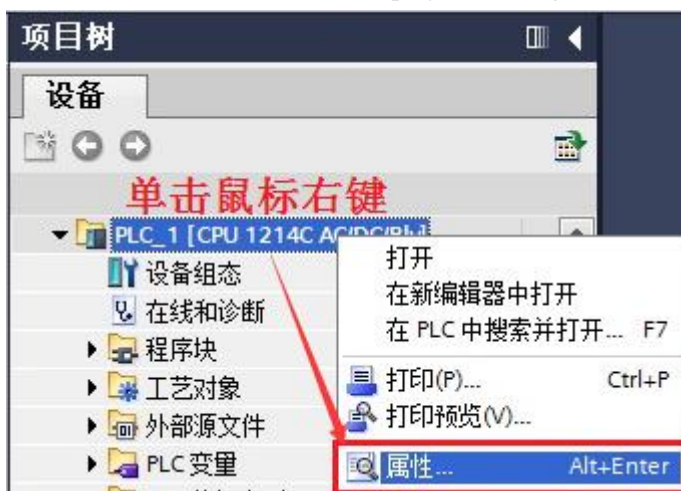


3. Choose project-program block-data block can define the address in the data block.

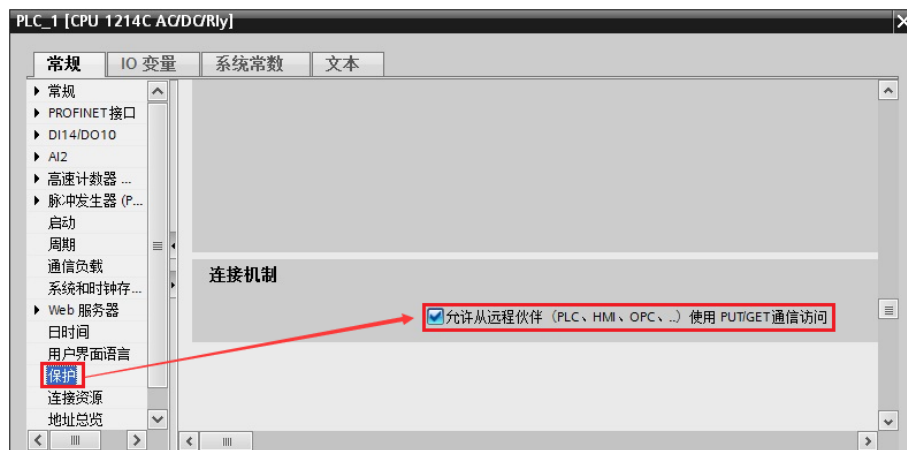


Note: for the software STEP Basic V12 and up version, please release the communication protection:

(1) Choose the PLC model in the project tree, right click it, choose properties



(2) Please choose “permit access with PUT/GET communication from remote partner (PLC, HMI, OPC)”. Then download the PLC program in the PLC.

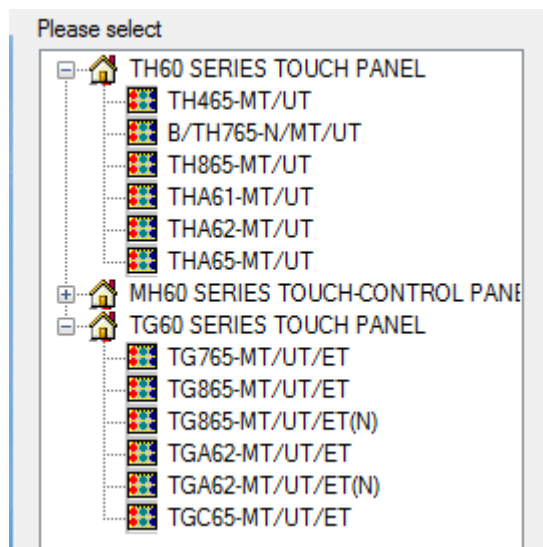


HMI settings:

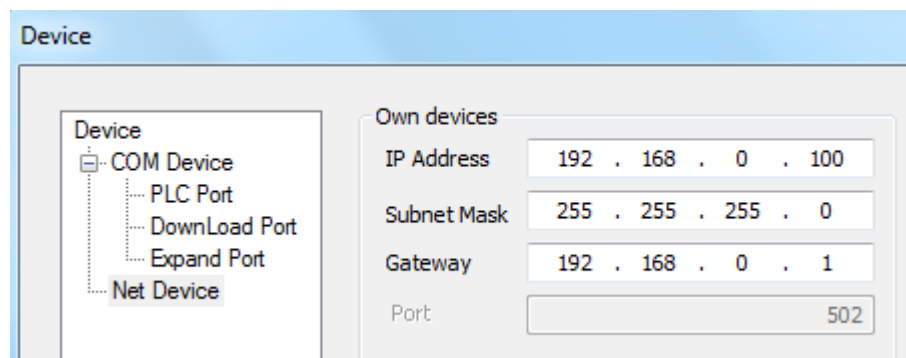
Only Touchwin software v2.d.1j and higher version support Siemens 1200 series PLC.

Operation steps:

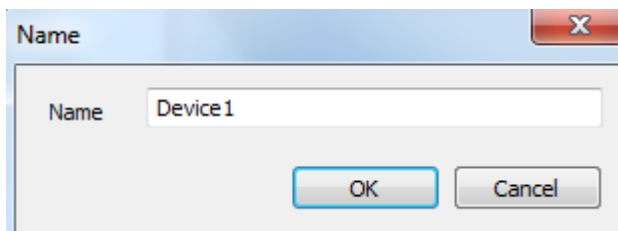
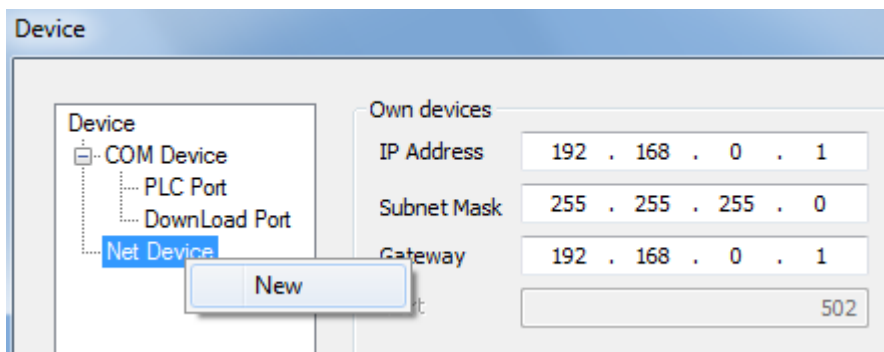
(1) Please select the HMI type, click next.



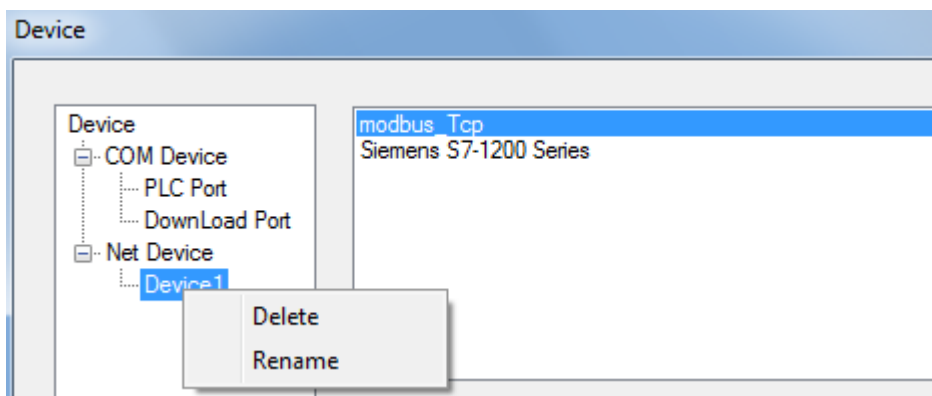
(2) Select Net device. The IP address in own devices is HMI IP address.



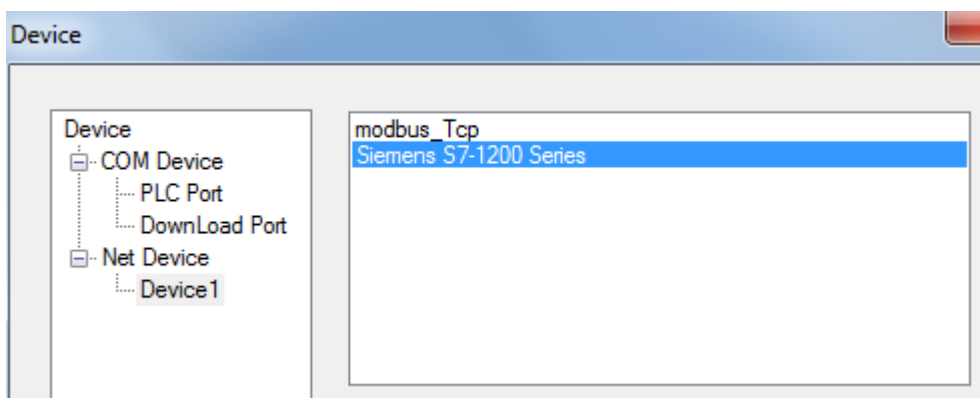
(3) Right click Net device, click New. Then input the project name.



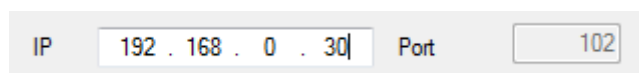
(4) Right click the project name to delete or rename the project.



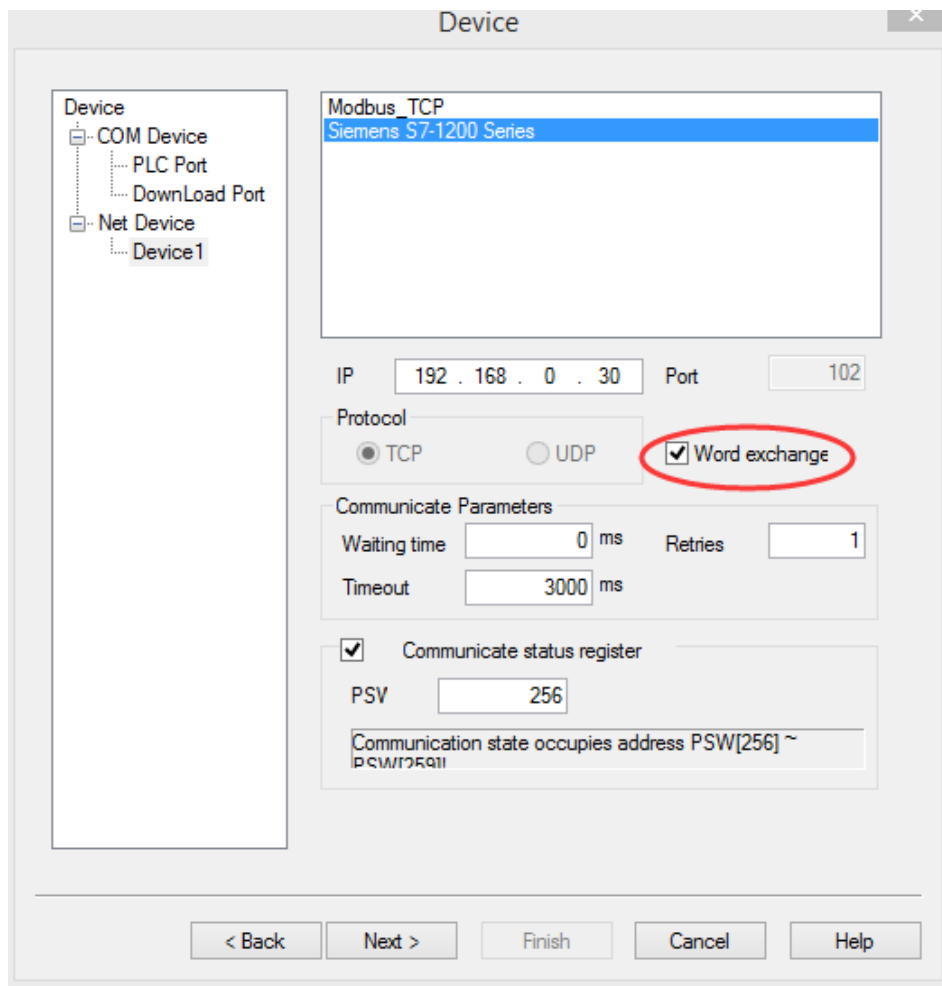
(5) Select Siemens S7-1200 series in the device list.



(6) The IP is S7-1200 IP address. Note: this IP can be set in PLC software. Port 102 cannot be changed.



(7) please choose “word exchange”, otherwise, the double word data will be error.



(8) Communication parameters: please use the default parameters.

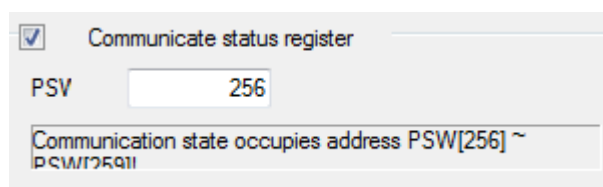
(9) Communication status register: if select this item, the status will occupy 4 registers. The register address can be set by user. If set the address to PSW256, the register meanings are shown as the following.

PSW256: communication succeeded times

PSW257: communication failed times

PSW258: timeout times

PSW259: communication error times.



(10) Then click next to finish the project setup.

(11) In the editing screen, when user defines the button object, please select device 1.

Note: please define the DB and M in the Siemens PLC, otherwise the communication will be error.

(12) Notes:

- A. Siemens PLC S7-1200 doesn't have station number problem. It can build network with HMI once the IP address is correct. The network mode can be multi-HMI-one-PLC, one-HMI-multi-PLC, and multi-PLC-multi-HMI.
- B. RX/TX lights when the communication is successful. RX/TX is shining when it is finding the network.
- C. Modbus TCP device is used to connect with TBOX-XINJE PLC; Siemens S7-1200 device can connect any device with Ethernet.
- D. please define the DB and M in the Siemens PLC, otherwise the communication will be error.

## 2.42.3 Cable making

RJ45 straight through cable (connect HUB) or RJ45 crossover cable:

Pin no.	Color		Pin no.	Color
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

Diagram 1

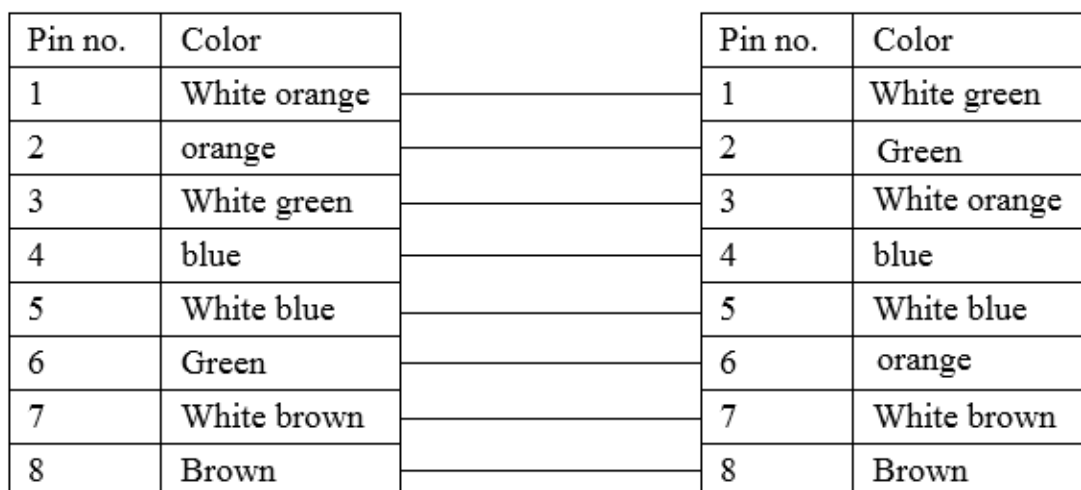


Diagram 2

## 2.42.4 Device address

PLC address type	Range	Object type	Explanation
I	0~9999	Byte/Word/DWord	Input register
Q	0~9999	Byte/Word/DWord	Output register
M	0~9999	Byte/Word/DWord	Internal auxiliary register
DB0~DB20	0~9999	Byte/Word/DWord	Data register
I	0.0~9999.7	Bit	Input
Q	0.0~9999.7	Bit	Output
M	0.0~9999.7	Bit	Auxiliary relay
DB0~DB20	0.0~9999.7	Bit	Auxiliary relay

## 2.43 Mitsubishi FR series inverter

### 2.43.1 Device type

Series	Connect module	Communication type	Cable diagram	PLC type in Touchwin software
FR	RS485 port on CPU unit	RS485	diagram 1	Mitsubishi FR series inverter
				Modbus RTU (panel is Master)

### 2.43.2 Parameters

Choose Mitsubishi FR series inverter:

HMI:

Parameters	Recommended setting	Choices of settings	Notes
PLC type	Mitsubishi FR series	-	-
Port type	RS485	RS485	
Data bit	8	-	
Stop bit	2	-	
Parity	Even parity	-	
Baud rate	19200	9600/115200/19200/187500	
Station no.	0	0~31	

Inverter parameters:

Function (FR)	Name	Default value	Range	Debug parameters
P117	Station no.	0	0~31, 0~247	0
P118	Baud rate	19.2kbps	4800bps,9600bps,38400bps	19200
P119	Stop bit, data bit	1	0: 1 stop bit, 8 data bit 1: 2 stop bit, 8 data bit 10: 1 stop bit, 7 data bit 11: 2 stop bit, 7 data bit	1: 2 stop bit, 8 data bit
P120	Parity	2	0: no parity 1: odd parity 2: even parity	2: even parity
P121	Retry times	9999		9999
P122	Test time	0	0: RS485 9999: no communication test	0

P123	Wait time	150ms		125
P124	R/LF	0	0: without CR, LF 1: with CR 2: with R, LF	0
P79	Mode selection	0	0~7	Set to 2, external communication mode, please cut off the power of inverter after setting the parameters
P340	Communication start mode	0	0, 1, 10	Set to 1, start in network running mode

Select Modbus RTU (Panel is Master):

HMI:

Parameter	Recommended settings	Choices of settings	Note
PLC type	Modbus Rtu (Panel is Master)	-	-
Port type	RS485	RS485	
Data bit	8	-	
Stop bit	2	-	
Parity	Even parity	-	
Baud rate	19200	9600/115200/19200/187500	
Station no.	1	0~31	



Communication Parameter

Baudrate  
☐ 4800   ☐ 56000  
☐ 9600   ☐ 57600  
☒ 19200   ☐ 115200  
☐ 38400   ☐ 187500

Data Bit  
☐ 7Bits   ☒ 8Bits

Stop Bit  
☐ 1Bit   ☒ 2Bits

Parity check  
☐ None   ☐ Odd   ☒ Even

Wait  
Communication Time  MSEL

☒ Send Data   ☐ Vir Station   Retry times

☐ Exchange WORD

OK   Cancel

Inverter parameters:

Function (FR)	Name	Default value	Range	Debug parameters
P117	Station no.	1	0~31, 0~247	1 (Modbus station no. can not be 0)
P118	Baud rate	19.2kbps	4800bps, 9600bps, 38400 bps	19200
P119	Stop bit	1	0: 1 stop bit, 8 data bit 1: 2 stop bit, 8 data bit 10: 1 stop bit, 7 data bit 11: 2 stop bit, 7 data bit	1: 2 stop bit, 8 data bit
P120	Parity	Even	0: no parity 1: odd parity 2: even parity	2: even parity
P121	Retry times	9999		9999
P122	Communication test	0	0: RS485 9999: no communication test	0
P123	Waiting time	150ms		125
P124	CR/LF selection	0	0: without CR, LF 0: with CR 0: with R, LF	0
	549 protocol selection	1	Modbus-RTU	Be valid after restart the inverter
P79	Mode selection	0	0~7	Set to 2, external

				communication mode, please cut off the power of inverter after setting the parameters
P340	Communication start mode	0	0, 1, 10	Set to 1, start in network running mode

### 2.43.3 Cable making

RS485 cable:

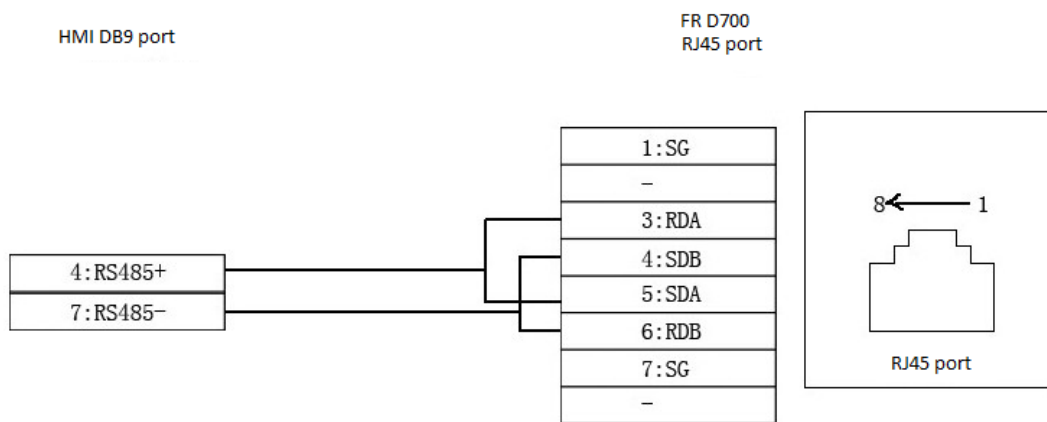


Diagram 1

## 2.44 Sanken VM06 inverter

### 2.44.1 Device type

Series	Port type	Cable diagram	PLC type in Touchwin software
VM06	RS485	diagram 1	Sanken VM06 inverter
			Modbus RTU (Panel is master)

### 2.44.2 Parameters

Select Sanken VM06 inverter:

HMI:

Parameter	Recommended setting	Choices of setting	Note
PLC type	Sanken VM06 inverter	-	-
Port type	RS485	RS485	
Data bit	8	-	
Stop bit	1	-	
Parity	Even parity	-	
Baud rate	9600	9600/115200/19200/187500	
Station no.	1	0~31	

Select Modbus RTU (Panel is master)

HMI:

Parameter	Recommended setting	Choices of setting	Note
PLC type	Modbus Rtu (Panel is master)	-	-
Port type	RS485	RS485	
Data bit	8	-	
Stop bit	1	-	
Parity	Even parity	-	
Baud rate	9600	9600/115200/19200/187500	
Station no.	1	0~31	

Communication Parameter

Baudrate  
☐ 4800   ☐ 56000  
☒ 9600   ☐ 57600  
☐ 19200   ☐ 115200  
☐ 38400   ☐ 187500

Data Bit  
☐ 7Bits   ☒ 8Bits

Stop Bit  
☒ 1Bit   ☐ 2Bits

Parity check  
☐ None   ☐ Odd   ☒ Even

Wait  
 Communication Time  MSEL

☒ Send Data   ☐ Vir Station   Retry times

☐ Exchange WORD

OK   Cancel

Inverter:

Function	Name	Content	Debug parameters
F1002	Frequency setting	1: operate panel 2: external analog voltage VIF1 (0~5V) 21: terminal stepper 22: communication	22
F1101	Running command selection	1. Operate panel   2. External terminals 3. communication	3
F4002	RS232C/RS485	1: RS232C (default setting) 2: RS485	Choose according to wiring method
F4005	Serial communication function	0: no function (default setting) 1: special protocol communication 2: Modbus communication	2
F4006	Inverter station no.	0~254: ModBus station no. (1~32: RS485 communication) 1~32 is valid in special protocol communication	1
F4007	Baud rate	1: 1200bps   2: 2400bps 3: 4800bps   4: 9600bps 5: 19200bps   6: 38400bps 7: 57600bps	4
F4008	Parity	0: no   1: odd (default setting) 2: even	2
F4009	Stop bit	1: 1 bit (default setting)	1

		2: 2 bit	
F4010	Stop code	0: CR + LF (default setting) 1: CR ※ BINARY and Modbus without stop code	0

### 2.44.3 Cable making

RS485:

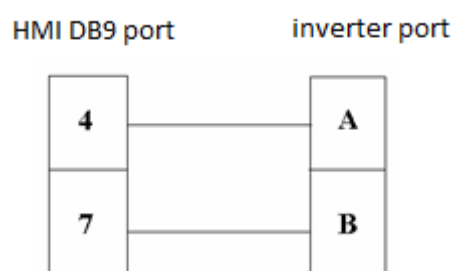


Diagram 1

### 2.44.4 Device address

Inverter Modbus address

Function code	Upper limit frequency	33775	Data input/display
	Setting frequency	34869	Function button-set data
Register	Forward running	1001	Function button (2)
	Reverse running	1001	Function button (8)
	Setting frequency	1000	Function button

## 2.45 XINJE XD/XE series

### 2.45.1 Device type

Series	CPU	Connection	Communication	Cable	Choose PLC type in Touchwin
XD/XE	XD3/XE3	Connect CPU directly	RS232	Diagram 1	XINJE XD/XE series
			RS485	Diagram 2	

### 2.45.2 Parameters

#### 1. HMI setting

Parameters	Recommended setting	Other settings for choice	Notes
PLC type	XINJE XD/XE series	XINJE XD/XE series /Modbus RTU (panel is Master) /Modbus ASCII (panel is Master)	
Serial port	RS232	RS232/RS485	
Data bit	8		
Stop bit	1		
Parity	Even parity		
Baud rate	19200	4800/9600/19200/38400/115200	
Station no.	1	0~255	

