

HMI Connection Manual



Version: 2024/04/16

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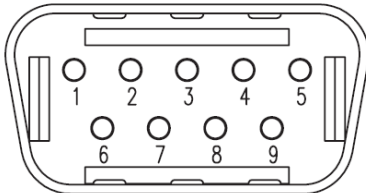
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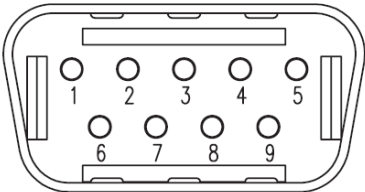
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1. HMI Model Serial Information

DB-9 pin + Terminal block 7 pin

Serial Interface	COM1(RS-232[TXD,RXD,RTS,CTS]) COM3(RS-422/485) COM4(RS-485)				
Serial Layout					
	PIN#		COM1		
	1				
	2		RX		
	3		TX		
	4				
	5		GND		
	6				
	7		RTS		
	8		CTS		
	9				
					
	PIN#		COM3 (RS-422)	COM3 (RS-485)	COM4 (RS-485)
	1				DATA+
	2				DATA-
	3		ISO_GND	ISO_GND	ISO_GND
	4		RX+		
	5		RX-		
	6		TX+	DATA+	
	7		TX-	DATA-	

Only DB-9 pin

Serial Interface	COM1(RS-232[TXD,RXD]) COM2(RS-422/485) COM3(RS-485)				
Serial Layout					
	PIN#	COM1 (RS-232)	COM2 (RS-422)	COM2 (RS-485)	COM3 (RS-485)
	1		TX+	DATA+	
	2	RX			
	3	TX			
	4		RX+		
	5	GND	GND	GND	GND
	6		TX-	DATA-	
	7				DATA+
	8				DATA-
	9		RX-		

2. PLC Connection

2.1 MERITEK Automation Corp.

2.1.1 MBs/MB1/MB1Z/MHB1

2.1.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	Must match PLC port setting
Communication Method	MERITEK Communication Protocol	

2.1.1.2 Memory Resource Review

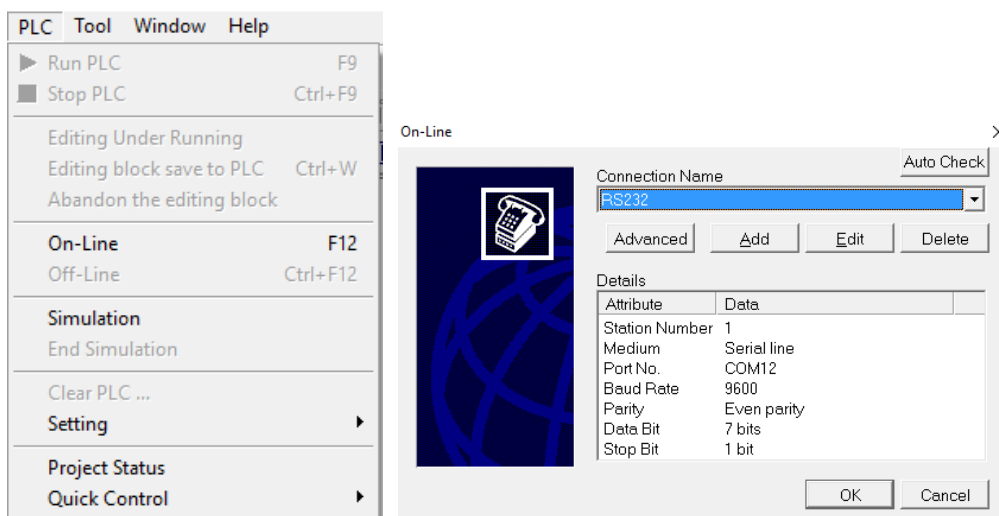
Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	0	2001	Input Relay
WS	16	DDDD	0	999	Step Relay
RT	16	DDDD	0	255	Timer Register
RC	16	DDDD	0	199	Counter Register
DRC	32	DDDD	200	255	Counter Register
R	16	DDDD	0	8071	Data Register
D	16	DDDD	0	4095	Data Register

F	16	DDDD	0	8191	File Register
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2.1.1.3 Connecting to PLC

Configuring of PLC

Use the application **WinProLadder** (ver. 3.25) to configure the serial port of the PLC. Connect the PLC to a computer. In the application, under the **PLC** tab, select the **On-Line** option. In the dialog, select **RS232** for the Connection Name and press 'Edit'. Within the edit dialog, select the port number the PLC is connected to. Press OK to confirm the settings.



Under the **PLC** tab, select the **Setting** option and choose Port 0. Here, the Baud rate and other parameters of the serial port can be configured.

Comm. Parameters Setting - Port0

Baud Rate: 9600

Parity: Even parity

Data Bit: 7 bits

Stop Bit: 1 bit

☒ This port is used for current programming.

Reply delay time: 3 mS

Transmission Delay: x10mS

Receive Time-out interval time: x10mS

☐ Without checking of station number

Protocol:

OK Cancel

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Meritek Automation corp

Product Series: Meritek MBs/B1/B1z/HB1

Interface Setting

Basic Comm. Error Handling

Port: COM1 Timeout(ms): 3000

Baudrate: 9600 Command Delay(ms): 0

Parity: Even Retry Count: 0

Data Bits: 7

Stop Bits: 1

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

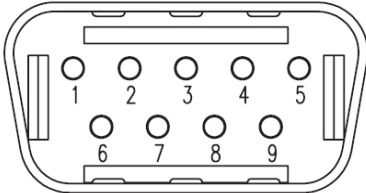
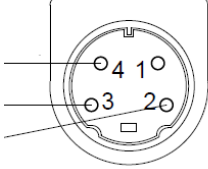
Under **Manufacturer** select MERITEK Automation Corp

Under **Product Series** select MERITEK MBs/MB1/MB1Z/MHB1

Under **Port** select COM1

Verify the other parameters are consistent with the settings on the PLC.

2.1.1.4 Wiring Diagrams(COM1)

 HMI COM1 *Looking into COM1 Port		Mini-DIN (PLC Site)  PLC RS232	
PIN#	COM1 (RS232)	PIN#	Signal
1		1	
2	RX	2	GND
3	TX	3	RX
4		4	TX
5	GND		
6			
7	RTS		
8	CTS		
9			

HMI COM1	PLC RS232 Port
2 RX	4 TX
3 TX	3 RX
5 GND	2 GND

2.1.2 MBs/MB1/MB1Z/MHB1 (TCP)

2.1.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.1.3	
Port	500	
PLC Station No.	0	
Communication Method	TCP	

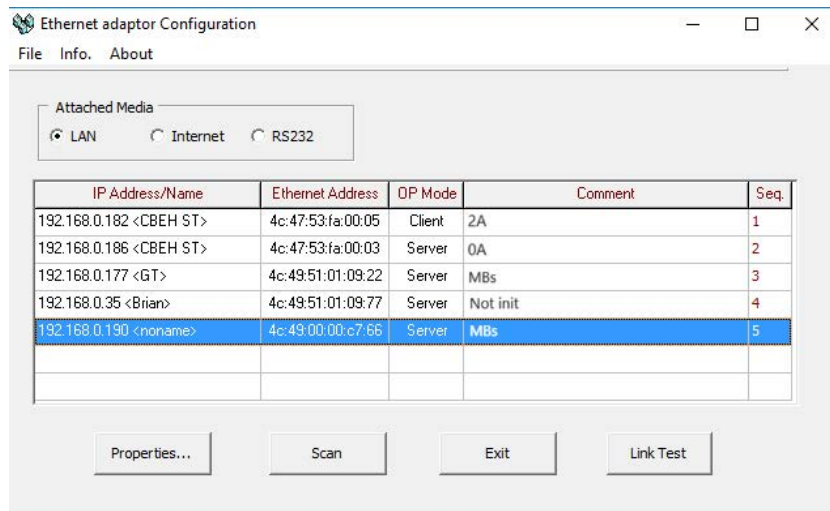
2.1.2.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	0	2001	Input Relay
WS	16	DDDD	0	999	Step Relay
RT	16	DDDD	0	255	Timer Register
RC	16	DDDD	0	199	Counter Register
DRC	32	DDDD	200	255	Counter Register
R	16	DDDD	0	8071	Data Register
D	16	DDDD	0	4095	Data Register
F	16	DDDD	0	8191	File Register

2.1.2.3 Connected Setting

Configuring IP Address on PLC

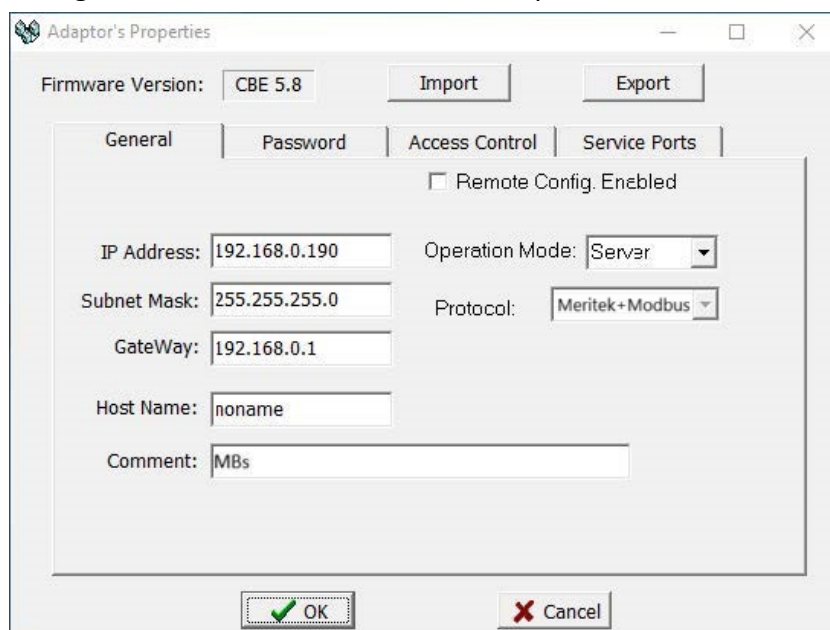
Use the application **MERITEK Ethernet Module Configuration Tool** to configure the IP address of the PLC. Connect an Ethernet cable to the PLC. Under **Attached Media**, select LAN and press scan.



Select the PLC to connect to and right click or press Properties to change the IP.

Note: The default IP address for the PLC has 1 for its third octet. If the IP address of the computer has a different number at that position, the PLC will not show up in the scan. Configure network settings on the computer to be able to see the PLC in the local network.

In the dialog window, the IP address and other parameters of the PLC can be configured. In the **Service Ports** tab, the port number of the PLC can be changed.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: MERITEK Automation Corp.

Product Series: MERITEK MBs/MB1/MB1z/MHB1

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192.168.0.190 Timeout(ms): 3000

Port: 500 Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

Device Name: Q

OK

Within the **Link** configuration window in FvDesigner: Under

Interface Type select Ethernet

Under **Manufacturer** select MERITEK Automation Corp Under

Product Series select MERITEK MBs/MB1/MB1Z/MHB1 (TCP)

Use the IP address and port number assigned on the PLC

2.1.3 MBs/MB1/MB1Z/MHB1 (UDP)

2.1.3.1 Communication Setting

Item	Default Settings	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.1.100	
Port	500	
PLC Station No.	0	
Communication Method	UDP	

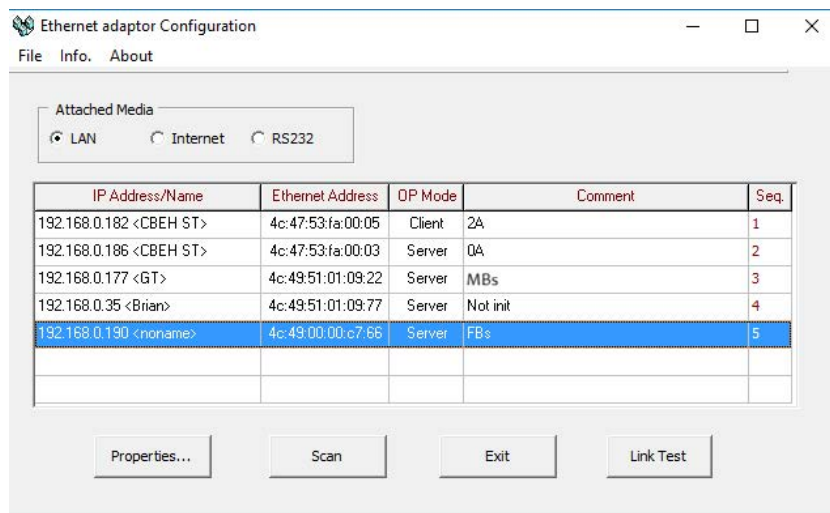
2.1.3.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	0	2001	Input Relay
WS	16	DDDD	0	999	Step Relay
RT	16	DDDD	0	255	Timer Register
RC	16	DDDD	0	199	Counter Register
DRC	32	DDDD	200	255	Counter Register
R	16	DDDD	0	8071	Data Register
D	16	DDDD	0	4095	Data Register
F	16	DDDD	0	8191	File Register

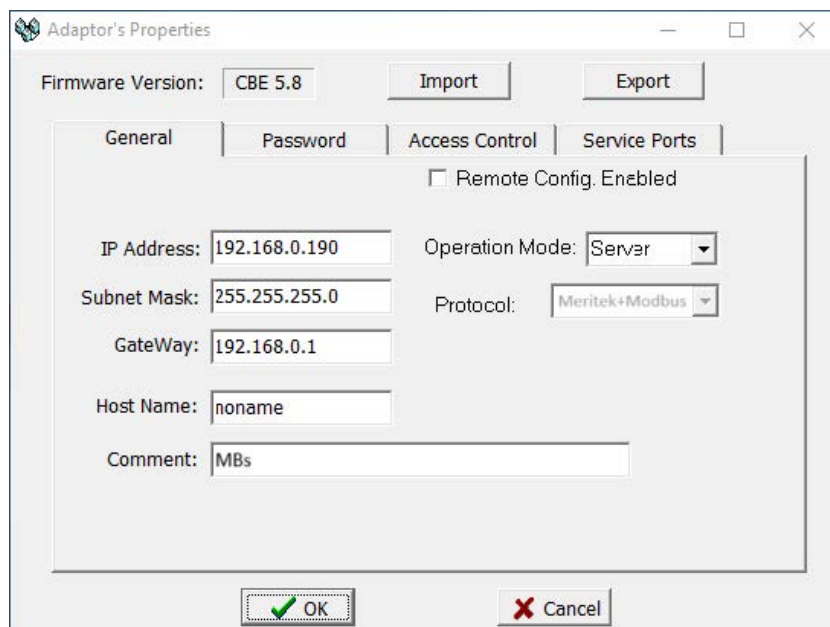
2.1.3.3 Connected Setting

Configuring IP Address on PLC

Use the application **MERITEK Ethernet Module Configuration Tool** to configure the IP address of the PLC. Connect an Ethernet cable to the PLC. Under **Attached Media**, select LAN and press scan.



In the dialog window, the IP address and other parameters of the PLC can be configured.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

New Link Property

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: MERITEK Automation Corp. Help

Product Series: MERITEK MBs/MB1/MB1z/MHB1 (UDP)

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192.168.1.100 Timeout(ms): 1000

Port: 500 Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Station Number: 1 ☐ Set in Register

☐ Link Status

OK Cancel

Within the **Link** configuration window in FvDesigner:

- Under **Interface Type** select Ethernet
- Under **Manufacturer** select MERITEK Automation Corp
- Under **Product Series** select MERITEK MBe (UDP)
- Use the IP address assigned on the PLC
- Leave the Port at the default value

2.1.4 MBe

2.1.4.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232 / RS485	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	Must match PLC port setting
Communication Method	MERITEK Communication Protocol	

2.1.4.2 Memory Resource Review

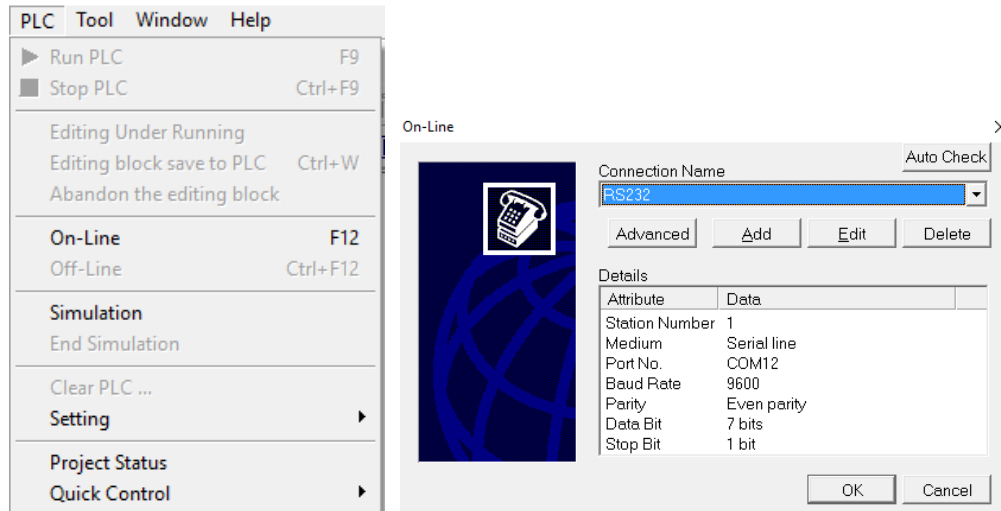
Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	0	2001	Input Relay
WS	16	DDDD	0	999	Step Relay
RT	16	DDDD	0	255	Timer Register
RC	16	DDDD	0	199	Counter Register
DRC	32	DDDD	200	255	Counter Register
R	16	DDDD	0	8071	Data Register
D	16	DDDD	0	4095	Data Register

2.1.4.3 Connecting to PLC

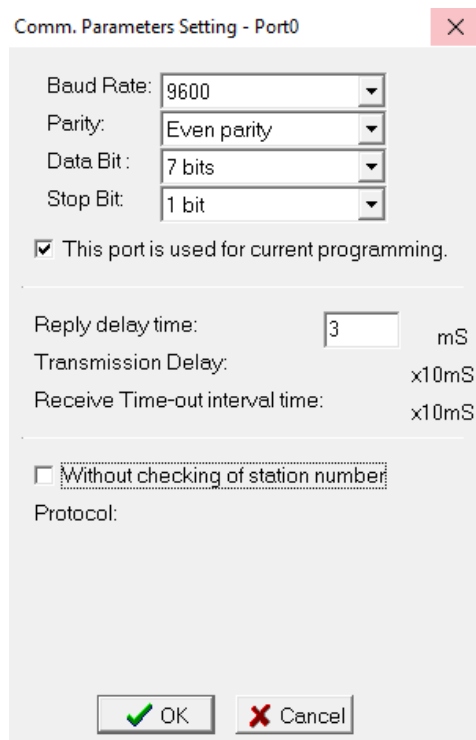
Configuring of PLC

Use the application **WinProLadder** (ver. 3.25) to configure the serial port of the PLC.

Connect the PLC to a computer. In the application, under the **PLC** tab, select the **On-Line** option. In the dialog, select **RS232** for the Connection Name and press 'Edit'. Within the edit dialog, select the port number the PLC is connected to. Press OK to confirm the settings.

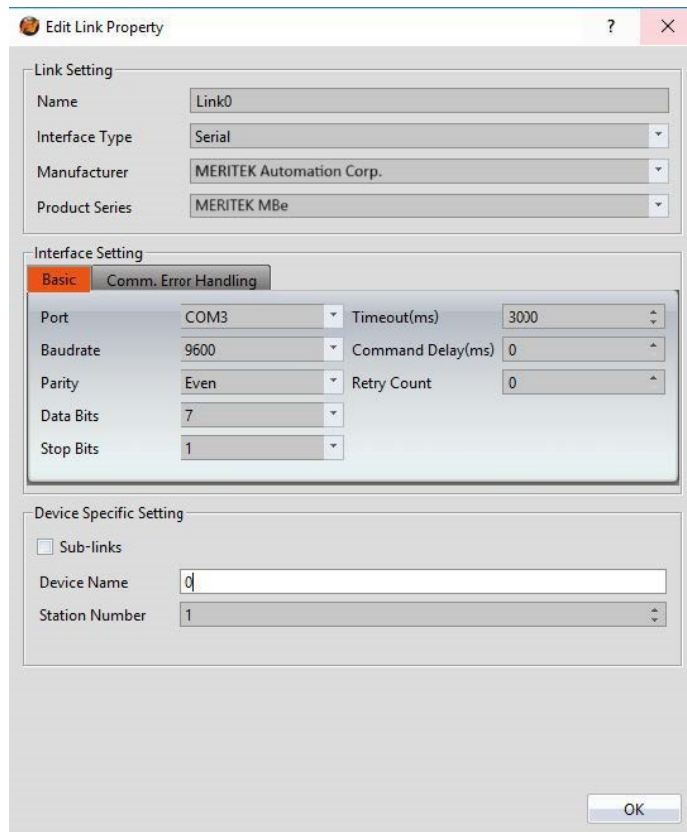


Under the **PLC** tab, select the **Setting** option and choose Port 0. Here, the Baud rate and other parameters of the serial port can be configured.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select MERITEK Automation Corp.

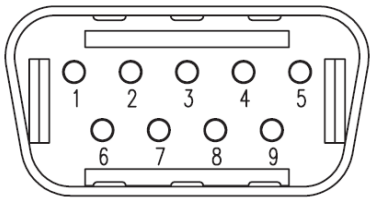
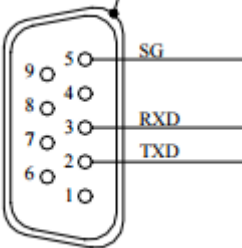
Under **Product Series** select MERITEK MBe

Under **Port** select the port corresponding to the connection to the PLC

Verify the other parameters are consistent with the settings on the PLC

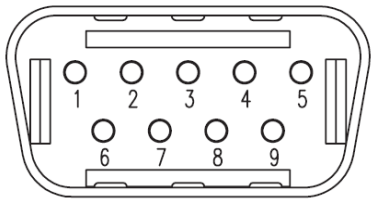
2.1.4.4 Wiring Diagrams(COM1)

The connections were made between the HMI and the FB-DTBR-E module. The module provides ports for each connection type.

 *Looking into COM1 Port		 PLC RS232 *Looking into port0	
PIN#	COM1 (RS232)	PIN#	Port 0 (RS-232)
1		1	
2	RX	2	TXD
3	TX	3	RXD
4		4	
5	GND	5	GND
6		6	
7	RTS	7	
8	CTS	8	
9		9	

HMI COM1	PLC RS232 Port
2 RX	2 TXD
3 TX	3 RXD
5 GND	5 GND

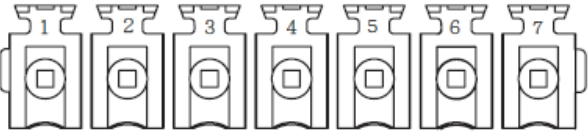
2.1.4.5 Wiring Diagrams(COM2/3)

			PLC RS485 D+ D- FG 
PIN#	COM2	COM3	Port 2 (RS-485)
1	DATA+		DATA+
2			DATA-
3			FG
4			
5	GND	GND	
6	DATA-		
7		DATA+	
8		DATA-	
9			

HMI COM2	PLC RS485 Port
1 DATA+	DATA+
6 DATA-	DATA-

HMI COM3	PLC RS485 Port
7 DATA+	DATA+
8 DATA-	DATA-

2.1.4.6 Wiring Diagrams(COM3/4)

 *Looking into HMI Device			PLC RS485 D + D- FG 
PIN#	COM3	COM4	Port 2 (RS-485)
1		DATA+	DATA+
2		DATA-	DATA-
3	ISO_GND	ISO_GND	FG
4			
5			
6	DATA+		
7	DATA-		

HMI COM3	PLC RS485 Port
6 DATA+	DATA+
7 DATA-	DATA-

HMI COM4	PLC RS485 Port
1 DATA+	DATA+
2 DATA-	DATA-

2.1.5 MBe (TCP)

2.1.5.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.1.3	
Port	500	
PLC Station No.	0	
Communication Method	TCP	

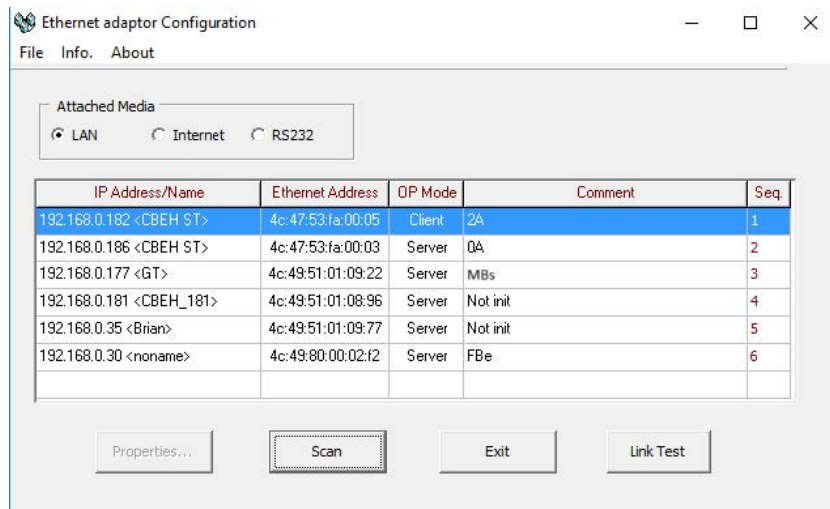
2.1.5.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	0	2001	Input Relay
WS	16	DDDD	0	999	Step Relay
RT	16	DDDD	0	255	Timer Register
RC	16	DDDD	0	199	Counter Register
DRC	32	DDDD	200	255	Counter Register
R	16	DDDD	0	8071	Data Register
D	16	DDDD	0	4095	Data Register

2.1.5.3 Connected Setting

Configuring IP Address on PLC

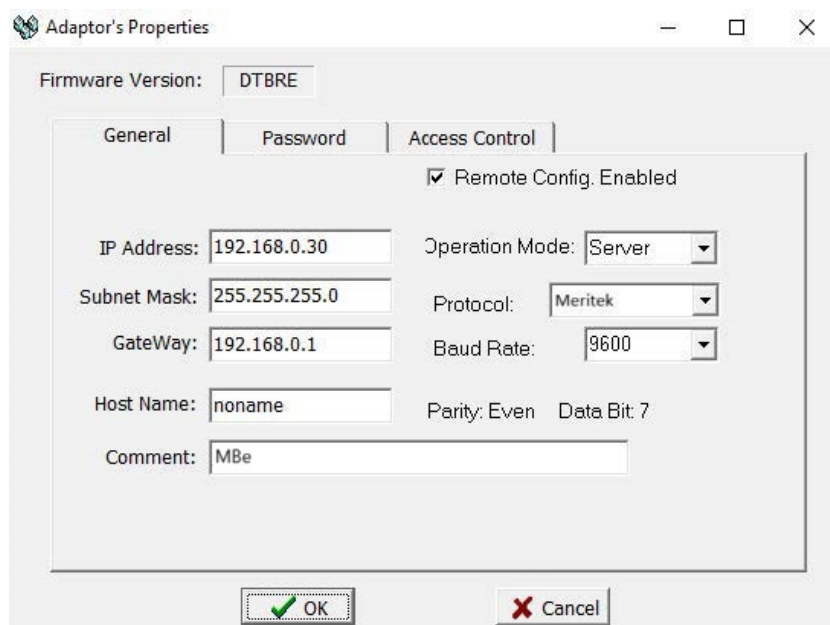
Use the application **MERITEK Ethernet Module Configuration Tool** to configure the IP address of the PLC. Connect an Ethernet cable to the PLC. Under **Attached Media**, select LAN and press scan.



Select the PLC to connect to and right click or press Properties to change the IP.

Note: The default IP address for the PLC has 1 for its third octet. If the IP address of the computer has a different number at that position, the PLC will not show up in the scan. Configure network settings on the computer to be able to see the PLC in the local network.

In the dialog window, the IP address and other parameters of the PLC can be configured.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: MERITEK Automation Corp.

Product Series: MERITEK MBe (TCP)

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192 . 168 . 0 . 30

Port: 500

Timeout(ms): 3000

Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

Device Name: q

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select MERITEK Automation Corp Under **Product Series** select MERITEK MBe

(TCP) Use the IP address assigned on the PLC

Leave the Port at the default value

2.1.6 SD3 Servo

2.1.6.1 Communication Setting

ITEMS	SPEC
Electrical specifications	Asynchronous serial communication half duplex
Baud rate	2400,4800,9600,19200,38400,57600bps
Data bit	8 bit
Parity bit	None even odd
Stop bit	1bit 2bit
Check sum	CRC16-CCITT
Data transfer	8 bit (binary)
Communication data length	32 bytes

2.1.6.2 Memory Resource Review

Bit/ Word	Device Name	Register symbol	Input format	Start	End	Read/ Write
B	Alarm Status	A	D	0	0	R
W	Parameter	P	DDDD	0	1029	R/W
	State	S	DDDD	0	1029	R
	Multi-Turn Data	MTD	D	0	0	R
	Alarm Status	A	D	0	0	R
DW	Parameter	DP	DDDD	0	1029	R/W
	State	DS	DDDD	0	1029	R
	Single-Turn Data	STD	D	0	0	R

2.1.6.3 Connected Setting

Sankyo Servo Parameter configuration

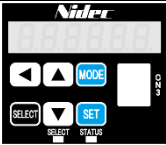
With the upper control device specifications, set the drive communication address and communication parameters. The following are the parameters that must be set for RS-485.

Parameter No.	parameter	Setting value
4.0	RS-485 communication address	1-32 Initial value 1 °
6.0	RS-485 communication Baud rate	0 : 2,400bps 1 : 4,800bps

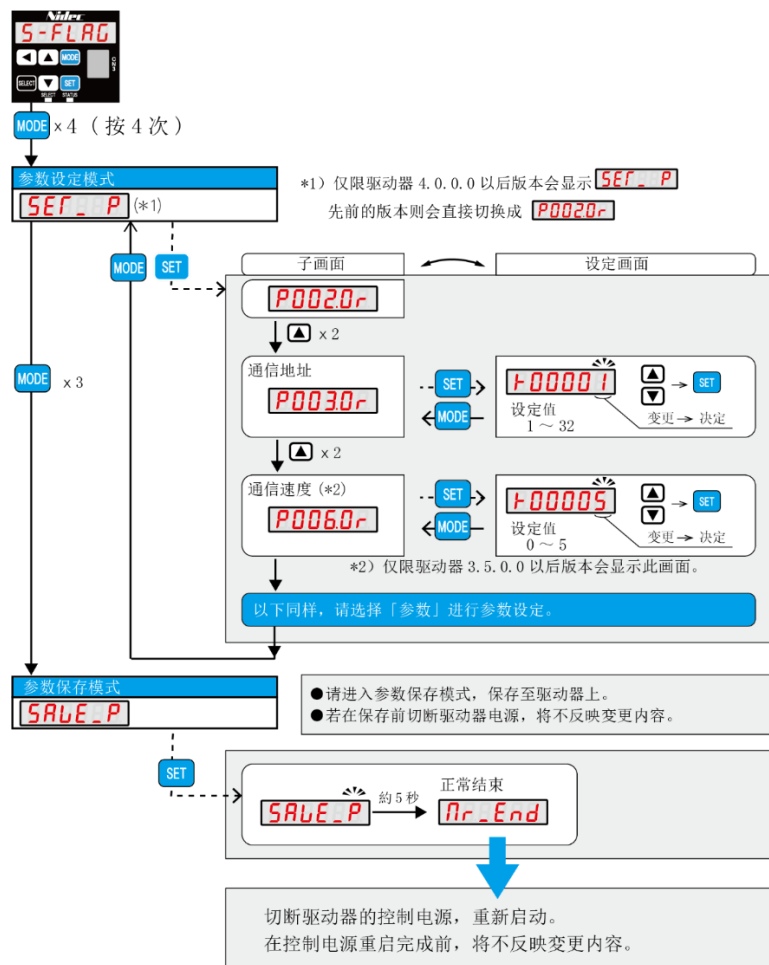
		2 : 9,600bps 3 : 19,200bps 4 : 38,400bps 5 : 57,600bps (Initial value)
6.1	RS-485 communication STOP bit	0 : 1 bit (Initial value) 1 : 2 bit
6.2	RS-485 communication parity	0 : none (Initial value) 1 : EVEN 2 : ODD
8.0	RS-485 communication ON/OFF	0 : no use (Initial value) 1 : use
11.0	RS-485 Communication Minimum response time	0-255 Initial value 3 [ms] °

2.1.6.4 Wiring Diagrams

Parameter setting method (alternatively set the following parameters):

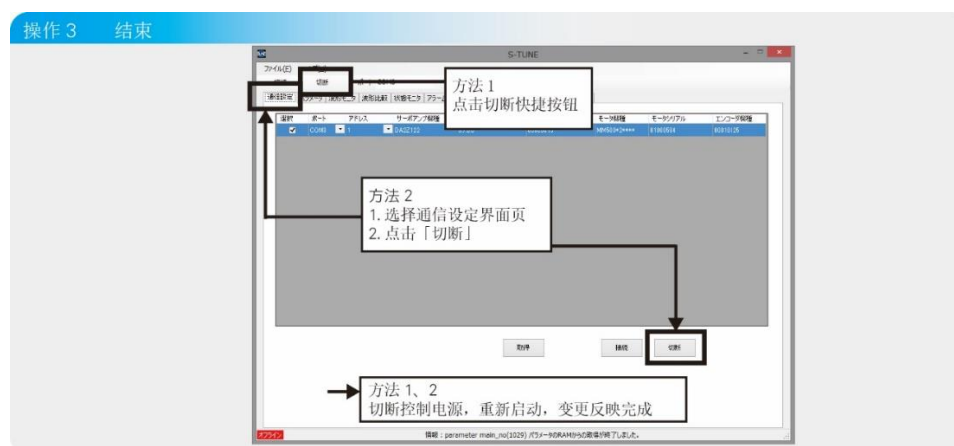
Setting	
	Use the drive front panel settings.
	S-TUNE has been set for adjustment. Software needs to be installed on the computer.

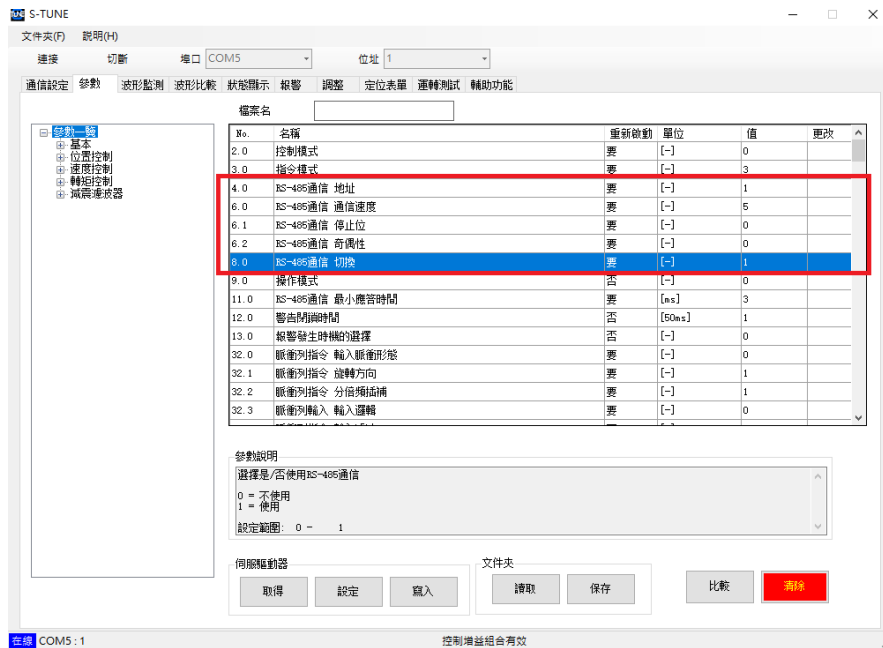
Method1:



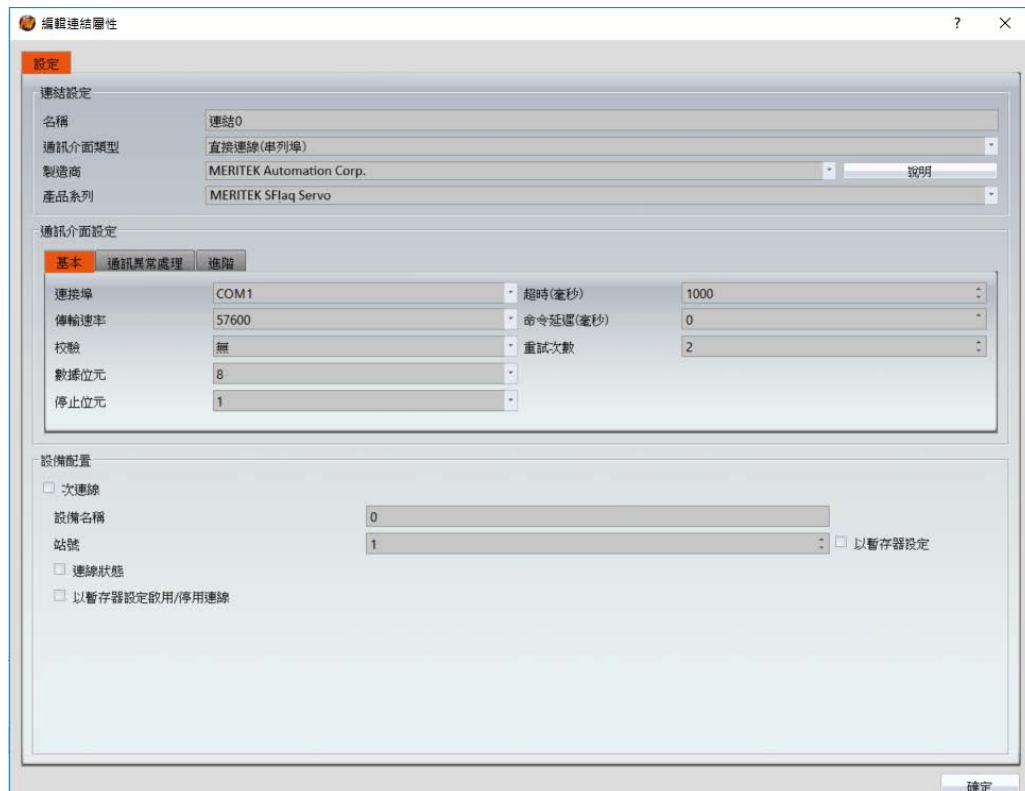
Method2:

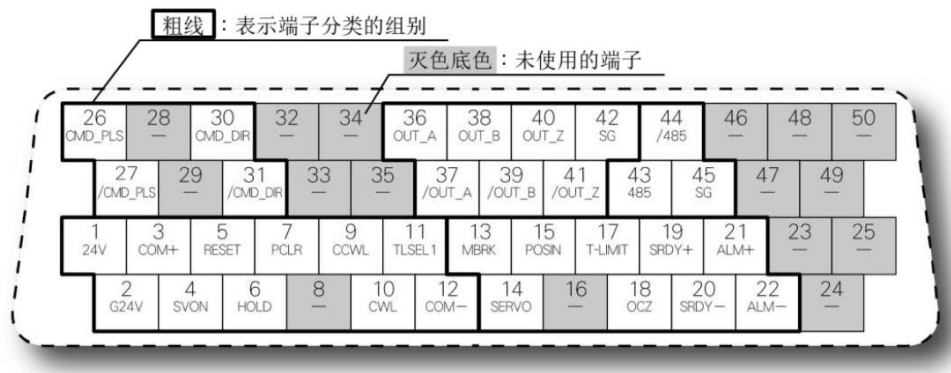
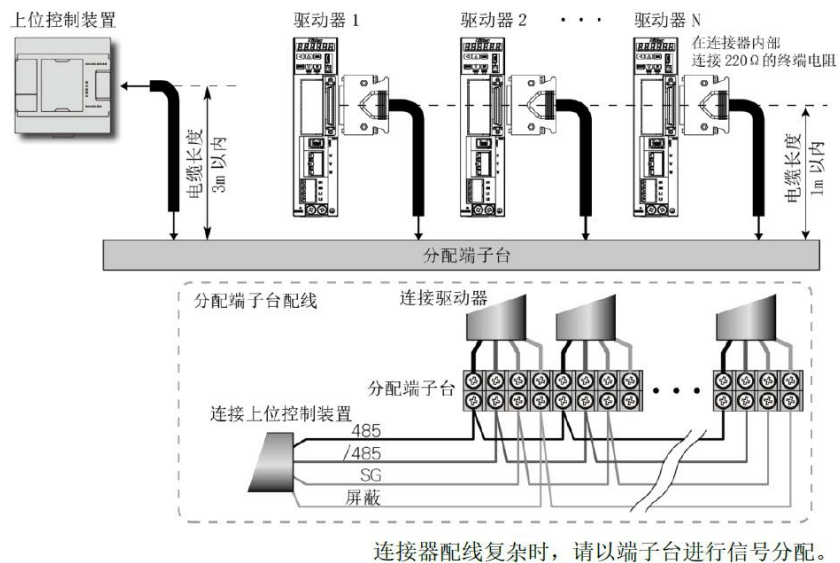
Open Sankyo S-TUNE and use the mini USB cable to connect to the computer USB port, it will automatically connect





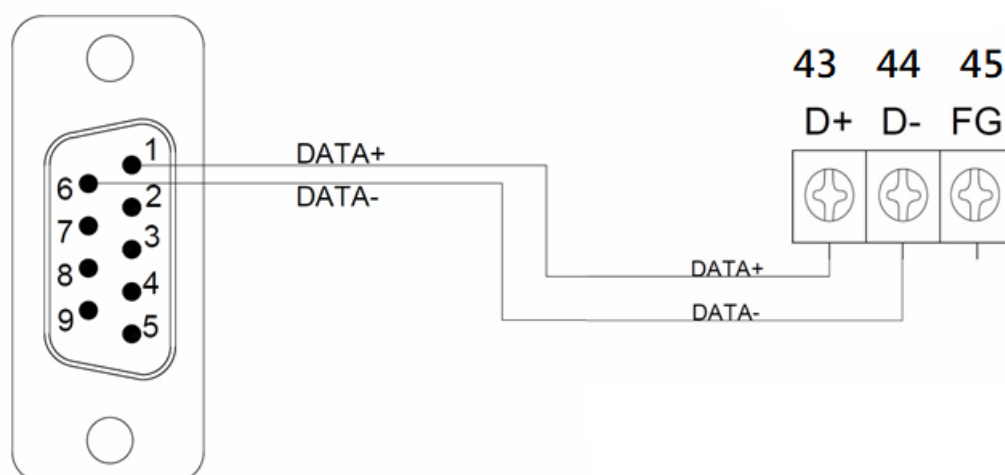
Configuring of HMI





HMI COM2

Sankyo Servo CN1
PIN脚位



2.1.7 M series

2.1.7.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	
Communication Method	MERITEK Communication Protocol	

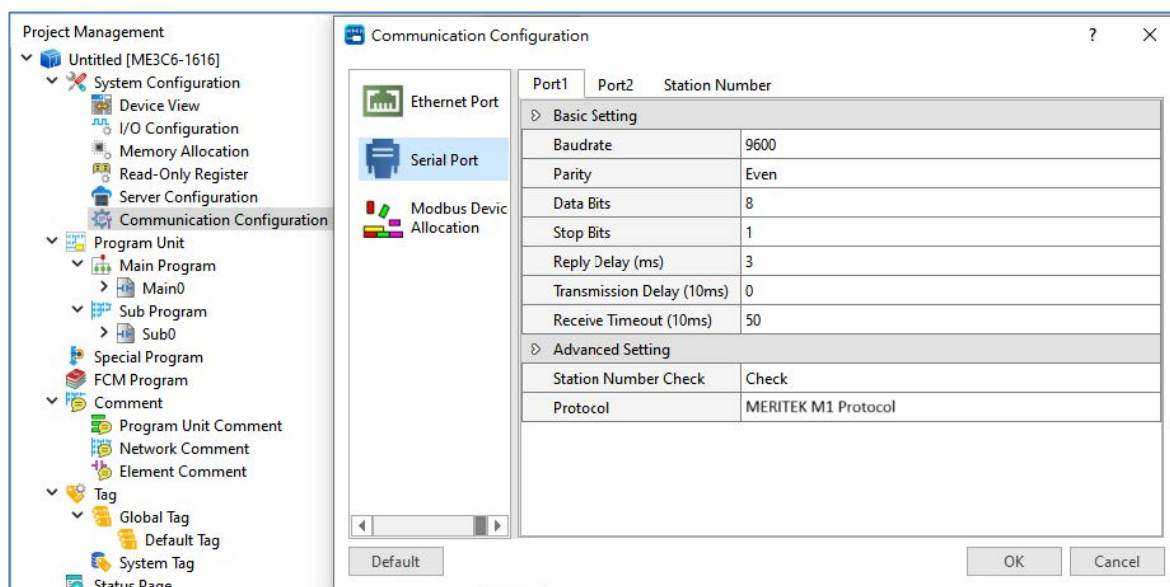
2.1.7.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	1023	Input Discrete
Y	1	DDDD	0	1023	Output Relay
M	1	DDDDD	0	29599	Internal Relay
S	1	DDDD	0	3103	Step Relay
T	1	DDDD	0	1023	Timer Discrete
C	1	DDDD	0	1279	Counter Discrete
WX	16	DDDD	0	1023	Input Discrete
WY	16	DDDD	0	1023	Output Relay
WM	16	DDDDD	0	19599	Internal Relay
WS	16	DDDD	0	3103	Step Relay
RT	16	DDDD	0	1023	Timer Register
RC	16	DDDD	0	1023	16-bit Counter Register
LC	32	DDDD	1024	1279	32-bit Counter Register
R	16	DDDD	0	47319	Data Register
D	16	DDDD	0	11999	Data Register
F	16	DDDD	0	32767	File Register

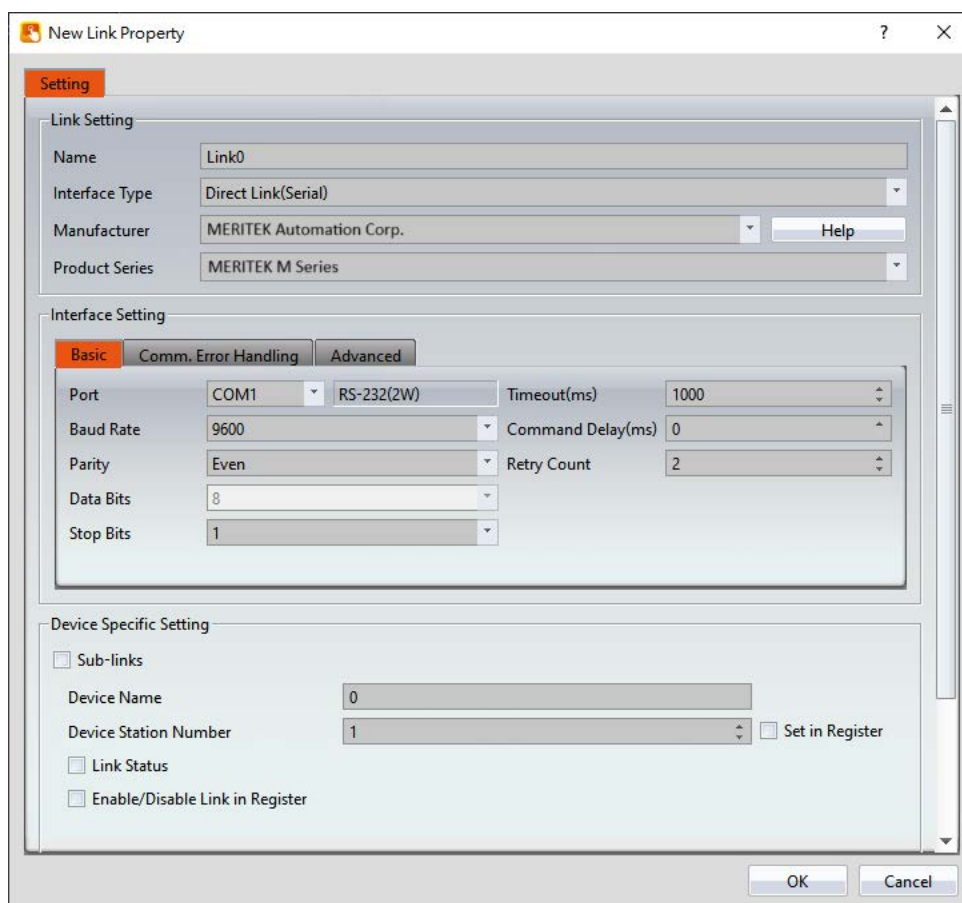
2.1.7.3 Connecting to PLC

Configuring of PLC

Use the PLC software "UperLogic" to configure the serial port communication parameters of the PLC. After connecting to the device via "USB" or "Ethernet," select the "Communication Settings" option to set the corresponding communication parameters.



Configuring of HMI



Within the Link configuration window in FvDesigner:

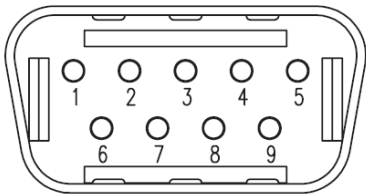
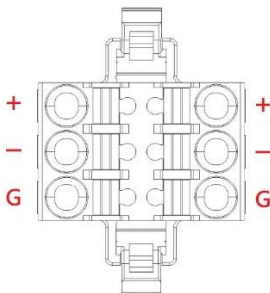
Under Interface Type select **Serial**.

Under Manufacturer select **MERITEK Automation**

Corp. Under Product Series select **MERITEK M Series**.

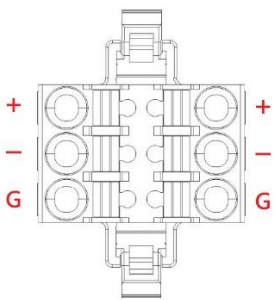
Verify the other parameters are consistent with the settings on the PLC.

2.1.7.4 Wiring Diagrams(COM2)

HMI485 		PLC RS485  PO1/PO2 (RS-485)
PIN#	Port 2 (RS-485)	Port1/2 (RS-485)
1	D+	D+
6	D-	D-
5	G	G

PIN#	Port 3 (RS-485)	Port1/2 (RS-485)
7	D+	D+
8	D-	D-
5	G	G

2.1.7.5 Wiring Diagrams(COM3/4)

HMI485 		PLC RS485  PO1/PO2 (RS-485)
PIN#	Port 3 (RS-485)	Port1/2 (RS-485)
6	D+	D+
7	D-	D-
3	G	G

PIN#	Port 4 (RS-485)	Port1/2 (RS-485)
1	D+	D+
2	D-	D-
3	G	G

2.1.8 M series (TCP)

2.1.8.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.2.4	
Port	501	
PLC Station No.	0	
Communication Method	TCP	

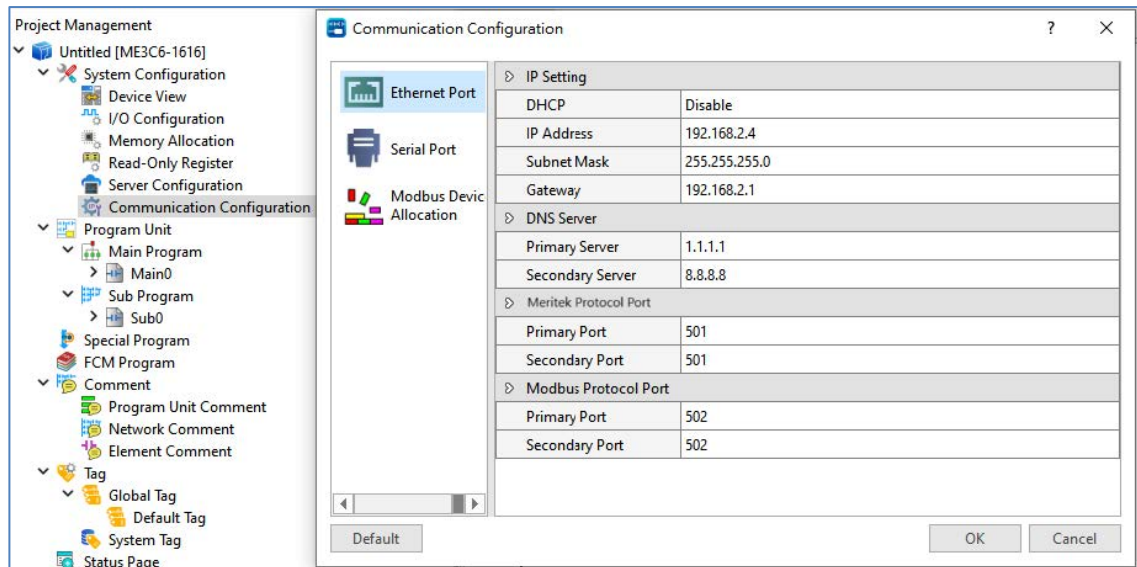
2.1.8.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	1023	Input Discrete
Y	1	DDDD	0	1023	Output Relay
M	1	DDDDD	0	29599	Internal Relay
S	1	DDDD	0	3103	Step Relay
T	1	DDDD	0	1023	Timer Discrete
C	1	DDDD	0	1279	Counter Discrete
WX	16	DDDD	0	1023	Input Discrete
WY	16	DDDD	0	1023	Output Relay
WM	16	DDDDD	0	19599	Internal Relay
WS	16	DDDD	0	3103	Step Relay
RT	16	DDDD	0	1023	Timer Register
RC	16	DDDD	0	1023	16-bit Counter Register
LC	32	DDDD	1024	1279	32-bit Counter Register
R	16	DDDD	0	47319	Data Register
D	16	DDDD	0	11999	Data Register
F	16	DDDD	0	32767	File Register

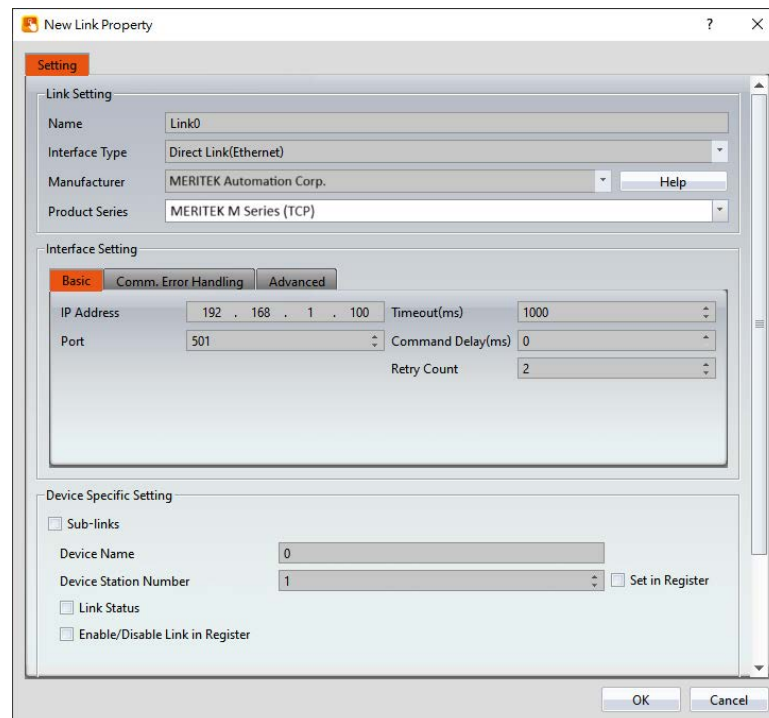
2.1.8.3 Connecting to PLC

Configuring of PLC

Use the PLC software "**UperLogic**" to configure the serial port communication parameters of the PLC. After connecting to the device via "USB" or "Ethernet," select the "Communication Settings" option to set the corresponding communication parameters.



Configuring of HMI



Within the Link configuration window in FvDesigner:

Under Interface Type select **Direct Link (Ethernet)**.

Under Manufacturer select **MERITEK Automation Corp.**

Under Product Series select **MERITEK M Series (TCP)**.

Verify the other parameters are consistent with the settings on the PLC.

2.2 Mitsubishi

2.2.1 FX2N CPU

2.2.1.1 Communication Setting

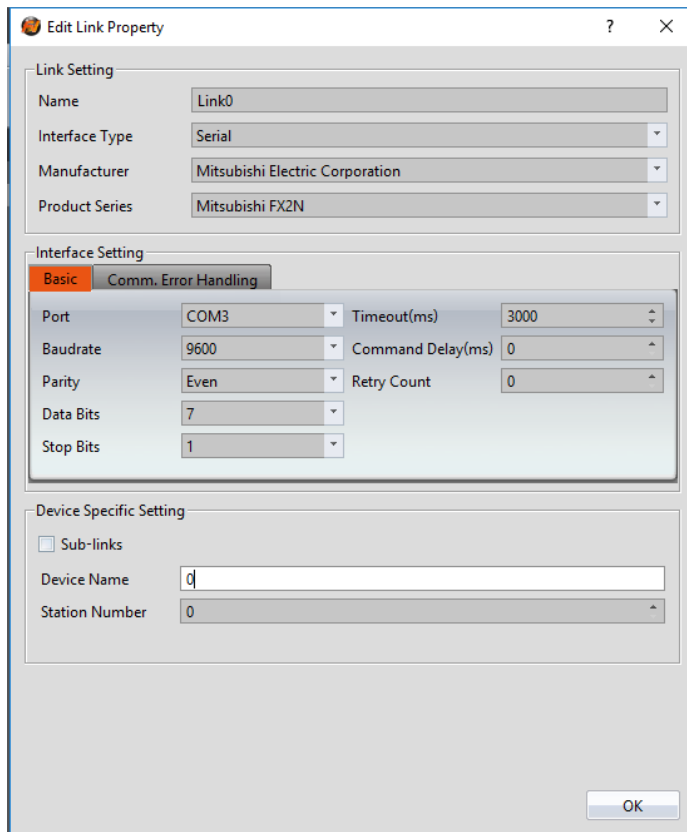
Item	Default Setting	Remark
Signal Level	RS485 4W	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	0	
Communication Method	Programming Protocol	

2.2.1.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
X	Input Discrete	1	0	377
Y	Output Relay	1	0	377
M	Internal Relay	1	0	7999
SM	Special Relay	1	8000	8255
S	Step Relay	1	0	4095
TS	Timer Discrete	1	0	255
CS	Counter Discrete	1	0	255
WX	Input Discrete	16	0	360
WY	Output Relay	16	0	360
WM	Internal Relay	16	0	7984
WS	Step Relay	16	0	4080
TN	Timer Memory	16	0	255
CN	Counter Memory	16	0	199
D	Data Register	16	0	7999
SD	Special Data Register	16	8000	8255
DCN	Counter Memory	32	200	255

2.2.1.3 Connected Setting

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

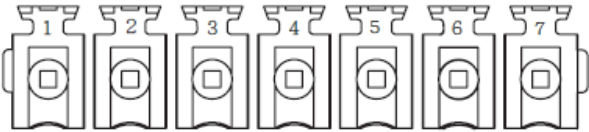
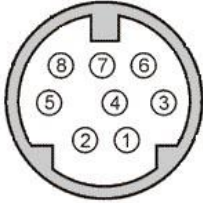
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select Mitsubishi FX2N

Under **Port** select COM3

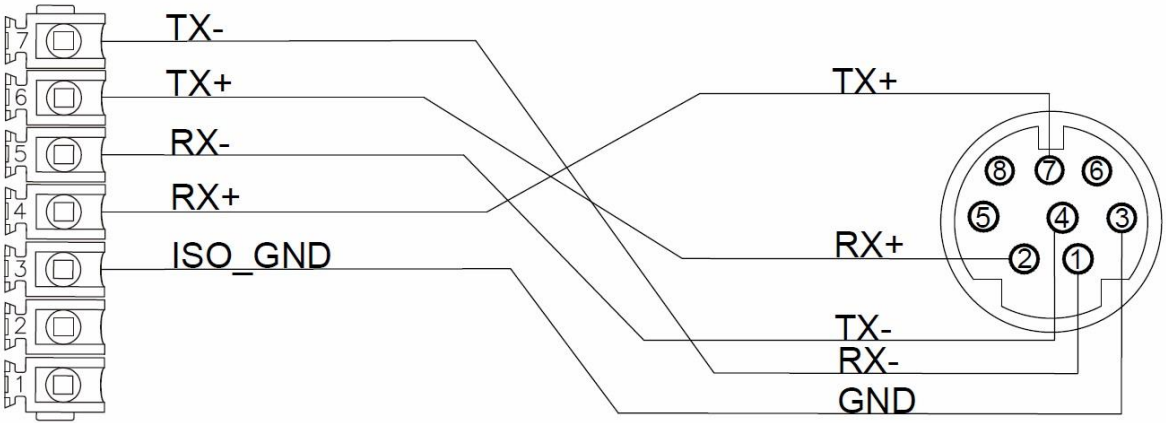
2.2.1.4 Wiring Diagrams

HMI COM3 Pinout		PLC RS422 Pinout	
			
*Looking into HMI Device		*View from soldering point of the cable	
PIN#	COM3 (RS-422/RS-485)	PIN#	Signal
1		1	RX-
2		2	RX+
3	ISO_GND	3	GND
4	RX+	4	TX-
5	RX-	5	
6	TX+	6	
7	TX-	7	TX+
		8	

HMI COM3	PLC RS422 Port
5 RX-	4 TX-
4 RX+	7 TX+
7 TX-	1 RX-
6 TX+	2 RX+
3 ISO_GND	3 GND

HMI COM3

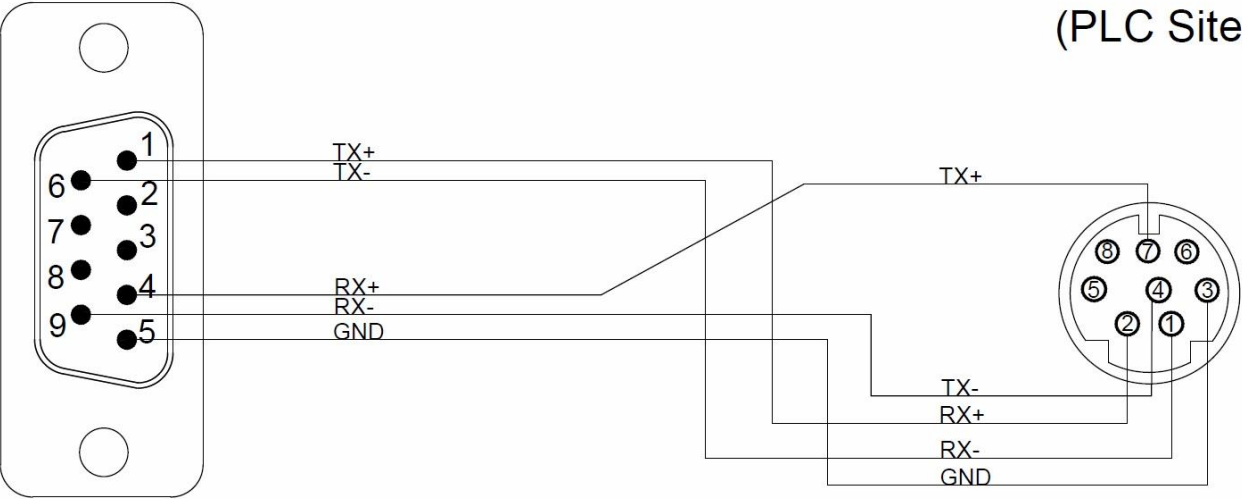
PLC RS422



HMI COM2	PLC RS422 Port
9 RX-	4 TX-
4 RX+	7 TX+
6 TX-	1 RX-
1 TX+	2 RX+
5 GND	3 GND

HMI COM2

Mini-DIN
(PLC Site)



2.2.2 FX2N-485BD

2.2.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	
TX Control	Form1	Without CR,LF
Checksum	Yes	
Communication Method	Computer Link	

2.2.2.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
X	Input Discrete	1	0	377
Y	Output Relay	1	0	377
M	Internal Relay	1	0	3071
SM	Special Relay	1	8000	8255
S	Step Relay	1	0	999
TS	Timer Discrete	1	0	255
CS	Counter Discrete	1	0	199
WX	Input Discrete	16	0	360
WY	Output Relay	16	0	360
WM	Internal Relay	16	0	3056
WS	Step Relay	16	0	976
TN	Timer Memory	16	0	255
CN	Counter Memory	16	0	199
D	Data Register	16	0	7999
SD	Special Data Register	16	8000	8255
DCN	Counter Memory	32	200	255

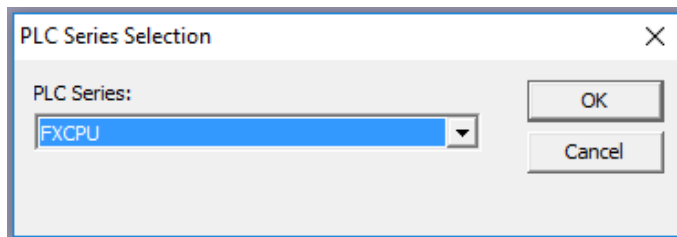
2.2.2.3 Connected Setting

Configuring of PLC

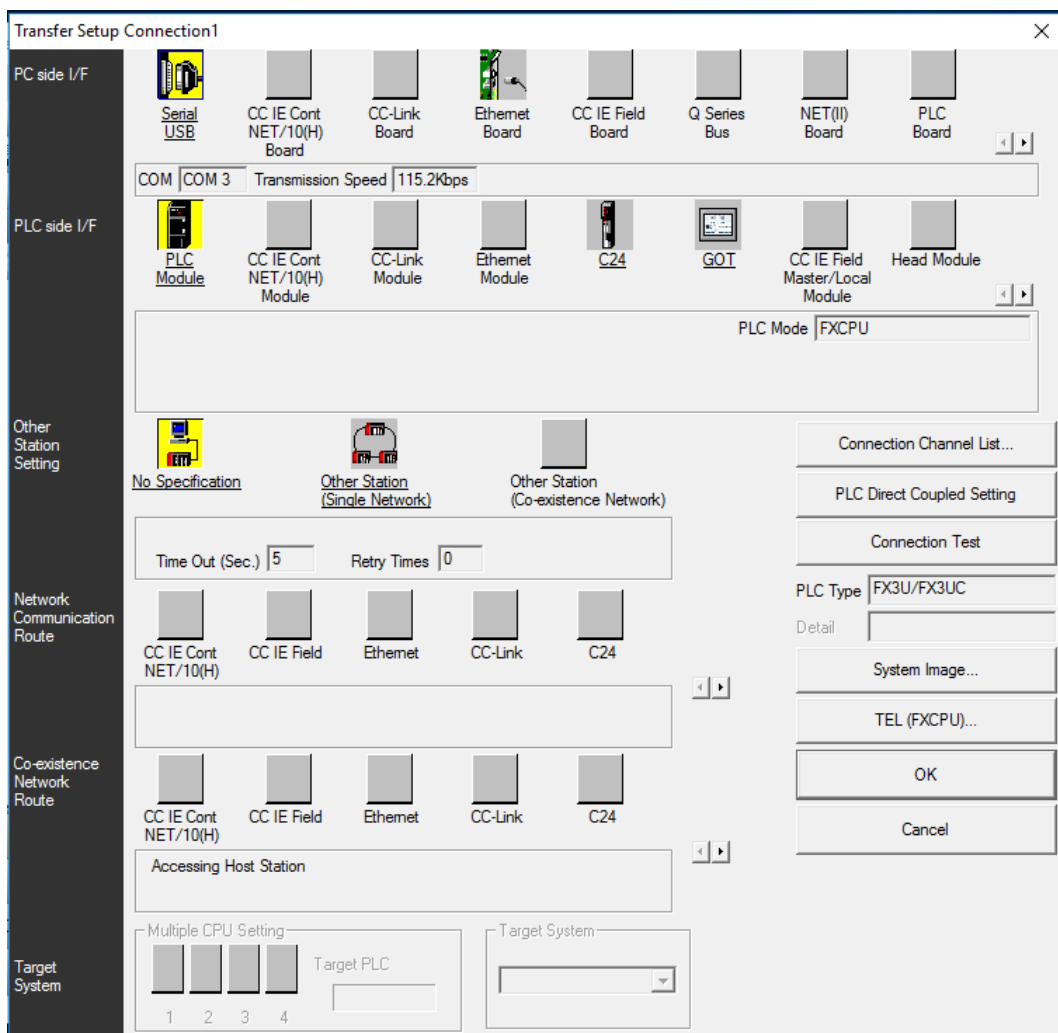
Use **MELSOFT GX Works2** to configure the port of the PLC.

Under the **Online** menu option, select **Read from PLC**

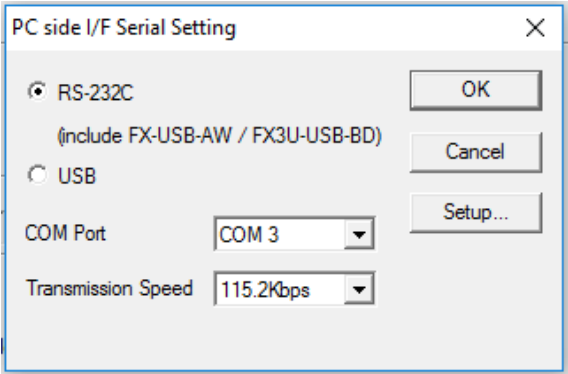
Select the **FXCPU** PLC series.



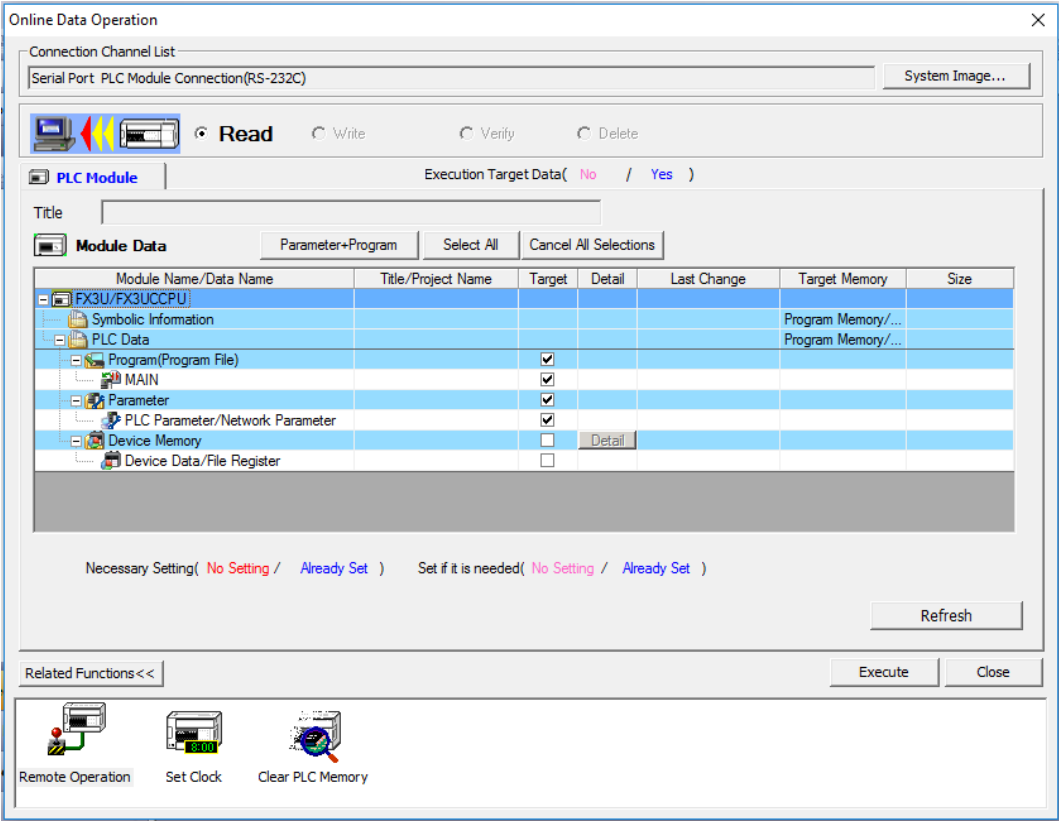
Select **Serial USB** in the Transfer Setup Communication window.



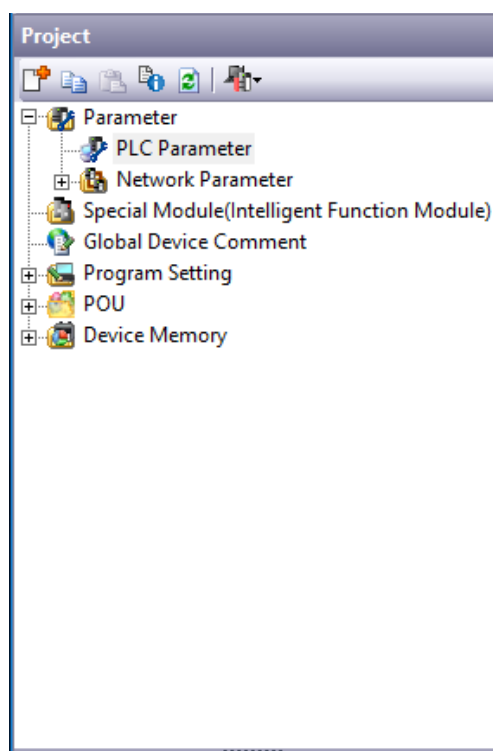
Select the **RS-232C** radio button and select the **COM Port** that the PLC is connected at. Click **Connection Test** to verify the connection and then press OK.



After confirming the **Parameter** option is checked, press **Execute** in the Online Data Operation window.



Under the Project Sidebar, expand **Parameter** and select **PLC Parameter**.



Navigate to the **PLC System(2)** tab and configure it to the settings detailed below.

The image shows the 'FX Parameter' dialog box with the 'PLC System(2)' tab selected. The 'Operate Communication Setting' checkbox is checked. A note states: 'The setting contents are cleared when unchecked. (When communicate with GX Works2, GOT, etc. by PLC using optional board for FX etc., the D8120 special register of PLC must be 0 cleared, and must be unchecked.)'. The configuration settings are as follows:

Parameter	Value
Protocol	Dedicated Protocol
Data Length	7Bit
Parity	Even
Stop Bit	1Bit
Transmission Speed	19200 (bps)
Header	Unchecked
Terminator	Unchecked
Control Line	Unchecked
H/W Type	RS-485
Control Mode	Invalid
Sum Check	Checked
Transmission Control Procedure	Form1(Without CR,LF)
Station Number Setting	00 H (00H--0FH)
Time Out Judge Time	1 X 10ms (1--255)

Buttons at the bottom include 'Print Window...', 'Print Window Preview', 'Default', 'Check', 'End', and 'Cancel'.

Check **Operate Communication Setting** to enable configuration

Set Protocol to **Dedicated Protocol**

Set Parity to **Even**

Set Transmission Speed to **19200**

Set H/W Type to **RS-485**

Check the **Sum Check** checkbox

Verify the Station Number is consistent with the one set in FvDesigner.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi FX2N-485BD

Interface Setting

Basic | Comm. Error Handling

Port: COM3 | Timeout(ms): 3000

Baudrate: 19200 | Command Delay(ms): 0

Parity: Even | Retry Count: 0

Data Bits: 7 | TX Control Procedure: Form1(Without CR,LF)

Stop Bits: 1 | Sum Check: ☒

Device Specific Setting

☐ Sub-links

Device Name: Q

Station Number: 0

OK

Within the **Link** configuration window in FvDesigner:

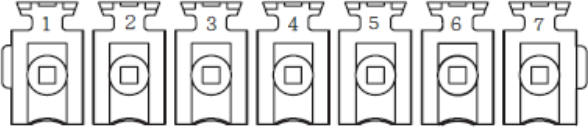
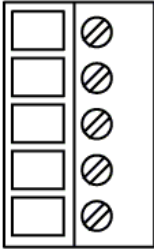
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

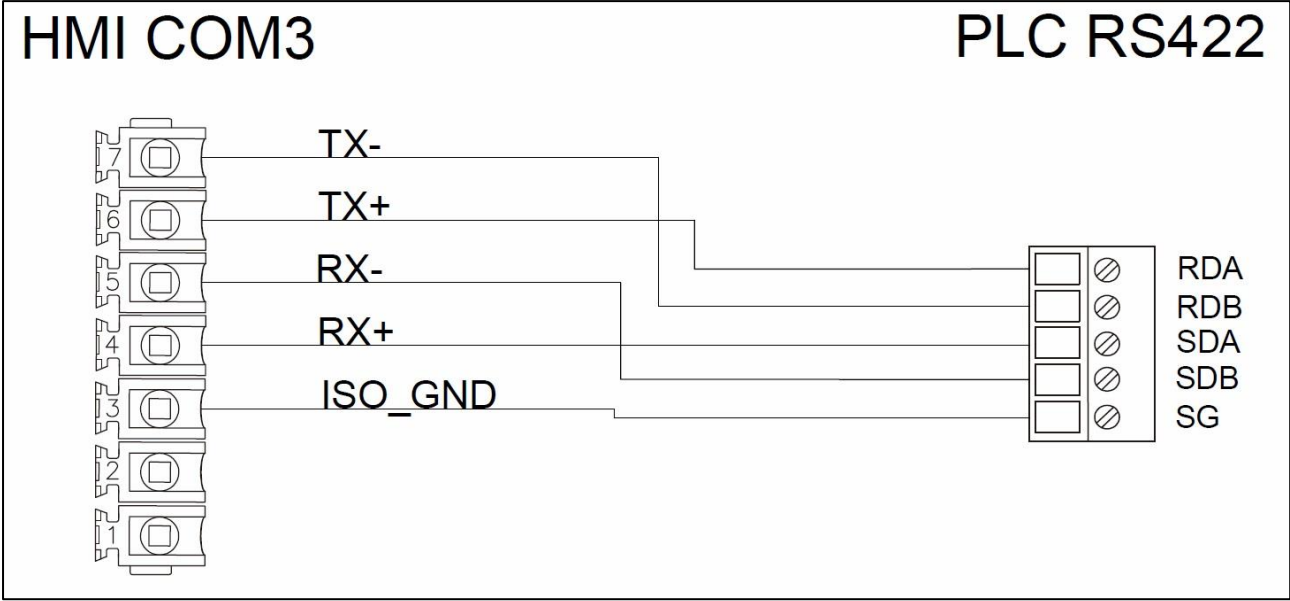
Under **Product Series** select Mitsubishi FX2N-485BD.

Under **Port** select COM3

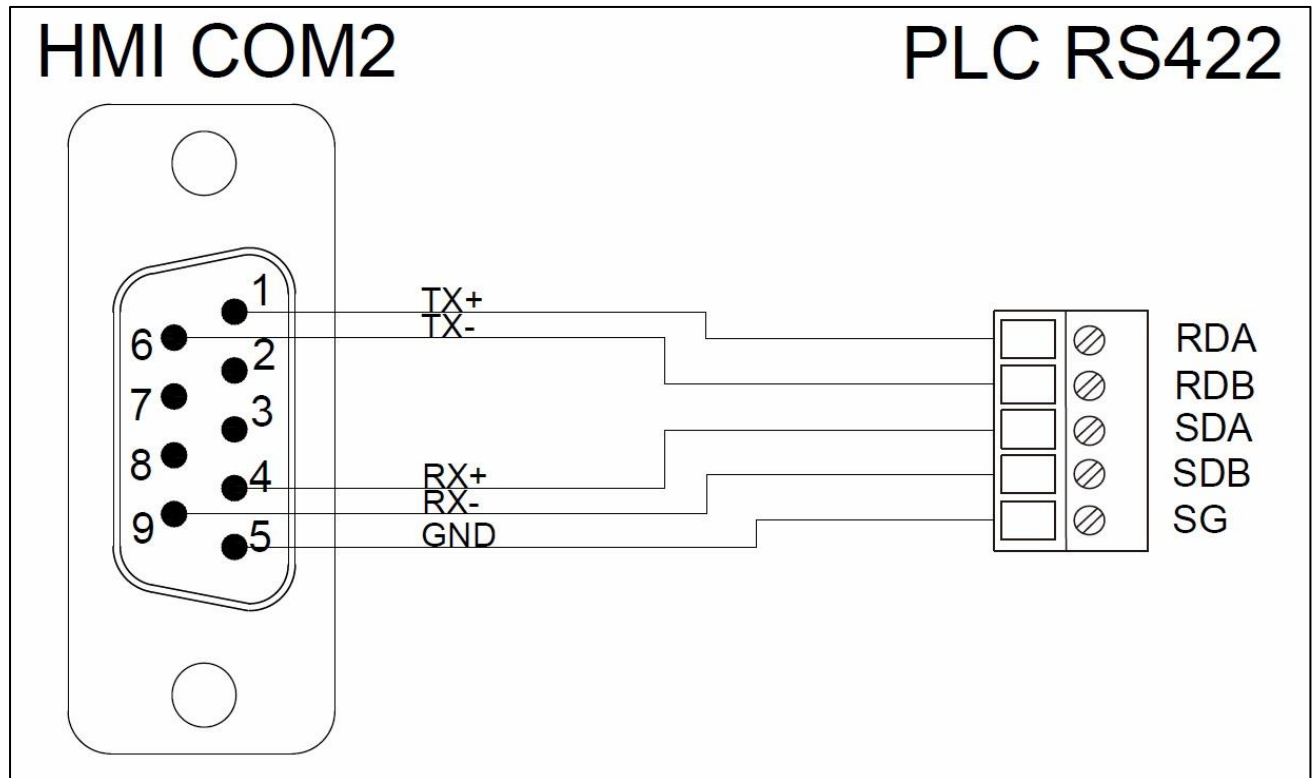
2.2.2.4 Wiring Diagrams

HMI COM3 Pinout		PLC RS422 Pinout
		
*Looking into HMI Device		
PIN#	COM3 (RS-422/RS-485)	PLC RS422 Port
1		
2		
3	ISO_GND	SG
4	RX+	SDA
5	RX-	SDB
6	TX+	RDA
7	TX-	RDB

HMI COM3	PLC RS422 Port
3 GND	SG
4 RX+	RDA
5 RX-	RDB
6 TX+	RDA
7 TX-	RDB



HMI COM2	PLC RS422 Port
9 RX-	SDB
4 RX+	SDA
6 TX-	RDB
1 TX+	RDA
5 GND	SG



2.2.3 FX3U CPU

2.2.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485 4W	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	0	
Communication Method	Programming Protocol	

2.2.3.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
X	Input Discrete	1	0	377
Y	Output Relay	1	0	377
M	Internal Relay	1	0	7999
SM	Special Relay	1	8000	8511
S	Step Relay	1	0	4095
TS	Timer Discrete	1	0	511
CS	Counter Discrete	1	0	199
WX	Input Discrete	16	0	360
WY	Output Relay	16	0	360
WM	Internal Relay	16	0	7664
WS	Step Relay	16	0	4080
TN	Timer Memory	16	0	511
CN	Counter Memory	16	0	199
D	Data Register	16	0	7999
SD	Special Data Register	16	8000	8511
R	Extended Register	16	0	32767
DCN	Counter Memory	32	200	255

2.2.3.3 Connected Setting

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi FX3U/3G

Interface Setting

Basic | Comm. Error Handling

Port: COM3 | Timeout(ms): 3000

Baudrate: 9600 | Command Delay(ms): 0

Parity: Even | Retry Count: 0

Data Bits: 7

Stop Bits: 1

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 0

OK

Within the **Link** configuration window in FvDesigner:

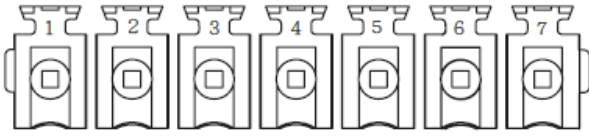
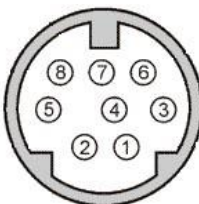
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select Mitsubishi FX3U/3G

Under **Port** select COM3

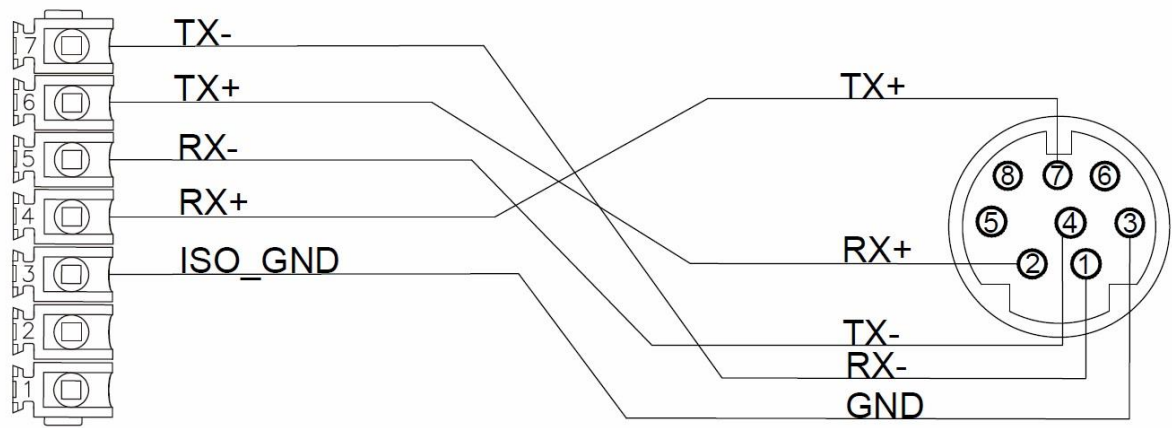
2.2.3.4 Wiring Diagrams

HMI COM3 Pinout		PLC RS422 Pinout	
			
*Looking into HMI Device		*View from soldering point of the cable	
PIN#	COM3 (RS-422/RS-485)	PIN#	Signal
1		1	RX-
2		2	RX+
3	ISO_GND	3	GND
4	RX+	4	TX-
5	RX-	5	
6	TX+	6	
7	TX-	7	TX+
		8	

HMI COM3	PLC RS422 Port
5 RX-	4 TX-
4 RX+	7 TX+
7 TX-	1 RX-
6 TX+	2 RX+
3 ISO_GND	3 GND

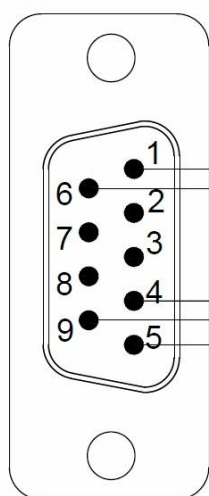
HMI COM3

PLC RS422

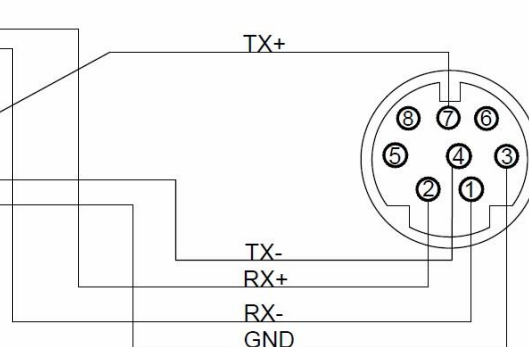


HMI COM2	PLC RS422 Port
9 RX-	4 TX-
4 RX+	7 TX+
6 TX-	1 RX-
1 TX+	2 RX+
5 GND	3 GND

HMI COM2



PLC RS422



2.2.4 FX3U-485BD

2.2.4.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	
TX Control	Form1	Without CR,LF
Checksum	Yes	
Communication Method	Computer Link	

2.2.4.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
X	Input Discrete	1	0	377
Y	Output Relay	1	0	377
M	Internal Relay	1	0	7679
SM	Special Relay	1	8000	8511
S	Step Relay	1	0	4095
TS	Timer Discrete	1	0	511
CS	Counter Discrete	1	0	199
WX	Input Discrete	16	0	360
WY	Output Relay	16	0	360
WM	Internal Relay	16	0	7664
WS	Step Relay	16	0	4080
TN	Timer Memory	16	0	511
CN	Counter Memory	16	0	199
D	Data Register	16	0	7999
SD	Special Data Register	16	8000	8511
R	Extended Register	16	0	32767
DCN	Counter Memory	32	200	255

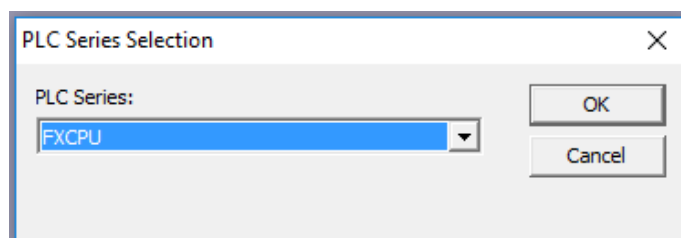
2.2.4.3 Connected Setting

Configuring of PLC

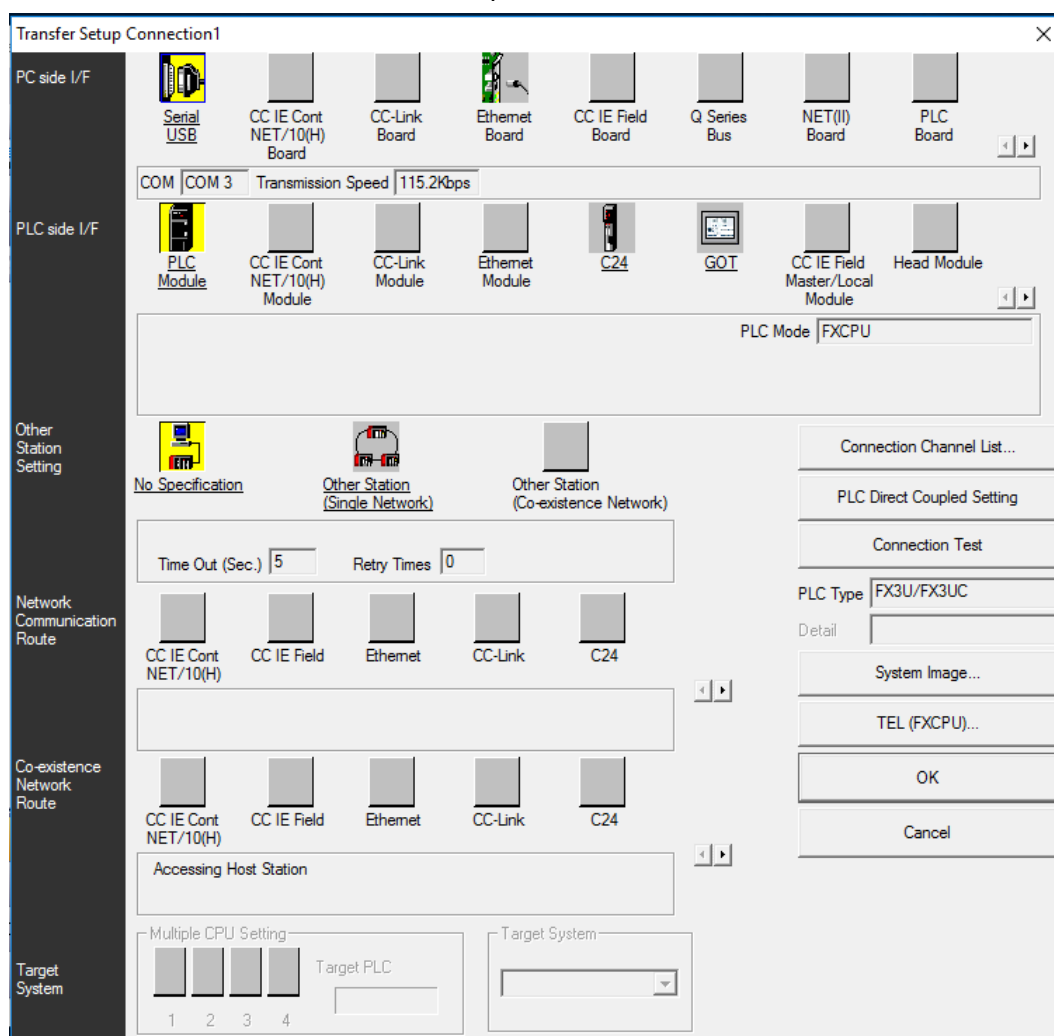
Use **MELSOFT GX Works2** to configure the port of the PLC.

