HMI Connection Manual



Update: 2026/10/20

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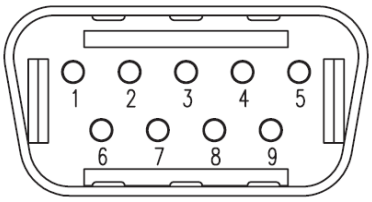
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1. HMI Model Serial Information

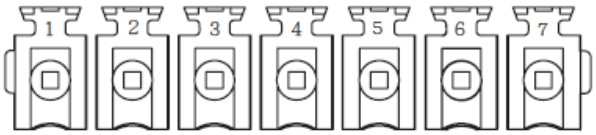
DB-9 pin + Terminal block 7 pin

Serial Interface	**COM1(RS-232)** **COM3(RS-422/485)** **COM4(RS-485)**

Serial Layout

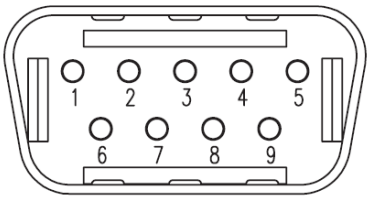


PIN#	COM1
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	
9	



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 FATEK

2.1.1 FBs/B1/B1z/HB1

2.1.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	1	Must match PLC port setting
Communication Method	FATEK Communication Protocol	

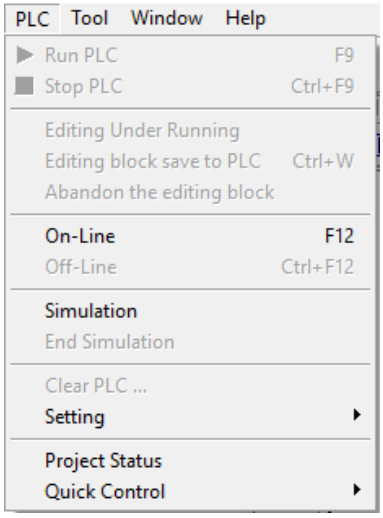
2.1.1.2 PLC Resource

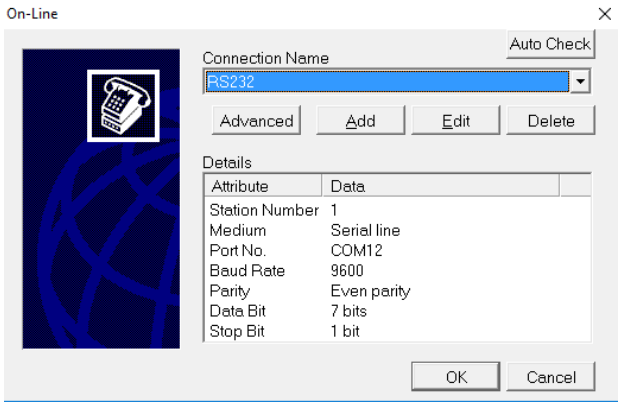
Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	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

2.1.1.3 Connecting to PLC

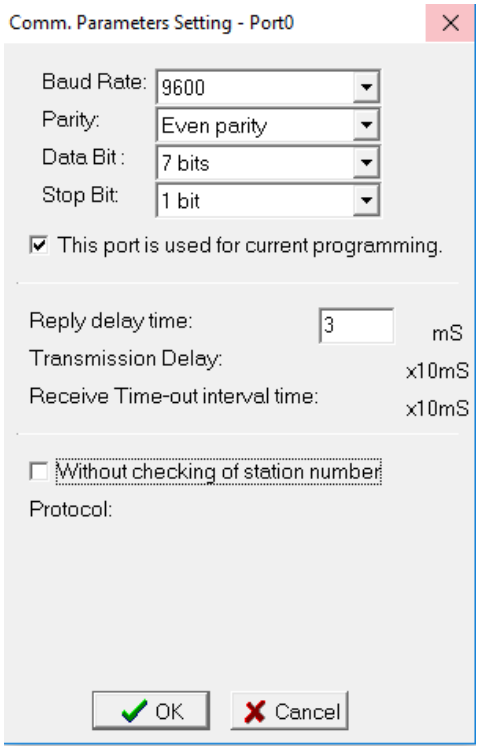
Configuring of PLC

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.



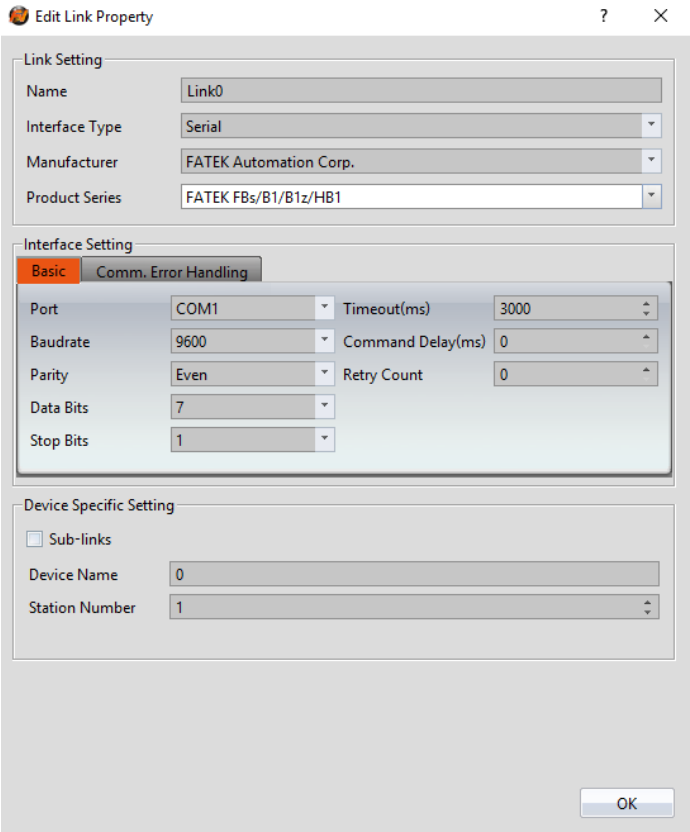


Under the **PLC** tab, select the **Setting** option and choose Port 0. Here, the Baud rate and other parameters of the serial port can be configured.



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 FATEK Automation Corp

Under **Product Series** select FATEK FBs/B1/B1z/HB1

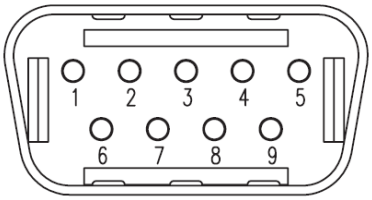
Under **Port** select COM1

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

To communicate with the backpack-type HB1, the【Port】parameter must be set to【PLC Port】

HMI	HB1
G03	Only HB1 with **OS version V5.80 or later** is supported, and the baud rate of **HB1 port 0 must be changed to 57600**.
Other	There is **no OS version limitation** for the HB1 used. However, if an HB1 with **OS version V5.80 or later** is used, the baud rate of **HB1 port 0 must be set by changing register R4050 to 562EH (921600)**.

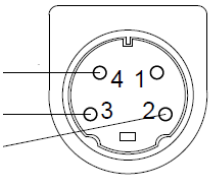
2.1.1.4 Wiring Diagrams(COM1)



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			
8			
9			

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

2.1.2 FBs/B1/B1z/HB1 (TCP)

2.1.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.1.3	
Port	500	
Device Station num.	0	
Communication Method	TCP	

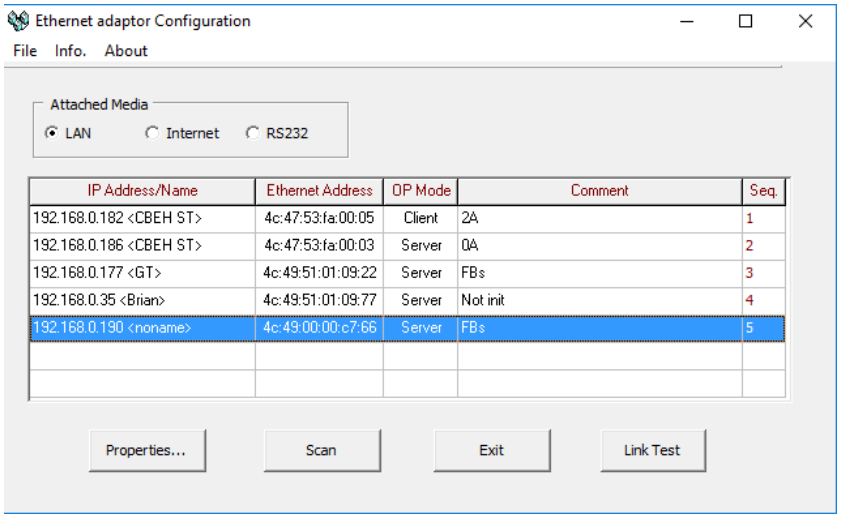
2.1.2.2 PLC Resource

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

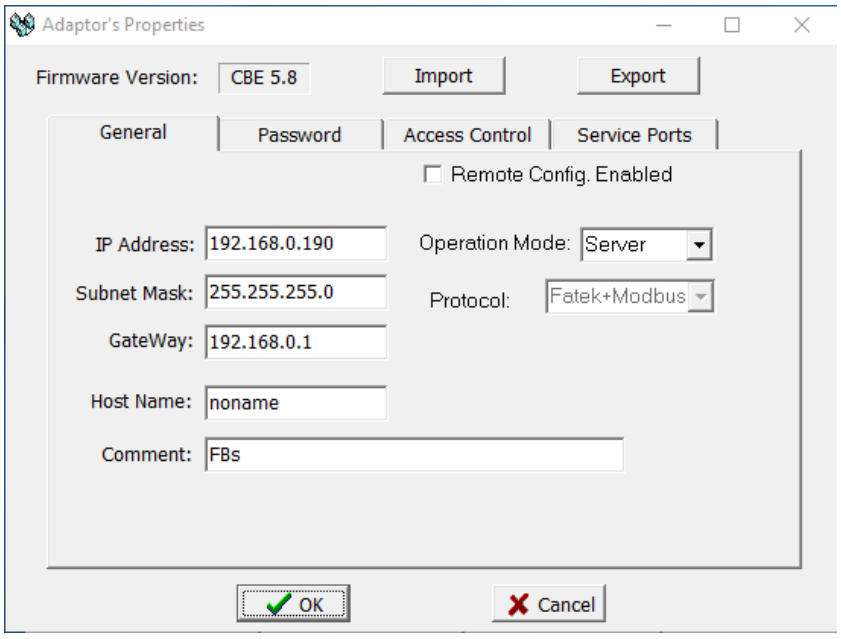
Use the application **FATEK Ethernet Module Configuration Tool** to configure the IP address of the PLC. Connect an Ethernet cable to the PLC. Under **Attached Media**, select LAN and press scan.



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

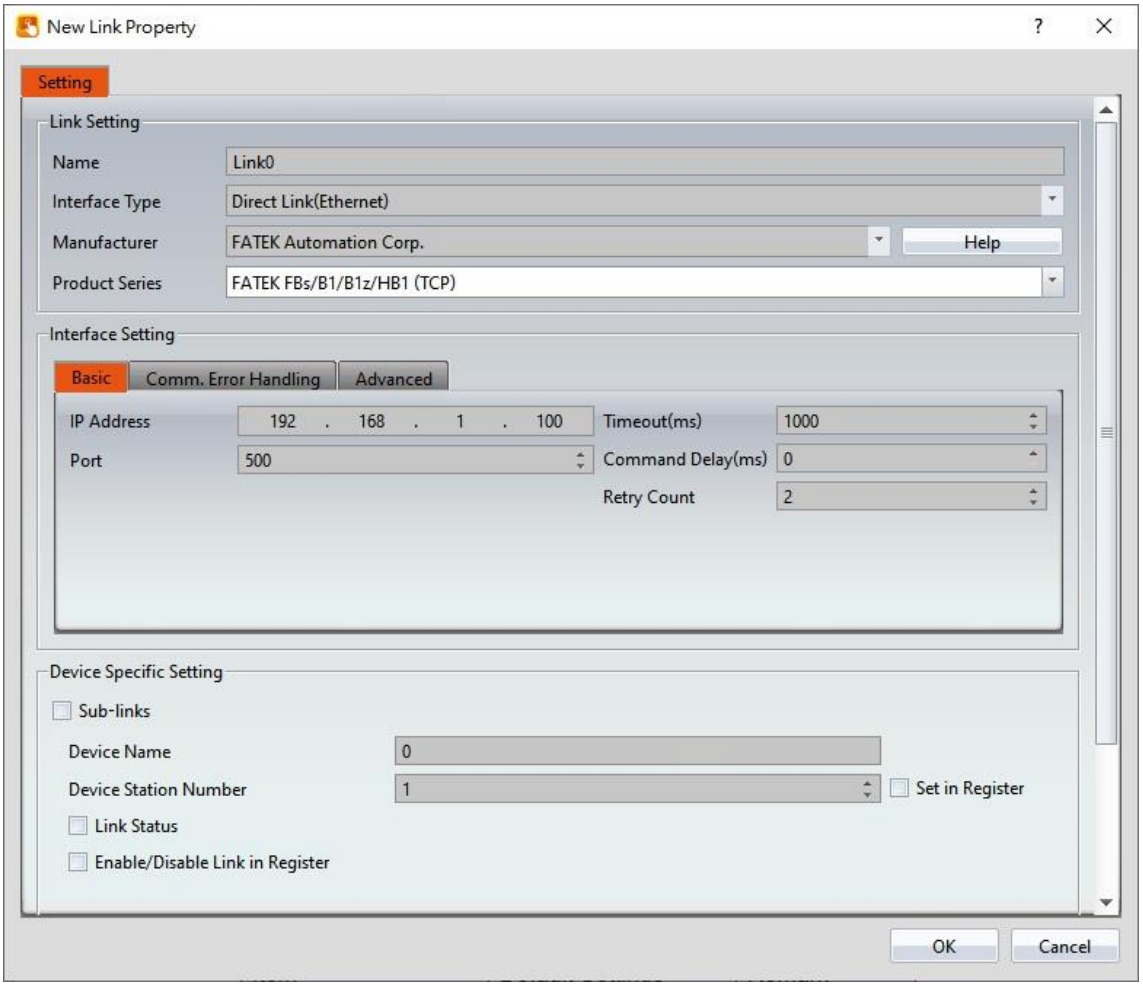
Note: The default IP address for the PLC has 1 for its third octet. If the IP address of the computer has a different number at that position, the PLC will not show up in the scan. Configure network settings on the computer to be able to see the PLC in the local network.

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



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

Under **Interface Type** select Ethernet

Under **Manufacturer** select FATEK Automation Corp

Under **Product Series** select FATEK FBs/B1/B1z/HB1 (TCP)

Use the IP address and port number assigned on the PLC

2.1.3 FBs/B1/B1z/HB1 (UDP)

2.1.3.1 Communication Setting

Item	Default Settings	Remark
Interface Type	Ethernet	
IP Address	192.168.1.100	
Port	500	
Device Station num.	0	
Communication Method	UDP	

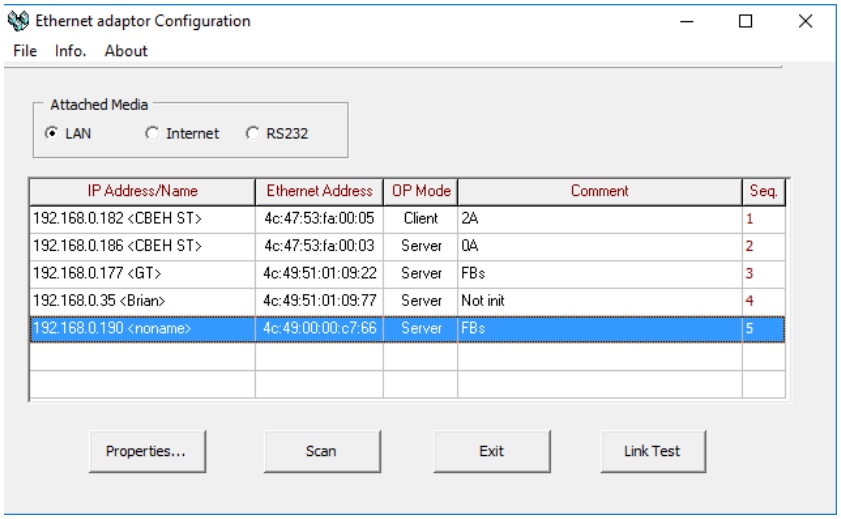
2.1.3.2 PLC Resource

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

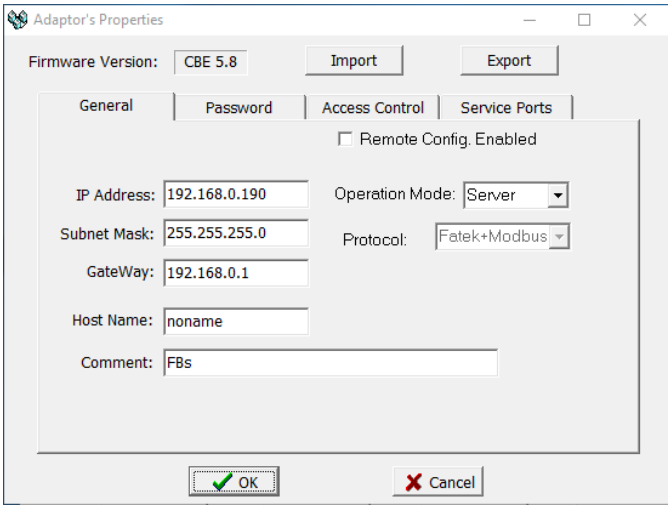
2.1.3.3 Connected Setting

Configuring IP Address on PLC

Use the application **FATEK 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.

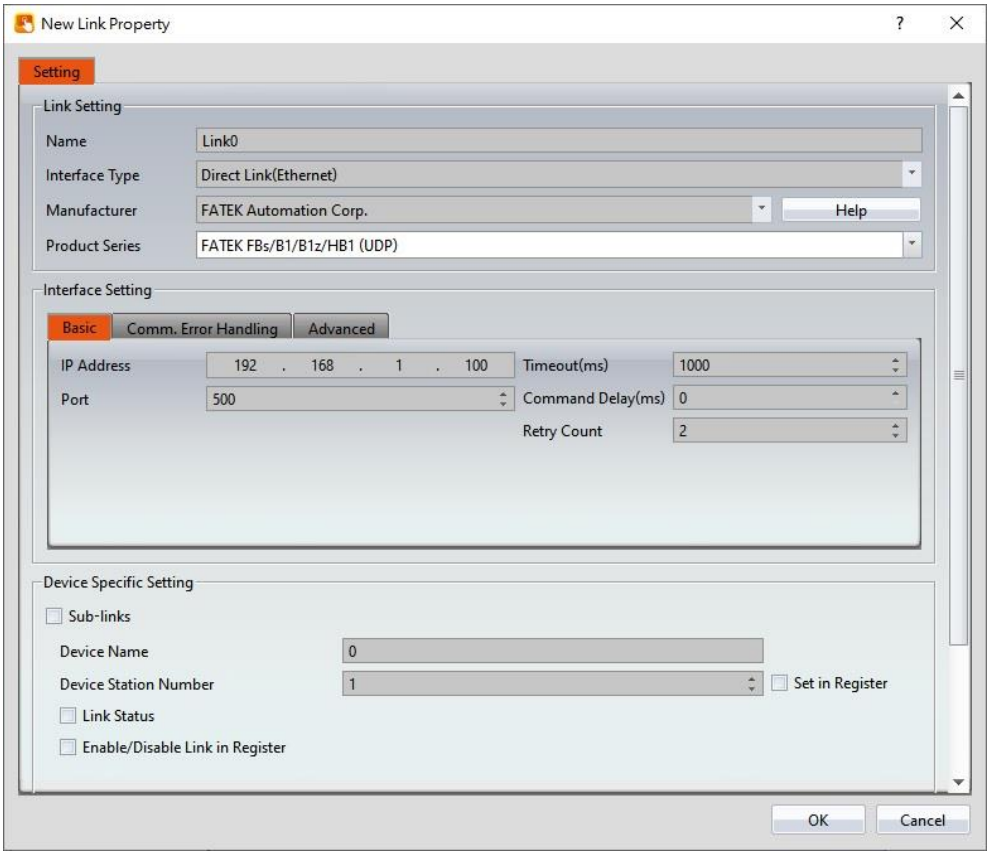


In the dialog window, the IP address and other parameters of the PLC can be configured.



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

Configuring of HMI



Under **Interface Type** select Ethernet

Under **Manufacturer** select FATEK Automation Corp

Under **Product Series** select FATEK FBe (UDP)

Use the IP address assigned on the PLC

Leave the Port at the default value

2.1.4 FBe

2.1.4.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232 / RS485	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	1	Must match PLC port setting
Communication Method	FATEK Communication Protocol	

2.1.4.2 PLC Resource

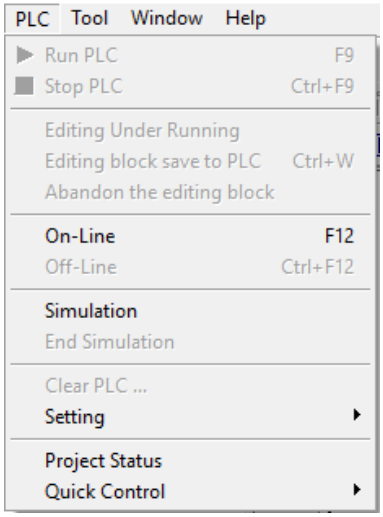
Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	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

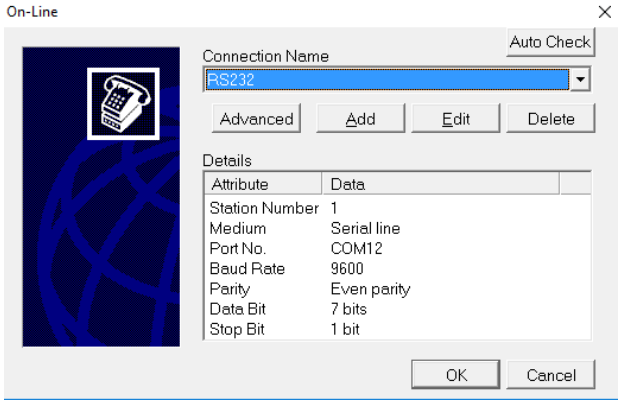
2.1.4.3 Connecting to PLC

Configuring of PLC

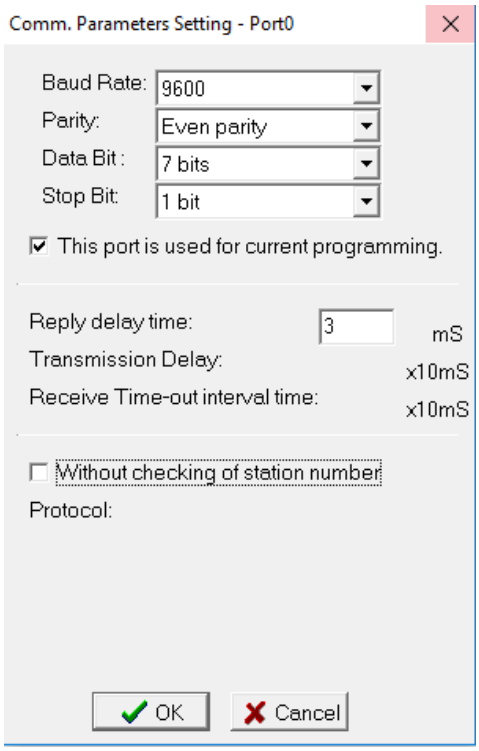
Use the application **WinProLadder** (ver. 3.25) to configure the serial port of the PLC.

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.



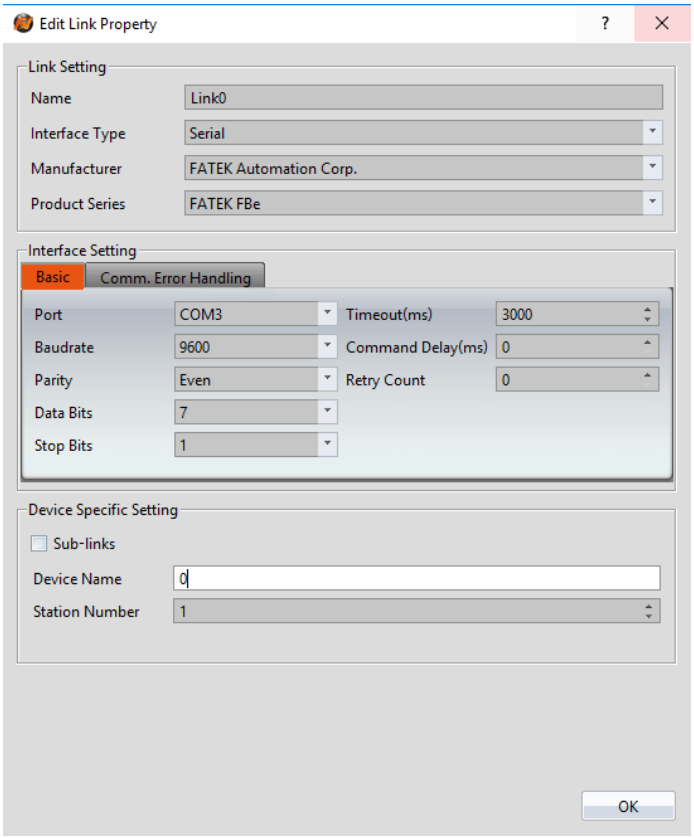


Under the **PLC** tab, select the **Setting** option and choose Port 0. Here, the Baud rate and other parameters of the serial port can be configured.



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 FATEK Automation Corp.

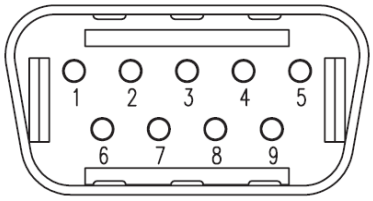
Under **Product Series** select FATEK FBe

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

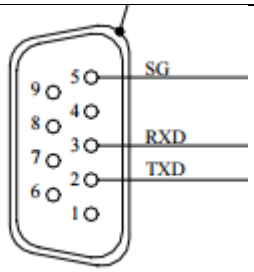
Verify the other parameters are consistent with the settings on the PLC

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



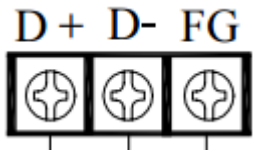
PLC RS232

*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		7	
8		8	
9		9	

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

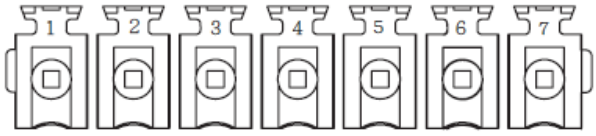
2.1.4.5 Wiring Diagrams(COM2/3)

			PLC RS485 
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-

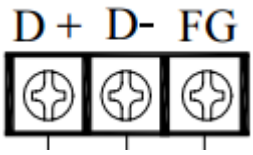
HMI COM3	PLC RS485 Port
7 DATA+	DATA+
8 DATA-	DATA-

2.1.4.6 Wiring Diagrams(COM3/4)



*Looking into HMI Device

PLC RS485



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 FBe (TCP)

2.1.5.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.1.3	
Port	500	
Device Station num.	0	
Communication Method	TCP	

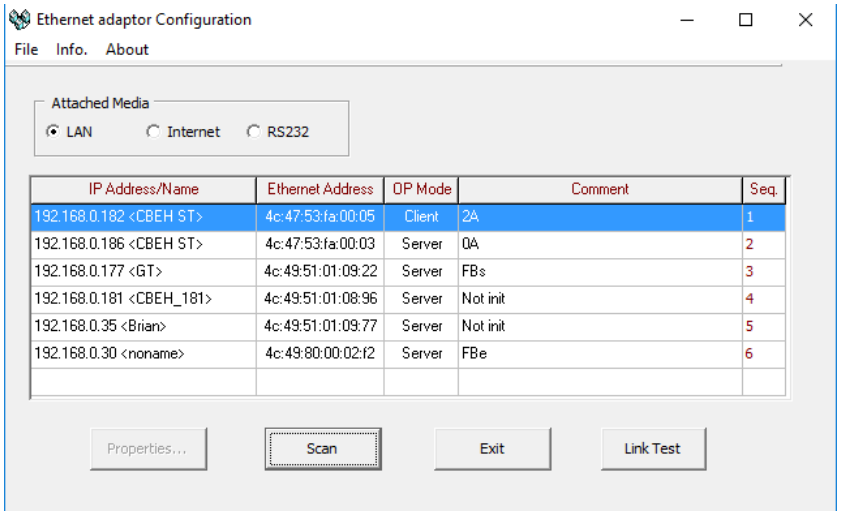
2.1.5.2 PLC Resource

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

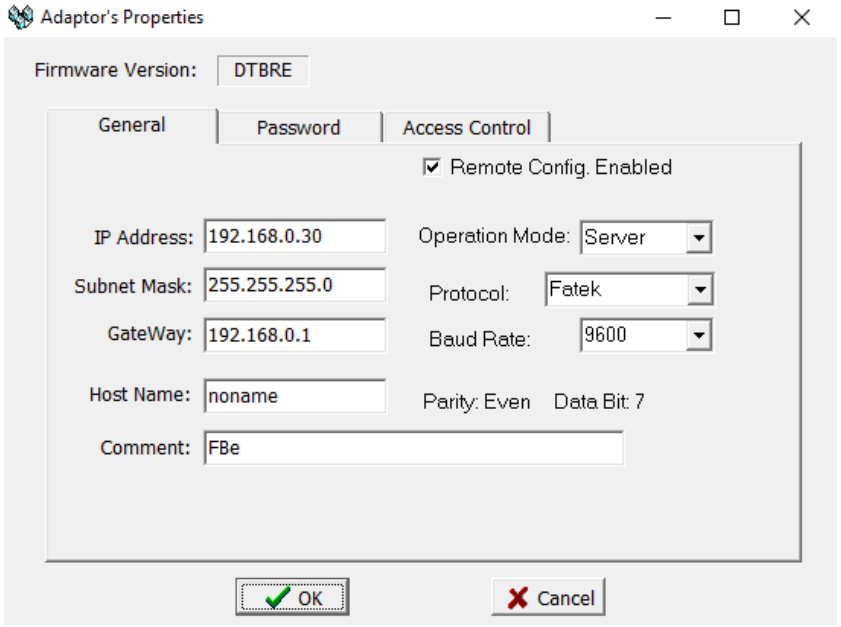
Use the application **FATEK Ethernet Module Configuration Tool** to configure the IP address of the PLC. Connect an Ethernet cable to the PLC. Under **Attached Media**, select LAN and press scan.



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

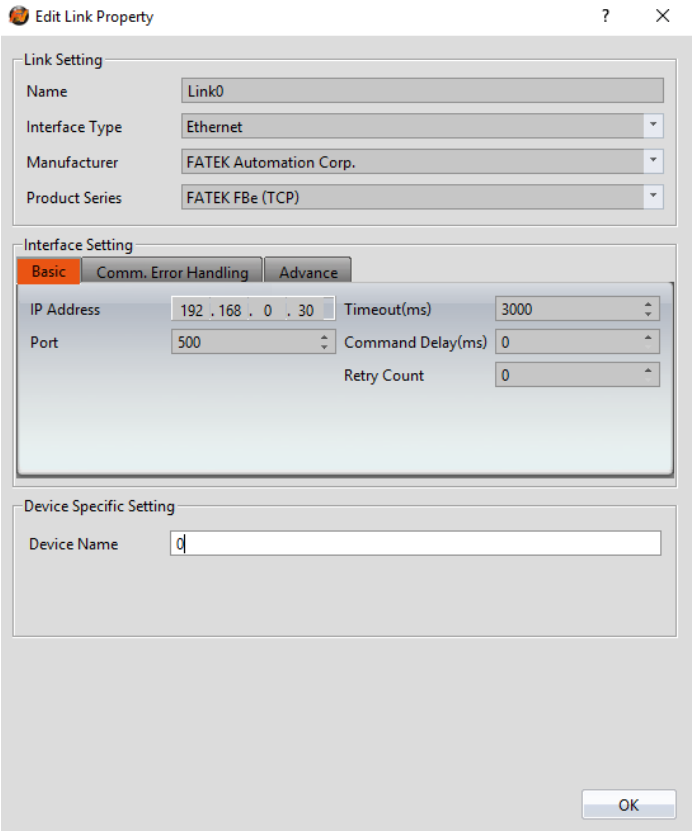
Note: The default IP address for the PLC has 1 for its third octet. If the IP address of the computer has a different number at that position, the PLC will not show up in the scan. Configure network settings on the computer to be able to see the PLC in the local network.

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



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

Under **Interface Type** select Ethernet

Under **Manufacturer** select FATEK Automation Corp

Under **Product Series** select FATEK FBe (TCP)

Use the IP address assigned on the PLC

Leave the Port at the default value

2.1.6 SC3 Servo

2.1.6.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
Device Station num.	1	
Communication Method	Modbus	

2.1.6.2 PLC Resource

Device	Data Bits	Address Format	Min.	Max.	Description
0x	1	DDDDD	1	65535	0x
1x	1	DDDDD	1	65535	1x
3x	16	DDDDD	1	65535	3x
4x	16	DDDDD	1	65535	4x

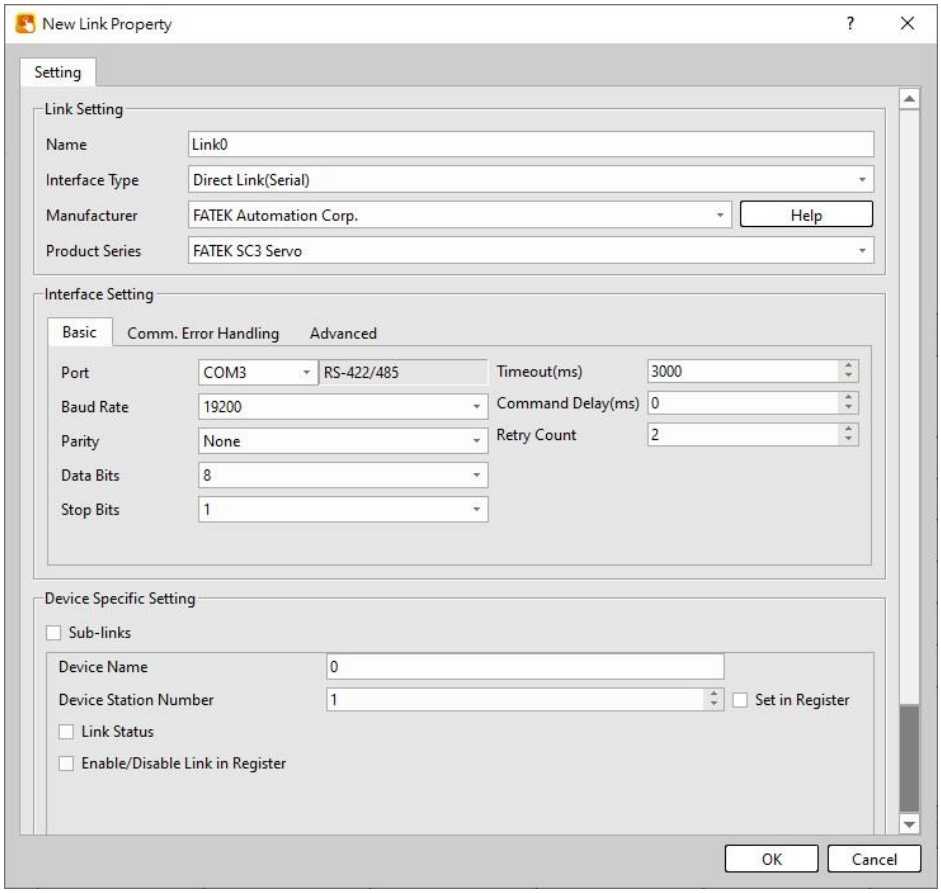
2.1.6.3 Tags

Name	Type	Address	Bits	Description
Motor_SN	4x	49249	16	Motor SN
Motor_Speed	4x	57345	16	Motor Speed (Un000)
Speed_Reference	4x	57346	16	Speed Reference (Un001)
Torque_Reference	4x	57347	16	Torque Reference (Un002)
Rotational_Angle_2	4x	57350	16	Rotational Angle 2 (Un004)
Input_Signal_Monitor	4x	57351	16	Input Signal Monitor (Un005)
Output_Signal_Monitor	4x	57352	16	Output Signal Monitor (Un006)
Input_Reference_Pulse_Speed	4x	57353	16	Input Reference Pulse Speed (Un007)
Position_Deviation	4x	57354	32	Position Deviation (Un008)
Accumulated_Load_Ratio	4x	57356	16	Accumulated Load Ratio (Un009)
Regenerative_Load_Ratio	4x	57357	16	Regenerative Load Ratio (Un00A)
Dynamic_Brake_Resistor_ Power_Consumption	4x	57358	16	Dynamic Brake Resistor Power Consumption (Un00B)

Input_Reference_Pulse_Counter	4x	57359	32	Input Reference Pulse Counter (Un00C)
Feedback_Pulse_Counter_Pulse	4x	57361	32	Feedback Pulse Counter Pulse (Un00D)
Fully_closed_Loop_Feedback_ Pulse_Counter	4x	57363	32	Fully closed Loop Feedback Pulse Counter (Un00E)
Feedback_Pulse_Counter_ Reference_Units	4x	57372	32	Feedback Pulse Counter Reference Units (Un0013)
Absolute_Encoder_Multiturn_Data	4x	57409	16	Absolute Encoder Multiturn Data (Un040)
Position_within_One_Rotation_of_ Absolute_Encoder	4x	57410	32	Position within One Rotation of Absolute Encoder (Un041)
Absolute_Position	4x	60417	32	Absolute Position
Servo_Inteneral_Status	4x	57617	32	Servo Inteneral Status
Servo_Inteneral_Inputs_Status	4x	57633	32	Servo Inteneral Inputs Status
Servo_Inteneral_Output_Status	4x	57649	32	Servo Inteneral Output Status
DC_Link_Voltage	4x	57665	16	DC Link Voltage
Current_Alarm_State	4x	58635	16	Current Alarm State
Servo_Software_Version	4x	58648	32	Servo Software Version
Servo_Status	4x	58652	16	Servo Status
Servo_Control_Mode	4x	58653	16	Servo Control Mode
Communication_input	4x	9985	32	Communication input

2.1.6.4 Connected Setting

HMI Setting



Under Interface Type select【Direct link】
Under Manufacturer select【FATEK Automation Corp】
Under Product Series select【FATEK FBe (TCP)】

2.1.7 SD3 Servo

2.1.7.1 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

2.1.7.2 PLC Resource

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

2.1.7.3 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 。

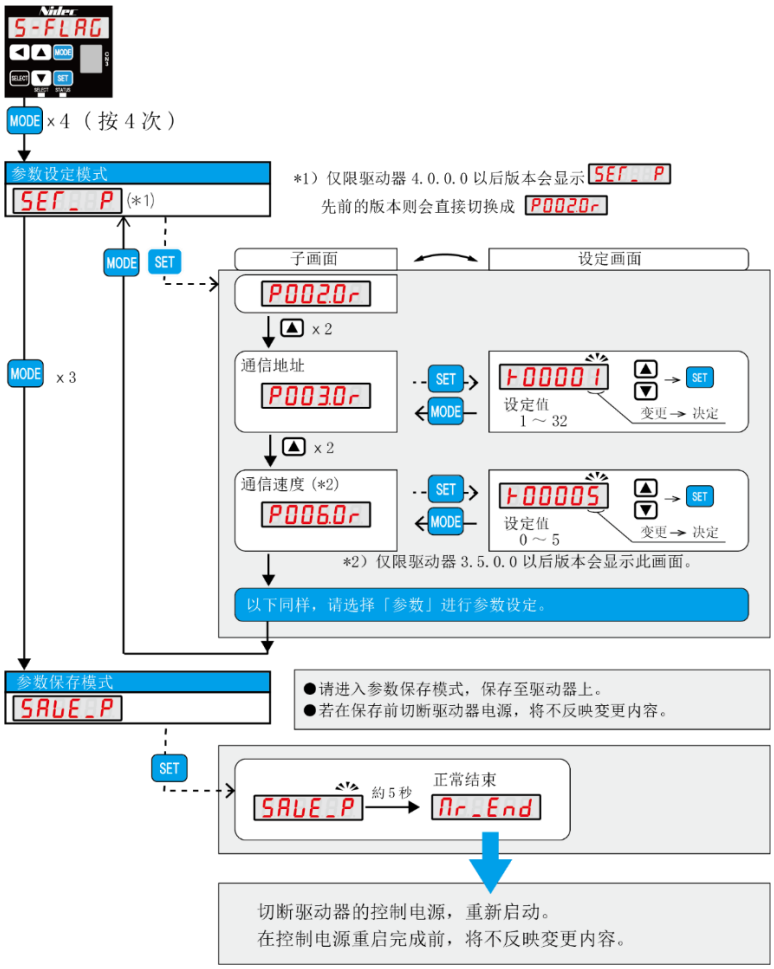
6.0	RS-485 communication Baud rate	0： 2,400bps 1： 4,800bps 2： 9,600bps 3：19,200bps 4：38,400bps 5：57,600bps （Initial value）
6.1	RS-485 communication STOP bit	0：1 bit（Initial value） 1：2 bit
6.2	RS-485communication parity	0：none（Initial value） 1：EVEN 2：ODD
8.0	RS-485 communication ON/OFF	0：no use（Initial value） 1：use
11.0	RS-485 Communication Minimum response time	0-255 Initial value 3 [ms]。

2.1.7.4 Wiring Diagrams

Parameter setting method (alternatively set the following parameters):

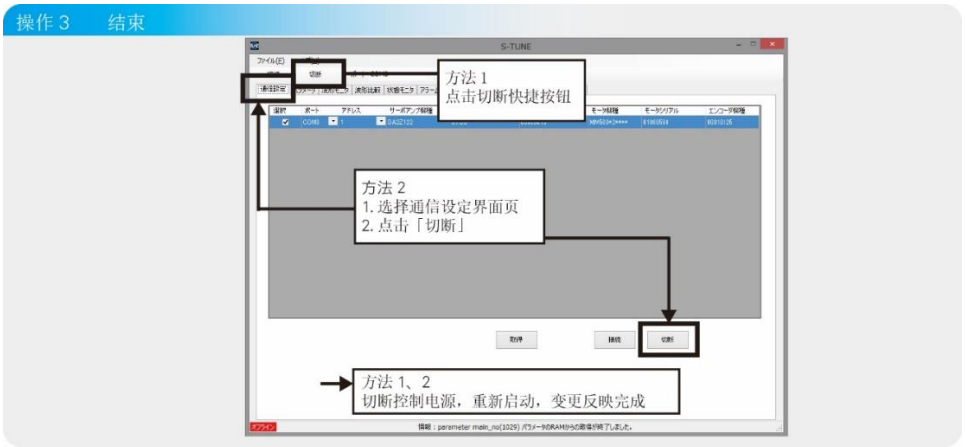
Setting	
	Use the drive front panel settings.
	S-TUNE has been set for adjustment. Software needs to be installed on the computer.

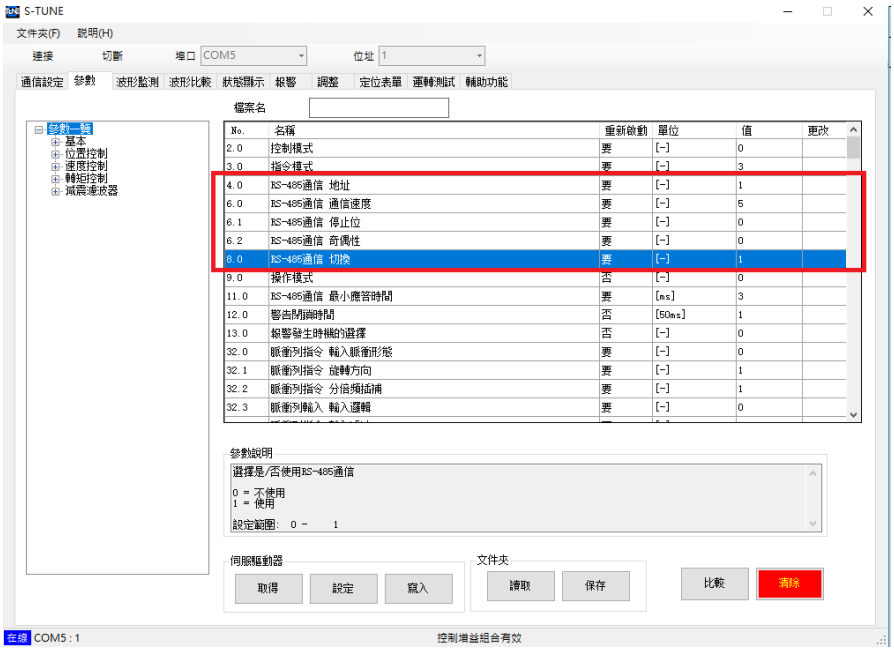
Method1:



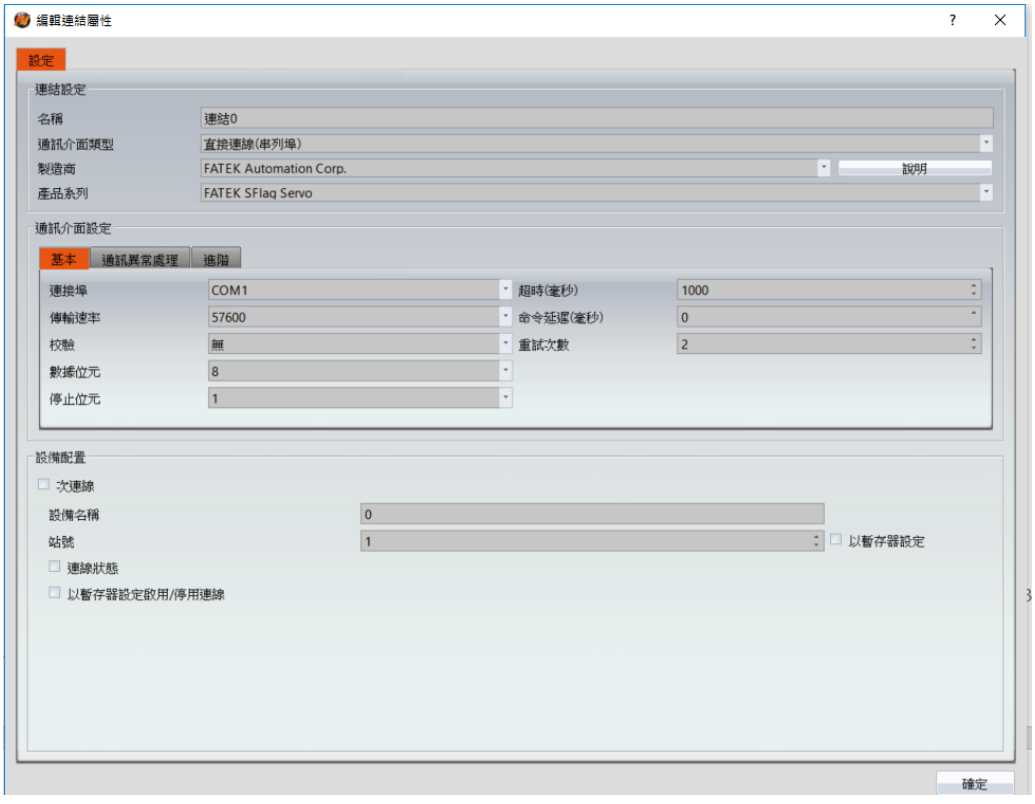
Method2:

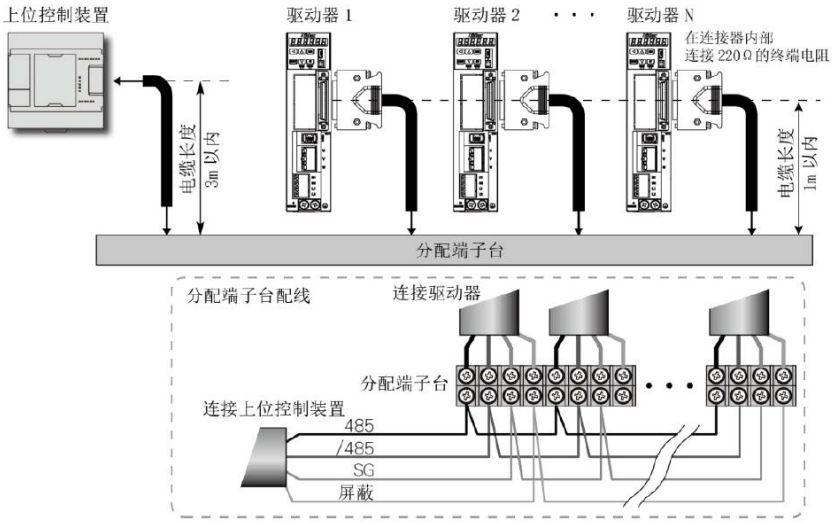
Open Sankyo S-TUNE and use the mini USB cable to connect to the computer USB port, it will automatically connect



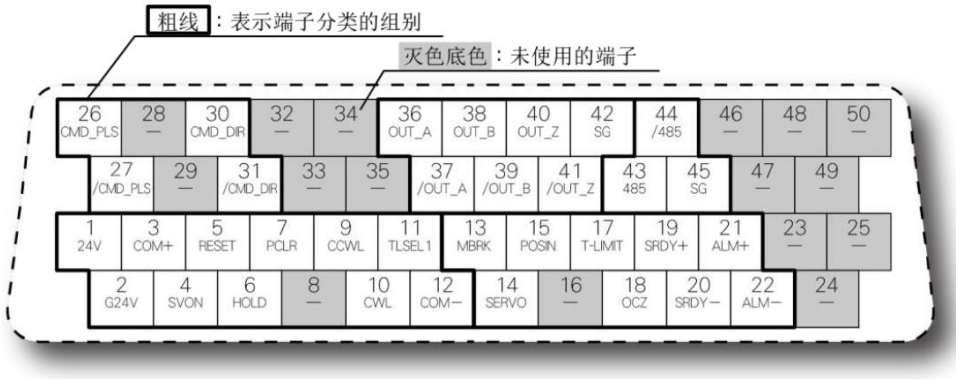


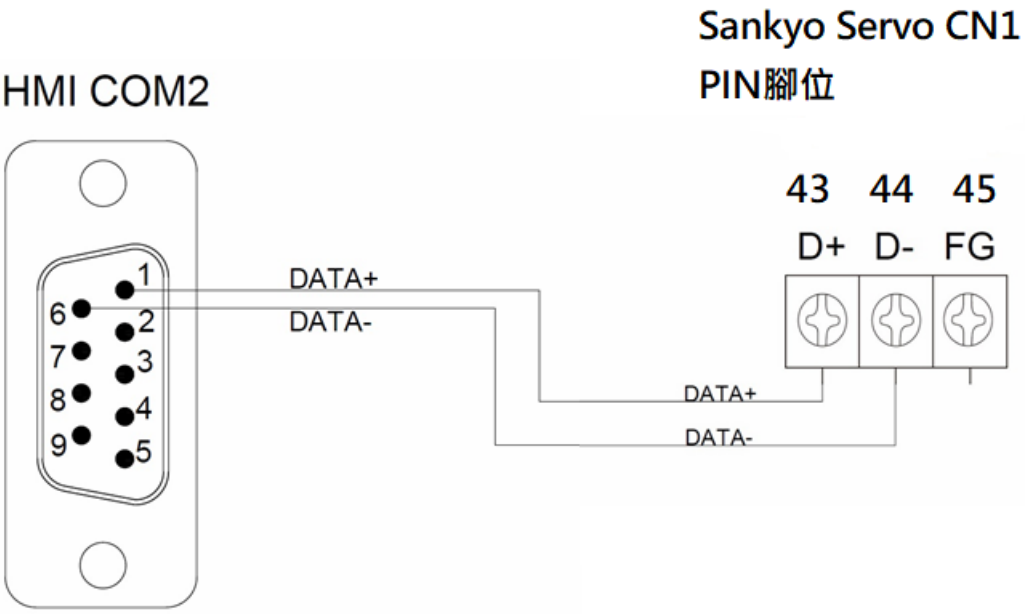
Configuring of HMI





连接器配线复杂时，请以端子台进行信号分配。





2.1.8 M series

2.1.8.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	1	
Communication Method	FATEK Communication Protocol	

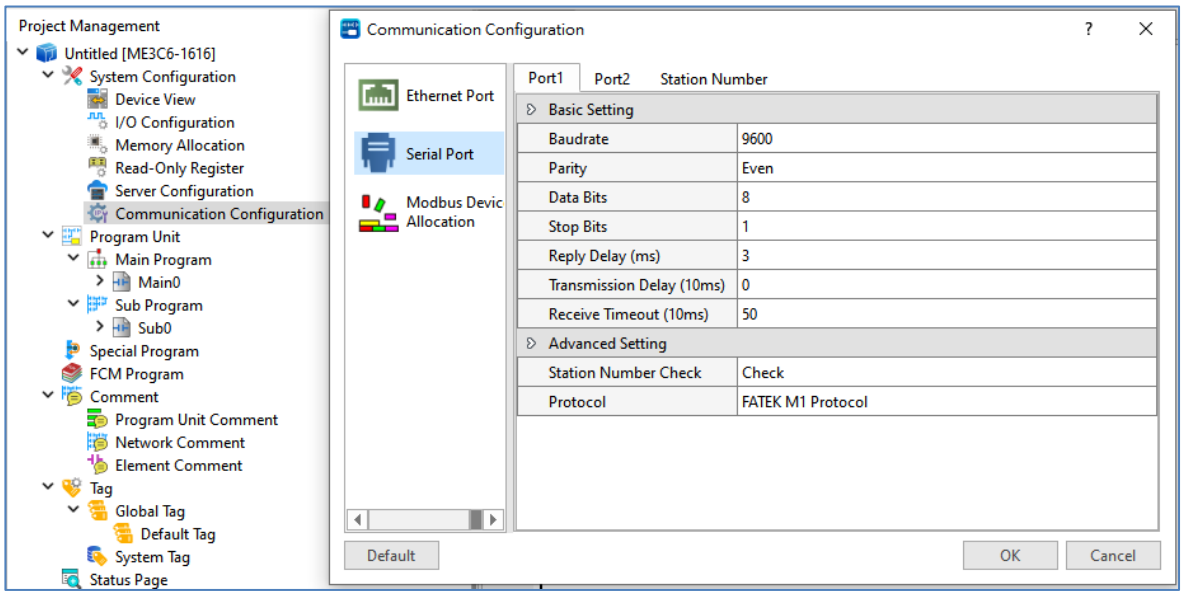
2.1.8.2 PLC Resource

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

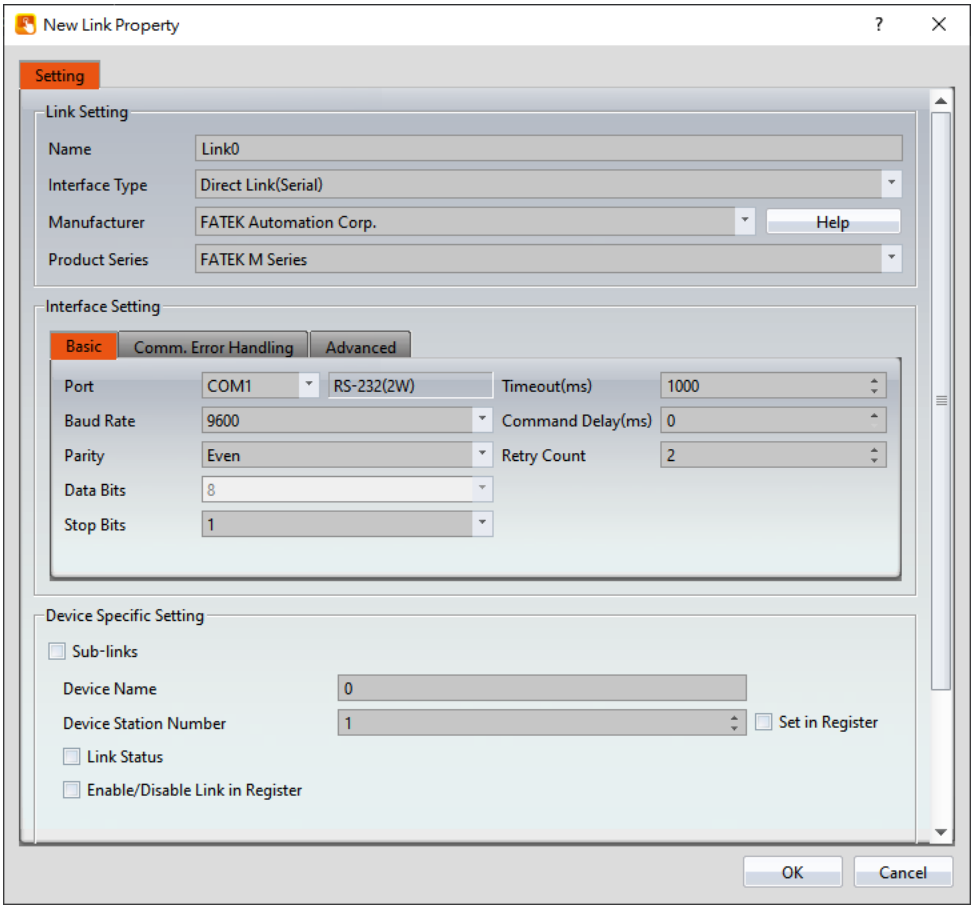
2.1.8.3 Connecting to PLC

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.



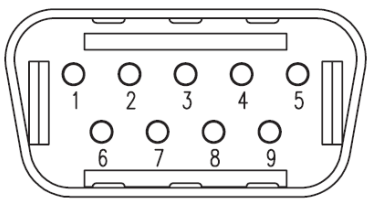
Configuring of HMI

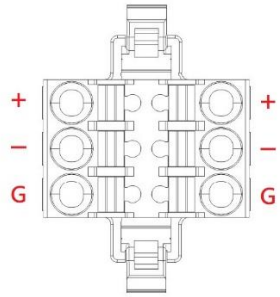


Within the Link configuration window in FvDesigner:
Under Interface Type select **Serial**.
Under Manufacturer select **FATEK Automation Corp.**
Under Product Series select **FATEK M Series.**

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

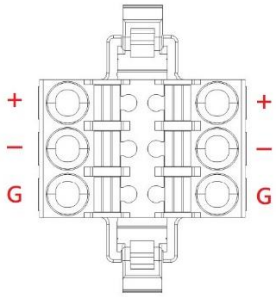
2.1.8.4 Wiring Diagrams(COM2)

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**

2.1.8.5 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**

2.1.9 M series (TCP)

2.1.9.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.2.4	
Port	501	
Device Station num.	0	
Communication Method	TCP	

2.1.9.2 PLC Resource

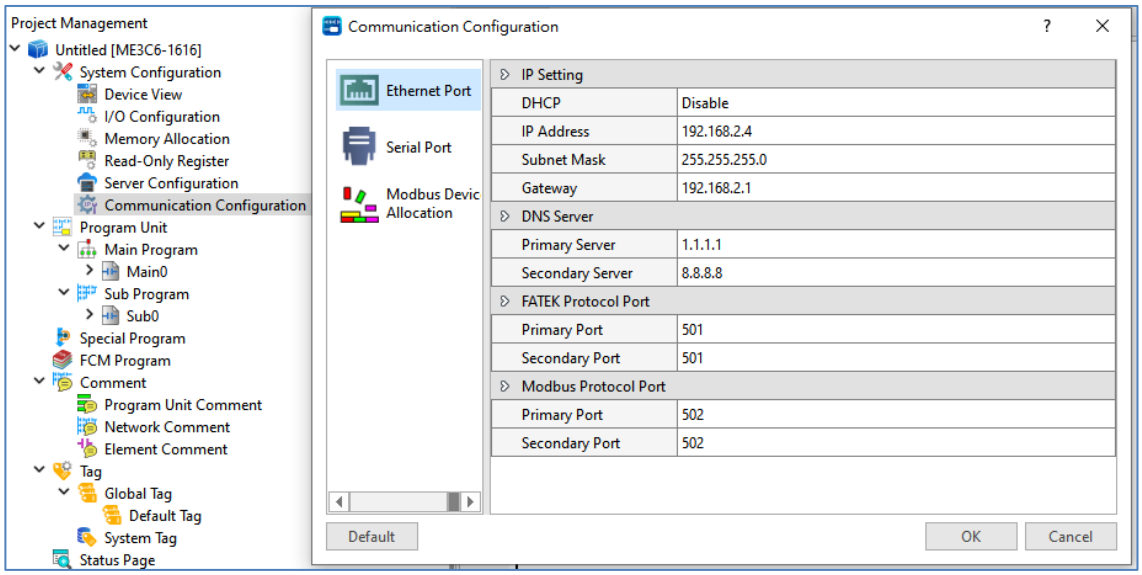
Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	1023	Input Discrete
Y	1	DDDD	0	1023	Output Relay
M	1	DDDDD	0	29599	Internal Relay
S	1	DDDD	0	3103	Step Relay
T	1	DDDD	0	1023	Timer Discrete
C	1	DDDD	0	1279	Counter Discrete
WX	16	DDDD	0	1023	Input Discrete
WY	16	DDDD	0	1023	Output Relay
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

2.1.9.3 Connecting to PLC

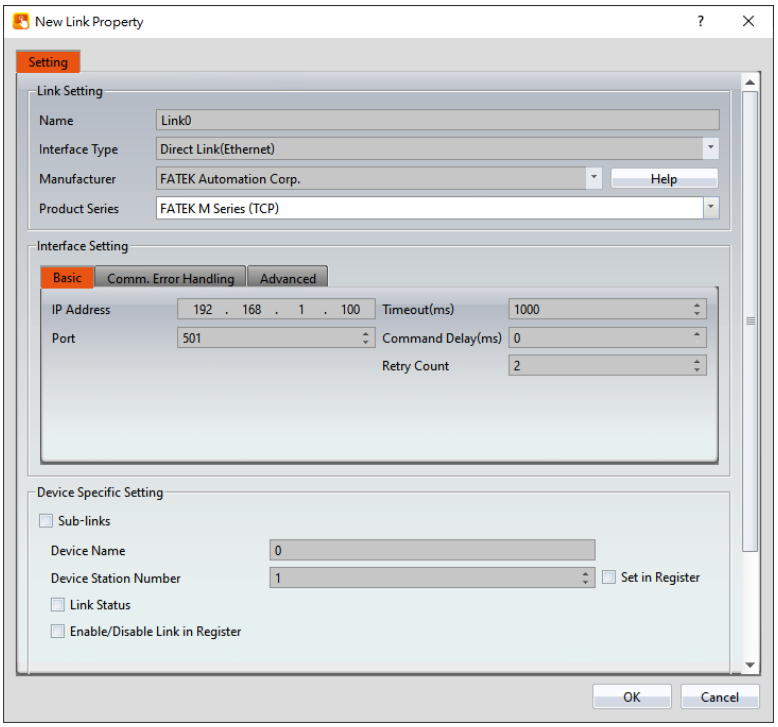
Configuring of PLC

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



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

Under Manufacturer select **FATEK Automation Corp**.

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

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

2.1.10 Data Sharer (UDP)

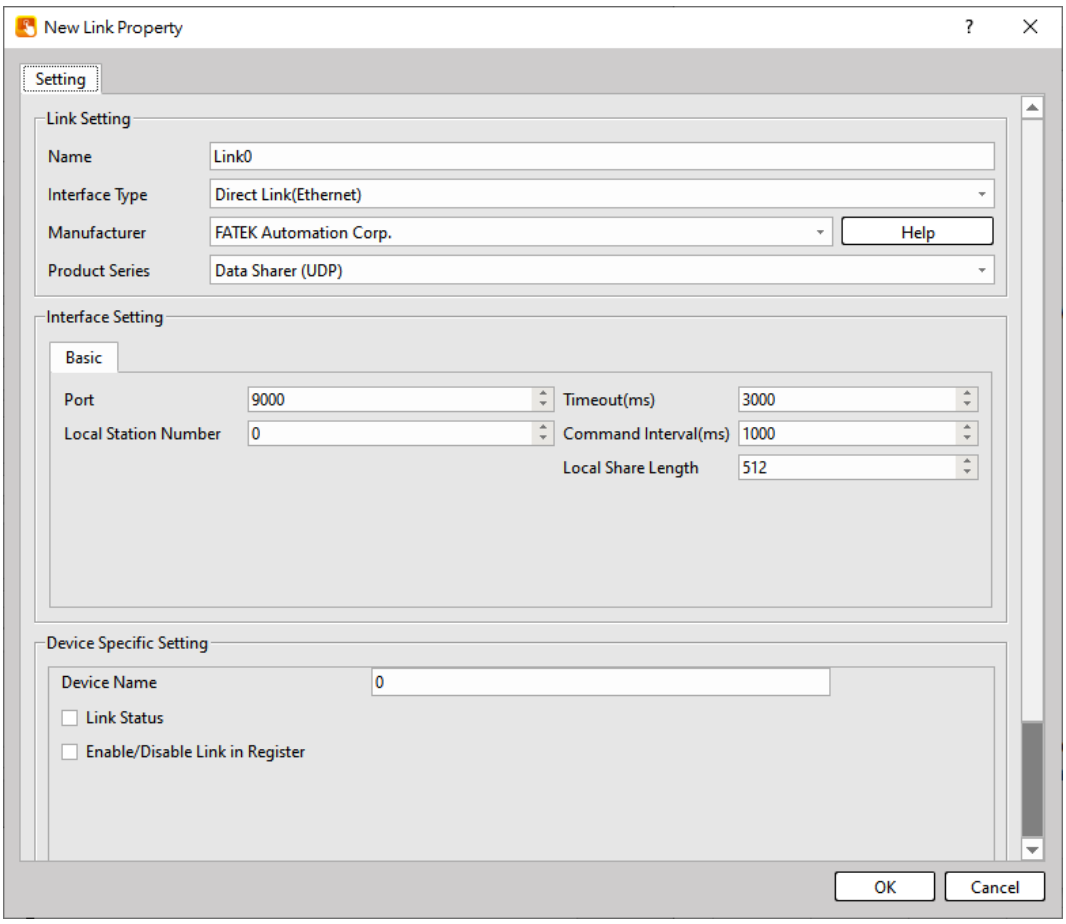
2.1.10.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
Port	9000	
Local Station Number	0	
Timeout(ms)	1000	
Local Share Length	512	
Communication Method	UDP	

2.1.10.2 PLC Resource

Device	Data Bits	Format	Min.	Max.	Description
S	16	DD	0	15	Sn indicates the connection status of station n.
L	16	DD	0	15	Ln indicates the shared data length of station n.
P0_	16	DDD	0	511	Data of station 0
P1_	16	DDD	0	511	Data of station 1
P2_	16	DDD	0	511	Data of station 2
P3_	16	DDD	0	511	Data of station 3
P4_	16	DDD	0	511	Data of station 4
P5_	16	DDD	0	511	Data of station 5
P6_	16	DDD	0	511	Data of station 6
P7_	16	DDD	0	511	Data of station 7
P8_	16	DDD	0	511	Data of station 8
P9_	16	DDD	0	511	Data of station 9
P10_	16	DDD	0	511	Data of station 10
P11_	16	DDD	0	511	Data of station 11
P12_	16	DDD	0	511	Data of station 12
P13_	16	DDD	0	511	Data of station 13
P14_	16	DDD	0	511	Data of station 14
P15_	16	DDD	0	511	Data of station 15

2.1.10.3 Connecting



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

Under Manufacturer select **FATEK Automation Corp**.

Under Product Series select **Data Sharer (UDP)**.

Please ensure that the【port】settings of every HMI in the group are identical, and that the【Local Station Number】setting of each HMI is different.

2.1.10.4 Use teaching

Data Sharer communicates via Ethernet, allowing multiple HMIs to share data within their designated blocks.

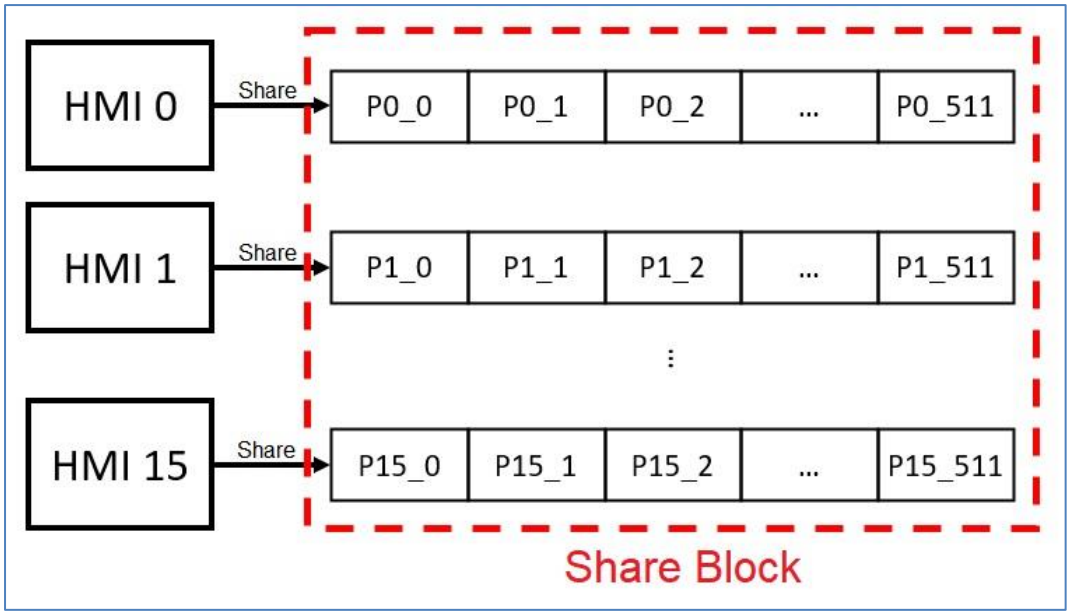
Up to 16 HMIs can be configured, with a maximum of 512 words shared.

Once HMI A establishes a Data Sharer connection, it will periodically share its own data block based on its local station ID.

When HMI A receives data shared by another HMI (e.g., HMI B), the values in the block corresponding to station B will be updated immediately.

All HMIs participating in data sharing must enable the Data Sharer connection. They must be configured with the same port, and each HMI must have a unique local station ID.
Each HMI can read and write data within its own station block, while the data blocks of other stations are read-only.

- **Type P： Data Block**



- **Type L：**

Displays the length of the received data. For example, if set to L2, it will display the length of the data received from the device with station number 2.

- **Type S：**

Displays the online status of each station (16-bit integer).

Value	Description
0	Online
1	Station number conflict — indicates that a shared data packet was received with the same station number as the local device
2	Timeout — indicates that no shared data was received from this station within the specified time

2.2 Mitsubishi

2.2.1 FX2N CPU

2.2.1.1 Communication Setting

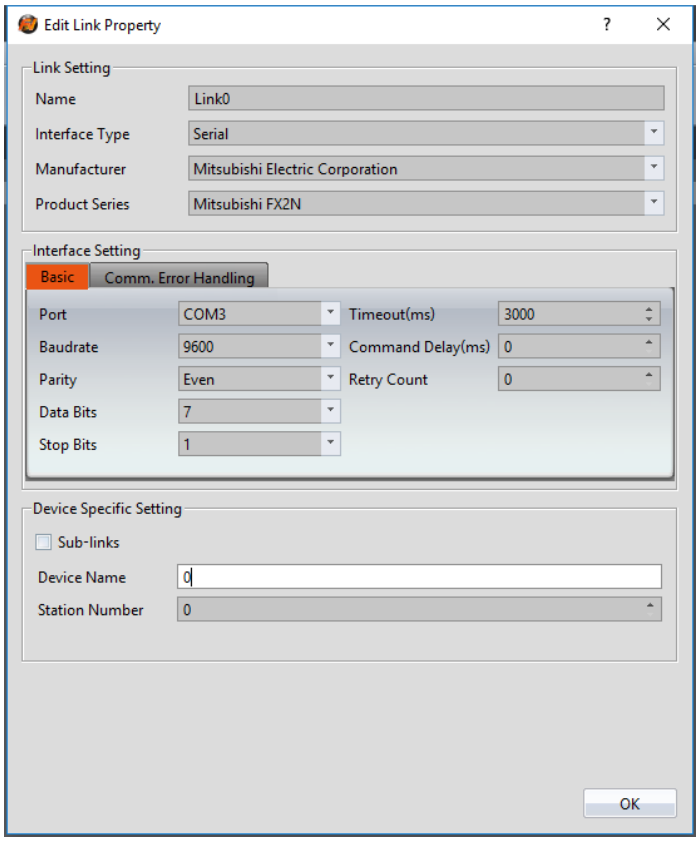
Item	Default Setting	Remark
Interface Type	RS485 4W	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	0	
Communication Method	Programming Protocol	

2.2.1.2 PLC Resource

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:

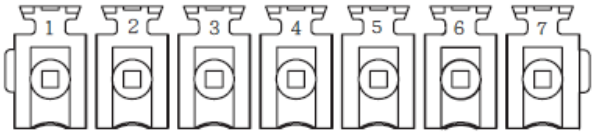
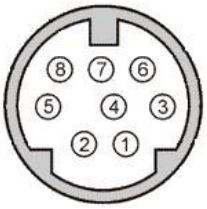
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

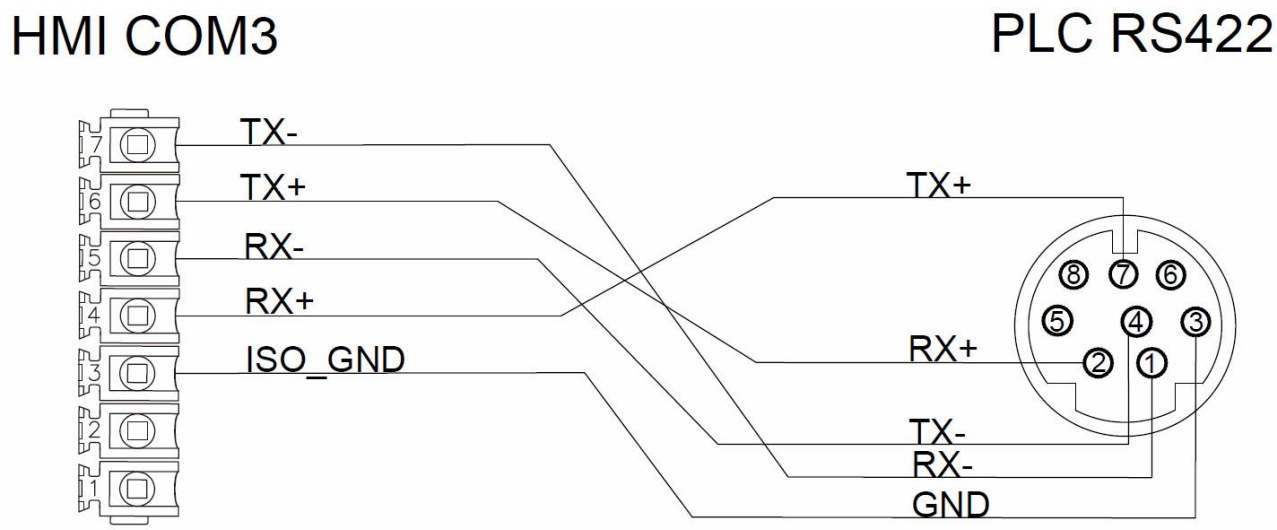
Under **Product Series** select Mitsubishi FX2N

Under **Port** select COM3

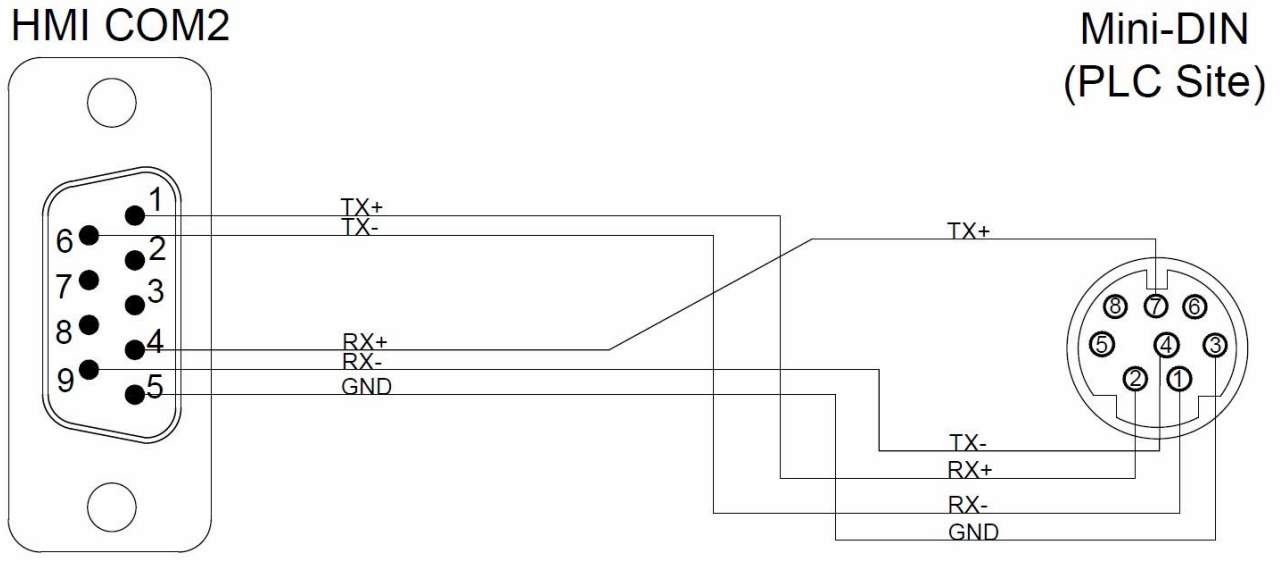
2.2.1.4 Wiring Diagrams

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



2.2.2 FX2N-485BD

2.2.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	1	
TX Control	Form1	Without CR,LF
Checksum	Yes	
Communication Method	Computer Link	

2.2.2.2 PLC Resource

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

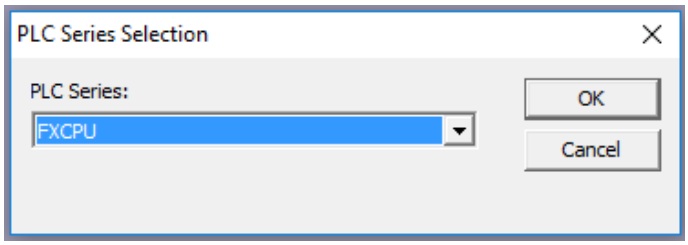
2.2.2.3 Connected Setting

Configuring of PLC

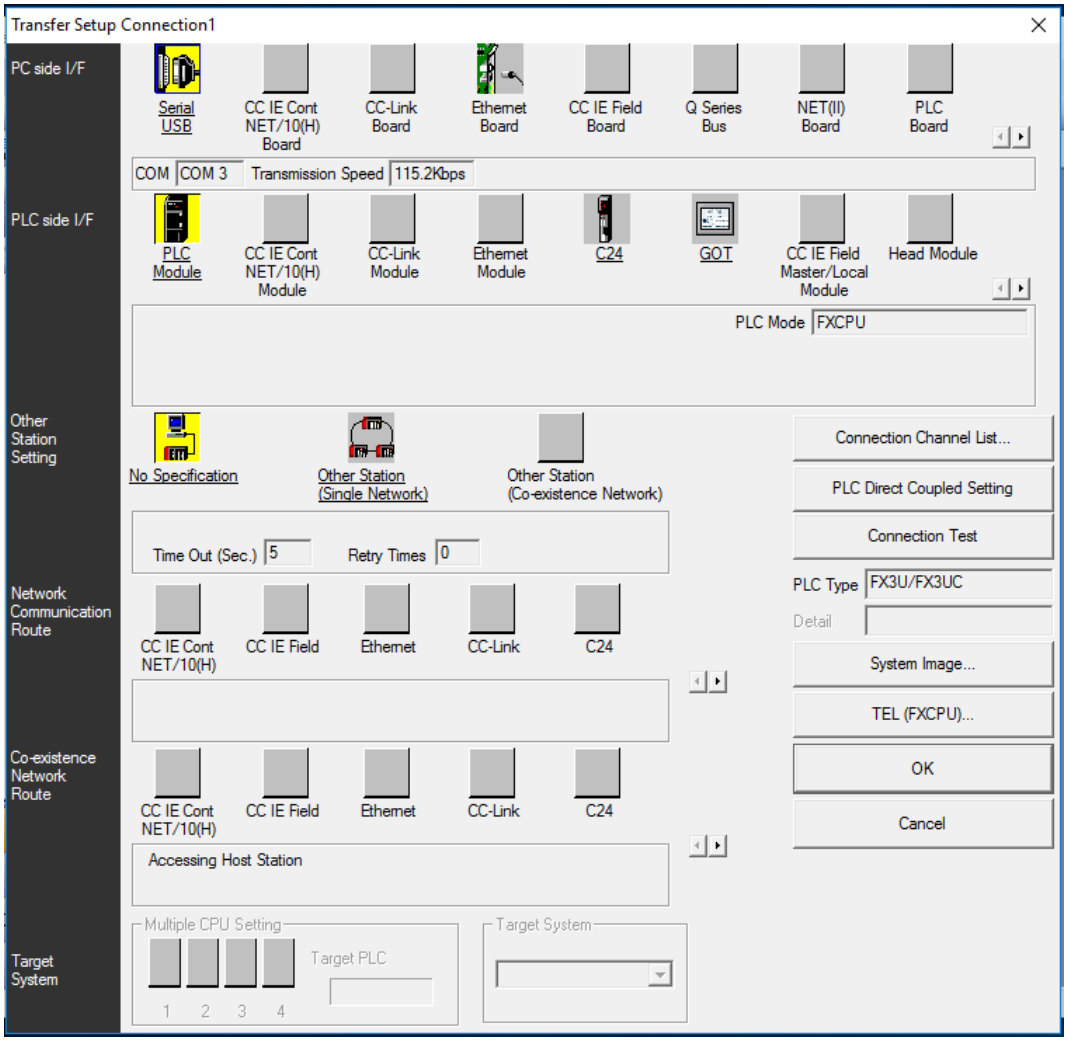
Use **MELSOFT GX Works2** to configure the port of the PLC.

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

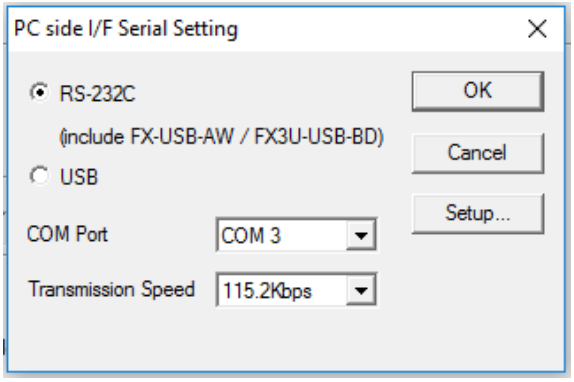
Select the **FXCPU** PLC series.



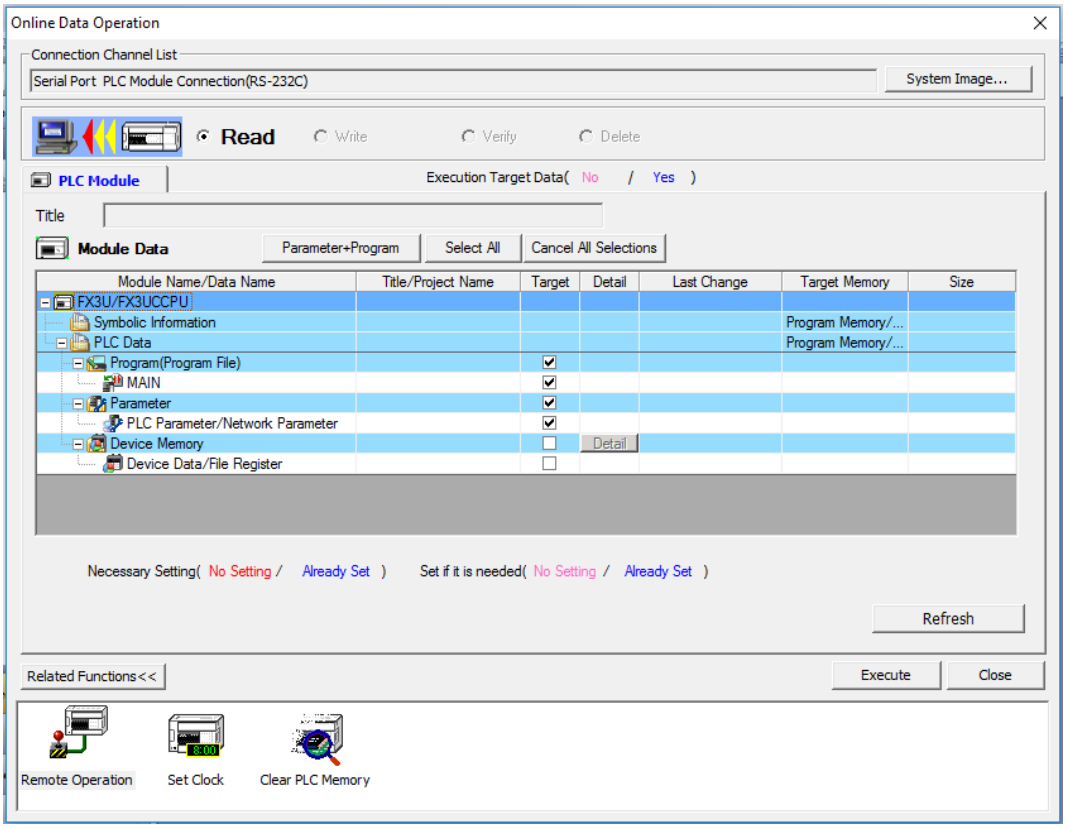
Select **Serial USB** in the Transfer Setup Communication window.



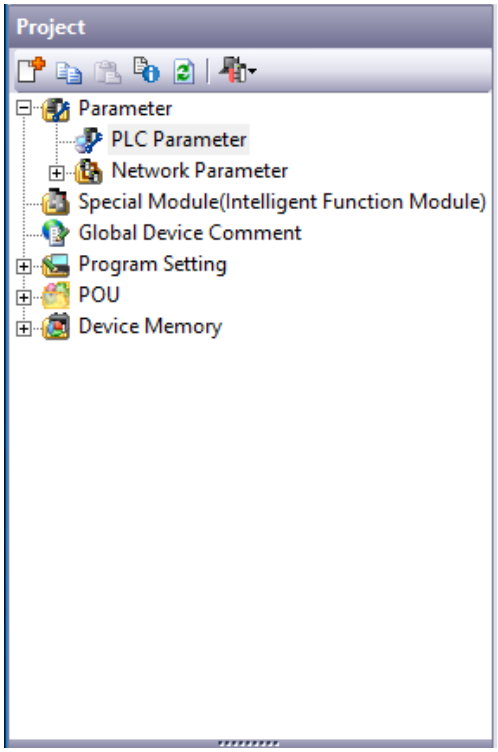
Select the **RS-232C** radio button and select the **COM Port** that the PLC is connected at. Click **Connection Test** to verify the connection and then press OK.



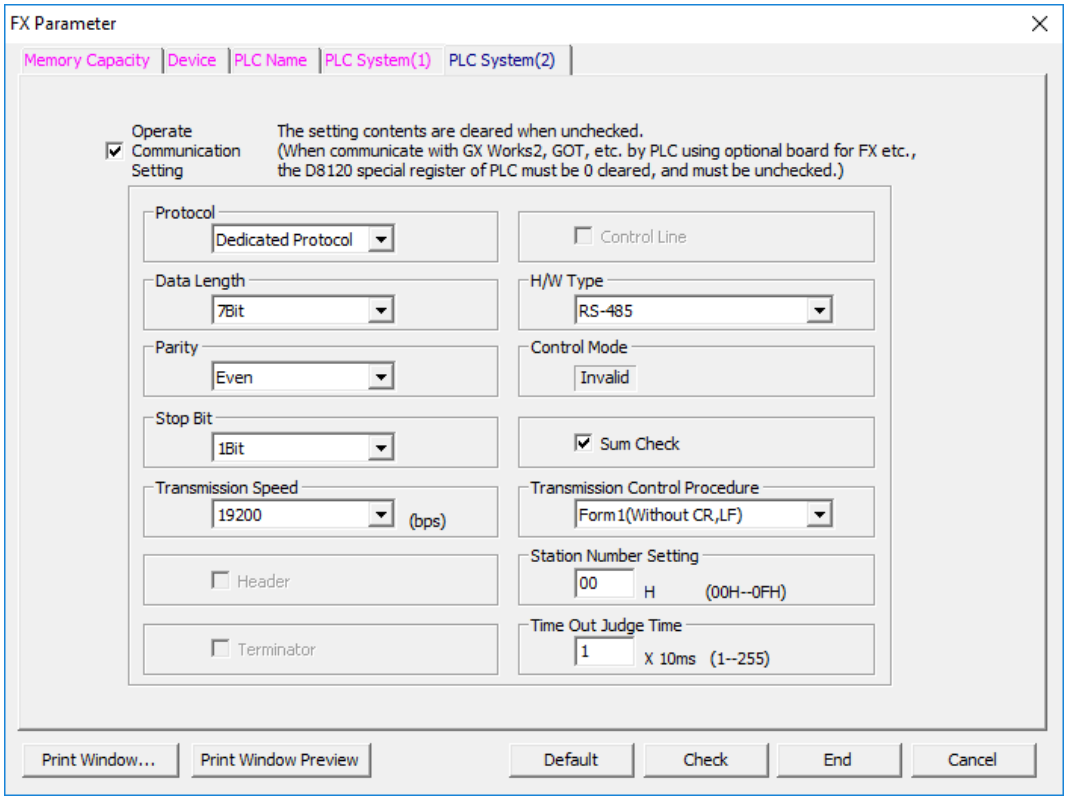
After confirming the **Parameter** option is checked, press **Execute** in the Online Data Operation window.



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.



Check **Operate Communication Setting** to enable configuration

Set Protocol to **Dedicated Protocol**

Set Parity to **Even**

Set Transmission Speed to **19200**

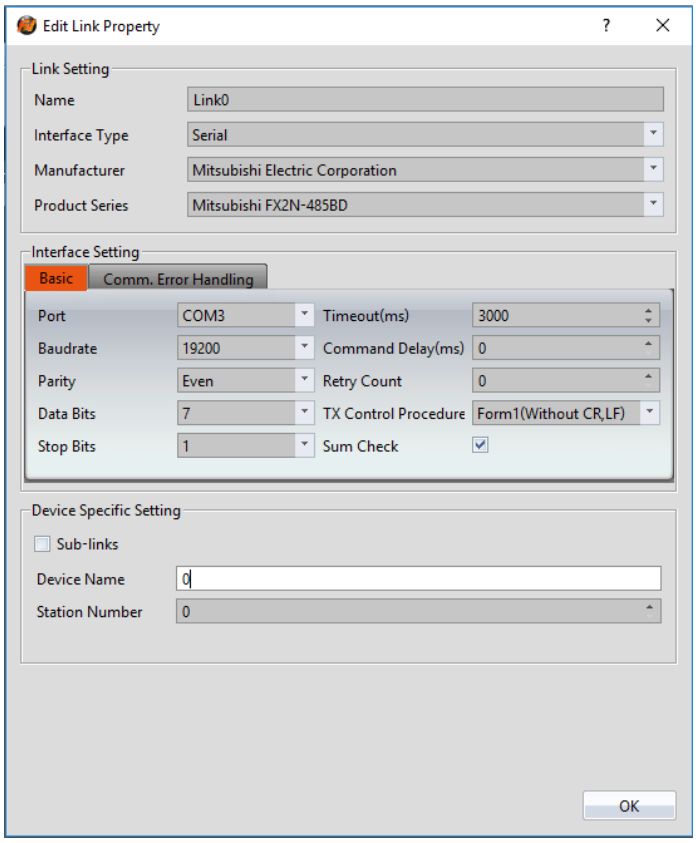
Set H/W Type to **RS-485**

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



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

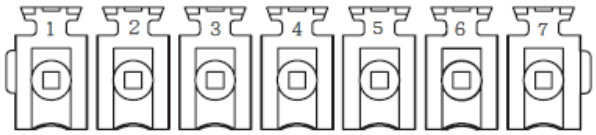
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

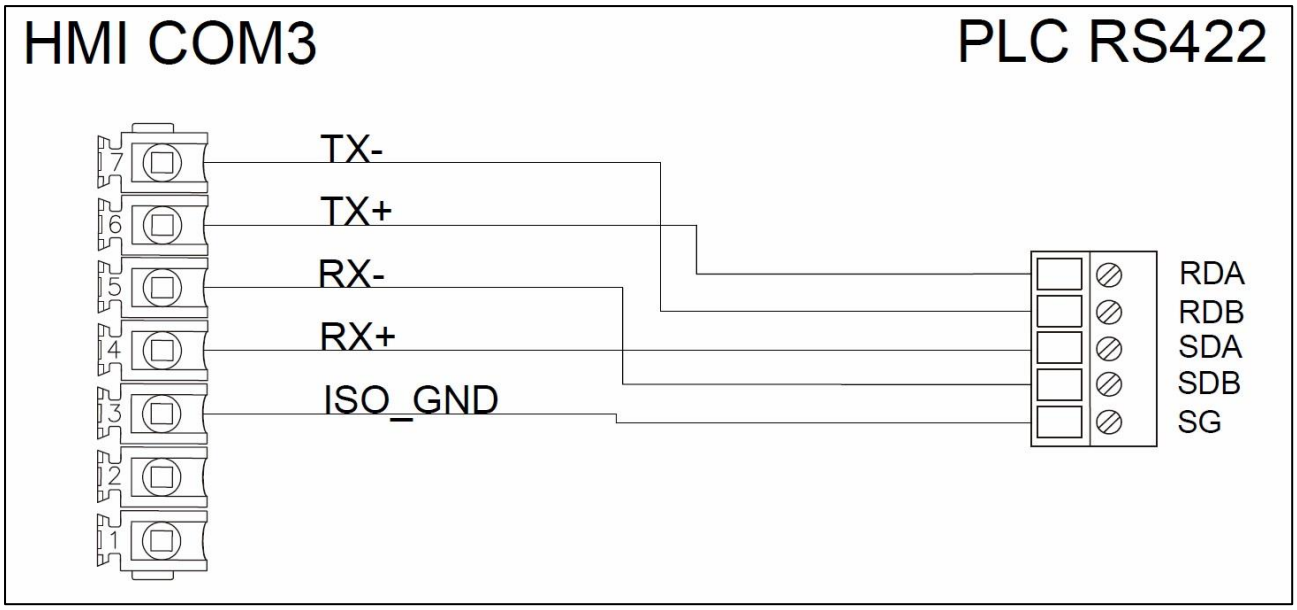
Under **Product Series** select Mitsubishi FX2N-485BD.