XINJE XD/XE series default parameters:

Communicate parameters

Baud Rate

☐ 4800

☐ 56000

☐ 9600

☐ 57600

☒ 19200

☐ 115200

☐ 38400

☐ 187500

Data bit

☐ 7位

☒ 8位

Stop bit

☒ 1位

☐ 2位

Checksum

☐ No parity

☐ Odd

☒ Even

Delay

Send delay time

0

ms

☒ Send data

☐ Virtual Station

☐ Word exchange

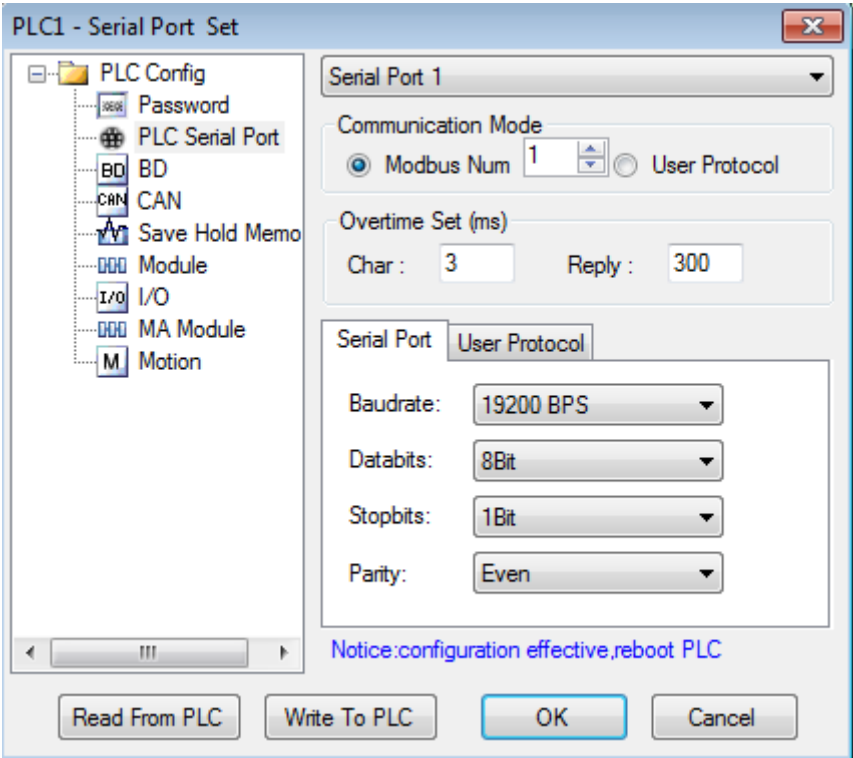
Retry Tim

3

OK

Cancel

2. PLC setting



2.45.3 Cable making

1. XD/XE series PLC CPU (RS232 port)

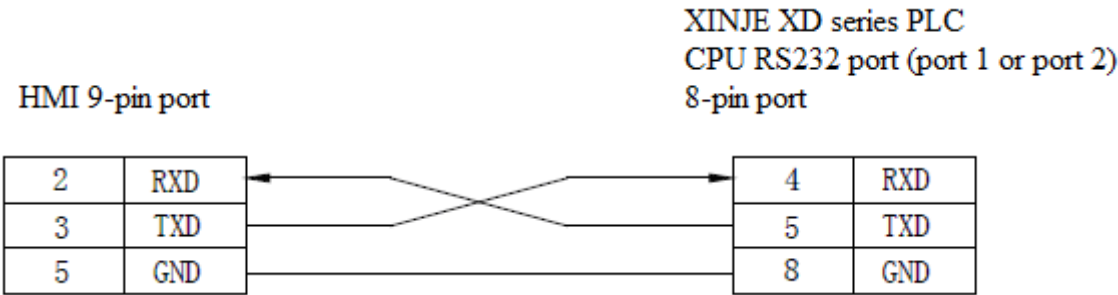


Diagram 1

2. XD/XE series PLC CPU (RS485 port)

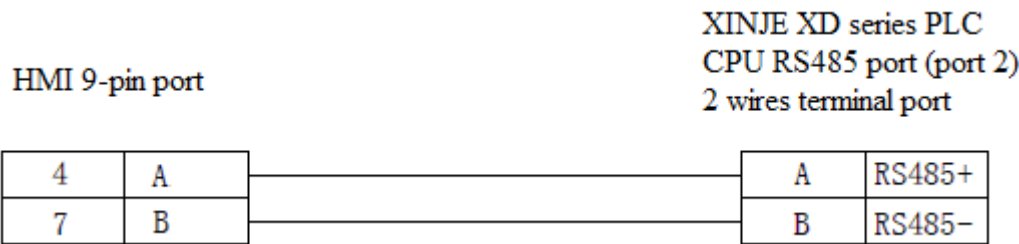


Diagram 2

## 2.45.4 Device address

PLC address type	Range	Object type	Explanation
X	0~77	Bit	Input relay
X1 xxxx	0~1777	Bit	Extended module input relay
X2 xxxx	0~477	Bit	Extended BD input relay
Y	0~77	Bit	Output relay
Y1 xxxx	0~1777	Bit	Extended module output relay
Y2 xxxx	0~477	Bit	Extended BD output relay
M	0~7999	Bit	Internal relay
S	0~1023	Bit	Flow
SM	0~2047	Bit	Internal relay, special using
T	0~575	Bit	Timer
C	0~575	Bit	Counter
ET	0~31	Bit	Timer, precise timer
SE	0~31	Bit	Sequence block wait instruction special coil
HM	0~959	Bit	Internal relay, power-off retentive
HS	0~127	Bit	Flow, power-off retentive
HT	0~95	Bit	Auxiliary relay, power-off retentive
HC	0~95	Bit	Counter, power-off retentive
HSC	0~31	Bit	Counter, high speed counter
D	0~7999	Word//DWord	Data register
ID	0~99	Word//DWord	Analog input
ID1xxxx	0~1599	Word//DWord	Extended module analog input
ID2xxxx	0~499	Word//DWord	Extended BD analog input
QD	0~99	Word//DWord	Analog output
QD1xxxx	0~1599	Word//DWord	Extended module analog output
QD2xxxx	0~499	Word//DWord	Extended BD analog output
SD	0~2047	Word//DWord	Data register, special using
TD	0~575	Word//DWord	Timer value
CD	0~575	Word//DWord	Counter value
ETD	0~31	Word//DWord	Timer value, precise timer
HD	0~999	Word//DWord	Data register
HSD	0~499	Word//DWord	Data register, power-off retentive
HTD	0~95	Word//DWord	Timer value, power-off retentive
HCD	0~95	Word//DWord	Counter value, power-off retentive
HSCD	0~31	Word//DWord	Counter value, high speed counter
FD	0~6143	Word//DWord	FlashROM register
SFD	0~1999	Word//DWord	FlashROM register, special using



FS	0~47	Word//DWord	Special security register
DM	0~7984	Word	For data register
DX	0~60	Word	For data register
DX1xxxx	0~1760	Word	For data register, extended module
DX2xxxx	0~460	Word	For data register, extended BD
DY	0~60	Word	For data register
DY1xxxx	0~1760	Word	For data register, extended module
DY2xxxx	0~460	Word	For data register, extended BD
DS	0~1008	Word	For data register
DSM	0~2032	Word	For data register, special function using
DT	0~560	Word	For data register
DC	0~560	Word	For data register
DET	0~16	Word	For data register, precise timer
DSE	0~16	Word	For data register, WAIT instruction
DHM	0~944	Word	For data register, power-off retentive
DHS	0~112	Word	For data register, power-off retentive
DHT	0~80	Word	For data register, power-off retentive
DHC	0~80	Word	For data register, power-off retentive
DHSC	0~16	Word	For data register, high speed counter

# 2.46 LG XGB series PLC

## 2.46.1 Device type

Series name	CPU	Connection	Communication	Cable	Choose PLC type in Touchwin
XGB	XBC-DR10E	Programming port	RS232	Diagram 1	LG XGT/XGK series (CPU Direct)
	XBC-DR20E	CNet port	RS232	Diagram 2	LG Master-K80/120 Series (CNet)
	XBC-DR30E		RS485	Diagram 3	

## 2.46.2 Parameters

### 1. Programming port

#### (1) HMI setting

Parameter	Recommended setting	Settings for choice	Notes
PLC type	LG XGT/XGK series (CPU Direct)		
Port	RS232		
Data bit	8		
Stop bit	1		
Parity	No parity		
Baud rate	115200		
Station no.	0		

LG XGT/XGK series (CPU Direct) default parameters:

Communicate parameters

Baud Rate

☐ 4800

☐ 56000

☐ 9600

☐ 57600

☐ 19200

☒ 115200

☐ 38400

☐ 187500

Data bit

☐ 7位

☒ 8位

Stop bit

☒ 1位

☐ 2位

Checksum

☒ No parity

☐ Odd

☐ Even

Delay

Send delay time

0

ms

☒ Send data

☐ Virtual Station

☐ Word exchange

Retry Tim 3

OK

Cancel

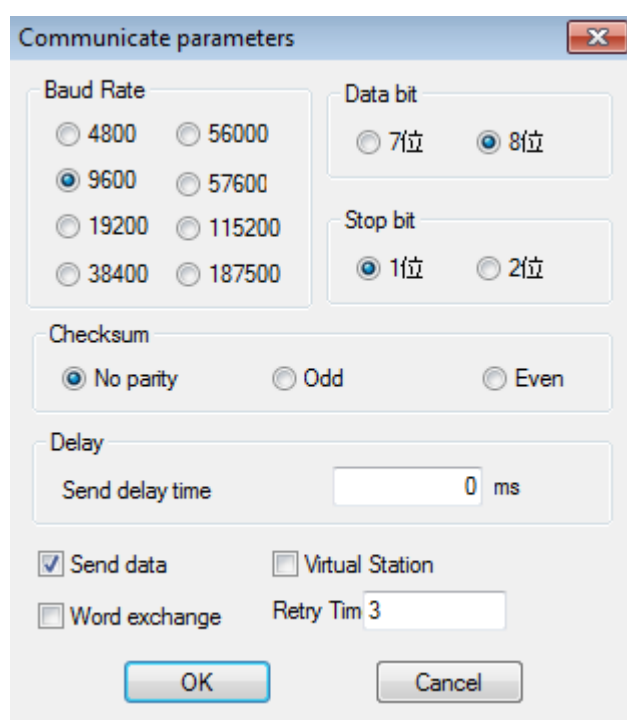
**Note: XGB series (CPU direct) only support baud rate 115200, cannot change the station no.**

## 2. CNet port

### (1) HMI setting

Parameter	Recommended setting	Settings for choice	Notes
PLC type	LG Master-K80/120 series (CNet)		
Port	RS232	RS232/RS485	
Data bit	8		
Stop bit	1		
Parity	No parity		
Baud rate	9600	9600/19200/38400/115200/187500	
Station no.	0	0~255	

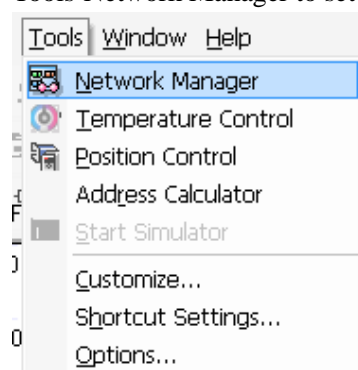
LG Master-K80/120 series (CNet) default parameters:

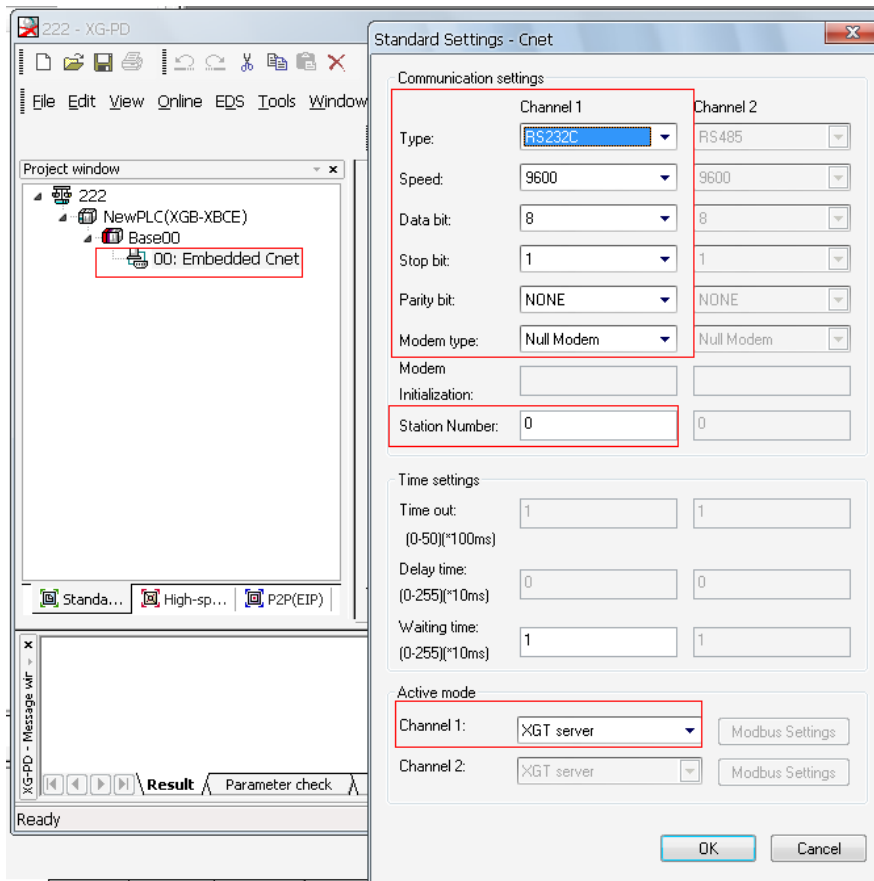


### (2) PLC setting

#### a. RS232 communication

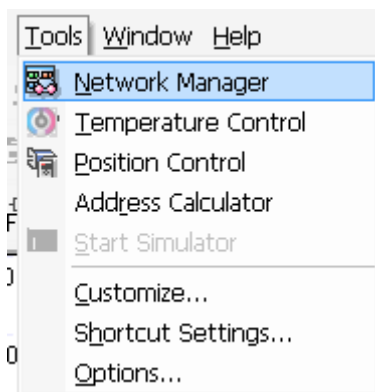
Tools-Network Manager to set parameters:

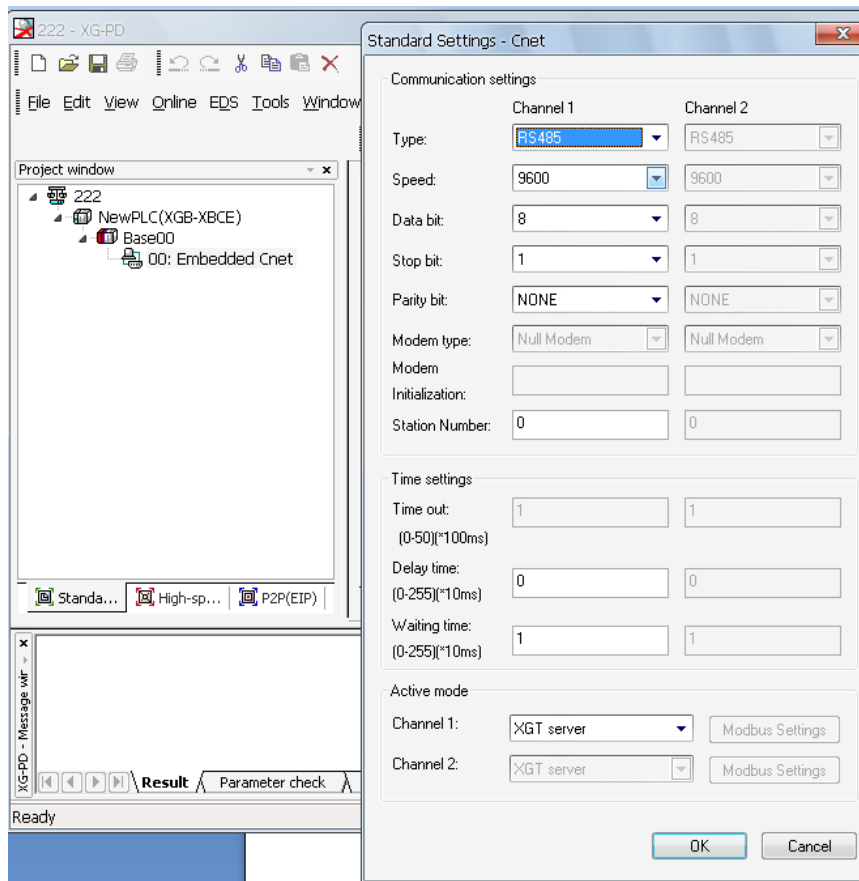




#### b. RS485 communication

Tools-Network Manager to set parameters:





## 2.46.3 Cable making

### 1. Programming port RS232

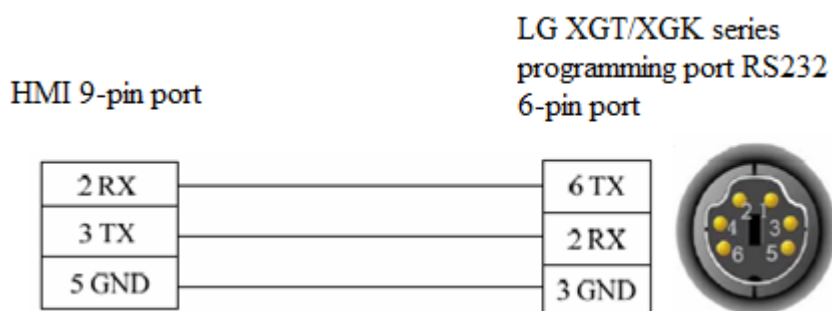


Diagram 1

### 2. CNet port RS232

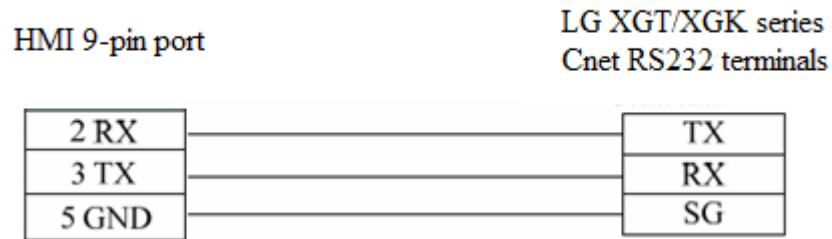


Diagram 2

### 3. CNet port RS485

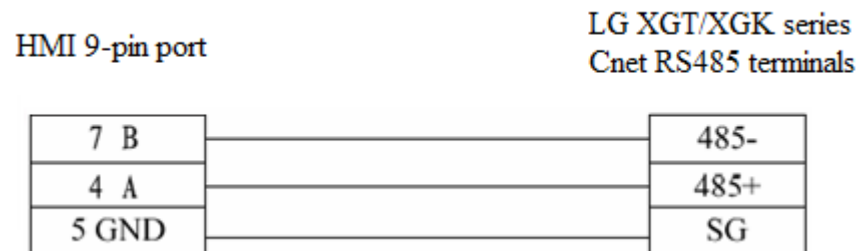


Diagram 3

## 2.46.4 Device address

PLC address	Range	Object type	Explanation
P	0.0~65535.F	Bit	External I/O
	65535	Word/DWord	Data register
M	0.0~65535.F	Bit	Internal auxiliary output
	65535	Word/DWord	Data register
L	0.0~65535.F	Bit	External output
	65535	Word/DWord	Data register
F	0.0~65535.F	Bit	Data register
	65535	Word/DWord	Data register
T	65535	Word/DWord	Data register
	65535	Bit	Timer
C	65535	Word/DWord	Data register
	65535	Bit	Counter
D	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
S	65535	Bit	Relay
K	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
Z	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay

N	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
R	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
ZR	65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
TS	65535	Word	Data register
CS	65535	DWord	Data register

## 2.47 Koyo Click series

### 2.47.1 Device type

Koyo Direct Logic series DL05, DL250... (connect to CPU unit directly)

Series	CPU	Connection module	Port type	Wiring diagram	The PLC type in TouchWin
Click		Connect to CPU RJ-11 port (RS232 port)	RS232	Diagram 1	Koyo Click series

### 2.47.2 Parameter setting

#### 1. HMI setting

Parameter	Recommended setting	Optional settings	Notes
PLC type	Koyo Click series		
Port type	RS232	RS232/RS422	
Data bit	8		
Stop bit	1		
Parity	Odd parity		
Baud rate	38400	9600/19200/38400	
Station no.	1	1~247	

Koyo Click series default communication parameters:

Communicate parameters

Baud Rate

☐ 4800
☐ 56000
☐ 9600
☐ 57600
☐ 19200
☐ 115200
☒ 38400
☐ 187500

Data bit

☐ 7位
☒ 8位

Stop bit

☒ 1位
☐ 2位

Checksum

☐ No parity
☒ Odd
☐ Even

Delay

Send delay time

0 ms

☒ Send data
☐ Virtual Station

☐ Word exchange

Retry Tim

3

OK

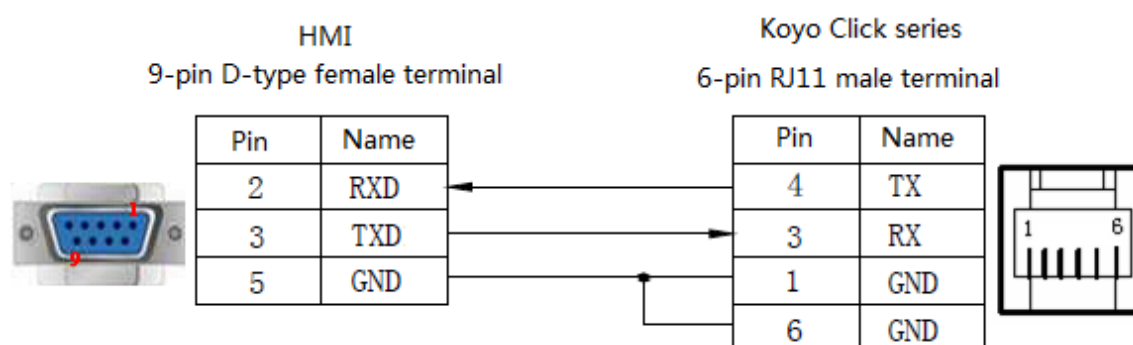
Cancel

## 2. PLC setting

Please refer to Koyo S series PLC settings.

### 2.47.3 Cable making

RS232 wiring:



### 2.47.4 Device address

Device type	Range	Object type	Explanation
X0	1~16	Bit	Input
X1	1~16	Bit	I/O module 1 input



X2	1~16	Bit	I/O module 2 input
Y0	1~16	Bit	Output
Y1	1~16	Bit	I/O module 1 output
Y2	1~16	Bit	I/O module 2 output
C	1~2000	Bit	Control bit
T	1~500	Bit	Timer
CT	1~250	Bit	Counter
SC	1~1000	Bit	System control bit
DS	1~4500	Word	Data temporary storage register, support double words
DD	1~1000	Word/DWord	Data temporary storage register, support double words
TD	1~500	Word	Timer present value
CTD	1~250	Word/DWord	Counter present value, support double words
SD	1~1000	Word	System data temporary storage register
DH	1~500	Word/DWord	Data temporary storage register
DF	1~500	DWord	Data temporary storage register (double words)
XD	0	Word/DWord	Input state temporary storage register
YD	0	Word/DWord	Input state temporary storage register
TXT	1~1000	Word/DWord	texts temporary storage register

## 2.48 Mitsubishi Melsec protocol

### 2.48.1 Device type

Series	Communication type	Cable diagram	PLC model in Touchwin software
Mitsubishi L series Mitsubishi Q series	RJ45	Diagram 1 or 2	Mitsubishi Melsec

## 2.48.2 Parameter settings

Take Mitsubishi L series PLC as an example to explain the Melsec protocol device parameter settings.

### 1. PLC software settings

Select project area-PLC parameter-Ethernet terminal setting, set the PLC IP address. The communication data code please set to binary code communication. Select “permit write (FTP & MC protocol) when running.

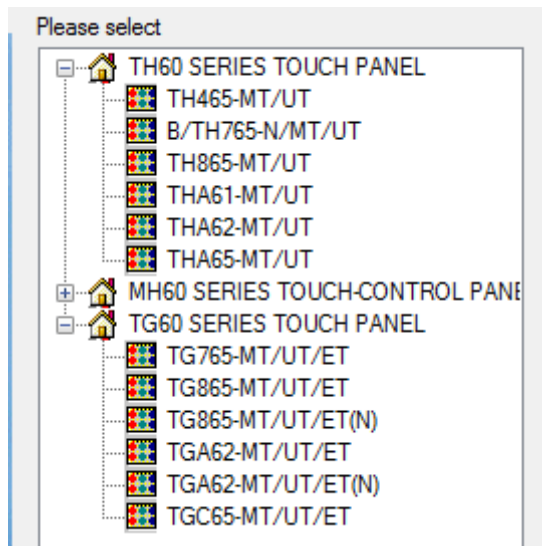


click “open the setting”, select “TCP” protocol and “MC” open mode, and set the station port no. (range is 0401H~1387H, 1392H~FFFEH).