Under the **Online** menu option, select **Read from PLC**

Select the **FXCPU** PLC series.

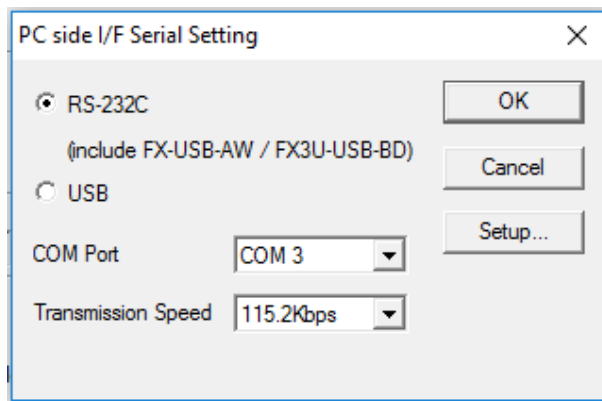


Select **Serial USB** in the Transfer Setup Communication window.

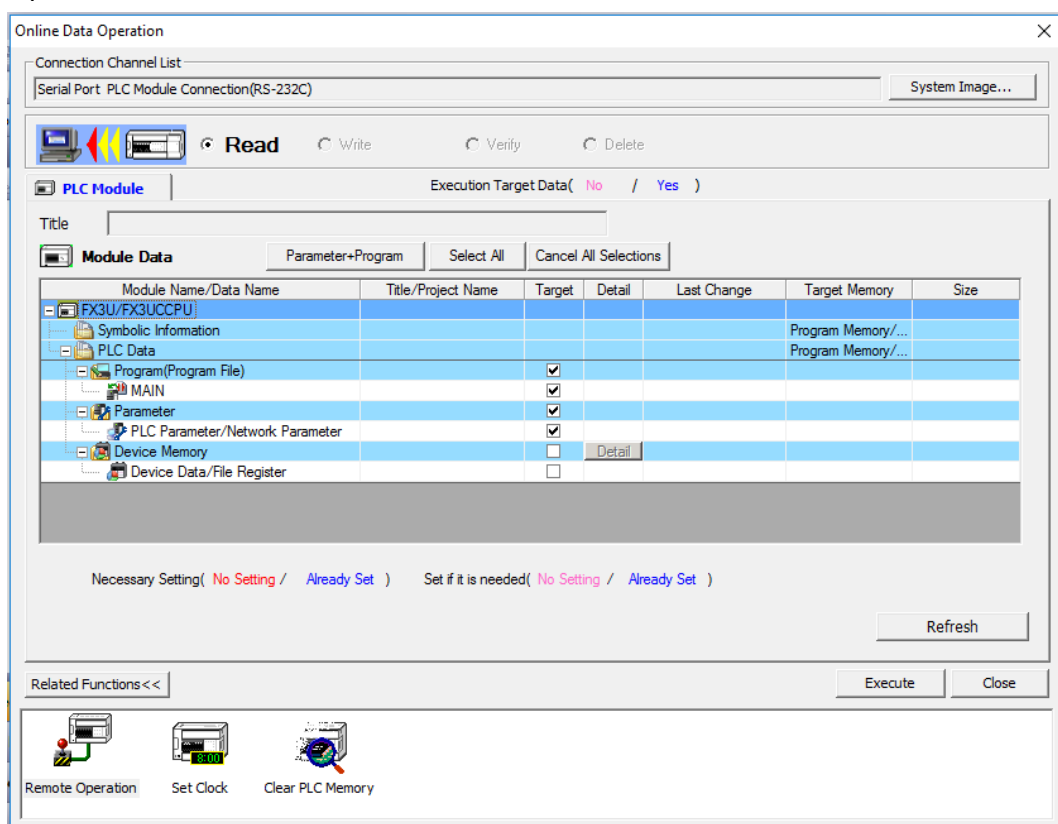


Select the **RS-232C** radio button and select the **COM Port** that the PLC is connected at.

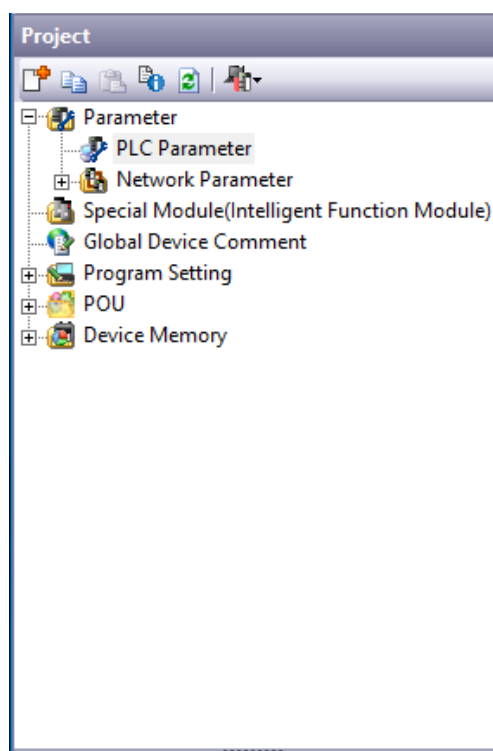
Click **Connection Test** to verify the connection and then press OK.



After confirming the **Parameter** option is checked, press **Execute** in the Online Data Operation window.



Under the Project Sidebar, expand **Parameter** and select **PLC Parameter**.



Navigate to the **PLC System(2)** tab and configure it to the settings detailed below.

FX Parameter

Memory Capacity | Device | PLC Name | PLC System(1) | **PLC System(2)** | Special Function Block | Positioning | Ethernet Port

CH1

☐ Operate
☒ Communication Setting

The setting contents are cleared when unchecked.
(When communicate with GX Works2, GOT, etc. by PLC using optional board for FX etc., the D8120 special register of PLC must be 0 cleared, and must be unchecked.)

Protocol Dedicated Protocol	☐ Control Line
Data Length 7Bit	H/W Type RS-485
Parity Even	Control Mode Invalid
Stop Bit 1Bit	☒ Sum Check
Transmission Speed 19200 (bps)	Transmission Control Procedure Form1(Without CR,LF)
☐ Header	Station Number Setting 00 H (00H--0FH)
☐ Terminator	Time Out Judge Time 1 X 10ms (1--255)

Print Window... | Print Window Preview | Default | Check | End | Cancel

Check **Operate Communication Setting** to enable configuration

Set Protocol to **Dedicated Protocol**

Set Parity to **Even**

Set Transmission Speed to **19200**

Set H/W Type to **RS-485**

Check the **Sum Check** checkbox

Verify the Station Number is consistent with the one set in FvDesigner.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi FX3U/3G-485BD

Interface Setting

Basic | Comm. Error Handling

Port: COM3 | Timeout(ms): 3000

Baudrate: 19200 | Command Delay(ms): 0

Parity: Even | Retry Count: 0

Data Bits: 7 | TX Control Procedure: Form1(Without CR,LF)

Stop Bits: 1 | Sum Check: ☒

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 0

OK

Within the **Link** configuration window in FvDesigner:

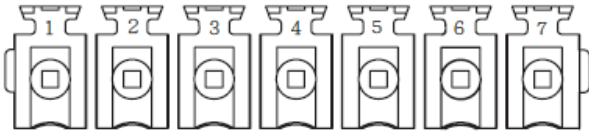
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select Mitsubishi FX3U/3G-485BD.

Under **Port** select COM3

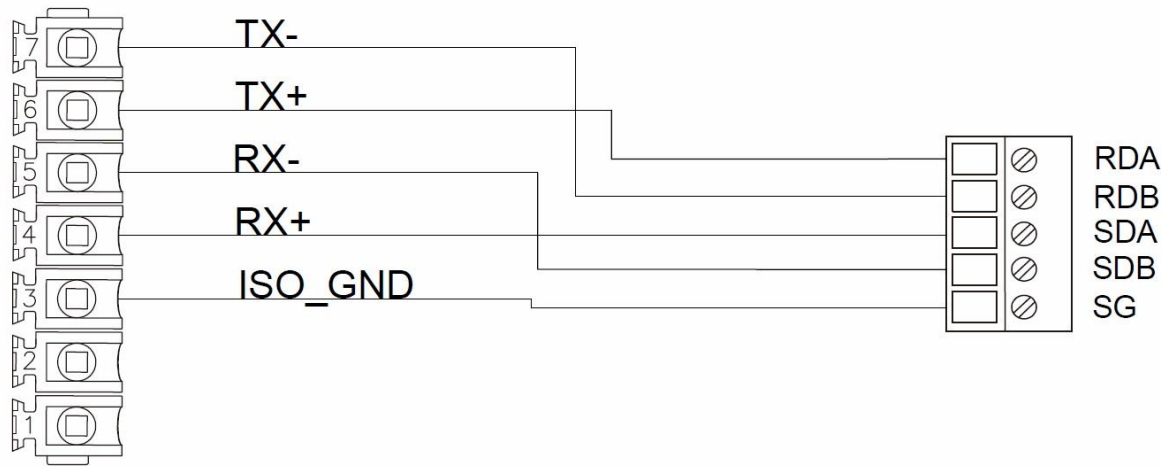
2.2.4.4 Wiring Diagrams

HMI COM3 Pinout		PLC RS422 Pinout
		
*Looking into HMI Device		
PIN#	COM3 (RS-422/RS-485)	
1		
2		
3	ISO_GND	
4	RX+	
5	RX-	
6	TX+	
7	TX-	

HMI COM3	PLC RS422 Port
5 RX-	SDB
4 RX+	SDA
7 TX-	RDB
6 TX+	RDA
3 ISO_GND	SG

HMI COM3

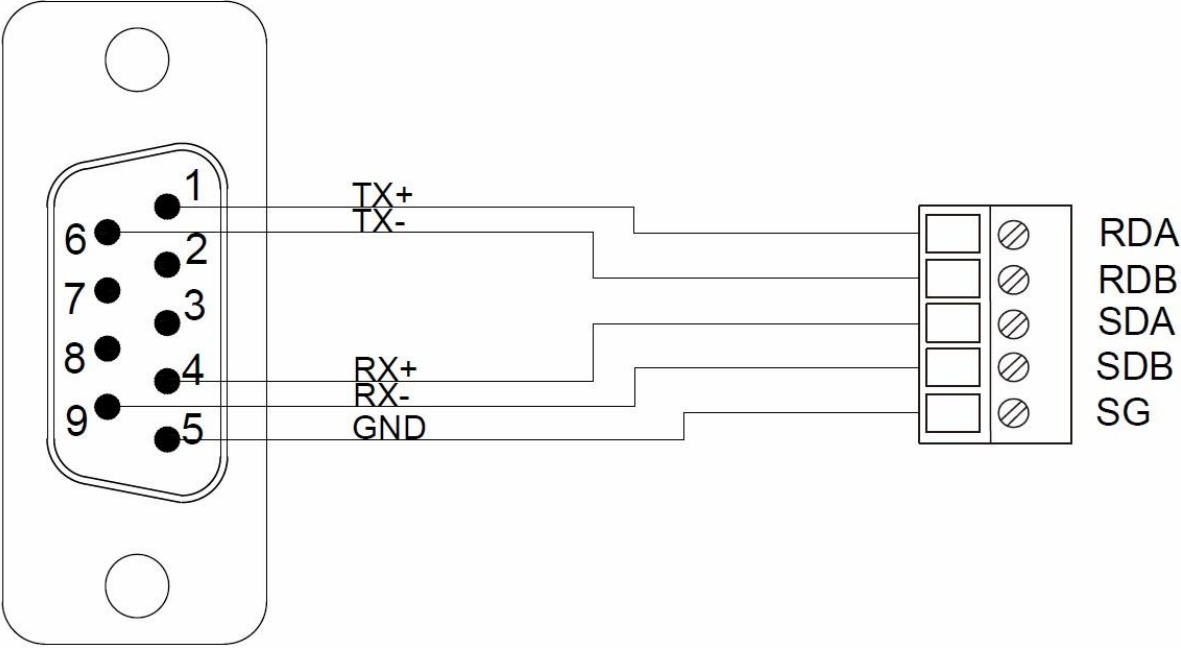
PLC RS422



HMI COM2	PLC RS422 Port
9 RX-	SDB
4 RX+	SDA
6 TX-	RDB
1 TX+	RDA
5 GND	SG

HMI COM2

PLC RS422



2.2.5 FX3U Ethernet

2.2.5.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	
Port	5001	
PLC Station No.	0	
Communication Method	MC protocol	Binary/ASCII

2.2.5.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
X	Input Discrete	1	0	377
Y	Output Relay	1	0	377
M	Internal Relay	1	0	7679
SM	Special Relay	1	8000	8511
S	Step Relay	1	0	4095
TS	Timer Discrete	1	0	511
CS	Counter Discrete	1	0	199
WX	Input Discrete	16	0	360
WY	Output Relay	16	0	360
WM	Internal Relay	16	0	7664
WS	Step Relay	16	0	4080
TN	Timer Memory	16	0	511
CN	Counter Memory	16	0	199
D	Data Register	16	0	7999
SD	Special Data Register	16	8000	8511
R	Extended Register	16	0	32767
DCN	Counter Memory	32	200	255

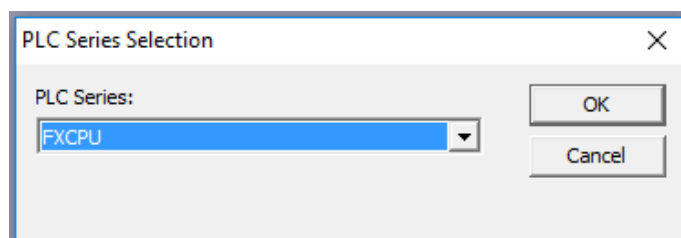
2.2.5.3 Connected Setting

Configuring IP Address on PLC

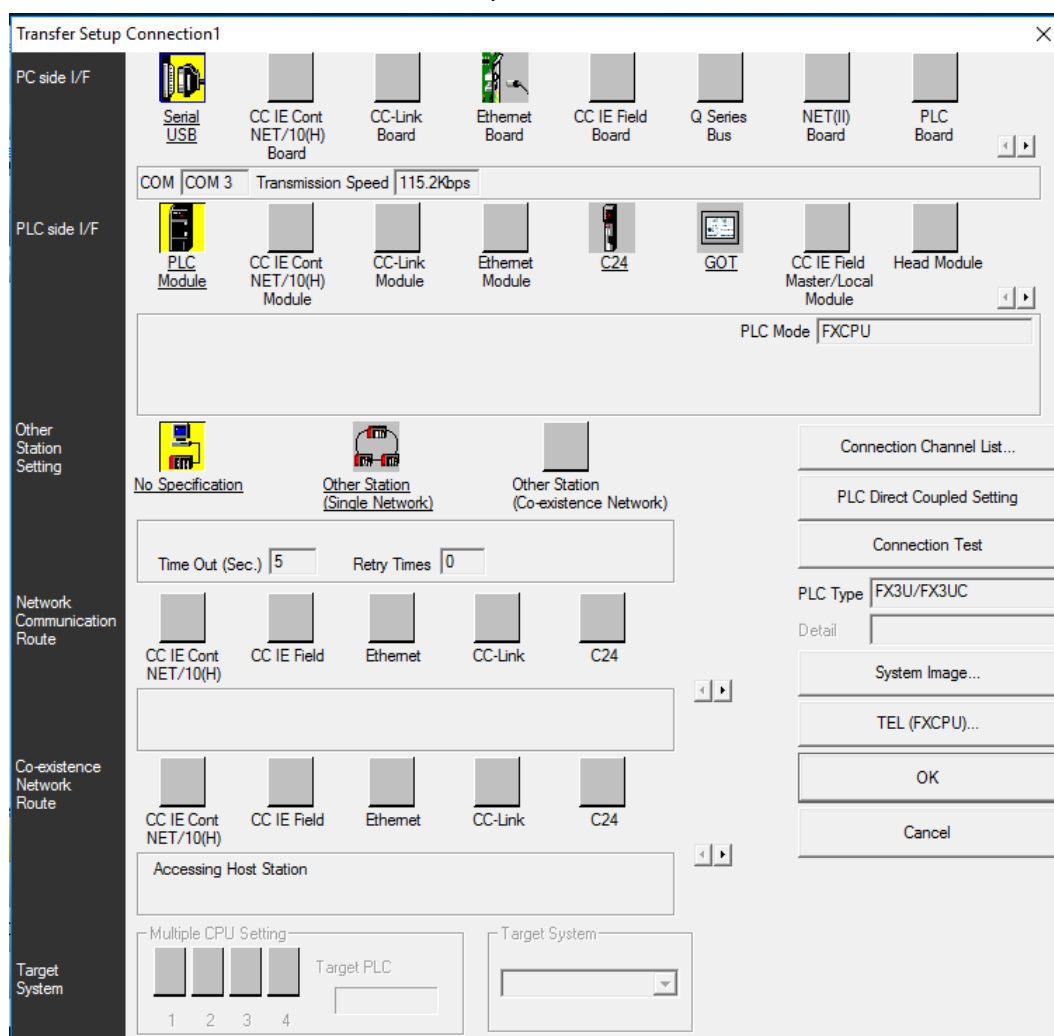
Use **MELSOFT GX Works2** to configure the IP address of the PLC.

Under the **Online** menu option, select **Read from PLC**

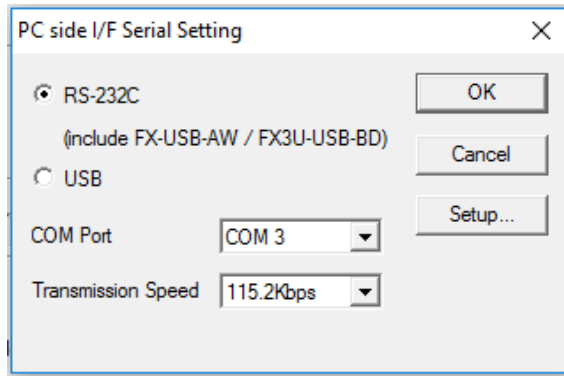
Select the **FXCPU** PLC series.



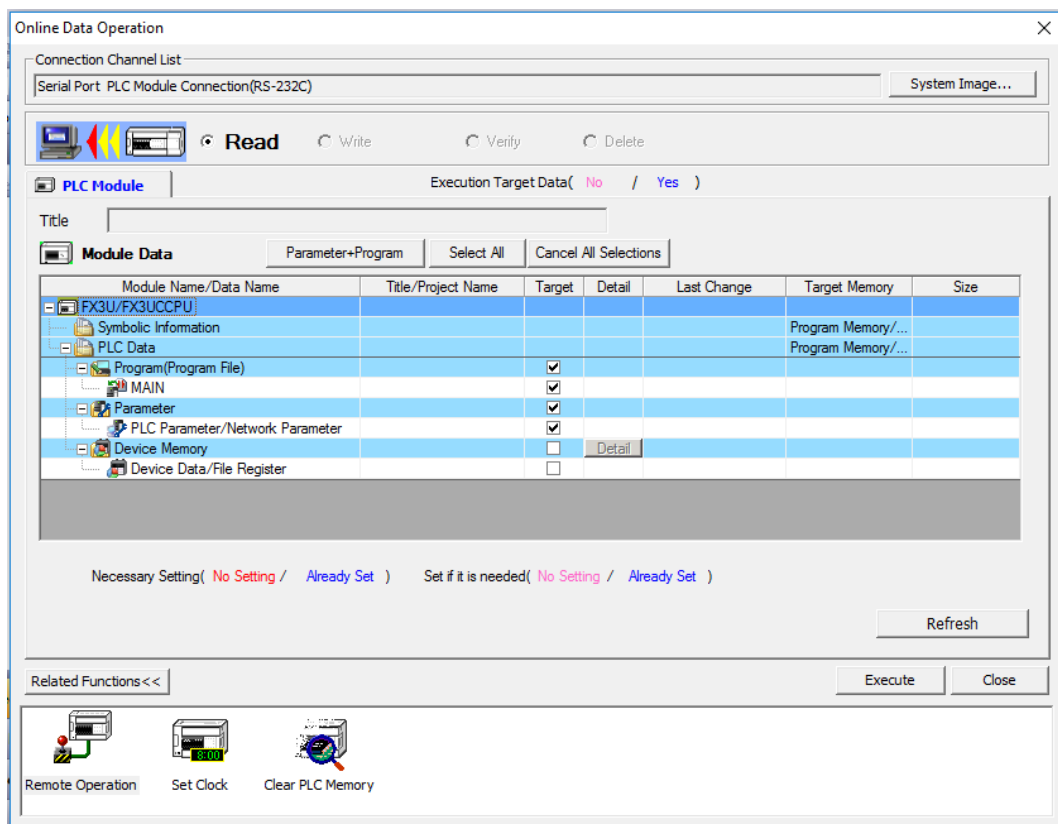
Select **Serial USB** in the Transfer Setup Communication window.



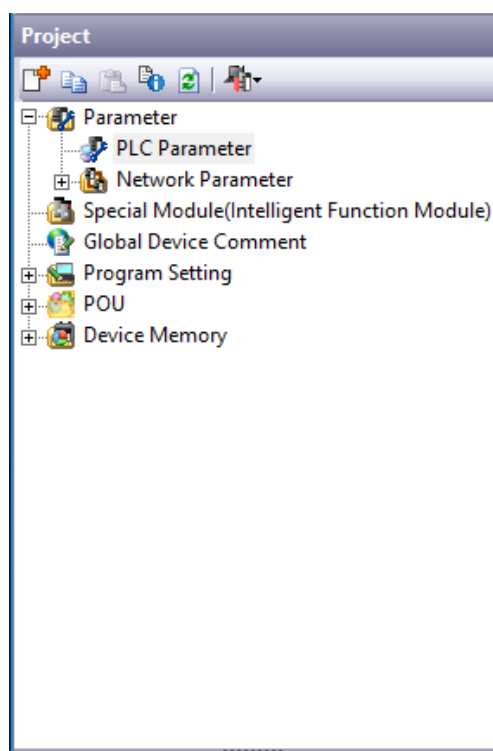
Select the **RS-232C** radio button and select the **COM Port** that the PLC is connected at. Click **Connection Test** to verify the connection and then press OK.



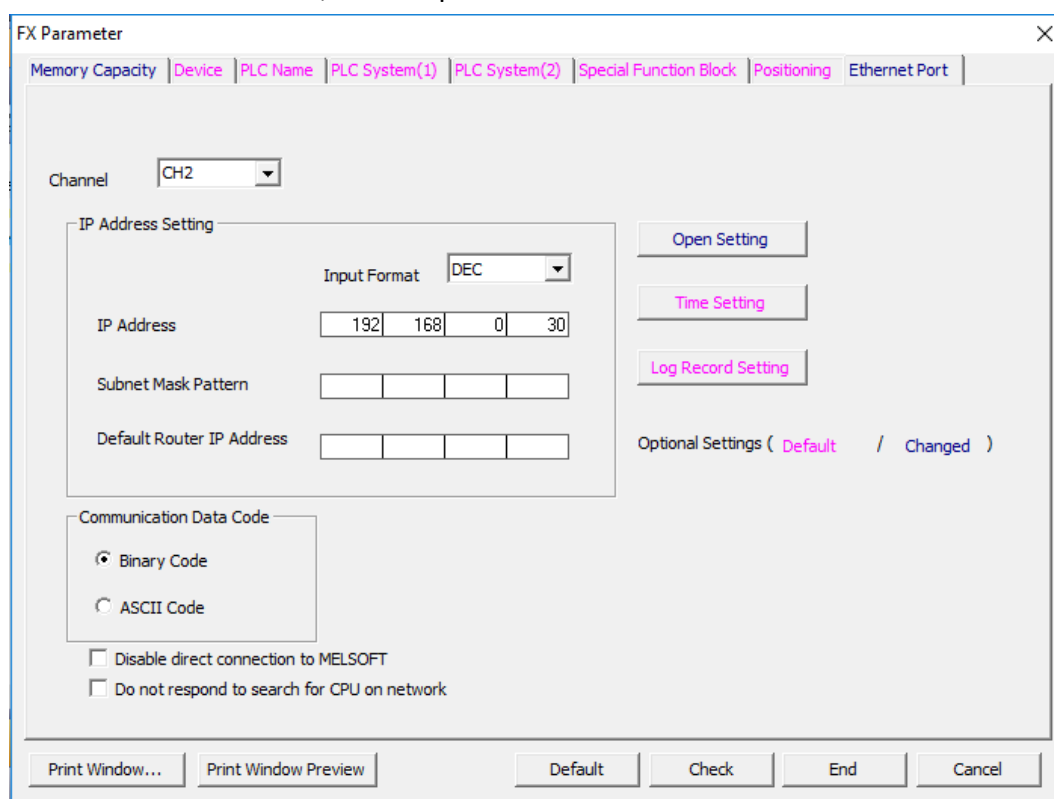
After confirming the **Parameter** option is checked, press **Execute** in the Online Data Operation window.



Under the Project Sidebar, expand **Parameter** and select **PLC Parameter**.



In the **Ethernet Port** tab, set an open IP address.



Click **Open Setting** and set the entire **Open System** column to **MC Protocol**. For the **Host Station Port No.**, set row 1 to 5001, row 2 to 5002 and so on.

Ethernet Port Open Setting

	Protocol	Open System	Host Station Port No.	Destination IP Address	Destination Port No.
1	TCP	MC Protocol	5001		
2	TCP	MC Protocol	5002		
3	TCP	MC Protocol	5003		
4	TCP	MC Protocol	5004		

Input decimal value for the Host Station Port No., Destination IP Address and Destination Port No..

End Cancel

Under the **Online** menu option, select **Write to PLC** to save the settings to the PLC. Press **Execute** in the Online Data Operation window.

Online Data Operation

Connection Channel List
Serial Port PLC Module Connection(RS-232C) System Image...

  ☒ **Write** ☐ Verify ☐ Delete

PLC Module Execution Target Data(No / Yes)

Title

Edit Data Parameter+Program Select All Cancel All Selections

Module Name/Data Name	Title	Target	Detail	Last Change	Target Memory	Size
(Untitled Project)						
PLC Data					Program Memory/De...	
Program(Program File)		☒				
MAIN		☒		2016/07/25 08:30:20		1 Steps
Parameter		☒				
PLC Parameter/Network Parameter		☒		2016/07/25 08:26:04		
Global Device Comment		☐				
COMMENT		☐	Detail	2016/07/25 08:32:46		
Device Memory		☐	Detail			
MAIN		☐		2016/07/25 08:26:05		

Necessary Setting(No Setting / Already Set) Set if it is needed(No Setting / Already Set)

Program Size 1 Steps 8,000 Steps Refresh

Related Functions << Execute Close

Remote Operation Set Clock Clear PLC Memory

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi FX3U-ENET-ADP(BINARY)

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192.168.0.30 | Timeout(ms): 3000

Port: 5001 | Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

☐ Sub-links

Device Name: Q

Station Number: 0

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select one of the Mitsubishi FX3U-ENET-ADP options. The last part of the series name (BINARY or ASCII) should be consistent with the Connection Data Code set in the Ethernet Port for the PLC.

Enter the **IP Address** that was written into the PLC.

Enter 5001 for the Port.

2.2.6 FX5U-Serial

2.2.6.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
PLC Station No.	0	
TX Control	Form1	Without CR,LF
Checksum	Yes	
Communication Method	MC Protocol 3C	

2.2.6.2 Memory Resource Review

Device	Description	Data bit	Input Format	Min.	Max.
X	Input Relay	1	OOOO	0	1777
Y	Output Relay	1	OOOO	0	1777
M	Internal Relay	1	DDDDD	0	32767
B	Link Relay	1	HHHH	0	7FFF
F	Annunciator	1	DDDDD	0	32767
SB	Link Special Relay	1	HHHH	0	7FFF
S	Step Relay	1	DDDD	0	4095
TS	Timer Contact	1	DDDD	0	1023
TC	Timer Coil	1	DDDD	0	1023
SS	Retentive Timer Contact	1	DDDD	0	1023
SC	Retentive Timer Coil	1	DDDD	0	1023
CS	Counter Contact	1	DDDD	0	1023
CC	Counter Coil	1	DDDD	0	1023
LCS ^{*1}	Long Counter Contact	1	DDDD	0	1023
LCC ^{*1}	Long Counter Coil	1	DDDD	0	1023
SM	Special Relay	1	DDDD	0	9999
WX ^{*2}	Input Relay	16	OOOO	0	1760

WY ^{*2}	Output Relay	16	OOOO	0	1760
WM ^{*3}	Internal Relay	16	DDDDD	0	32752
B_Word ^{*3}	Link Relay	16	HHHH	0	7FF0
F_Word ^{*3}	Annunciator	16	DDDDD	0	32752
SB_Word ^{*3}	Link Special Relay	16	HHHH	0	7FF0
WS ^{*3}	Step Relay	16	DDDD	0	4080
TS_Word ^{*3}	Timer Contact	16	DDDD	0	1008
TC_Word ^{*3}	Timer Coil	16	DDDD	0	1008
SS_Word ^{*3}	Retentive Timer Contact	16	DDDD	0	1008
SC_Word ^{*3}	Retentive Timer Coil	16	DDDD	0	1008
CS_Word ^{*3}	Counter Contact	16	DDDD	0	1008
CC_Word ^{*3}	Counter Coil	16	DDDD	0	1008
SM_Word ^{*3}	Special Relay	16	DDDD	0	9984
TN	Timer Current Value	16	DDDD	0	1023
SN	Retentive Timer Current Value	16	DDDD	0	1023
CN	Counter Current Value	16	DDDD	0	1023
D	Data Register	16	DDDD	0	7999
W	Link Register	16	HHHH	0	7FFF
SW	Link special Register	16	HHHH	0	7FFF
SD	Special Register	16	DDDDD	0	11999
R	File Register	16	DDDDD	0	32767
Z	Index Register	16	DD	0	23
LCN ^{*1}	Long Counter Current Value	32	DDDD	0	1023
LZ	Long Index Register	32	DD	0	11

^{*1} Binary mode support only

^{*2} Address increased by 0, 20, 40, 60...

^{*3} Address increased by 0, 20, 40, 60...

2.2.6.3 Connected Setting

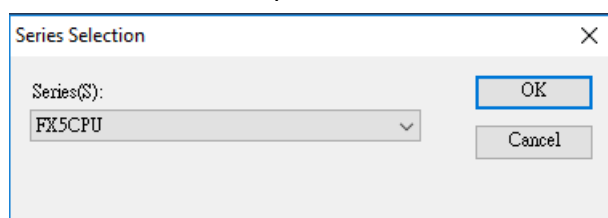
Configuring of PLC

Connect the PLC using an Ethernet cable. The following setup uses an Ethernet Port Direct Connection to configure the PLC.

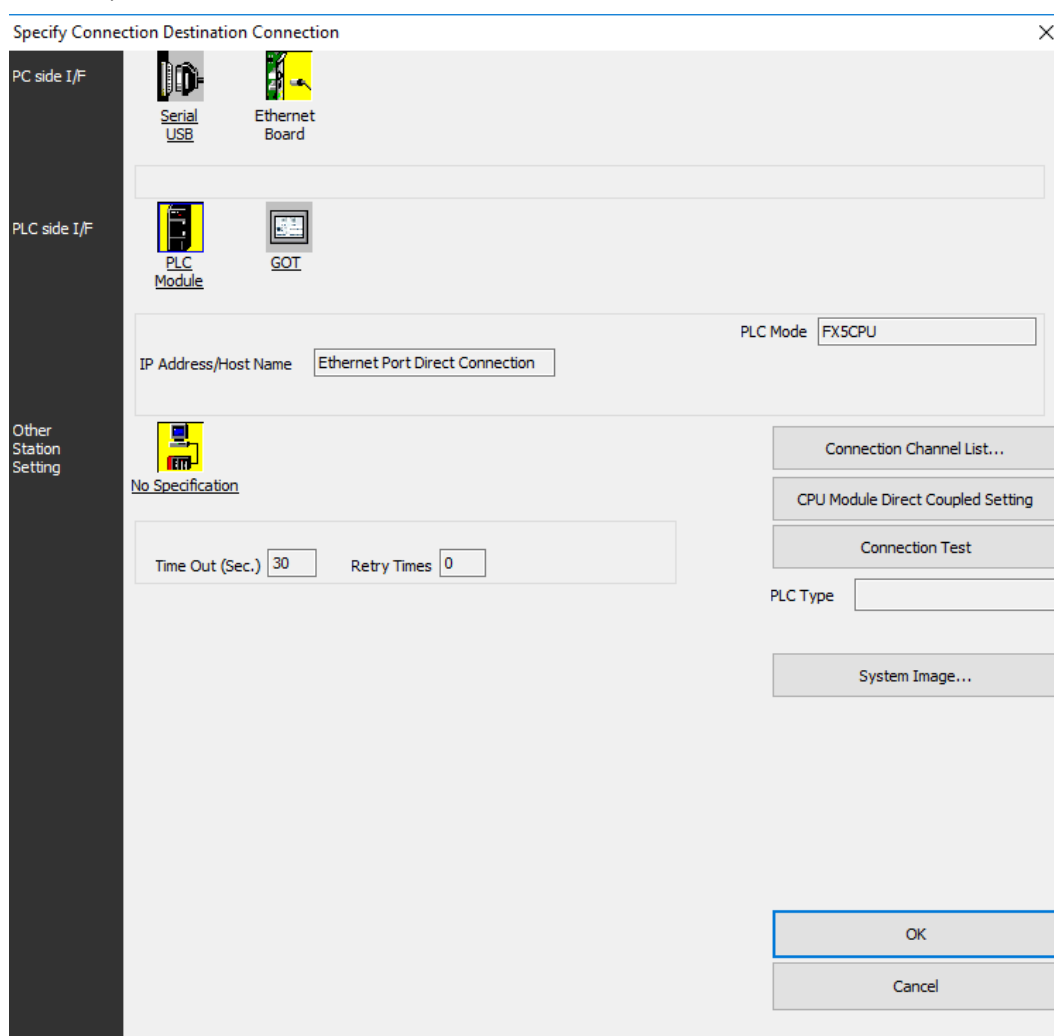
Use **MELSOFT GX Works3** to configure the port of the PLC.

Under the **Online** menu option, select **Read from PLC**.

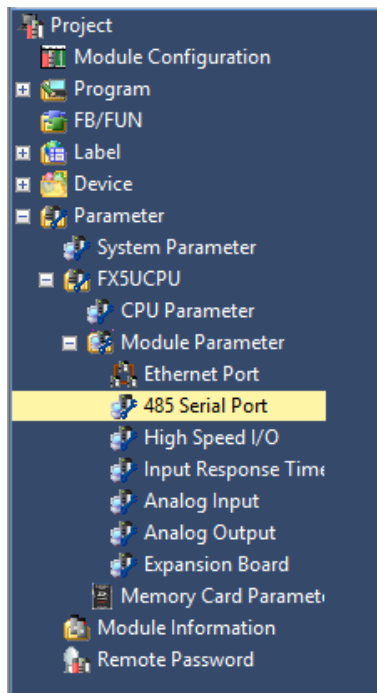
Select the **FX5CPU** option for the Series.



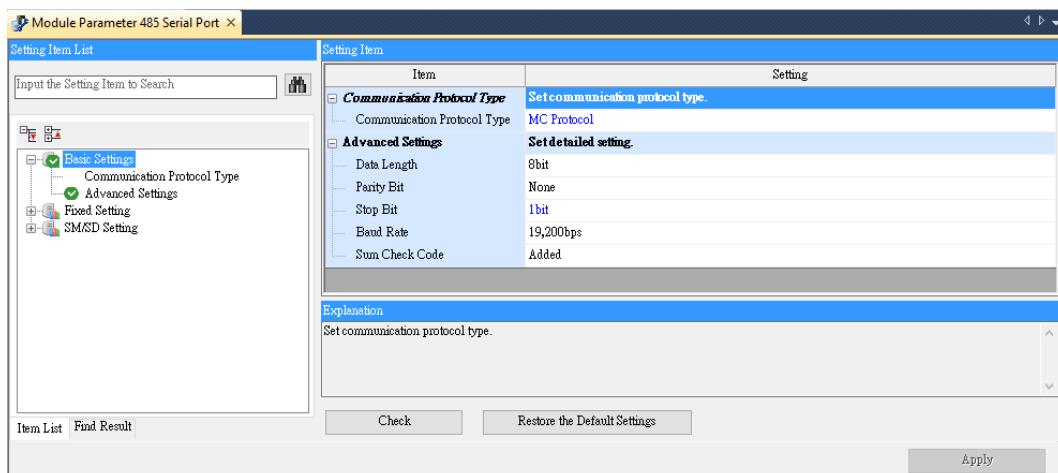
In the connection window, select **Ethernet Board**. Click **PLC Module** and in the dialog window, select the **Ethernet Port Direct Connection** radio button.



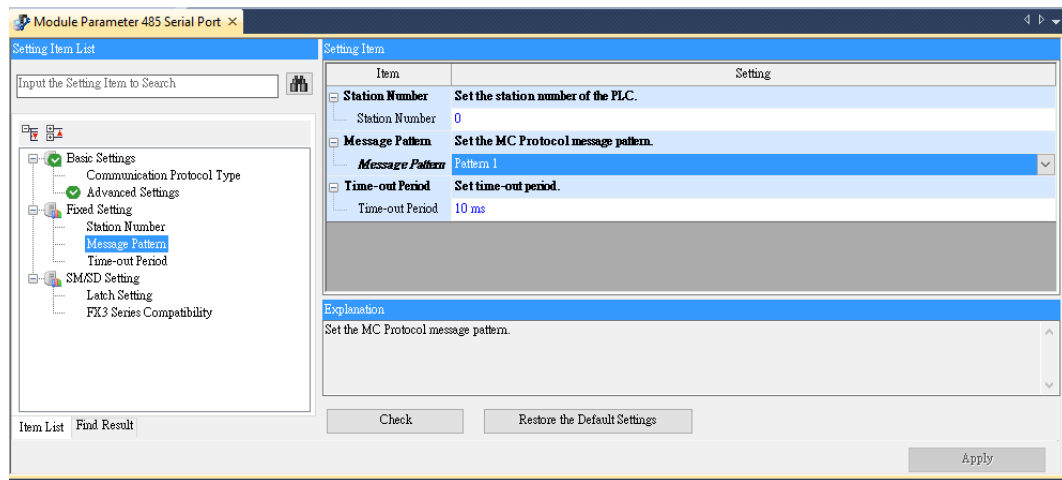
In the **Project** sidebar, expand **Parameter**, **FX5UCPU**, and **Module Parameter** and select **485 Serial Port**.



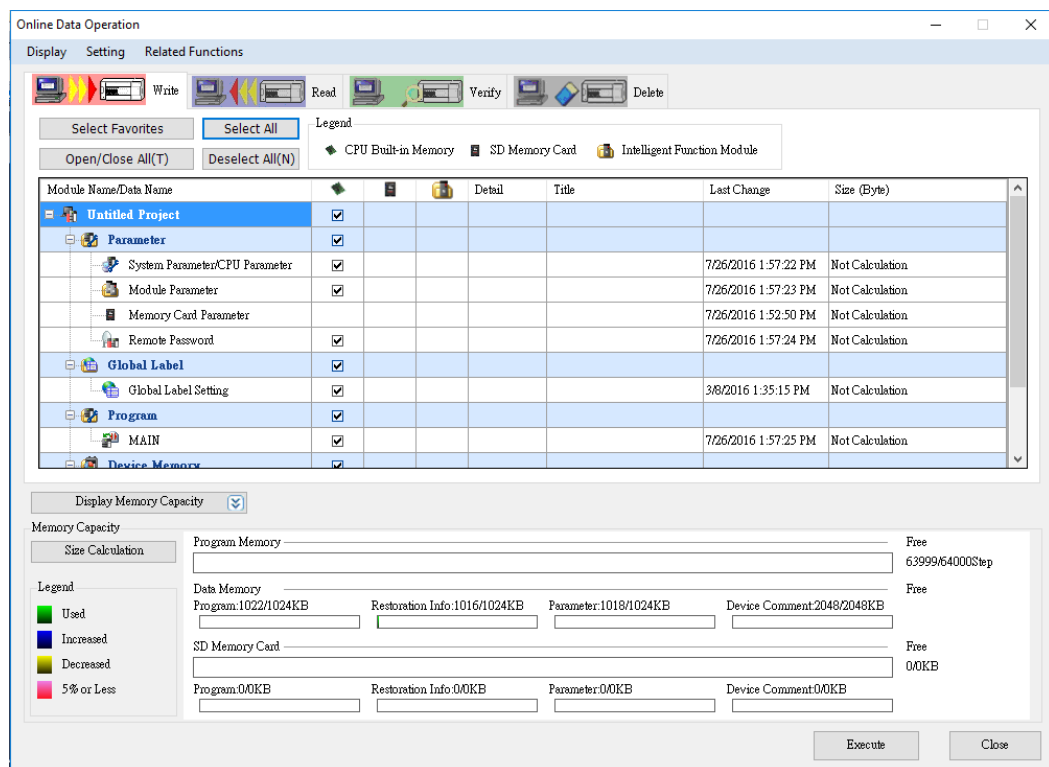
Under Basic Settings, change **Communication Protocol Type** to MC Protocol.



Under Fixed Setting, change **Message Pattern** to Pattern 1 and verify the station number is consistent with the one set in FvDesigner.



Under the **Online** menu option, select **Write to PLC** to save the settings to the PLC. Click **Select All** and press **Execute** in the Online Data Operation window.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select Mitsubishi FX5U-SERIAL.

Verify the parameters match the window above.

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi FX5U-SERIAL

Interface Setting

Basic | Comm. Error Handling

Port: COM3 | Timeout(ms): 3000

Baudrate: 19200 | Command Delay(ms): 0

Parity: None | Retry Count: 0

Data Bits: 8 | TX Control Procedure: Form1(Without CR,LF)

Stop Bits: 1 | Sum Check: ☒

Device Specific Setting

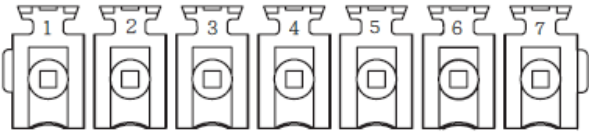
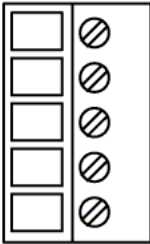
☐ Sub-links

Device Name: q

Station Number: 0

OK

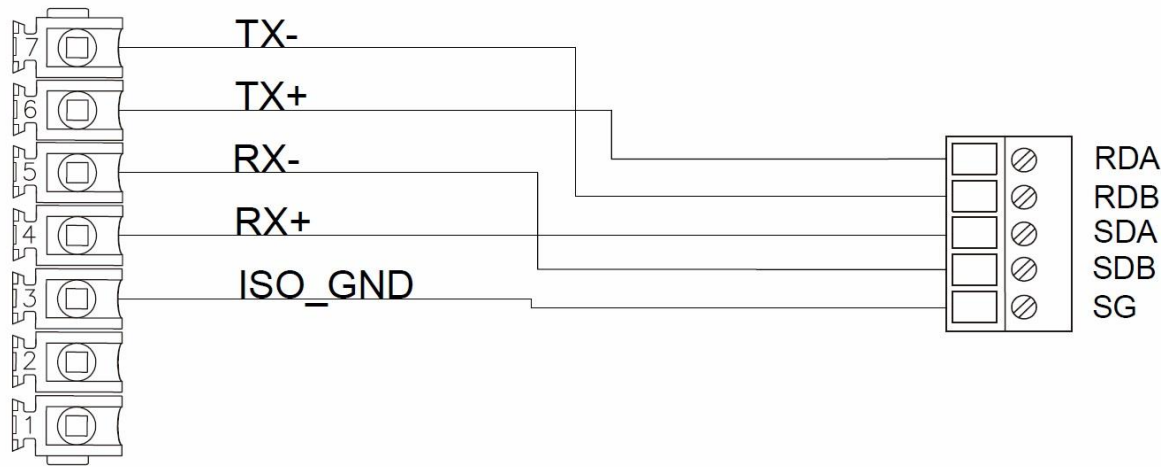
2.2.6.4 Wiring Diagrams

HMI COM3 Pinout		PLC RS422 Pinout
		
*Looking into HMI Device		
PIN#	COM3 (RS-422/RS-485)	
1		
2		
3	ISO_GND	
4	RX+	
5	RX-	
6	TX+	
7	TX-	

HMI COM3	PLC RS422 Port
5 RX-	SDB
4 RX+	SDA
7 TX-	RDB
6 TX+	RDA
3 ISO_GND	SG

HMI COM3

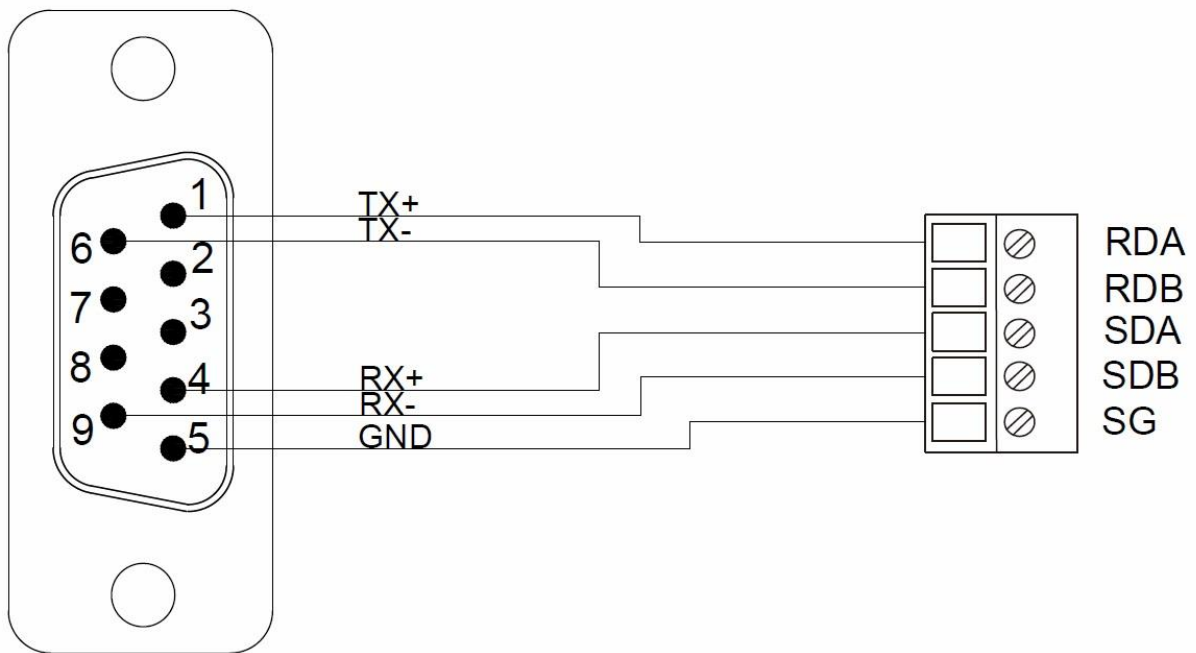
PLC RS422



HMI COM2	PLC RS422 Port
9 RX-	SDB
4 RX+	SDA
6 TX-	RDB
1 TX+	RDA
5 GND	SG

HMI COM2

PLC RS422



2.2.7 FX5U Ethernet

2.2.7.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	
Port	1025	
PLC Station No.	0	
Communication Method	MC protocol 3E	Binary/ASCII

2.2.7.2 Memory Resource Review

Device	Description	Data bit	Input Format	Min.	Max.
X	Input Relay	1	OOOO	0	1777
Y	Output Relay	1	OOOO	0	1777
M	Internal Relay	1	DDDDD	0	32767
B	Link Relay	1	HHHH	0	7FFF
F	Annunciator	1	DDDDD	0	32767
SB	Link Special Relay	1	HHHH	0	7FFF
S	Step Relay	1	DDDD	0	4095
TS	Timer Contact	1	DDDD	0	1023
TC	Timer Coil	1	DDDD	0	1023
SS	Retentive Timer Contact	1	DDDD	0	1023
SC	Retentive Timer Coil	1	DDDD	0	1023
CS	Counter Contact	1	DDDD	0	1023
CC	Counter Coil	1	DDDD	0	1023
LCS ^{*1}	Long Counter Contact	1	DDDD	0	1023
LCC ^{*1}	Long Counter Coil	1	DDDD	0	1023
SM	Special Relay	1	DDDD	0	9999
WX ^{*2}	Input Relay	16	OOOO	0	1760
WY ^{*2}	Output Relay	16	OOOO	0	1760
WM ^{*3}	Internal Relay	16	DDDDD	0	32752
B_Word ^{*3}	Link Relay	16	HHHH	0	7FF0
F_Word ^{*3}	Annunciator	16	DDDDD	0	32752

SB_Word ^{*3}	Link Special Relay	16	HHHH	0	7FF0
WS ^{*3}	Step Relay	16	DDDD	0	4080
TS_Word ^{*3}	Timer Contact	16	DDDD	0	1008
TC_Word ^{*3}	Timer Coil	16	DDDD	0	1008
SS_Word ^{*3}	Retentive Timer Contact	16	DDDD	0	1008
SC_Word ^{*3}	Retentive Timer Coil	16	DDDD	0	1008
CS_Word ^{*3}	Counter Contact	16	DDDD	0	1008
CC_Word ^{*3}	Counter Coil	16	DDDD	0	1008
SM_Word ^{*3}	Special Relay	16	DDDD	0	9984
TN	Timer Current Value	16	DDDD	0	1023
SN	Retentive Timer Current Value	16	DDDD	0	1023
CN	Counter Current Value	16	DDDD	0	1023
D	Data Register	16	DDDD	0	7999
W	Link Register	16	HHHH	0	7FFF
SW	Link special Register	16	HHHH	0	7FFF
SD	Special Register	16	DDDDD	0	11999
R	File Register	16	DDDDD	0	32767
Z	Index Register	16	DD	0	23
LCN ^{*1}	Long Counter Current Value	32	DDDD	0	1023
LZ	Long Index Register	32	DD	0	11

^{*1} Binary mode support only

^{*2} Address increased by 0, 20, 40, 60...

^{*3} Address increased by 0, 20, 40, 60...

2.2.7.3 Connected Setting

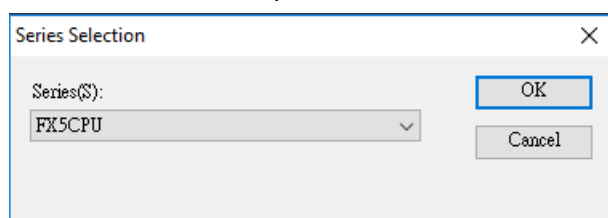
Configuring IP Address on PLC

Connect the PLC using an Ethernet cable. The following setup uses an Ethernet Port Direct Connection to configure the PLC.

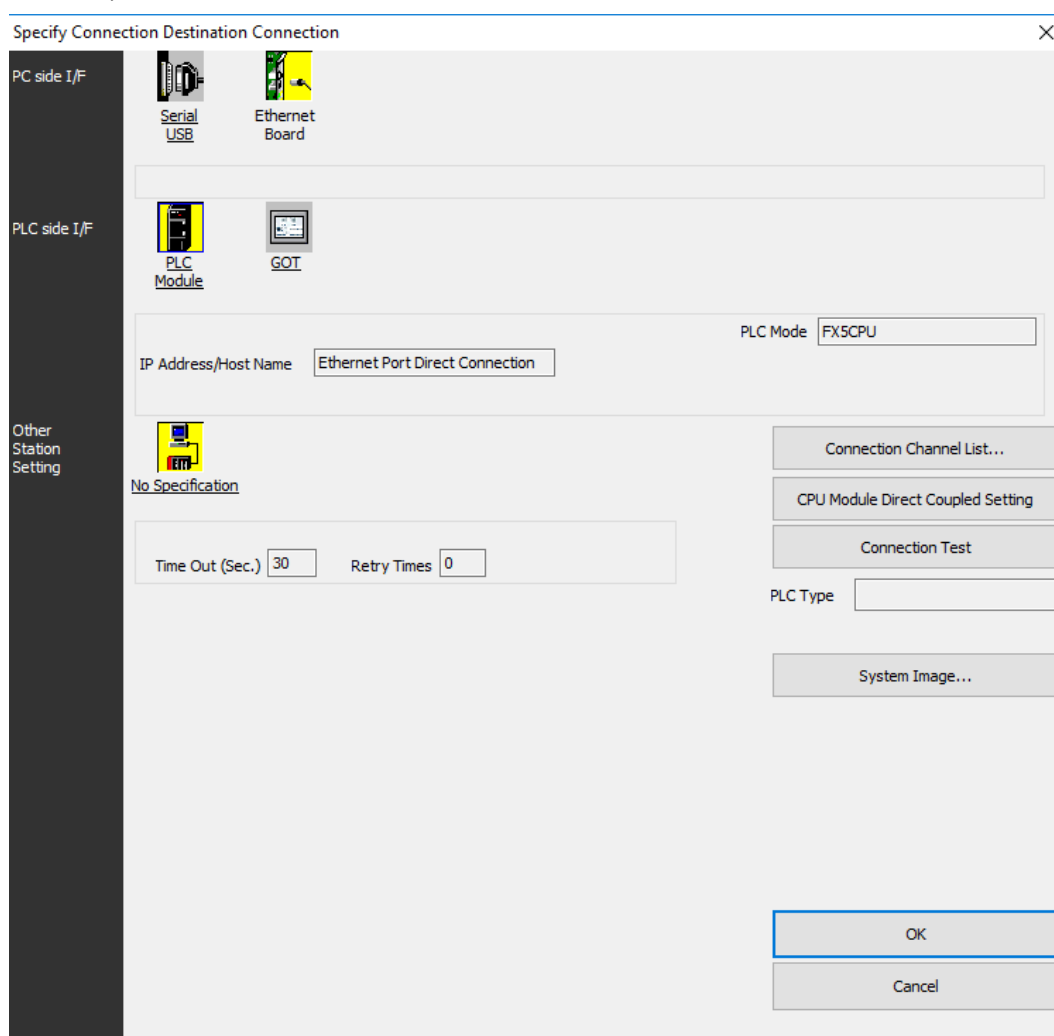
Use **MELSOFT GX Works3** to configure the port of the PLC.

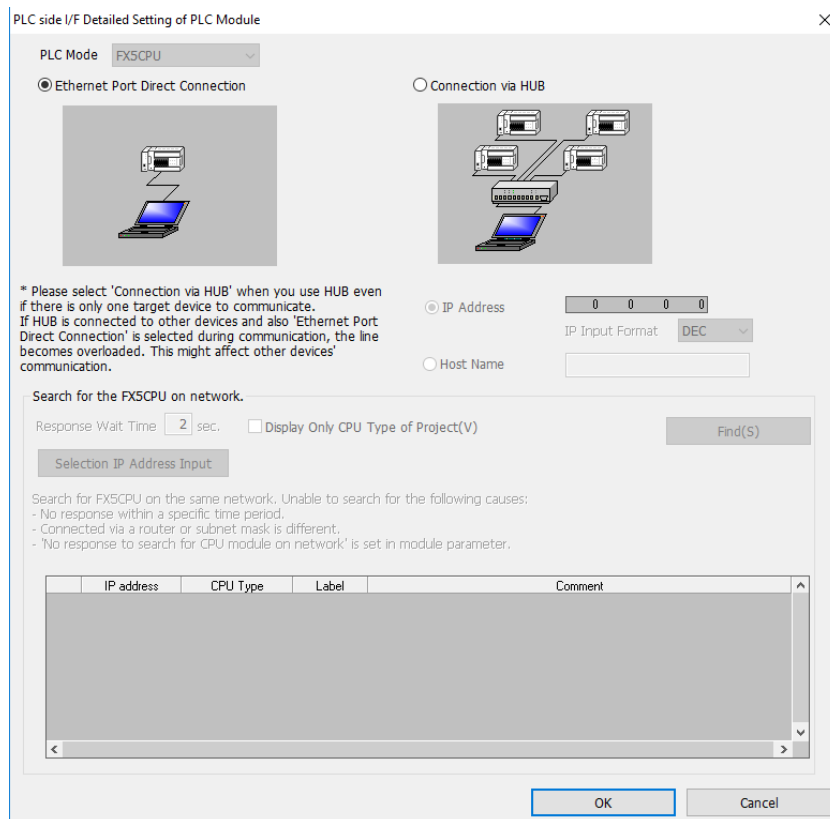
Under the **Online** menu option, select **Read from PLC**.

Select the **FX5CPU** option for the Series.



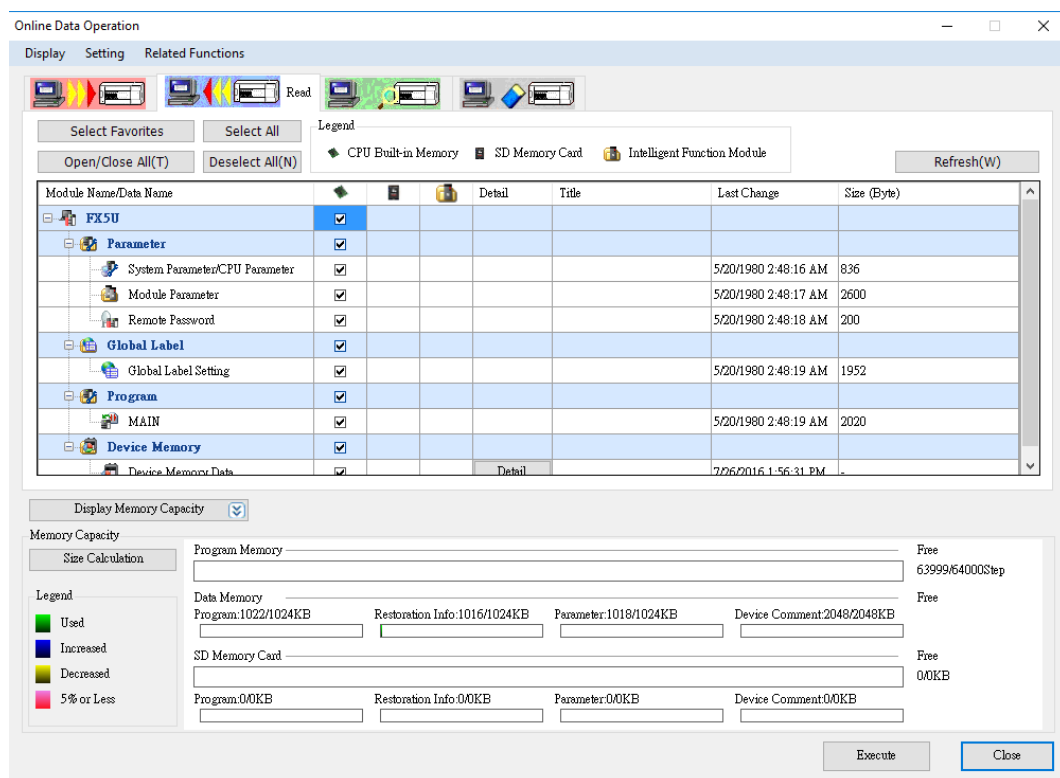
In the connection window, select **Ethernet Board**. Click **PLC Module** and in the dialog window, select the **Ethernet Port Direct Connection** radio button.



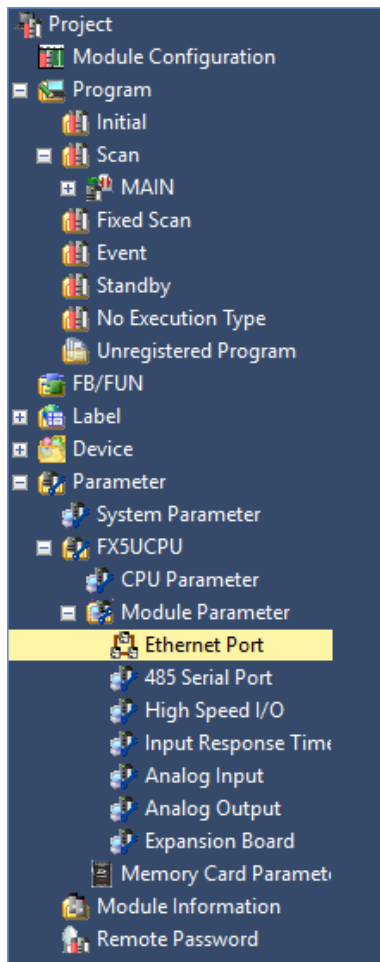


Click **Connection Test** to verify the connection and then press OK.

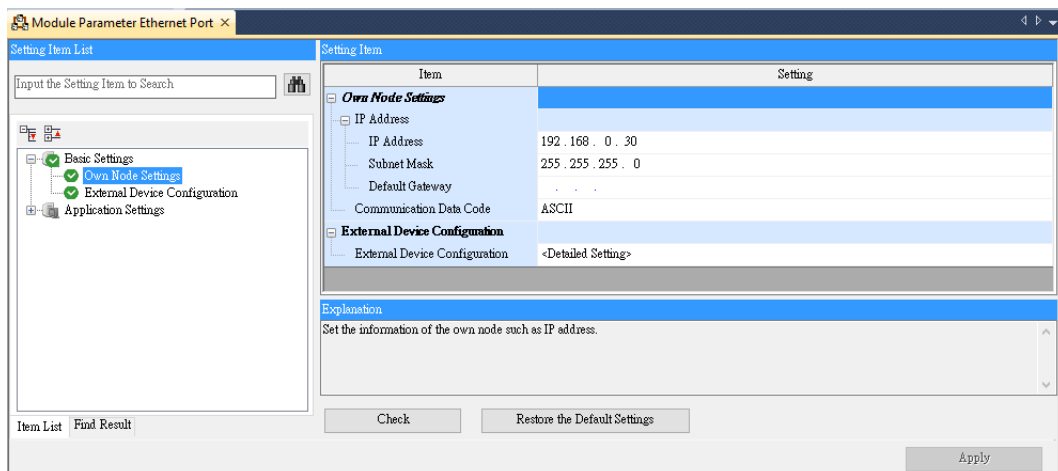
Click **Select All** in the Online Data Operation window and press **Execute**. Allow the read to finish.

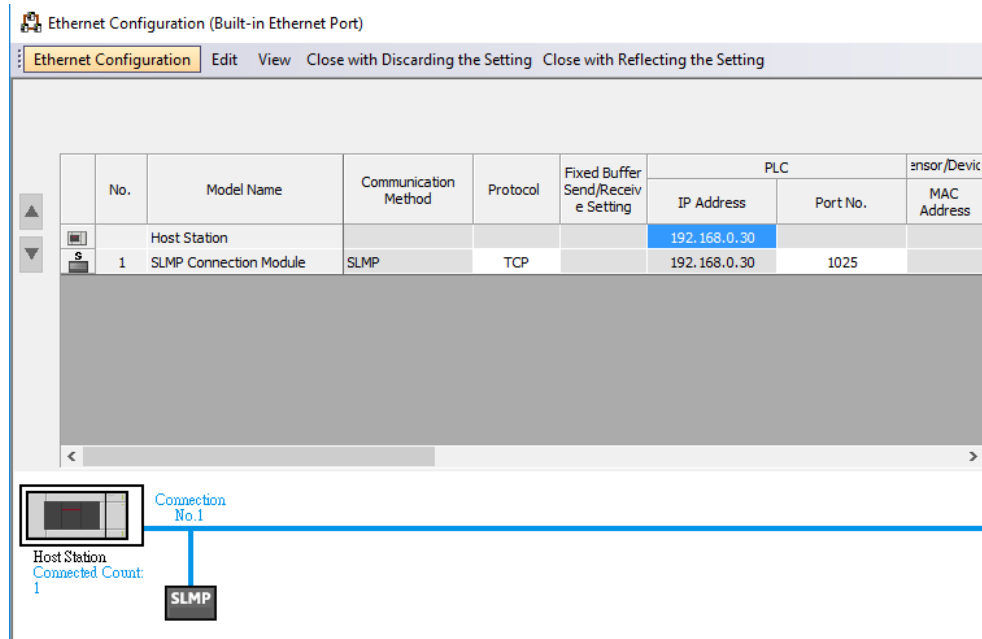


In the **Project** sidebar, expand **Parameter**, **FX5UCPU**, and **Module Parameter** and select **Ethernet Port**.

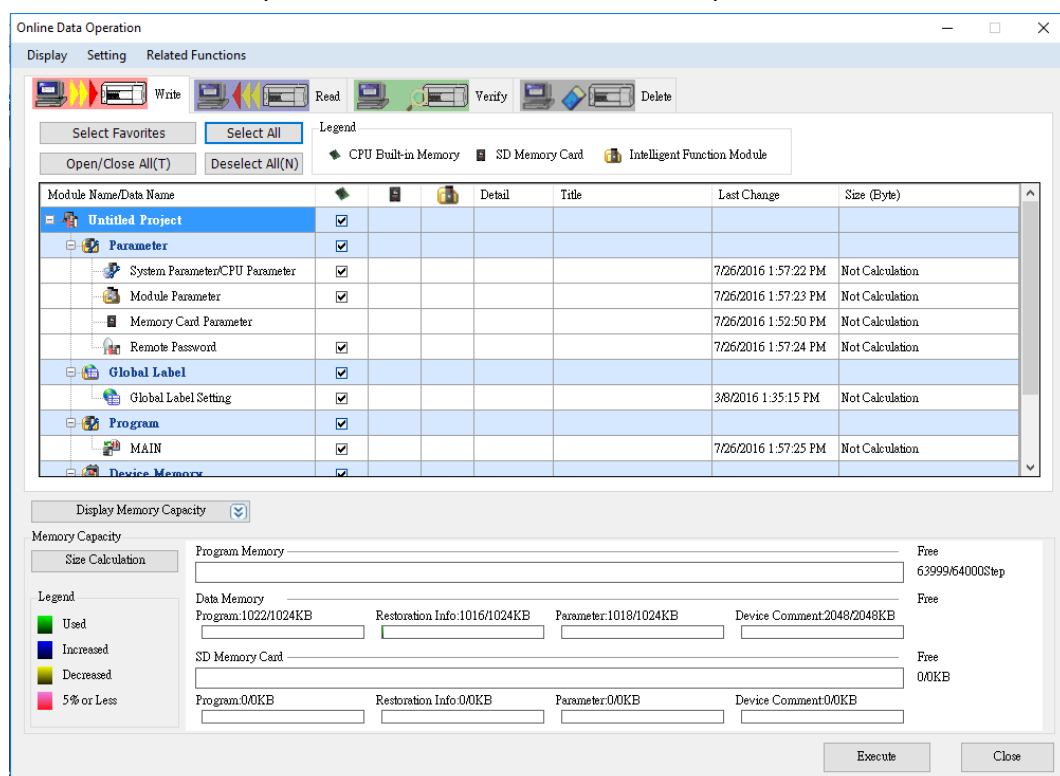


The **IP Address** of the PLC can be obtained here. Switch the **Communication Data Code** to the mode needed (Binary or ASCII). Double click "<Detailed Setting>" under **External Device Configuration** to get the port information. Verify the **Protocol** is TCP.





If the user needs to change the **IP Address**, edit the IP address under the **Own Node Settings**. Then enter the Detailed Settings and press **Close with Reflecting the Setting**. Under the **Online** menu option, select **Write to PLC** to save the settings to the PLC. Click **Select All** and press **Execute** in the Online Data Operation window.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi FX5U-ENET(ASCII)

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192.168.0.30 | Timeout(ms): 3000

Port: 1025 | Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 0

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select one of the Mitsubishi FX5U-ENET options. The last part of the series name (BINARY or ASCII) should be consistent with the Connection Data Code set in the Ethernet Port for the PLC.

Enter the **IP Address** that was written into the PLC.

Enter 1025 for the Port.

2.2.8 QSeries-Serial Communication(Link Port)

2.2.8.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232/RS422/RS485	QJ71C24N Module
Baud Rate	115200	
Data Length	7	
Stop Bit	1	
Parity	Odd	
PLC Station No.	0	
TX Control Procedure	Form4	Without CR,LF
Sum Check	Yes	
Communication Method	MC Protocol 3C	

2.2.8.2 Memory Resource Review

Device	Description	Data bit	Input format	Max.	Max.
X	Input Relay	1	HHHH	0	1fff
Y	Output Relay	1	HHHH	0	1fff
M	Internal Relay	1	DDDDD	0	61439
L	Latch Relay	1	DDDD	0	32767
B	Link Relay	1	HHHH	0	efff
F	Annunciator	1	DDDD	0	32767
V	Edge Relay	1	DDDD	0	32767
SB	Link Special Relay	1	HHH	0	7FFF
S	Step Relay	1	DDDD	0	16383
TS	Timer Contact	1	DDDD	0	32767
TC	Timer Coil	1	DDDD	0	32767
SS	Retentive Timer Contact	1	DDDD	0	32767
SC	Retentive Timer Coil	1	DDDD	0	32767
CS	Counter Contact	1	DDDD	0	32767
CC	Counter Coil	1	DDDD	0	32767
SM	Special Relay	1	DDDD	0	2047
DX	Direct Input	1	HHHH	0	1fff
DY	Direct Output	1	HHHH	0	1fff

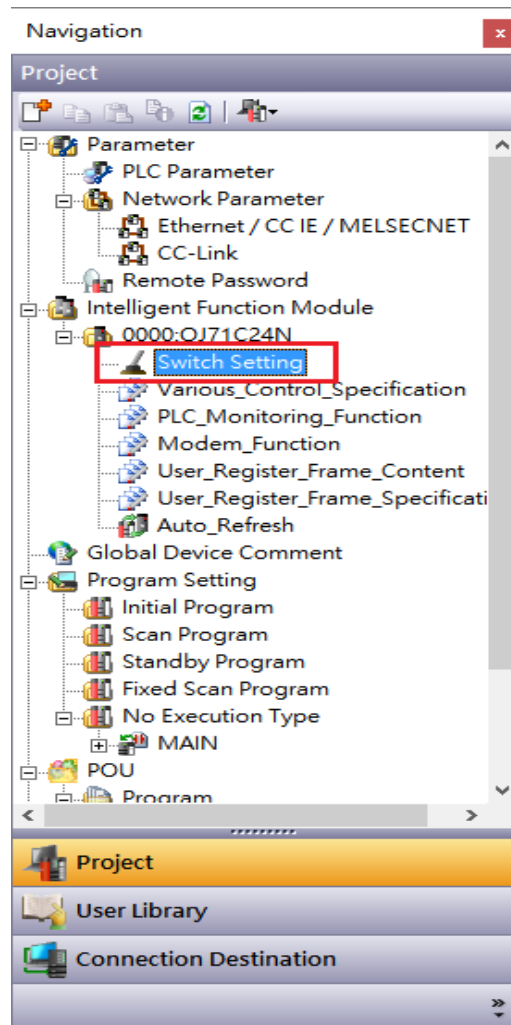
WX	Input Relay	16	HHHH	0	1ff0
WY	Output Relay	16	HHHH	0	1ff0
WM	Internal Relay	16	DDDDD	0	61424
WL	Link Relay	16	DDDD		32752
B_Word	Link Relay	16	HHHH	0	eff0
F_Word	Annunciator	16	DDDDD	0	32752
WV	Edge relay	16	DDDDD	0	32752
SB_Word	Link Special Relay	16	HHH	0	7ff0
WS	Step Relay	16	DDDD	0	16368
TS_Word	Timer Contact	16	DDDD	0	32752
TC_Word	Timer Coil	16	DDDD	0	32752
SS_Word	Retentive Timer Contact	16	DDDD	0	32752
SC_Word	Retentive Timer Coil	16	DDDD	0	32752
CS_Word	Counter Contact	16	DDDD	0	32752
CC_Word	Counter Coil	16	DDDD	0	32752
SM_Word	Special Relay	16	DDDD	0	2032
TN	Timer Current Value	16	DDDD	0	32752
SN	Retentive Timer Current Value	16	DDDD	0	32752
CN	Counter Current Value	16	DDDD	0	32752
D	Data Register	16	DDDDD	0	39935
W	Link Register	16	HHHH	0	9bff
SW	Link special Register	16	HHH	0	7FFF
SD	Special Register	16	DDDD	0	2047
R	File Register	16	DDDDD	0	32767
Z	Index Register	16	DD	0	19
ZR	File Register	16	HHHHH	0	9fff

2.2.8.3 Connected Setting

Configuring of PLC

Use **MELSOFT GX Works2** to configure the port of the **QJ71C24N Module**.

Under the Project Sidebar, expand **Intelligent Function Module** and select **Switch Setting**.



Configure it to the settings detailed below.

Switch Setting 0000:QJ71C24N
✕

Item	CH1	CH2	
Transmission Setting	Operation setting	Independent	Independent
	Data Bit	7	7
	Parity Bit	None	None
	Even/odd parity	Odd	Odd
	Stop bit	1	1
	Sum check code	None	None
	Online Change	Disable	Disable
	Setting modifications	Disable	Disable
Communication rate setting	115200bps	115200bps	
Communication protocol setting	MC protocol (Format 4)	MC protocol (Format 4)	
Station number setting (0 to 31)	0		

The following setting is available for product information 10122000000000-B or later.
 Communication protocol setting
 - Predefined protocol

* This dialog setting is linked to the Switch Setting of the PLC parameter.
 Default value will be shown in the dialog
 if the Switch Setting of the PLC parameter contains an out-of-range value.

OK
Cancel

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

New Link Property

Link Setting

Name: Link0

Interface Type: Direct Link(Serial)

Manufacturer: Mitsubishi Electric Corporation [Help](#)

Product Series: Mitsubishi QSeries-Serial Communication(Link Port)

Interface Setting

Basic | Comm. Error Handling

Port: COM1 | Timeout(ms): 3000

Baudrate: 115200 | Command Delay(ms): 0

Parity: Odd | Retry Count: 0

Data Bits: 7 | TX Control Procedure: Form4(With CR,LF)

Stop Bits: 1 | Sum Check: ☒

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 0 ☐ Set By Register

OK Cancel

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

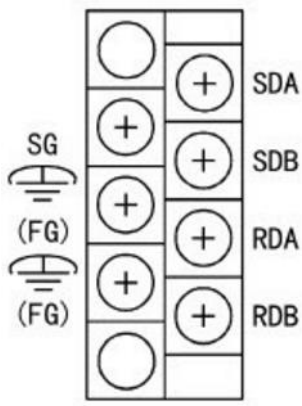
Under **Manufacturer** select Mitsubishi Electric Corporation

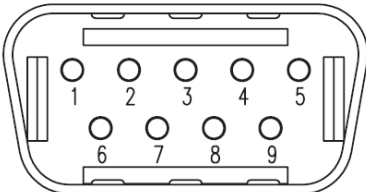
Under **Product Series** select Mitsubishi QSeries-Serial Communication(Link Port).

Verify the parameters match the window above.

The setting of Q series CPU setting if "Use serial communication" is checked, please use QSeries-Serial Communication (Link Port), and the transfer control program is set to Form 5 (Binary mode).

2.2.8.4 Wiring Diagrams

QJ71C24N RS232 Pinout		QJ71C24N RS422/485 Pinout
 * Looking into PLC Device		
PIN#	Signal	
1	DCD	
2	RXD	
3	TXD	
4	DTR	
5	GND	
6	DSR	
7	RTS	
8	CTS	

HMI COM1 pinout		HMI COM3 pinout	
 *Looking into COM1 Port		 *Looking into HMI Device	
PIN#	COM1 (RS232)	PIN#	COM3 (RS-422/RS-485)
1		1	
2	RX	2	
3	TX	3	ISO_GND
4		4	RX+
5	GND	5	RX-
6		6	TX+

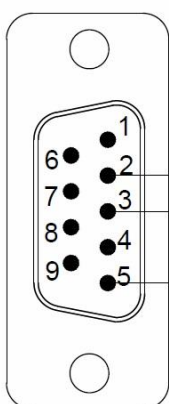
7	RTS	7	TX-
8	CTS		
9			

With PLC RS232

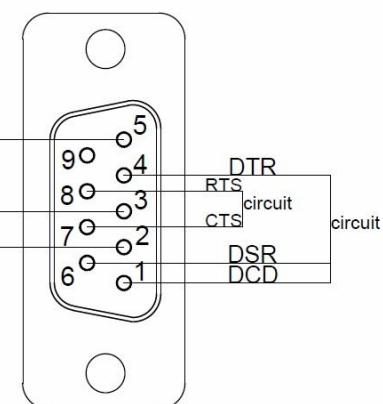
HMI COM1	QJ71 RS232 Port	
2 RX	3 TXD	
3 TX	2 RXD	
5 GND	5 GND	
	1 DCD	circuit
	4 DTR	
	6 DSR	
	7 RTS	circuit
	8 CTS	

Wiring Diagrams:RS232

HMI COM1



PLC RS232



RX

TX

GND

GND

TXD

RXD

DTR

RTS

CTS

DSR

DCD

circuit

With PLC RS422

HMI COM3	QJ71 RS422/485 Port
4 RX+	SDA
5 RX-	SDB
6 TX+	RDA
7 TX-	RDB
3 GND	SG

Wiring Diagrams:RS422

HMI COM3

QJ71 RS422/485



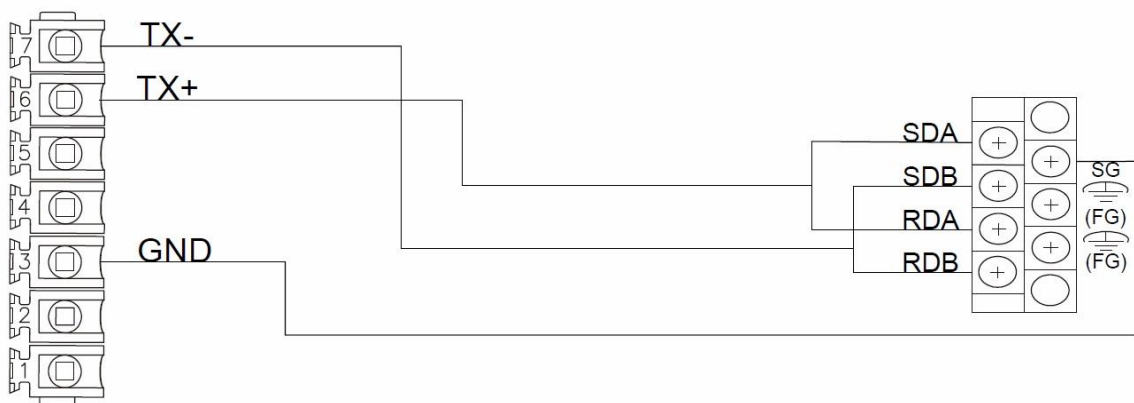
With PLC RS485

HMI COM3	QJ71 RS422/485 Port
6 TX+	SDA
	RDA
7 TX-	SDB
	RDB
3 GND	SG

Wiring Diagrams: RS485

HMI COM3

QJ71 RS422/485



2.2.9 QSeries-Serial Communication(CPU Port)

2.2.9.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	Odd	
PLC Station No.	0	

2.2.9.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	Input Relay	1	HHHH	0	1fff
Y	Output Relay	1	HHHH	0	1fff
M	Internal Relay	1	DDDDD	0	61439
L	Latch Relay	1	DDDDD	0	32767
B	Link Relay	1	HHHH	0	Efff
F	Annunciator	1	DDDDD	0	32767
V	Edge Relay	1	DDDDD	0	32767
SB	Link Special Relay	1	HHHH	0	7fff
S	Step Relay	1	DDDDD	0	16383
TS	Timer Contact	1	DDDDD	0	32767
TC	Timer Coil	1	DDDDD	0	32767
SS	Retentive Timer Contact	1	DDDDD	0	32767
SC	Retentive Timer Coil	1	DDDDD	0	32767
CS	Counter Contact	1	DDDDD	0	32767
CC	Counter Coil	1	DDDDD	0	32767
SM	Special Relay	1	DDDD	0	2047
DX	Direct Input	1	HHHH	0	1fff
DY	Direct Output	1	HHHH	0	1fff
WX	Input Relay	16	HHHH	0	1ff0
WY	Output Relay	16	HHHH	0	1ff0
WM	Internal Relay	16	DDDDD	0	61424
WL	Latch Relay	16	DDDDD	0	32752

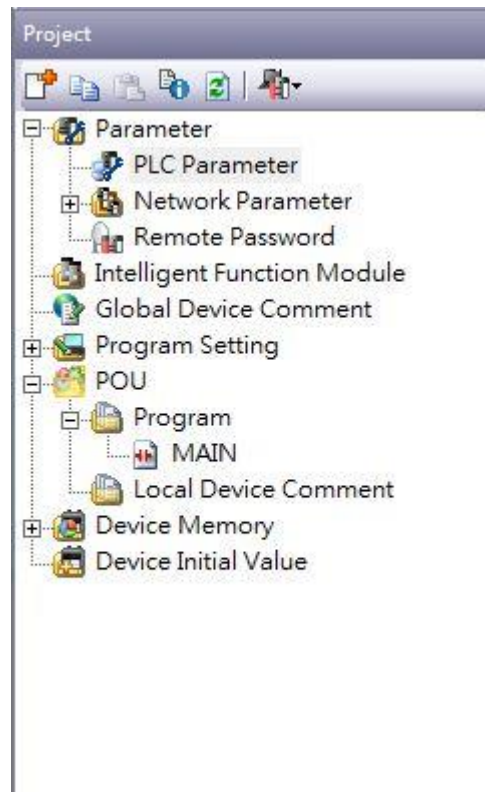
B_Word	Link Relay	16	HHHH	0	Eff0
F_Word	Annunciator	16	DDDDD	0	32752
WV	Edge Relay	16	DDDDD	0	32752
SB_Word	Link Special Relay	16	HHHH	0	7ff0
WS	Step Relay	16	DDDDD	0	16368
TS_Word	Timer Contact	16	DDDDD	0	32752
TC_Word	Timer Coil	16	DDDDD	0	32752
SS_Word	Retentive Timer Contact	16	DDDDD	0	32752
SC_Word	Retentive Timer Coil	16	DDDDD	0	32752
CS_Word	Counter Contact	16	DDDDD	0	32752
CC_Word	Counter Coil	16	DDDDD	0	32752
SM_Word	Special Relay	16	DDDD	0	2032
TN	Timer Current Value	16	DDDDD	0	32767
SN	Retentive Timer Current Value	16	DDDDD	0	32767
CN	Counter Current Value	16	DDDDD	0	32767
D	Data Register	16	DDDDD	0	39935
W	Link Register	16	HHHH	0	9bff
SW	Link Special Register	16	HHHH	0	7fff
SD	Special Register	16	DDDD	0	2047
R	File Register	16	DDDDD	0	32767
Z	Index Register	16	DD	0	19
ZR	File Register	16	HHHHH	0	9ffff

2.2.9.3 Connected Setting

Configuring IP Address on PLC

Use **MELSOFT GX Works2** to configure the port of the PLC.