Under **Port** select COM3

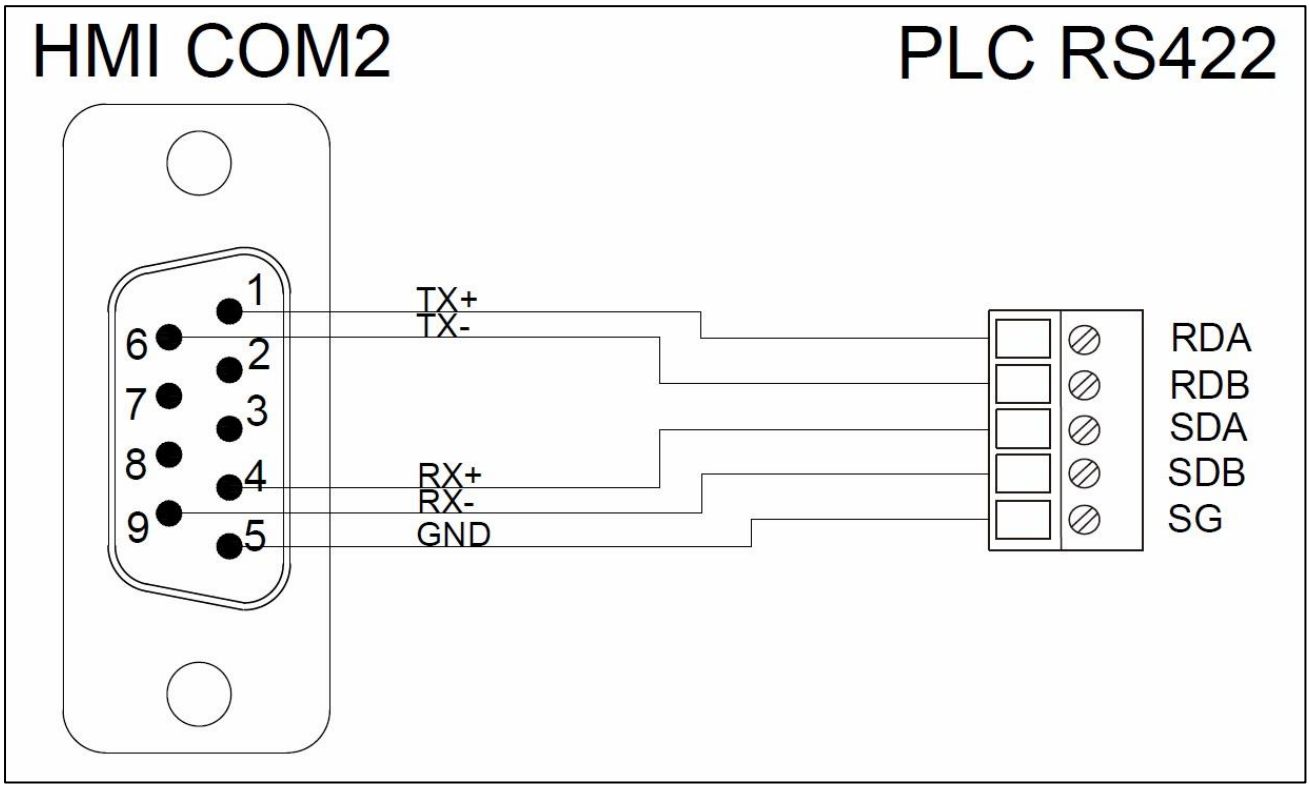
2.2.2.4 Wiring Diagrams

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

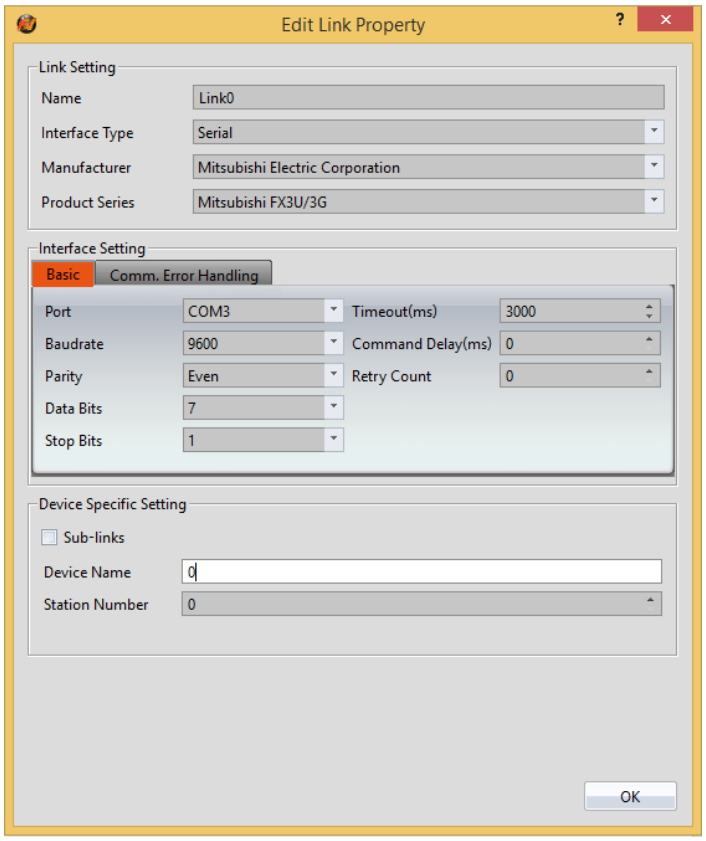
Item	Default Setting	Remark
Interface Type	RS485 4W	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	0	
Communication Method	Programming Protocol	

2.2.3.2 PLC Resource

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



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

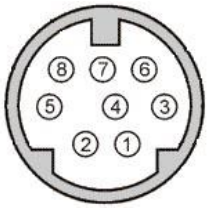
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

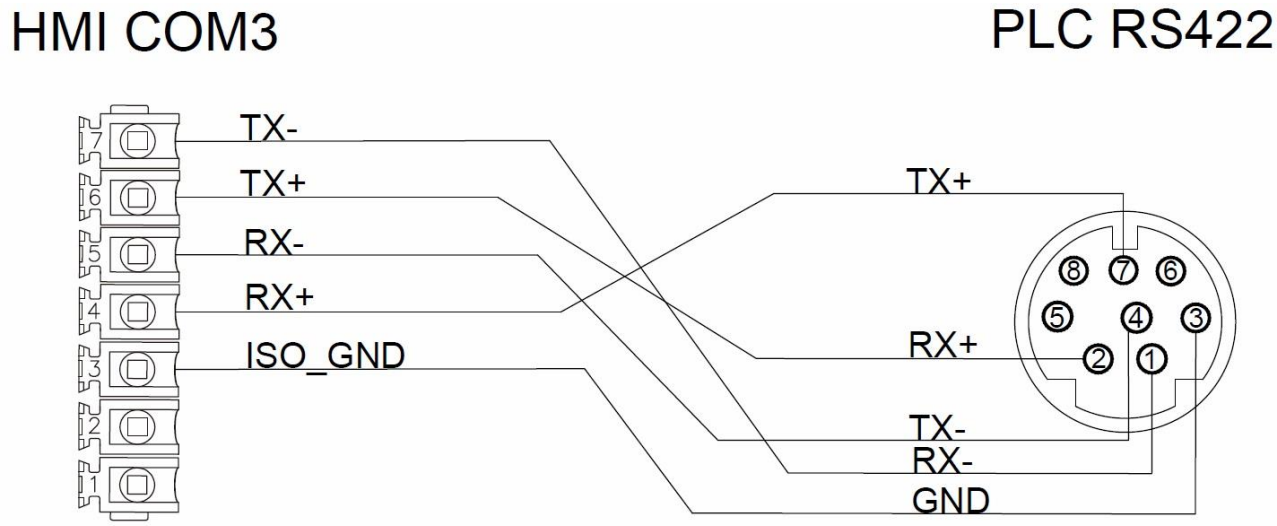
Under **Product Series** select Mitsubishi FX3U/3G

Under **Port** select COM3

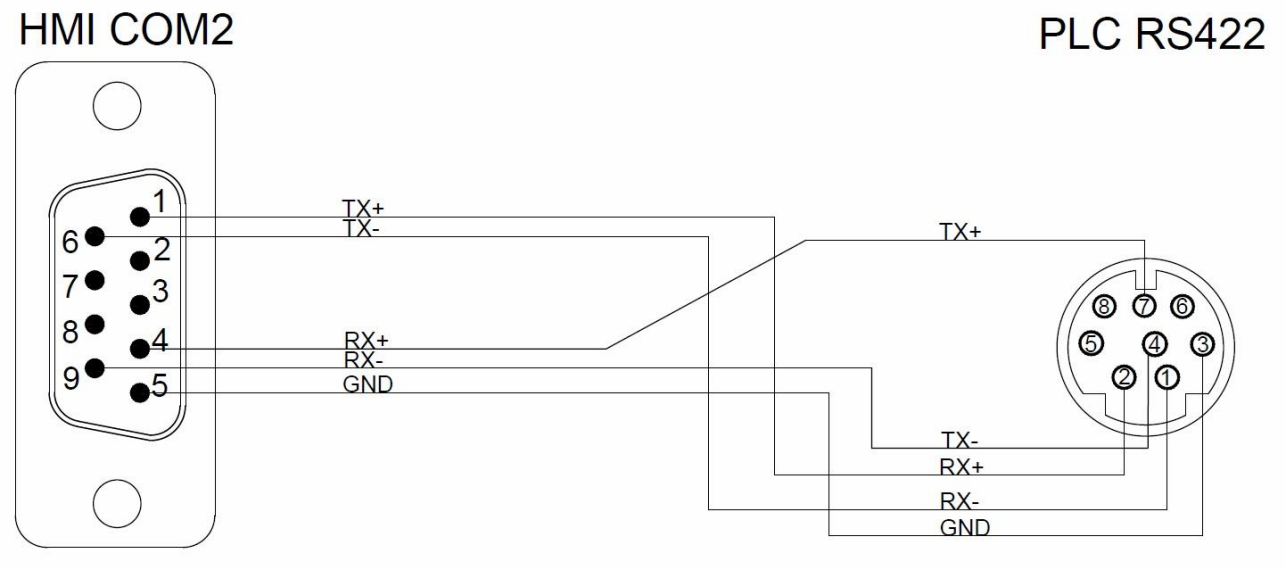
2.2.3.4 Wiring Diagrams

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



2.2.4 FX3U-485BD

2.2.4.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	1	
TX Control	Form1	Without CR,LF
Checksum	Yes	
Communication Method	Computer Link	

2.2.4.2 PLC Resource

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

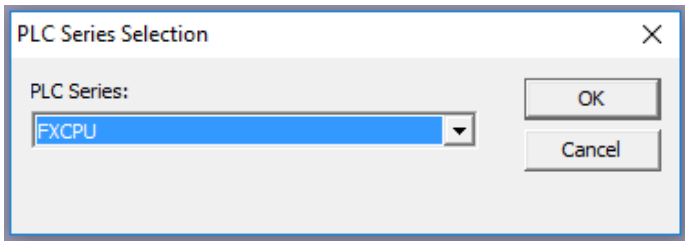
2.2.4.3 Connected Setting

Configuring of PLC

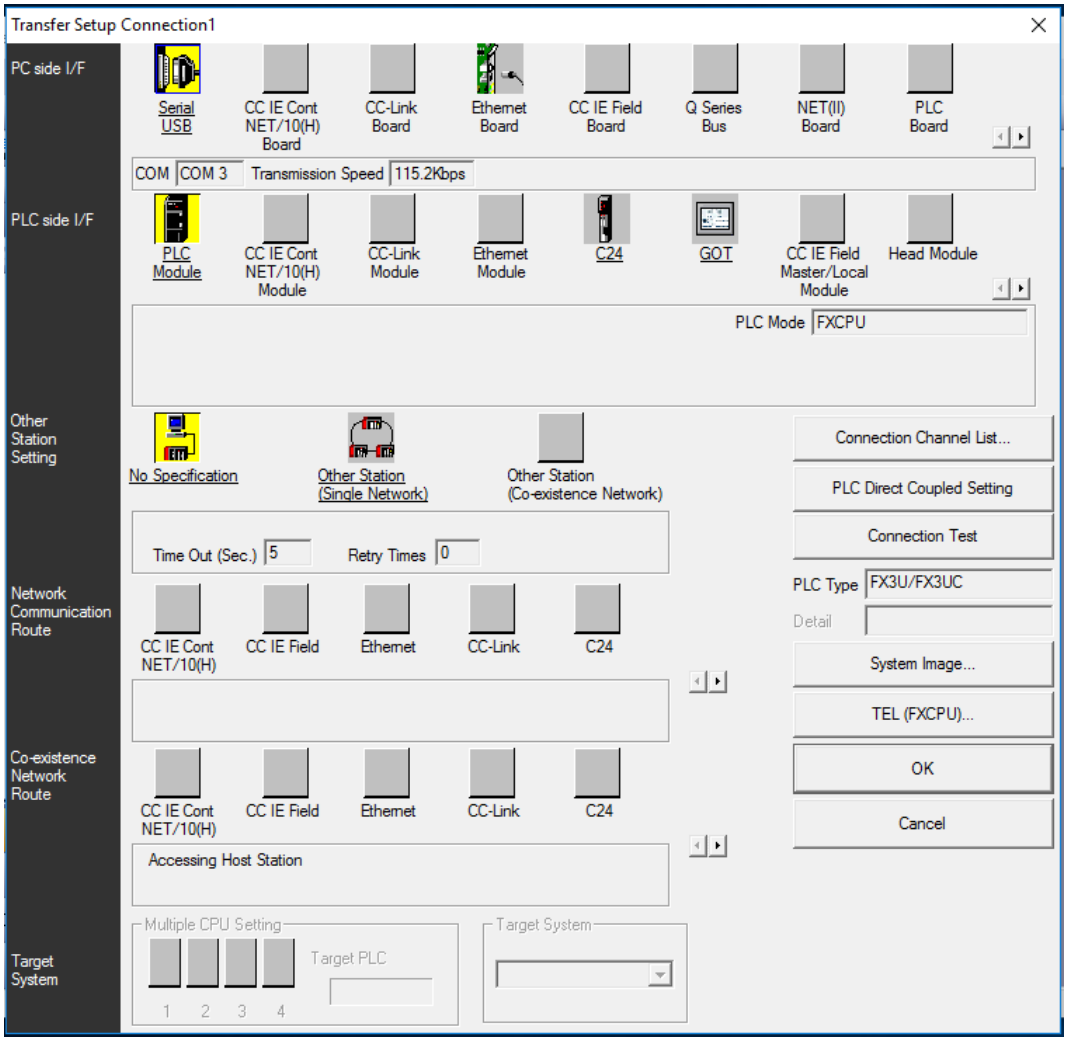
Use **MELSOFT GX Works2** to configure the port of the PLC.

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

Select the **FXCPU** PLC series.

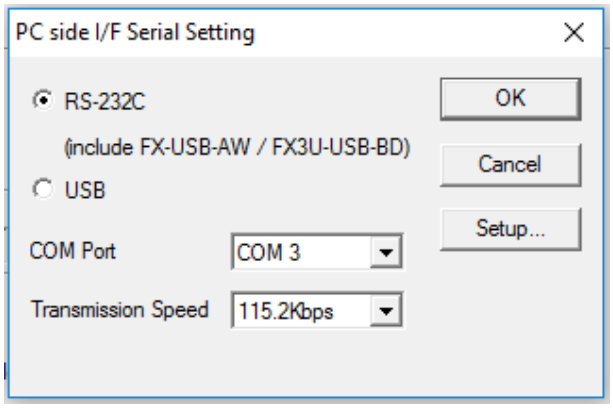


Select **Serial USB** in the Transfer Setup Communication window.

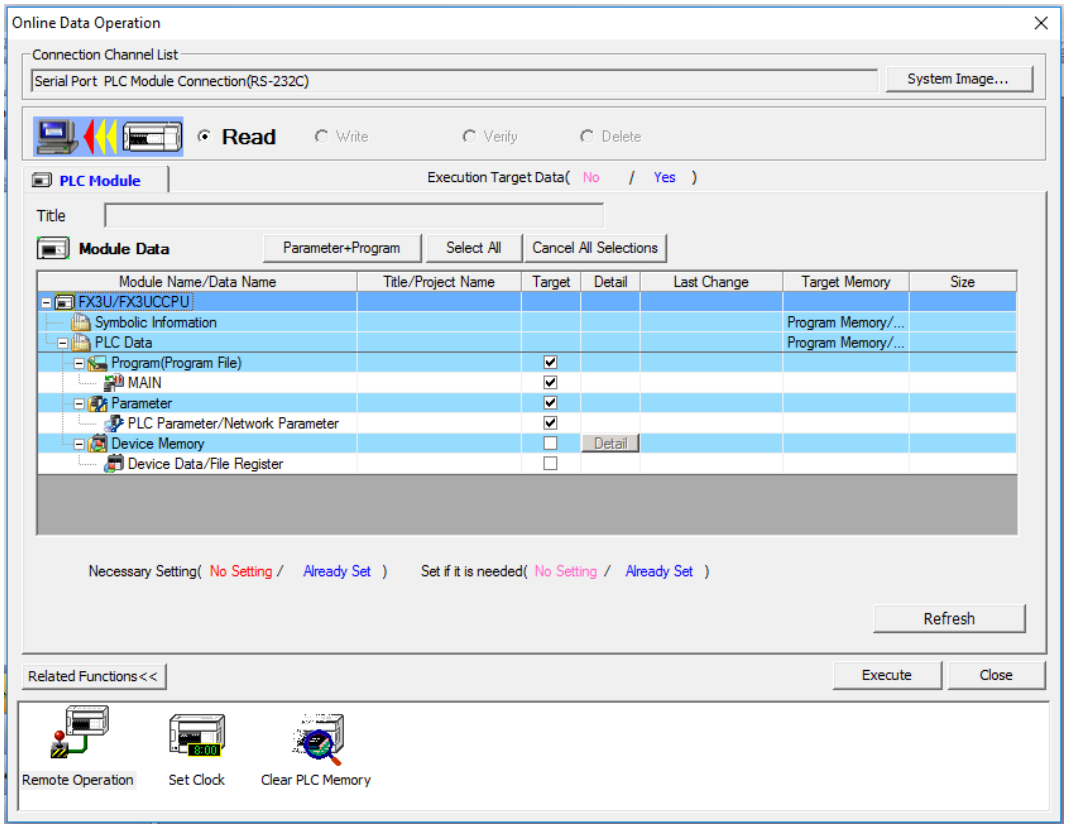


Select the **RS-232C** radio button and select the **COM Port** that the PLC is connected at.

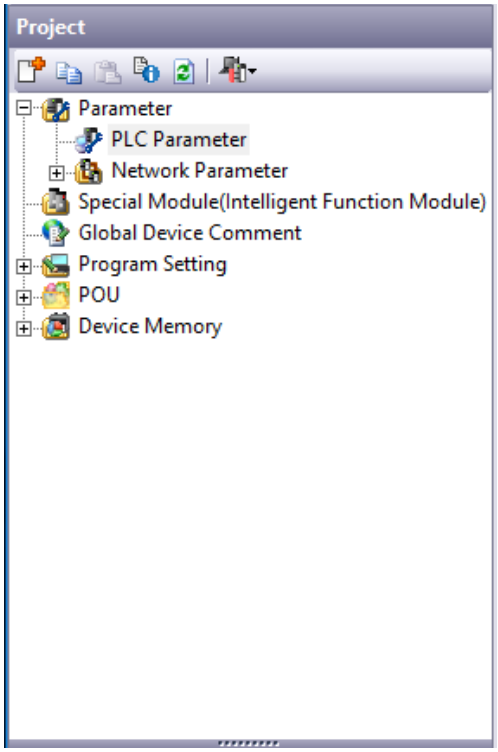
Click **Connection Test** to verify the connection and then press OK.



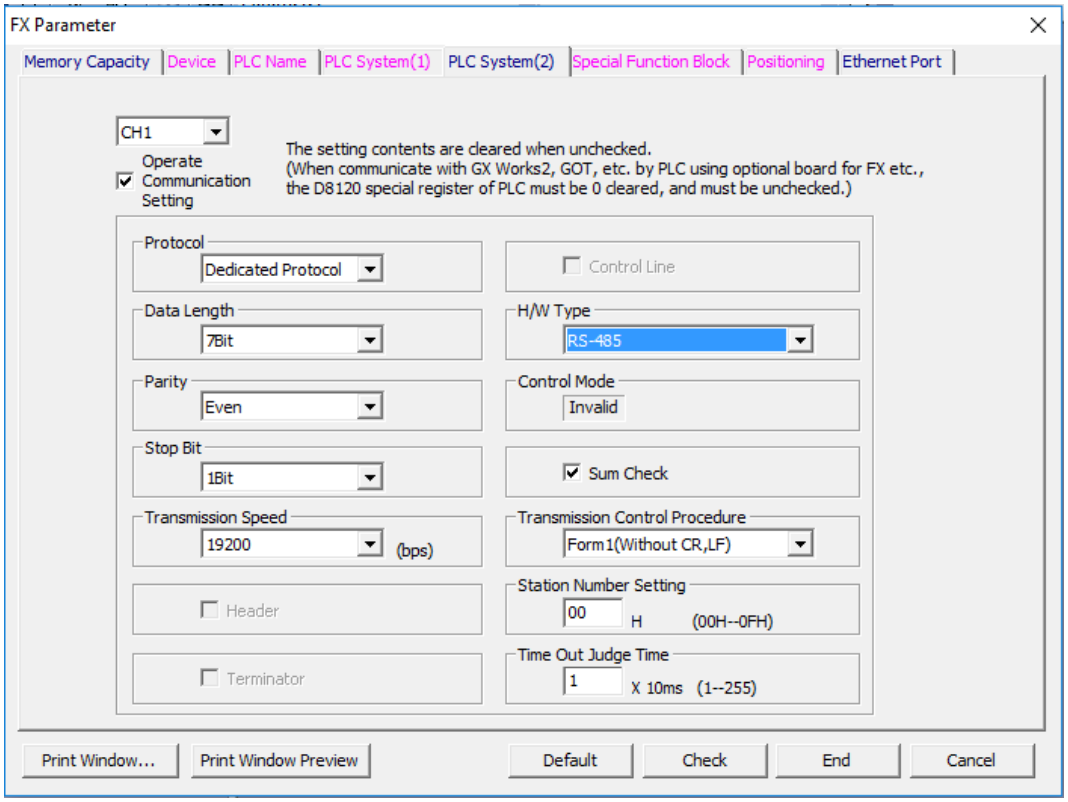
After confirming the **Parameter** option is checked, press **Execute** in the Online Data Operation window.



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.



Check **Operate Communication Setting** to enable configuration

Set Protocol to **Dedicated Protocol**

Set Parity to **Even**

Set Transmission Speed to **19200**

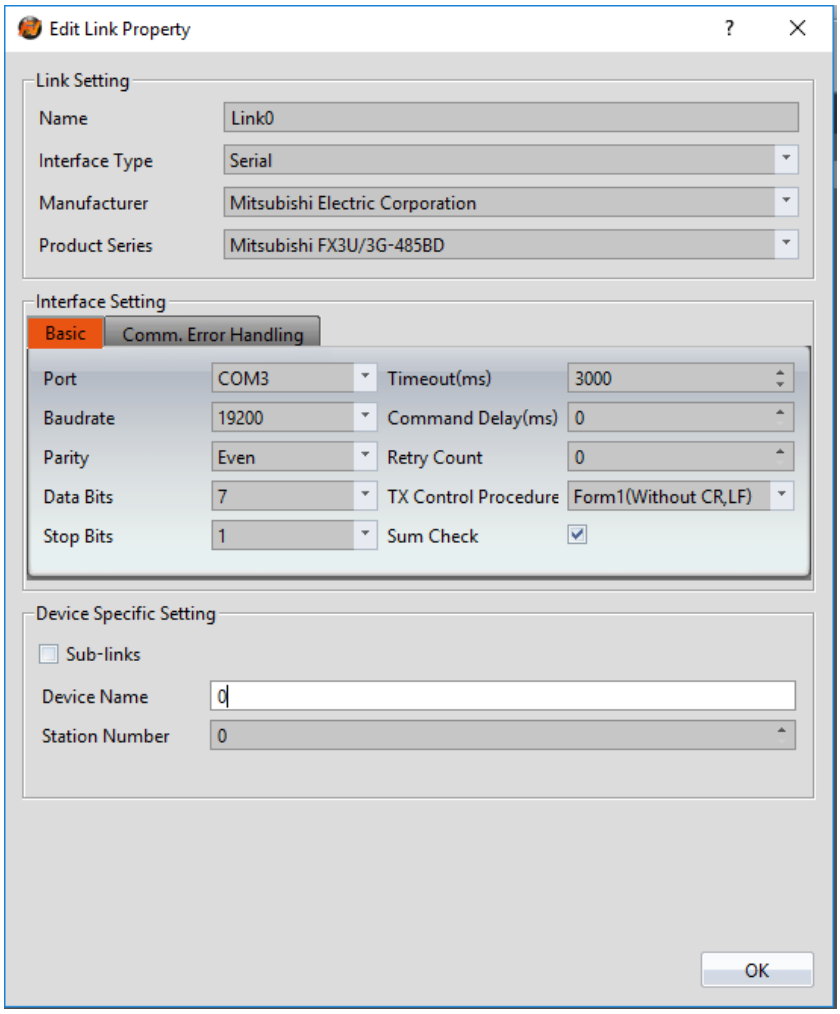
Set H/W Type to **RS-485**

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



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

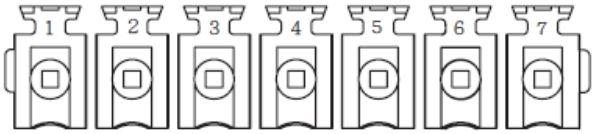
Under **Interface Type** select Serial

Under **Manufacturer** select Mitsubishi Electric Corporation

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

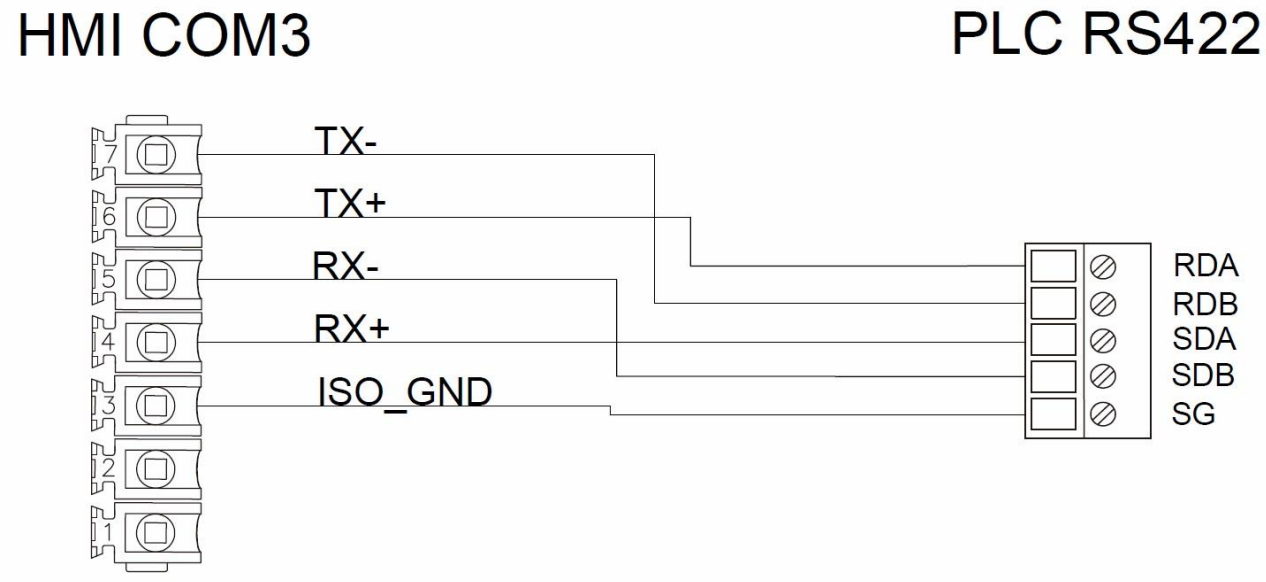
Under **Port** select COM3

2.2.4.4 Wiring Diagrams

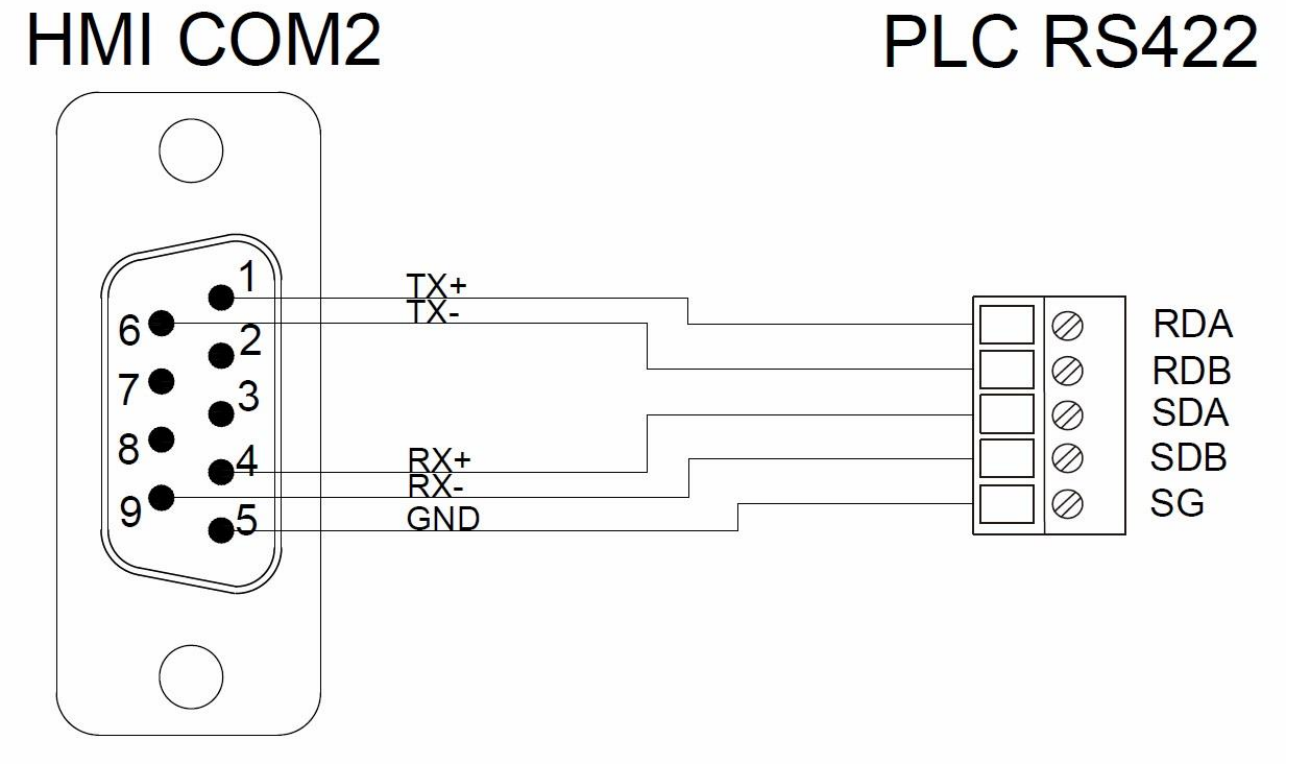
HMI COM3 Pinout	PLC RS422 Pinout
 *Looking into HMI Device	

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



2.2.5 FX3U Ethernet

2.2.5.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	
Port	5001	
Device Station num.	0	
Communication Method	MC protocol	Binary/ASCII

2.2.5.2 PLC Resource

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

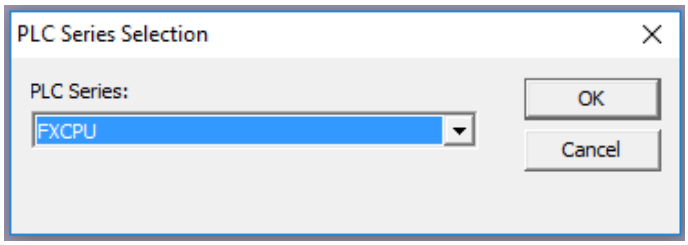
2.2.5.3 Connected Setting

Configuring IP Address on PLC

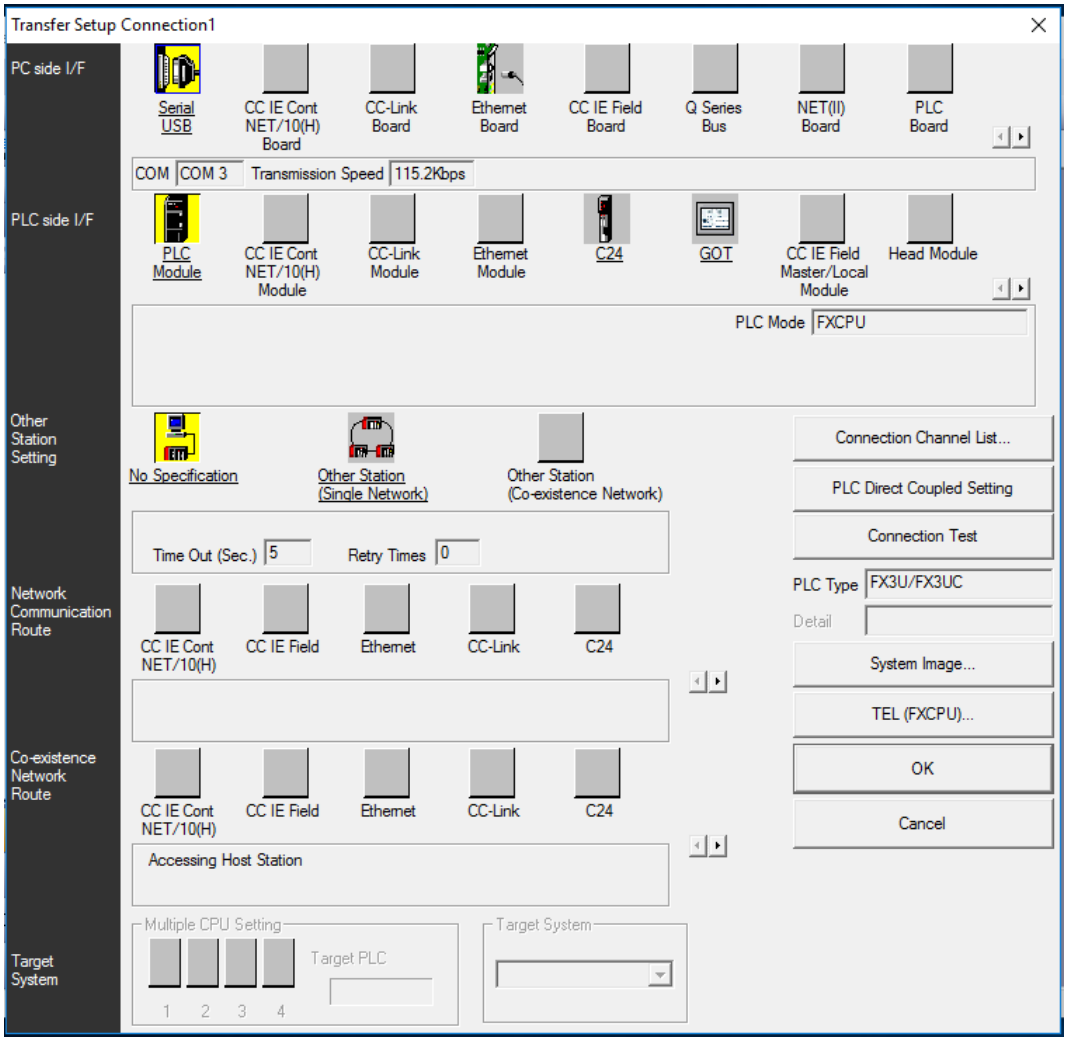
Use **MELSOFT GX Works2** to configure the IP address of the PLC.

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

Select the **FXCPU** PLC series.

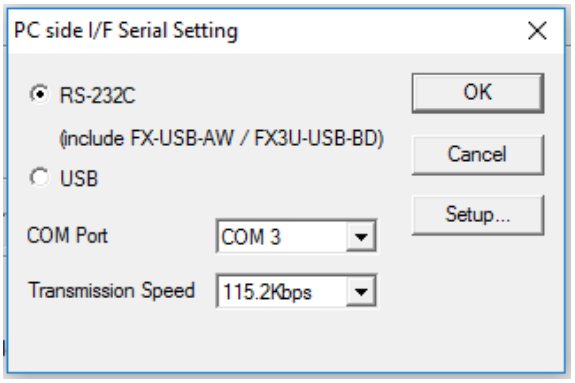


Select **Serial USB** in the Transfer Setup Communication window.

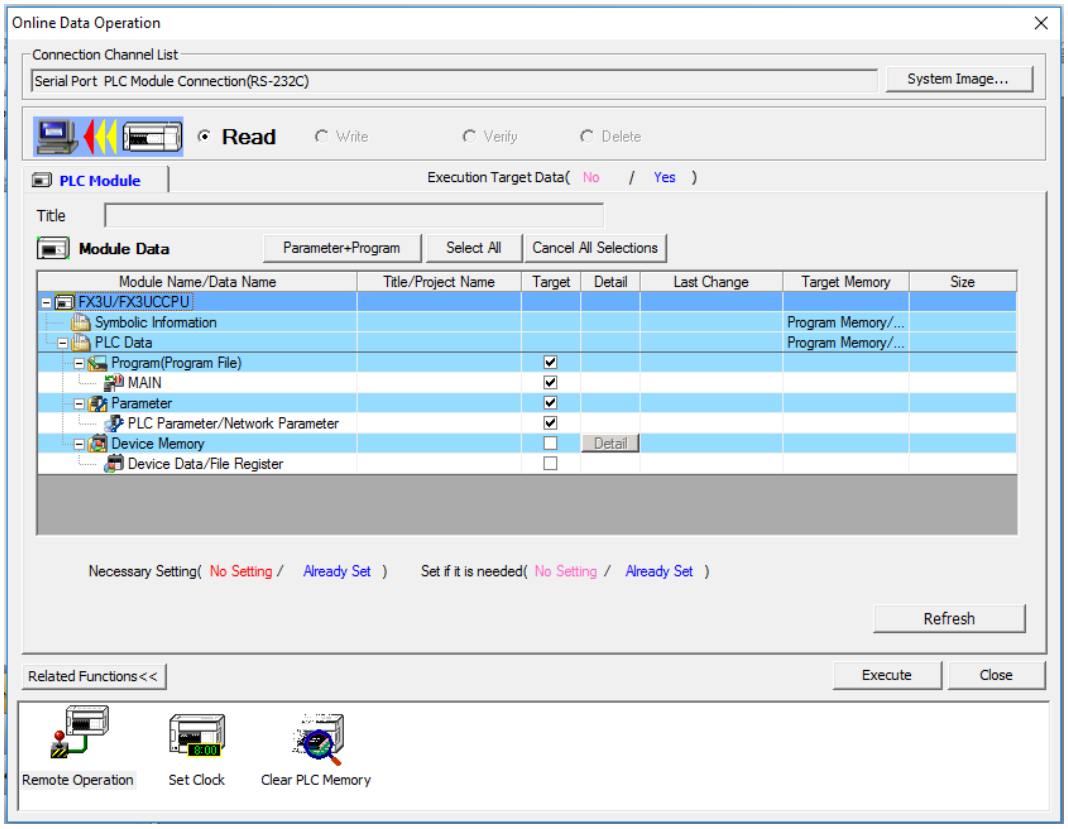


Select the **RS-232C** radio button and select the **COM Port** that the PLC is connected at.

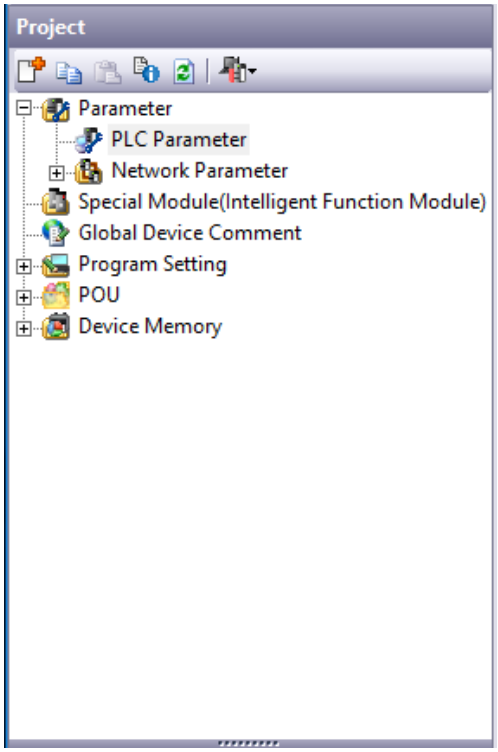
Click **Connection Test** to verify the connection and then press OK.



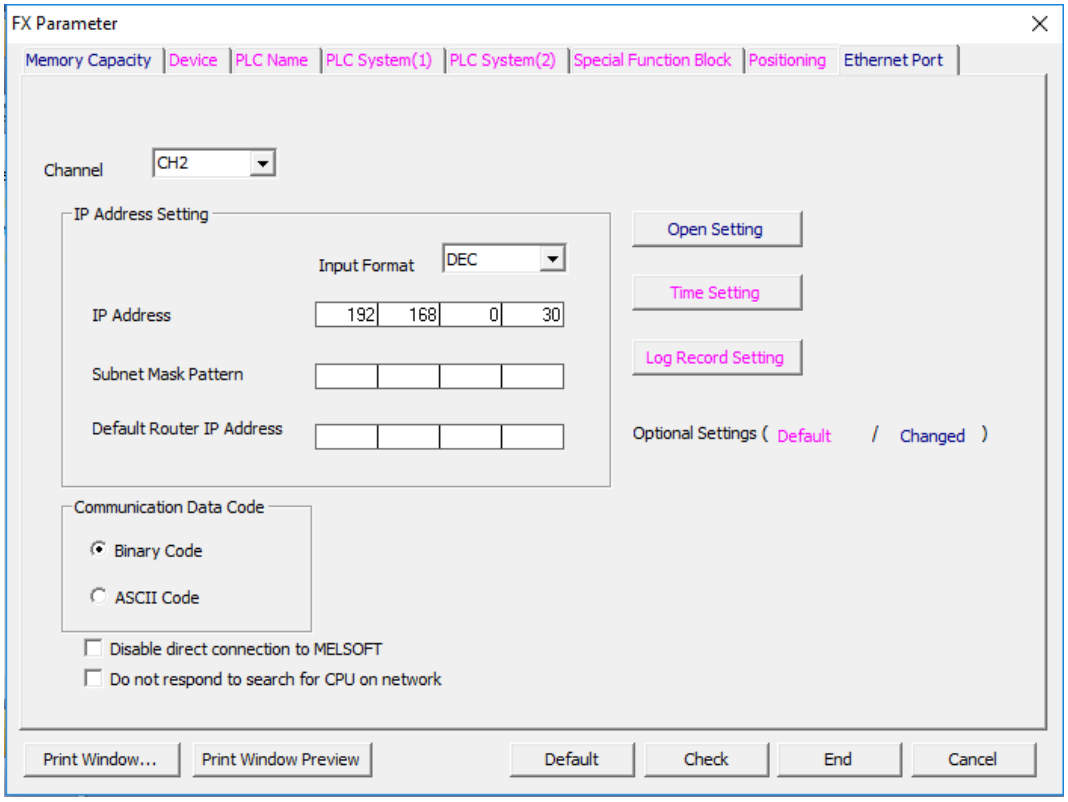
After confirming the **Parameter** option is checked, press **Execute** in the Online Data Operation window.



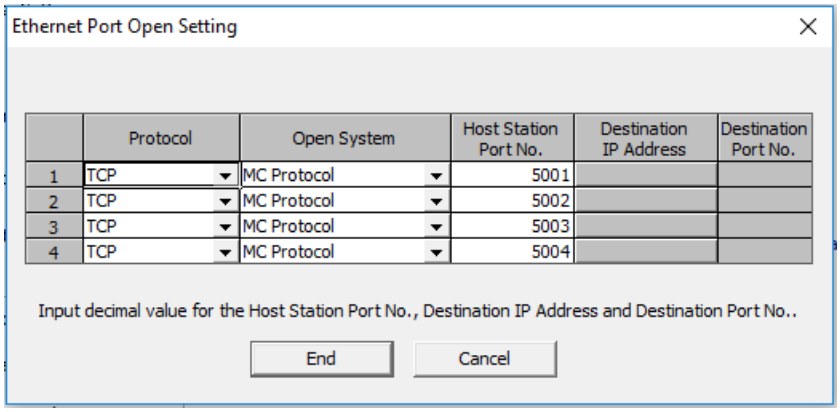
Under the Project Sidebar, expand **Parameter** and select **PLC Parameter**.



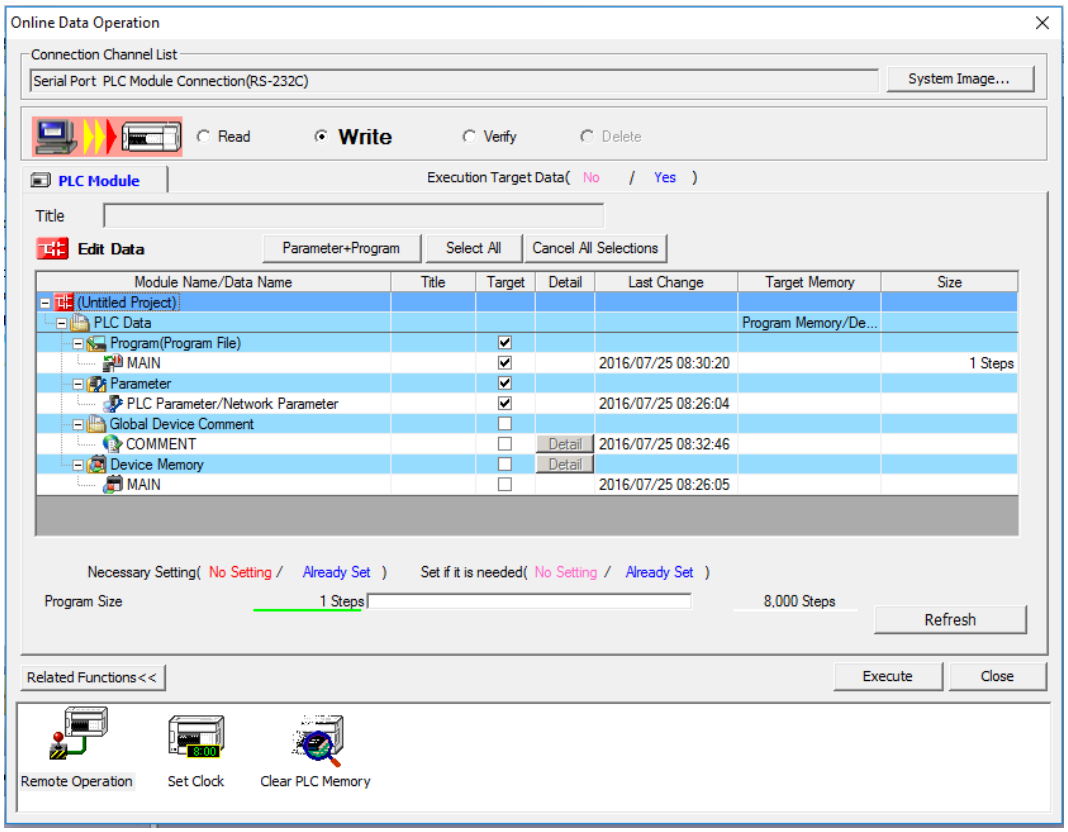
In the **Ethernet Port** tab, set an open IP address.



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.

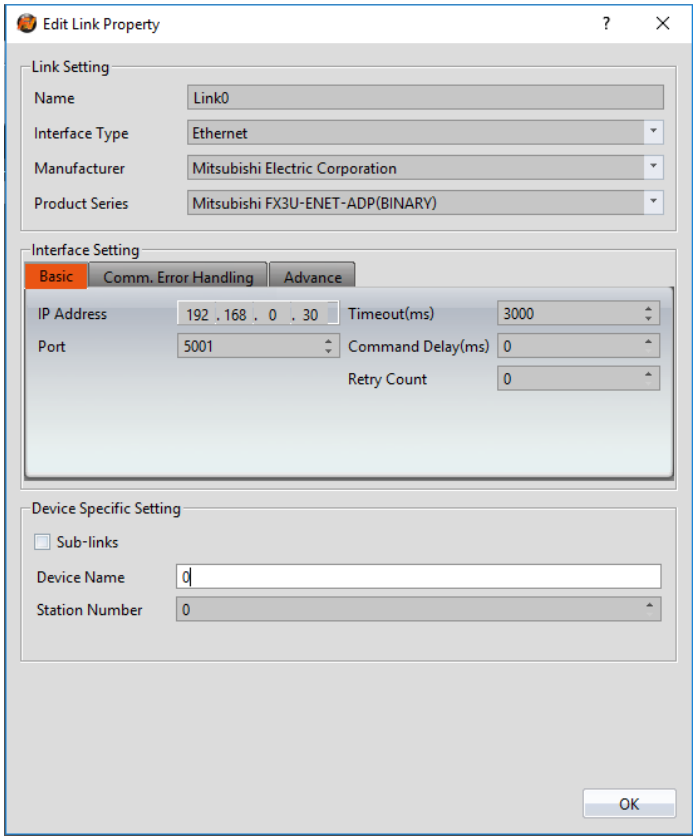


Under the **Online** menu option, select **Write to PLC** to save the settings to the PLC. Press **Execute** in the Online Data Operation window.



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 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
Interface Type	RS485	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
Device Station num.	0	
TX Control	Form1	Without CR,LF
Checksum	Yes	
Communication Method	MC Protocol 3C	

2.2.6.2 PLC Resource

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

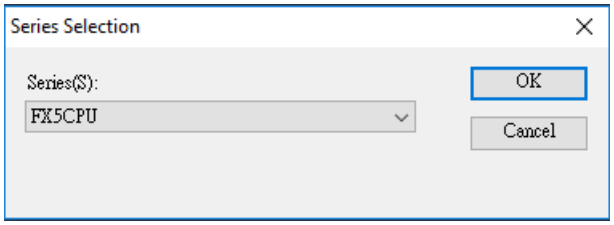
Configuring of PLC

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

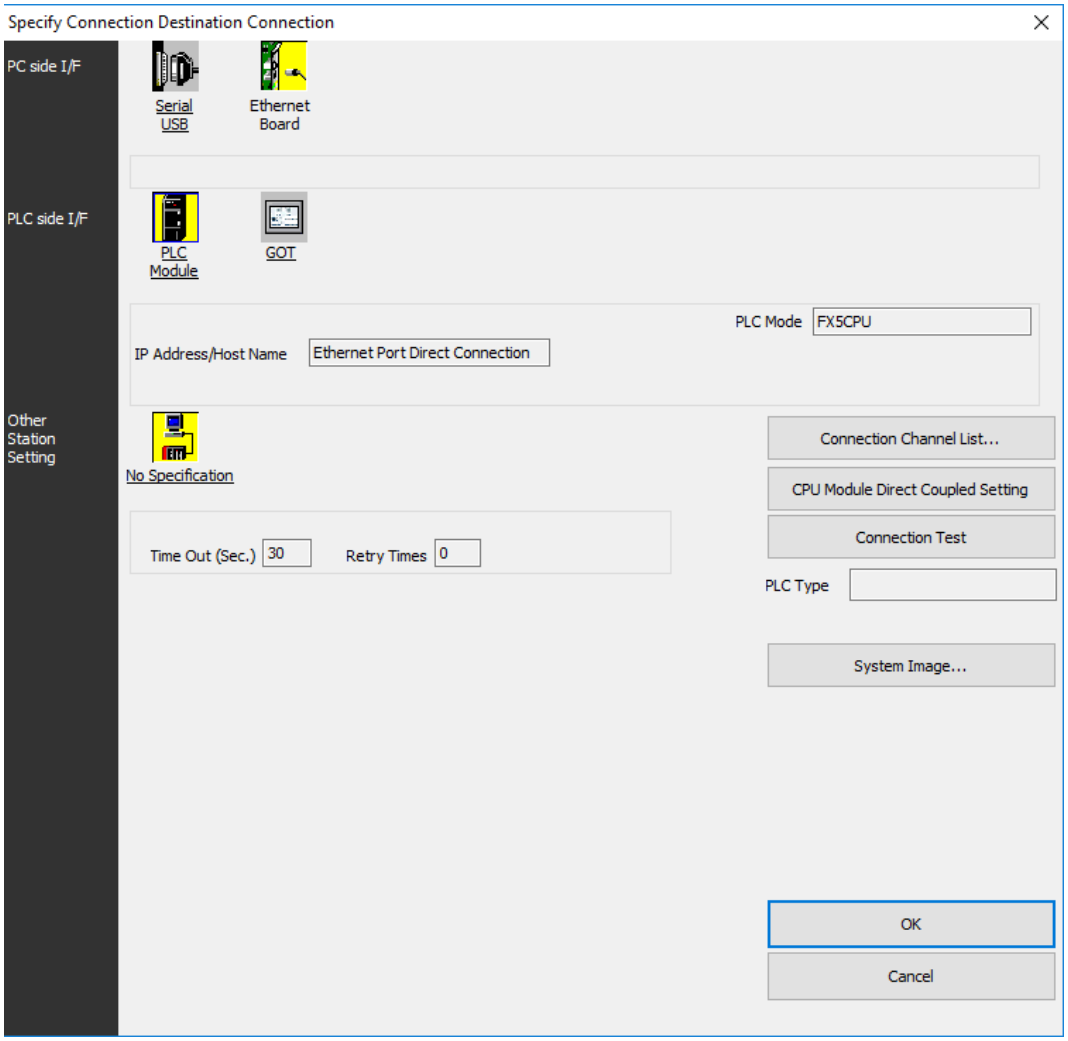
Use **MELSOFT GX Works3** to configure the port of the PLC.

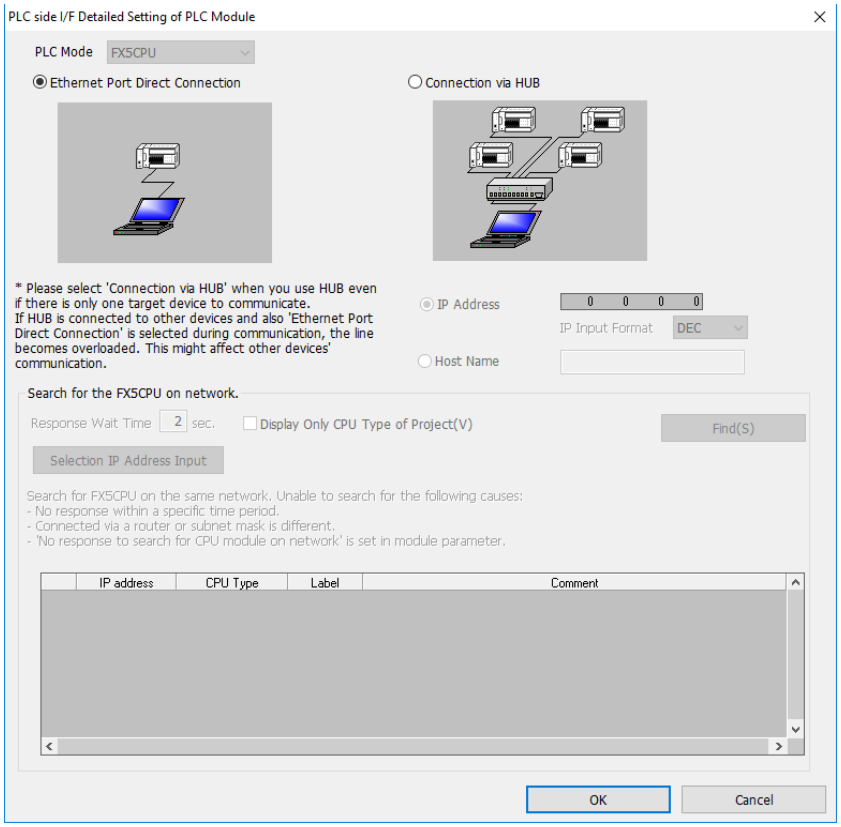
Under the **Online** menu option, select **Read from PLC**.

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



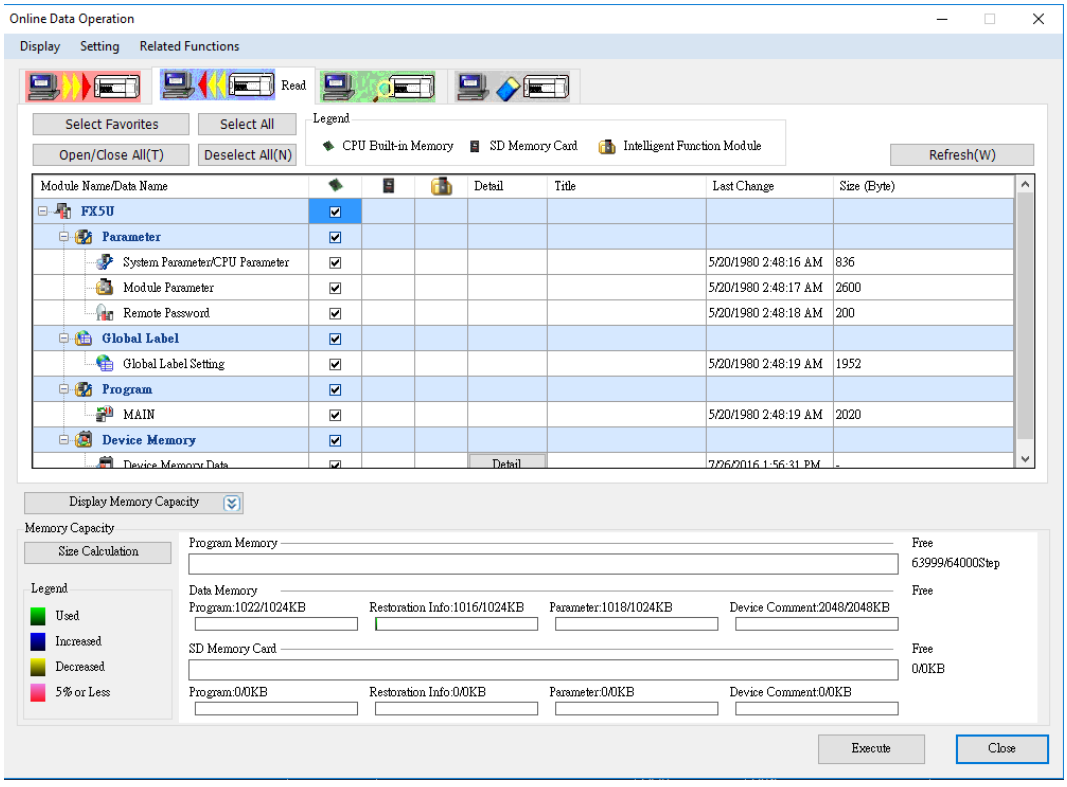
In the connection window, select **Ethernet Board**. Click **PLC Module** and in the dialog window, select the **Ethernet Port Direct Connection** radio button.



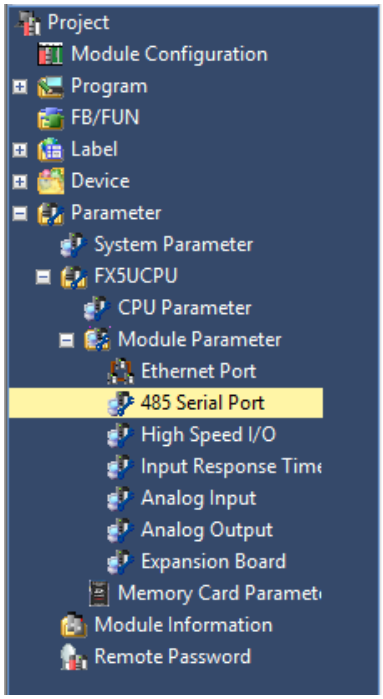


Click **Connection Test** to verify the connection and then press OK.

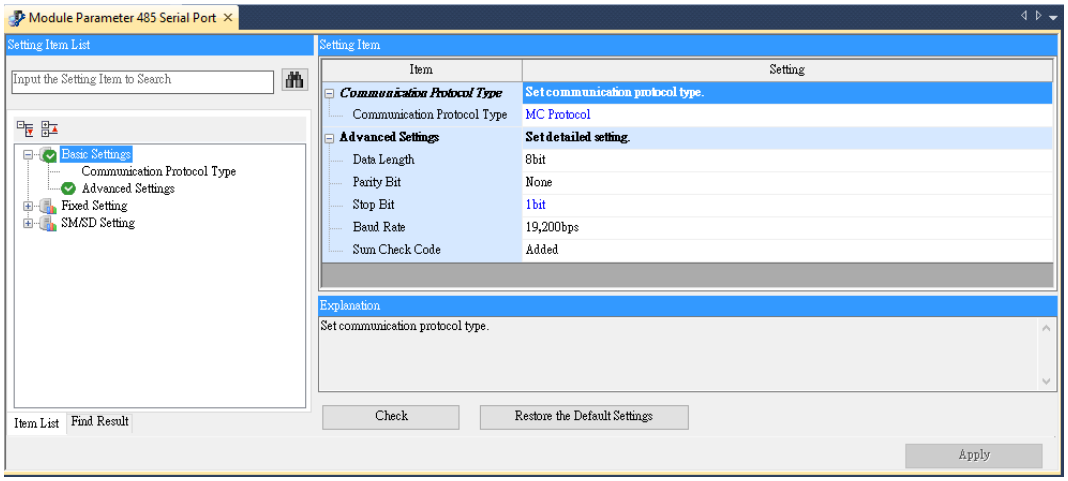
Click **Select All** in the Online Data Operation window and press **Execute**. Allow the read to finish.



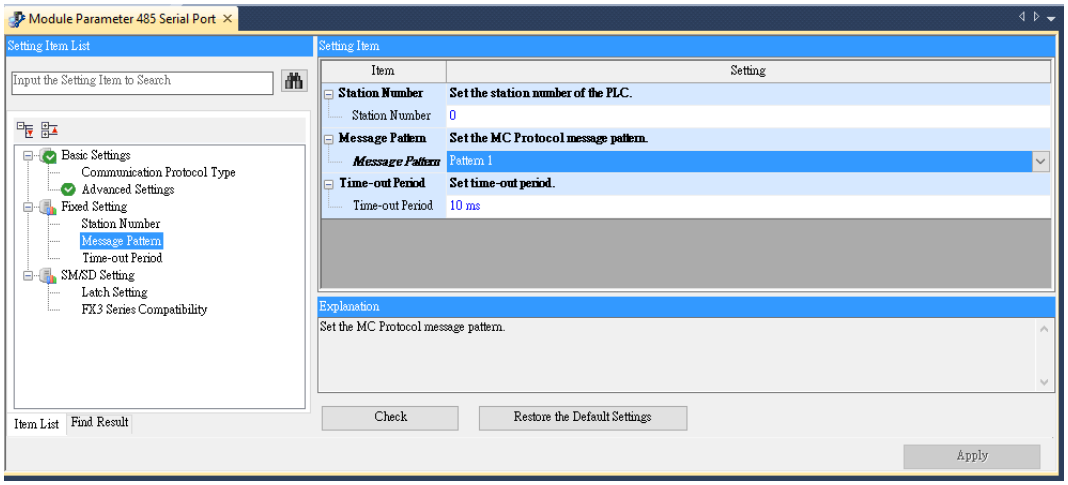
In the **Project** sidebar, expand **Parameter, FX5UCPU,** and **Module Parameter** and select **485 Serial Port**.



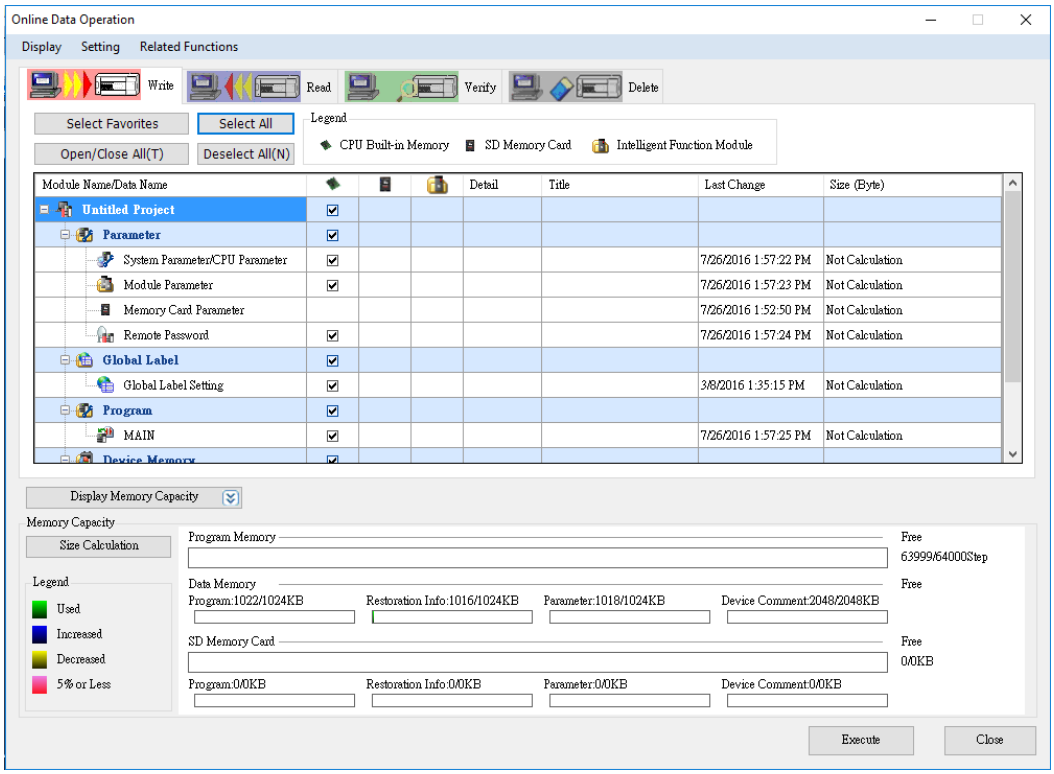
Under Basic Settings, change **Communication Protocol Type** to MC Protocol.



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

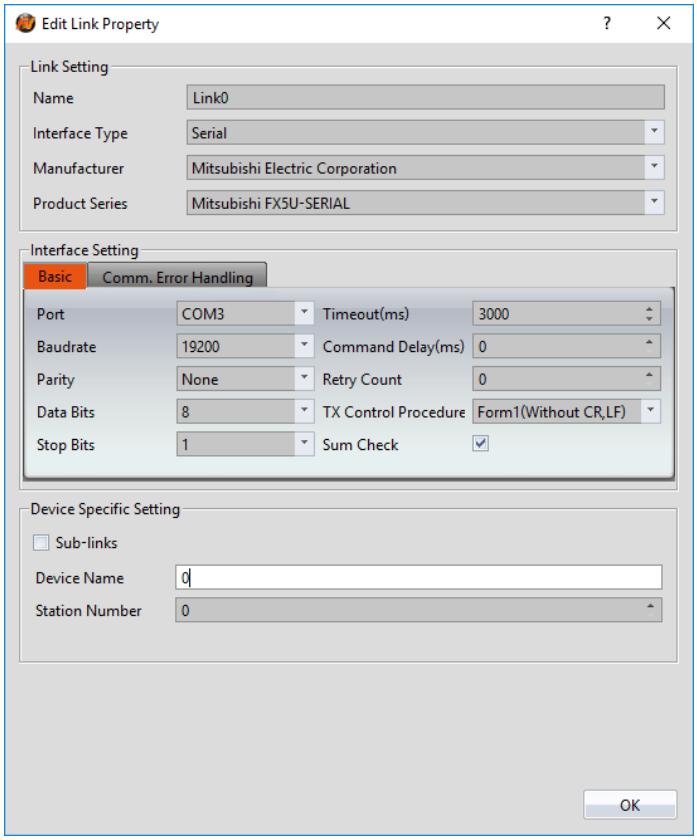
Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

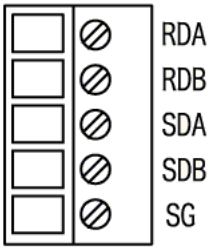
Under **Manufacturer** select Mitsubishi Electric Corporation

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

Verify the parameters match the window above.

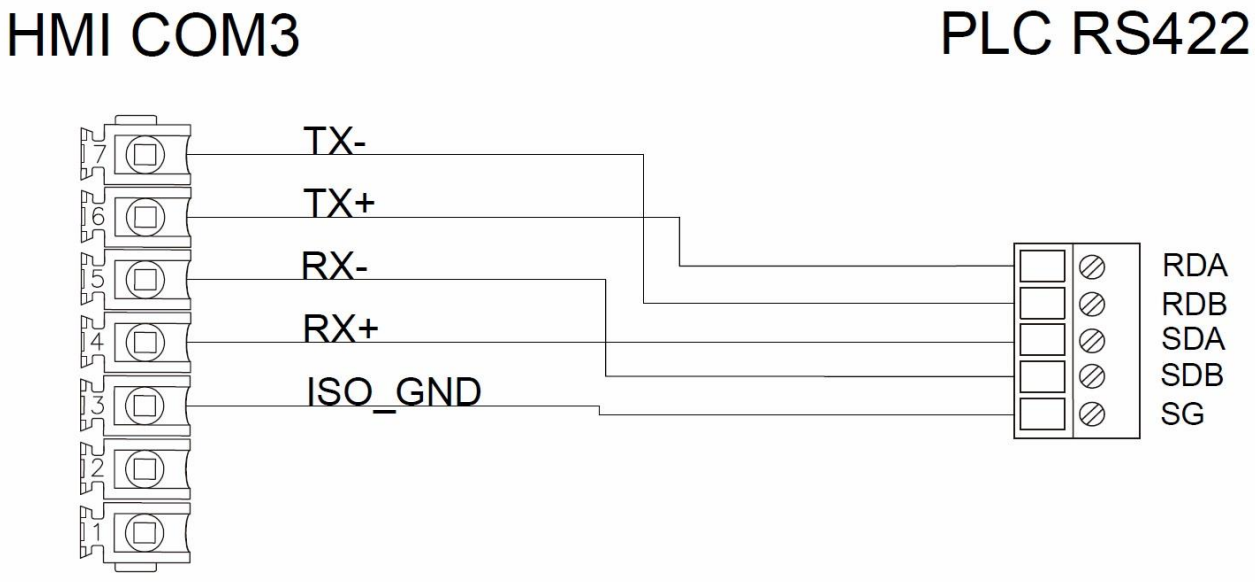


2.2.6.4 Wiring Diagrams

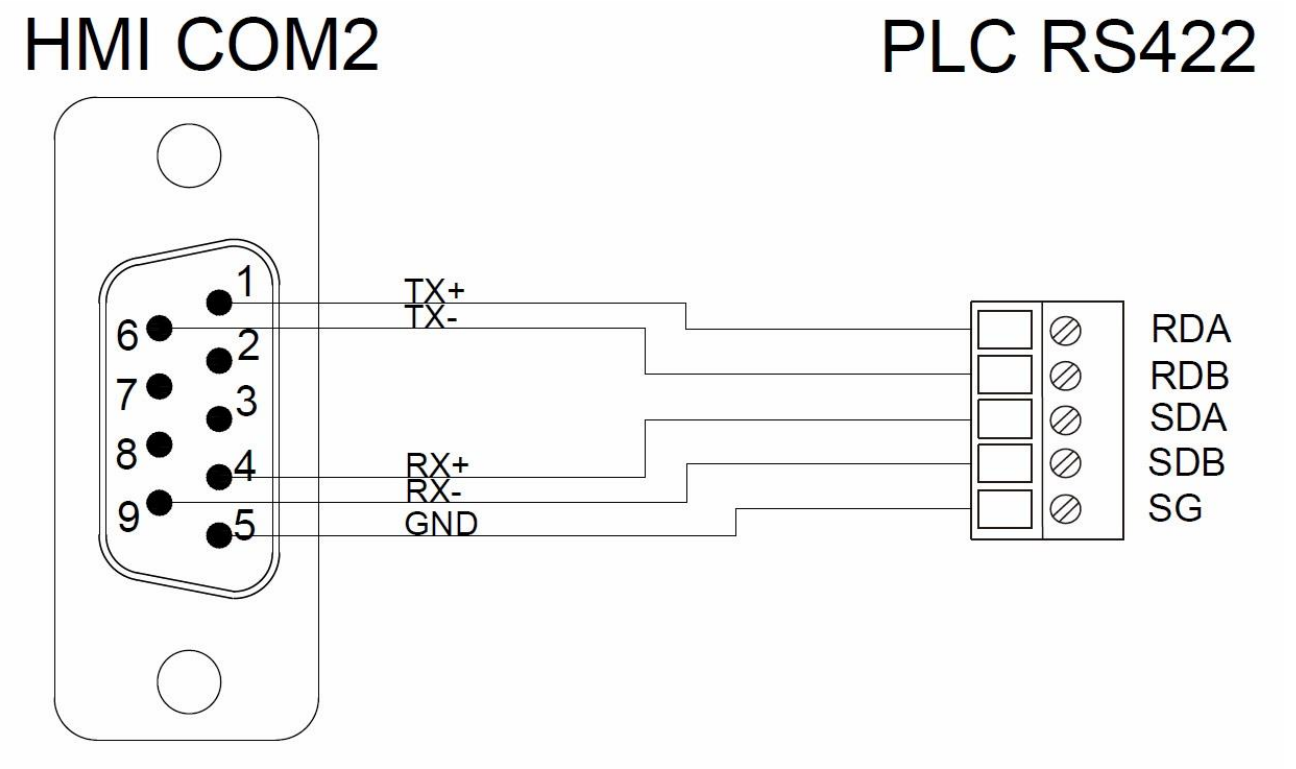
HMI COM3 Pinout	PLC RS422 Pinout
 *Looking into HMI Device	

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



2.2.7 FX5U Ethernet

2.2.7.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	
Port	1025	
Device Station num.	0	
Communication Method	MC protocol 3E	Binary/ASCII

2.2.7.2 PLC Resource

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

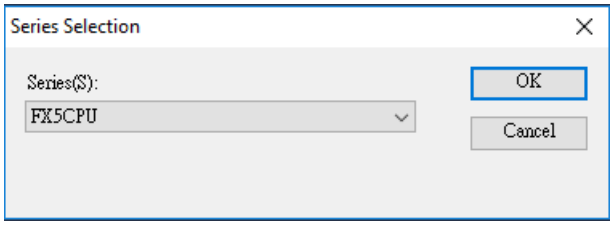
Configuring IP Address on PLC

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

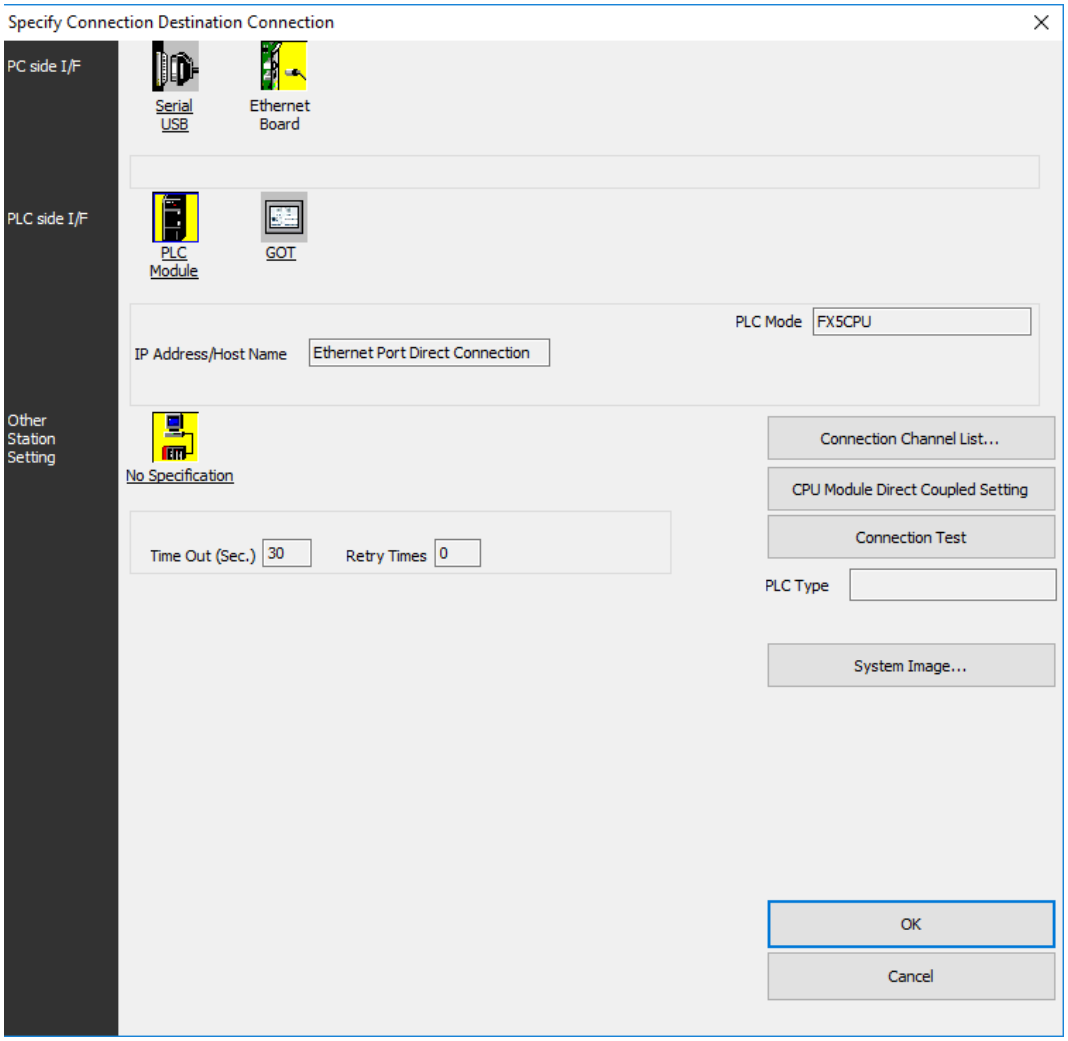
Use **MELSOFT GX Works3** to configure the port of the PLC.

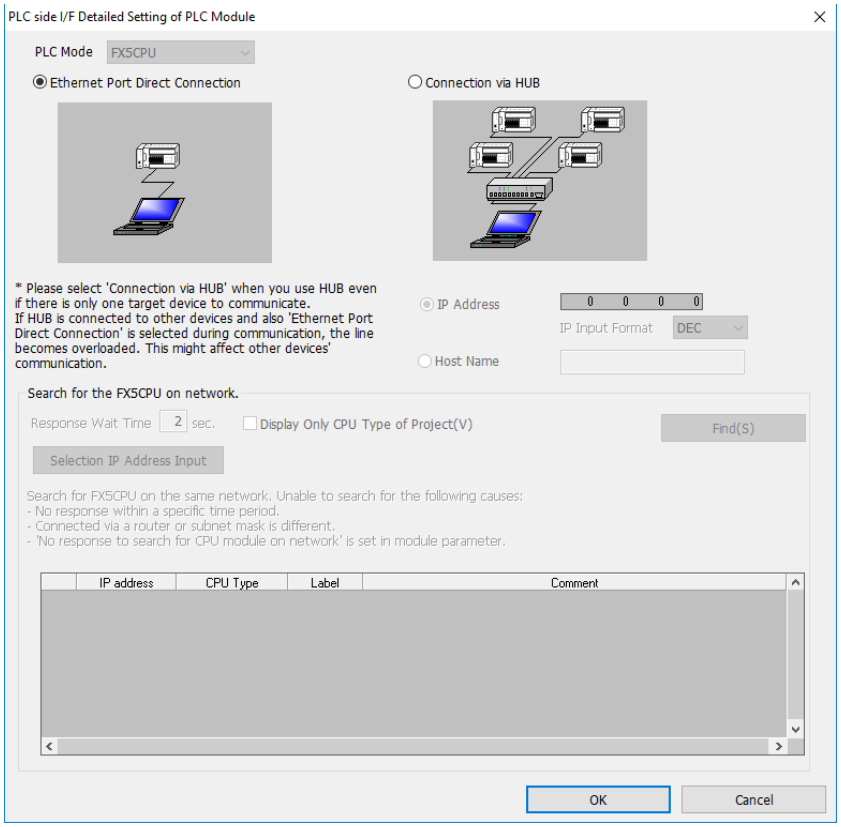
Under the **Online** menu option, select **Read from PLC**.

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



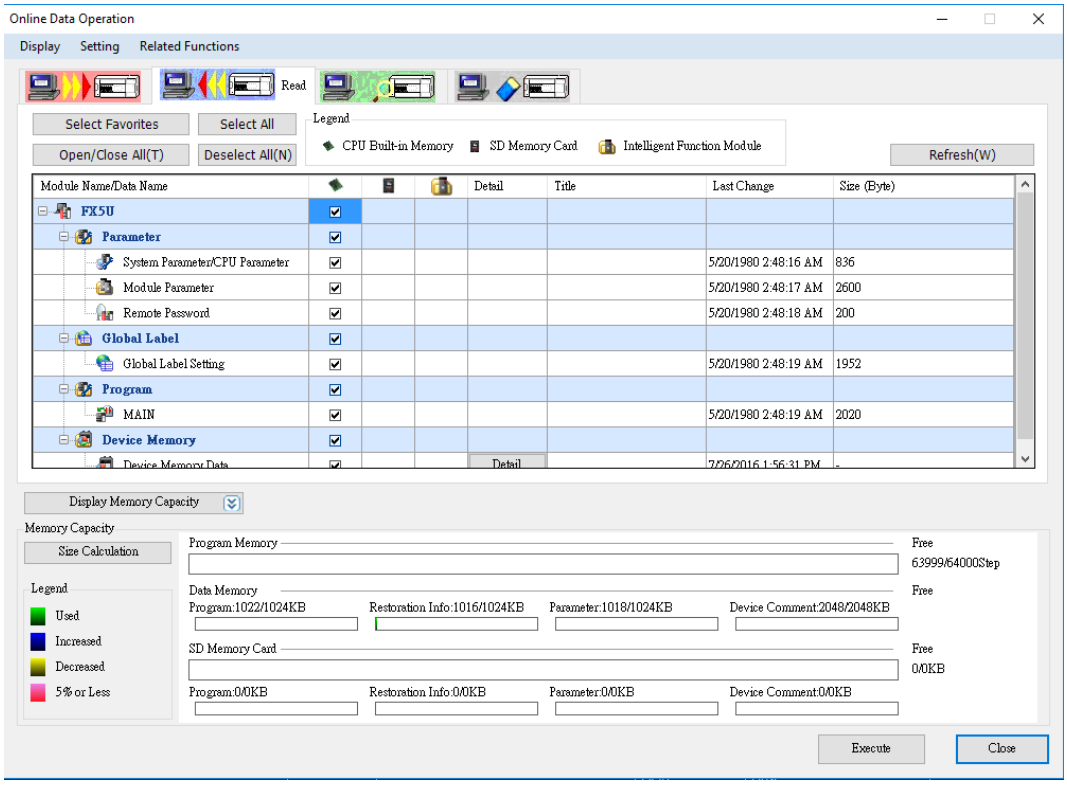
In the connection window, select **Ethernet Board**. Click **PLC Module** and in the dialog window, select the **Ethernet Port Direct Connection** radio button.



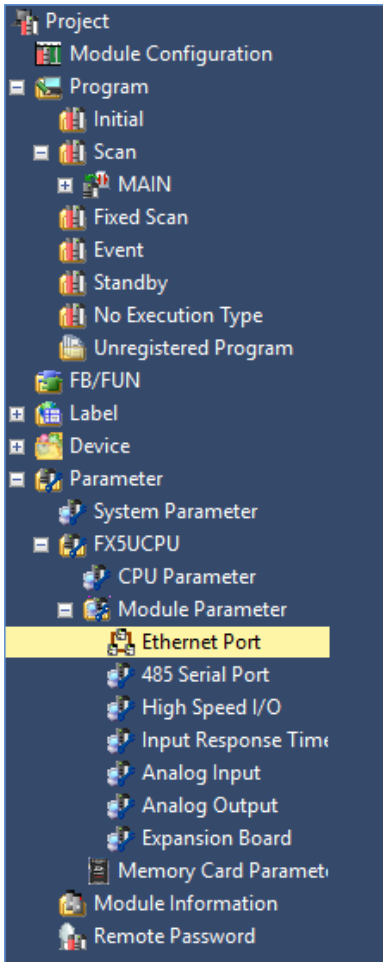


Click **Connection Test** to verify the connection and then press OK.

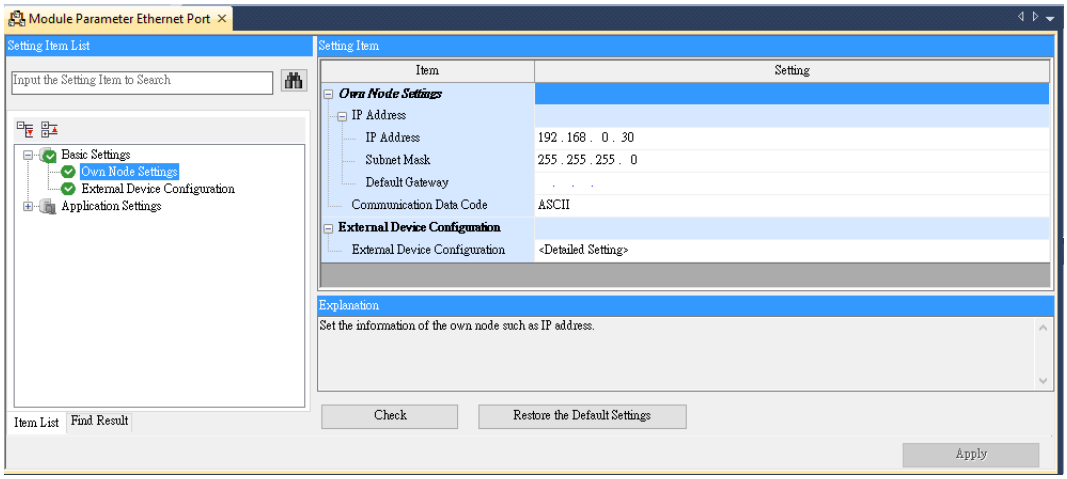
Click **Select All** in the Online Data Operation window and press **Execute**. Allow the read to finish.

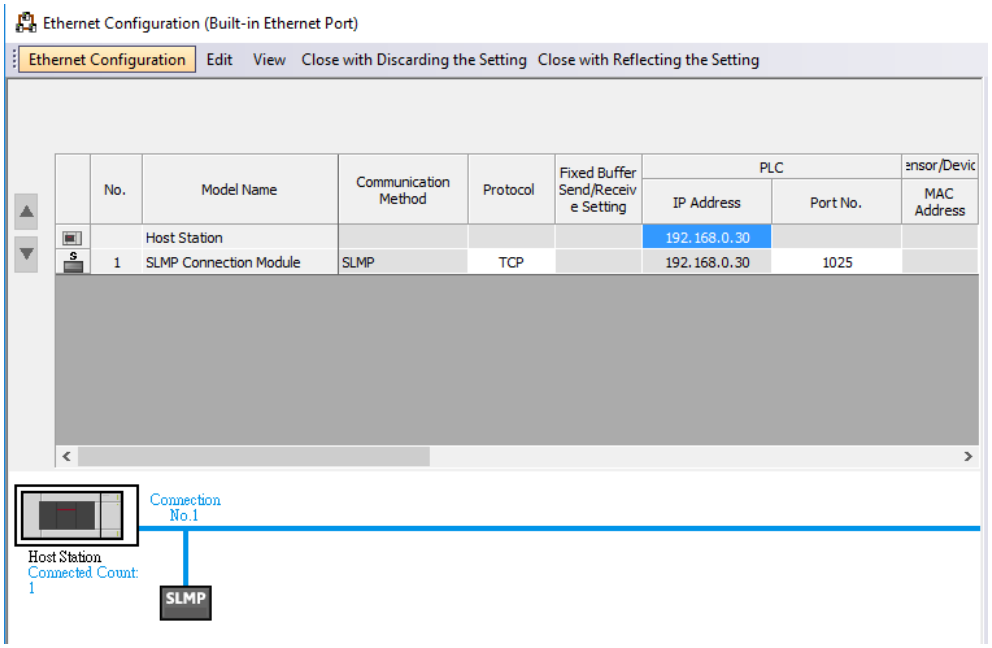


In the **Project** sidebar, expand **Parameter, FX5UCPU,** and **Module Parameter** and select **Ethernet Port**.

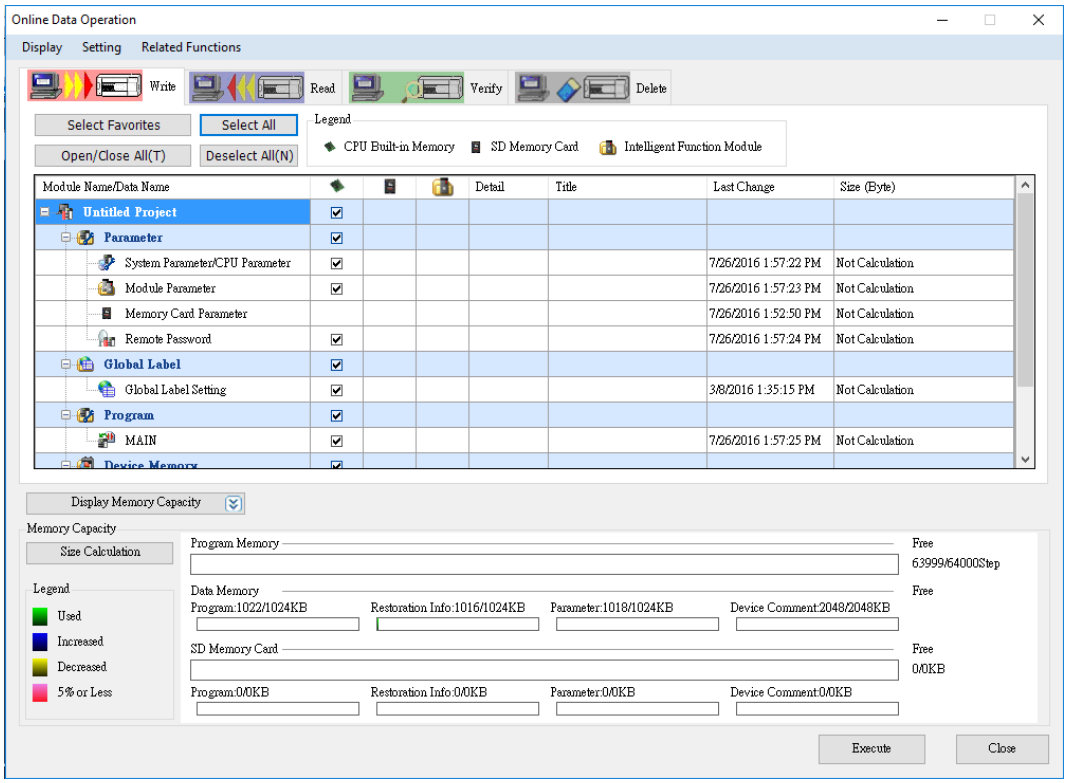


The **IP Address** of the PLC can be obtained here. Switch the **Communication Data Code** to the mode needed (Binary or ASCII). Double click “<Detailed Setting>” under **External Device Configuration** to get the port information. Verify the **Protocol** is TCP.



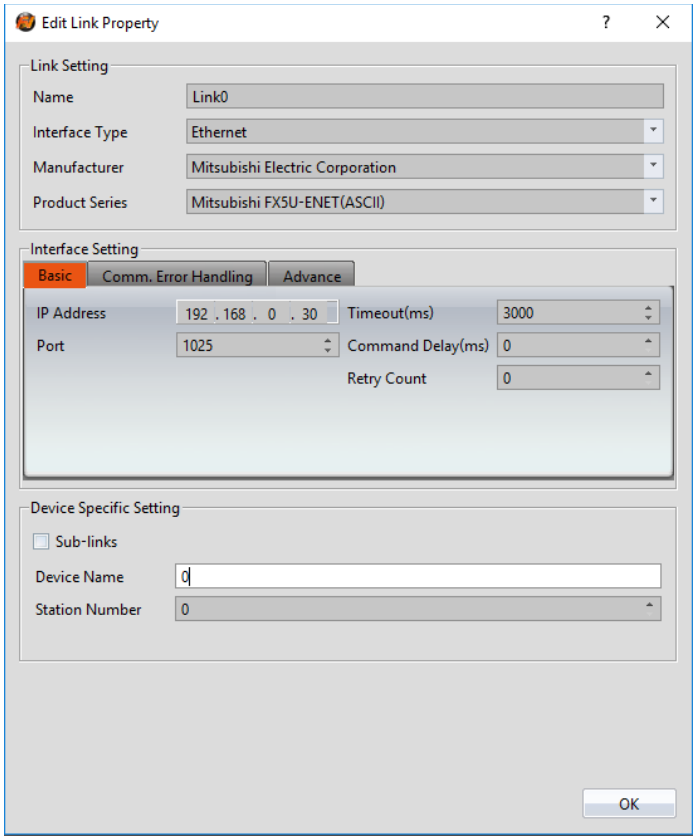


If the user needs to change the **IP Address**, edit the IP address under the **Own Node Settings**. Then enter the Detailed Settings and press **Close with Reflecting the Setting**. Under the **Online** menu option, select **Write to PLC** to save the settings to the PLC. Click **Select All** and press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



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

Configuring of HMI



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
Interface Type	RS232/RS422/RS485	QJ71C24N Module
Baud Rate	115200	
Data Length	7	
Stop Bit	1	
Parity	Odd	
Device Station num.	0	
TX Control Procedure	Form4	With CR,LF
Sum Check	No	
Communication Method	MC Protocol 3C	

2.2.8.2 PLC Resource

Device	Description	Data bit	Input fromat	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

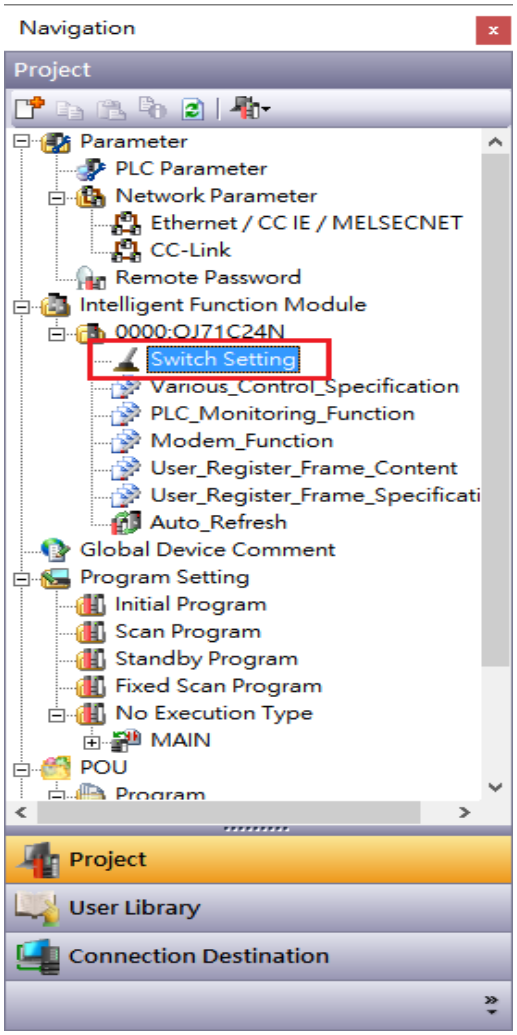
WX	Input Relay	16	HHHH	0	1ff0
WY	Output Relay	16	HHHH	0	1ff0
WM	Internal Relay	16	DDDDD	0	61424
WL	Link Relay	16	DDDD		32752
B_Word	Link Relay	16	HHHH	0	eff0
F_Word	Annunciator	16	DDDDD	0	32752
WV	Edge relay	16	DDDDD	0	32752
SB_Word	Link Special Relay	16	HHH	0	7ff0
WS	Step Relay	16	DDDD	0	16368
TS_Word	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
ZR_Dec	File Register(Dec Addr.)	16	DDDDDD	0	655359

2.2.8.3 Connected Setting

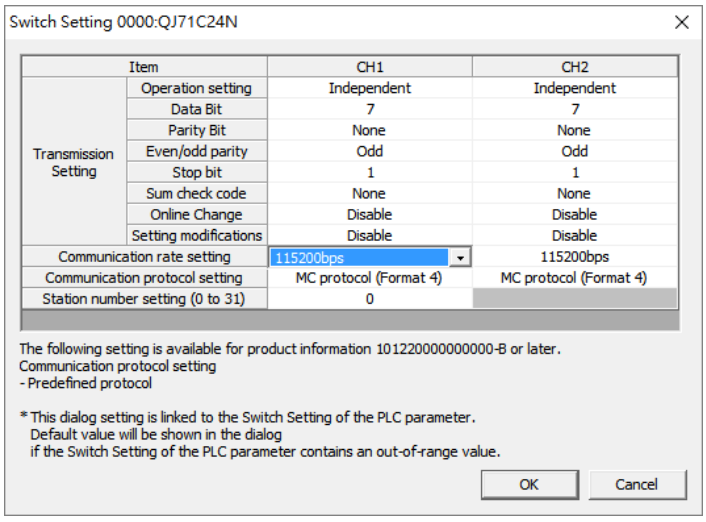
Configuring of PLC

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

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

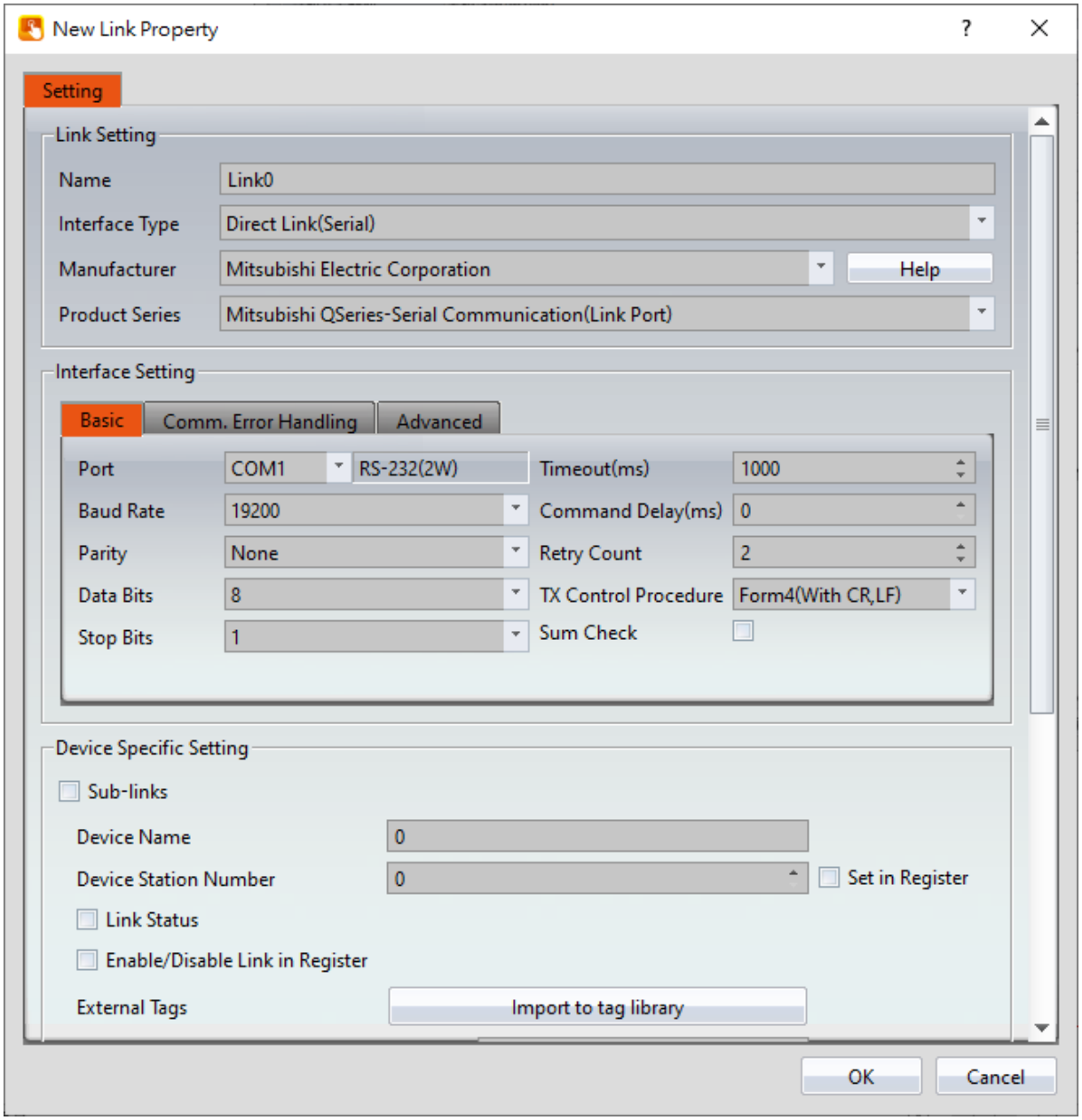


Configure it to the settings detailed below.