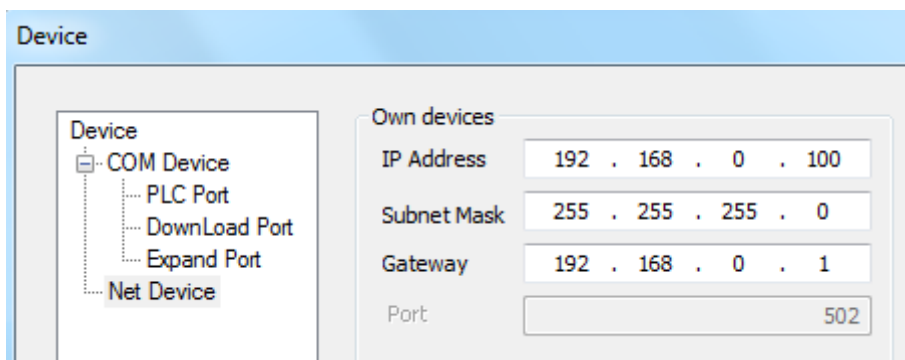


### 2. HMI setting

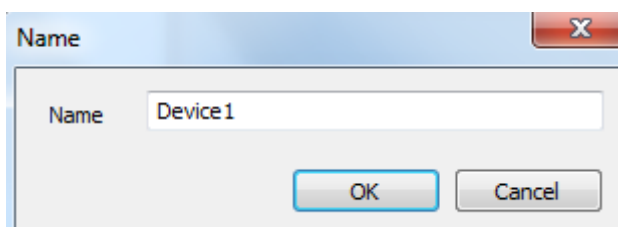
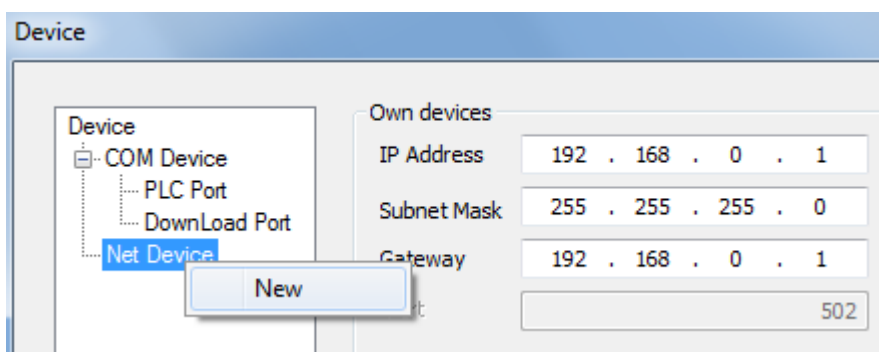
Please select the HMI type, click next.



Select Net device. The IP address in own devices is HMI IP address.



Right click Net device, click New. Then input the project name.



Select Mitsubishi Melsec series in the device list. The IP address is Mitsubishi PLC IP address, the port

1025 is the station port no. setting in the Mitsubishi PLC.

Communication parameters: please use the default parameters. Communication status register: if select this item, the status will occupy 4 registers. The register address can be set by user. If set the address to PSW256, the register meanings are shown as the following.

PSW256: communication succeeded times

PSW257: communication failed times

PSW258: timeout times

PSW259: communication error times.

Then click next to finish the project setup.

In the editing screen, when user defines the button object, please select device 1.

Button

Object Operate Button Color Position

Station

Device Device1

VirStaNO 0 Station 0

Object

ObjType 0 0

☐ indirect ☐ indirect

### 2.48.3 Cable making

RJ45 straight through cable (connect HUB) or RJ45 crossover cable:

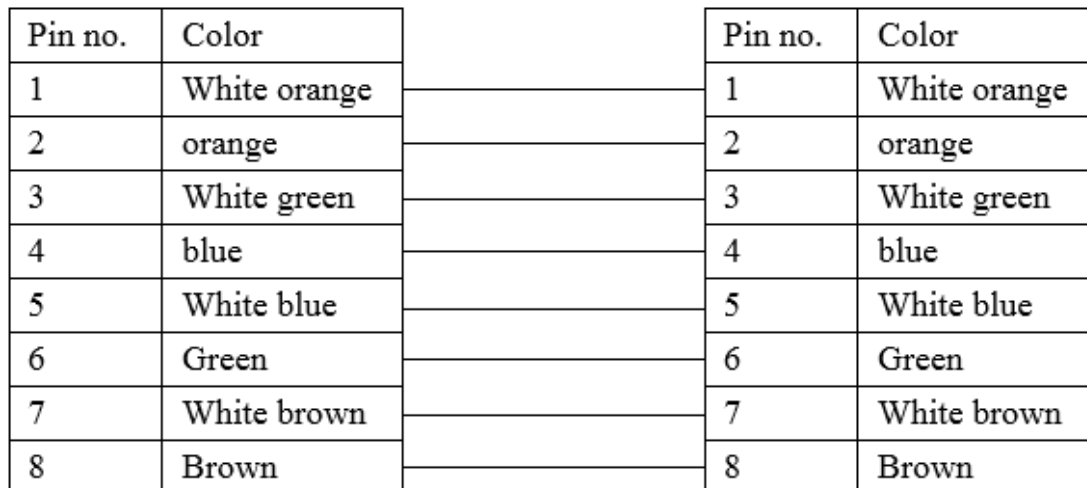


Diagram 1

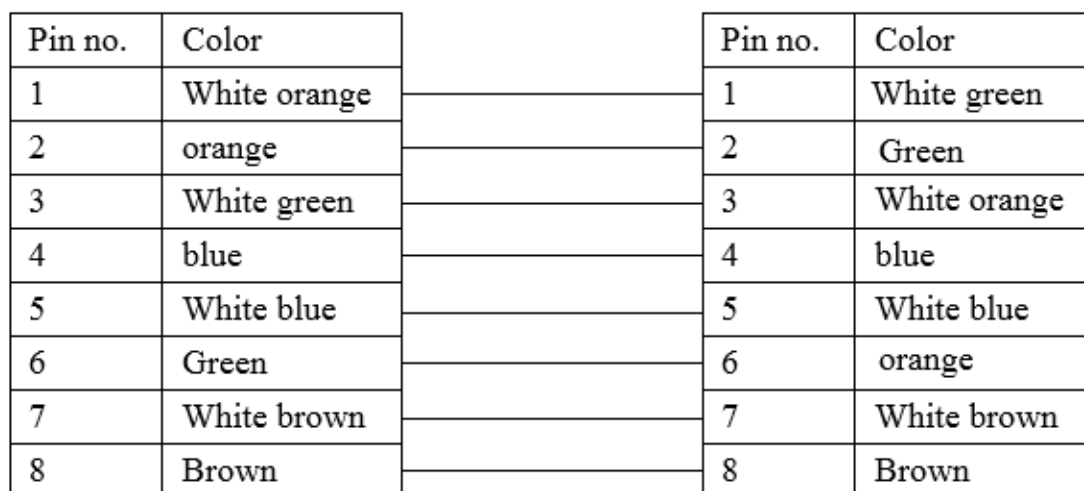


Diagram 2

## 2.48.4 Device address

PLC address	Range	Object type	Explanation
X	0~1fff	Bit	Input
Y	0~1fff	Bit	Output
M	0~8191	Bit	Internal auxiliary relay
L	0~8191	Bit	Lock relay
F	0~2047	Bit	Alarm relay
V	0~2047	Bit	Variable address relay
B	0~1fff	Bit	Link relay
TS	0~2047	Bit	Timer relay
SS	0~2047	Bit	Holding delay timer relay
CS	0~1023	Bit	Counter relay
SB	0~7ff	Bit	Special link relay
S	0~2047	Bit	Stepper relay
SM	0~2047	Bit	Special relay
D	0~65535	Word/DWord	Data register
W	0~1fff	Word/DWord	Link register
TC	0~2047	Word/DWord	Timer coil
TN	0~2047	Word/DWord	Timer present value
SC	0~2047	Word/DWord	Holding delay timer coil
SN	0~2047	Word/DWord	Holding delay timer present value
CC	0~1023	Word/DWord	Counter coil
CN	0~1023	Word/DWord	Counter coil
SW	0~7ff	Word/DWord	Special link register
SD	0~2047	Word/DWord	Special register
Z	0~19	Word/DWord	Variable address register

## 2.49 Free type (panel is slave)

### 2.49.1 Device type

Series	Port type	Cable making	The PLC model in the Touchwin software
The device with serial port and support free type protocol	RS485	diagram 1	Free type (panel is slave)
	RS232	diagram 2	
	RS422	diagram 3	

2.49.2 Parameter setting

1. HMI setting

Parameter	Recommended setting	Optional setting	Notes
PLC model	Free type (panel is slave)		
Port type	RS485	RS485/RS232/RS422	
Data bit	8	7/8	
Stop bit	1	1/2	
Parity	Even parity	Even /odd /no	
Baud rate	9600	4800/38400/9600/115200/19200/187500	
Station no.	1	0~255	

Free type (panel is slave) default parameters:

Communicate parameters

Baud Rate

☐ 4800

☐ 56000

☒ 9600

☐ 57600

☐ 19200

☐ 115200

☐ 38400

☐ 187500

Data bit

☐ 7位

☒ 8位

Stop bit

☒ 1位

☐ 2位

Checksum

☐ No parity

☐ Odd

☒ Even

Delay

Send delay time

0

ms

☒ Send data

☐ Virtual Station

☐ Word exchange

Retry Tim

3

OK

Cancel

2. Free type protocol

The HMI free type protocol is a simple protocol for connecting HMI with controller. The controller is the master station, the HMI is slave station. It only needs to write simple communication program in the controller but no need to make communication interruption service program.

The controller sends a request to the HMI, the HMI will reply after receiving the request. The max data exchanging between controller and HMI is 256 words, the HMI address range is PSW256~PSW511. Each bit of the word can be used to coil. For example, coil PSWx.i (x=256~511, i=00~15).

(1) Request format:

Station no.	Command	Address	Length	Data	Parity
-------------	---------	---------	--------	------	--------

Station no.: HMI station no. (0~255, 0 is broadcast mode, the HMI no need to reply)

Command: “R” is HMI read, “W” is HMI write

Address: index no., the index no. corresponding to HMI PSW256~PSW511 is 0~256

Length: PSW numbers (1~256) needs to read and write

Data: PSW value, there is no data for command “R”

Parity: add all the bytes from station no. to data (not include parity), get the remainder of 0x100 (if the parity is 0x5A, ignore it, not check)

(2) Data response format:

Station no.	State	Address	Length	Data	Parity
-------------	-------	---------	--------	------	--------

State: communication state

0--- normal

1--- address error

2--- length error

3--- range error (address+length > 256)

4--- command error

When the command is “W” or abnormal, there is no address, length and data

Data format:

PSWi (high)	PSWi (low)	PSWi+1 (high)	PSWi+1 (low)	.....	PSWi+n-1 (high)	PSWi+n-1 (low)
----------------	---------------	------------------	-----------------	-------	--------------------	-------------------

Address is I, length is n.

(3) Protocol

The controller sends a request to the HMI, the HMI will check the parity after receiving the request. If the parity is correct, and the station no. is equal to the HMI, the HMI will reply the request. Otherwise, the HMI will not reply.

The controller will check the overtime of HMI response. If the time is over 50ms, the controller will resend the request.

The HMI will check the overtime of receiving data. If the time is over 25ms, the HMI will initialize the communication and wait for the new request.

Read (read HMI data)

Controller

Station no.	“R”	Address	Length	Data	Parity
-------------	-----	---------	--------	------	--------

HMI

Station no.	State	Address	Length	Data	Parity
-------------	-------	---------	--------	------	--------

Data: PSW value

Write(write data in HMI)

Controller

Station no.	“W”	Address	Length	Data	Parity
-------------	-----	---------	--------	------	--------

HMI

Station no.	State	Parity
-------------	-------	--------



State: 0--- OK

(4) Application

- a. The controller read HMI data PSW256=0, PSW257=12

Controller send: 01H 52H 00H 02H 55H

HMI reply: 01H 00H 00H 02H 00H 00H 00H 0CH 0FH

- b. Controller write 256 in HMI PSW256

Controller send: 01H 57H 00H 01H 01H 00H 5AH

HMI reply: 01H 00H 01H

## 2.49.3 Cable making

### 1. RS485 cable

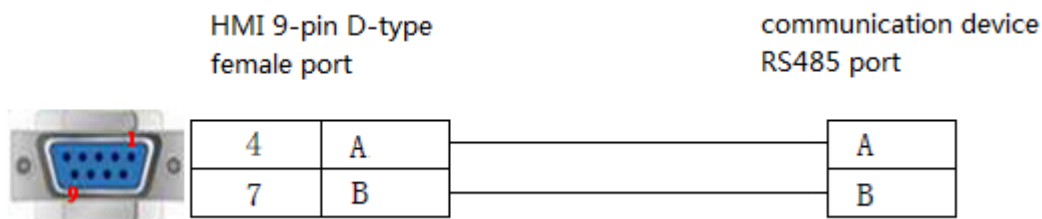


Diagram 1

### 2. RS232 cable

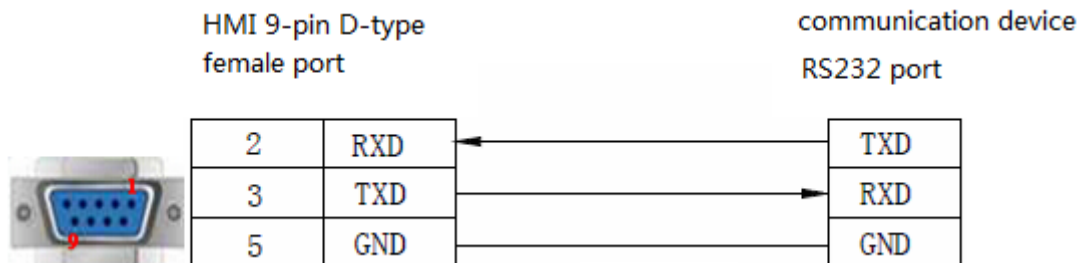


Diagram 2

### 3. RS422 cable

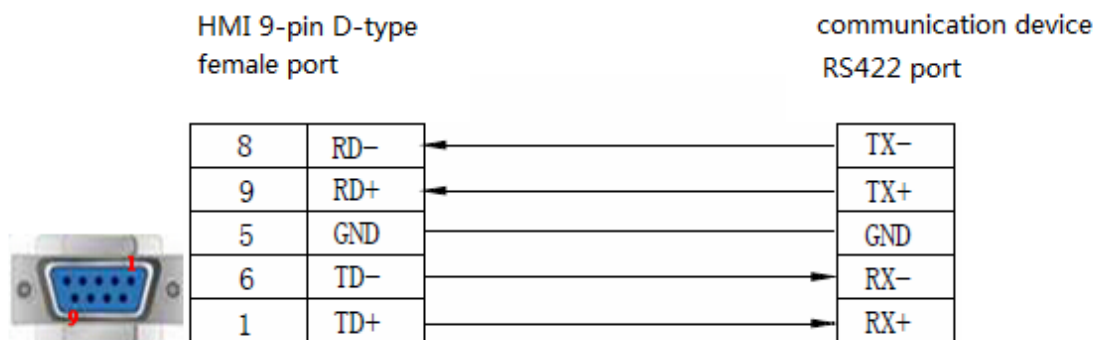


Diagram 3

## 2.49.4 Device address

Address type	Range	Object type	Property	Notes
PSW	256.00~511.15	Bit	R/W	Internal coil
PSW	256~511	Word/Dword	R/W	Data register

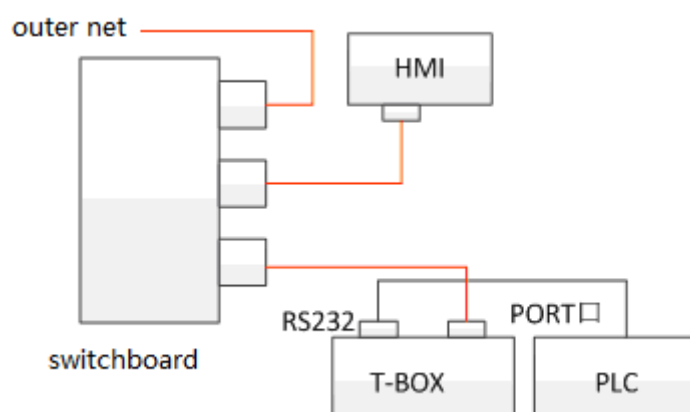
## 2.50 Modbus-TCP device

### 2.50.1 Device type

Series name	Port type	Cable making	PLC model in Touchwin software
Ethernet device supporting Modbus TCP protocol	RJ45	Diagram 1, diagram 2	Modbus_TCP

### 2.50.2 Parameter setting

Take Xinje T-BOX as an example to explain the Modbus TCP parameter setting.



#### 1. Hardware configuration

Wiring as the above diagram. Turn off of the TBOX DIP switch S3, make sure T-BOX is connected to the Ethernet. Power on the device. Make sure the PLC is connected to the Ethernet.

Version requirements:

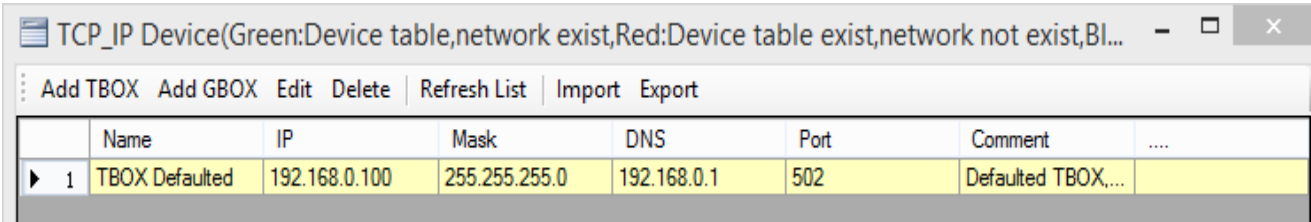
T-BOX hardware version 2.10 please use PLC software XCPpro version 3.3

T-BOX hardware version 2.0 please use PLC software XCPpro version 3.0f.

Please turn off DIP switch S3 to make the Ethernet indentifying the T-BOX for the firt time using. Please use

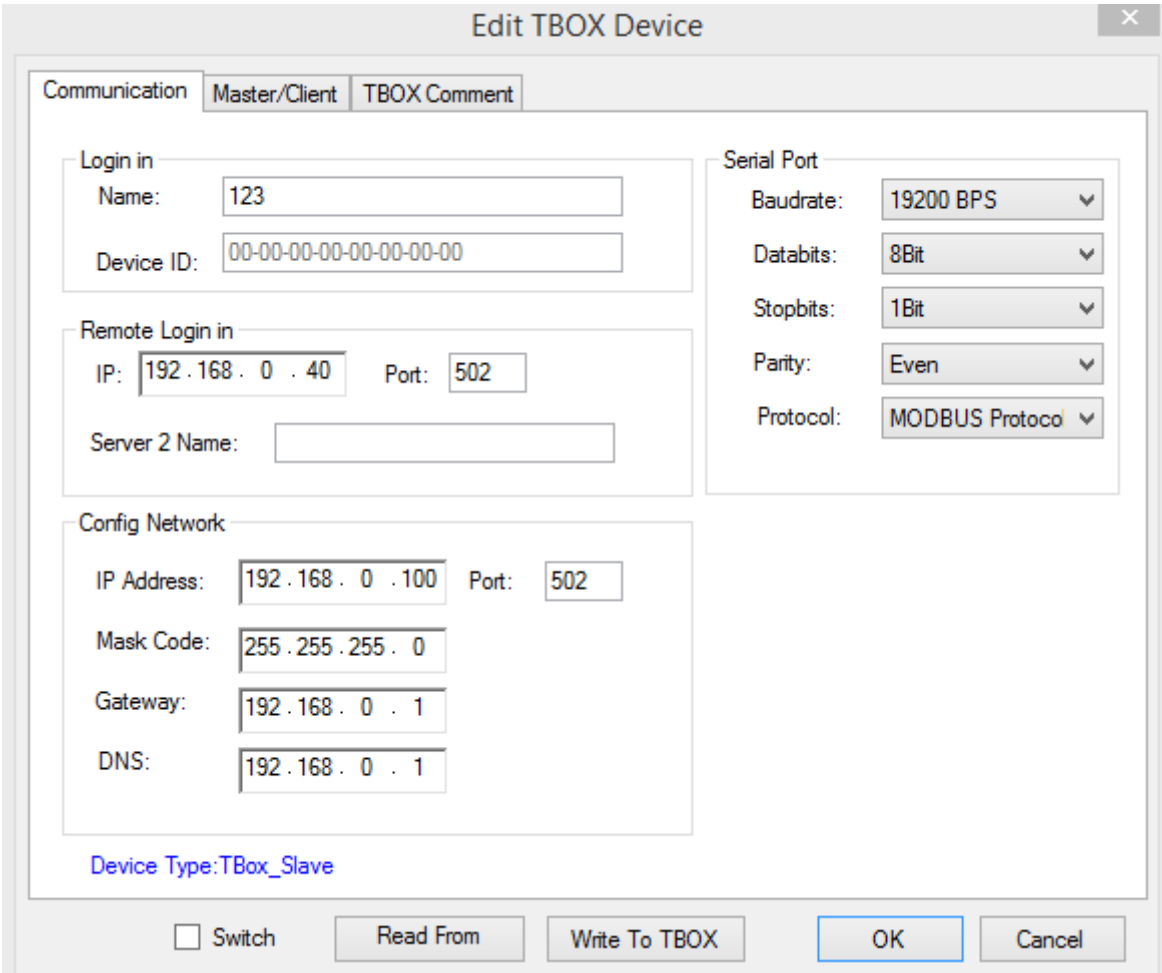
fixed IP address (192.168.0.111) for the T-BOX and connect it in the Ethernet to configure the parameters. The IP of PC must be in the same gateway of T-BOX (192.168.0.\*\*\*). As each T-BOX default IP is the same, only one T-BOX can be configured in the network at one time. Otherwise, the IP will be conflict.

- 2. T-BOX configuration
  - (1) T-BOX Link LED always ON means it has connected to the Ethernet (no need connect to PC via RS232) when it connected to the Ethernet cable. Please use PLC software XCPpro to configure the T-BOX. Please turn off DIP switch S3 to make the Ethernet indentifying the T-BOX for the firt time using. T-BOX is slave station, please turn on DIP switch S1.
  - (2) Open XCPpro software, click option/Ethernet module settings. Click “refresh list”, it will show the T-BOX in the network. Double click the T-BOX to configure.



	Name	IP	Mask	DNS	Port	Comment	....
▶ 1	TBOX Defaulted	192.168.0.100	255.255.255.0	192.168.0.1	502	Defaulted TBOX,...	

The following is T-BOX setting window.



CommunicationMaster/ClientTBOX Comment

Login in

Name:123

Device ID:00-00-00-00-00-00-00

Remote Login in

IP:192.168.0.40Port:502

Server 2 Name:

Config Network

IP Address:192.168.0.100Port:502

Mask Code:255.255.255.0

Gateway:192.168.0.1

DNS:192.168.0.1

Serial Port

Baudrate:19200 BPS

Databits:8Bit

Stopbits:1Bit

Parity:Even

Protocol:MODBUS Protocol

Device Type:TBox\_Slave

☐ Switch

Read From

Write To TBOX

OK

Cancel

Log in name: set by user  
Device ID: set by factory, cannot be changed  
Remote log in: the purpose is to connect the TBOX with the Ethernet. If using Xinje server, the parameters

no need to change. If user can build server, please set the IP, port and server name of the server.

Config network: the DIP switch S3 is OFF, please set the T-BOX IP, then turn ON S3. The network will identify the fixed IP of T-BOX.

Serial port: the parameters can be changed, but the parameters must be same to the device connecting to the T-BOX.

Note: when it uses LAN, the remote log in address is:

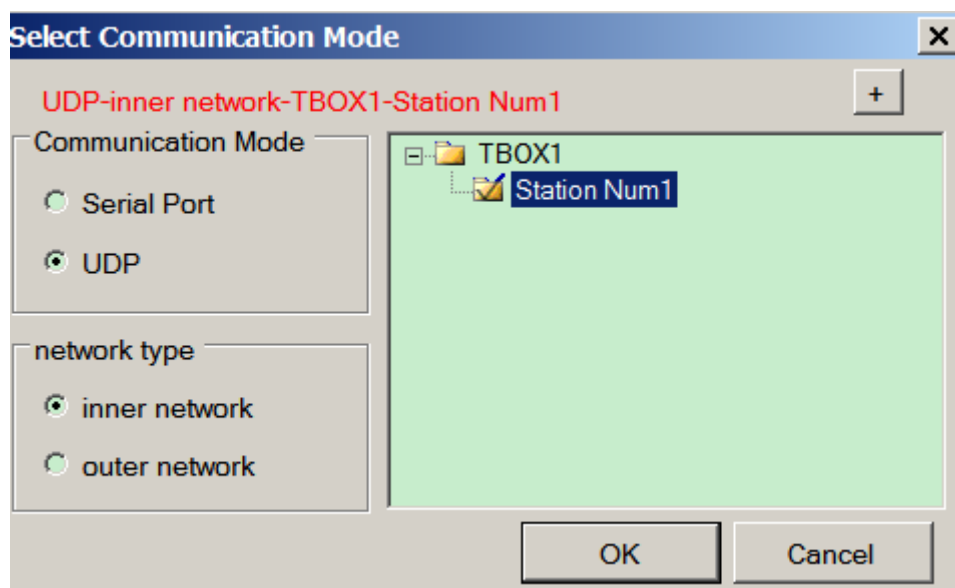


Remote Login in

IP: 192.168.0.200 Port: 502

Server 2 Name: Thinget Slave Server

- (3) When the S2 switch is OFF, shut down the log in server, click option/comm mode setting, set as the following to monitor the PLC.