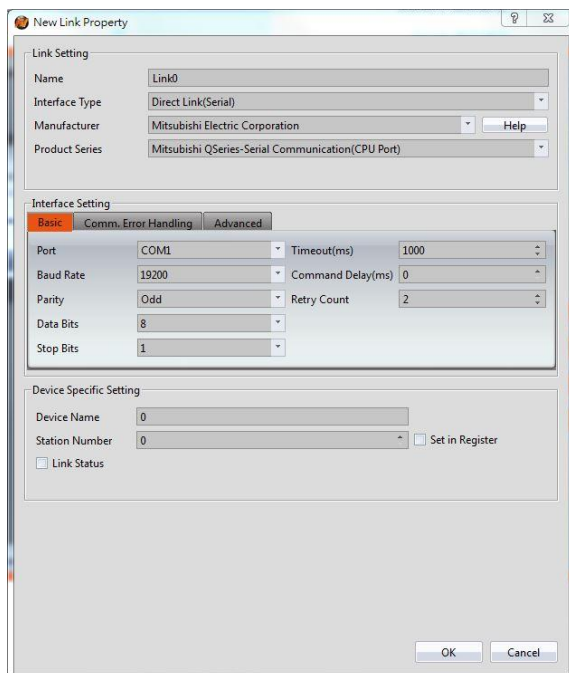
In the **Project** sidebar, expand **Parameter** and expand **PLC Parameter**.



The setting of Q series CPU setting if “Use serial communication” is checked, please use QSeries-Serial Communication (Link Port).

Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI



Within the **Link** configuration window in FvDesigner:

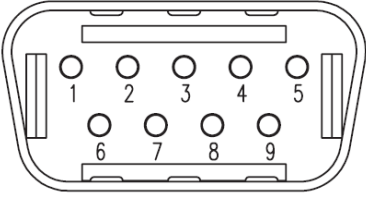
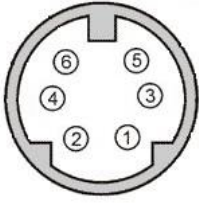
Under **Interface Type** select Direct Link(Serial)

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select one of the Mitsubishi QSeries-Series Communication(CPU Port).

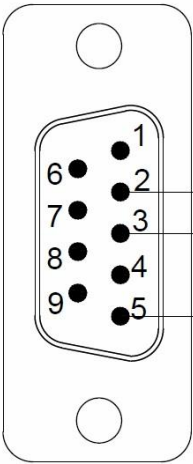
Verify the parameters match the window above.

2.2.9.4 Wiring Diagrams

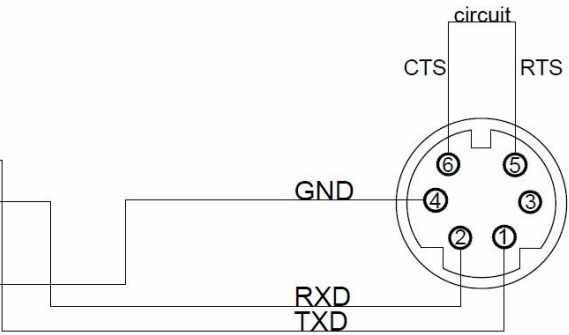
HMI RS232		PLC RS232 Pinout	
			
*Looking into COM1 Port		*View from soldering point of the cable	
PIN#	COM1 (RS232)	PIN#	Signal
1		1	TXD
2	RX	2	RXD
3	TX	3	
4		4	GND
5	GND	5	RTS
6		6	CTS
7	RTS		
8	CTS		
9			

HMI COM1	PLC RS232 Port	
2 RX	1 TXD	
3 TX	2 RXD	
5 GND	4 GND	
	5 RTS	circuit
	6 CTS	

HMI COM1



PLC RS232



2.2.10Q/L Series-ENET

2.2.10.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	
Port	4999	
PLC Station No.	0	
Communication Method	MC protocol 3E	Binary/ASCII

2.2.10.2 Memory Resource Review

Device	Description	Data bit	Input Format	Min.	Max.
X	Input Relay	1	HHHH	0	1fff
Y	Output Relay	1	HHHH	0	1fff
M	Internal Relay	1	DDDDD	0	61439
L	Latch Relay	1	DDDD	0	32767
B	Link Relay	1	HHHH	0	efff
F	Annunciator	1	DDDD	0	32767
V	Edge Relay	1	DDDD	0	32767
SB	Link Special Relay	1	HHH	0	7FFF
S	Step Relay	1	DDDD	0	16383
TS	Timer Contact	1	DDDD	0	32767
TC	Timer Coil	1	DDDD	0	32767
SS	Retentive Timer Contact	1	DDDD	0	32767
SC	Retentive Timer Coil	1	DDDD	0	32767
CS	Counter Contact	1	DDDD	0	32767
CC	Counter Coil	1	DDDD	0	32767
SM	Special Relay	1	DDDD	0	2047
DX	Direct Input	1	HHHH	0	1fff
DY	Direct Output	1	HHHH	0	1fff
WX ^{*1}	Input Relay	16	HHHH	0	1ff0
WY ^{*1}	Output Relay	16	HHHH	0	1ff0
WM ^{*1}	Internal Relay	16	DDDDD	0	61424
WL	Link Relay	16	DDDD		32752
B_Word ^{*1}	Link Relay	16	HHHH	0	eff0
F_Word ^{*1}	Annunciator	16	DDDDD	0	32752

WV	Edge relay	16	DDDDD	0	32752
SB_Word * ¹	Link Special Relay	16	HHH	0	7ff0
WS* ¹	Step Relay	16	DDDD	0	16368
TS_Word * ¹	Timer Contact	16	DDDD	0	32752
TC_Word * ¹	Timer Coil	16	DDDD	0	32752
SS_Word * ¹	Retentive Timer Contact	16	DDDD	0	32752
SC_Word * ¹	Retentive Timer Coil	16	DDDD	0	32752
CS_Word * ¹	Counter Contact	16	DDDD	0	32752
CC_Word * ¹	Counter Coil	16	DDDD	0	32752
SM_Word * ¹	Special Relay	16	DDDD	0	2032
TN	Timer Current Value	16	DDDD	0	32752
SN	Retentive Timer Current Value	16	DDDD	0	32752
CN	Counter Current Value	16	DDDD	0	32752
D	Data Register	16	DDDDD	0	39935
W	Link Register	16	HHHH	0	9bff
SW	Link special Register	16	HHH	0	7FFF
SD	Special Register	16	DDDD	0	2047
R	File Register	16	DDDDD	0	32767
Z	Index Register	16	DD	0	19
ZR	File Register	16	HHHHH	0	9fff

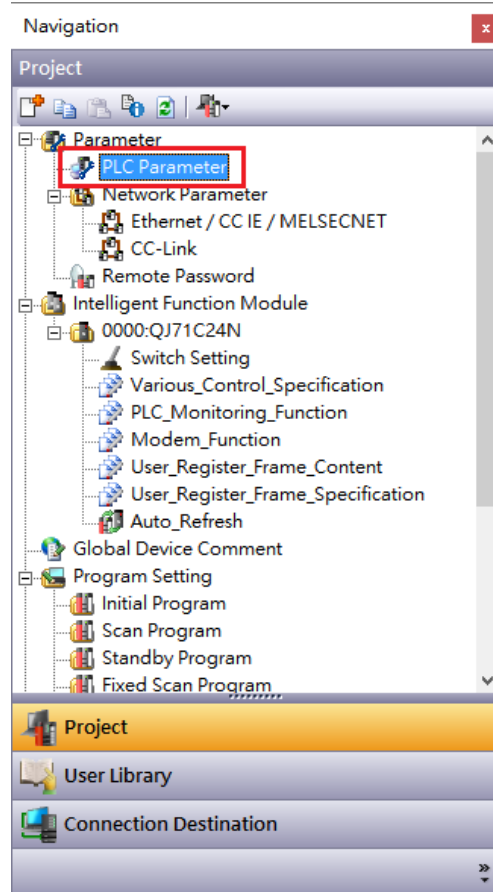
*¹ Address increased by 0, 20, 40, 60...

2.2.10.3 Connected Setting

Configuring IP Address on PLC

Use **MELSOFT GX Works2** to configure the port of the PLC.

In the **Project** sidebar, expand **Parameter** and expand **PLC Parameter**.



Navigate to **Built-in Ethernet Port Setting** tab, the IP address and other parameters can be set.

Q Parameter Setting

PLC Name | PLC System | PLC File | **PLC RAS** | Boot File | Program | SFC | Device | I/O Assignment | Multiple CPU Setting | **Built-in Ethernet Port Setting**

IP Address Setting

Input Format: DEC

IP Address: 192 168 0 39

Subnet Mask Pattern: [][][][]

Default Router IP Address: [][][][]

Open Setting

FTP Setting

Time Setting

Communication Data Code

☐ Binary Code

☒ ASCII Code

☒ Enable online change (FTP, MC Protocol)

☐ Disable direct connection to MELSOFT

☐ Do not respond to search for CPU (Built-in Ethernet port) on network

IP packet transfer setting

IP packet transfer setting

Set if it is needed(Default / Changed)

Print Window... | Print Window Preview | Acknowledge XY Assignment | Default | Check | End | Cancel

Click Open Setting and set the entire Open System column to MC Protocol. For the Host Station Port No 4999.

Built-in Ethernet Port Open Setting

IP Address/Port No. Input Format: DEC

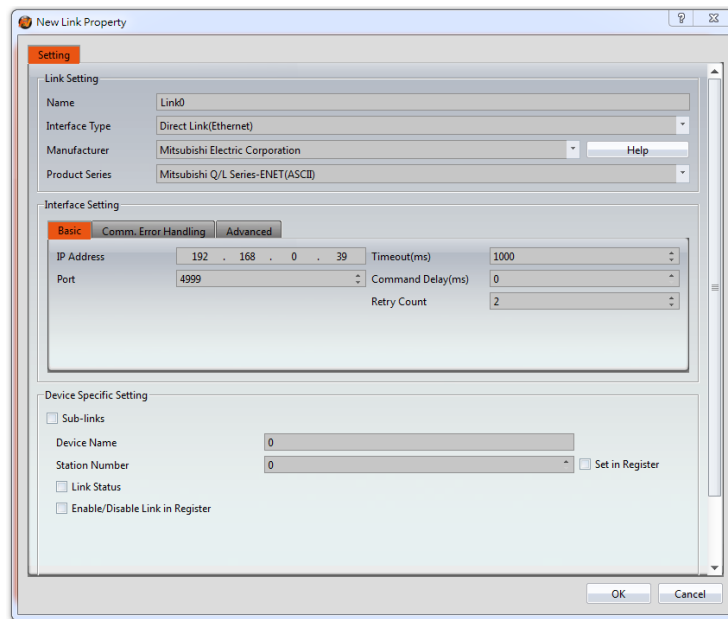
	Protocol	Open System	TCP Connection	Host Station	Destination IP Address	Destination Port No.	Start Device to Store Predefined Protocol
1	TCP	MC Protocol		4999			
2	TCP	MELSOFT Connection					
3	TCP	MELSOFT Connection					
4	TCP	MELSOFT Connection					
5	TCP	MELSOFT Connection					
6	TCP	MELSOFT Connection					
7	TCP	MELSOFT Connection					
8	TCP	MELSOFT Connection					
9	TCP	MELSOFT Connection					
10	TCP	MELSOFT Connection					
11	TCP	MELSOFT Connection					
12	TCP	MELSOFT Connection					
13	TCP	MELSOFT Connection					
14	TCP	MELSOFT Connection					
15	TCP	MELSOFT Connection					
16	TCP	MELSOFT Connection					

(*) IP Address and Port No. will be displayed by the selected format.
Please enter the value according to the selected number.

End | Cancel

Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select one of the Mitsubishi Q/L Series-ENET(BINARY 或 ASCII).

The last part of the series name (BINARY or ASCII) should be consistent with the Connection Data Code set in the Ethernet Port for the PLC.

Enter the **IP Address** that was written into the PLC.

Verify the parameters match the window above.

2.2.11 iQ-R Series-ENET

2.2.11.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	
Port	4999	
PLC Station No.	0	
Communication Method	MC protocol 3E	Binary/ASCII

2.2.11.2 Memory Resource Review

Device	Data bit	Description	Input Format	Min.	Max.
X	1	Input	HHHH	0	2fff
Y	1	Output	HHHH	0	2fff
M	1	Internal Relay	DDDDD	0	638975
SM	1	Special Relay	DDDD	0	4095
B	1	Link Relay	HHHHH	0	9bfff
SB	1	Link Special Relay	HHHHH	0	9bfff
F	1	Annunciator	DDDDD	0	32767
V	1	Edge Relay	DDDDD	0	32767
TS	1	Timer Contact	DDDDD	0	35487
TC	1	Timer Coil	DDDDD	0	35487
LTS	1	Long Timer Contact	DDDDD	0	35487
LTC	1	Long Timer Coil	DDDDD	0	35487
STS	1	Retentive Timer Contact	DDDDD	0	35487
STC	1	Retentive Timer Coil	DDDDD	0	35487
LSTS	1	Long Retentive Timer Contact	DDDDD	0	35487
LSTC	1	Long Retentive Timer Coil	DDDDD	0	35487
CS	1	Counter Contact	DDDDD	0	35487
CC	1	Counter Coil	DDDDD	0	35487
LCS	1	Long Counter Contact	DDDDD	0	35487
LCC	1	Long Counter Coil	DDDDD	0	35487
L	1	Latch Relay	DDDDD	0	32767
D	16	Data Register	DDDDD	0	39935

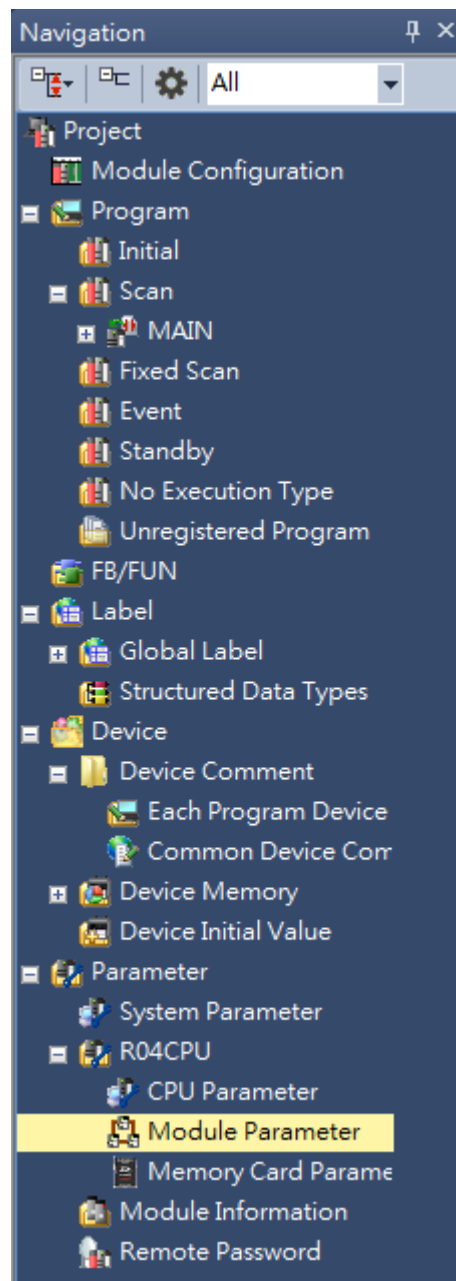
SD	16	Special Register	DDDD	0	4095
W	16	Link Register	HHHH	0	9bff
SW	16	Link Special Register	HHHH	0	9bff
TN	16	Timer Current Value	DDDDD	0	35487
STN	16	Retentive Timer Current Value	DDDDD	0	35487
CN	16	Counter Current Value	DDDDD	0	35487
Z	16	Index Register	DD	0	23
LTN	16	Long Timer Current Value	DDDDD	0	35487
LSTN	16	Long Retentive Timer Current Value	DDDDD	0	35487
LCN	16	Long Counter Current Value	DDDDD	0	35487
LZ	16	Long Index Register	DD	0	11

2.2.11.3 Connected Setting

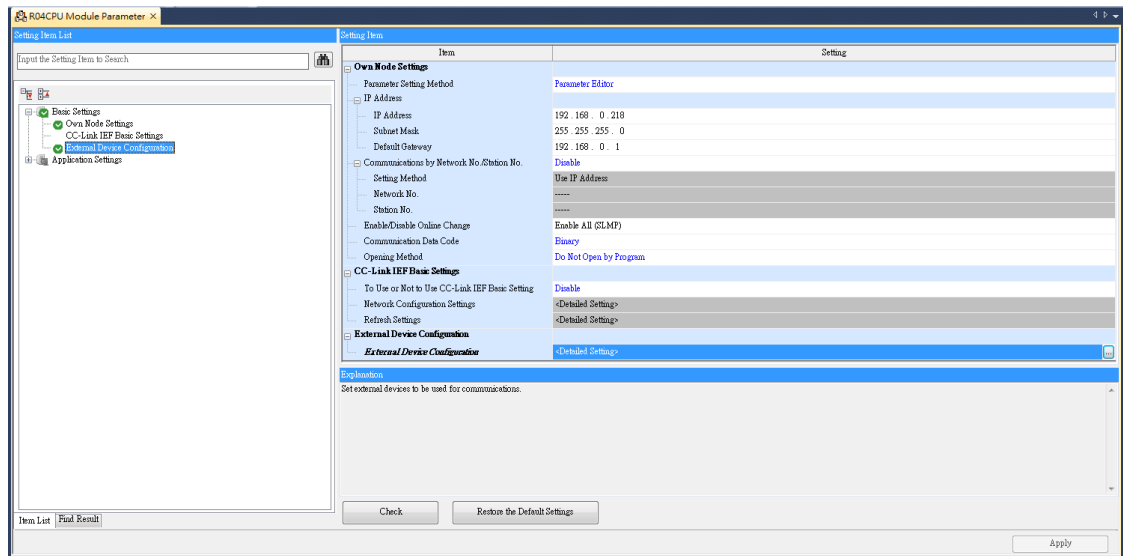
Configuring IP Address on PLC

Use **MELSOFT GX Works2** to configure the port of the PLC.

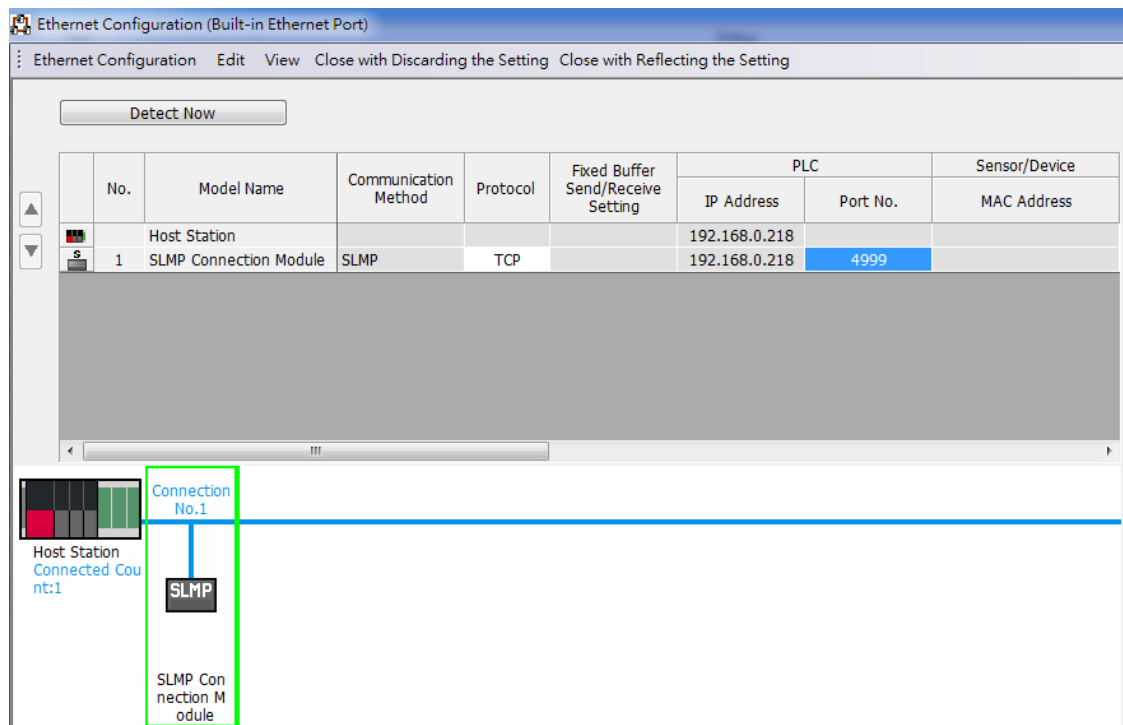
In the **Project** sidebar, expand **Parameter** and expand **Module Parameter**.



Navigate to **External Device Configuration** tab, the IP address and other parameters can be set.

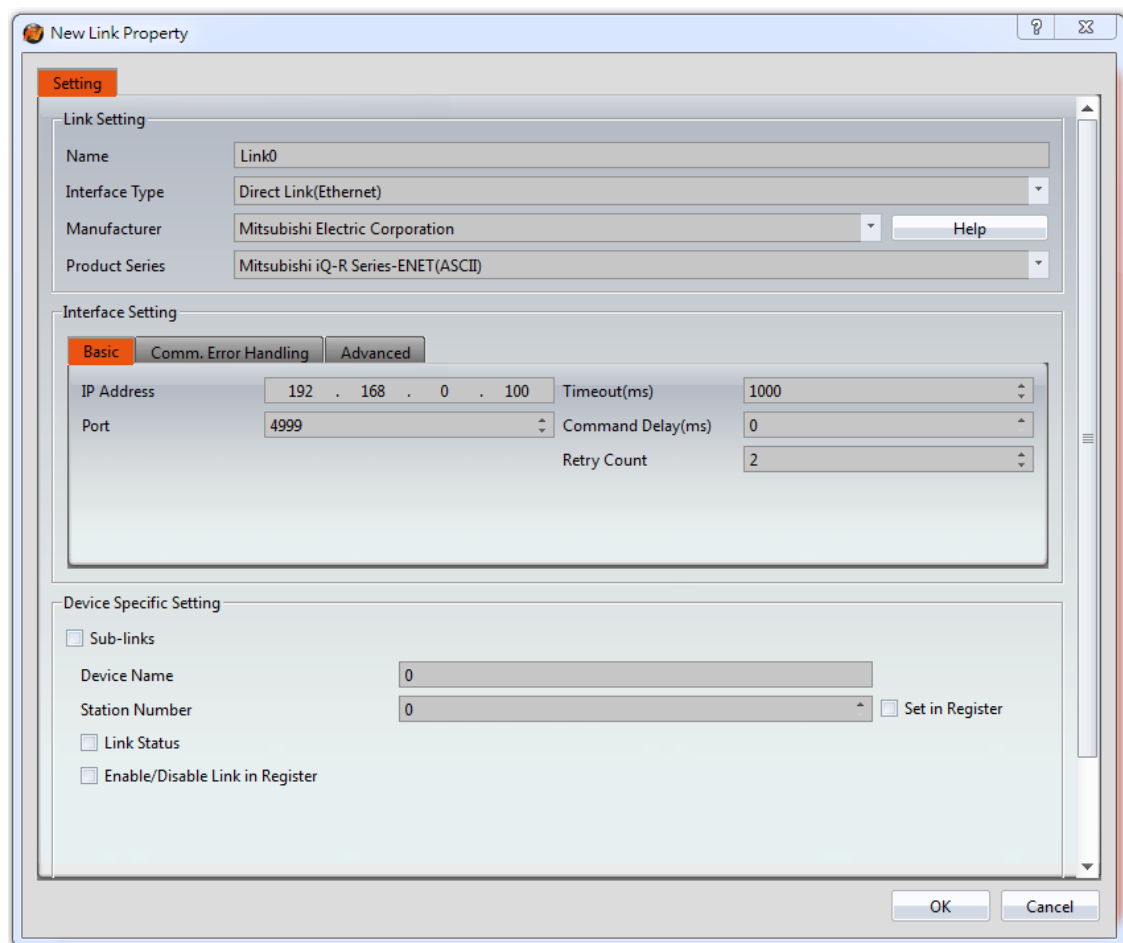


Click PLC Port No and set the Port No to 4999.



Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select one of the Mitsubishi iQ-R Series-ENET(BINARY 或 ASCII).

The last part of the series name (BINARY or ASCII) should be consistent with the Connection Data Code set in the Ethernet Port for the PLC.

Enter the **IP Address** that was written into the PLC.

Verify the parameters match the window above.

2.2.12 AnA/AnU(Link Port)

2.2.12.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9200	
Data Length	8	
Stop Bit	1	
Parity	Odd	
TX Control	Form1(Without CR,LF)	

2.2.12.2 Memory Resource Review

Device	Data bit	Description	Input Format	Min.	Max.
X	1	Input	HHHH	0	1fff
Y	1	Output	HHHH	0	1fff
B	1	Link Relay	HHHH	0	1fff
F	1	Annunciator	DDDD	0	2047
M	1	Internal Relay	DDDD	0	8191
L	1	Latch Relay	DDDD	0	8191
SM	1	Special Relay	DDDD	9000	9255
TS	1	Timer Contact	DDDD	0	2047
TC	1	Timer Coil	DDDD	0	2047
CS	1	Counter Contact	DDDD	0	1023
CC	1	Counter Coil	DDDD	0	1023
WX	16	Input	HHHH	0	1ff0
WY	16	Output	HHHH	0	1ff0
B_Word	16	Link Relay	HHHH	0	1ff0
F_Word	16	Annunciator	DDDD	0	2032
WM	16	Internal Relay	DDDD	0	8176
WL	16	Latch Relay	DDDD	0	8176
W	16	Link Register	HHHH	0	1fff
TN	16	Timer Present Value	DDDD	0	2047
CN	16	Counter Present Value	DDDD	0	1023
D	16	Data Register	DDDD	0	8191
SD	16	Special Register	DDDD	9000	9255

2.2.12.3 Connected Setting

Connect PLC to HMI

New Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Serial)

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi AnA/AnU(Link Port)

Interface Setting

Basic | Comm. Error Handling | Advanced

Port: COM1 | RS-232(4W) | Timeout(ms): 1000

Baud Rate: 9600 | Command Delay(ms): 0

Parity: Odd | Retry Count: 2

Data Bits: 8 | TX Control Procedure: Form1(Without CR,LF)

Stop Bits: 1 | Sum Check: ☒

Device Specific Setting

☐ Sub-links

Device Name: 1

Station Number: 0 | ☐ Set in Register

☐ Link Status

☐ Enable/Disable Link in Register

OK Cancel

Within the Link configuration window in FvDesigner:

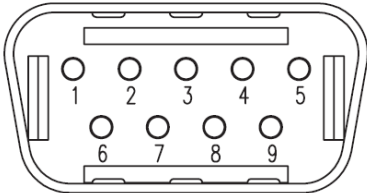
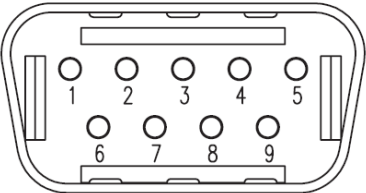
Under Interface Type select Direct Link(Serial)

Under Manufacturer select Mitsubishi Electric Corporation.

Under Product Series select one of the Mitsubishi AnA/AnU(Link Port).

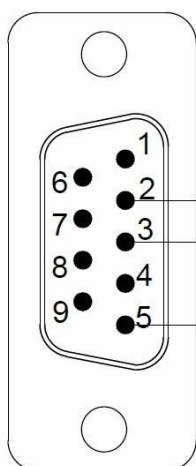
Verify the parameters match the window above.

2.2.12.4 Wiring Diagrams

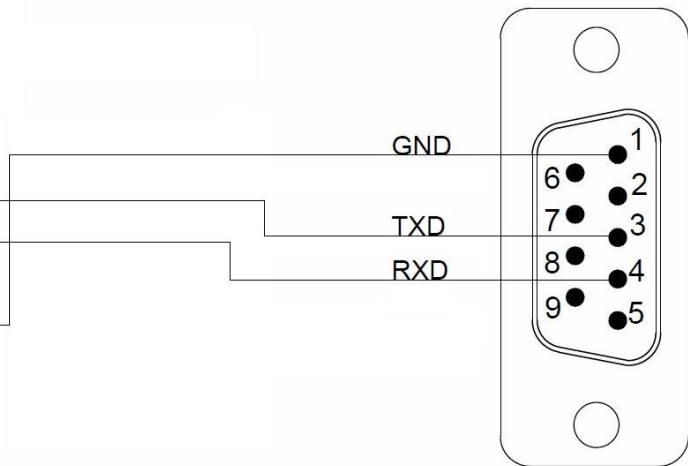
HMI COM1 Pinout		PLC RS232 Pinout	
			
*Looking into COM1 Port		*View from soldering point of the cable	
PIN#	COM1 (RS232)	PIN#	Signal
1		1	GND
2	RX	2	
3	TX	3	RXD
4		4	TXD
5	GND	5	
6		6	
7		7	
8		8	
9		9	

HMI COM1	PLC RS232 Port
2 RX	3 TXD
3 TX	4 RXD
5 GND	1 GND

HMI COM1



PLC RS232



2.2.13 Q/L Series-ENET(Binary)

(Support connect with QJ71E71-100)

2.2.13.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	
Port	4999	
PLC Station No.	0	
Communication Method	MC protocol 3E	Binary

2.2.13.2 Memory Resource Review

Device	Description	Data bit	Input Format	Min.	Max.
X	Input Relay	1	HHHH	0	1fff
Y	Output Relay	1	HHHH	0	1fff
M	Internal Relay	1	DDDDD	0	61439
L	Latch Relay	1	DDDD	0	32767
B	Link Relay	1	HHHH	0	efff
F	Annunciator	1	DDDD	0	32767
V	Edge Relay	1	DDDD	0	32767
SB	Link Special Relay	1	HHH	0	7FFF
S	Step Relay	1	DDDD	0	16383
TS	Timer Contact	1	DDDD	0	32767
TC	Timer Coil	1	DDDD	0	32767
SS	Retentive Timer Contact	1	DDDD	0	32767
SC	Retentive Timer Coil	1	DDDD	0	32767
CS	Counter Contact	1	DDDD	0	32767
CC	Counter Coil	1	DDDD	0	32767
SM	Special Relay	1	DDDD	0	2047
DX	Direct Input	1	HHHH	0	1fff
DY	Direct Output	1	HHHH	0	1fff
WX ^{*1}	Input Relay	16	HHHH	0	1ff0
WY ^{*1}	Output Relay	16	HHHH	0	1ff0

WM ^{*1}	Internal Relay	16	DDDDD	0	61424
WL	Link Relay	16	DDDD		32752
B_Word ^{*1}	Link Relay	16	HHHH	0	eff0
F_Word ^{*1}	Annunciator	16	DDDDD	0	32752
WV	Edge relay	16	DDDDD	0	32752
SB_Word ^{*1}	Link Special Relay	16	HHH	0	7ff0
WS ^{*1}	Step Relay	16	DDDD	0	16368
TS_Word ^{*1}	Timer Contact	16	DDDD	0	32752
TC_Word ^{*1}	Timer Coil	16	DDDD	0	32752
SS_Word ^{*1}	Retentive Timer Contact	16	DDDD	0	32752
SC_Word ^{*1}	Retentive Timer Coil	16	DDDD	0	32752
CS_Word ^{*1}	Counter Contact	16	DDDD	0	32752
CC_Word ^{*1}	Counter Coil	16	DDDD	0	32752
SM_Word ^{*1}	Special Relay	16	DDDD	0	2032
TN	Timer Current Value	16	DDDD	0	32752
SN	Retentive Timer Current Value	16	DDDD	0	32752
CN	Counter Current Value	16	DDDD	0	32752
D	Data Register	16	DDDDD	0	39935
W	Link Register	16	HHHH	0	9bff
SW	Link special Register	16	HHH	0	7FFF
SD	Special Register	16	DDDD	0	2047
R	File Register	16	DDDDD	0	32767
Z	Index Register	16	DD	0	19
ZR	File Register	16	HHHHH	0	9fff

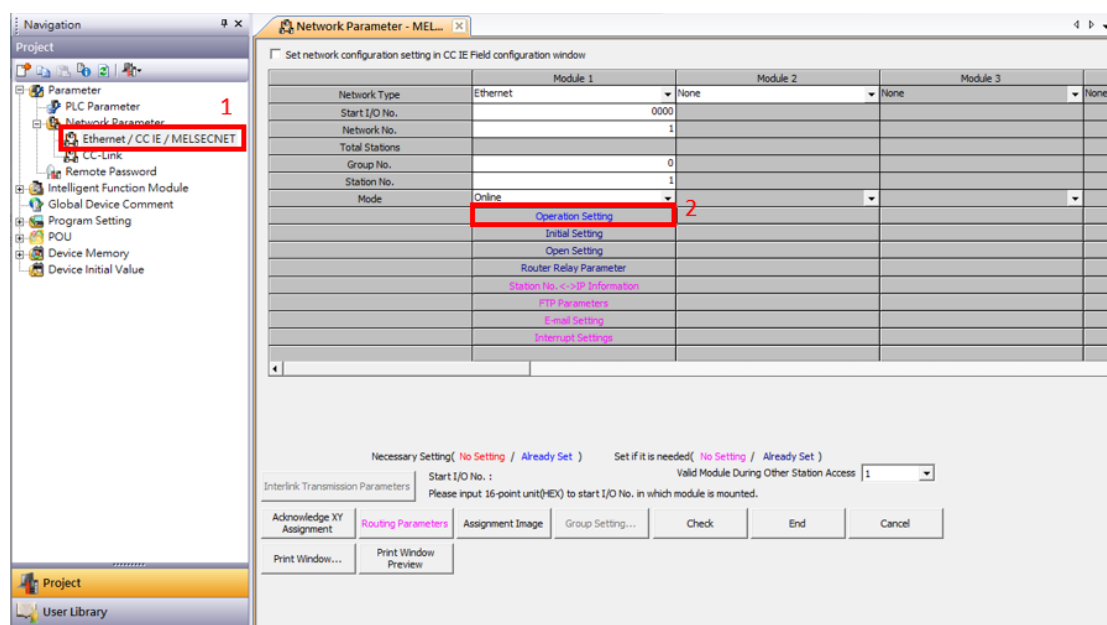
^{*1} Address increased by 0, 20, 40, 60...

2.2.13.3 Connected Setting

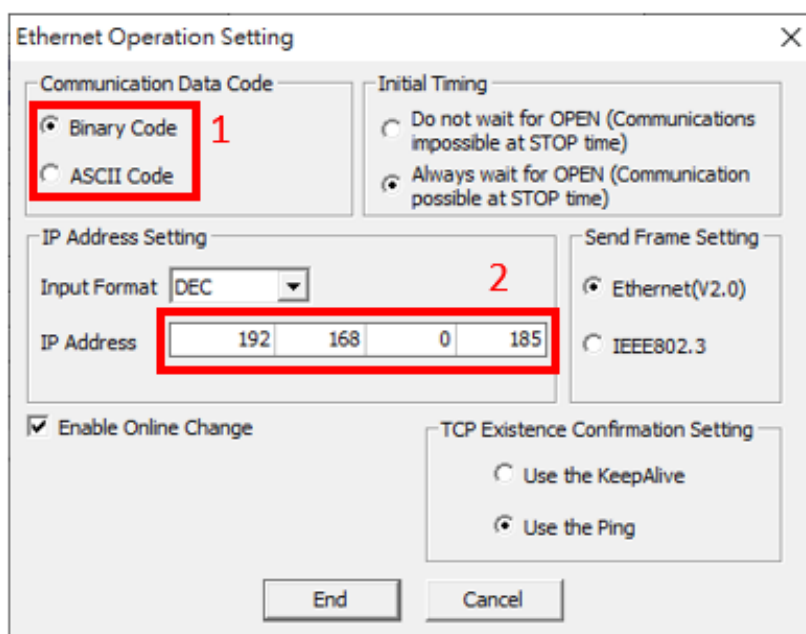
Configuring IP Address on PLC

Use **MELSOFT GX Works2** to configure the port of the PLC.

In the **Project** sidebar, expand **Network Parameter** -> **Ethernet/CC IE/MELSECNET** -> **Operation Setting**.



Setting the **Communication Data Code** to **Binary Code**, and setting the IP address.



Click **Open Setting** and set the entire **Open System** column to **TCP**. And setting to **MELSOFT Connection**.

Built-in Ethernet Port Open Setting

IP Address/Port No. Input Format: DEC

	Protocol	Open System	TCP Connection	Host Station	Destination IP Address	Destination Port No.	Start Device to Store Predefined Protocol
1	TCP	MC Protocol		4999			
2	TCP	MELSOFT Connection					
3	TCP	MELSOFT Connection					
4	TCP	MELSOFT Connection					
5	TCP	MELSOFT Connection					
6	TCP	MELSOFT Connection					
7	TCP	MELSOFT Connection					
8	TCP	MELSOFT Connection					
9	TCP	MELSOFT Connection					
10	TCP	MELSOFT Connection					
11	TCP	MELSOFT Connection					
12	TCP	MELSOFT Connection					
13	TCP	MELSOFT Connection					
14	TCP	MELSOFT Connection					
15	TCP	MELSOFT Connection					
16	TCP	MELSOFT Connection					

(*) IP Address and Port No. will be displayed by the selected format.
Please enter the value according to the selected number.

End Cancel

Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI

New Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Mitsubishi Electric Corporation

Product Series: Mitsubishi Q/L Series-ENET(BINARY)

Interface Setting

Basic Comm. Error Handling Advanced

IP Address: 192 . 168 . 0 . 185 Timeout(ms): 1000

Port: 5002 Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

☐ Sub-links

Device Name: 1

Station Number: 0 ☐ Set in Register

☐ Link Status

☐ Enable/Disable Link in Register

OK Cancel

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Mitsubishi Electric Corporation

Under **Product Series** select one of the Mitsubishi Q/L Series-ENET(BINARY).

Connection Data Code set in the Ethernet Port 5002 for the PLC.

Enter the **IP Address** that was written into the PLC.

Verify the parameters match the window above.

2.3 Omron

2.3.1 Sysmac CP Series (FINS)

2.3.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
PLC Station No.	0	
Communication Method	FINS	

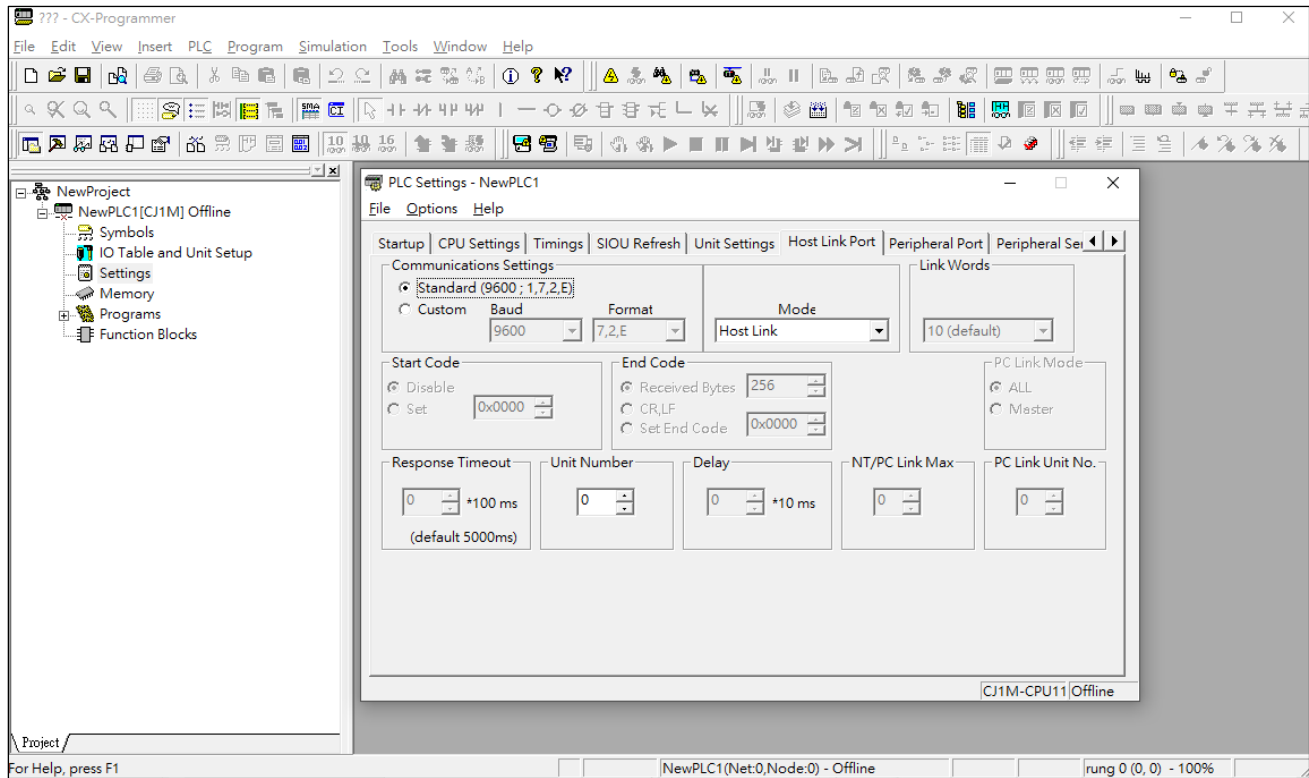
2.3.1.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Bit Area	16	0	511
A	Auxiliary Bit Area	16	0	959
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	DM Area	16	0	32767

2.3.1.3 Connected Setting

Configuring of PLC

To modify the communication parameters of the PLC using 「CX-Programmer」, click on "Settings" → "Port" for modification.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

New Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Serial)

Manufacturer: Omron Corporation

Product Series: Sysmac CP Series (FINS)

Interface Setting

Basic | Comm. Error Handling | Advanced

Port: COM1 | RS-232(2W) | Timeout(ms): 1000

Baud Rate: 9600 | Command Delay(ms): 0

Parity: Even | Retry Count: 2

Data Bits: 7

Stop Bits: 2

Device Specific Setting

☐ Sub-links

Device Name: 0

Device Station Number: 0

☐ Link Status

☐ Enable/Disable Link in Register

External Tags: Import

Set in Register

OK Cancel

Within the **Link** configuration window in FvDesigner:

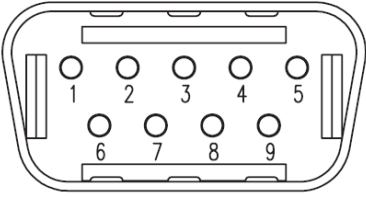
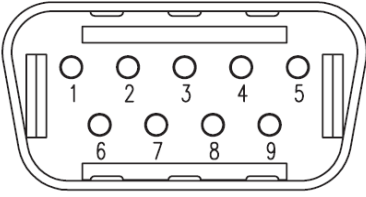
Under **Interface Type** select Serial

Under **Manufacturer** select Omron Corporation

Under **Product Series** select Sysmac CP Series (FINS)

Under **Port** select COM1

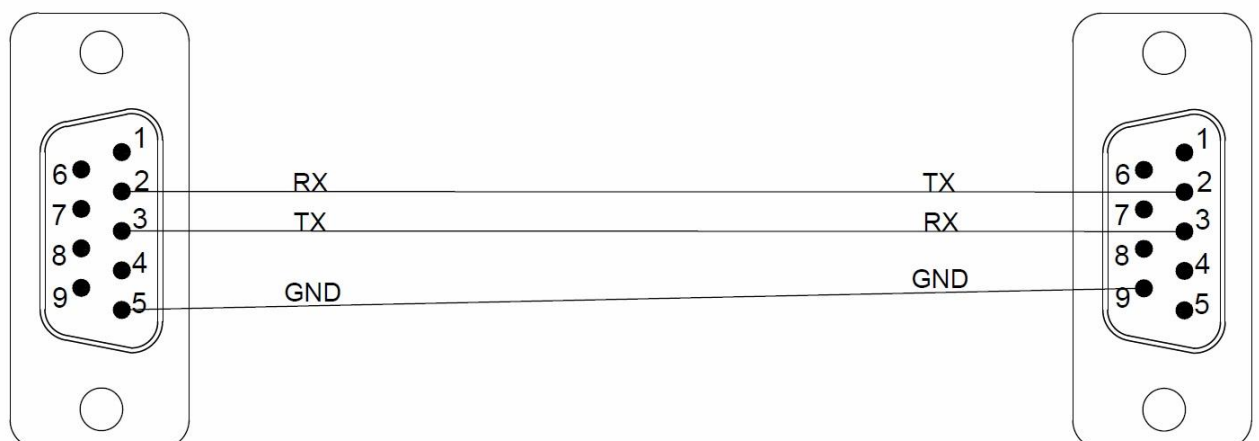
2.3.1.4 Wiring Diagrams

HMI COM1 Pinout		PLC RS232 Pinout	
			
*Looking into COM1 Port		*Looking into male RS232 Cable	
PIN#	COM1 (RS232)	PIN#	Signal
1		1	
2	RX	2	TX
3	TX	3	RX
4		4	
5	GND	5	
6		6	
7	RTS	7	
8	CTS	8	
9		9	GND

HMI COM1	PLC RS232 Port
2 RX	2 TX
3 TX	3 RX
5 GND	9 GND

HMI COM1

PLC RS232



2.3.2 Sysmac CP Series (FINS/TCP)

2.3.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	To be configured
Port	9600	
PLC Station No.	0	
Communication Method	FINS/TCP	

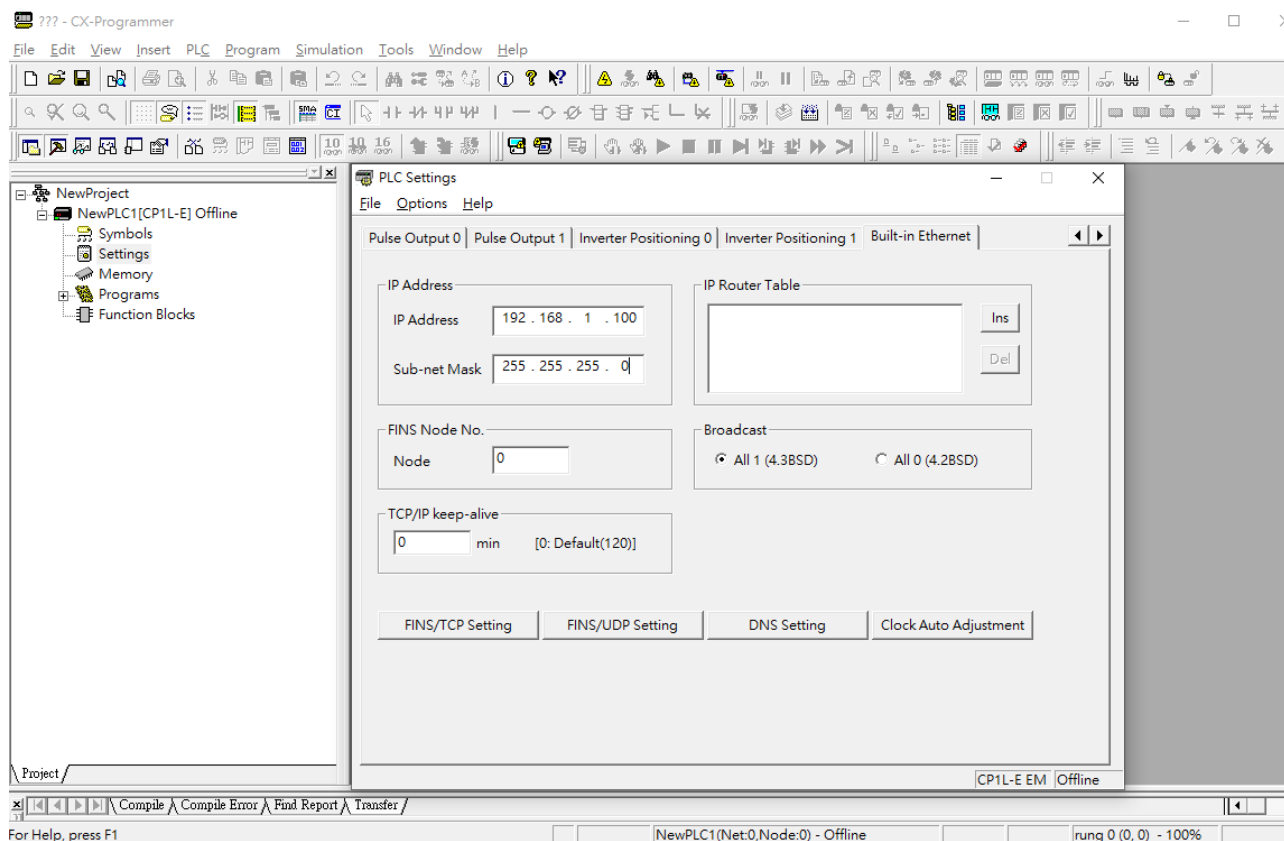
2.3.2.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
TK	Task Flag	1	0	31
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Area	16	0	511
A	Auxiliary Area	16	0	959
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	Data Memory Area	16	0	32767
IR	Index Register	32	0	15
DR	Data Register	16	0	15

2.3.2.3 Connected Setting

Configuring of PLC

To modify the communication parameters of the PLC using 「CX-Programmer」, click on "Settings" → "Built-in Ethernet" for modification.



Note: For more detailed information please refer to the PLC manual.

Configuring the HMI

New Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Omron Corporation

Product Series: Sysmac CP Series (FINS/TCP)

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192 . 168 . 1 . 100

Port: 9600

Timeout(ms): 1000

Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Device Station Number: 0

☐ Link Status

☐ Enable/Disable Link in Register

External Tags: Import

Set in Register

OK Cancel

Within the **Link** configuration window in FvDesigner:

- Under **Interface Type** select Ethernet
- Under **Manufacturer** select Omron Corporation
- Under **Product Series** select Sysmac CP Series (FINS/TCP)
- Enter the **IP Address** that was written into the PLC
- Enter 9600 for the Port

2.3.3 Sysmac CPM Series (HOSTLINK)

2.3.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
PLC Station No.	0	
Communication Method	HOSTLINK	

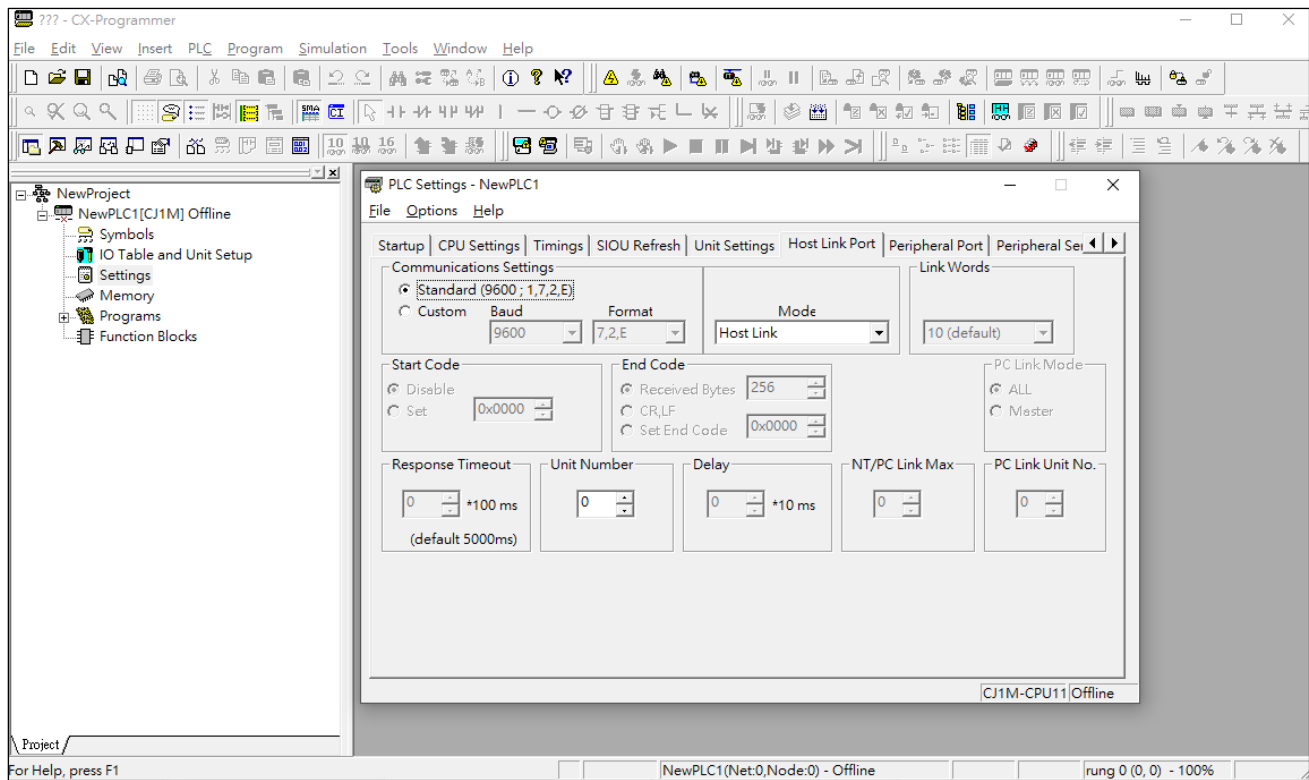
2.3.3.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
TNB	Timer Area	1	0	255
CNB	Counter Area	1	0	255
IR	IR area	16	0	227
HR	HR area	16	0	19
AR	AR area	16	0	23
LR	LR area	16	0	15
TN	Timer area	16	0	255
CN	Counter area	16	0	255
DM	DM area	16	0	6655

2.3.3.3 Connected Setting

Configuring of PLC

To modify the communication parameters of the PLC using 「CX-Programmer」, click on "Settings" → "Port" for modification.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

New Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Serial)

Manufacturer: Omron Corporation

Product Series: Sysmac CPM Series (HOSTLINK)

Interface Setting

Basic | Comm. Error Handling | Advanced

Port: COM1 | RS-232(2W) | Timeout(ms): 1000

Baud Rate: 9600 | Command Delay(ms): 0

Parity: Even | Retry Count: 2

Data Bits: 7

Stop Bits: 2

Device Specific Setting

☐ Sub-links

Device Name: 0

Device Station Number: 0

☐ Link Status

☐ Enable/Disable Link in Register

☐ Set in Register

OK Cancel

Within the **Link** configuration window in FvDesigner:

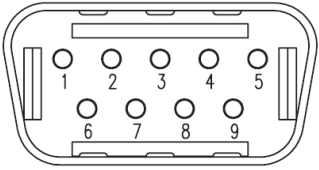
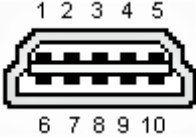
Under **Interface Type** select Serial

Under **Manufacturer** select Omron Corporation

Under **Product Series** select Sysmac CPM Series (HOSTLINK)

Under **Port** select COM1

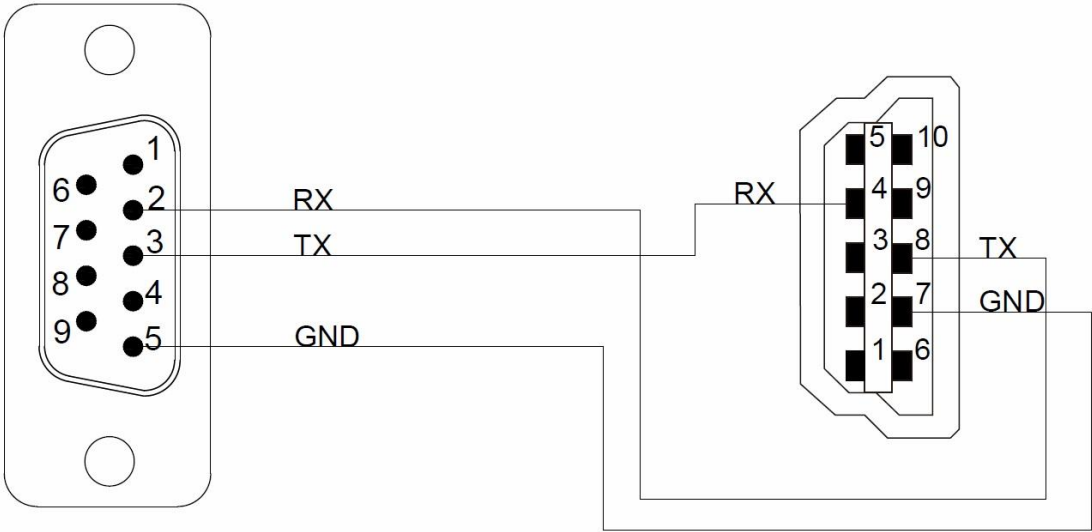
2.3.3.4 Wiring Diagrams

HMI COM1 Pinout		Omron PLC Pinout	
			
*Looking into COM1 Port		*Looking into Omron PLC Cable	
PIN#	COM1 (RS232)	PIN#	Signal
1		1	
2	RX	2	
3	TX	3	
4		4	RX
5	GND	5	
6		6	
7	RTS	7	GND
8	CTS	8	TX
9		9	RTS
		10	CTS

HMI COM1	Omron PLC Port
2 RX	8 TX
3 TX	4 RX
5 GND	7 GND

HMI COM1

Omron PLC



2.3.4 Sysmac CQM Series (HOSTLINK)

2.3.4.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
PLC Station No.	0	
Communication Method	HOSTLINK	

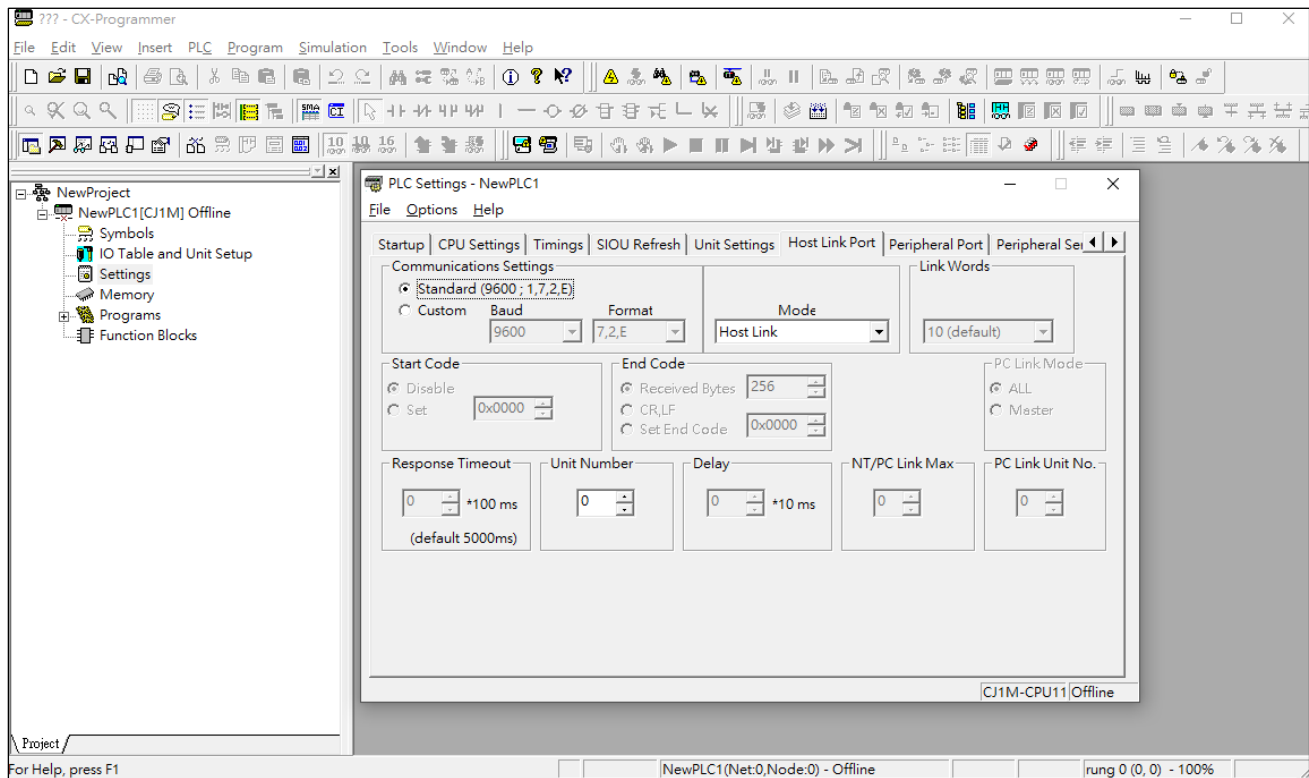
2.3.4.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
TNB	Timer Area	1	0	255
CNB	Counter Area	1	0	255
IR	IR area	16	0	227
HR	HR area	16	0	19
AR	AR area	16	0	23
LR	LR area	16	0	15
TN	Timer area	16	0	255
CN	Counter area	16	0	255
DM	DM area	16	0	6655

2.3.4.3 Connected Setting

Configuring of PLC

To modify the communication parameters of the PLC using 「CX-Programmer」, click on "Settings" → "Port" for modification.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

New Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Serial)

Manufacturer: Omron Corporation

Product Series: Sysmac CQM Series (HOSTLINK)

Interface Setting

Basic | Comm. Error Handling | Advanced

Port: COM1 | RS-232(2W) | Timeout(ms): 1000

Baud Rate: 9600 | Command Delay(ms): 0

Parity: Even | Retry Count: 2

Data Bits: 7

Stop Bits: 2

Device Specific Setting

☐ Sub-links

Device Name: 0

Device Station Number: 0

☐ Link Status

☐ Enable/Disable Link in Register

☐ Set in Register

OK Cancel

Within the **Link** configuration window in FvDesigner:

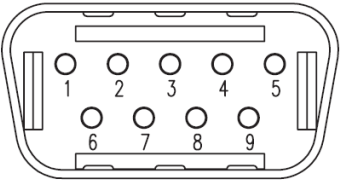
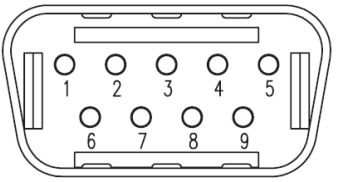
Under **Interface Type** select Serial

Under **Manufacturer** select Omron Corporation

Under **Product Series** select Sysmac CQM Series (HOSTLINK)

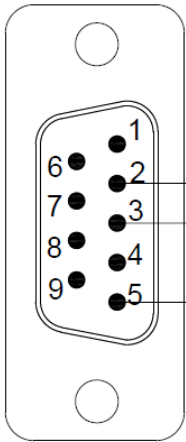
Under **Port** select COM1

2.3.4.4 Wiring Diagrams

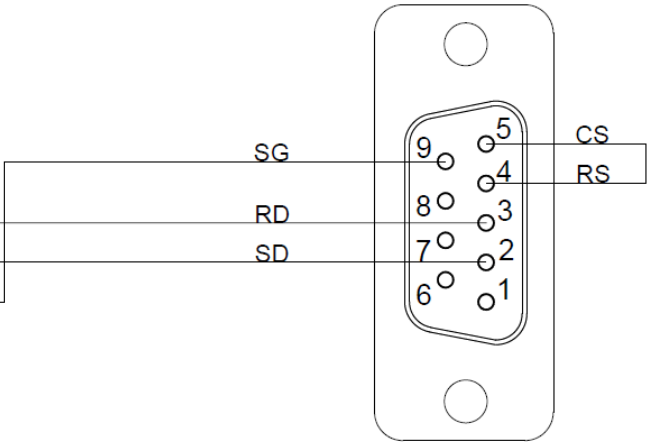
HMI COM1 Pinout		Omron PLC Pinout	
			
*Looking into COM1 Port		*Looking into PLC Port	
PIN#	COM1 (RS232)	PIN#	Signal
1		1	
2	RX	2	SD
3	TX	3	RD
4		4	RS
5	GND	5	CS
6		6	
7		7	
8		8	
9		9	SG

HMI COM1	Omron PLC Port	
2 RX	2 SD	
3 TX	3 RD	
5 GND	9 SG	
	4 RS	circuit
	5 CS	

HMI COM1



Omron PLC COM1



2.3.5 Sysmac CS/CJ Series (FINS)

2.3.5.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232/RS422	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
PLC Station No.	0	
Communication Method	FINS	

2.3.5.2 Memory Resource Review

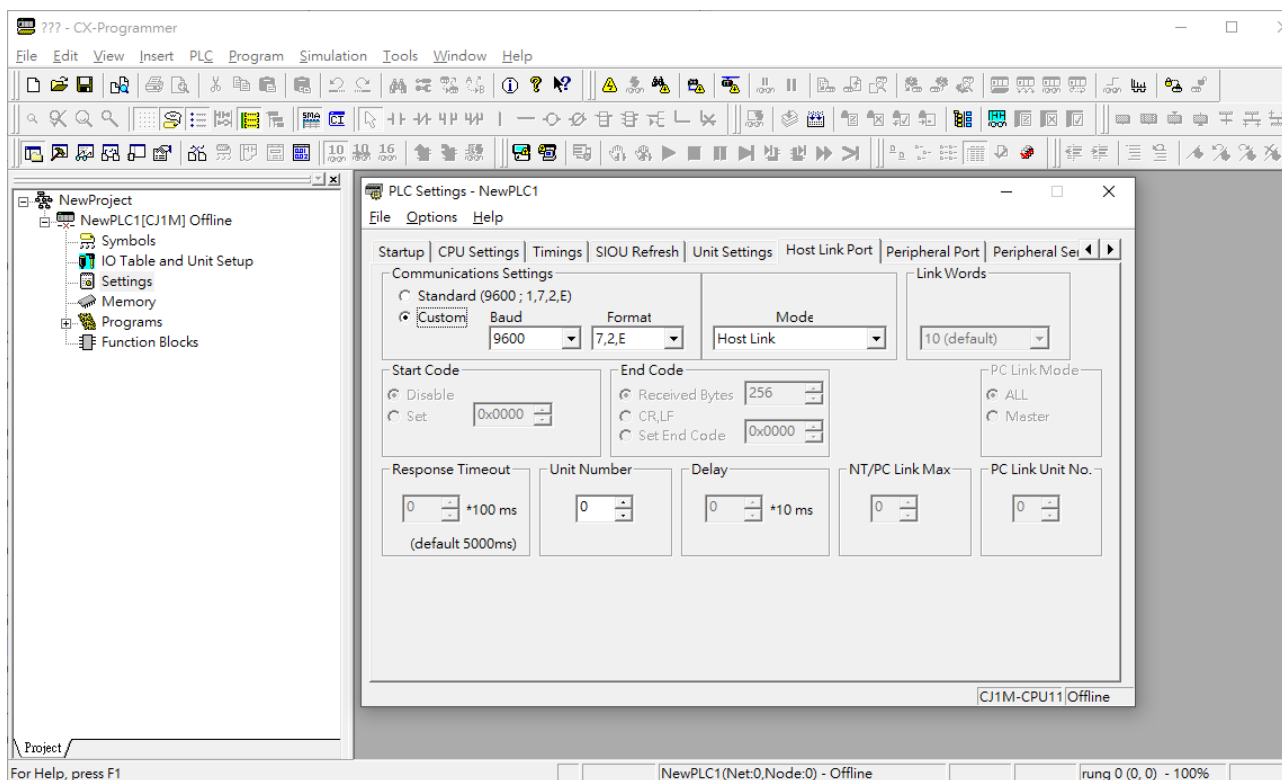
Device	Description	Data bit	Min.	Max.
TK	Task Flag	1	0	127
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Bit Area	16	0	1535
A	Auxiliary Bit Area	16	0	11535
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	DM Area	16	0	32767
E0	EM Bank 0	16	0	32767
E1	EM Bank 1	16	0	32767
E2	EM Bank 2	16	0	32767
E3	EM Bank 3	16	0	32767
E4	EM Bank 4	16	0	32767
E5	EM Bank 5	16	0	32767
E6	EM Bank 6	16	0	32767
E7	EM Bank 7	16	0	32767
E8	EM Bank 8	16	0	32767
E9	EM Bank 9	16	0	32767
EA	EM Bank 10	16	0	32767
EB	EM Bank 11	16	0	32767
EC	EM Bank 12	16	0	32767

EM	Current EM Bank	16	0	32767
DR	Data Register	16	0	15
IR	Index Register	32	0	15

2.3.5.3 Connected Setting

Configuring of PLC

To modify the communication parameters of the PLC using 「CX-Programmer」, click on "Settings" → "Port" for modification.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

The screenshot shows the 'New Link Property' dialog box with the following configuration:

- Link Setting:**
 - Name: Link0
 - Interface Type: Direct Link(Serial)
 - Manufacturer: Omron Corporation
 - Product Series: Sysmac CS/CJ Series (FINS)
- Interface Setting (Basic tab):**
 - Port: COM1, RS-232(2W)
 - Timeout(ms): 1000
 - Baud Rate: 9600
 - Command Delay(ms): 0
 - Parity: Even
 - Retry Count: 2
 - Data Bits: 7
 - Stop Bits: 2
- Device Specific Setting:**
 - ☒ Sub-links
 - Device Name: 0
 - Device Station Number: 0
 - ☒ Set in Register
 - ☐ Link Status
 - ☐ Enable/Disable Link in Register
 - External Tags: Import

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Omron Corporation

Under **Product Series** select Sysmac CS/CJ Series (FINS)

Under **Port** select COM3

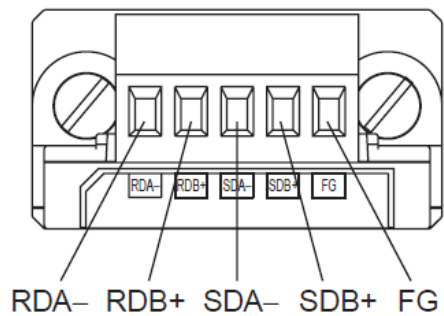
2.3.5.4 PLC Message

When the first 4 error codes are 200A, it means that the last 4 error codes are created by PLC.

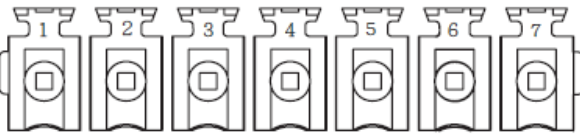
Please refer to PLC manual <https://www.automationdirect.com/microsites/c-more/software-help/Content/476.htm>

2.3.5.5 Wiring Diagrams

CJ1W-CIF11 (RS422/485)



HMI COM3 Pinout

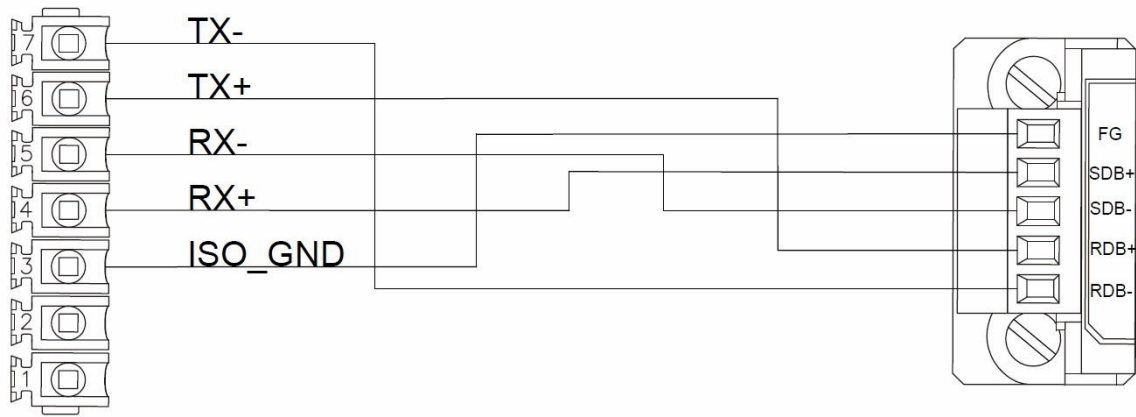
 *Looking into HMI Device	
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	RX+
5	RX-
6	TX+
7	TX-

HMI COM3	PLC RS422 Port
5 RX-	SDA-
4 RX+	SDB+
7 TX-	RDA-
6 TX+	RDB+
3 ISO_GND	FG

Wiring Diagrams

HMI COM3

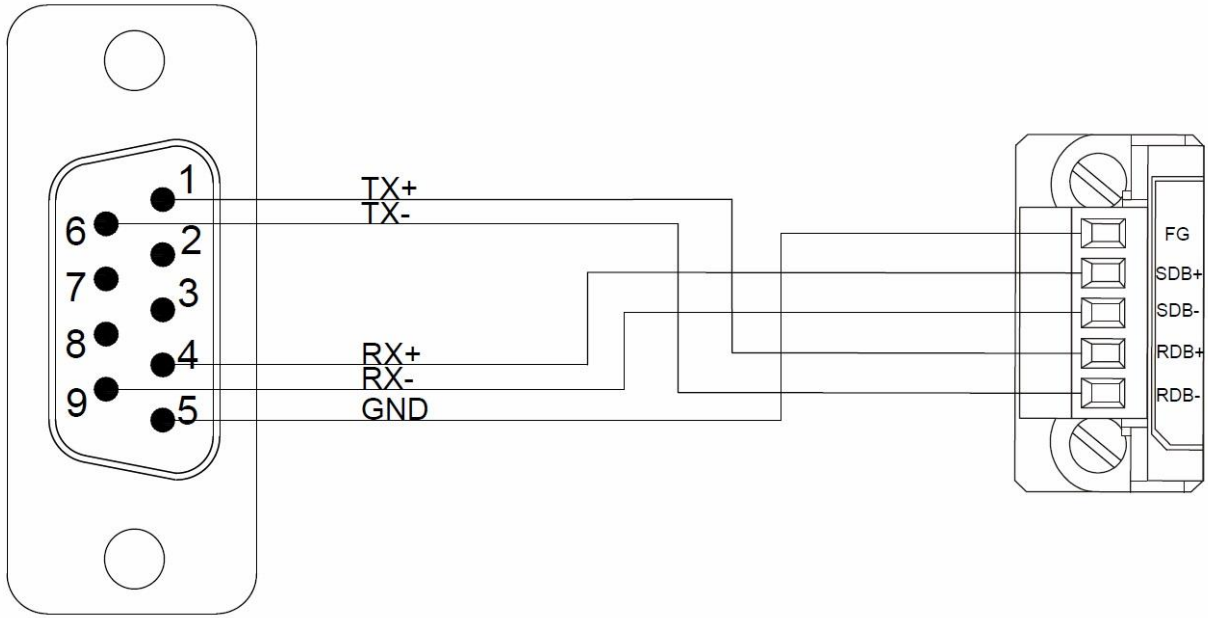
PLC RS485



HMI COM2	PLC RS422 Port
9 RX-	SDA-
4 RX+	SDB+
6 TX-	RDA-
1 TX+	RDB+
5 GND	FG

HMI COM2

PLC RS485



2.3.6 Sysmac CS/CJ Series (FINS/TCP)

2.3.6.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	To be configured
Port	9600	
PLC Station No.	0	
Communication Method	FINS/TCP	

2.3.6.2 Memory Resource Review

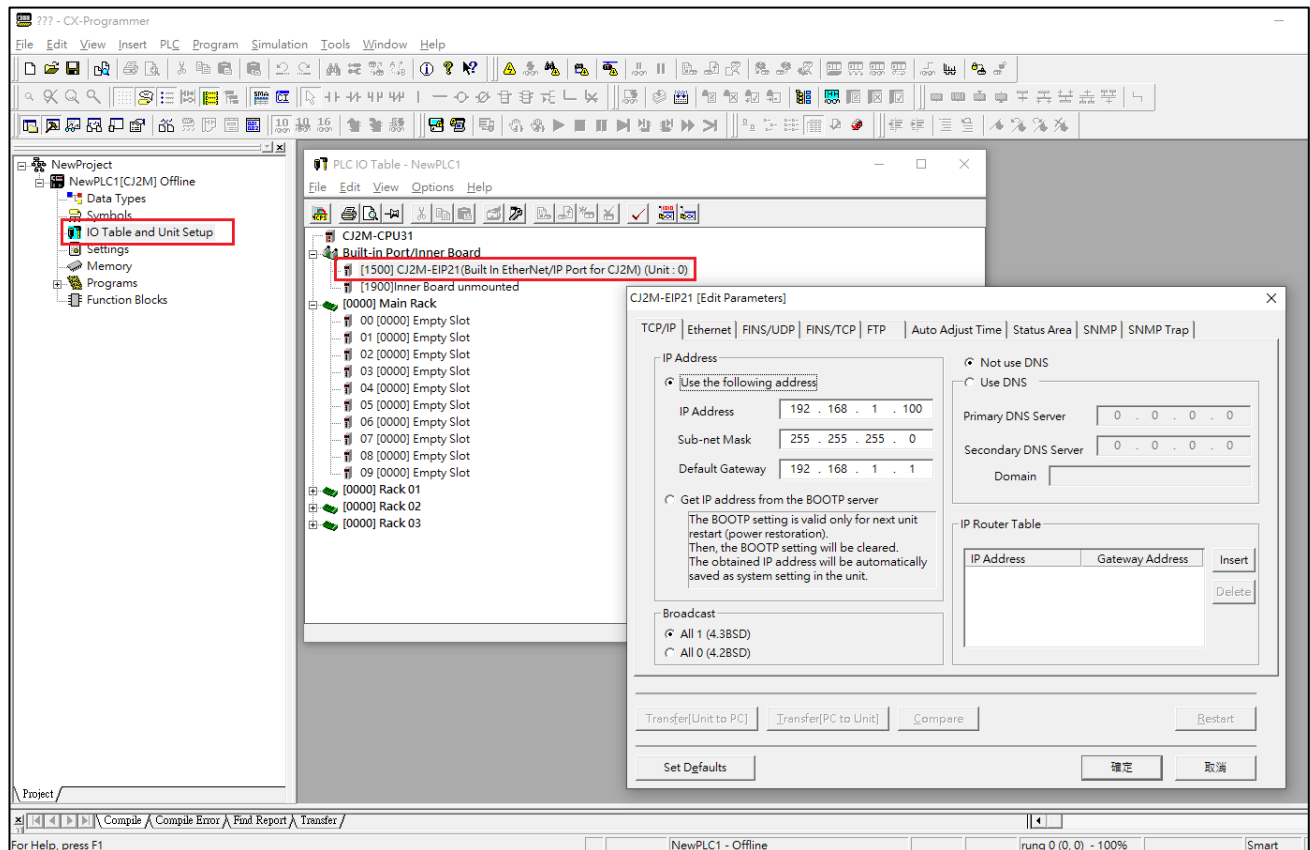
Device	Description	Data bit	Min.	Max.
TK	Task Flag	1	0	127
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Bit Area	16	0	1535
A	Auxiliary Bit Area	16	0	11535
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	DM Area	16	0	32767
E0	EM Bank 0	16	0	32767
E1	EM Bank 1	16	0	32767
E2	EM Bank 2	16	0	32767
E3	EM Bank 3	16	0	32767
E4	EM Bank 4	16	0	32767
E5	EM Bank 5	16	0	32767
E6	EM Bank 6	16	0	32767
E7	EM Bank 7	16	0	32767
E8	EM Bank 8	16	0	32767
E9	EM Bank 9	16	0	32767
EA	EM Bank 10	16	0	32767
EB	EM Bank 11	16	0	32767
EC	EM Bank 12	16	0	32767
EM	Current EM Bank	16	0	32767
DR	Data Register	16	0	15

IR	Index Register	32	0	15
----	----------------	----	---	----

2.3.6.3 Connected Setting

Configuring of PLC

Use CX-Programmer to configure the IP of the PLC.



Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI

New Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Omron Corporation

Product Series: Sysmac CS/CJ Series (FINS/TCP)

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192 . 168 . 1 . 100

Port: 9600

Timeout(ms): 1000

Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Device Station Number: 0

☐ Set in Register

☐ Link Status

☐ Enable/Disable Link in Register

External Tags: Import

OK Cancel

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Omron Corporation

Under **Product Series** select Sysmac CS/CJ Series (FINS/TCP)

Enter the **IP Address** that was written into the PLC

Enter 9600 for the Port

2.3.7 Omron Ethernet

2.3.7.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.250.1	
Port	9600	
PLC Station No.	0	
Communication Method	FINS/UDP	

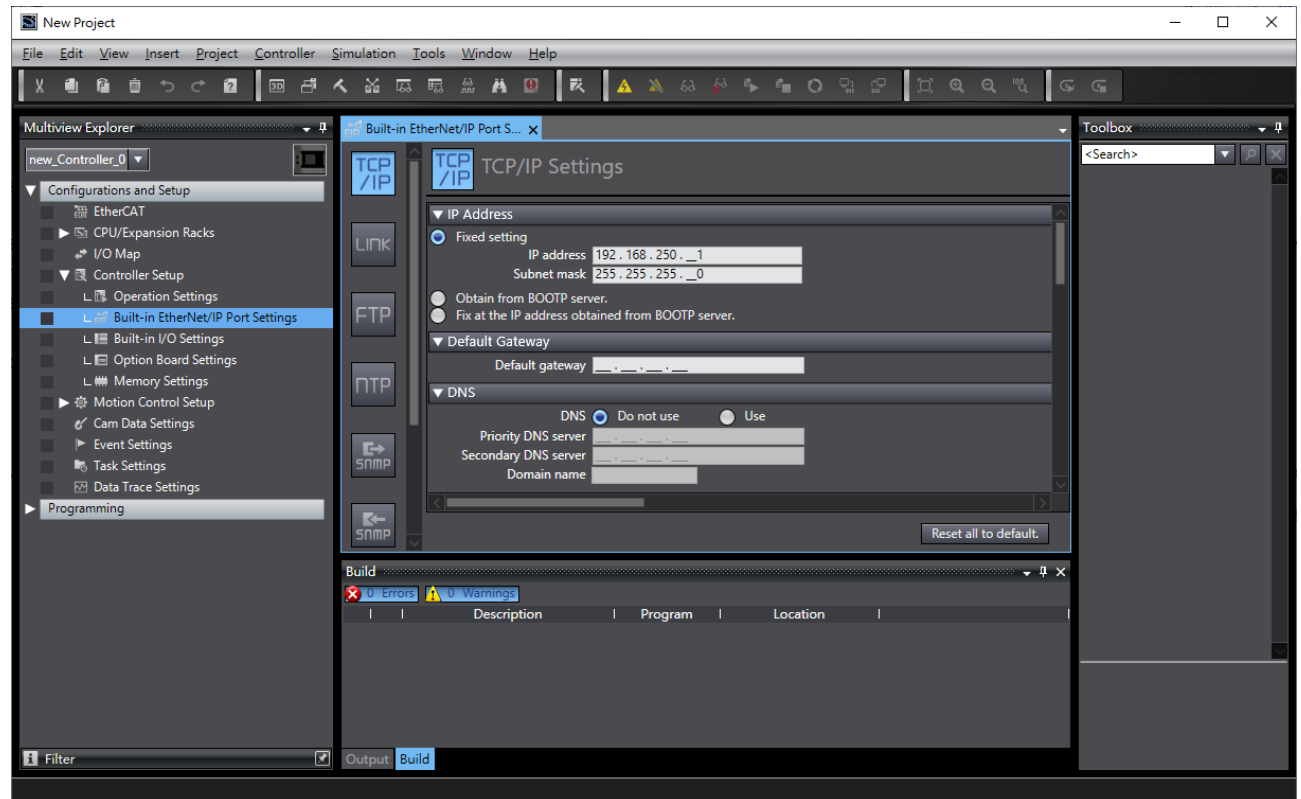
2.3.7.2 Memory Resource Review

Device	Description	Data bit	Min	Max
TK	Task Flag	1	0	127
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Bit Area	16	0	1535
A	Auxiliary Bit Area	16	0	11535
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	DM Area	16	0	32767
E0_	EM Bank 0	16	0	32767
E1_	EM Bank 1	16	0	32767
E2_	EM Bank 2	16	0	32767
E3_	EM Bank 3	16	0	32767
E4_	EM Bank 4	16	0	32767
E5_	EM Bank 5	16	0	32767
E6_	EM Bank 6	16	0	32767
E7_	EM Bank 7	16	0	32767
E8_	EM Bank 8	16	0	32767
E9_	EM Bank 9	16	0	32767
EA_	EM Bank 10	16	0	32767
EB_	EM Bank 11	16	0	32767
EC_	EM Bank 12	16	0	32767
EM_	Current EM Bank	16	0	32767
DR	Data Register	16	0	15
IR	Index Register	32	0	15

2.3.7.3 Connected Setting

Configuring of PLC

Using "Sysmac Studio" and set the IP address in the "Build-in Ethernet/IP Port Settings" section.



Note: For more detailed information please refer to the PLC manual.