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 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

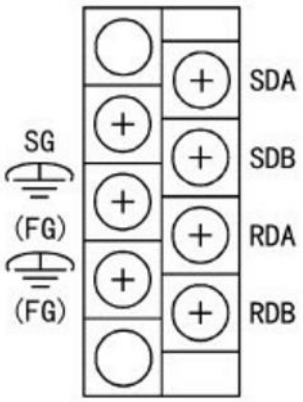
QJ71C24N RS232 Pinout



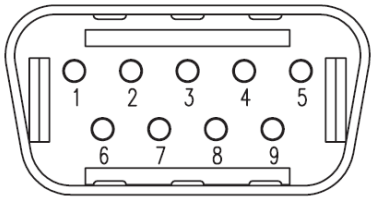
* Looking into PLC Device

PIN#	Signal
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

QJ71C24N RS422/485 Pinout

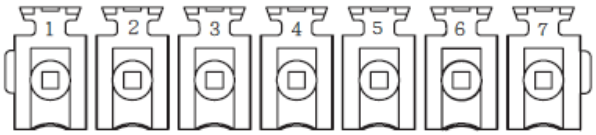


HMI COM1 pinout



*Looking into COM1 Port

HMI COM3 pinout



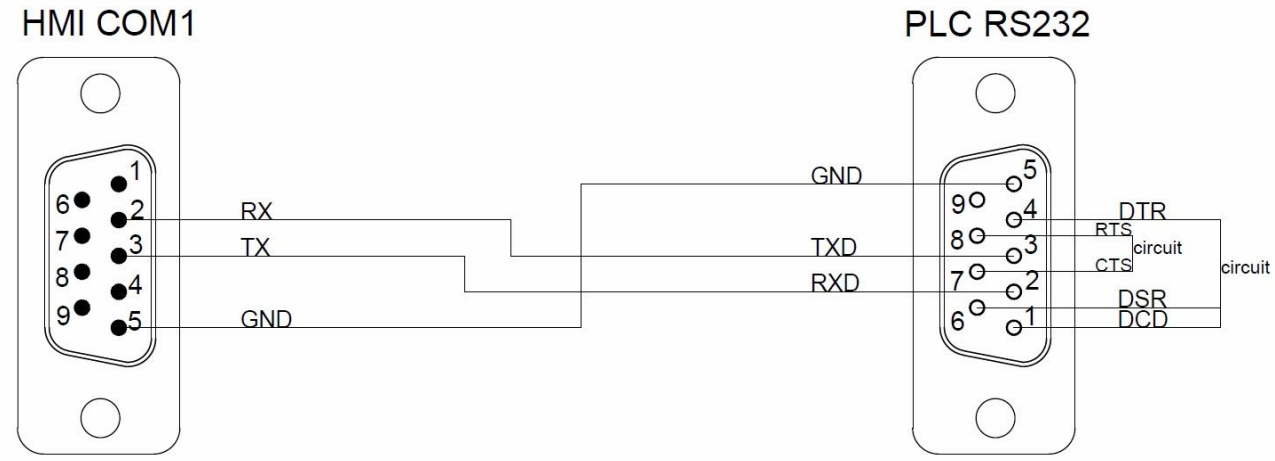
*Looking into HMI Device

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		7	TX-
8			
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	

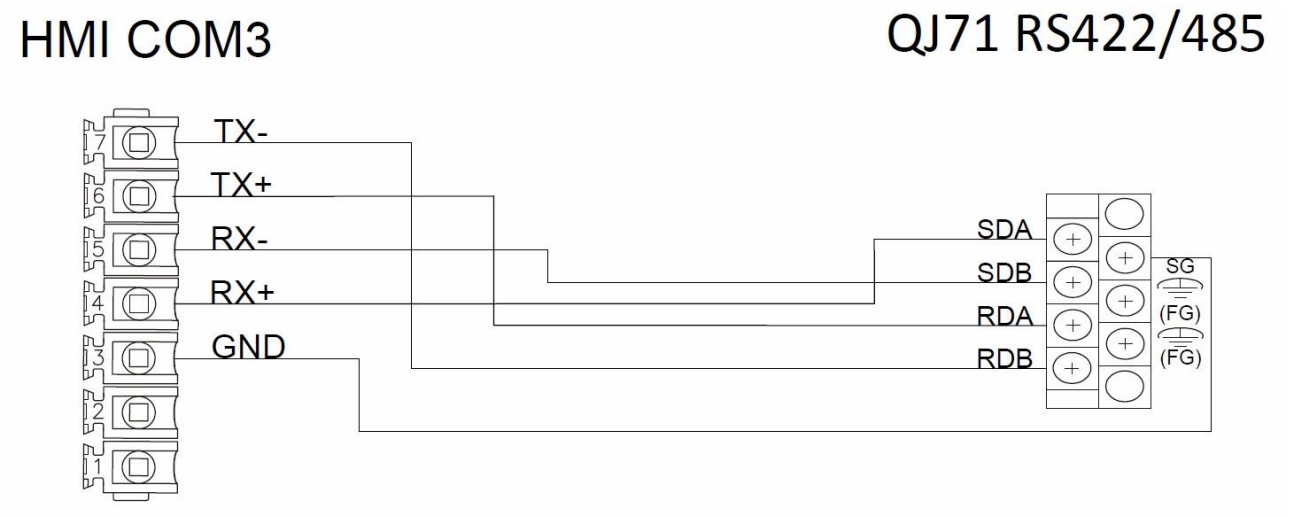
Wiring Diagrams:RS232



With PLC RS422

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

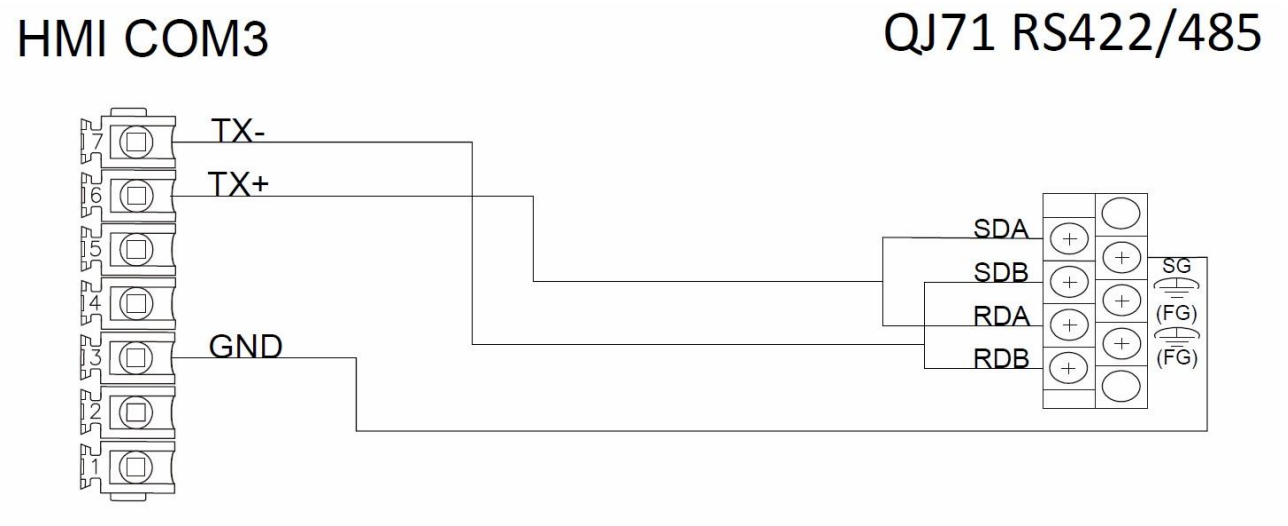
Wiring Diagrams:RS422



With PLC RS485

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

Wiring Diagrams: RS485



2.2.9 QSeries-Serial Communication(CPU Port)

2.2.9.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	Odd	
Device Station num.	0	

2.2.9.2 PLC Resource

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

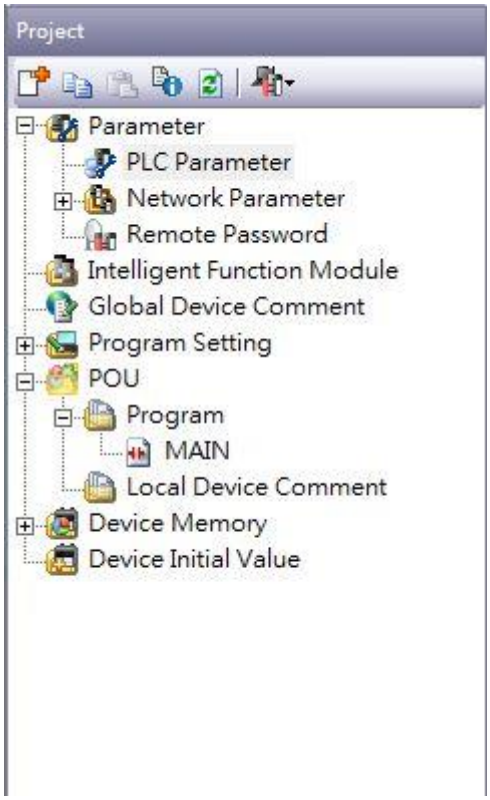
CN	Counter Current Value	16	DDDDD	0	32767
D	Data Register	16	DDDDD	0	39935
W	Link Register	16	HHHH	0	9bff
SW	Link Special Register	16	HHHH	0	7fff
SD	Special Register	16	DDDD	0	2047
R	File Register	16	DDDDD	0	32767
Z	Index Register	16	DD	0	19
ZR	File Register	16	HHHHH	0	9ffff
ZR_Dec	File Register(Dec Addr.)	16	DDDDDD	0	655359

2.2.9.3 Connected Setting

Configuring IP Address on PLC

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

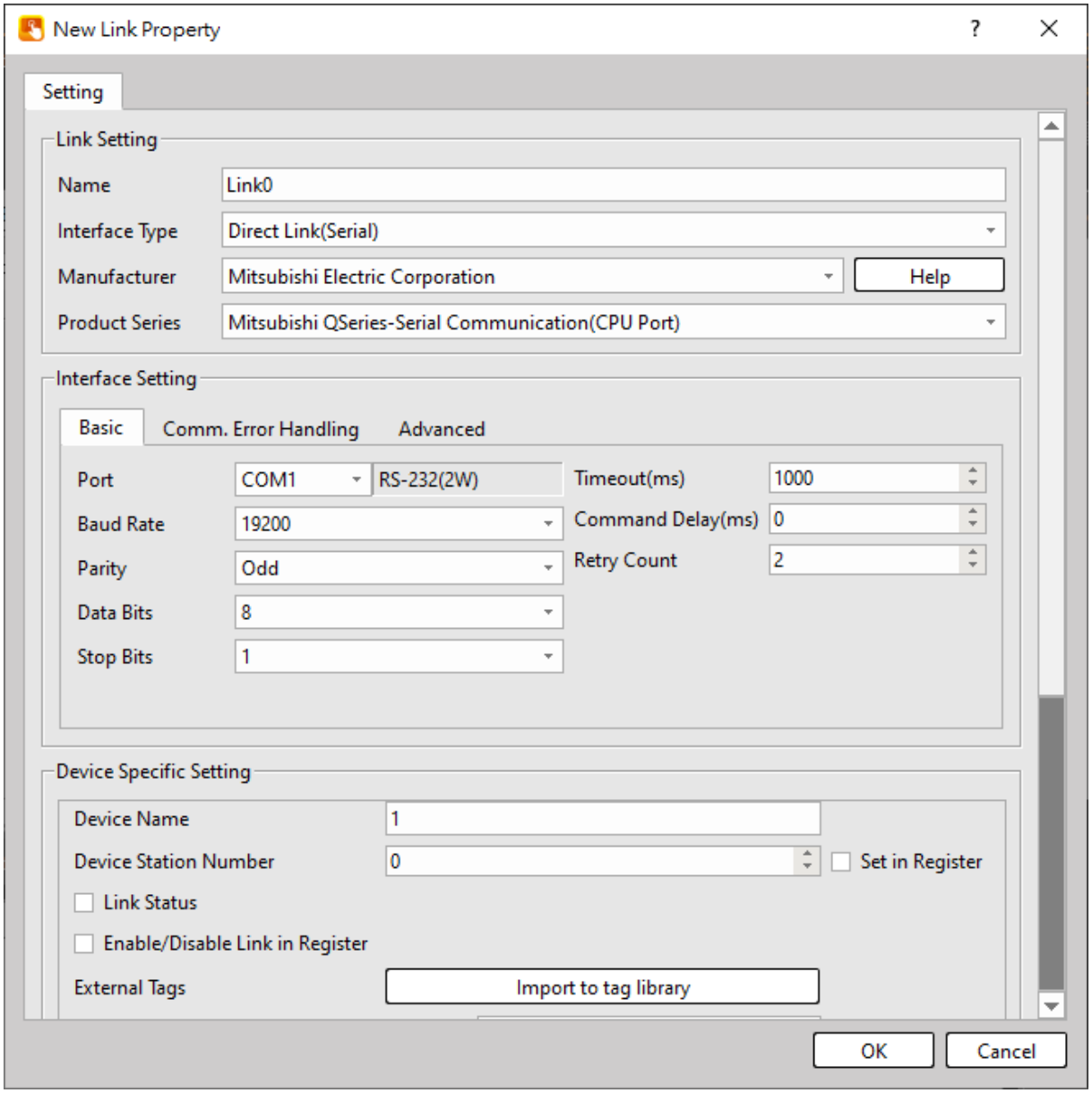
In the **Project** sidebar, expand **Parameter** and expand **PLC Parameter**.



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:

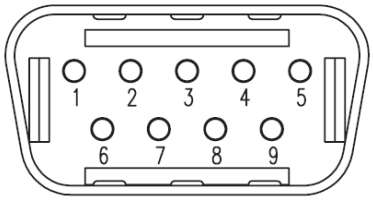
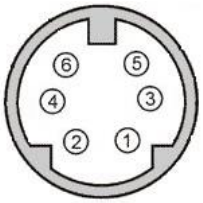
Under **Interface Type** select Direct Link(Serial)

Under **Manufacturer** select Mitsubishi Electric Corporation

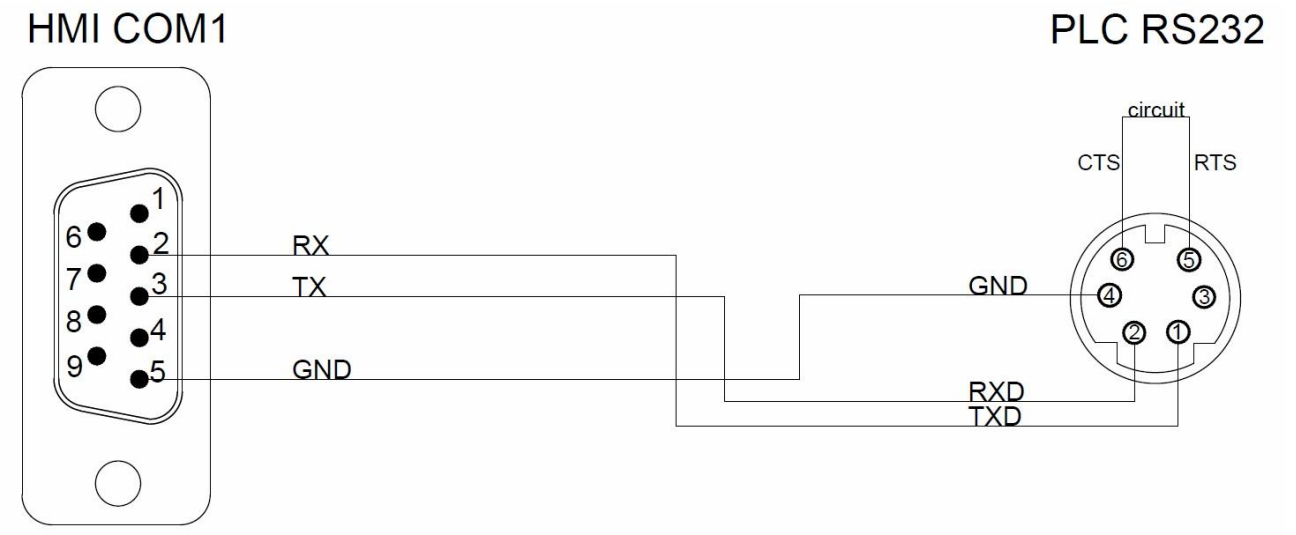
Under **Product Series** select one of the Mitsubishi QSeries-Series Communication(CPU Port).

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			
8			
9			

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



2.2.10 iQ-R Series-ENET(BINARY)

2.2.10.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	
Port	4999	
Device Station num.	0	
Communication Method	MC protocol 3E	Binary/ASCII

2.2.10.2 PLC Resource

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

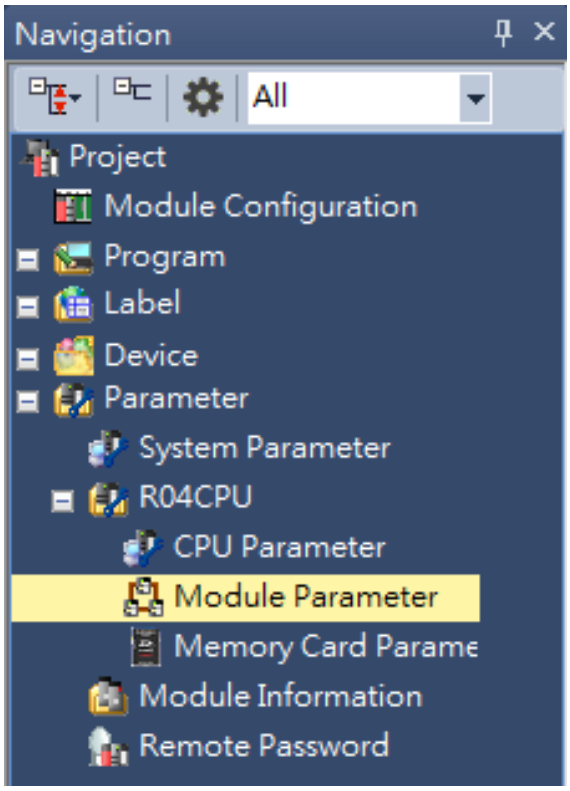
LTS	1	Long Timer Contact	DDDDD	0	35487
LTC	1	Long Timer Coil	DDDDD	0	35487
STS	1	Retentive Timer Contact	DDDDD	0	35487
STC	1	Retentive Timer Coil	DDDDD	0	35487
LSTS	1	Long Retentive Timer Contact	DDDDD	0	35487
LSTC	1	Long Retentive Timer Coil	DDDDD	0	35487
CS	1	Counter Contact	DDDDD	0	35487
CC	1	Counter 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
ZR	16	File Register	HHHHH	0	18FFFF
ZR_Dec	16	File Register(Dec addr.)	DDDDDD	0	1638399
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

2.2.10.3 Connected Setting

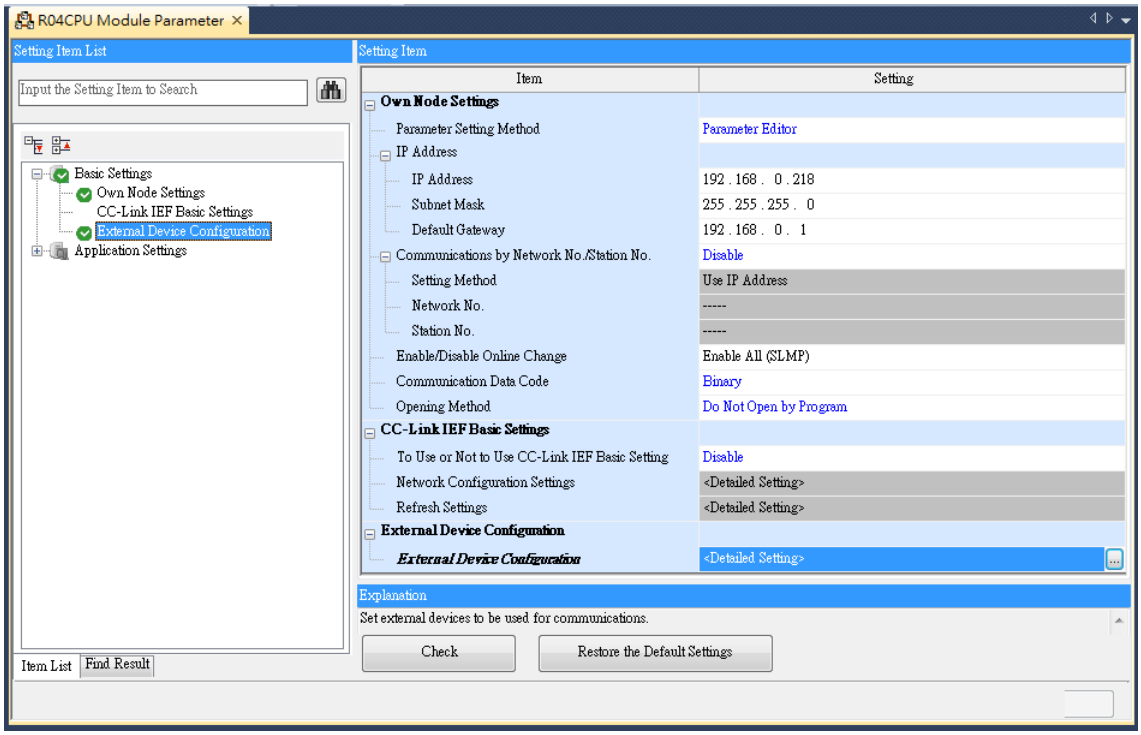
Configuring IP Address on PLC

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

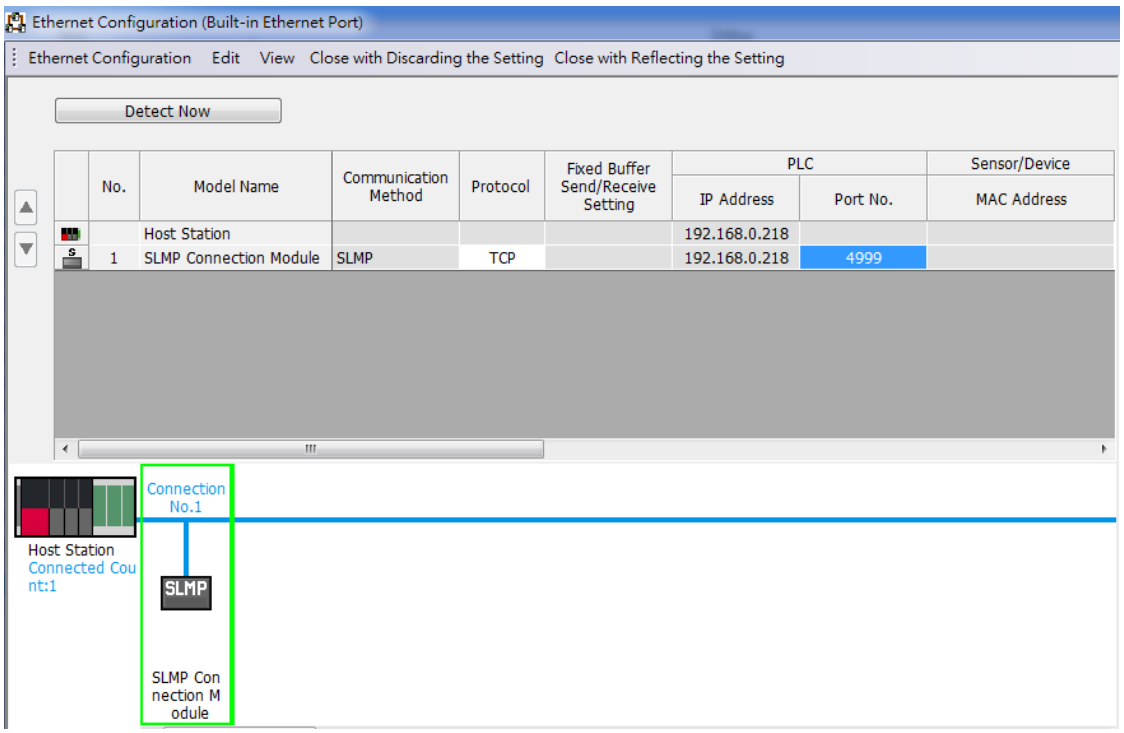
In the **Project** sidebar, expand **Parameter** and expand **Module Parameter**.



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

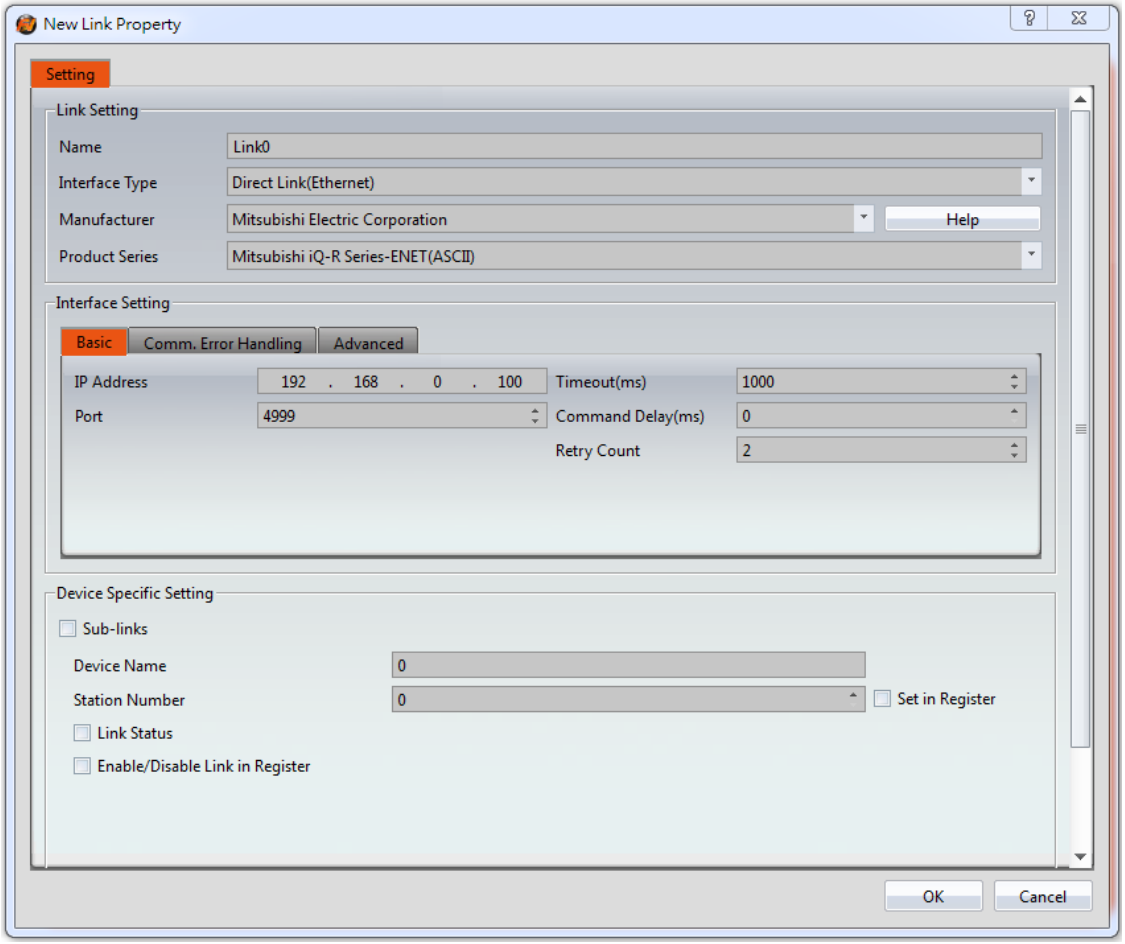


Click PLC Port No and set the Port No to 4999.



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).

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(ASCII)

2.2.11.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	
Port	4999	
Device Station num.	0	
Communication Method	MC protocol 3E	Binary/ASCII

2.2.11.2 PLC Resource

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

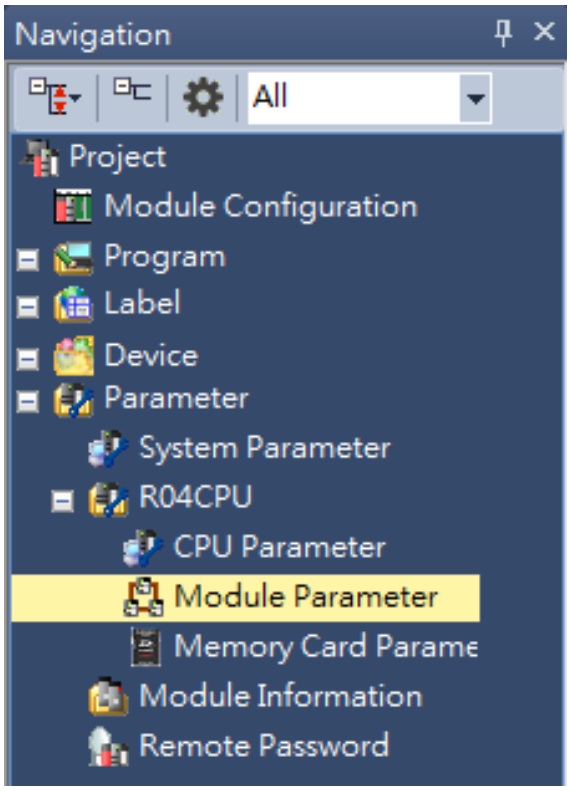
D	16	Data Register	DDDDD	0	39935
SD	16	Special Register	DDDD	0	4095
W	16	Link Register	HHHH	0	9bff
SW	16	Link Special Register	HHHH	0	9bff
TN	16	Timer Current Value	DDDDD	0	35487
STN	16	Retentive Timer Current Value	DDDDD	0	35487
CN	16	Counter Current Value	DDDDD	0	35487
Z	16	Index Register	DD	0	23
ZR	16	File Register	HHHHH	0	18FFFF
ZR_Dec	16	File Register(Dec addr.)	DDDDDD	0	1638399
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

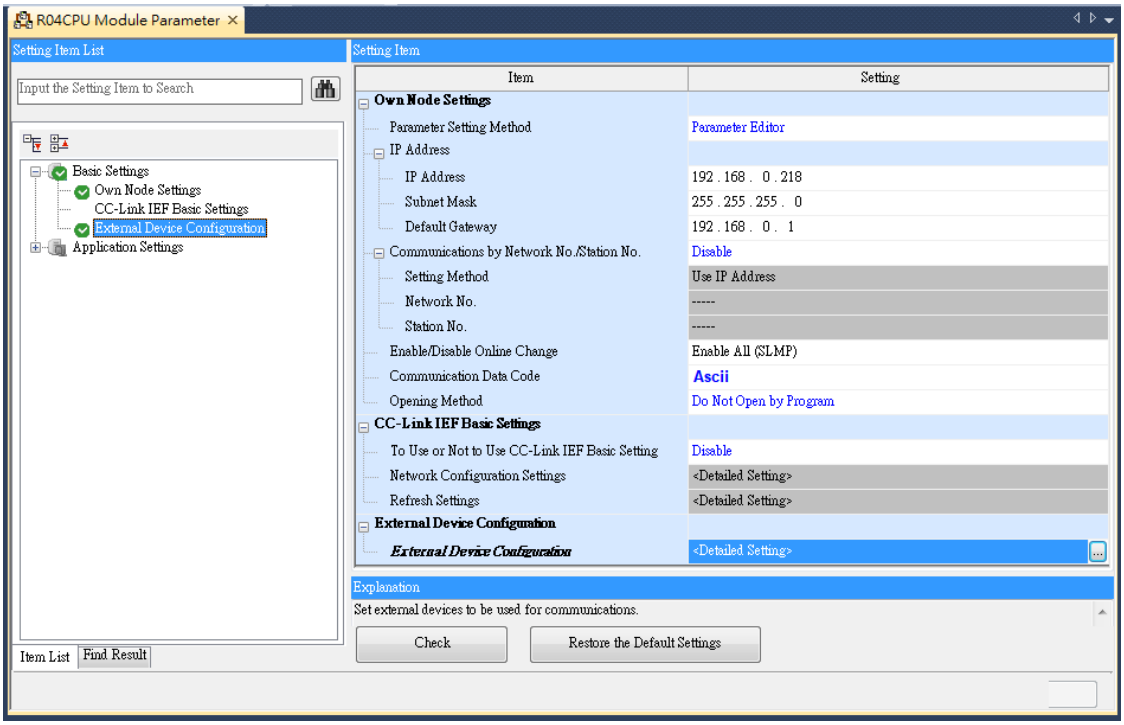
Configuring IP Address on PLC

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

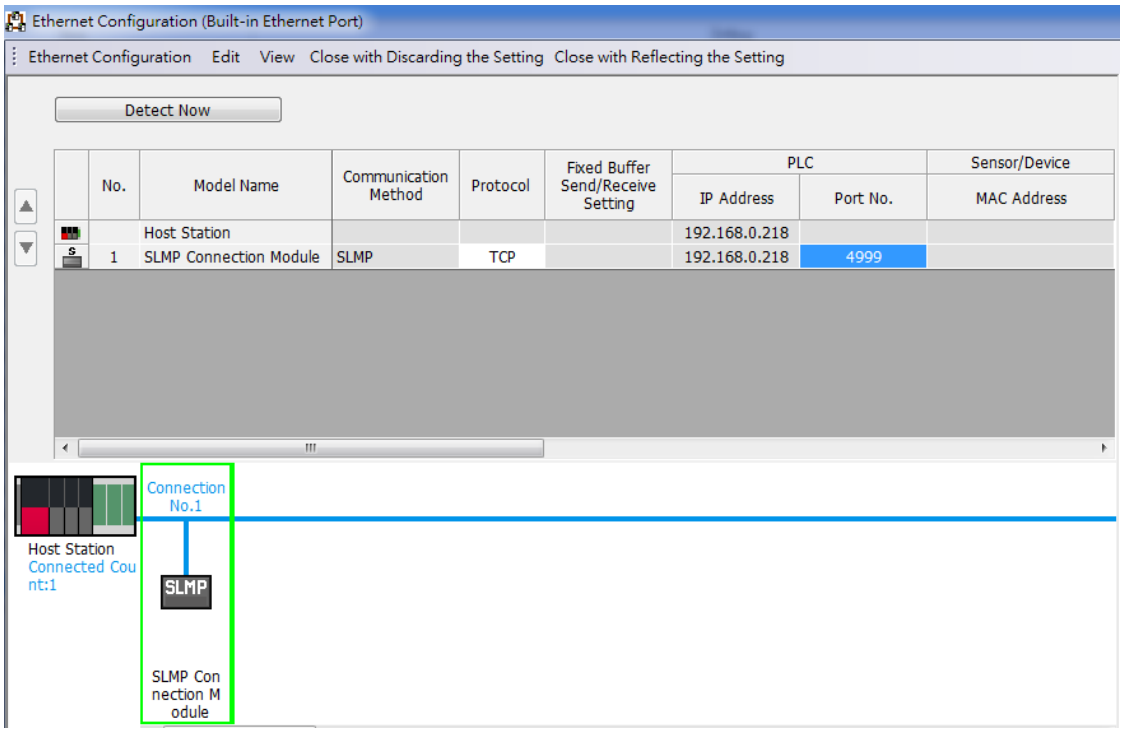
In the **Project** sidebar, expand **Parameter** and expand **Module Parameter**.



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

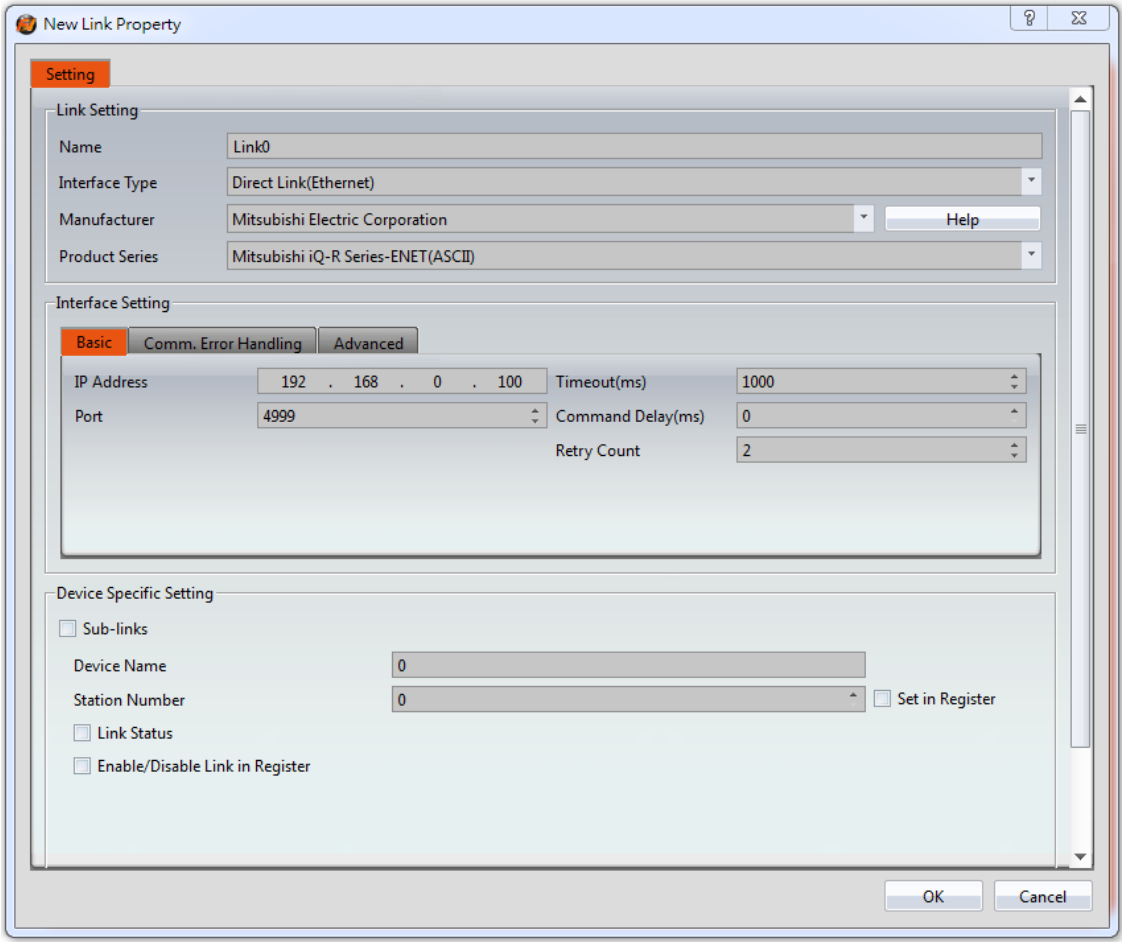


Click PLC Port No and set the Port No to 4999.



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(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

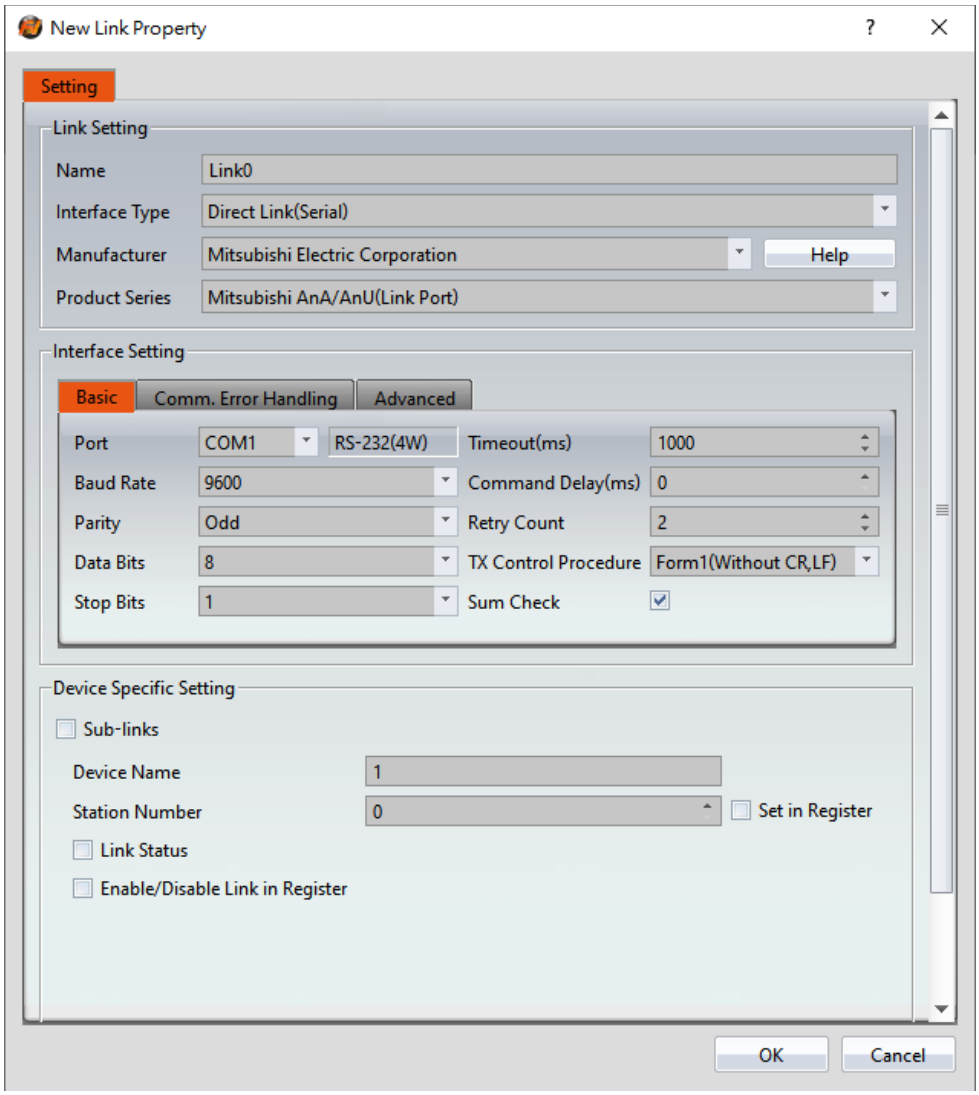
Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	9200	
Data Length	8	
Stop Bit	1	
Parity	Odd	
TX Control	Form1(Without CR,LF)	

2.2.12.2 PLC Resource

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



Within the Link configuration window in FvDesigner:

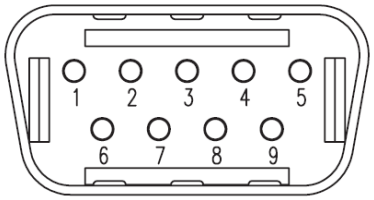
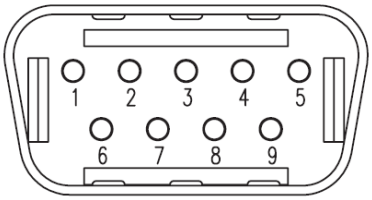
Under Interface Type select Direct Link(Serial)

Under Manufacturer select Mitsubishi Electric Corporation.

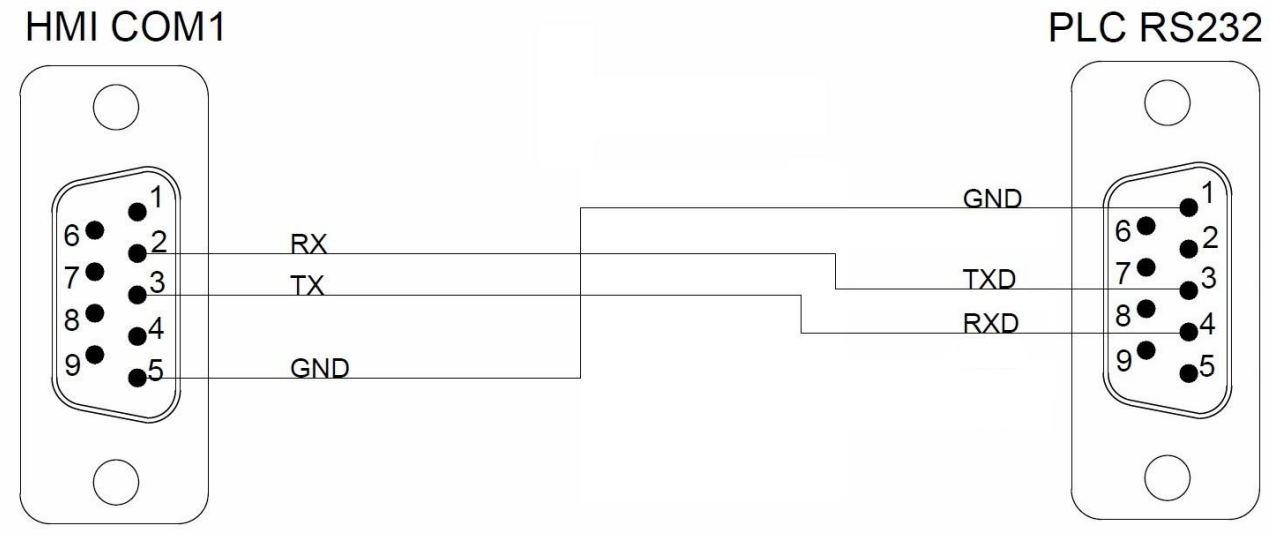
Under Product Series select one of the Mitsubishi AnA/AnU(Link Port).

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



2.2.13 Q/L Series-ENET(Binary)

(Support connect with QJ71E71-100)

2.2.13.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	
Port	4999	
Device Station num.	0	
Communication Method	MC protocol 3E	Binary

2.2.13.2 PLC Resource

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
ZR_Dec	File Register(Dec addr.)	16	DDDDDD	0	655359

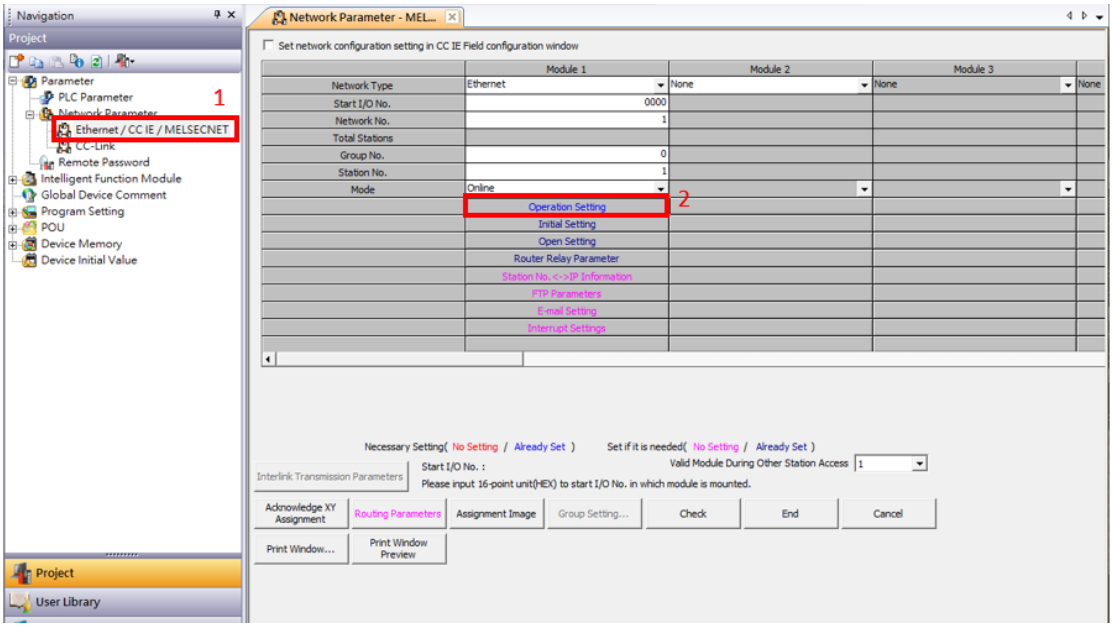
[*1] Address increased by 0, 20, 40, 60…

2.2.13.3 Connected Setting

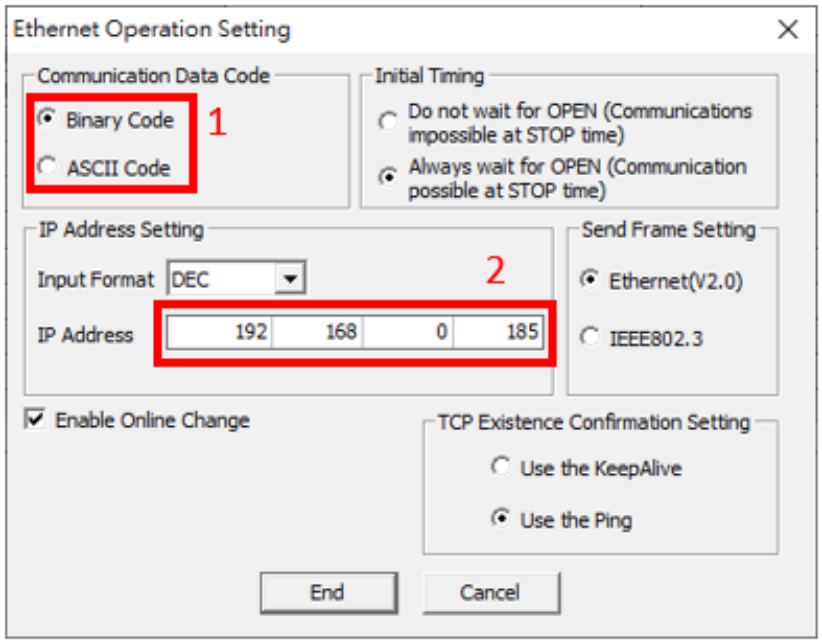
Configuring IP Address on PLC

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

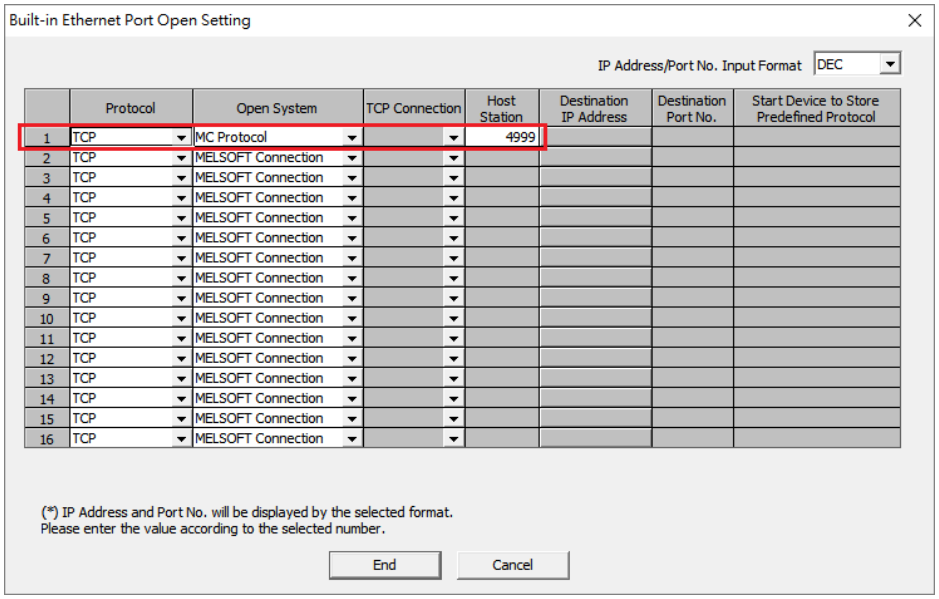
In the **Project** sidebar, expand **Network Parameter -> Ethernet/CC IE/MELSECNET -> Operation Setting**.



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

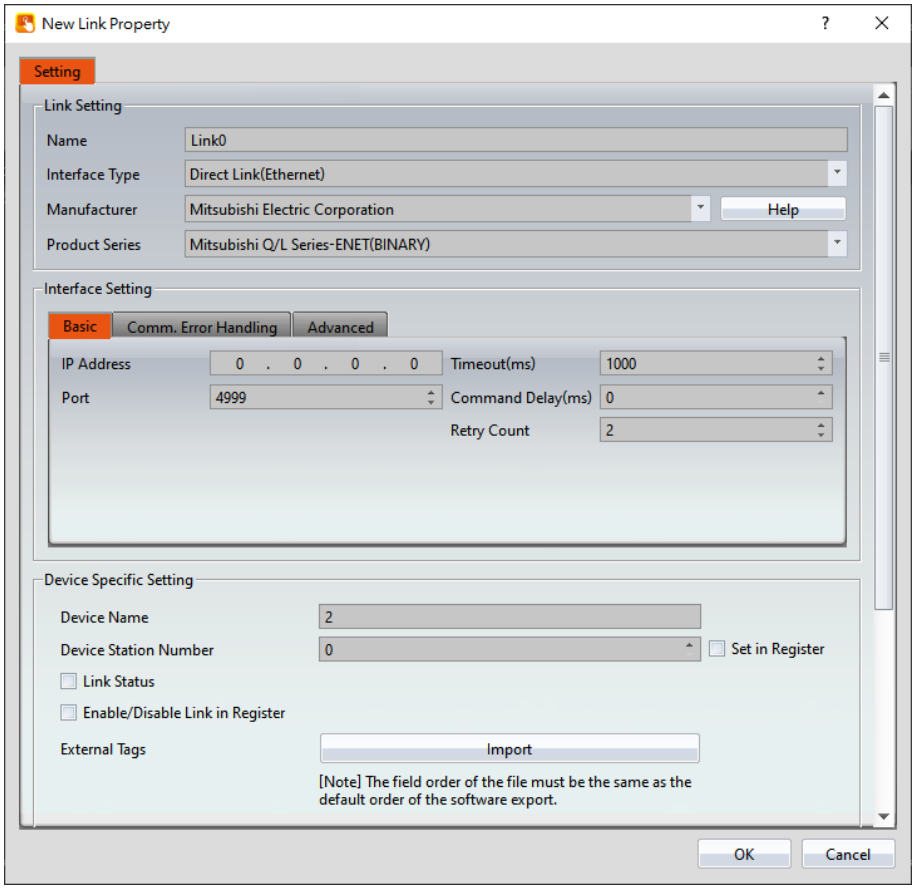


Click Open Setting and set the entire Open System column to TCP. And setting to MELSOFT Connection.



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).

Connection Data Code set in the Ethernet Port 4999 for the PLC.

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

Verify the parameters match the window above.

2.2.14 Q/L Series-ENET(ASCII)

(Support connect with QJ71E71-100)

2.2.14.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	
Port	4999	
Device Station num.	0	
Communication Method	MC protocol 3E	ASCII

2.2.14.2 PLC Resource

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
ZR_Dec	File Register(Dec addr.)	16	DDDDDD	0	655359

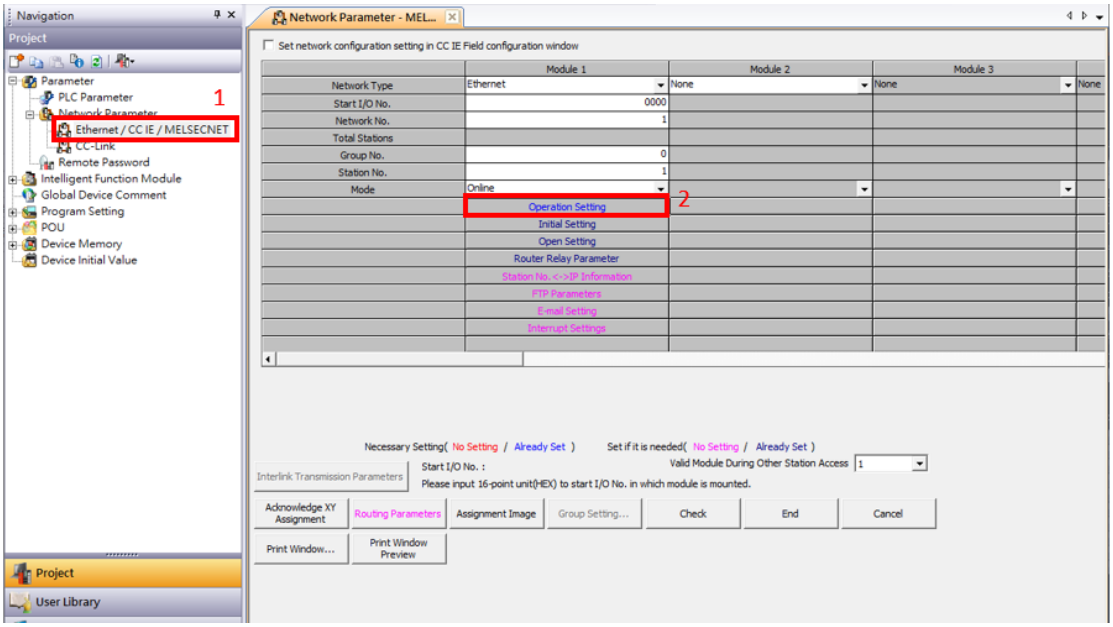
*1 Address increased by 0, 20, 40, 60…

2.2.14.3 Connected Setting

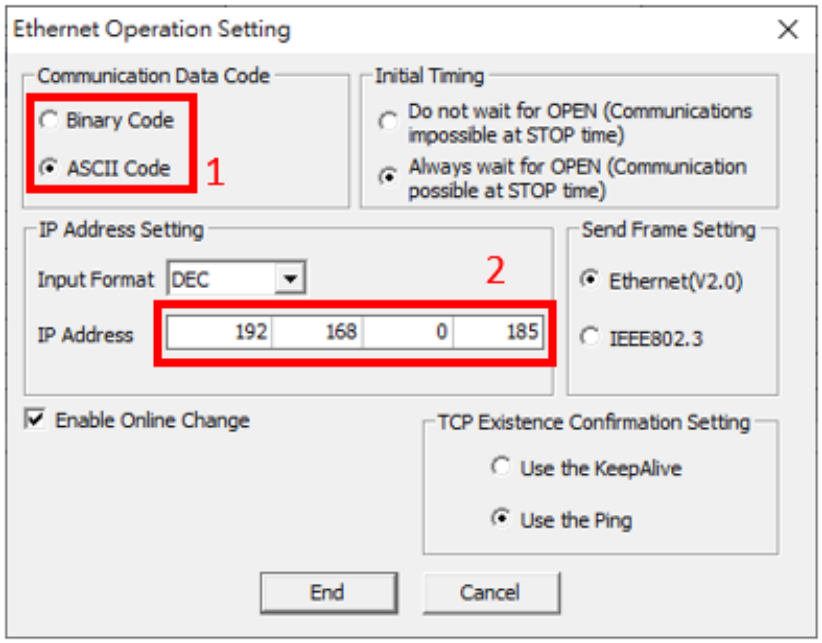
Configuring IP Address on PLC

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

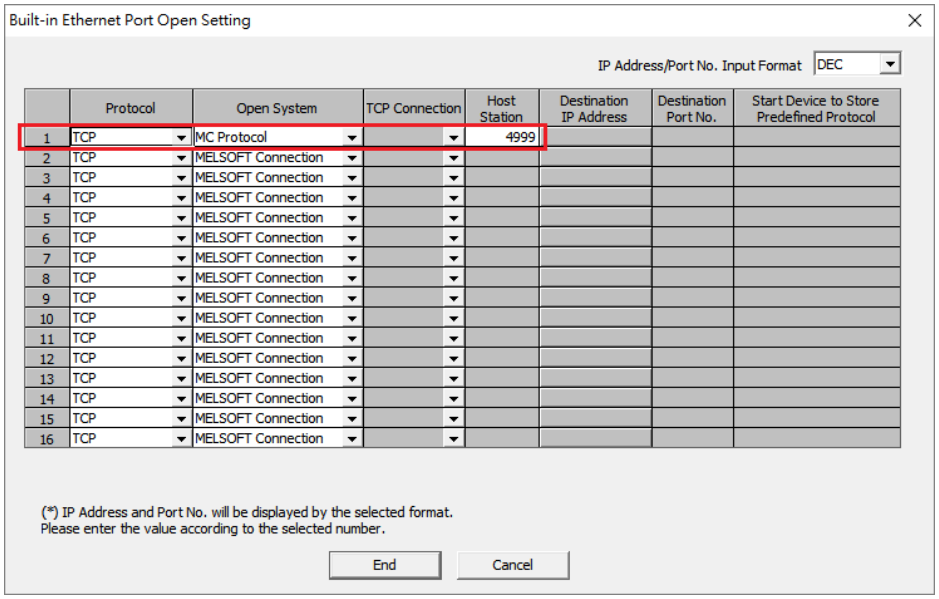
In the **Project** sidebar, expand **Network Parameter -> Ethernet/CC IE/MELSECNET -> Operation Setting**.



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

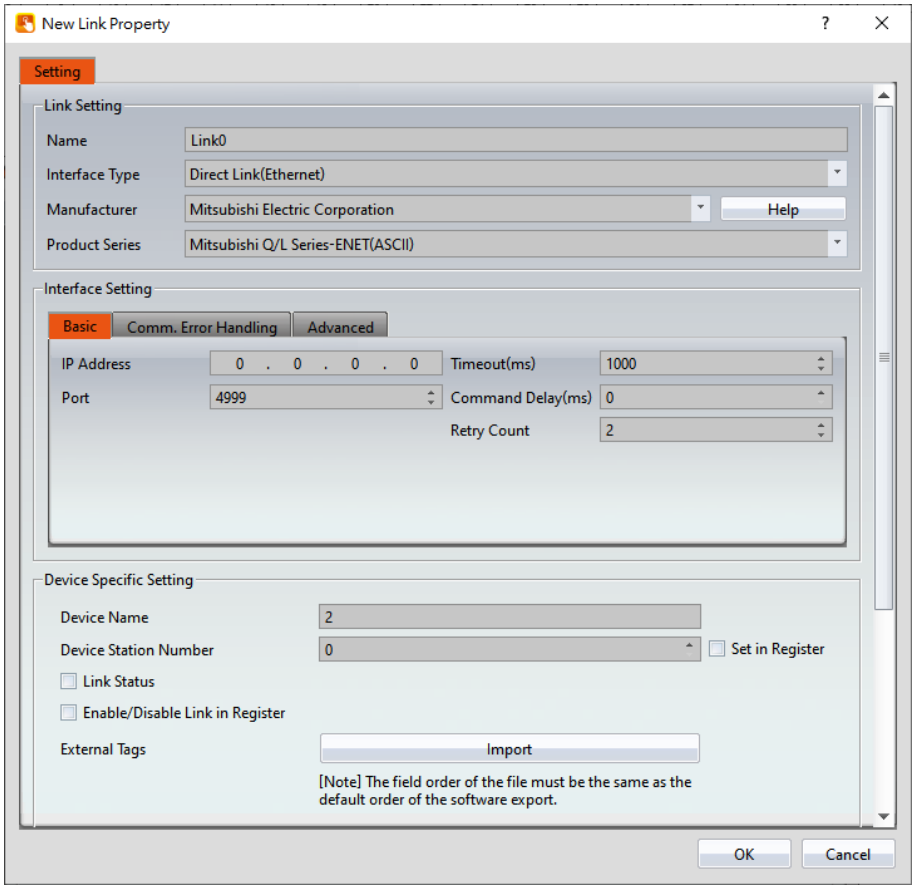


Click Open Setting and set the entire Open System column to TCP. And setting to MELSOFT Connection.



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(ASCII).

Connection Data Code set in the Ethernet Port 4999 for the PLC.

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

Verify the parameters match the window above.

2.2.15 A3A/A3N/A1SH (CPU Port)

2.2.15.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	A dedicated PLC programming cable (SC-09) is required to convert the PLC CPU port from RS-422 to RS-232 communication.
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Odd	
PLC Station No.	0	
File Register	0	0 - 8

2.2.15.2 Memory Resource Review

Device	Description	Data bit	Input fromat	Max.	Max.
X	Input Relay	1	HHH	0	7ff
Y	Output Relay	1	HHH	0	7ff
B	Link Relay	1	HHH	0	fff
F	Annunciator	1	DDDD	0	2047
L	Latch Relay	1	DDDD	0	2047
M	Internal Relay	1	DDDD	0	8191
SM	Special Relay	1	DDDD	9000	9255
TS	Timer Contact	1	DDDD	0	2047
TC	Timer Coil	1	DDDD	0	2047
CS	Counter Contact	1	DDDD	0	1023
CC	Counter Coil	1	DDDD	0	1023
WX*1	Input Relay	16	HHH	0	7f0
WY*1	Output Relay	16	HHH	0	7f0

B_Word	Link Relay	16	HHH	0	ff0
F_Word	Annunciator	16	DDDD	0	2032
WL	Latch Relay	16	DDDD	0	2032
WM	Internal Relay	16	DDDD	0	8176
W	Link Register	16	HHH	0	fff
TN	Timer Present Value	16	DDDD	0	2047
CN	Counter Present Value	16	DDDD	0	1023
D	Data Register	16	DDDD	0	8191
SD	Special Register	16	DDDD	9000	9255
R	File Register	16	DDDD	0	8191

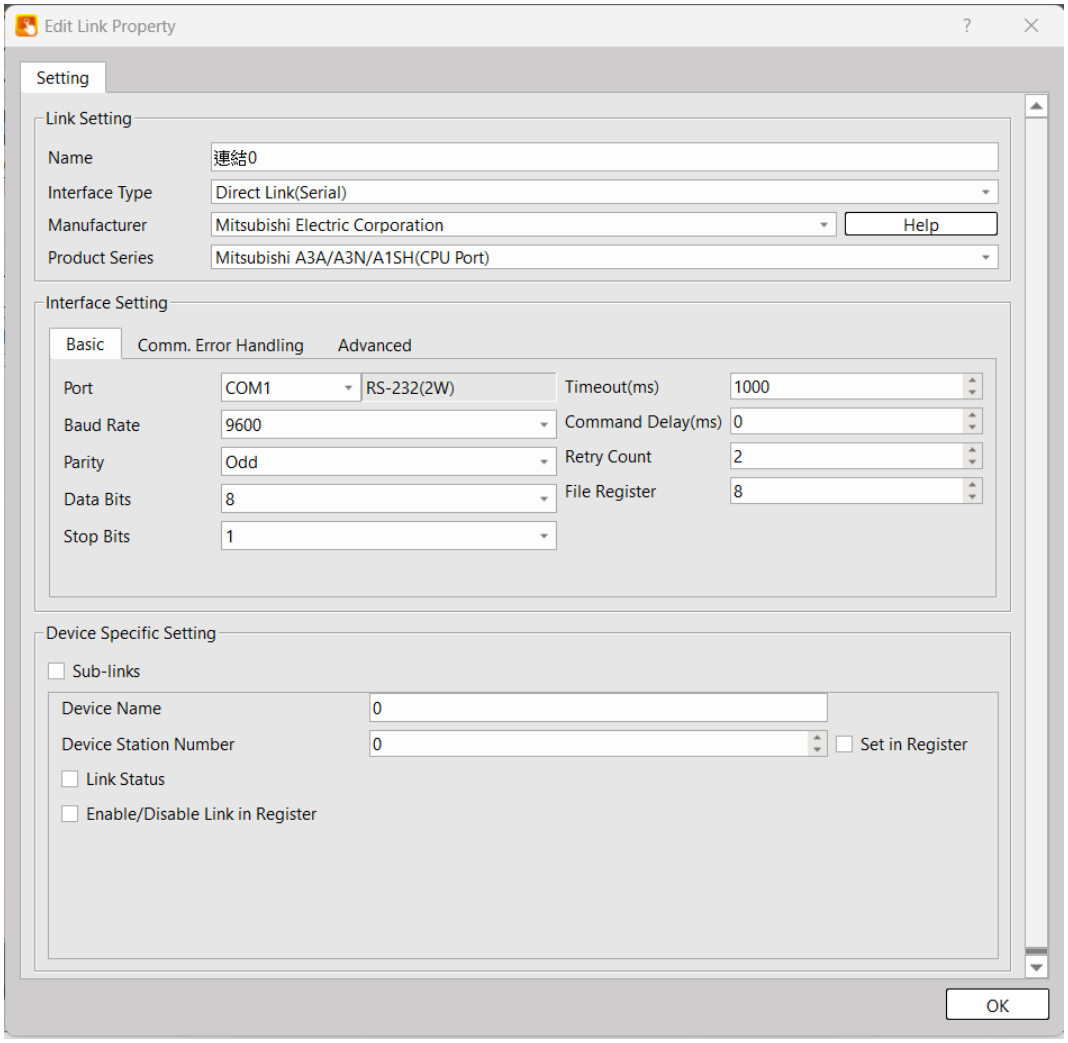
*1 The address increment method is 0, 10, 20, 30…

* The address range varies depending on the CPU module.

2.2.15.3 Connected Setting

Configuring of HMI

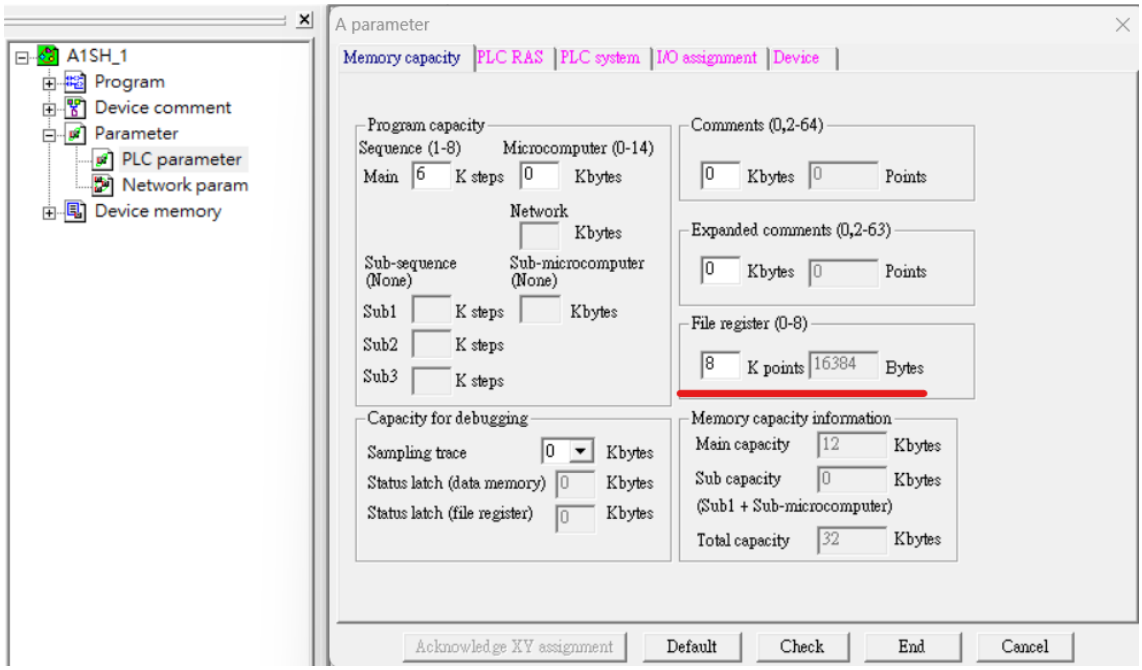
The HMI must use the G03 model, and the DB9 port must support Mitsubishi PLC communication. Please contact your distributor for more information.



Within the **Link** configuration window in FvDesigner:
Under **Interface Type** select Serial
Under **Manufacturer** select Mitsubishi Electric Corporation
Under **Product Series** select Mitsubishi A3A/A3N/A1SH(CPU Port).
Please ensure that the communication interface parameters are consistent with the PLC settings.

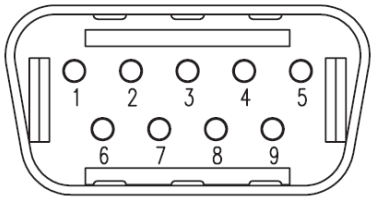
Configuring of PLC

The communication parameters do not require any special adjustment. If the PLC file register range needs to be changed, it can be adjusted in the PLC software.
Parameter -> Memory capacity -> File register.



2.2.15.4 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	

Connection method:

Please use the dedicated PLC programming cable (SC-09) to convert the PLC CPU port from RS-422 to RS-232, and then connect it to the HMI's DB9 port for communication.

2.2.16 A2A/A2U/A2AS (CPU Port)

2.2.16.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	A dedicated PLC programming cable (SC-09) is required to convert the PLC CPU port from RS-422 to RS-232 communication.
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Odd	
PLC Station No.	0	
File Register	0	0 - 8

2.2.16.2 Memory Resource Review

Device	Description	Data bit	Input fromat	Max.	Max.
X	Input Relay	1	HHHH	0	1fff
Y	Output Relay	1	HHHH	0	1fff
B	Link Relay	1	HHHH	0	1fff
F	Annunciator	1	DDDD	0	2047
L	Latch Relay	1	DDDD	0	2047
M	Internal Relay	1	DDDD	0	8191
SM	Special Relay	1	DDDD	9000	9255
TS	Timer Contact	1	DDDD	0	2047
TC	Timer Coil	1	DDDD	0	2047
CS	Counter Contact	1	DDDD	0	1023
CC	Counter Coil	1	DDDD	0	1023
WX*1	Input Relay	16	HHHH	0	1ff0
WY*1	Output Relay	16	HHHH	0	1ff0
B_Word	Link Relay	16	HHHH	0	1ff0
F_Word	Annunciator	16	DDDD	0	2032

WL	Latch Relay	16	DDDD	0	2032
WM	Internal Relay	16	DDDD	0	8176
W	Link Register	16	HHHH	0	1fff
TN	Timer Present Value	16	DDDD	0	2047
CN	Counter Present Value	16	DDDD	0	1023
D	Data Register	16	DDDD	0	8191
SD	Special Register	16	DDDD	9000	9255
R	File Register	16	DDDD	0	8191

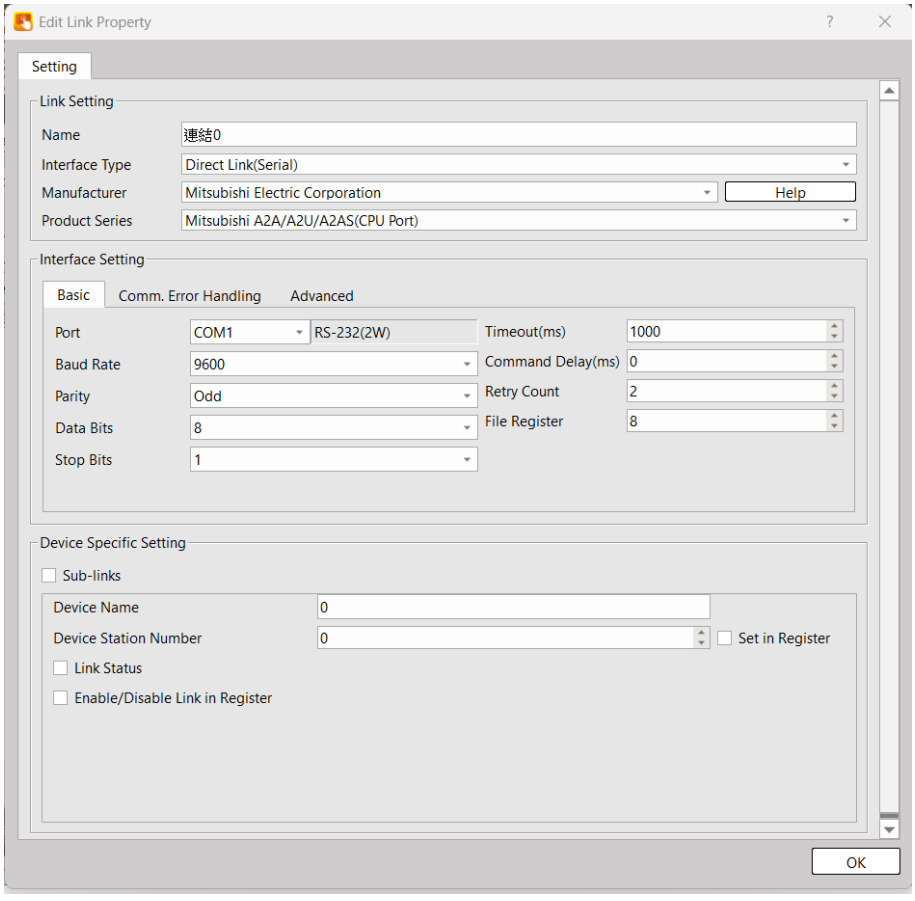
*1 The address increment method is 0, 10, 20, 30…

* The address range varies depending on the CPU module.

2.2.16.3 Connected Setting

Configuring of HMI

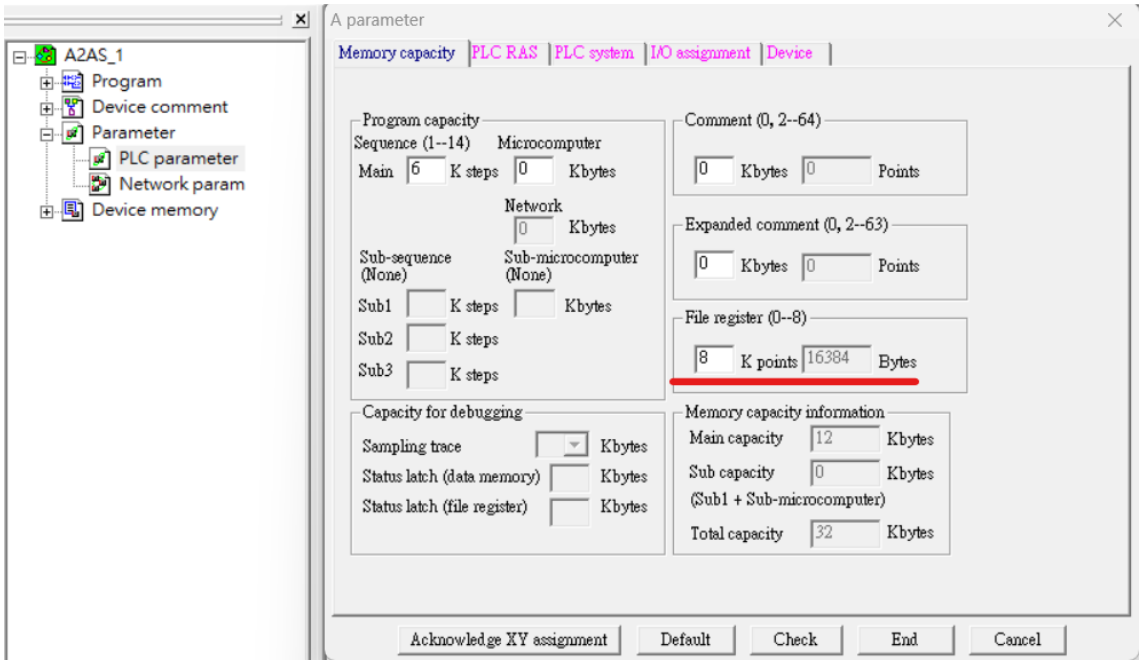
The HMI must use the G03 model, and the DB9 port must support Mitsubishi PLC communication. Please contact your distributor for more information.



Within the **Link** configuration window in FvDesigner:
Under **Interface Type** select Serial
Under **Manufacturer** select Mitsubishi Electric Corporation
Under **Product Series** select Mitsubishi A2A/A2U/A2AS(CPU Port).
Please ensure that the communication interface parameters are consistent with the PLC settings.

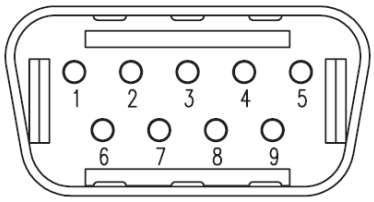
Configuring of PLC

The communication parameters do not require any special adjustment. If the PLC file register range needs to be changed, it can be adjusted in the PLC software.
Parameter -> Memory capacity -> File register.



2.2.16.4 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	

Connection method:
Please use the dedicated PLC programming cable (SC-09) to convert the PLC CPU port from RS-422 to RS-232, and then connect it to the HMI's DB9 port for communication.

2.2.17 A2S (CPU Port)

2.2.17.1 Communication Setting

Item	Default Setting	Remark
Signal Level	RS232	A dedicated PLC programming cable (SC-09) is required to convert the PLC CPU port from RS-422 to RS-232 communication.
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Odd	
PLC Station No.	0	
File Register	0	0 - 4

2.2.17.2 Memory Resource Review

Device	Description	Data bit	Input fromat	Max.	Max.
X	Input Relay	1	HHH	0	7ff
Y	Output Relay	1	HHH	0	7ff
B	Link Relay	1	HHH	0	3ff
F	Annunciator	1	DDD	0	255
L	Latch Relay	1	DDDD	0	2047
M	Internal Relay	1	DDDD	0	2047
SM	Special Relay	1	DDDD	9000	9255
TS	Timer Contact	1	DDD	0	255
TC	Timer Coil	1	DDD	0	255
CS	Counter Contact	1	DDD	0	255
CC	Counter Coil	1	DDD	0	255
WX*1	Input Relay	16	HHH	0	7f0
WY*1	Output Relay	16	HHH	0	7f0
B_Word	Link Relay	16	HHH	0	3f0
F_Word	Annunciator	16	DDD	0	240
WL	Latch Relay	16	DDDD	0	2032
WM	Internal Relay	16	DDDD	0	2032

W	Link Register	16	HHH	0	3ff
TN	Timer Present Value	16	DDD	0	255
CN	Counter Present Value	16	DDD	0	255
D	Data Register	16	DDDD	0	1023
SD	Special Register	16	DDDD	9000	9255
R	File Register	16	DDDD	0	4095

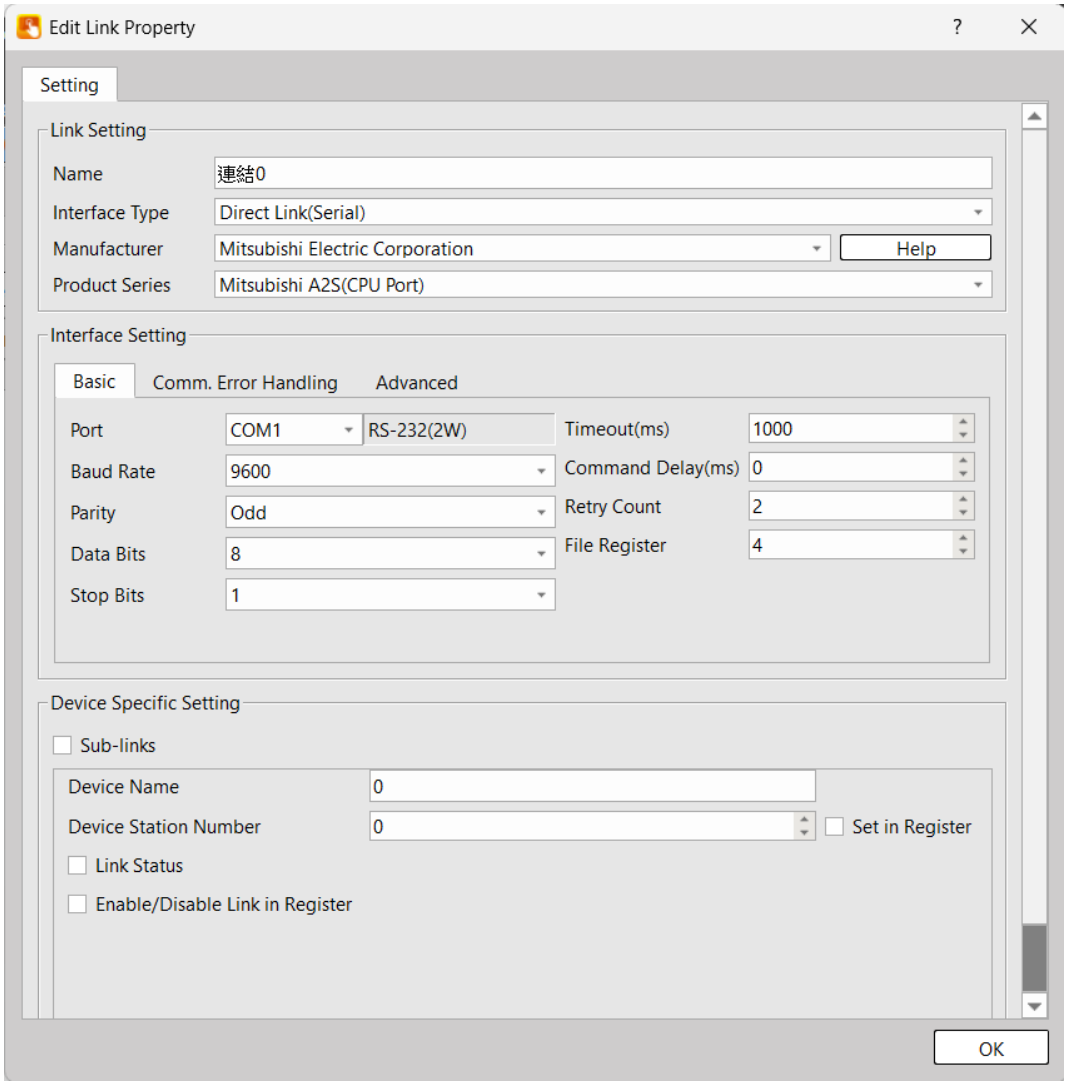
*1 The address increment method is 0, 10, 20, 30…

* The address range varies depending on the CPU module.

2.2.17.3 Connected Setting

Configuring of HMI

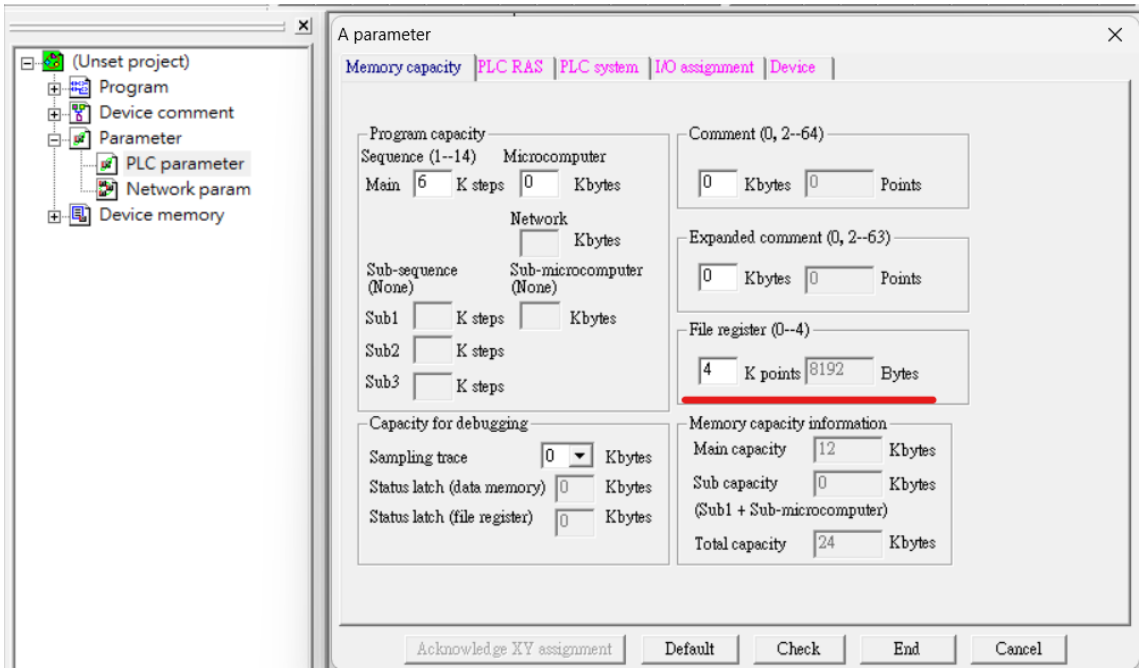
The HMI must use the G03 model, and the DB9 port must support Mitsubishi PLC communication. Please contact your distributor for more information.



Within the **Link** configuration window in FvDesigner:
Under **Interface Type** select Serial
Under **Manufacturer** select Mitsubishi Electric Corporation
Under **Product Series** select Mitsubishi A2S(CPU Port).
Please ensure that the communication interface parameters are consistent with the PLC settings.

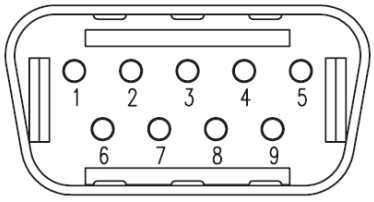
Configuring of PLC

The communication parameters do not require any special adjustment. If the PLC file register range needs to be changed, it can be adjusted in the PLC software.
Parameter -> Memory capacity -> File register.



2.2.17.4 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	

Connection method:
Please use the dedicated PLC programming cable (SC-09) to convert the PLC CPU port from RS-422 to RS-232, and then connect it to the HMI's DB9 port for communication.

2.3 Omron

2.3.1 Sysmac CP Series (FINS)

2.3.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
Device Station num.	0	
Communication Method	FINS	

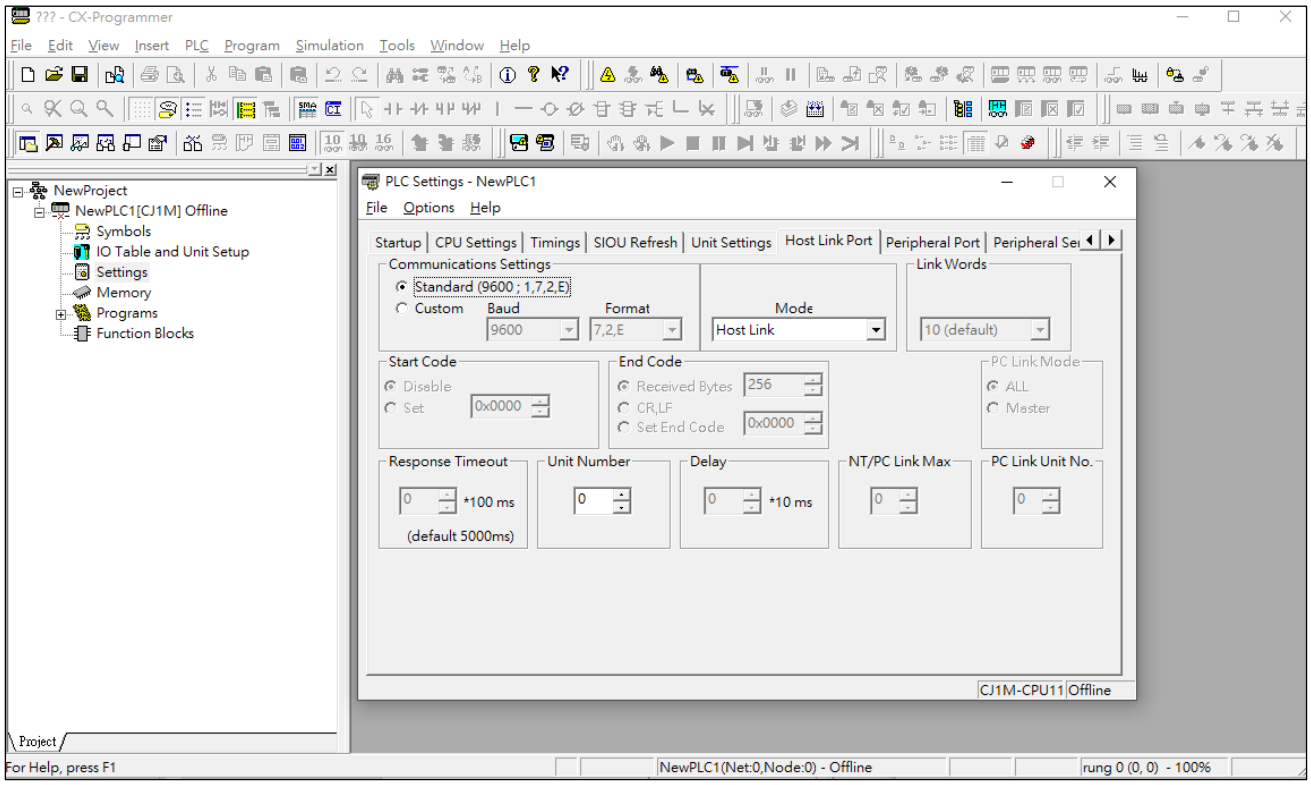
2.3.1.2 PLC Resource

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

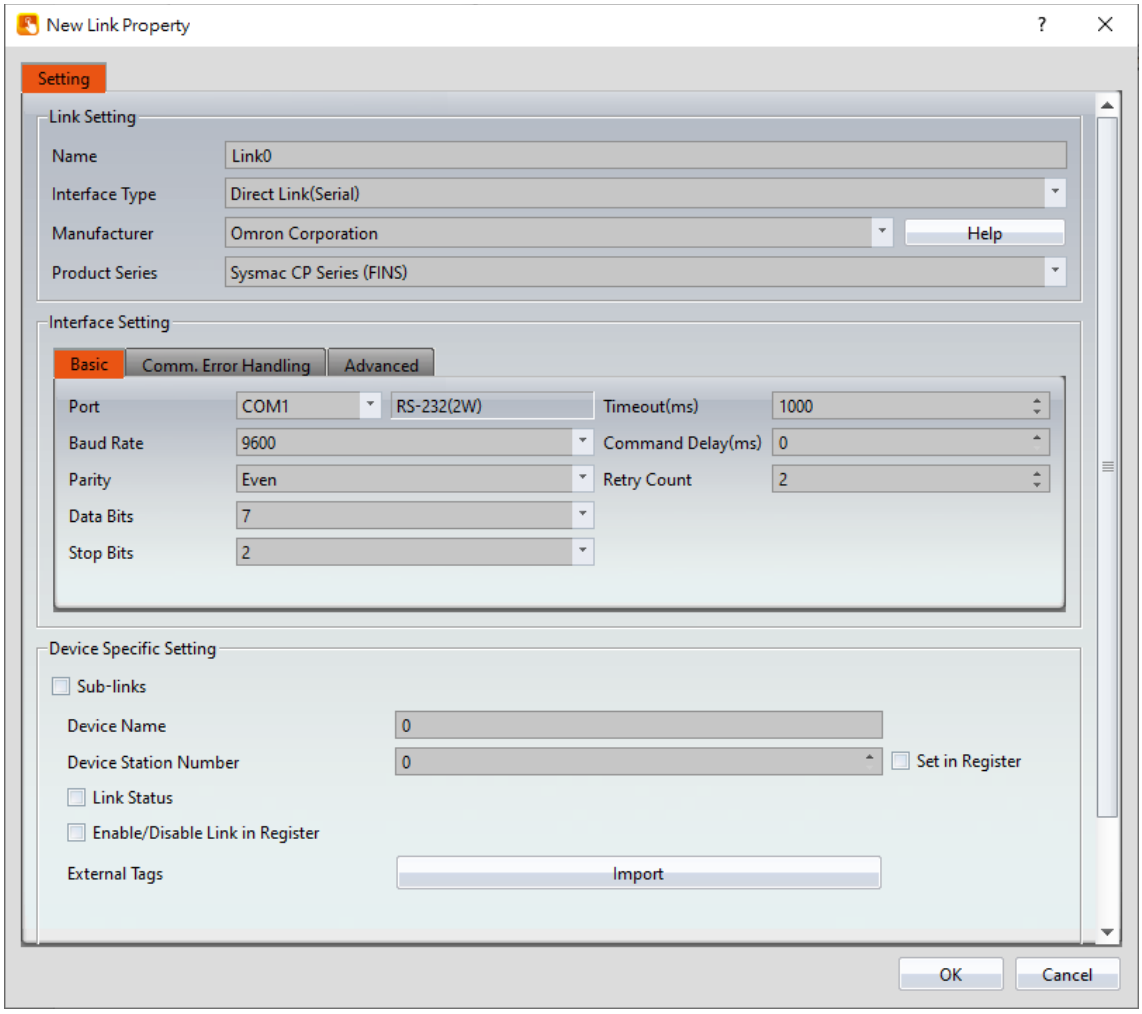
Configuring of PLC

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



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

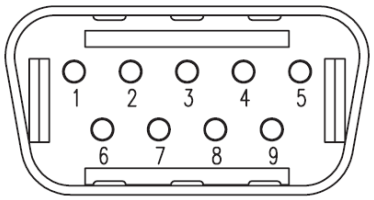
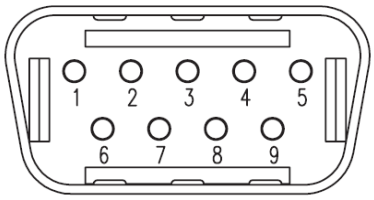
Under **Interface Type** select Serial

Under **Manufacturer** select Omron Corporation

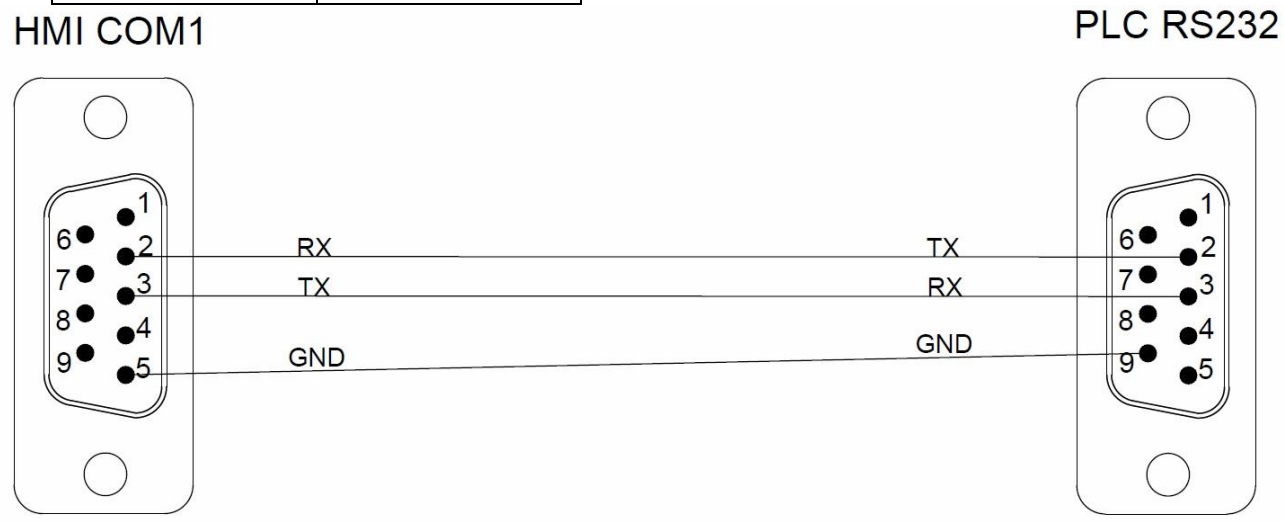
Under **Product Series** select Sysmac CP Series (FINS)

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		7	
8		8	
9		9	GND

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



2.3.2 Sysmac CP Series (FINS/TCP)

2.3.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	To be configured
Port	9600	
Device Station num.	0	
Communication Method	FINS/TCP	

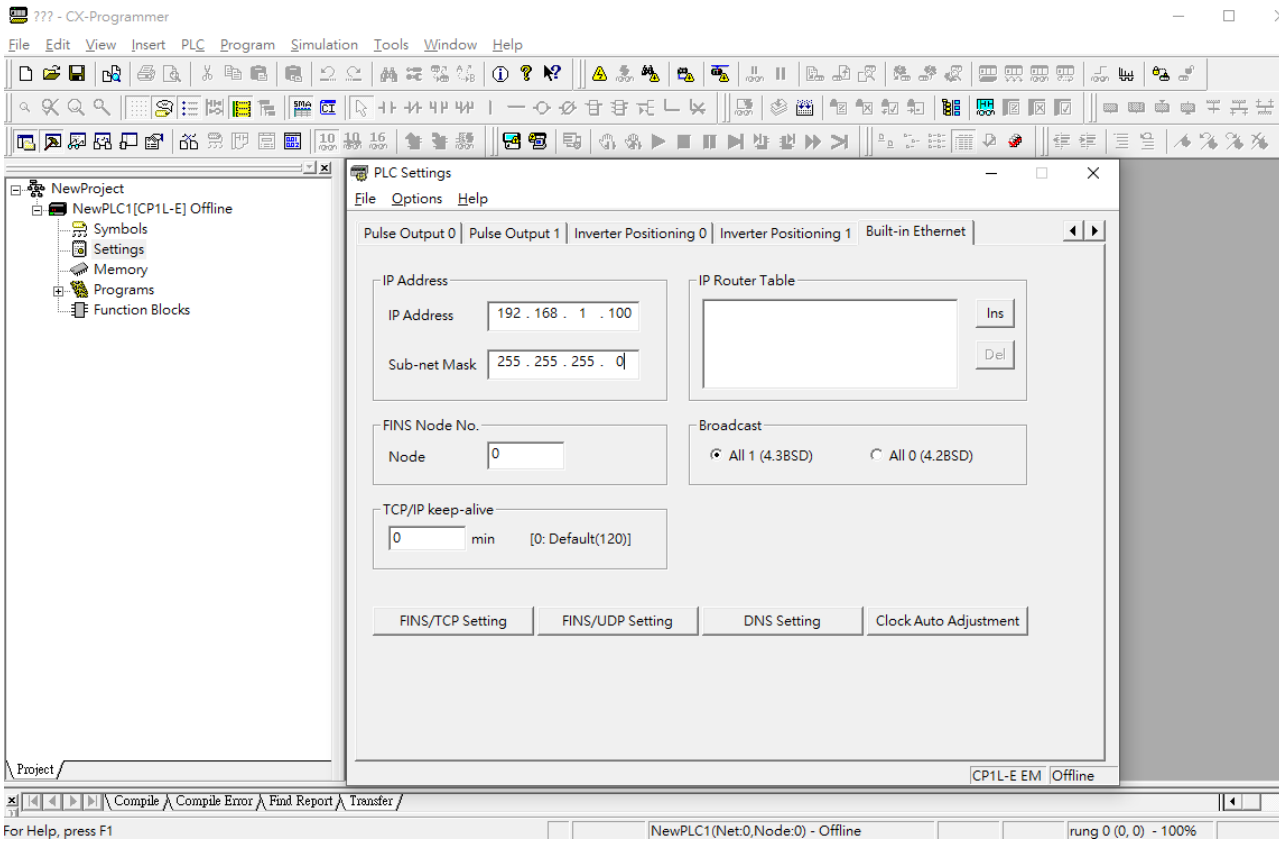
2.3.2.2 PLC Resource

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

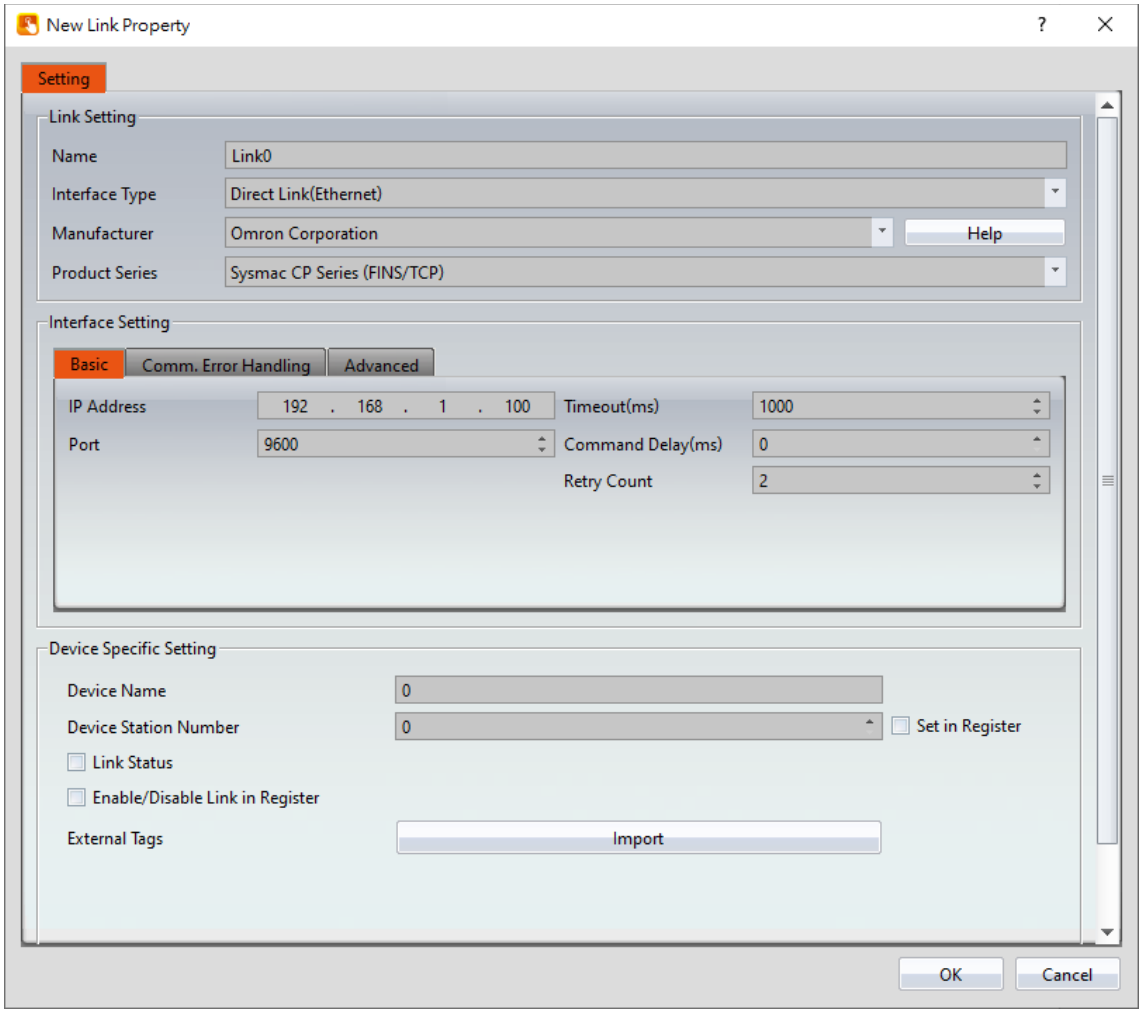
Configuring of PLC

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



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
Interface Type	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
Device Station num.	0	
Communication Method	HOSTLINK	