When using Xinje company server, the remote log in address is:

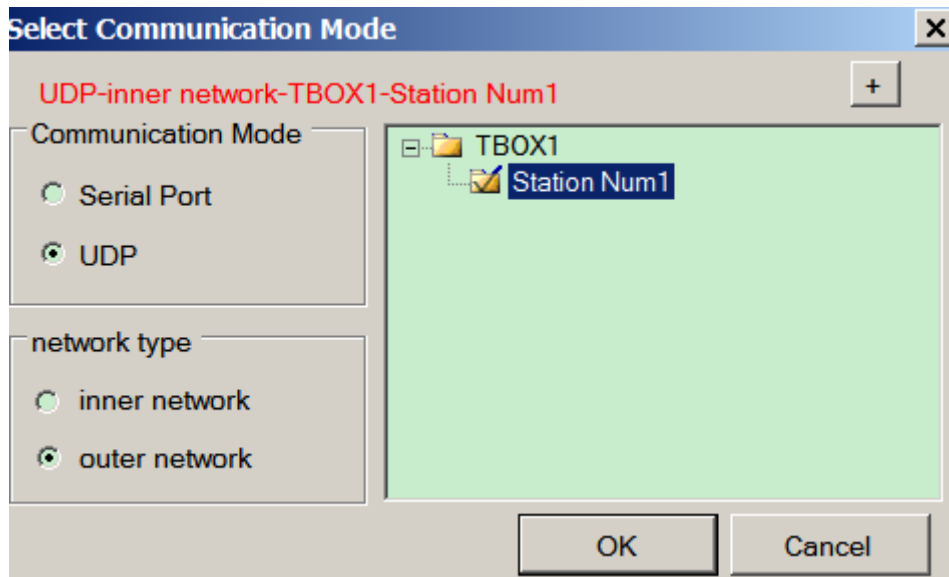


Remote Login in

IP: 61.160.67.86 Port: 502

Server 2 Name: Thinget Slave Server

Turn on S2 switch, startup the log in server, click option/comm mode setting, set as the following, it can monitor the PLC after logging in server successfully.



- (4) For the first time using, in order to make the network indentify the T-BOX, the S3 switch is OFF. It can change the IP address after connecting successfully.

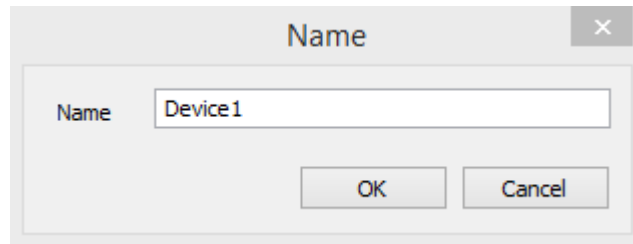
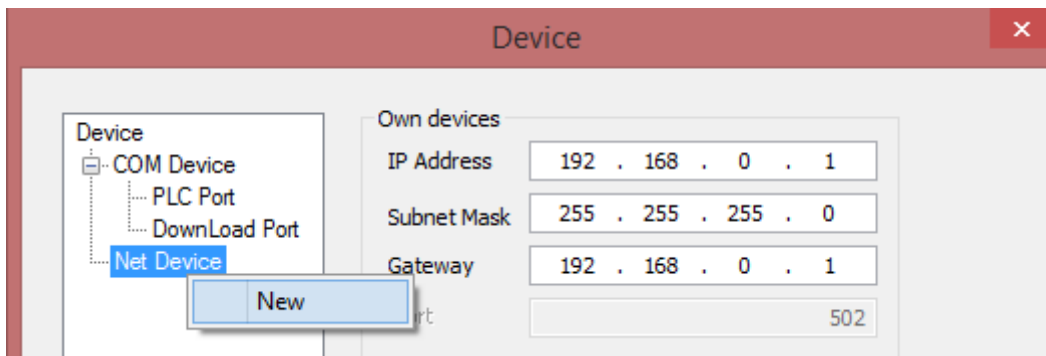
Config Network

IP Address:	<input type="text" value="192 . 168 . 0 . 40"/>	Port:	<input type="text" value="502"/>
Mask Code:	<input type="text" value="255 . 255 . 255 . 0"/>		
Gateway:	<input type="text" value="192 . 168 . 0 . 1"/>		
DNS:	<input type="text" value="192 . 168 . 0 . 1"/>		

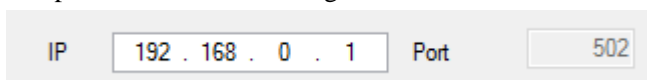
### 3. HMI software setting

- (1) Select the HMI model TN(-ET), TG(-ET), TE(-ET), click next, select “Net device” in the list. Please set the HMI IP address in the own devices. The IP cannot be conflict with other device.

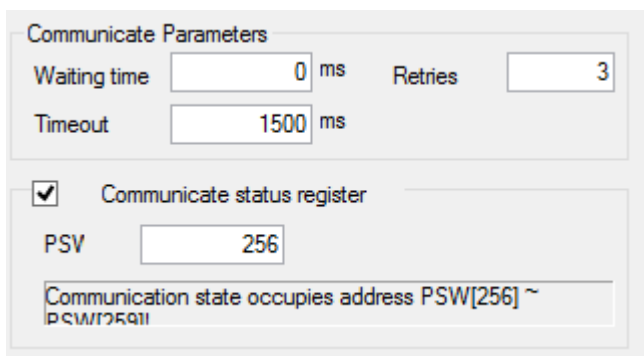
- (2) Right click the “Net device”, select “New”. The new project name is device.



- (3) Please select Modbus TCP device for communicating with T-BOX. This IP is T-BOX IP address, the port 502 cannot be changed.



- (4) The communication parameters please keep defaulted. If selecting communicate status register, the PSW256~PSW259 represents communicate successful times, communication failure times, communication overtime times, communication error times. User can change the PSW address.



- (5) Click next to finish the setting. Then enter the editing screen, put a data input button on the screen, select "device", the object type includes 4x(read and write, word object), 3x(read only, word object), 0x(bit object, read and write), 1x(read only, bit object).

**Data Input**

Object    Display    Convert    Inputs    Font    Color    Position

---

Operate Object

Station

Device: Device1

VirStaNO: 0    Station: 1

---

Object

ObjType: 4x    0

☐ indirect

---

Value

Data Type: Word

(6) Download the program in the HMI.

Note: T-BOX can connect multi-PLC through RS485, the station no. can be set in the XCPpro software. Please set the “send delay” time to improve the communication speed.

**Edit TBOX Device**

Communication    Master/Client    TBOX Comment

---

Master Mode

Protocol: TCP

Station-IP Table

Station Num	IP
1	
2	

Shield Table

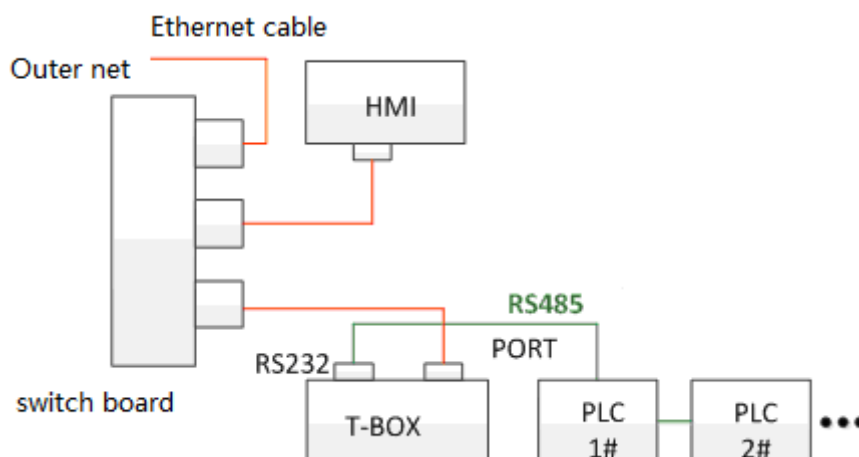
Station
1
2

Client Mode

Send Delay(ms): 3

Station Table

Station Num
1
2



### 2.50.3 Cable making

RJ45 straight through cable (connect HUB) or RJ45 crossover cable:

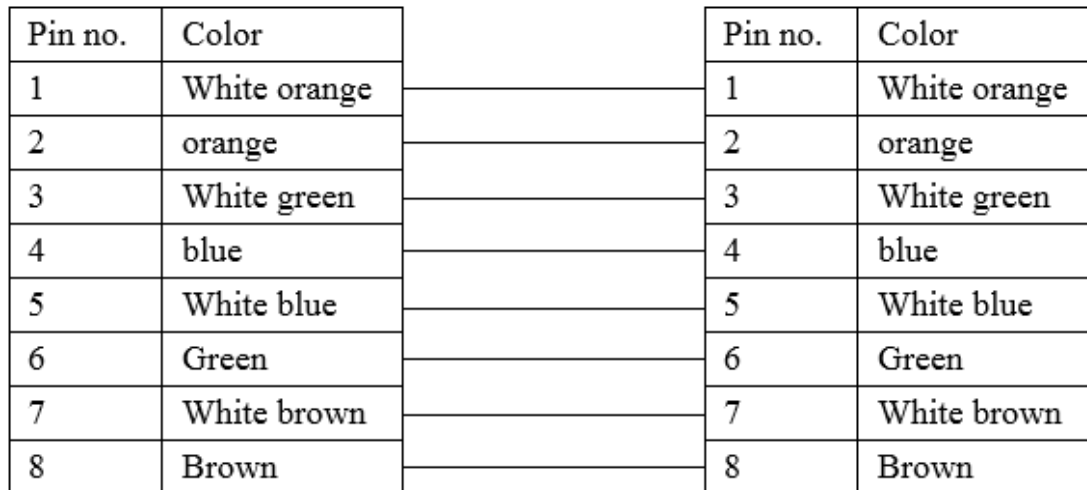


Diagram 1

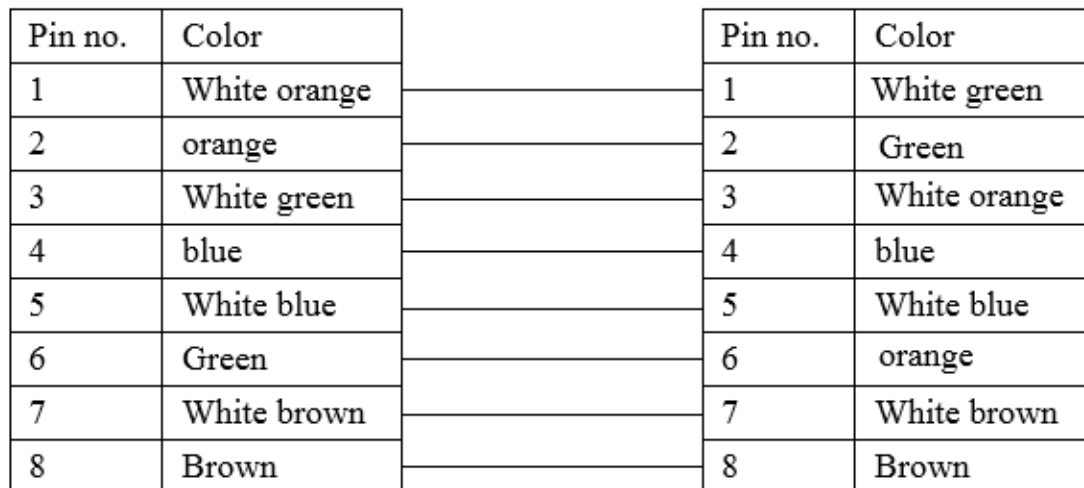


Diagram 2

## 2.50.4 Device address

Address	Range	Object type	property	Notes
0x	0~65535	Bit	R/W	I/O internal coil
1x	0~65535	Bit	R	I/O internal coil
4x	0.00~65535.15	Bit	R/W	I/O internal coil
4x	0~65535	Word/Dword	R/W	Data register
3x	0~65535	Word/Dword	R	Data register



## 2.51 Mitsubishi FX5U series

### 2.51.1 Device type

Series name	CPU unit	Connection module	Communication type	Cable	PLC type in touchwin software
FX5U series		CPU unit connect directly	RS485	Fig 1	Mitsubishi FX5U series

### 2.51.2 Parameter setting

#### HMI setting

Parameter	Recommended setting	Optional setting	Notes
PLC type	Mitsubishi FX5U series	Mitsubishi FX5U series/ Mitsubishi Q series	When choose Q series, the I/O is decimal format
Port type	RS485		
Data bit	8		
Stop bit	1		
Parity	Odd		
Baud rate	19200		
Station no.	0		Please use the recommended settings

#### Mitsubishi FX5U series communication parameter setting

Device

COM Device

PLC Port

DownLoad Port

Device mode

☒ Single mode
☐ Host Net
☐ Slave Net

PLC Port

Thinget XNet Series

Thinget FC Series

Mitsubishi FX Series

Mitsubishi FX3U/G Series

Mitsubishi Q Series

Mitsubishi FX BD(232/485)

Siemens S7-200 Series

19200, 8, Odd, 1

0

< Back

Next >

Finish

Cancel

Help

Communicate parameters

Baud Rate

☐ 4800
☐ 56000
☐ 9600
☐ 57600
☒ 19200
☐ 115200
☐ 38400
☐ 187500

Data bit

☐ 7位
☒ 8位

Stop bit

☒ 1位
☐ 2位

Checksum

☐ No parity
☒ Odd
☐ Even

Delay

Send delay time

0 ms

☒ Send data
☐ Virtual Station

☐ Word exchange

Retry Tim3

OK

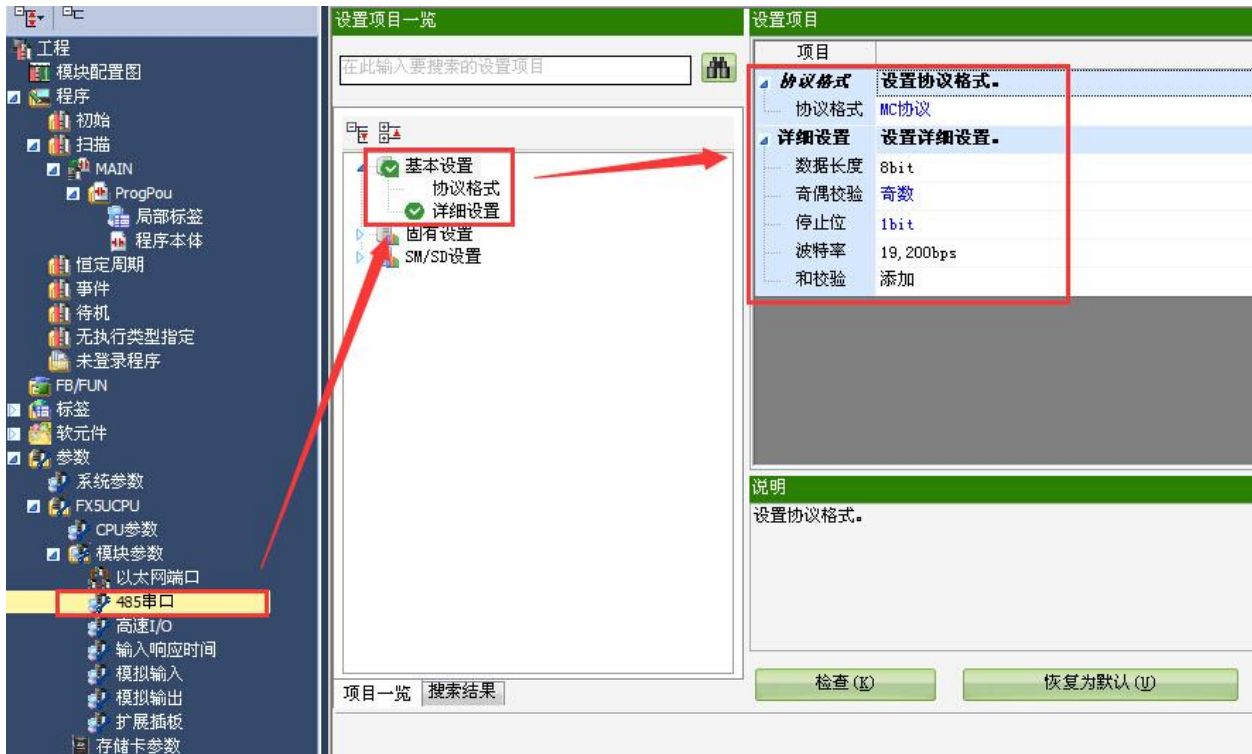
Cancel

**Note: the HMI station no. is 0, it cannot change.**

## PLC setting

### (1) MC protocol communication

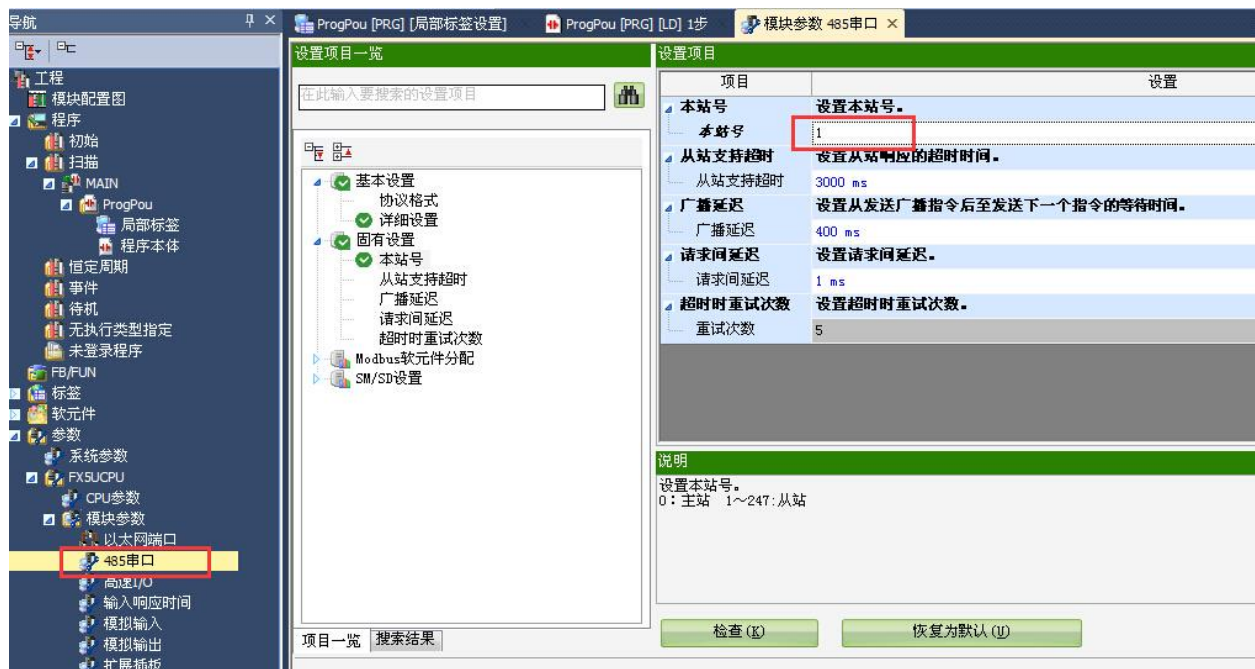
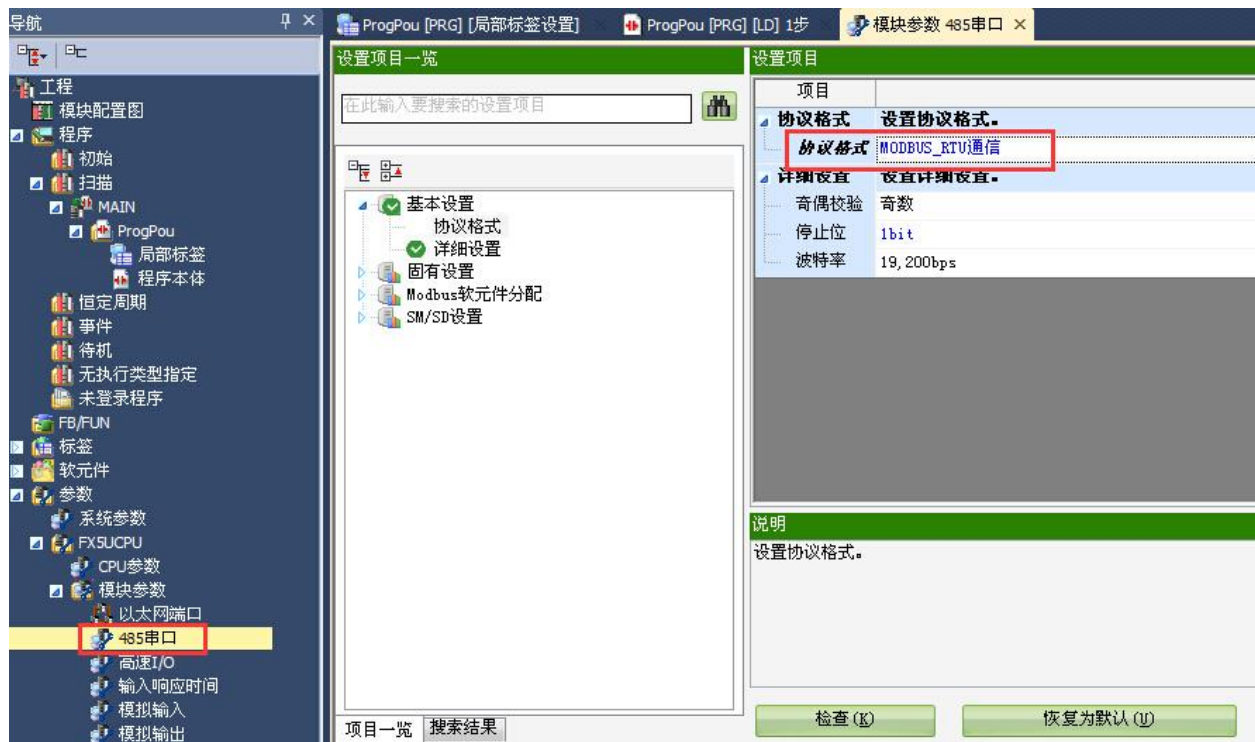
Please set the protocol format to MC protocol in RS485 serial port. The transfer mode is set to mode 5.



## (2) Modbus RTU communication

The HMI please choose “Modbus RTU” protocol.

Please set the protocol format to Modbus RTU in RS485 serial port, and set the Modbus station no. to non-zero number, the HMI parameters must be same to PLC settings.



Notes: PLC has fixed Modbus address in Modbus communication, it will read and write as the address.



### 2.51.3 Cable making

Please use the RS485 port on FX5U CPU unit.