Configuring the HMI

Edit Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Omron Corporation

Product Series: Omron Ethernet

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192 . 168 . 250 . 1

Port: 9600

Timeout(ms): 1000

Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Device Station Number: 0

☐ Link Status

☐ Enable/Disable Link in Register

External Tags: Import

[External Tags] Cancel import file, or parse successfully but no valid tags exist

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Omron Corporation

Under **Product Series** select Sysmac Omron Ethernet

Enter the **IP Address** that was written into the PLC

Enter 9600 for the Port

2.3.8 Sysmac NJ/NX Series (EtherNet/IP)

2.3.8.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.250.1	
Port	44818	
PLC Station No.	1	
Communication Method	EtherNet/IP	

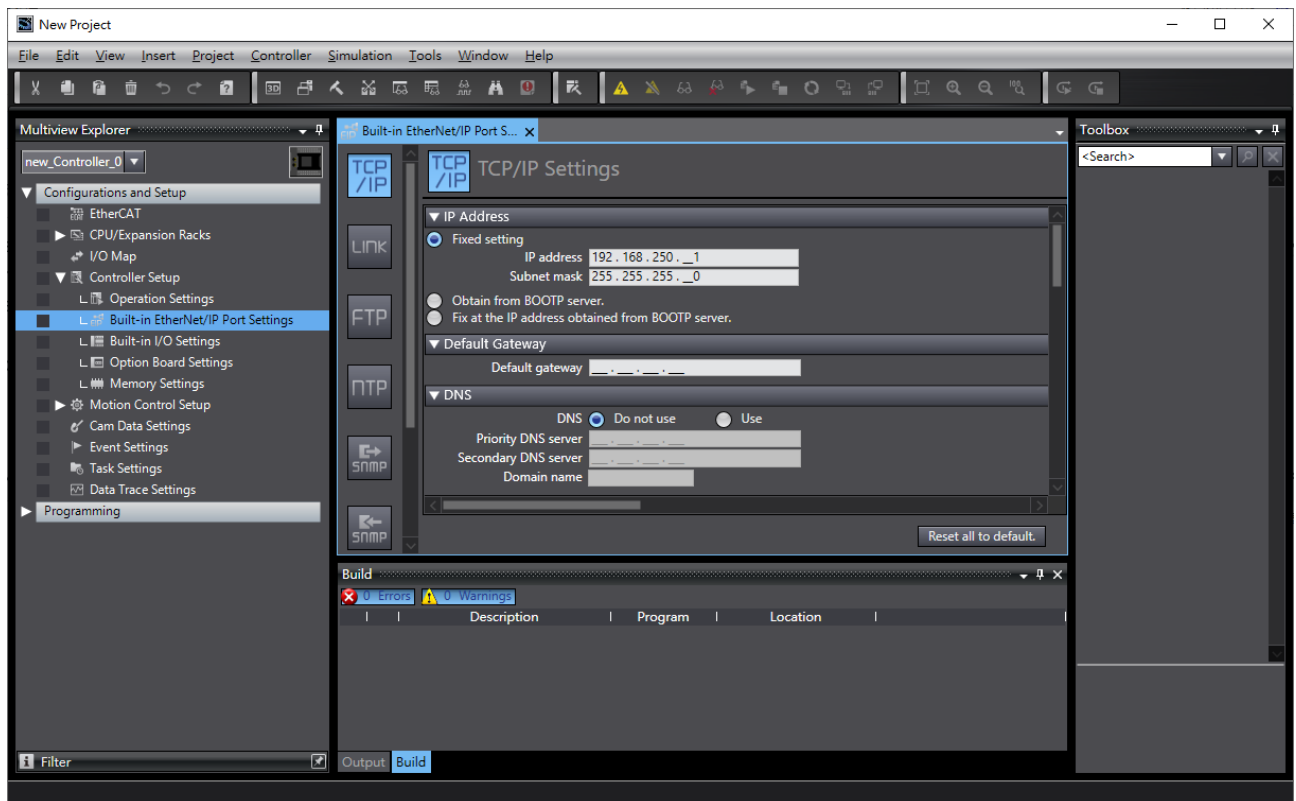
2.3.8.2 Memory Resource Review

Device		Data bit	Description
BOOL	---	1	boolean value
BYTE	---	8	byte value
SINT	---	8	short integer value
USINT	---	8	unsigned short integer value
INT	---	16	integer value
UINT	---	16	unsigned integer value
WORD	---	16	word value
DINT	---	32	double integer value
DWORD	---	32	double word value
REAL	---	32	float value
UDINT	---	32	unsigned double integer value
BOOL[]	BOOL	1*n	array of Boolean value
BYTE[]	BYTE	8*n	array of byte value
SINT[]	SINT	8*n	array of short integer value
USINT[]	USINT	8*n	array of unsigned short integer value
INT[]	INT	16*n	array of integer value
UINT[]	UINT	16*n	array of unsigned integer value
WORD[]	WORD	16*n	array of word value
DINT[]	DINT	32*n	array of Double integer value
DWORD[]	DWORD	32*n	array of double word value
REAL[]	REAL	32*n	array of float value
UDINT[]	UDINT	32*n	array of unsigned double integer value

2.3.8.3 Connected Setting

Configuring of PLC

Using "Sysmac Studio" and set the IP address in the "Build-in Ethernet/IP Port Settings" section.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Omron Corporation

Product Series: Sysmac NJ/NX Series (EtherNet/IP)

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192 . 168 . 250 . 1

Port: 44818

Timeout(ms): 1000

Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Device Station Number: 1

☐ Link Status

☐ Enable/Disable Link in Register

☐ Set in Register

External Tags: Import

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Omron Corporation

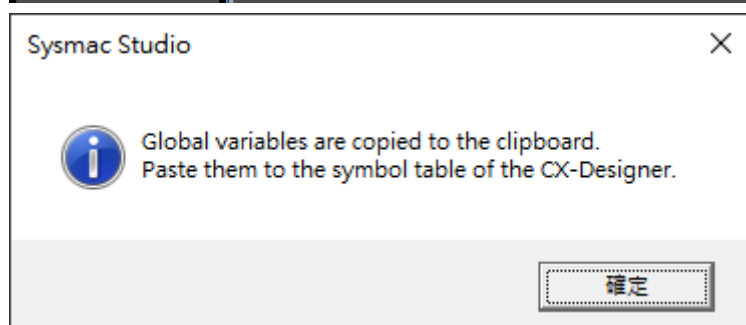
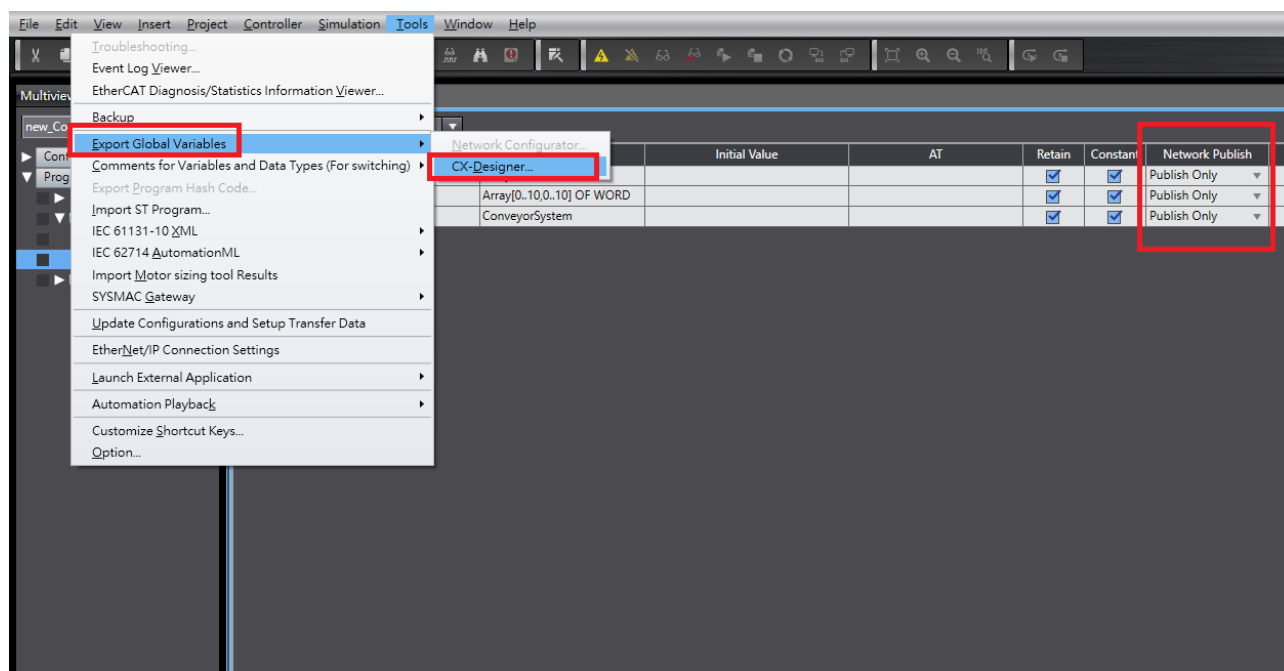
Under **Product Series** select SYSMAC NJ/NX Series(EtherNet/IP)

Enter the IP Address that was written into the PLC

Enter **44818** for the Port

Export the tags from the Sysmac Studio project.

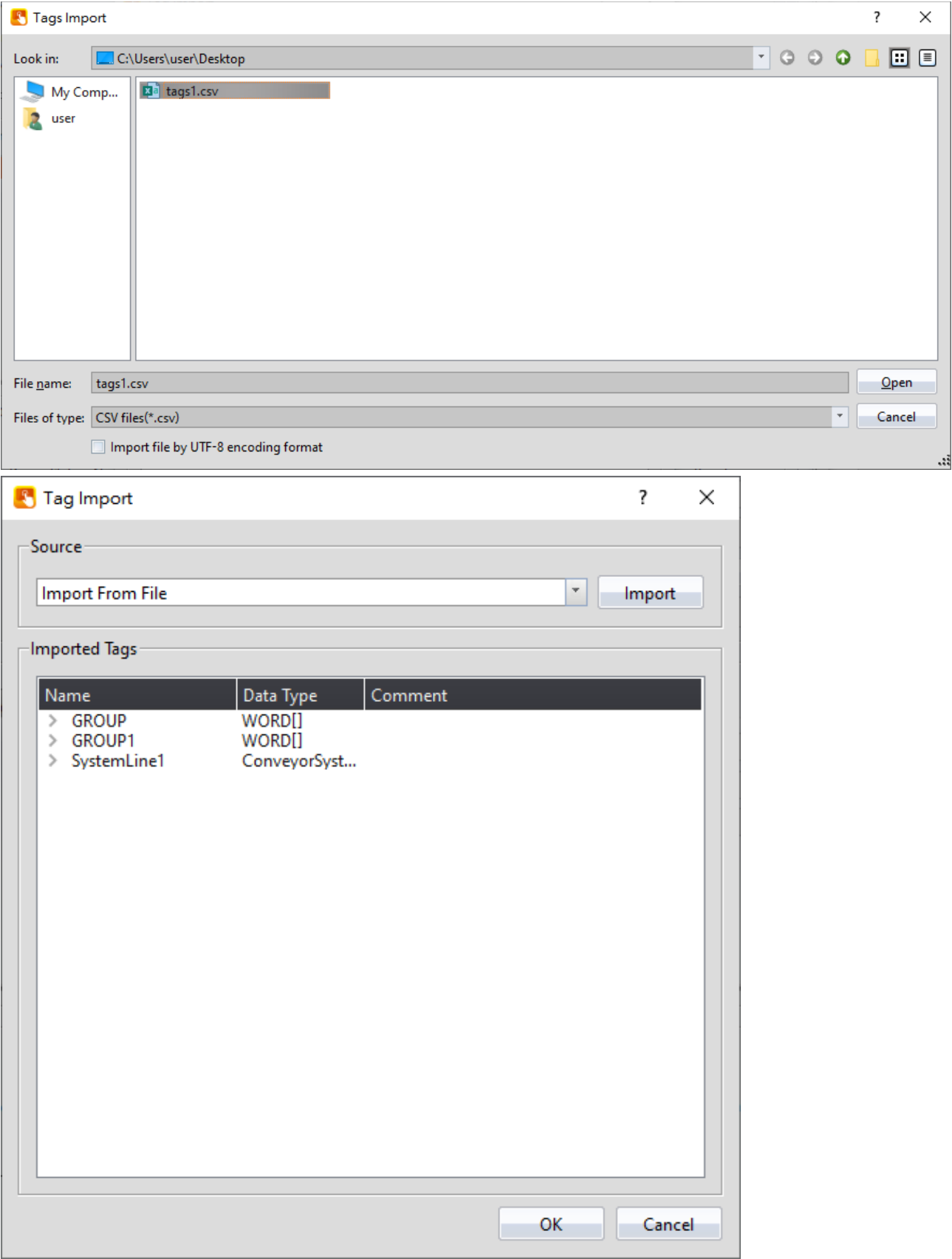
Set the Tags to "Publish Only" and choose Tools -> Export Global Variables -> CX-Designer...



Paste the copied information into Excel, and choose "CSV (Comma delimited) (*.csv)" as the file type for saving.

	A	B	C	D	E	F	G	H
1	HOST	NAME	DATATYPE	ADDRESS	COMMENT	TAGLINK	RW	POU
2		GROUP	WORD[0..10]			TRUE	RW	
3		GROUP1	WORD[0..10,0..10]			TRUE	RW	
4		SystemLine	BOOL			TRUE	RW	
5		SystemLine	BOOL			TRUE	RW	
6		SystemLine	BOOL			TRUE	RW	
7		SystemLine	BOOL			TRUE	RW	
8		SystemLine	BOOL			TRUE	RW	
9		SystemLine	BOOL			TRUE	RW	
10		SystemLine	BOOL			TRUE	RW	
11		SystemLine	BOOL			TRUE	RW	
12								

Then you can choose to import the External Tags.



2.3.9 Sysmac NJ Series (FINS/TCP)

2.3.9.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.250.1	
Port	9600	
PLC Station No.	0	
Communication Method	FINS/TCP	

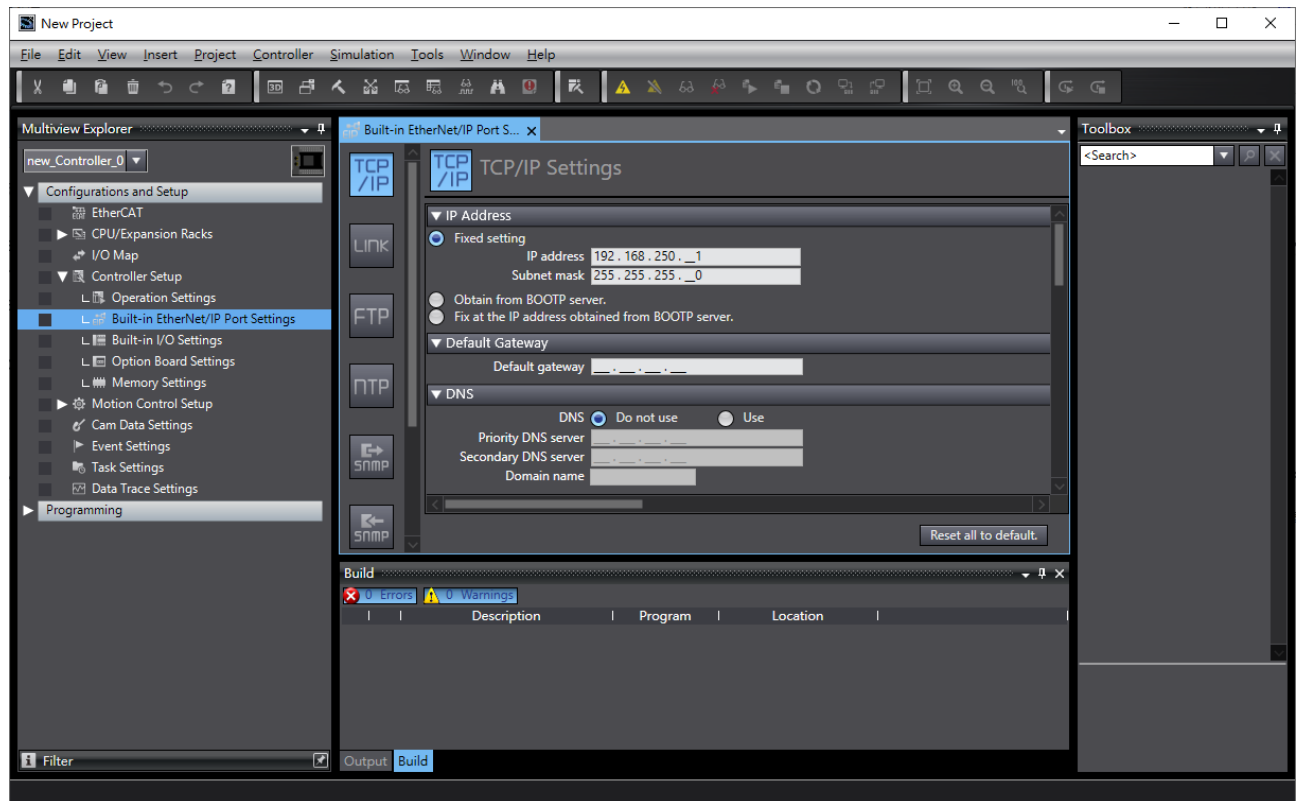
2.3.9.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
%	CIO Area	16	0	6143
%W	Work Area	16	0	511
%H	Holding Bit Area	16	0	1535
%D	DM Area	16	0	32767
%E0_	EM Bank 0	16	0	32767
%E1_	EM Bank 1	16	0	32767
%E2_	EM Bank 2	16	0	32767
%E3_	EM Bank 3	16	0	32767
%E4_	EM Bank 4	16	0	32767
%E5_	EM Bank 5	16	0	32767
%E6_	EM Bank 6	16	0	32767
%E7_	EM Bank 7	16	0	32767
%E8_	EM Bank 8	16	0	32767
%E9_	EM Bank 9	16	0	32767
%EA_	EM Bank 10	16	0	32767
%EB_	EM Bank 11	16	0	32767
%EC_	EM Bank 12	16	0	32767

2.3.9.3 Connected Setting

Configuring of PLC

Using "Sysmac Studio" and set the IP address in the "Build-in Ethernet/IP Port Settings" section.



Note: For more detailed information please refer to the PLC manual.

Configuring the HMI

Edit Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Omron Corporation [Help](#)

Product Series: Sysmac NJ Series (FINS/TCP)

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192 . 168 . 250 . 1 Timeout(ms): 1000

Port: 9600 Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Device Station Number: 0 ☐ Set in Register

☐ Link Status

☐ Enable/Disable Link in Register

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Omron Corporation

Under **Product Series** select Sysmac NJ Series (FINS/TCP)

Enter the IP Address that was written into the PLC

Enter 9600 for the Port

2.3.10 Sysmac NX/NJ Series (FINS/UDP)

2.3.10.1 Communication Setting

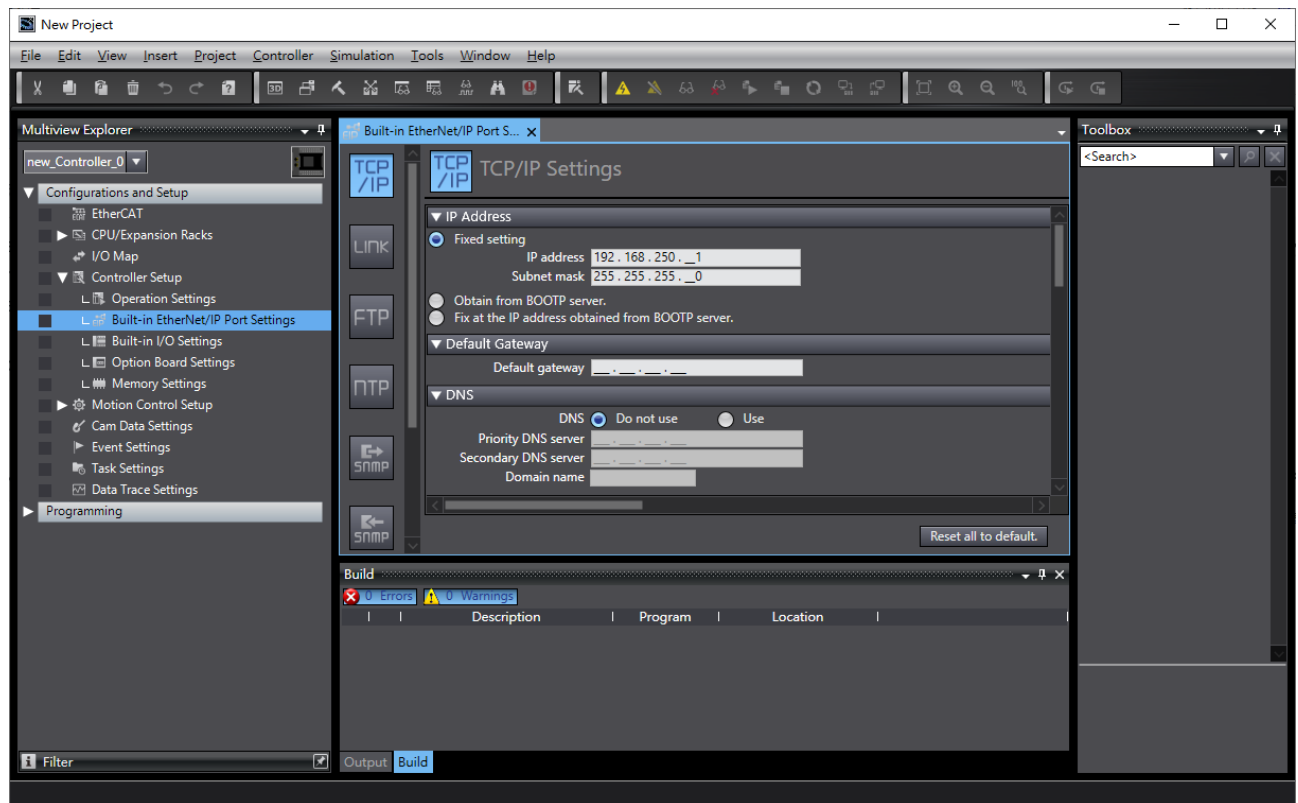
Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.250.1	
Port	9600	
PLC Station No.	0	
Communication Method	FINS/UDP	

2.3.10.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
%	CIO Area	16	0	6143
%W	Work Area	16	0	511
%H	Holding Bit Area	16	0	1535
%D	DM Area	16	0	32767
%E0_	EM Bank 0	16	0	32767
%E1_	EM Bank 1	16	0	32767
%E2_	EM Bank 2	16	0	32767
%E3_	EM Bank 3	16	0	32767
%E4_	EM Bank 4	16	0	32767
%E5_	EM Bank 5	16	0	32767
%E6_	EM Bank 6	16	0	32767
%E7_	EM Bank 7	16	0	32767
%E8_	EM Bank 8	16	0	32767
%E9_	EM Bank 9	16	0	32767
%EA_	EM Bank 10	16	0	32767
%EB_	EM Bank 11	16	0	32767
%EC_	EM Bank 12	16	0	32767

2.3.10.3 Connected Setting

Using "**Sysmac Studio**" and set the IP address in the "**Build-in Ethernet/IP Port Settings**" section.



Note: For more detailed information please refer to the PLC manual.

Configuring the HMI

Edit Link Property

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Omron Corporation

Product Series: Sysmac NX/NJ Series (FINS/UDP)

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192 . 168 . 250 . 1

Port: 9600

Timeout(ms): 1000

Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Device Station Number: 0

☐ Link Status

☐ Enable/Disable Link in Register

☐ Set in Register

OK

Within the **Link** configuration window in FvDesigner:

- Under **Interface Type** select Ethernet
- Under **Manufacturer** select Omron Corporation
- Under **Product Series** select Sysmac NJ Series (FINS/TCP)
- Enter the IP Address that was written into the PLC
- Enter 9600 for the Port

2.4 Siemens

2.4.1 Siemens S7-200 SMART

2.4.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485 2W	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	2	
Communication Method	PPI	

2.4.1.2 Memory Resource Review

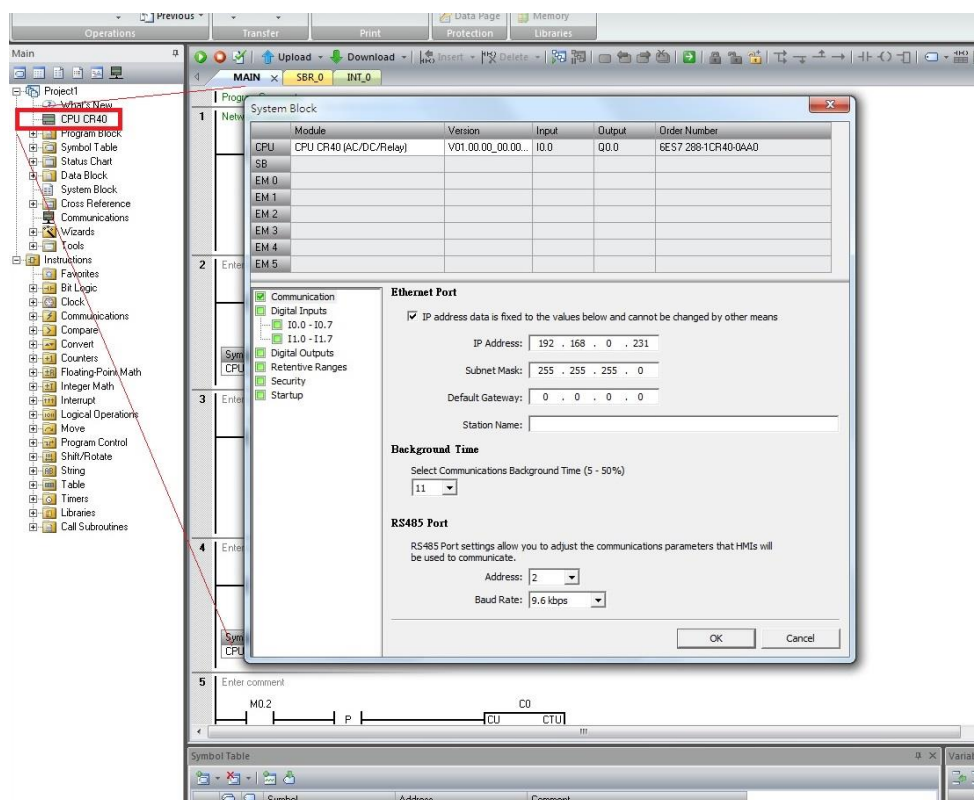
Device	Description	Data bit	Min.	Max.
I	Input	1	0	31
Q	Output	1	0	31
M	Bit Memory	1	0	31
V	Variable Memory	1	0	20479
C	Counter	1	0	255
T	Timer	1	0	255
S	Sequential Control Relays	1	0	31
SM	Special Memory Bit	1	0	1535
IW	Input	16	0	31
QW	Output	16	0	31
TW	Timer	16	0	255
CW	Counter	16	0	255
MW	Word Memory	16	0	31
SW	SCR	16	0	31
VW	V Memory	16	0	20479
SMW	Special Memory	16	0	1535
AIW	Analog Input	16	0	111
AQW	Analog Output	16	0	111

2.4.1.3 Connected Setting

Configuring of PLC

Use **Step7 microWIN smart** to configure the port of the PLC.

Under the Project Sidebar, expand **CPU model** and configure it to the settings detailed below.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Siemens Corporation

Product Series: S7-200 SMART PPI

Interface Setting

Basic | Comm. Error Handling

Port: COM2 | Timeout(ms): 3000

Baudrate: 9600 | Command Delay(ms): 0

Parity: Even | Retry Count: 0

Data Bits: 8

Stop Bits: 1

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 2

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

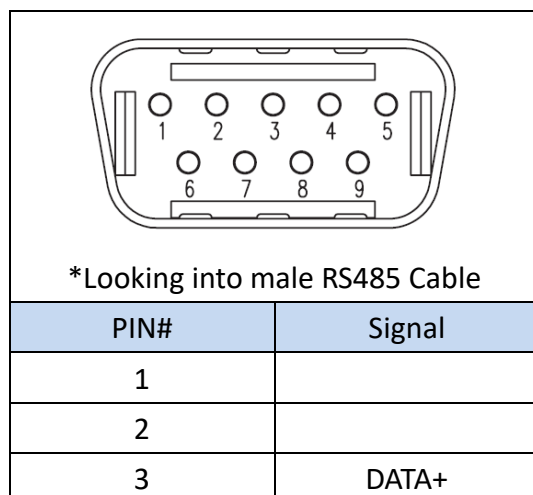
Under **Manufacturer** select Siemens Corporation

Under **Product Series** select S7-200 SMART PPI

Under **Port** select the port number that corresponds to the RS485 connection on the HMI.

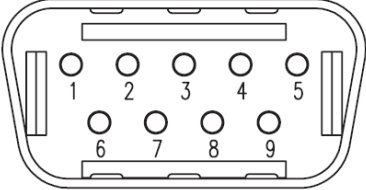
2.4.1.4 Wiring Diagrams

PLC RS485 Port

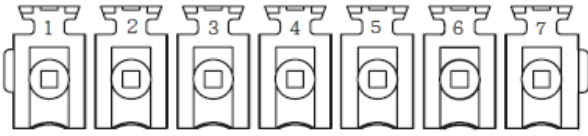


4	
5	GND
6	
7	
8	DATA-
9	

HMI COM2

 *Looking into HMI	
PIN#	COM2 (RS485)
1	DATA+
2	
3	
4	
5	GND
6	DATA-
7	
8	
9	

HMI COM3 Pinout

 *Looking into HMI Device	
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	

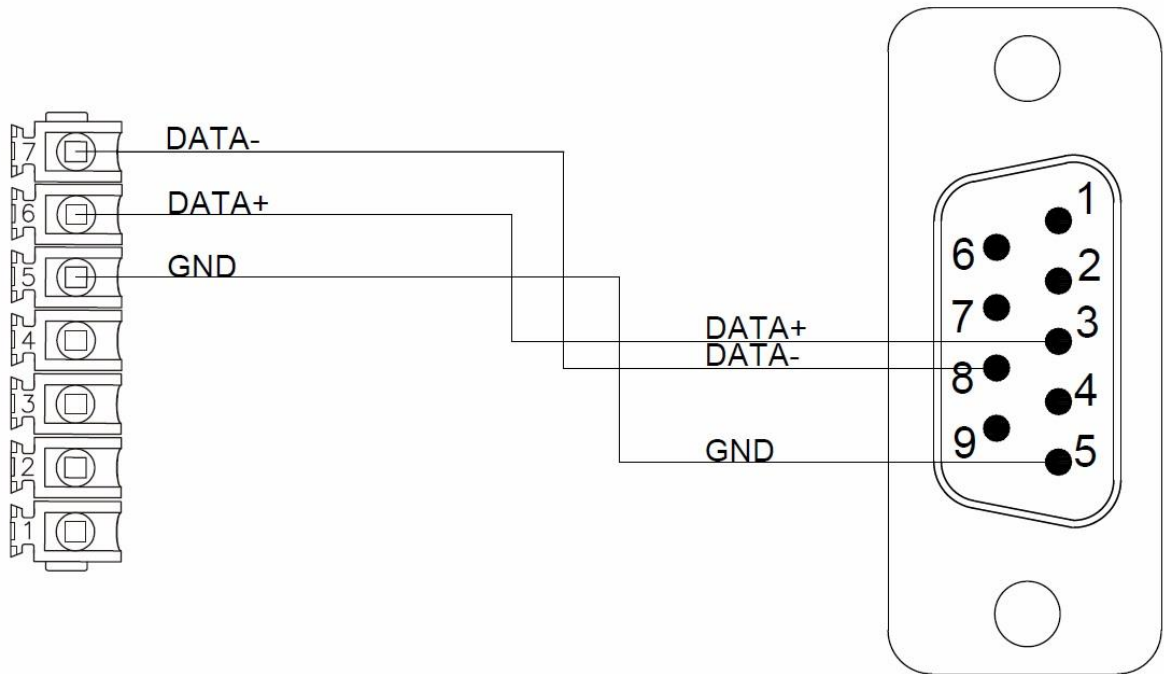
5	
6	DATA+
7	DATA-

HMI COM3 Port	PLC RS485 Port
6 DATA+	3 DATA+
7 DATA-	8 DATA-
5 GND	5 GND

Wiring Diagrams

HMI COM3

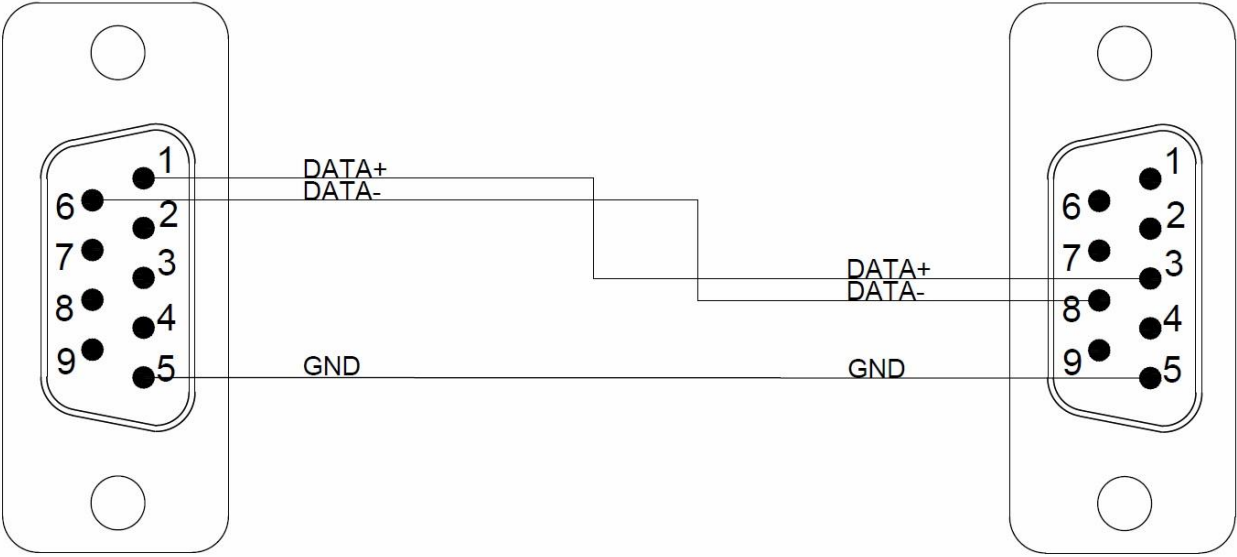
PLC RS485



HMI COM3 Port	PLC RS485 Port
1 DATA+	3 DATA+
6 DATA-	8 DATA-
5 GND	5 GND

HMI COM2

PLC RS485



2.4.2 Siemens S7-200 SMART Ethernet

2.4.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	To be configured
Port	102	
PLC Station No.	0	
Communication Method	ISO TCP	

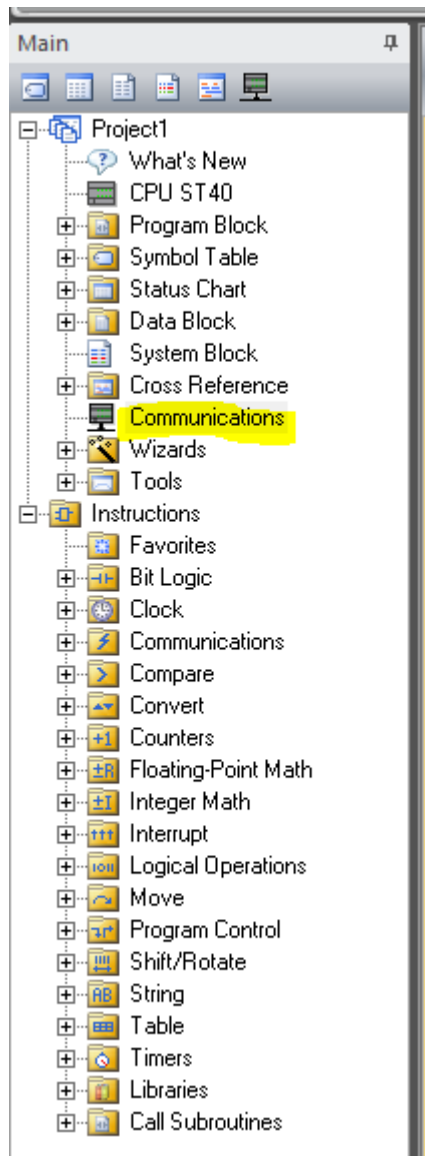
2.4.2.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
I	Input	1	0	31.7
Q	Output	1	0	31.7
M	Bit Memory	1	0	31.7
V	Variable Memory	1	0	20479.7
C	Counter	1	0	255
T	Timer	1	0	255
S	Sequential Control Relays	1	0	31.7
SM	Special Memory Bit	1	0	1535.7
IW	Input	16	0	31
QW	Output	16	0	31
TW	Timer	16	0	255
CW	Counter	16	0	255
MW	Word Memory	16	0	31
SW	SCR	16	0	31
VW	V Memory	16	0	20479
SMW	Special Memory	16	0	1535
AIW	Analog Input	16	0	111
AQW	Analog Output	16	0	111

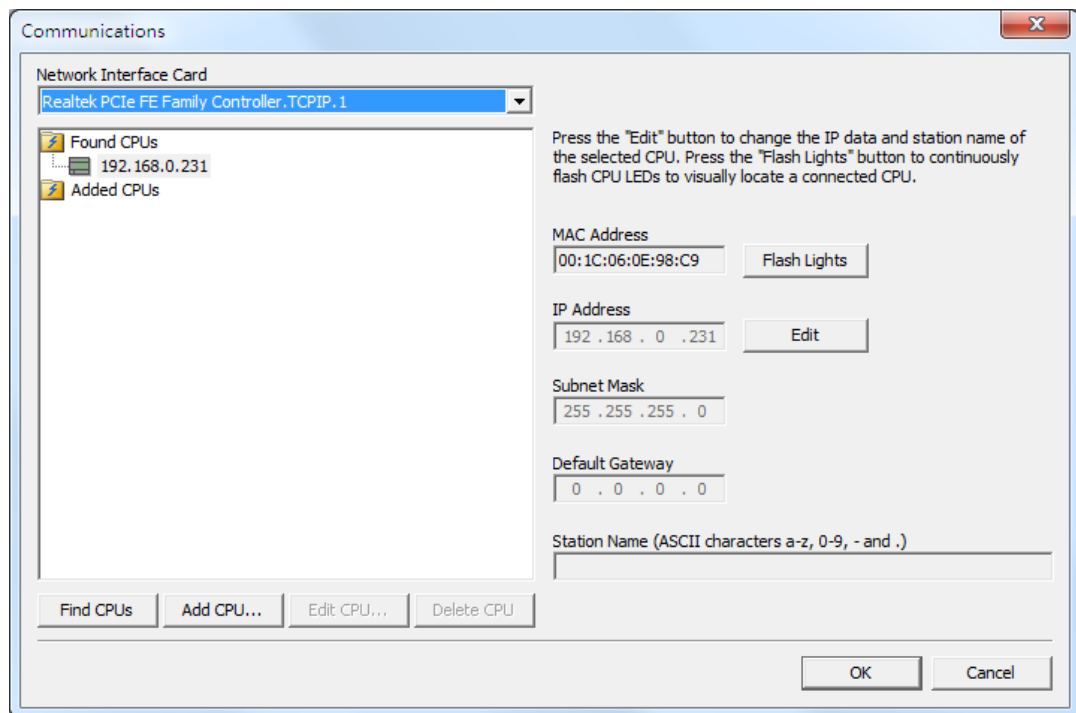
2.4.2.3 Connected Setting

Configuring IP Address on PLC

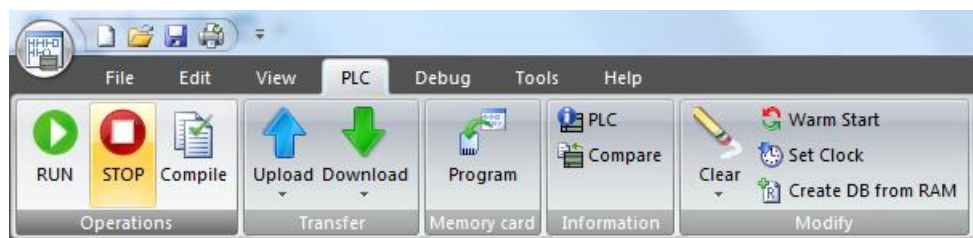
Use the application **STEP 7-MicroWIN SMART** to configure the IP address of the PLC. Under the **Project**, press the **Communications** option to connect to the PLC over the local network.



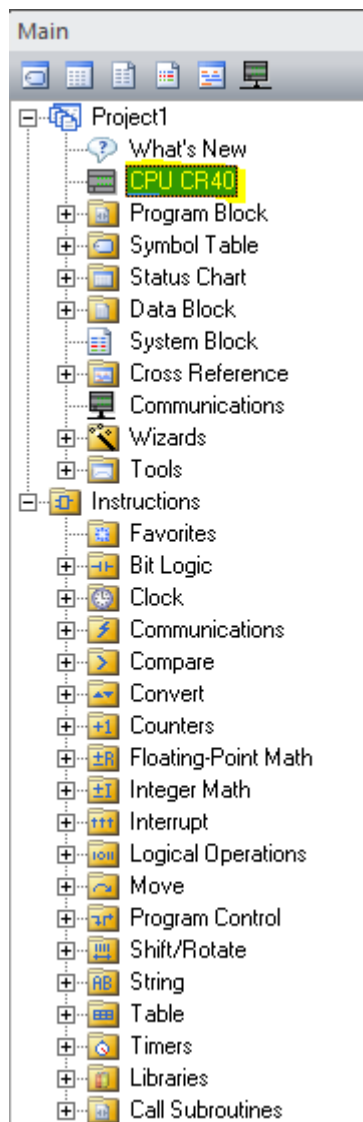
Under Network interface, select one of the options to scan the local network. The IP address of the PLC will show up. The MAC address can be verified with the one on the PLC.



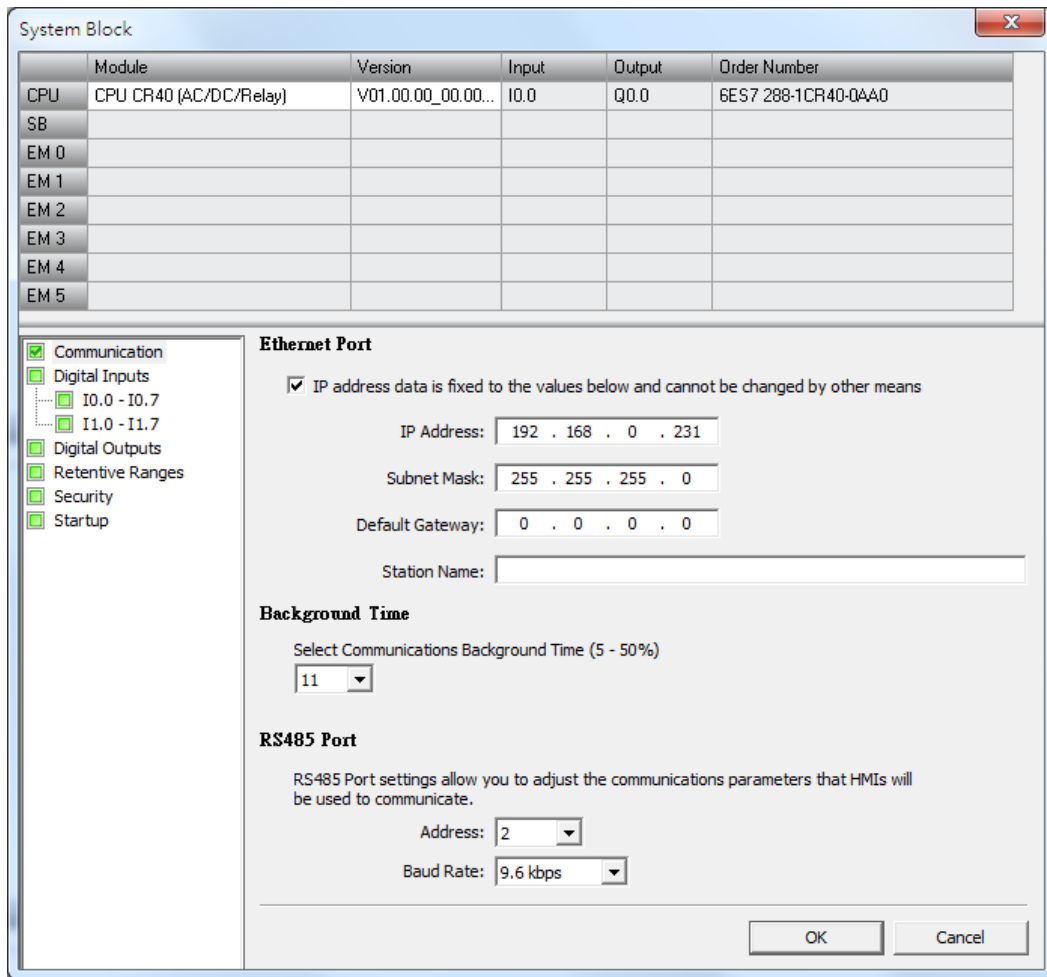
Navigate to the PLC tab and select to upload the PLC program onto the computer.



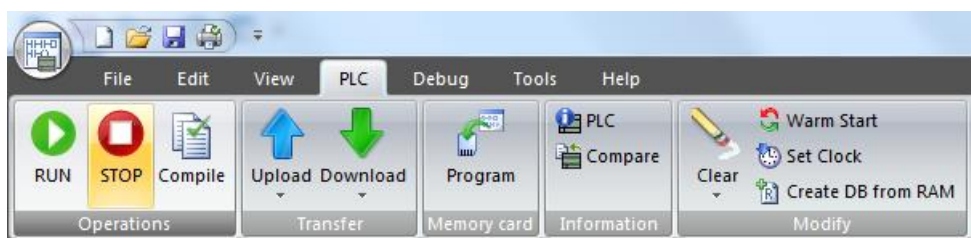
On the sidebar, right click CPU CR40 and select the first option. A dialog window will open up.



In the dialog window, the IP address can be changed. Press OK to confirm the setting.



In the PLC tab, select to download the settings onto the PLC.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Within the **Link** configuration window in FvDesigner:

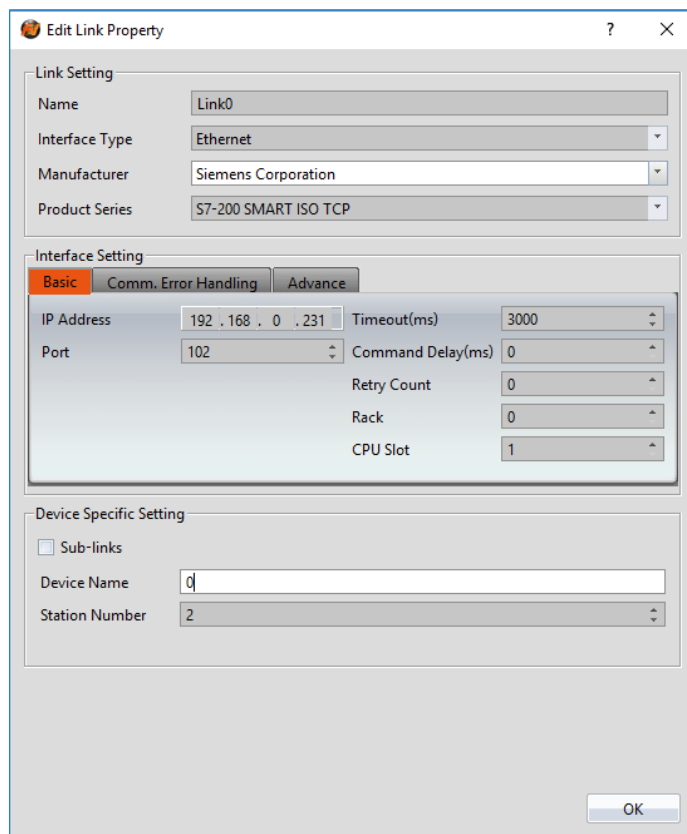
Under **Interface Type** select Ethernet

Under **Manufacturer** select Siemens Corporation

Under **Product Series** select S7-200 SMART ISO TCP

Enter the **IP Address** that was written into the PLC.

Enter the **Port** number that was set on the PLC. The default is 102.

The image shows a software window titled "Edit Link Property". It contains three main sections: "Link Setting", "Interface Setting", and "Device Specific Setting". The "Link Setting" section has fields for Name, Interface Type, Manufacturer, and Product Series. The "Interface Setting" section has tabs for Basic, Comm. Error Handling, and Advance, with the Basic tab selected. It contains fields for IP Address, Port, Timeout(ms), Command Delay(ms), Retry Count, Rack, and CPU Slot. The "Device Specific Setting" section has a checkbox for Sub-links, a text field for Device Name, and a dropdown for Station Number. An OK button is located at the bottom right.

 Edit Link Property ? X

Link Setting

Name

Interface Type

Manufacturer

Product Series

Interface Setting

Basic Comm. Error Handling Advance

IP Address	192 . 168 . 0 . 231	Timeout(ms)	3000
Port	102	Command Delay(ms)	0
		Retry Count	0
		Rack	0
		CPU Slot	1

Device Specific Setting

☐ Sub-links

Device Name

Station Number

OK

2.4.3 Siemens S7-1200 Ethernet

2.4.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	To be configured
Port	102	
PLC Station No.	0	
Communication Method	ISO TCP	

2.4.3.2 Memory Resource Review

Device	Description	Data bit	Min.	Max.
I	Input	1	0	1022.7
Q	Output	1	0	1022.7
M	Bit Memory	1	0	1022.7
IW	Input	16	0	1022
QW	Output	16	0	1022
MW	Word Memory	16	0	1022

2.4.3.3 Support Data block type

Data block type	Size
Bool	Bit
Byte	8-bit
SInt	8-bit
USInt	8-bit
Word	16-bit
Int	16-bit
UInt	16-bit
DWord	32-bit
DInt	32-bit
UDInt	32-bit
Real	32-bit
String	Length = 254 byte

Please make sure that proper setting is in TIA:

- (1) [DB Properties]→[Attributes]→[Optimized block access] is unchecked
- (2) [PLC program Properties]→[Protection]→[Permit access with PUT/GET communication from remote partner (PLC,HMI,OPC,...)] is checked.

2.4.3.4 Connected Setting

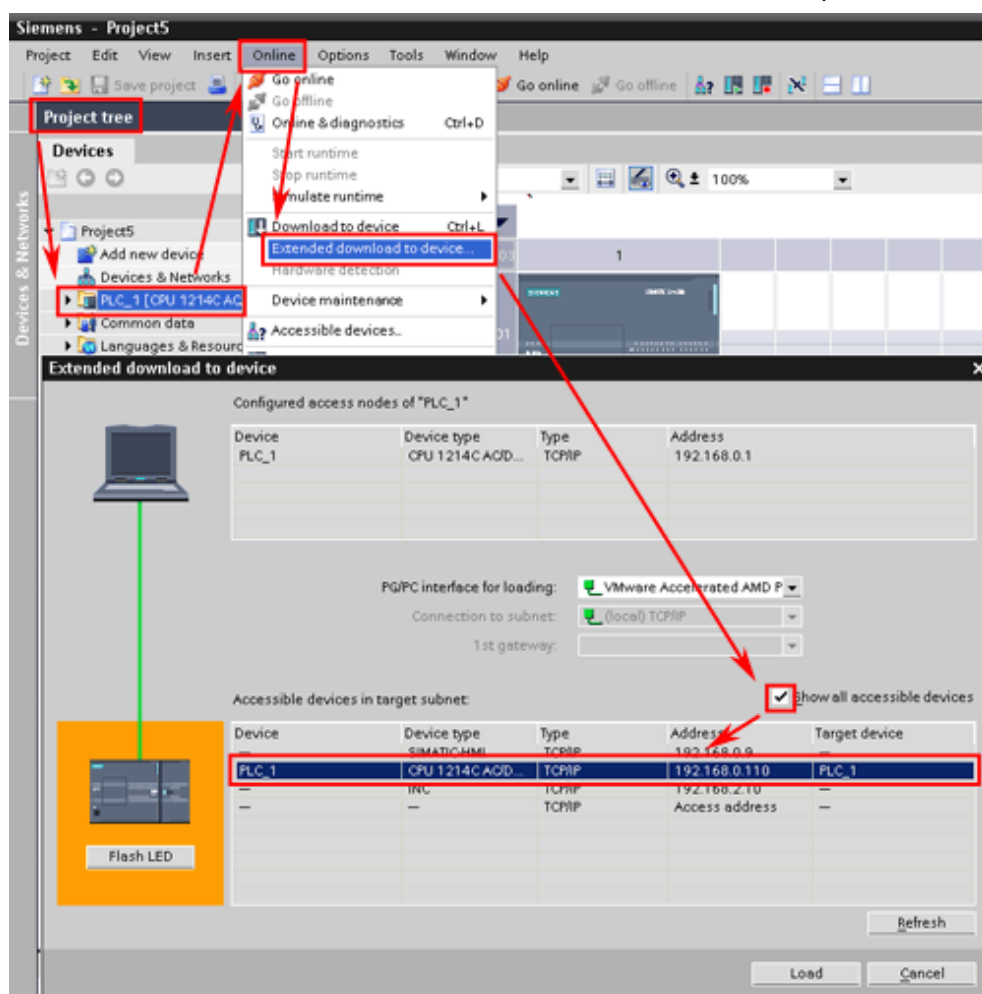
Configuring IP Address on PLC

Use the application **TIA V13 Step Basic** to configure the IP address on the PLC.

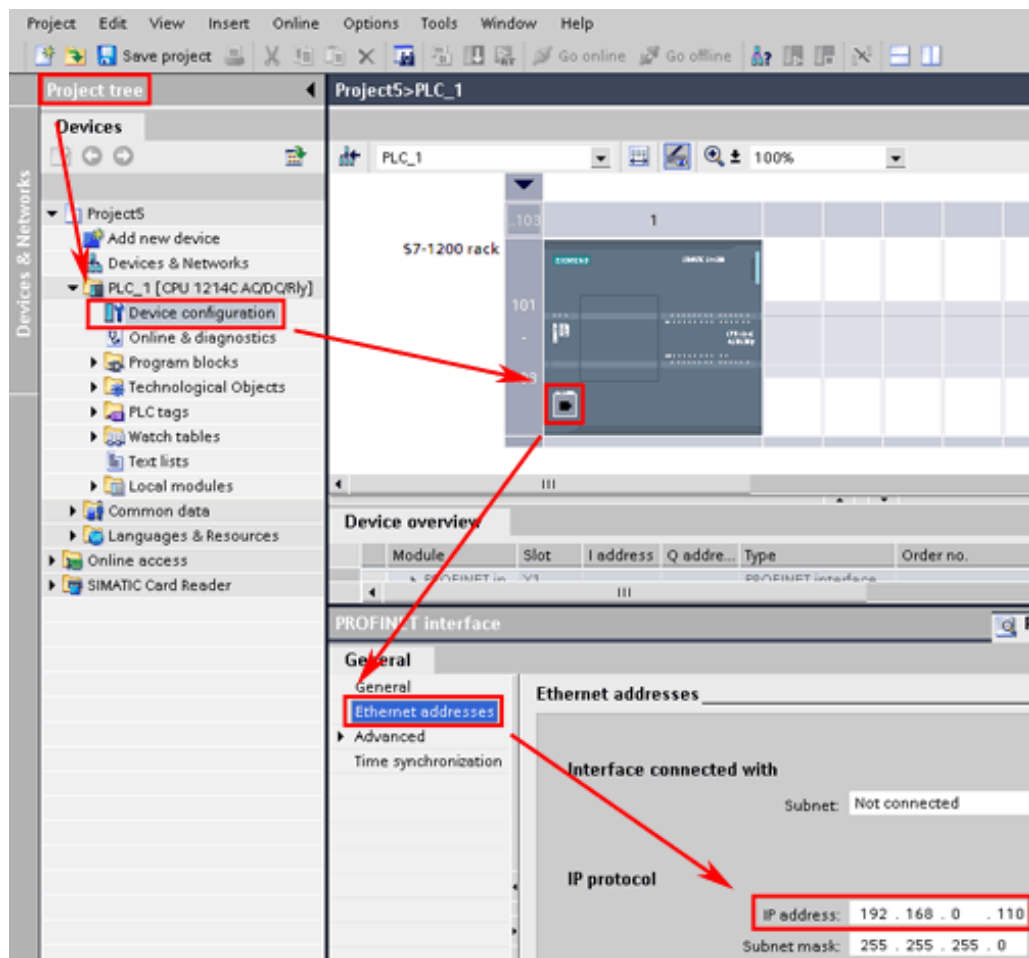
Open a new project and add the device to be configured.

In the Project tree sidebar, select the device and navigate to the **Online** menu option.

Under the Online menu option, select **Extend Download to Device**. Select the appropriate network interfaces and check **Show all accessible devices**. The application will scan the network for the device. When the device shows up, select it.



Under the device in the project tree, select **Device configuration** and click the Ethernet port on the device image. Under the **Ethernet addresses** menu option, the IP address can be configured.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: Siemens Corporation

Product Series: S7-1200

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192 . 168 . 0 . 17 Timeout(ms): 3000

Port: 102 Command Delay(ms): 0

Retry Count: 0

Rack: 0

CPU Slot: 1

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

Tags Import

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Siemens Corporation

Under **Product Series** select S7-1200

Enter the **IP Address** that was written into the PLC.

Enter the **Port** number that was set on the PLC. The default is 102.

2.4.4 Siemens S7-200

2.4.4.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485 2W	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	2	
Communication Method	PPI	

2.4.4.2 Memory Resource Review

Device	Description	Data Bit	Min.	Max.
I	Input	1	0	15
Q	Output	1	0	15
M	Bit Memory	1	0	31
V	Variable Memory	1	0	10239
C	Counter	1	0	255
T	Timer	1	0	255
S	Sequential Control Relays	1	0	31
SM	Special Memory Bit	1	0	549
IW	Input	16	0	14
QW	Output	16	0	14
TW	Timer	16	0	255
CW	Counter	16	0	255
MW	Word Memory	16	0	30
SW	SCR	16	0	30
VW	V Memory	16	0	10238
SMW	Special Memory	16	0	548
AIW	Analog Input	16	0	62
AQW	Analog Output	16	0	62
ID	Input	32	0	12
QD	Output	32	0	12
MD	Word Memory	32	0	28
SD	SCR	32	0	28

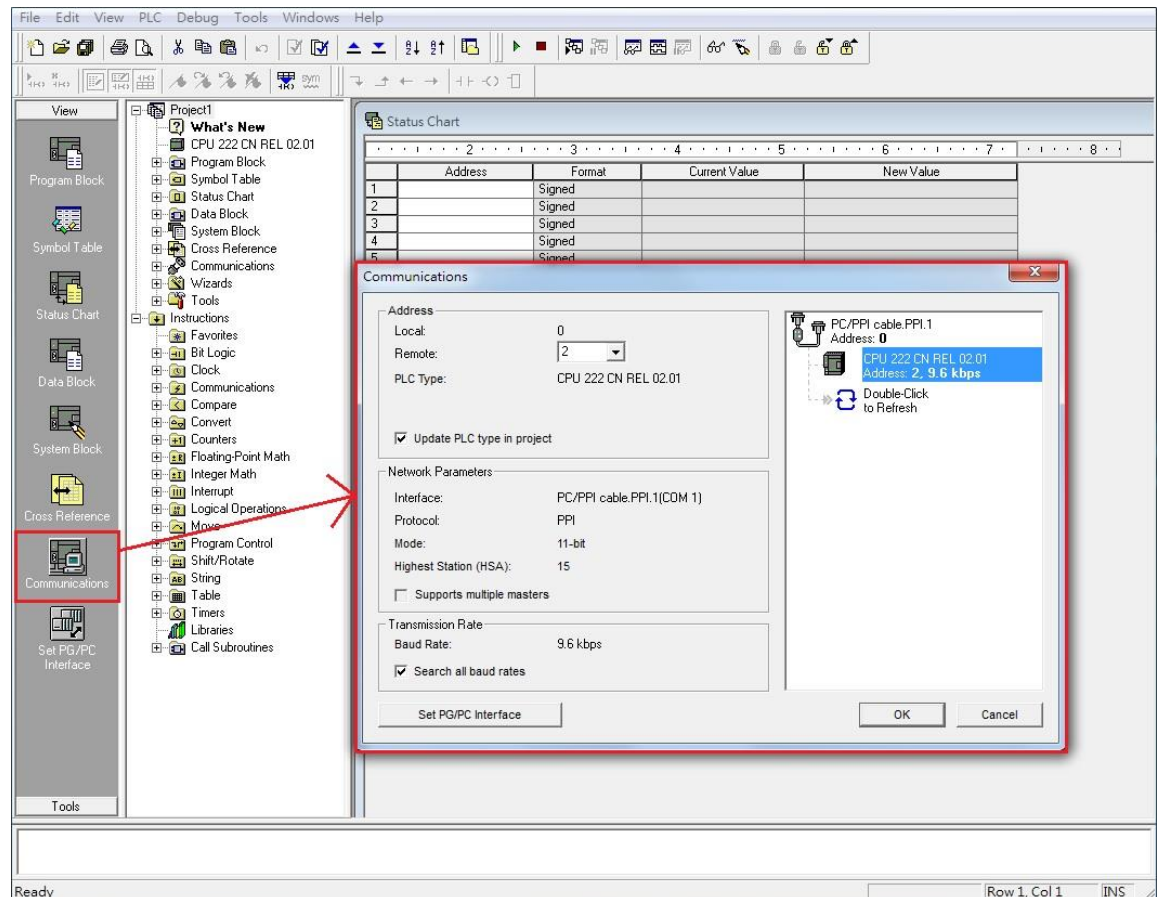
VD	V Memory	32	0	10236
SMD	Special Memory	32	0	546

2.4.4.3 Connected Setting

Configuring of PLC

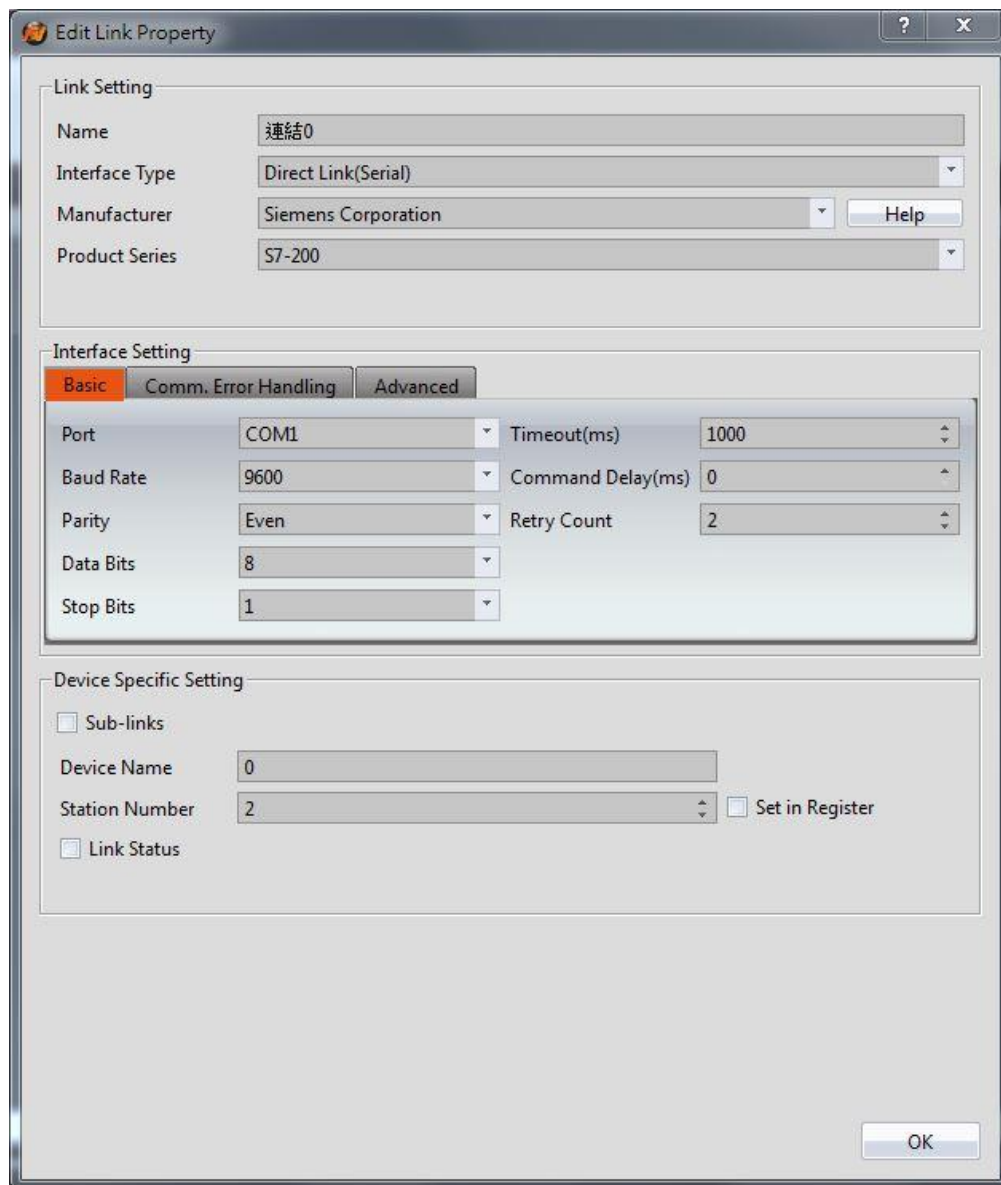
Use Step7 MicroWIN SP9 to configure the port of the PLC.

After choose the PLC type, click communication in the view field, then double click the “double click to refresh” to connect.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

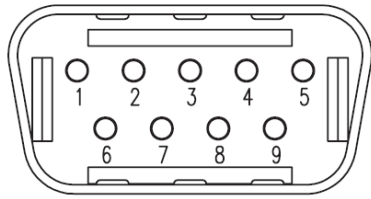
Under **Manufacturer** select Siemens Corporation

Under **Product Series** select S7-200

Under **Port** select the port number that corresponds to the RS485 connection on the HMI.

2.4.4.4 Wiring Diagrams

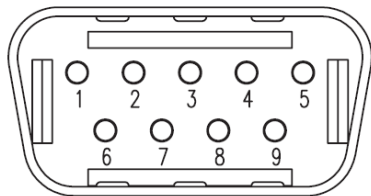
PLC RS485 Port



*Looking into male RS485 Cable

PIN#	Signal
1	
2	
3	DATA+
4	
5	GND
6	
7	
8	DATA-
9	

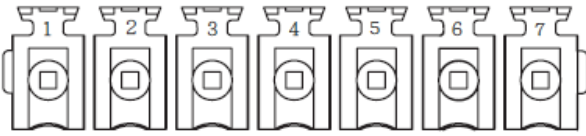
HMI COM2



*Looking into HMI

PIN#	COM2 (RS485)
1	DATA+
2	
3	
4	
5	GND
6	DATA-
7	
8	
9	

HMI COM3 Pinout

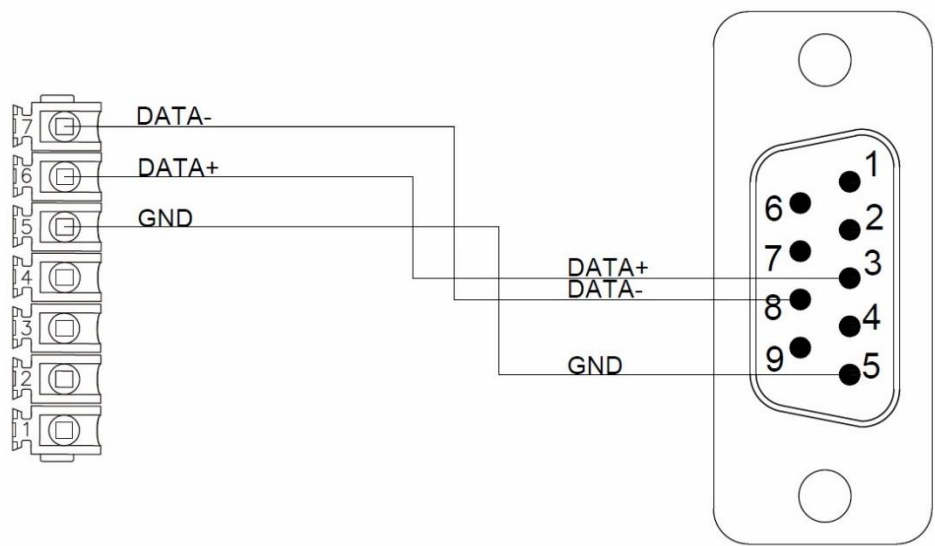
	
*Looking into HMI Device	
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	
5	
6	DATA+
7	DATA-

HMI COM3 Port	PLC RS485 Port
6 DATA+	3 DATA+
7 DATA-	8 DATA-
5 GND	5 GND

Wiring Diagrams

HMI COM3

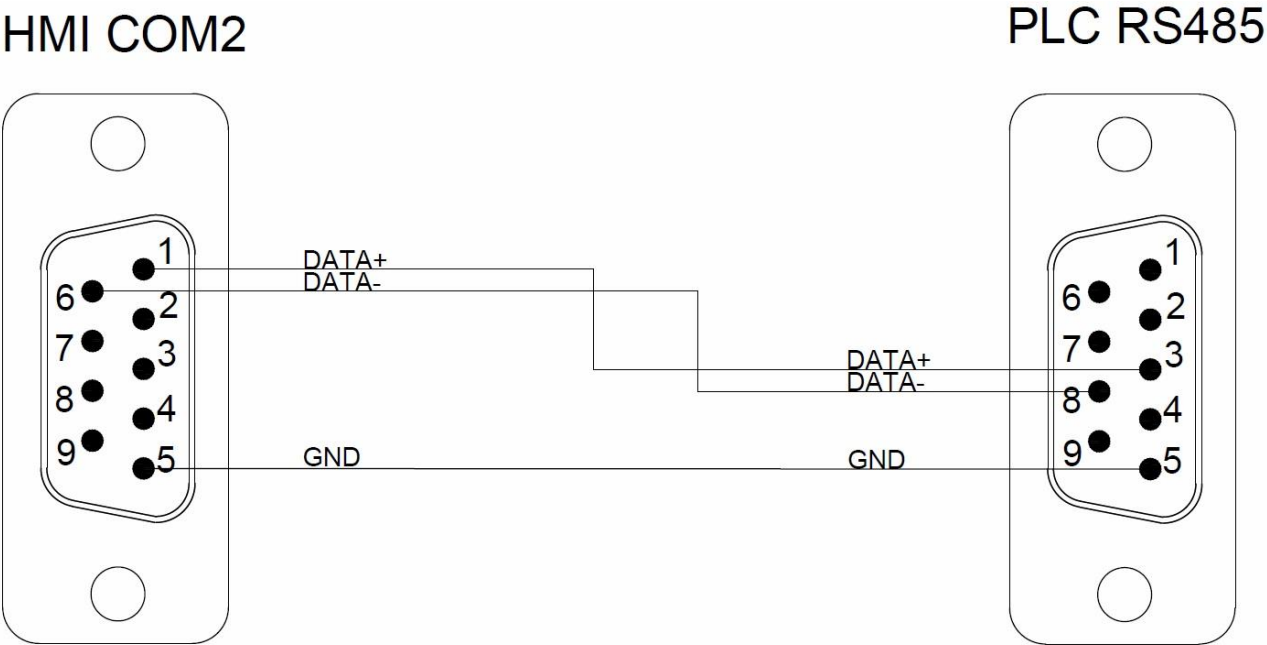
PLC RS485



HMI COM3 Port	PLC RS485 Port
---------------	----------------

1 DATA+	3 DATA+
6 DATA-	8 DATA-
5 GND	5 GND

Wiring Diagrams



2.4.5 Siemens LOGO

2.4.5.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	To be configured
Port	102	
PLC Station No.	0	
Communication Method	ISO TCP	
Model	0BA8	0BA7/0BA8
Local TSAP	1000	HEX
Remote TSAP	2100	HEX

2.4.5.2 Memory Resource Review

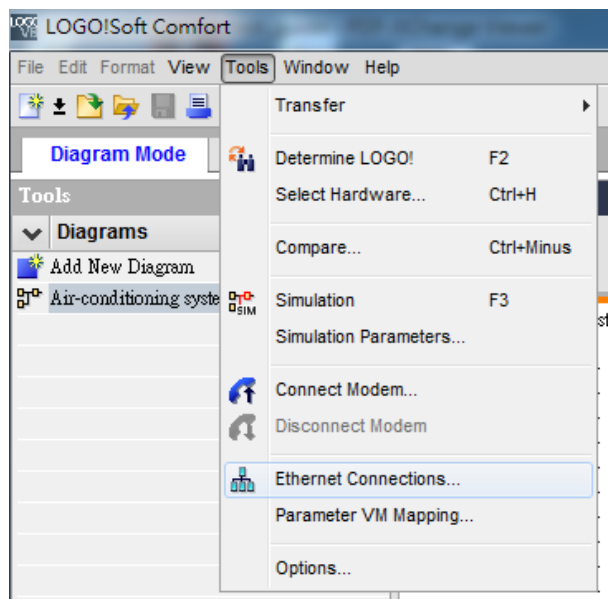
Device	Description	Data bit	Min.	Max.
I	Input	1	1	64
Q	Output	1	1	64
M	Bit Memory	1	1	112
V	Variable Memory	1	0.0	1469.7
AI	Analog Input	16	1	16
AQ	Analog Output	16	1	16
AM	Analog Memory	16	1	64
VW		16	0	1468
VD		32	0	1466

2.4.5.3 Connected Setting

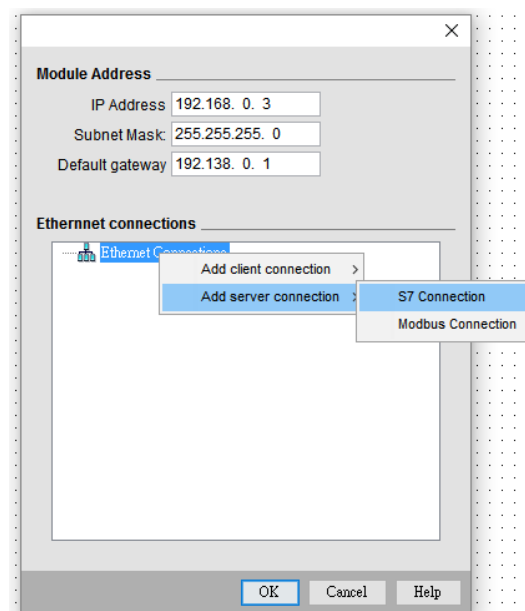
Configuring IP Address on PLC

Use the application **LOGO!Soft Comfort V8.1** to configure the IP address of the PLC.

Under the **Online** menu option, select **Ethernet Connections**.



Right click **Ethernet Connections** and **Add server connections**.



Enable **Accept all connection requests**, And setting TSAP for **Remote Properties(Client)**

Connection1

Local Properties (Server)

TSAP: 10.00

☐ Connect with an Operator Panel (OP)

☒ Accept all connection requests

Only this connection: . . .

Remote Properties (Client)

TSAP: 21.00

OK Cancel Help

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

New Link Property

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Siemens Corporation

Product Series: LOGO

Interface Setting

Basic Comm. Error Handling Advanced

IP Address: 192 . 168 . 0 . 3 Timeout(ms): 1000

Port: 102 Command Delay(ms): 0

Model: 0BA8 Retry Count: 2

Local TSAP(Hex): 1000

Remote TSAP(Hex): 2100

Device Specific Setting

Device Name: 0

Station Number: 1 ☐ Set in Register

☐ Link Status

OK Cancel

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Siemens Corporation

Under **Product Series** select LOGO

Enter the **IP Address** that was written into the PLC.

Enter the **Port** number that was set on the PLC. The default is 102.

2.5 Hitachi

2.5.1 EHV Series

2.5.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	0	
Communication Method	h protocol	

2.5.1.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	Input bit	1	DDDDD	0	65535
Y	Output bit	1	DDDDD	0	65535
M	Memory bit	1	HHHH	0	FFFF
R	Internaloutput bit	1	HHH	0	FFF
L	Link bit	1	HHHH	0	3FFF
TD	Timer	1	DDDD	0	2559
CU	Counter	1	DDD	0	511
WX	Input word	16	DDDD	0	9999
WY	Output word	16	DDDD	0	9999
WM	Memory word	16	HHH	0	FFF
WR	Internaloutput word	16	HHHH	0	FFFF
WL	Link word	16	HHH	0	3FF
TC	Timer / Counter	16	DDDD	0	2559

2.5.1.3 Connected Setting

Configuring of HMI

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Hitachi Ltd.

Under **Product Series** select EHV Series

Under **Port** select the port number that corresponds to the RS232 connection on the HMI.

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Hitachi Ltd.

Product Series: EHV Series

Interface Setting

Basic | Comm. Error Handling

Port: COM1 | Timeout(ms): 3000

Baudrate: 38400 | Command Delay(ms): 0

Parity: Even | Retry Count: 0

Data Bits: 7

Stop Bits: 1

Device Specific Setting

☐ Sub-links

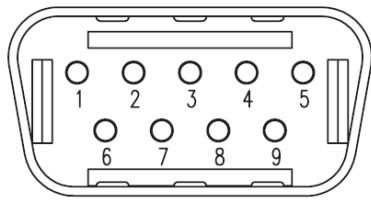
Device Name: 0

Station Number: 1

OK

2.5.1.4 Wiring Diagrams

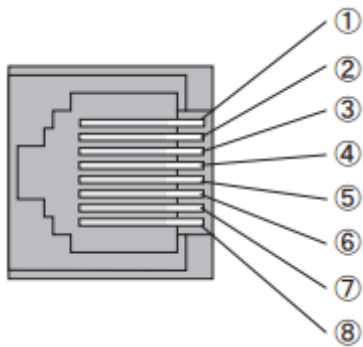
HMI COM1 Pinout



*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

PLC RS232 Pinout



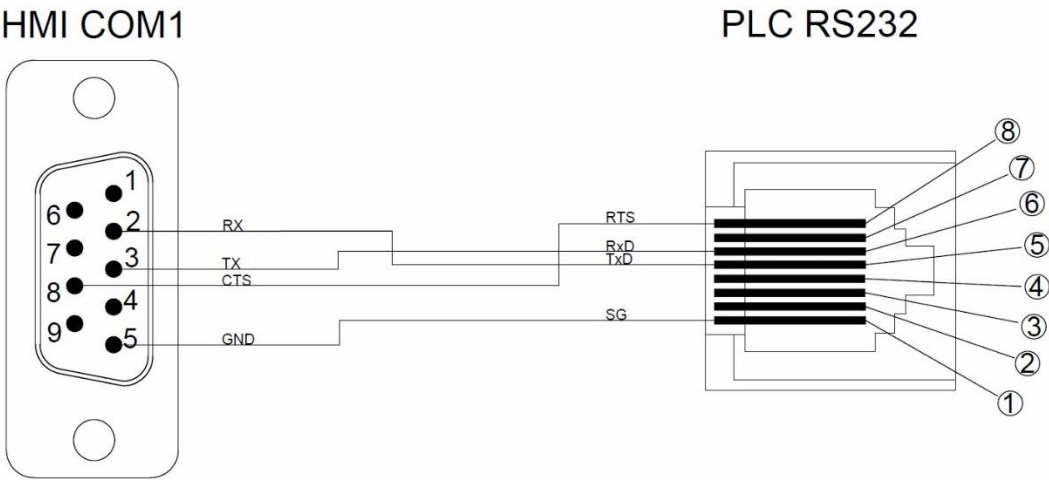
*Looking into PLC

PIN#	Signal
1	SG
2	VCC
3	ER
4	
5	TxD
6	RxD
7	

8	RTS
---	-----

HMI COM1	PLC RS232 Port
2 RX	5 TxD
3 TX	6 RxD
5 GND	1 SG
8 CTS	8 RTS

Wiring Diagrams:



2.5.2 EHV Series (Ethernet)

2.5.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.1.100	
Port	3004	
PLC Station No.	0	
Communication Method	h protocol (Ethernet)	

2.5.2.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	Input bit	1	DDDDD	0	65535
Y	Output bit	1	DDDDD	0	65535
M	Memory bit	1	HHHH	0	FFFF
R	Internal output bit	1	HHH	0	FFF
L	Link bit	1	HHHH	0	3FFF
TD	Timer	1	DDDD	0	2559
CU	Counter	1	DDD	0	511
WX	Input word	16	DDDD	0	9999
WY	Output word	16	DDDD	0	9999
WM	Memory word	16	HHH	0	FFF
WR	Internal output word	16	HHHH	0	FFFF
WL	Link word	16	HHH	0	3FF
TC	Timer / Counter	16	DDDD	0	2559

2.6 Schneider

2.6.1 MODBUS RTU

2.6.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485 2W	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
PLC Station No.	0	
Communication Method	MODBUS RTU(Zero-based)	

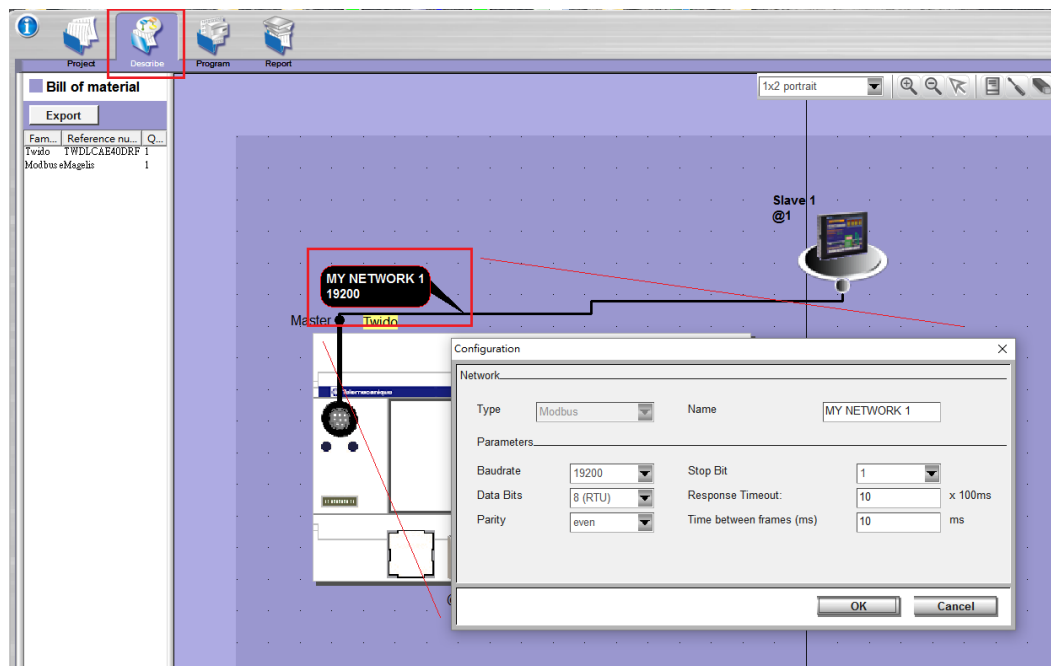
2.6.1.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
%M	Memory bit	1	DDDDD	0	65535
%MW	Memory word	16	DDDDD	0	65535

2.6.1.3 Connected Setting

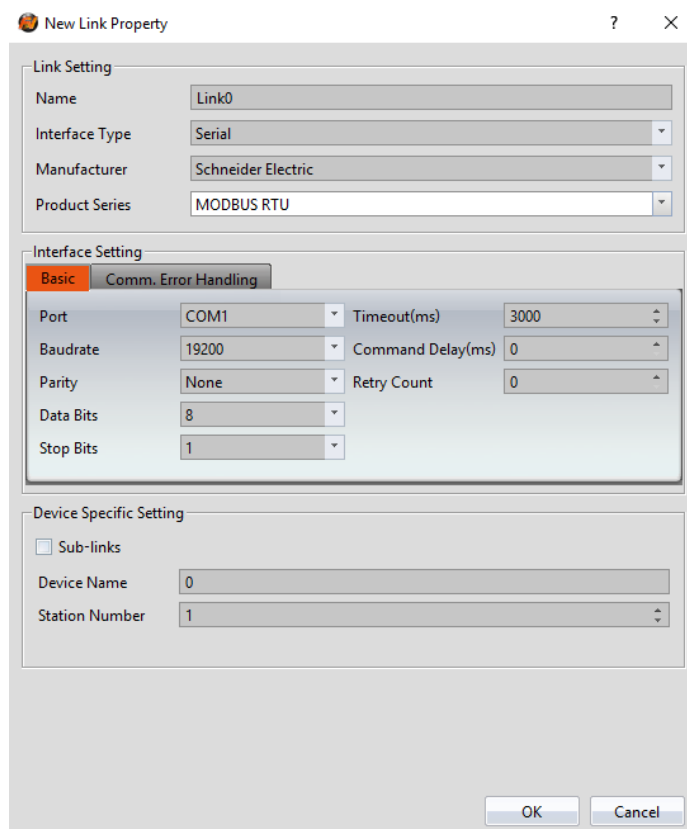
Configuring of PLC

Use **TwidoSuite** to configure the port of the PLC.,
expand **Describe** tab and creation Modbus setting,
Click **MY NETWORK** and configure it to the settings detailed below.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

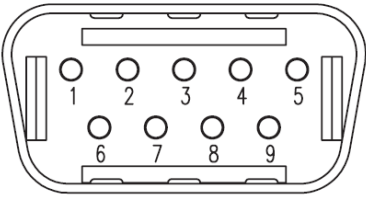


Within the **Link** configuration window in FvDesigner:
Under **Interface Type** select Serial

Under **Manufacturer** select Schneider
Under **Product Series** select MODBUS RTU
Enter the **IP Address** that was written into the PLC.

2.6.1.4 Wiring Diagrams

HMI COM2

	
*Looking into HMI	
PIN#	COM2 (RS485)
1	DATA+
2	
3	
4	
5	GND
6	DATA-
7	
8	
9	

HMI COM3

	
*Looking into HMI Device	
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	
5	

6	DATA+
7	DATA-

PLC RS485 Pinout

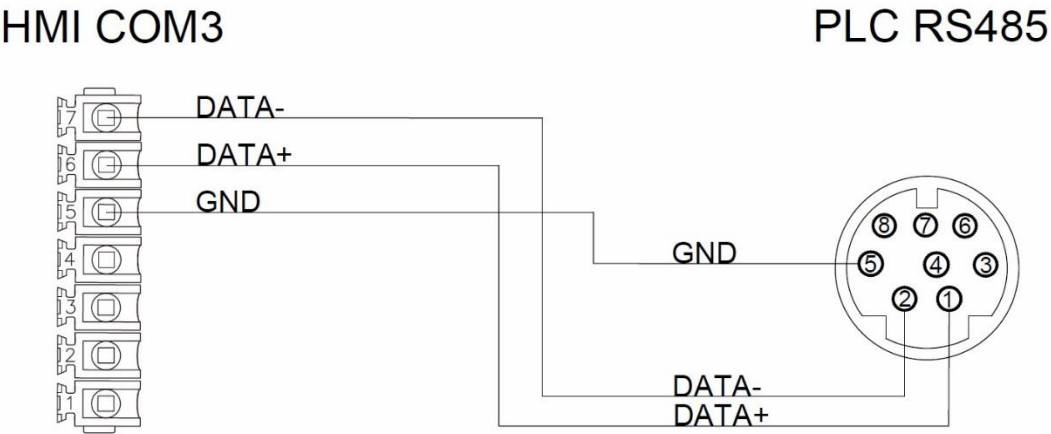


*Looking into PLC

PIN#	Signal
1	DATA+
2	DATA-
3	
4	
5	
6	
7	GND
8	

HMI COM3 Port	PLC RS485 Port
6 DATA+	1 DATA+
7 DATA-	2 DATA-
5 GND	5 GND

Wiring Diagrams

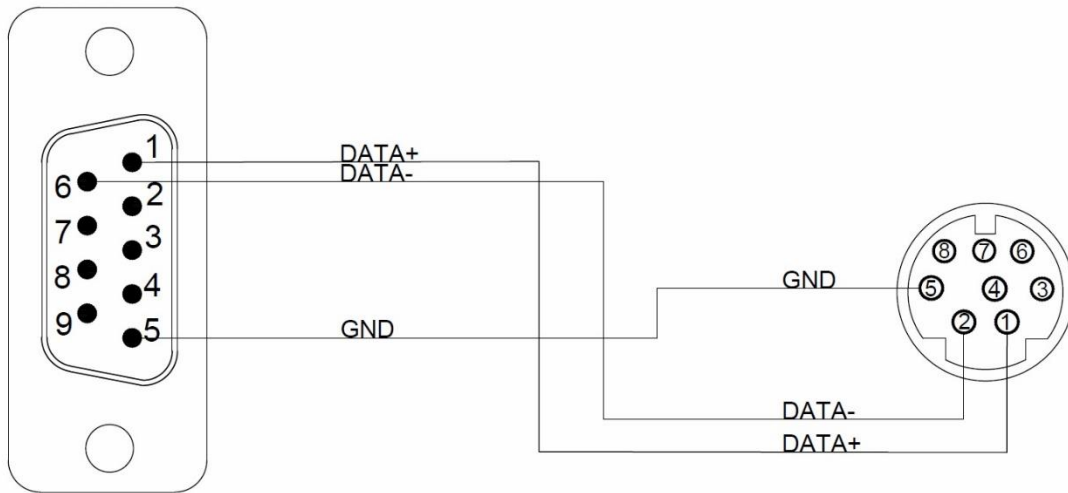


HMI COM2 Port	PLC RS485 Port
1 DATA+	1 DATA+
6 DATA-	2 DATA-
5 GND	5 GND

Wiring Diagrams

HMI COM2

PLC RS485



2.6.2 MODBUS TCP

2.6.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.2	
Port	502	
PLC Station No.	0	
Communication Method	MODBUS TCP(Zero-based)	

2.6.2.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
%M	Memory bit	1	DDDD	0	65535
%MW	Memory word	16	DDDD	0	65535

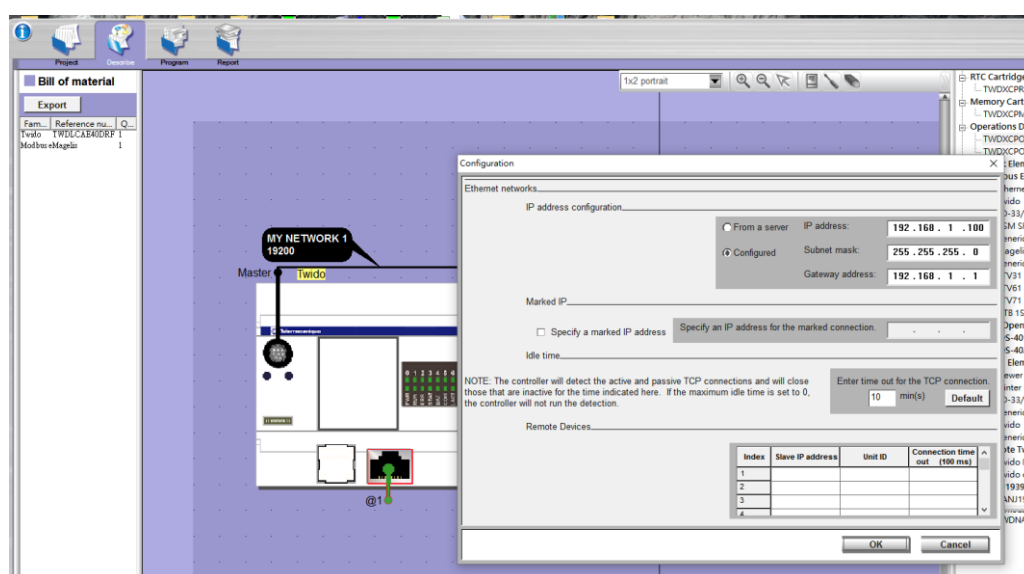
2.6.2.3 Connected Setting

Configuring IP Address on PLC

Use **TwidoSuite** to configure the IP of the PLC.