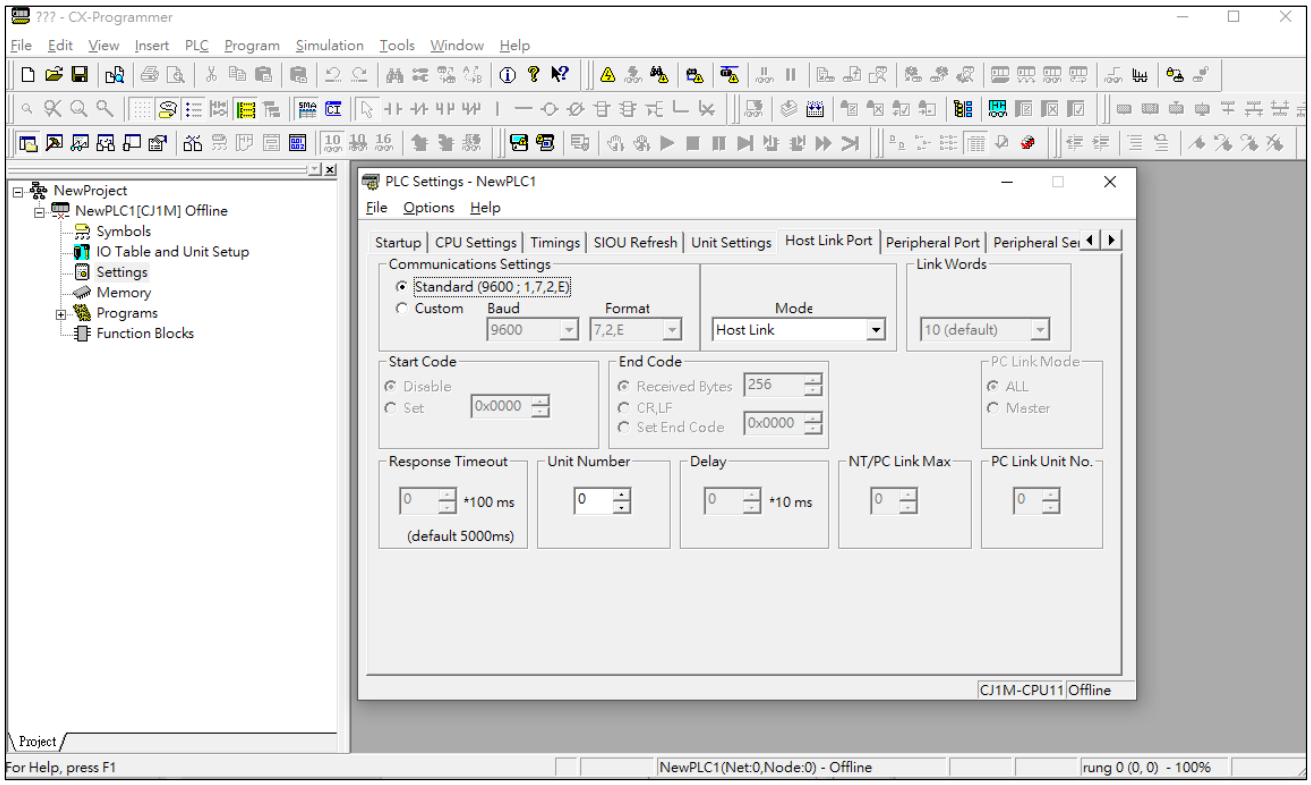
2.3.3.2 PLC Resource

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

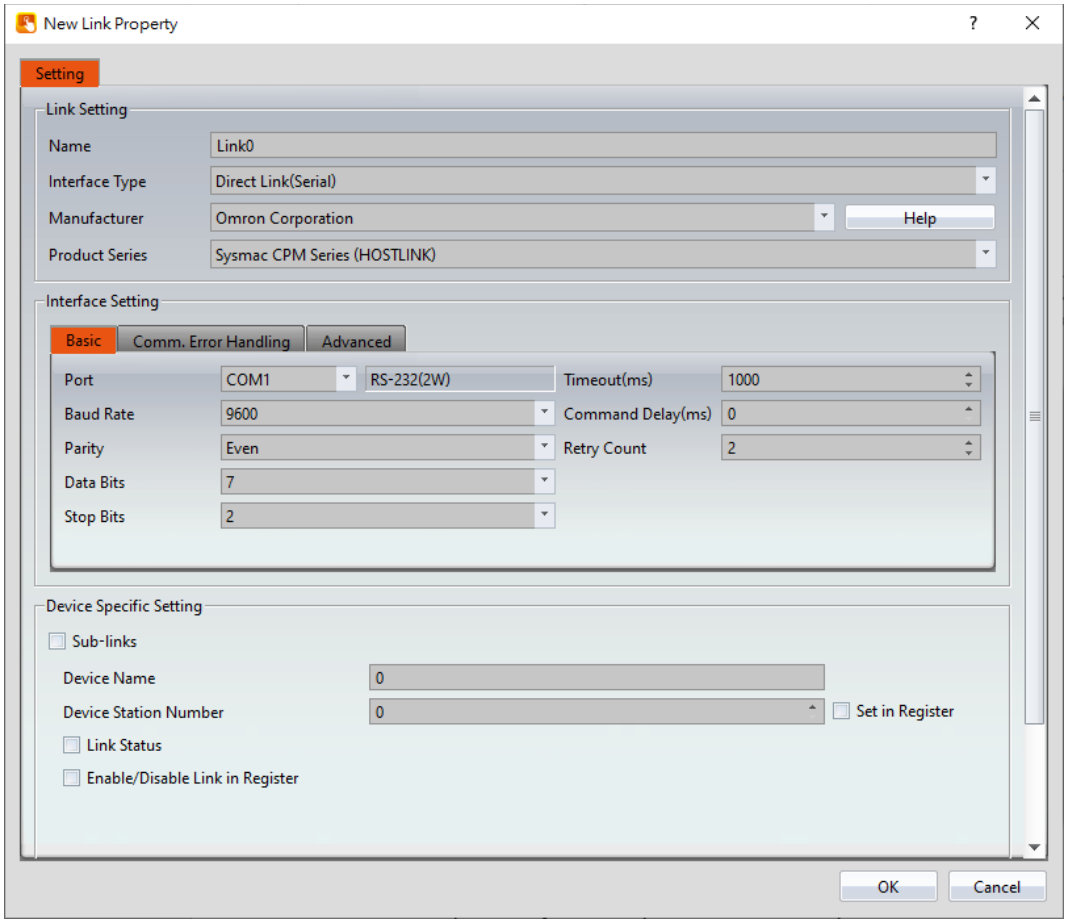
Configuring of PLC

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



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

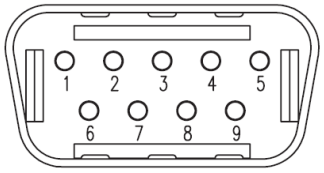
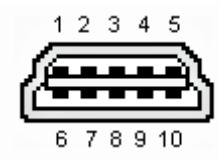
Under **Interface Type** select Serial

Under **Manufacturer** select Omron Corporation

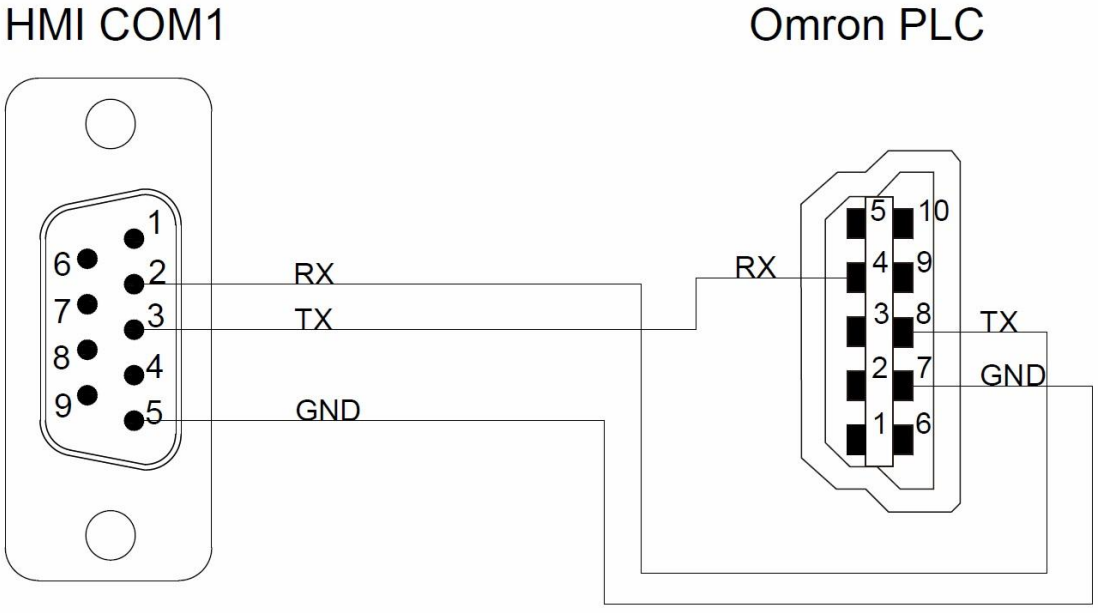
Under **Product Series** select Sysmac CPM Series (HOSTLINK)

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		7	GND
8		8	TX
9		9	RTS
		10	CTS

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



2.3.4 Sysmac CQM Series (HOSTLINK)

2.3.4.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
Device Station num.	0	
Communication Method	HOSTLINK	

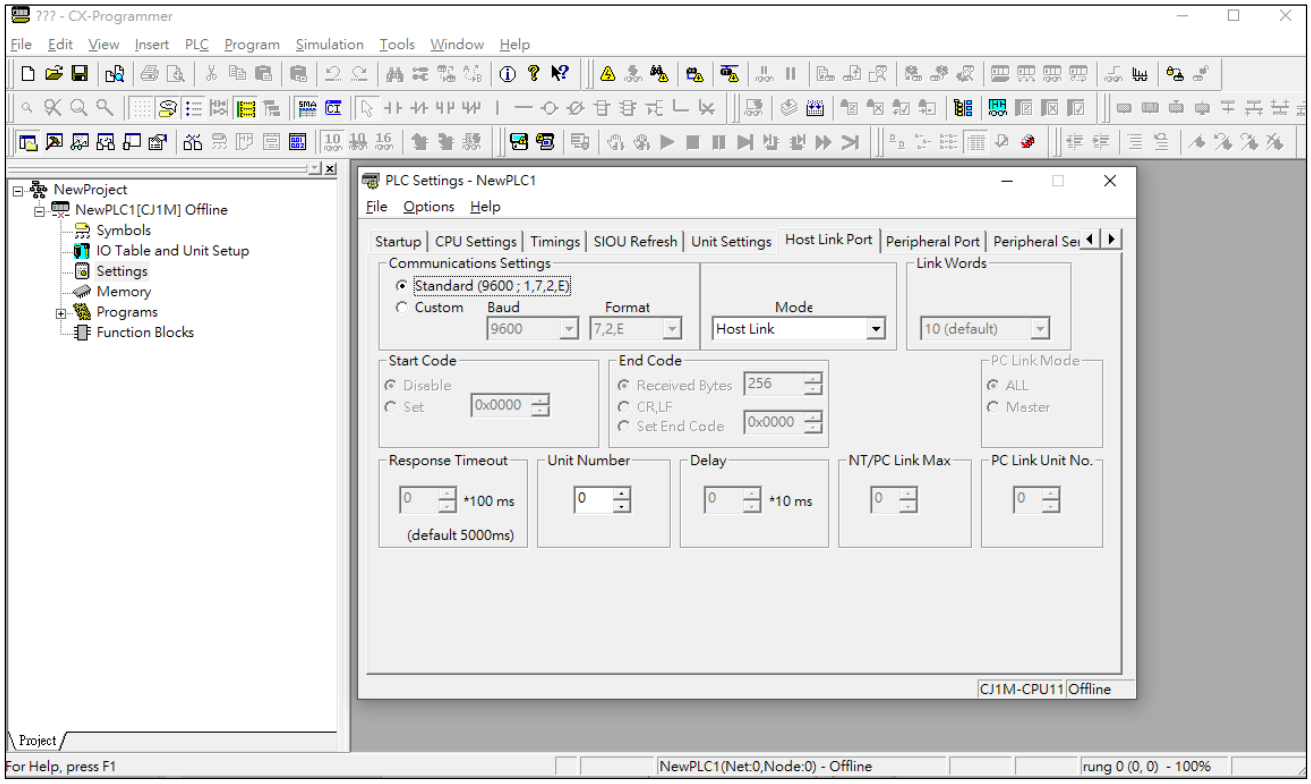
2.3.4.2 PLC Resource

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

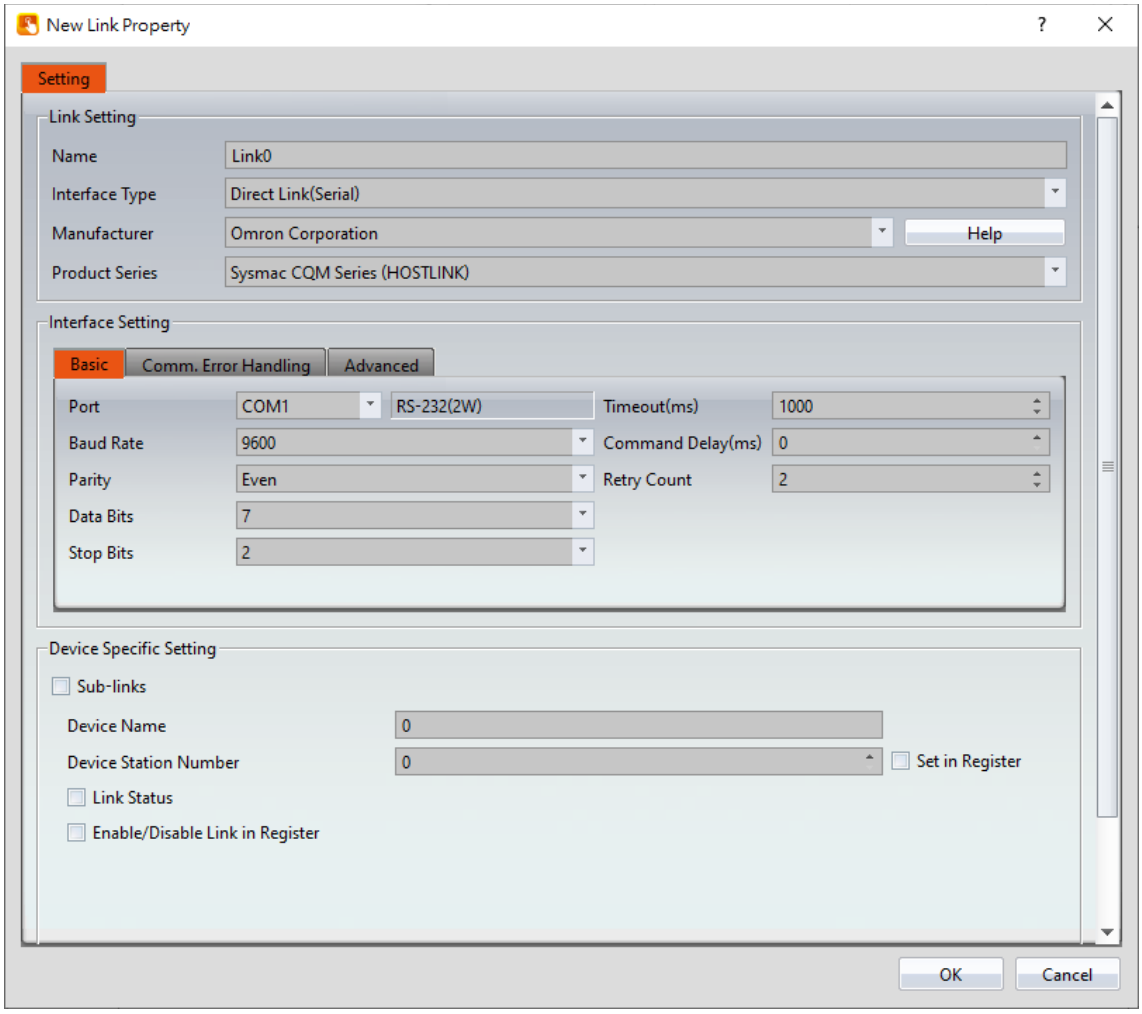
Configuring of PLC

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



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

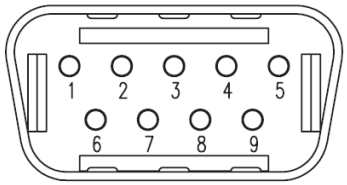
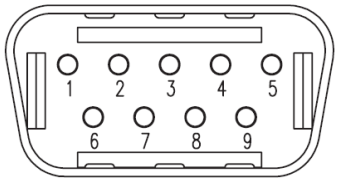
Under **Interface Type** select Serial

Under **Manufacturer** select Omron Corporation

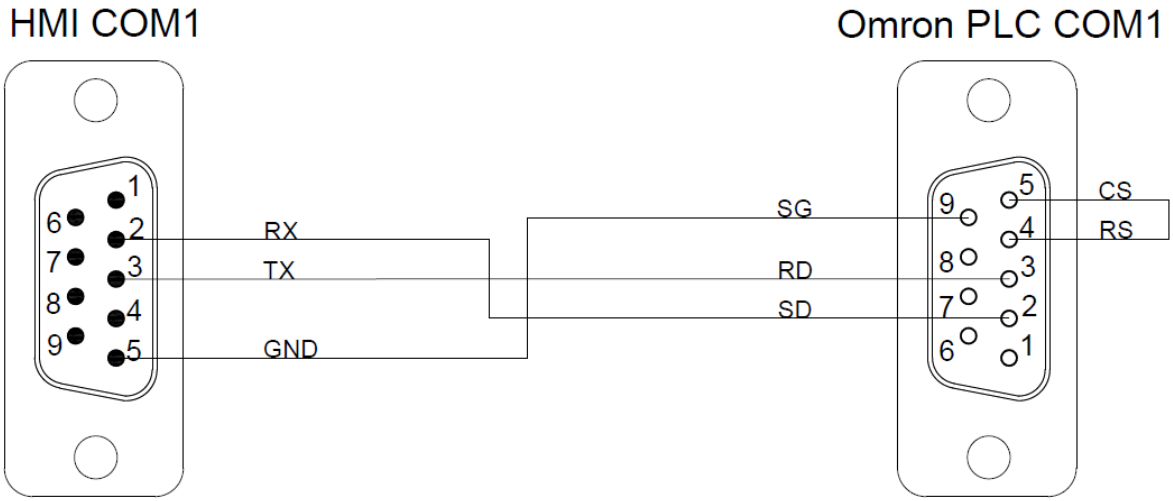
Under **Product Series** select Sysmac CQM Series (HOSTLINK)

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	



2.3.5 Sysmac CS/CJ Series (FINS)

2.3.5.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232/RS422	
Baud Rate	9600	
Data Length	7	
Stop Bit	2	
Parity	Even	
Device Station num.	0	
Communication Method	FINS	

2.3.5.2 PLC Resource

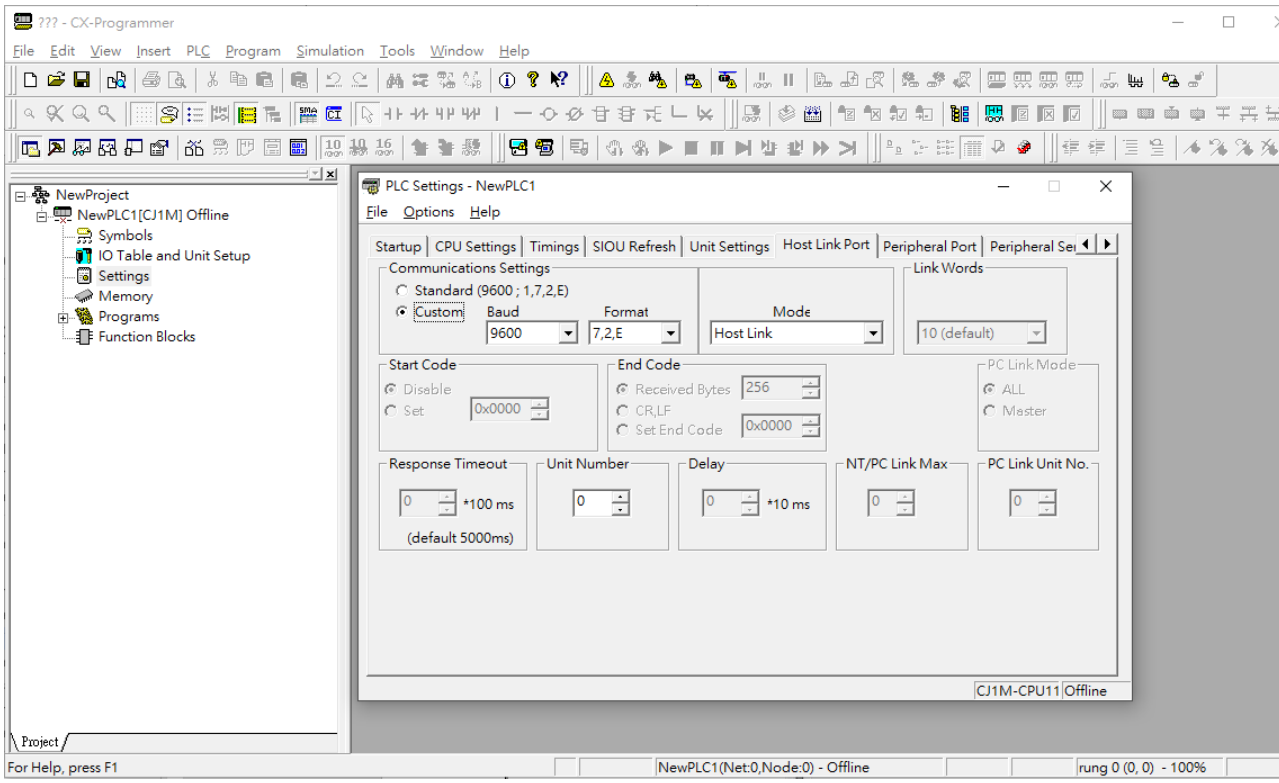
Device	Description	Data bit	Min.	Max.
TK	Task Flag	1	0	127
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Bit Area	16	0	1535
A	Auxiliary Bit Area	16	0	11535
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	DM Area	16	0	32767
E0	EM Bank 0	16	0	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

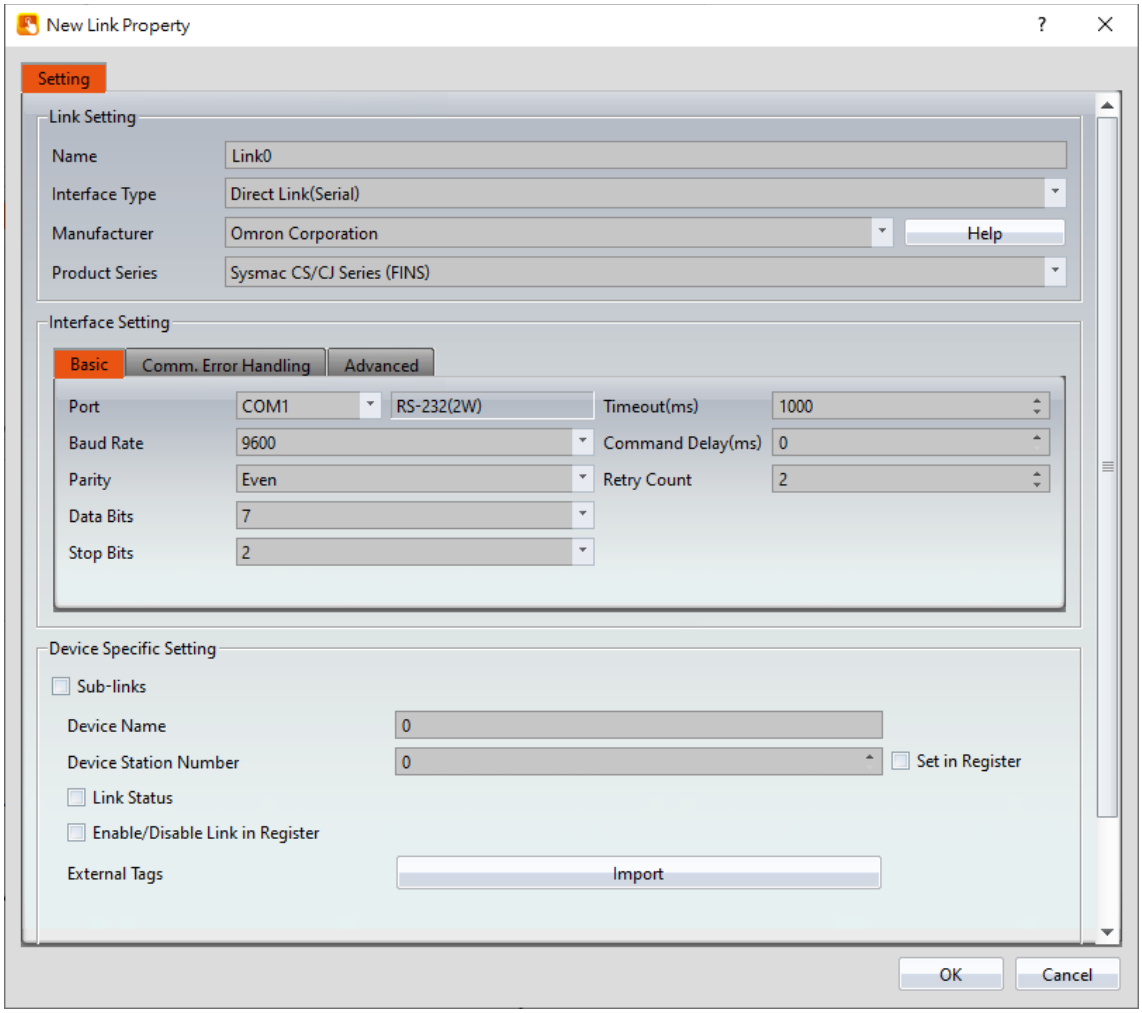
Configuring of PLC

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



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

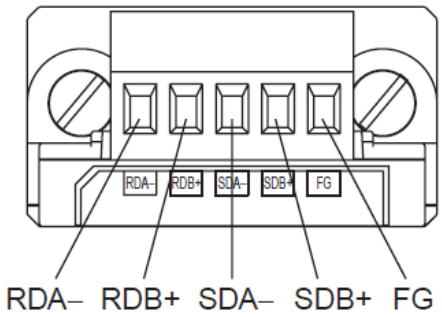
2.3.5.4 PLC Message

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

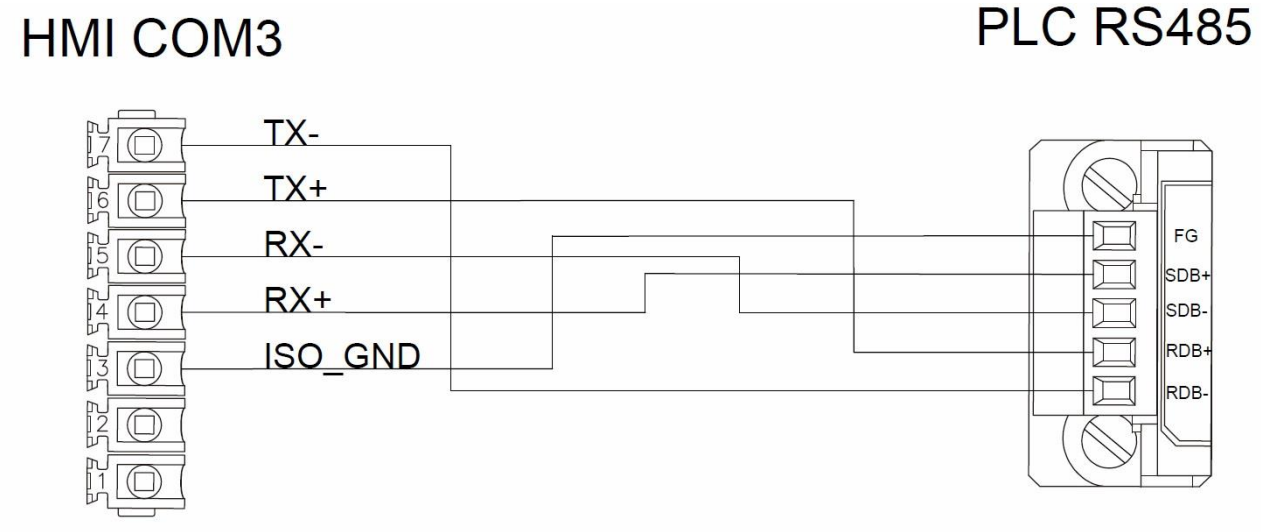


*Looking into HMI Device

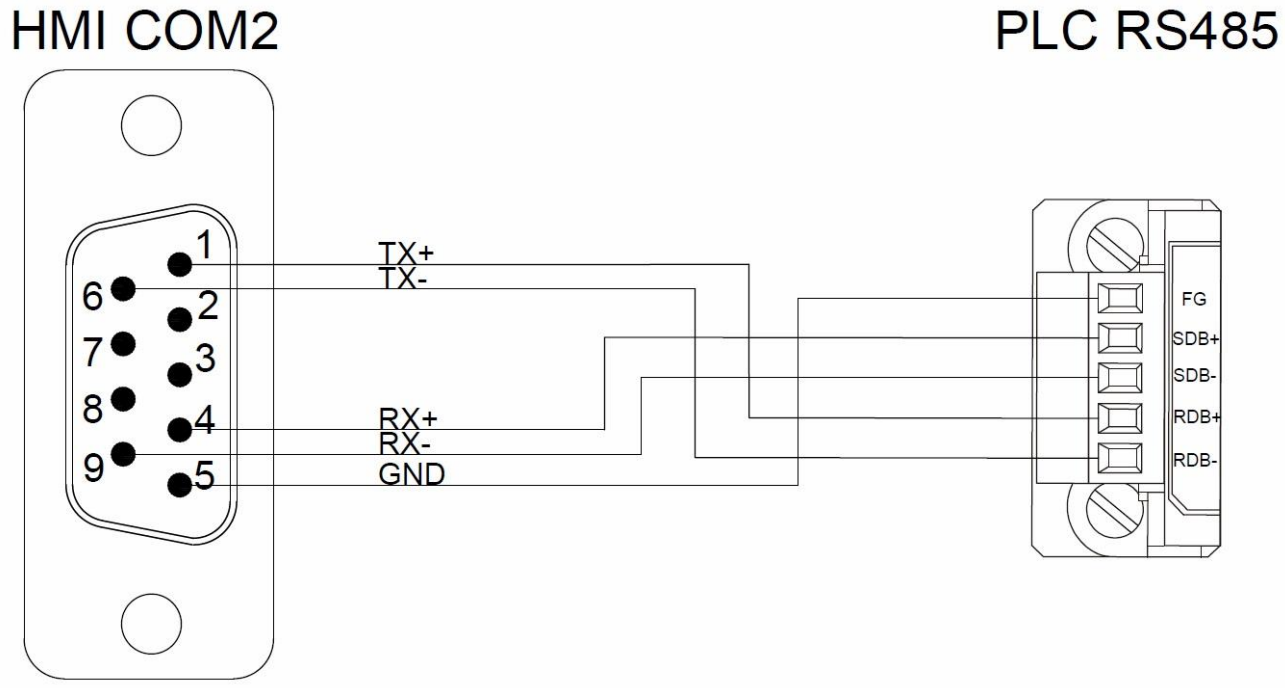
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	RX+
5	RX-
6	TX+
7	TX-

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

Wiring Diagrams



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



2.3.6 Sysmac CS/CJ Series (FINS/TCP)

2.3.6.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	To be configured
Port	9600	
Device Station num.	0	
Communication Method	FINS/TCP	

2.3.6.2 PLC Resource

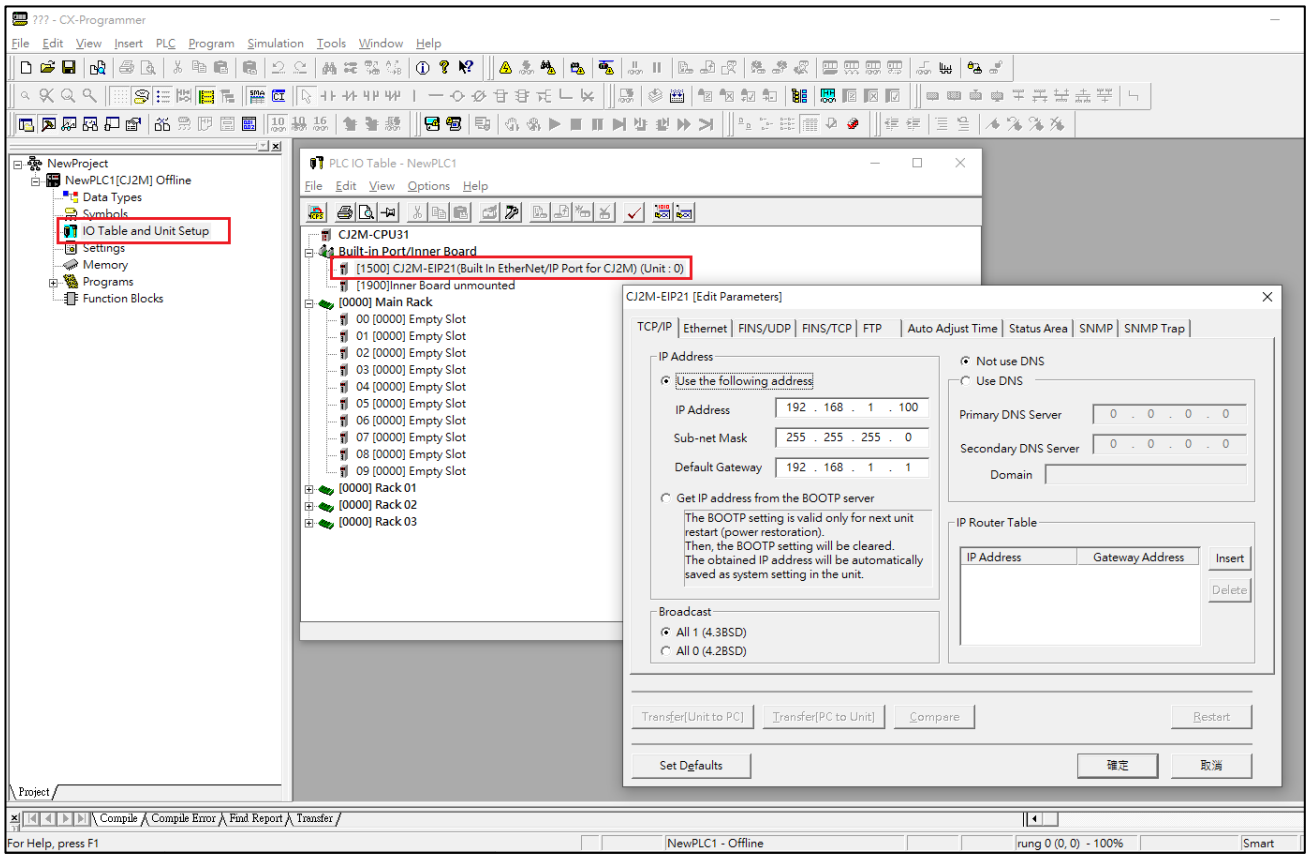
Device	Description	Data bit	Min.	Max.
TK	Task Flag	1	0	127
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Bit Area	16	0	1535
A	Auxiliary Bit Area	16	0	11535
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	DM Area	16	0	32767
E0	EM Bank 0	16	0	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

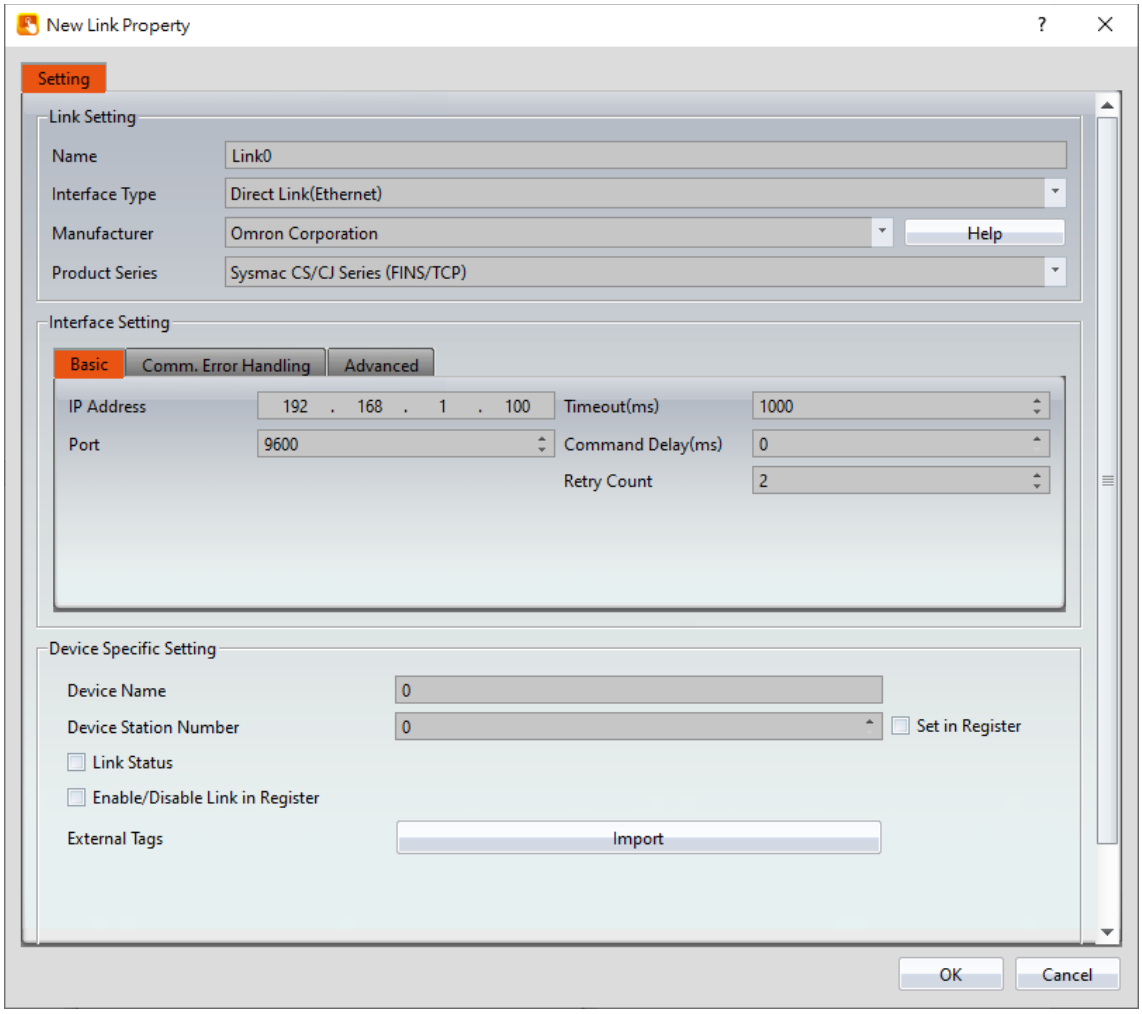
Configuring of PLC

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



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
Interface Type	Ethernet	
IP Address	192.168.250.1	
Port	9600	
Device Station num.	0	
Communication Method	FINS/UDP	

2.3.7.2 PLC Resource

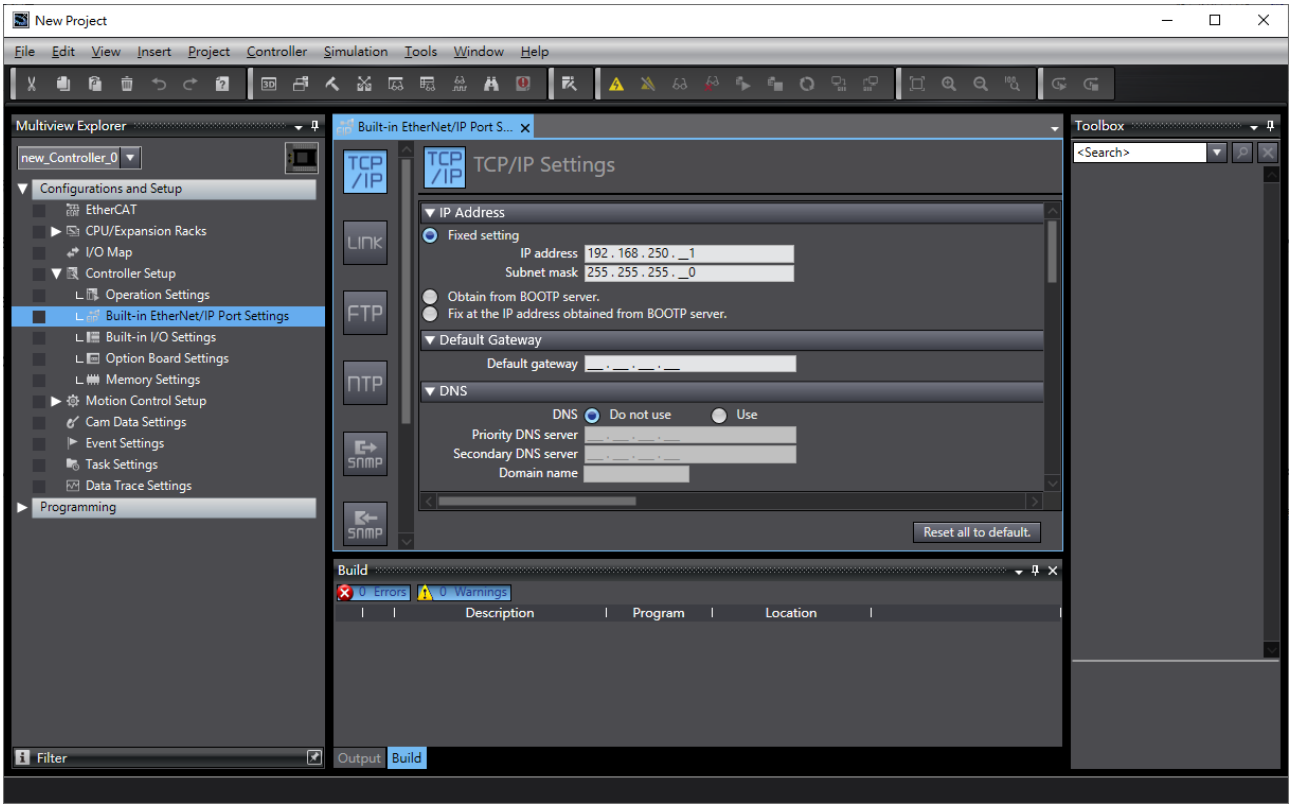
Device	Description	Data bit	Min	Max
TK	Task Flag	1	0	127
TIM	Timer Area	1	0	4095
CNT	Counter Area	1	0	4095
CIO	CIO Area	16	0	6143
W	Work Area	16	0	511
H	Holding Bit Area	16	0	1535
A	Auxiliary Bit Area	16	0	11535
T	Timer Area	16	0	4095
C	Counter Area	16	0	4095
D	DM Area	16	0	32767
E0_	EM Bank 0	16	0	32767
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

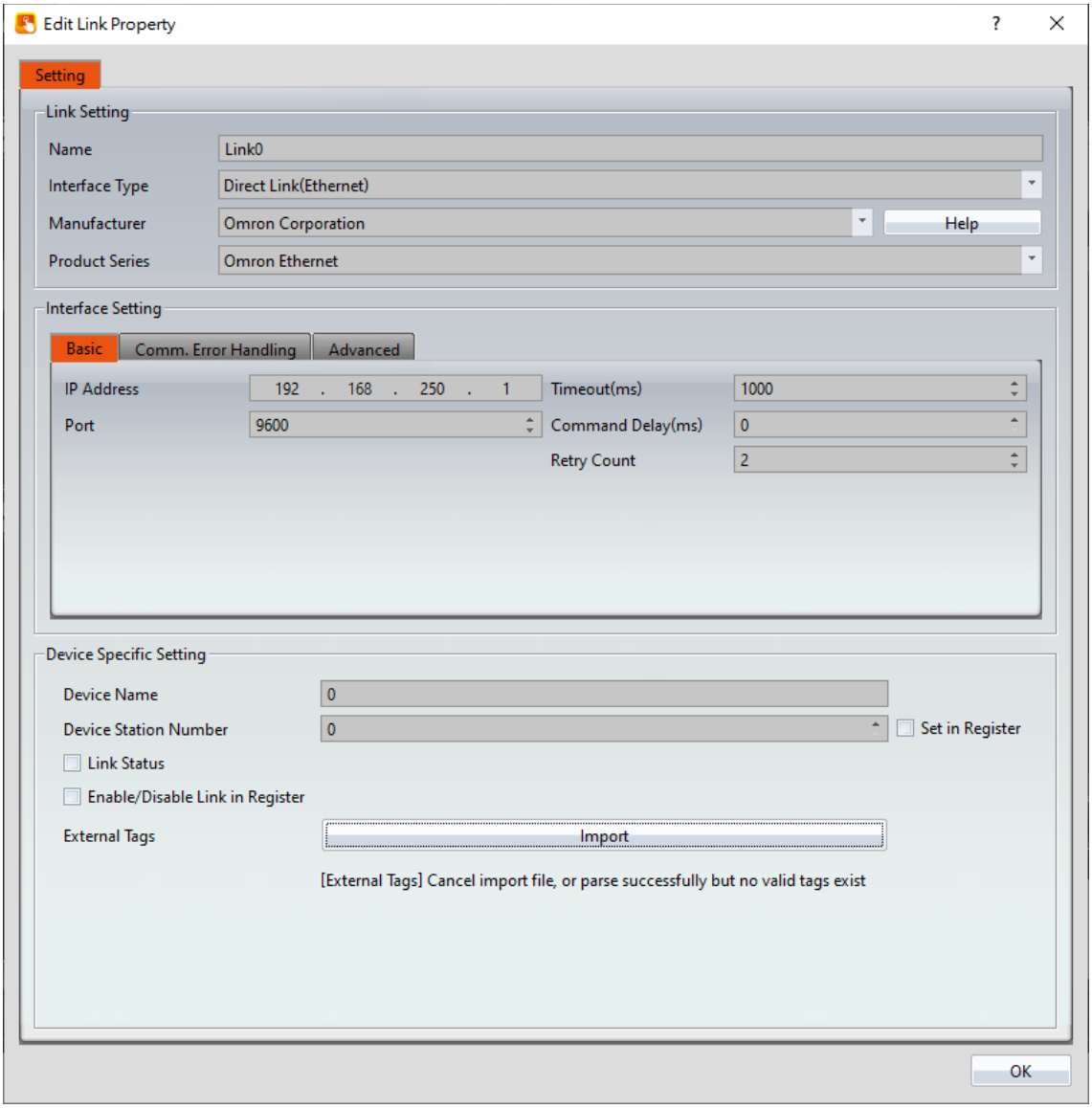
Configuring of PLC

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



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
Interface Type	Ethernet	
IP Address	192.168.250.1	
Port	44818	
Device Station num.	1	
Communication Method	EtherNet/IP	

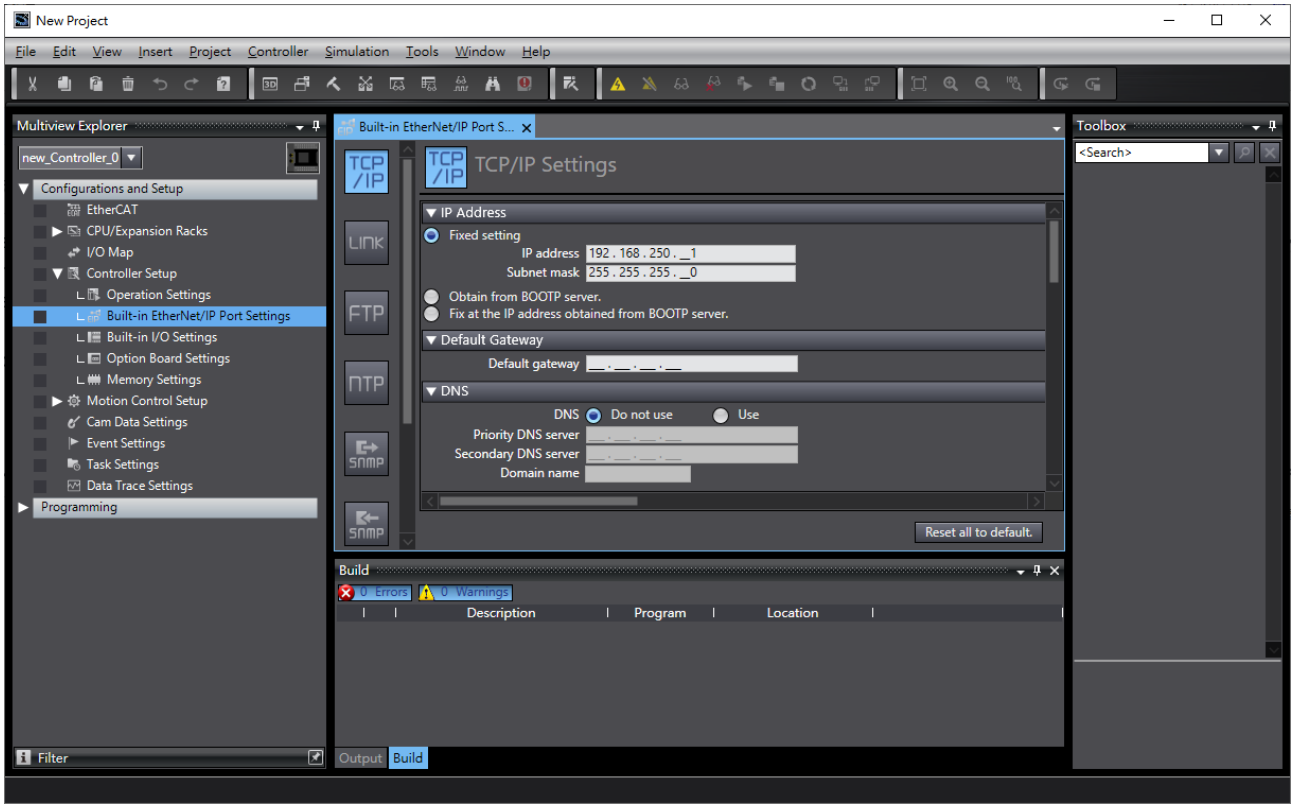
2.3.8.2 PLC Resource

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

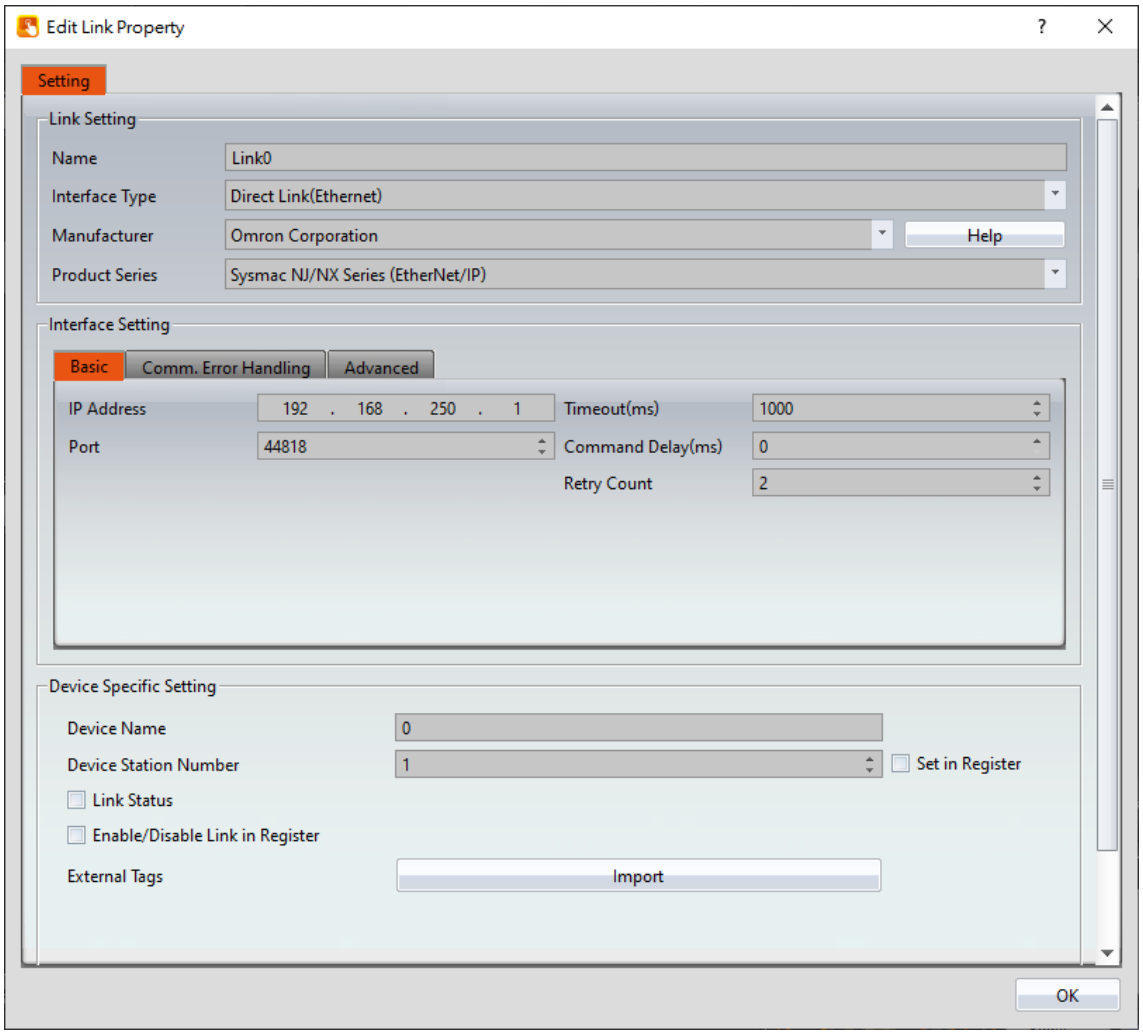
Configuring of PLC

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



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

Under **Interface Type** select Ethernet

Under **Manufacturer** select Omron Corporation

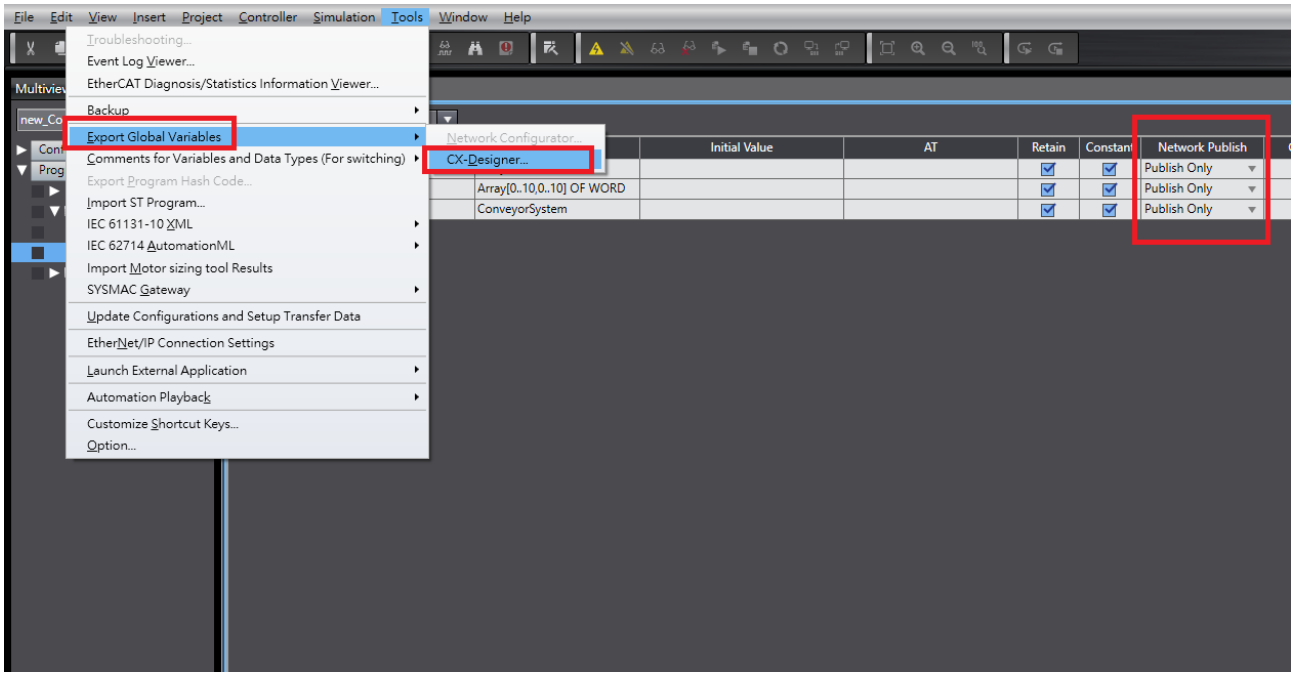
Under **Product Series** select SYSMAC NJ/NX Series(EtherNet/IP)

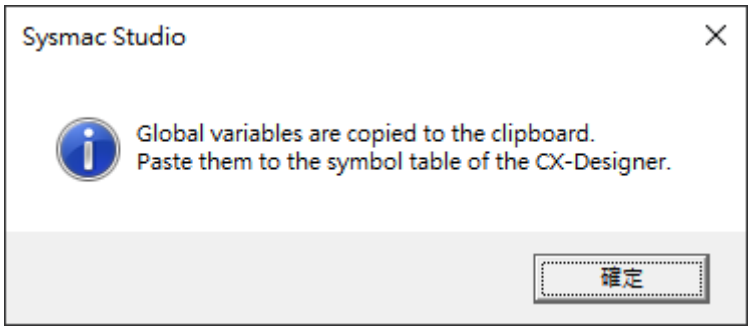
Enter the IP Address that was written into the PLC

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...

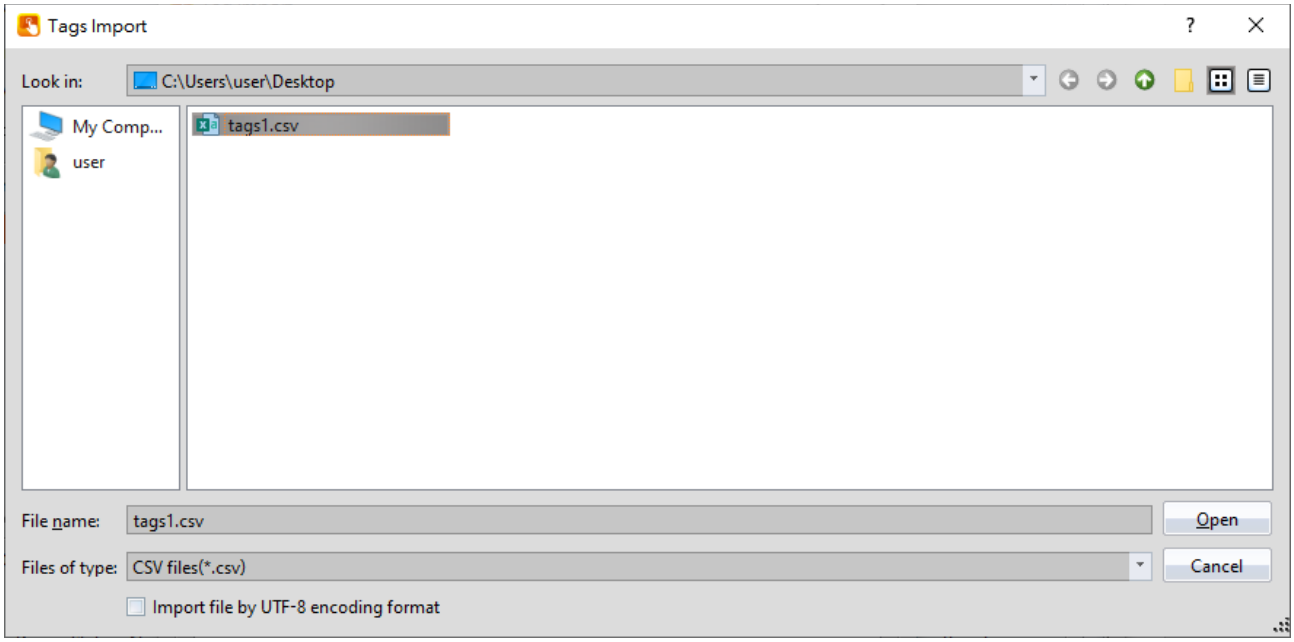


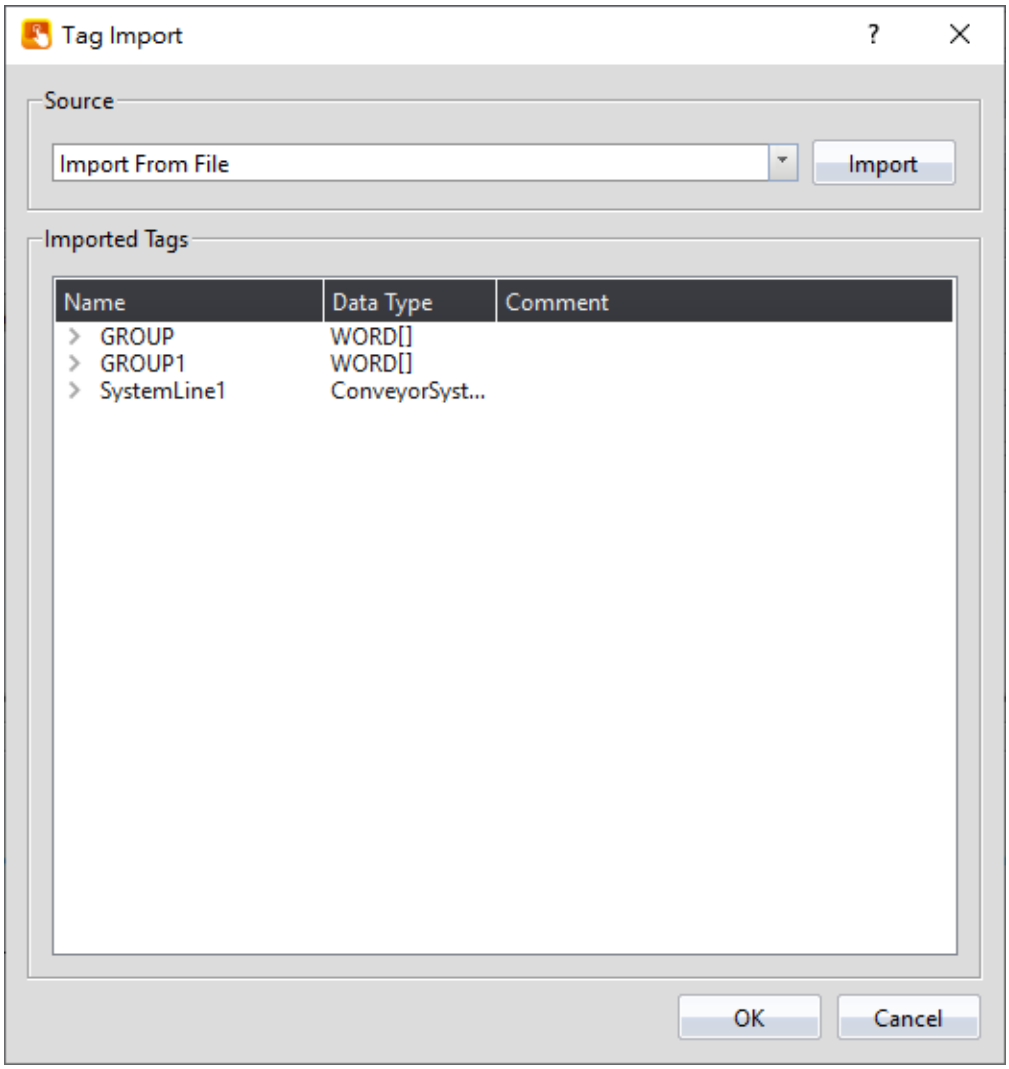


Paste the copied information into Excel, and choose "CSV (Comma delimited) (*.csv)" as the file type for saving.

	A	B	C	D	E	F	G	H
1	HOST	NAME	DATATYP	ADDRESS	COMMEN	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
Interface Type	Ethernet	
IP Address	192.168.250.1	
Port	9600	
Device Station num.	0	
Communication Method	FINS/TCP	

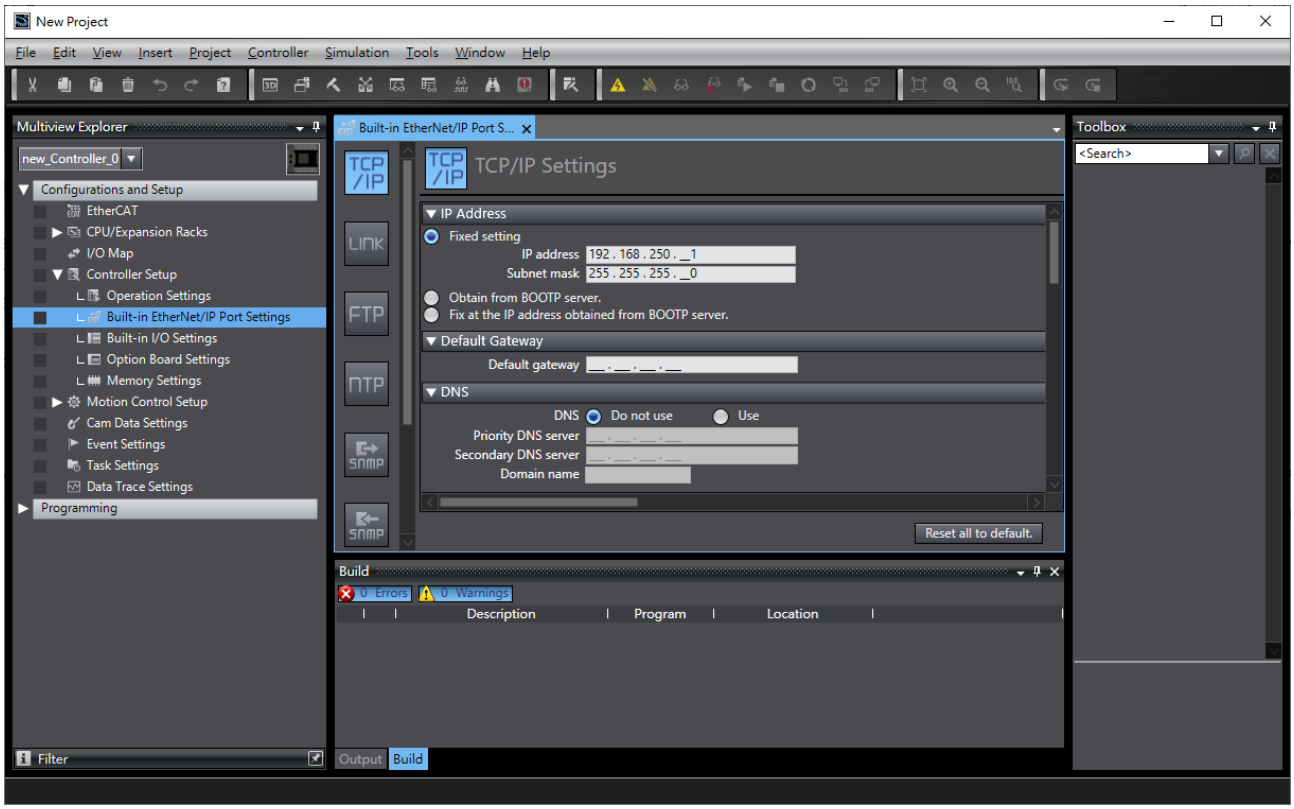
2.3.9.2 PLC Resource

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

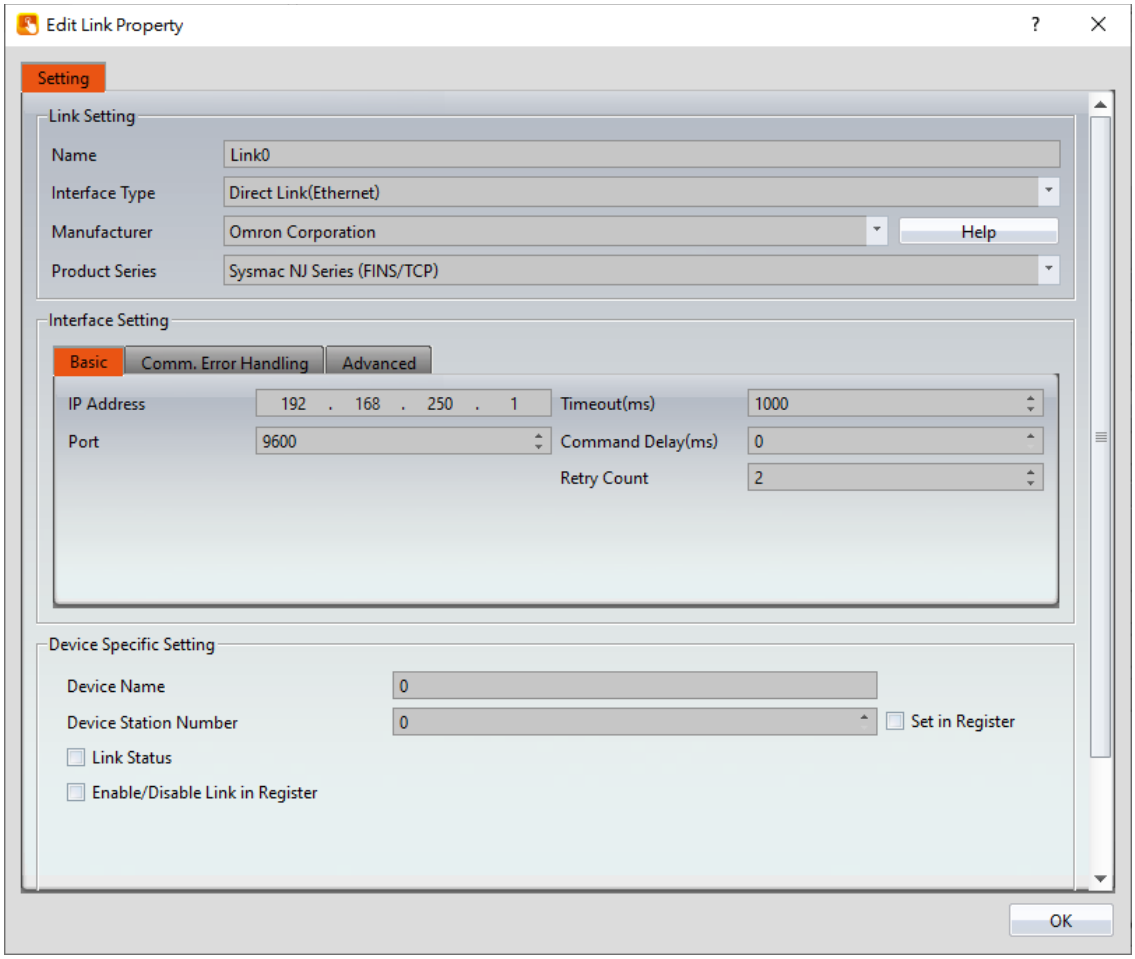
Configuring of PLC

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



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

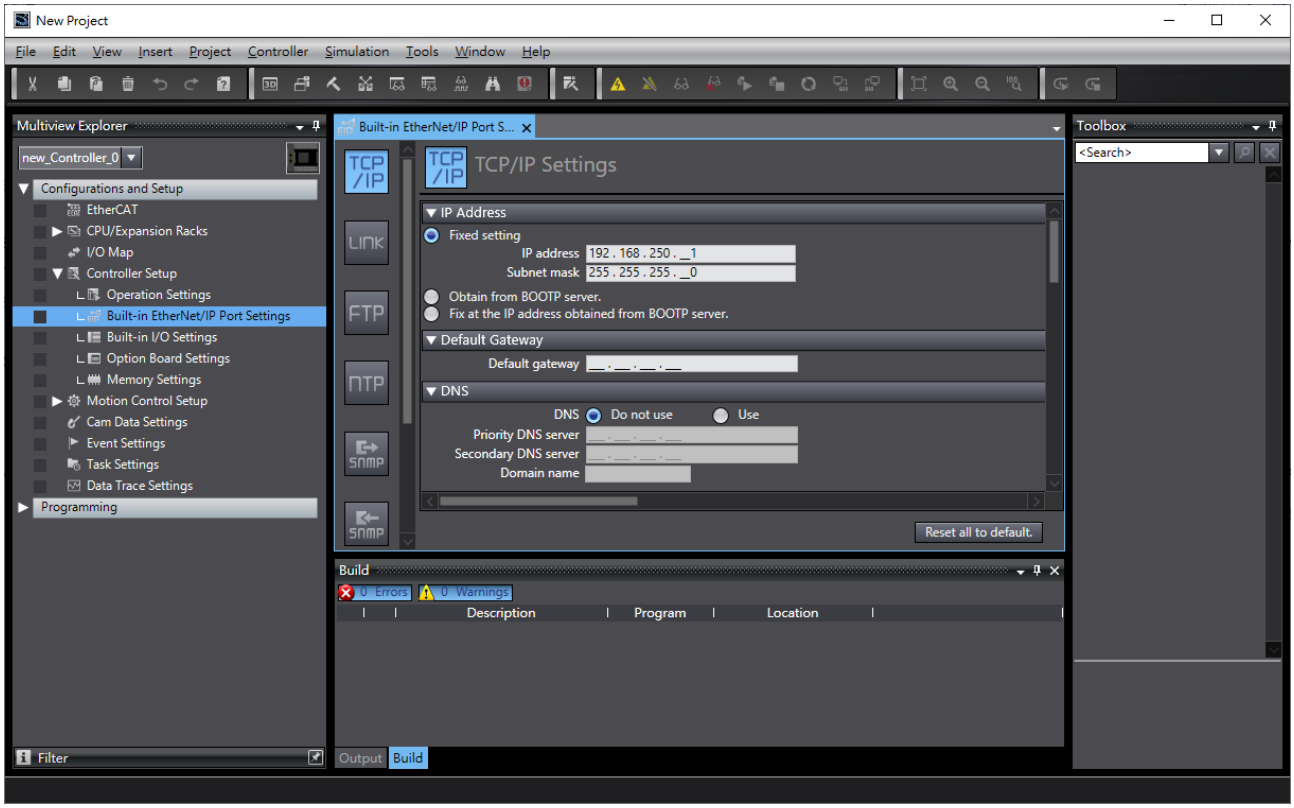
Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.250.1	
Port	9600	
Device Station num.	0	
Communication Method	FINS/UDP	

2.3.10.2 PLC Resource

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

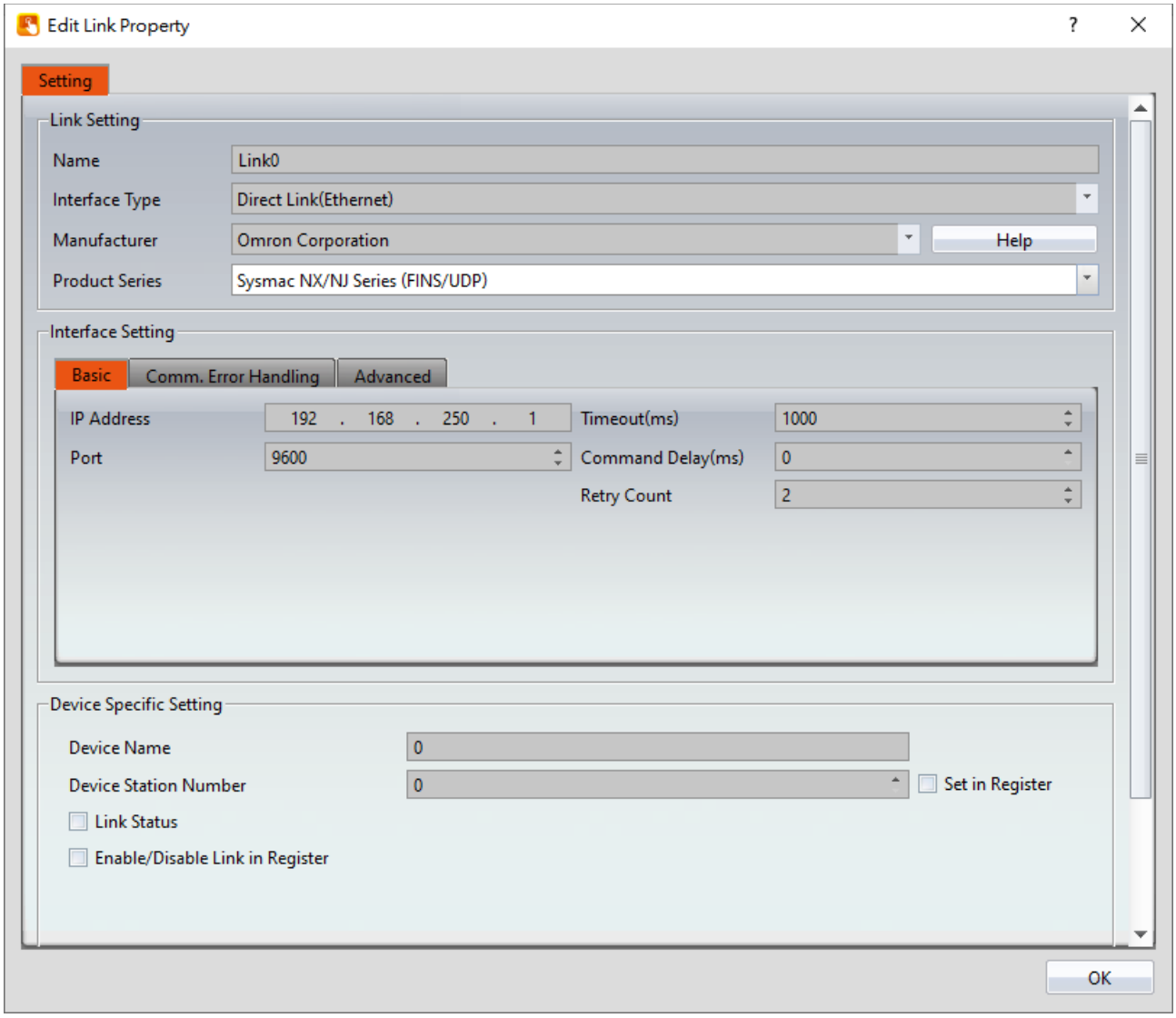
2.3.10.3 Connected Setting

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



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
Interface Type	RS485 2W	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	2	
Communication Method	PPI	

2.4.1.2 PLC Resource

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

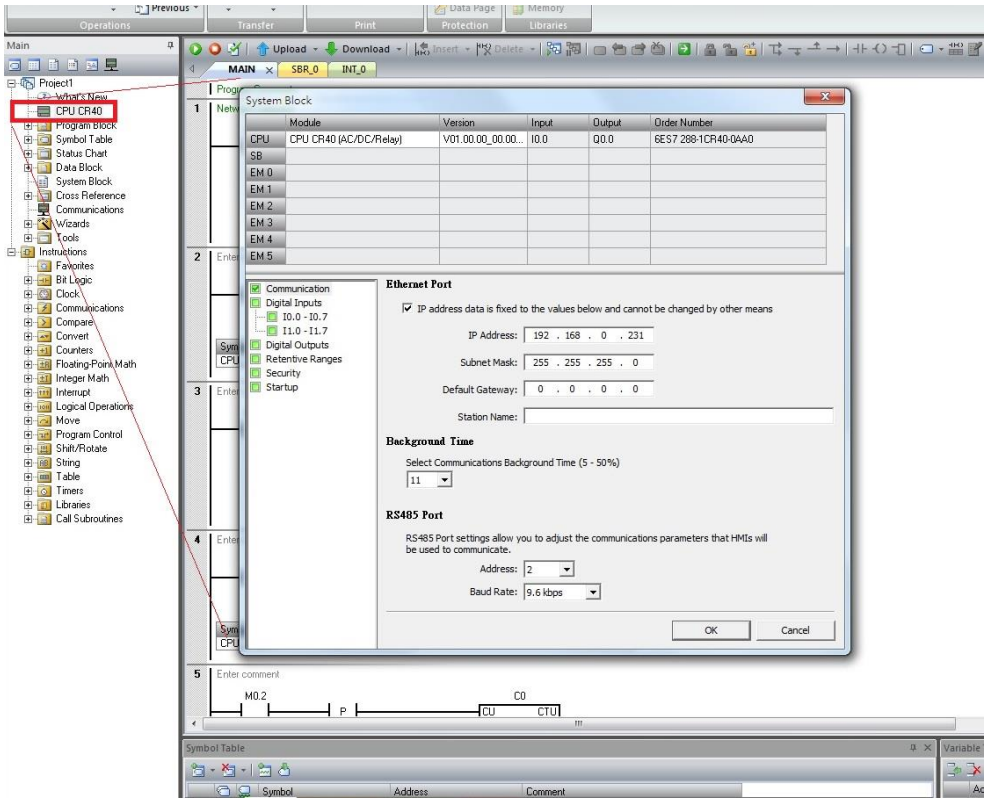
AQW	Analog Output	16	0	111

2.4.1.3 Connected Setting

Configuring of PLC

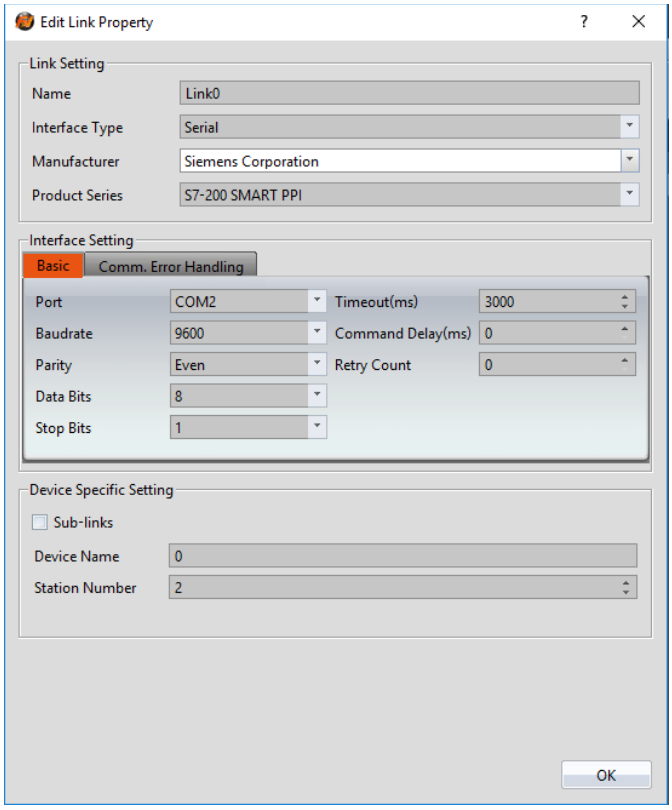
Use **Step7 microWIN smart** to configure the port of the PLC.

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



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

Under **Interface Type** select Serial

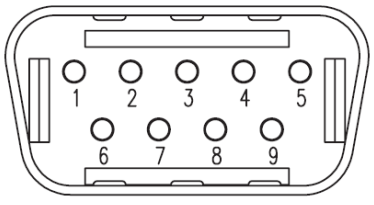
Under **Manufacturer** select Siemens Corporation

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

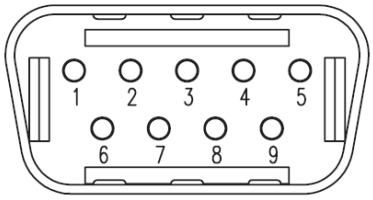


*Looking into male RS485 Cable

PIN#	Signal
1	
2	

3	DATA+
4	
5	GND
6	
7	
8	DATA-
9	

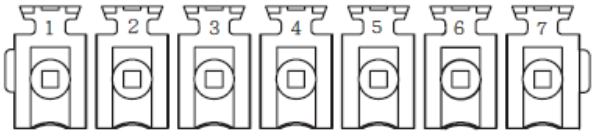
HMI COM2



*Looking into HMI

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

HMI COM3 Pinout



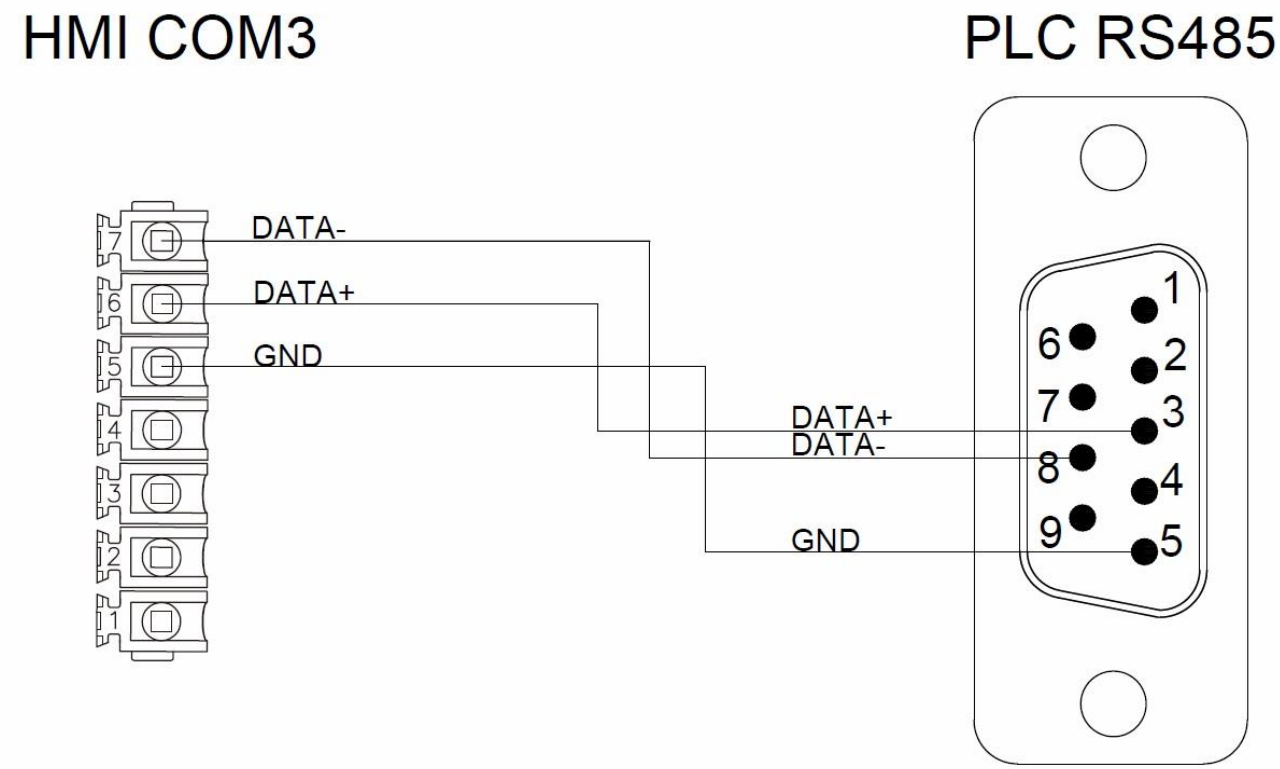
*Looking into HMI Device

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

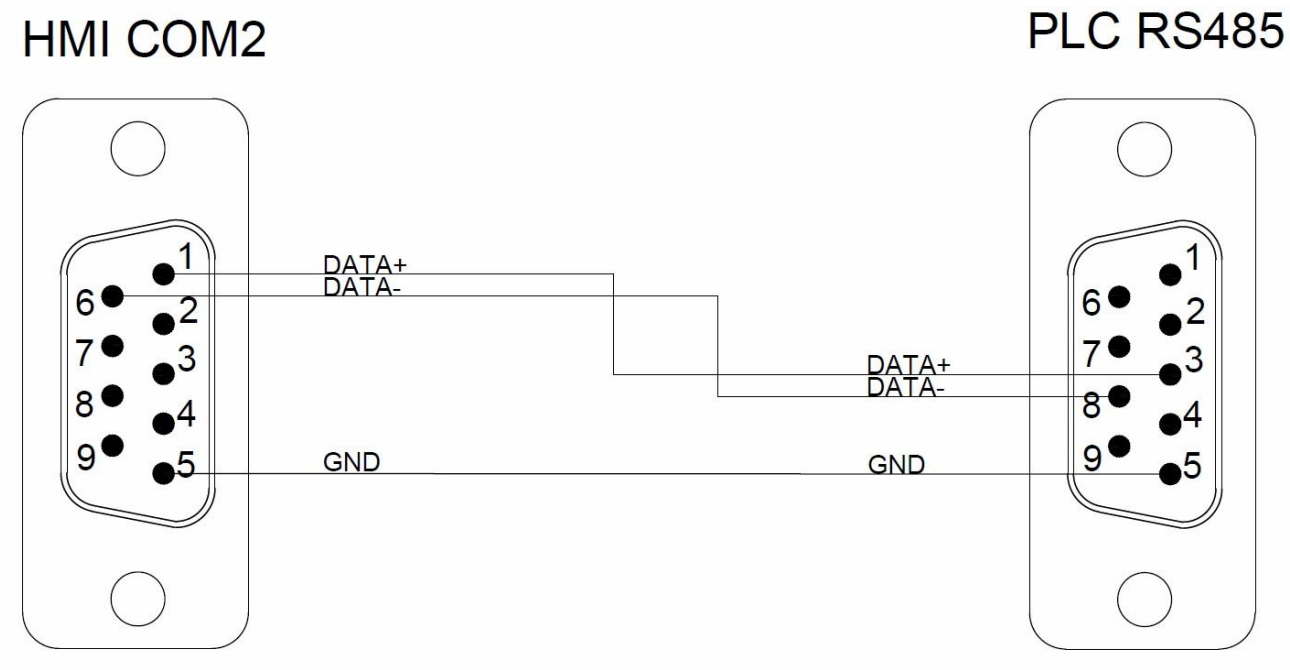
4	
5	
6	DATA+
7	DATA-

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

Wiring Diagrams



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


HMI COM2
PLC RS485
1
6
2
7
3
8
4
9
5
DATA+
DATA-
GND
DATA+
DATA-
GND

2.4.2 Siemens S7-200 SMART Ethernet

2.4.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	To be configured
Port	102	
Device Station num.	0	
Communication Method	ISO TCP	

2.4.2.2 PLC Resource

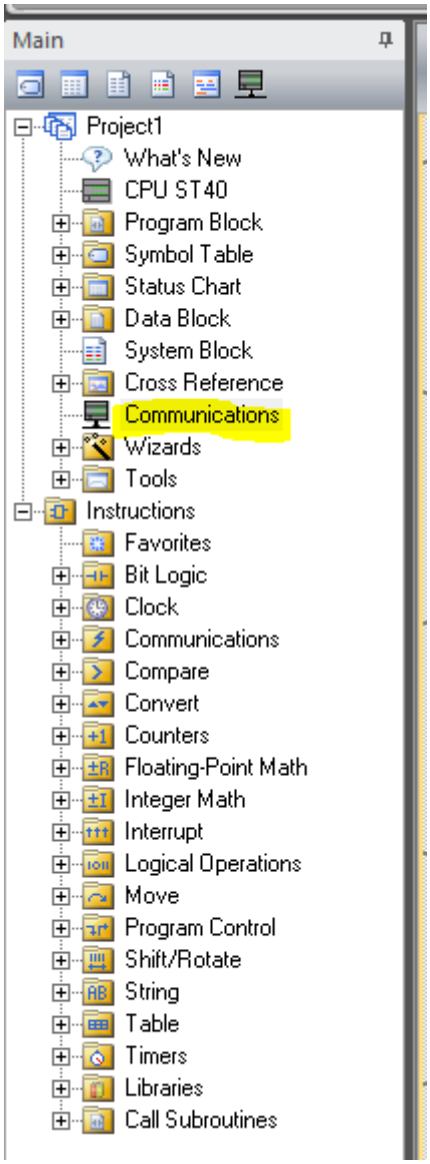
Device	Description	Data bit	Min.	Max.
I	Input	1	0	31.7
Q	Output	1	0	31.7
M	Bit Memory	1	0	31.7
V	Variable Memory	1	0	20479.7
C	Counter	1	0	255
T	Timer	1	0	255
S	Sequential Control Relays	1	0	31.7
SM	Special Memory Bit	1	0	1535.7
IW	Input	16	0	31
QW	Output	16	0	31
TW	Timer	16	0	255
CW	Counter	16	0	255
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

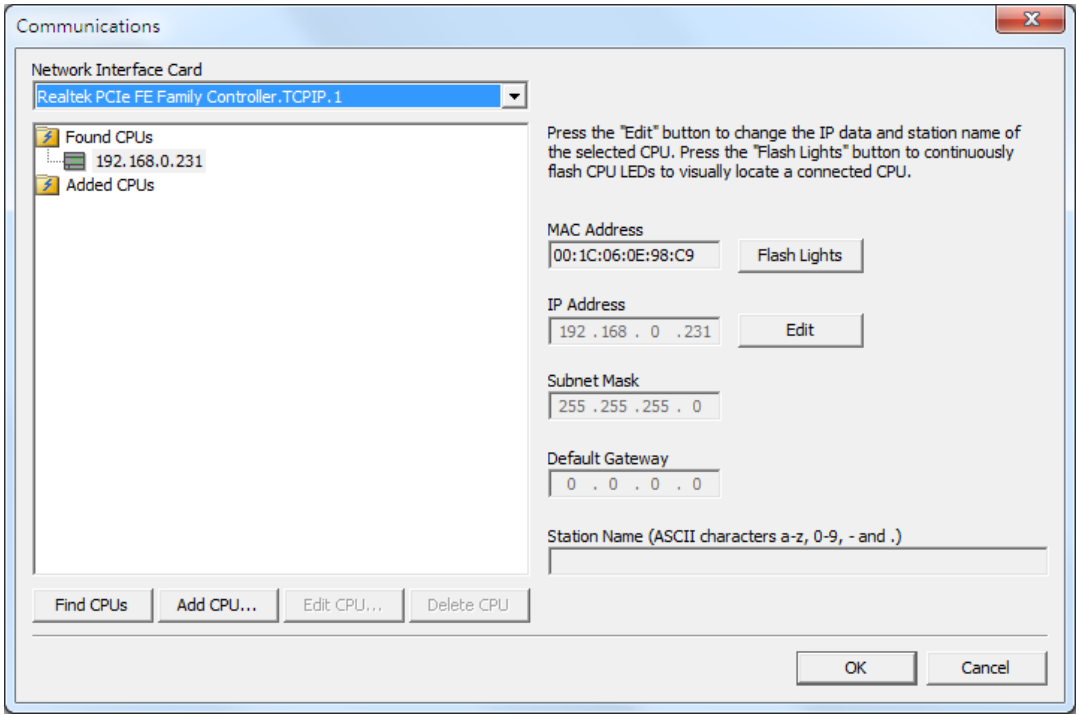
Configuring IP Address on PLC

Use the application **STEP 7-MicroWIN SMART** to configure the IP address of the PLC.

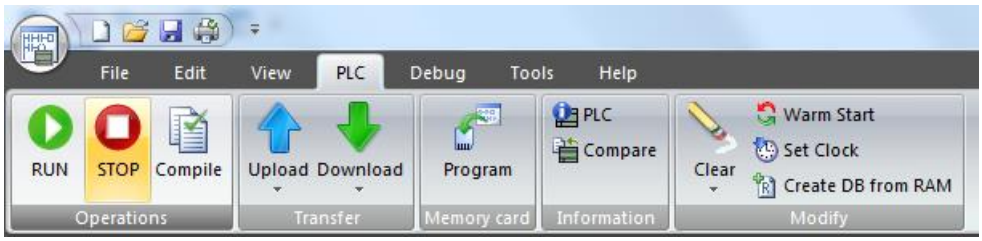
Under the **Project**, press the **Communications** option to connect to the PLC over the local network.



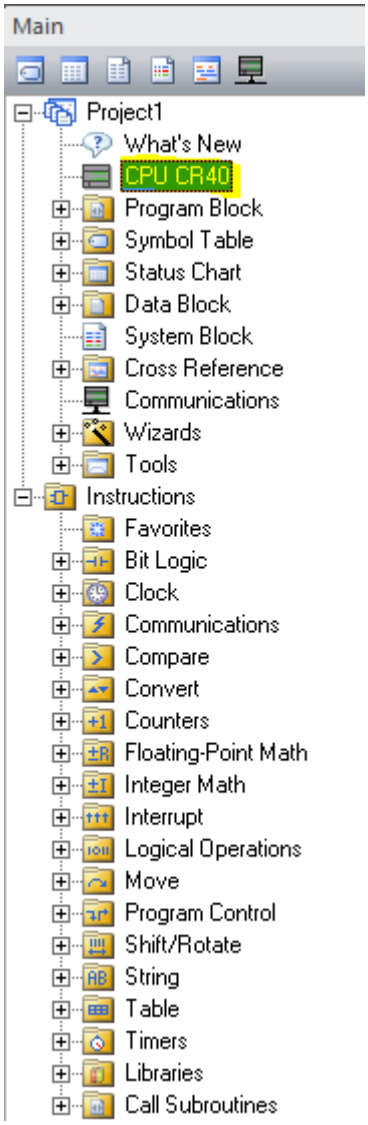
Under Network interface, select one of the options to scan the local network. The IP address of the PLC will show up. The MAC address can be verified with the one on the PLC.