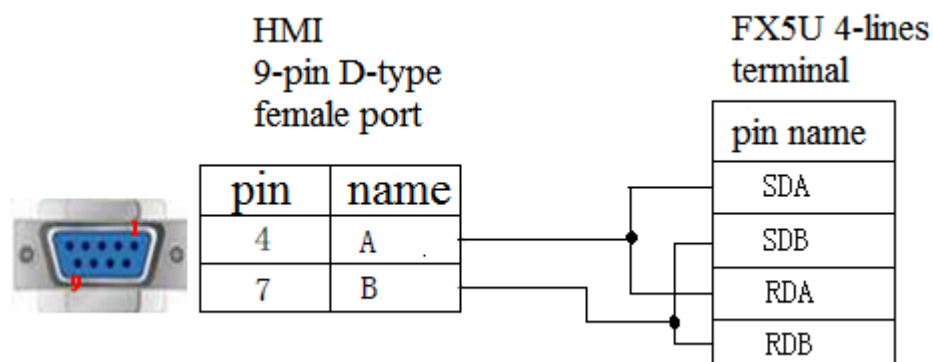


Fig1

## 2.51.4 Device address

PLC address type	Range	Object type	Explanation
X	0~8191	Bit	Input
Y	0~8191	Bit	Output
M	0~8191	Bit	Internal auxiliary relay
B	0~8191	Bit	Linkage relay
SB	0~2047	Bit	Internal special linkage relay
DX	0~8191	Bit	Direct input
DY	0~8191	Bit	Direct output
S	0~8191	Bit	Step relay
SM	0~2047	Bit	Internal special step relay
L	0~8191	Bit	Locking relay
F	0~2047	Bit	Alarm
V	0~2047	Bit	Variable address relay
TS	0~2047	Bit	Timer contactor
TC	0~2047	Bit	Timer coil
SS	0~2047	Bit	Accumulated timer contactor
SC	0~2047	Bit	Accumulated timer coil
CS	0~1023	Bit	Counter contactor
CC	0~1023	Bit	Counter coil
D	0~12287	Word/DWord	Data register
W	0~8191	Word/DWord	Linkage register
SW	0~2047	Word/DWord	Internal special linkage register
ZR	0~1042431	Word/DWord	File register
SD	0~2047	Word/DWord	Internal special register
TN	0~2047	Word/DWord	Timer
SN	0~2047	Word/DWord	Accumulated timer
CN	0~1023	Word/DWord	Counter
Z	0~15	Word/DWord	Variable register
R	0~32767	Word/DWord	File register

## 2.52 Siemens S7-200 smart series

### 2.52.1 Device type

Series name	Communication type	Cable making	PLC type in touchwin software
S7-200 smart	RJ45	fig 1 or fig 2	Siemens S7-200 smart series

### 2.52.2 Parameter setting

#### PLC setting

系统块

	模块	版本	输入	输出	订货号
CPU	CPU SR60 (AC/DC/Relay)	V02.01.00_00.00...	I0.0	Q0.0	6ES7 288-1SR60-0AA0
SB					
EM 0					
EM 1					
EM 2					
EM 3					
EM 4					
EM 5					

☒ 通信

☒ 数字量输入

- ☒ I0.0 - I0.7
- ☒ I1.0 - I1.7
- ☒ I2.0 - I2.7
- ☒ I3.0 - I3.7
- ☒ I4.0 - I4.7

☒ 数字量输出

☒ 保持范围

☒ 安全

☒ 启动

#### 以太网端口

☒ IP 地址数据固定为下面的值，不能通过其它方式更改

IP 地址: 192 , 168 , 0 , 1

子网掩码: 255 , 255 , 255 , 0

默认网关: 192 , 168 , 0 , 1

站名称:

#### 背景时间

选择通信背景时间 (5 - 50%)

10

#### RS485 端口

通过 RS485 端口设置可调整 HMI 用来通信的通信参数。

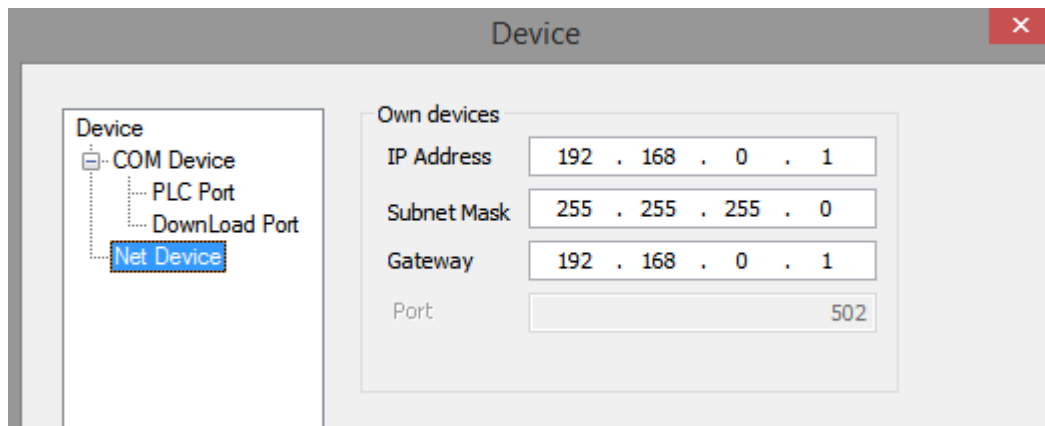
地址: 2

波特率: 9.6 kbps

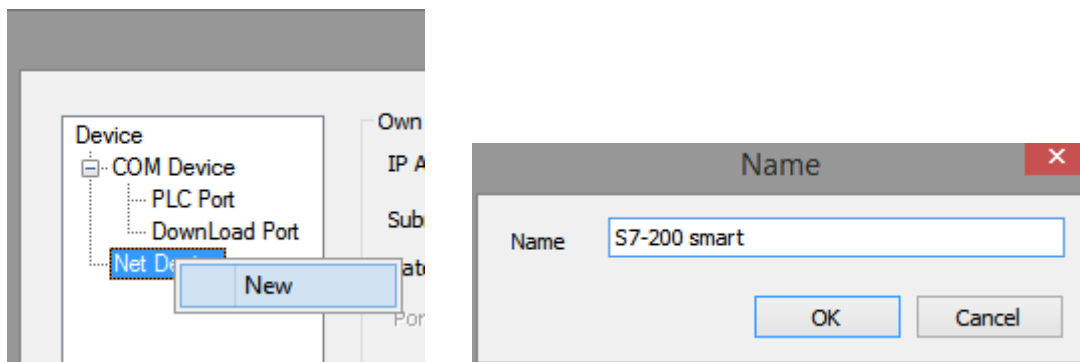
确定 取消

### Touchwin software setting

1. Choose the HMI type TN(-ET), TG(-ET) or TE(-ET), click next, choose Net device in the list, please input the HMI IP address in the own devices.

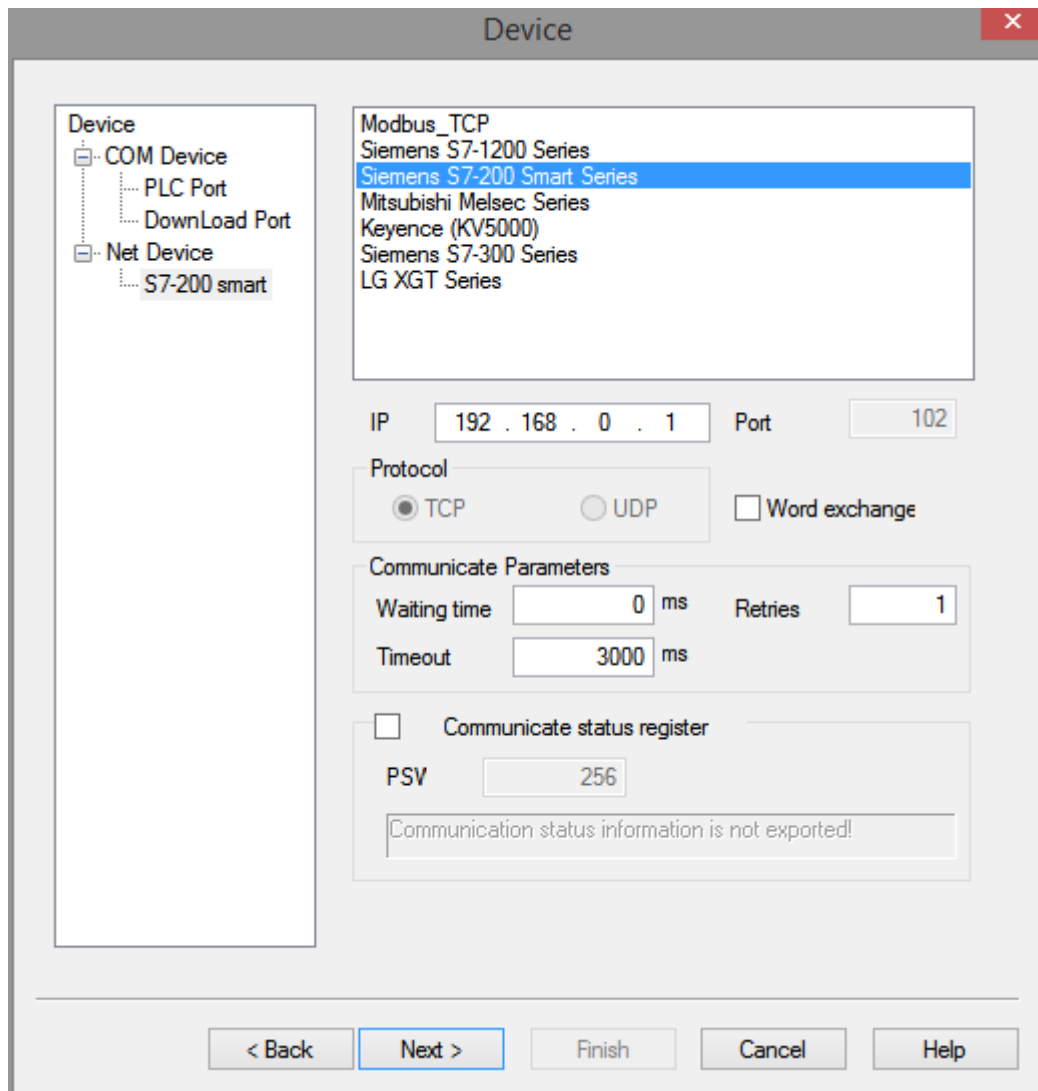


2. Choose the net device, right click it, choose new, and name it as S7-200 smart.

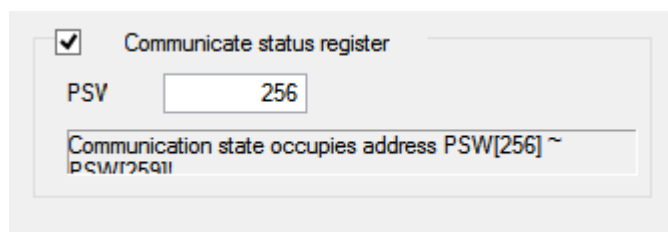


3. Choose Siemens S7-200 smart series in the device list, in this example, the PLC IP address is 192.168.0.1, the port is 102 which cannot be changed.

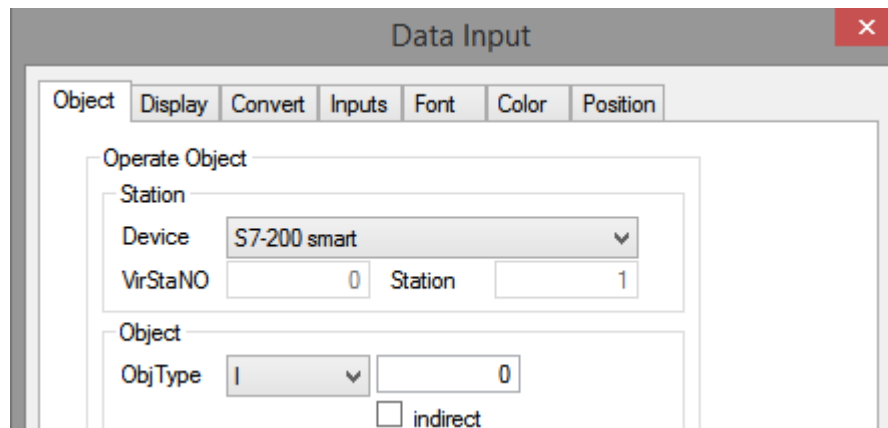




4. The communication parameters please use default settings. If communication status register is chosen, and set to PSW256, then PSW256~PSW259 means communication succeeded times, failed times, overtime times, error times. The register address can be set by user.



5. Click next to finish the settings. Then enter the screen, for example, put a data input button in the screen, choose the device S7-200 smart.



There is no station no. for Siemens S7-200 smart, set the correct IP address is ok. It can make the networks of multi-HMI-one-PLC, one-HMI-multi-PLC, multi-HMI-multi-PLC.

### 2.52.3 Cable making

RJ45 Straight Through Cable (connect HUB) or RJ45 Crossover Cable:

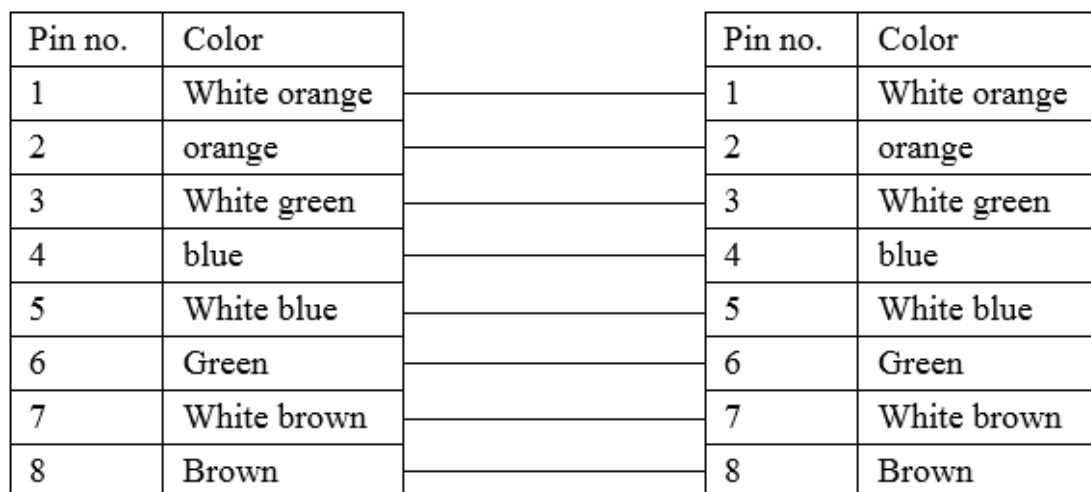


Diagram 1

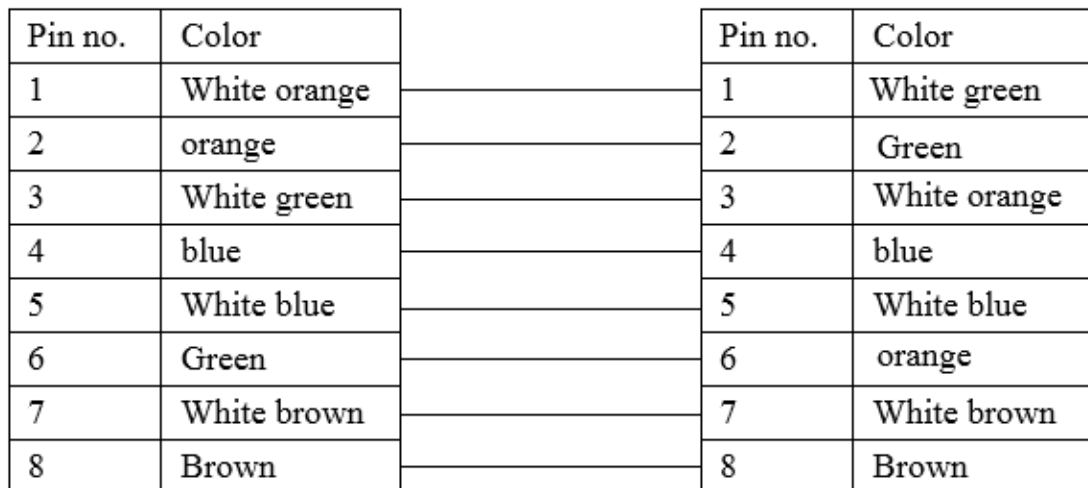


Diagram2

## 2.52.4 Device address

Siemens S7-200smart series

PLC address	Range	Data type	Explanation
VB	0~9999	Byte	variable byte data register
VW	0~9999	Word	variable word data register
VD	0~9999	DWord	variable double word data register
IB	0~15	Byte	External input byte reflection register
IW	0~15	Word	External input word reflection register
ID	0~15	DWord	External input double words reflection register
QB	0~15	Byte	External output byte reflection register
QW	0~15	Word	External output word reflection register
QD	0~15	DWord	External output double words reflection register
MB	0~31	Byte	Internal auxiliary byte register
MW	0~31	Word	Internal auxiliary word register
MD	0~31	DWord	Internal auxiliary double words register
SMB	0~299	Byte	Internal special auxiliary byte register
SMW	0~299	Word	Internal special auxiliary word register
SMD	0~299	DWord	Internal special auxiliary double words register
SB	0~31	Byte	Special auxiliary byte register
SW	0~31	Word	Special auxiliary word register
SD	0~31	DWord	Special auxiliary double words register
T	0~255	Word	Register
C	0~255	Word	Register
M	0.0~31.7	Bit	Bit register
V	0.0~9999.7	Bit	Variable register
I	0.0~15.7	Bit	External input coil
Q	0.0~15.7	Bit	External output coil
SM	0.0~299.7	Bit	Special relay
S	0.0~31.7	Bit	Sequence relay
T	0~255	Bit	Timer
C	0~255	Bit	Counter

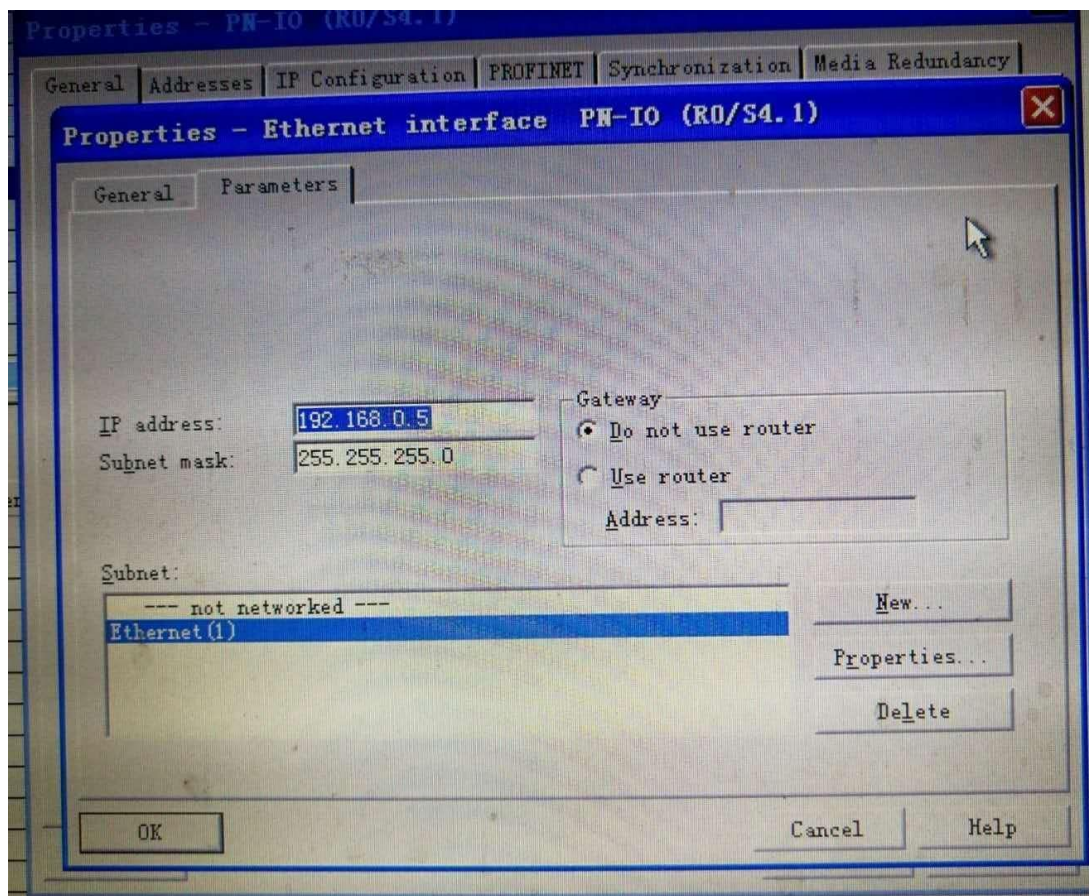
## 2.53 Siemens S7-300 series

### 2.53.1 Device type

Series name	Communication type	Cable making	PLC type in touchwin software
S7-300	RJ45	Fig 1 or fig 2	Siemens S7-300 series

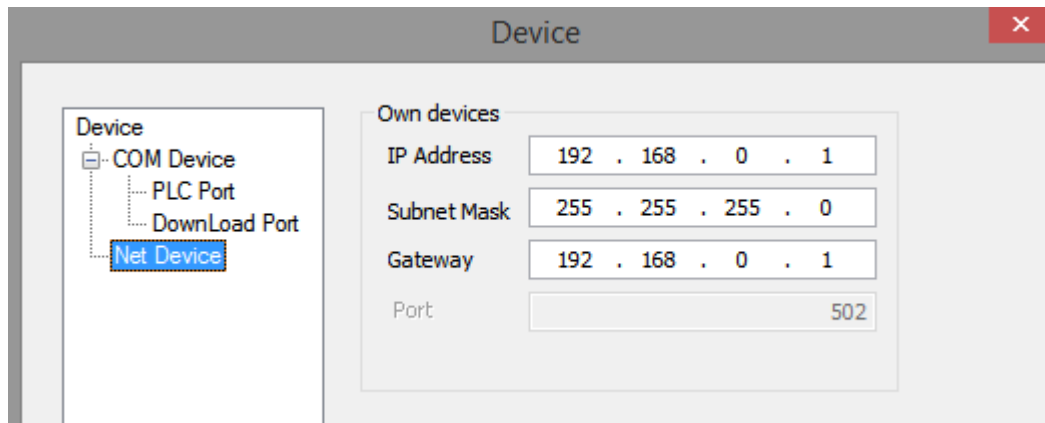
### 2.53.2 Parameter setting

PLC setting

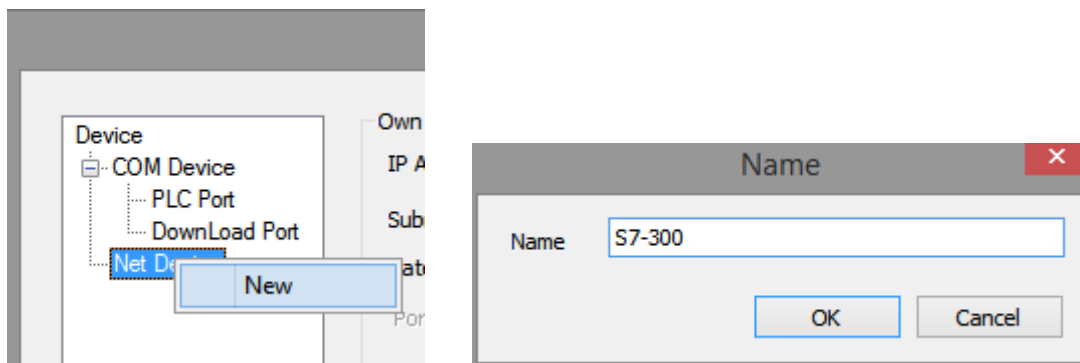


HMI setting

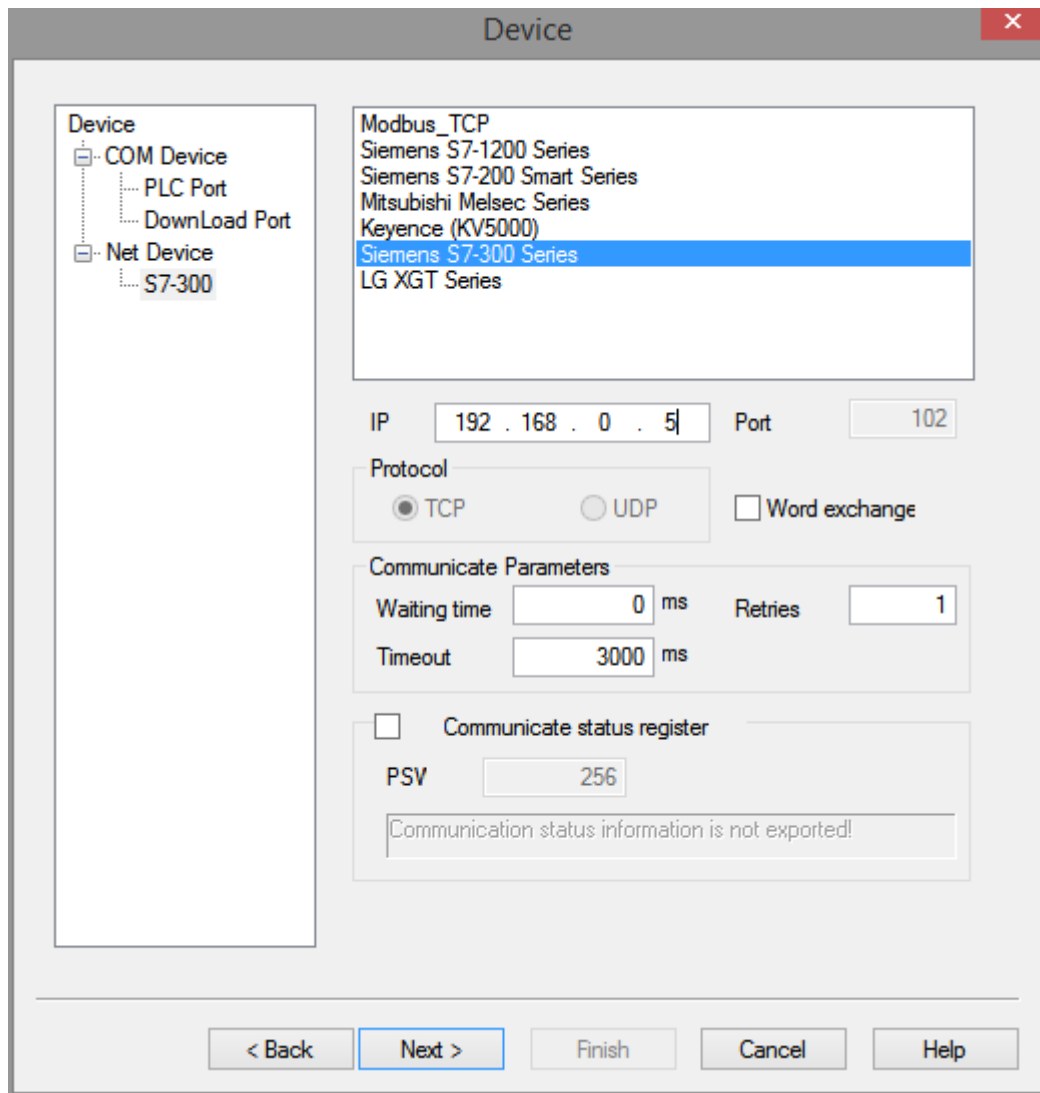
1. Choose the HMI type TN(-ET), TG(-ET) or TE(-ET), click next, choose Net device in the list, please input the HMI IP address in the own devices.