Expand **Describe** tab, and click **Ethernet Port**,

The IP address and other parameters can be set.



Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI

New Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: Schneider Electric

Product Series: MODBUS TCP

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192 . 168 . 0 . 2 Timeout(ms): 3000

Port: 502 Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

OK Cancel

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Schneider Electric.

Under **Product Series** select Modbus TCP.

Enter the **IP Address** that was written into the PLC.

2.7 Allen-Bradley

2.7.1 CompactLogix/ControlLogix/FlexLogix Tag Series

2.7.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.2	
Port	44818	
PLC Station No.	0	
Communication Method	EtherNet/IP	

2.7.1.2 PLC Resource Review

DataType		bits	Description
BOOL	---	1	Boolean
SINT	---	8	Single integer
INT	---	16	Integer
DINT	---	32	Double integer
REAL	---	32	Float number
STRING	LEN		Length of string
	DATA		Character data of string
COUNTER	PRE	32	Preset value
	ACC	32	Accumulatedvalue
	CU	1	Count up flag
	CD	1	Count down flag
	DN	1	Done flag
	OV	1	Overflowflag
	UN	1	Underflowflag
TIMER	PRE	32	Preset value
	ACC	32	Accumulatedvalue
	EN	1	Enable flag
	TT	1	Timing flag
	DN	1	Done Flag
AB:1769_DI16:I:0	Fault	32	
	Data	16	Data of DI16

AB:1769_DI32:I:0	Fault	32	
	Data	32	Data of DI32
AB:1769_DO16:O:0	Data	16	Data of DO16
AB:1769_DO32:O:0	Data	32	Data of DO32

2.7.1.3 Connected Setting

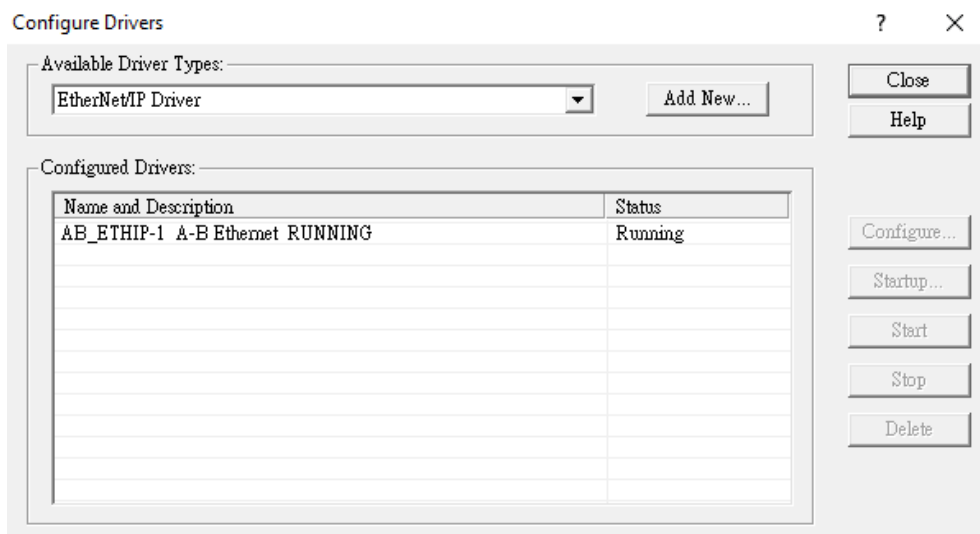
Configuring IP Address on PLC

The application **RSLink Classic** (ver. 3.51) was used to configure the IP address on the device.

On the PLC device, make sure the switch on the main module is not set to the **RUN** setting.

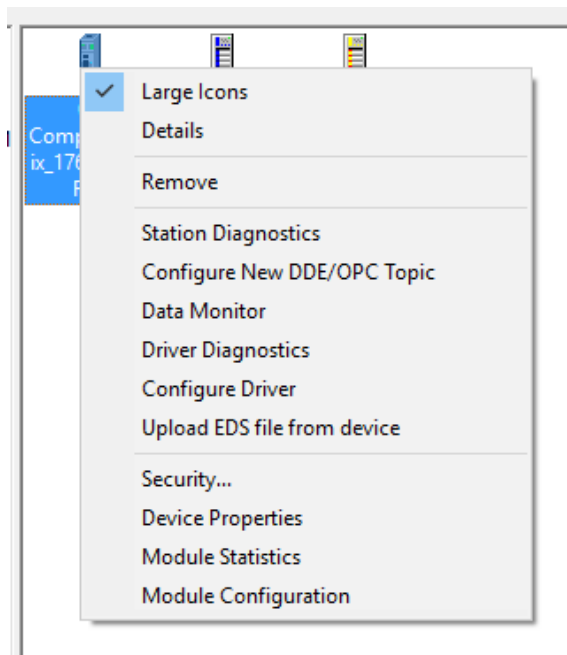
Open RSLink Classic and connect to the PLC either with a USB-Serial cable or through the local network. To connect to PLC via the local network, follow the steps below.

In the **Communications** menu tab, select **Configure Drivers**. Select **EtherNet/IP Driver** and press 'Add New'. Select "Your Network Interface Card" and press OK. Start the Driver and close out of the dialog window.

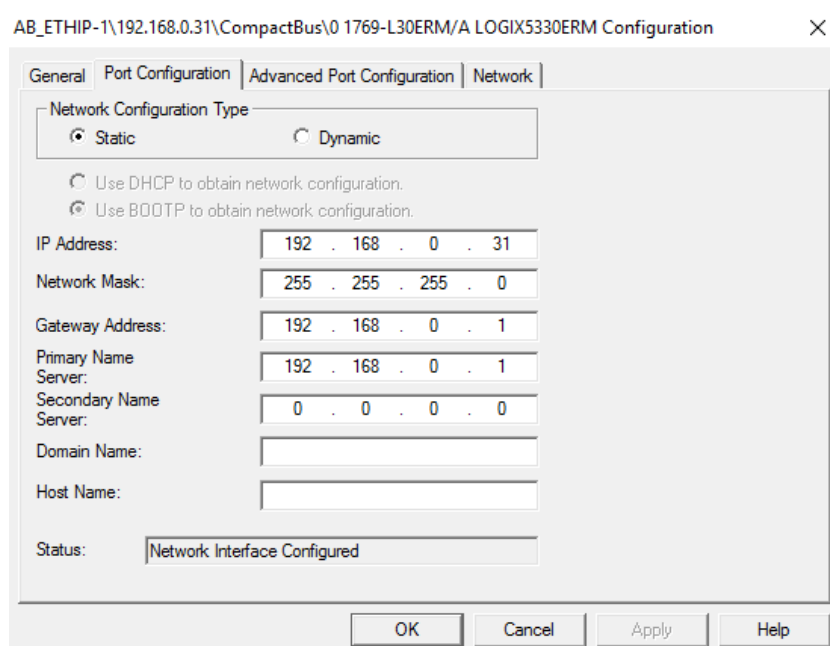


Under the new Ethernet driver, the PLC connected to the local network should be visible.

Right click the main module of the PLC and select **Module Configuration**.

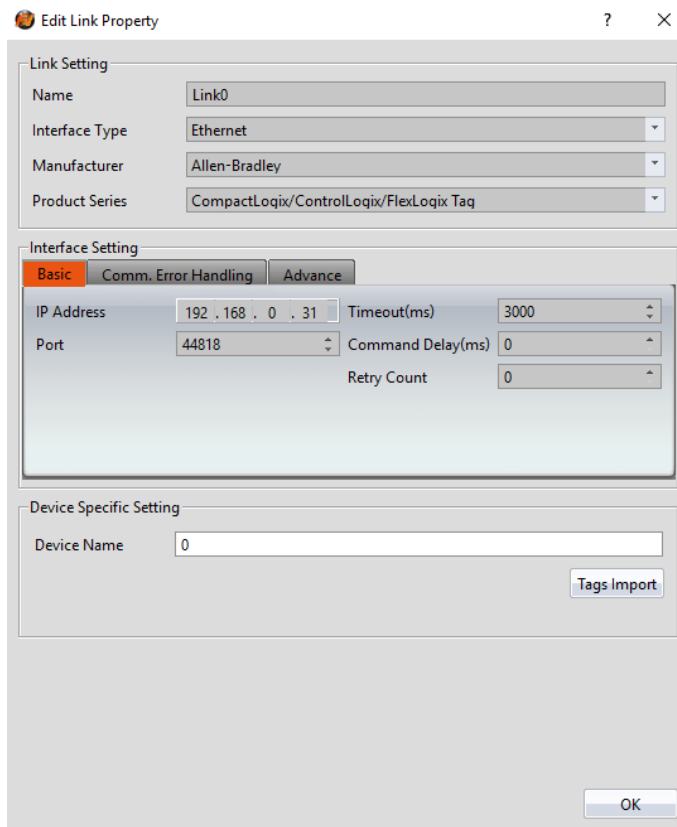


Navigate to the **Port Configuration** tab. Here, the IP address and other parameters can be set. Press OK to confirm the settings.



Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Allen-Bradley.

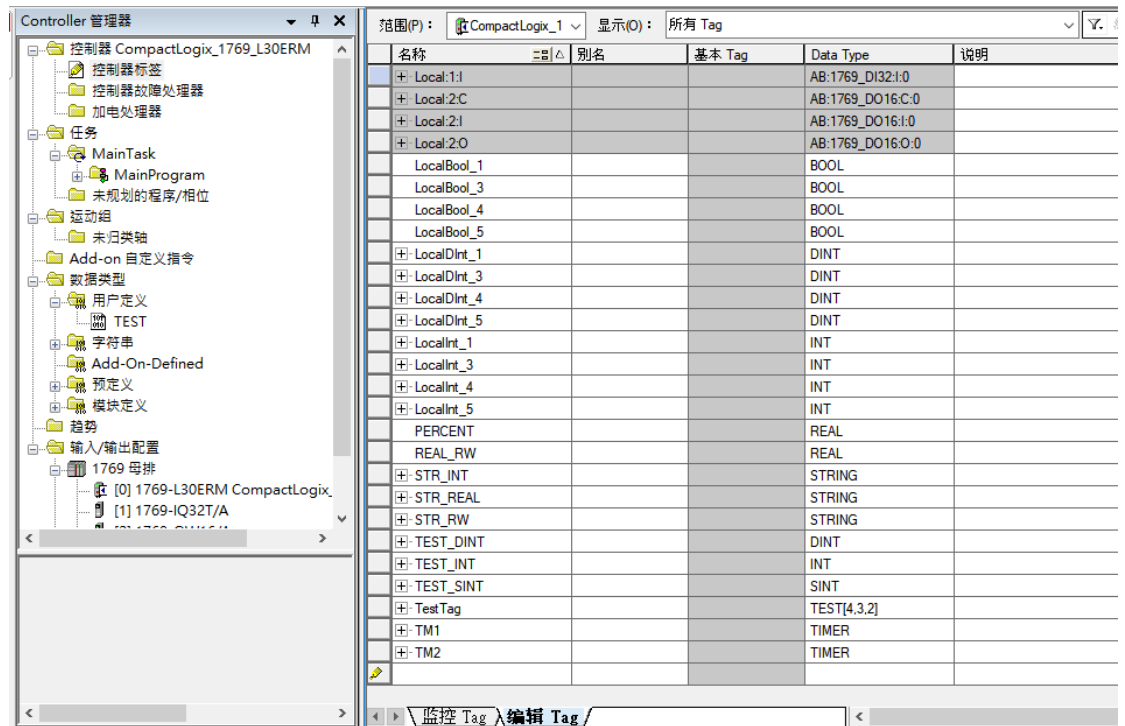
Under **Product Series** select CompactLogix/ControlLogix/FlexLogix Tag.

Enter the **IP Address** that was written into the PLC.

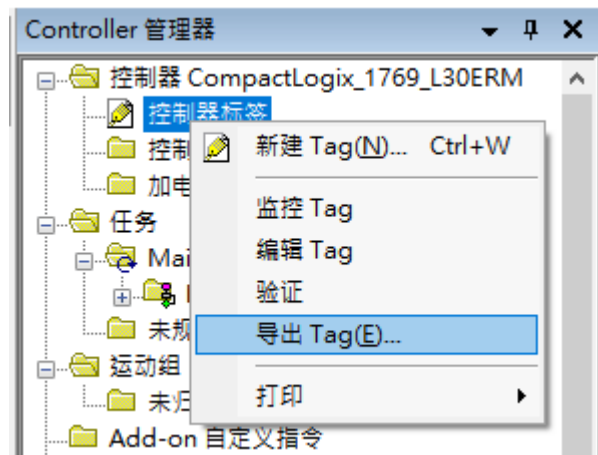
2.7.1.4 Tag setting

After setting the CompactLogix/ControlLogix/FlexLogix Tag driver, the user can export the tags edited by RSLogix5000 into a csv file, and then import them into FvDesigner. However, some data type structures defined in RSLogix5000 will not be exported. If you want to use these tags, you must first define the data type structure in FvDesigner. The import procedure of Allen-Bradley CompactLogix/ControlLogix/FlexLogix Tag will be explained below.

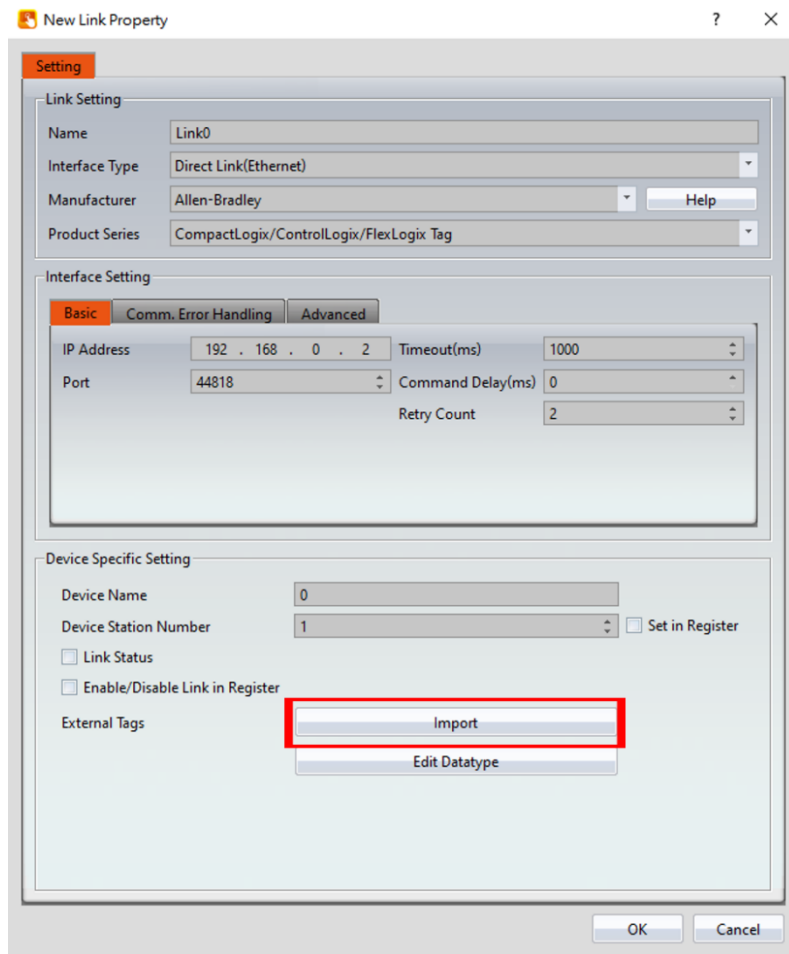
Step 1. Create Tag in RSLogix5000



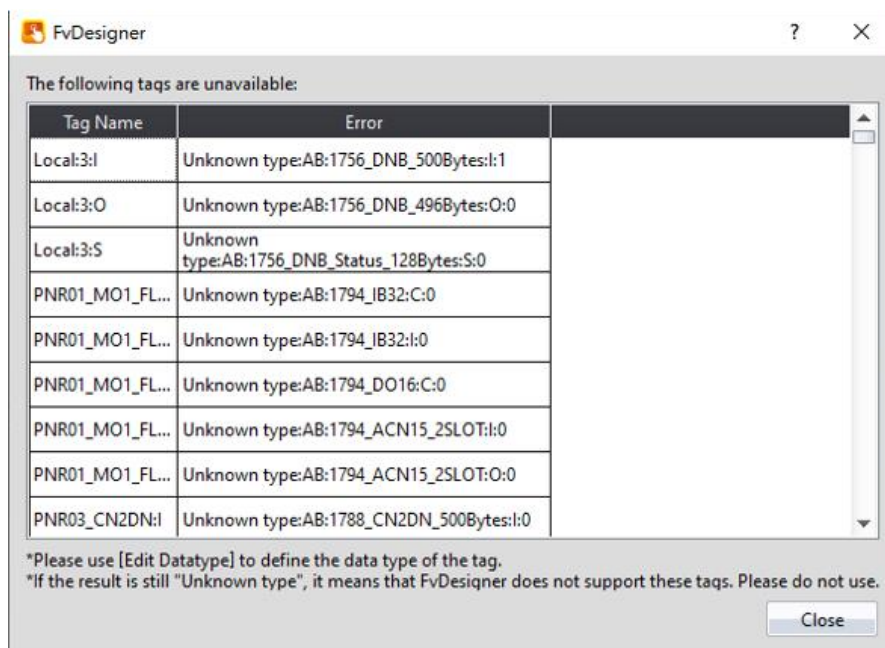
Step 2. Export Tag to CSV file



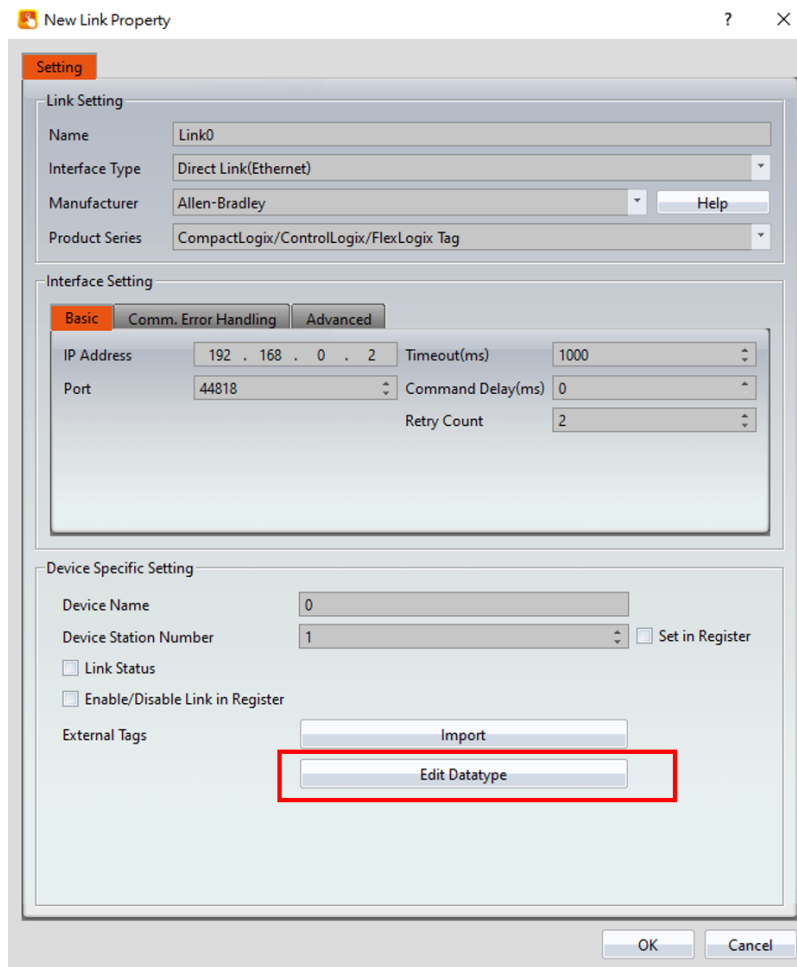
Step 3. After setting the CompactLogix/ControlLogix/FlexLogix Tag in FvDesigner, click Import.



Step 4. After selecting the file, if there are no errors, it will show that the import was successful. Otherwise, the tag in question and the reason why it cannot be imported will be displayed



Step 5. Press Edit Data Type



The 'New Link Property' dialog box is shown with the 'Setting' tab selected. It contains three main sections: 'Link Setting', 'Interface Setting', and 'Device Specific Setting'. The 'Link Setting' section has fields for Name (Link0), Interface Type (Direct Link(Ethernet)), Manufacturer (Allen-Bradley), and Product Series (CompactLogix/ControlLogix/FlexLogix Tag). The 'Interface Setting' section has tabs for Basic, Comm. Error Handling, and Advanced. The Basic tab is active, showing IP Address (192.168.0.2), Port (44818), Timeout(ms) (1000), Command Delay(ms) (0), and Retry Count (2). The 'Device Specific Setting' section has fields for Device Name (0), Device Station Number (1), and checkboxes for Link Status, Enable/Disable Link in Register, and External Tags. The 'Edit Datatype' button is highlighted with a red rectangle.

Setting

Link Setting

Name: Link0

Interface Type: Direct Link(Ethernet)

Manufacturer: Allen-Bradley

Product Series: CompactLogix/ControlLogix/FlexLogix Tag

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192 . 168 . 0 . 2

Port: 44818

Timeout(ms): 1000

Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

Device Name: 0

Device Station Number: 1

☐ Link Status

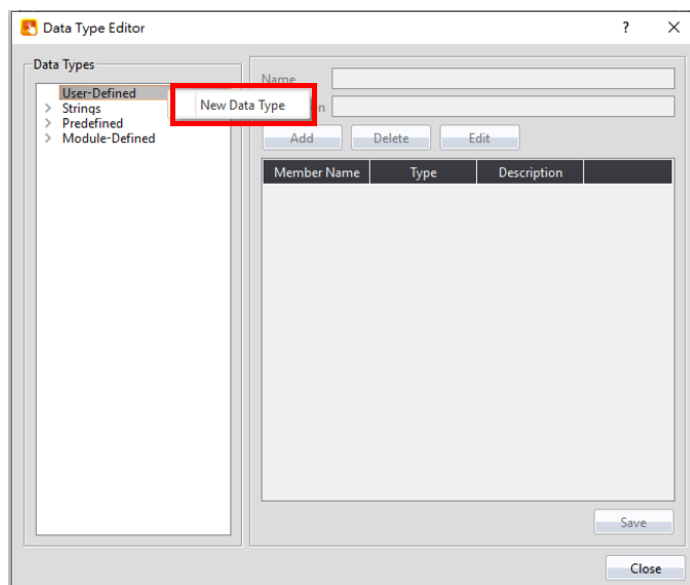
☐ Enable/Disable Link in Register

External Tags: Import

Edit Datatype

OK Cancel

Step 6. Right click and select Add Data Type



The 'Data Type Editor' dialog box is shown. It has a 'Data Types' list on the left with 'User-Defined' selected. A red rectangle highlights the 'New Data Type' button. The right side has a 'Name' field, 'Add', 'Delete', and 'Edit' buttons, and a table with columns 'Member Name', 'Type', and 'Description'. The 'Save' and 'Close' buttons are at the bottom.

Data Type Editor

Data Types

- User-Defined
- Strings
- Predefined
- Module-Defined

New Data Type

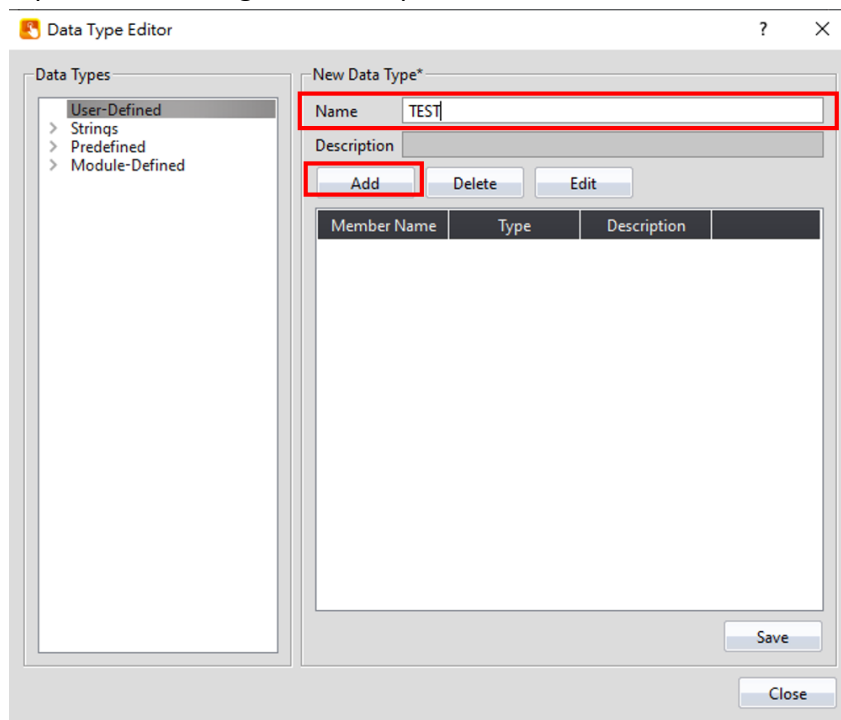
Name:

Add Delete Edit

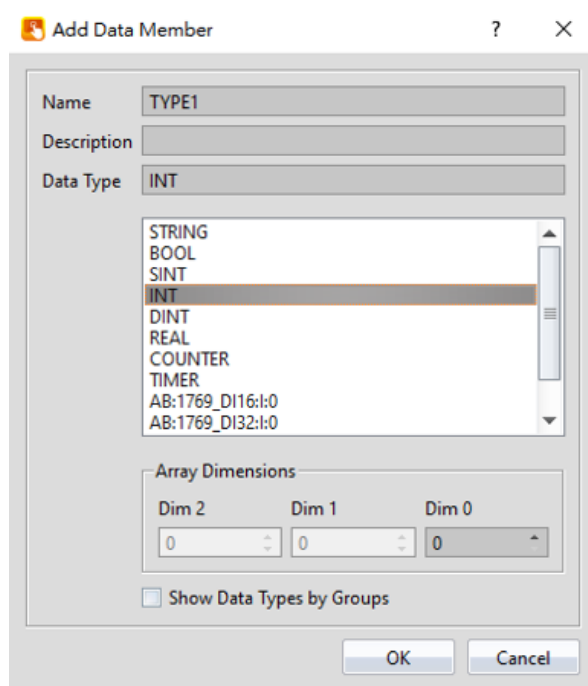
Member Name	Type	Description
-------------	------	-------------

Save Close

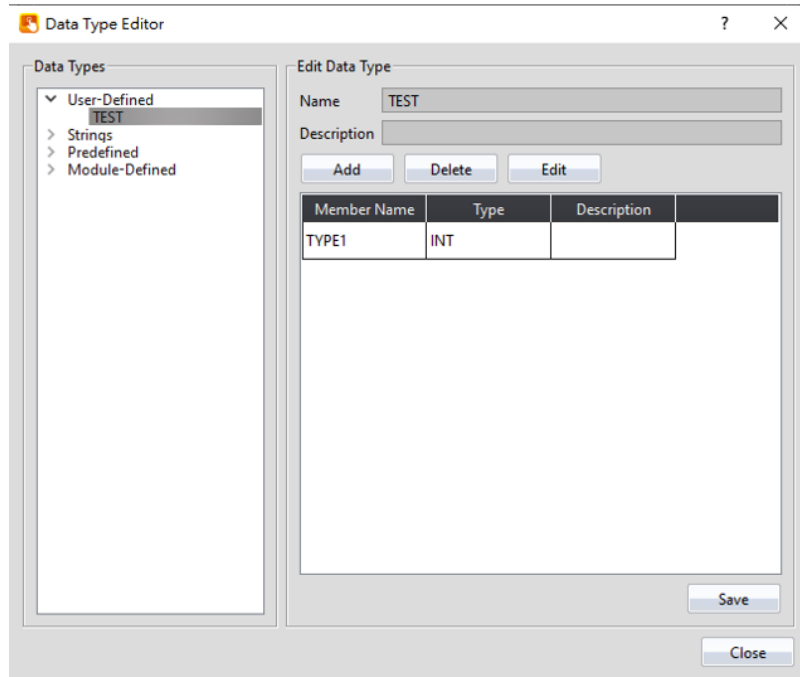
Step 7. After editing the name, press Add to add a new member structure.



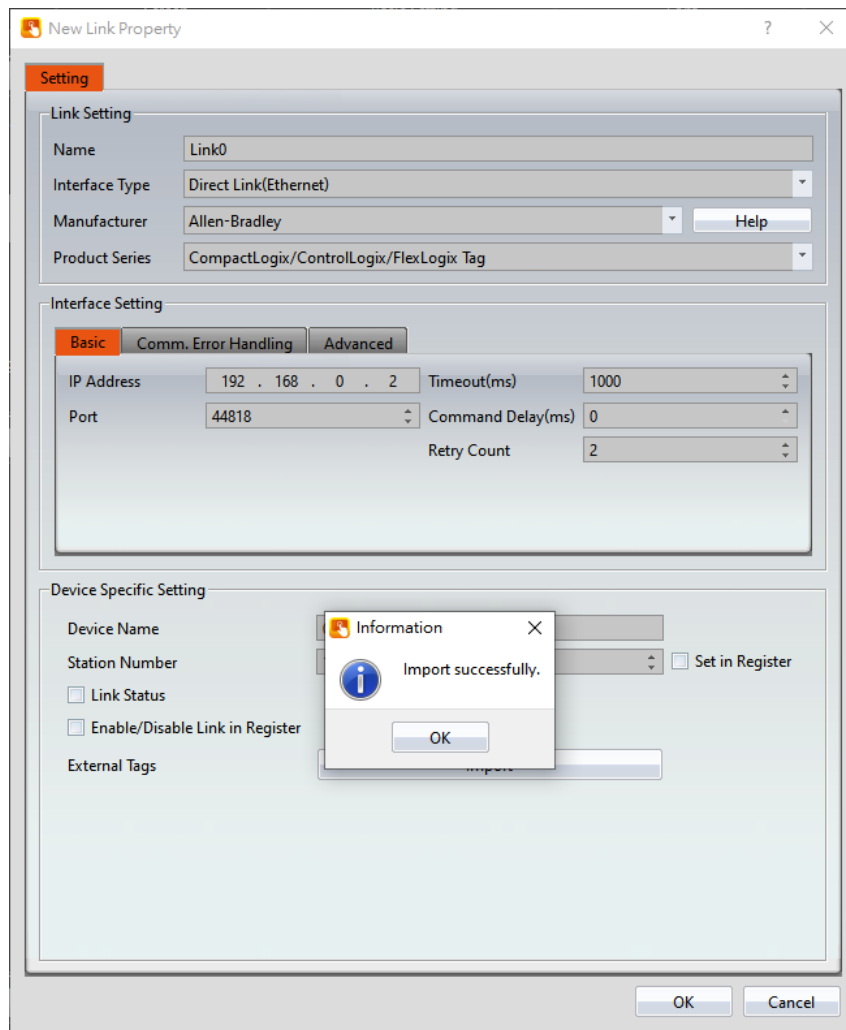
Step 8. Edit the name, select the data type and press OK



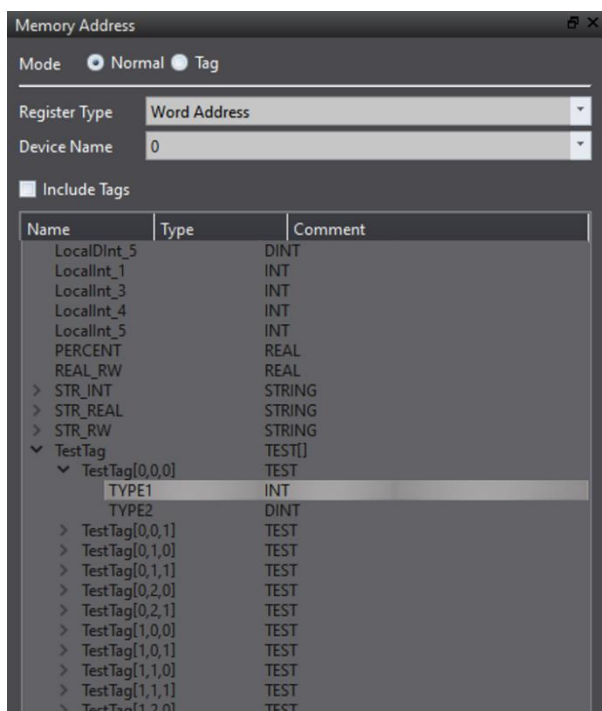
Step 9. After editing the members, press Save. If there are no errors, this data type will be displayed on the left. Press close and then go back to step 3 to import the tag. If you edit the data type, you need to press save to update.



Step 10. Show import success



Step 11. The successfully imported Tag can be seen in the memory address



2.7.2 SLC series (EtherNet/IP)

2.7.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.1	
Port	44818	
Communication Method	EtherNet/IP	

2.7.2.2 PLC Resource Review

Device	Description	Data bit	Input format	Min.	Max.
O	Output File	1/16	O F:S.D	O0:0.0	O0:30.255
I	Input File	1/16	I F:S.D	I1:0.0	I1:30.255
S	Status File	1/16	S F:E	S2:0	S2:163
B	Bit File	1/16	B F:E	B3:0	B255:255
T	Timer File	1/16	T F:E.D	T4:0.0	T255:255.2
C	Counter File	1/16	C F:E.D	C5:0.0	C255:255.2
R	Control File	1/16	R F:E.D	R6:0.0	R255:255.2

N	Integer File	1/16	N F:E	N7:0	N255:255
F	Floating File	32	F F:E	F8:0	F255:255
A	ASCII File	1/16	A F:E	A9:0	A255:255
ST	String File	1/16	ST F:E.D	ST9:0.0	ST255:255.41

2.7.2.3 Connected Setting

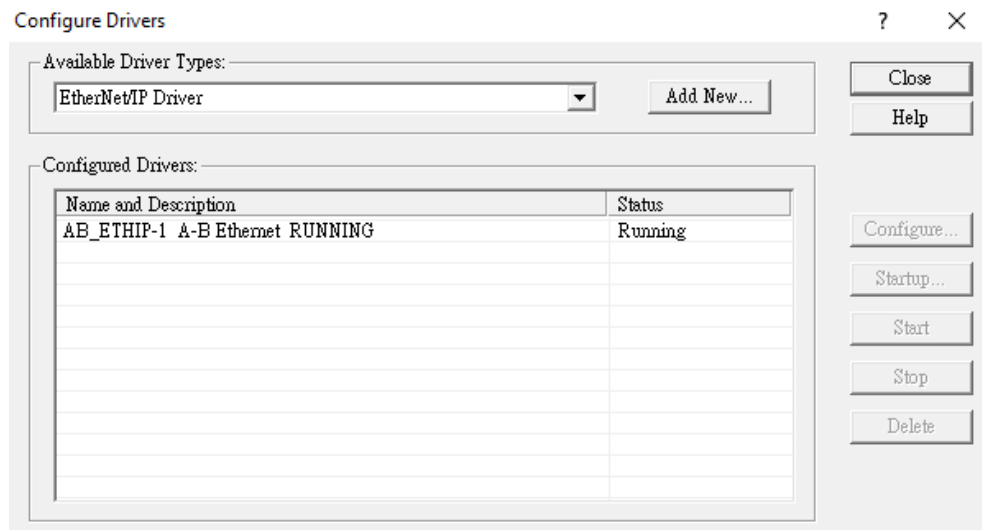
The SLC series PLC can be configured using the same procedure as the Micrologix series configuration. The figures refer to the Micrologix PLC but the procedure is the same.

Configuring IP Address on PLC

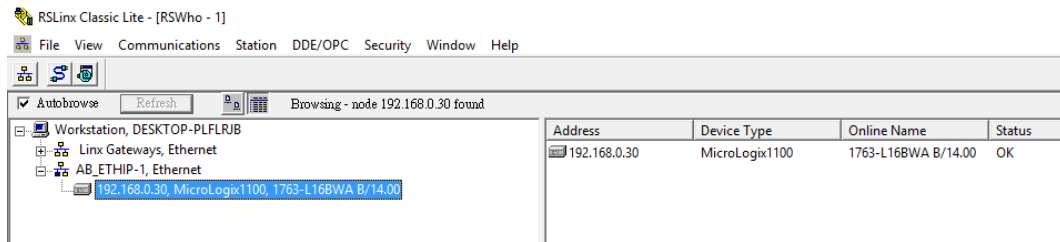
If the IP address needs to be configured, follow the steps below.

Use the applications **RSLink Classic Lite** and **RSLogix 500** to configure the IP address of the PLC.

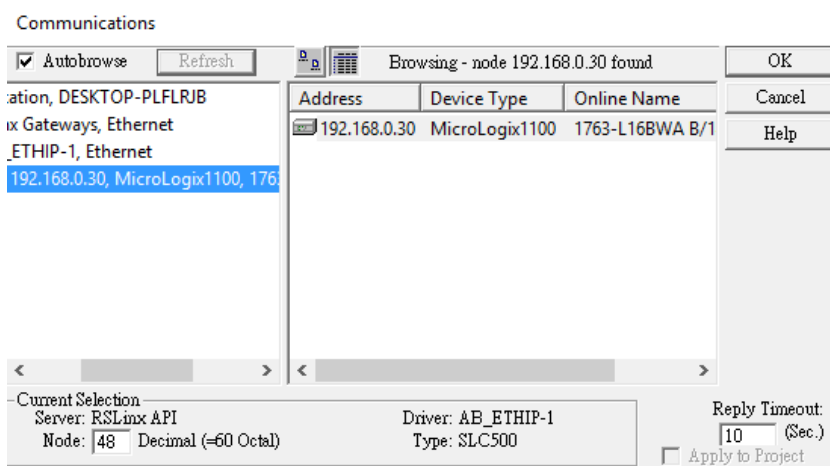
First open **RSLink Classic Lite** to set up a connection between the computer and PLC. An Ethernet cable needs to be connected to the PLC and the computer must be online. In the **Communications** menu tab, select **Configure Drivers**. Select **EtherNet/IP Driver** and press 'Add New'. Select "Your Network Interface Card" and press OK. Start the Driver and close out of the dialog window.



Under the new Ethernet driver, the PLC connected to the local network should be visible. If the status of the device is OK, open up **RSLogix 500**.



In **RSLogix 500**, under the **Comms** menu option, select **Who Active go Online**. In the dialog window that appears, select the PLC device connected through RSLinx.



Press **Create New File** in the dialog window that appears after pressing OK.

On the left side of the program, double click **Channel Configuration** to access the PLC's Ethernet settings. Under the Channel 1 tab, the IP address can be changed.

Channel Configuration
×

General | Channel 0 | Channel 1

Driver: Ethernet

Hardware Address: 00:1D:9C:A1:62:93

Network Link ID: 0

IP Address: 192 . 168 . 0 . 30

Subnet Mask: 255 . 255 . 255 . 0

Gateway Address: 192 . 168 . 0 . 1

Default Domain Name:

Primary Name Server: 192 . 168 . 0 . 1

Secondary Name Server: 255 . 0 . 0 . 0

Protocol Control

☐ BOOTP Enable ☐ DHCP Enable Msg Connection Timeout (x 1mS): 15000

☐ SNMP Server Enable Msg Reply Timeout (x 1mS): 3000

☐ HTTP Server Enable

☒ Auto Negotiate

Port Setting: 10/100 Mbps Full Duplex/Half Duplex

Contact:

Location:

OK Cancel Apply Help

Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI

Within the **Link** configuration window in FvDesigner:

- Under **Interface Type** select Ethernet
- Under **Manufacturer** select Allen-Bradley
- Under **Product Series** select SLC (Ethernet/IP)
- Enter the **IP Address** that was written into the PLC.
- Keep the **Port** at the default setting.

2.7.3 SLC Series

2.7.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
PLC Station No.	1	

TX Control	CRC	CRC/BCC
Communication Method	DF1	

2.7.3.2 PLC Resource Review

Device	Description	Data bit	Input format	Min.	Max.
O	Output File	1/16	O F:S.D	O0:0.0	O0:30.255
I	Intput File	1/16	I F:S.D	I1:0.0	I1:30.255
S	Status File	1/16	S F:E	S2:0	S2:163
B	Bit File	1/16	B F:E	B3:0	B255:255
T	Timer File	1/16	T F:E.D	T4:0.0	T255:255.2
C	Counter File	1/16	C F:E.D	C5:0.0	C255:255.2
R	Control File	1/16	R F:E.D	R6:0.0	R255:255.2
N	Integer File	1/16	N F:E	N7:0	N255:255
F	Floating File	32	F F:E	F8:0	F255:255
A	ASCII File	1/16	A F:E	A9:0	A255:255
ST	String File	1/16	ST F:E.D	ST9:0.0	ST255:255.41

2.7.3.3 Connected Setting

Configuring of PLC

Use **RSLink Classic Lite** and **RSLogix 500** to configure the port of the PLC.

Under the Project Sidebar, expand **Channel Configuration**. And expand **Channel 0** tab, Configure it to the settings detailed below.

Channel Configuration ✕

General Channel 0 Channel 1

Driver DF1 Full Duplex Source ID 1 (decimal)

Baud 19200

Parity NONE

Protocol Control

Control Line No Handshaking ACK Timeout (x20 ms) 50

Error Detection CRC

Embedded Responses Auto Detect

☒ Duplicate Packet Detect

NAK Retries 3

ENQ Retries 3

OK Cancel Apply Help

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

New Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Allen-Bradley

Product Series: SLC

Interface Setting

Basic | Comm. Error Handling

Port: COM1 | Timeout(ms): 3000

Baudrate: 19200 | Command Delay(ms): 0

Parity: None | Retry Count: 0

Data Bits: 8 | TX Control Procedure: CRC

Stop Bits: 1

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

OK Cancel

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

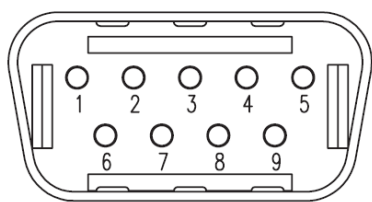
Under **Manufacturer** select Allen-Bradley

Under **Product Series** select SLC.

Verify the parameters match the window above.

2.7.3.4 Wiring Diagrams

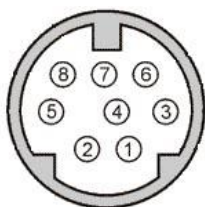
HMI COM1 Pinout



*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

PLC RS232 Pinout



*Looking into PLC

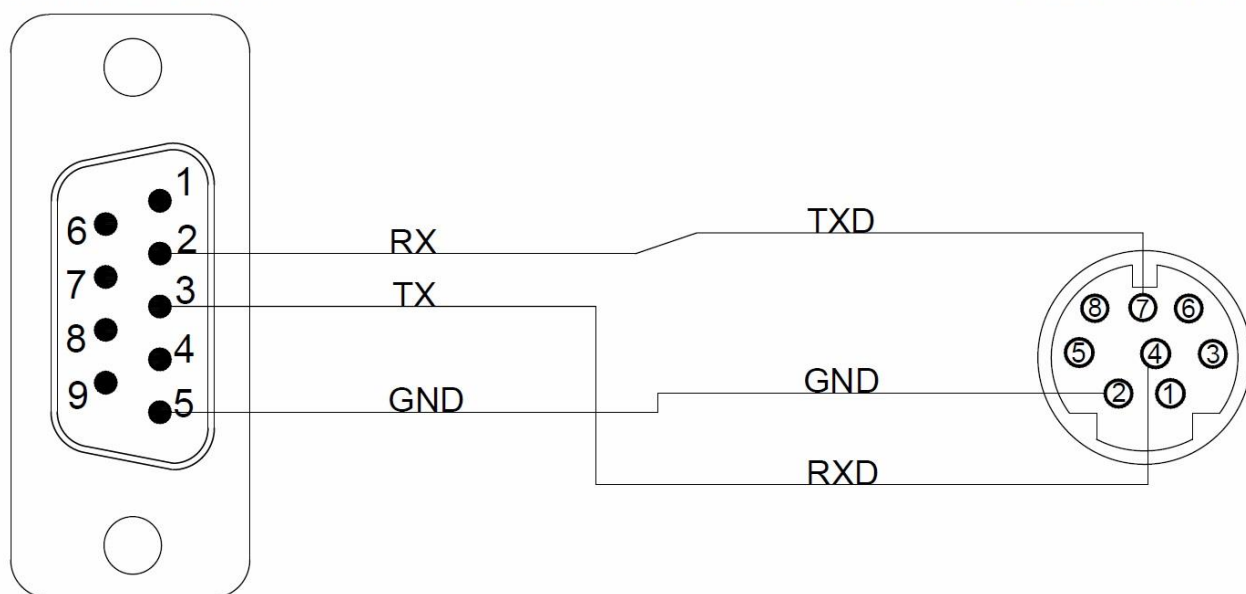
PIN#	Signal
1	
2	GND
3	
4	RXD
5	
6	
7	TXD
8	

HMI COM1	PLC RS232 Port
2 RX	7 TXD
3 TX	4 RXD
5 GND	2 GND

Wiring Diagrams:

HMI COM1

PLC RS232



2.7.4 MicroLogix Series (EtherNet/IP)

2.7.4.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.1	
Port	44818	
Communication Method	EtherNet/IP	

2.7.4.2 PLC Resource Review

Device	Description	Data bit	Input format	Min.	Max.
O	Output File	1/16	O F:S.D	O0:0.0	O0:30.255
I	Intput File	1/16	I F:S.D	I1:0.0	I1:30.255
S	Status File	1/16	S F:E	S2:0	S2:163
B	Bit File	1/16	B F:E	B3:0	B255:255

T	Timer File	1/16	T F:E.D	T4:0.0	T255:255.2
C	Counter File	1/16	C F:E.D	C5:0.0	C255:255.2
R	Control File	1/16	R F:E.D	R6:0.0	R255:255.2
N	Integer File	1/16	N F:E	N7:0	N255:255
F	Floating File	32	F F:E	F8:0	F255:255
ST	String File	1/16	ST F:E.D	ST9:0.0	ST255:255.41
L	Long word File	32	L F:E	L9:0	L255:255

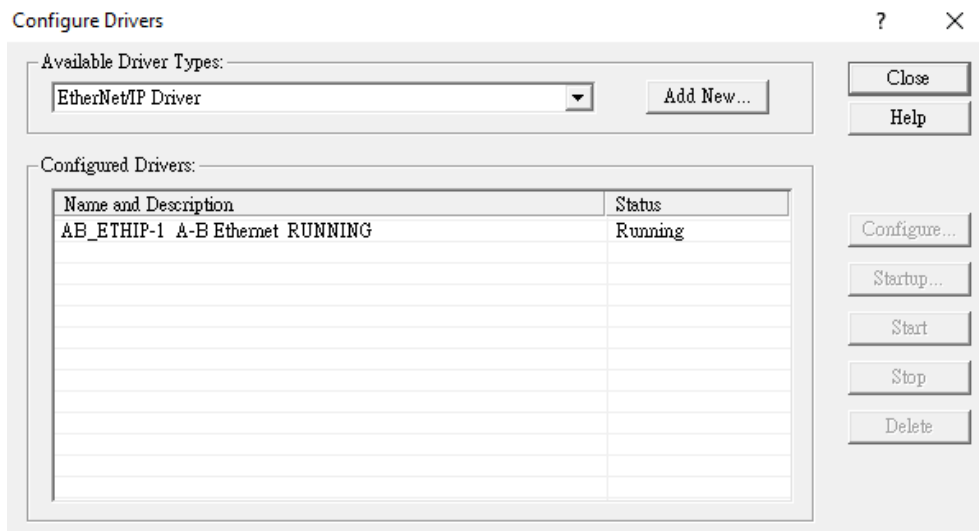
2.7.4.3 Connected Setting

Configuring IP Address on PLC

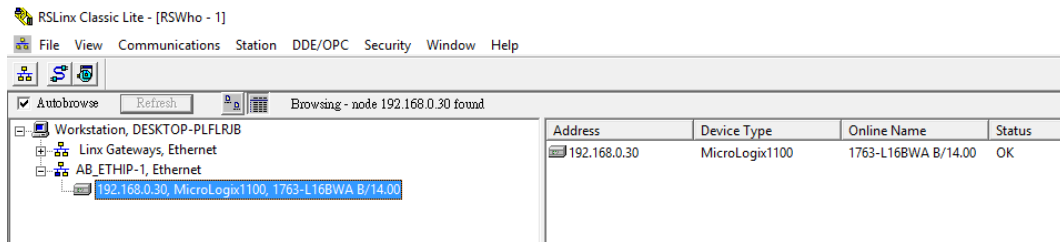
If the IP address needs to be configured, follow the steps below.

Use the applications **RSLink Classic Lite** and **RSLogix 500** to configure the IP address of the PLC.

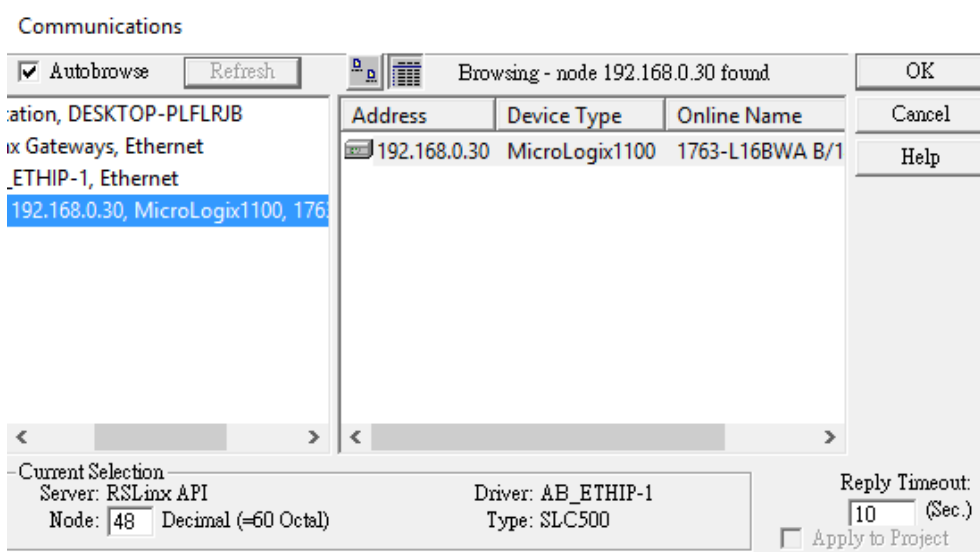
First open **RSLink Classic Lite** to set up a connection between the computer and PLC. An Ethernet cable needs to be connected to the PLC and the computer must be online. In the **Communications** menu tab, select **Configure Drivers**. Select **EtherNet/IP Driver** and press 'Add New'. Select "Your Network Interface Card" and press OK. Start the Driver and close out of the dialog window.



Under the new Ethernet driver, the PLC connected to the local network should be visible. If the status of the device is OK, open up **RSLogix 500**.



In **RSLogix 500**, under the **Comms** menu option, select **Who Active go Online**. In the dialog window that appears, select the PLC device connected through RSLinx.



Press **Create New File** in the dialog window that appears after pressing OK. On the left side of the program, double click **Channel Configuration** to access the PLC's Ethernet settings. Under the Channel 1 tab, the IP address can be changed.

Channel Configuration
✕

General
Channel 0
Channel 1

Driver: Ethernet

Hardware Address: 00:1D:9C:A1:62:93

IP Address: 192 . 168 . 0 . 30

Subnet Mask: 255 . 255 . 255 . 0

Gateway Address: 192 . 168 . 0 . 1

Default Domain Name:

Primary Name Server: 192 . 168 . 0 . 1

Secondary Name Server: 255 . 0 . 0 . 0

Network Link ID 0

Protocol Control

☐ BOOTP Enable ☐ DHCP Enable

☐ SNMP Server Enable

☐ HTTP Server Enable

Msg Connection Timeout (x 1mS): 15000

Msg Reply Timeout (x 1mS): 3000

☒ Auto Negotiate

Port Setting 10/100 Mbps Full Duplex/Half Duplex

Contact:

Location:

OK
Cancel
Apply
Help

Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: Allen-Bradley

Product Series: Micrologix (EtherNet/IP)

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192.168.0.30 | Timeout(ms): 3000

Port: 44818 | Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

Device Name:

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Allen-Bradley

Under **Product Series** select Micrologix (Ethernet/IP)

Enter the **IP Address** that was written into the PLC.

Keep the **Port** at the default setting.

2.7.5 MicroLogix Series

2.7.5.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
PLC Station No.	1	

TX Control	CRC	CRC/BCC
Communication Method	DF1 Protocol	

2.7.5.2 PLC Resource Review

Device	Description	Data bit	Input format	Min.	Max.
O	Output File	1/16	O F:S.D	O0:0.0	O0:30.255
I	Input File	1/16	I F:S.D	I1:0.0	I1:30.255
S	Status File	1/16	S F:E	S2:0	S2:163
B	Bit File	1/16	B F:E	B3:0	B255:255
T	Timer File	1/16	T F:E.D	T4:0.0	T255:255.2
C	Counter File	1/16	C F:E.D	C5:0.0	C255:255.2
R	Control File	1/16	R F:E.D	R6:0.0	R255:255.2
N	Integer File	1/16	N F:E	N7:0	N255:255
F	Floating File	32	F F:E	F8:0	F255:255
ST	String File	1/16	ST F:E.D	ST9:0.0	ST255:255.41
L	Long word File	32	L F:E	L9:0	L255:255

2.7.5.3 Connected Setting

Configuring of PLC

To connect the PLC to a computer, follow the same steps detailed in the previous chapter. Configuring the serial connection of the PLC is the same as configuring the IP address of the PLC.

Double click **Channel Configuration** and navigate to the Channel 0 tab. Here, the serial connection settings can be adjusted if needed.

Channel Configuration ✕

General Channel 0 Channel 1

Driver DF1 Full Duplex Source ID 1 (decimal)

Baud 19200

Parity NONE

Protocol Control

Control Line No Handshaking ACK Timeout (x20 ms) 50

Error Detection CRC

Embedded Responses Auto Detect

☒ Duplicate Packet Detect

NAK Retries 3

ENQ Retries 3

OK Cancel Apply Help

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Serial

Manufacturer: Allen-Bradley

Product Series: Micrologix

Interface Setting

Basic | Comm. Error Handling

Port: COM1 | Timeout(ms): 3000

Baudrate: 19200 | Command Delay(ms): 0

Parity: None | Retry Count: 0

Data Bits: 8 | TX Control Procedure: CRC

Stop Bits: 1

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Allen-Bradley

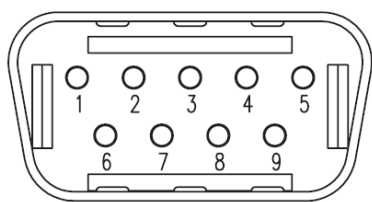
Under **Product Series** select Micrologix

Under **Port** select COM1

Verify the other parameters are consistent with the ones set on the PLC.

2.7.5.4 Wiring Diagrams

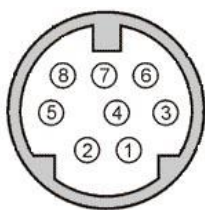
HMI COM1 Pinout



*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

PLC RS232 Pinout

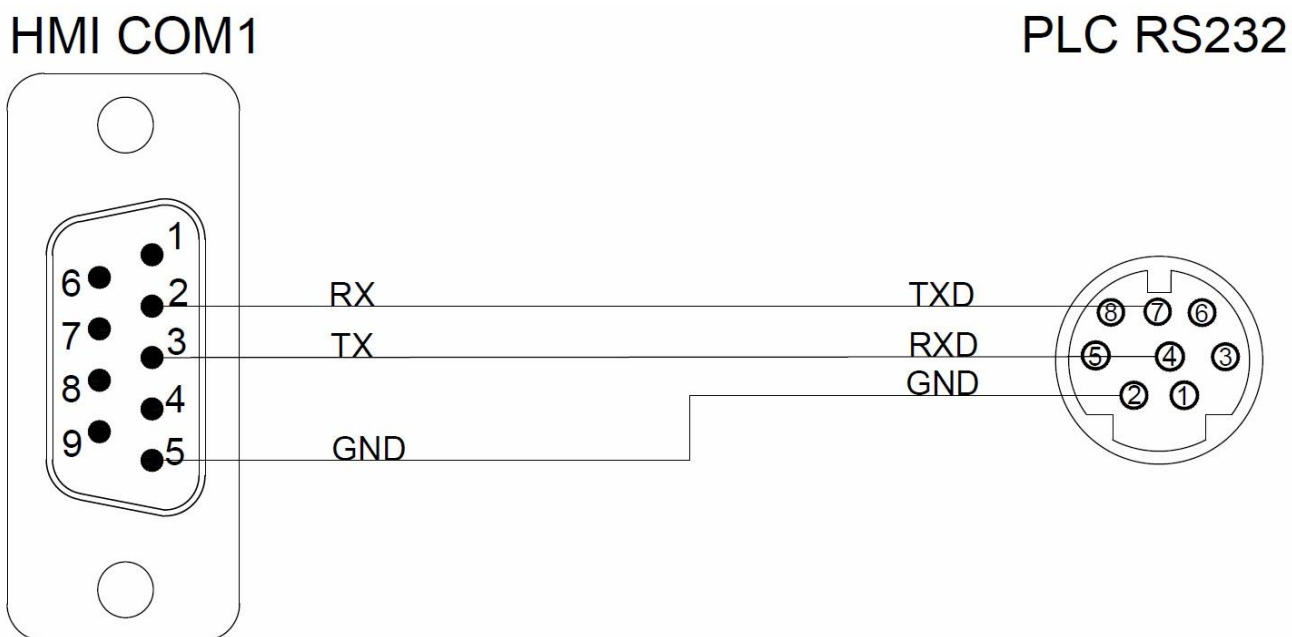


*Looking into PLC

PIN#	Signal
1	
2	GND
3	
4	RXD
5	
6	
7	TXD
8	

HMI COM1	PLC RS232 Port
2 RX	7 TXD
3 TX	4 RXD
5 GND	2 GND

Wiring Diagrams:



2.8 Taiwan Instrument & Control Co., Ltd.

2.8.1 FY Series

2.8.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485 2W	
Baud Rate	38400	
Data Length	8	
Stop Bit	1	
Parity	Odd	
PLC Station No.	0	

Communication Method	MODBUS RTU	
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2.8.1.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
SV	Set Point	16	D	0	0
OUTL	Output Limit	16	D	0	0
AT	Auto Tuning	16	D	0	0
AL1	Alarm 1 set value	16	D	0	0
AL2	Alarm 2 set value	16	D	0	0
AL3	Alarm 3 set value	16	D	0	0
PTN	Program Pattern	16	D	0	0
SEG	Program Segment Display	16	D	0	0
TIMR	Program Countdown Display	16	D	0	0
SV_1	Set Point of Seg.1(Pattern 1)	16	D	0	0
TM_1	Run Time of Seg.1(Pattern 1)	16	D	0	0
OUT1	Output Limit of Seg.1(Pattern 1)	16	D	0	0
SV_2	Set Point of Seg.2(Pattern 1)	16	D	0	0
TM_2	Run Time of Seg.2(Pattern 1)	16	D	0	0
OUT2	Output Limit of Seg.2(Pattern 1)	16	D	0	0
SV_3	Set Point of Seg.3(Pattern 1)	16	D	0	0
TM_3	Run Time of Seg.3(Pattern 1)	16	D	0	0
OUT3	Output Limit of Seg.3(Pattern 1)	16	D	0	0
SV_4	Set Point of Seg.4(Pattern 1)	16	D	0	0
TM_4	Run Time of Seg.4(Pattern 1)	16	D	0	0
OUT4	Output Limit of Seg.4(Pattern 1)	16	D	0	0
SV_5	Set Point of Seg.5(Pattern 1)	16	D	0	0
TM_5	Run Time of Seg.5(Pattern 1)	16	D	0	0
OUT5	Output Limit of Seg.5(Pattern 1)	16	D	0	0
SV_6	Set Point of Seg.6(Pattern 1)	16	D	0	0
TM_6	Run Time of Seg.6(Pattern 1)	16	D	0	0
OUT6	Output Limit of Seg.6(Pattern 1)	16	D	0	0
SV_7	Set Point of Seg.7(Pattern 1)	16	D	0	0
TM_7	Run Time of Seg.7(Pattern 1)	16	D	0	0
OUT7	Output Limit of Seg.7(Pattern 1)	16	D	0	0
SV_8	Set Point of Seg.8(Pattern 1)	16	D	0	0
TM_8	Run Time of Seg.8(Pattern 1)	16	D	0	0

OUT8	Output Limit of Seg.8(Pattern 1)	16	D	0	0
SV_12	Set Point of Seg.1(Pattern 2)	16	D	0	0
TM_12	Run Time of Seg.1(Pattern 2)	16	D	0	0
OUT12	Output Limit of Seg.1(Pattern 2)	16	D	0	0
SV_22	Set Point of Seg.2(Pattern 2)	16	D	0	0
TM_22	Run Time of Seg.2(Pattern 2)	16	D	0	0
OUT22	Output Limit of Seg.2(Pattern 2)	16	D	0	0
SV_32	Set Point of Seg.3(Pattern 2)	16	D	0	0
TM_32	Run Time of Seg.3(Pattern 2)	16	D	0	0
OUT32	Output Limit of Seg.3(Pattern 2)	16	D	0	0
SV_42	Set Point of Seg.4(Pattern 2)	16	D	0	0
TM_42	Run Time of Seg.4(Pattern 2)	16	D	0	0
OUT42	Output Limit of Seg.4(Pattern 2)	16	D	0	0
SV_52	Set Point of Seg.5(Pattern 2)	16	D	0	0
TM_52	Run Time of Seg.5(Pattern 2)	16	D	0	0
OUT52	Output Limit of Seg.5(Pattern 2)	16	D	0	0
SV_62	Set Point of Seg.6(Pattern 2)	16	D	0	0
TM_62	Run Time of Seg.6(Pattern 2)	16	D	0	0
OUT62	Output Limit of Seg.6(Pattern 2)	16	D	0	0
SV_72	Set Point of Seg.7(Pattern 2)	16	D	0	0
TM_72	Run Time of Seg.7(Pattern 2)	16	D	0	0
OUT72	Output Limit of Seg.7(Pattern 2)	16	D	0	0
SV_82	Set Point of Seg.8(Pattern 2)	16	D	0	0
TM_82	Run Time of Seg.8(Pattern 2)	16	D	0	0
OUT82	Output Limit of Seg.8(Pattern 2)	16	D	0	0
P1	OUT1 Proportional Band	16	D	0	0
I1	OUT1 Integral Time	16	D	0	0
D1	OUT1 Derivative Time	16	D	0	0
DB1	Dead-band Time	16	D	0	0
ATVL	Auto Tuning Offset	16	D	0	0
CYT1	OUT1 Cycle Time	16	D	0	0
HYS1	OUT1 Hysteresis	16	D	0	0
P2	OUT2 Proportional Band	16	D	0	0
I2	OUT2 Integral Time	16	D	0	0
D2	OUT2 Derivative Time	16	D	0	0
CYT2	OUT2 Cycle Time	16	D	0	0

HYS2	OUT2 Hysteresis	16	D	0	0
GAP1	OUT1 Control Gap	16	D	0	0
GAP2	OUT2 Control Gap	16	D	0	0
LCK	Function Lock	16	D	0	0
INP1	Input Type Selection	16	D	0	0
ANL1	Linear Input Zero Calibration	16	D	0	0
ANH1	Linear Input Span Calibration	16	D	0	0
DP	Decimal Point Position	16	D	0	0
LSPL	Lower Set Point Limit	16	D	0	0
USPL	Upper Set Point Limit	16	D	0	0
ANL2	Remote Input Zero Calibration	16	D	0	0
ANH2	Linear Input Span Calibration	16	D	0	0
ALD1	Alarm mode for AL1	16	D	0	0
ALT1	Alarm time for AL1	16	D	0	0
ALD2	Alarm mode for AL2	16	D	0	0
ALT2	Alarm time for AL2	16	D	0	0
ALD3	Alarm mode for AL3	16	D	0	0
ALT3	Alarm time for AL3	16	D	0	0
HYS2	Hysteresis for all Alarms	16	D	0	0
CLO1	OUT1 Lower Calibration	16	D	0	0
CHO1	OUT1 Upper Calibration	16	D	0	0
CLO2	OUT1 Lower Calibration	16	D	0	0
CHO2	OUT1 Upper Calibration	16	D	0	0
CLO3	TRS Lower Calibration	16	D	0	0
CHO3	TRS Upper Calibration	16	D	0	0
RUCY	Full run time of motor valve	16	D	0	0
WAIT	Full run time of proportional motor valve	16	D	0	0
SETA		16	D	0	0
PSL	Protocol Selection	16	D	0	0
BITS	Communication Bits	16	D	0	0
IDNO	ID Number	16	D	0	0
BAUD	Baud rate	16	D	0	0
SVOS	SV Compensation	16	D	0	0
PVOS	PV Compensation	16	D	0	0
UNIT	Unit of PV and SV	16	D	0	0

PVFT	PV Filter	16	D	0	0
CASC		16	D	0	0
OUd	Heating / Cooling selection	16	D	0	0
OPAD	Control Algorithm	16	D	0	0
HZ	Power Frequency	16	D	0	0
SET1	Hide/ Display parameter	16	D	0	0
SET2	Hide/ Display parameter	16	D	0	0
SET3	Hide/ Display parameter	16	D	0	0
SET4	Hide/ Display parameter	16	D	0	0
SET5	Hide/ Display parameter	16	D	0	0
SET6	Hide/ Display parameter	16	D	0	0
SET7	Hide/ Display parameter	16	D	0	0
SET8	Hide/ Display parameter	16	D	0	0
SET9	Hide/ Display parameter	16	D	0	0
SET0	Hide/ Display parameter	16	D	0	0
INP2	Hide/ Display parameter	16	D	0	0
OUTY	Hide/ Display parameter	16	D	0	0
VER	Output mode selection	16	D	0	0
OUT%	Firmware Version	16	D	0	0
OBIT	Output percentage	16	D	0	0
CV	CT Current Value	16	D	0	0
PV	Process Value	16	D	0	0

2.8.1.3 Connected Setting

Configuring of PLC

Press  +  key 3 seconds to configure parameters in Level 3

Character	Name , Functions and Setting range	Default
<i>P S L</i>	Protocol Selection <i>r t U</i> : MODBUS RTU Protocol <i>R S C I</i> : MODBUS ASCII Protocol <i>t R i E</i> : TAIE Protocol	<i>r t U</i>
<i>b i t S</i>	Communication Bits <i>O _ B 1</i> : Odd parity , Data bits = 8 , Stop Bit = 1 <i>O _ B 2</i> : Odd parity , Data bits = 8 , Stop Bit = 2 <i>E _ B 1</i> : Even parity , Data bits = 8 , Stop Bit = 1 <i>E _ B 2</i> : Even parity , Data bits = 8 , Stop Bit = 2	<i>O _ B 1</i>
<i>I d , N O</i>	ID Number Range : 0 ~ 255	1
<i>b A U d</i>	Communication Baud rate <i>2 4</i> : 2400 bps <i>4 8</i> : 4800 bps <i>9 6</i> : 9600 bps <i>1 9 2</i> : 19200 bps <i>3 8 4</i> : 38400 bps	384

- When parameter *b i t S* or *b A U d* was changed, always turn on the power again. Otherwise, no communication is performed by using the changed value.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Taiwan Instrument & Control Co.,Ltd.

Under **Product Series** select TAIE FY100/900 Series.

Verify the parameters match the window above.

2.8.1.4 Wiring diagrams

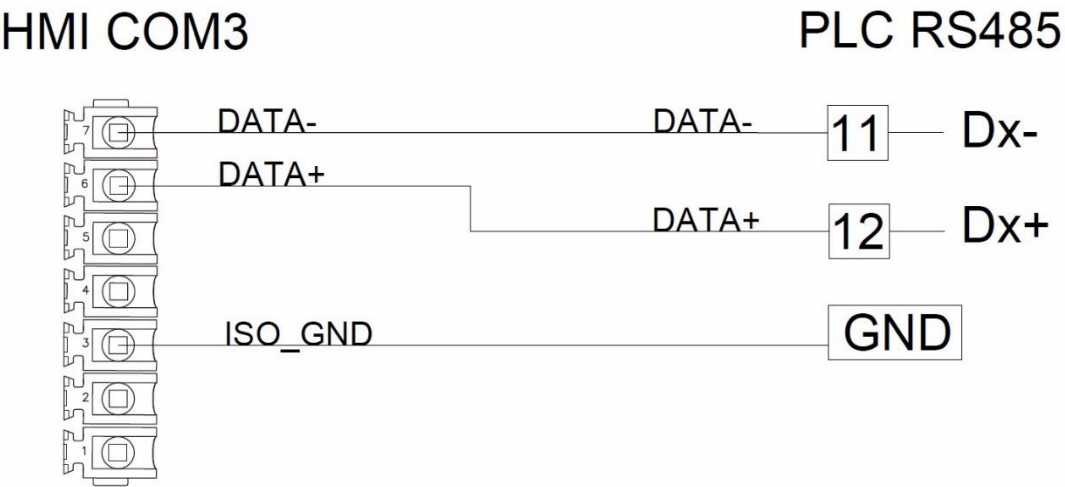
HMI COM3 Pinout

PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	
5	

6	DATA+
7	DATA-

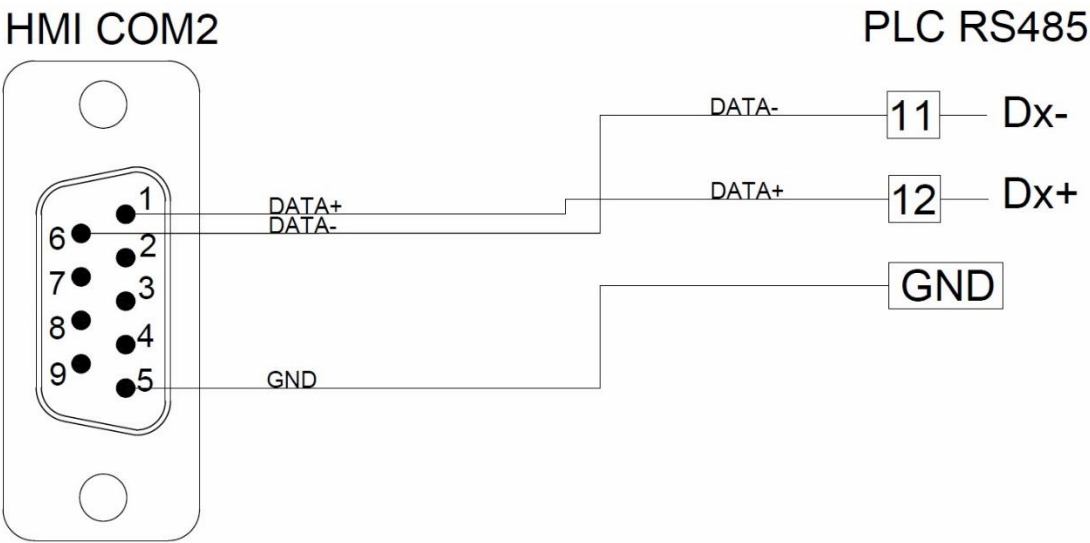
HMI COM3 Port	PLC RS485 Port
6 DATA+	12 DATA+
7 DATA-	11 DATA-
3 ISO_GND	GND

Wiring Diagrams



HMI COM2 Port	PLC RS485 Port
1 DATA+	12 DATA+
6 DATA-	11 DATA-
5 GND	GND

Wiring Diagrams



2.9 Delta

2.9.1 DVP Series

2.9.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	0	
Communication Method	MODBUS ASCII	

2.9.1.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	Input relay	1	OOO	0	377
Y	Output relay	1	OOO	0	377
M	Auxiliary relay	1	DDDD	0	4095
S	Step	1	DDDD	0	1023
T	Timer	1	DDD	0	255
C	Counter	1	DDD	0	255
CV	Counter memory	16	DDD	0	199
TV	Timer memory	16	DDD	0	255
D	Data register	16	DDDDD	0	11999
SCV	Counter memory	32	DDD	200	255

2.9.1.3 Connected Setting

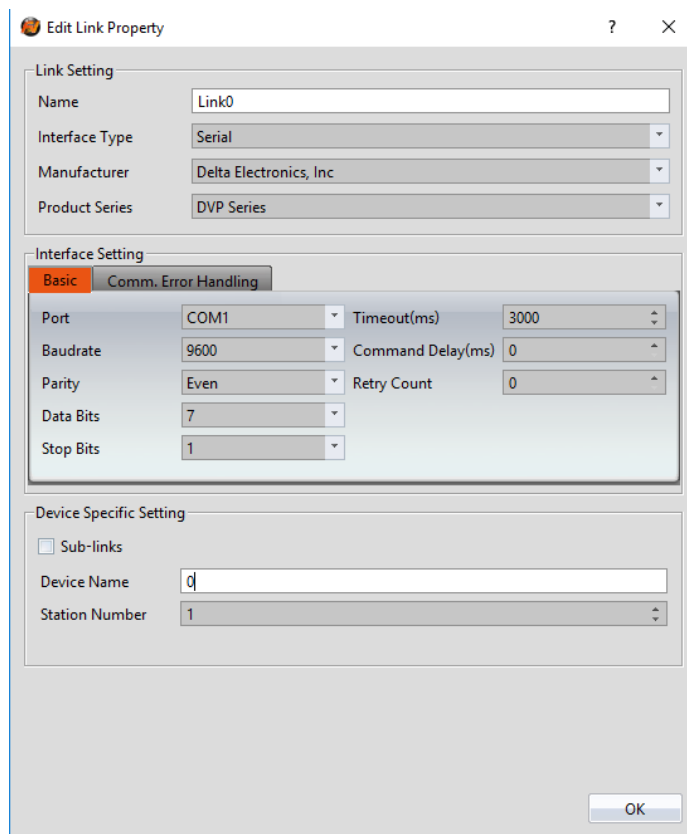
Configuring of PLC

Use ISPsoft to configure the port of the PLC.

But RS232 can't change setting.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

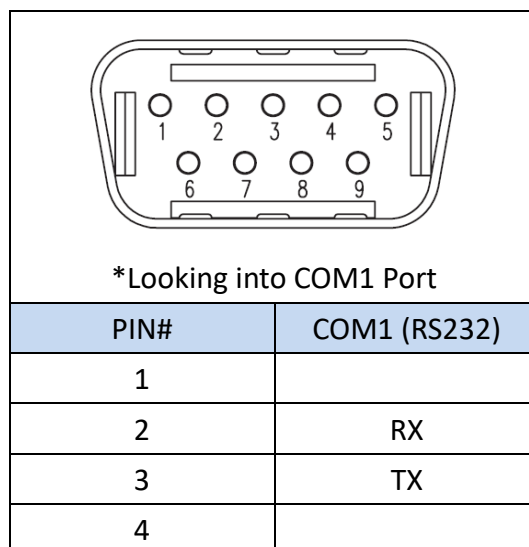
Under **Manufacturer** select Delta Electronics, Inc

Under **Product Series** select DVP Series

Make sure the other parameters are set at the values in the figure.

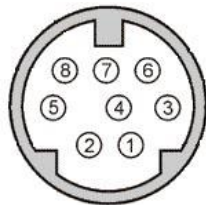
2.9.1.4 Wiring Diagrams

HMI COM1 Pinout



5	GND
6	
7	RTS
8	CTS
9	

PLC RS232 Pinout



*Looking into PLC

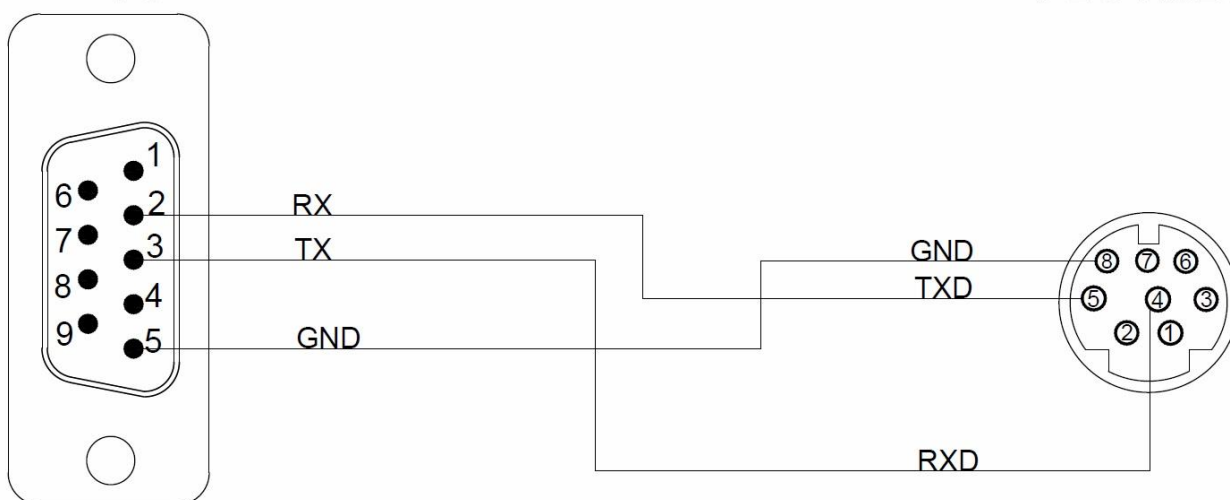
PIN#	Signal
1	
2	
3	
4	RXD
5	TXD
6	
7	
8	GND

HMI COM1	PLC RS232 Port
2 RX	5 TXD
3 TX	4 RXD
5 GND	8 GND

Wiring Diagrams:

HMI COM1

PLC RS232



2.9.2 AH500 Series

2.9.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	
Communication Method	MODBUS ASCII	

2.9.2.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	Input relay	1	DDD.D	0.0	511.15
		16	DDD	0	511
Y	Output relay	1	DDD.D	0.0	511.15

		16	DDD	0	511
D	Data register	1	DDDDD.D	0	65535.15
		16	DDDDD	0	65535
L	Link register	1	DDDDD.D	0	65535.15
		16	DDDDD	0	65535
M	Auxiliary relay	1	DDDD	0	8191
SM	Special Auxiliary Relay	1	DDDD	0	2047
S	Stepping Relay	1	DDDD	0	2047
T	Timer	1	DDDD	0	2047
TV	Timer memory	16	DDDD	0	2047
C	Counter	1	DDDD	0	2047
CV	Counter memory	16	DDDD	0	2047
HC	32-bit Counter	1	DD	0	63
HCV	32-bit Counter memory	32	DD	0	63
SR	Special data register	16	DDDD	0	2047
E	Index register	16	DD	0	31

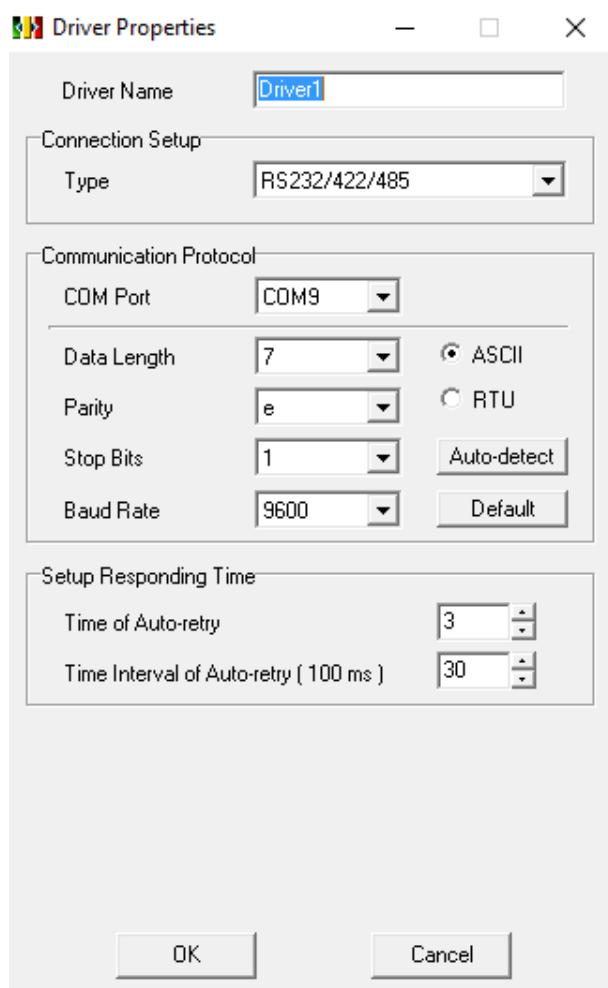
2.9.2.3 Connected Setting

Configuring of PLC

Use the application **ISPSOft** (Ver. 2.05) to configure the PLC. The application **COMMGR** is used to establish the connection between the PLC and the computer.

Open **COMMGR**. The application opens in the system tray. Double click the icon to open it.

In Device Manager, verify the port number the PLC is connected to. In COMMGR, press **Add** and for **Connection Setup**, select RS232/422/485 for type. Select the port number the PLC is connected to for the **COM Port** setting. Press **Auto-detect** and the application will automatically adjust the rest of the parameters.



Driver Properties

Driver Name:

Connection Setup

Type:

Communication Protocol

COM Port:

Data Length: ☒ ASCII ☐ RTU

Parity:

Stop Bits:

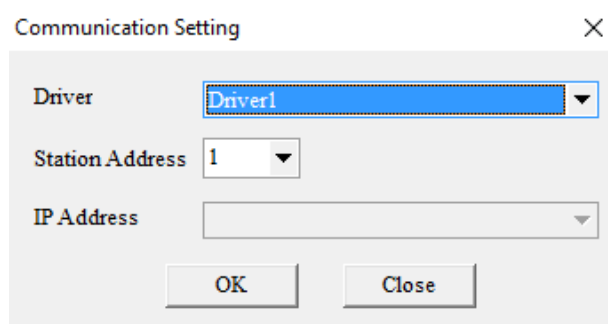
Baud Rate:

Setup Responding Time

Time of Auto-retry:

Time Interval of Auto-retry (100 ms) :

In **ISPSOft**, under the **Tools** menu option, select **Communication Settings**. Select the name of the connection configured in **COMMGR** and press **OK**.



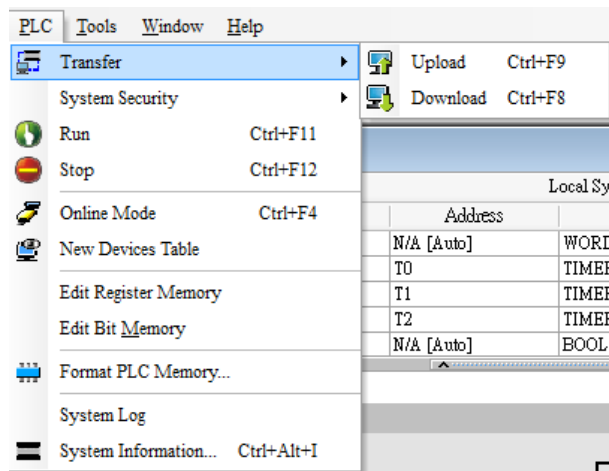
Communication Setting

Driver:

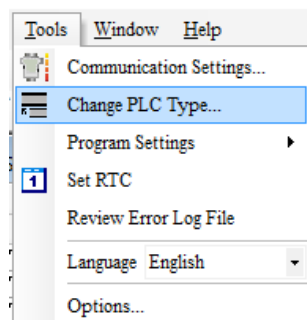
Station Address:

IP Address:

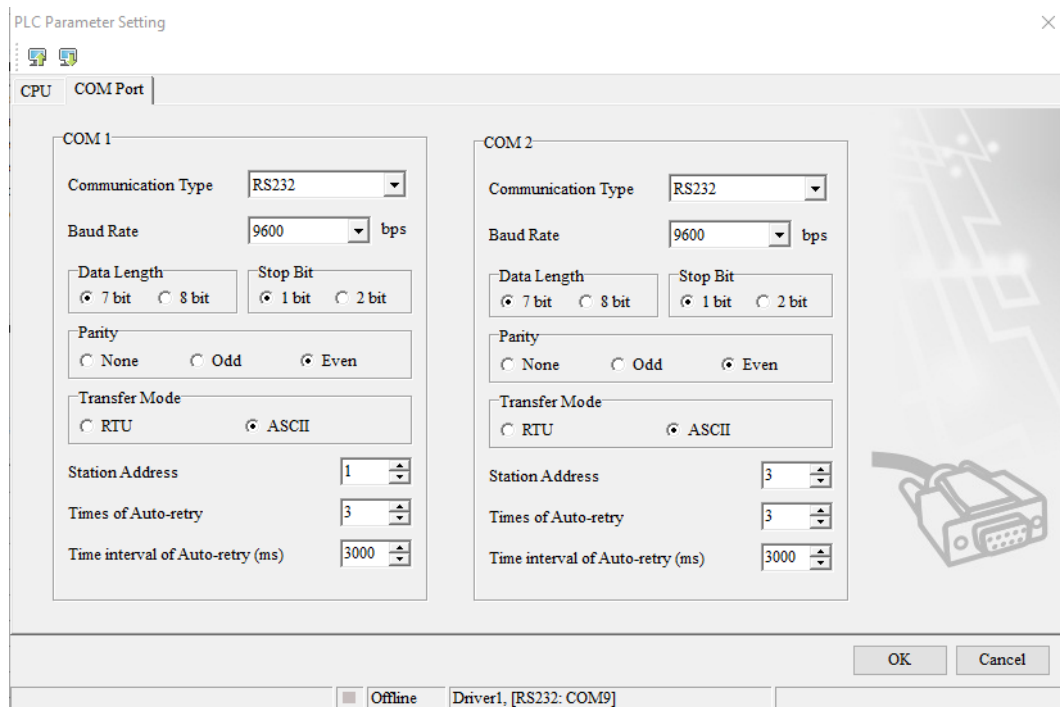
Under the **PLC** menu option, select **Transfer** and **Upload**. If there is a program on the PLC, it will be uploaded and the system settings can be configured. If there is no program present on the PLC one will have to be downloaded.