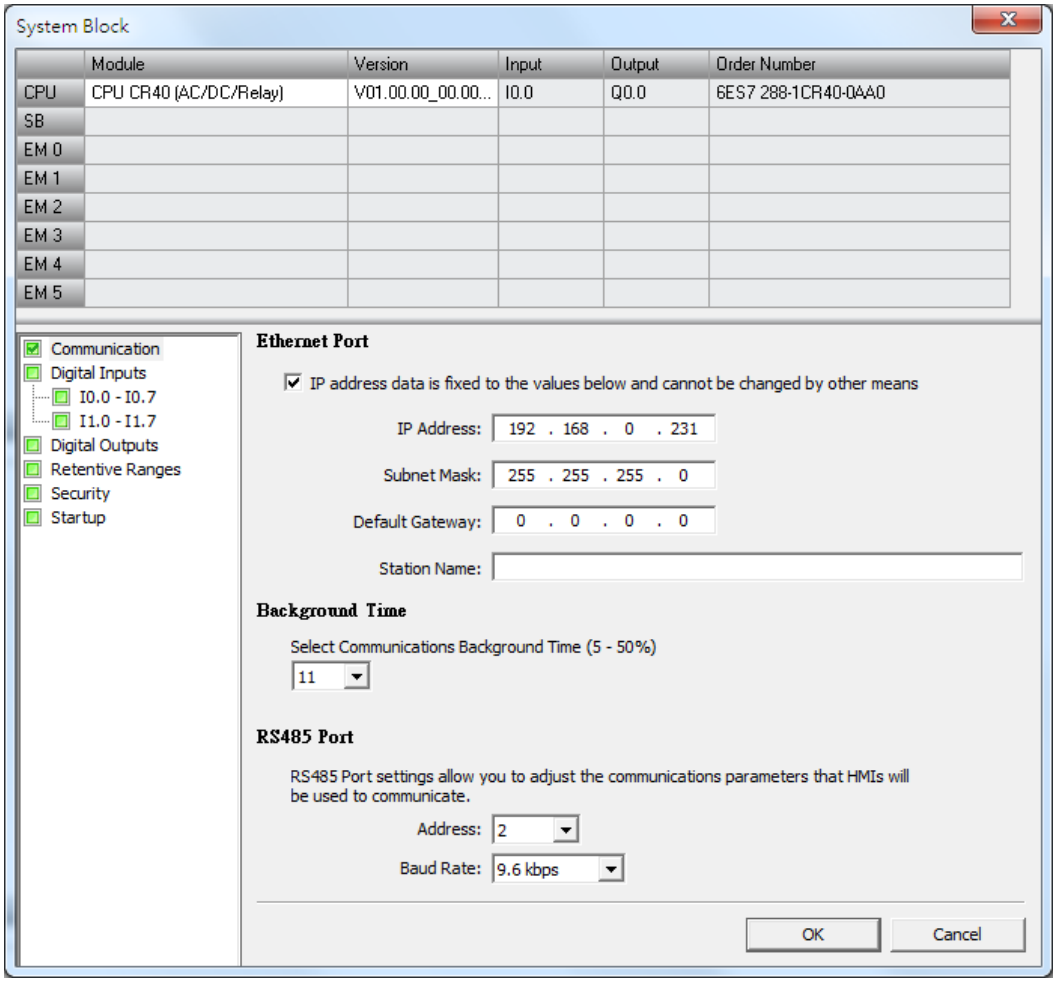
Navigate to the PLC tab and select to upload the PLC program onto the computer.



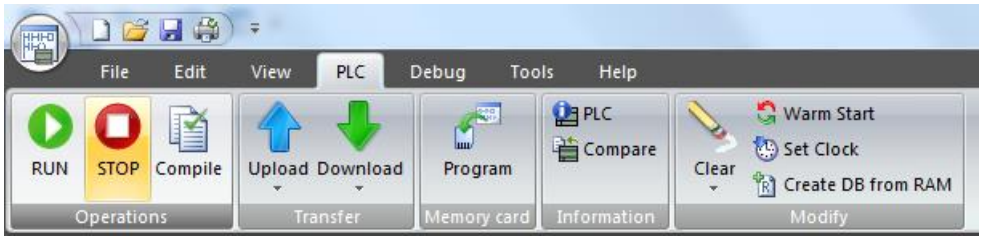
On the sidebar, right click CPU CR40 and select the first option. A dialog window will open up.



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:

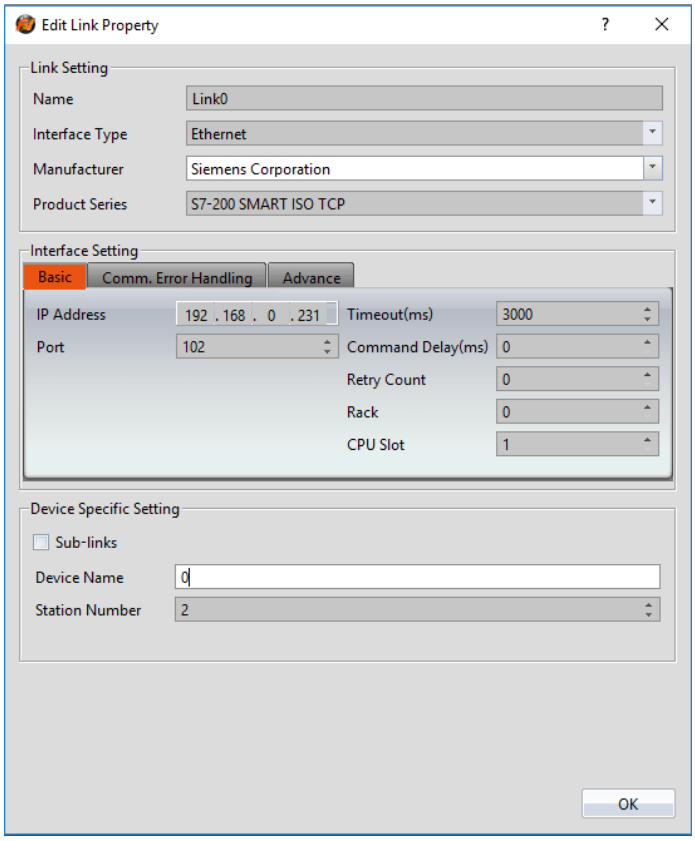
Under **Interface Type** select Ethernet

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.


Edit Link Property
Link Setting
Name
Link0
Interface Type
Ethernet
Manufacturer
Siemens Corporation
Product Series
S7-200 SMART ISO TCP
Interface Setting
Basic
Comm. Error Handling
Advance
IP Address
192 . 168 . 0 . 231
Port
102
Timeout(ms)
3000
Command Delay(ms)
0
Retry Count
0
Rack
0
CPU Slot
1
Device Specific Setting
Sub-links
Device Name
0
Station Number
2
OK

2.4.3 Siemens S7-1200/1500 Ethernet

2.4.3.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	0.0.0.0	To be configured
Port	102	
Device Station num.	0	
Communication Method	ISO TCP	

2.4.3.2 PLC Resource

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.

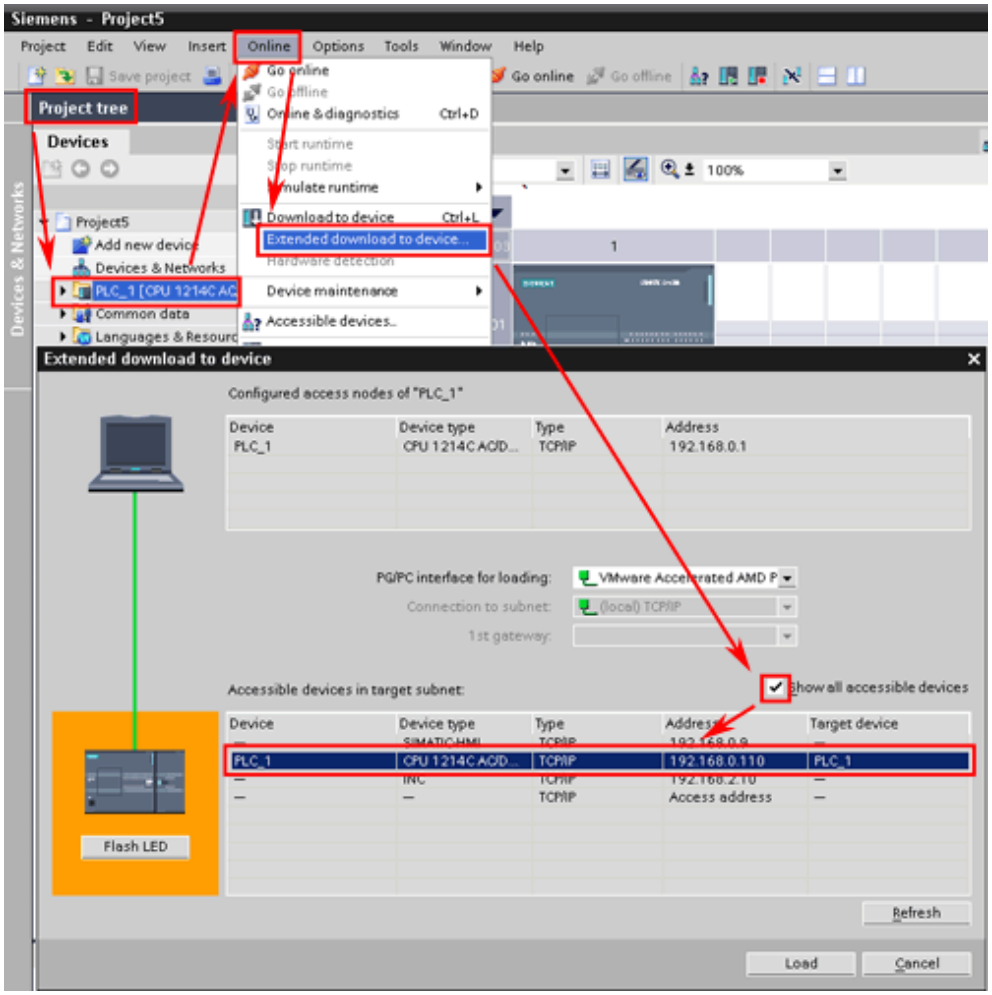
2.4.3.4 Connected Setting

Configuring IP Address on PLC

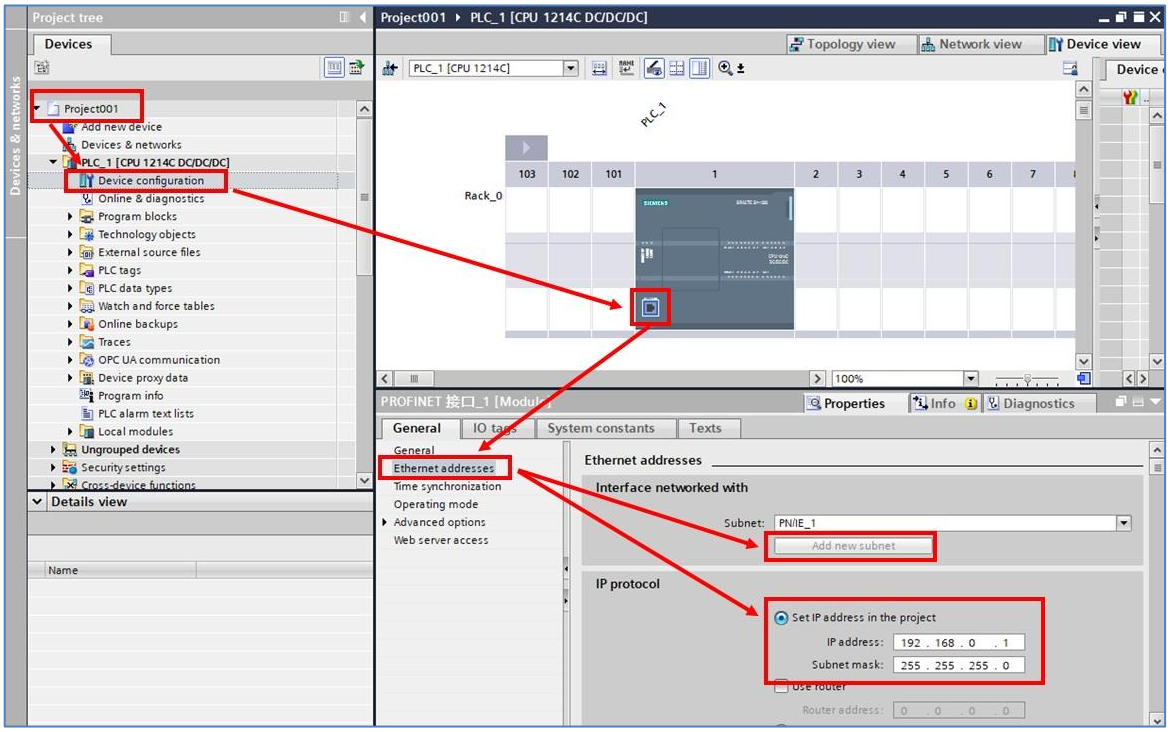
Use the application **TIA Portal** to configure the IP address on the PLC.

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.

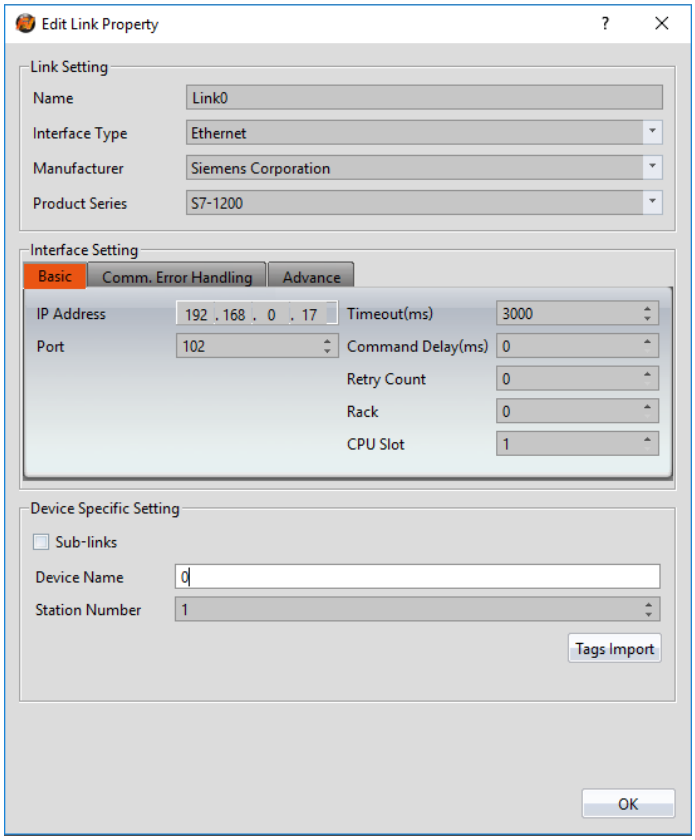


Under the device in the project tree, select **Device configuration** and click the Ethernet port on the device image. Under the **Ethernet addresses** menu option, the IP address can be configured, and need **Add new Subnet**.



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 S7-1200

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
Interface Type	RS485 2W	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	2	
Communication Method	PPI	

2.4.4.2 PLC Resource

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

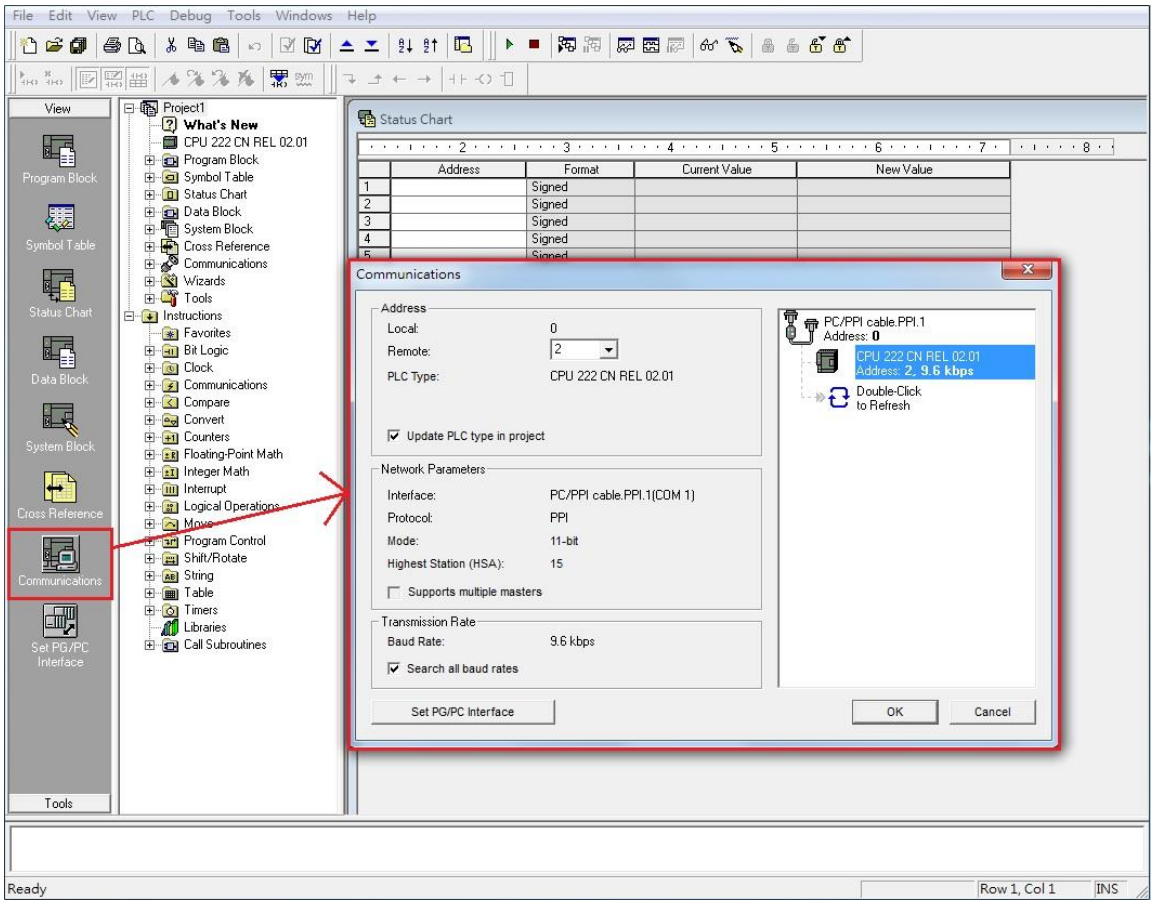
MD	Word Memory	32	0	28
SD	SCR	32	0	28
VD	V Memory	32	0	10236
SMD	Special Memory	32	0	546

2.4.4.3 Connected Setting

Configuring of PLC

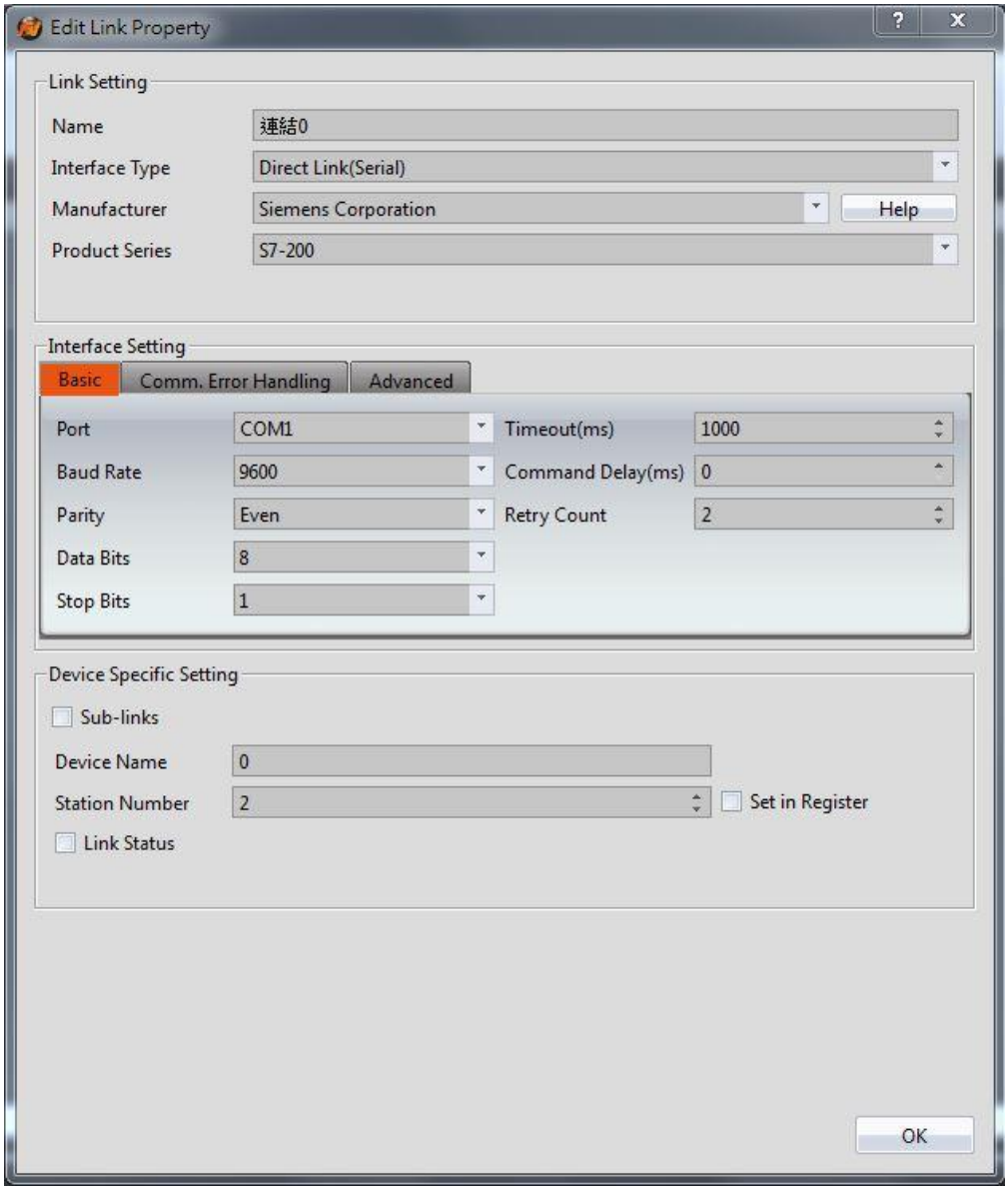
Use Step7 MicroWIN SP9 to configure the port of the PLC.

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

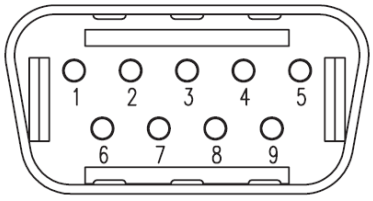
Under **Manufacturer** select Siemens Corporation

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

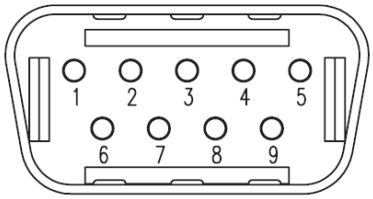
PLC RS485 Port



*Looking into male RS485 Cable

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

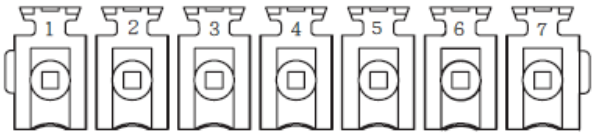
HMI COM2



*Looking into HMI

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

HMI COM3 Pinout

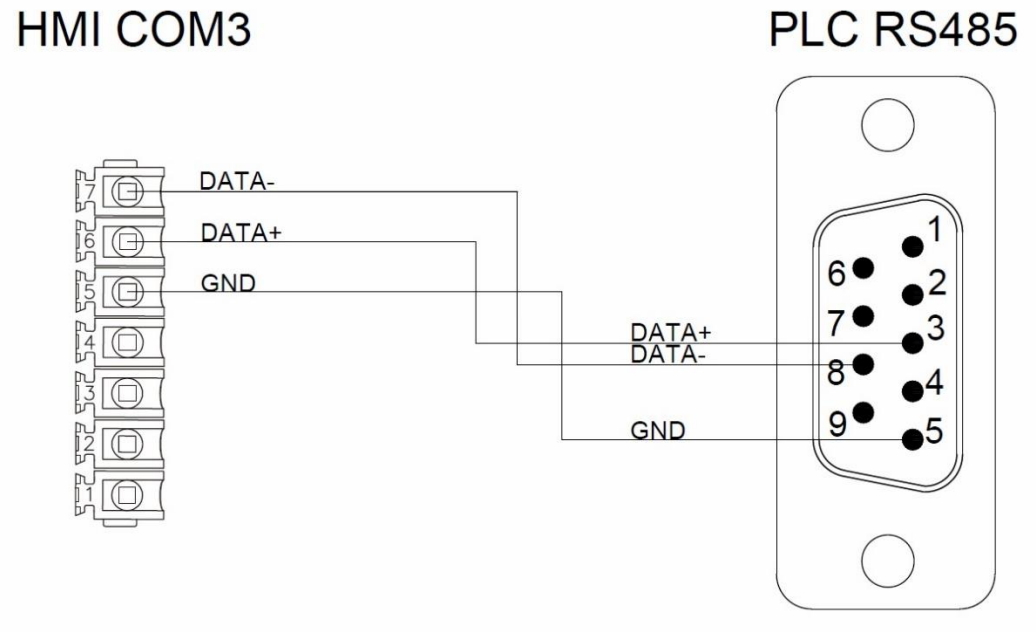


*Looking into HMI Device

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

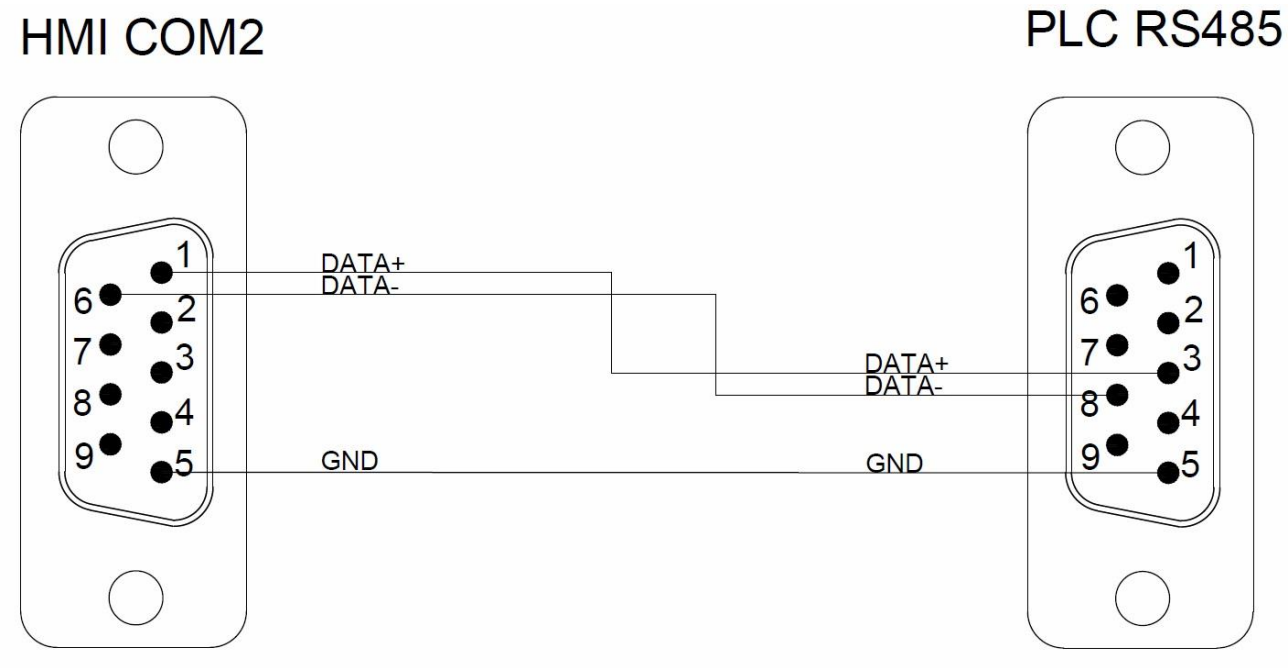
HMI COM3 Port	PLC RS485 Port
6 DATA+	3 DATA+
7 DATA-	8 DATA-
5 GND	5 GND

Wiring Diagrams



HMI COM3 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
Interface Type	Ethernet	
IP Address	0.0.0.0	To be configured
Port	102	
Device Station num.	0	
Communication Method	ISO TCP	
Model	0BA8	0BA7/0BA8
Local TSAP	1000	HEX
Remote TSAP	2100	HEX

2.4.5.2 PLC Resource

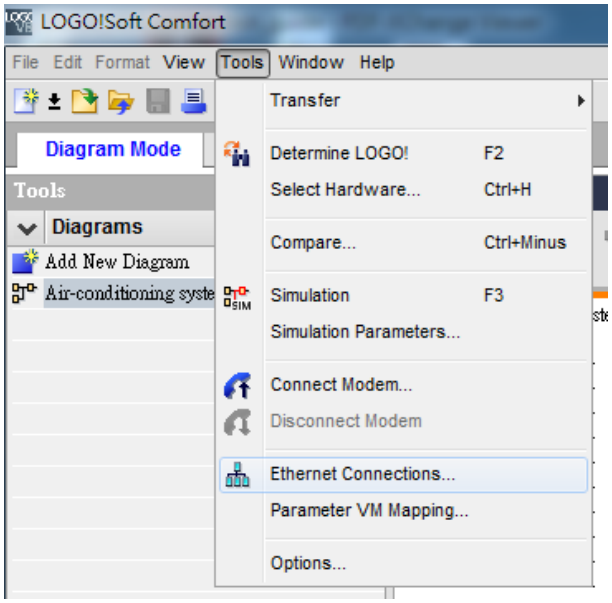
Device	Description	Data bit	Min.	Max.
I	Input	1	1	64
Q	Output	1	1	64
M	Bit Memory	1	1	112
V	Variable Memory	1	0.0	1469.7
AI	Analog Input	16	1	16
AQ	Analog Ouput	16	1	16
AM	Analog Memory	16	1	64
VW		16	0	1468
VD		32	0	1466

2.4.5.3 Connected Setting

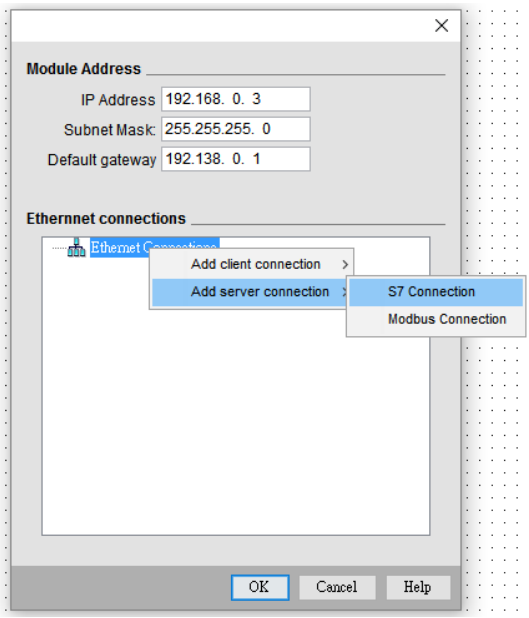
Configuring IP Address on PLC

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

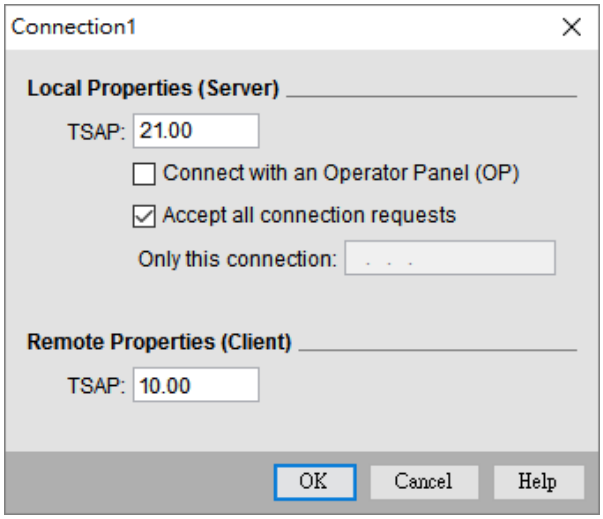
Under the **Online** menu option, select **Ethernet Connections.**



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

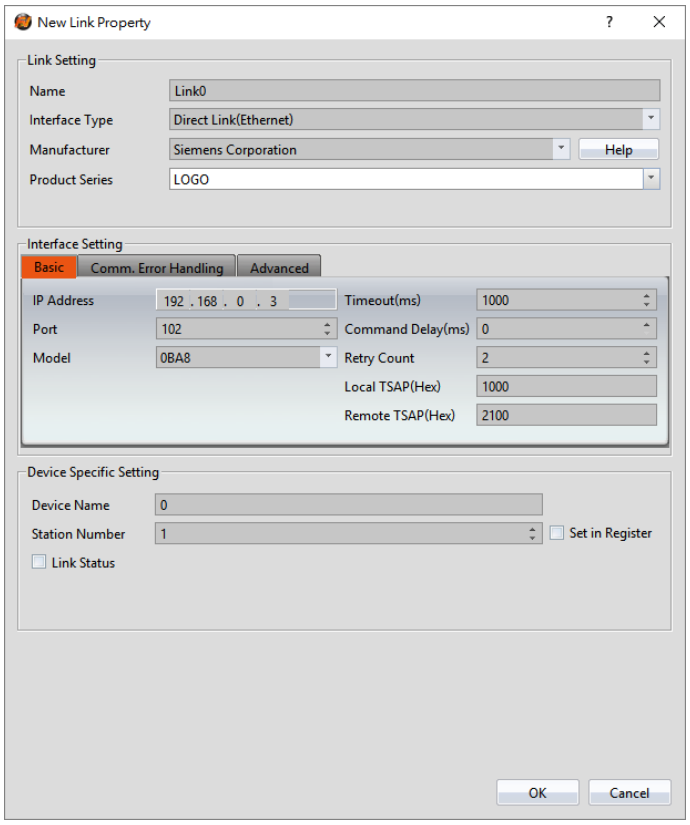


Enable **Accept all connection requests**, And setting TSAP for **Remote Properties(Client)**



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 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
Interface Type	RS232C	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	0	
Communication Method	h protocol	

2.5.1.2 PLC Resource

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

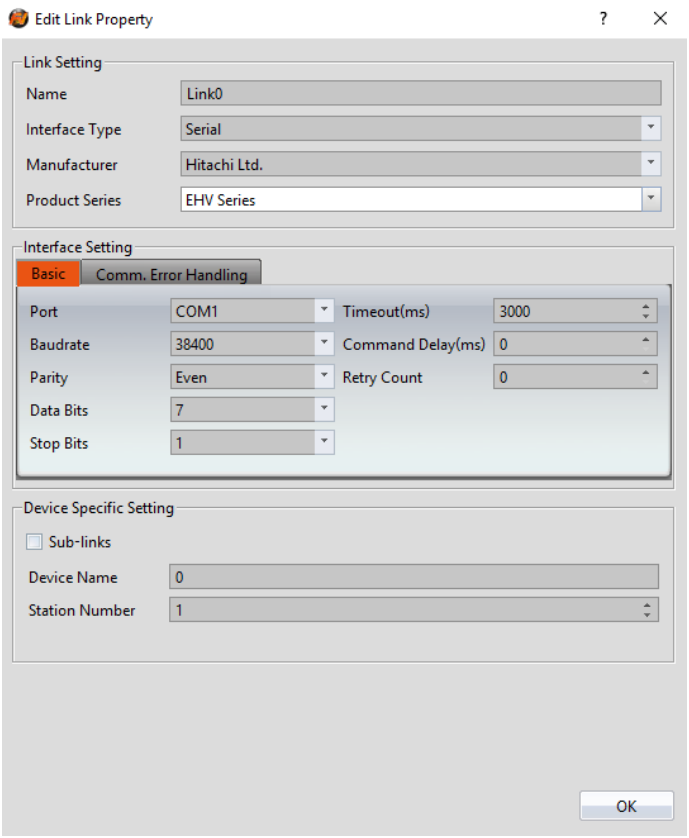
Within the **Link** configuration window in FvDesigner:

Under **Interface Type** select Serial

Under **Manufacturer** select Hitachi Ltd.

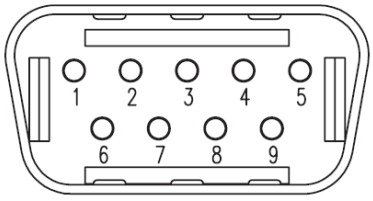
Under **Product Series** select EHV Series

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



2.5.1.4 Wiring Diagrams

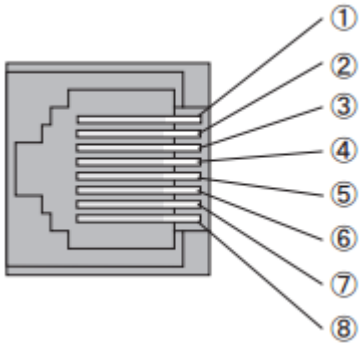
HMI COM1 Pinout



*Looking into COM1 Port

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

PLC RS232 Pinout



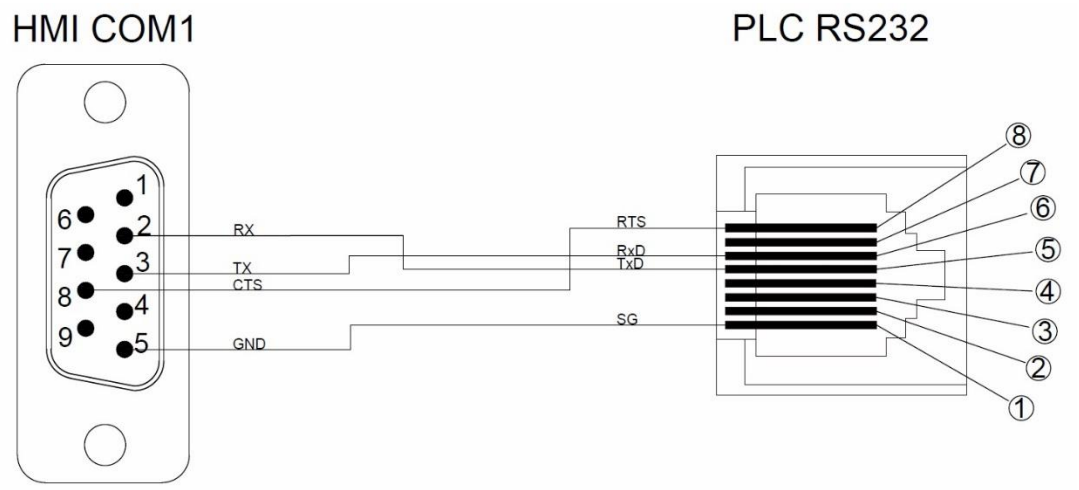
*Looking into PLC

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 RTS

Wiring Diagrams:



2.5.2 EHV Series (Ethernet)

2.5.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.1.100	
Port	3004	
Device Station num.	0	
Communication Method	h protocol (Ethernet)	

2.5.2.2 PLC Resource

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
Interface Type	RS485 2W	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
Device Station num.	0	
Communication Method	MODBUS RTU(Zero-based)	

2.6.1.2 PLC Resource

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

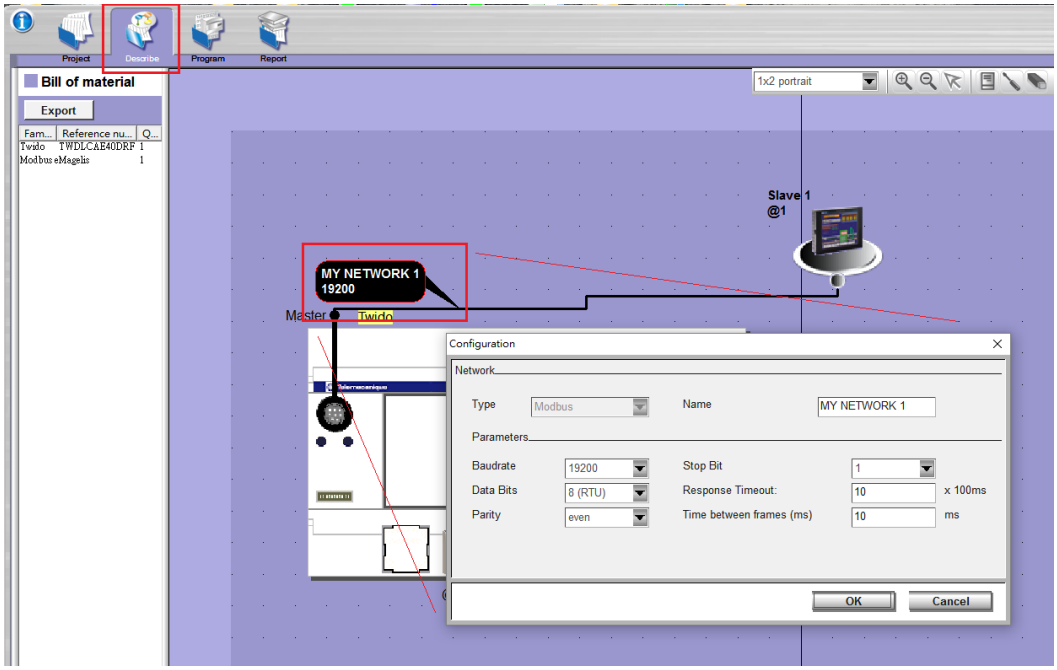
2.6.1.3 Connected Setting

Configuring of PLC

Use **TwidoSuite** to configure the port of the PLC.,

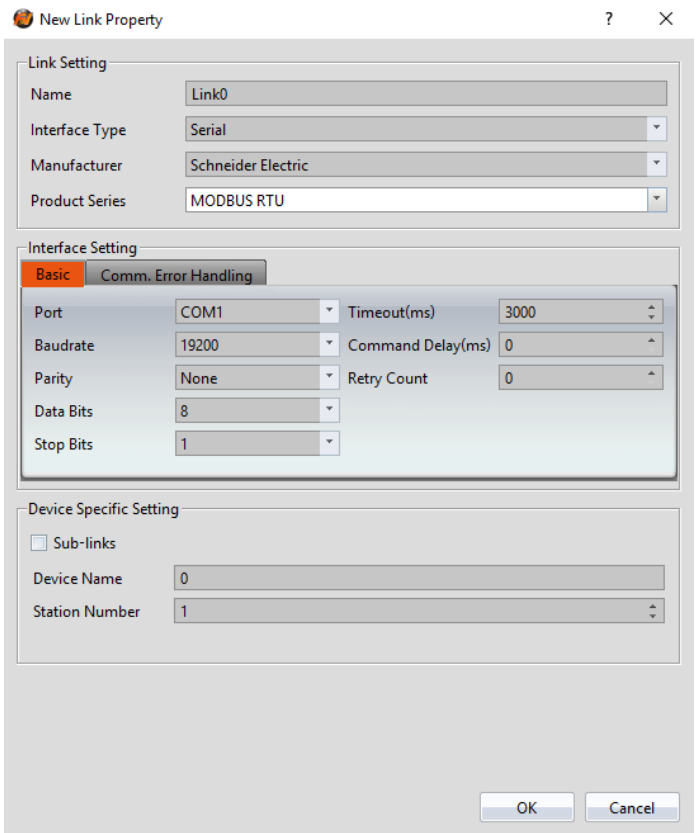
expand **Describe** tab and creation Modbus setting,

Chick **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

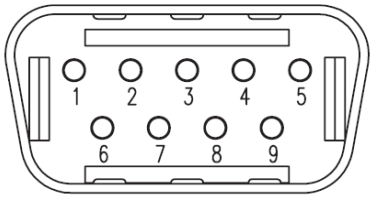
Under **Manufacturer** select Schneider

Under **Product Series** select MODBUS RTU

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

2.6.1.4 Wiring Diagrams

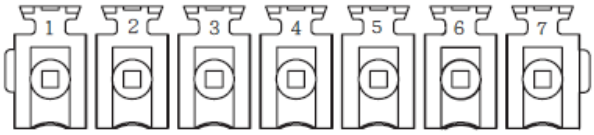
HMI COM2



*Looking into HMI

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

HMI COM3

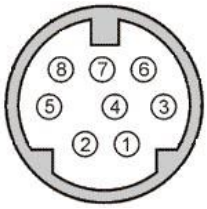


*Looking into HMI Device

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

5	
6	DATA+
7	DATA-

PLC RS485 Pinout

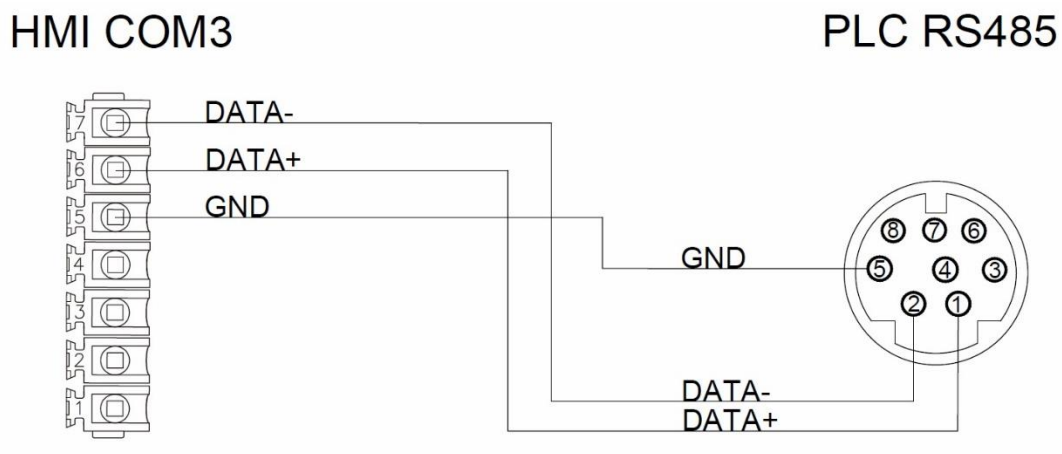


*Looking into PLC

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

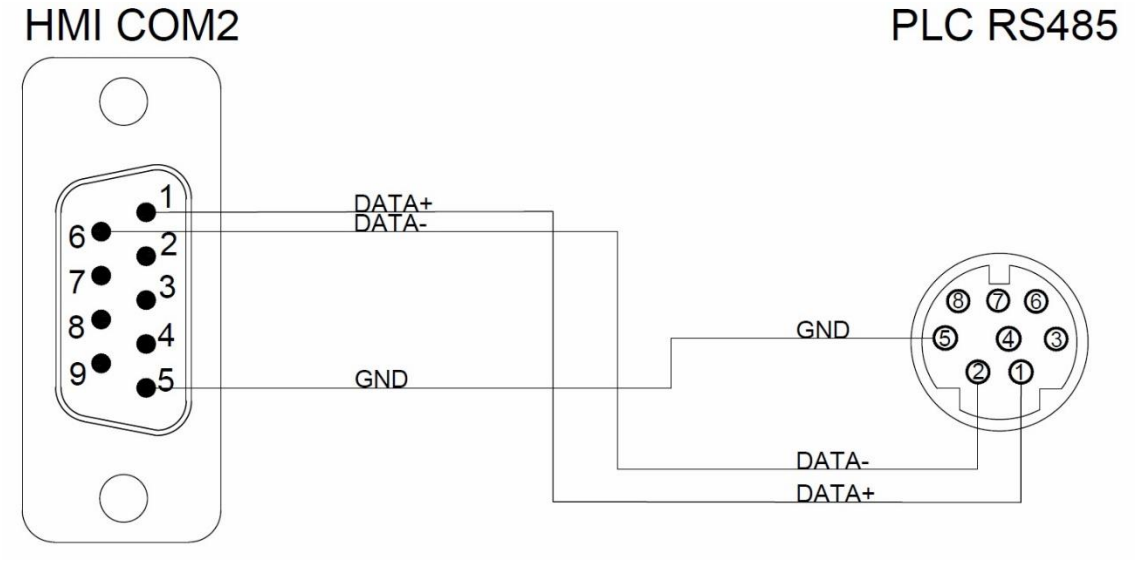
HMI COM3 Port	PLC RS485 Port
6 DATA+	1 DATA+
7 DATA-	2 DATA-
5 GND	5 GND

Wiring Diagrams



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

Wiring Diagrams



2.6.2 MODBUS TCP

2.6.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.0.2	
Port	502	
Device Station num.	0	
Communication Method	MODBUS TCP(Zero-based)	

2.6.2.2 PLC Resource

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

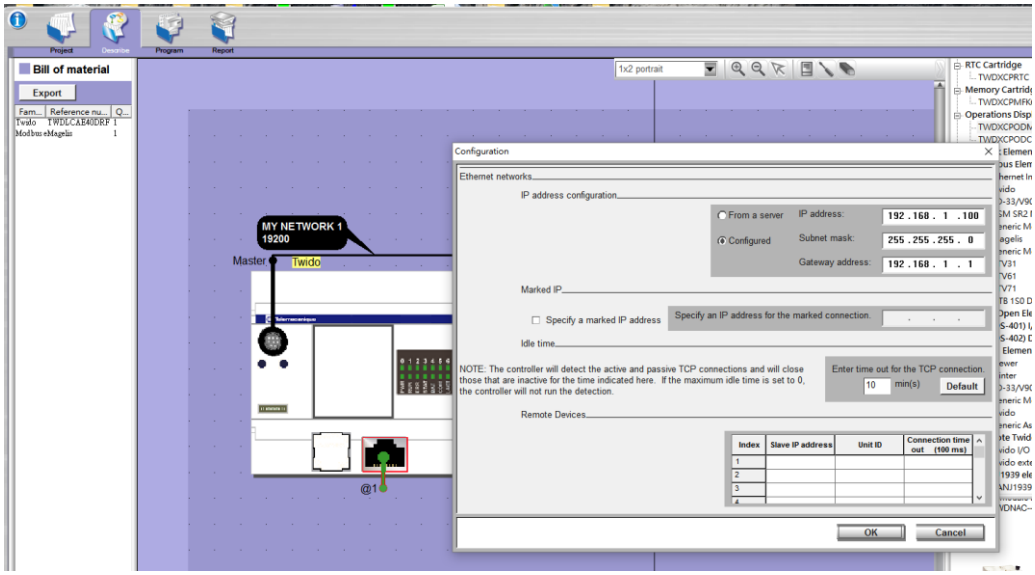
2.6.2.3 Connected Setting

Configuring IP Address on PLC

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

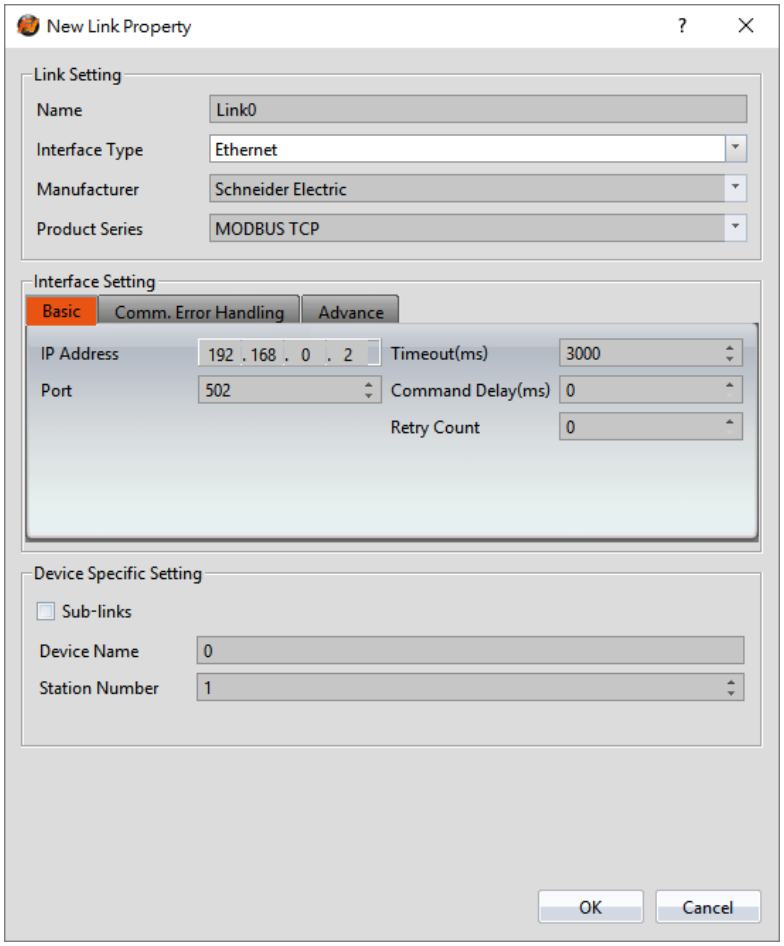
Expand **Describe** tab, and click Ethernet Port,

The IP address and other parameters can be set.



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

Connect PLC to HMI



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
Interface Type	Ethernet	
IP Address	192.168.0.2	
Port	44818	
Device Station num.	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

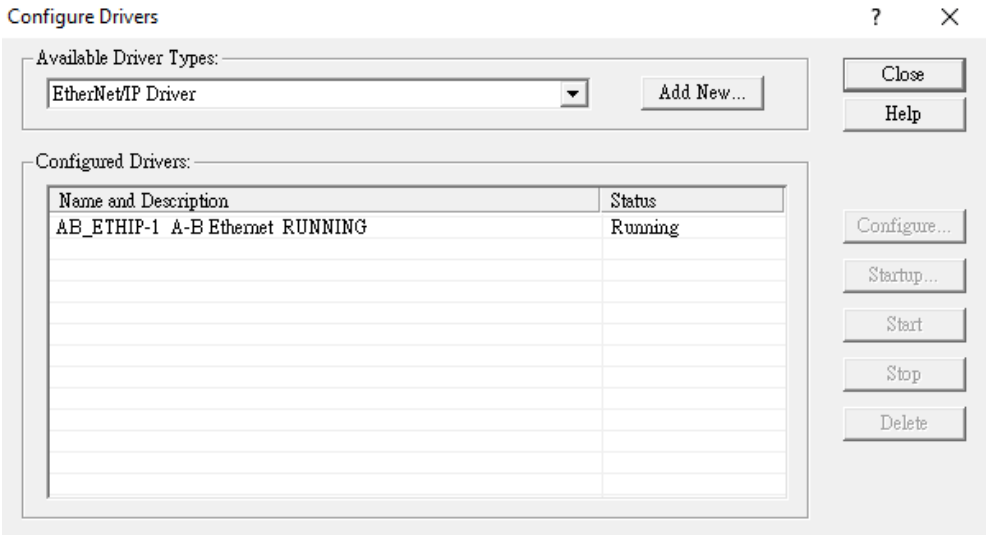
Configuring IP Address on PLC

The application **RSLinx 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.

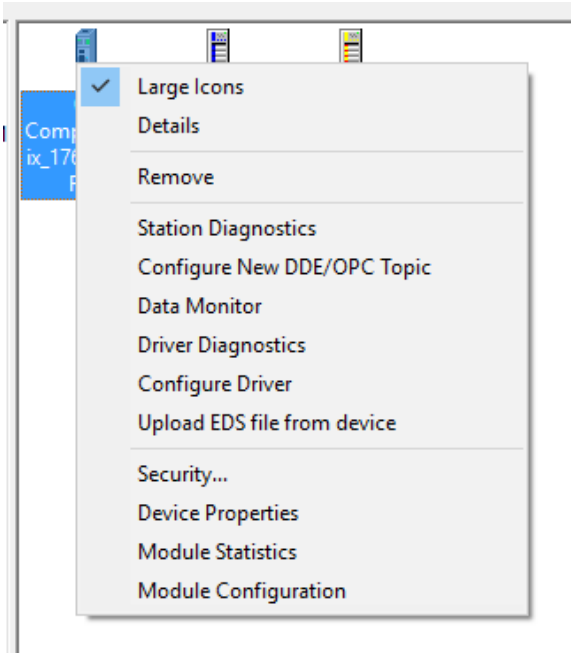
Open RSLinx Classic and connect to the PLC either with a USB-Serial cable or through the local network. To connect to PLC via the local network, follow the steps below.

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.

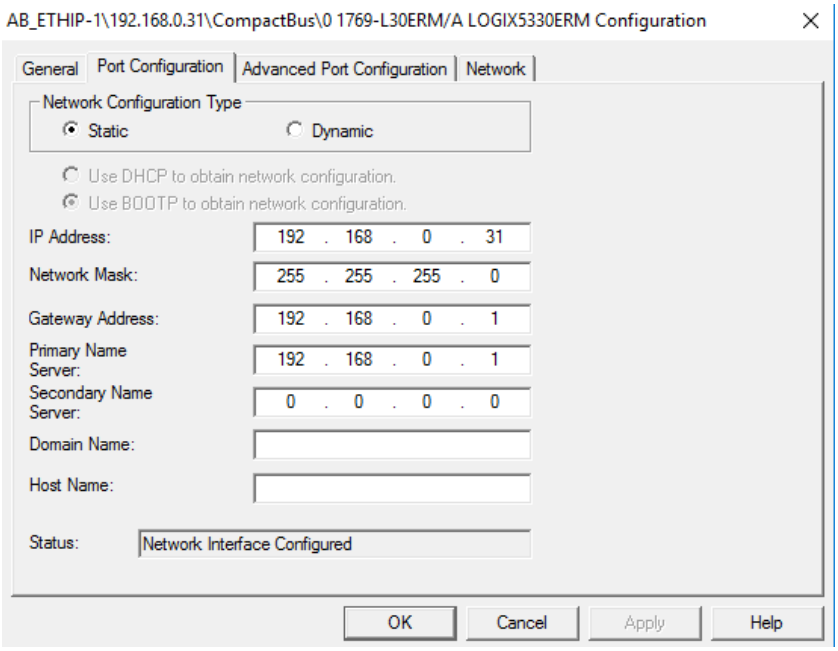


Under the new Ethernet driver, the PLC connected to the local network should be visible.

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

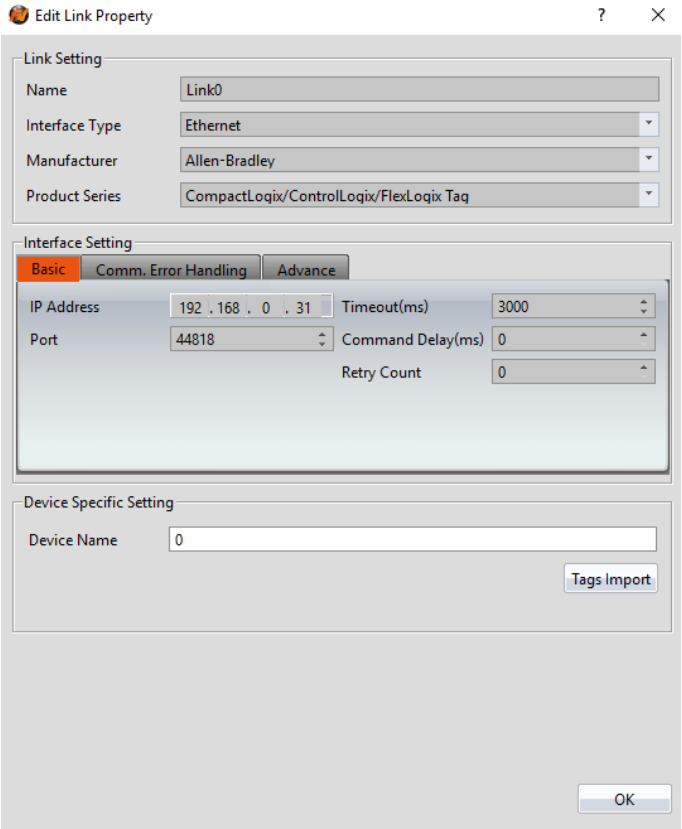


Navigate to the **Port Configuration** tab. Here, the IP address and other parameters can be set. Press OK to confirm the settings.



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.

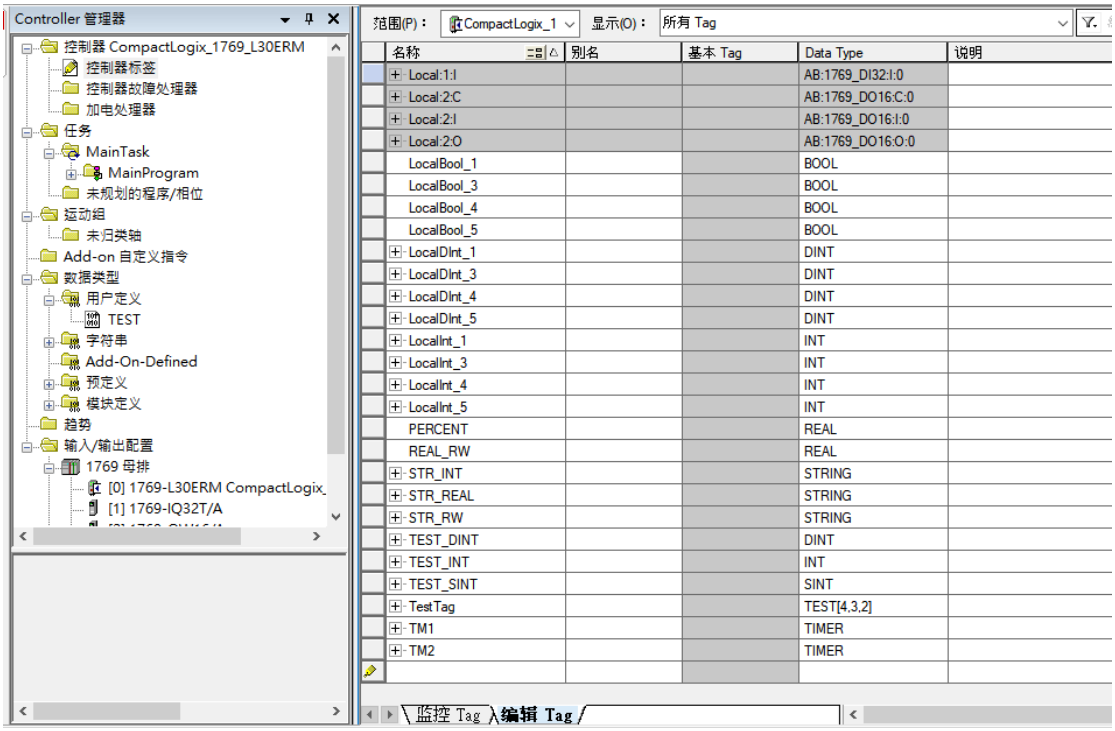
Under **Product Series** select CompactLogix/ControlLogix/FlexLogix Taq.

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

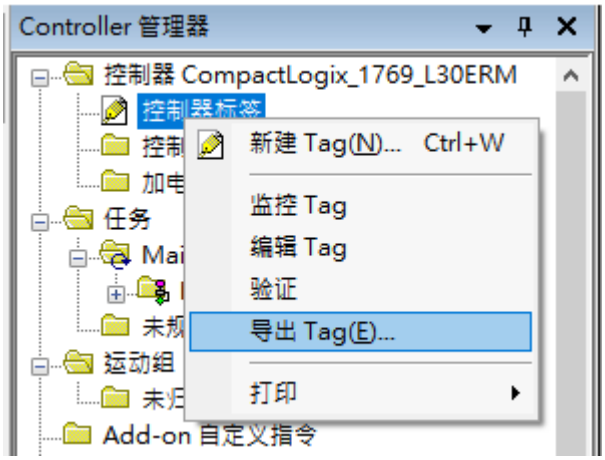
2.7.1.4 Tag setting

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.

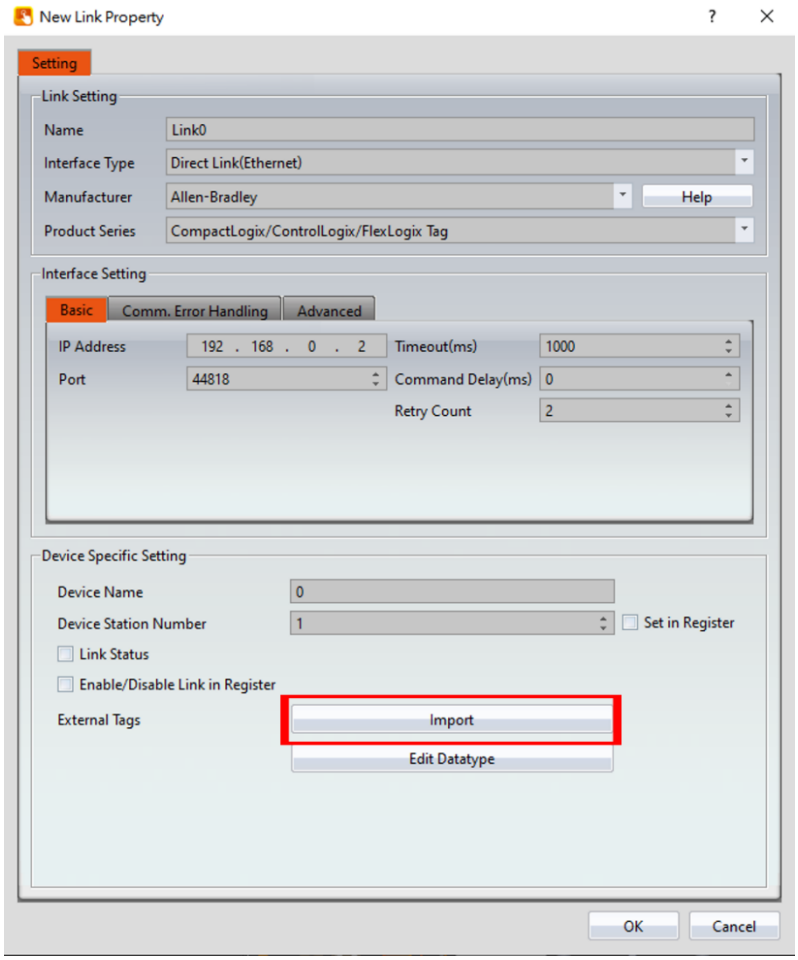
Step 1. Create Tag in RSLogix5000



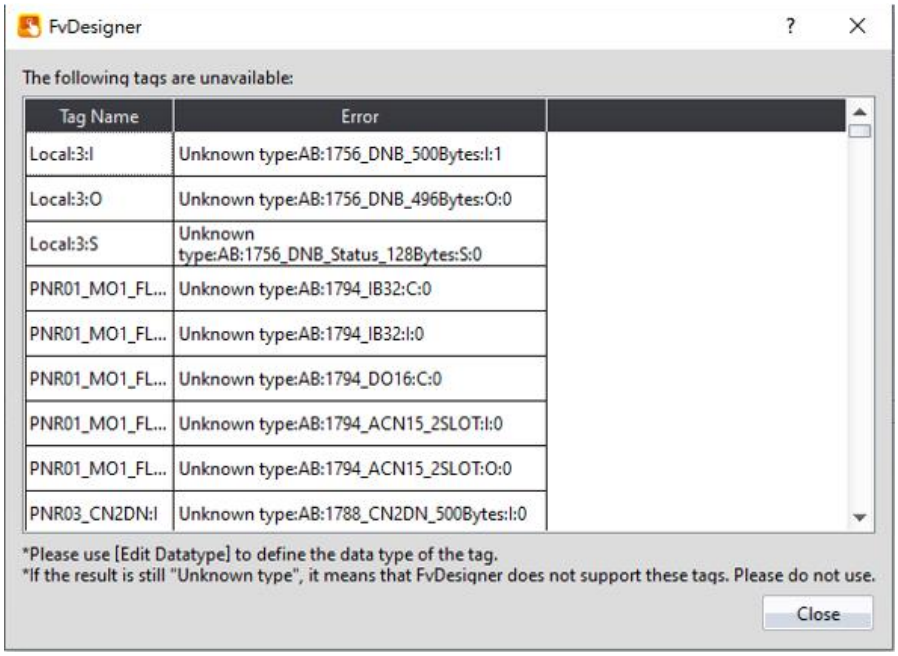
Step 2. Export Tag to CSV file



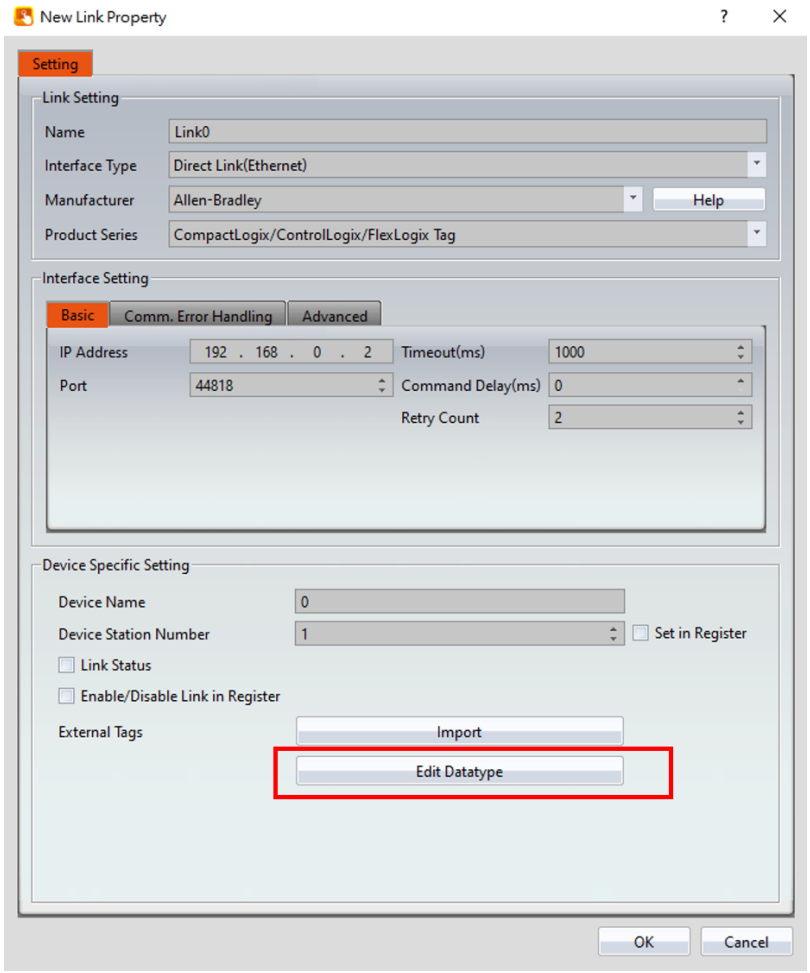
Step 3. After setting the CompactLogix/ControlLogix/FlexLogix Tag in FvDesigner, click Import.



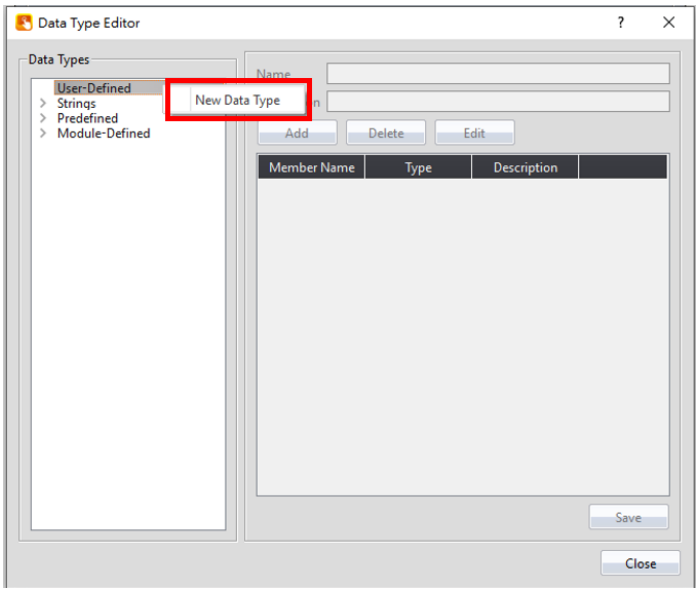
Step 4. After selecting the file, if there are no errors, it will show that the import was successful. Otherwise, the tag in question and the reason why it cannot be imported will be displayed



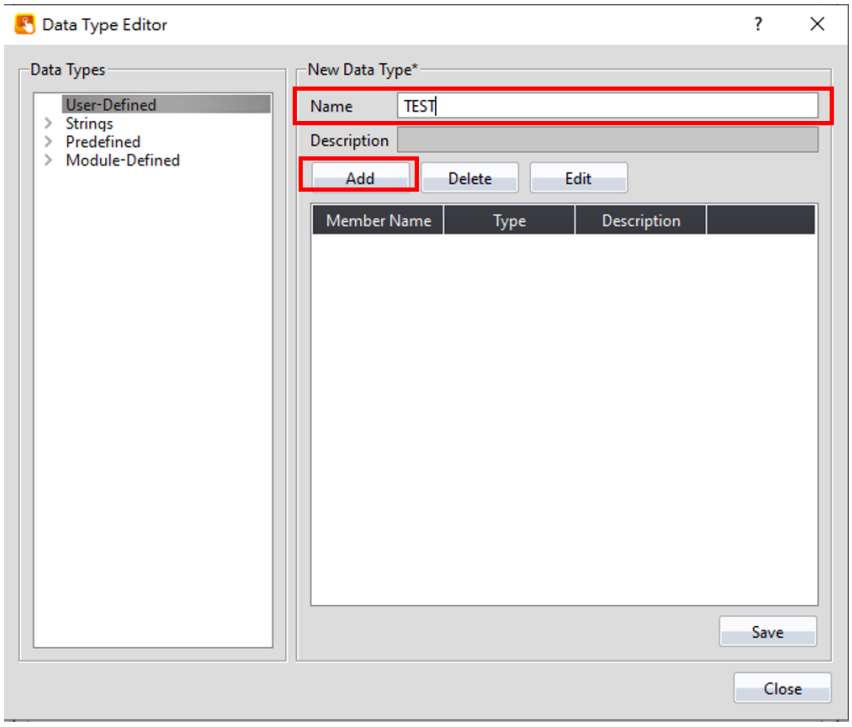
Step 5. Press Edit Data Type



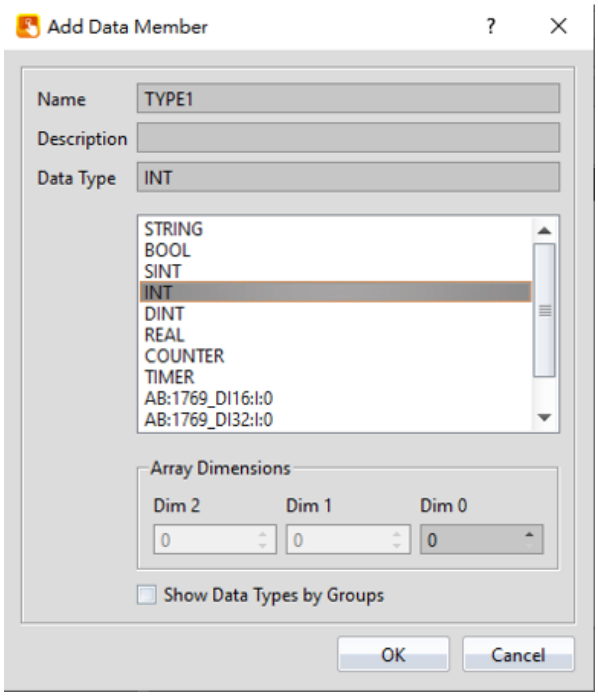
Step 6. Right click and select Add Data Type



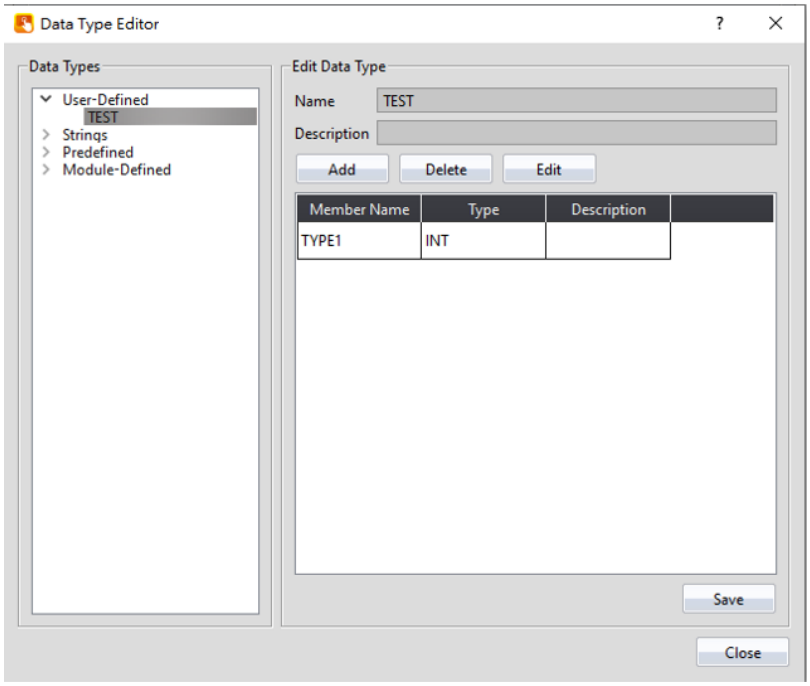
Step 7. After editing the name, press Add to add a new member structure.



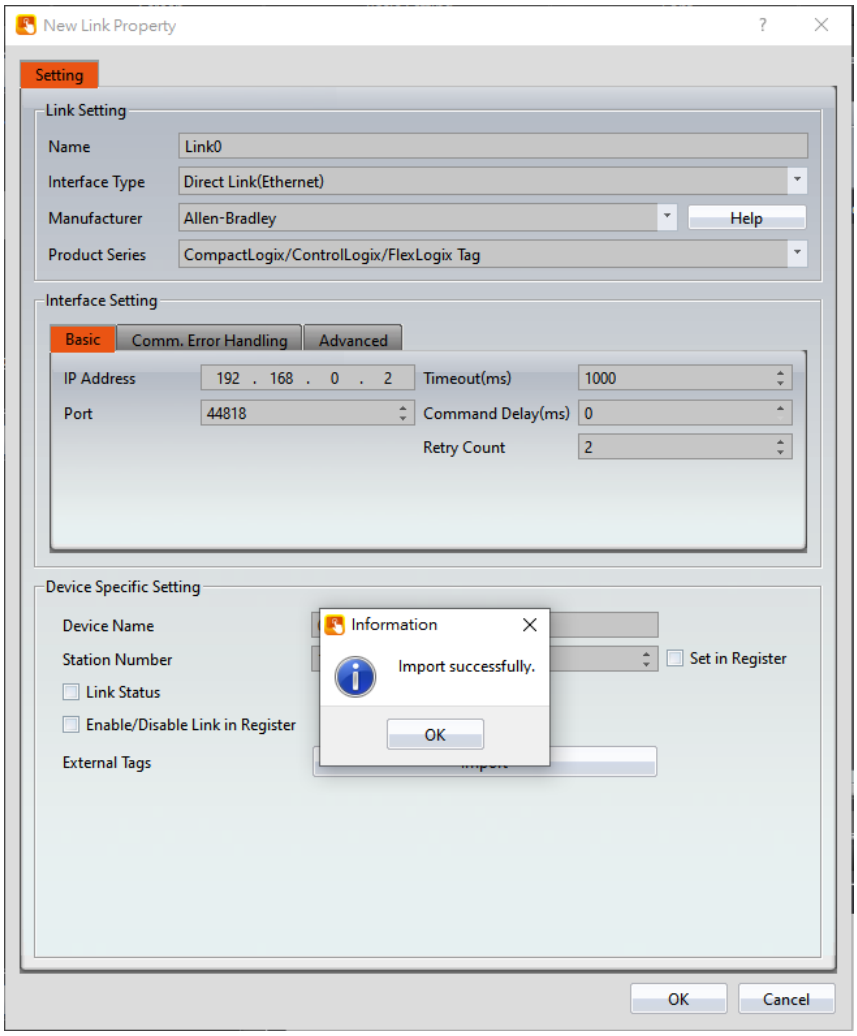
Step 8. Edit the name, select the data type and press OK



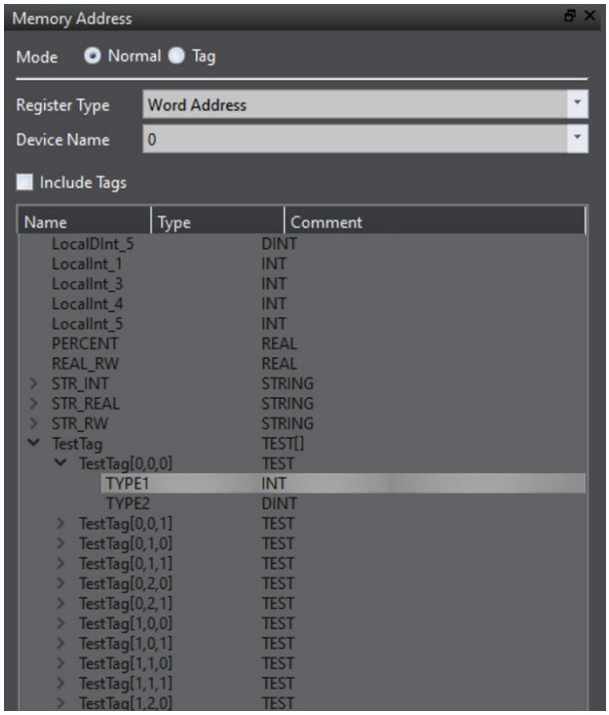
Step 9. After editing the members, press Save. If there are no errors, this data type will be displayed on the left. Press close and then go back to step 3 to import the tag.
If you edit the data type, you need to press save to update.



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
Interface Type	Ethernet	
IP Address	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	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

2.7.2.3 Connected Setting

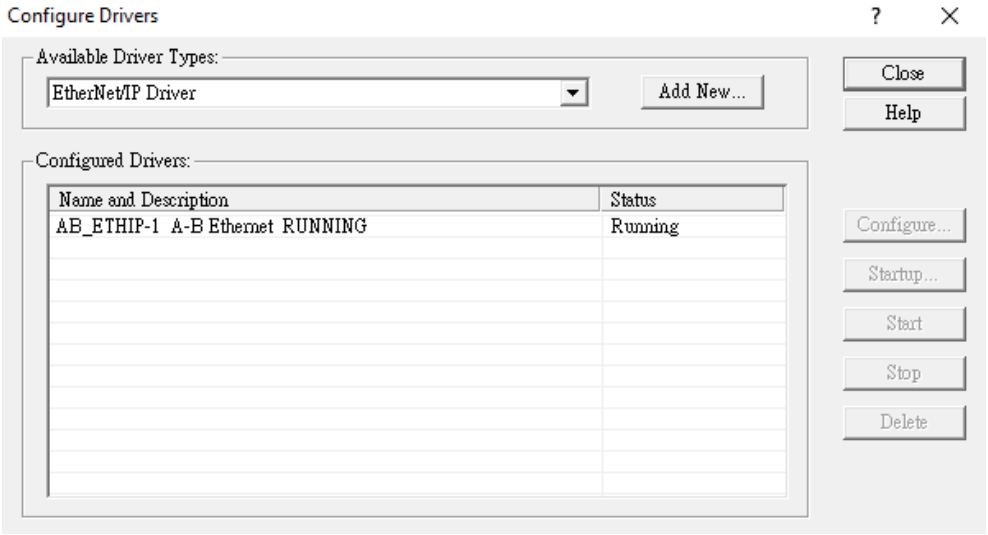
The SLC series PLC can be configured using the same procedure as the Micrologix series configuration. The figures refer to the Micrologix PLC but the procedure is the same.

Configuring IP Address on PLC

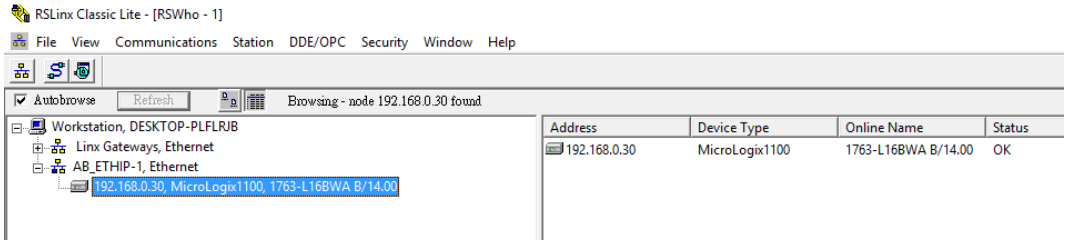
If the IP address needs to be configured, follow the steps below.

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

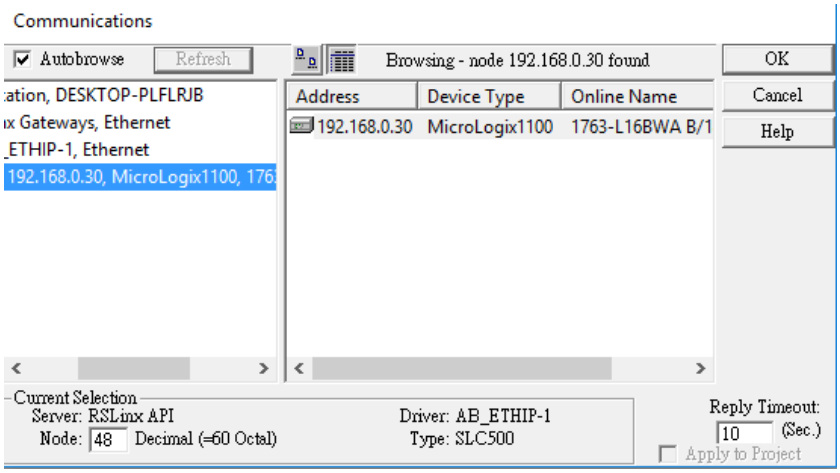
First open **RSLinx Classic Lite** to set up a connection between the computer and PLC. An Ethernet cable needs to be connected to the PLC and the computer must be online. In the **Communications** menu tab, select **Configure Drivers**. Select **EtherNet/IP Driver** and press 'Add New'. Select "Your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



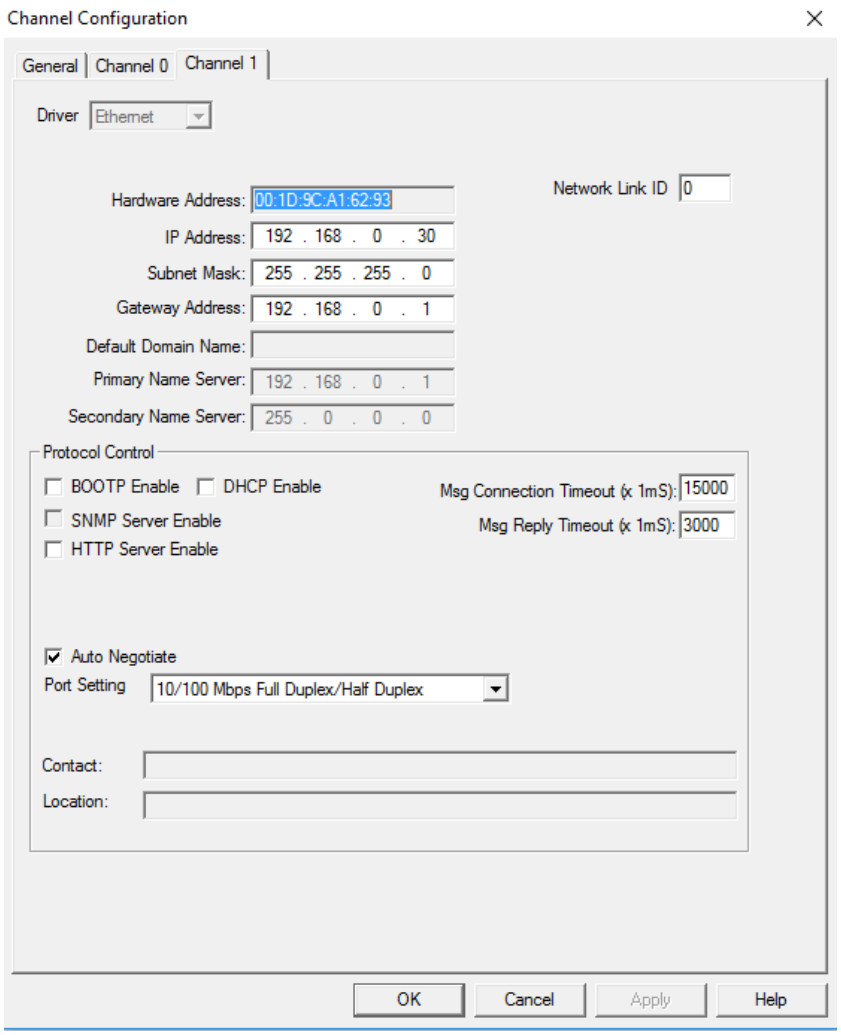
Under the new Ethernet driver, the PLC connected to the local network should be visible. If the status of the device is OK, open up **RSLogix 500**.



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.

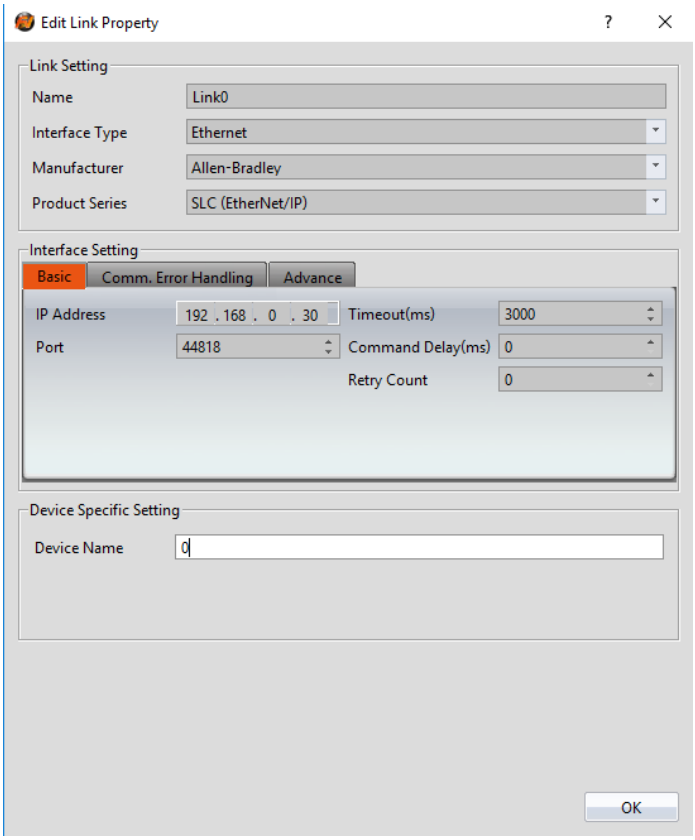


Press **Create New File** in the dialog window that appears after pressing OK.
On the left side of the program, double click **Channel Configuration** to access the PLC's Ethernet settings. Under the Channel 1 tab, the IP address can be changed.



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
Interface Type	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	

Device Station num.	1	
TX Control	CRC	CRC/BCC
Communication Method	DF1	

2.7.3.2 PLC Resource Review

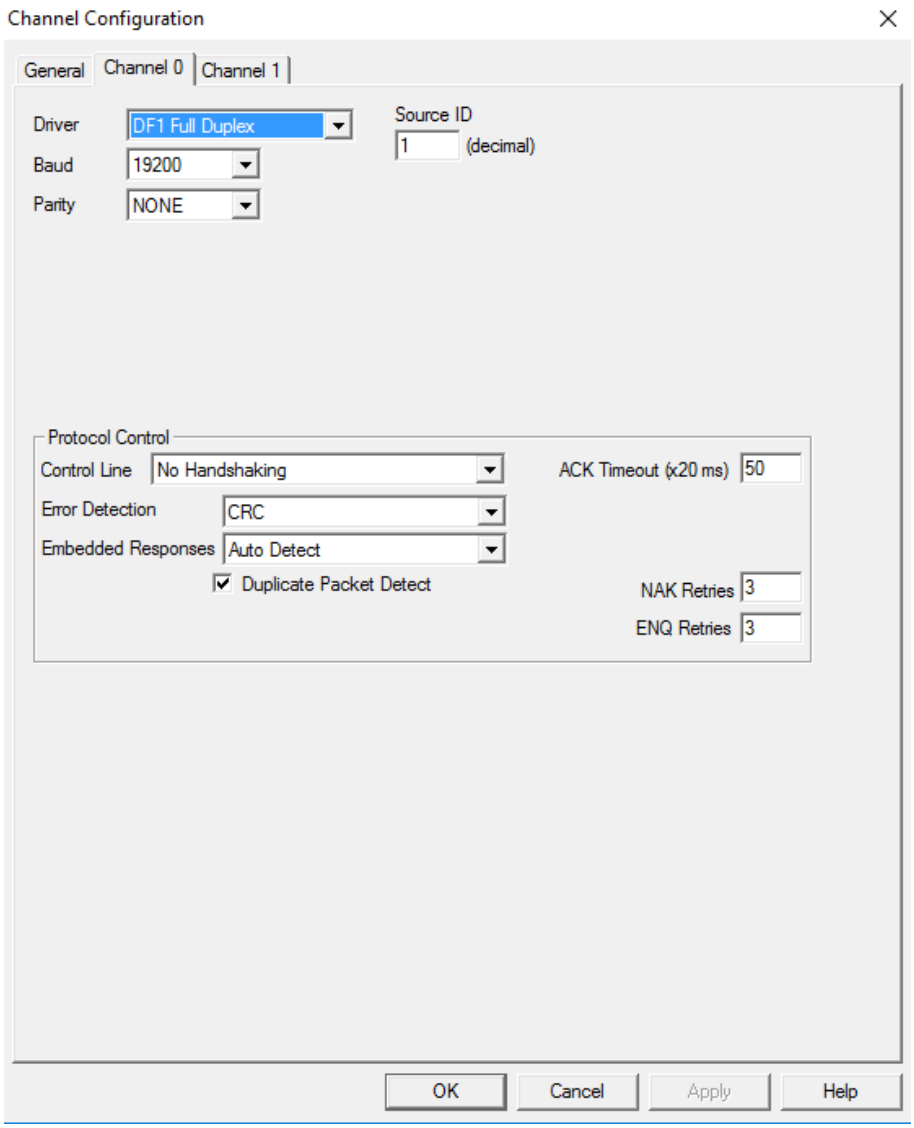
Device	Description	Data bit	Input format	Min.	Max.
O	Output File	1/16	O F:S.D	O0:0.0	O0:30.255
I	Intput File	1/16	I F:S.D	I1:0.0	I1:30.255
S	Status File	1/16	S F:E	S2:0	S2:163
B	Bit File	1/16	B F:E	B3:0	B255:255
T	Timer File	1/16	T F:E.D	T4:0.0	T255:255.2
C	Counter File	1/16	C F:E.D	C5:0.0	C255:255.2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

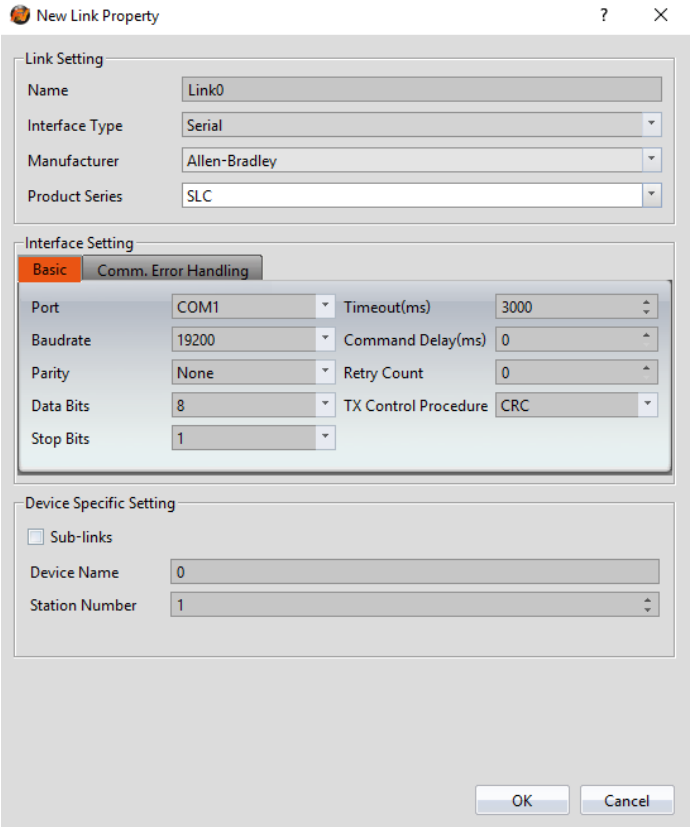
Use **RSLinx Classic Lite** and **RSLogix 500** to configure the port of the PLC.

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



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

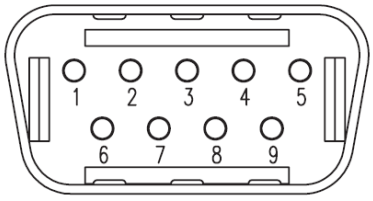
Under **Manufacturer** select Allen-Bradley

Under **Product Series** select SLC.

Verify the parameters match the window above.

2.7.3.4 Wiring Diagrams

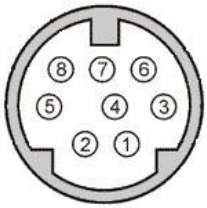
HMI COM1 Pinout



*Looking into COM1 Port

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

PLC RS232 Pinout

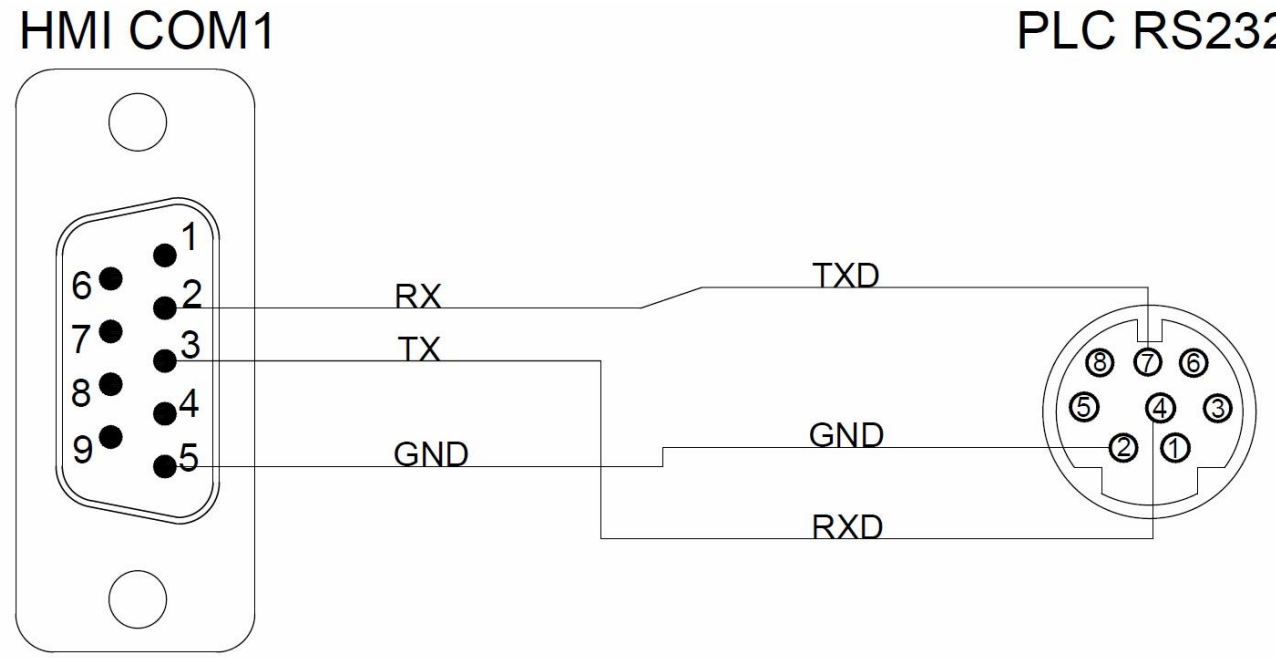


*Looking into PLC

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:



2.7.4 MicroLogix Series (EtherNet/IP)

2.7.4.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	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

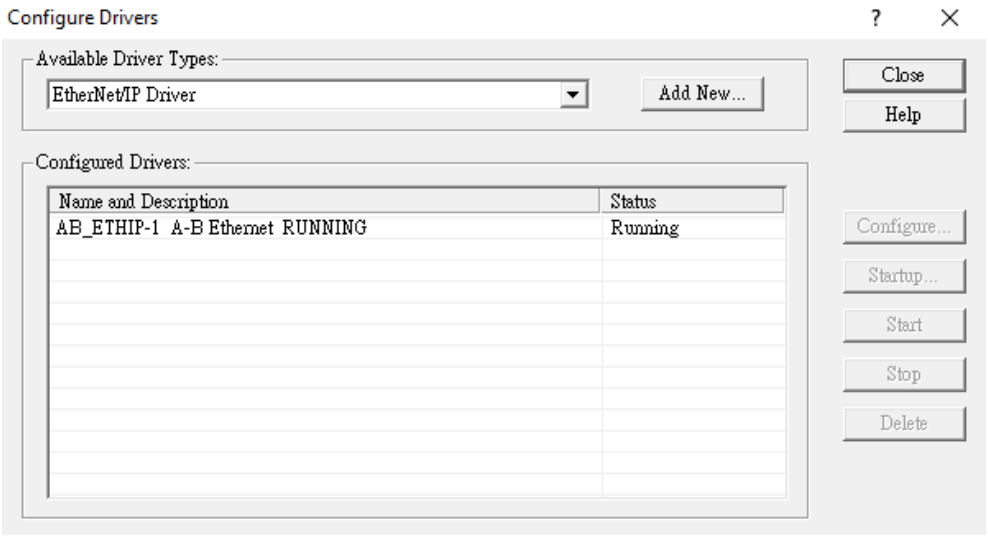
2.7.4.3 Connected Setting

Configuring IP Address on PLC

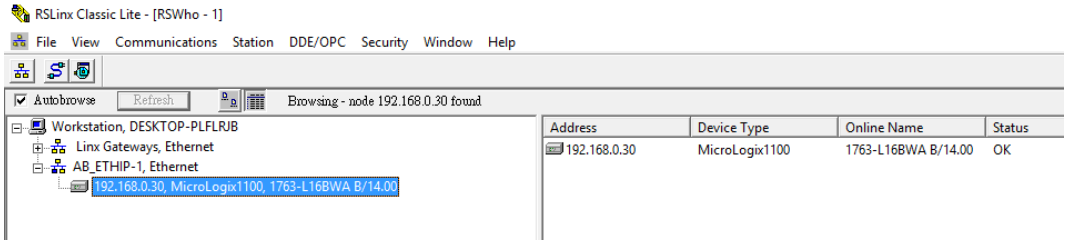
If the IP address needs to be configured, follow the steps below.