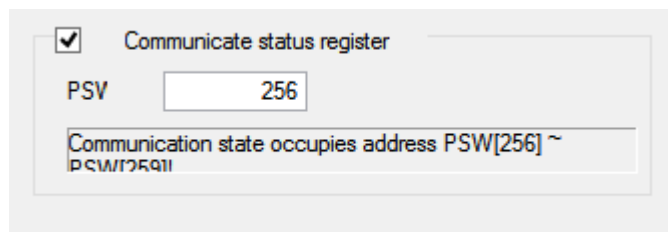
2. Choose the net device, right click it, choose new, and name it as S7-300.



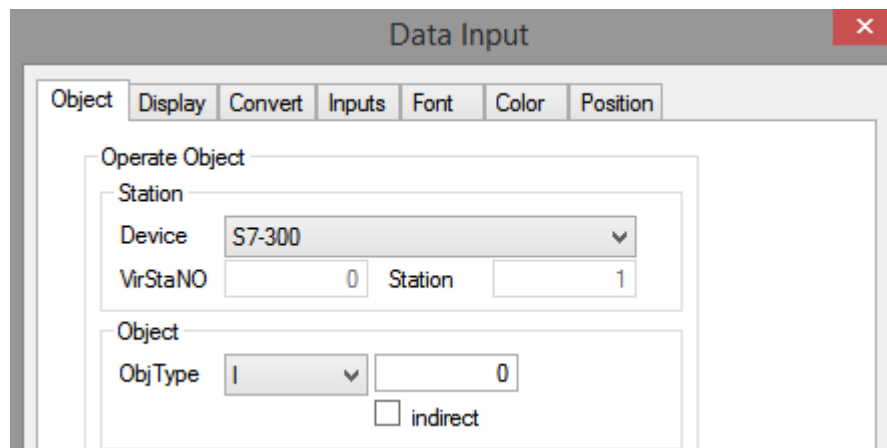
3. Choose Siemens S7-300 series in the device list, in this example, the PLC IP address is 192.168.0.5, the port is 102 which cannot be changed.



4. The communication parameters please use default settings. If communication status register is chosen, and set to PSW256, then PSW256~PSW259 means communication succeeded times, failed times, overtime times, error times. The register address can be set by user.



5. Click next to finish the settings. Then enter the screen, for example, put a data input button in the screen, choose the device S7-300.



There is no station no. for Siemens S7-300, set the correct IP address is ok. It can make the networks of multi-HMI-one-PLC, one-HMI-multi-PLC, multi-HMI-multi-PLC.

### 2.53.3 Cable making

RJ45 Straight Through Cable (connect HUB) or RJ45 Crossover Cable:

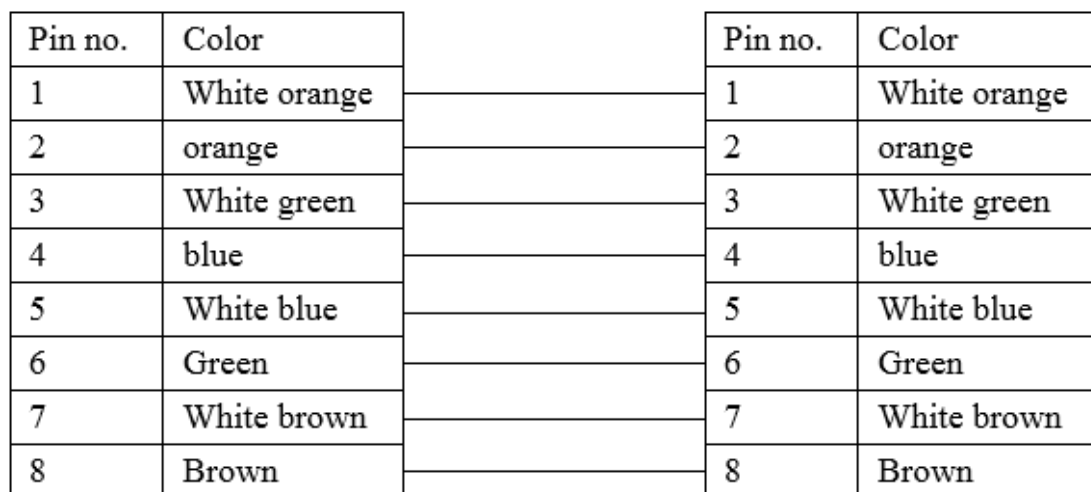


Diagram 1



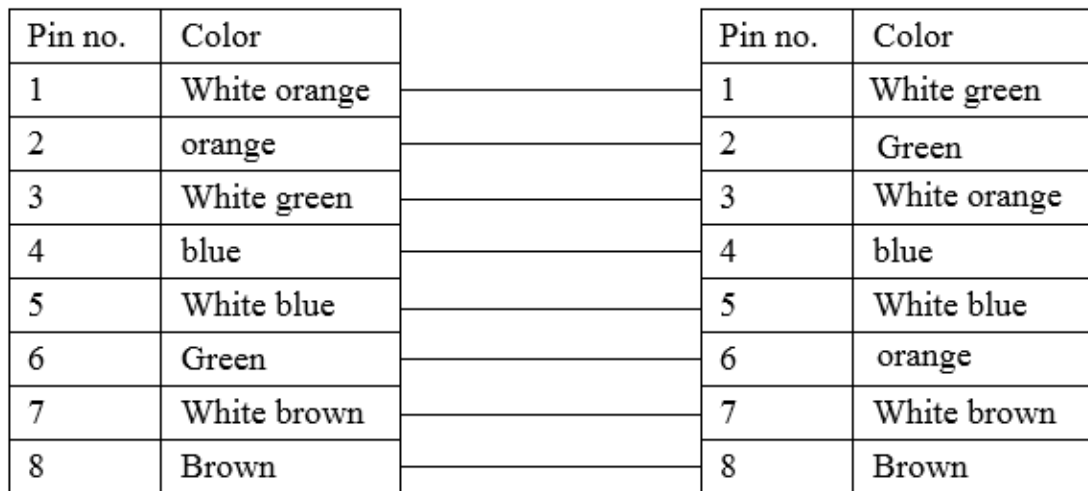


Diagram2

## 2.53.4 Device address

Siemens S7-300 series

PLC address	Range	Data type	Explanation
VB	0~9999	Byte	variable byte data register
VW	0~9999	Word	variable word data register
VD	0~9999	DWord	variable double word data register
IB	0~15	Byte	External input byte reflection register
IW	0~15	Word	External input word reflection register
ID	0~15	DWord	External input double words reflection register
QB	0~15	Byte	External output byte reflection register
QW	0~15	Word	External output word reflection register
QD	0~15	DWord	External output double words reflection register
MB	0~31	Byte	Internal auxiliary byte register
MW	0~31	Word	Internal auxiliary word register
MD	0~31	DWord	Internal auxiliary double words register
SMB	0~299	Byte	Internal special auxiliary byte register
SMW	0~299	Word	Internal special auxiliary word register
SMD	0~299	DWord	Internal special auxiliary double words register
SB	0~31	Byte	Special auxiliary byte register
SW	0~31	Word	Special auxiliary word register
SD	0~31	DWord	Special auxiliary double words register
T	0~255	Word	Register
C	0~255	Word	Register
M	0.0~31.7	Bit	Bit register
V	0.0~9999.7	Bit	Variable register
I	0.0~15.7	Bit	External input coil
Q	0.0~15.7	Bit	External output coil
SM	0.0~299.7	Bit	Special relay
S	0.0~31.7	Bit	Sequence relay
T	0~255	Bit	Timer
C	0~255	Bit	Counter

## 2.54 X-NET communication

X-NET bus is the bus protocol between TG/TE series HMI and XD series PLC. The TG series -NT model is a dedicated screen for bus communication, which has faster communication speed and better networking performance. It is recommended to choose -NT model when bus communication.

### 2.54.1 Device type

Series name	CPU unit	Connection module	Communication type	Cable making	PLC type in touchwin software
XD	XD3/XDM/XDC	CPU direct connect	RS485	Fig 1 or 2	Xinje Xnet series
		extension BD module	RS232	Fig 3	

### 2.54.2 HMI setting

Parameters	Recommended setting	Optional setting	Notes
PLC type	Xinje Xnet series		1. PLC station no. must be 2 for auto matching 2. -NT model has no RS232 for PLC port
Communication port	RS485	RS485/RS232	
Data bit	8		
Stop bit	1		
Parity	Even parity		
Auto match baud rate	57600	57600	
Set baud rate manually	57600	9600~3M	
Station no.	1	1~100	

**X-NET bus includes two connection modes: OMMS mode which is supported by TG/TE series(single HMI mode including one HMI one device, one HMI multi-device); TBN mode which is supported by NT model(multi-HMI mode including multi-HMI one device, multi-HMI multi-device). The XD series PLC must be hardware v3.2.2 and up. The download port and PLC port is separate for TG/TE series HMI.**

#### 2.54.2.1 OMMS mode

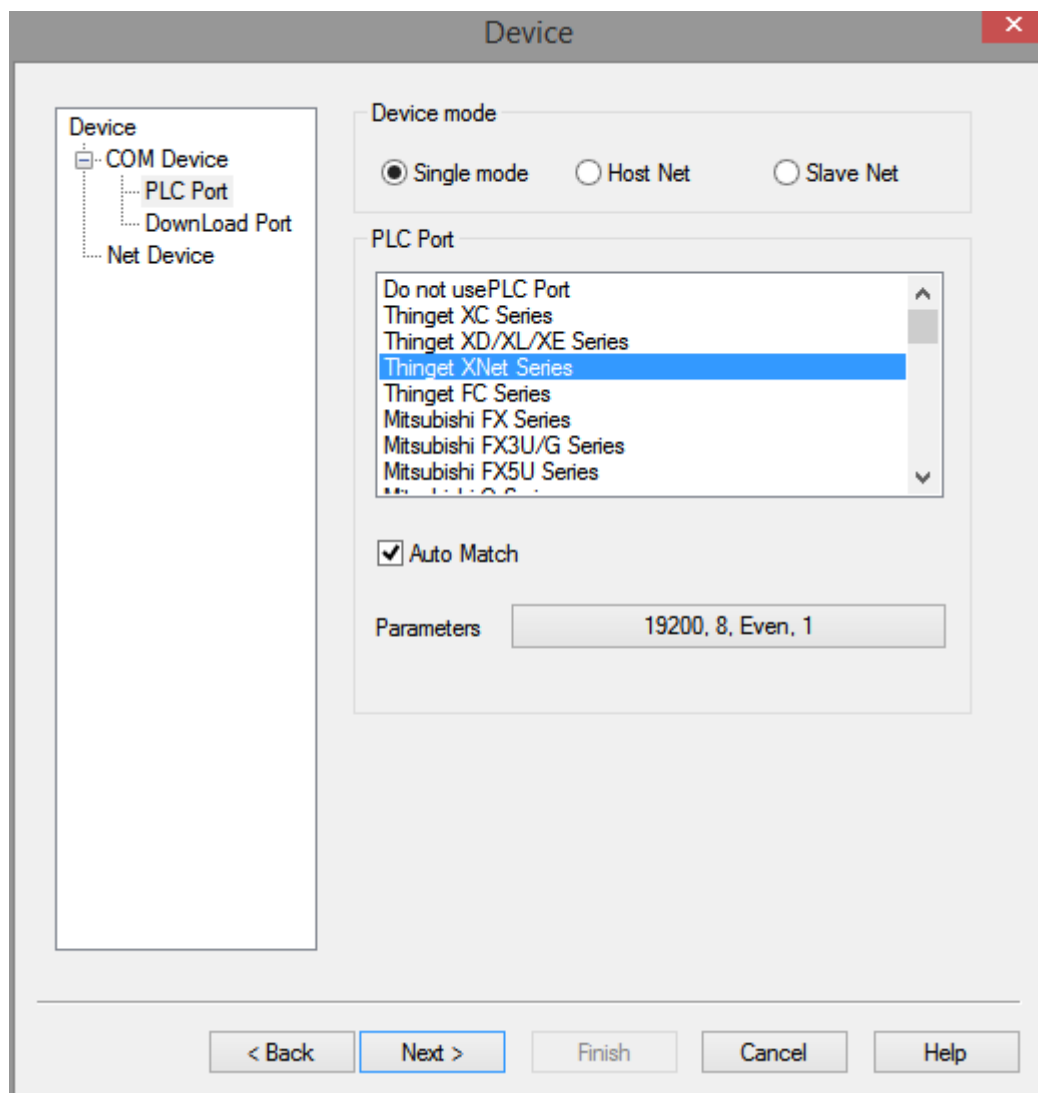
OMMS mode includes auto match and manual setting. If auto match is selected, there is no need to set the parameters, this mode is fit for one HMI one device communication, and the PLC station no. should be no. 2, baud rate must be 57600pbs.

The default is manual setting mode if auto match is not selected. In this case, it needs to use xinje config tool to set the HMI parameters, PLC station no. and baud rate are not limited, please choose them as you need.

### 1. Auto match

Touchwin software can automatic set the communication parameters in auto match mode, only TG/TE series HMI PLC port OMMS mode support auto match mode.

When building the HMI program, PLC port please choose xinje Xnet series, PLC port device please choose auto match, other no needs to set.

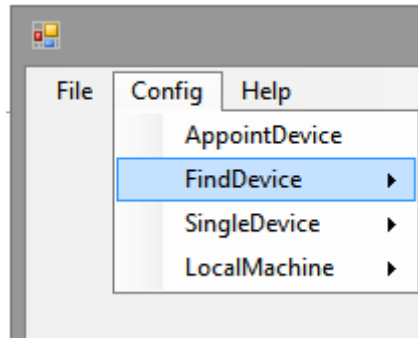


### 2. Manual set

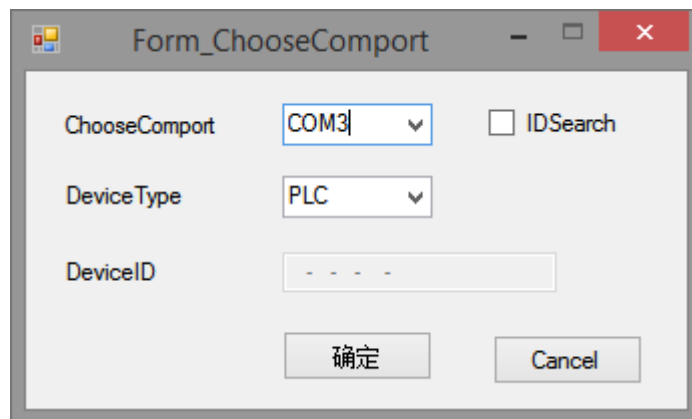
(1) make a new HMI program, the download port please set to xinje Xnet series, PLC port please set to xinje Xnet series, the screen contents can be anything, and download the program in the HMI.

(2) connect the download port of HMI with PC, power on the HMI.

(3) open xinje config tool, click config/ find device

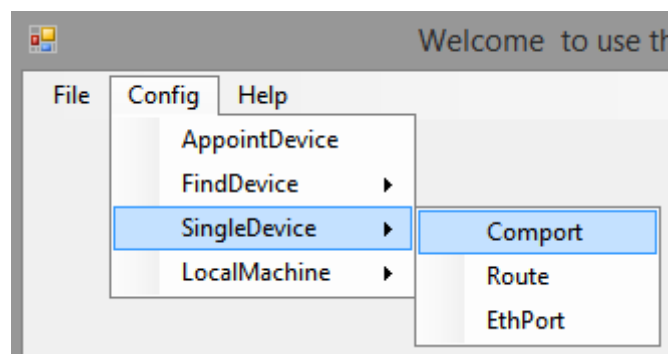


(4) choose the com port, which is the PC serial port, it will show the config tool main interface after the connection is normal.

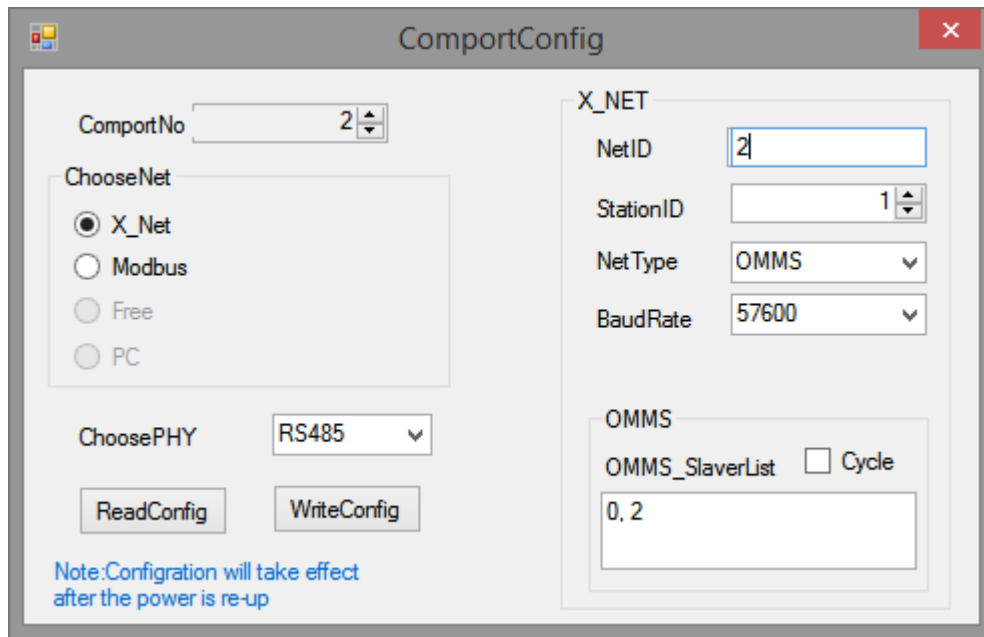


If the connection fails, a connection failure window will pop up. Please check whether the RS232 serial port line is wrong and close other software that occupies the serial port. The bus can be initialized if cannot connecting, set ON switch 4 on the back of the touch screen, restart the touch screen, and download the newly created program again. After the download, set OFF switch 4, and then repeat the connection operation.

(5) After the connection is successful, click config/single device/com port:



(6) set the serial port parameters and net id, click write config and close the window.



Com port no.: 1 means HMI download port, 2 means HMI PLC port.

Choose Net: please choose X-NET.

Choose PHY(physical layer): RS232 communication (-NT model PLC port not support), RS485 communication.

Net ID: the communication network no., all the devices in the same network should have the same network no., the range is 1 to 32767.

Station no.: it must be 1 for OMMD mode HMI station no.

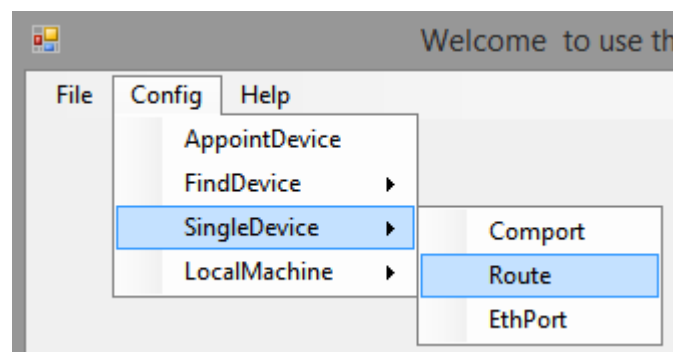
Net type: please choose OMMS mode (which is single HMI mode)

Baud rate: the max baud rate is 115200 for TG/TE series PLC port, download port, and -NT model download port, the max baud rate is 3M for -NT model PLC port.

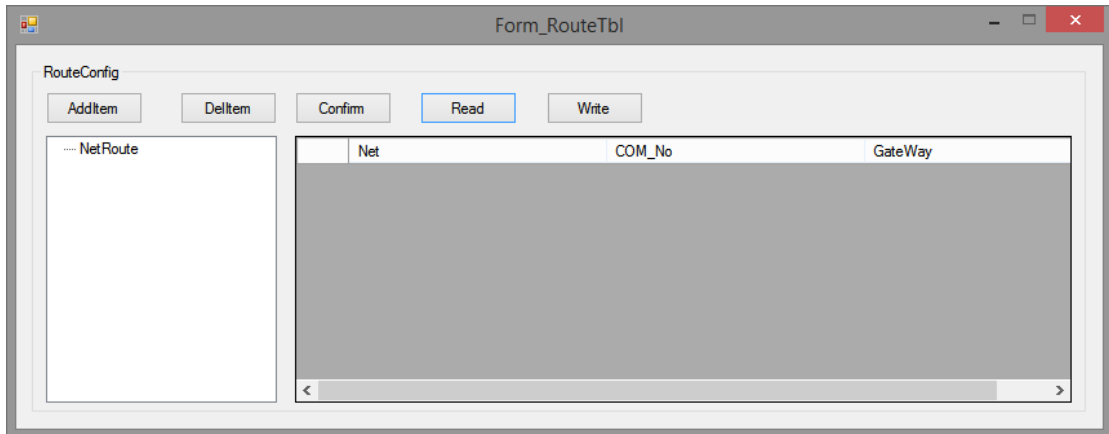
Cycle: please choose this when PLC supports motion bus.

OMMS\_slaver list: all the slave station no. connecting the HMI. For example, one HMI connects two PLCs, the station no. of the two PLCs are 2 and 3, it must set 0,2,3 here. Otherwise it will not communicate.

(7) click config/single device/route



(8) first please read the HMI setting, then choose add item, set the parameters, then click write.



Net: the net id in the serial port setting.

Com no.: com port no. in the serial port setting.

Gateway: it is 0 in the same network. For cross network communication, it is the station no. that the cross network transfer equipment signal accesses the serial port.

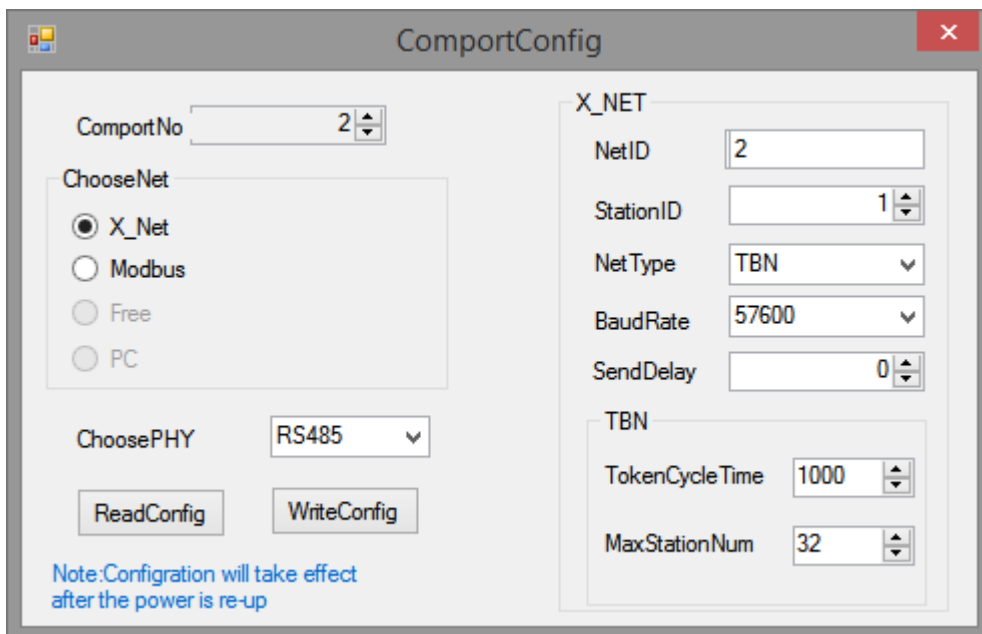
(note: cross network communication must be PLC hardware v3.3 and up)

After setting, please restart the HMI to make the setting effective.

#### 2.54.2.2 TBN mode

Only –NT model supports this mode. Repeat OMMS mode manual step 1 to 5.

(6) set the serial port parameters and net id, click write config and close the window



Com port no.: 1 means HMI download port, 2 means HMI PLC port.

Choose Net: please choose X-NET.

Choose PHY(physical layer): RS232 communication (-NT model PLC port not support), RS485 communication.

Net ID: the communication network no., all the devices in the same network should have the same network no., the range is 1 to 32767.

Station no.: set any station no. for the PLC and HMI in the network.

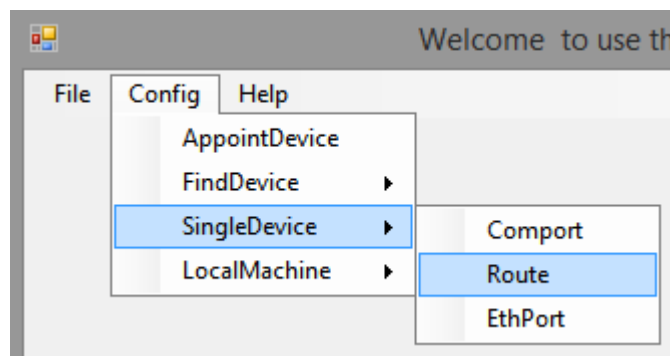
Net type: please choose TBN mode (which is multi-HMI mode)

Baud rate: the max baud rate is 115200 for-NT model, the max baud rate is 3M for -NT model PLC port.