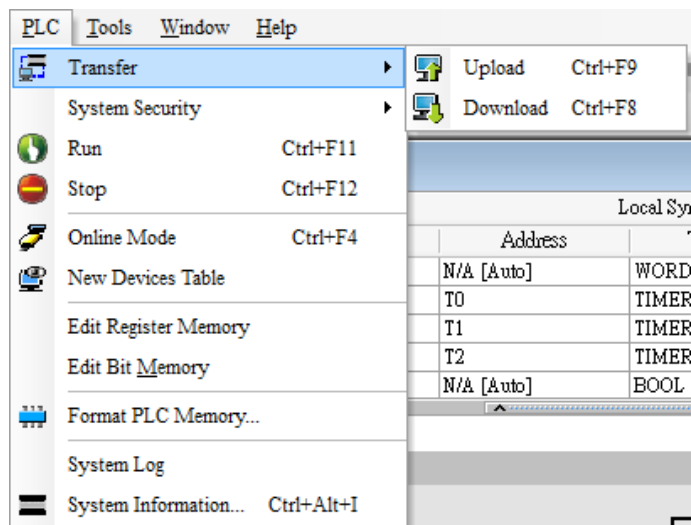
If program has to be downloaded onto the PLC, press open and select a program. In the active folder, there are example programs. The device associated with the example program may not be the same as the device connected. Under **Tools**, select **PLC Type** and select the device currently used. Once a program is opened, the PLC settings can be configured.



In the Project sidebar, double click **HWCONFIG**. Double click the **CPU** module and navigate to the **COM Port** tab in the settings dialog. Adjust communication parameters and press OK to confirm the settings.

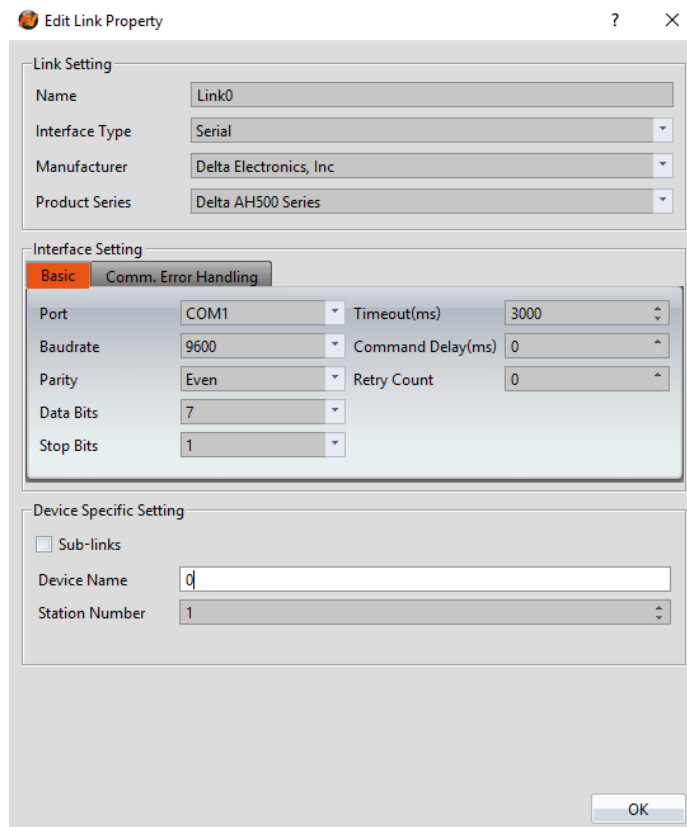


Under the **PLC** menu option, the program and PLC configurations can be downloaded onto the device.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Delta Electronics, Inc

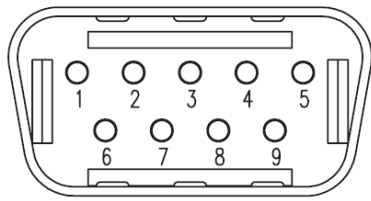
Under **Product Series** select Delta AH500 Series

Select the appropriate **Port** to establish connection with the PLC.

Verify the other parameters are configured correctly.

2.9.2.4 Wiring Diagrams

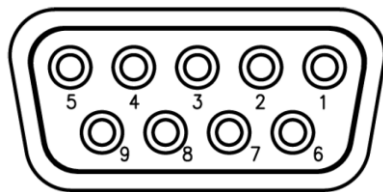
HMI COM1 Pinout



*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

PLC COM1/COM2 Pinout

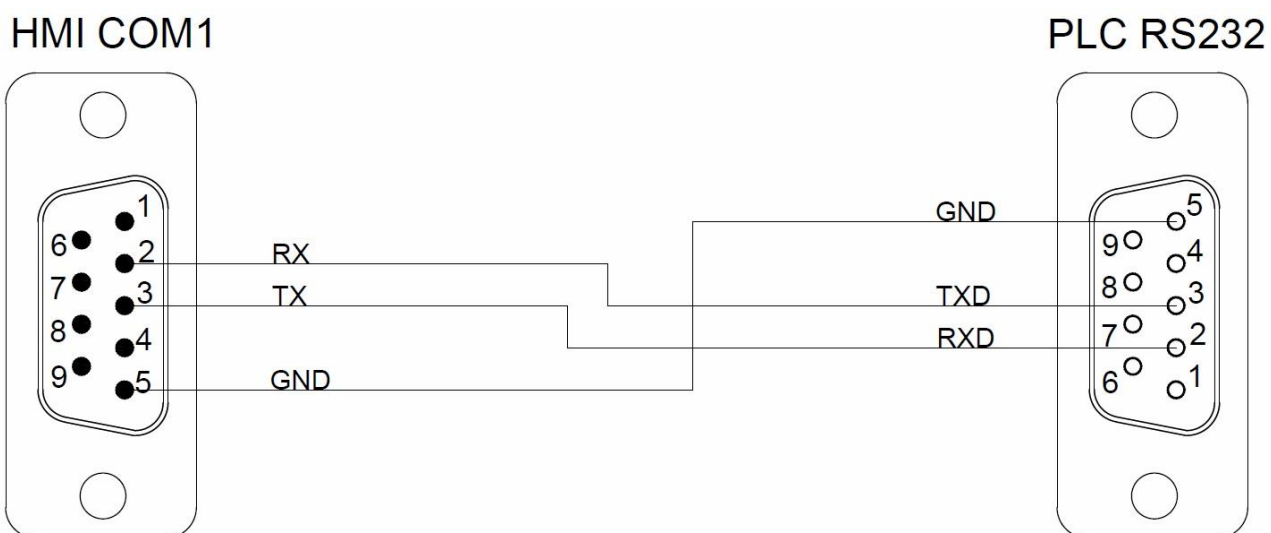


*Looking into PLC

PIN#	Signal
1	
2	RXD
3	TXD
4	
5	GND
6	
7	
8	
9	

HMI COM1	PLC RS232 Port
2 RX	3 TXD
3 TX	2 RXD
5 GND	5 GND

Wiring Diagrams:



2.9.3 AS300 Series(ASCII)

2.9.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	
Communication Method	MODBUS ASCII	

2.9.3.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	Input Relay	16	DD	0	63

Y	Output Relay	16	DD	0	63
M_Bit	Auxiliary Relay	1	DDDD	0	8191
SM_Bit	Special Auxiliary Relay	1	DDDD	0	4095
SR_Word	Special Auxiliary Relay	16	DDDD	0	2047
D	Data Register	16	DDDDD	0	29999
S_Bit	Stepping Relay	1	DDDD	0	2047
T_Bit	Timer	1	DDD	0	511
T_Word	Timer	16	DDD	0	511
C_Bit	Counter	1	DDD	0	511
C_Word	Counter	16	DDD	0	511
HC_Bit	32-Bit Counter	1	DDD	0	255
HC_DWord	32-Bit Counter	32	DD	0	255
E_Word	Index Register	16	D	0	9

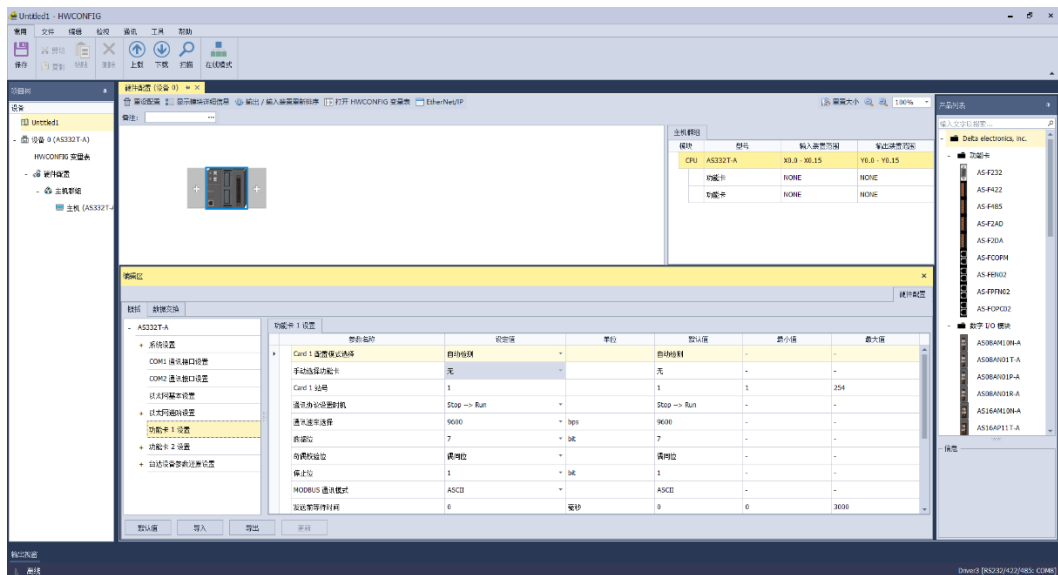
2.9.3.3 Connected Setting

Configuring of PLC

Using **COMMGR** to create the connection setting between PLC and PC.

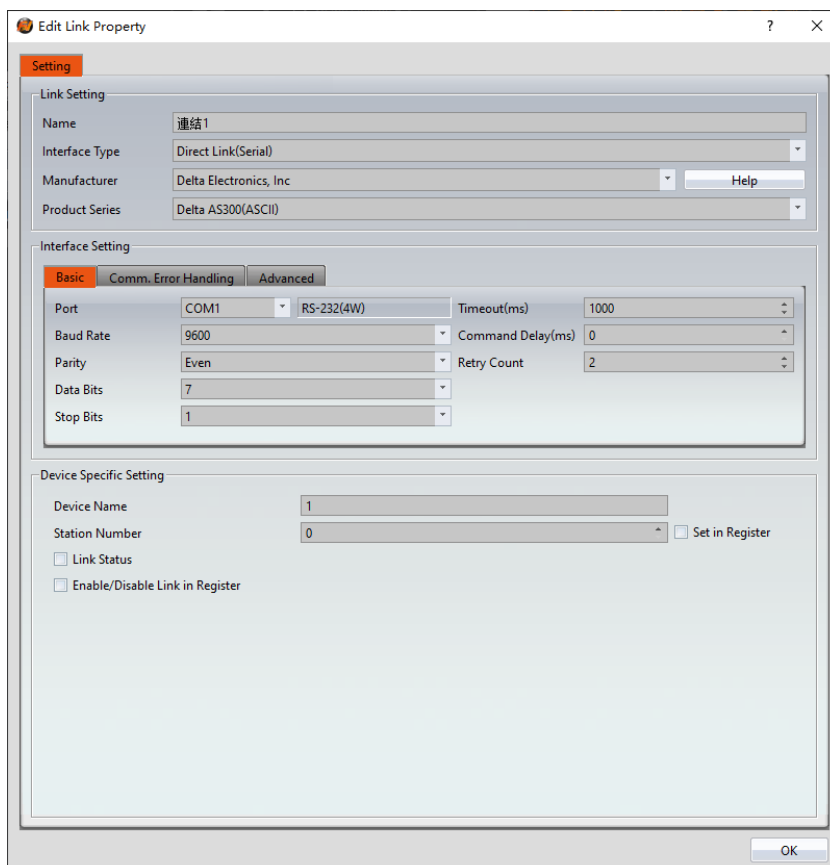


In **ISPSOFT**, under the **Tools** menu option, select **HWCONFIG**. Select the **Function CARD** and set the PLC connection setting.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

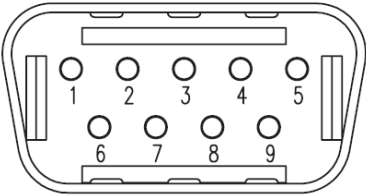
Under **Manufacturer** select Delta Electronics, Inc

Under **Product Series** select Delta AS300(ASCII)

Select the appropriate **Port** to establish connection with the PLC.
Verify the other parameters are configured correctly.

2.9.3.4 Wiring Diagram

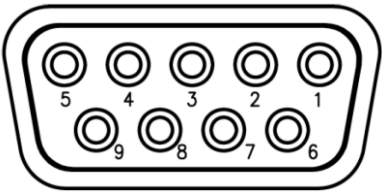
HMI COM1 Pinout



*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

PLC COM1/COM2 Pinout



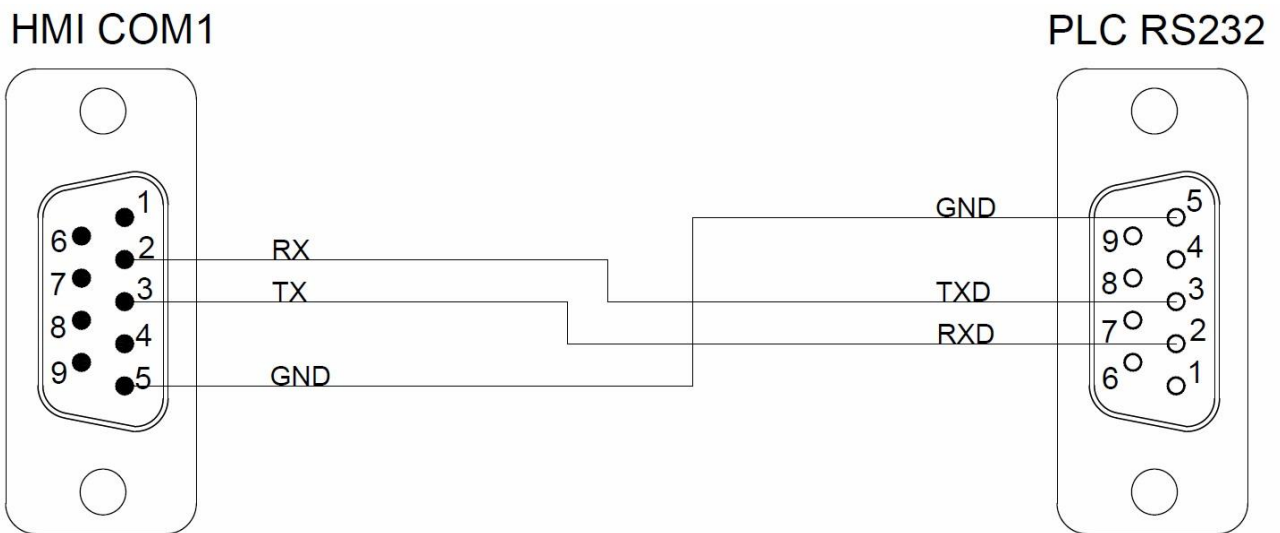
*Looking into PLC

PIN#	Signal
1	
2	RXD
3	TXD
4	
5	GND

6	
7	
8	
9	

HMI COM1	PLC RS232 Port
2 RX	3 TXD
3 TX	2 RXD
5 GND	5 GND

Wiring Diagrams:



2.9.4 AS300 Series(RTU)

2.9.4.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	
Communication Method	MODBUS RTU	

2.9.4.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	Input Relay	16	DD	0	63
Y	Output Relay	16	DD	0	63
M_Bit	Auxiliary Relay	1	DDDD	0	8191
SM_Bit	Special Auxiliary Relay	1	DDDD	0	4095
SR_Word	Special Auxiliary Relay	16	DDDD	0	2047
D	Data Register	16	DDDDD	0	29999
S_Bit	Stepping Relay	1	DDDD	0	2047
T_Bit	Timer	1	DDD	0	511
T_Word	Timer	16	DDD	0	511
C_Bit	Counter	1	DDD	0	511
C_Word	Counter	16	DDD	0	511
HC_Bit	32-Bit Counter	1	DDD	0	255
HC_DWord	32-Bit Counter	32	DD	0	255
E_Word	Index Register	16	D	0	9

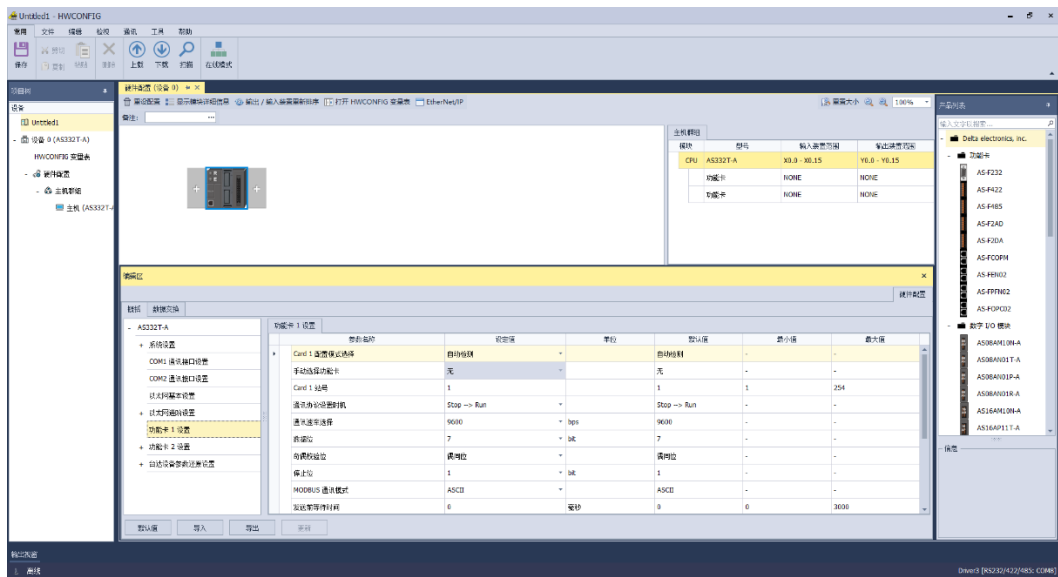
2.9.4.3 Connected Setting

Configuring of PLC

Using **COMMGR** to create the connection setting between PLC and PC.

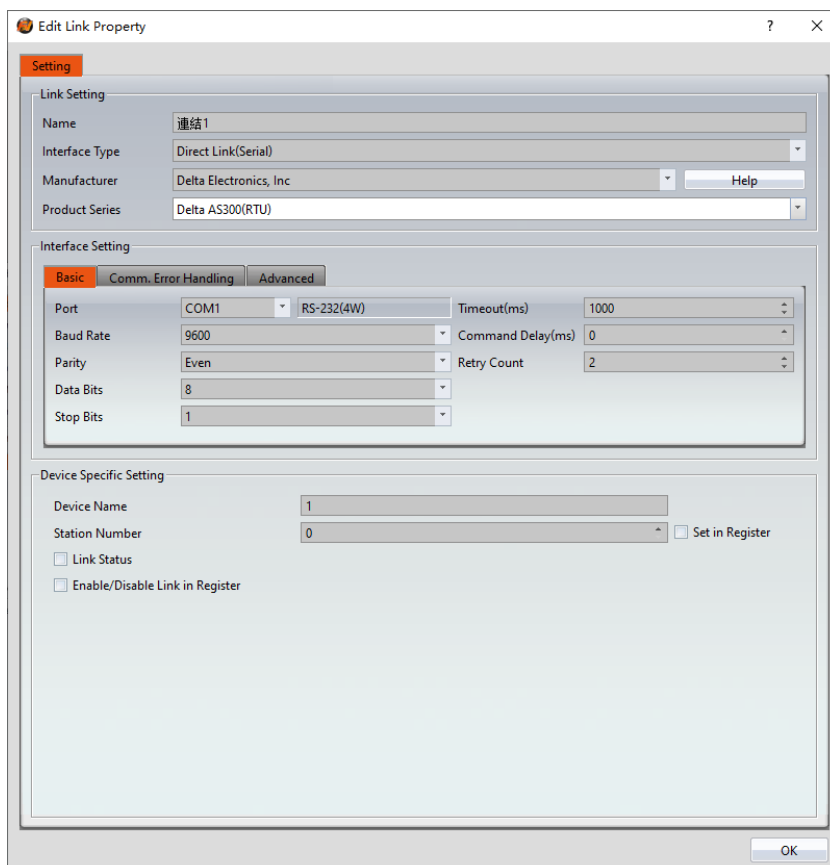


In **ISPSoft**, under the **Tools** menu option, select **HWCONFIG**. Select the **Function CARD** and set the PLC connection setting.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

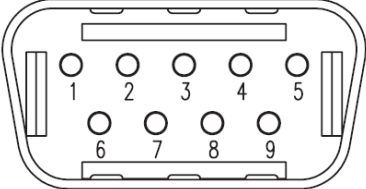
Under **Manufacturer** select Delta Electronics, Inc

Under **Product Series** select Delta AS300(RTU)

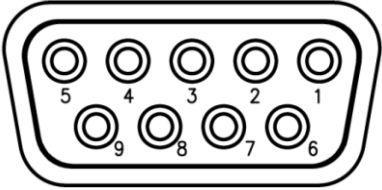
Select the appropriate **Port** to establish connection with the PLC.
Verify the other parameters are configured correctly.

2.9.4.4 Wiring Diagram

HMI COM1 Pinout

	
*Looking into COM1 Port	
PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

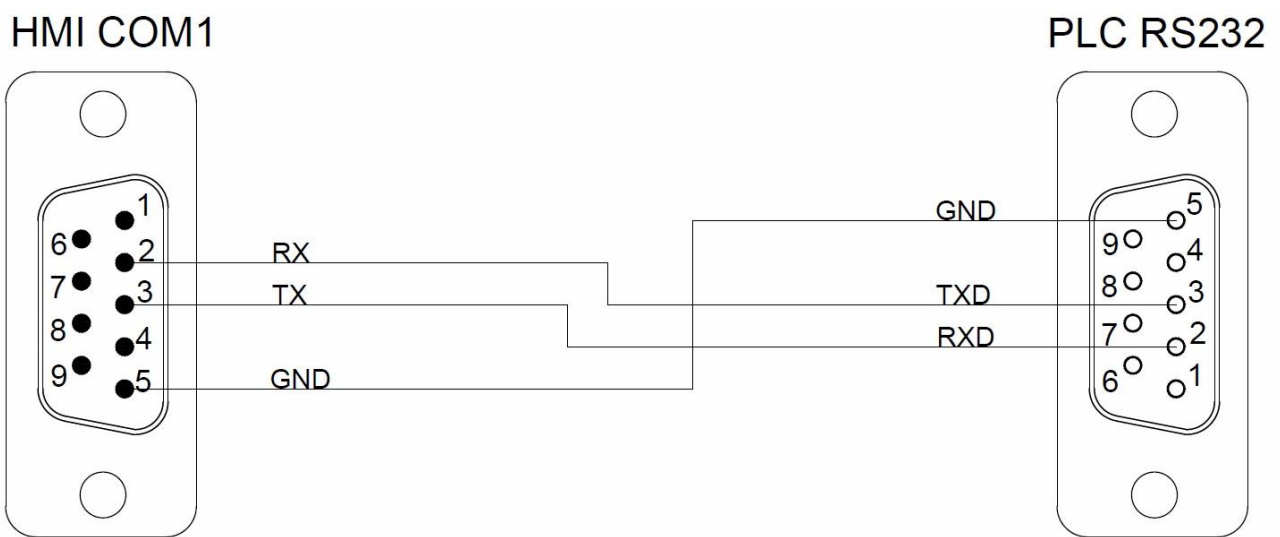
PLC COM1/COM2 Pinout

	
*Looking into PLC	
PIN#	Signal
1	
2	RXD
3	TXD
4	
5	GND
6	

7	
8	
9	

HMI COM1	PLC RS232 Port
2 RX	3 TXD
3 TX	2 RXD
5 GND	5 GND

Wiring Diagrams:



2.9.5 ES3 Series

2.9.5.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.1.100	
Port	502	
PLC Station No.	1	
Communication Method	V1.6.7, Delta DVPES3(TCP)	

2.9.5.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
--------	-------------	----------	--------------	------	------

X	Input Relay	1	000	0	377
Y	Output Relay	1	000	0	377
M	Auxiliary Relay	1	DDDD	0	8191
SM	Special Auxiliary Relay	1	DDDD	0	4095
SR	Special Auxiliary Relay	16	DDDD	0	2047
D	Data Register	16	DDDDD	0	29999
S	Stepping Relay	1	DDDD	0	2047
T_Bit	Timer	1	DDD	0	511
T_Word	Timer	16	DDD	0	511
C_Bit	Counter	1	DDD	0	511
C_Word	Counter	16	DDD	0	511
HC_Bit	32-Bit Counter	1	DDD	0	255
HC_D Word	32-Bit Counter	32	DDD	0	255
E	Index Register	16	D	0	9

2.9.5.3 Connected Setting

Configuring of HMI

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: Panasonic Corporation

Product Series: FP series(Ethernet)

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192.168.0.30 | Timeout(ms): 1000

Port: 9094 | Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Delta Electronics, Inc.

Under **Product Series** select Delta ES3 Series.

Enter the **IP Address** that was written into the PLC.

Enter the **Port** number that was set on the PLC.

2.10 Panasonic

2.10.1 FP Series

2.10.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Odd	
PLC Station No.	1	
Communication Method	MEWTOCOL (computer link)	

2.10.1.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	External input relay	1	DDDD	0	8191
Y	External output relay	1	DDDD	0	8191
R	Internal relay	1	DDDDD	0	14191
L	Link Relay	1	DDDDD	0	10239
T	Timer	1	DDDD	0	3071
C	Counter	1	DDDD	0	3071
WX	External input relay	16	DDD	0	511
WY	External output relay	16	DDD	0	511
WR	Internal relay	16	DDD	0	886
WL	Link Relay	16	DDD	0	639
DT	Data register	16	DDDDD	0	99999
LD	Link data register	16	DDDD	0	8447
SV	Timer/Counter set value area	16	DDDD	0	3071
EV	Timer/Counter elapsed value area	16	DDDD	0	3071
FL	File register	16	DDDDD	0	99999

2.10.1.3 Connected Setting

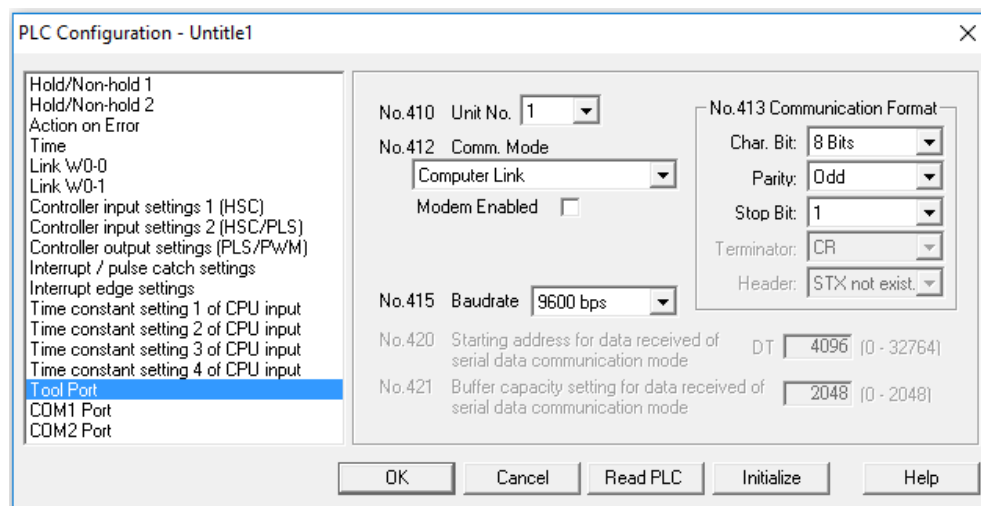
Configuring of PLC

If the PLC does not connect based on the default communication settings, configuration of the PLC settings is needed.

Within **FPWIN GR**:

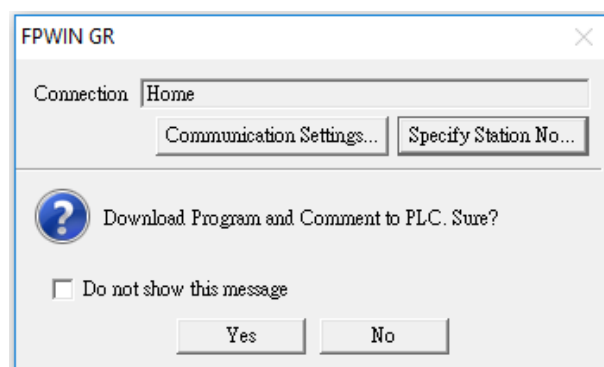
Connect the PLC to the computer via USB and navigate to the **Online** menu option and switch to **Online Editing Mode**.

Navigate to the **Option** menu option and select **PLC Configuration**.



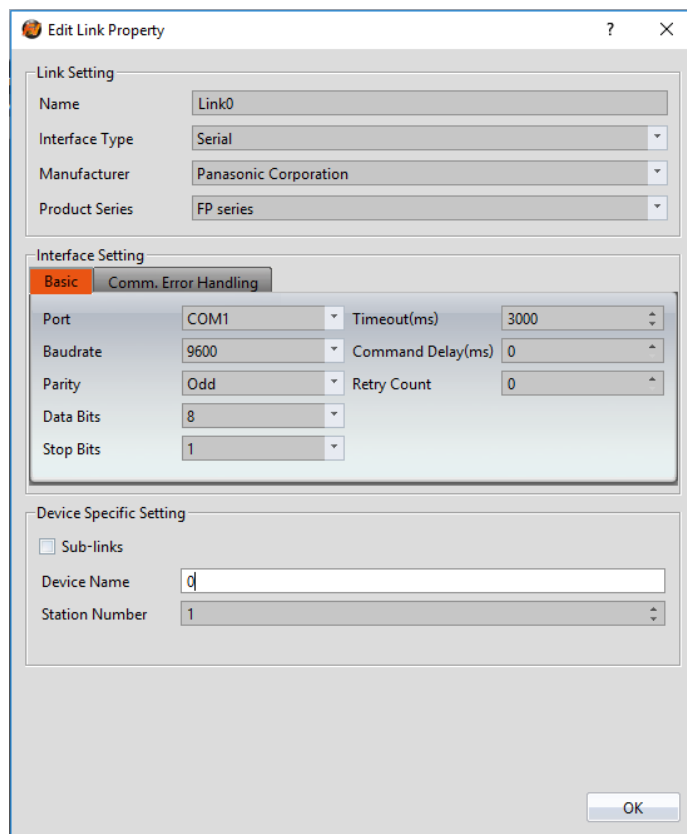
Go to the **Tool Port** option in the sidebar and select **Read PLC** to see the current PLC settings. Change the settings needed to be changed and press OK.

Navigate to the **File** menu option and select **Download to PLC** to save the settings to the PLC.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Panasonic Corporation

Under **Product Series** select FP Series

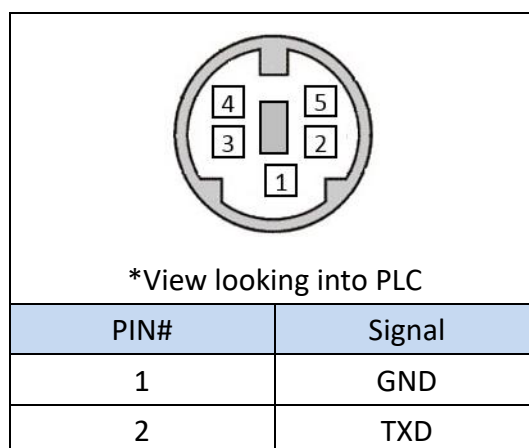
Select **COM1** for the port

Select **1** for the station number

Verify the other settings are consistent with the settings on the PLC.

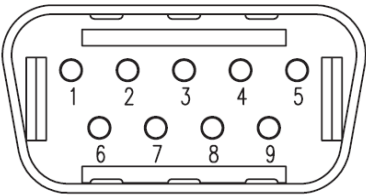
2.10.1.4 Wiring Diagrams

PLC RS232 Pinout



3	RXD
4	
5	

HMI COM1 Pinout

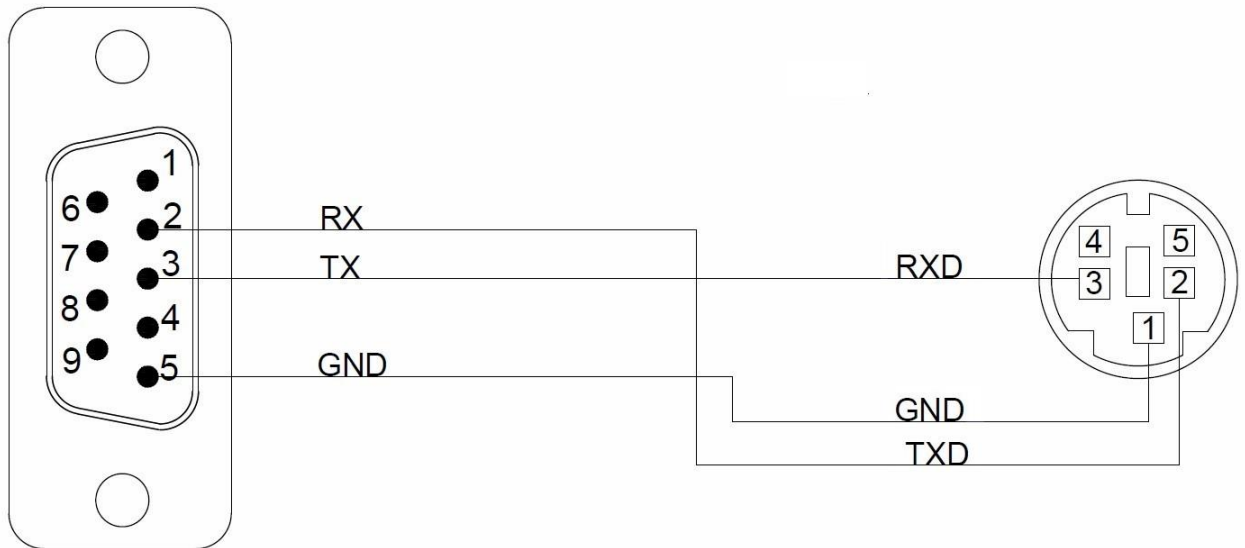
 *Looking into COM1 Port	
PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

HMI COM1	PLC RS232 Port
2 RX	2 TXD
3 TX	3 RXD
5 GND	1 GND

Wiring Diagrams:

HMI COM1

PLC RS232



2.10.2 FP Series (Ethernet)

2.10.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	With AFPX-COM5
Internet Protocol	192.168.1.100	
Port	9094	
PLC Station No.	1	
Communication Method	MEWTOCOL (computer link)	

2.10.2.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
X	External input relay	1	DDDD	0	8191
Y	External output relay	1	DDDD	0	8191
R	Internal relay	1	DDDDD	0	14191
L	Link Relay	1	DDDDD	0	10239
T	Timer	1	DDDD	0	3071
C	Counter	1	DDDD	0	3071
WX	External input relay	16	DDD	0	511

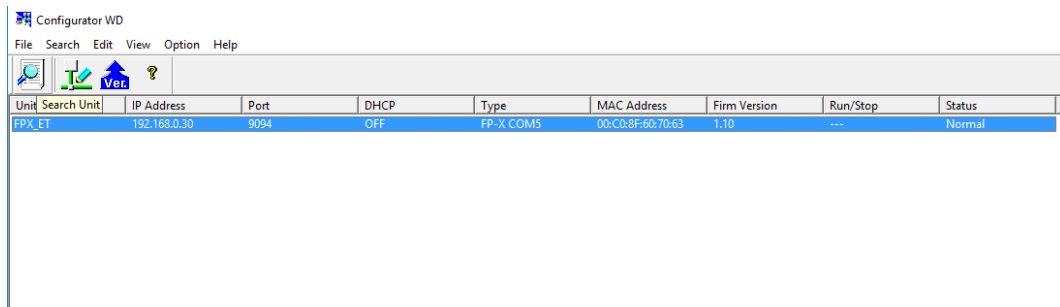
WY	External output relay	16	DDD	0	511
WR	Internal relay	16	DDD	0	886
WL	Link Relay	16	DDD	0	639
DT	Data register	16	DDDDD	0	99999
LD	Link data register	16	DDDD	0	8447
SV	Timer/Counter set value area	16	DDDD	0	3071
EV	Timer/Counter elapsed value area	16	DDDD	0	3071
FL	File register	16	DDDDD	0	99999

2.10.2.3 Connected Setting

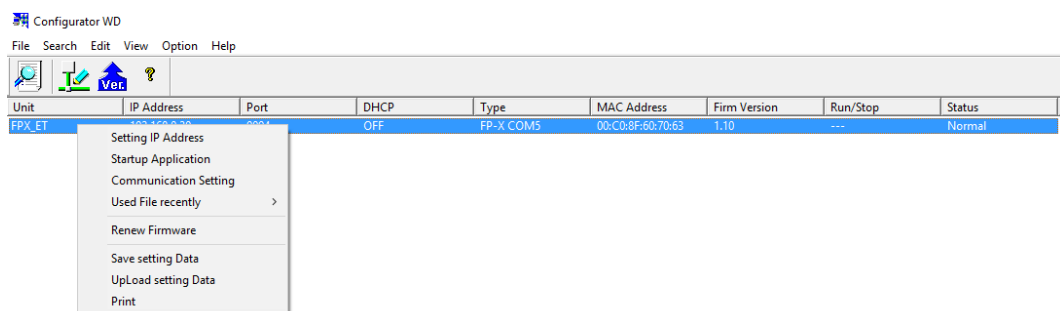
Configuring IP Address on PLC

Use the application Configurator WD to view/change the IP address on the PLC.

Press the **Search Unit** to search for the PLC on the local network. Right click the PLC and press **Setting IP Address** to change the IP address if needed.



Right click the PLC and press **Communication Setting** to change the port if necessary.



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Panasonic Corporation

Under **Product Series** select FP Series(Ethernet)

Enter the **IP Address** that was written into the PLC.

Enter the **Port** number that was set on the PLC.

Edit Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: Panasonic Corporation

Product Series: FP series(Ethernet)

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192.168.0.30 | Timeout(ms): 1000

Port: 9094 | Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

OK

2.11 YASKAWA

2.11.1 Extended MEMOBUS

2.11.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.1.1	
Port	502	
PLC Station No.	1	
Communication Method	Extended MEMOBUS	

2.11.1.2 Memory Resource Review

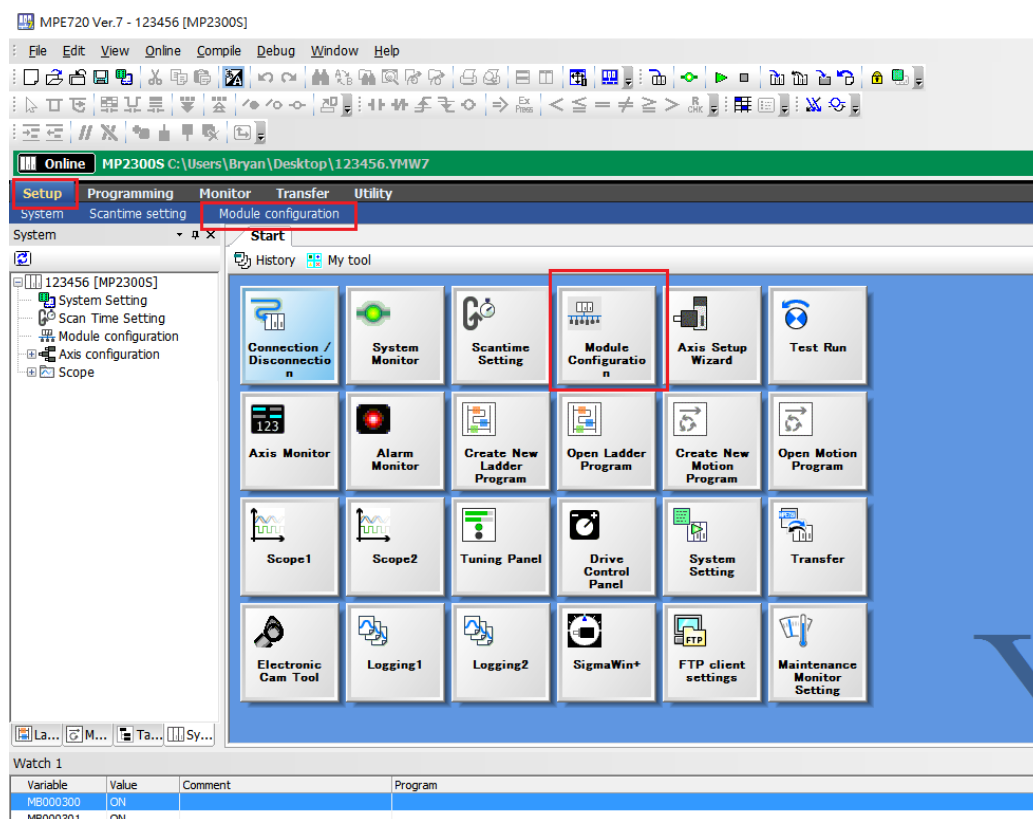
Device	Description	Data bit	Input format	Min.	Max.
IB	Input bits(Read only)	1	HHHHH	0	FFFF
MB	Data bits	1	DDDDDH	0	65534F
IW	Input registers(Read only)	16	HHHH	0	FFFF
MW	Data registers	16	DDDD	0	65534
IL	Input registers (DWord / Read only)	32	HHHH	0	FFFF
ML	Data registers (Dword)	32	DDDD	0	65533
IF	Input registers (Float / Read only)	32	HHHH	0	FFFF
MF	Data registers(Float)	32	DDDD	0	65533

2.11.1.3 Connected Setting

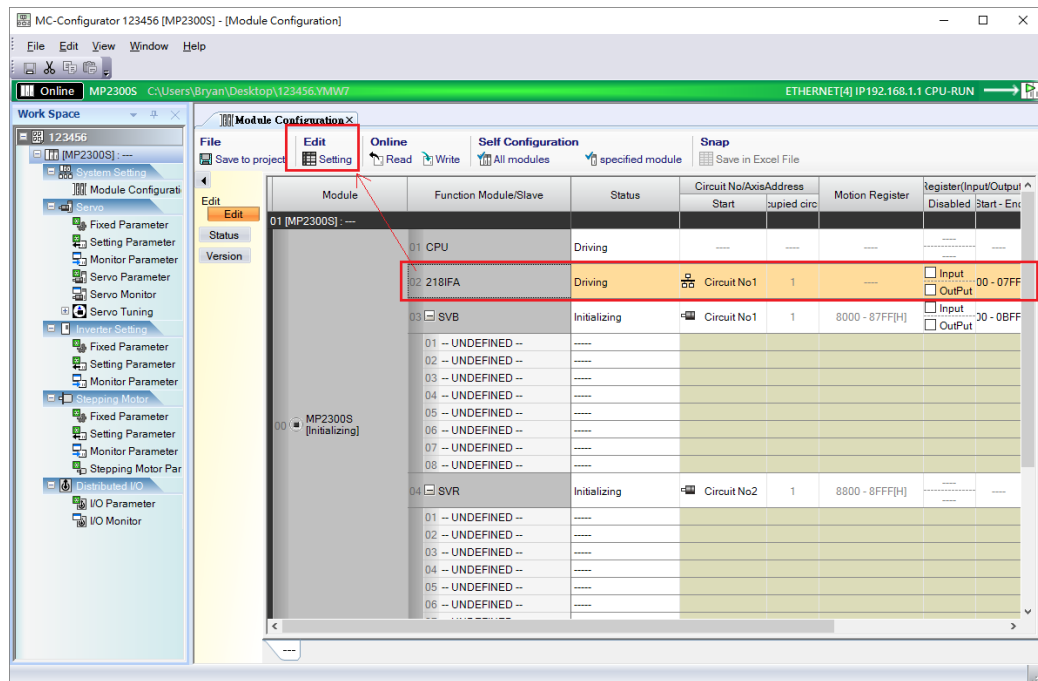
Configuring IP Address on PLC

Use **MPE720 Ver.7** to configure the IP of the PLC.

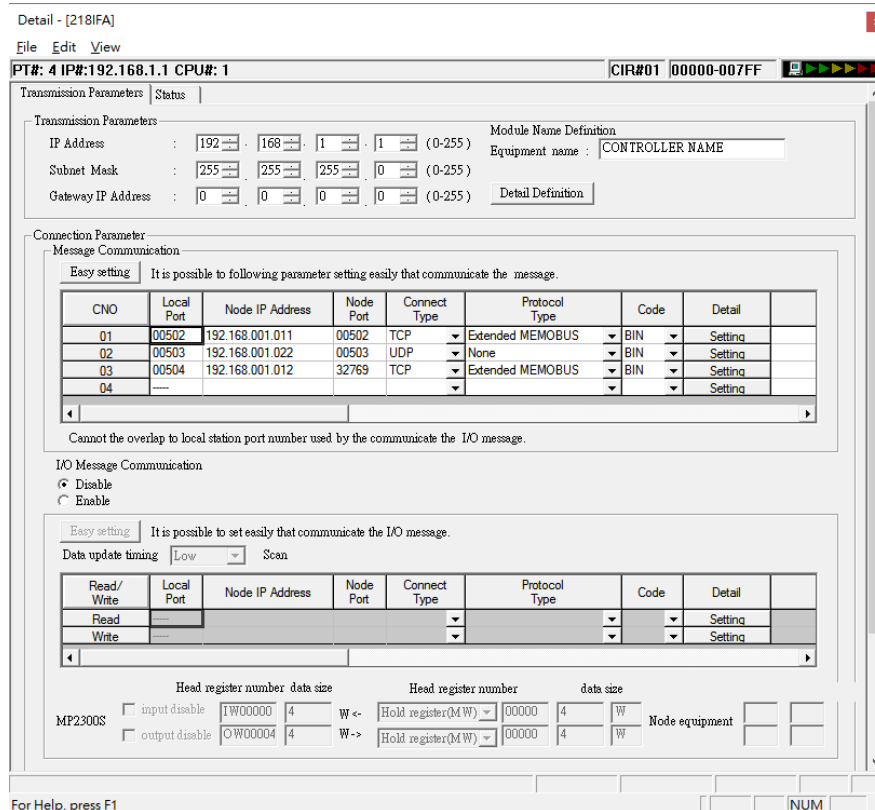
Click **Module configuration** function



Double click 218IFA, or click 218IFA then click Edit-Setting



the IP address and other parameters can be set.



Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI

New Link Property

Link Setting

Name: Link0

Interface Type: Ethernet

Manufacturer: YASKAWA Electric Corporation

Product Series: Extended MEMOBUS

Interface Setting

Basic | Comm. Error Handling | Advance

IP Address: 192.168.1.1 | Timeout(ms): 3000

Port: 502 | Command Delay(ms): 0

Retry Count: 0

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

OK Cancel

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select YASKAWA Electric Corporation.

Under **Product Series** select Extended MEMOBUS.

Enter the **IP Address** that was written into the PLC.

Verify the parameters match the window above.

2.11.2 MP Series Extension (Ethernet)

2.11.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	UDP
Internet Protocol	192.168.1.1	
Port	10000	
PLC Station No.	1	
Communication Method	MP Series Extension (Ethernet)	

2.11.2.2 Memory Resource Review

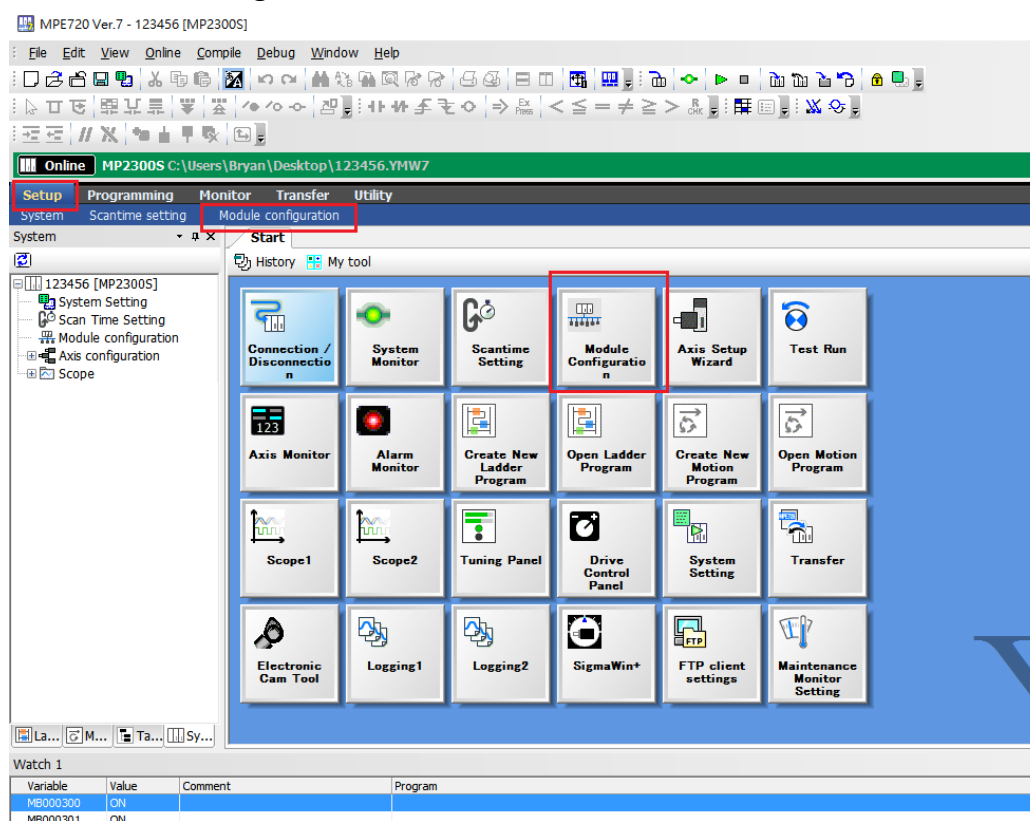
Device	Description	Data bit	Input format	Min.	Max.
SB	System bits	1	DDDDH	0	8191F
MB	Data bits	1	DDDDH	0	65534F
IB	Input bits	1	HHHHH	0	FFFFF
OB	Output bits	1	HHHHH	0	FFFFF
SW	System registers	16	DDDD	0	8191
MW	Data registers	16	DDDD	0	65534
IW	Input registers	16	HHHH	0	FFFF
OW	Output registers	16	HHHH	0	FFFF
ML	Data registers(Dword)	32	DDDD	0	65533

2.11.2.3 Connected Setting

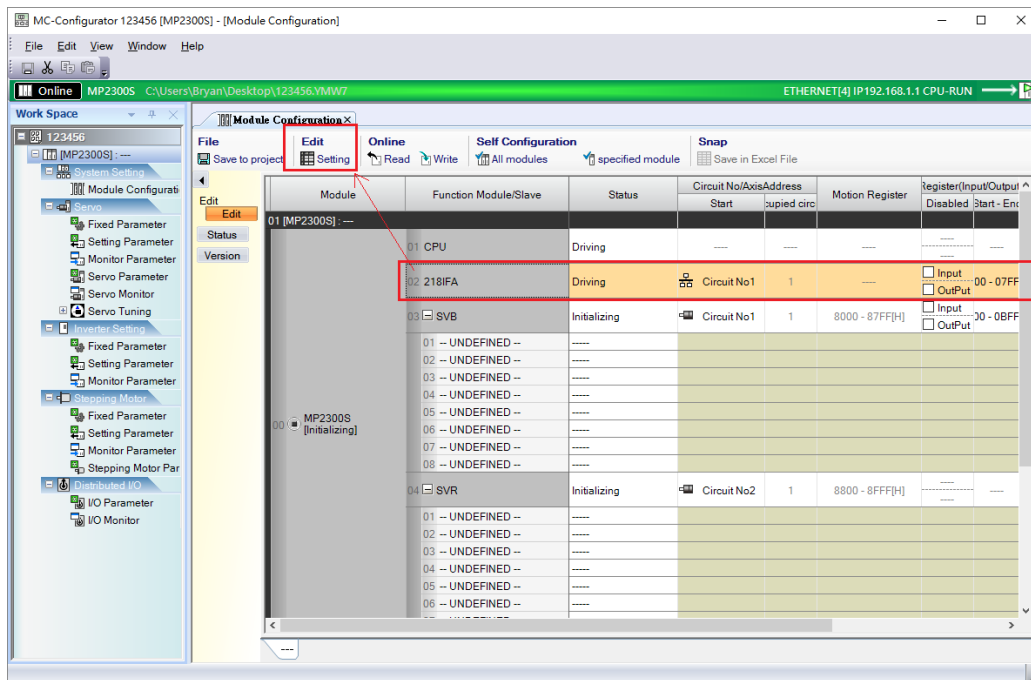
Configuring IP Address on PLC

Use **MPE720 Ver.7** to configure the IP of the PLC.

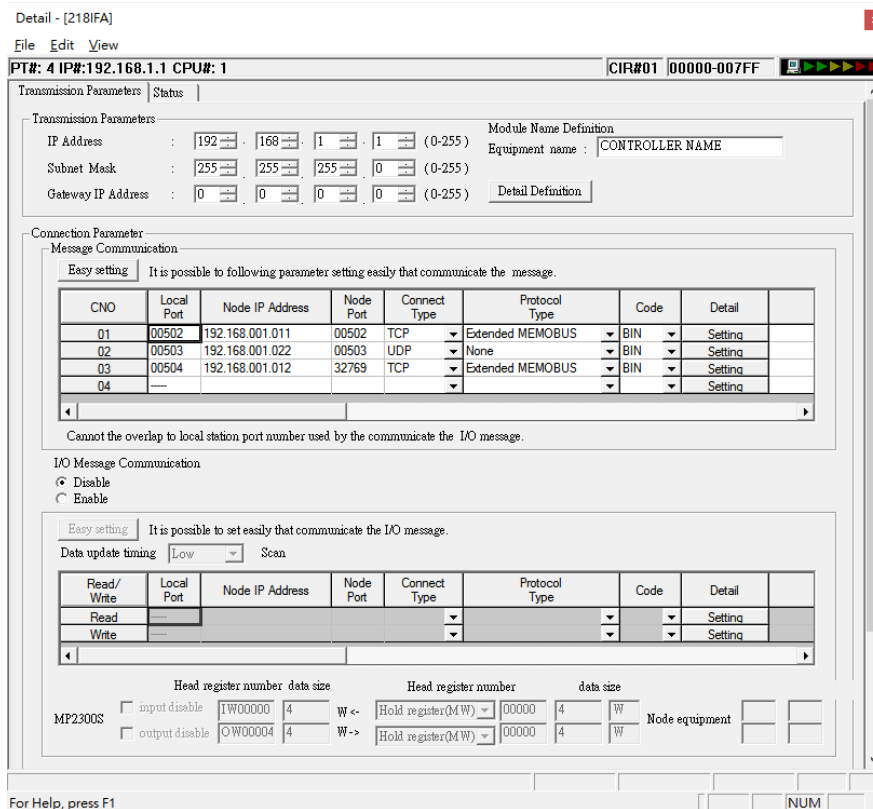
Click **Module configuration** function



Double click 218IFA, or click 218IFA then click Edit-Setting



the IP address and other parameters can be set.



Note: For more detailed information please refer to the PLC manual.

Connect PLC to HMI

Edit Link Property

Link Setting

Name: 連結0

Interface Type: Direct Link(Ethernet)

Manufacturer: YASKAWA Electric Corporation

Product Series: MP Series Extension (Ethernet)

Interface Setting

Basic | Comm. Error Handling | Advanced

IP Address: 192.168.1.80

Port: 10000

Timeout(ms): 1000

Command Delay(ms): 0

Retry Count: 2

Device Specific Setting

☐ Sub-links

Device Name: 0

Station Number: 1

☐ Link Status

☐ Set in Register

OK

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select YASKAWA Electric Corporation.

Under **Product Series** select MP Series Extension (Ethernet).

Enter the **IP Address** that was written into the PLC.

Verify the parameters match the window above.

2.12 Keyence

2.12.1 KV-3000/5000/5500/7500(Ethernet)

2.12.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	0.0.0.0	

Port	8501	
PLC Station No.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.12.1.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
R	Relay	1	DDDdd	0	99915
B	Link relay	1	HHHH	0	7FFF
MR	Internal auxiliary relay	1	DDDDdd	0	399915
LR	Latch relay	1	DDDdd	0	99915
T	Timer	1	DDDD	0	3999
C	Counter	1	DDDD	0	3999
CTC_sts	High-speed counter comparator (contact)	1	D	0	7
CR	Control relay	1	DDdd	0	7915
VB	Work relay	1	HHHH	0	F9FF
DM	Data memory	16	DDDDD	0	65534
EM	Extended data memory	16	DDDDD	0	65534
FM	File register	16	DDDDD	0	32767
ZF	File register	16	DDDDDD	0	524287
W	Link register	16	HHHH	0	7FFFF
TM	Temporary data memory	16	DDD	0	511
CM	Control memory	16	DDDD	0	5999
VM	Work memory	16	DDDDD	0	50999
Z	Index register	32	D	1	12
TC	Timer (current value)	32	DDDD	0	3999
TS	Timer (set value)	32	DDDD	0	3999
CC	Counter (current value)	32	DDDD	0	3999
CS	Counter (set value)	32	DDDD	0	3999

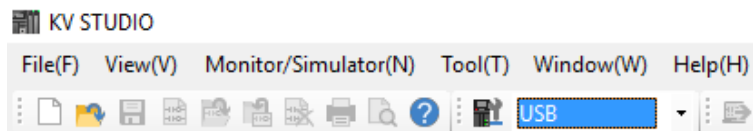
CTH	High-speed counter (current value)	32	D	0	3
CTC	High-speed counter comparator (set value)	32	D	0	7
TRM	Digital trimmer	32	D	0	7

2.12.1.3 Connected Setting

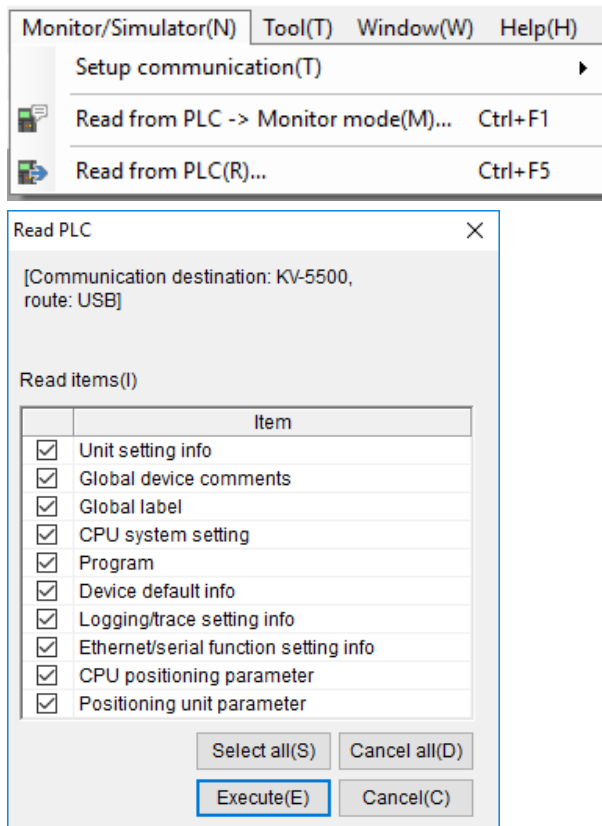
Configuring IP address on PLC

Use the application **KV Studio** to configure the IP address of the PLC.

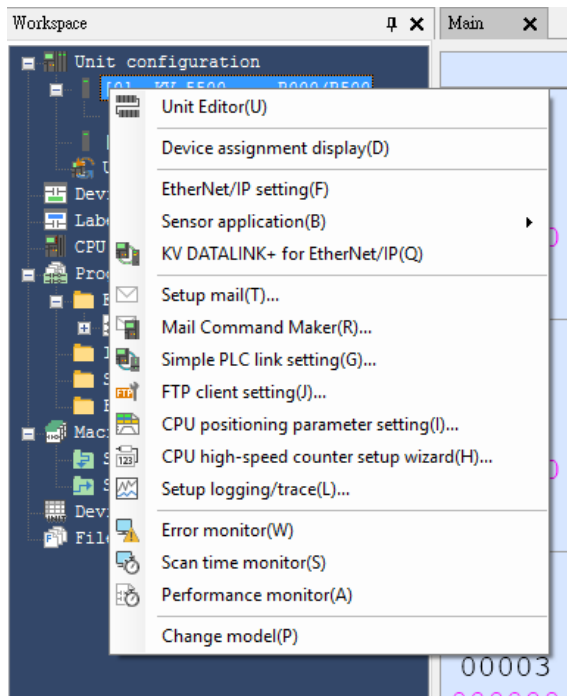
Select the connection between the PLC and the computer. A USB connection was used in this case.



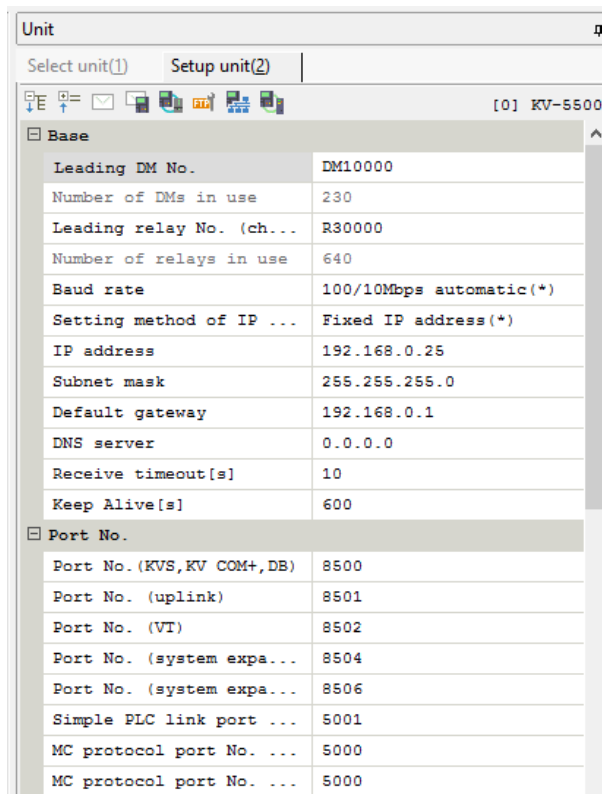
Under the **Monitor/Simulator** menu option, select **Read from PLC** and execute the operation.



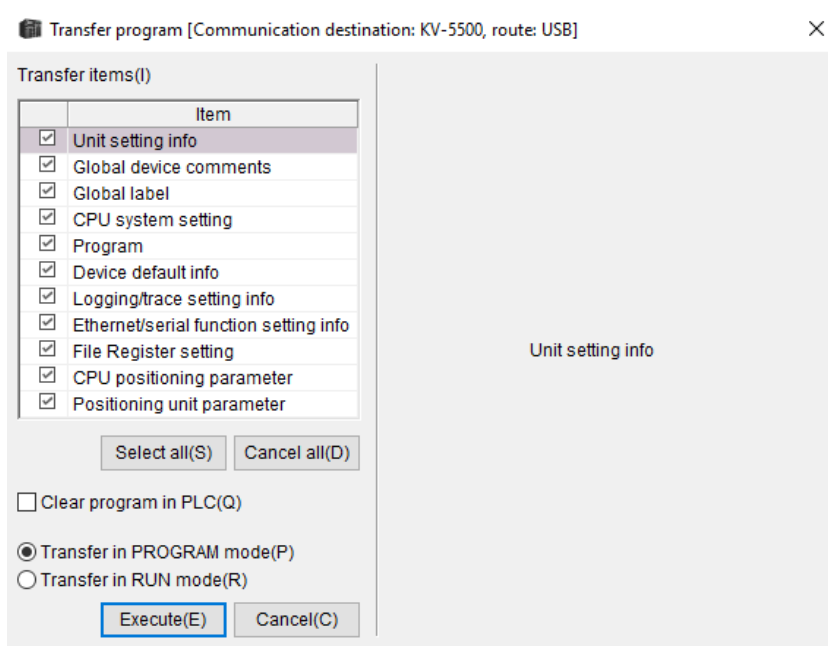
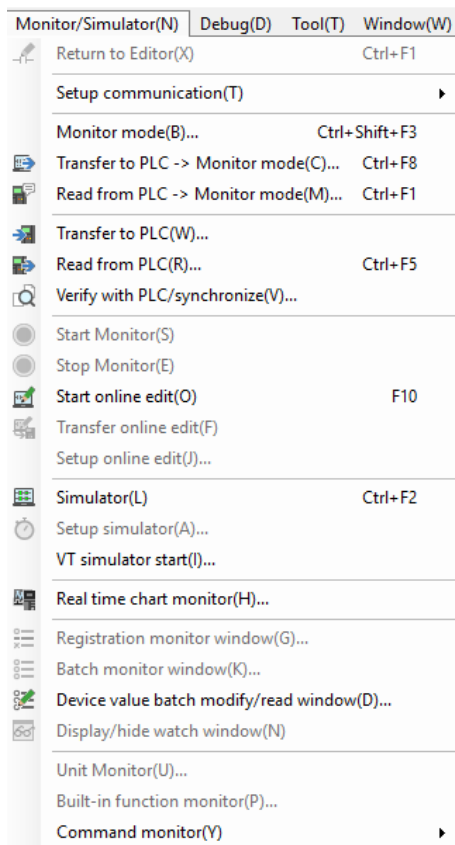
In the Workspace, right click the PLC model name and select **Unit Editor**.



On the right side of the dialog window, the IP address and Port can be changed. When done, close out of the window and select 'Yes' to save the settings.



Under **Monitor/Simulator**, select **Transfer to PLC** to download the changes onto the PLC. Confirm the execution of the operation



Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select Keyence Corporation

Under **Product Series** select KV-3000/5000/5500/7500(Ethernet)

Set the **IP address** and **Port** to the values configured on the PLC.

2.12.2 KV-L21V/3000/5000/5500 (host link)

2.12.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	
Baud Rate	115200	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	0	
Communication Method	HOST-LINK	

	COMMUNICATION	
--	---------------	--

2.12.2.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
R	Relay	1	DDDdd	0	99915
B	Link relay	1	HHHH	0	7FFF
MR	Internal auxiliary relay	1	DDDDdd	0	399915
LR	Latch relay	1	DDDdd	0	99915
T	Timer	1	DDDD	0	3999
C	Counter	1	DDDD	0	3999
CTC_sts	High-speed counter comparator (contact)	1	D	0	7
CR	Control relay	1	DDdd	0	7915
VB	Work relay	1	HHHH	0	F9FF
DM	Data memory	16	DDDDD	0	65534
EM	Extended data memory	16	DDDDD	0	65534
FM	File register	16	DDDDD	0	32767
ZF	File register	16	DDDDDD	0	524287
W	Link register	16	HHHH	0	7FFFF
TM	Temporary data memory	16	DDD	0	511
CM	Control memory	16	DDDD	0	5999
VM	Work memory	16	DDDDD	0	50999
Z	Index register	32	D	1	12
TC	Timer (current value)	32	DDDD	0	3999
TS	Timer (set value)	32	DDDD	0	3999
CC	Counter (current value)	32	DDDD	0	3999
CS	Counter (set value)	32	DDDD	0	3999
CTH	High-speed counter (current value)	32	D	0	3
CTC	High-speed counter	32	D	0	7

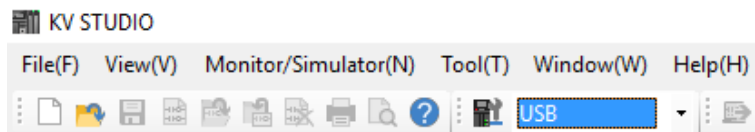
	comparator (set value)				
TRM	Digital trimmer	32	D	0	7

2.12.2.3 Connected Setting

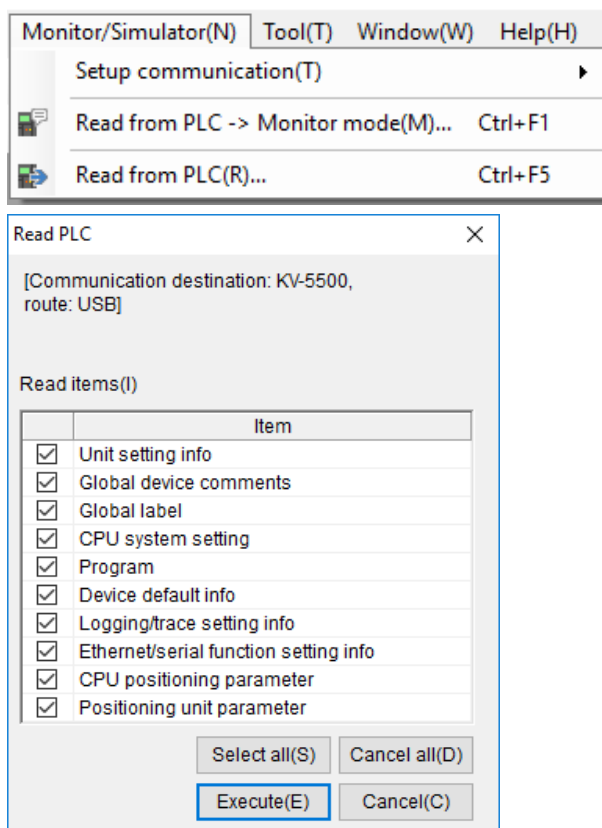
Configuring of PLC

Use the application **KV Studio** to configure the serial connection of the PLC.

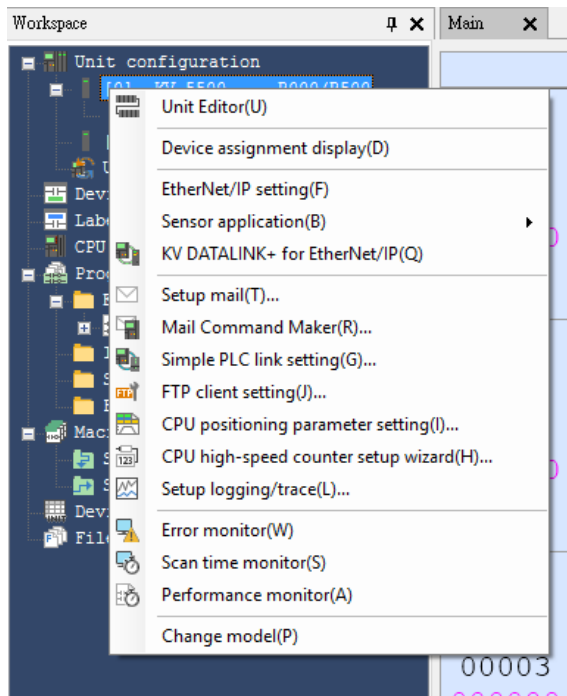
Select the connection between the PLC and the computer. A USB connection was used in this case.



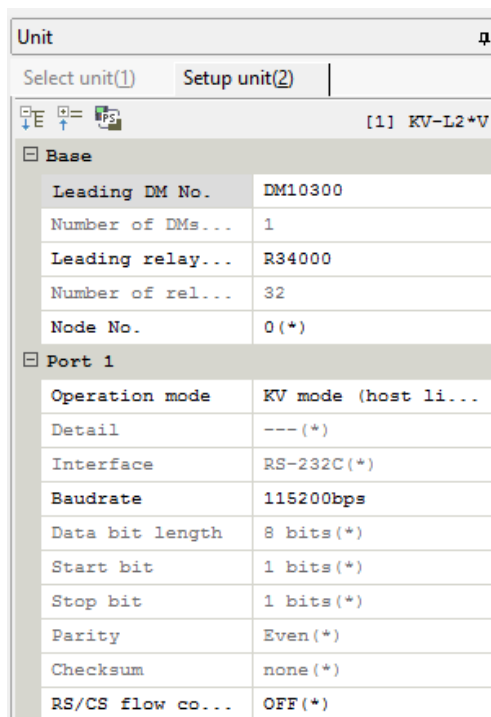
Under the **Monitor/Simulator** menu option, select **Read from PLC** and execute the operation.



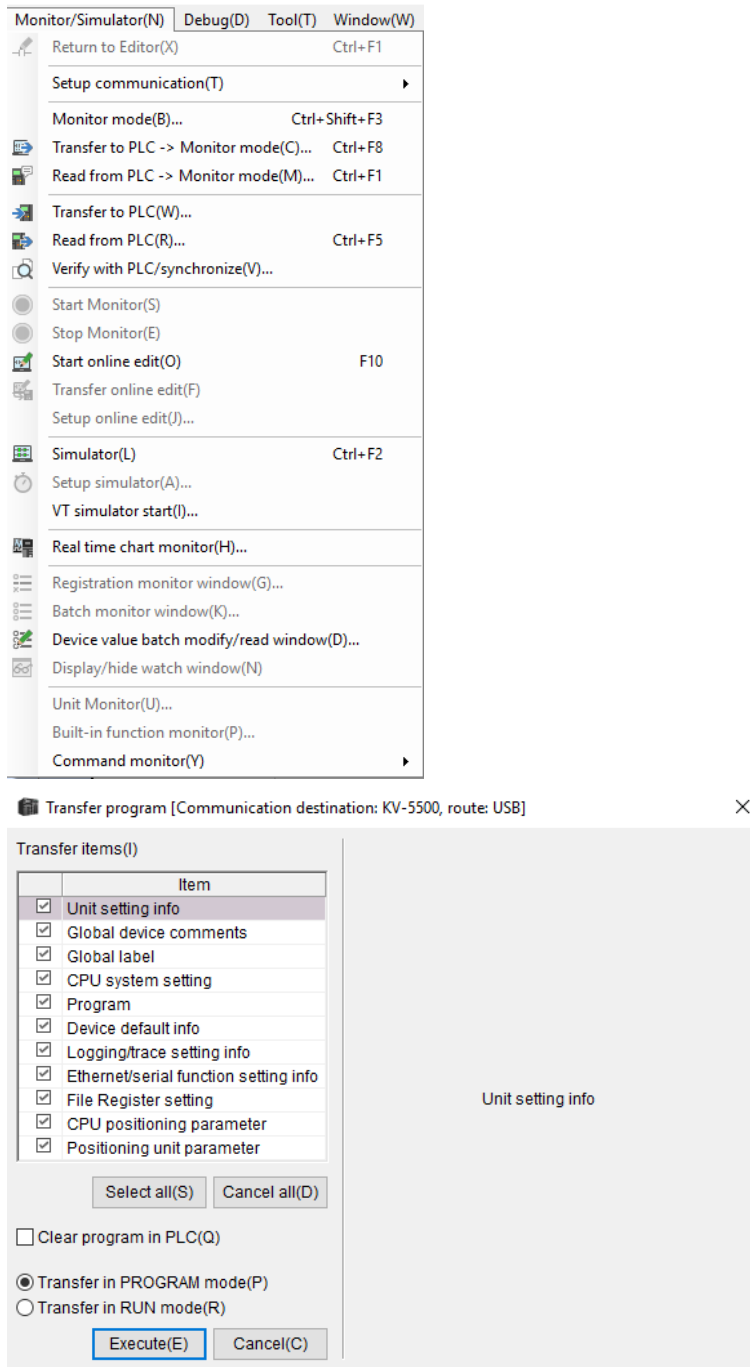
In the Workspace, right click the PLC model name and select **Unit Editor**.



On the right side of the dialog window, verify the baud rate is **115200bps**. Close out of the window and select 'Yes' to save the settings.



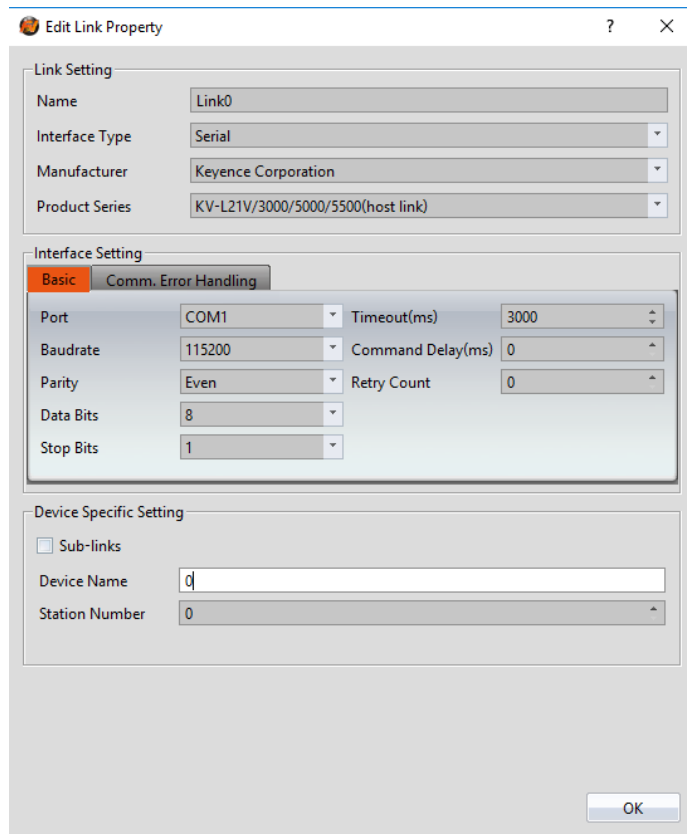
Under **Monitor/Simulator**, select **Transfer to PLC** to download the changes onto the PLC. Confirm the execution of the operation



Note: Port 2 of the PLC can also be configured following the steps above. The parameters for Port 2 are under the parameters for Port 1 in the dialog window.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under Interface Type select Serial

Under **Manufacturer** select Keyence Corporation

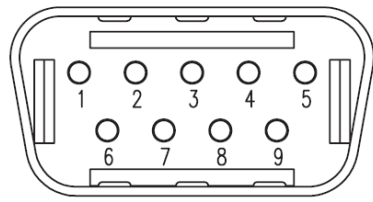
Under **Product Series** select KV-L21V/3000/5000/5500(host link)

Under **Port** select required COM port. Verify the baud rate is the same as the value set on the PLC.

2.12.2.4 Wiring Diagrams

Using Port 1

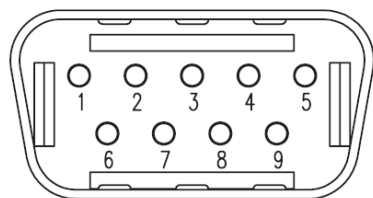
PLC RS232 Port (PORT1)



*Looking into PLC

PIN#	Signal
1	
2	RXD
3	TXD
4	
5	GND
6	
7	
8	
9	

HMI COM1 Pinout

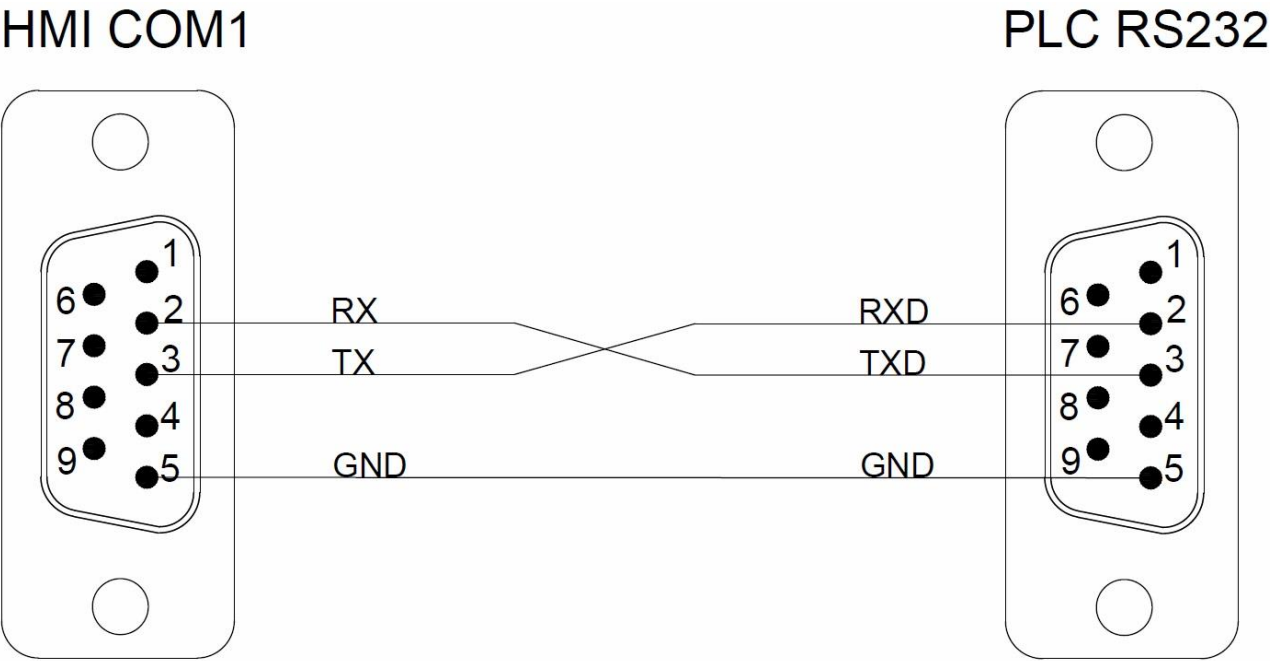


*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

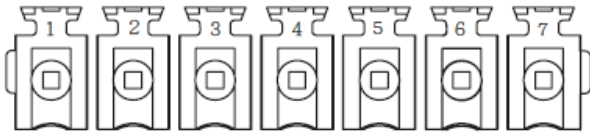
HMI COM1	PLC RS232 Port
2 RX	3 TXD
3 TX	2 RXD
5 GND	5 GND

Wiring Diagrams:



Using Port 2

HMI COM3 Pinout

	
*Looking into HMI Device	
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	RX+
5	RX-
6	TX+
7	TX-

PLC RS485 Port (PORT2)

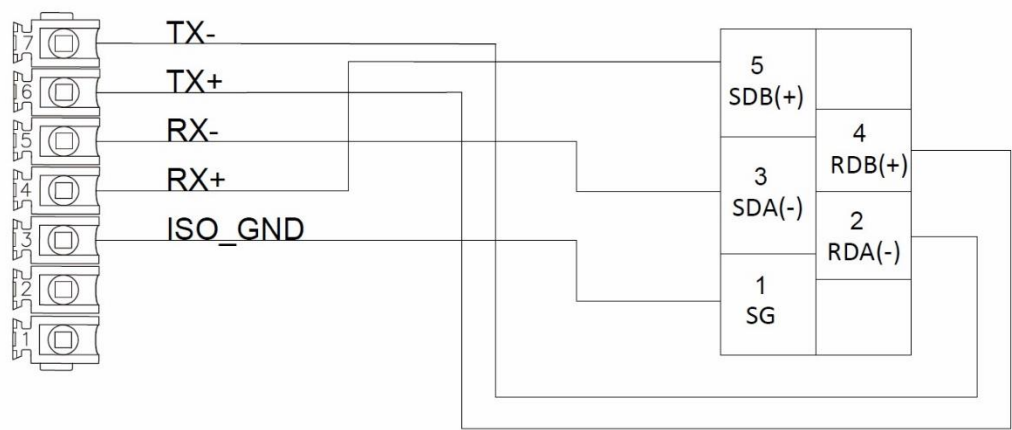
1 SG	3 SDA(-)	5 SDB(+)
	2 RDA(-)	4 RDB(+)

HMI COM3	PLC RS485 Port
5 RX-	3 SDA(-)
4 RX+	5 SDB(+)
7 TX-	2 RDA(-)
6 TX+	4 RDA(+)
3 ISO_GND	1 SG

Wiring Diagrams

HMI COM3

PLC RS485

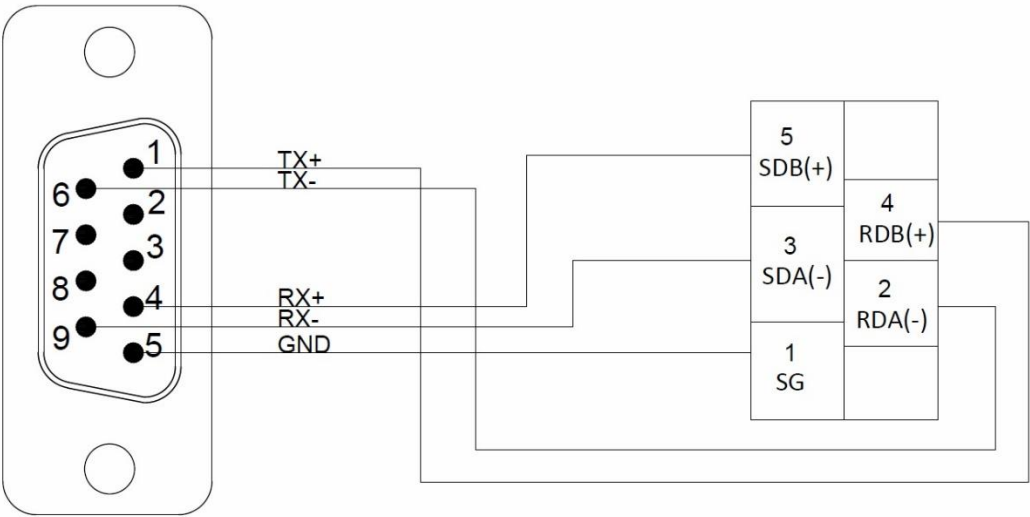


HMI COM2	PLC RS485 Port
9 RX-	3 SDA(-)
4 RX+	5 SDB(+)
6 TX-	2 RDA(-)
1 TX+	4 RDA(+)
5 GND	1 SG

Wiring Diagrams

HMI COM2

PLC RS485



2.12.3 KV-Nano (host link)

2.12.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232C	OP-26486
Baud Rate	115200	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.12.3.2 Memory Resource Review

Device	Description	Data bit	Input format	Min.	Max.
R	Relay	1	DDDdd	0	59915
B	Link relay	1	HHHH	0	1FFF
MR	Internal auxiliary relay	1	DDDDdd	0	59915
LR	Latch relay	1	DDDdd	0	19915
T	Timer	1	DDDD	0	511
C	Counter	1	DDDD	0	255
CTC_sts	High-speed counter comparator (contact)	1	D	0	7
CR	Control relay	1	DDdd	0	8915
VB	Work relay	1	HHHH	0	1FFF
DM	Data memory	16	DDDDD	0	32767
W	Link register	16	HHHH	0	3FFF
TM	Temporary data memory	16	DDD	0	511
CM	Control memory	16	DDDD	0	8999
VM	Work memory	16	DDDDD	0	9999
Z	Index register	32	D	1	12
TC	Timer (current value)	32	DDDD	0	511

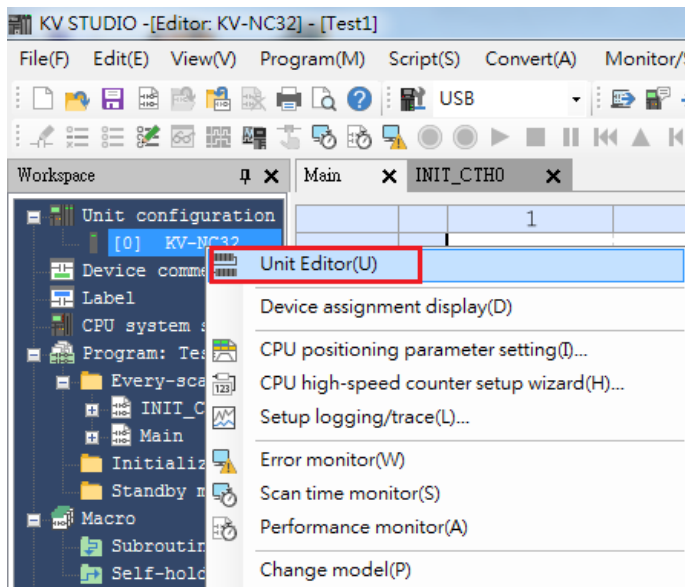
TS	Timer (set value)	32	DDDD	0	511
CC	Counter (current value)	32	DDDD	0	255
CS	Counter (set value)	32	DDDD	0	255
CTH	High-speed counter (current value)	32	D	0	3
CTC	High-speed counter comparator (set value)	32	D	0	7

2.12.3.3 Connected Setting

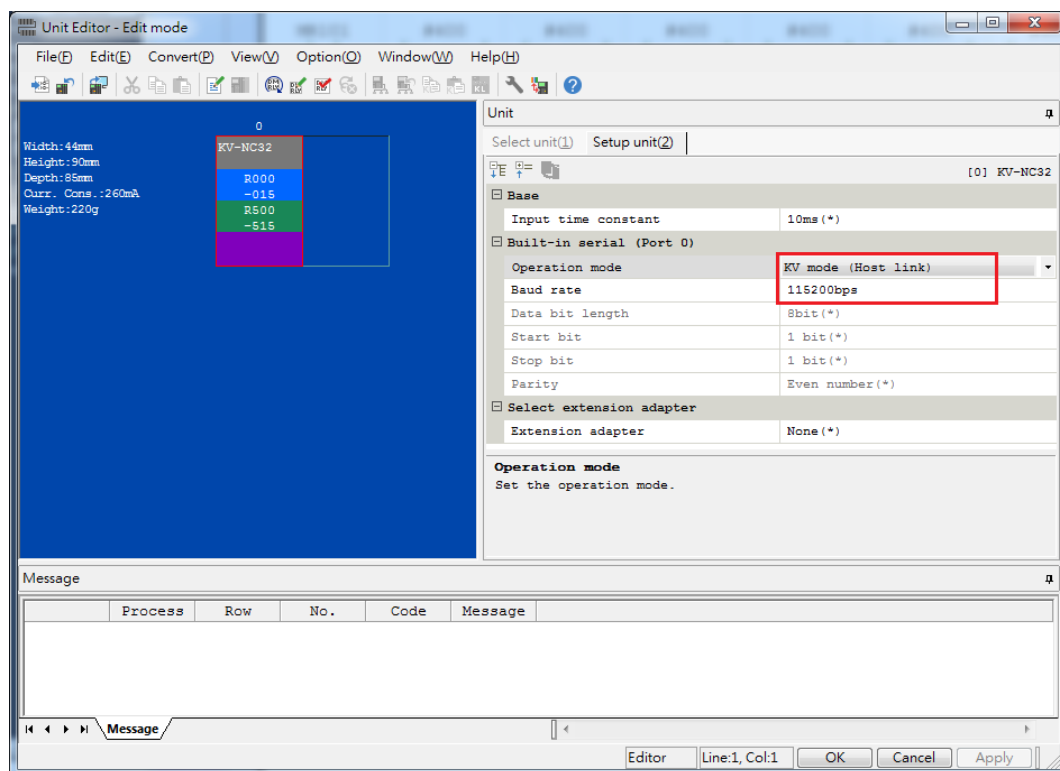
Configuring of PLC

Use the software KV Studio (ver. 9.02) to configure the PLC.