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

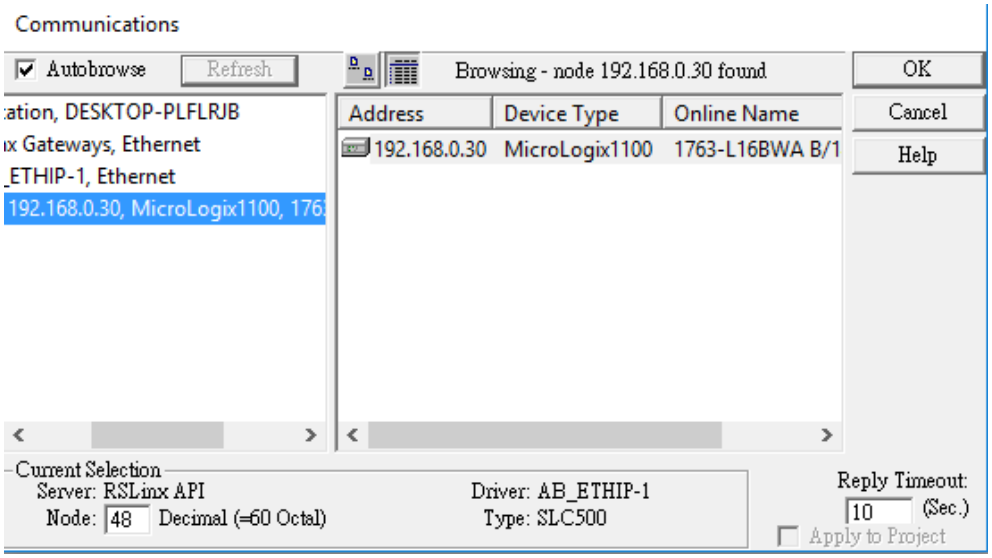
First open **RSLinx Classic Lite** to set up a connection between the computer and PLC. An Ethernet cable needs to be connected to the PLC and the computer must be online. In the **Communications** menu tab, select **Configure Drivers**. Select **EtherNet/IP Driver** and press 'Add New'. Select "Your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



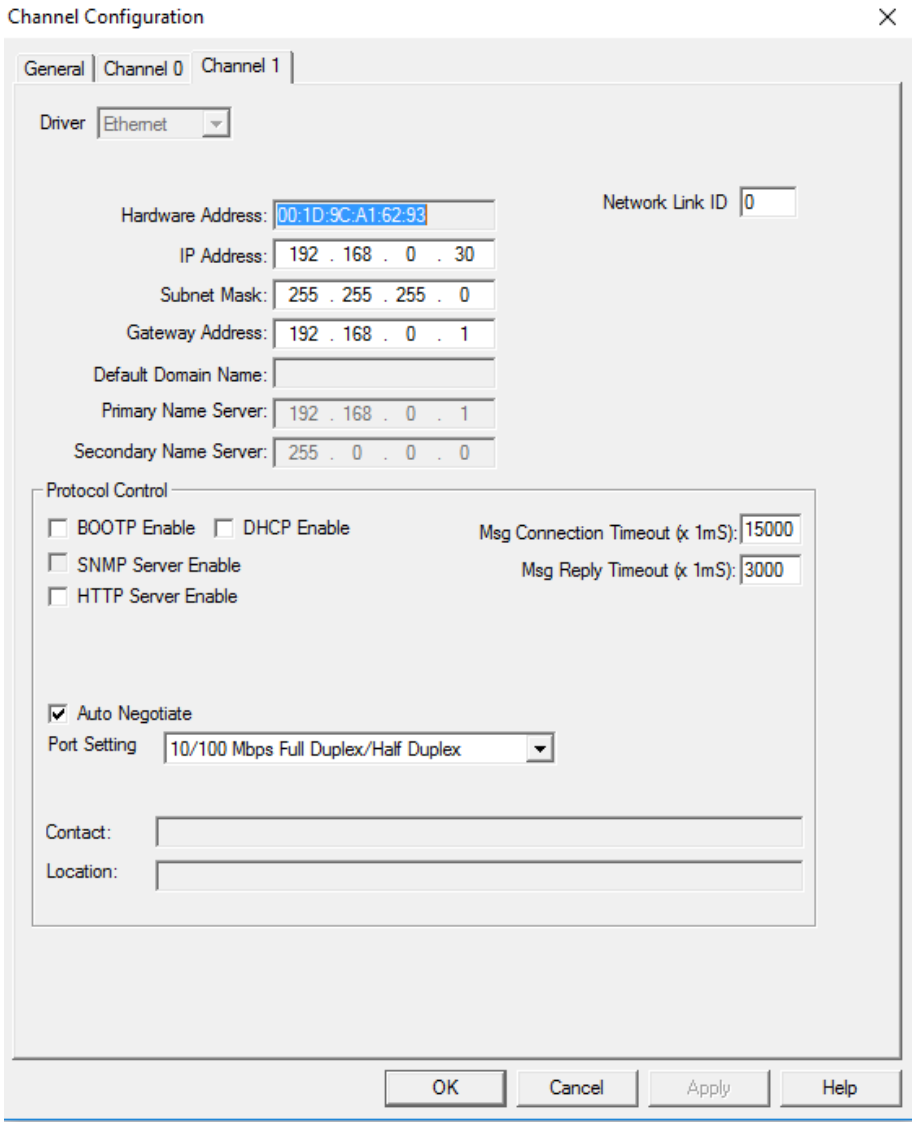
Under the new Ethernet driver, the PLC connected to the local network should be visible. If the status of the device is OK, open up **RSLogix 500**.



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.

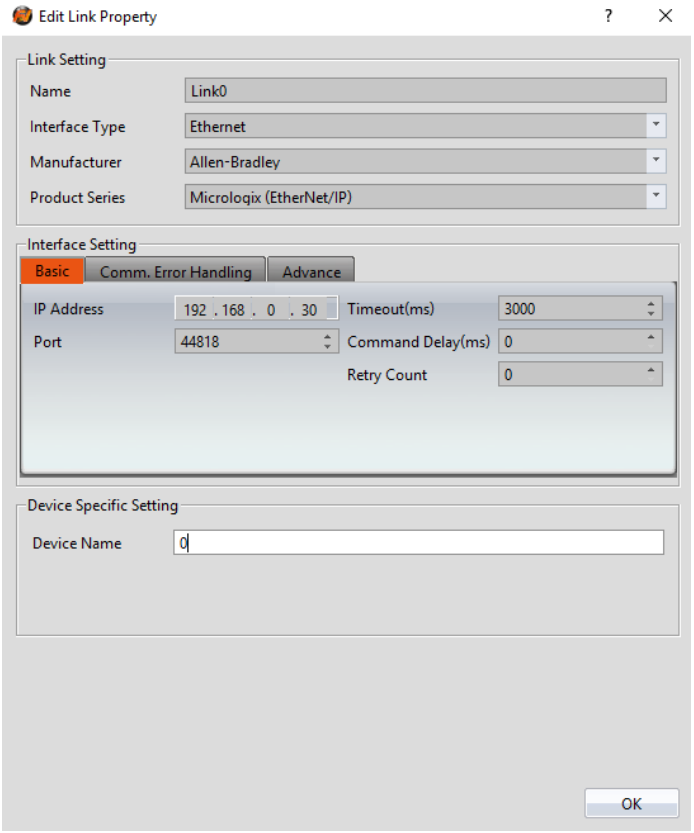


Press **Create New File** in the dialog window that appears after pressing OK.
On the left side of the program, double click **Channel Configuration** to access the PLC's Ethernet settings. Under the Channel 1 tab, the IP address can be changed.



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 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
Interface Type	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	

Device Station num.	1	
TX Control	CRC	CRC/BCC
Communication Method	DF1 Protocol	

2.7.5.2 PLC Resource Review

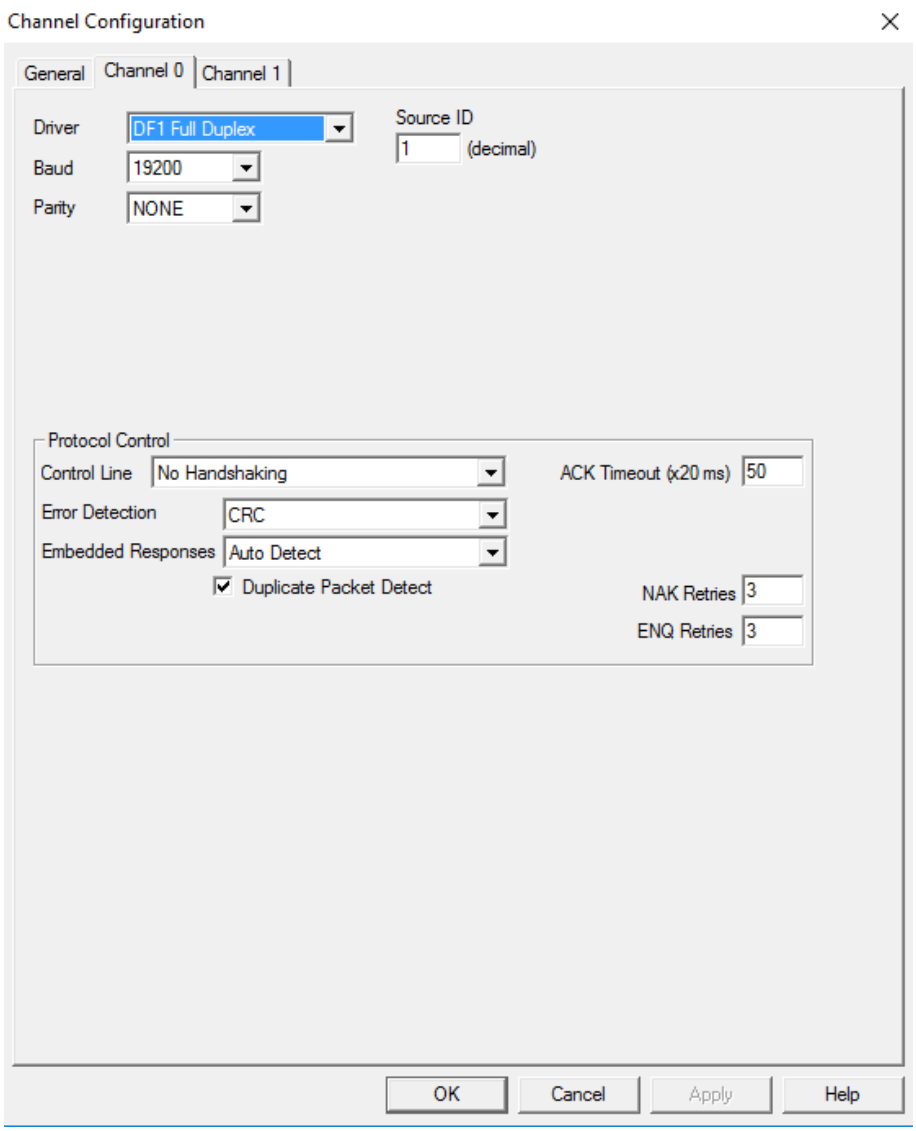
Device	Description	Data bit	Input format	Min.	Max.
O	Output File	1/16	O F:S.D	O0:0.0	O0:30.255
I	Intput File	1/16	I F:S.D	I1:0.0	I1:30.255
S	Status File	1/16	S F:E	S2:0	S2:163
B	Bit File	1/16	B F:E	B3:0	B255:255
T	Timer File	1/16	T F:E.D	T4:0.0	T255:255.2
C	Counter File	1/16	C F:E.D	C5:0.0	C255:255.2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

2.7.5.3 Connected Setting

Configuring of PLC

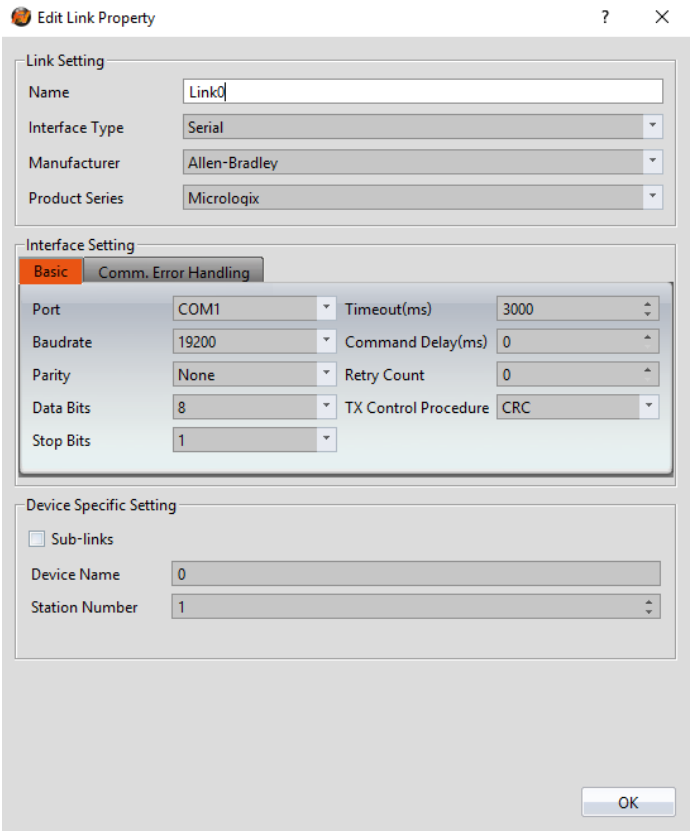
To connect the PLC to a computer, follow the same steps detailed in the previous chapter. Configuring the serial connection of the PLC is the same as configuring the IP address of the PLC.

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



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 Allen-Bradley

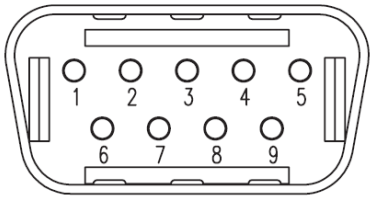
Under **Product Series** select Micrologix

Under **Port** select COM1

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

2.7.5.4 Wiring Diagrams

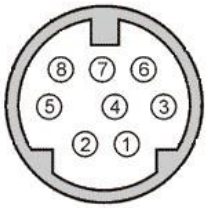
HMI COM1 Pinout



*Looking into COM1 Port

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

PLC RS232 Pinout

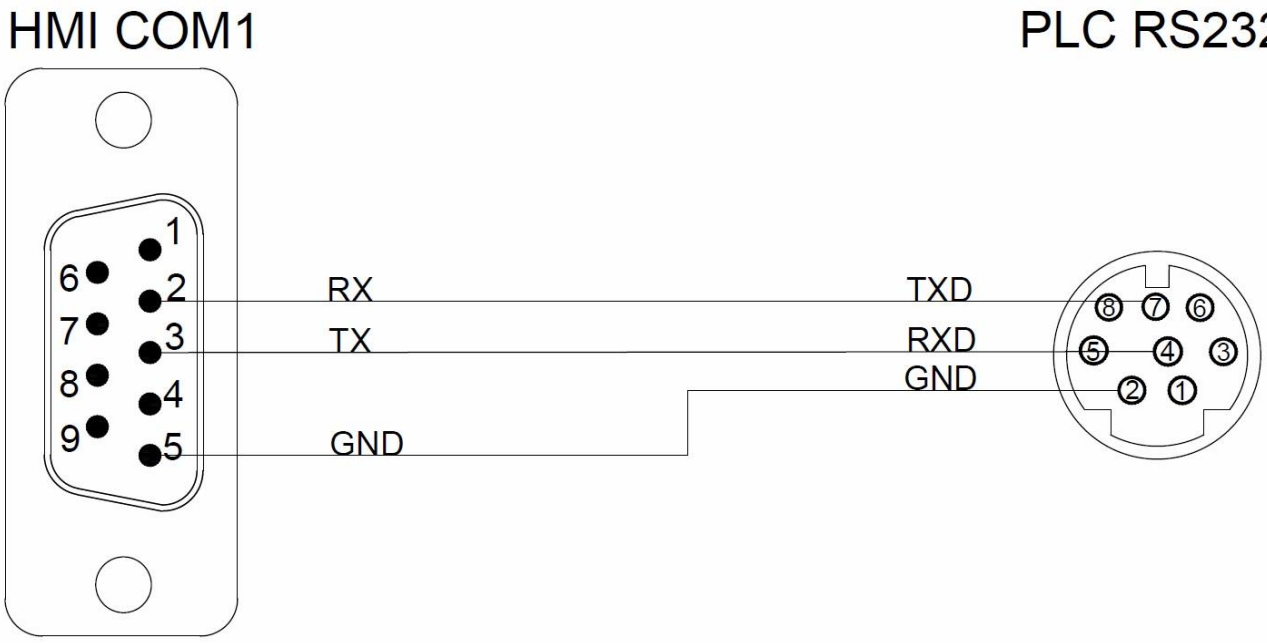


*Looking into PLC

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:



2.8 Taiwan Instrument & Control Co., Ltd.

2.8.1 FY Series

2.8.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485 2W	
Baud Rate	38400	
Data Length	8	
Stop Bit	1	

Parity	Odd	
Device Station num.	0	
Communication Method	MODBUS RTU	

2.8.1.2 PLC Resource

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
HYSA	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

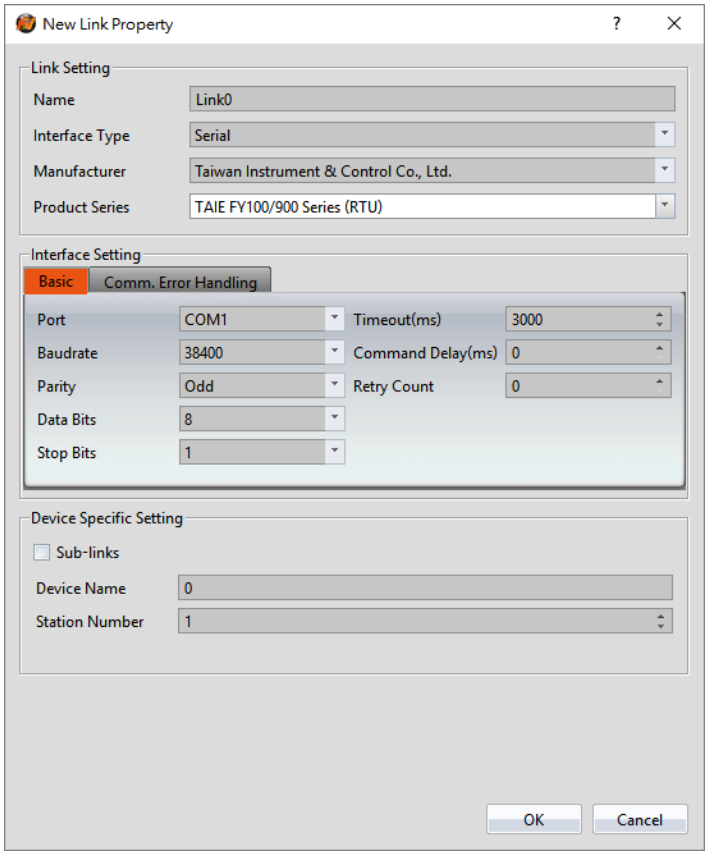
Press SET + < key 3 seconds to configure parameters in Level 3

Character	Name , Functions and Setting range	Default
PSL	Protocol Selection rtU: MODBUS RTU Protocol ASCII: MODBUS ASCII Protocol tAIE: TAIE Protocol	rtU
bitS	Communication Bits 0_81: Odd parity , Data bits = 8 , Stop Bit = 1 0_82:Odd parity , Data bits = 8 , Stop Bit = 2 E_81: Even parity , Data bits = 8 , Stop Bit = 2 E_82: Even parity , Data bits = 8 , Stop Bit = 2	0_81
Id.NO	ID Number Range : 0 ~ 255	1
bAUd	Communication Baud rate 24: 2400 bps 48: 4800 bps 96: 9600 bps 192: 19200 bps 384: 38400 bps	384

- When parameter bitS or bAUd 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

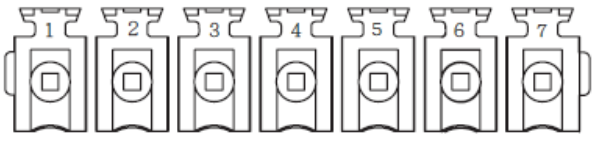
Under **Manufacturer** select Taiwan Instrument & Control Co.,Ltd.

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

Verify the parameters match the window above.

2.8.1.4 Wiring diagrams

HMI COM3 Pinout



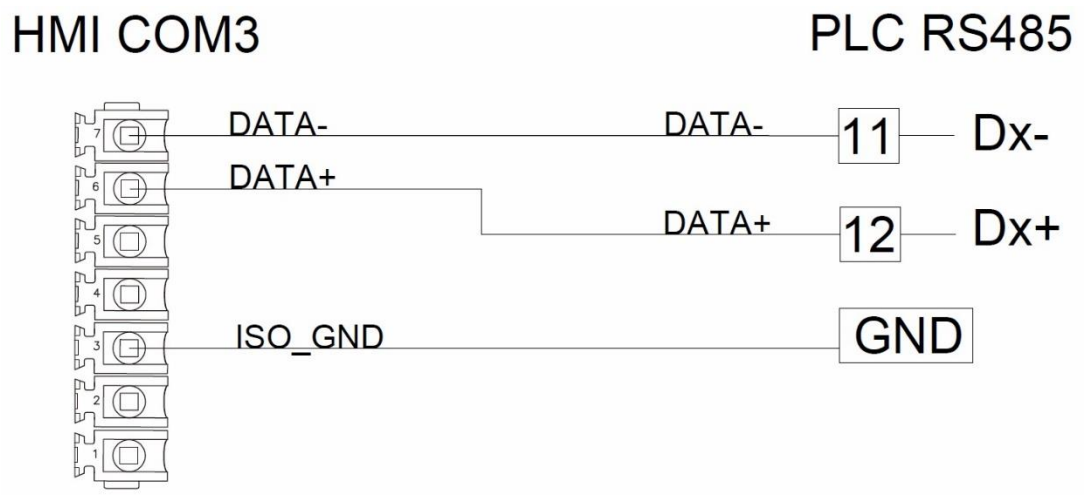
*Looking into HMI Device

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

5	
6	DATA+
7	DATA-

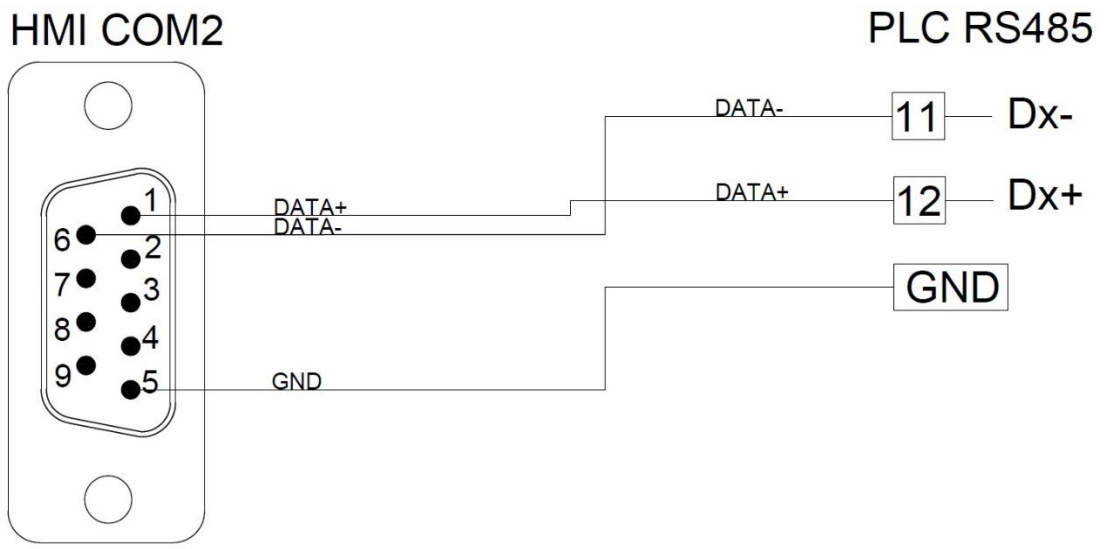
HMI COM3 Port	PLC RS485 Port
6 DATA+	12 DATA+
7 DATA-	11 DATA-
3 ISO_GND	GND

Wiring Diagrams



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

Wiring Diagrams


HMI COM2
PLC RS485
1
2
3
4
5
6
7
8
9
DATA+
DATA-
GND
DATA-
DATA+
11
12
Dx-
Dx+
GND

2.9 Delta

2.9.1 DVP Series

2.9.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232C	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	0	
Communication Method	MODBUS ASCII	

2.9.1.2 PLC Resource

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
SCV	Counter memory	32	DDD	200	255
TV	Timer memory	16	DDD	0	255
D	Data register	16	DDDDD	0	11999

2.9.1.3 Connected Setting

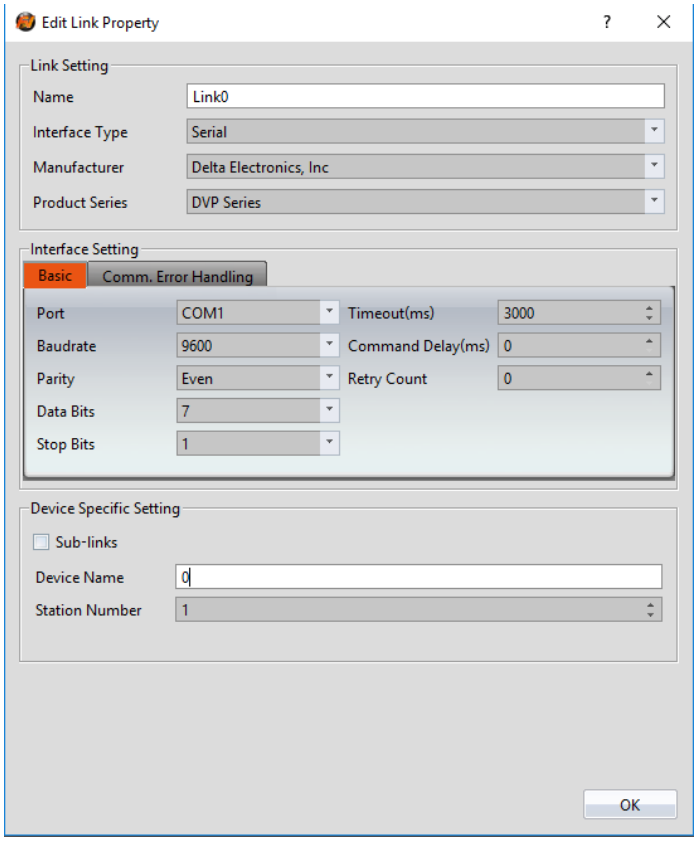
Configuring of PLC

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

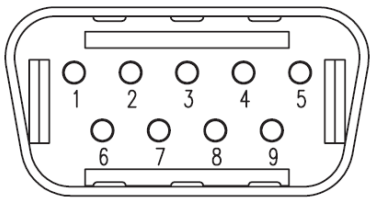
Under **Manufacturer** select Delta Electronics, Inc

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

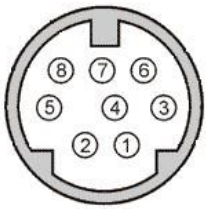


*Looking into COM1 Port

PIN#	COM1 (RS232)
1	

2	RX
3	TX
4	
5	GND
6	
7	
8	
9	

PLC RS232 Pinout

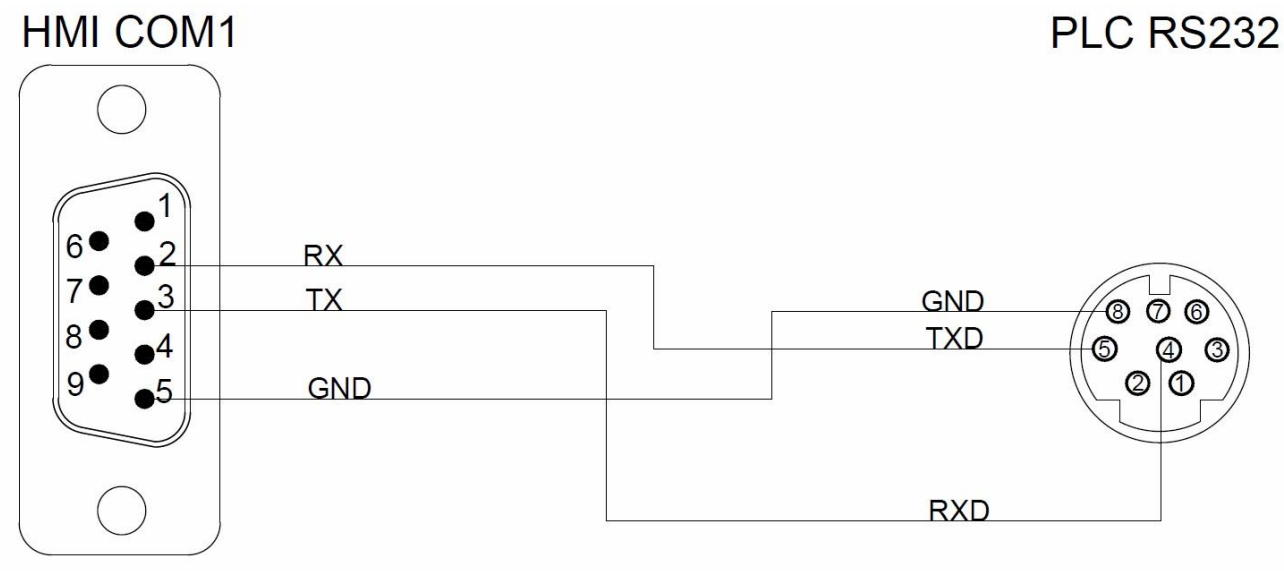


*Looking into PLC

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:



2.9.2 DVP Series (TCP)

2.9.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.1.100	
Port	502	
Device Station num.	0	
Communication Method	MODBUS TCP	

2.9.2.2 PLC Resource

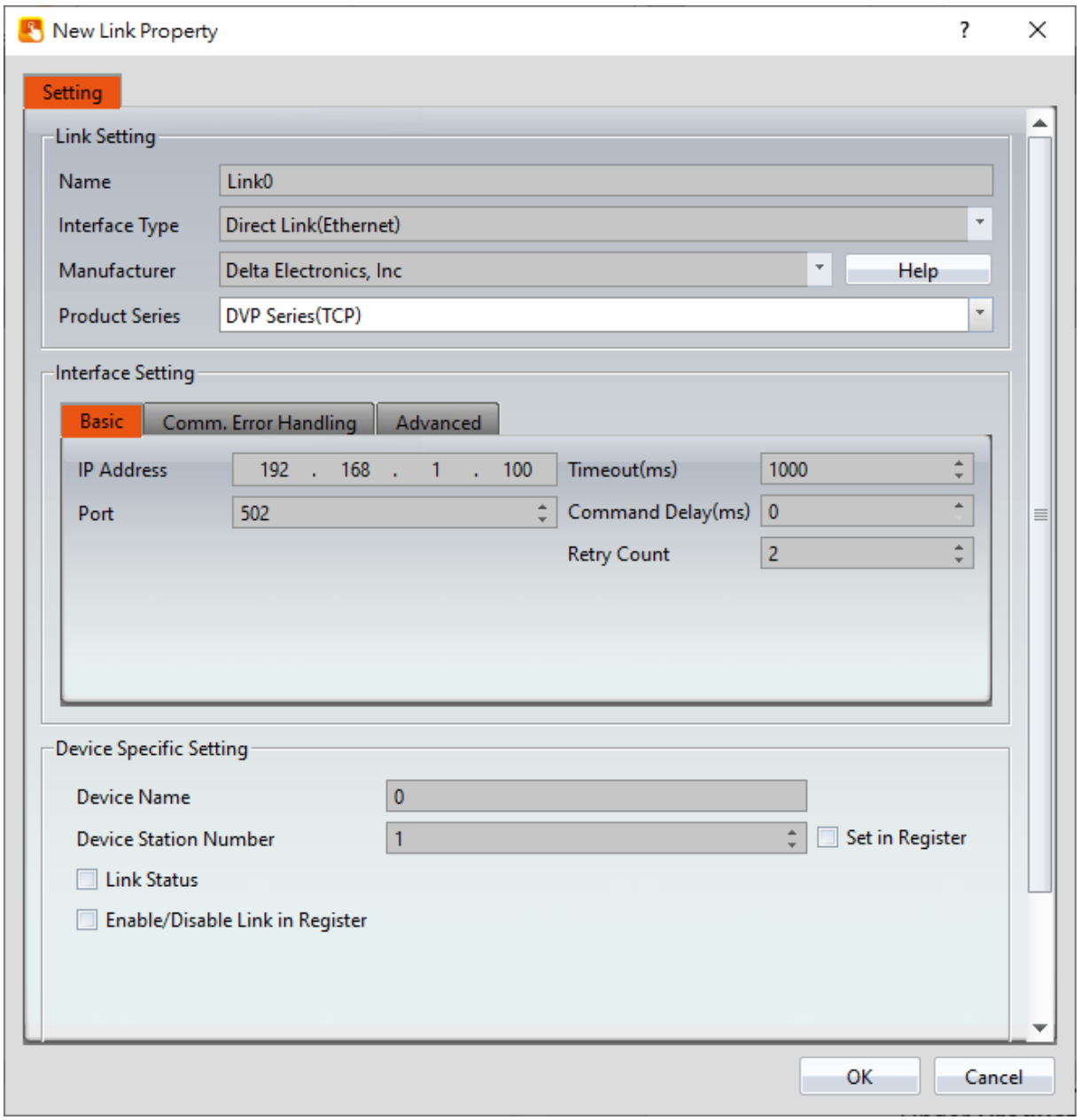
Device	Description	Data bit	Input format	Min.	Max.
X	Input relay	1	OOO	0	377
Y	Output relay	1	OOO	0	377
M	Auxiliary relay	1	DDDD	0	4095
S	Step	1	DDDD	0	1023
T	Timer	1	DDD	0	255
C	Counter	1	DDD	0	255
CV	Counter memory	16	DDD	0	199
SCV	Counter memory	32	DDD	200	255
TV	Timer memory	16	DDD	0	255
D	Data register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

2.9.2.3 Connected Setting

Configuring of PLC

Use **WPLSoft** to configure the port of the PLC.

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 TCP.

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

2.9.3 AH500 Series

2.9.3.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232C	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	1	
Communication Method	MODBUS ASCII	

2.9.3.2 PLC Resource

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

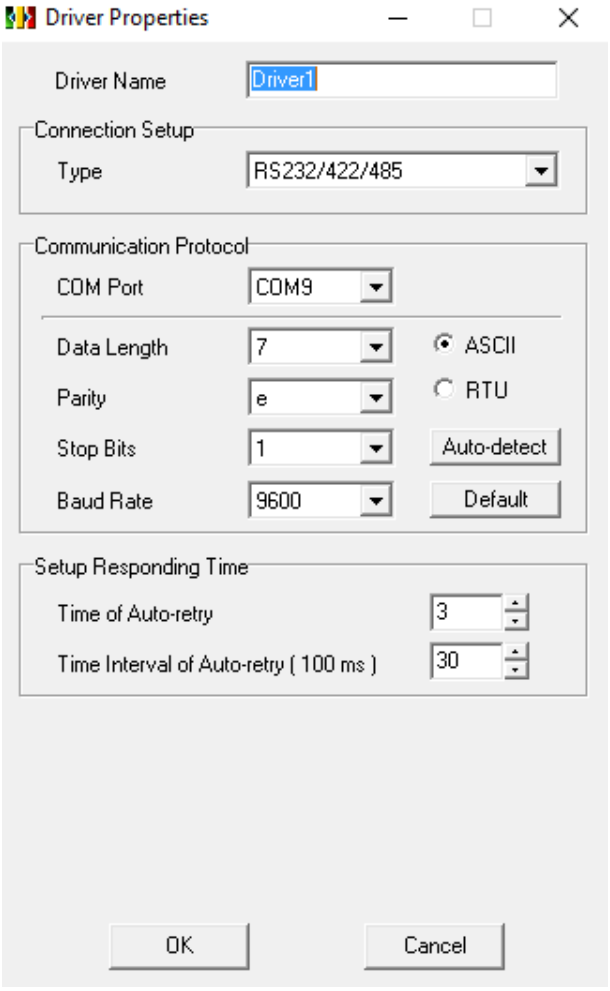
2.9.3.3 Connected Setting

Configuring of PLC

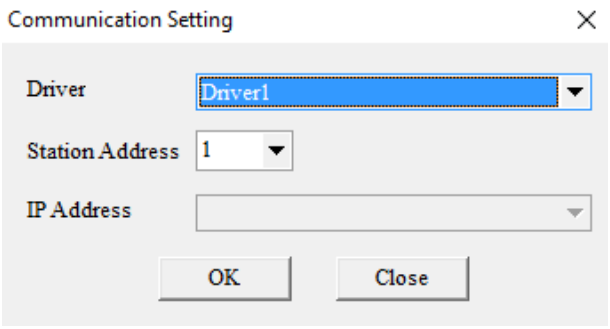
Use the application **ISPSoft** (Ver. 2.05) to configure the PLC. The application **COMMGR** is used to establish the connection between the PLC and the computer.

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

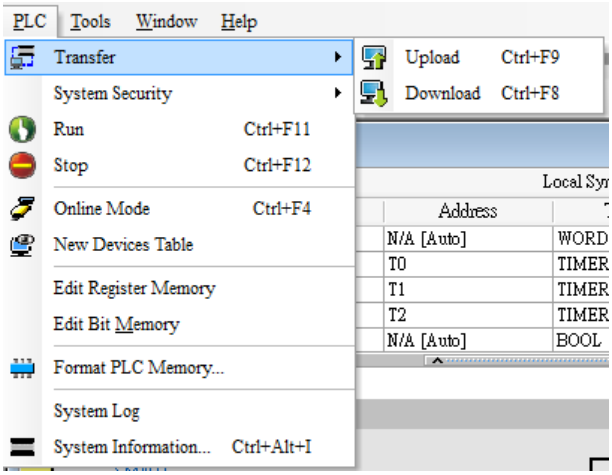
In Device Manager, verify the port number the PLC is connected to. In COMMGR, press **Add** and for **Connection Setup**, select RS232/422/485 for type. Select the port number the PLC is connected to for the **COM Port** setting. Press **Auto-detect** and the application will automatically adjust the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



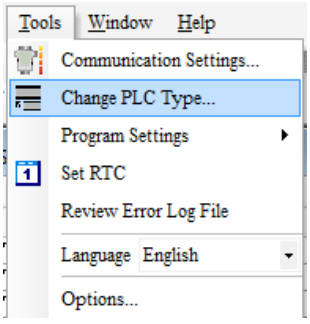
In **ISPSoft**, under the **Tools** menu option, select **Communication Settings**. Select the name of the connection configured in COMMGR and press OK.



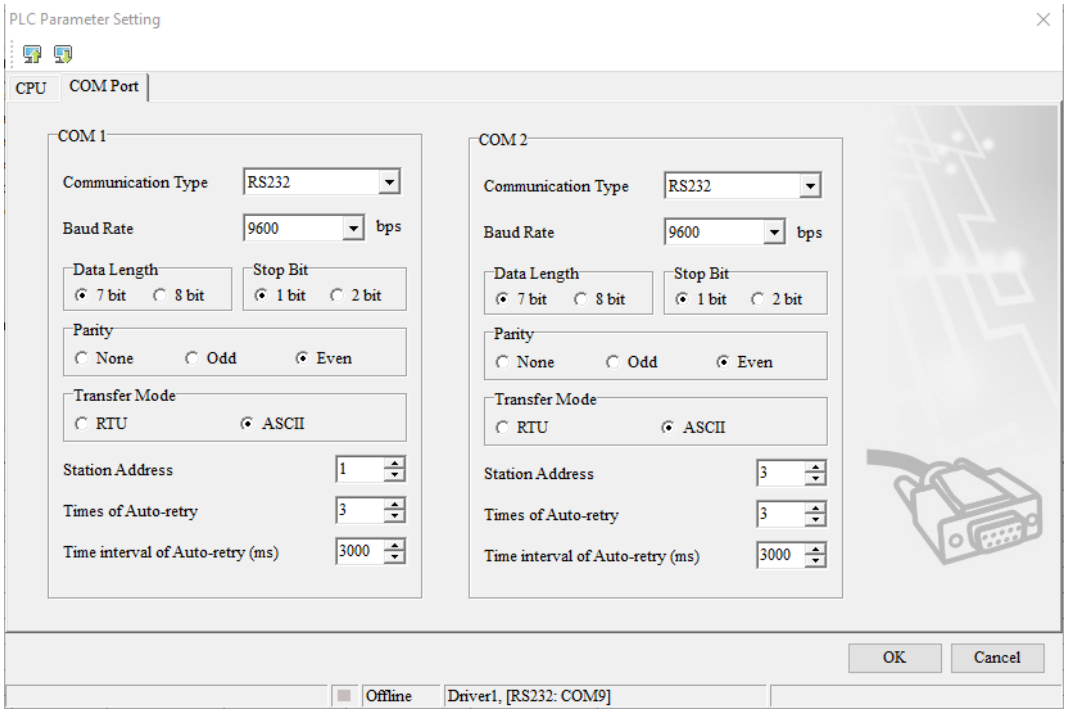
Under the **PLC** menu option, select **Transfer** and **Upload**. If there is a program on the PLC, it will be uploaded and the system settings can be configured. If there is no program present on the PLC one will have to be downloaded.



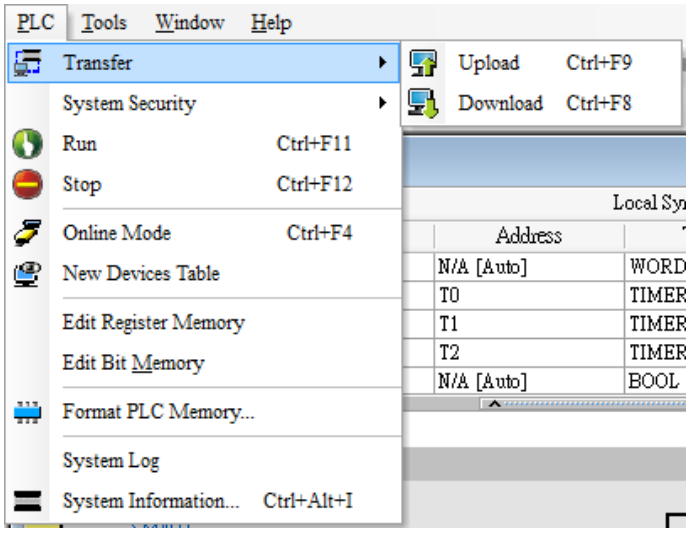
If program has to be downloaded onto the PLC, press open and select a program. In the active folder, there are example programs. The device associated with the example program may not be the same as the device connected. Under **Tools**, select **PLC Type** and select the device currently used. Once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

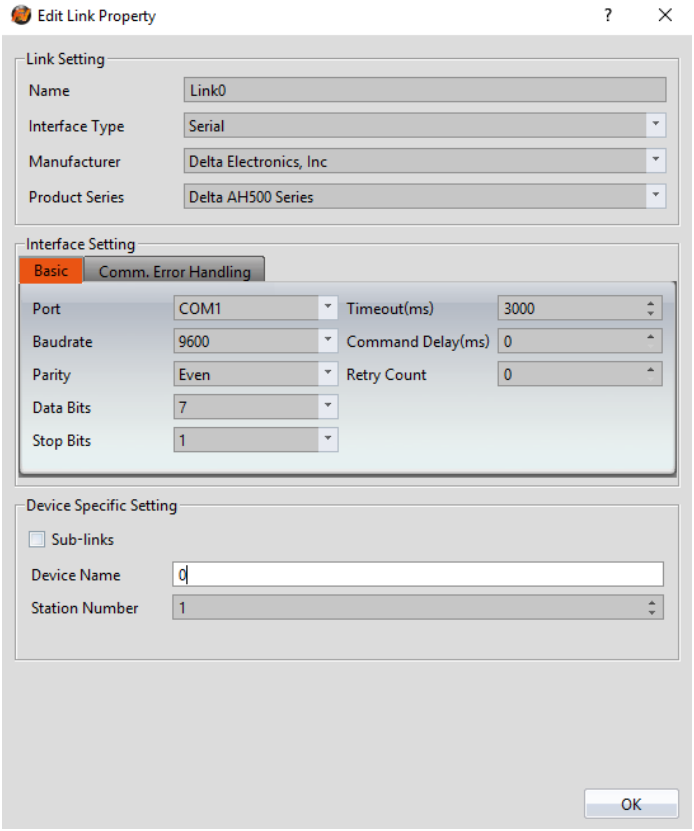


Under the **PLC** menu option, the program and PLC configurations can be downloaded onto the device.



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

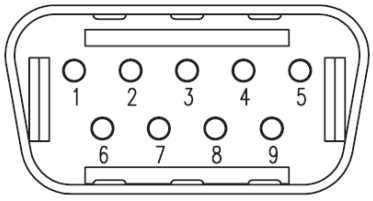
Under **Product Series** select Delta AH500 Series

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

Verify the other parameters are configured correctly.

2.9.3.4 Wiring Diagrams

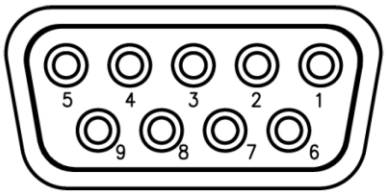
HMI COM1 Pinout



*Looking into COM1 Port

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

PLC COM1/COM2 Pinout

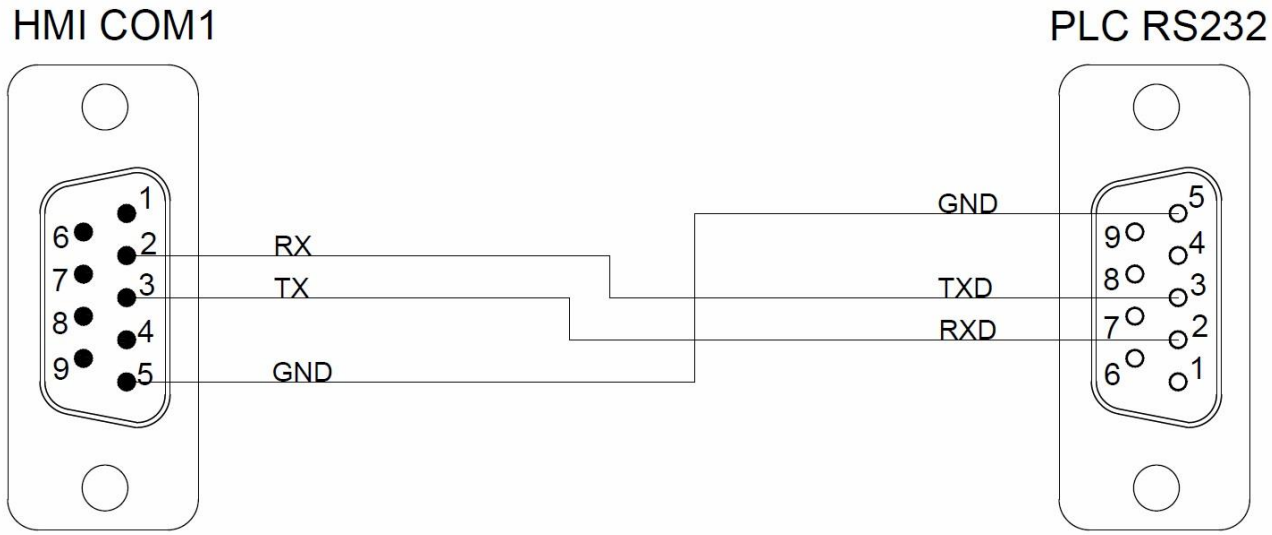


*Looking into PLC

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(ASCII)

2.9.4.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232C	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	1	
Communication Method	MODBUS ASCII	

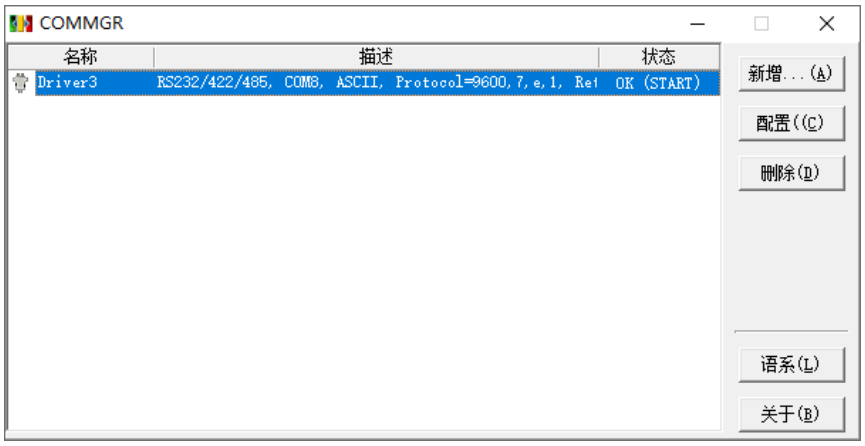
2.9.4.2 PLC Resource

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

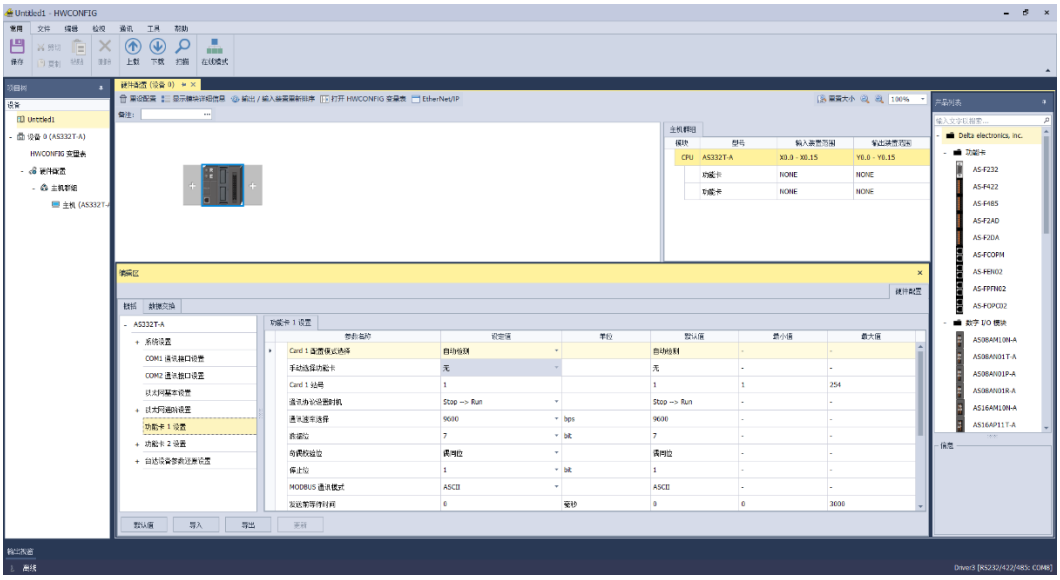
2.9.4.3 Connected Setting

Configuring of PLC

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

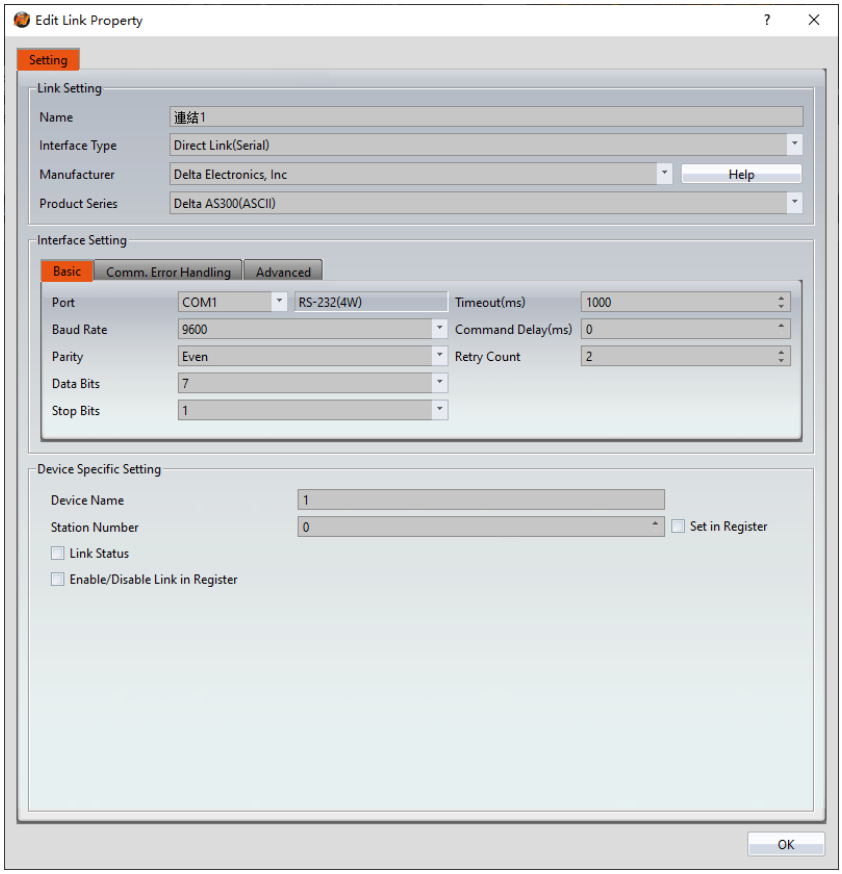


In **ISPSoft**, under the **Tools** menu option, select **HWCONFIG**. Select the **Function CARD** and set the PLC connection setting.



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

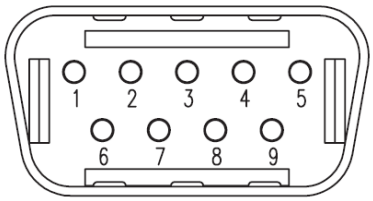
Under **Product Series** select Delta AS300(ASCII)

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

Verify the other parameters are configured correctly.

2.9.4.4 Wiring Diagram

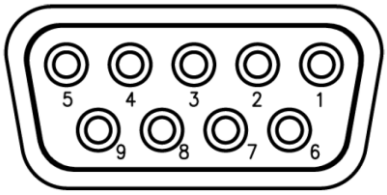
HMI COM1 Pinout



*Looking into COM1 Port

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

PLC COM1/COM2 Pinout



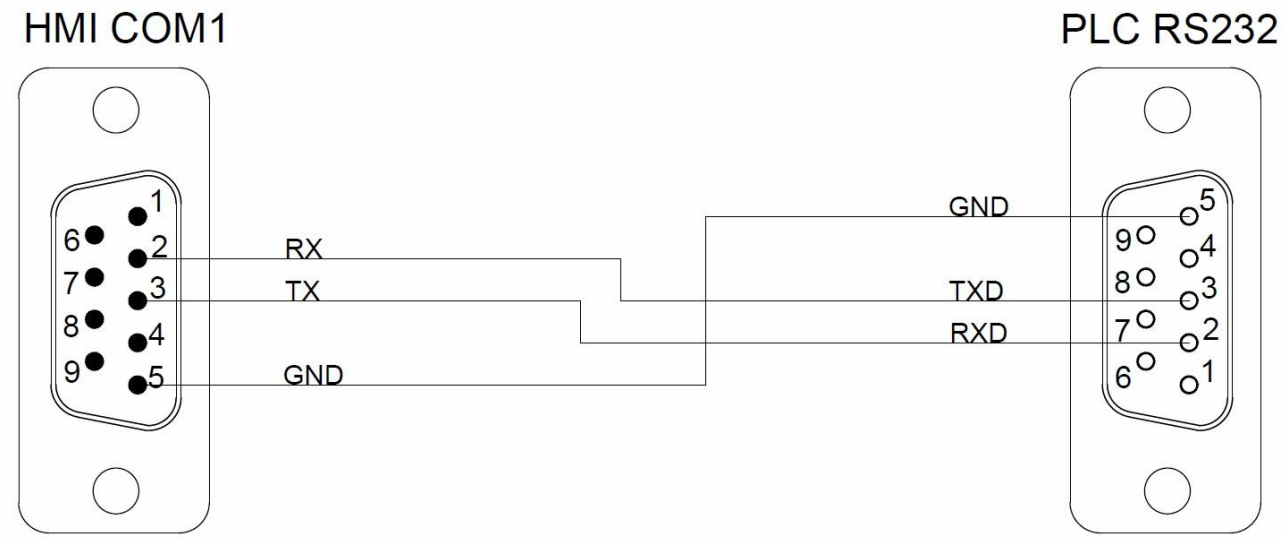
*Looking into PLC

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 AS300 Series(RTU)

2.9.5.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232C	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	1	
Communication Method	MODBUS RTU	

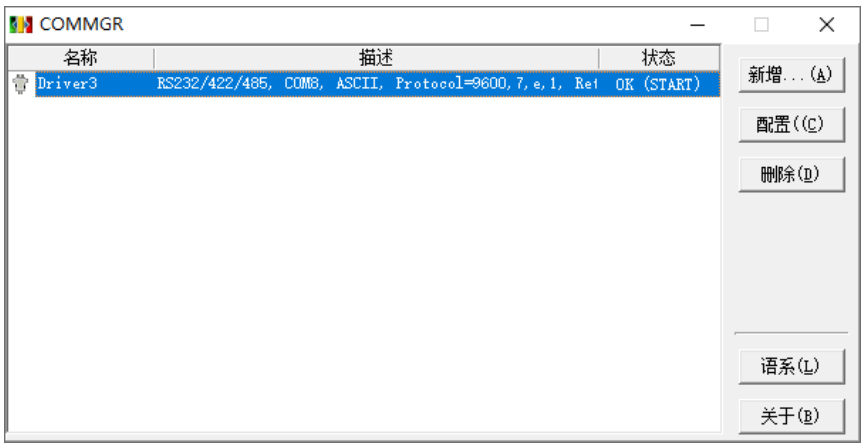
2.9.5.2 PLC Resource

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

2.9.5.3 Connected Setting

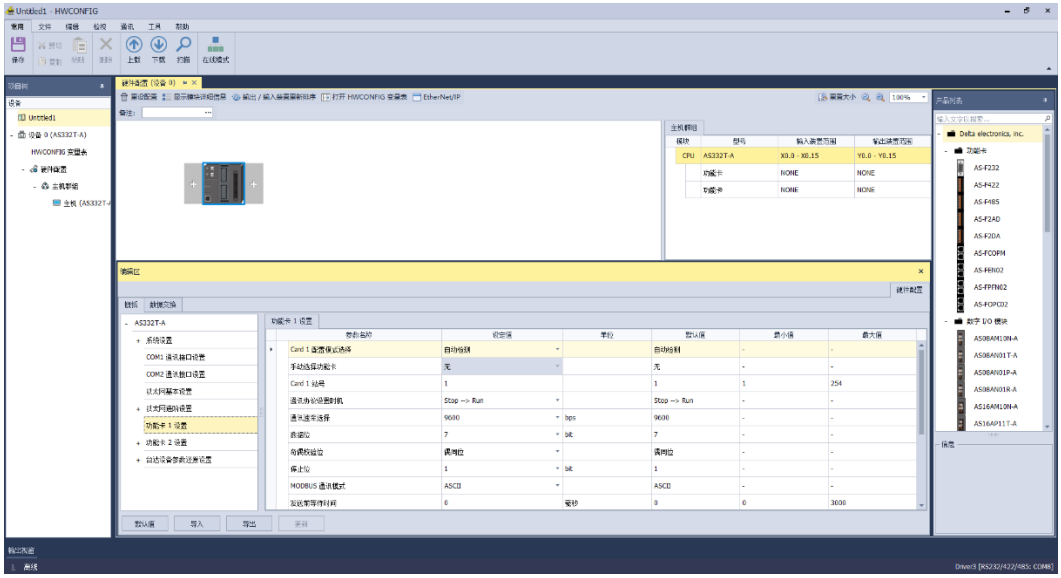
Configuring of PLC

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



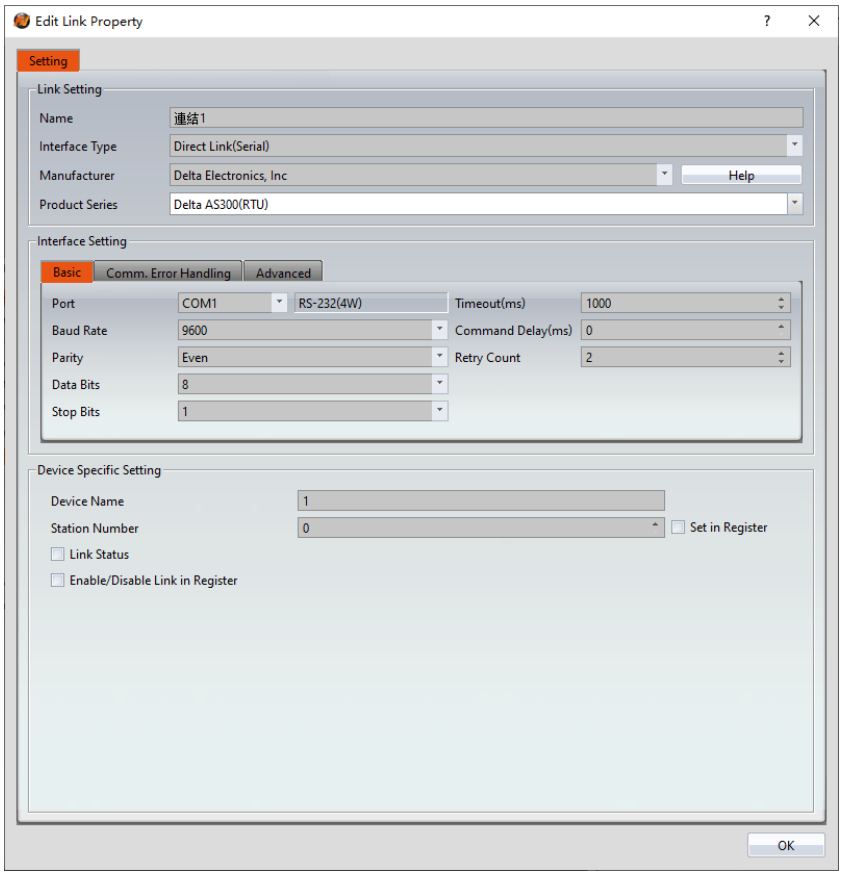
In **ISPSoft**, under the **Tools** menu option, select **HWCONFIG**. Select the **Function CARD**

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

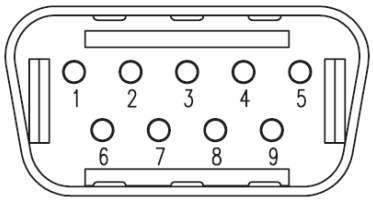
Under **Product Series** select Delta AS300(RTU)

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

Verify the other parameters are configured correctly.

2.9.5.4 Wiring Diagram

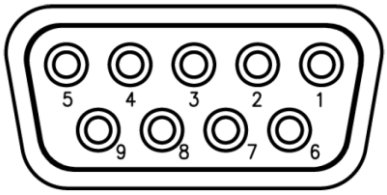
HMI COM1 Pinout



*Looking into COM1 Port

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

PLC COM1/COM2 Pinout



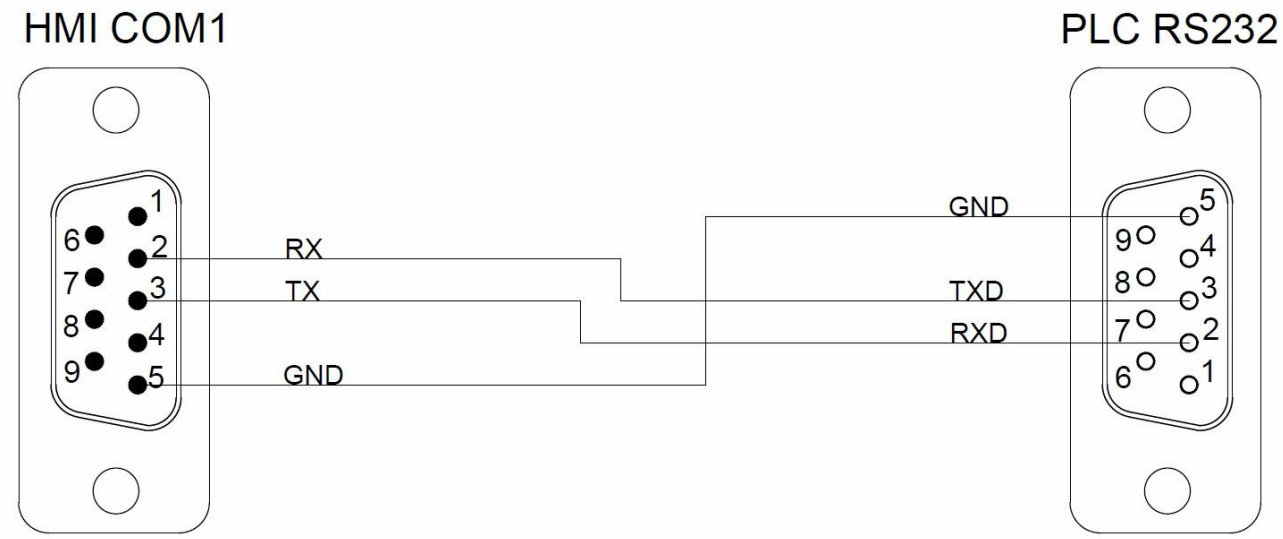
*Looking into PLC

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:



2.9.6 ES3 Series

2.9.6.1 Communication Setting

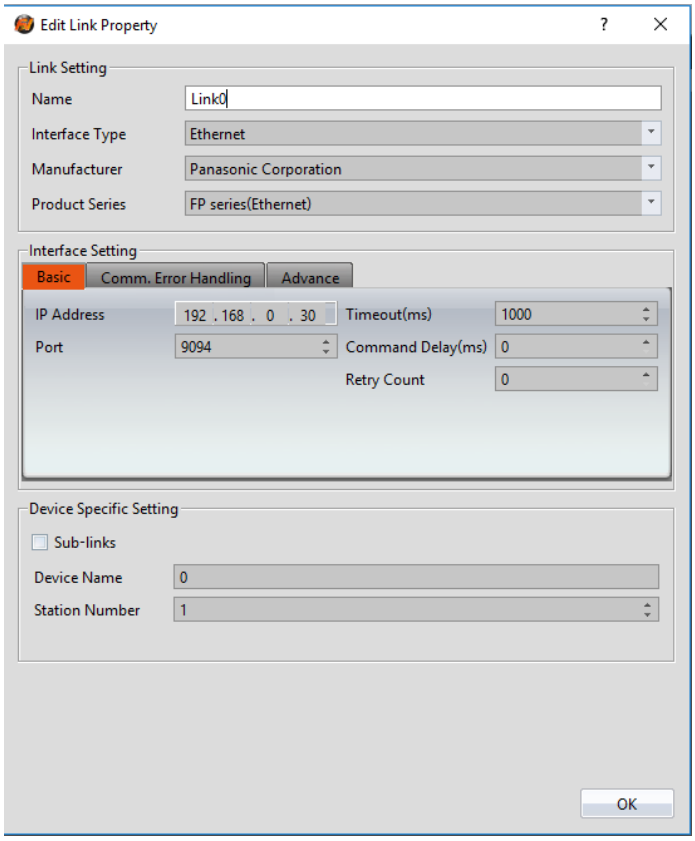
Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.1.100	
Port	502	
Device Station num.	1	
Communication Method	V1.6.7, Delta DVPES3(TCP)	

2.9.6.2 PLC Resource

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	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_DWord	32-Bit Counter	32	DDD	0	255
E	Index Register	16	D	0	9

2.9.6.3 Connected Setting

Configuring of HMI



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
Interface Type	RS232C	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Odd	
Device Station num.	1	
Communication Method	MEWTOCOL (computer link)	

2.10.1.2 PLC Resource

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

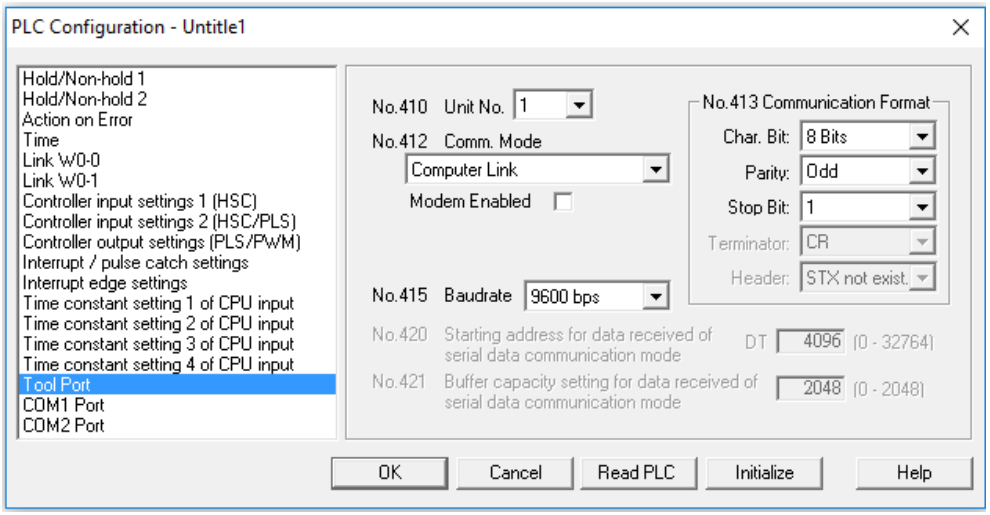
Configuring of PLC

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

Within **FPWIN GR**:

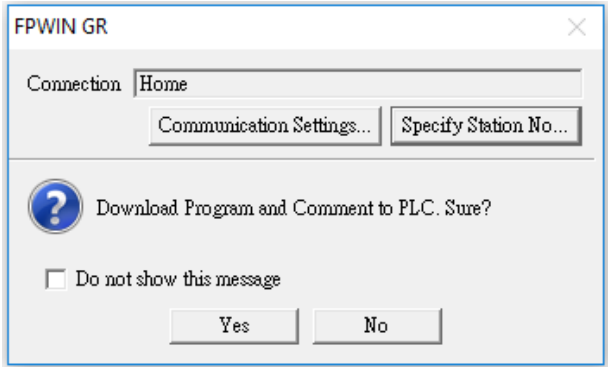
Connect the PLC to the computer via USB and navigate to the **Online** menu option and switch to **Online Editing Mode**.

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



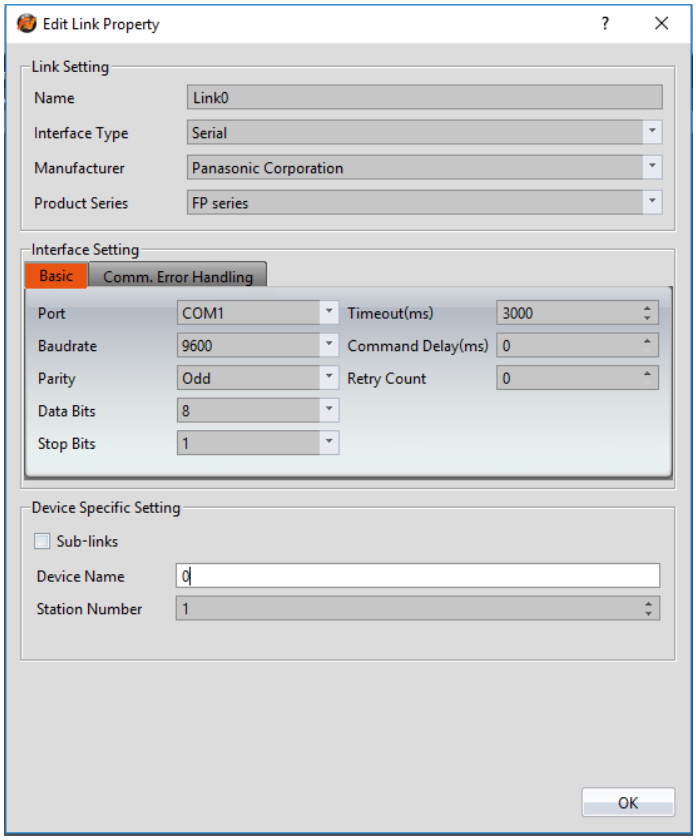
Go to the **Tool Port** option in the sidebar and select **Read PLC** to see the current PLC settings. Change the settings needed to be changed and press OK.

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

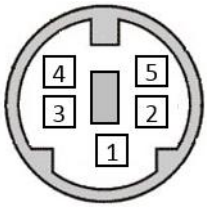
Select **COM1** for the port

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

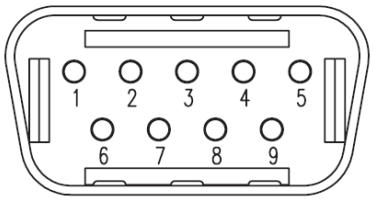


*View looking into PLC

PIN#	Signal

1	GND
2	TXD
3	RXD
4	
5	

HMI COM1 Pinout

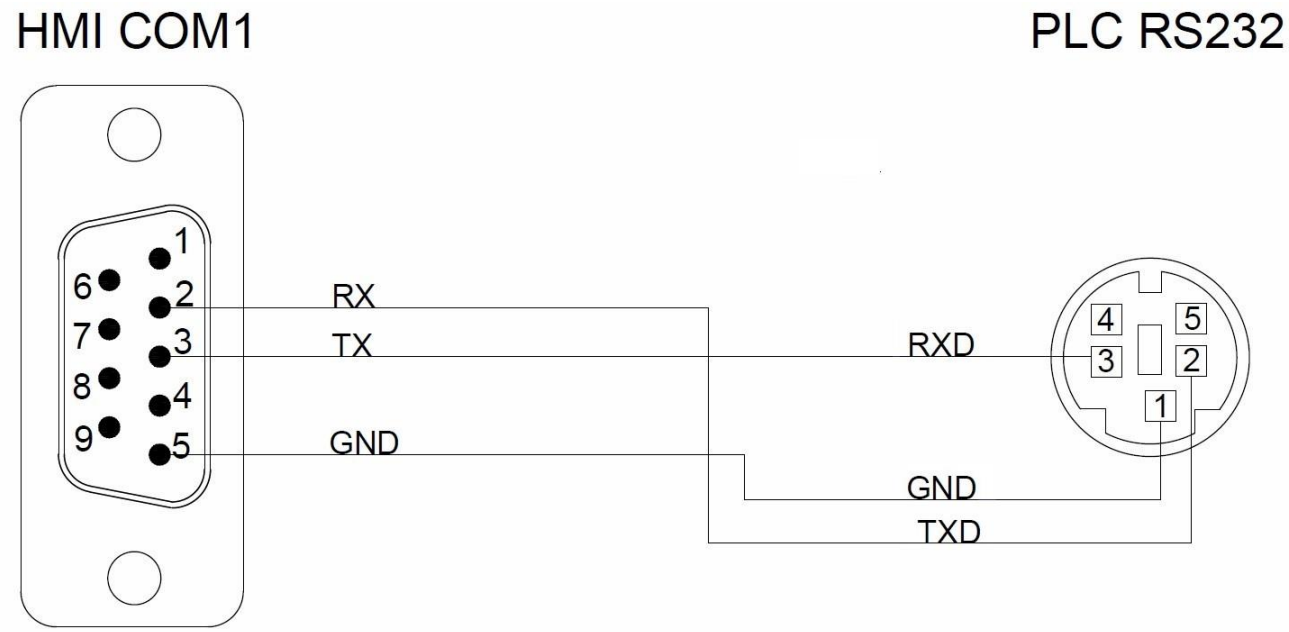


*Looking into COM1 Port

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

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

Wiring Diagrams:



2.10.2 FP Series (Ethernet)

2.10.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	With AFPX-COM5
IP Address	192.168.1.100	
Port	9094	
Device Station num.	1	
Communication Method	MEWTOCOL (computer link)	

2.10.2.2 PLC Resource

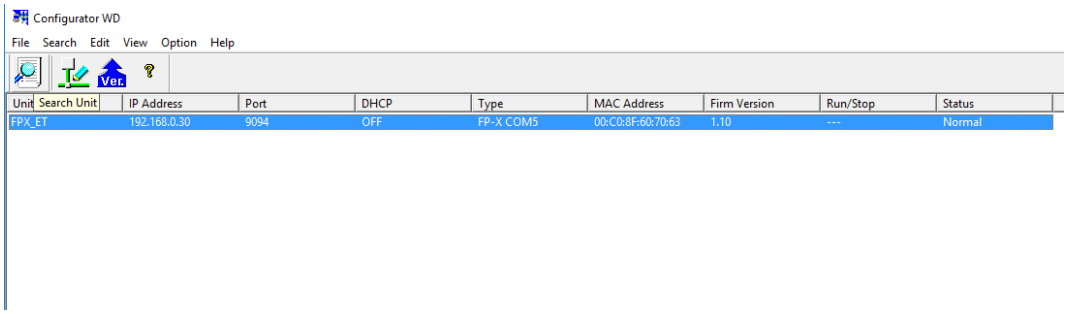
Device	Description	Data bit	Input format	Min.	Max.
X	External input relay	1	DDDD	0	8191
Y	External output relay	1	DDDD	0	8191
R	Internal relay	1	DDDDD	0	14191
L	Link Relay	1	DDDDD	0	10239
T	Timer	1	DDDD	0	3071

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

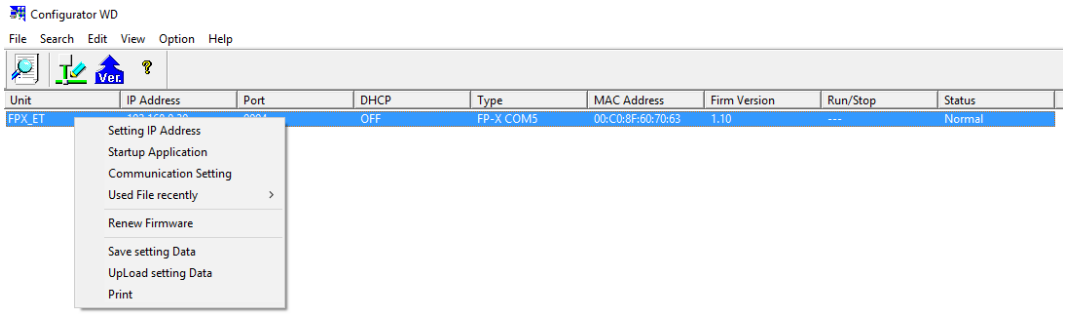
2.10.2.3 Connected Setting

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:

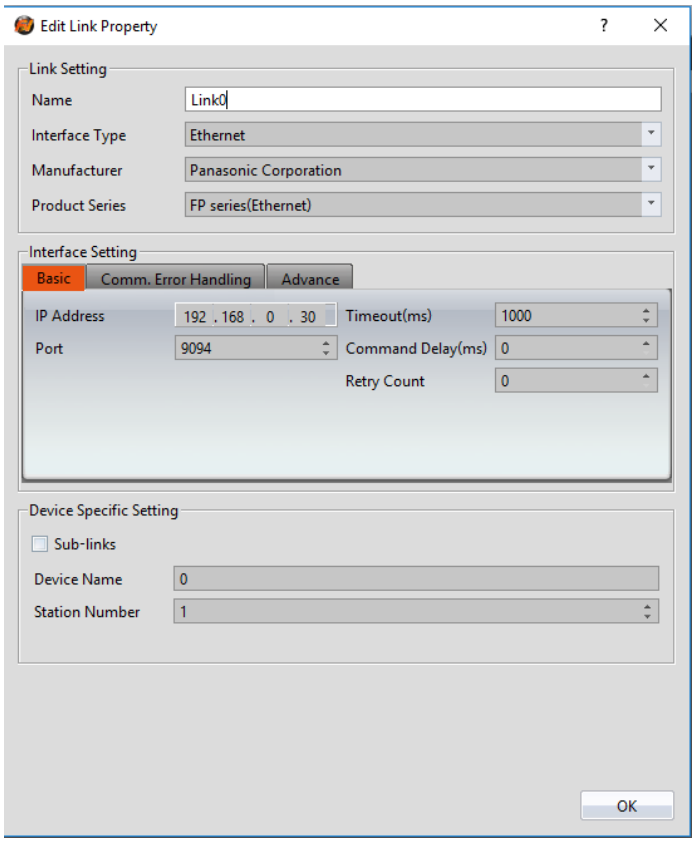
Under **Interface Type** select Ethernet

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.



2.11 YASKAWA

2.11.1 Extended MEMOBUS

2.11.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	

IP Address	192.168.1.1	
Port	502	
Device Station num.	1	
Communication Method	Extended MEMOBUS	

2.11.1.2 PLC Resource

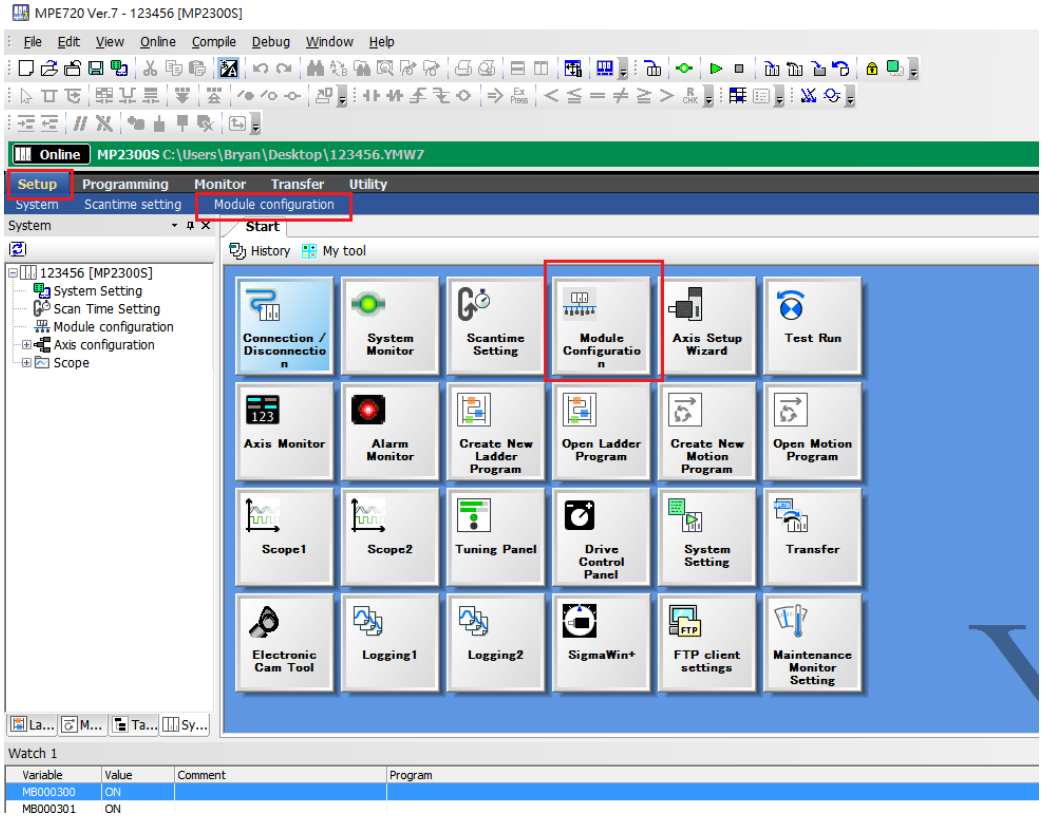
Device	Description	Data bit	Input format	Min.	Max.
IB	Input bits(Read only)	1	HHHHH	0	FFFFF
MB	Data bits	1	DDDDDH	0	65534F
IW	Input registers(Read only)	16	HHHH	0	FFFF
MW	Data registers	16	DDDDD	0	65534
IL	Input registers (DWord / Read only)	32	HHHH	0	FFFF
ML	Data registers (Dword)	32	DDDDD	0	65533
IF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

2.11.1.3 Connected Setting

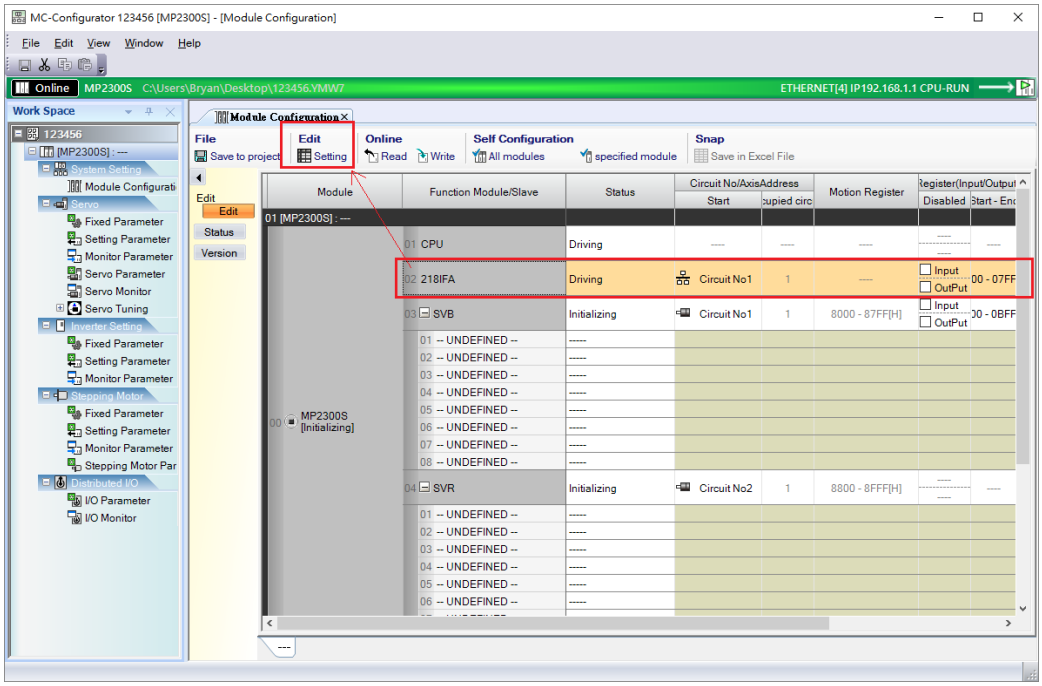
Configuring IP Address on PLC

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

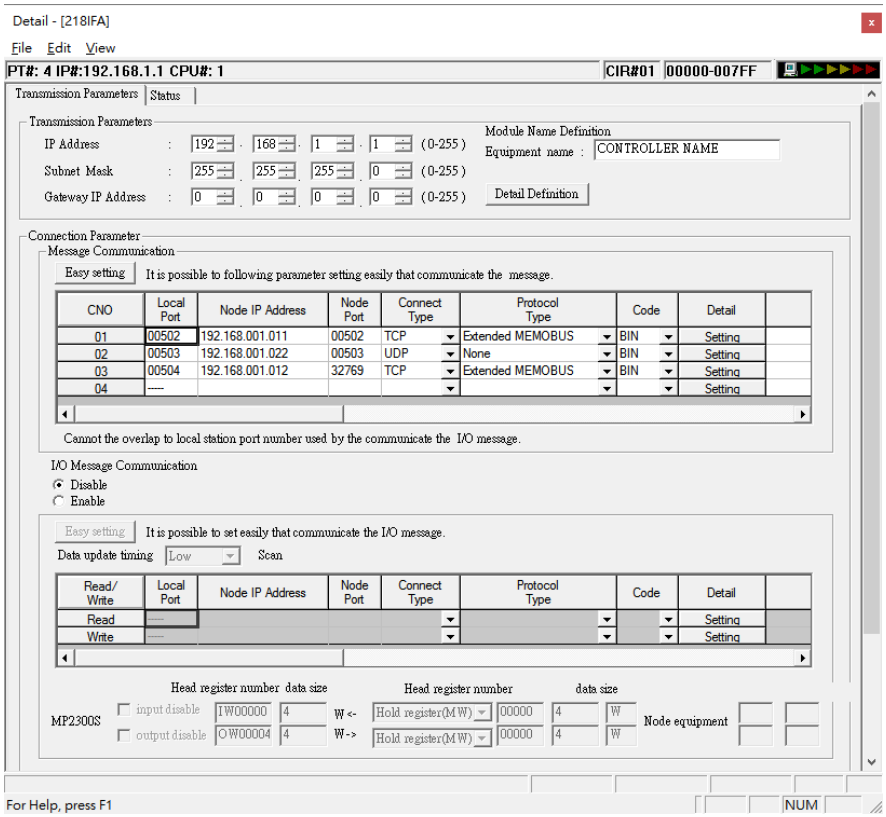
Click **Module configuration** function



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

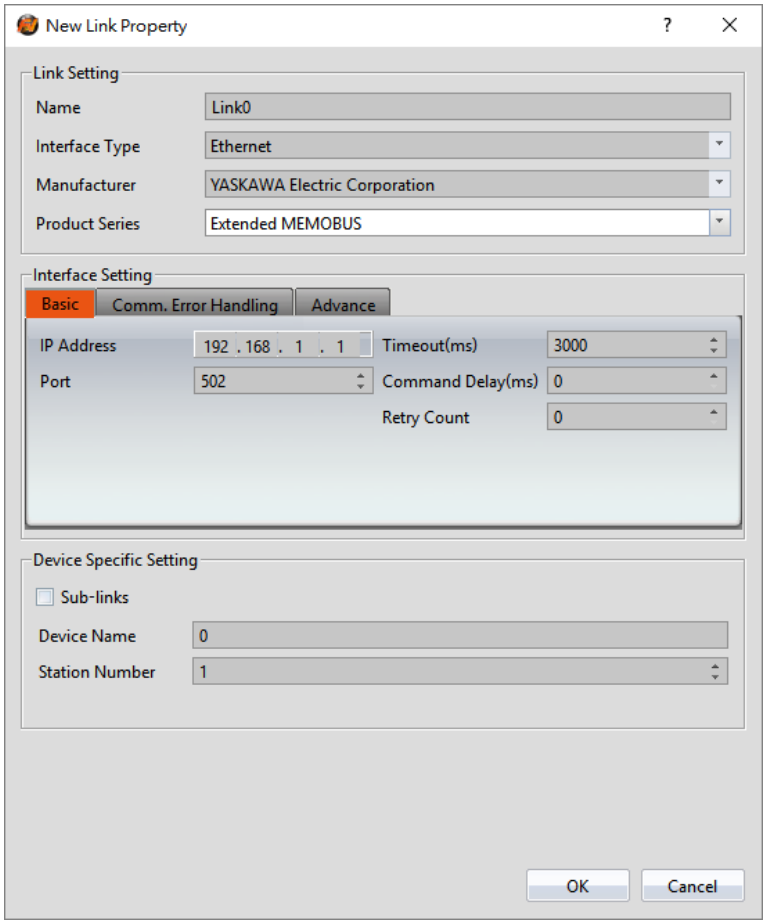


the IP address and other parameters can be set.



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

Connect PLC to HMI



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
Interface Type	Ethernet	UDP
IP Address	192.168.1.1	
Port	10000	
Device Station num.	1	
Communication Method	MP Series Extension (Ethernet)	

2.11.2.2 PLC Resource

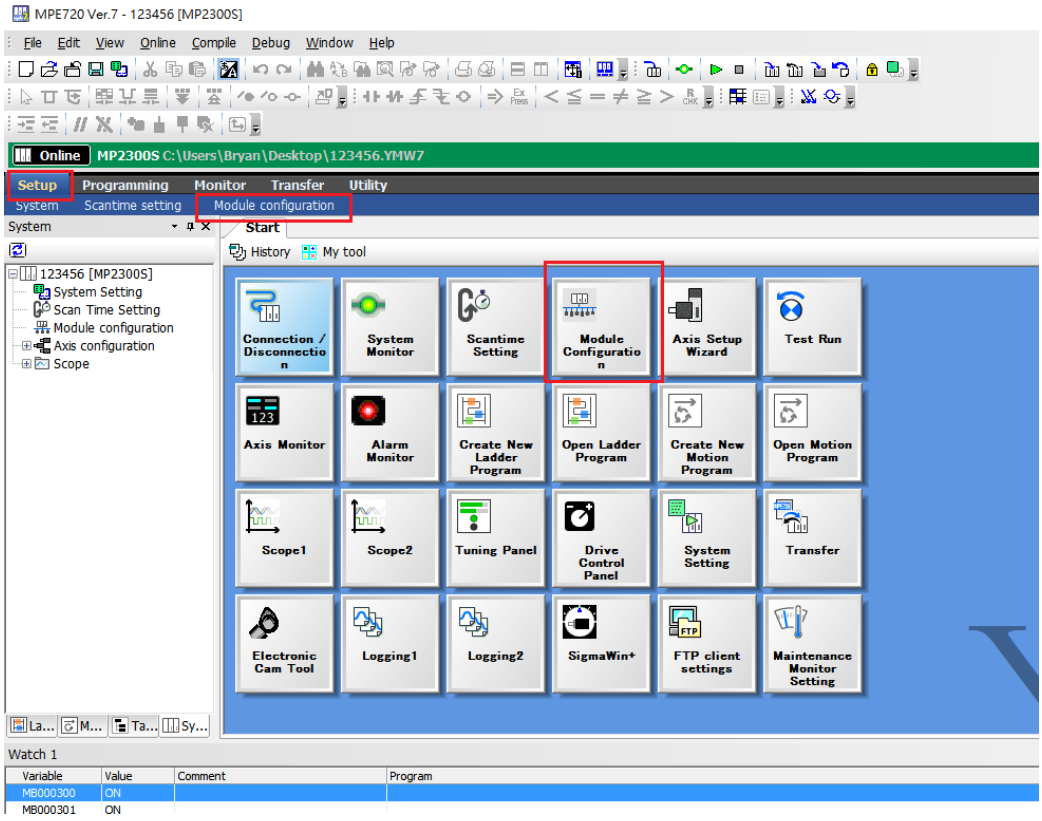
Device	Description	Data bit	Input format	Min.	Max.
SB	System bits	1	DDDDH	0	8191F
MB	Data bits	1	DDDDDH	0	65534F
IB	Input bits	1	HHHHH	0	FFFFF
OB	Output bits	1	HHHHH	0	FFFFF
SW	System registers	16	DDDD	0	8191
MW	Data registers	16	DDDDD	0	65534
IW	Input registers	16	HHHH	0	FFFF
OW	Output registers	16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

2.11.2.3 Connected Setting

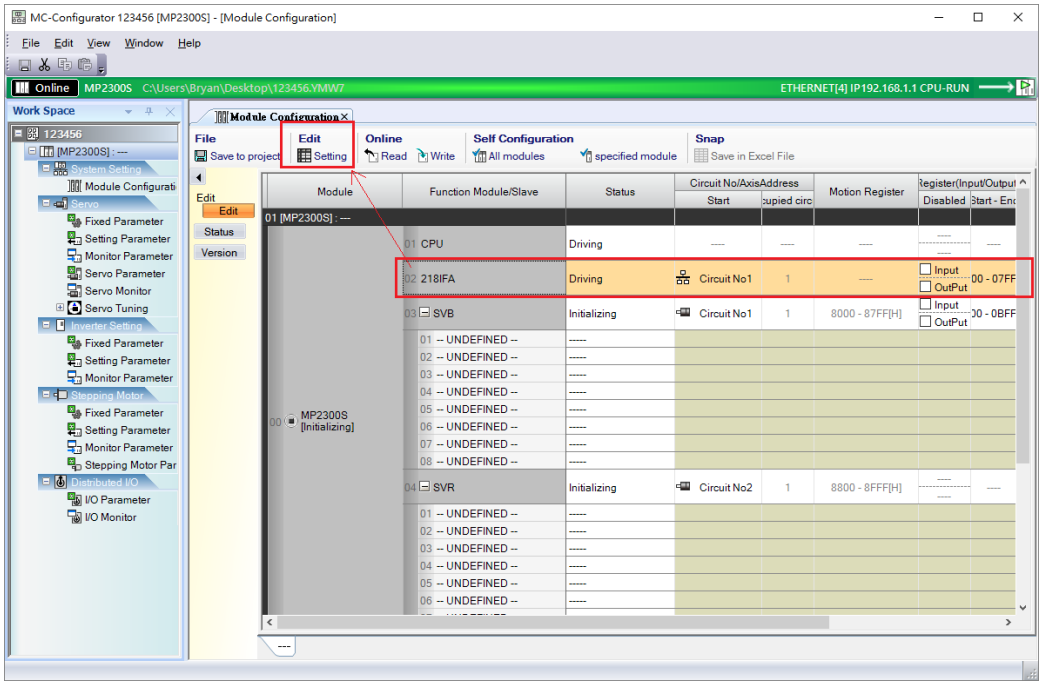
Configuring IP Address on PLC

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

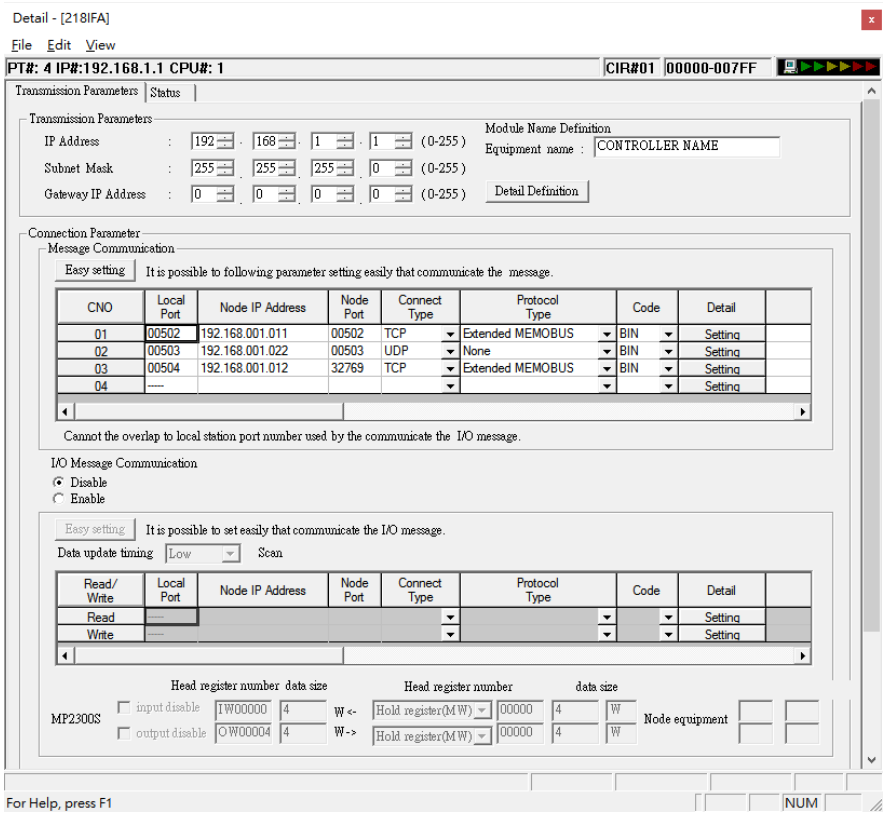
Click **Module configuration** function



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

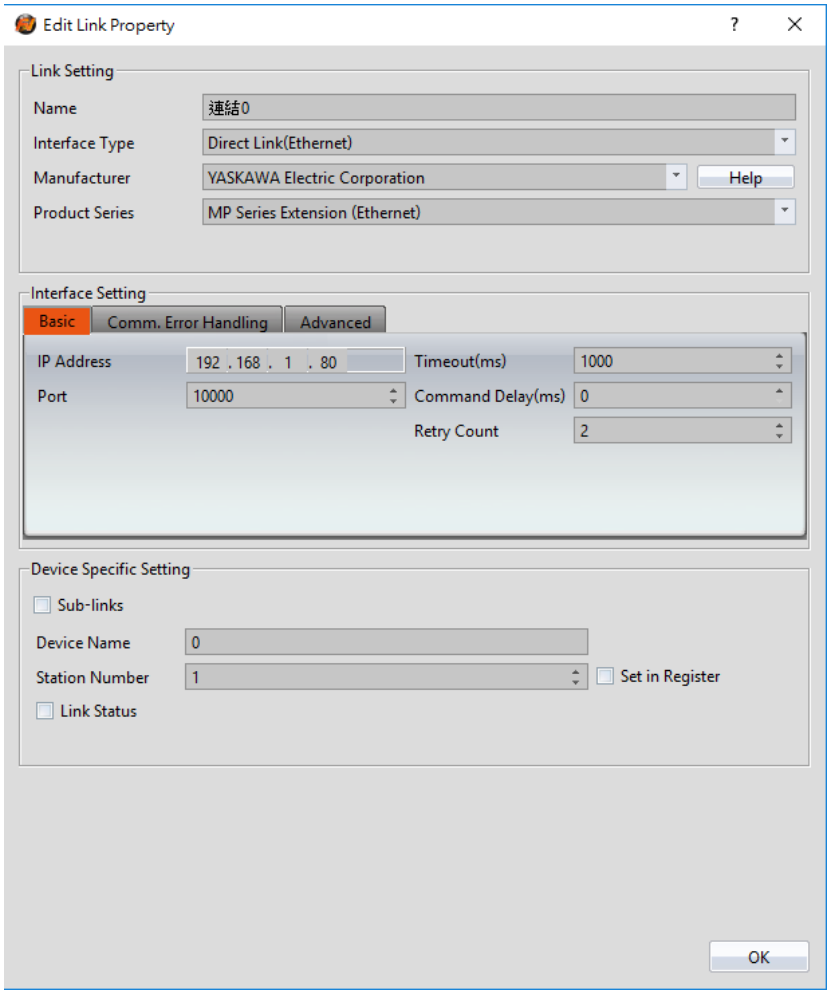


the IP address and other parameters can be set.