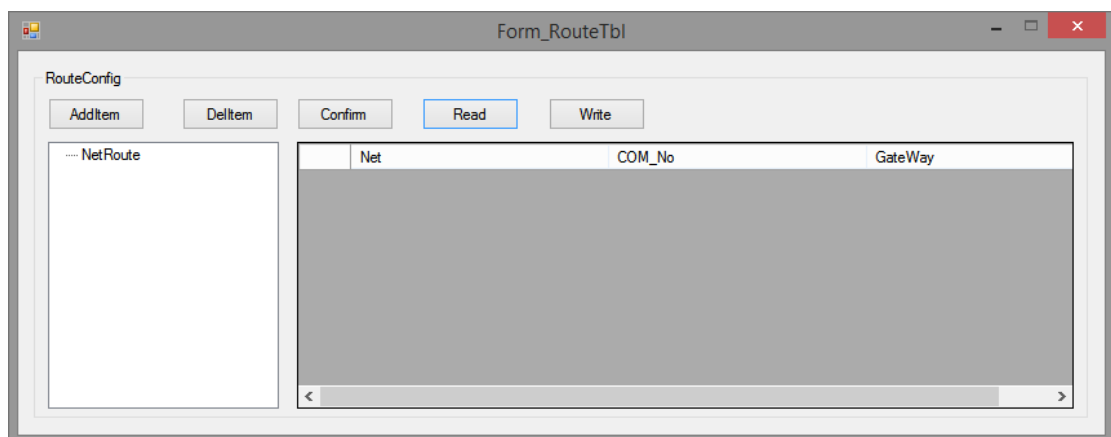
Token cycle time: the longest time the token passes one circle. The default time is 1000ms.

Max station no.: It refers to the largest station number in a network, and the communication token will be searched from station 1 to the largest station number. Considering the communication speed, it is suggested that the customer choose the continuous station number when assigning station number, and the largest station number cannot exceed 100.

(7) click config/single device/route



(8) first please read the HMI setting, then choose add item, set the parameters, then click write.



After setting, please restart the HMI to make the setting effective.



**Data Input**

Object | Display | Convert | Inputs | Font | Color | Position

**Operate Object**

Station

Device: PLC Port

Net ID: 2 Station: 3

Object

ObjType: D 0

☐ indirect

Value

Data Type: Word

☐ Monitoring object

Station

Device: PLC Port

Net ID: 1 Station: 1

Object

ObjType: D 0

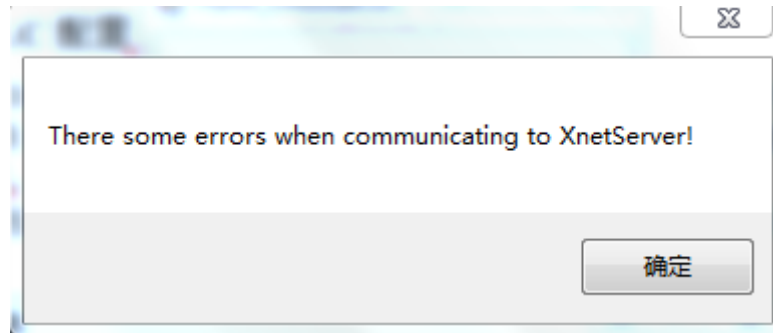
☒ indirect

OK Cancel Apply Help

**Note:** in the HMI program, the Net ID corresponds to the net number in the serial port configuration, station corresponds to the station number in the serial port configuration.

### 2.54.3 XD series PLC setting (PLC hardware V3.2.2 and up)

Connect the PLC to the computer through USB cable or port1, power the PLC, and repeat the OMMS manual configuration step 3-5. If PLC and computer communication is not normal, the corresponding error message will appear. At this time, you need to restart Config software and start the configuration again until the error message below appears.



Set the serial port parameters, net id, then click write config and close the window.

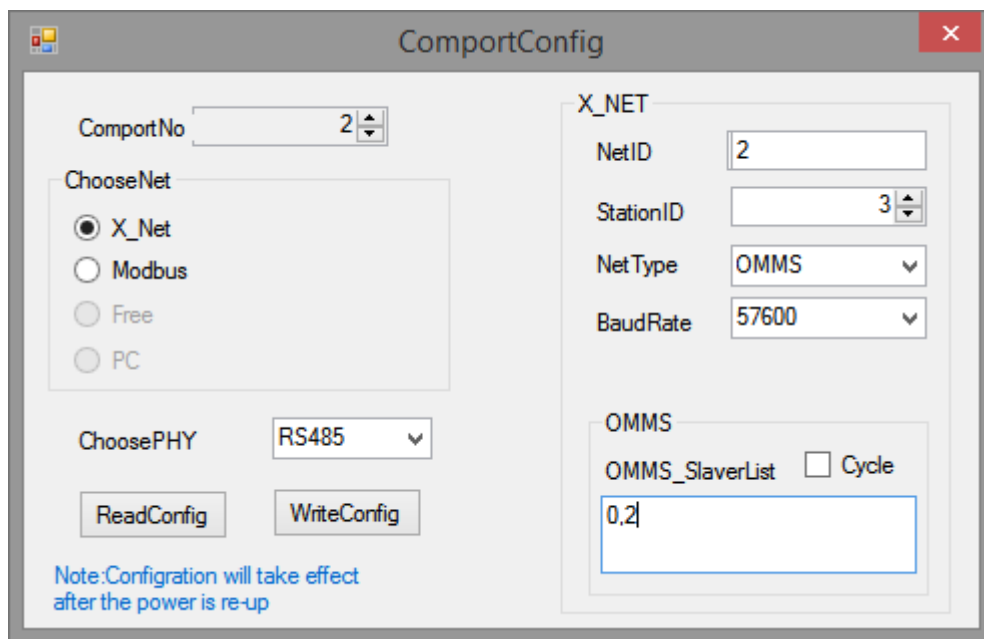


Fig. 3-1 OMMS mode

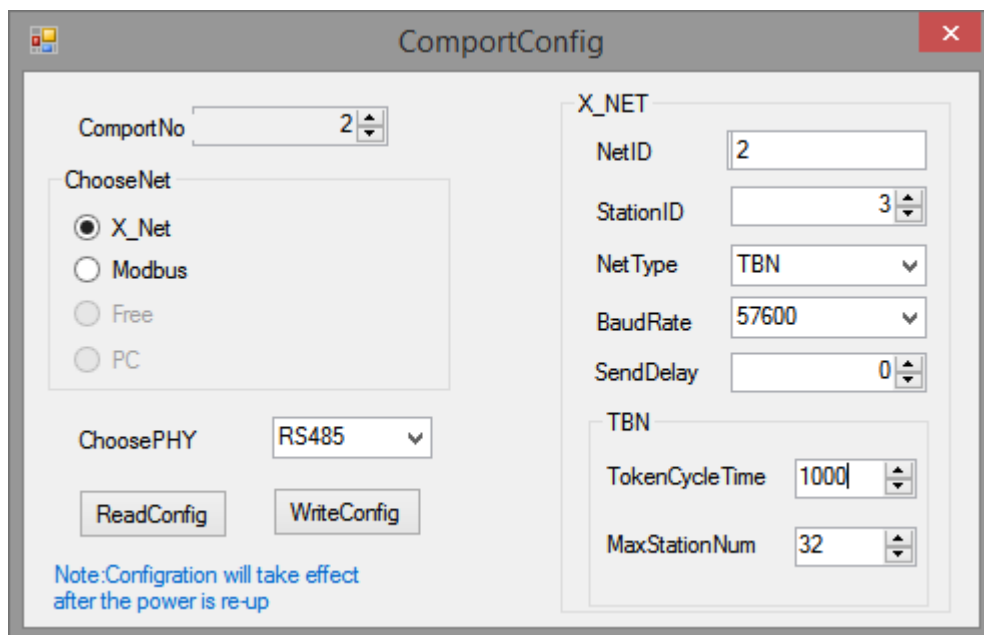


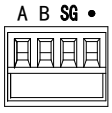


Fig. 3-2 TBN mode

Serial port: PLC port no., please set as actual connection port no.

**XD series PLC port definition and functions:**

Port	Appearance	Port definition	Serial port no.
Port1		RS232 port	1
Port2	A, B	RS485 port	2
USB		USB port	
Port3	Developping	Left extension ED port	3
Port4 Port5	 Up extension BD (left Port4, right Port5)	RS232 port/RS485 port/optical fiber port	4, 5

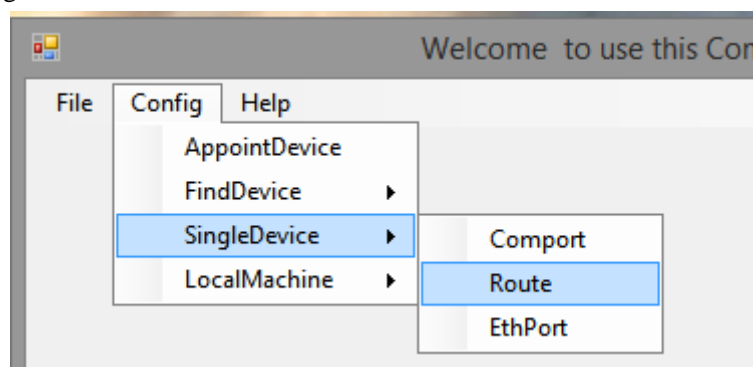
Station no.: the PLC station no. in the network, the range is 1 to 100. The operate object station no. in the HMI corresponds to this station no. note: the PLC station no. must be 2 in OMMS auto match mode.

Net type: OMMS: one HMI one device, one HMI multi-device (fig. 3-1), multi-HMI multi-device (fig. 3-2). Please choose it as the actual needs.

Baud rate: set the same baud rate for HMI and PLC.

Other settings please refer to the above HMI setting.

click config/single device/route:



First read the settings, then click add item, set the parameters, then click write.

The screenshot shows a software window titled 'Form\_RouteTbl'. Inside, there's a 'RouteConfig' section with five buttons: 'AddItem', 'DelItem', 'Confirm', 'Read', and 'Write'. Below these buttons is a list box containing 'NetRoute'. To the right of the list box is a table with three columns: 'Net', 'COM\_No', and 'GateWay'. The table is currently empty, and there's a scrollbar at the bottom.

After finishing the configuration, restart the PLC to make the settings effective.

## 2.54.4 Cable making

Model	Hardware version	Communication type	PLC port cable making	Download port cable making
TG/TE		RS485	Fig 1	Fig 1
		RS232	Fig 3	
TG765-NT (TN765-ET)	V1.0	RS485	Fig 1	Fig 1
		RS232	\	Fig 3
	V1.1 and up	RS485	Fig 2	Fig 1
		RS232	\	Fig 3
TG865-NT (TN865-ET)	V1.0 and up	RS485	Fig 2	Fig 1
		RS232	\	Fig 3
TGA63-NT (TNA63-ET)	V1.0 and up	RS485	Fig 2	Fig 1
		RS232	\	Fig 3

### 2.54.4.1 Cable

#### 1. TE/TG and TG765-NT (V1.0) (RS485 mode)

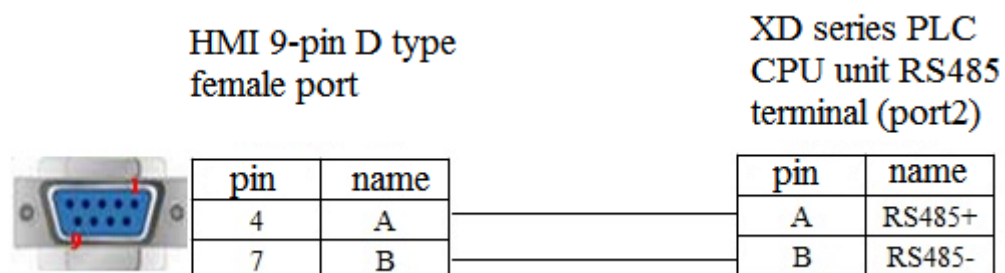


Fig 1

2. -NT model (V1.1) PLC port RS485 mode

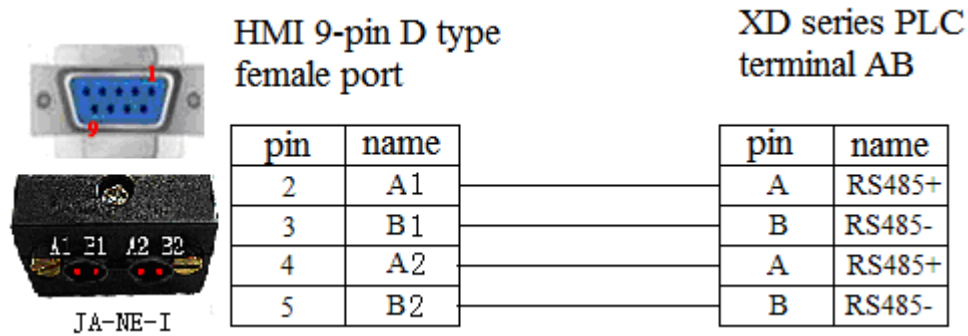


Fig 2

**Note:** use together with JA-NE-I, which is easy to wiring.

3. TE/TG (download port) series RS232 mode

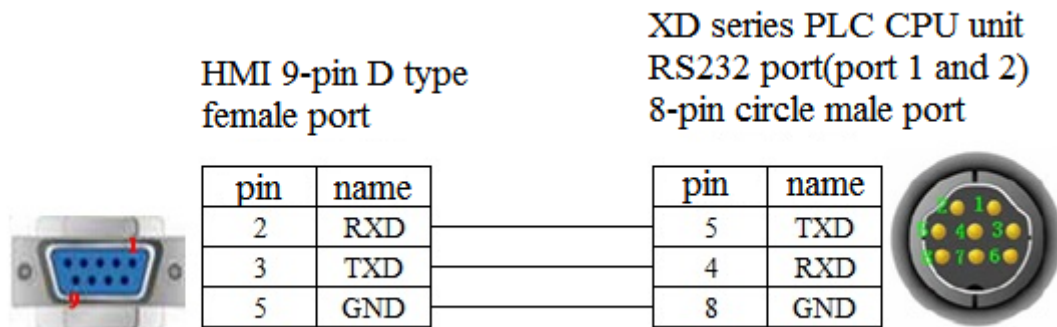
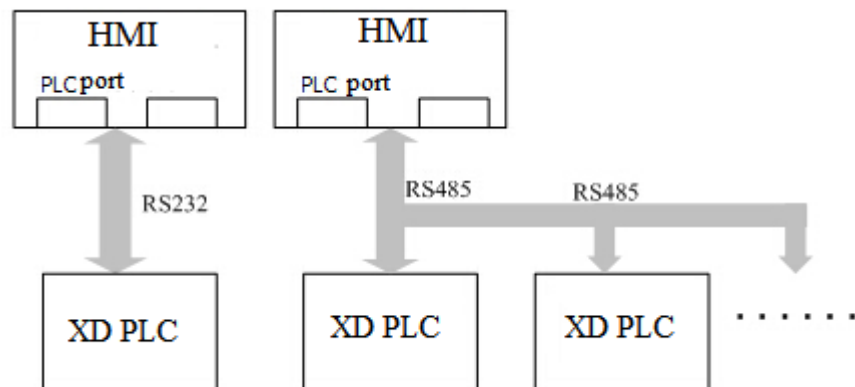
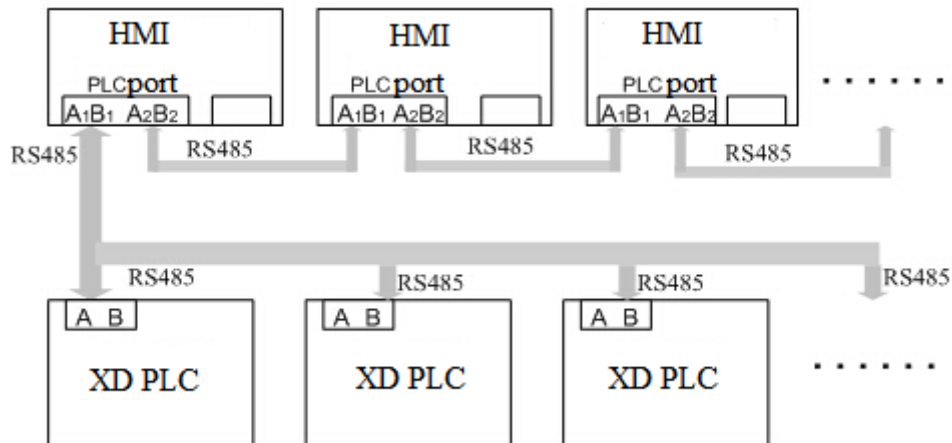


Fig 3

2.54.4.2 OMMS wiring mode (-NT model PLC port no RS232)



### 2.54.4.3 TBN wiring mode



### 2.54.5 Device address

PLC address	Range	Object type	Notes
X	0~77	Bit	Input
X1 xxxx	0~1777	Bit	Extension module input
X2 xxxx	0~277	Bit	Extension BD input
Y	0~77	Bit	Output
Y1 xxxx	0~1777	Bit	Extension module output
Y2 xxxx	0~277	Bit	Extension BD output
M	0~4999	Bit	Internal auxiliary relay
S	0~7999	Bit	Status relay
SM	0~4999	Bit	Special status relay
T	0~4999	Bit	Timer
C	0~4999	Bit	Counter
ET	0~39	Bit	Timer, precise timer
SE	0~31	Bit	Sequence block special coil for wait instruction
HM	0~11999	Bit	Internal relay, hold during power off
HS	0~999	Bit	Process, hold during power off
HT	0~1999	Bit	Auxiliary relay, hold during power off
HC	0~1999	Bit	Counter, hold during power off
HSC	0~39	Bit	Counter, high speed counter
D	0~4999	Word//DWord	Data register
ID	0~99	Word//DWord	Analog input
ID1xxxx	0~1599	Word//DWord	Extension module analog input
ID2xxxx	0~299	Word//DWord	Extension BD analog input
QD	0~99	Word//DWord	Analog output
QD1xxxx	0~1599	Word//DWord	Extension module analog output
QD2xxxx	0~499	Word//DWord	Extension BD analog output

SD	0~4999	Word//DWord	Data register, special purpose
TD	0~4999	Word//DWord	Timer value
CD	0~4999	Word//DWord	Counter value
ETD	0~39	Word//DWord	Timer value, precise timer
HD	0~24999	Word//DWord	Data register
HSD	0~1999	Word//DWord	Data register, hold during power off
HTD	0~1999	Word//DWord	Timer value, hold during power off
HCD	0~1999	Word//DWord	Counter value, hold during power off
HSCD	0~39	Word//DWord	Counter value, high speed counter
FD	0~8899	Word//DWord	FlashROM register
SFD	0~5999	Word//DWord	FlashROM register, special purpose
FS	0~299	Word//DWord	Special security register
DM	0~74984	Word	Used as a data register
DX	0~60	Word	Used as a data register
DX1xxxx	0~1760	Word	Used as a data register, extension module
DX2xxxx	0~260	Word	Used as a data register, extension BD
DY	0~60	Word	Used as a data register
DY1xxxx	0~1760	Word	Used as a data register, extension module
DY2xxxx	0~260	Word	Used as a data register, extension BD
DS	0~7984	Word	Used as a data register
DSM	0~4984	Word	Used as a data register, special function
DT	0~4984	Word	Used as a data register
DC	0~4984	Word	Used as a data register
DET	0~24	Word	Used as a data register, precise timer
DSE	0~16	Word	Used as a data register, special for sequence block wait instruction
DHM	0~11984	Word	Used as a data register, hold during power off
DHS	0~984	Word	Used as a data register, hold during power off
DHT	0~1984	Word	Used as a data register, hold during power off
DHC	0~1984	Word	Used as a data register, hold during power off
DHSC	0~24	Word	Used as a data register, high speed counter

## 2.55 Keyence KV5000

### 2.55.1 Device type

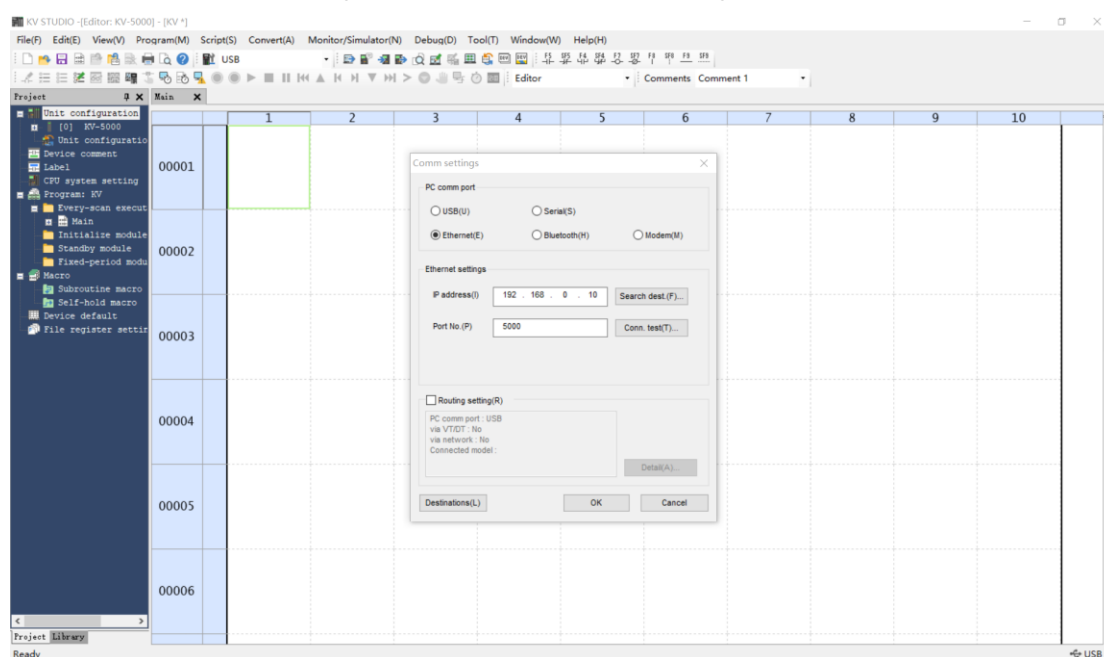
Series	Communication type	Cable making	PLC model selection in touchwin
Keyence KV5000	RJ45	Fig 1 or 2	Keyence KV5000/5500/7500

### 2.55.2 Parameter setting

Take Keyence KV5000 PLC as an example to explain the settings of communication device.

PLC software settings:

1. Startup KV STUDIO, click the unit edit, choose KV 5000, set the label in the unit, execute the Ethernet settings of KV5000, shown as below figure:





Comm settings

PC comm port

☐ USB(U)      ☐ Serial(S)  
☒ Ethernet(E)      ☐ Bluetooth(H)      ☐ Modem(M)

Ethernet settings

IP address(I)    192 . 168 . 0 . 10    Search dest.(F)...

Port No.(P)    5000    Conn. test(T)...

☐ Routing setting(R)

PC comm port : USB  
 via VT/DT : No  
 via network : No  
 Connected model :

Detail(A)...

Destinations(L)    OK    Cancel

HMI settings:

1. choose HMI model TN(-ET), TG(-ET) or TE(-ET), click next, then choose net device, fill in the IP address of HMI. The HMI IP cannot be conflict with other devices in the network.