Right click the device in **Unit configuration** and select Unit Editor.

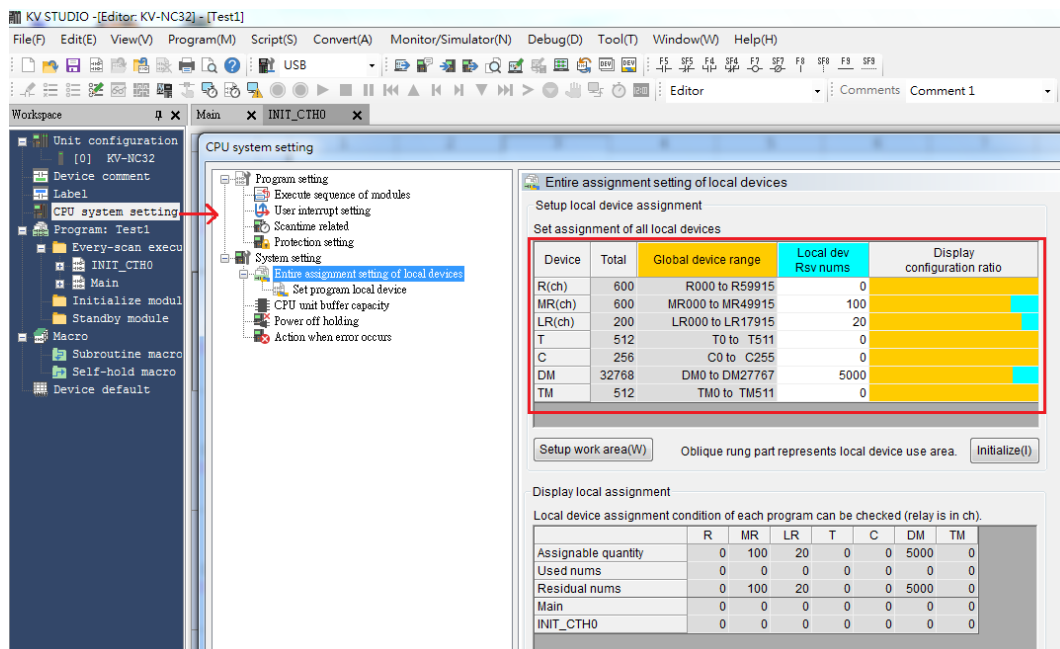


Choose **KV mode (Host Link)** and set the Baud rate to 115200.



Download the settings back onto the PLC and reset it.

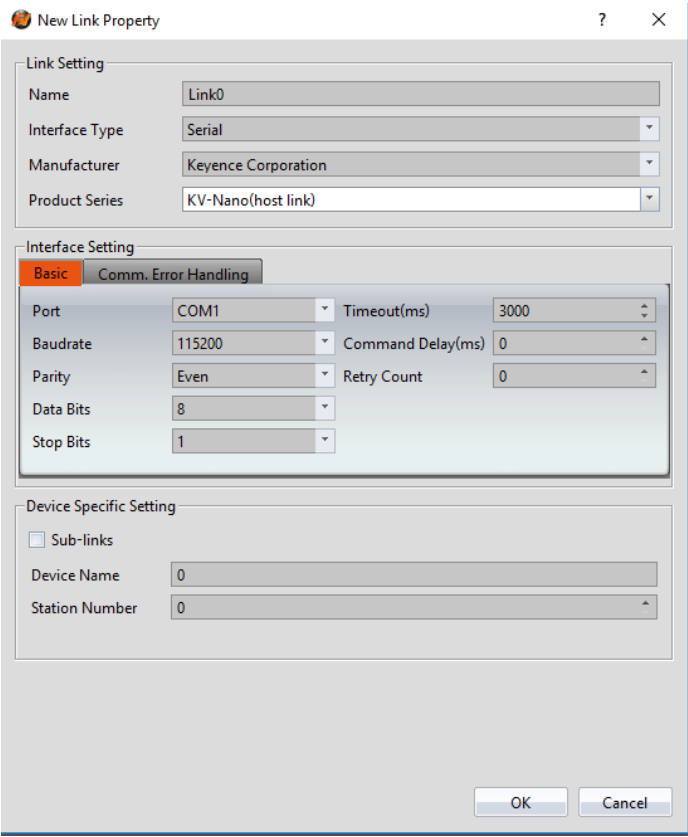
Required register ranges



Note: For more detailed information please refer to the PLC manual.

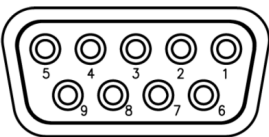
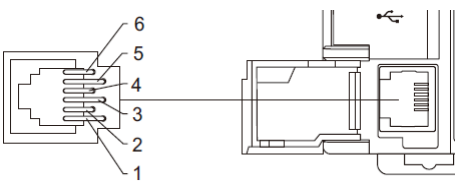
Configuring of HMI

Link settings screen to connect PLC to HMI



2.12.3.4 Wiring Diagrams

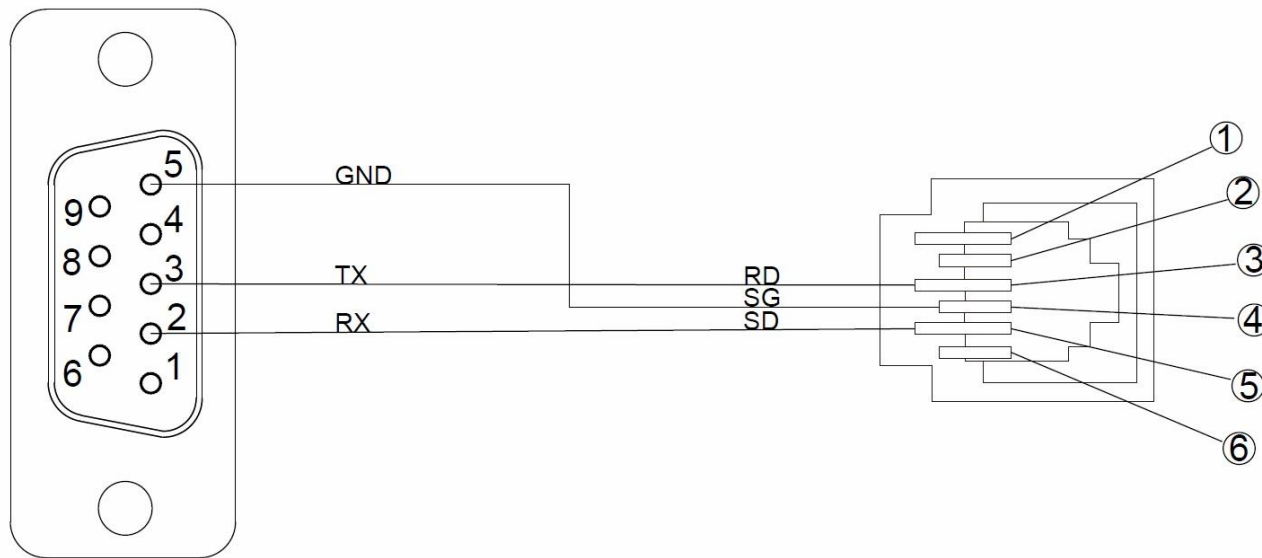
Port 1: RS232

	HMI		PLC	
Serial Interface	COM1 RS-232 9 pin D-SUB Female		RS232 6 pin	
			 Looking into PLC	
	PIN#	Signal	PIN#	Signal
	2	RX	5	SD
	3	TX	3	RD
	5	GND	4	SG

Wiring Diagrams:Port 1: RS232

HMI COM1

PLC RS232



2.13 Beckhoff Automation

2.13.1 Twincat(Ethernet)

2.13.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
IP	192.168.1.100	
Port	801	
PLC Station No.	1	
Communication Method	ADS	

2.13.1.2 Memory Resource Review

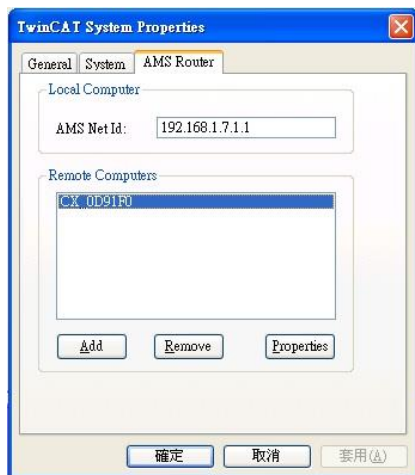
Device	Description	Data Bits	Address Format	Min.	Max.
IX	Input	1	DDDDD.O	0.0	27484.7
QX	Output	1	DDDDD.O	0.0	27484.7
MX	Bit Memory	1	DDDDD.O	0.0	27484.7
IW		16	DDDDD	0	65534
QW		16	DDDDD	0	65534
MW		16	DDDDD	0	65534
ID		32	DDDDD	0	65532
QD		32	DDDDD	0	65532
MD		32	DDDDD	0	65532

2.13.1.3 Connecting to PLC

Configuring of PLC

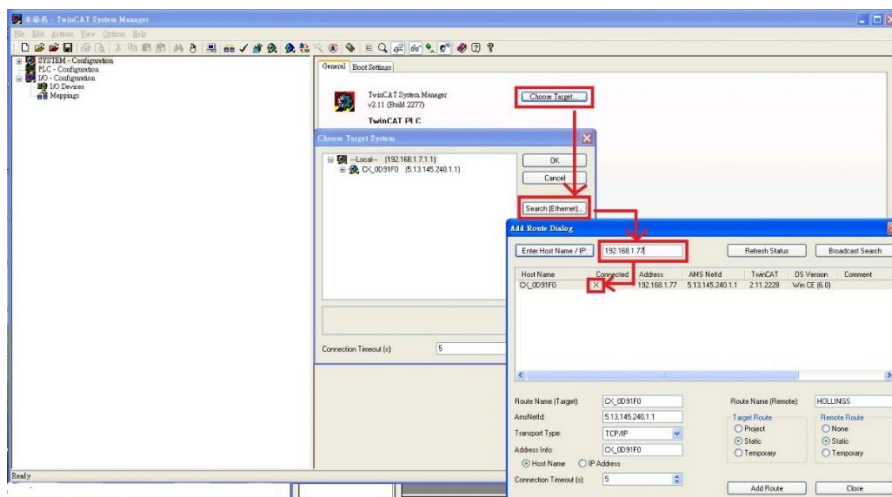
1. Set IP-Address connected with PC.

Open **TwinCAT System Control** , setting IP-Address of plc in TwinCAT System Properties

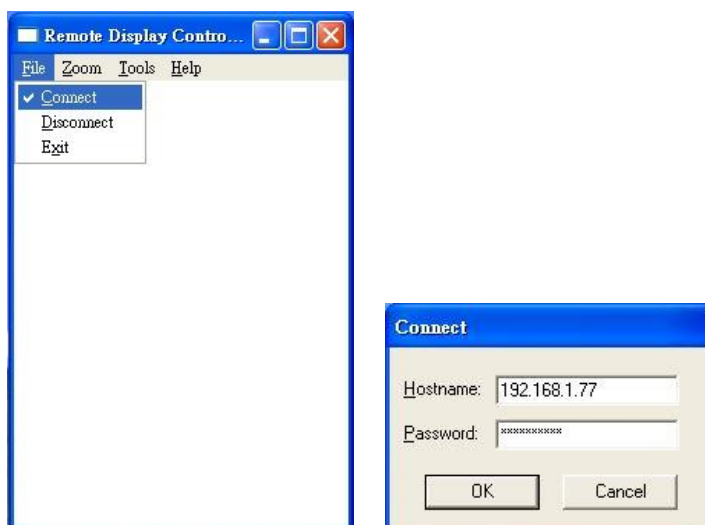


Open **TwinCAT system manager** build Route Table to ensure whether connecting success, if reopen plc, need to execute these steps.

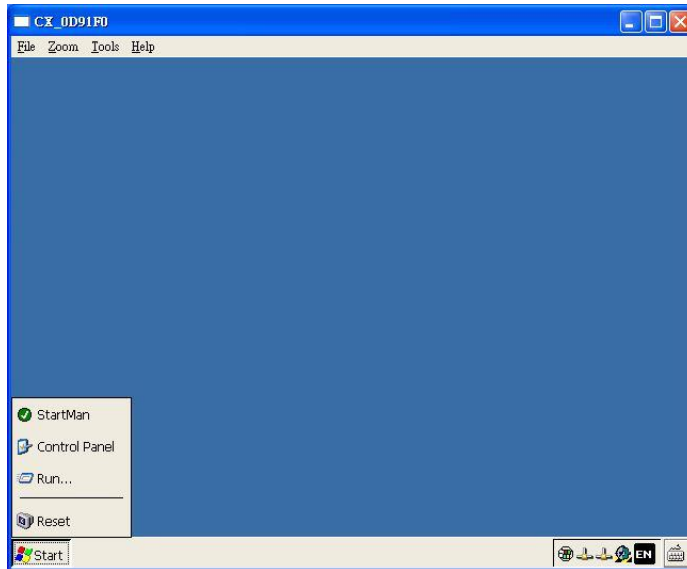
Note: when connecting success, display "x"



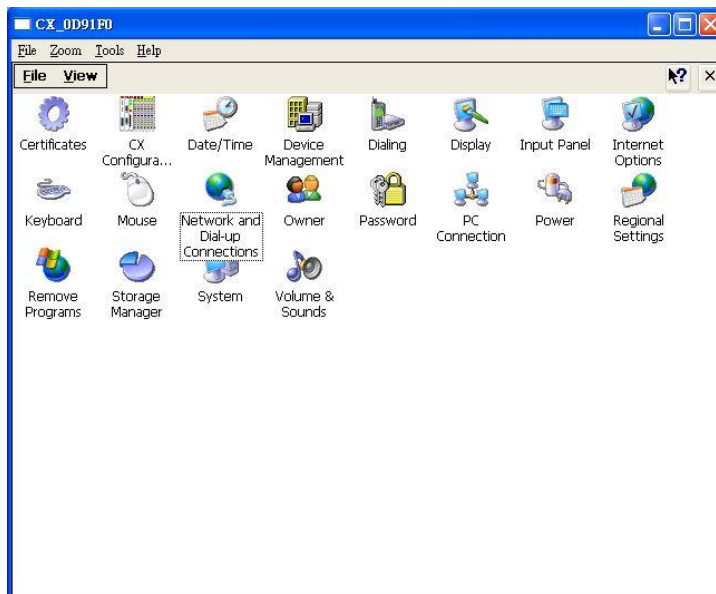
2. Use **CERHOST** to connect with plc, enter IP and Password of plc.

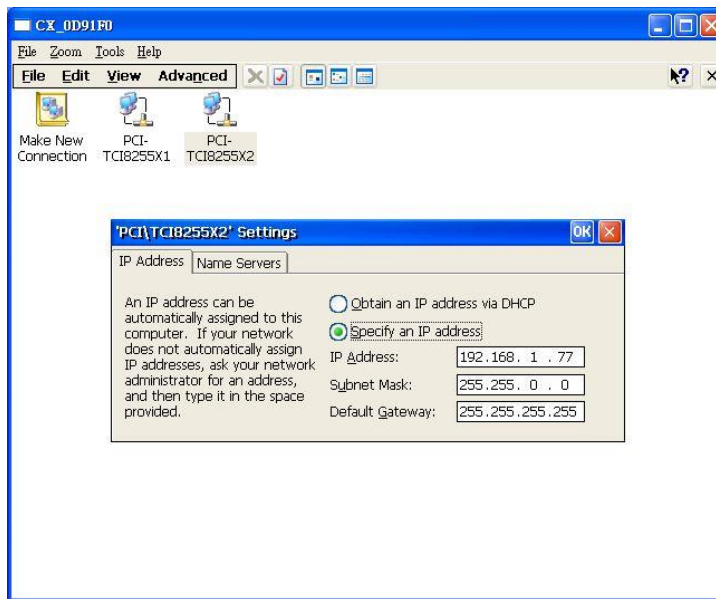


After connecting success with plc, click start → control panel



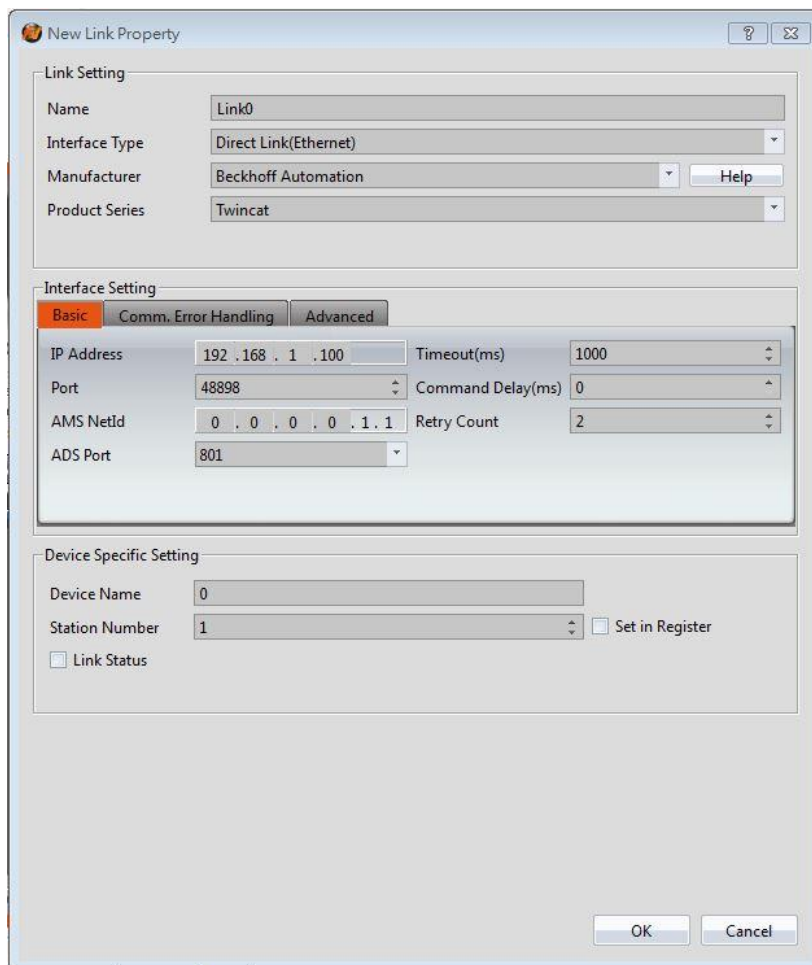
Click Network and Dial-up Connections, display information of plc, click plc to ensure the IP.





Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select MERITEK Automation Corp.

Under **Product Series** select MERITEK MBe

Under **Port** select the port corresponding to the connection to the PLC

Verify the other parameters are consistent with the settings on the PLC

2.14 Koyo

2.14.1 Direct

2.14.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9600	or 19200,38400
Data Length	8	
Stop Bit	1	
Parity	Odd	or even, no
PLC Station No.	1	1-90 DirectNET, K sequence 1-247 Modbus RTU
Communication Method	K sequence (slave), DirectNET (master/slave), Modbus	

2.14.1.2 Memory Resource Review

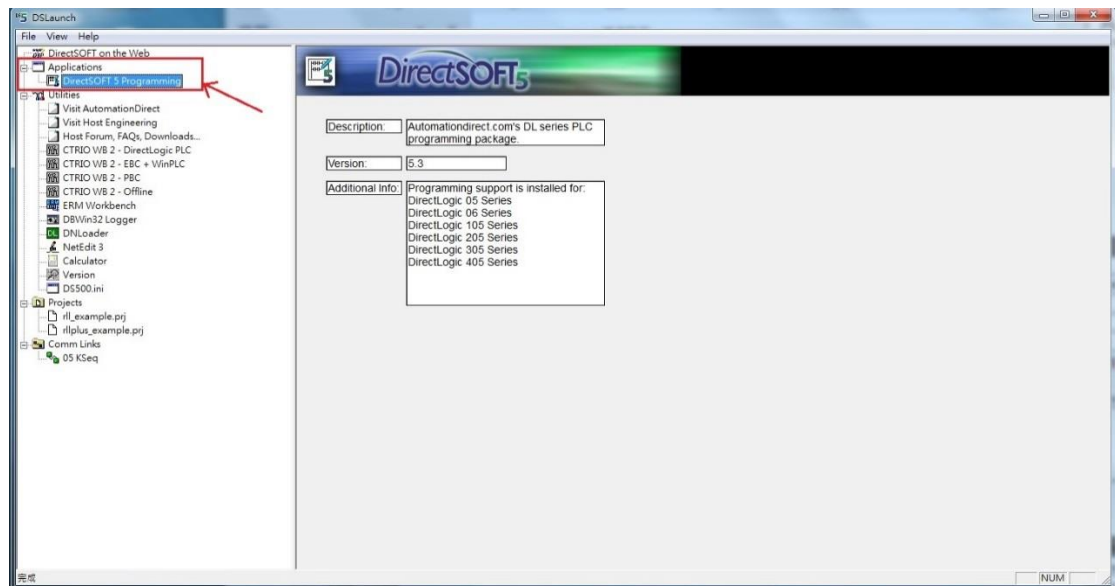
Device	Data bit	Data format	Max.	Min.	Description
GX	1	0000	3777	0	Global Input Bits
GY	1	0000	3777	0	Global Output Bits
X	1	0000	1777	0	Input Bits
Y	1	0000	1777	0	Output Bits
C	1	0000	3777	0	Control Relays
S	1	0000	1777	0	Stage Status Bits

T	1	000	377	0	Timer Status Bits
CT	1	000	777	0	Counter Status Bits
SP	1	0000	1777	0	System Status Bits
V	16	00000	77777	0	V Memory

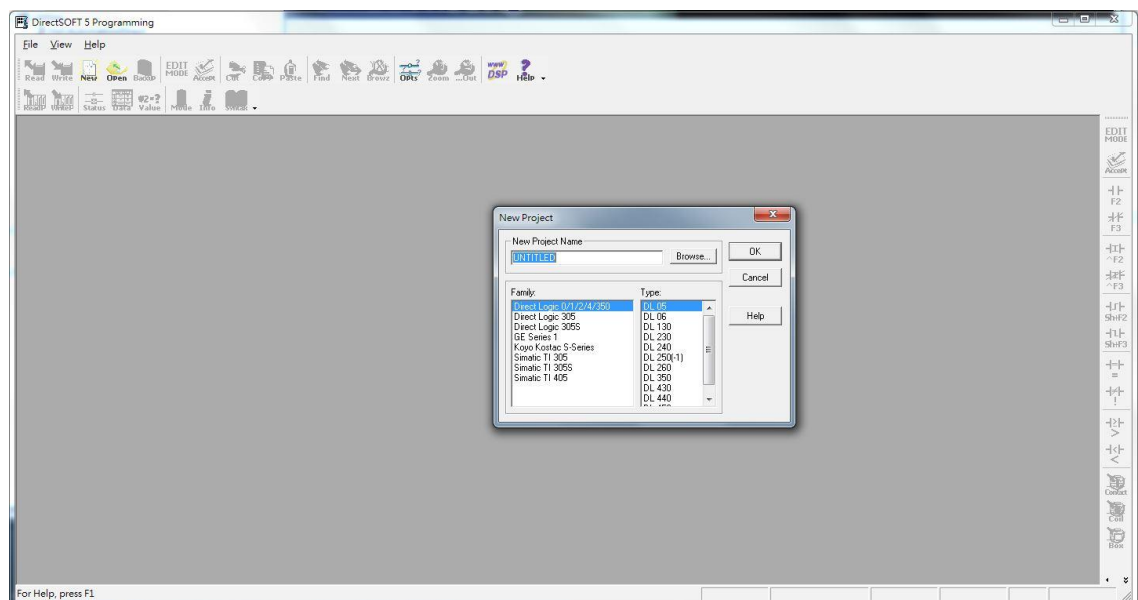
2.14.1.3 Connected Setting

Configuring of PLC

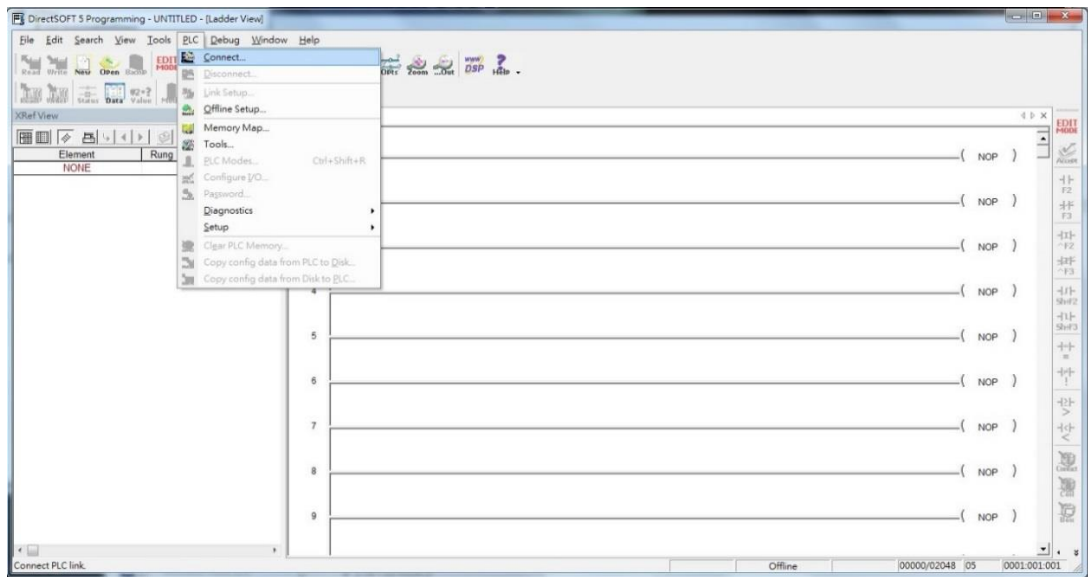
1. open **DSL**aunch 5, click Applications→DirectSOFT 5 Programming on the left side.



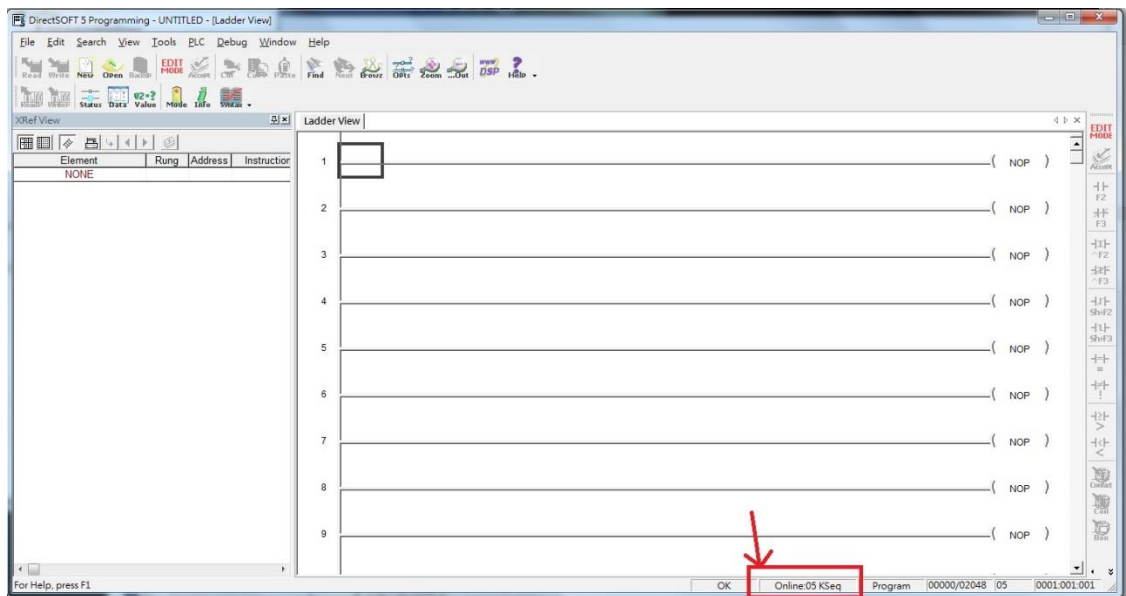
2. choose model and build project.



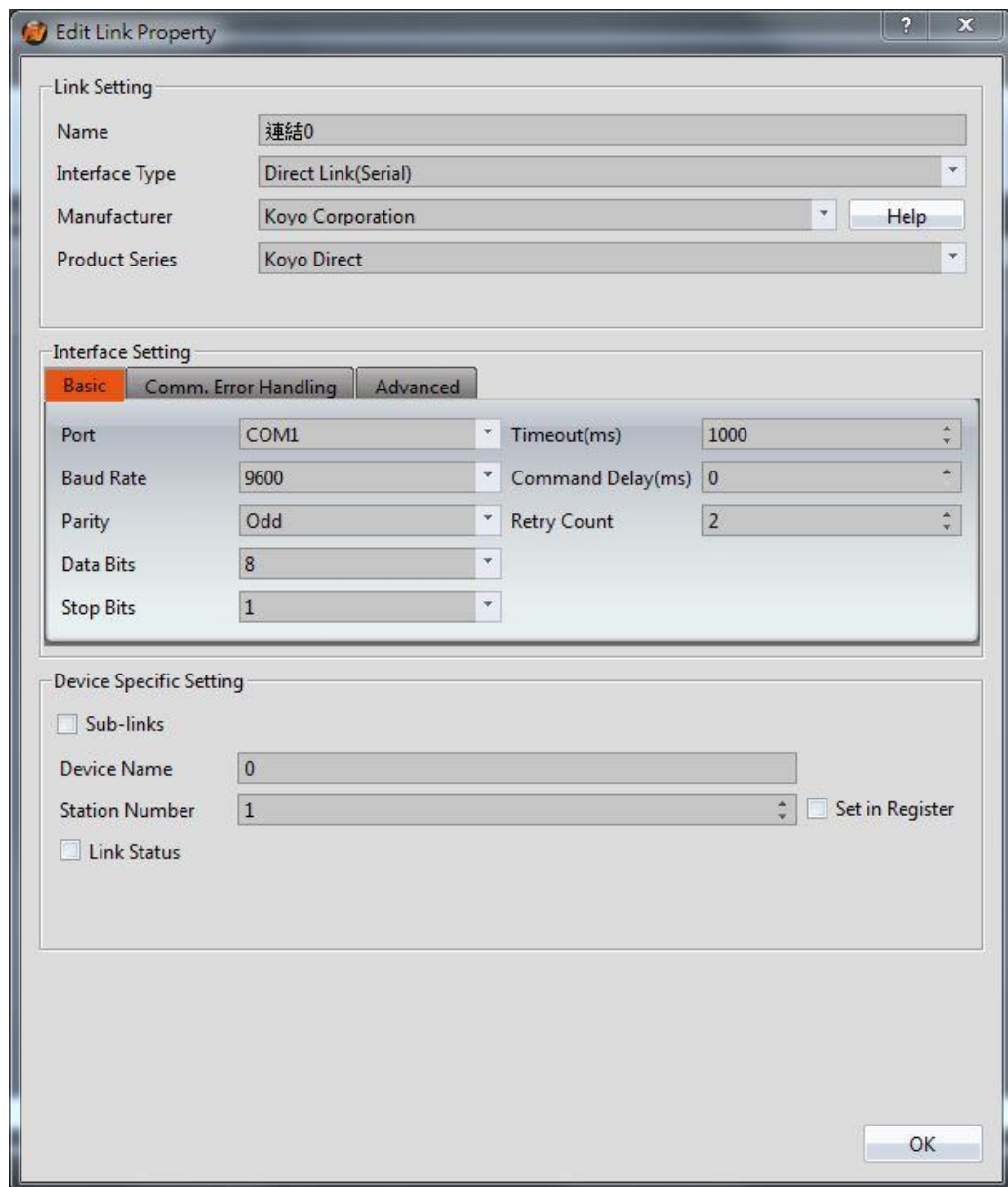
click PLC on the top, select “connect” to connect.



connect success, as shown below.



HMI Setting



Within the **Link** configuration window in FvDesigner:

Under Interface Type select Serial

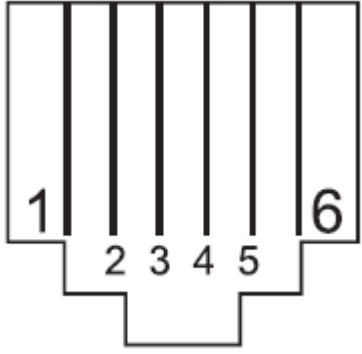
Under **Manufacturer** select Koyo Corporation

Under **Product Series** select Koyo Direct

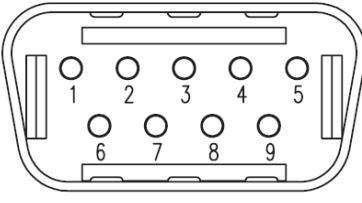
Under **Port** select required COM port. Verify the baud rate is the same as the value set on the PLC.

2.14.1.4 Wiring Diagrams

PLC RS232 Pinout

	
PIN#	Signal
1	GND
2	Power+ 5V
3	Rx (RS-232C)
4	Tx (RS-232C)
5	Power+ 5V
6	GND

HMI COM1 Pinout

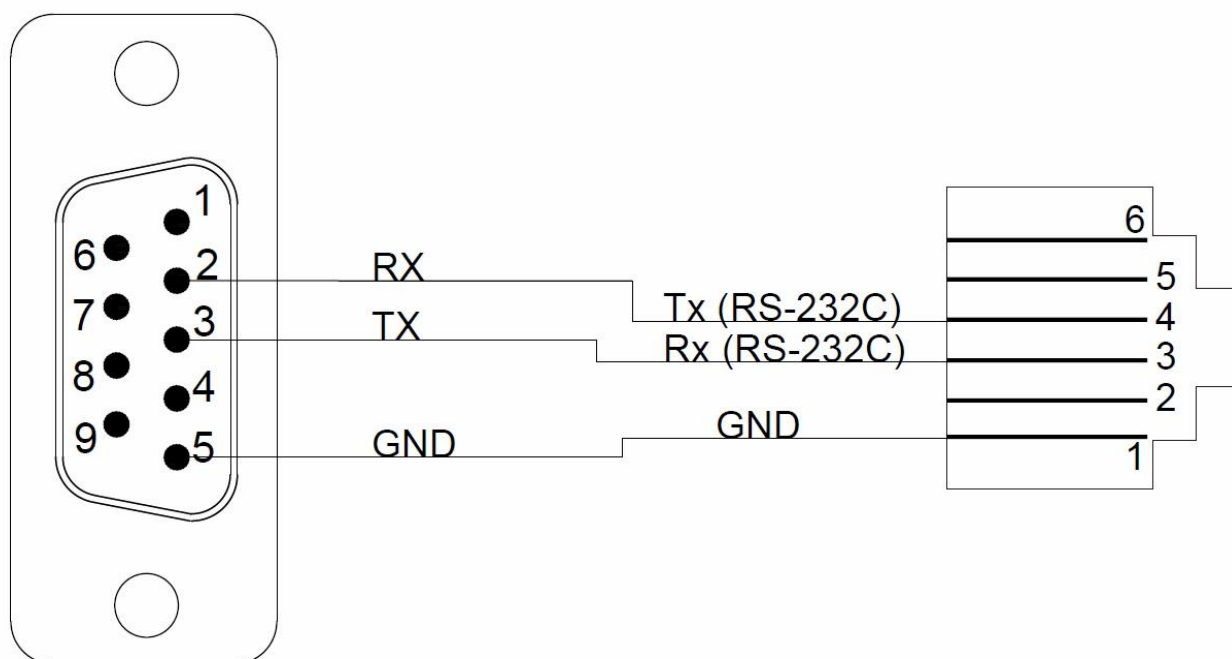
	
*Looking into COM1 Port	
PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

HMI COM1	PLC Port
2 RX	4 Tx (RS-232C)
3 TX	3 Rx (RS-232C)
5 GND	1 GND

Wiring Diagrams:

HMI COM1

PLC RS232



2.14.2 K-Sequence

2.14.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9600	or 19200,38400
Data Length	8	
Stop Bit	1	
Parity	Odd	or even, no
PLC Station No.	1	
Communication Method	K-sequence (slave)	

2.14.2.2 Memory Resource Review

Device	Data bit	Data format	Min.	Min.	Description
GX	1	OOOO	3777	0	Global Input Bits

GY	1	0000	3777	0	Global Output Bits
X	1	0000	1777	0	Input Bits
Y	1	0000	1777	0	Output Bits
C	1	0000	3777	0	Control Relays
S	1	0000	1777	0	Stage Status Bits
T	1	000	377	0	Timer Status Bits
CT	1	000	777	0	Counter Status Bits
SP	1	0000	1777	0	System Status Bits
V	16	00000	77777	0	V Memory

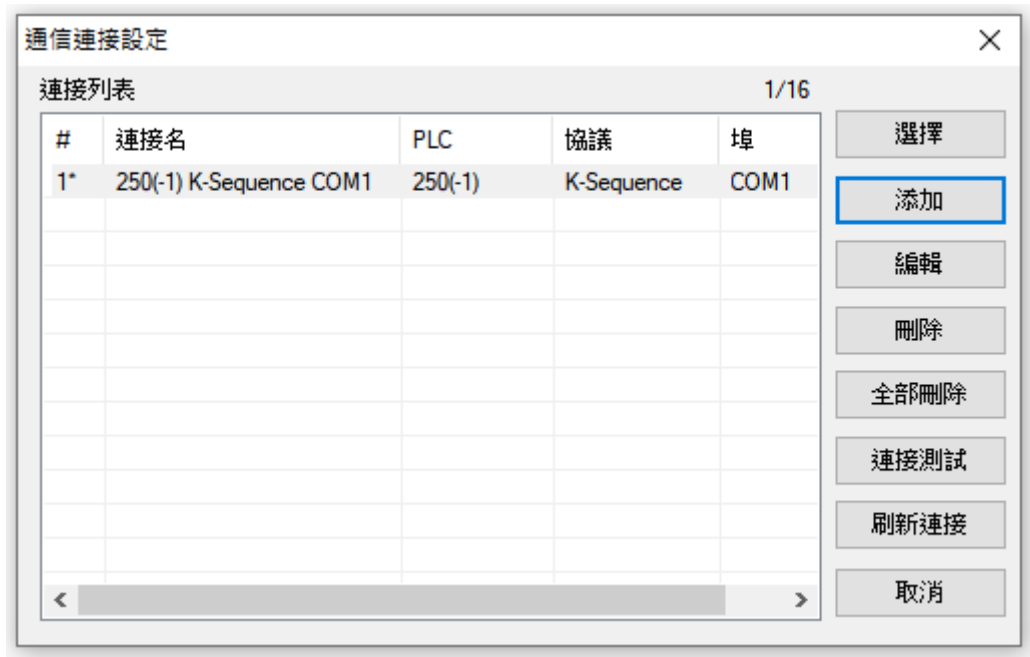
2.14.2.3 Connected Setting

Configuring of PLC

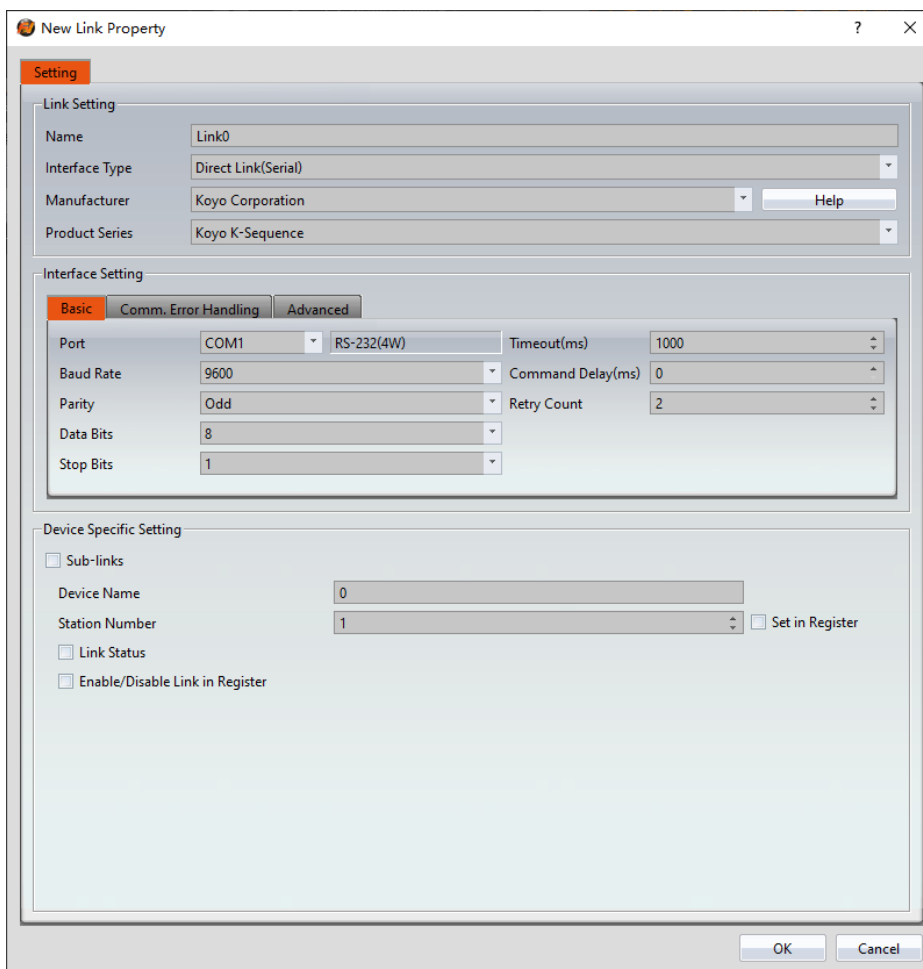
1. Connecting PLC with the PC. After open KPP Koyo PLC Programming Software, select connect PLC. Start auto-finding connecting of PLC.



2. Check on the page of the link setting, select the link to connect the PLC.



HMI Setting



Within the **Link** configuration window in FvDesigner:

Under Interface Type select Serial

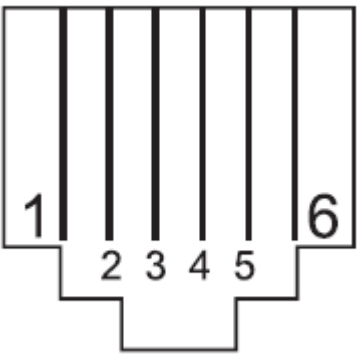
Under **Manufacturer** select Koyo Corporation

Under **Product Series** select Koyo K-Sequence

Under **Port** select required COM port. Verify the baud rate is the same as the value set on the PLC.

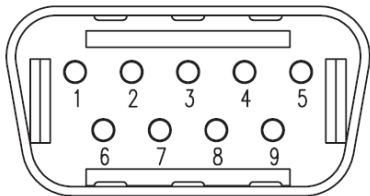
2.14.2.4 Wiring Diagrams

PLC RS232 Pinout



PIN#	Signal
1	GND
2	Power+ 5V
3	Rx (RS-232C)
4	Tx (RS-232C)
5	Power+ 5V
6	GND

HMI COM1 Pinout



*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX

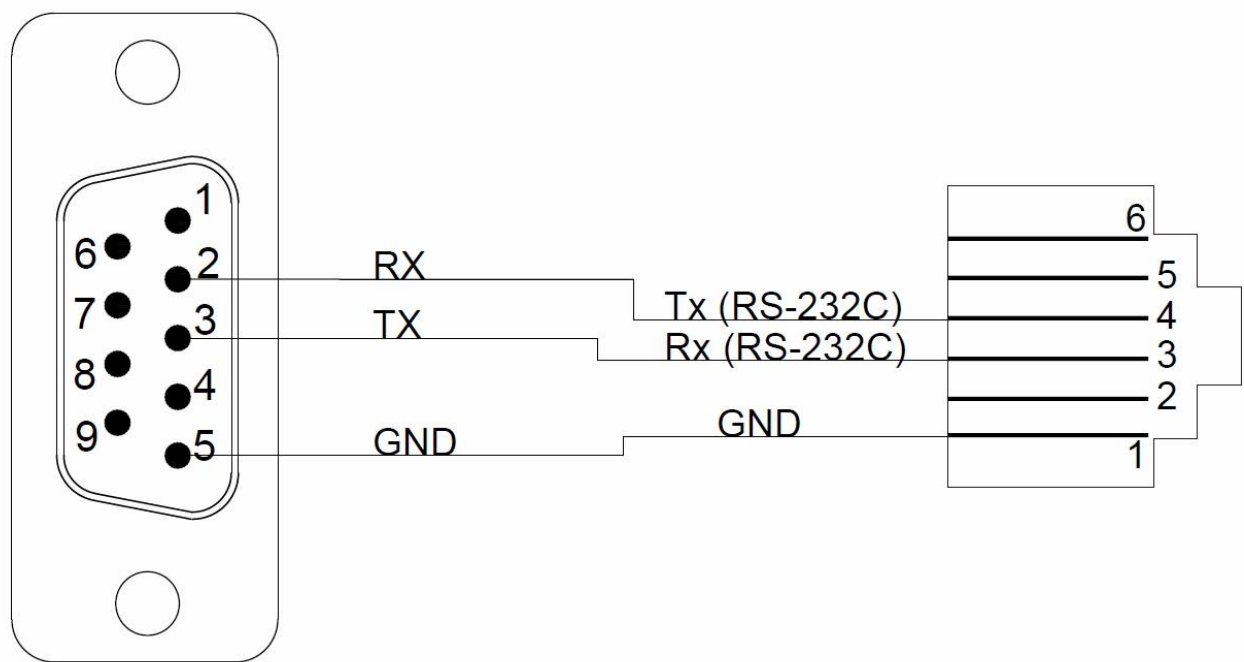
4	
5	GND
6	
7	RTS
8	CTS
9	

HMI COM1	PLC Port
2 RX	4 Tx (RS-232C)
3 TX	3 Rx (RS-232C)
5 GND	1 GND

Wiring Diagrams:

HMI COM1

PLC RS232



2.15 Yudian

2.15.1 AI

2.15.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232/RS485	
Baud Rate	9600	or 4800,19200
Data Length	8	
Stop Bit	1	
Parity	NONE	
PLC Station No.	0	
Communication Method	Yudian Communication Protocol	

2.15.1.2 Memory Resource Review

Device	Data bit	Data format	Min.	Min.	Description
Parm	16	HH	0	B4	Parameter
SV	16	D	0	B4	Pre-set Value
PV	16	D	0	0	Measuring Value
MV	16	D	0	0	Manual Output Value
AL	16	D	0	0	Alarm Status

2.15.1.3 Connected Setting

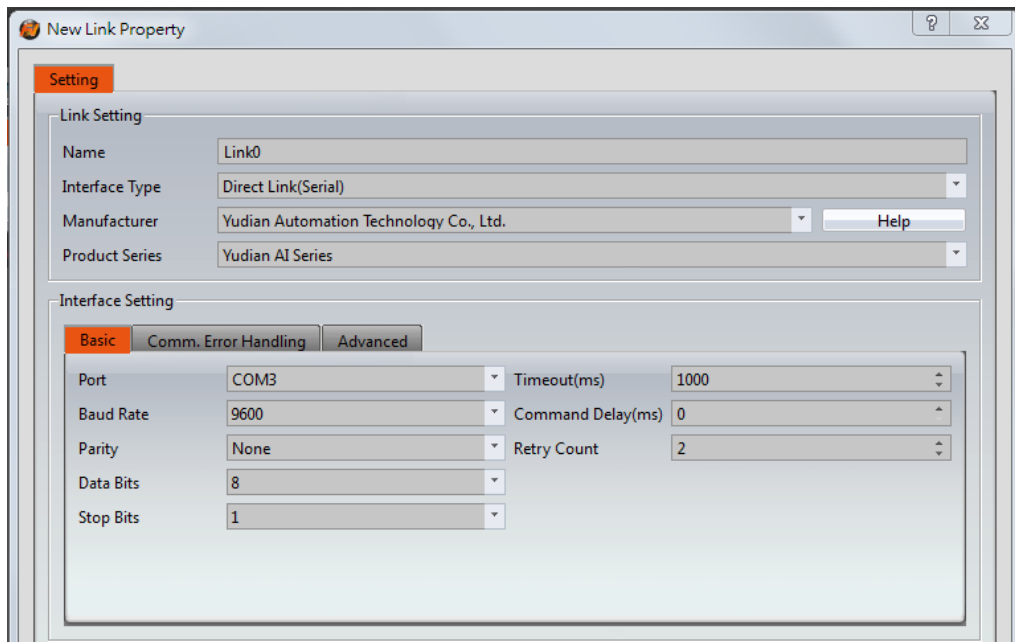
Configuring of PLC

Press the control panel button on the device for 2 seconds, then let go of your finger after the "parameter settings" were displayed, the panel will display the parameters in sequence, bAud: communication baud rate, Addr: communication address.

Other detailed settings can refer to Yudian official website

<http://www.yudian.com/>

HMI Setting



Within the **Link** configuration window in FvDesigner:

Under Interface Type select Serial

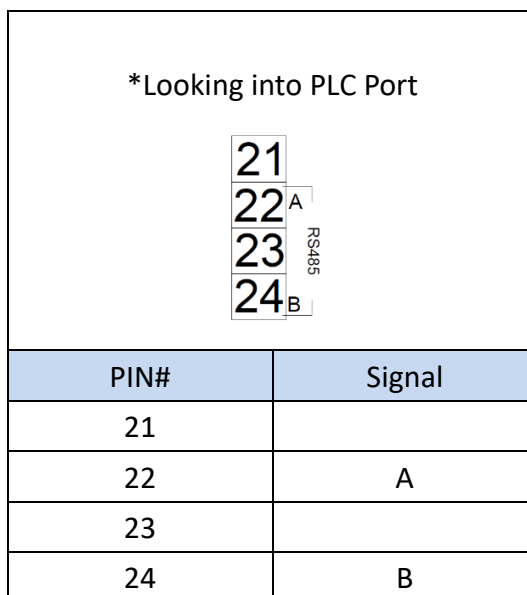
Under **Manufacturer** select Yudian Automation Technology Co, Ltd.

Under **Product Series** select Yudian AI Series

Under **Port** select required COM port. Verify the baud rate is the same as the value set on the PLC.

2.15.1.4 Wiring Diagrams

PLC RS485 Pinout



HMI COM3 腳位

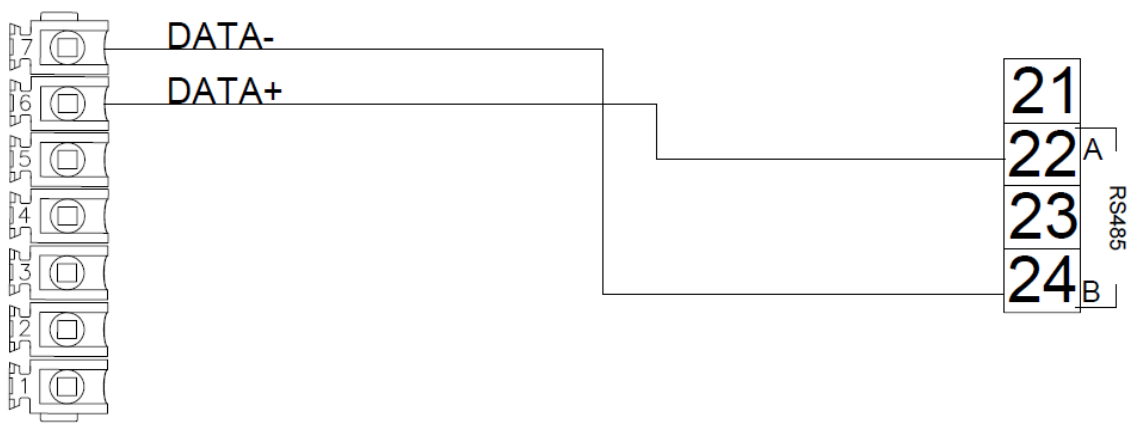
 *Looking into HMI Device	
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	
5	
6	DATA+
7	DATA-

HMI COM3	PLC RS485 Port
6 DATA+	22 A
7 DATA-	24 B

Wiring Diagrams

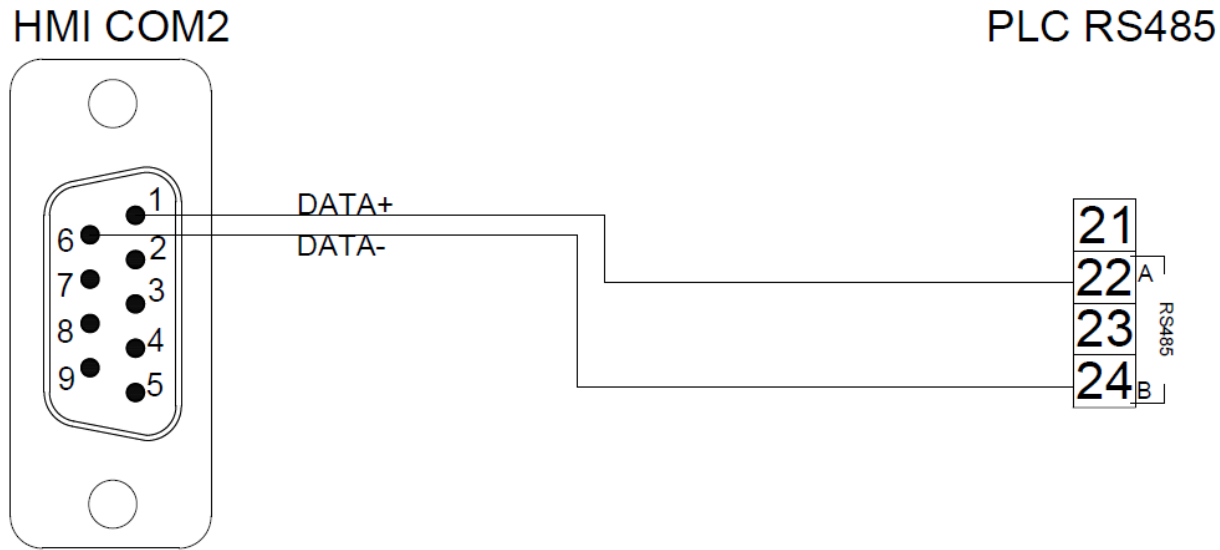
HMI COM3

PLC RS485



HMI COM2	PLC RS485 Port
1 DATA+	22 A
6 DATA-	24 B

Wiring Diagrams



2.16 Xinje

2.16.1 2.16.1 XC series

2.16.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	NONE	
PLC Station No.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.16.1.2 Memory Resource Review

Device	Data bit	Data format	Min.	Min.	Description
M	1	DDDD	0	8511	
X	1	OOOO	0	1037	
Y	1	OOOO	0	1037	

S	1	DDDD	0	1023	
T	1	DDD	0	618	
C	1	DDD	0	634	
D	16	DDDD	0	8511	
TD	16	DDD	0	618	
CD	16	DDD	0	634	
FD_1	16	DDDD	0	5000	
FD_2	16	DDDD	8000	8511	

2.16.1.3 Connected Setting

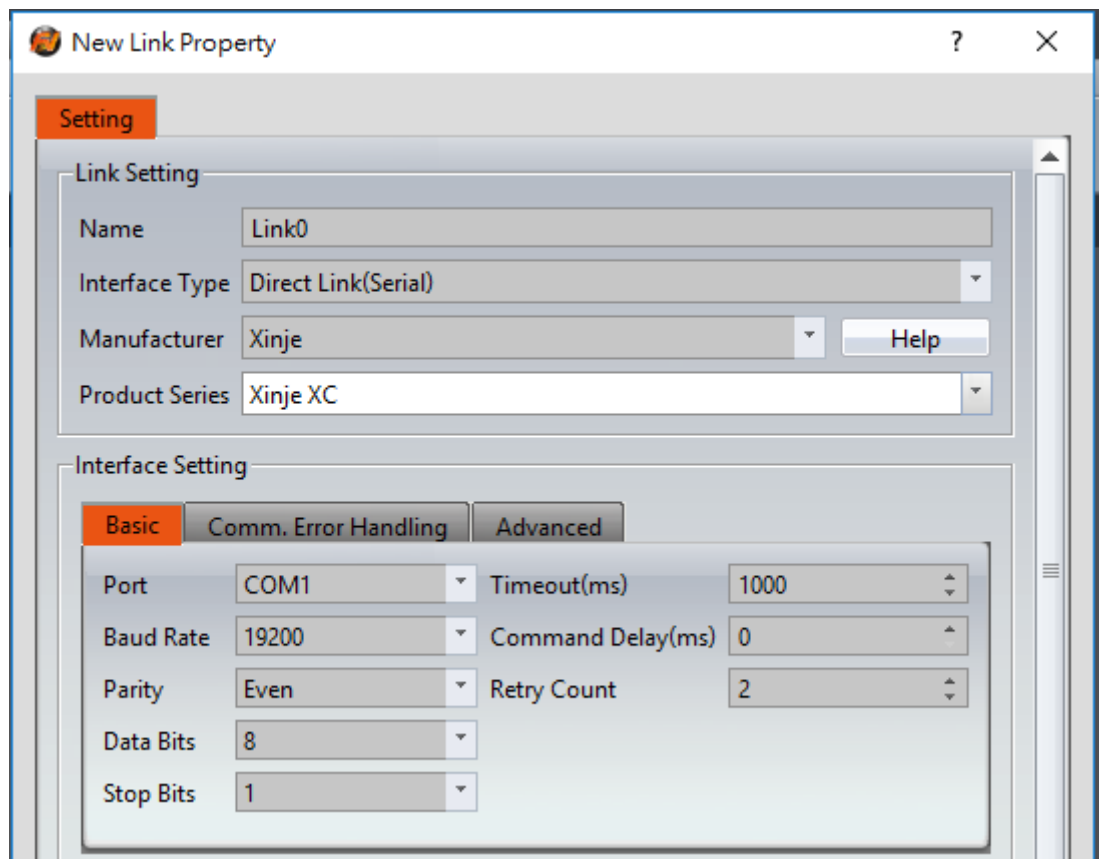
PLC Setting

Open XCPPro and use the official DVP cable to connect to the computer RS232 hole, the default will be use COM1 to connect automatically.

(Please do not modify the COME1 connection parameters, this will cause the PLC to be unable to connect to the PC)



HMI Setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Serial

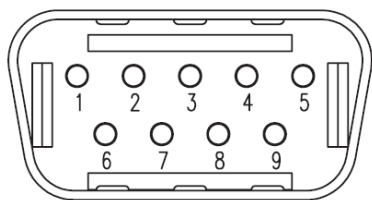
Under Manufacturer select Xinje

Under Product Series select XinjeXC Series

Under Port select required COM port. Verify the baud rate is the same as the value set on the PLC.

2.16.1.4 Wiring Diagrams

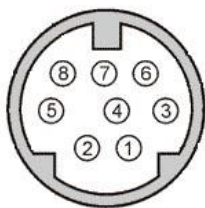
HMI COM1 Pinout



*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	
9	

PLC RS232 Pinout



*Looking into PLC

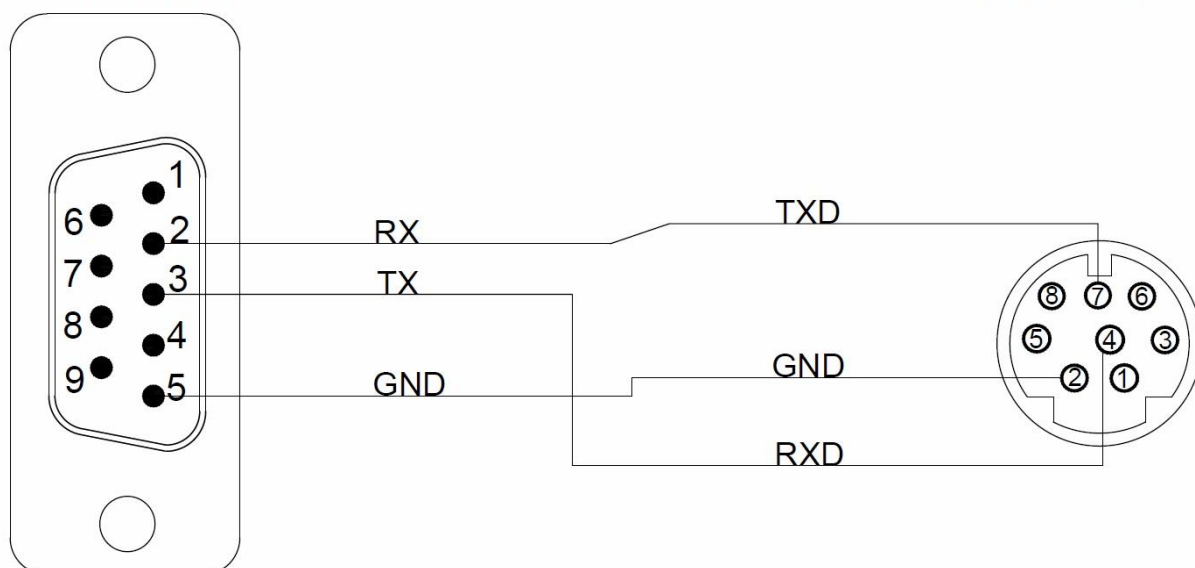
PIN#	Signal
1	
2	GND
3	
4	RXD
5	
6	
7	TXD
8	

HMI COM1	PLC RS232 Port
2 RX	7 TXD
3 TX	4 RXD
5 GND	2 GND

Wiring Diagrams:

HMI COM1

PLC RS232



2.16.2 XD series

2.16.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	NONE	
PLC Station No.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.16.2.2 Memory Resource Review

Device	Data bit	Data format	Min.	Min.	Description
M	1	DDDDD	0	20479	
X	1	OO	0	77	

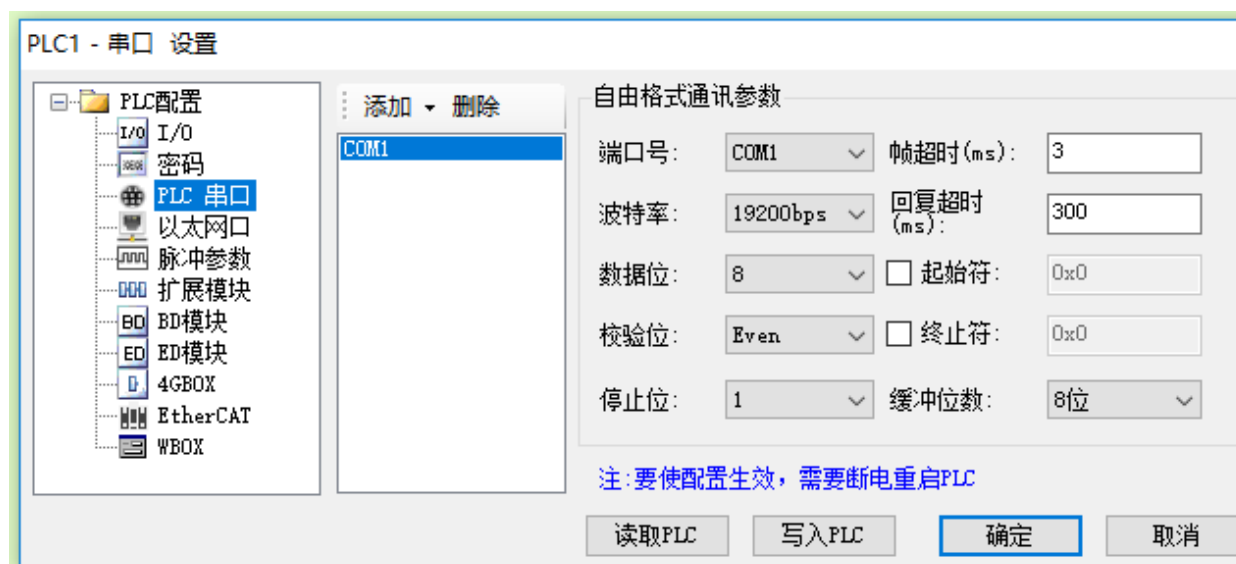
Y	1	DD	0	77	
S	1	DDDD	0	7999	
SM	1	DDDD	0	4095	
T	1	DDDD	0	4095	
C	1	DDDD	0	4095	
ET	1	DD	0	39	
SEM	1	DDD	0	127	
HM	1	DDDD	0	6143	
HS	1	DDD	0	999	
HT	1	DDDD	0	1023	
HC	1	DDDD	0	1023	
HSC	1	DD	0	39	
X_Extension	1	OOOOO	10000	11777	
X_BD	1	OOOOO	20000	20100	
Y_Extension	1	OOOOO	10000	11777	
Y_BD	1	OOOOO	20000	20100	
D	16	DDDDD	0	20479	
ID	16	DD	0	99	
QD	16	DD	0	99	
SD	16	DDDD	0	4095	
TD	16	DDDD	0	4095	
CD	16	DDDD	0	4095	
ETD	16	DD	0	39	
HD	16	DDDD	0	6143	
HSD	16	DDDD	0	1023	
HTD	16	DDDD	0	1023	
HCD	16	DDDD	0	1023	
HSCD	16	DD	0	39	
FD	16	DDDD	0	8191	
SFD	16	DDDD	0	5999	
FS	16	DD	0	49	
ID_Extension	16	DDDDD	10000	11599	
ID_BD	16	DDDDD	20000	20099	
QD_Extension	16	DDDDD	10000	11599	
QD_BD	16	DDDDD	20000	20099	

2.16.2.3 Connected Setting

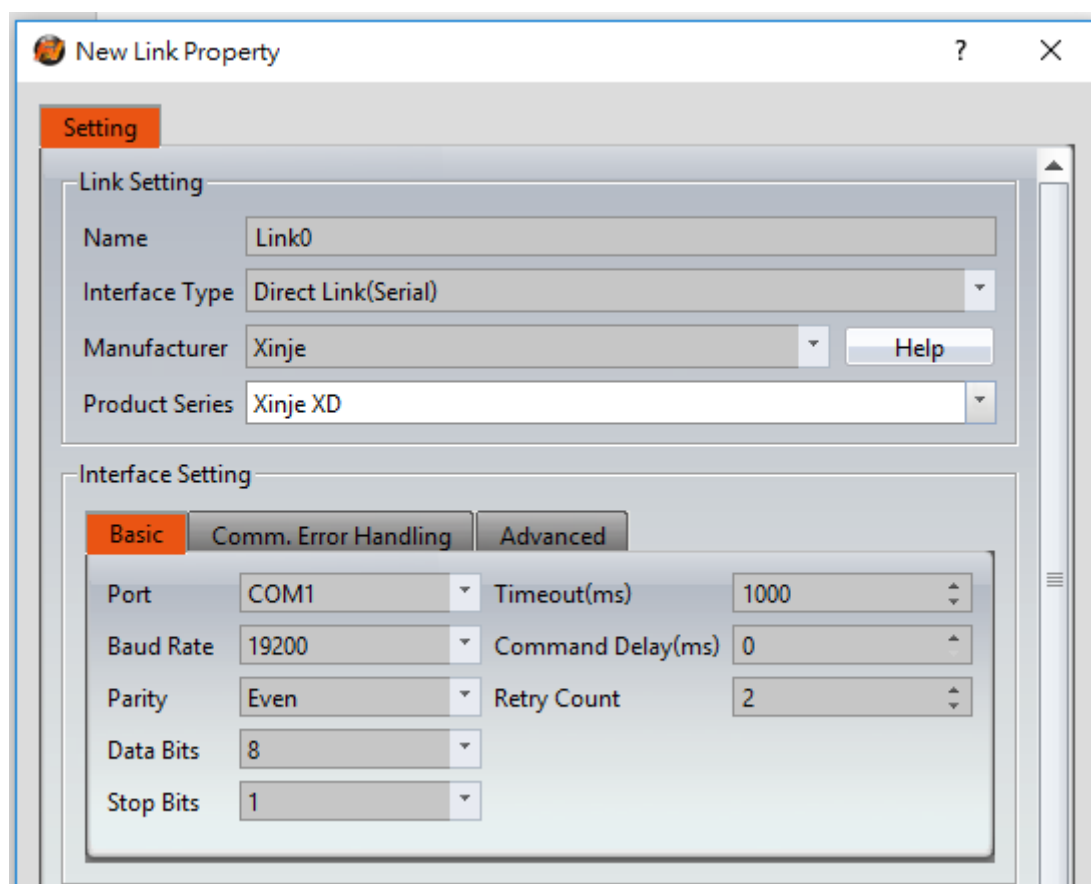
PLC Setting

Open XDPPor and use the official DVP cable to connect to the computer RS232 hole, the default will be use COM1 to connect automatically.

(Please do not modify the COM1 connection parameters, this will cause the PLC to be unable to connect to the PC)



HMI Setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Serial

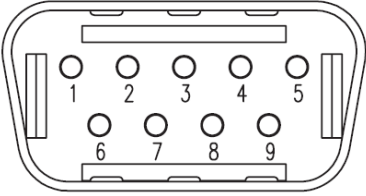
Under Manufacturer select Xinje

Under Product Series select XinjeXD Series

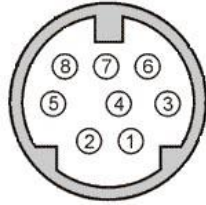
Under Port select required COM port. Verify the baud rate is the same as the value set on the PLC.

2.16.2.4 Wiring Diagrams

HMI COM1 Pinout

	
*Looking into COM1 Port	
PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	
9	

PLC RS232 Pinout



*Looking into PLC

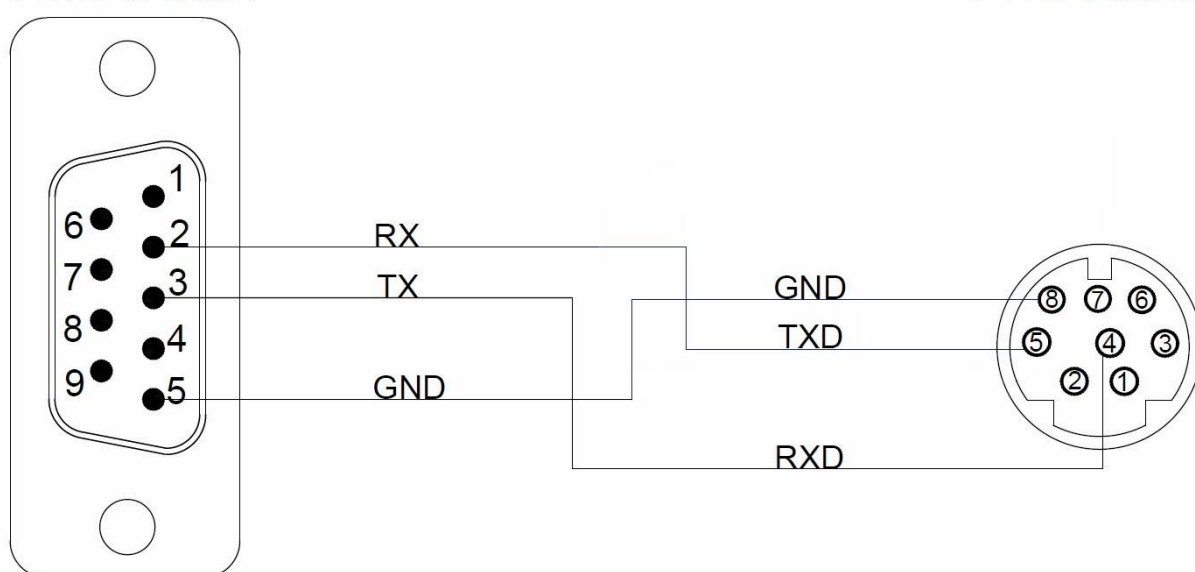
PIN#	Signal
1	
2	
3	
4	RXD
5	TXD
6	
7	
8	GND

HMI COM1	PLC RS232 Port
2 RX	5 TXD
3 TX	4 RXD
5 GND	8 GND

Wiring Diagrams:

HMI COM1

PLC RS232



2.17 Vigor

2.17.1 M/VB/VH Series

2.17.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232 2W	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
PLC Station No.	0	
Communication Method	Vigor M/VB/VH protocol	

2.17.1.2 Memory Resource Review

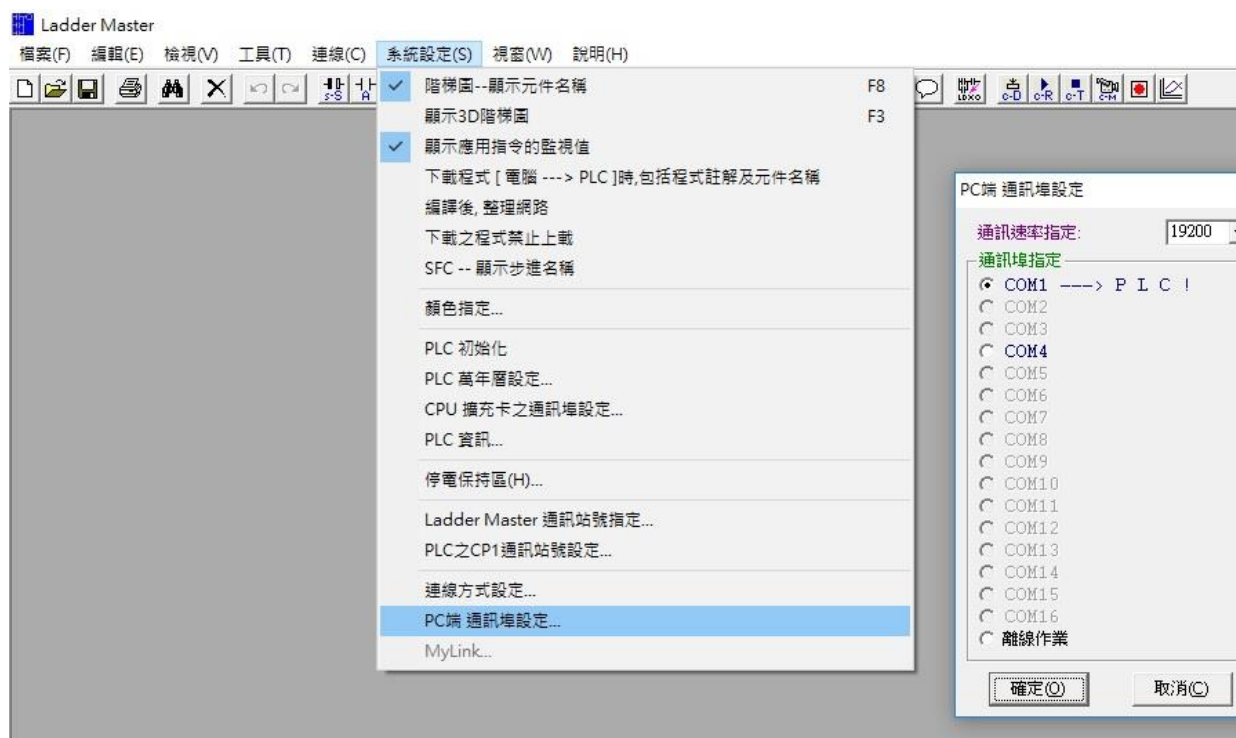
Device	Data bit	Data format	Min.	Max.	Description
X	1	OOO	0	777	External input relay
Y	1	OOO	0	777	External output relay
M	1	DDDD	0	7999	Internal relay

S	1	DDD	0	999	Step relay
SM	1	DDDD	9000	9255	Special relay
TC	1	DDD	0	255	Timer coil
CC	1	DDD	0	255	Counter coil
TS	1	DDD	0	255	Timer contact
CS	1	DDD	0	255	Counter contact
D	16	DDDD	0	8999	D data register
SD	16	DDD	9000	9255	Special data resgister
T	16	DDD	0	255	Timer
C	16	DDD	0	199	16 bits counter
CL	16	DDD	200	255	32 bits counter

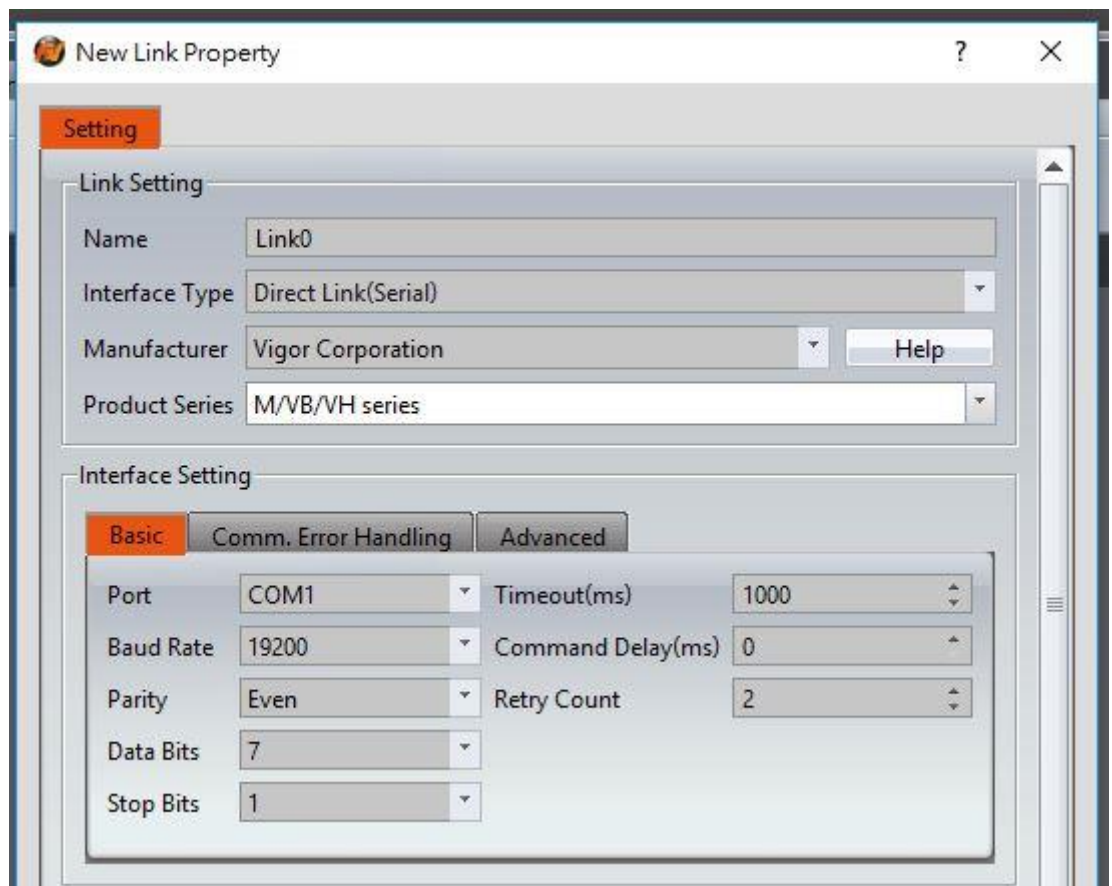
2.17.1.3 Connected Setting

PLC Setting

Open Ladder Master and use the Vigor VBUSB-200 cable to connect to the computer USB port, it will automatically connect.



HMI Setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Serial

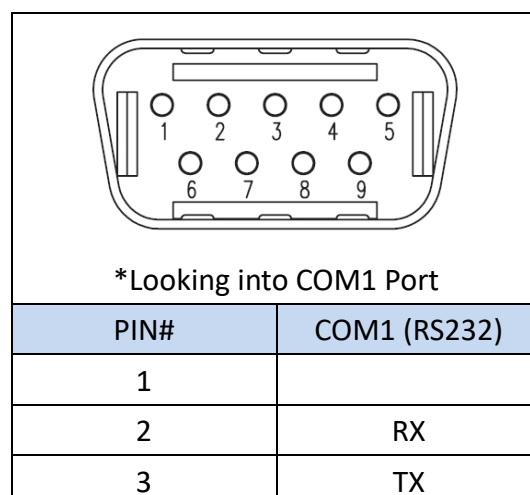
Under Manufacturer select Vigor Corporation

Under Product Series select VS Series

Under Port select required COM port. Verify the baud rate is the same as the value set on the PLC.