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

Connect PLC to HMI



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
Interface Type	Ethernet	

IP Address	0.0.0.0	
Port	8501	
Device Station num.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.12.1.2 PLC Resource

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	32	DDDD	0	3999

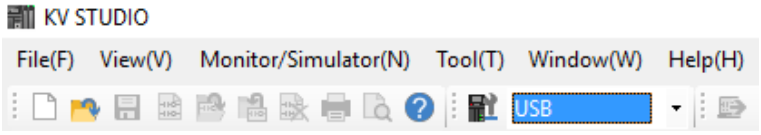
	value)				
CS	Counter (set value)	32	DDDD	0	3999
CTH	High-speed counter (current value)	32	D	0	3
CTC	High-speed counter comparator (set value)	32	D	0	7
TRM	Digital trimmer	32	D	0	7

2.12.1.3 Connected Setting

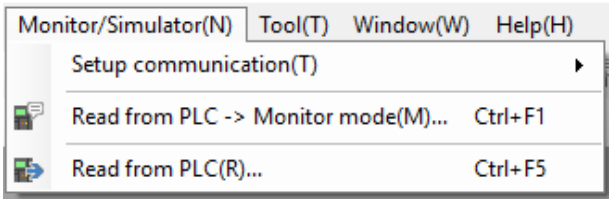
Configuring IP address on PLC

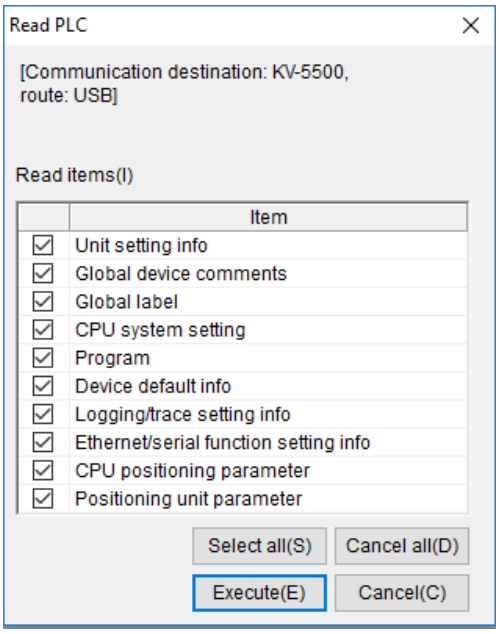
Use the application **KV Studio** to configure the IP address of the PLC.

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

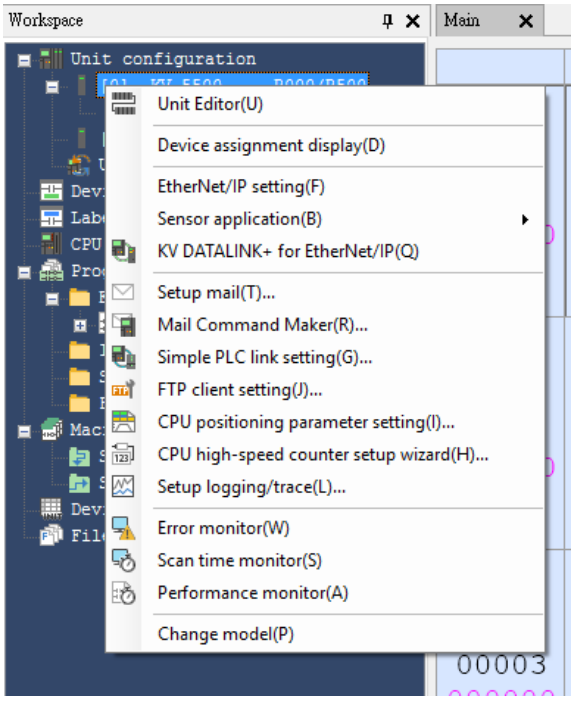


Under the **Monitor/Simulator** menu option, select **Read from PLC** and execute the operation.

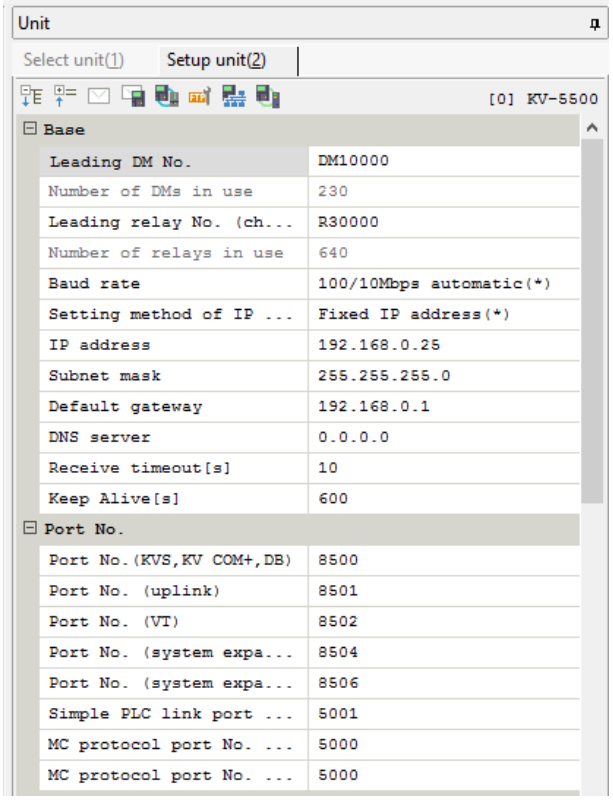




In the Workspace, right click the PLC model name and select **Unit Editor**.

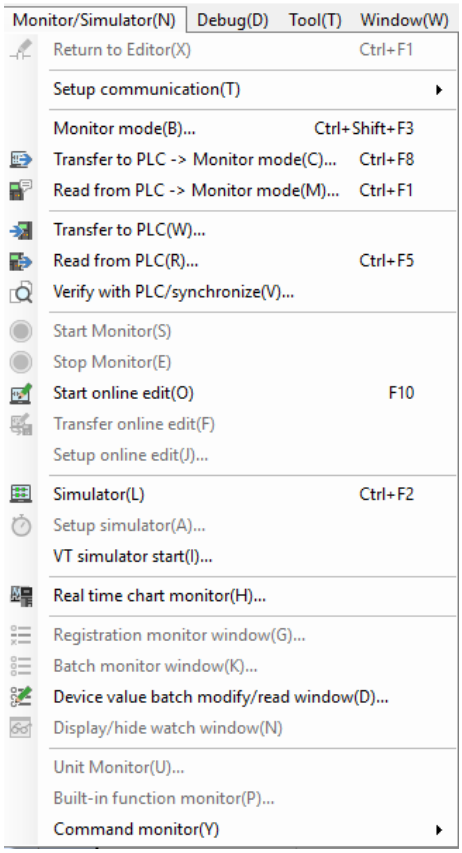


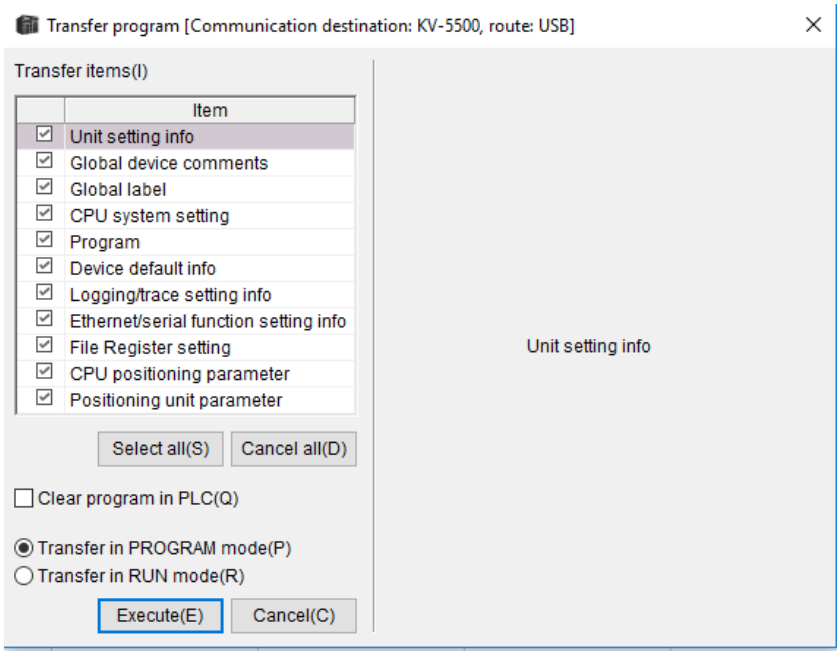
On the right side of the dialog window, the IP address and Port can be changed. When done, close out of the window and select 'Yes' to save the settings.



Under **Monitor/Simulator**, select **Transfer to PLC** to download the changes onto the

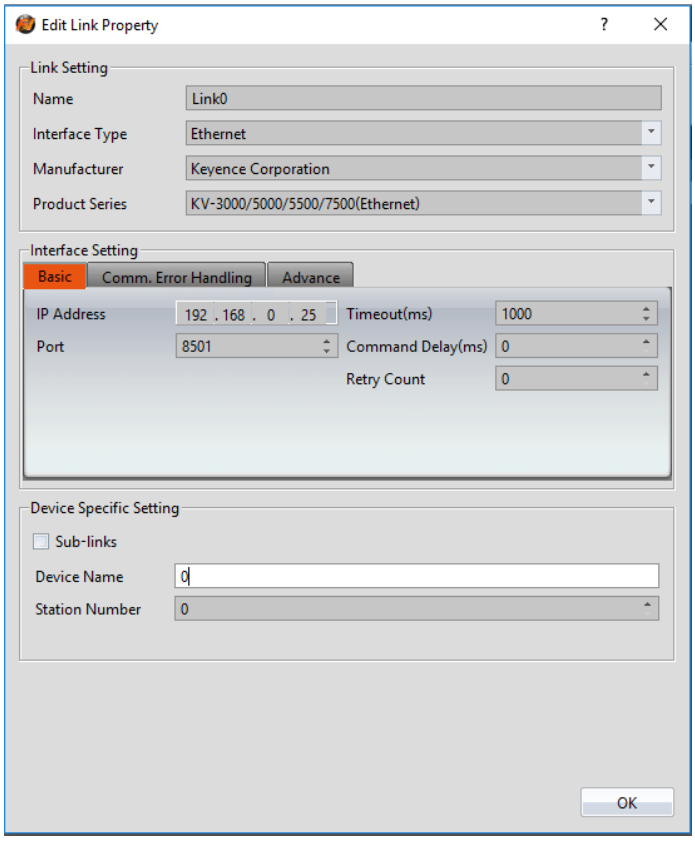
PLC. Confirm the execution of the operation





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
Interface Type	RS232C	
Baud Rate	115200	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	0	

Communication Method	HOST-LINK COMMUNICATION	

2.12.2.2 PLC Resource

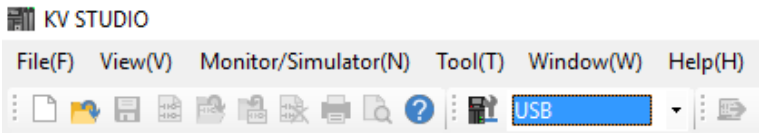
Device	Description	Data bit	Input format	Min.	Max.
R	Relay	1	DDDdd	0	99915
B	Link relay	1	HHHH	0	7FFF
MR	Internal auxiliary relay	1	DDDDdd	0	399915
LR	Latch relay	1	DDDdd	0	99915
T	Timer	1	DDDD	0	3999
C	Counter	1	DDDD	0	3999
CTC_sts	High-speed counter comparator (contact)	1	D	0	7
CR	Control relay	1	DDdd	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	32	D	0	3

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

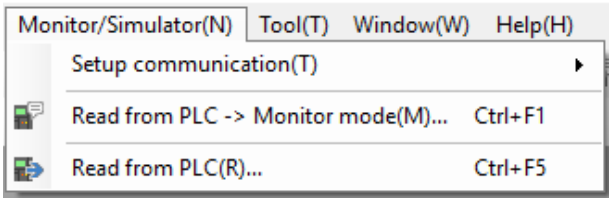
2.12.2.3 Connected Setting

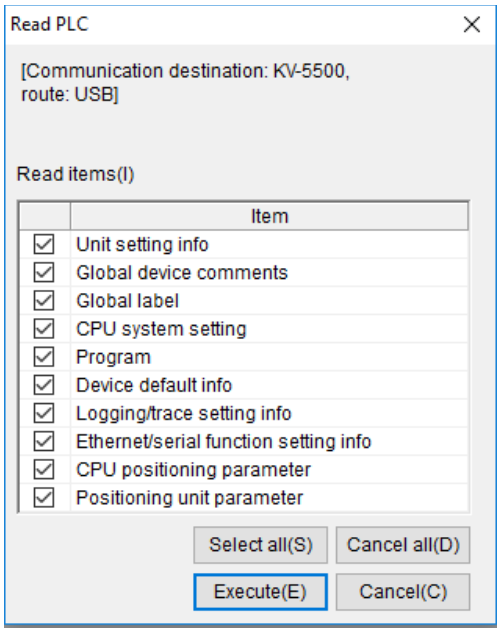
Configuring of PLC

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.

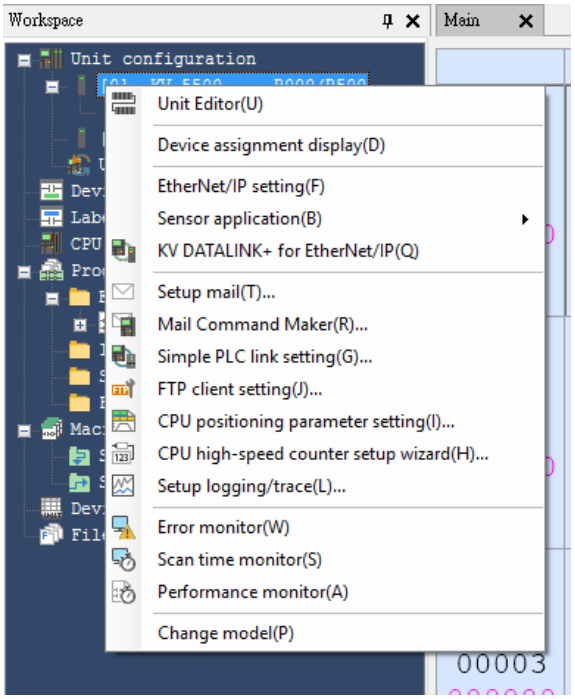


Under the **Monitor/Simulator** menu option, select **Read from PLC** and execute the operation.

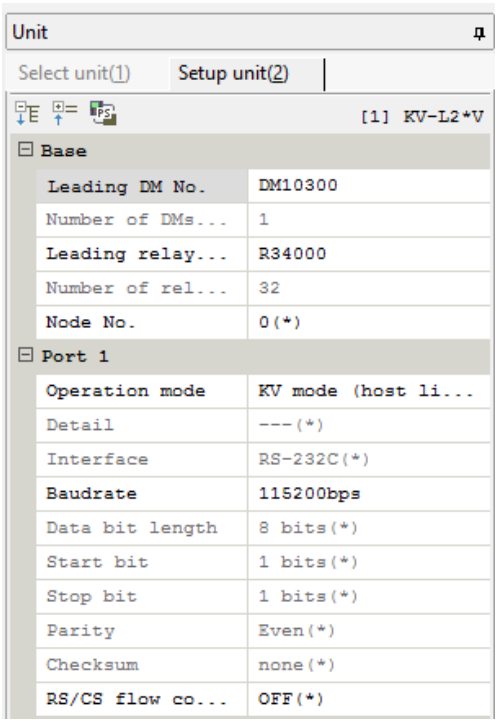




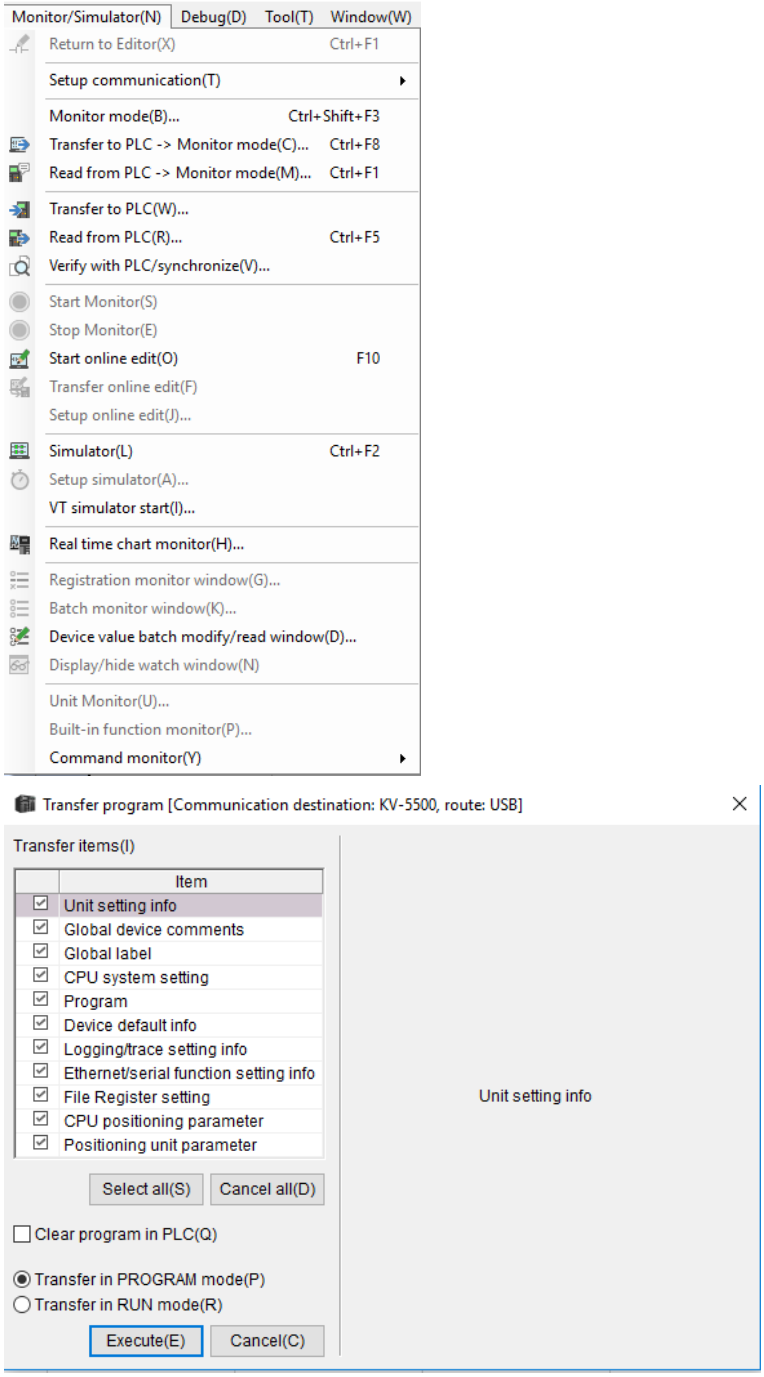
In the Workspace, right click the PLC model name and select **Unit Editor**.



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.



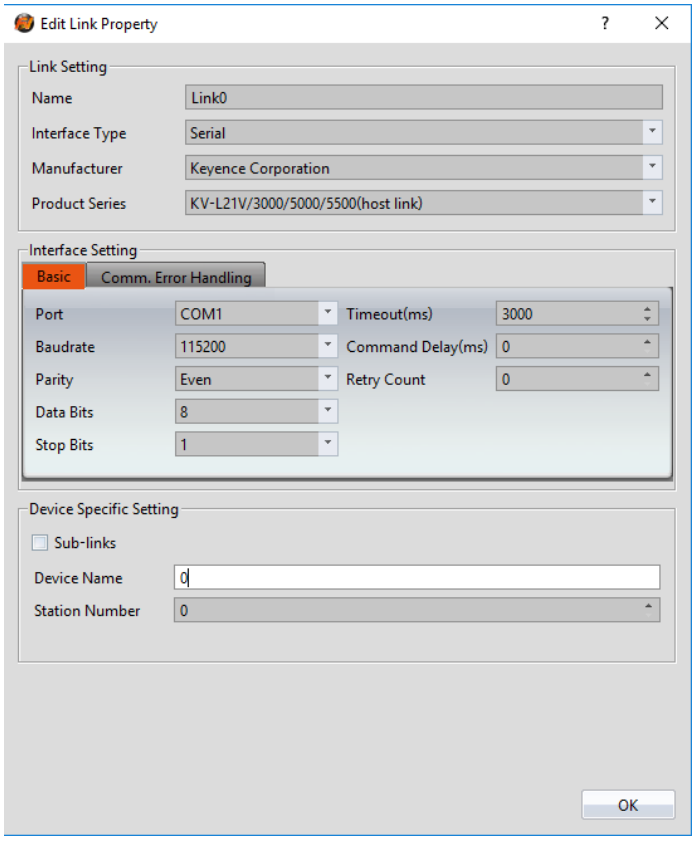
Under **Monitor/Simulator**, select **Transfer to PLC** to download the changes onto the PLC. Confirm the execution of the operation



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

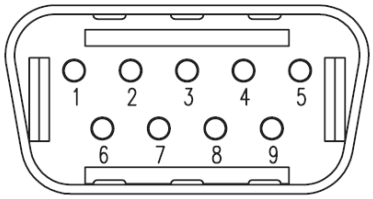
Under **Product Series** select KV-L21V/3000/5000/5500(host link)

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

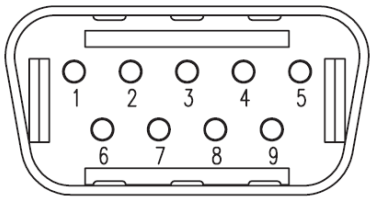
PLC RS232 Port (PORT1)



*Looking into PLC

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

HMI COM1 Pinout



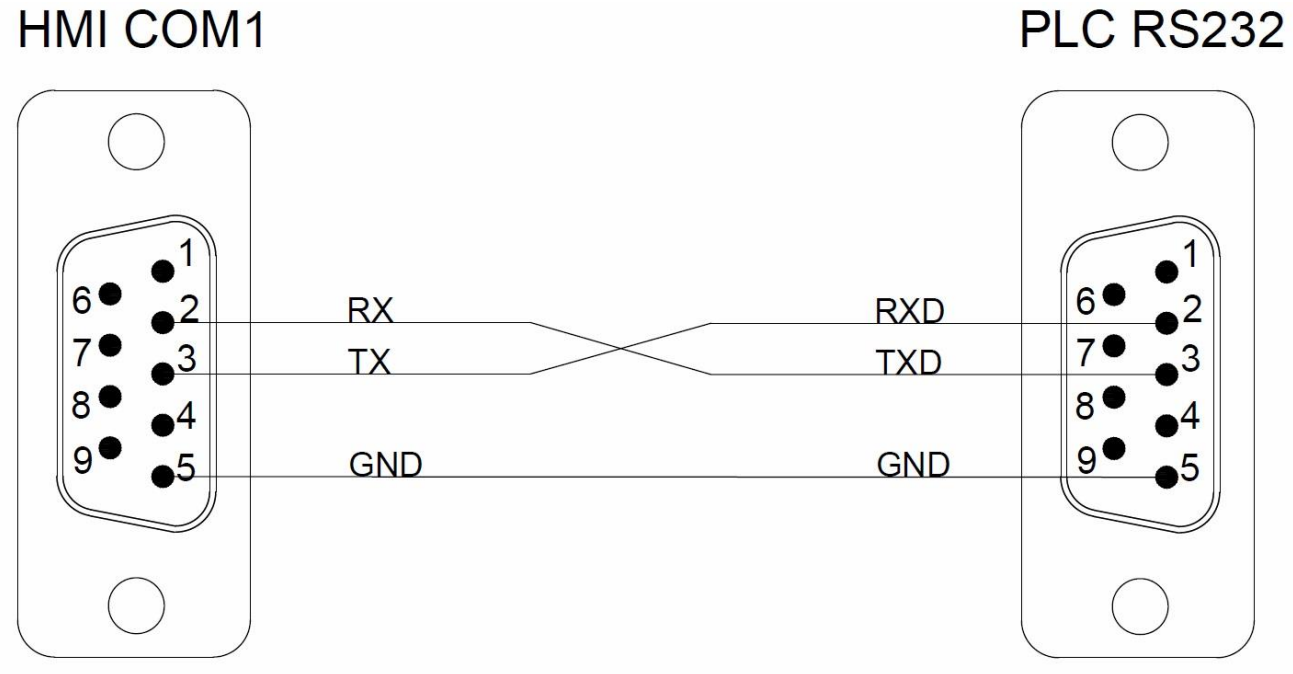
*Looking into COM1 Port

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

9	

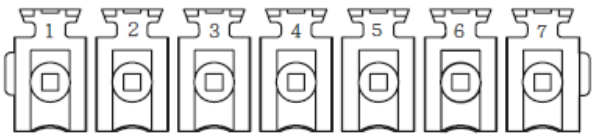
HMI COM1	PLC RS232 Port
2 RX	3 TXD
3 TX	2 RXD
5 GND	5 GND

Wiring Diagrams:



Using Port 2

HMI COM3 Pinout



*Looking into HMI Device

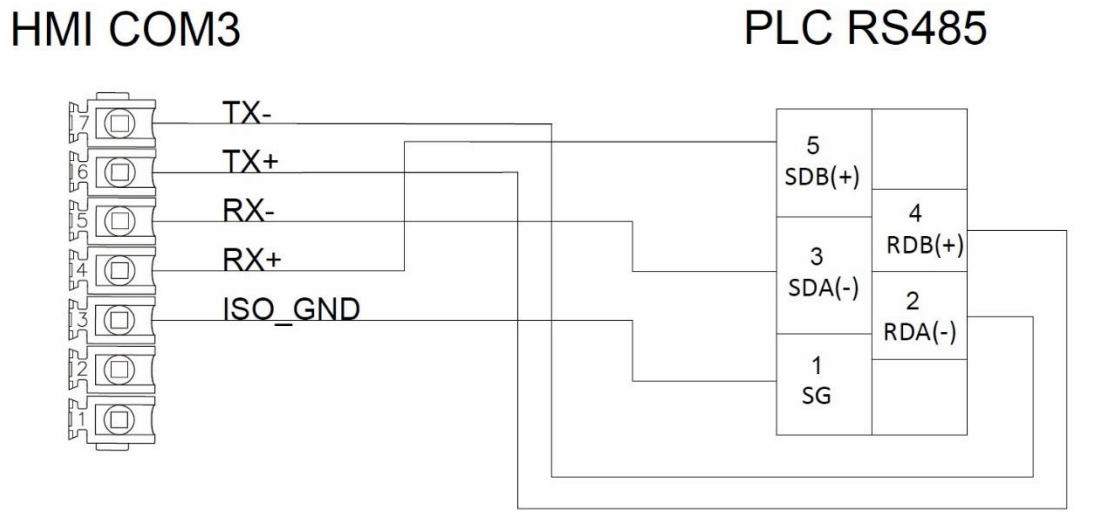
PIN#	COM3 (RS-422/RS-485)
1	
2	
3	ISO_GND
4	RX+
5	RX-
6	TX+
7	TX-

PLC RS485 Port (PORT2)

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

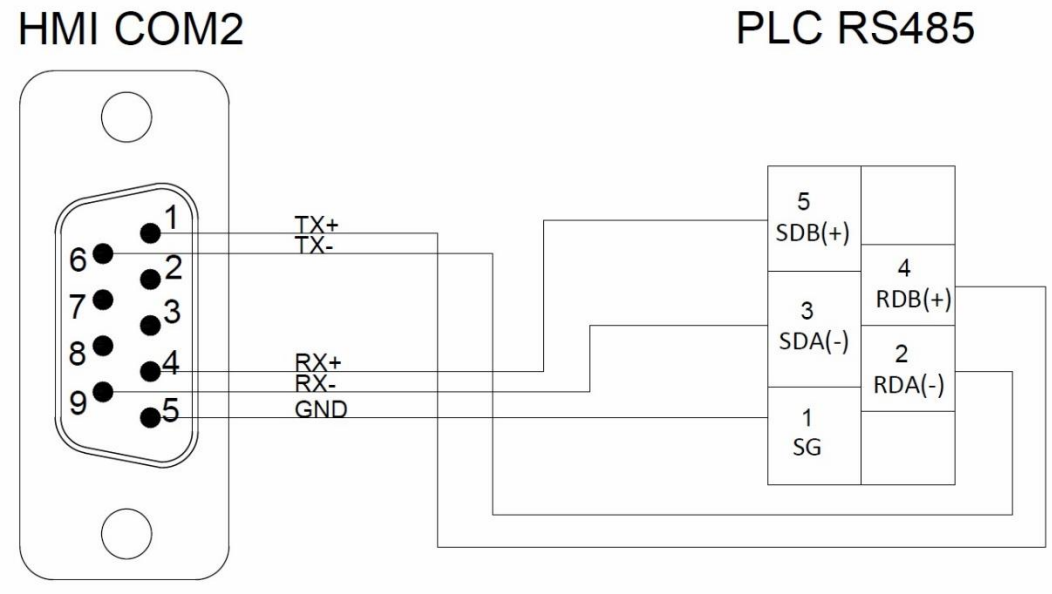
HMI COM3	PLC RS485 Port
5 RX-	3 SDA(-)
4 RX+	5 SDB(+)
7 TX-	2 RDA(-)
6 TX+	4 RDA(+)
3 ISO_GND	1 SG

Wiring Diagrams



HMI 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



2.12.3 KV-Nano (host link)

2.12.3.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232C	OP-26486
Baud Rate	115200	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.12.3.2 PLC Resource

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

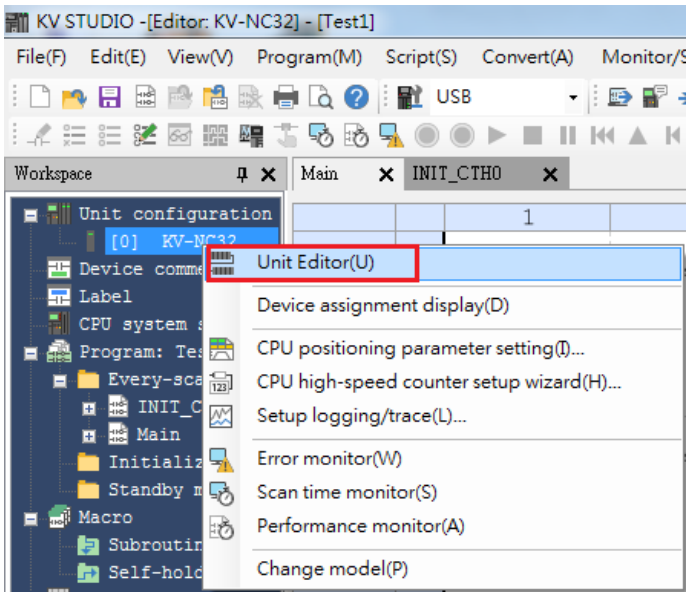
TC	Timer (current value)	32	DDDD	0	511
TS	Timer (set value)	32	DDDD	0	511
CC	Counter (current value)	32	DDDD	0	255
CS	Counter (set value)	32	DDDD	0	255
CTH	High-speed counter (current value)	32	D	0	3
CTC	High-speed counter comparator (set value)	32	D	0	7

2.12.3.3 Connected Setting

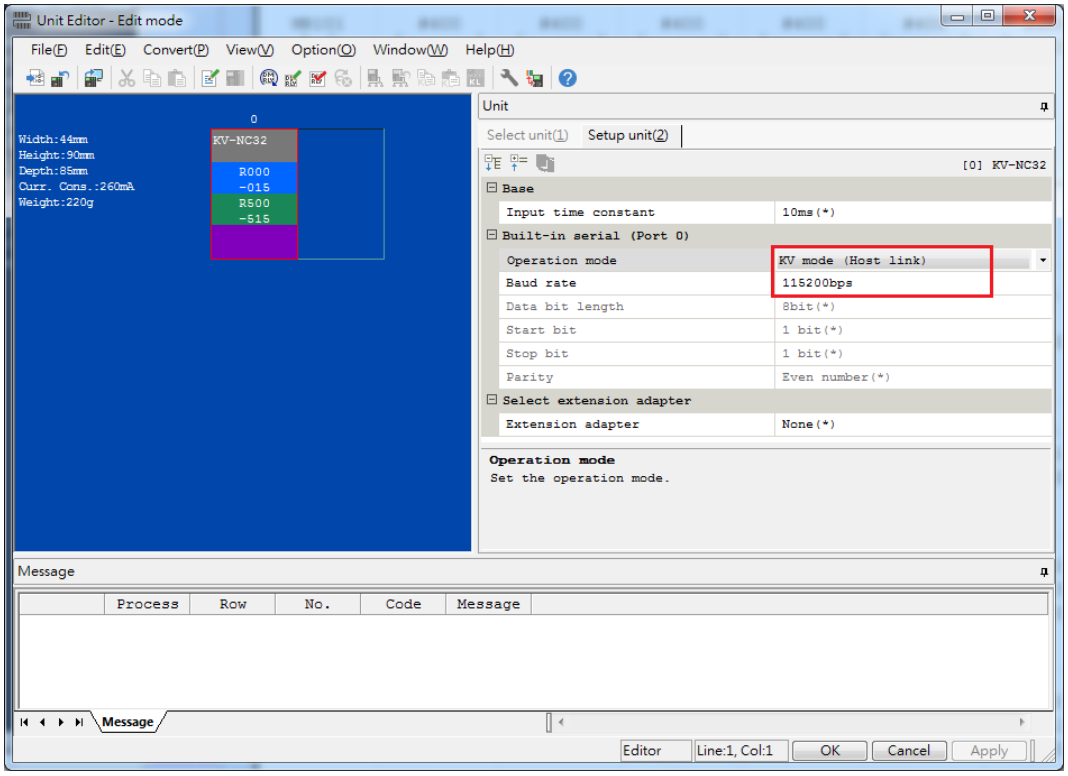
Configuring of PLC

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

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

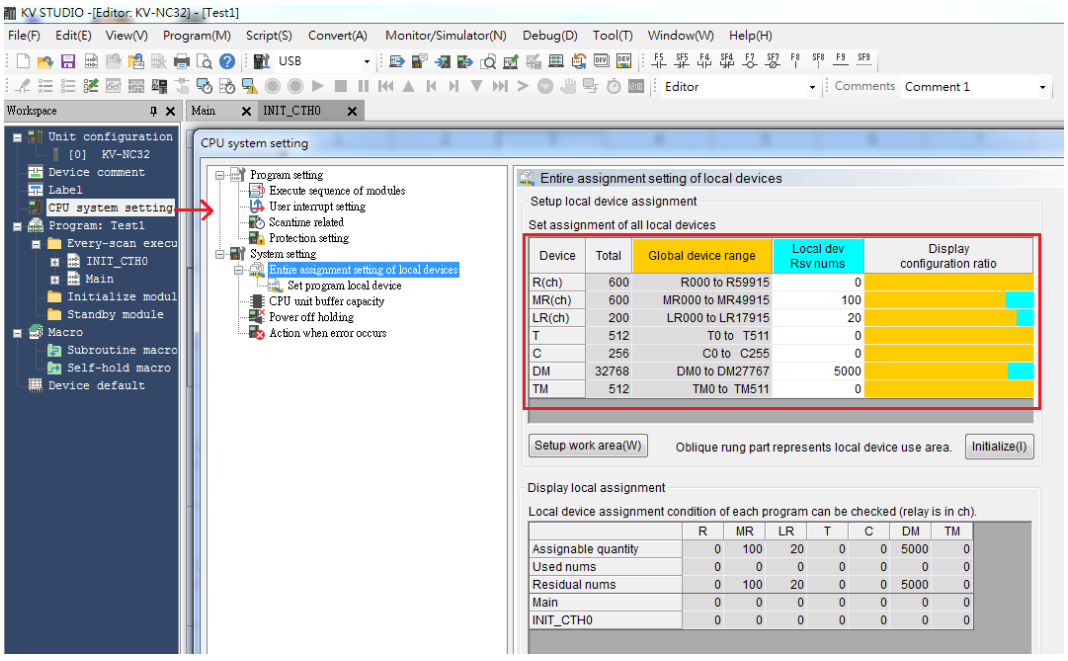


Choose **KV mode (Host Link)** and set the Baud rate to 115200.



Download the settings back onto the PLC and reset it.

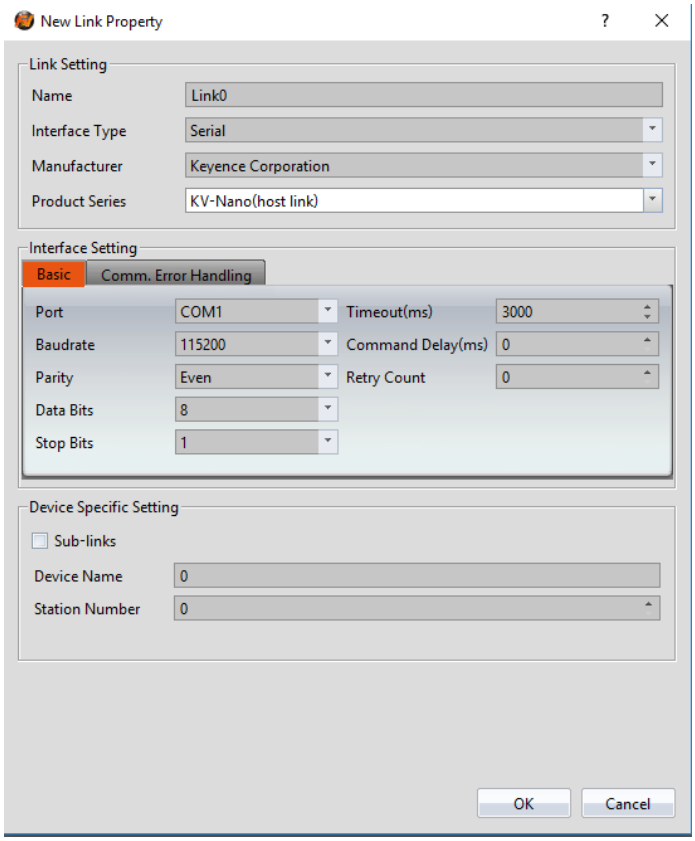
Required register ranges



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

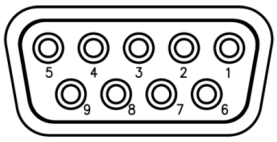
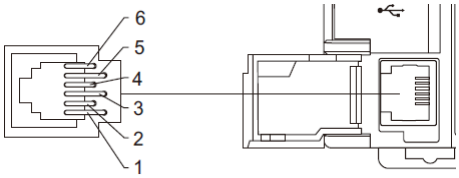
Configuring of HMI

Link settings screen to connect PLC to HMI

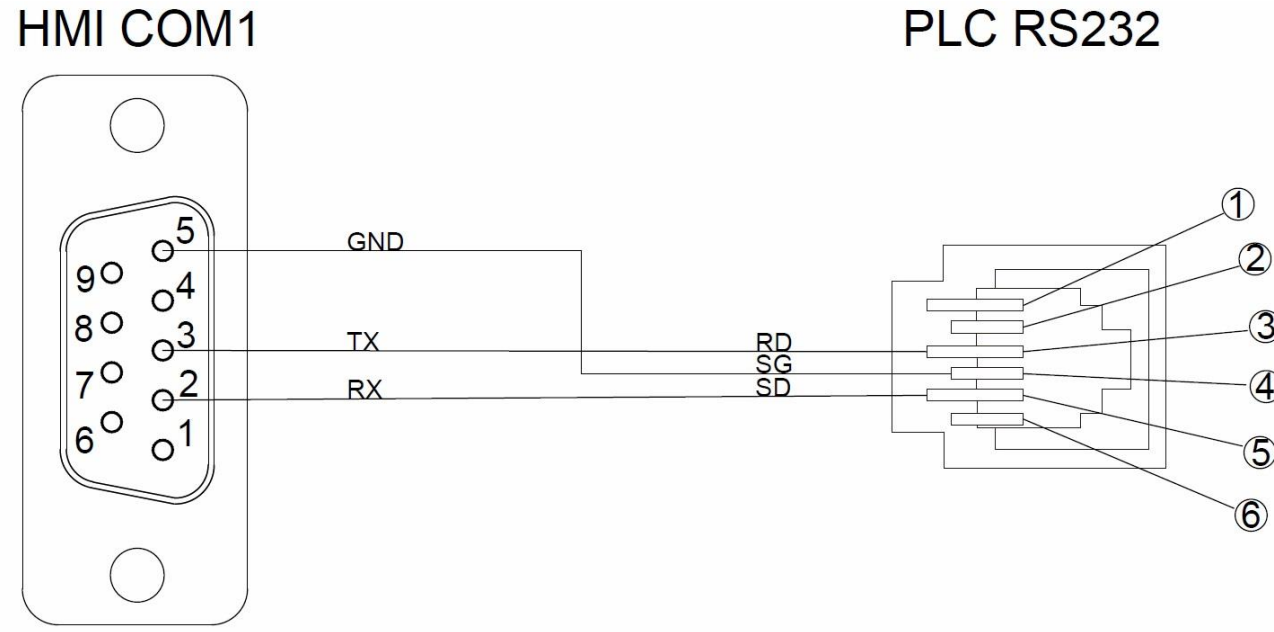


2.12.3.4 Wiring Diagrams

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



2.13 Beckhoff Automation

2.13.1 Twincat(Ethernet)

2.13.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP	192.168.1.100	
Port	801	
Device Station num.	1	
Communication Method	ADS	

2.13.1.2 PLC Resource

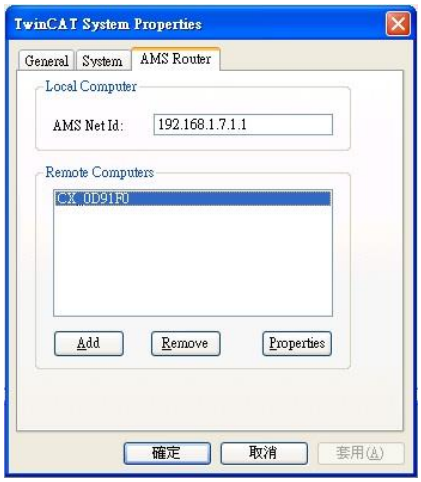
Device	Description	Data Bits	Address Format	Min.	Max.
IX	Input	1	DDDDD.O	0.0	27484.7
QX	Output	1	DDDDD.O	0.0	27484.7
MX	Bit Memory	1	DDDDD.O	0.0	27484.7
IW		16	DDDDD	0	65534
QW		16	DDDDD	0	65534
MW		16	DDDDD	0	65534
ID		32	DDDDD	0	65532
QD		32	DDDDD	0	65532
MD		32	DDDDD	0	65532

2.13.1.3 Connecting to PLC

Configuring of PLC

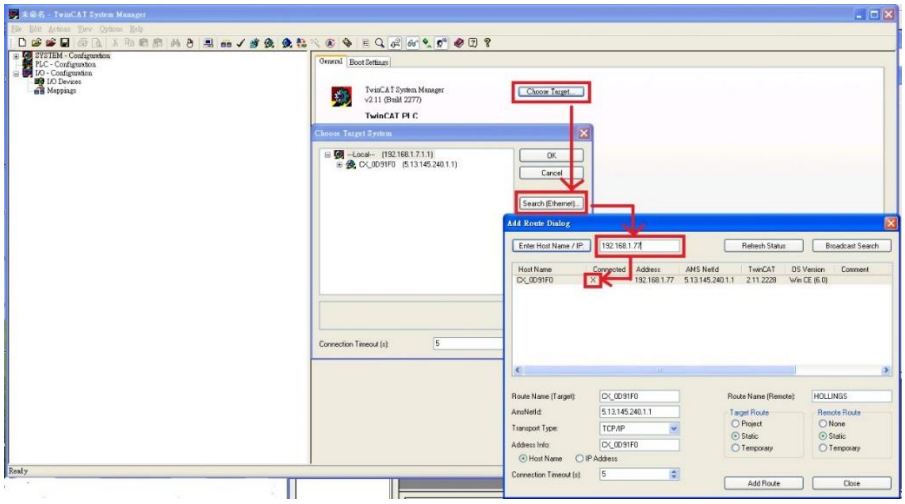
1. Set IP-Address connected with PC.

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

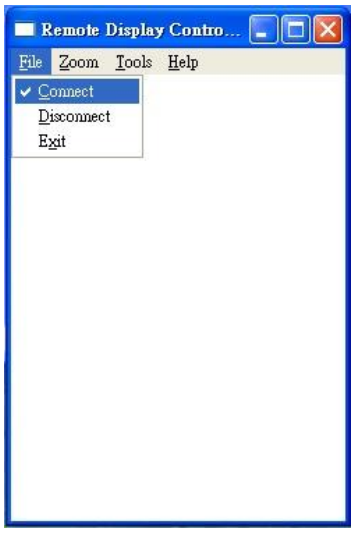


Open **TwinCAT system manager** build Route Table to ensure whether connecting success, if reopen plc, need to execute these steps.

Note: when connecting success, display''x''

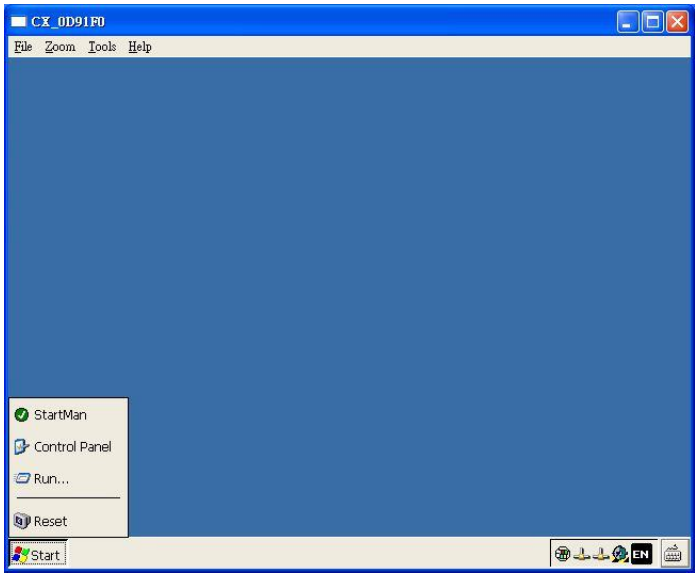


2. Use **CERHOST** to connect with plc, enter IP and Password of plc.

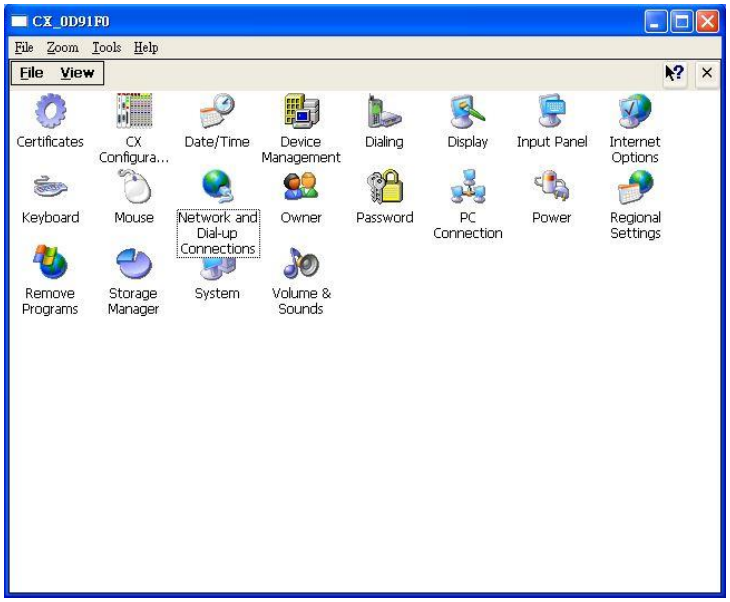


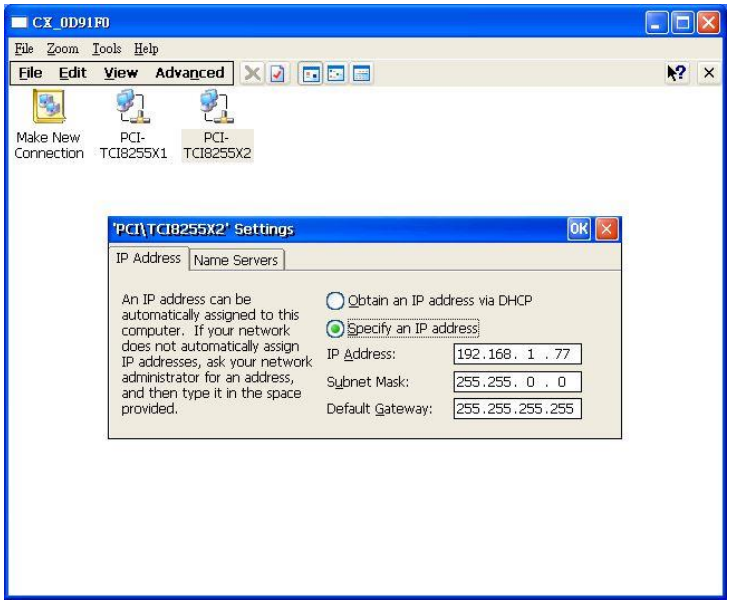


After connecting success with plc, click start→control panel



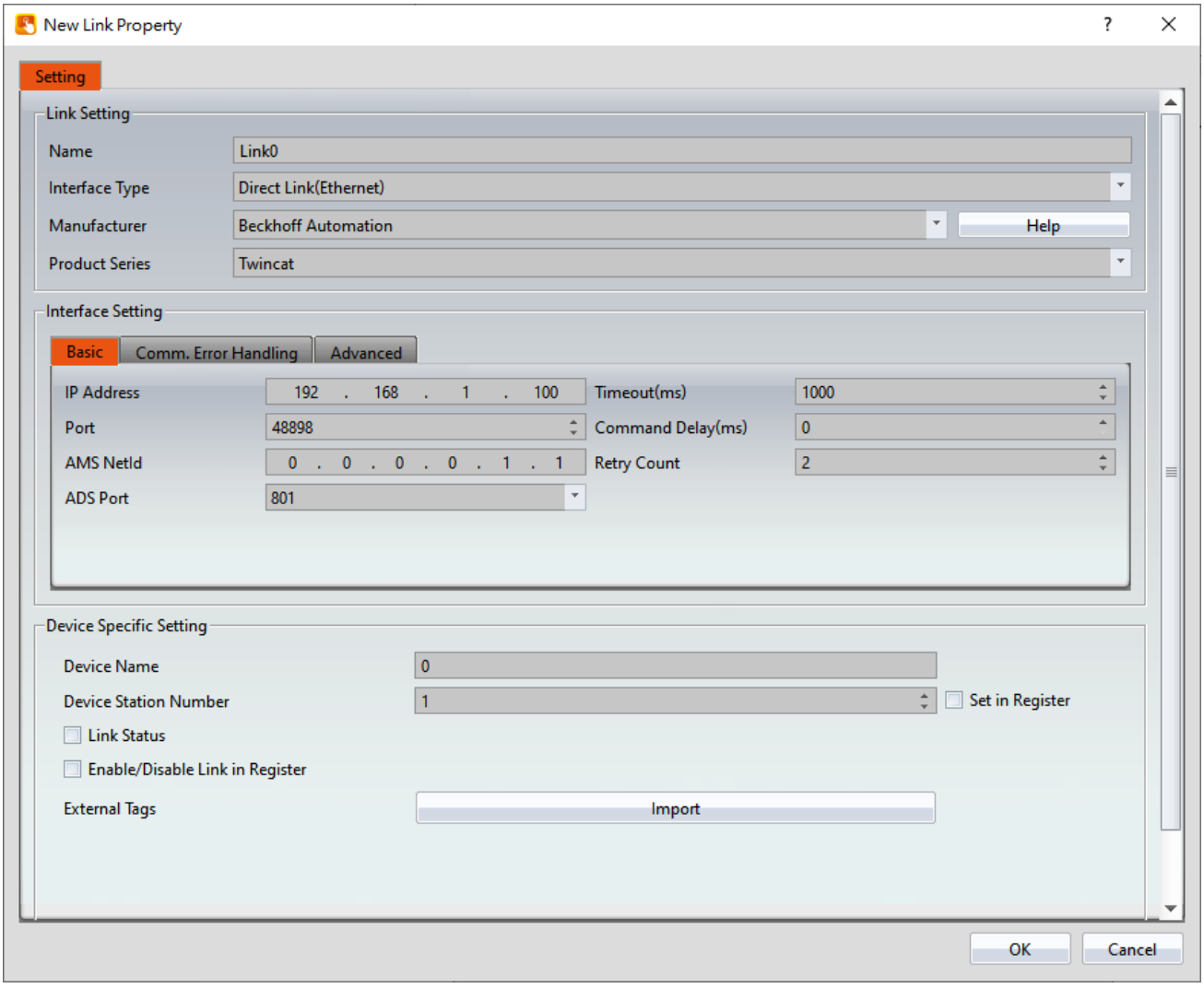
Click Network and Dial-up Connections, display information of plc, click plc to ensure the IP.





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 **Beckhoff Automation**.
Under **Product Series** select **Twincat**
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
Interface Type	RS232	
Baud Rate	9600	or 19200,38400
Data Length	8	
Stop Bit	1	
Parity	Odd	or even, no
Device Station num.	1	1-90 DirectNET, K sequence 1-247 Modbus RTU
Communication Method	K sequence (slave), DirectNET (master/slave), Modbus	

2.14.1.2 PLC Resource

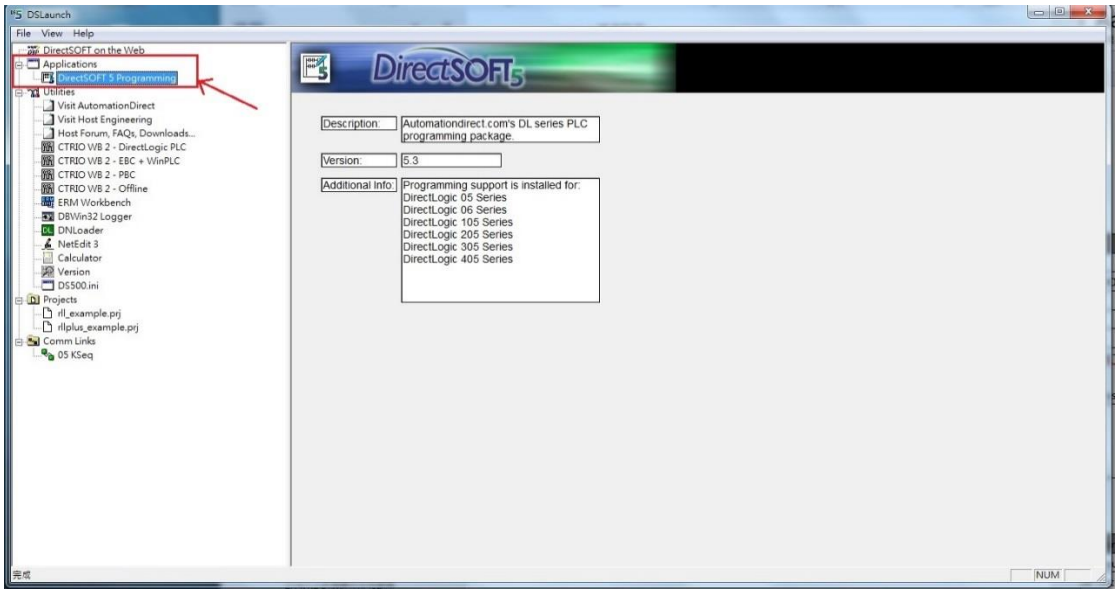
Device	Data bit	Data format	Max.	Min.	Description
GX	1	OOOO	3777	0	Global Input Bits
GY	1	OOOO	3777	0	Global Output Bits
X	1	OOOO	1777	0	Input Bits
Y	1	OOOO	1777	0	Output Bits

C	1	OOOO	3777	0	Control Relays
S	1	OOOO	1777	0	Stage Status Bits
T	1	OOO	377	0	Timer Status Bits
CT	1	OOO	777	0	Counter Status Bits
SP	1	OOOO	1777	0	System Status Bits
V	16	OOOOO	77777	0	V Memory

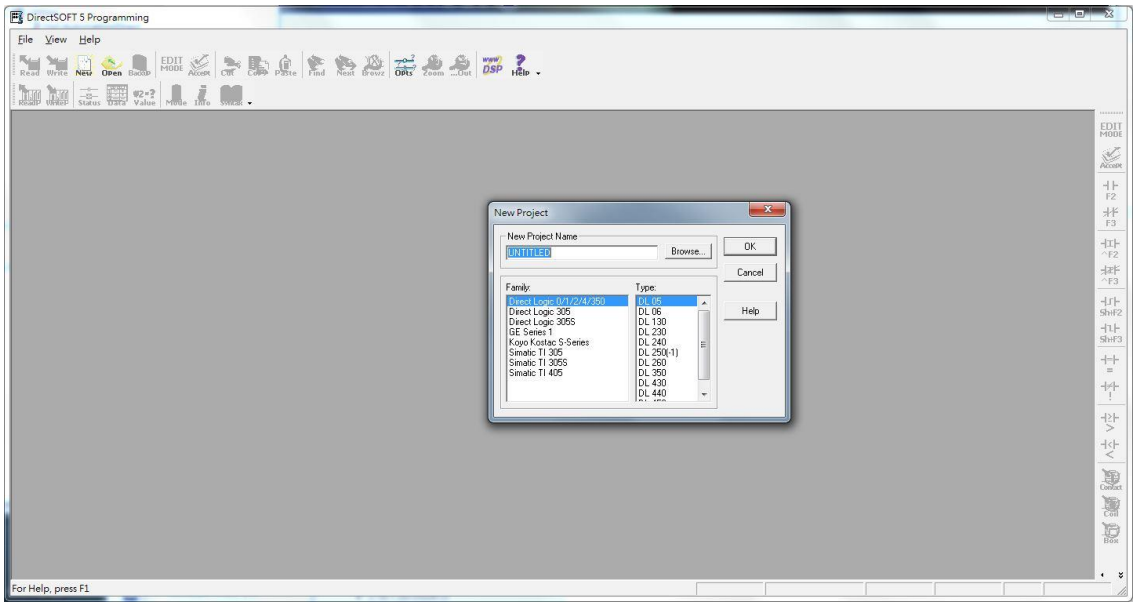
2.14.1.3 Connected Setting

Configuring of PLC

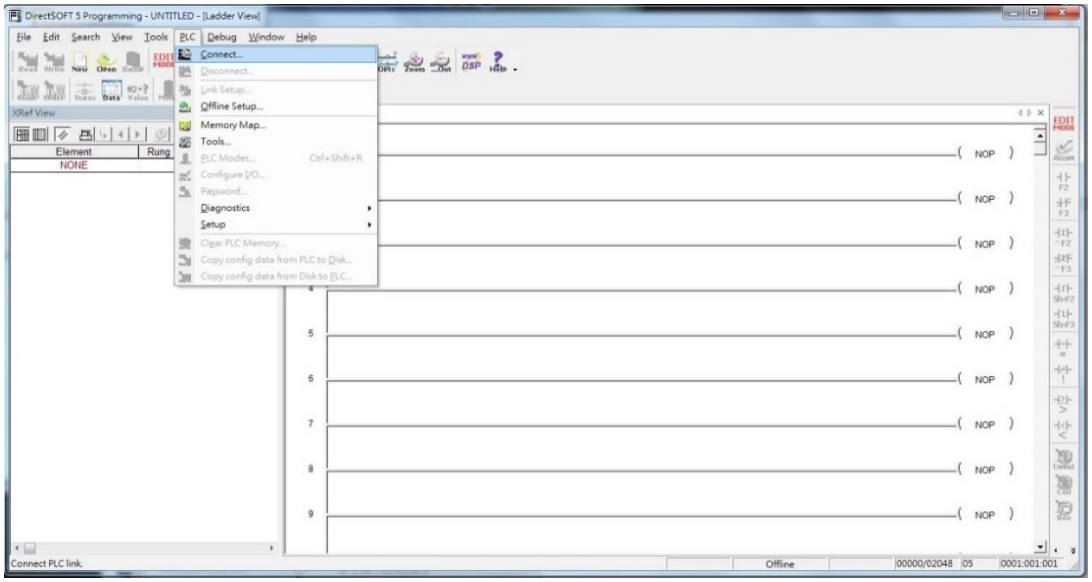
1. open**DSLaunch 5**, click Applications→DirectSOFT 5 Programming on the left side.



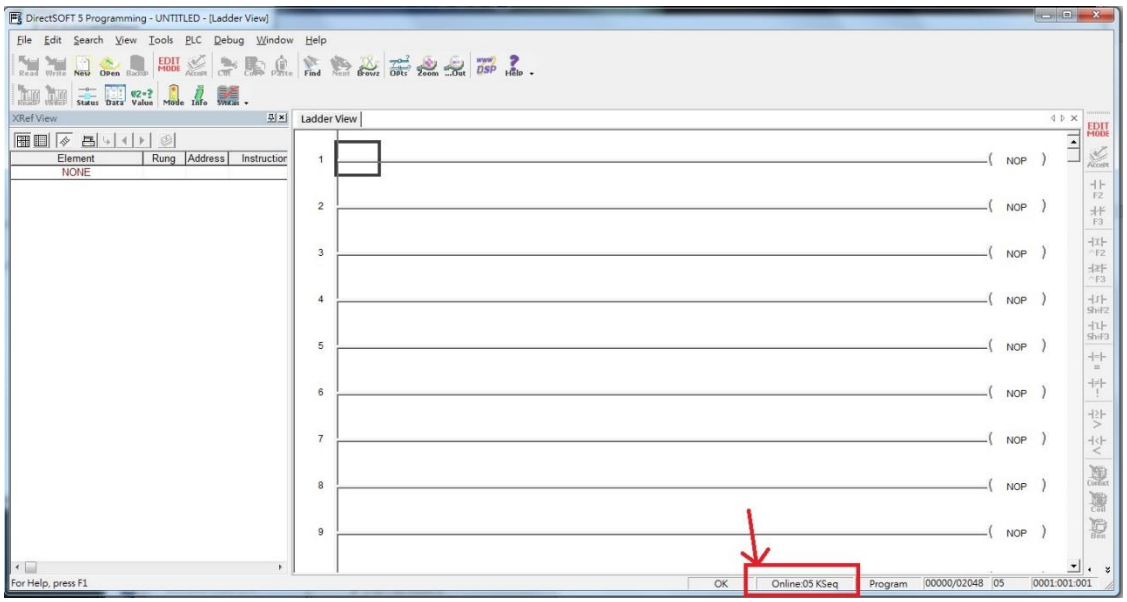
2. choose model and build project.



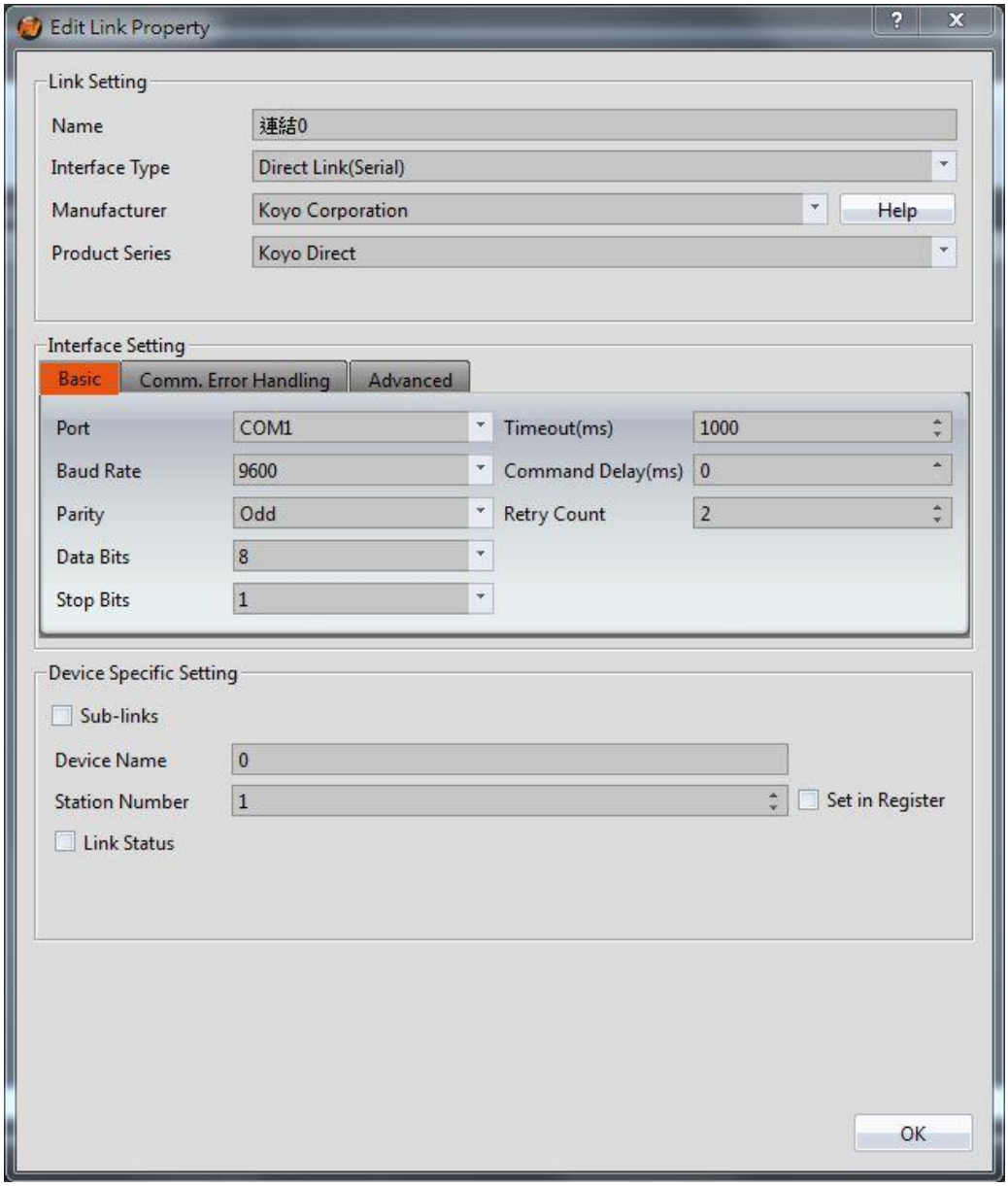
click PLC on the top, select ‘’connect’’ to connect.



connect success, as shown below.



HMI Setting



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

Under Interface Type select Serial

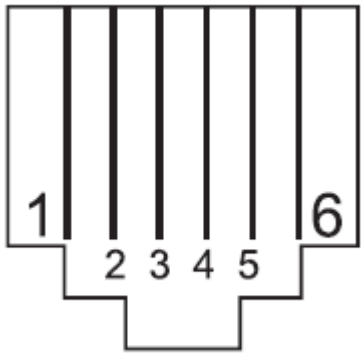
Under **Manufacturer** select Koyo Corporation

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.

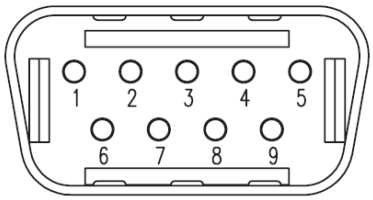
2.14.1.4 Wiring Diagrams

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

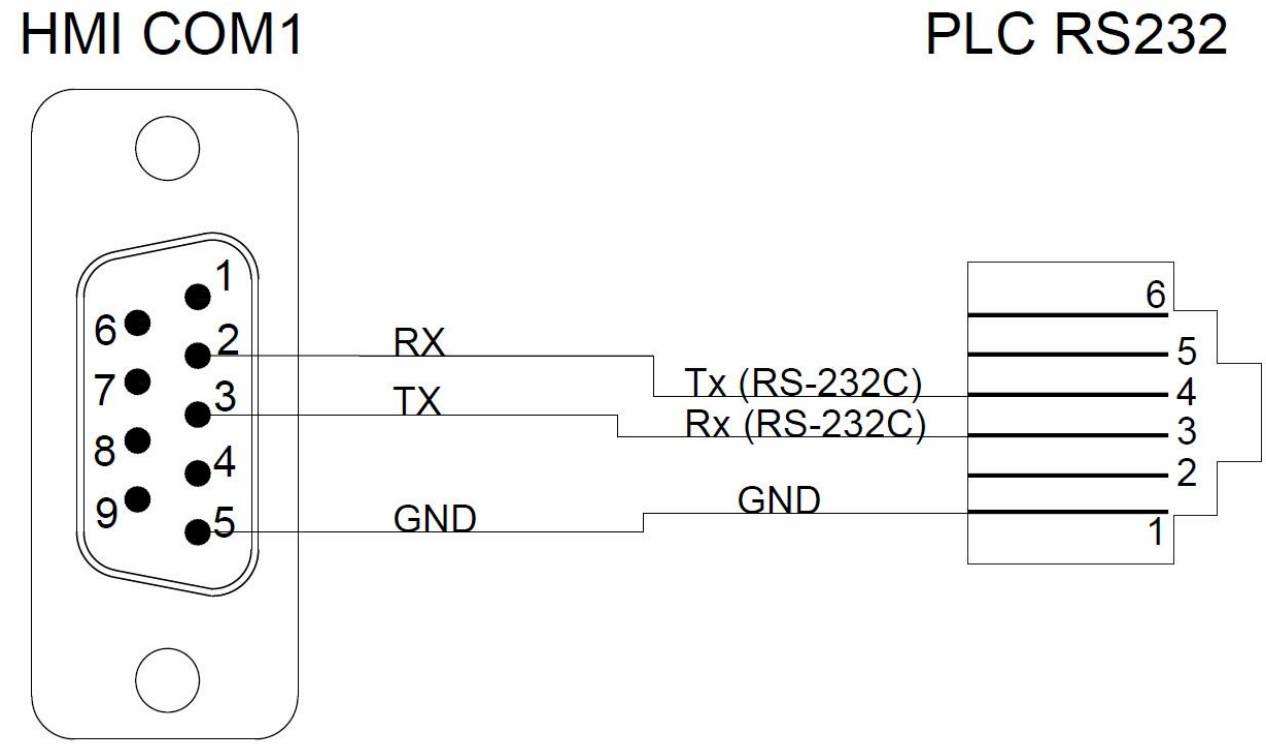


*Looking into COM1 Port

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

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

Wiring Diagrams:



2.14.2 K-Sequence

2.14.2.1 Communication Setting

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

2.14.2.2 PLC Resource

Device	Data bit	Data format	Min.	Min.	Description
GX	1	OOOO	3777	0	Global Input Bits
GY	1	OOOO	3777	0	Global Output Bits
X	1	OOOO	1777	0	Input Bits
Y	1	OOOO	1777	0	Output Bits
C	1	OOOO	3777	0	Control Relays
S	1	OOOO	1777	0	Stage Status Bits
T	1	OOO	377	0	Timer Status Bits
CT	1	OOO	777	0	Counter Status Bits
SP	1	OOOO	1777	0	System Status Bits
V	16	OOOOO	77777	0	V Memory

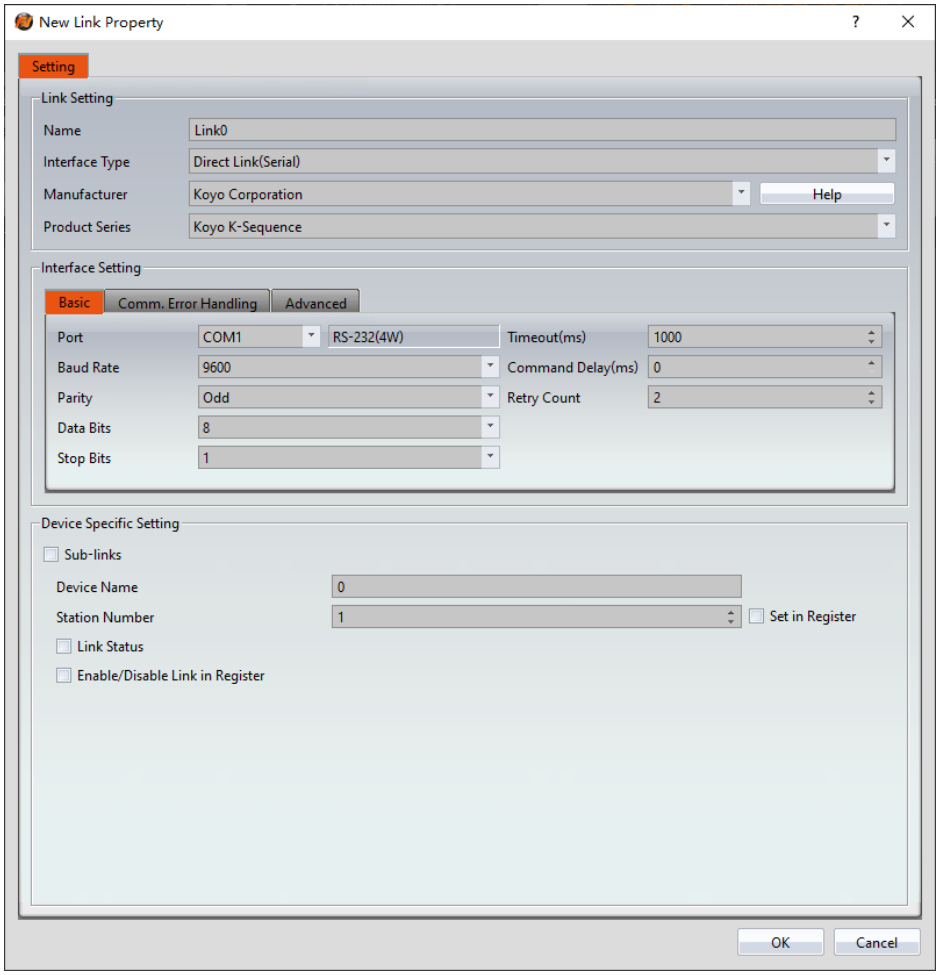
2.14.2.3 Connected Setting

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

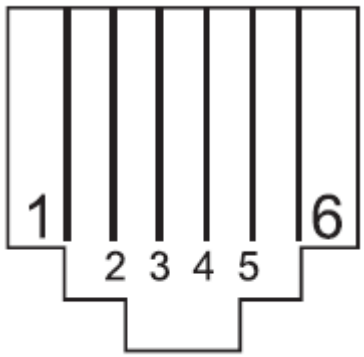
Under **Manufacturer** select Koyo Corporation

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.

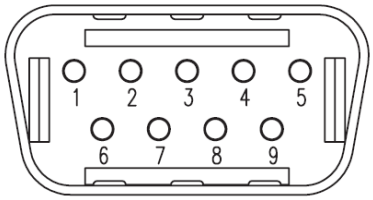
2.14.2.4 Wiring Diagrams

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

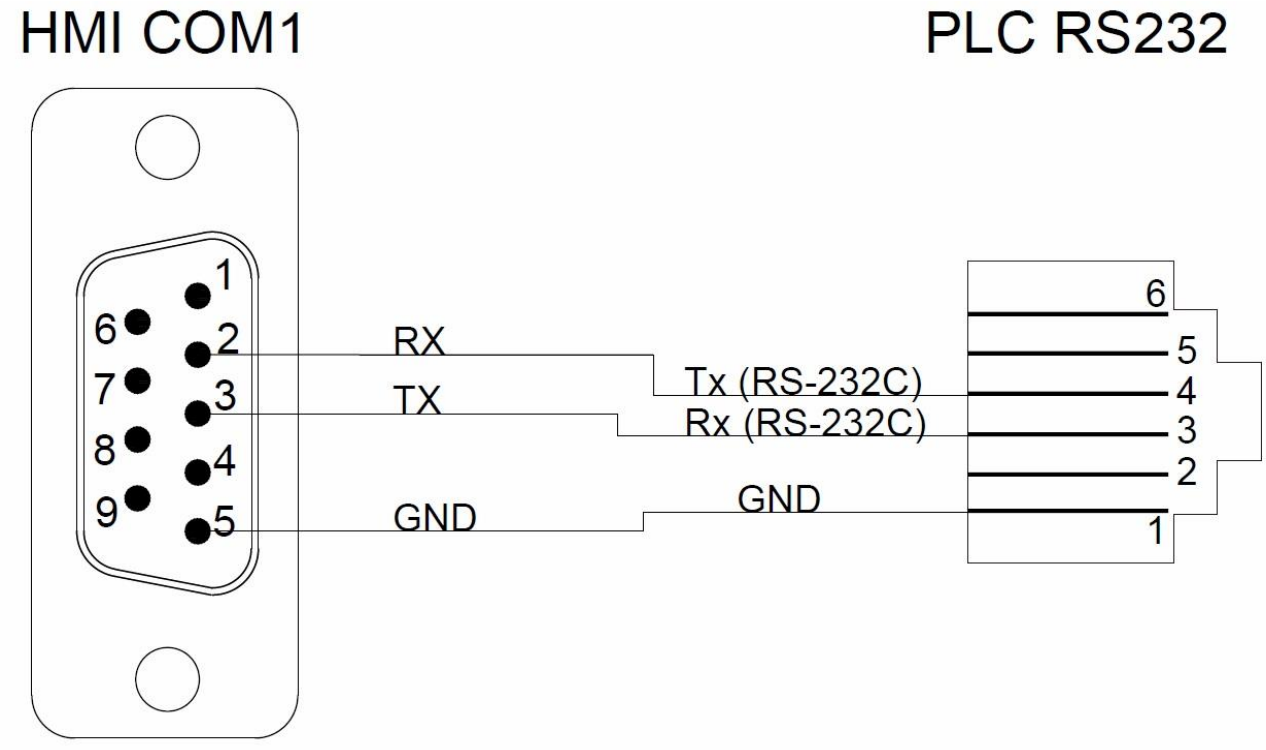


*Looking into COM1 Port

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

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

Wiring Diagrams:



2.15 Yudian

2.15.1 AI

2.15.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232/RS485	
Baud Rate	9600	or 4800,19200
Data Length	8	
Stop Bit	1	
Parity	NONE	
Device Station num.	0	
Communication Method	Yudian Communication Protocol	

2.15.1.2 PLC Resource

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

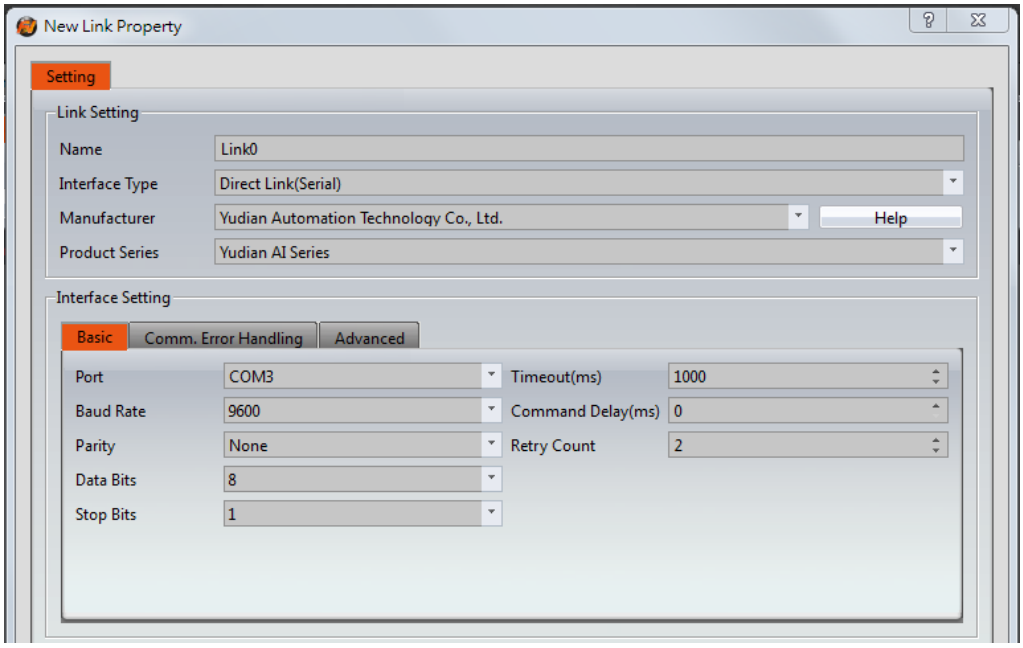
Configuring of PLC

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.

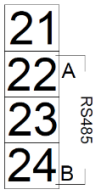
Under **Product Series** select Yudian AI Series

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

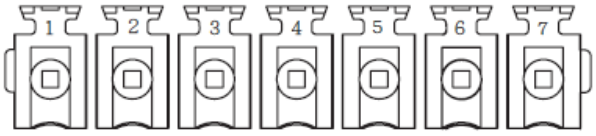
PLC RS485 Pinout

*Looking into PLC Port



PIN#	Signal
21	
22	A
23	
24	B

HMI COM3 腳位

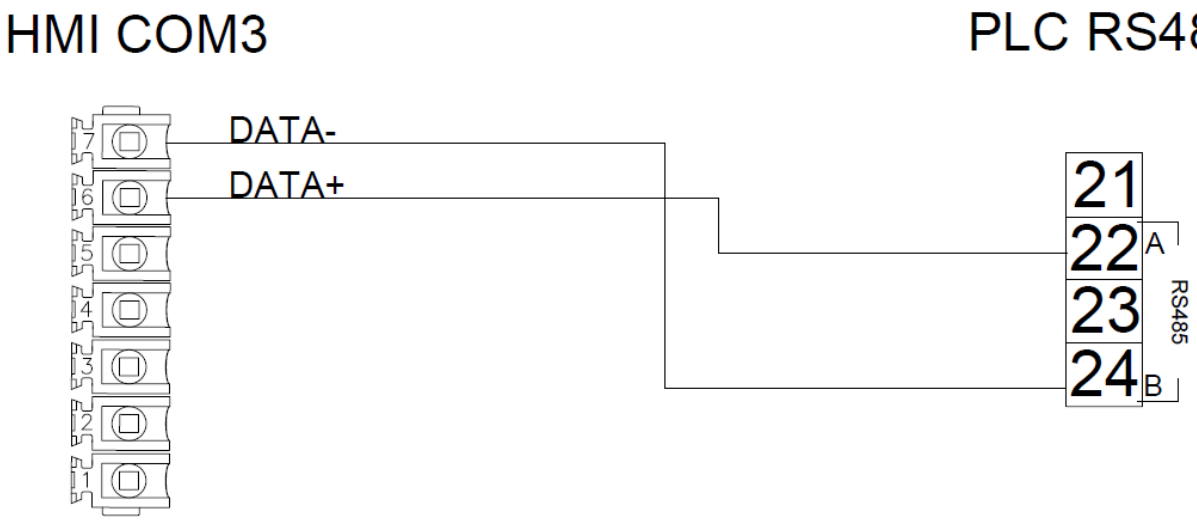


*Looking into HMI Device

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

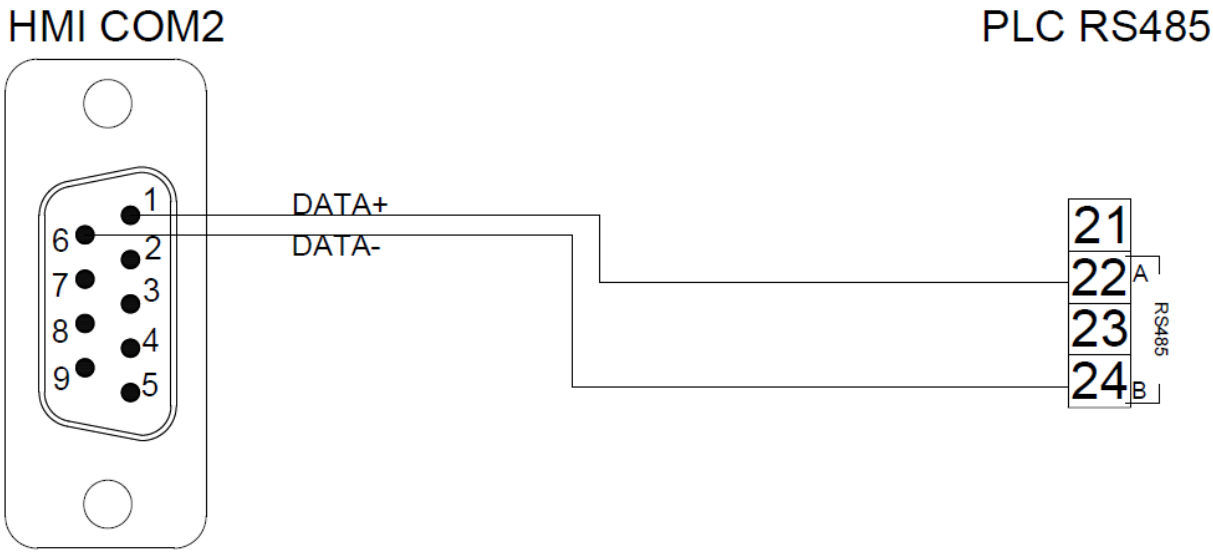
HMI COM3	PLC RS485 Port
6 DTAT+	22 A
7 DATA-	24 B

Wiring Diagrams



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
Interface Type	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	NONE	
Device Station num.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.16.1.2 PLC Resource

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

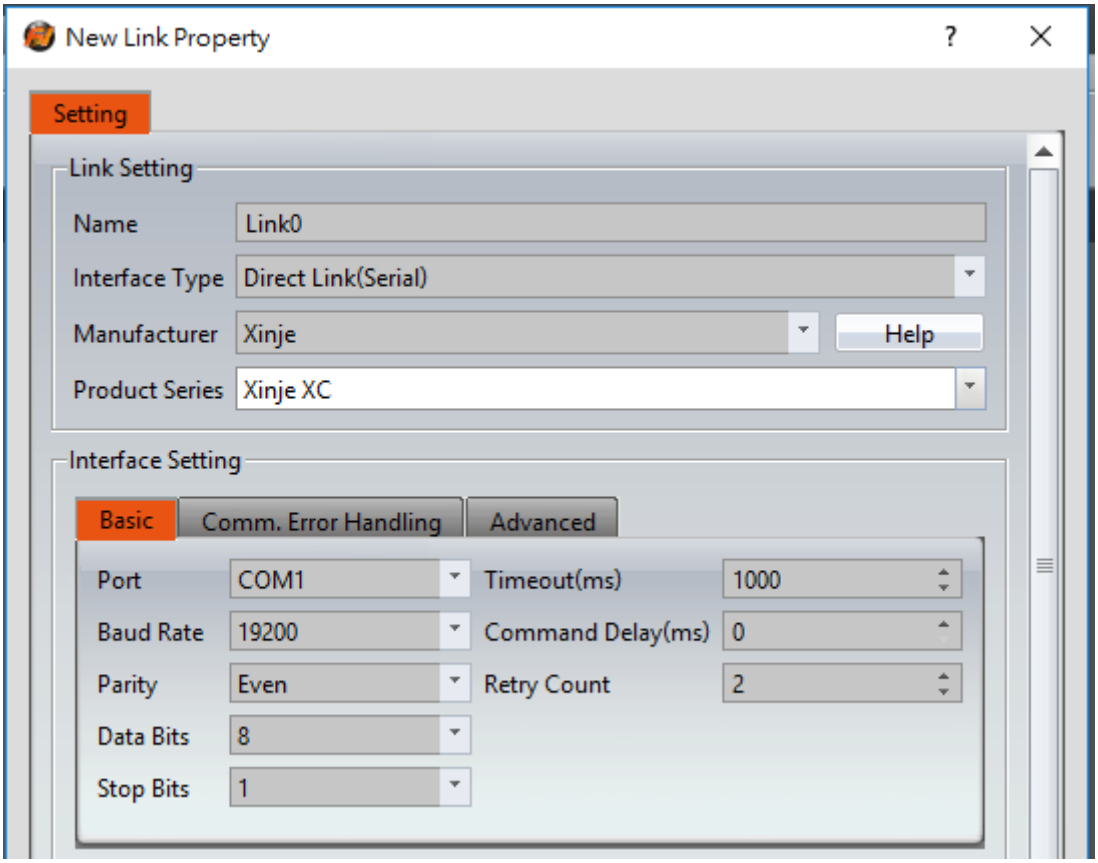
PLC Setting

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

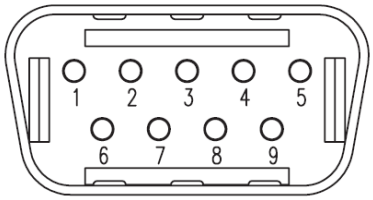
Under Manufacturer select Xinje

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

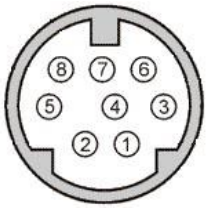
HMI COM1 Pinout



*Looking into COM1 Port

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

PLC RS232 Pinout

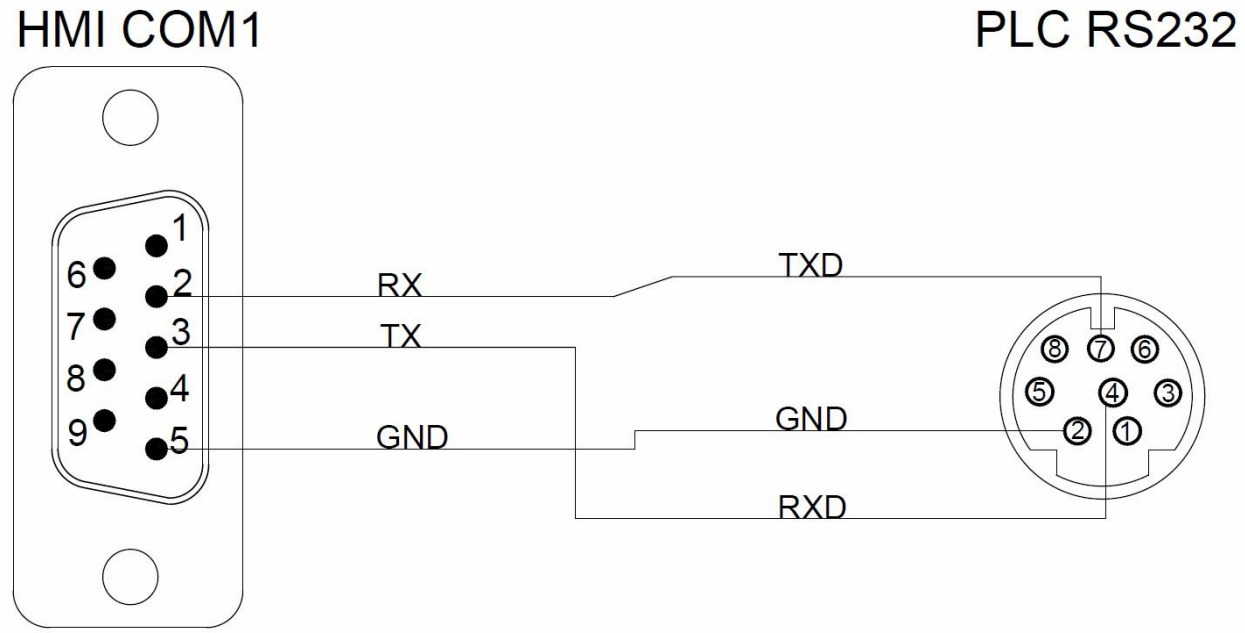


*Looking into PLC

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:



2.16.2 XD series

2.16.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	NONE	
Device Station num.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.16.2.2 PLC Resource

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

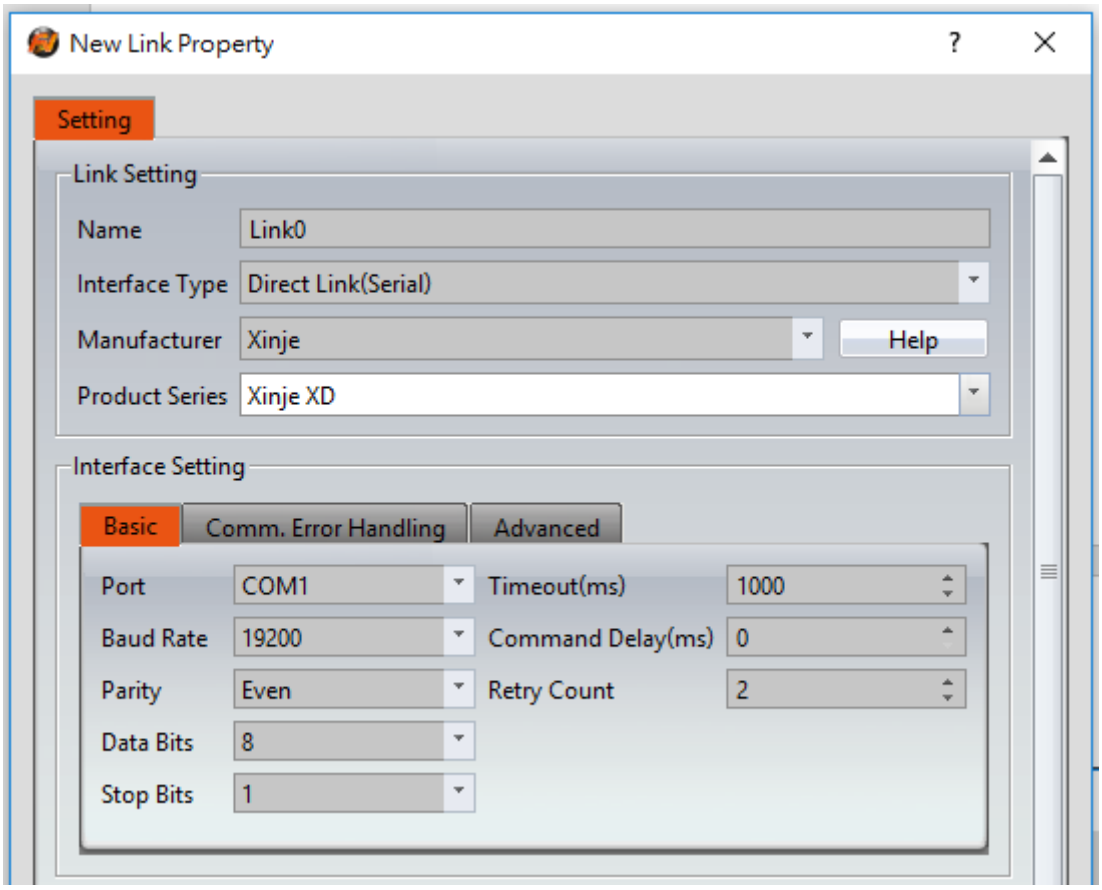
PLC Setting

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 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

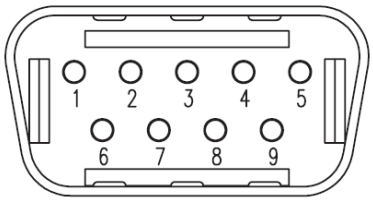
Under Manufacturer select Xinje

Under Product Series select 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

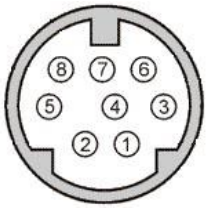


*Looking into COM1 Port

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

2.17 Vigor

2.17.1 M/VB/VH Series

2.17.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232 2W	
Baud Rate	19200	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	0	
Communication Method	Vigor M/VB/VH protocol	

2.17.1.2 PLC Resource

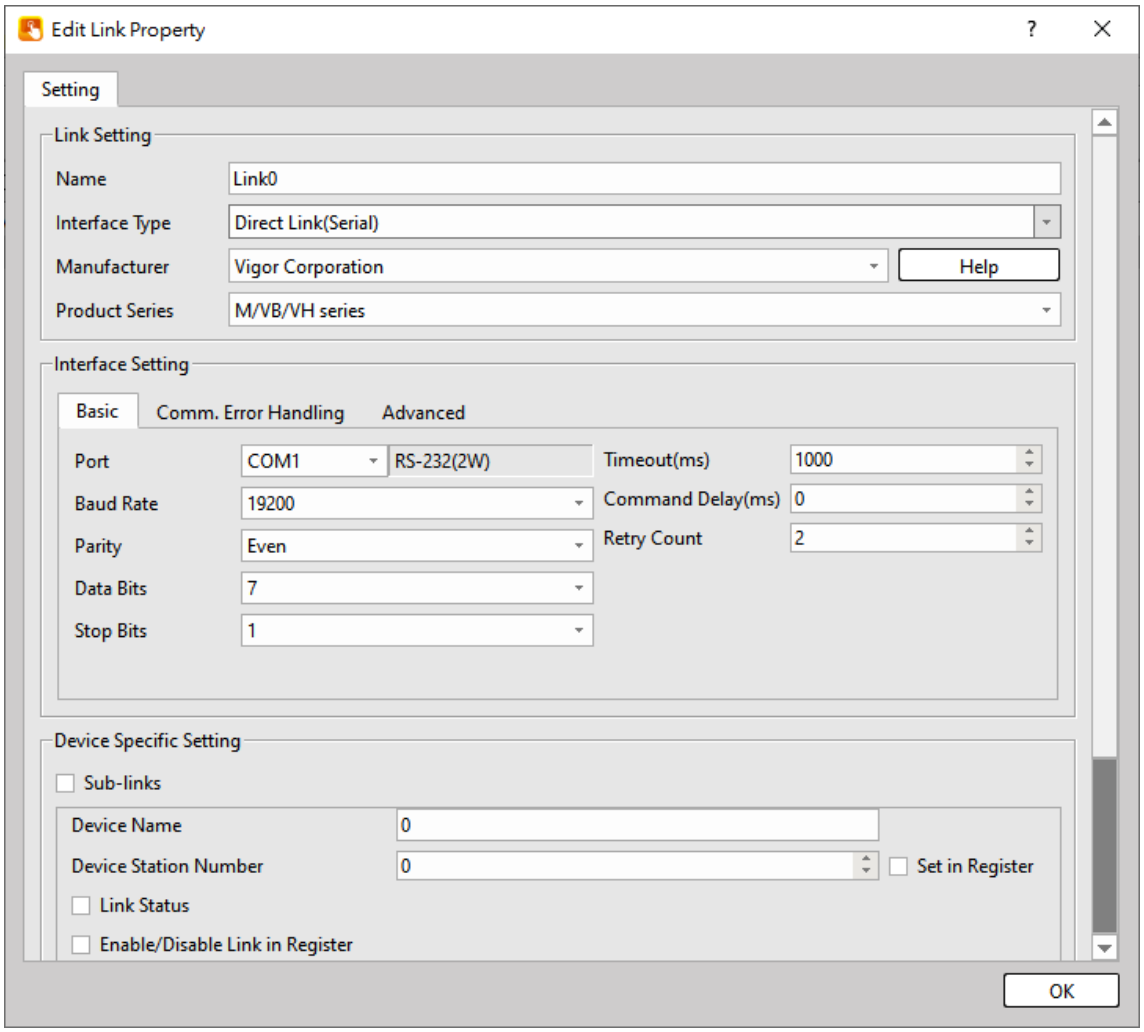
Device	Data bit	Data format	Min.	Min.	Description
X	1	OOO	0	777	External input relay
Y	1	OOO	0	777	External output relay
M	1	DDDD	0	5119	Internal relay
S	1	DDD	0	999	Step relay
SM	1	DDDD	9000	9255	Special relay
TC	1	DDD	0	255	Timer coil
CC	1	DDD	0	255	Counter coil
TS	1	DDD	0	255	Timer contact
CS	1	DDD	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



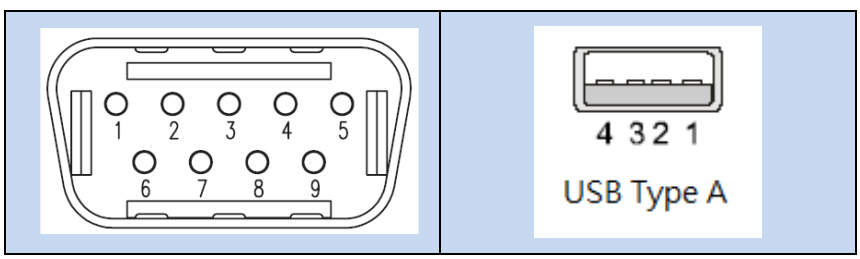
Within the Link configuration window in FvDesigner:

Under Interface Type select Serial

Under Manufacturer select Vigor Corporation

Under Product Series select M/VB/VH Series

2.17.1.4 Wiring Diagrams



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

2.17.2 M/VB/VH Series (Ethernet)

2.17.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.0.100	
Port	1000	
Device Station num.	0	
Communication Method	Ethernet	

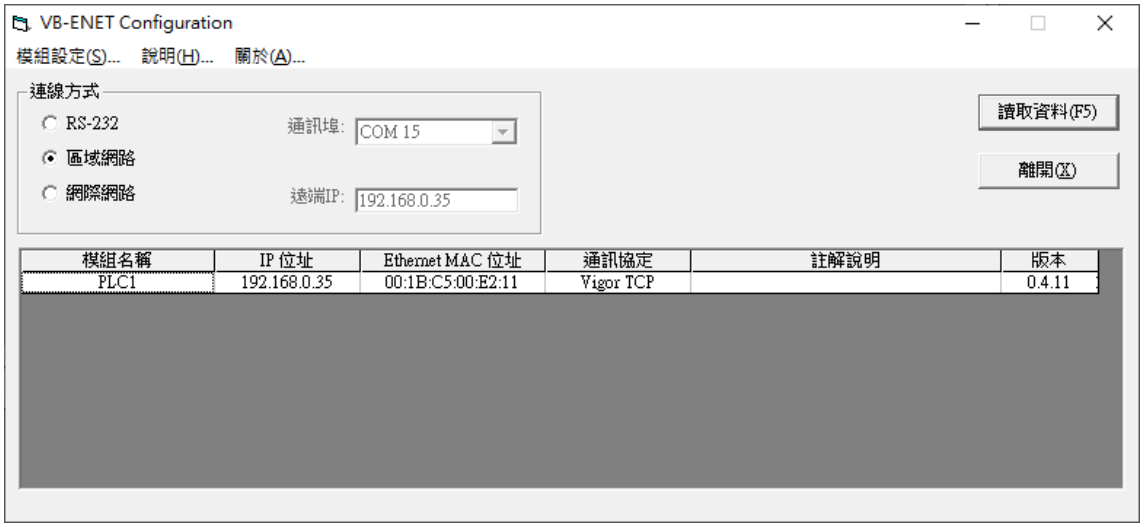
2.17.2.2 PLC Resource

Device	Data bit	Data format	Min.	Min.	Description
X	1	OOO	0	777	External input relay
Y	1	OOO	0	777	External output relay
M	1	DDDD	0	5119	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

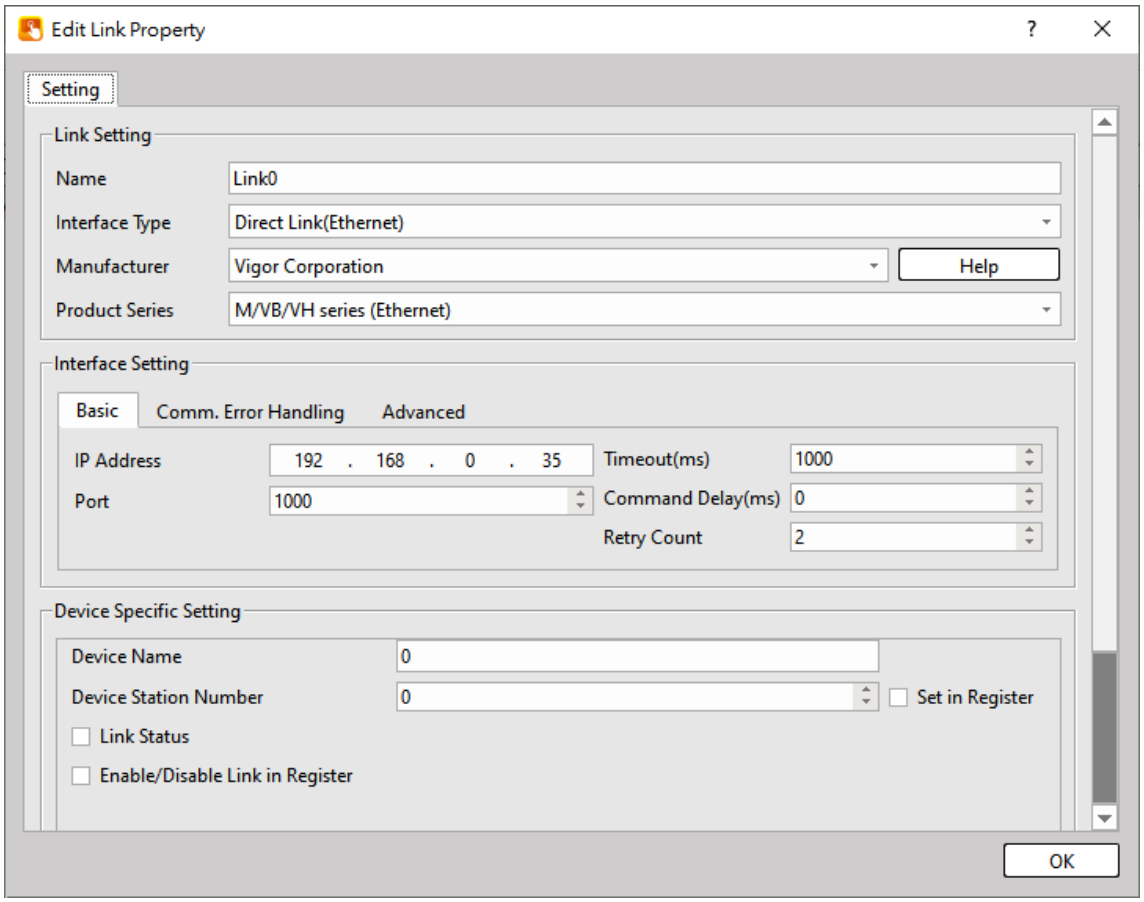
2.17.2.3 Connected Setting

PLC Setting

Open **VBENETCFG.exe**, then connect using the official RS-232 cable or search for the target PLC on the local area network. For detailed configuration steps, please refer to the PLC manual.