Device

☐ Auto IP Address  
☒ Local IP Address

IP Address    192 . 168 . 0 . 1

Subnet Mask    255 . 255 . 255 . 0

Gateway    192 . 168 . 0 . 1

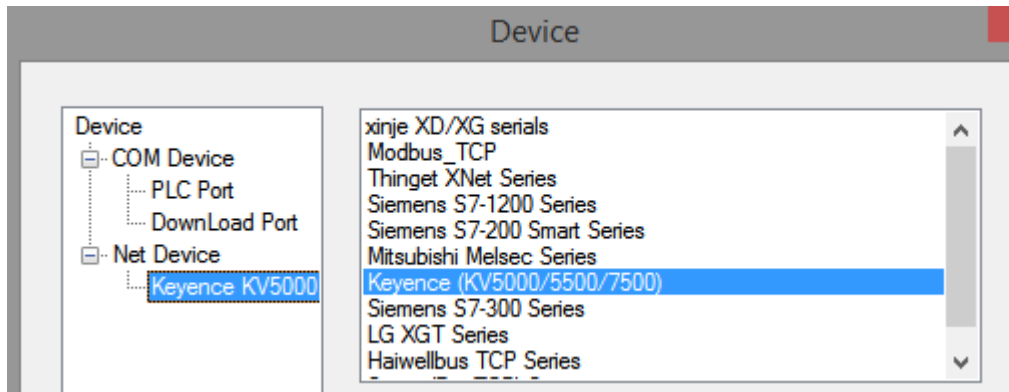
Port    502

Remote Commu

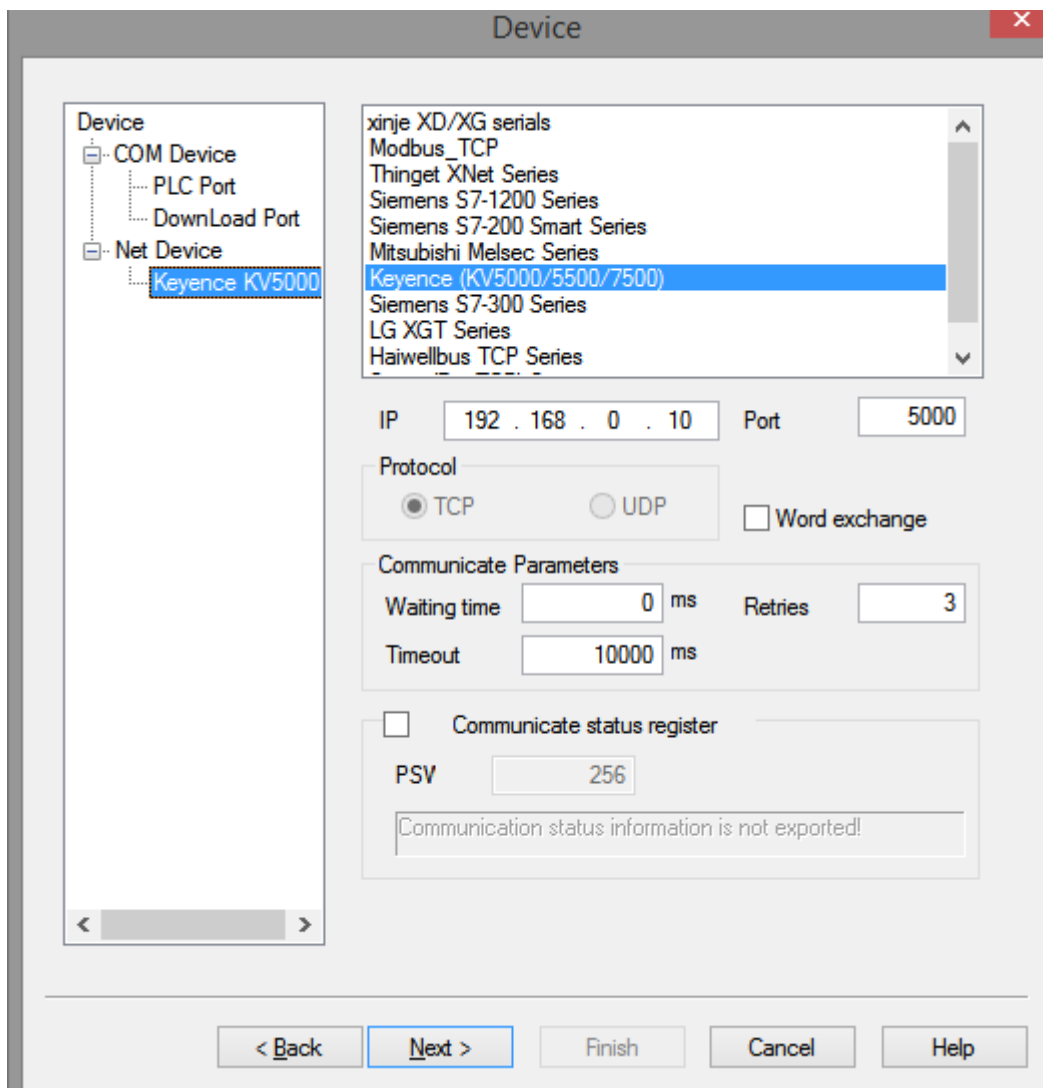
Device

COM Device  
 PLC Port  
 DownLoad Port  
 Net Device  
 Device1

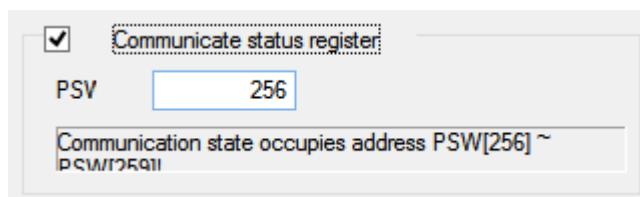
2. right click the net device, build a new project, and name it as keyence KV5000.



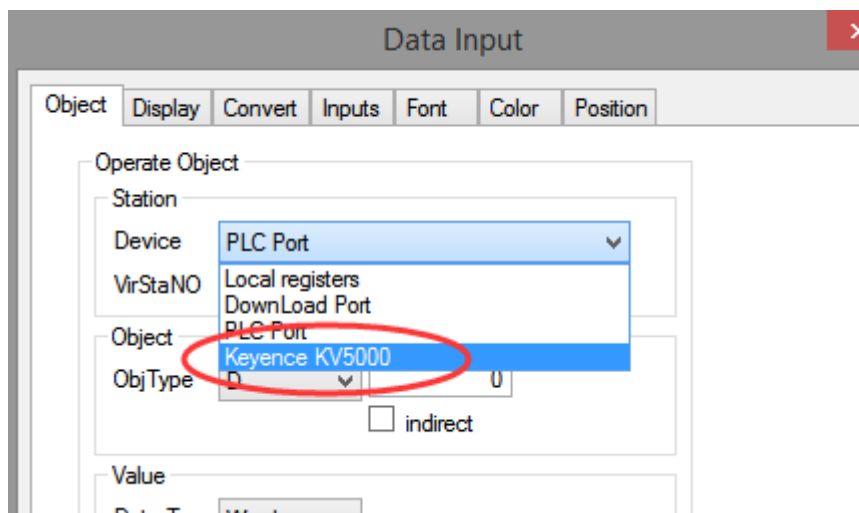
3. choose Keyence (KV5000/5500/7500) protocol in the list, and fill in the PLC IP address, the port is PLC port no. set in the PLC software.



4. Please keep the communication parameters as default, if the communicate status register is selected, PSW256~PSW259 respectively indicate communication successful times, failed times, overtime times, error times. User can set the register address as needs.



5. click next to finish the settings and enter screen edit interface. Put a data input button on the screen, and choose the keyence KV5000 in the device list.



### 2.55.3 Cable making

RJ45 Straight Through Cable (connect HUB) or RJ45 Crossover Cable:

Pin no.	Color		Pin no.	Color
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 1

Pin no.	Color		Pin no.	Color
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 2

#### 2.55.4 Device address

PLC address	Range	Object type	Notes
MR	0.00~999.15	Bit	Internal relay
LR	0.00~999.15	Bit	
CR	0.00~39.15	Bit	
T	0~3999	Bit	Timer
C	0~3999	Bit	Counter
DM	0~65534	Word/DWord	Data register
TM	0~11998	Word	Temporary data regsiter
EM	0~511	Word	Expanded data memory
FM	0~65534	Word	Flash data memory
CM	0~32766	Word	
TDC	0~3999	Word	
CDC	0~3999	Word	
TS	0~3999	Word	Timer
CS	0~3999	Word	Counter

## 2.56 LG XGT

### 2.56.1 Device type

Series name	Communication type	Cable making	PLC model selection in touchwin
LG XGT series	RJ45	Fig 1 or 2	LG XGT protocol

### 2.56.2 Parameter setting

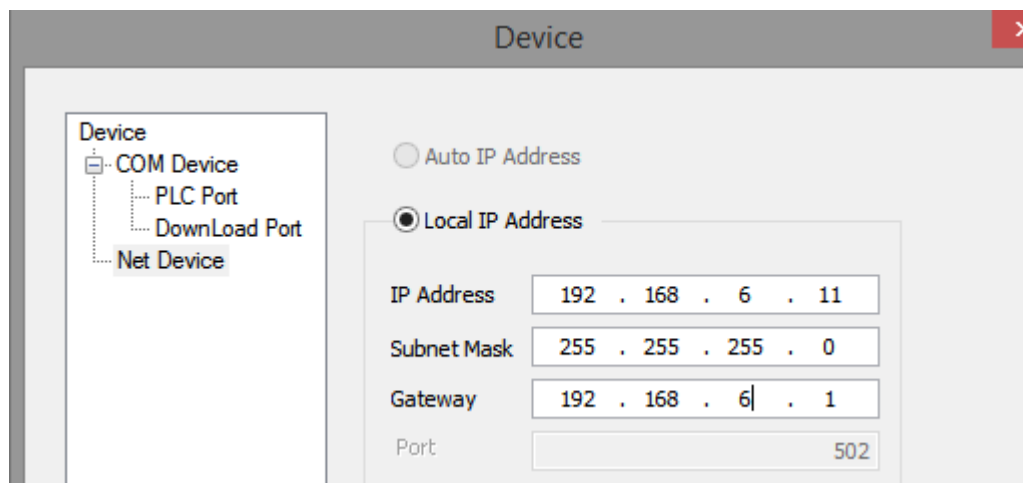
Take LG XGT series PLC as an example to explain the communication settings.

PLC settings:

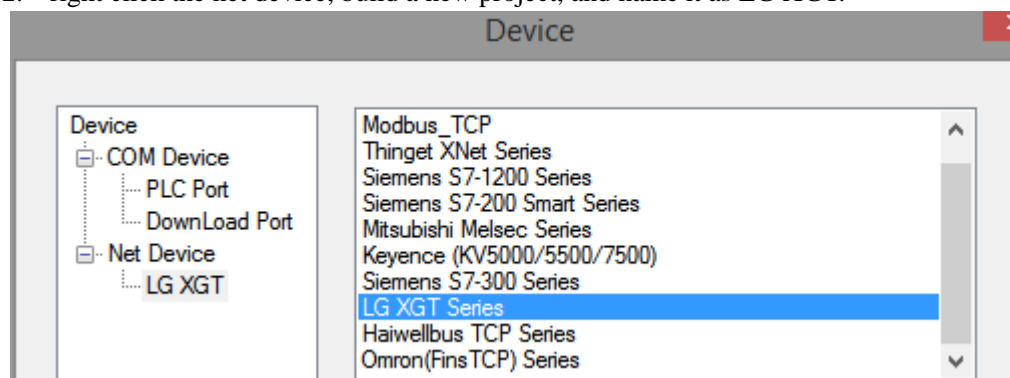
Open the PLC software, set the PLC IP to 192.168.6.10 for example.

HMI settings:

1. choose HMI model TN(-ET), TG(-ET) or TE(-ET), click next, then choose net device, fill in the IP address of HMI. The HMI IP cannot be conflict with other devices in the network. The HMI IP is set to 192.168.6.11 for example.

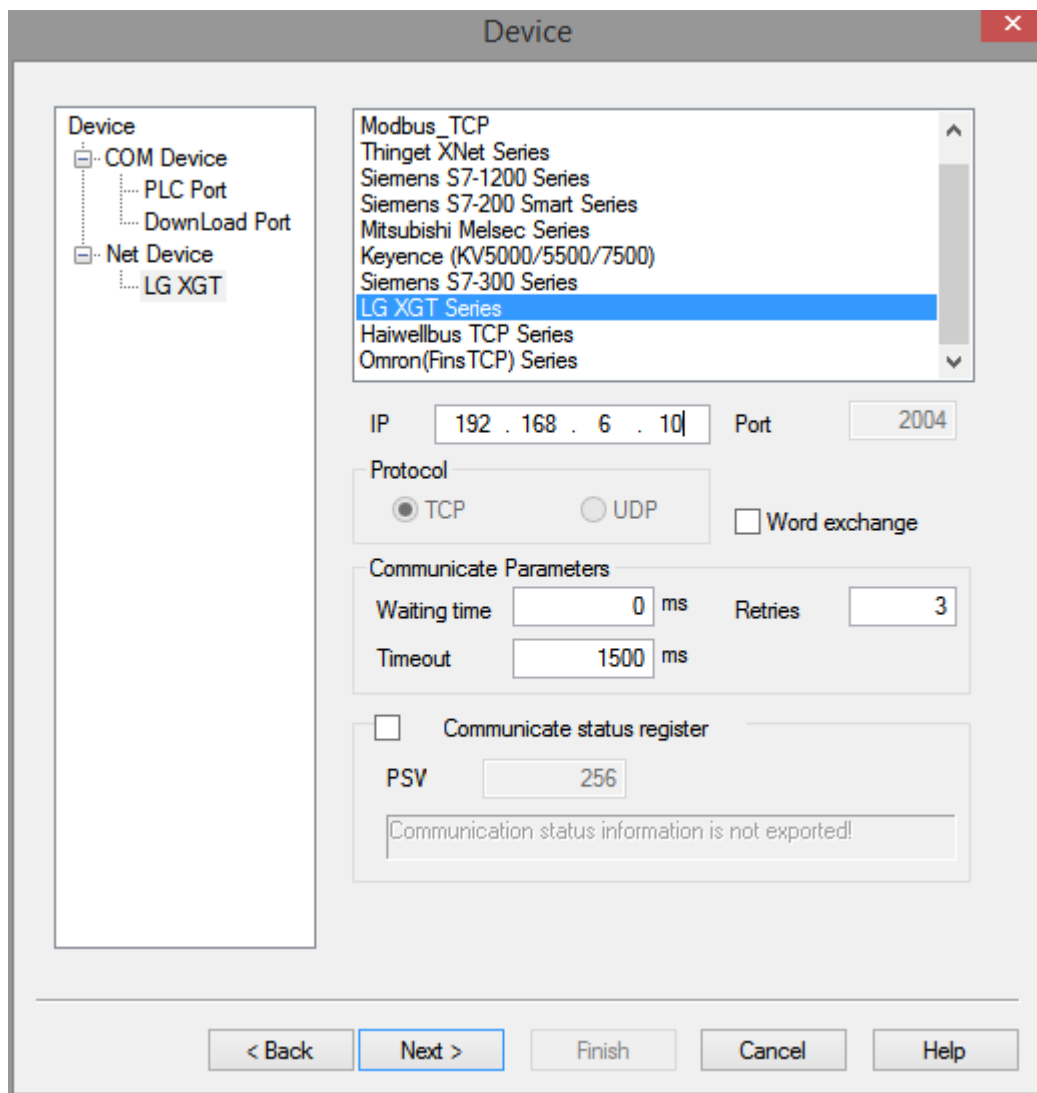


2. right click the net device, build a new project, and name it as LG XGT.

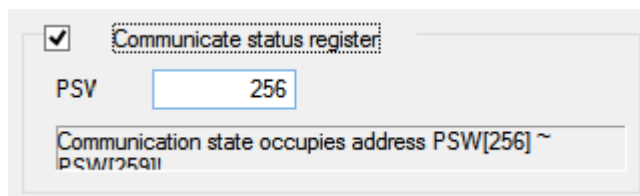


3. choose LG XGT series protocol in the list, and fill in the PLC IP address, the port is PLC port no.

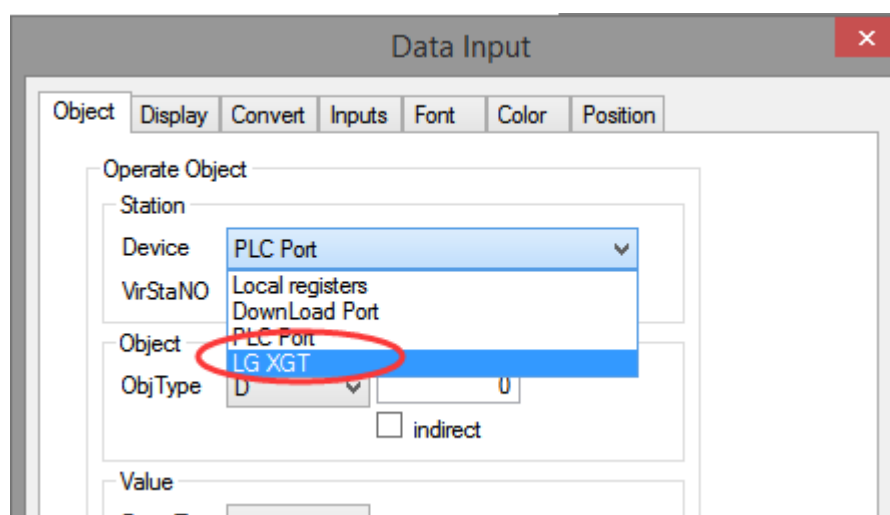
set in the PLC software.



4. Please keep the communication parameters as default, if the communicate status register is selected, PSW256~PSW259 respectively indicate communication successful times, failed times, overtime times, error times. User can set the register address as needs.



5. click next to finish the settings and enter screen edit interface. Put a data input button on the screen, and choose the LG XGT in the device list.



### 2.56.3 Cable making

RJ45 Straight Through Cable (connect HUB) or RJ45 Crossover Cable:

Pin no.	Color		Pin no.	Color
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 1

Pin no.	Color		Pin no.	Color
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 2

#### 2.56.4 Device address

PLC address	Range	Object type	Notes
P	0.0~65535.F	Bit	Input/output
	0~65535	Word/DWord	Data register
M	0.0~65535.F	Bit	Internal auxiliary relay
	0~65535	Word/DWord	Data register
L	0.0~65535.F	Bit	Communication output
	0~65535	Word/DWord	Communication register
F	0.0~65535.F	Bit	Internal special relay
	0~65535	Word/DWord	Internal special data register
T	0~65535	Word/DWord	Timer present value
	0~65535	Bit	Timer
C	0~65535	Word/DWord	Counter present value
	0~65535	Bit	Counter
D	0~65535	Word/DWord	Data register
	0.0~65535.F	Bit	Bit of Data register
S	0~65535	Bit	Step relay
K	0~65535	Word/DWord	Retentive data register
	0.0~65535.F	Bit	Retentive relay
Z	0~65535	Word/DWord	Index data register
	0.0~65535.F	Bit	Index relay
N	0~65535	Word/DWord	Communication register
	0.0~65535.F	Bit	Communication relay
R	0~65535	Word/DWord	Data register



	0.0~65535.F	Bit	Relay
ZR	0~65535	Word/DWord	Data register
	0.0~65535.F	Bit	Relay
TS	0~65535	Word/DWord	Timer set value
CS	0~65535	Word/DWord	Counter set value

## 2.57 Haiwell

### 2.57.1 Device type

Series name	Communication type	Cable making	The PLC model in touchwin
Haiwell PLC	RJ45	Fig 1 or 2	Haiwellbus TCP protocol

### 2.57.2 Parameters

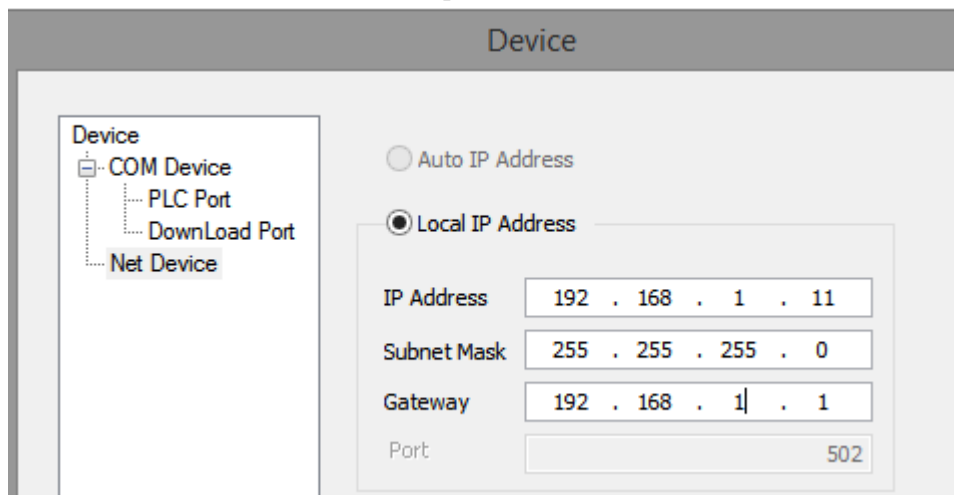
Take Haiwell PLC as an example to explain the communication settings.

PLC settings:

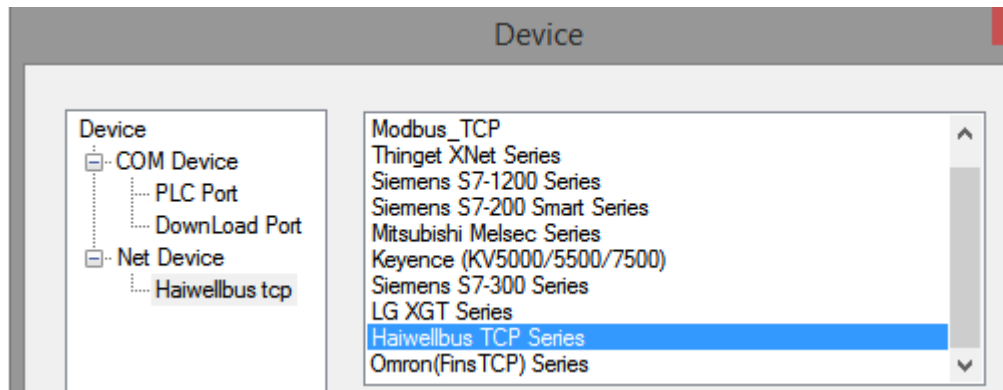
Open the PLC software, set the PLC IP to 192.168.1.111 for example.

HMI settings:

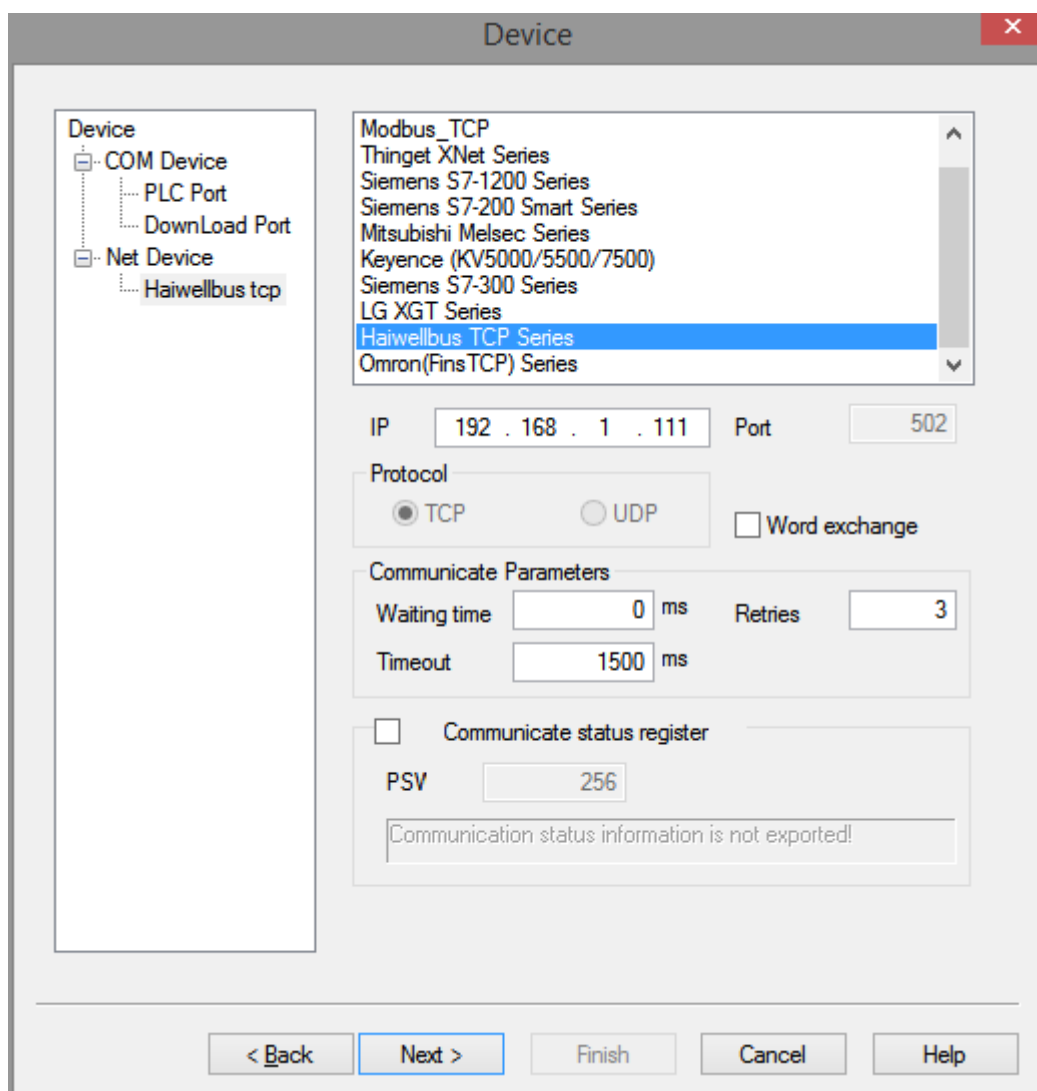
1. choose HMI model TN(-ET), TG(-ET) or TE(-ET), click next, then choose net device, fill in the IP address of HMI. The HMI IP cannot be conflict with other devices in the network. The HMI IP is set to 192.168.1.11 for example.



2. right click the net device, build a new project, and name it as Haiwellbus TCP.



3. choose Haiwellbus TCP protocol in the list, and fill in the PLC IP address, the port is PLC port no. set in the PLC software.



4. Please keep the communication parameters as default, if the communicate status register is selected, PSW256~PSW259 respectively indicate communication successful times, failed times, overtime times, error times. User can set the register address as needs.

☒ Communicate status register

PSV

Communication state occupies address PSW[256] ~ PSW[2591]

5. click next to finish the settings and enter screen edit interface. Put a data input button on the screen, and choose the Haiwellbus tcp in the device list.

**Data Input** ✕

Object   Display   Convert   Inputs   Font   Color   Position

Operate Object

Station

Device  ▼

VirStaNO    Station

Object

ObjType

☐ indirect

### 2.57.3 Cable making

RJ45 Straight Through Cable (connect HUB) or RJ45 Crossover Cable:

Pin no.	Color		Pin no.	Color
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 1

Pin no.	Color		Pin no.	Color
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 2

#### 2.57.4 Device address

PLC address	Range	Object type	Notes
X	0~1023	Bit	Digital input
Y	0~1023	Bit	Digital output
M	0~12287	Bit	Internal relay
T	0~1023	Bit	Timer
C	0~255	Bit	Counter
SM	0~215	Bit	System status bit
S	0~2047	Bit	Step relay
CR	0~255	Word/DWord	Extended module parameter
AI	0~255	Word/DWord	Analog input
AQ	0~255	Word/DWord	Analog output
V	0~14847	Word/DWord	Internal register
TV	0~1023	Word/DWord	Timer
CV	0~255	Word/DWord	Timer
SV	0~900	Word/DWord	Step driver



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