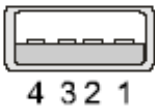
2.17.1.4 Wiring Diagrams

HMI COM1 Pinout



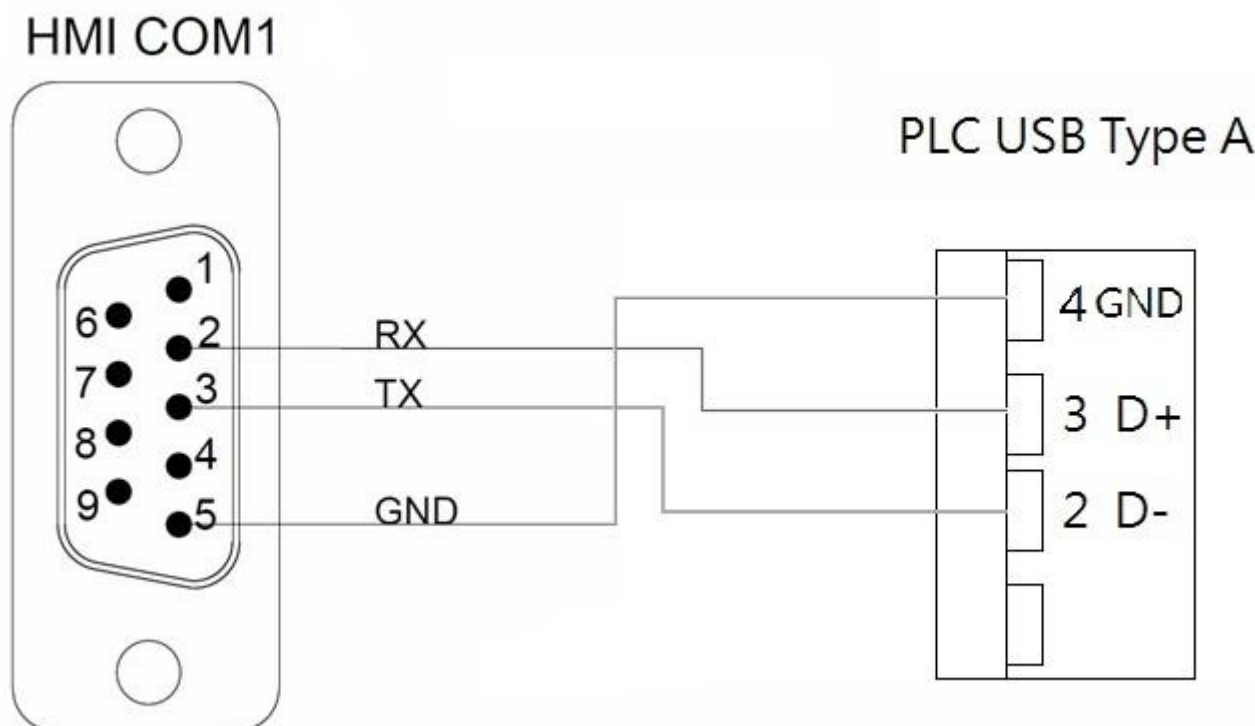
4	
5	GND
6	
7	
8	
9	

PLC USB Pinout

 4 3 2 1 USB Type A	
PIN#	Signal
1	
2	D-
3	D+
4	GND

HMI COM1	PLC USB Port
2 RX	3 D+
3 TX	2 D-
5 GND	5 GND

Wiring Diagrams:



2.17.2 VS series

2.17.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS485	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
PLC Station No.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.17.2.2 Memory Resource Review

Device	Data bit	Data format	Min.	Min.	Description
X	1	OOO	0	377	External input relay
Y	1	OOO	0	377	External output relay
M	1	DDDD	0	8191	Internal relay
S	1	DDDD	0	4095	Step relay

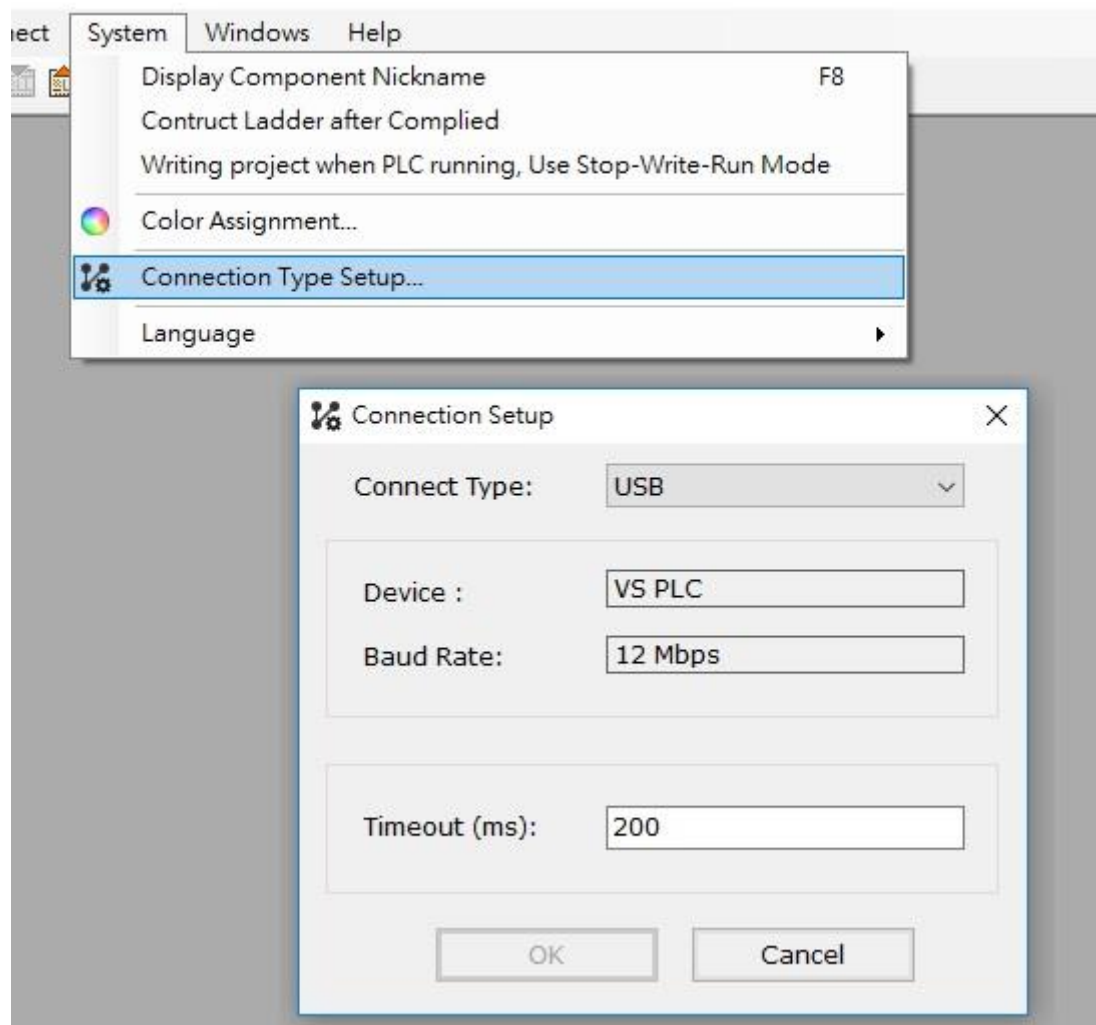
SM	1	DDD	9000	9511	Special relay
DB	1	DDDD.H	0.0	8999.f	D data register bits
RB	1	DDDDD.H	0.0	25999.f	R data register bits
TC	1	DDD	0	511	Timer coil
CC	1	DDD	0	255	Counter coil
TS	1	DDD	0	511	Timer contact
CS	1	DDD	0	255	Counter contact
D	16	DDDD	0	8999	D data register
SD	16	DDD	9000	9511	Special data resgister
R	16	DDDDD	0	25999	R data resgister
T	16	DDD	0	511	Timer
C	16	DDD	0	199	16 bits counter
WX	16	OOO	0	377	External input relay
WY	16	OOO	0	377	External output relay
WM	16	DDDD	0	8191	Internal relay
WS	16	DDDD	0	4095	Step relay
CL	32	DDD	200	255	32 bits counter

2.17.2.3 Connected Setting

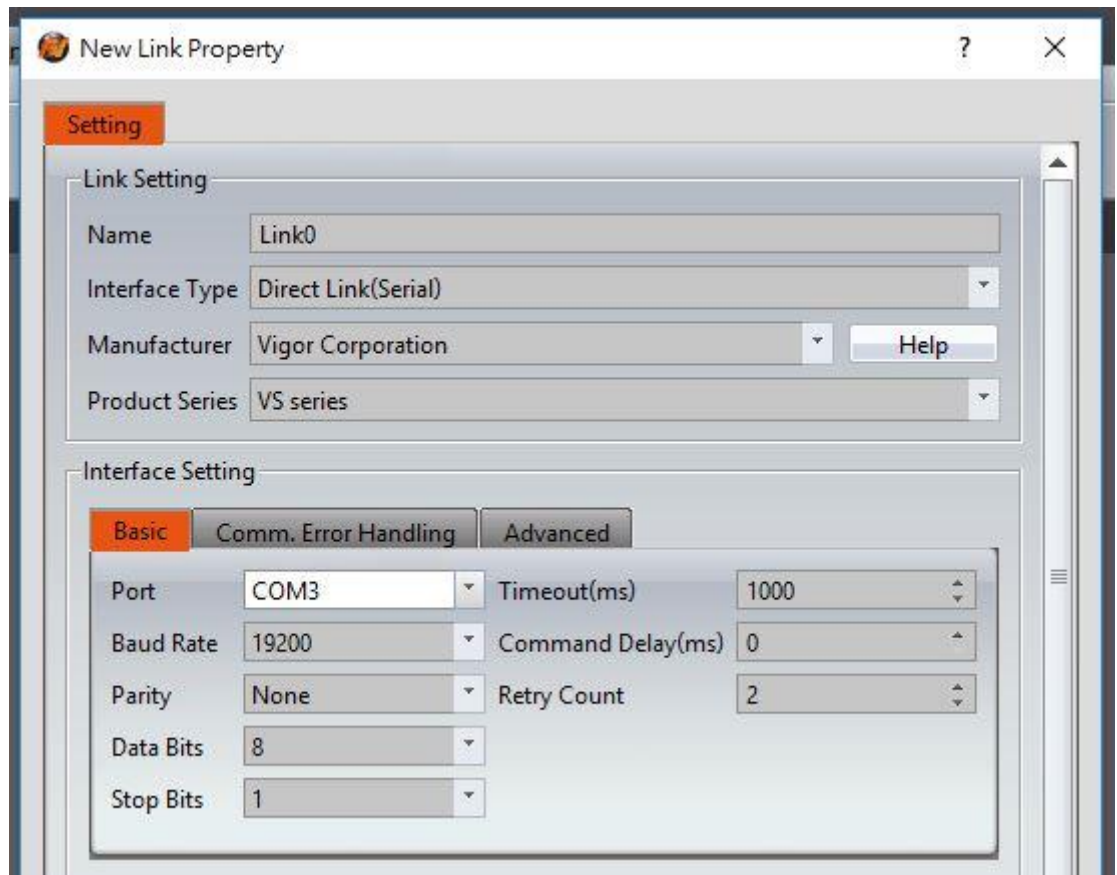
PLC Setting

Open Ladder Master and use the Vigor VBUSB-200 cable to connect to the computer USB port, it will automatically connect.

(Note: Mini-USB cable is required for programming, RS-485 is required for connection with human machine)



HMI Setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Serial

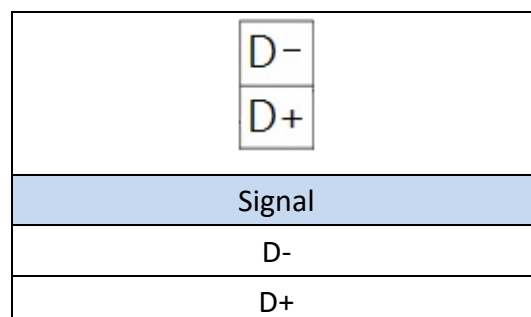
Under Manufacturer select Vigor Corporation

Under Product Series select VS Series

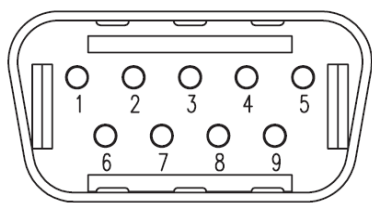
Under Port select required COM port. Verify the baud rate is the same as the value set on the PLC.

2.17.2.4 Wiring Diagrams

PLC RS485



HMI COM3



*Looking into COM3 Port

PIN#	COM3 (RS-485)
1	DATA+
2	
3	
4	
5	GND
6	DATA-
7	
8	
9	

HMI COM3	PLC RS485 Port
1 DATA+	D+
6 DATA-	D-

HMI COM3

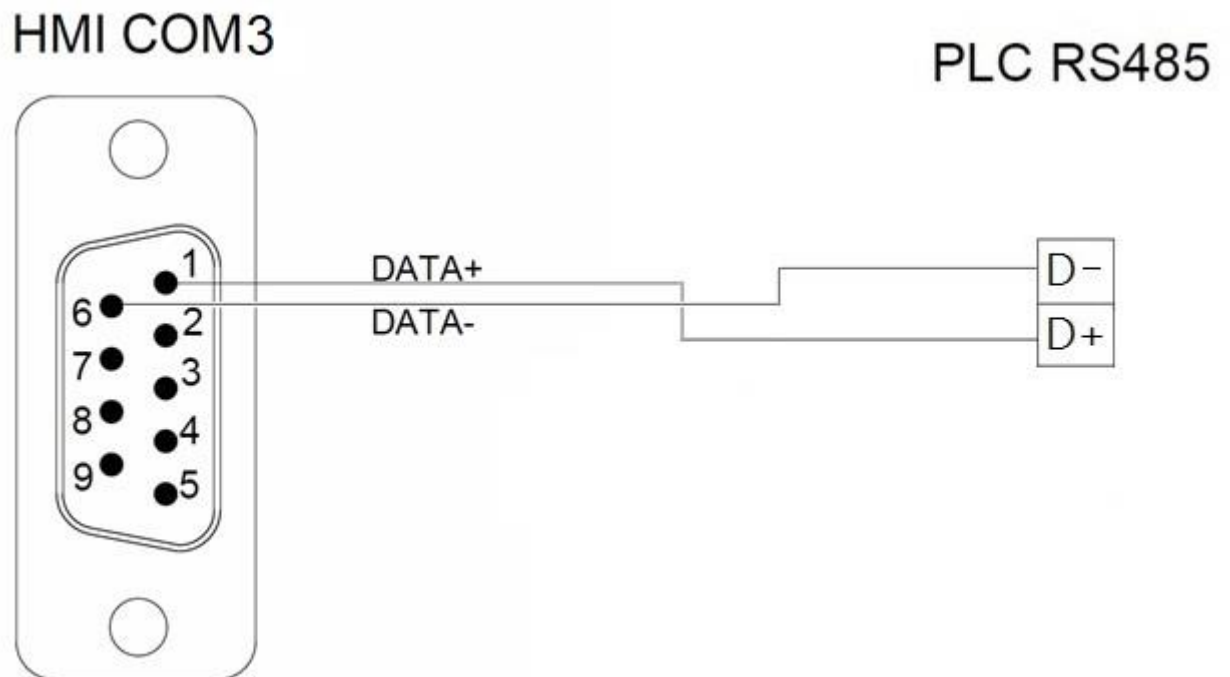


*Looking into HMI Device

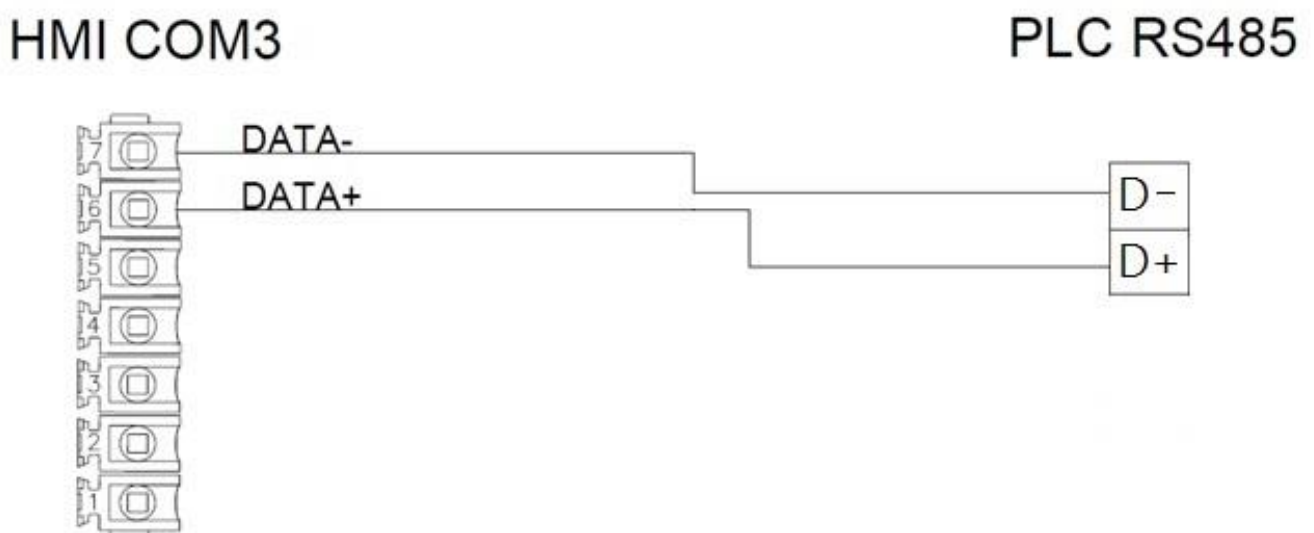
PIN#	COM3 (RS-485)
1	
2	
3	ISO_GND
4	
5	
6	DATA+
7	DATA-

HMI COM3	PLC RS485 Port
6 DATA+	DATA+
7 DATA-	DATA-

Wiring Diagrams



Wiring Diagrams



2.18 LS

2.18.1 LS XBC-cnet

2.18.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS-232/RS-485	
Baud Rate	115200	
Data Length	8	
Stop Bit	1	
Parity	None	
PLC Station No.	0	
Communication method	Serial	

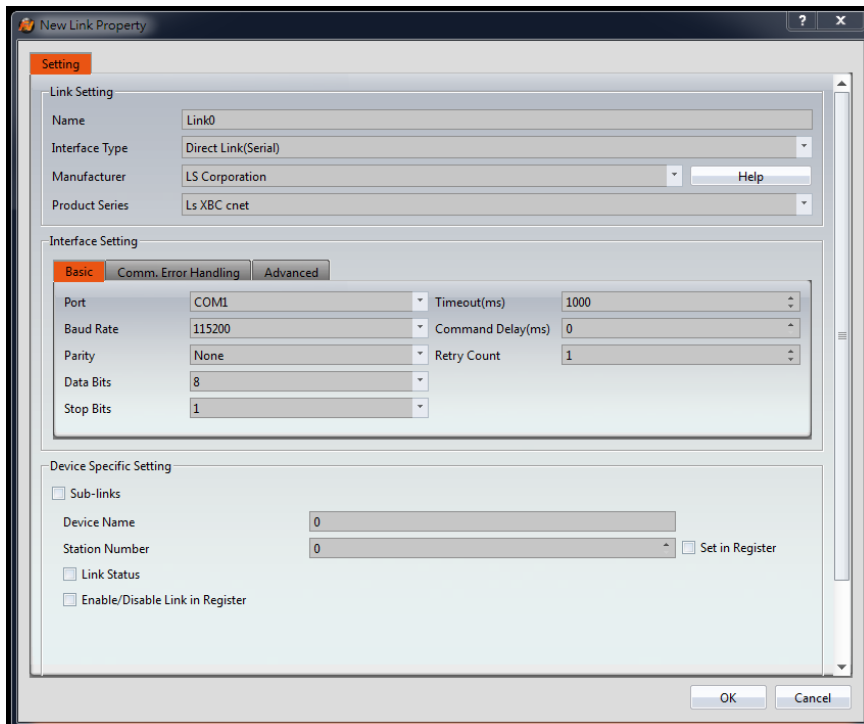
2.18.1.2 Memory Resource Review

Bit/ Word	Device Type	Range	XBC
B	PX	0-2047F	0-1023F
	MX	0-2047F	0-1023F
	KX	0-2559F	0-2559F
	FX	0-2047F	0-1023F
	TX	0-2047	0-1023
	CX	0-2047	0-1023
	UX	0-3F.31F	0-A.31F
	SX	0-12799	0-12799
	L	0-4095	0-2047F
	D	0-32767	0-10239
	R	0-32767	0-2047
W	PW	0-2047	0-1023
	MW	0-2047	0-1023
	KW	0-2559	0-2559
	FW	0-2047	0-1023
	TW	0-2047	0-1023
	CW	0-2047	0-1023
	UW	0-3F.31	0-A.31
	SW	0-12799	0-12799
	ZW	0-127	0-127
	LW	0-4095	0-2047F
	DW	0-32767	0-10239

	RW	0-32767	0-10239
--	----	---------	---------

2.18.1.3 Connected Setting

HMI setting



Within the Link configuration window in FvDesigner:

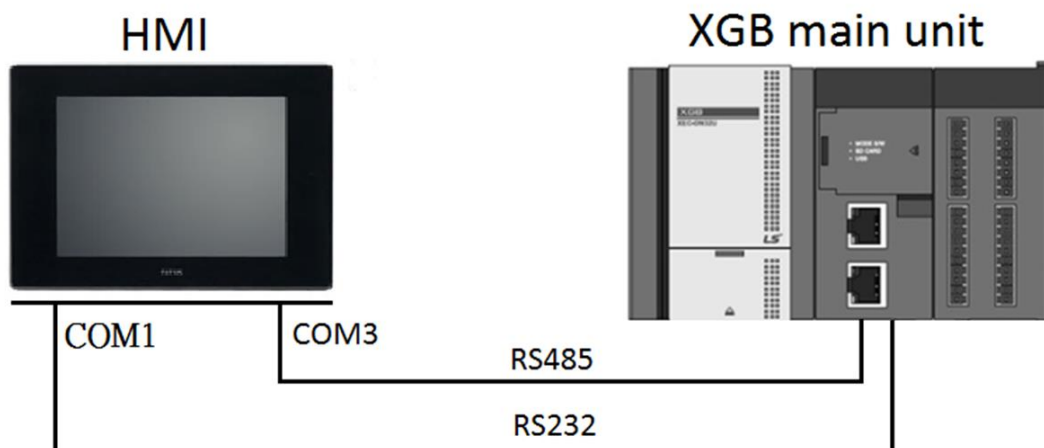
Under Interface Type select Serial

Under Manufacturer select LS Corporation

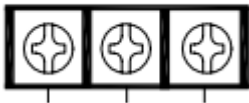
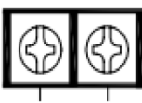
Under Product Series select LS XBC cnet

Under Port select COM1

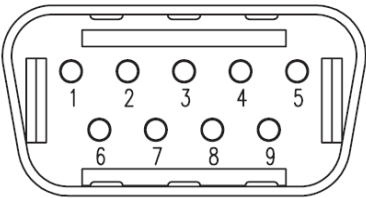
2.18.1.4 Wiring Diagrams



XBC-Cnet

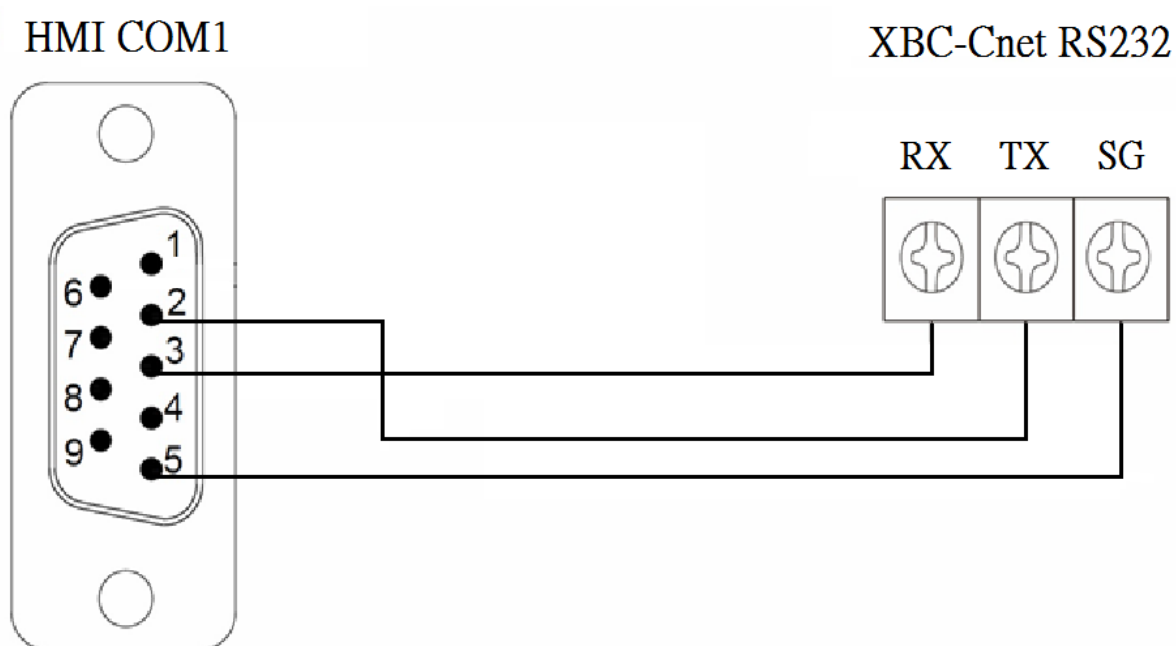
XBC-Cnet RS232Pinout RX TX SG 	XBC-Cnet RS485 Pinout D+ D- 
RS-232	RS-485
SG	DATA+(485+)
TX	DATA- (485-)
RX	

HMI COM1 Pinout

	
*Looking into COM1 Port	
PIN	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

HMI COM1	XBC-Cnet RS232 Port
2 RX	TX
3 TX	RX
5 GND	SG

Wiring Diagrams



2.18.2 LS XEC-Cnet

2.18.2.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS-232/RS-485	
Baud Rate	115200	
Data Length	8	
Stop Bit	1	
Parity	None	
PLC Station No.	0	
Communication method	Serial	

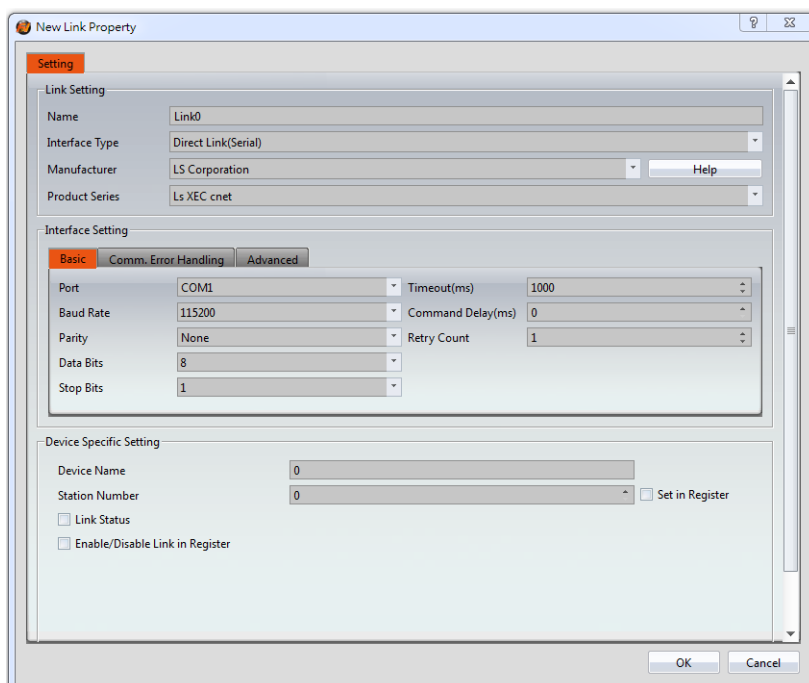
2.18.2.2 Memory Resource Review

Bit/ Word	Device Type	Range	XEC
B	IX	0.0.0-15.15.63	0.0.0-15.15.63
	QX	0.0.0-15.15.63	0.0.0-15.15.63
	MX	0-262143	0-262143
	LX	0-65535	0-65535
	NX	0-163839	0-163839
	KX	0-131071	0-131071
	UX	0.0-11.511	0.0-11.511

	RX	0-262143	0-262143
	AX	0-524287	0-524287
	WX	0-524287	0-524287
	FX	0-32767	0-32767
W	I	0.0.0-15.15.3	0.0.0-15.15.3
	QW	0.0.0-15.15.3	0.0.0-15.15.3
	MW	0-16383	0-16383
	LW	0-4095	0-4095
	NW	0-10239	0-10239
	KW	0-8191	0-8191
	UW	0.0-11.31	0.0-11.31
	RW	0-16383	0-16383
	AW	0-32767	0-32767
	WW	0-32767	0-32767
	FW	0-2047	0-2047

2.18.2.3 Connected Setting

HMI setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Serial

Under Manufacturer select LS Corporation

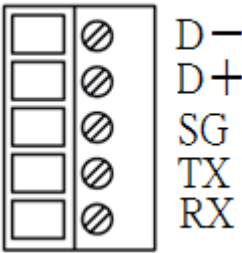
Under Product Series select LS XBC cnet

Under Port select COM1

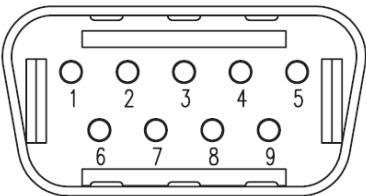
2.18.2.4 Wiring Diagrams



XBC-Cnet Pinout

	
RS-232	RS-485
SG	D- (485-)
TX	D+(485+)
RX	

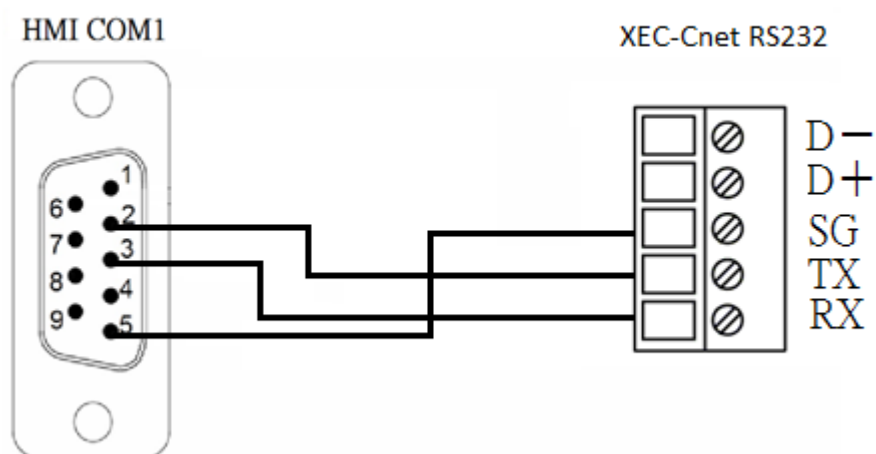
HMI COM1 Pinout

	
*Looking into COM1 Port	
PIN	COM1 (RS232)
1	

2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

HMI COM1	XBC-Cnet RS232 Port
2 RX	TX
3 TX	RX
5 GND	SG

Wiring Diagrams :



2.18.3 LS XBC-Fnet

2.18.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.61	
Port	2004	

PLC Station No.	1	
Communication Method	TCP	

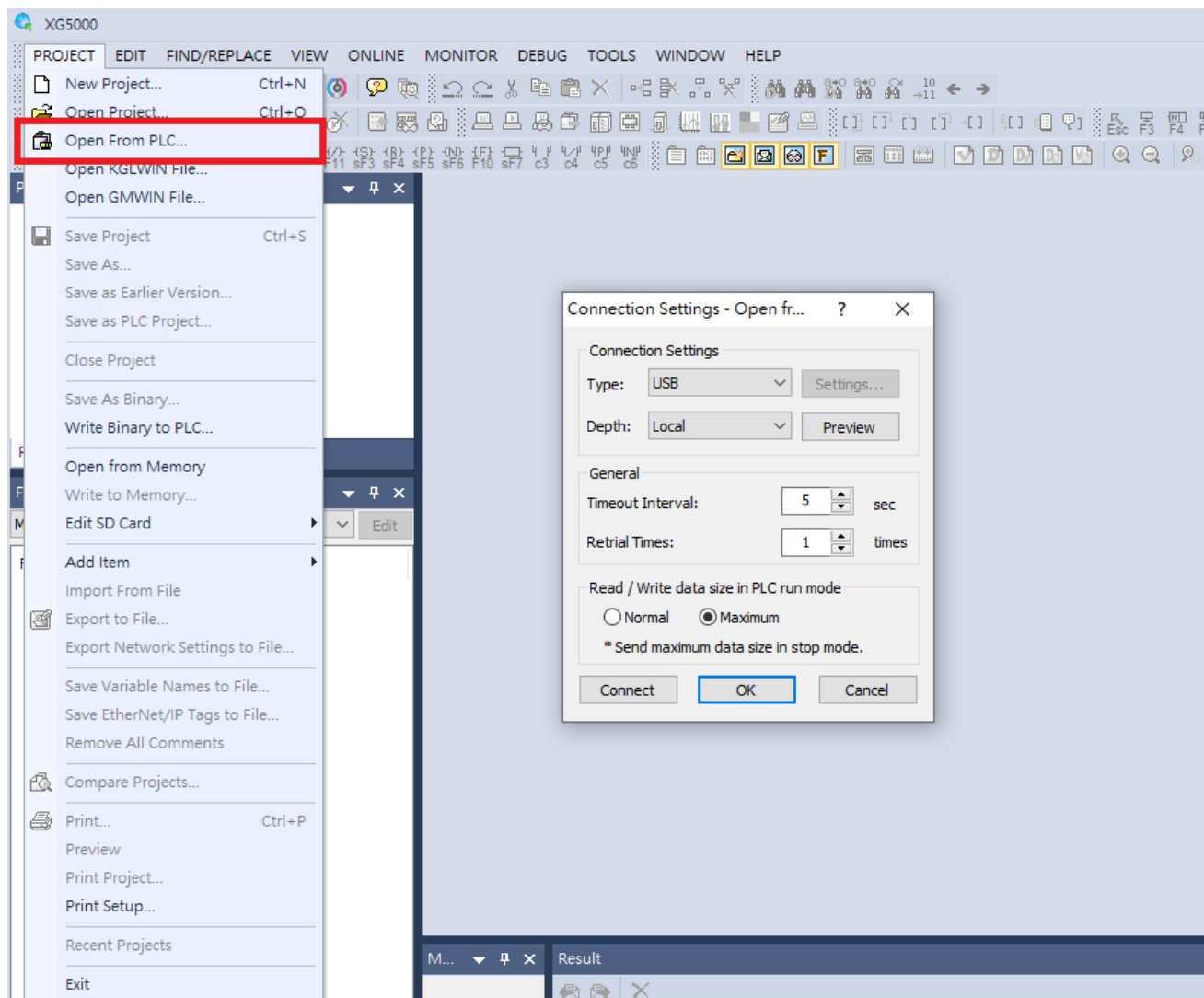
2.18.3.2 Memory Resource Review

類型	資料位元	地址格式	最小	最大	說明
PW	16	DDDD	0	2047	I/O relay
MW	16	DDDD	0	2047	Auxiliary relay
LW	16	DDDDD	0	4095	Link relay
KW	16	DDDD	0	2559	Keep relay
FW	16	DDDD	0	2047	Special relay
CW	16	DDDD	0	2047	Counter
TW	16	DDDD	0	2047	Timer
SW	16	DDD	0	12799	Step controller
DW	16	DDDDD	0	32767	Data register
UW	16	DH.DD	0	3F.31	Analog data register
RW	16	DDDDD	0	32767	File register
ZW	16	DDD	0	127	Index register
PX	1	DDDDH	0	2047F	Auxiliary relay
MX	1	DDDDH	0	2047F	Auxiliary relay
LX	1	DDDDDH	0	4095	Link relay
KX	1	DDDDH	0	2559F	Keep relay
FX	1	DDDDH	0	2047F	Special relay
DX	1	DDDDDH	0	32767	Data register
UX	1	DH.DD	0	3F.31F	Analog data register
RX	1	DDDDDH	0	32767	File register
SX	1	DDDDD	0	12799	Step controller
TX	1	DDDD	0	2047	Timer
CX	1	DDDD	0	2047	Counter

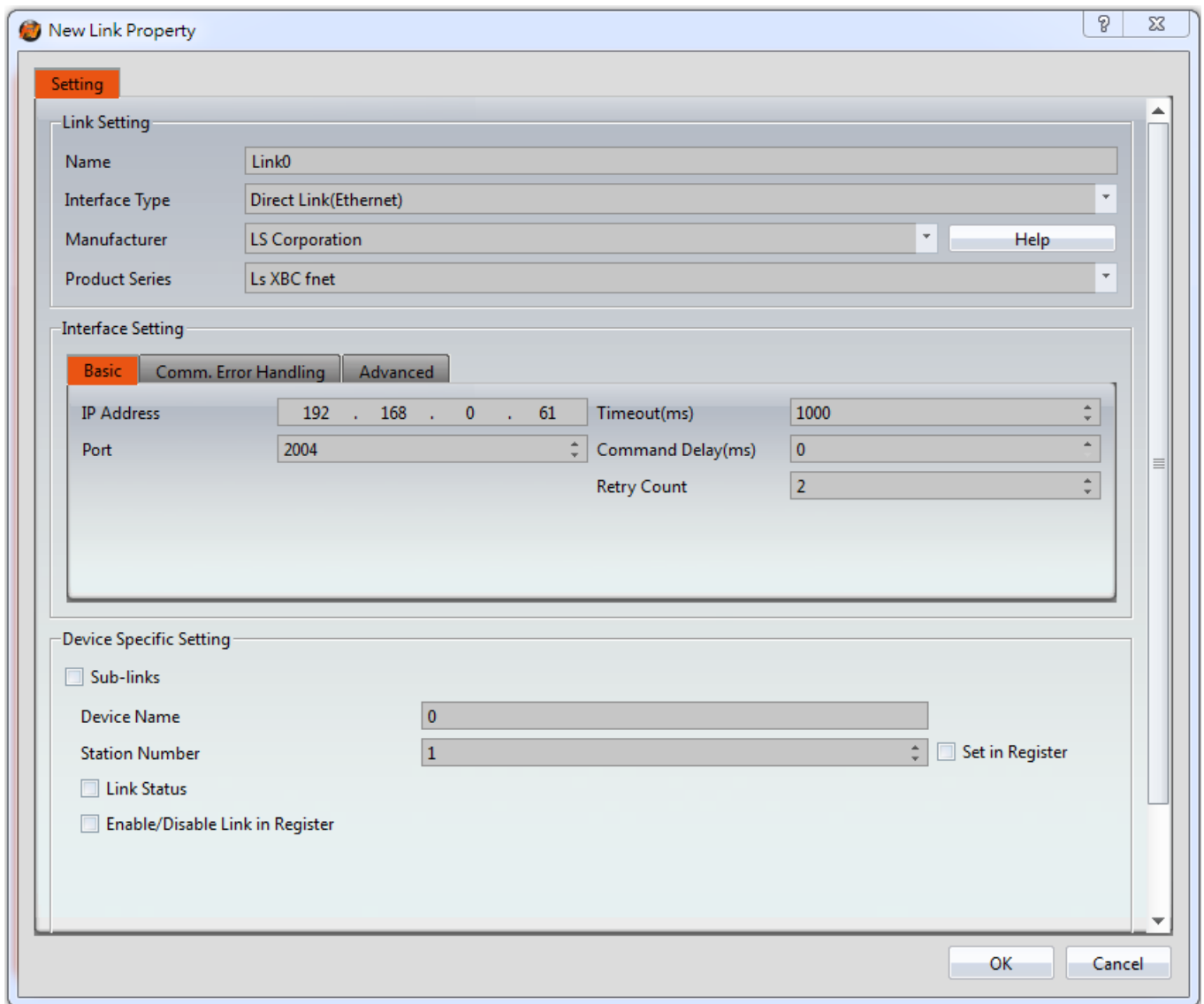
2.18.3.3 Connected Setting

PLC setting

Open XG5000.exe and use mini-USB to connect the USB port of the computer, it will connect automatically.



HMI setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Ethernet

Under Manufacturer select LS Corporation

Under Product Series select LS XBC fnet

Please confirm that the HMI communication setting and the PLC setting are consistent

2.18.4 LS XEC-Fnet

2.18.4.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.6	
Port	2004	
PLC Station No.	1	

Communication Method	TCP	
----------------------	-----	--

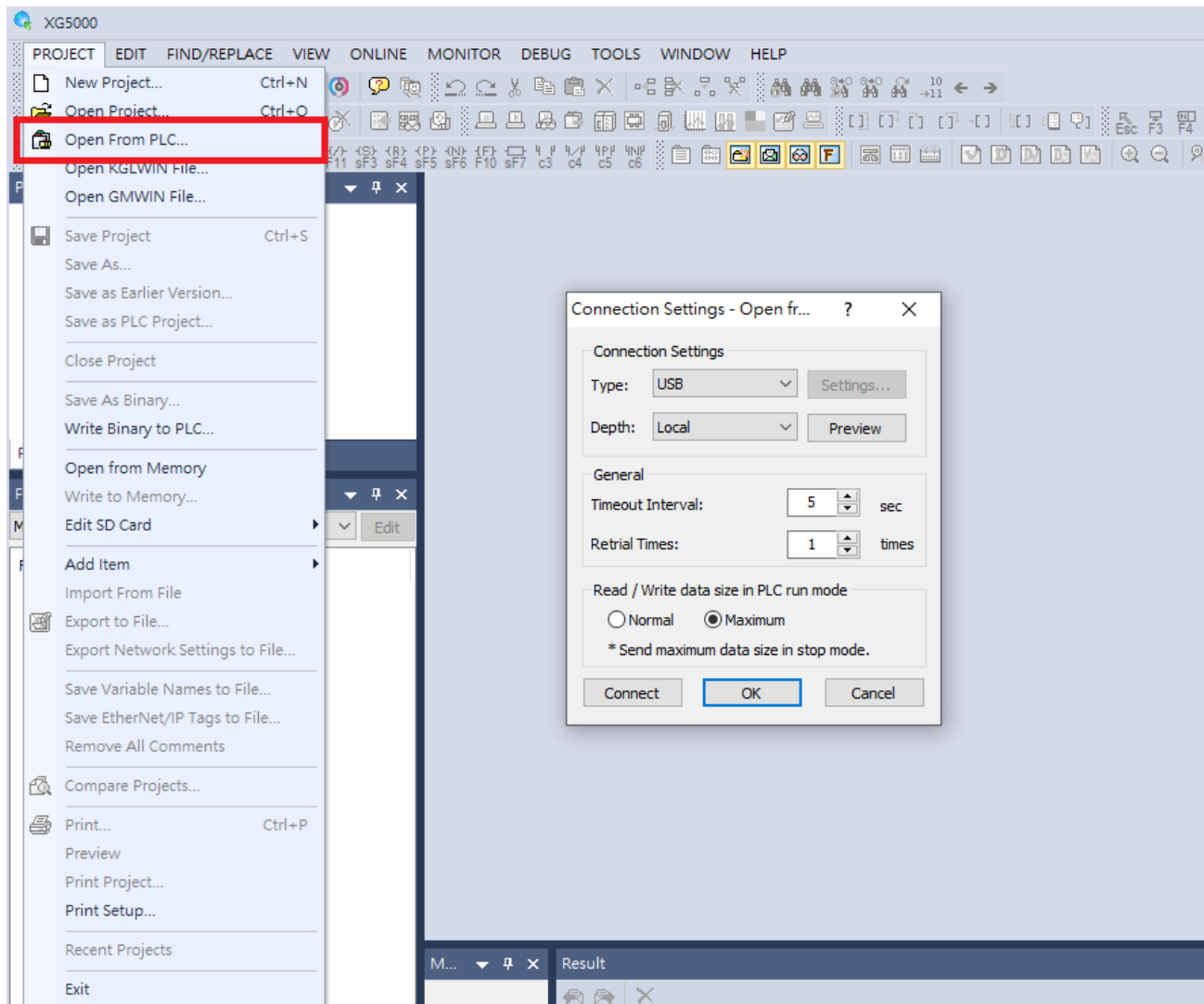
2.18.4.2 Memory Resource Review

Bit/ Word	Device Type	Range	XEC
B	IX	0.0.0-15.15.63	0.0.0-15.15.63
	QX	0.0.0-15.15.63	0.0.0-15.15.63
	MX	0-262143	0-262143
	LX	0-65535	0-65535
	NX	0-163839	0-163839
	KX	0-131071	0-131071
	UX	0.0-11.511	0.0-11.511
	RX	0-262143	0-262143
	AX	0-524287	0-524287
	WX	0-524287	0-524287
	FX	0-32767	0-32767
W	I	0.0.0-15.15.3	0.0.0-15.15.3
	QW	0.0.0-15.15.3	0.0.0-15.15.3
	MW	0-16383	0-16383
	LW	0-4095	0-4095
	NW	0-10239	0-10239
	KW	0-8191	0-8191
	UW	0.0-11.31	0.0-11.31
	RW	0-16383	0-16383
	AW	0-32767	0-32767
	WW	0-32767	0-32767
	FW	0-2047	0-2047

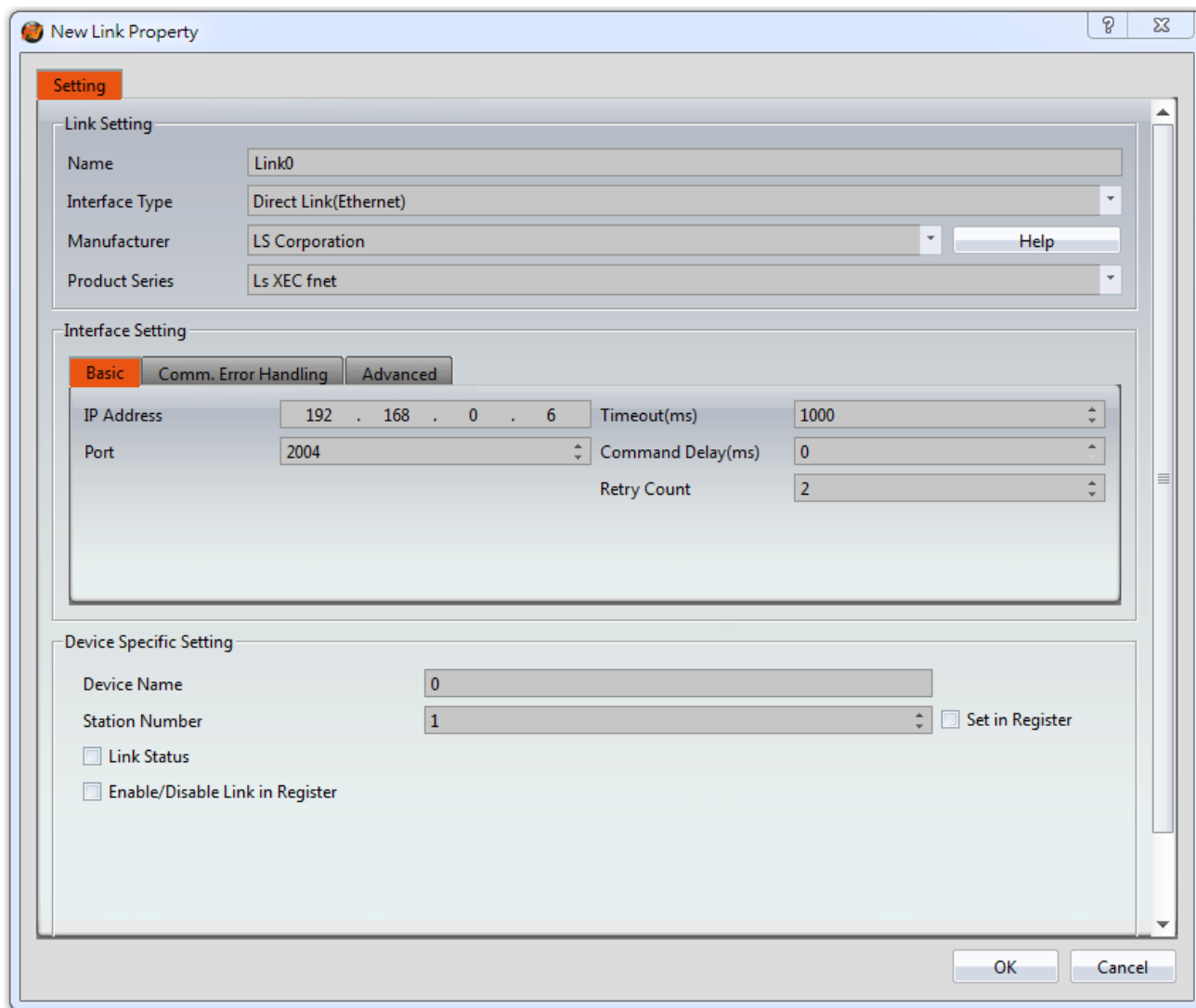
2.18.4.3 Connected Setting

PLC setting

Open XG5000.exe and use mini-USB to connect the USB port of the computer, it will connect automatically.



HMI setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Ethernet

Under Manufacturer select LS Corporation

Under Product Series select LS XEC fnet

Please confirm that the HMI communication setting and the PLC setting are consistent

2.19 Fuji

2.19.1 Fuji Micrex SX SPH

2.19.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	

Baud Rate	38400	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	

2.19.1.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
%QW	16	D	0	7	Output area
%IW	16	D	0	3	Input area
%MW1.	16	DDDD	0	8191	Standard Memory
%MW3.	16	DDDD	0	4095	Retain Memory
%MW10.	16	DDD	0	511	System Memory

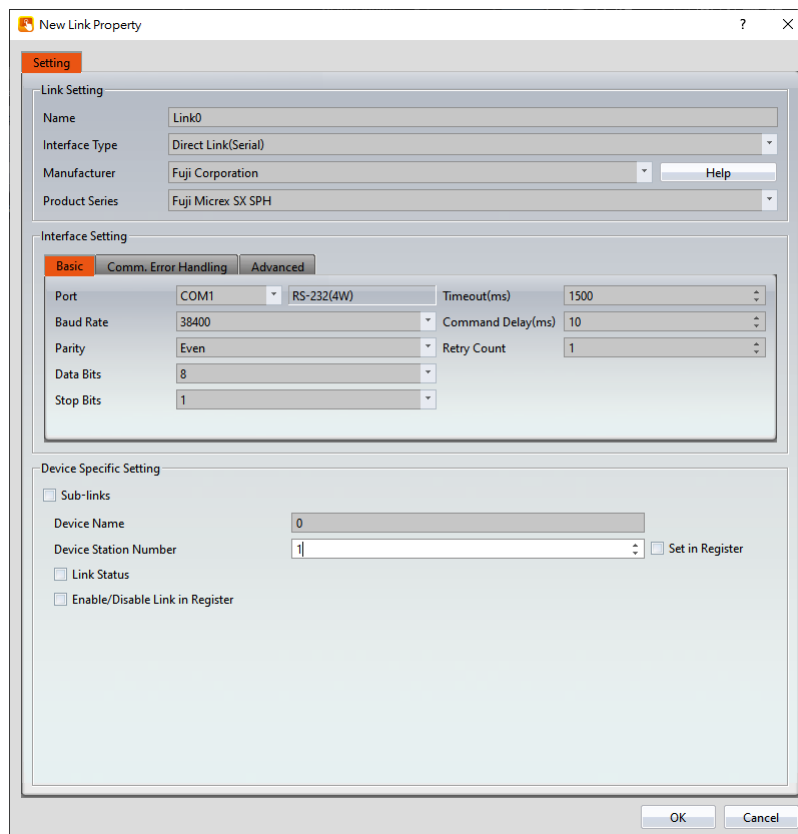
2.19.1.3 Connecting to PLC

Configuring of PLC

Use the switch from the top of PLC to configure the serial port of the PLC.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Fuji Corporation.

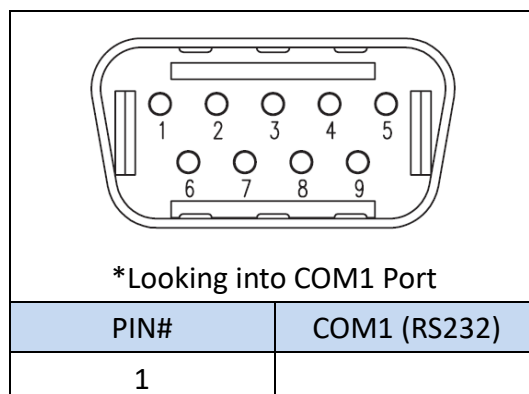
Under **Product Series** select Fuji Micrex SX SPH.

Under **Port** select the port corresponding to the connection to the PLC

Verify the other parameters are consistent with the settings on the PLC

2.19.1.4 Wiring Diagrams

HMI COM1 Pinout



2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

HMI COM1 (RS232)	Fuji Micrex SX RS232 Port
2 RX	TX
3 TX	RX
5 GND	SG

Wiring Diagrams:

2.20 CMZ Sitemi Elettronici

2.20.1 FCT Cotrollers

2.20.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
PLC Station No.	1	

2.20.1.2 Memory Resource Review

Device	Data	Address	Min.	Max.	Description
--------	------	---------	------	------	-------------

	Bits	Format			
IX0_	1	DDDDD	0.0	8191.7	Memory Bit
MX0_	1	DDDDD	0.0	8191.7	Memory Bit
MW0_	16	DDDDDD	0	131068	Word Memory
MB0_	16	DDDDDD	0	131068	Word Memory
MS0_	16	DDDDDD	0	131068	Word Memory
MD0_	32	DDDDDD	0	131068	Double Word Memory
0x	1	DDDDD	1	65536	Coil Status
1x	1	DDDDD	1	65536	Input Status
3x	16	DDDDD	1	65536	Input Register
4x	16	DDDDD	1	65536	Holding Register

2.20.1.3 Connecting to PLC

Configuring of PLC

Use the switch from the top of PLC to configure the serial port of the PLC.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI

The screenshot shows the 'New Link Property' dialog box with the following settings:

- Setting** tab is selected.
- Link Setting** section:
 - Name: Link0
 - Interface Type: Direct Link(Serial)
 - Manufacturer: CMZ Sistemi Elettronici
 - Product Series: FCT Controllers
- Interface Setting** section:
 - Basic** tab is selected.
 - Port: COM1, RS-232(4W)
 - Timeout(ms): 1000
 - Baud Rate: 9600
 - Command Delay(ms): 0
 - Parity: Even
 - Retry Count: 2
 - Data Bits: 8
 - Stop Bits: 1
- Device Specific Setting** section:
 - ☐ Sub-links
 - Device Name: 0
 - Device Station Number: 1
 - ☐ Set in Register
 - ☐ Link Status
 - ☐ Enable/Disable Link in Register

Buttons at the bottom: OK, Cancel.

Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select CMZ Sistemi Elettronici.

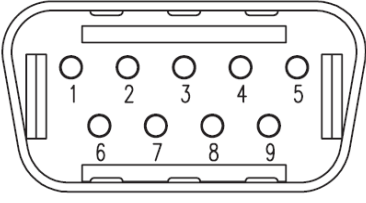
Under **Product Series** select FCT Controllers.

Under **Port** select the port corresponding to the connection to the PLC

Verify the other parameters are consistent with the settings on the PLC

2.20.1.4 Wiring Diagrams

HMI COM1 Pinout

	
*Looking into COM1 Port	
PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

HMI COM1 (RS232)	FCT Controllers RS232 Port
2 RX	TX
3 TX	RX
5 GND	SG

2.20.1 FCT Cotrollers

2.20.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.2	
Port	502	
PLC Station No.	1	
Communication Method	TCP	

2.20.1.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
IX0_	1	DDDDD	0.0	8191.7	Memory Bit
MX0_	1	DDDDD	0.0	8191.7	Memory Bit
MW0_	16	DDDDDD	0	131068	Word Memory
MB0_	16	DDDDDD	0	131068	Word Memory
MS0_	16	DDDDDD	0	131068	Word Memory
MD0_	32	DDDDDD	0	131068	Double Word Memory
0x	1	DDDDD	1	65536	Coil Status
1x	1	DDDDD	1	65536	Input Status
3x	16	DDDDD	1	65536	Input Register
4x	16	DDDDD	1	65536	Holding Register

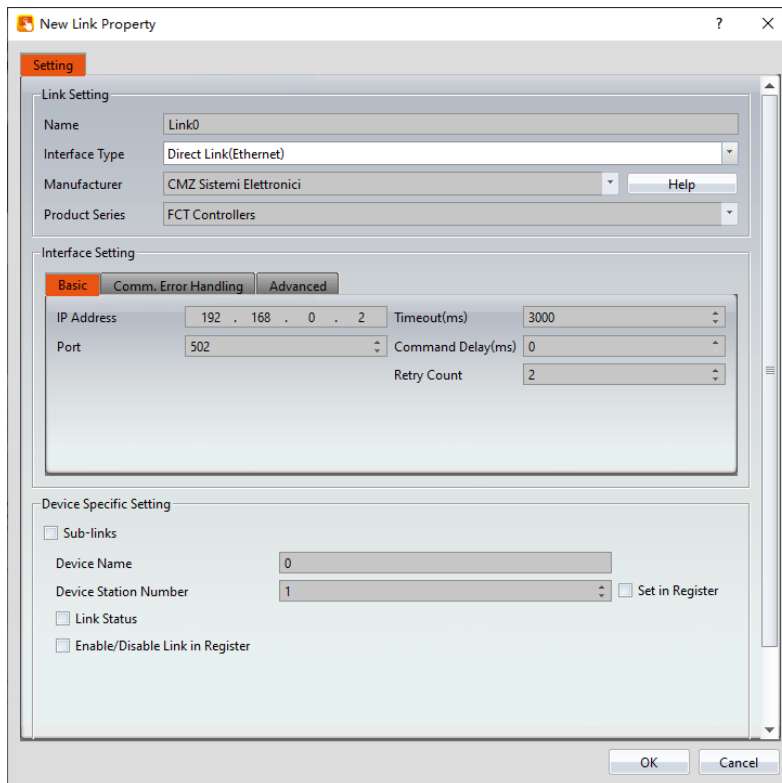
2.20.1.3 Connecting to PLC

Configuring of PLC

Use the switch from the top of PLC to configure the serial port of the PLC.

Note: For more detailed information please refer to the PLC manual.

Configuring of HMI



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Ethernet

Under **Manufacturer** select CMZ Sistemi Elettronici.

Under **Product Series** select FCT Controllers.

Under **Port** select the port corresponding to the connection to the PLC

Verify the other parameters are consistent with the settings on the PLC

2.21 Inovance

2.21.1 Easy Series (MODBUS TCP)

2.21.1.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.2	
Port	502	
Communication Method	MODBUS TCP	

2.21.1.2 Memory Resource Review

Device	Data	Address	Min.	Max.	Description
--------	------	---------	------	------	-------------

	Bits	Format			
X	1	OOOO	0	1777	Input Relay
Y	1	OOOO	0	1777	Output Relay
M	1	DDDD	0	7999	Internal Relay
B	1	DDDDD	0	32767	Internal Relay
S	1	DDDD	0	4095	State Relay
D	16	DDDD	0	7999	Data Register
R	16	DDDDD	0	32767	Extension Register

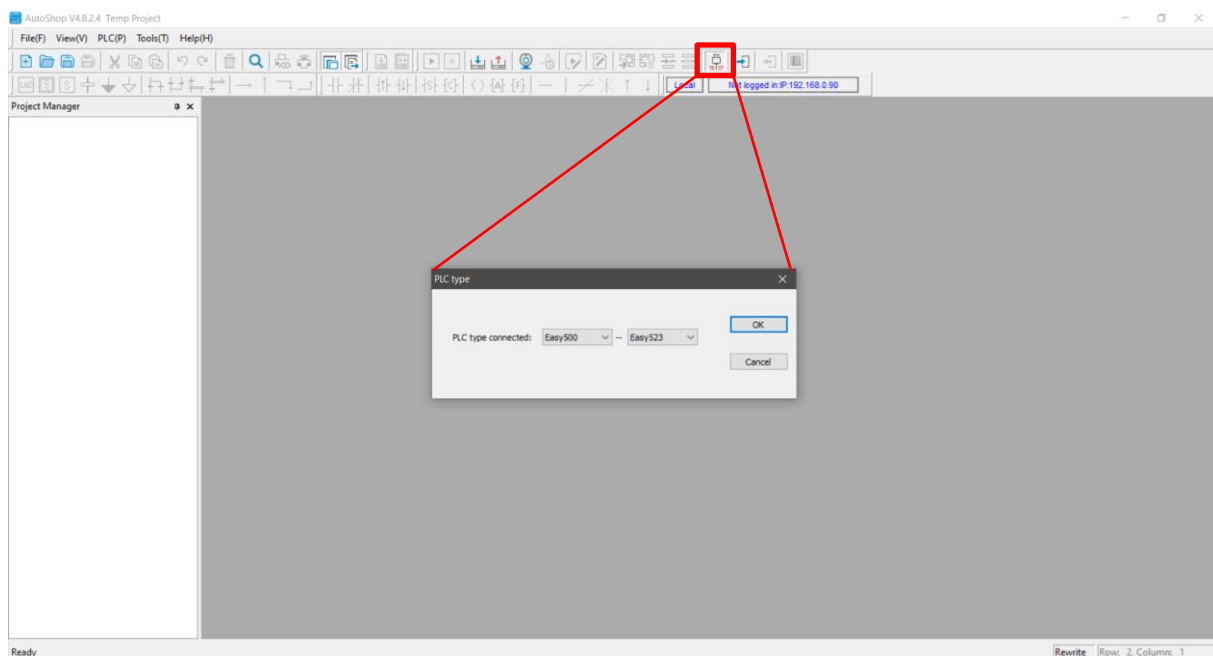
2.21.1.3 Connected Setting

Configuring of PLC

Use **AutoShop** to modify IP/ device name

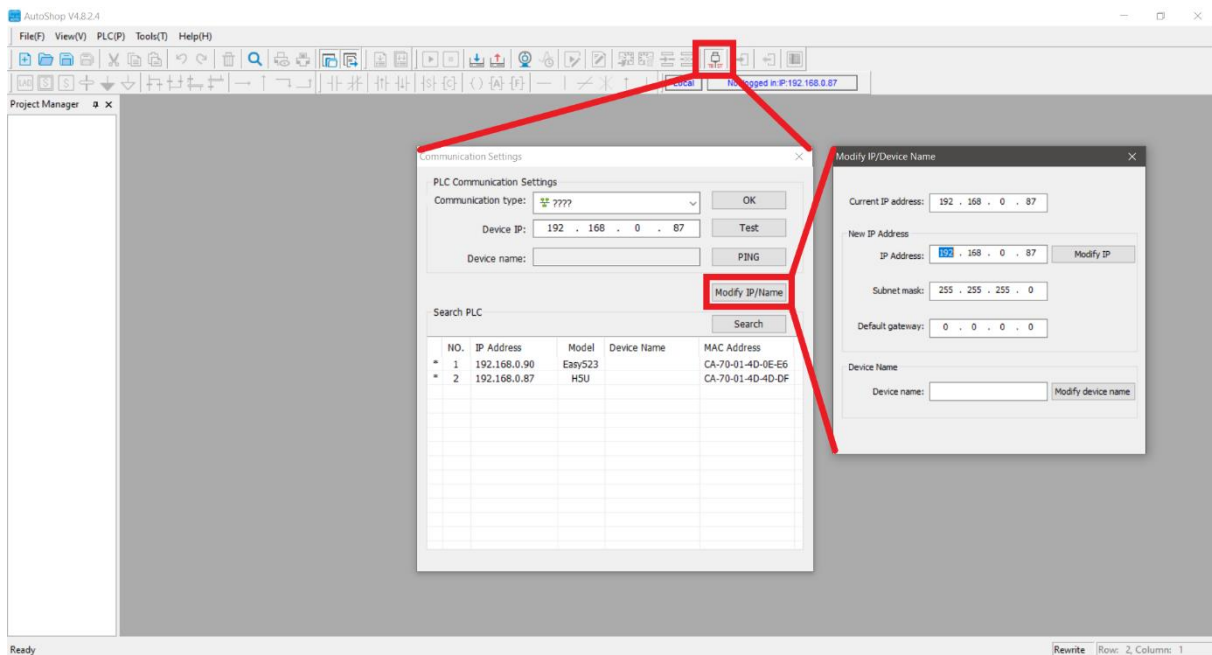
Click test communication status (Test).

Choose Easy500--Easy523 then press OK.



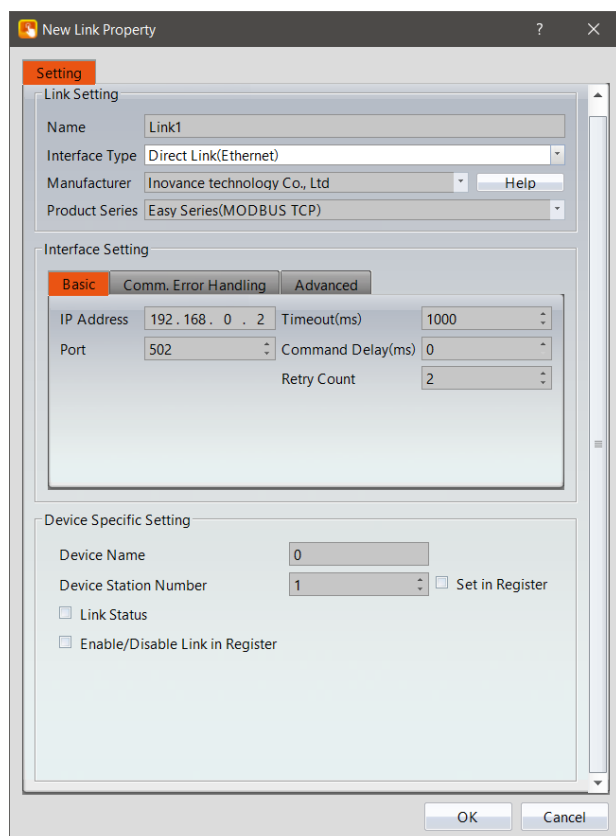
Click search and select PLC device.

Click Modify IP/Name to set IP/device name.



Note: For more detailed information please refer to the PLC manual.

HMI setting



Within the **Link** configuration window in FvDesigner:

Under Interface Type select Ethernet.

Under **Manufacturer** select Inovance technology Co., Ltd.

Under **Product Series** select Easy Series (MODBUS TCP).

Under **Port** select the port corresponding to the connection to the PLC.

Verify the other parameters are consistent with the settings on the PLC.

2.21.2 Easy Series (MODBUS RTU)

2.21.2.1 Communication setting

Item	Default Setting	Remark
Signal Level	RS485	
Baud Rate	9600	
Data Length	8	
Stop Bit	2	
Parity	Even	
PLC Station No.	1	

2.21.2.2 Memory resource review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	OOOO	0	1777	Input Relay
Y	1	OOOO	0	1777	Output Relay
M	1	DDDD	0	7999	Internal Relay
B	1	DDDDD	0	32767	Internal Relay
S	1	DDDD	0	4095	State Relay
D	16	DDDD	0	7999	Data Register
R	16	DDDDD	0	32767	Extension Register

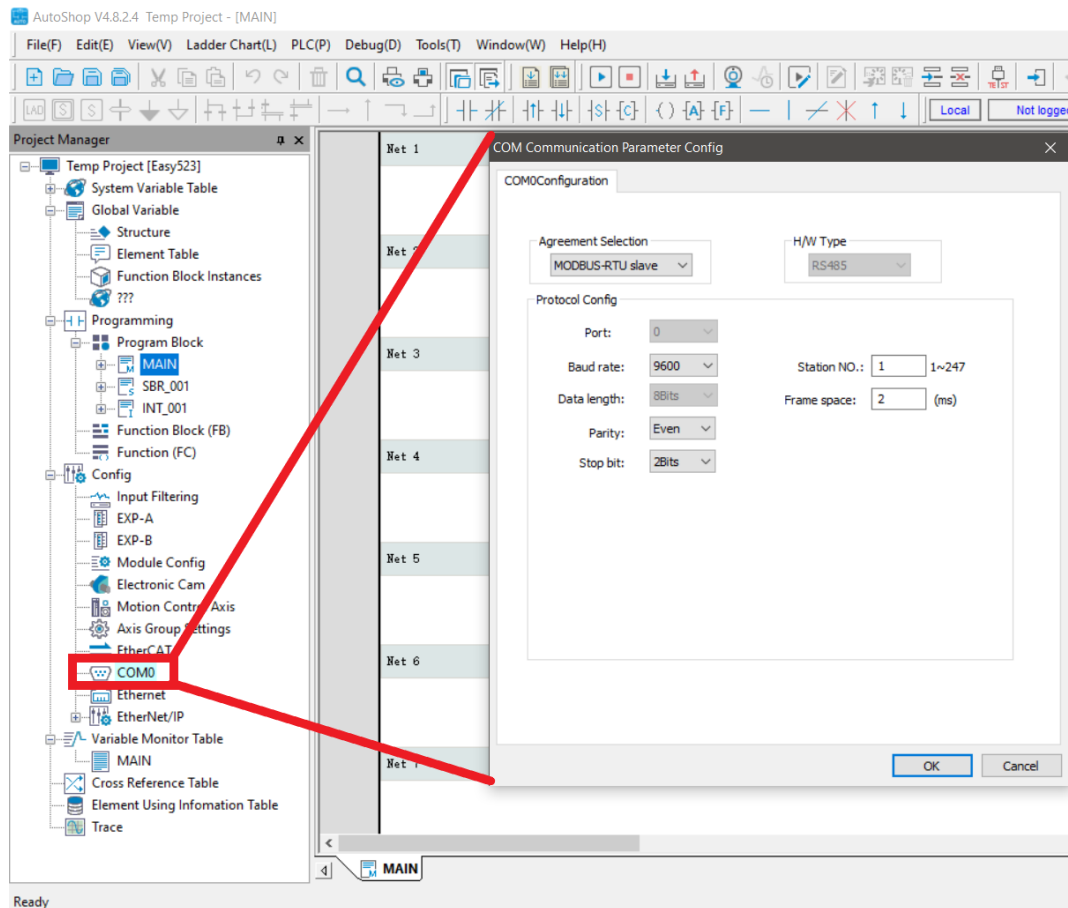
2.21.2.3 Connected Setting

Configuring of PLC

Use **AutoShop** to configure the serial port setting of the PLC

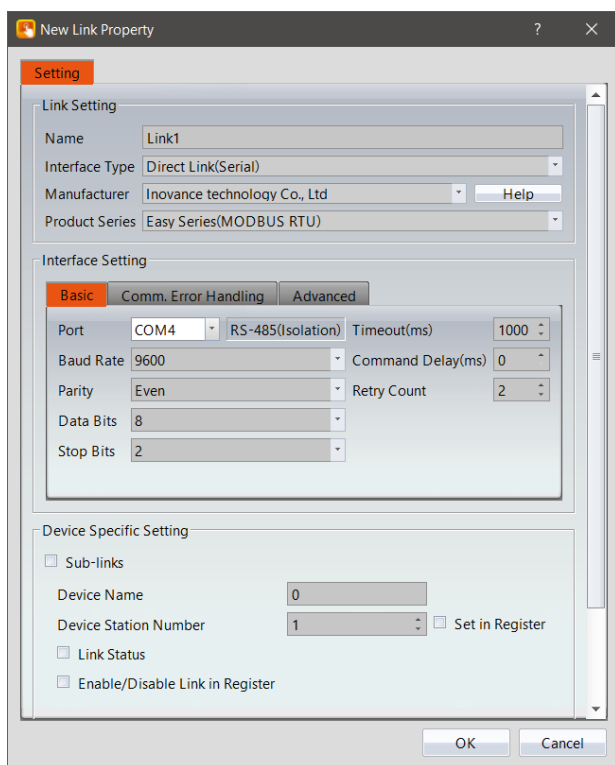
Click **COM0** under the **Config**.

Agreement selection please select MODBUS-RTU slave.



Note: For more detailed information please refer to the PLC manual.

HMI setting



Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial.

Under **Manufacturer** select Inovance technology Co., Ltd.

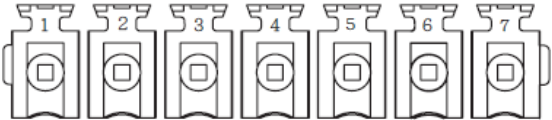
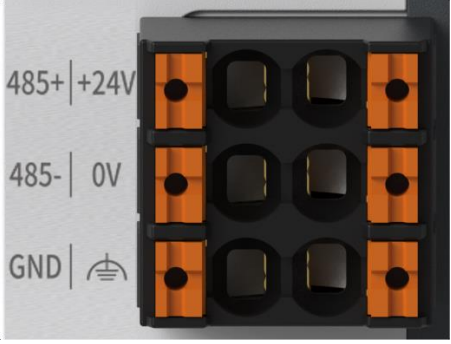
Under **Product Series** select Easy Series(MODBUS RTU).

Under **Port** select the port corresponding to the connection to the PLC.

Verify the other parameters are consistent with the settings on the PLC.

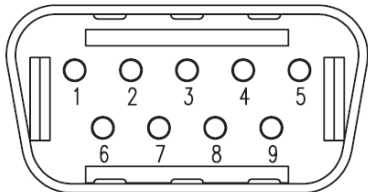
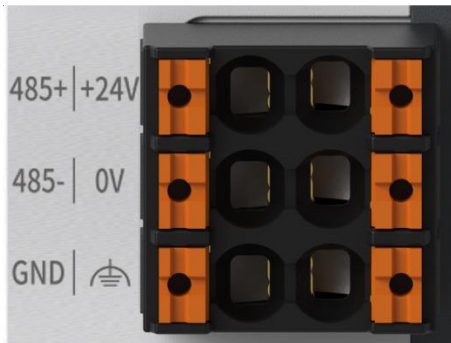
2.21.2.4 Wiring Diagrams

P5 series (except 4.3 inch)

HMI485 Pin		PLC RS485 Pin	
			
PIN#	COM 3 (RS-485)	PIN#	COM0
6	D+	1	D+
7	D-	2	D-
3	G	3	G

PIN#	COM 4 (RS-485)	PIN#	COM0
1	D+	1	D+
2	D-	2	D-
3	G	3	G

P5(4.3 inch) & P2 series

HMI485 Pin		PLC RS485 Pin	
			
PIN#	COM 2 (RS-485)	PIN#	COM0
1	D+	1	D+
6	D-	2	D-
5	G	3	G
PIN#	COM 3 (RS-485)	PIN#	COM0
7	D+	1	D+
8	D-	2	D-
5	G	3	G

2.21.3 H5U Series (MODBUS TCP)

2.21.3.1 Communication Setting

Item	Default Setting	Remark
Signal Level	Ethernet	
Internet Protocol	192.168.0.2	
Port	502	
Communication Method	MODBUS TCP	

2.21.3.2 Memory Resource Review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	OOOO	0	1777	Input Relay
Y	1	OOOO	0	1777	Output Relay
M	1	DDDD	0	7999	Internal Relay
B	1	DDDDD	0	32767	Internal Relay
S	1	DDDD	0	4095	State Relay
D	16	DDDD	0	7999	Data Register
R	16	DDDDD	0	32767	Extension Register

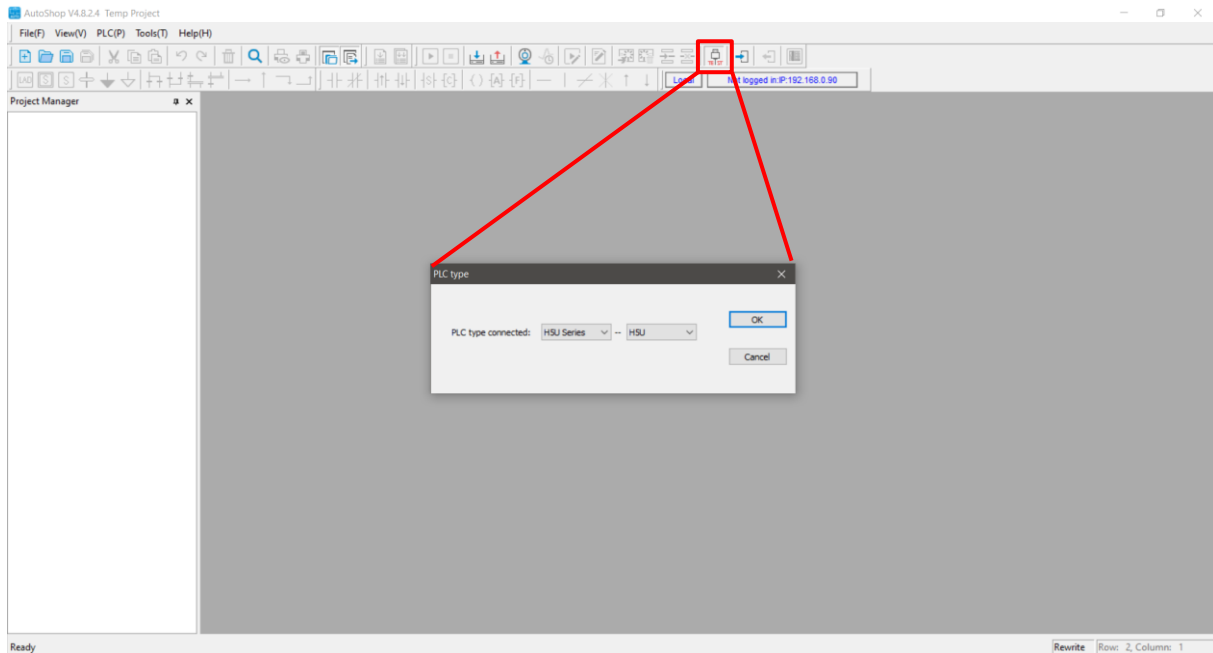
2.21.3.3 Connecting to PLC

Configuring of PLC

Use **AutoShop** to modify IP/ device name

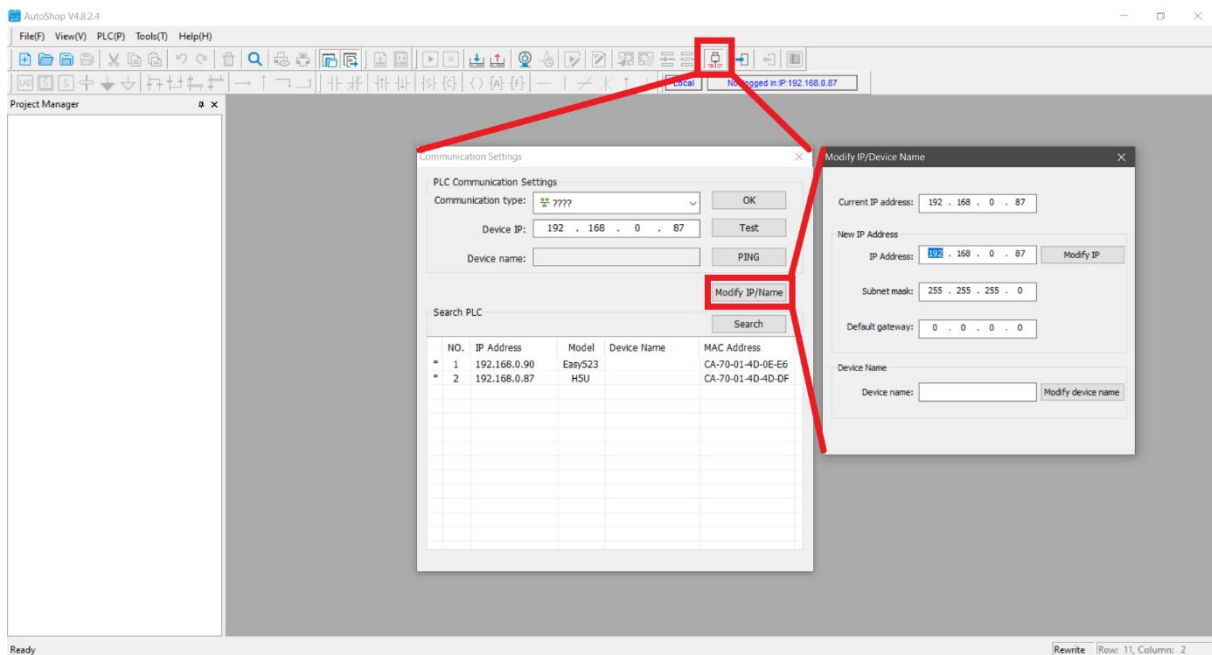
Click Test communication status (Test).

Choose H5U Series—H5U then press OK.



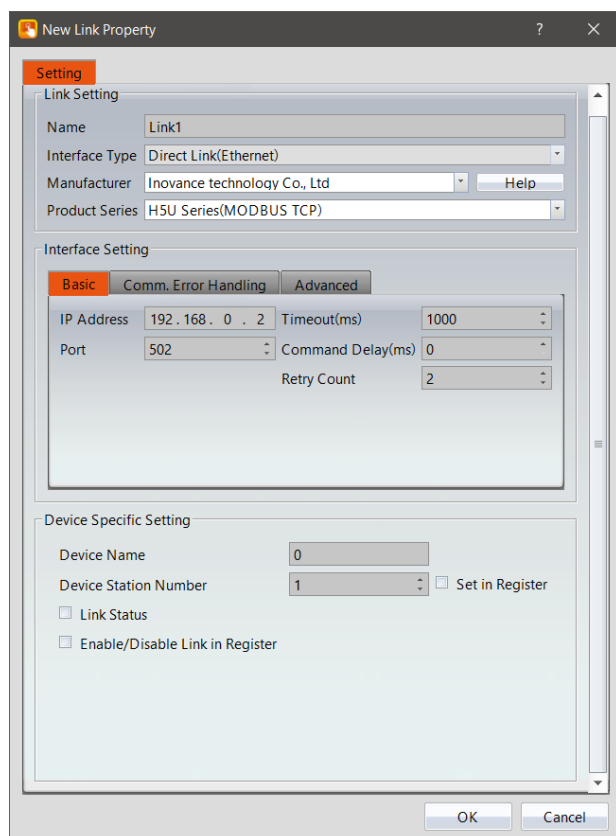
Click search and select PLC device.

Click Modify IP/Name to set IP/device name.



Note: For more detailed information please refer to the PLC manual.

HMI setting



Within the **Link** configuration window in FvDesigner:

Under Interface Type select Ethernet

Under **Manufacturer** select Inovance technology Co., Ltd

Under **Product Series** select H5U Series (MODBUS TCP)

Under **Port** select the port corresponding to the connection to the PLC
Verify the other parameters are consistent with the settings on the PLC

2.21.4 H5U Series (MODBUS RTU)

2.21.4.1 Communication setting

Item	Default Setting	Remark
Signal Level	RS485	
Baud Rate	9600	
Data Length	8	
Stop Bit	2	
Parity	Even	
PLC Station No.	1	

2.21.4.2 Memory resource review

Device	Data Bits	Address Format	Min.	Max.	Description
X	1	OOOO	0	1777	Input Relay
Y	1	OOOO	0	1777	Output Relay
M	1	DDDD	0	7999	Internal Relay
B	1	DDDDD	0	32767	Internal Relay
S	1	DDDD	0	4095	State Relay
D	16	DDDD	0	7999	Data Register
R	16	DDDDD	0	32767	Extension Register

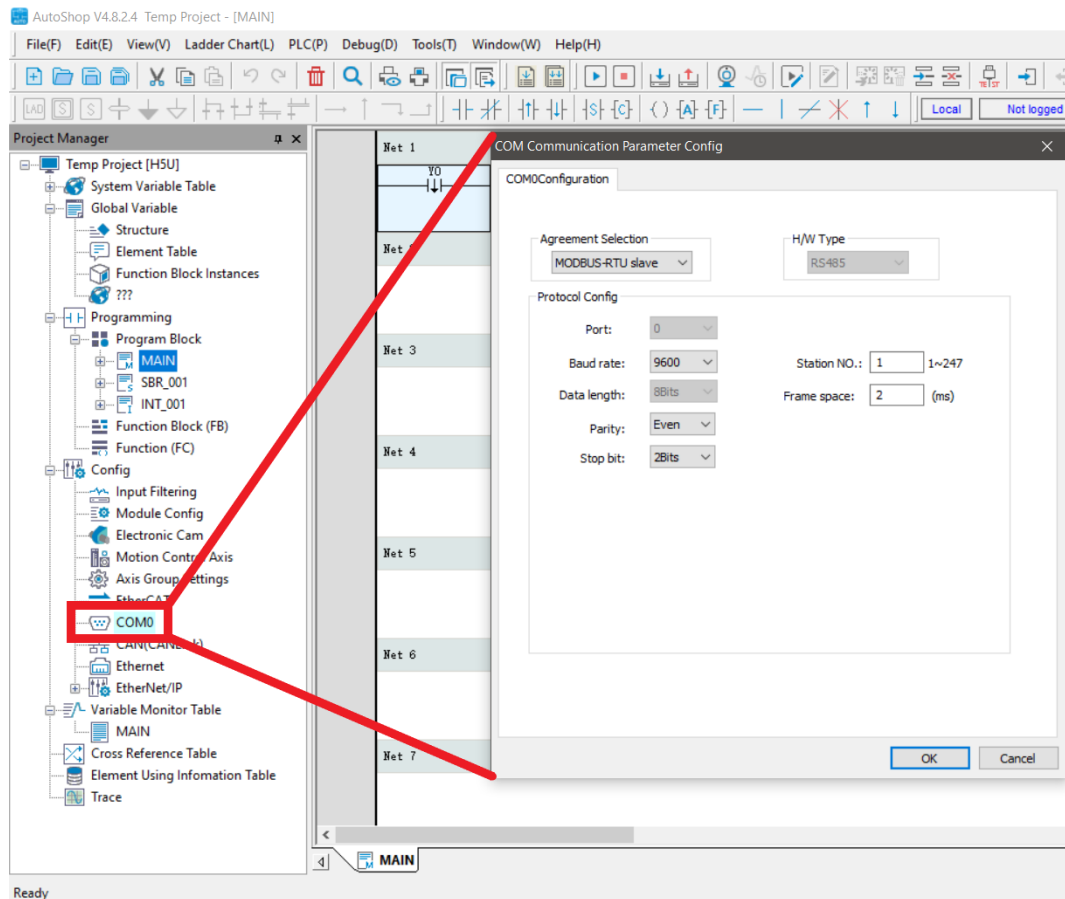
2.21.4.3 Connecting to PLC

Configuring of PLC

Use **AutoShop** to configure the serial port setting of the PLC

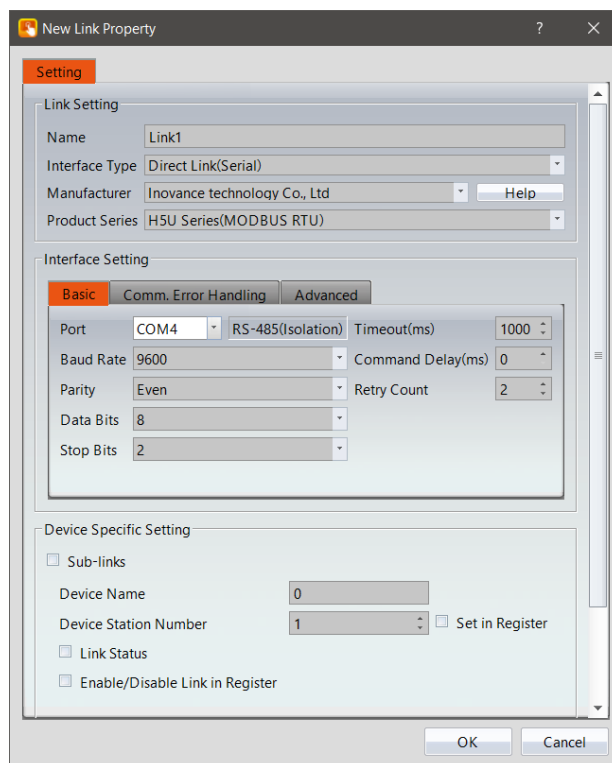
Click COM0 under the Config.

Agreement selection please select MODBUS-RTU slave.



Note: For more detailed information please refer to the PLC manual.

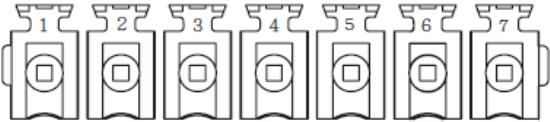
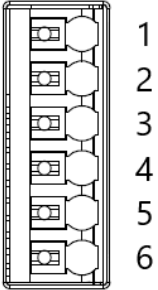
HMI setting



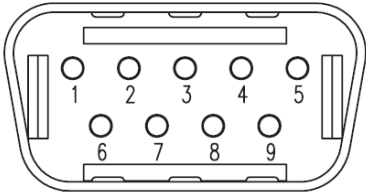
Within the **Link** configuration window in FvDesigner:
 Under Interface Type select Serial
 Under **Manufacturer** select Inovance technology Co., Ltd
 Under **Product Series** select H5U Series (MODBUS RTU)
 Under **Port** select the port corresponding to the connection to the PLC
 Verify the other parameters are consistent with the settings on the PLC

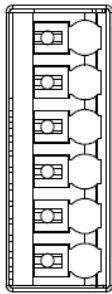
2.21.4.4 Wiring Diagrams

P5 series (except 4.3 inch)

HMI485 Pin		PLC RS485 Pin	
			
PIN#	COM 3 (RS-485)	PIN#	COM0
6	D+	1	D+
7	D-	2	D-
3	G	3	G
PIN#	COM 4 (RS-485)	PIN#	COM0
1	D+	1	D+
2	D-	2	D-
3	G	3	G

P5(4.3 inch) & P2 series

HMI485 Pin	PLC RS485 Pin
	

			
PIN#	COM 2 (RS-485)	PIN#	COM0
1	D+	1	D+
6	D-	2	D-
5	G	3	G
PIN#	COM 3 (RS-485)	PIN#	COM0
7	D+	1	D+
8	D-	2	D-
5	G	3	G