HMI Setting



Within the Link configuration window in FvDesigner:

Under Interface Type select Ethernet

Under Manufacturer select Vigor Corporation

Under Product Series select M/VB/VH series (Ethernrt)

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

2.17.3 VS series

2.17.3.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
Device Station num.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.17.3.2 PLC Resource

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

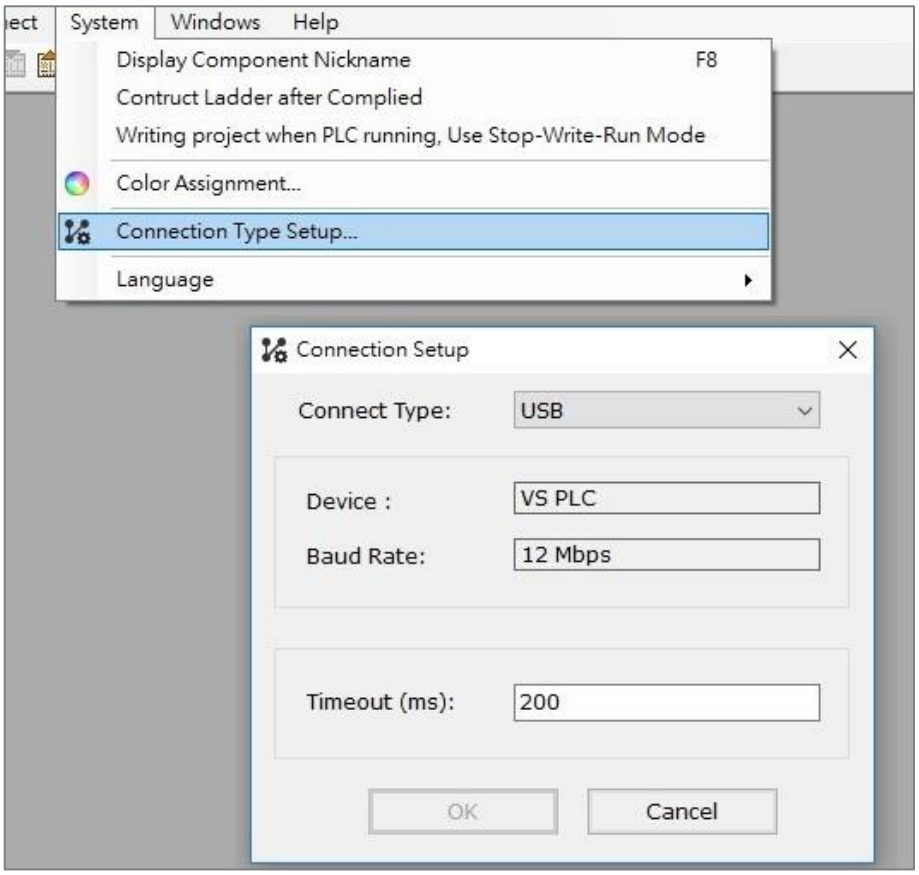
WX	16	OOO	0	377	External input relay
WY	16	OOO	0	377	External output relay
WM	16	DDDD	0	8191	Internal relay
WS	16	DDDD	0	4095	Step relay
CL	32	DDD	200	255	32 bits counter

2.17.3.3 Connected Setting

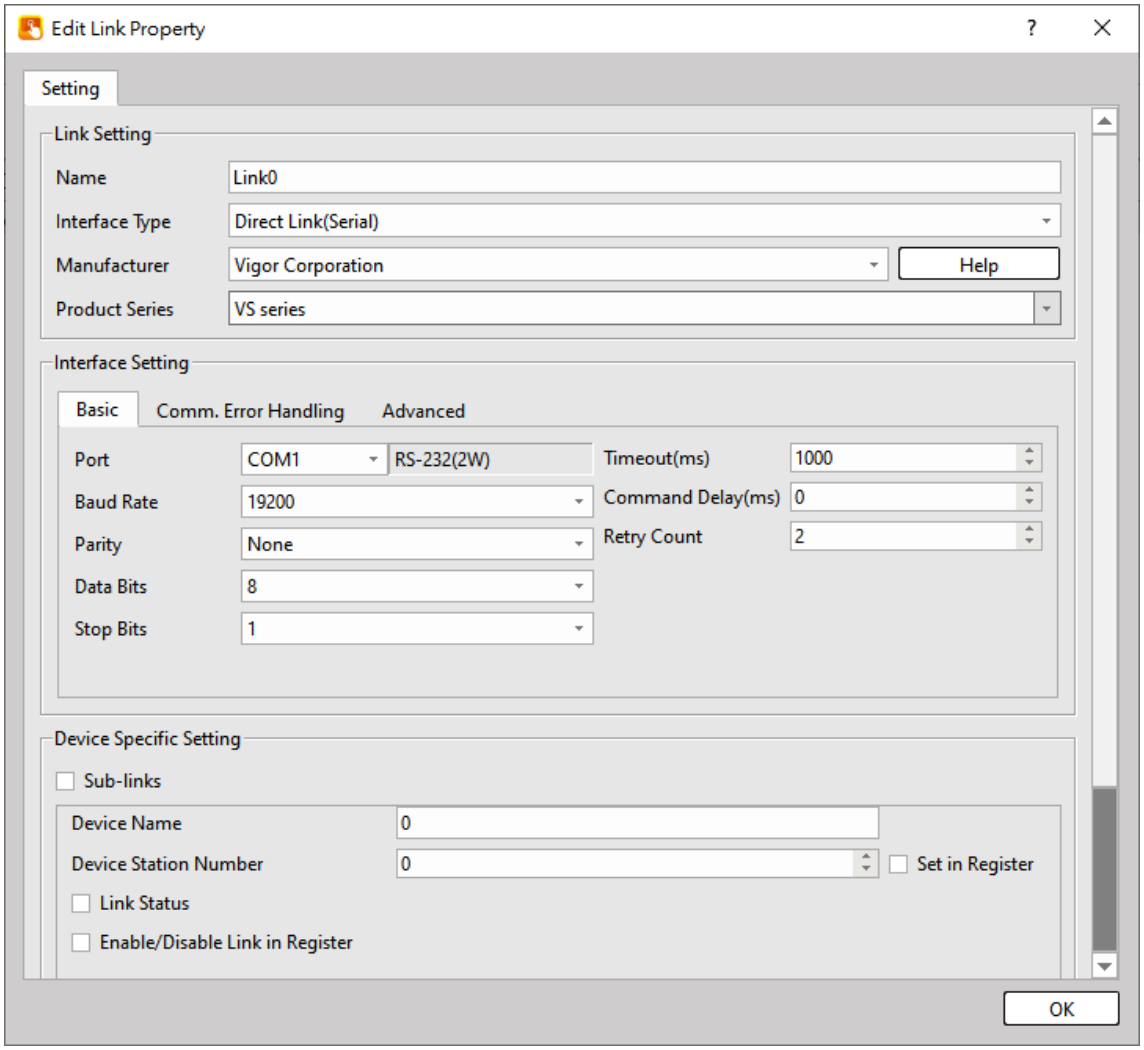
PLC Setting

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:

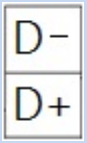
Under Interface Type select Serial

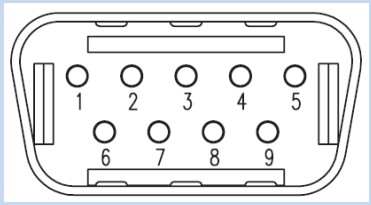
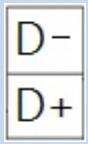
Under Manufacturer select Vigor Corporation

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.

2.17.3.4 Wiring Diagrams

	
HMI COM3	**PLCRS485 Port**
6 DATA+	DATA+
7 DATA-	DATA-

 **HMI COM2**	 **PLCRS485 Port**
1 DATA+	D+
6 DATA-	D-

2.17.4 VS Series (Ethernet)

2.17.4.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
Device Station num.	0	
Communication Method	HOST-LINK COMMUNICATION	

2.17.4.2 PLC Resource

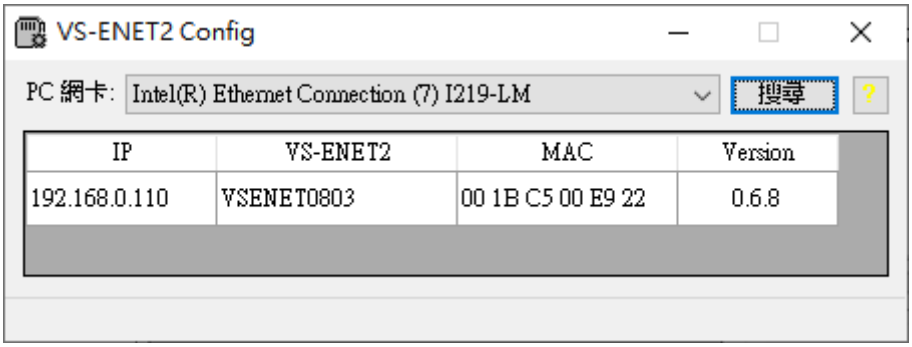
Device	Data bit	Data format	Min.	Min.	Description
X	1	OOO	0	377	External input relay
Y	1	OOO	0	377	External output relay
M	1	DDDD	0	8191	Internal relay
S	1	DDDD	0	4095	Step relay
SM	1	DDD	9000	9511	Special relay
DB	1	DDDD.H	0.0	8999.f	D data register bits
RB	1	DDDDD.H	0.0	25999.f	R data register bits
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

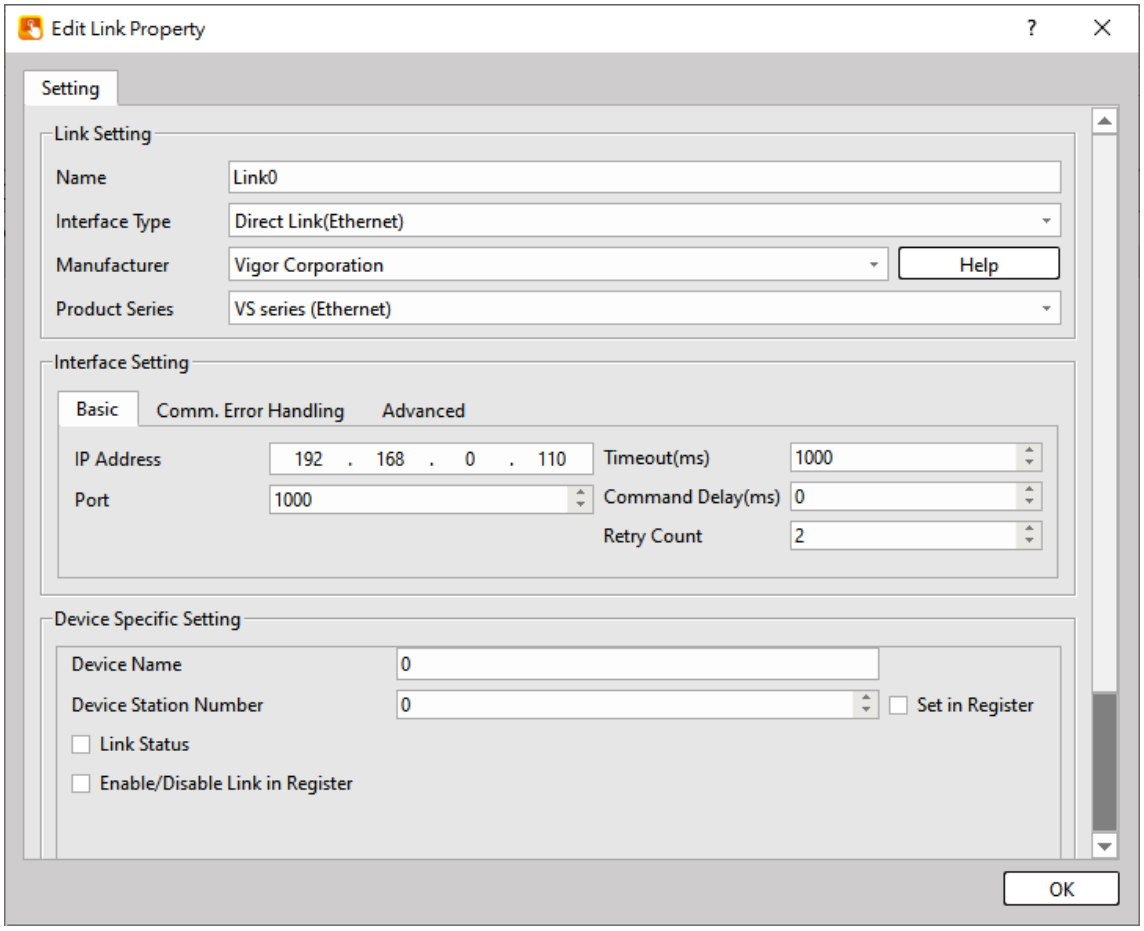
2.17.4.3 Connected Setting

PLC Setting

Open **VS-ENET2 Config** and search for VS PLCs on the local area network. Double-click a PLC to enter the communication module configuration screen.



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 (Ethernet)

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

2.18 LS

2.18.1 XEC/XGI/XGK/XBC-Cnet

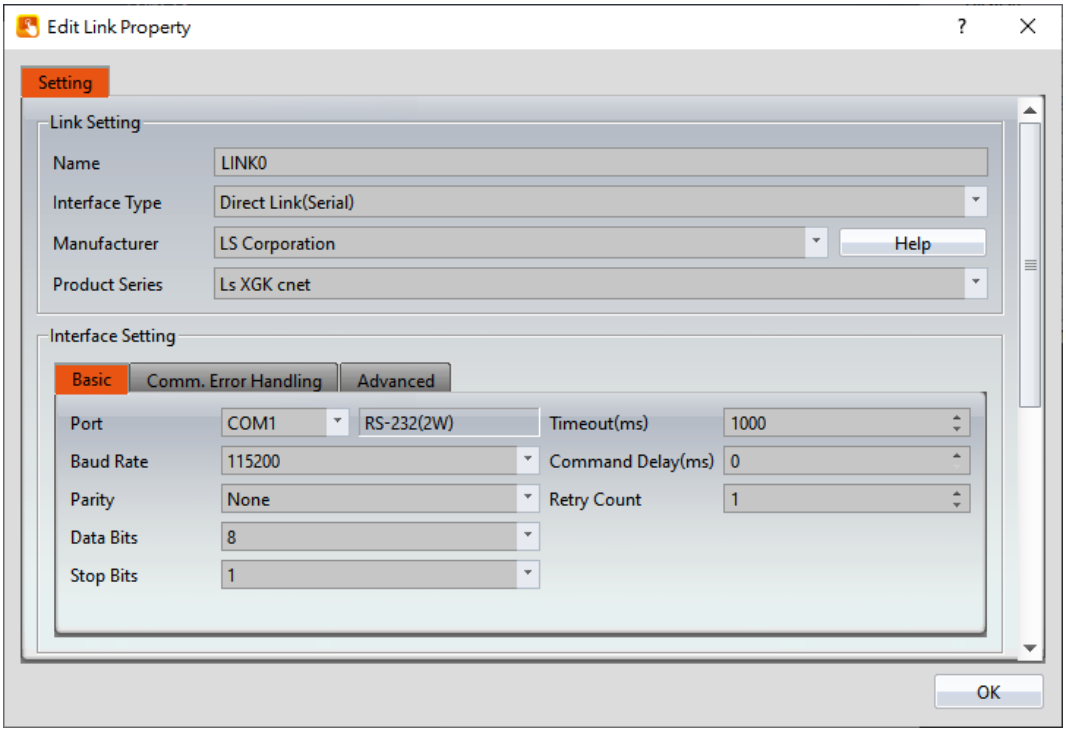
2.18.1.1 Communication Setting

Item	Default Setting	Remark
Communication	Serial	
Interface Type	RS-232	
Baud Rate	115200	
Parity	None	

Data Bite	8	
Stop Bits	1	
PLC Station Number	0	

2.18.1.2 Connected Setting

HMI Setting



Settings in the FvDesigner link:

Select「Serial」for the communication interface type.

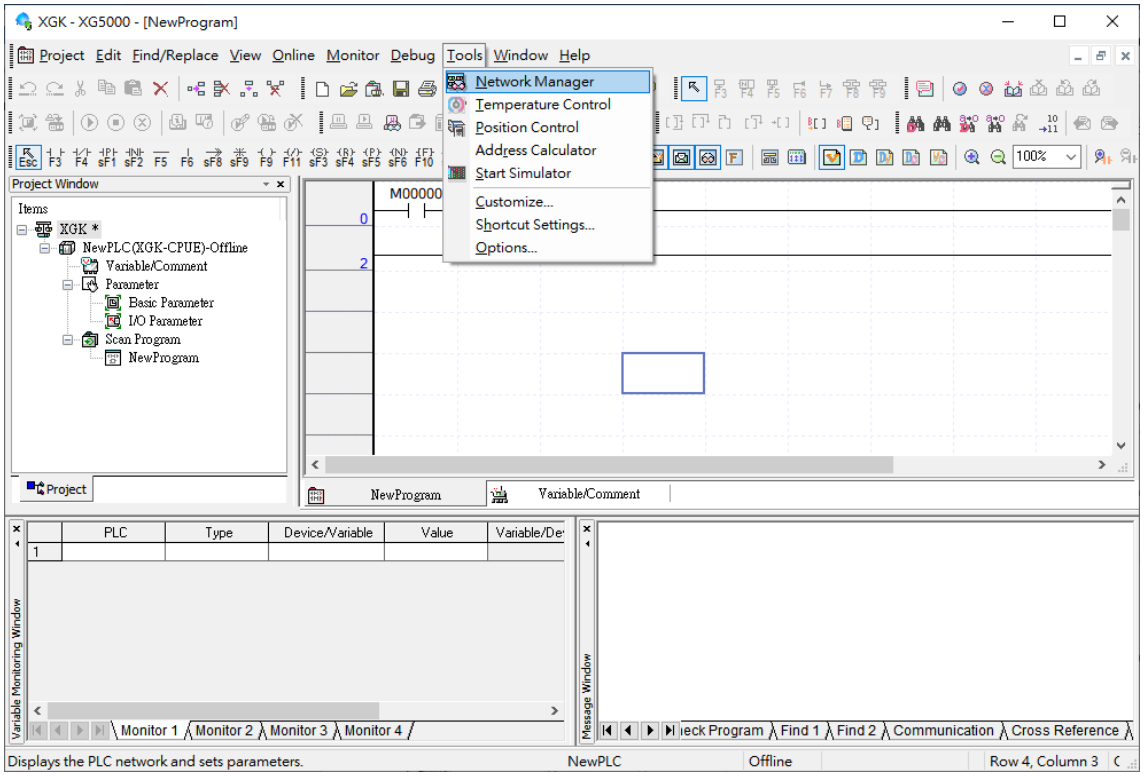
Choose「LS Corporation」for the manufacturer.

Select「LS (XEC/XGI/XGK/XBC) cnet」for the product series.

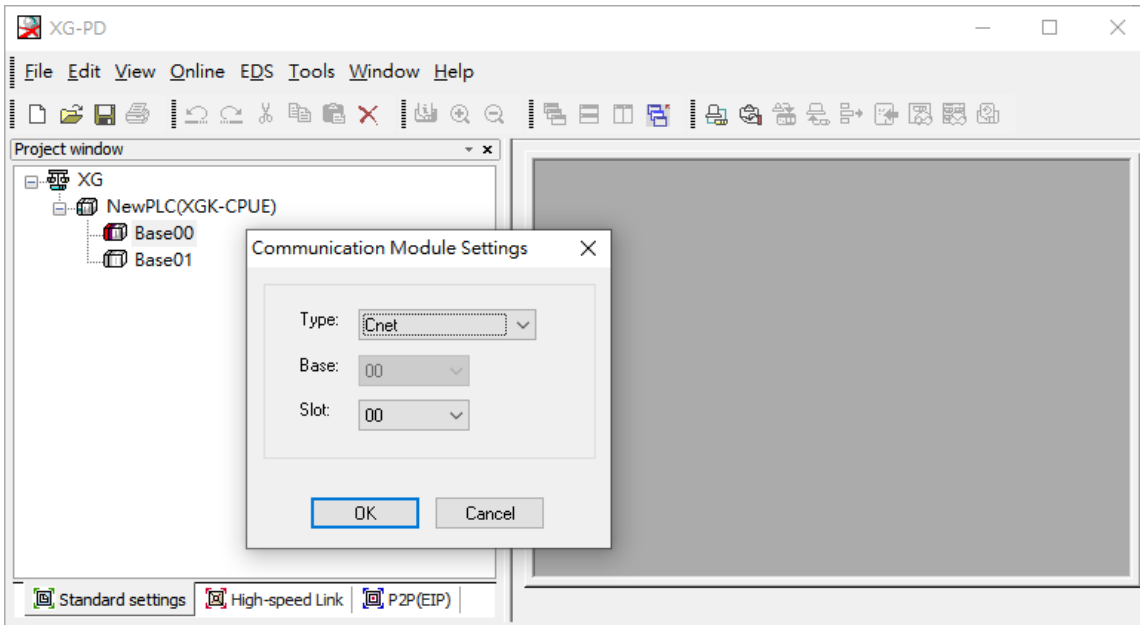
Ensure that the remaining communication parameters and PLC settings are consistent.

PLC Setting

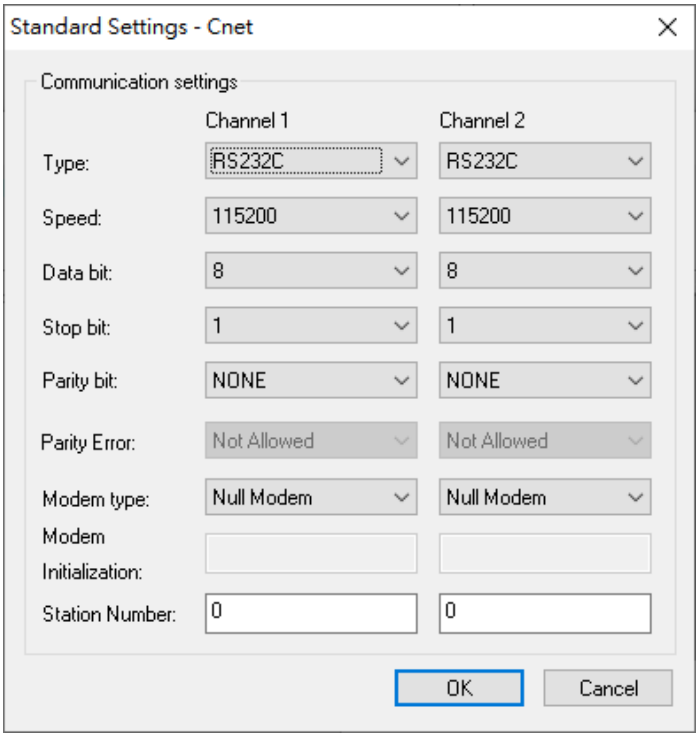
LS software includes XG5000 (for PLC program editing) and XG-PD (for communication settings). Open XG5000, create a new project according to the model used, and then click on "Tools" and select "Network Manager" to launch XG-PD.



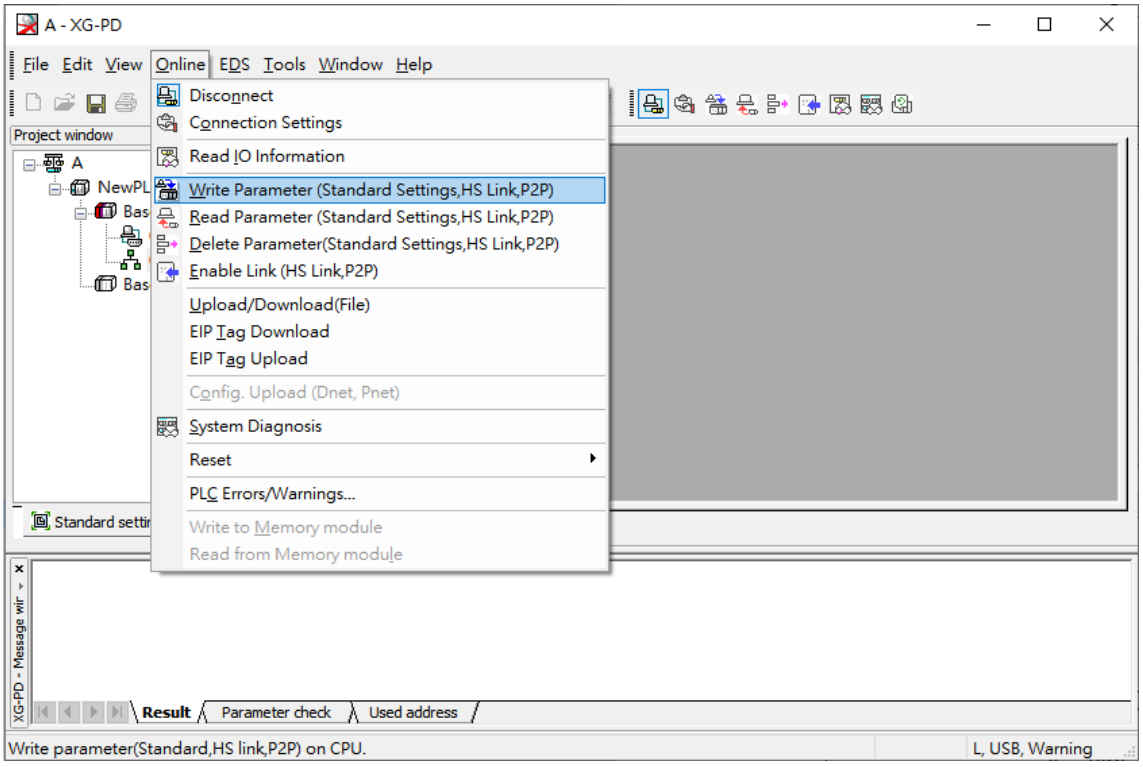
After launching XG-PD, create a new project based on the model used. On the left side, right-click on Base00 (where 00 represents the slot number; please choose according to the actual device), and select "Cnet" under the "Type" option.



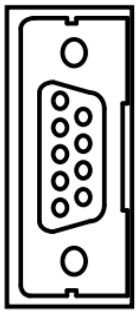
Right-click on the created Cnet and select "Module Settings" to open the communication parameter settings interface.



Once the settings are complete, select "Online" at the top, click "Connect" to establish a connection to the PLC, and then click "Write" to transfer the parameters to the PLC and modify the communication settings.



2.18.1.3 Wiring Diagrams



RS-232	
7	TX
8	RX
5	GND

HMI (RS-232)	XGL-C22A (communication module)
2 RX	7 TX
3 TX	8 RX
5 GND	5 GND

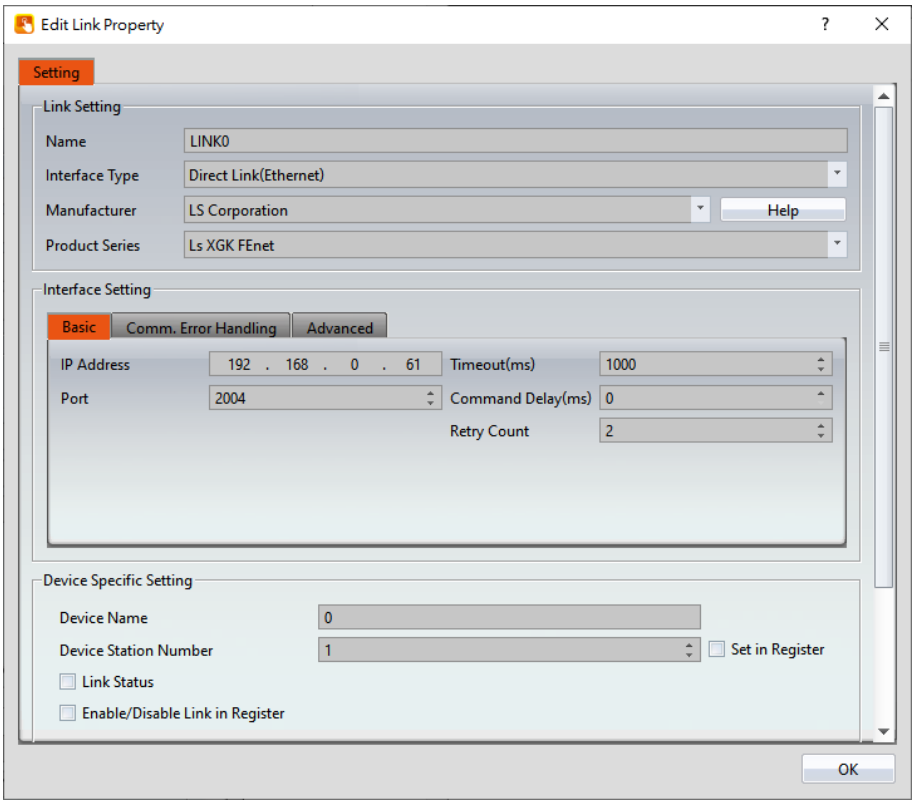
2.18.2 XEC/XGI/XGK/XBC-FEnet

2.18.2.1 Communication Setting

Item	Default Setting	Remark
Communication	Ethernet	
IP	192.168.0.61	
Port	2004	
Station	0	

2.18.2.2 Connected Setting

HMI Setting



Settings in the FvDesigner link:

Select「Ethernet」for the communication interface type.

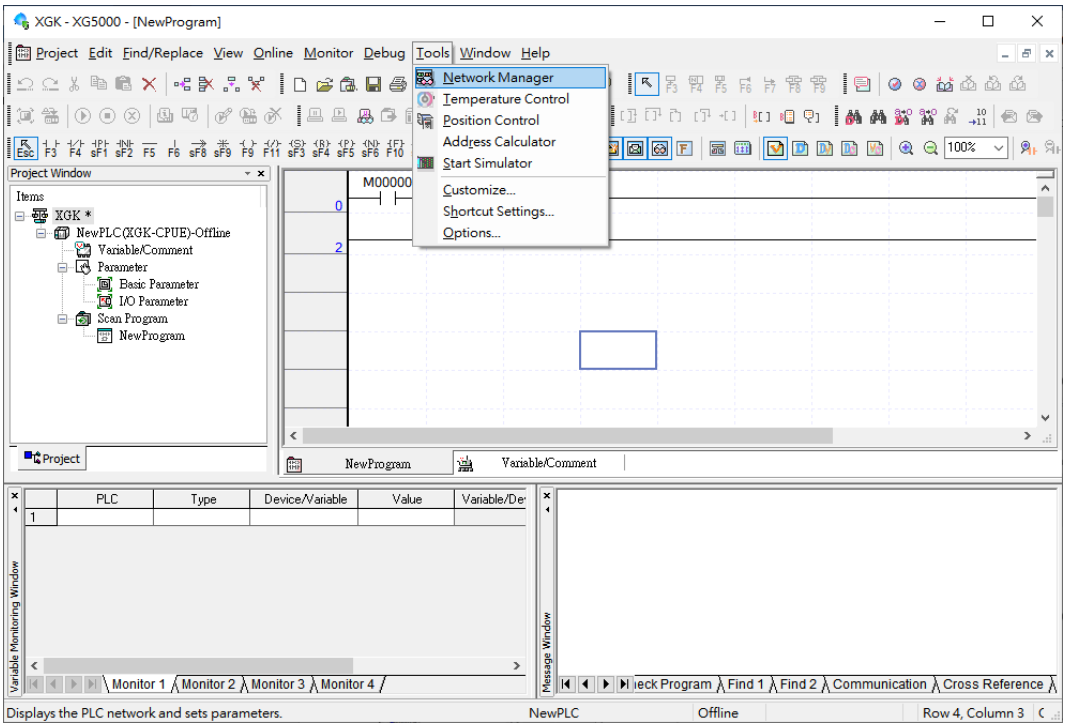
Choose「LS Corporation」for the manufacturer.

Select「LS (XEC/XGI/XGK/XBC) FEnet」for the product series.

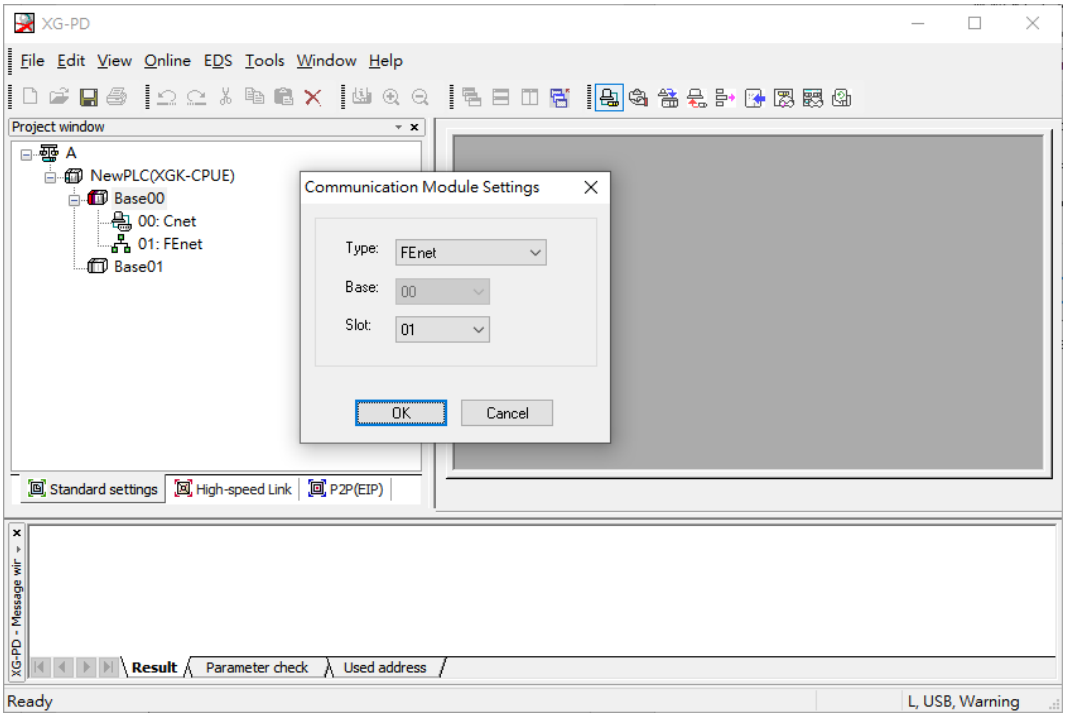
Ensure that the remaining communication parameters and PLC settings are consistent.

PLC Setting

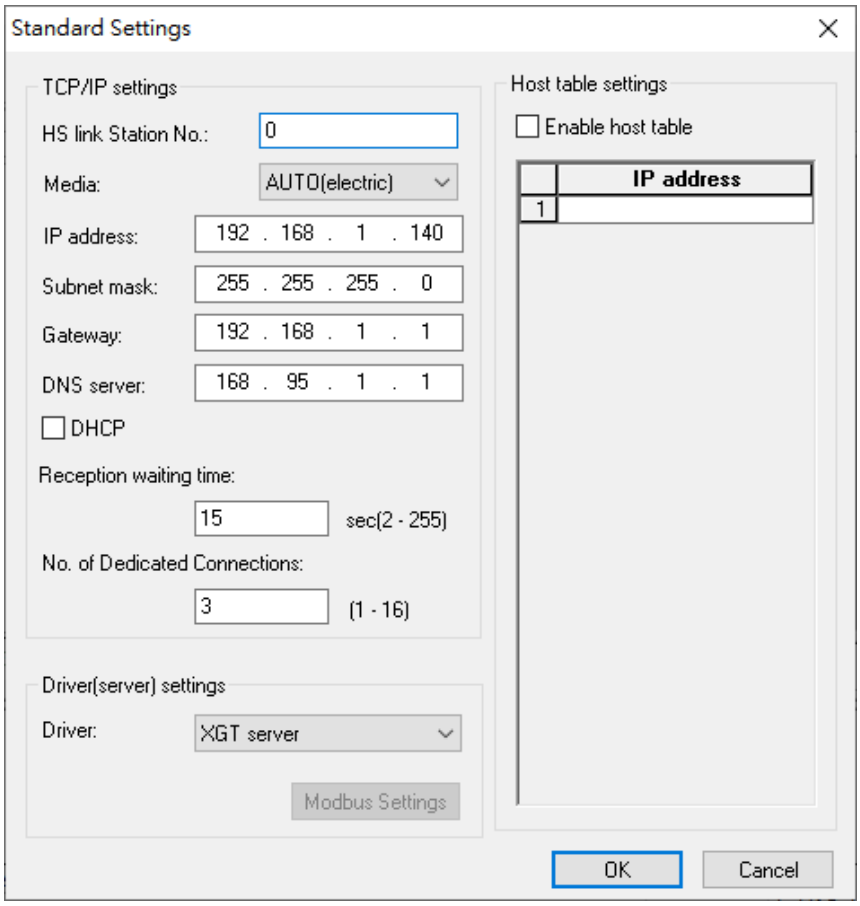
LS software includes XG5000 (for PLC program editing) and XG-PD (for communication settings). Open XG5000, create a new project according to the model used, and then click on "Tools" and select "Network Manager" to launch XG-PD.



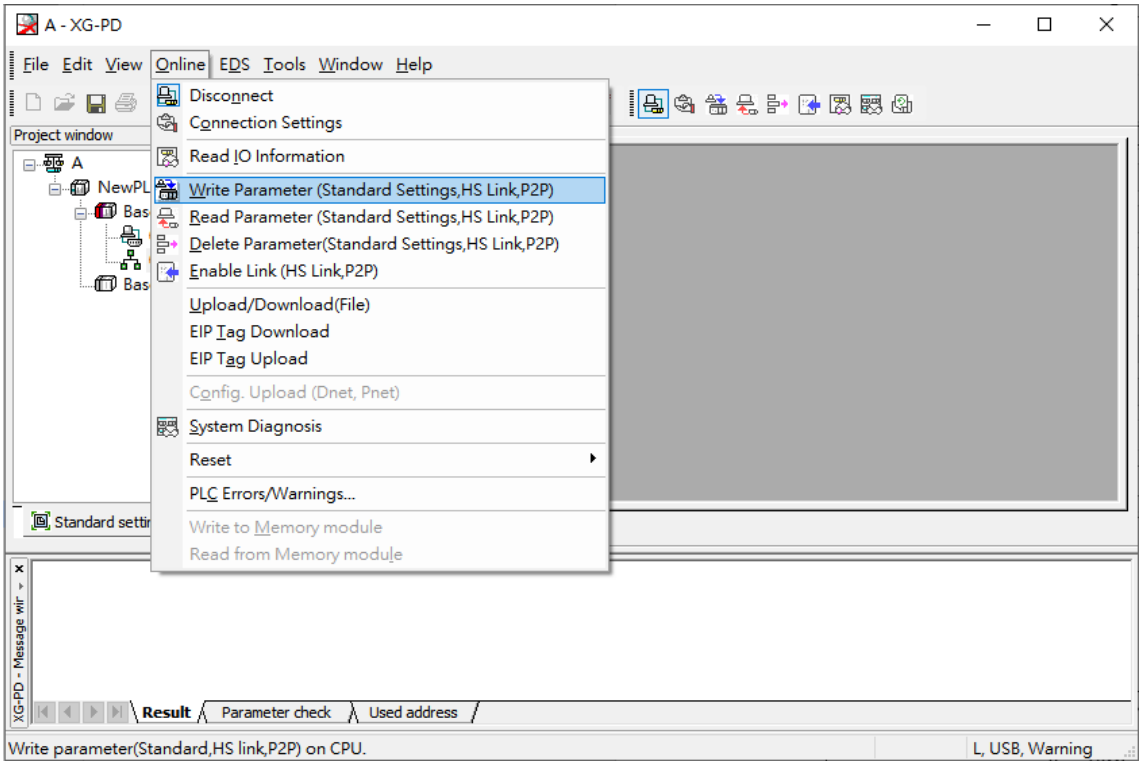
After launching XG-PD, create a new project based on the model used. On the left side, right-click on Base01 (where 01 represents the slot number; please choose according to the actual device), and select "FEnet" under the "Type" option.



Right-click on the created Cnet and select "Module Settings" to open the communication parameter settings interface.



Once the settings are complete, select "Online" at the top, click "Connect" to establish a connection to the PLC, and then click "Write" to transfer the parameters to the PLC and modify the communication settings.



2.18.2.3 Address

		XEC			XGI		
Type	Databits	Format	MIN	MAX	Format	MIN	MAX
AW	16	DDDDD	0	32767	DDDDDD	0	262143
QW	16	DD.DD.D	00.00.0	15.15.3	DDD.DD.D	000.00.0	127.15.3
IW	16	DD.DD.D	00.00.0	15.15.3	DDD.DD.D	000.00.0	127.15.3
MW	16	DDDDD	0	16383	DDDDDD	0	262143
LW	16	DDDD	0	4095	DDDDD	0	11263
NX	16	DDDDD	0	10239	DDDDD	0	25087
KW	16	DDDD	0	8191	DDDD	0	8399
FW	16	DDDD	0	2047	DDDD	0	4095
UW	16	DD.DD	00.00	11.31	D.DD.DD	0.00.00	7.15.26
RW	16	DDDDD	0	16383	DDDDD	0	32767
WW	16	DDDDD	0	32767	DDDDDD	0	524287
AX	1	DDDDDD	0	524287	DDDDDD	0	4194303
QX	1	DD.DD.DD	00.00.00	15.15.63	DDD.DD.DD	000.00.00	127.15.63
IX	1	DD.DD.DD	00.00.00	15.15.63	DDD.DD.DD	000.00.00	127.15.63
MX	1	DDDDDD	0	262143	DDDDDDD	0	4194303
LX	1	DDDDD	0	65535	DDDDDD	0	180223
NX	1	DDDDDD	0	163839	DDDDDD	0	401407
KX	1	DDDDDD	0	131071	DDDDDD	0	134399
FX	1	DDDDD	0	32767	DDDDD	0	65535
RX	1	DDDDDD	0	262143	DDDDDD	0	524287
WX	1	DDDDDD	0	524287	DDDDDDD	0	8388607

		XGK			XBC		
Type	Databits	Format	MIN	MAX	Format	MIN	MAX
PW	16	DDDD	0	4095	DDDD	0	2047
MW	16	DDDD	0	4095	DDDD	0	2047
LW	16	DDDDD	0	11263	DDDD	0	4095
KW	16	DDDD	0	4095	DDDD	0	2559
FW	16	DDDD	0	4095	DDDD	0	2047
CW	16	DDDD	0	4095	DDDD	0	2047
TW	16	DDDD	0	8191	DDDD	0	2047
SW	16	DDD	0	255	DDD	0	127
DW	16	DDDDDD	0	524287	DDDDD	0	32767
UW	16	DH.DD	00.00	7F.31	DH.DD	00.00	3F.31

NW	16	DDDDD	0	21503	-		-
RW	16	DDDDD	0	32767	DDDDD	0	32767
ZW	16	DDD	0	255	DDD	0	127
ZRW	16	DDDDD	0	65535	-		-
PX	1	DDDDH	0	4095F	DDDDH	0	2047F
MX	1	DDDDH	0	4095F	DDDDH	0	2047F
LX	1	DDDDDH	0	11263F	DDDDH	0	4095F
KX	1	DDDDH	0	4095F	DDDDH	0	2559F
FX	1	DDDDH	0	4095F	DDDDH	0	2047F
CX	1	DDDD	0	4095	DDDD	0	2047
TX	1	DDDD	0	8191	DDDD	0	2047
SX	1	DDDDD	0	25599	DDDDD	0	12799
DX	1	DDDDDDH	0	524287F	DDDDDH	0	32767F
UX	1	DH.DD	00.00	7F.31F	DH.DD	00.00	3F.31F
RX	1	DDDDDH	0	32767F	DDDDDH	0	32767F

2.18.3 LS GLOFA GM Reader

2.18.3.1 Communication Setting

Item	Default Setting	Remark
Communication	Serial	
Interface Type	RS-232	
Baud Rate	38400	
Parity	None	
Data Bite	8	
Stop Bits	1	
PLC Station Number	0	

2.18.3.2 Address

Device	Data Bits	Format	Min.	Max.
MD	32	DDDDD	0	16383
QW	16	D.D.D	0	7.7.3
IW	16	D.D.D	0	7.7.3
MW	16	DDDDD	0	32767
QX	1	D.D.DD	0	7.7.63
IX	1	D.D.DD	0	7.7.63

MX	1	DDDDDD	0	524287

2.19 Fuji

2.19.1 Fuji Micrex SX SPH

2.19.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	38400	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	1	

2.19.1.2 PLC Resource

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

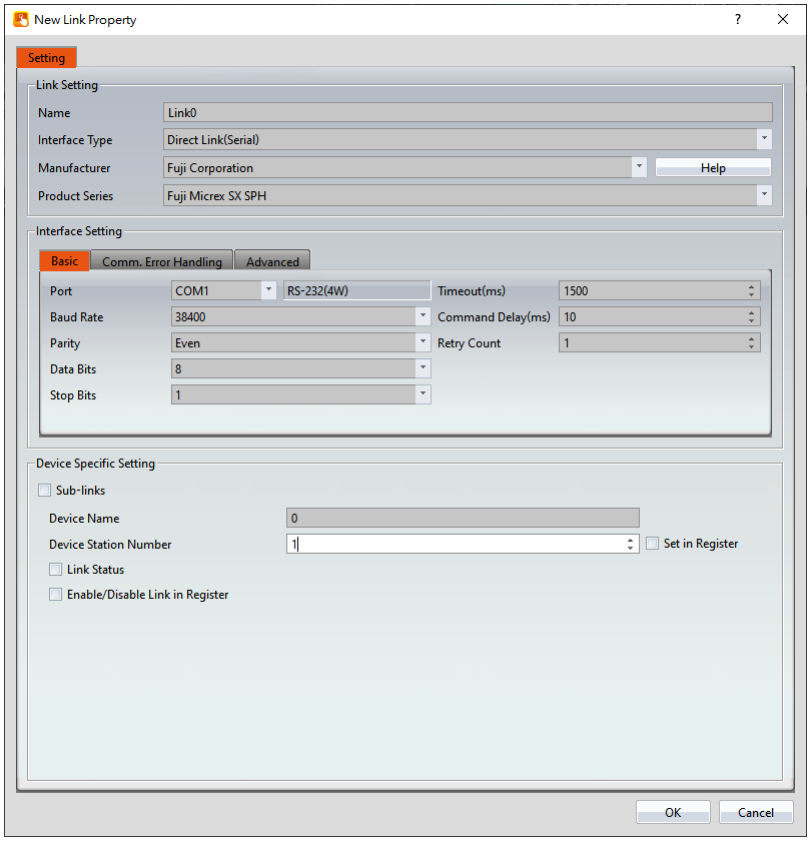
2.19.1.3 Connecting to PLC

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.

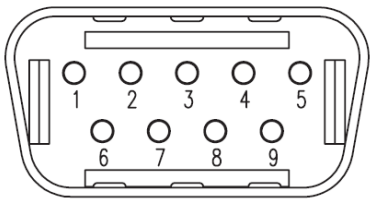
Under **Product Series** select Fuji Micrex SX SPH.

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



*Looking into COM1 Port

PIN#	COM1 (RS232)

1	
2	RX
3	TX
4	
5	GND
6	
7	
8	
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
Interface Type	RS232	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	Even	
Device Station num.	1	

2.20.1.2 PLC Resource

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

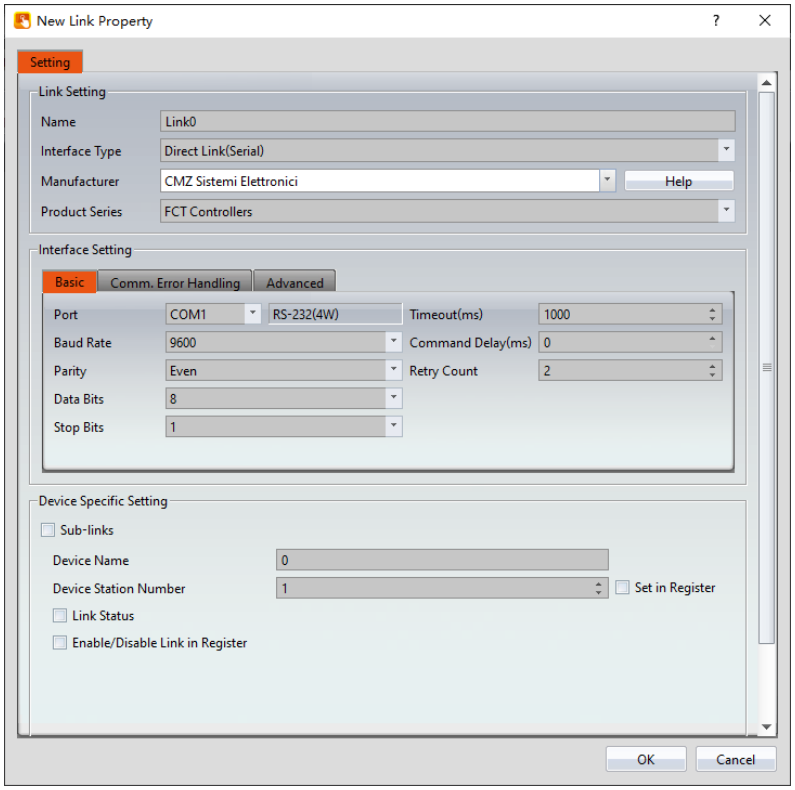
2.20.1.3 Connecting to PLC

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 Serial

Under **Manufacturer** select CMZ Sistemi Elettronici.

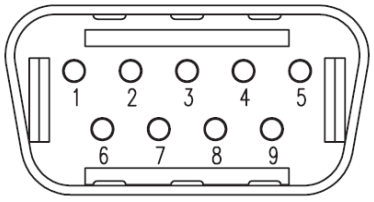
Under **Product Series** select FCT Controllers.

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	
8	
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
Interface Type	Ethernet	
IP Address	192.168.0.2	
Port	502	
Device Station num.	1	
Communication Method	TCP	

2.20.1.2 PLC Resource

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

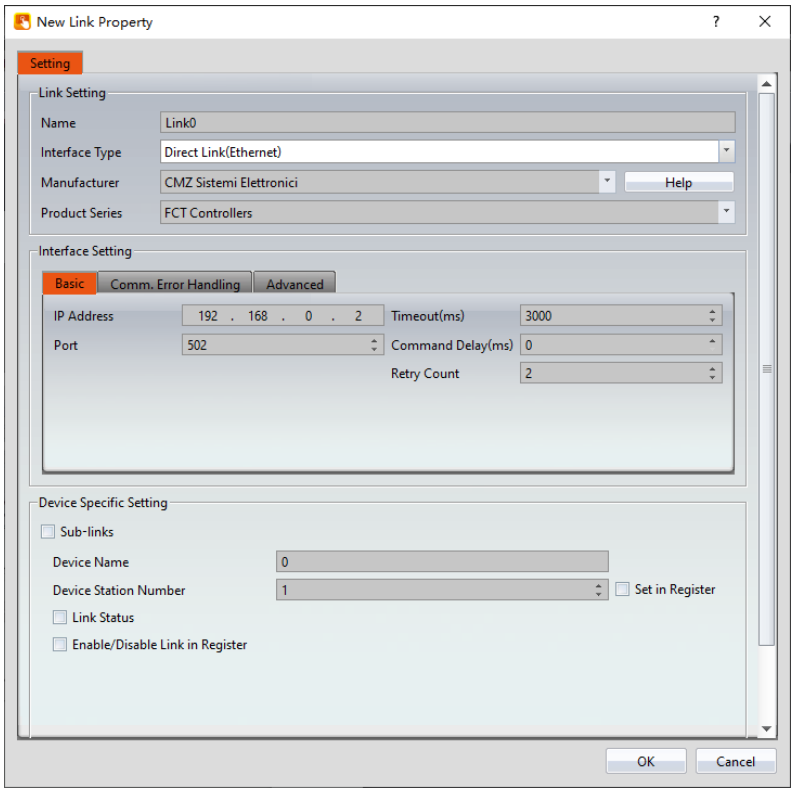
2.20.1.3 Connecting to PLC

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
Interface Type	Ethernet	
IP Address	192.168.0.2	
Port	502	
Communication Method	MODBUS TCP	

2.21.1.2 PLC Resource

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

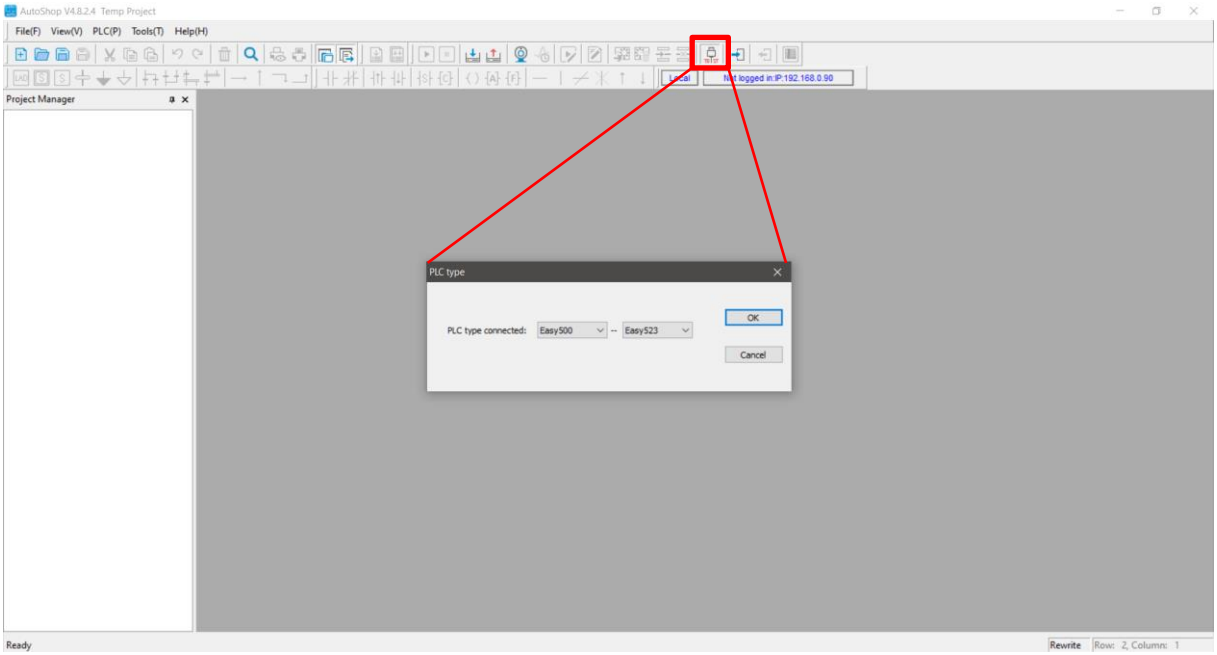
2.21.1.3 Connected Setting

Configuring of PLC

Use **AutoShop** to modify IP/ device name

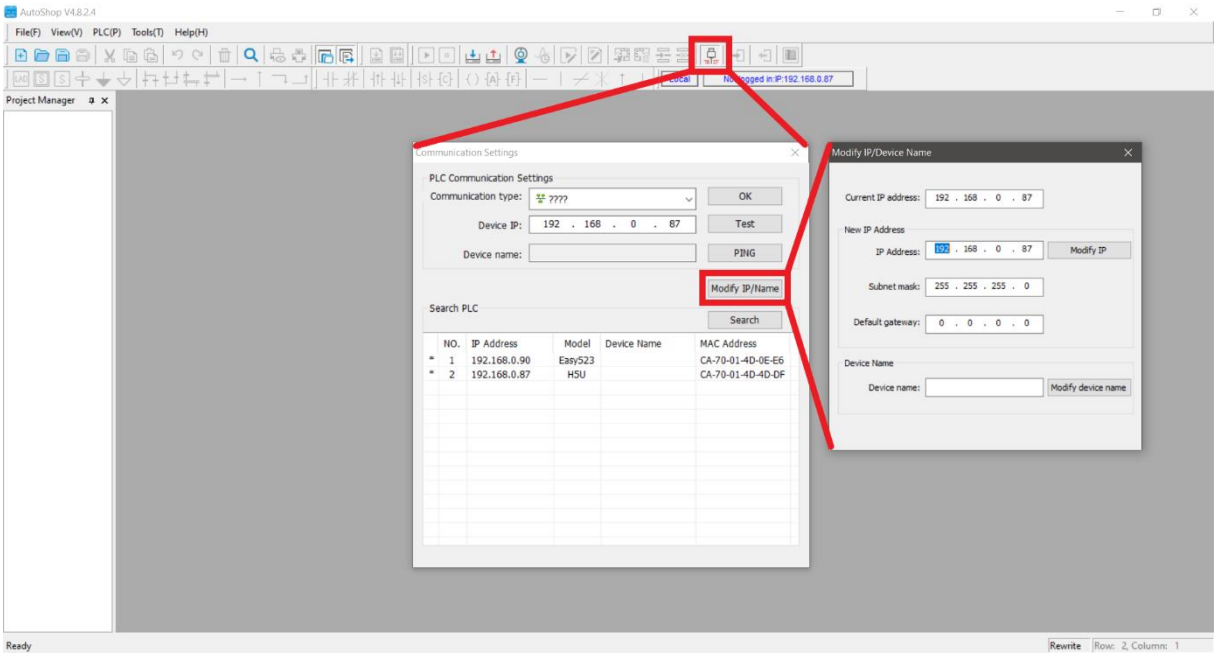
Click test communication status (Test).

Choose Easy500--Easy523 then press OK.



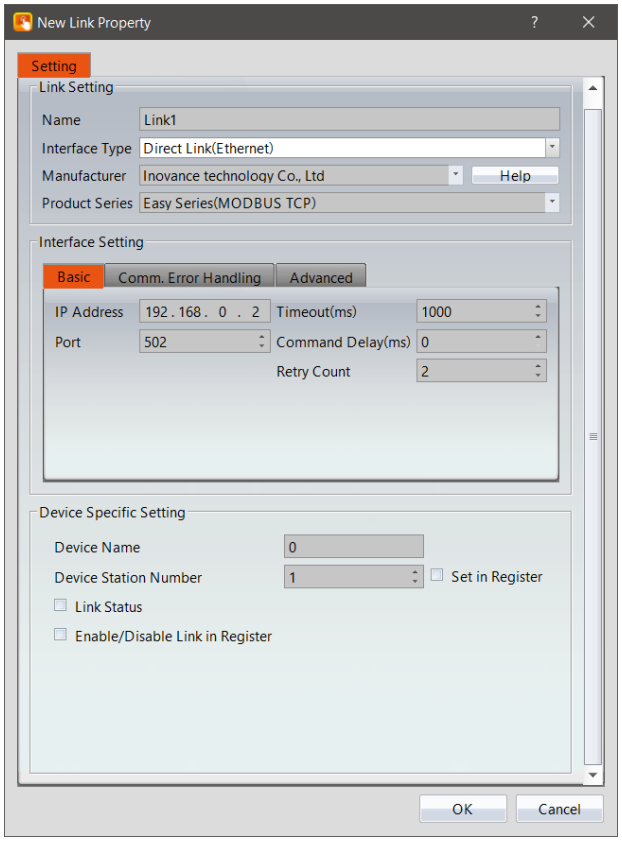
Click search and select PLC device.

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
Interface Type	RS485	
Baud Rate	9600	
Data Length	8	
Stop Bit	2	
Parity	Even	
Device Station num.	1	

2.21.2.2 PLC Resource

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

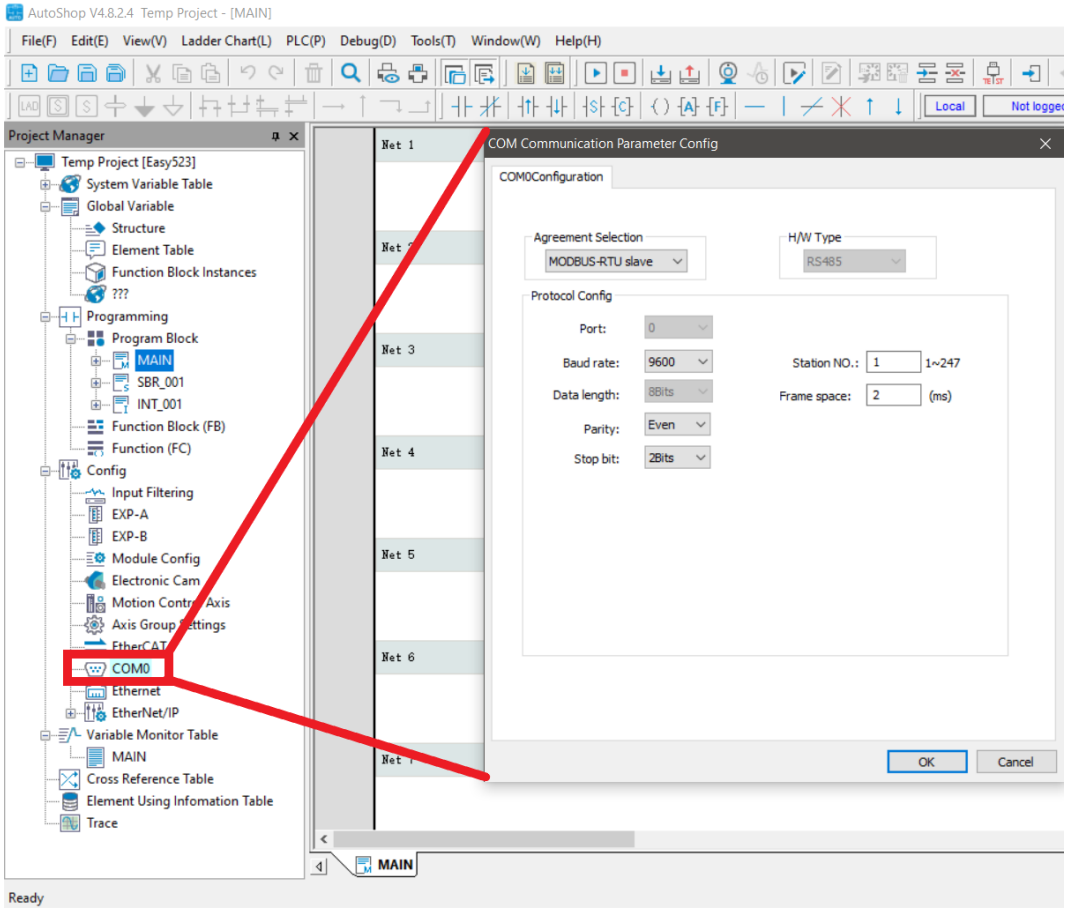
2.21.2.3 Connected Setting

Configuring of PLC

Use **AutoShop** to configure the serial port setting of the PLC

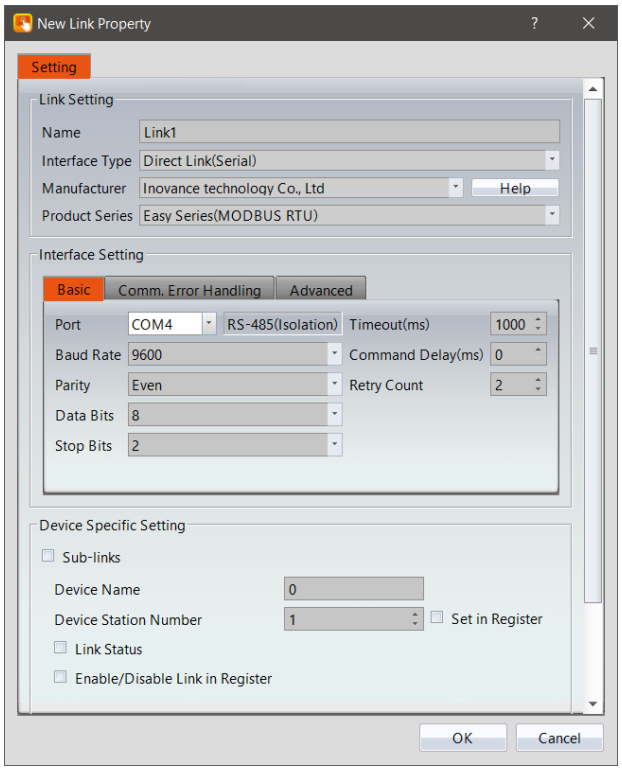
Click **COM0** under the **Config**.

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.

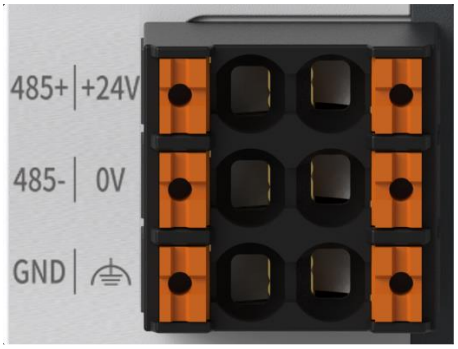
Under **Product Series** select Easy Series(MODBUS RTU).

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

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

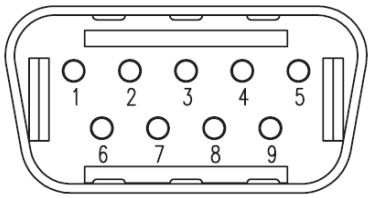
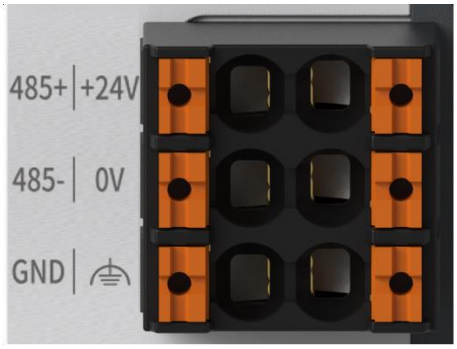
2.21.2.4 Wiring Diagrams

P5 series (except4.3 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

Interface Type	Ethernet	
IP Address	192.168.0.2	
Port	502	
Communication Method	MODBUS TCP	

2.21.3.2 PLC Resource

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

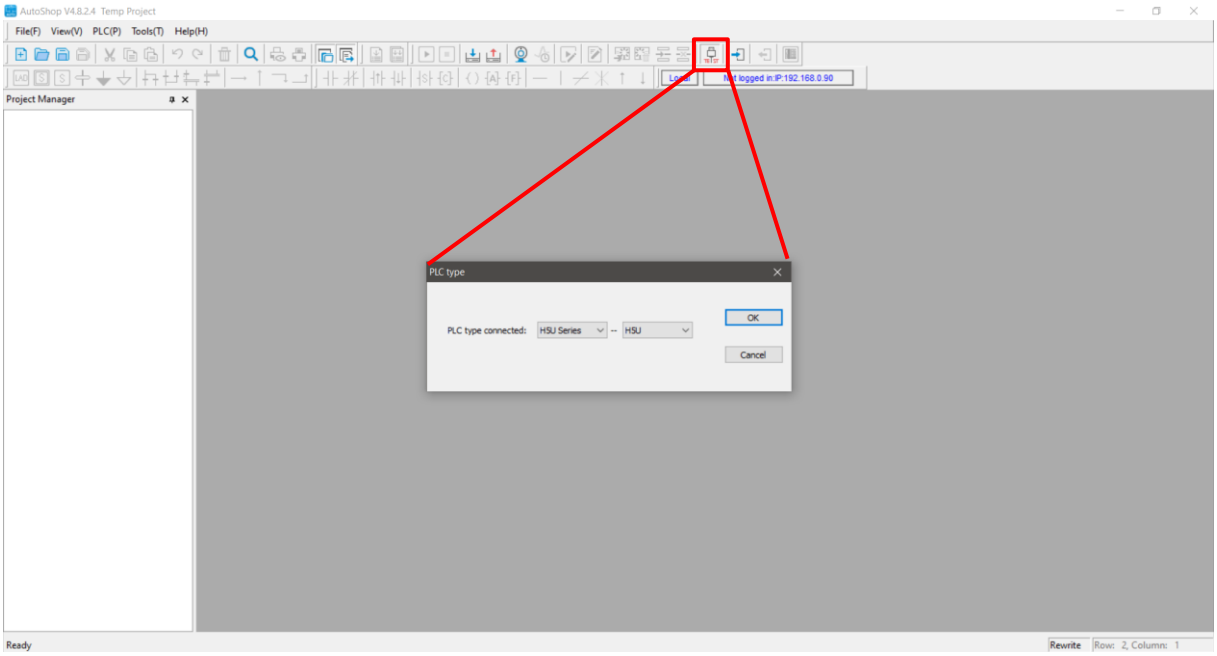
2.21.3.3 Connecting to PLC

Configuring of PLC

Use **AutoShop** to modify IP/ device name

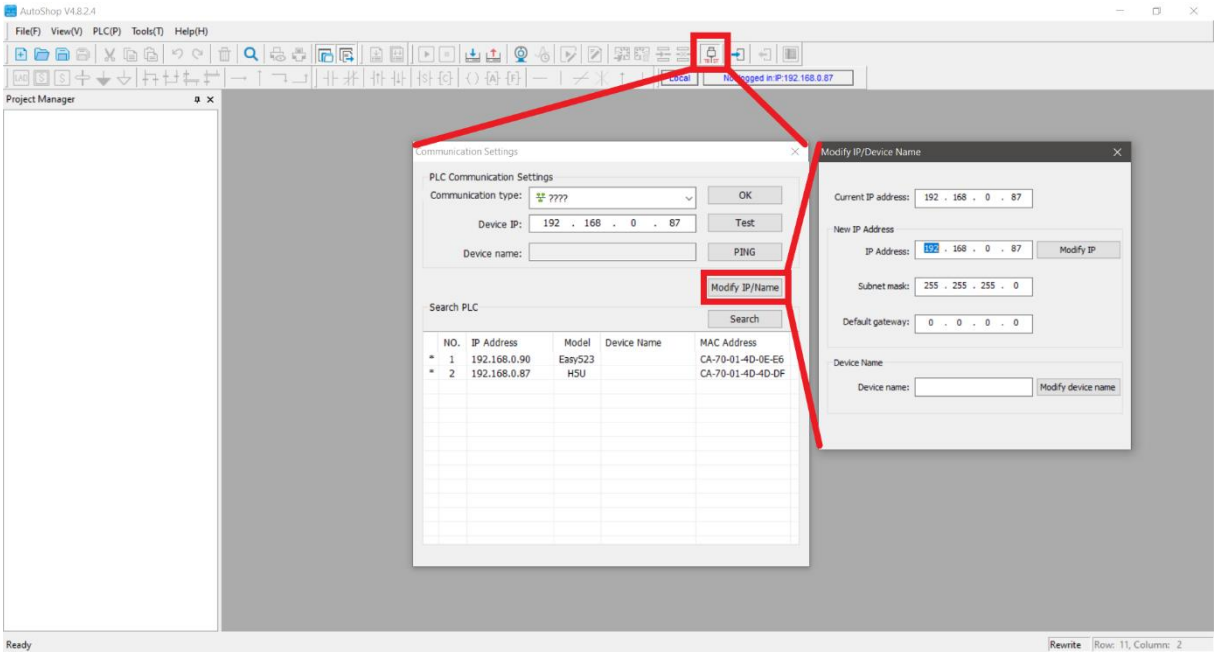
Click Test communication status (Test).

Choose H5U Series—H5U then press OK.



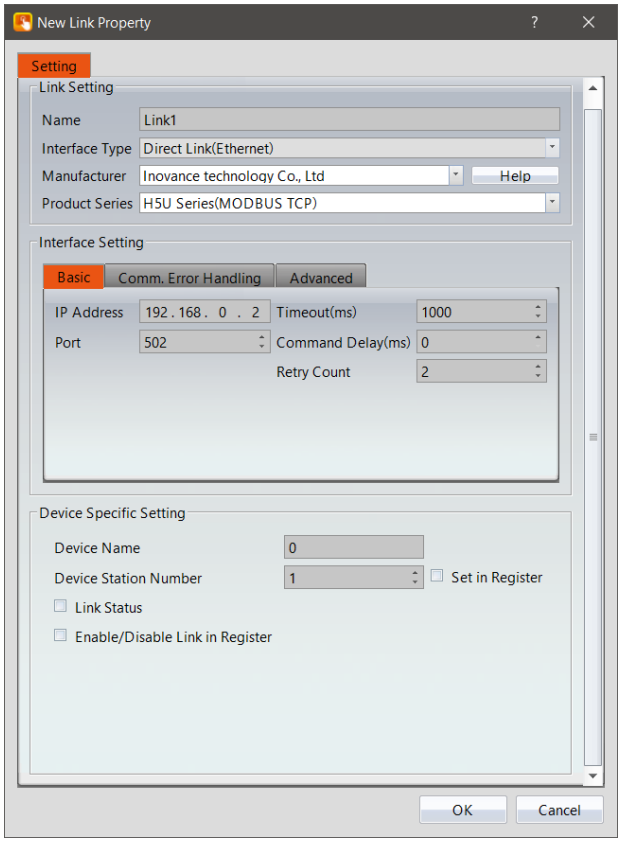
Click search and select PLC device.

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
Interface Type	RS485	
Baud Rate	9600	
Data Length	8	
Stop Bit	2	
Parity	Even	
Device Station num.	1	

2.21.4.2 PLC Resource

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

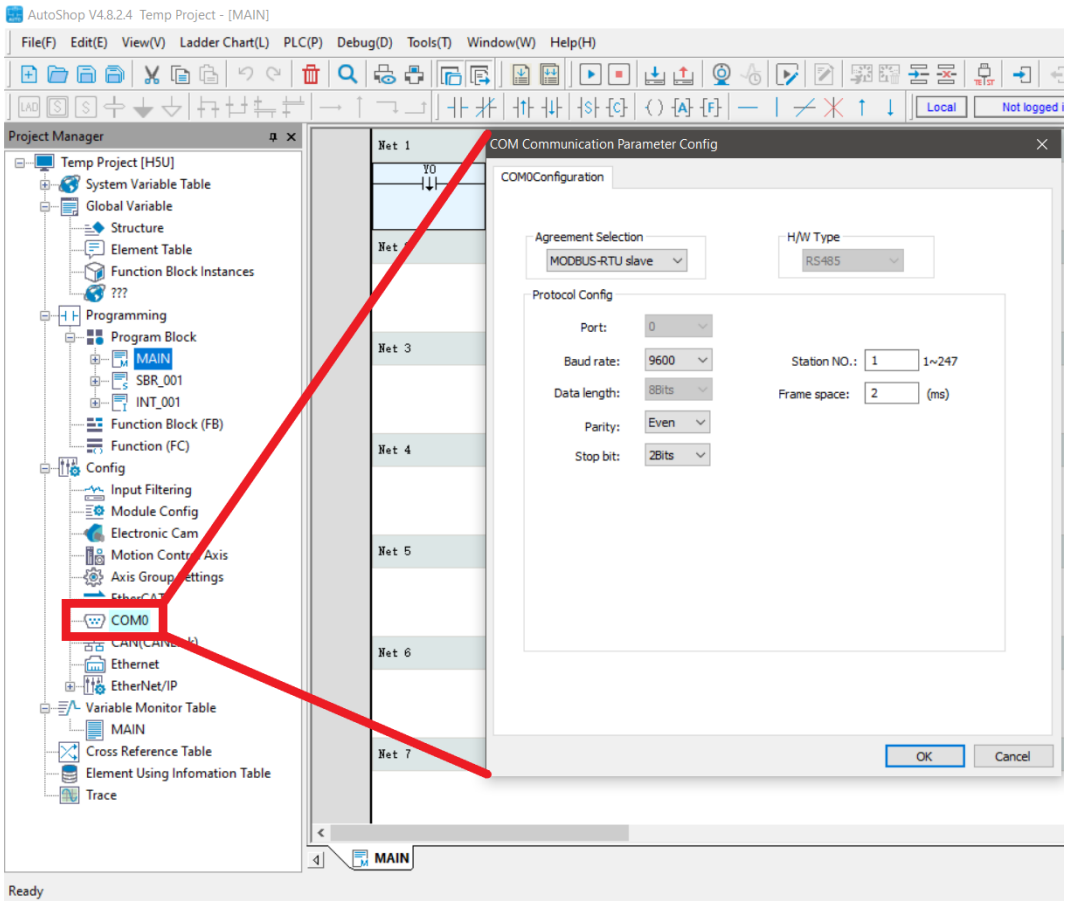
2.21.4.3 Connecting to PLC

Configuring of PLC

Use **AutoShop** to configure the serial port setting of the PLC

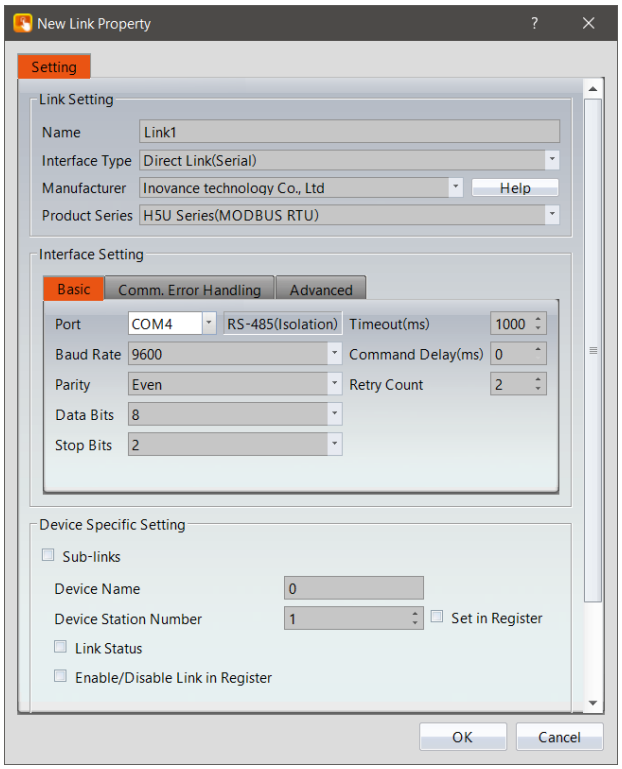
Click COM0 under the Config.

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

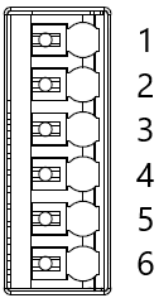
Under **Product Series** select H5U Series (MODBUS RTU)

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

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

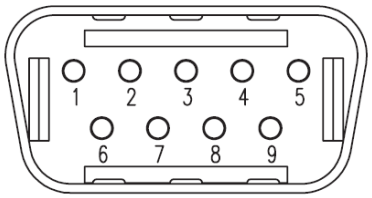
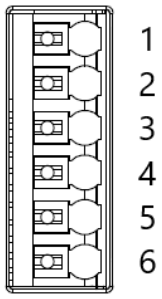
2.21.4.4 Wiring Diagrams

P5 series (except4.3 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**

2.22 Rockwell Automation

2.22.1 Micro 800 Tag Series

2.22.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	19200	
Data Length	8	
Stop Bit	1	
Parity	None	
Device Station num.	1	
TX Control	CRC	CRC/BCC
Communication Method	DF1	

2.22.1.2 PLC Resource Review

DataType		bits	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
UDINT	---	32	Unsigned double integer value
TIME	---	32	Time
DATE	---	32	Date
REAL	---	32	Float number
STRING	---	8	String
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
UDINT []	UDINT	32*n	Array of Unsigned double integer value
TIME []	TIME	32*n	Array of Time
DATE []	DATE	32*n	Array of Date
REAL []	REAL	32*n	Array of Float number
STRING []	STRING	8*n	Array of String

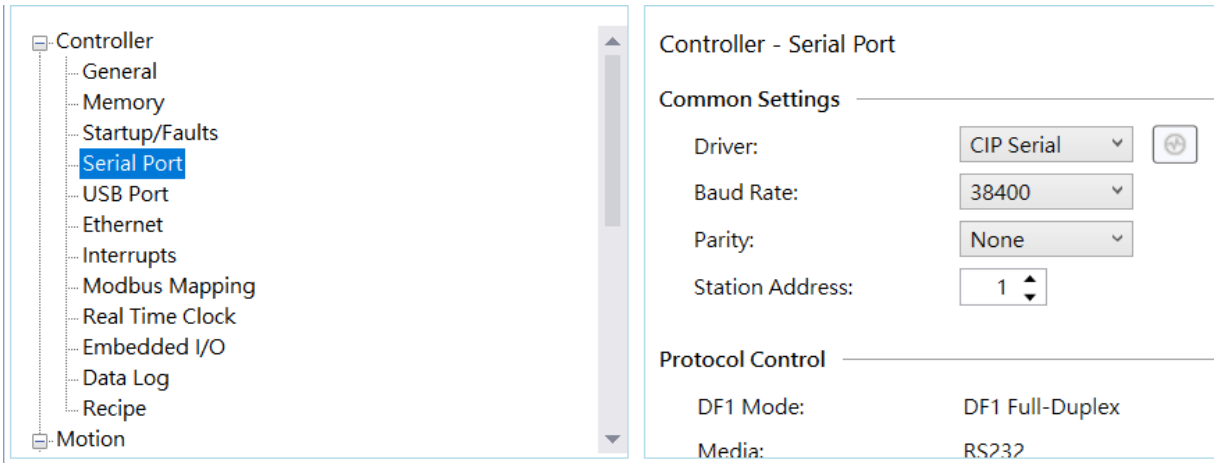
2.22.1.3 Connected Setting

Configuring of PLC

Use **Connected Component Workbench (CCW)** to configure the port of the PLC.

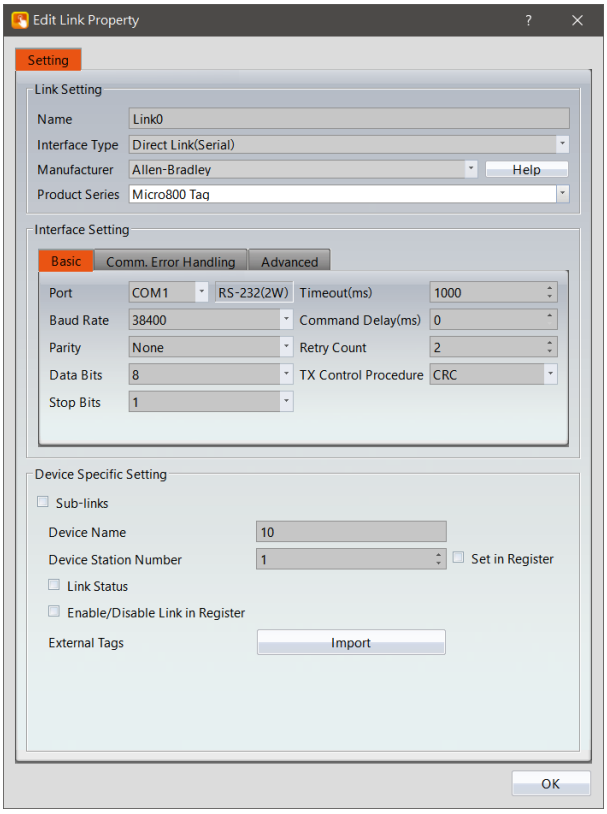
In the CCW Controller dendrogram, click on the Serial Port branch.

In the Serial Port branch, the serial port communication parameters of the PLC can be set.



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 Allen-Bradley

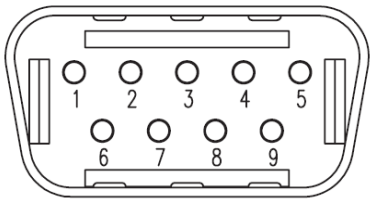
Under **Product Series** select Micro 800 Tag

Under **Port** select COM1

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

Wiring Diagram

HMI COM1 Pinout

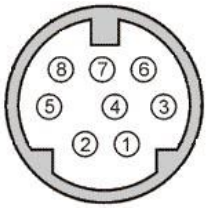


*Looking into COM1 Port

PIN#	COM1 (RS232)
1	
2	RX
3	TX
4	

5	GND
6	
7	
8	
9	

PLC RS232 Pinout

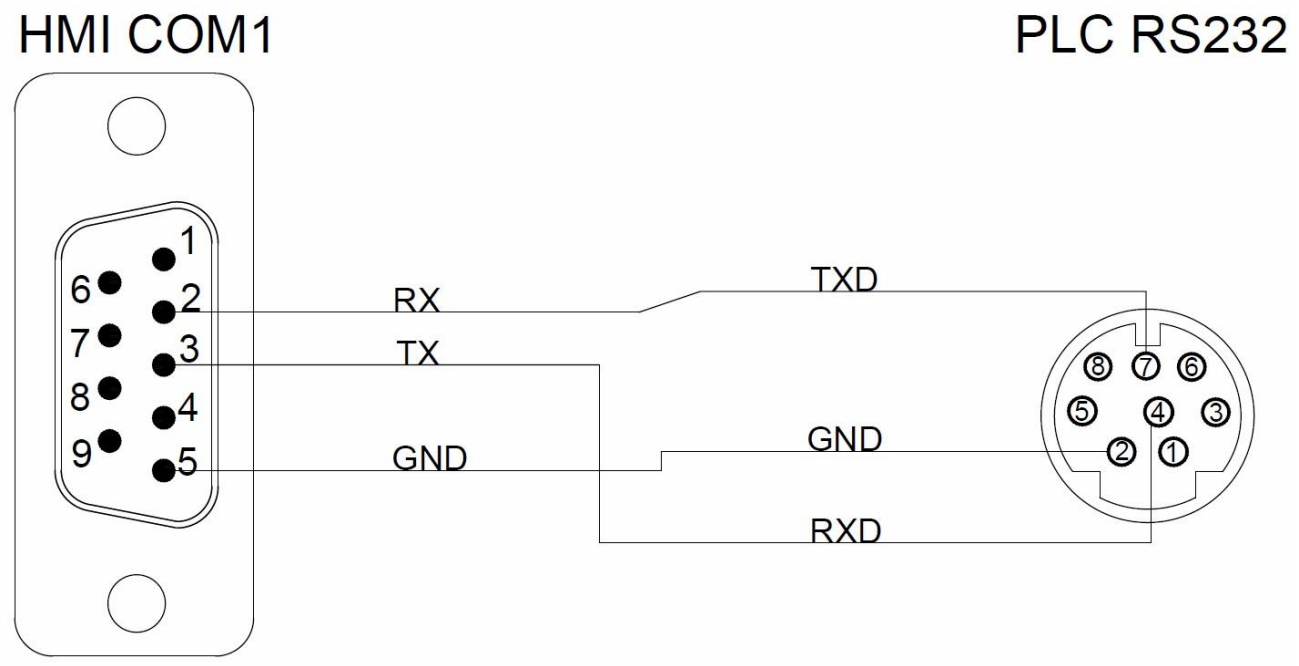


*Looking into PLC

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



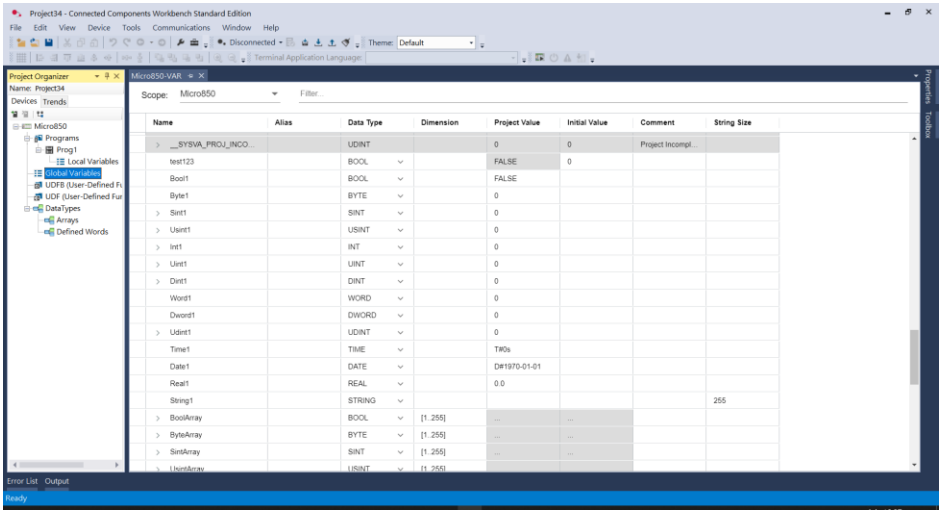
2.22.1.4 Tags setting

Allen-Bradley Micro800 Tags import description

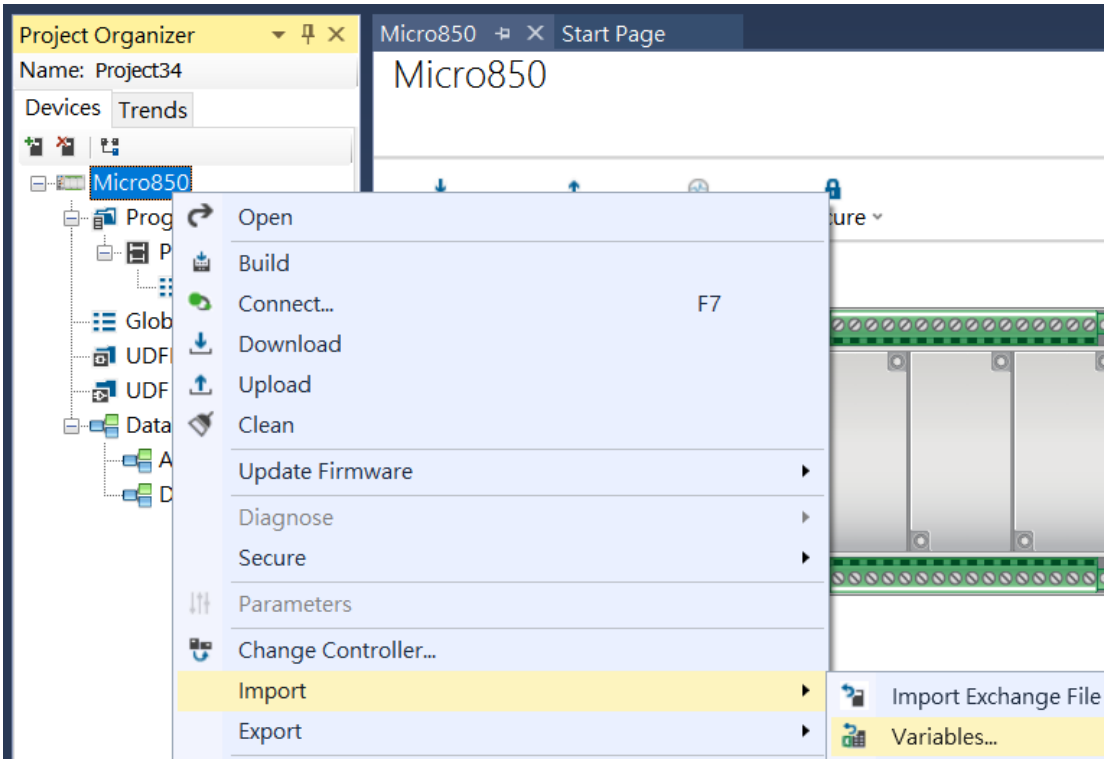
The edit soft of Allen-Bradley Micro800 series PLC is Connected Components Workbench (CCW)

Export the global variable tags of PLC project :

1. Edit the global variable through CCW.



2. Right click device → export → variable to export the xlsx file with Tags.



3. Below is the tag content of the xlsx file.

You can see the exported content from CCW, does not content the default I/O.

	Name	Data Type	Dimension	String Size	Initial Value	Direction	Attribute	Comment	Alias	IsRetained	Project Value	Version=2
2	(Name)	(DataType)	(Dimension)	(StringSize)	(InitialValue)	(Direction)	(Attribute)	(Comment)	(Alias)	(IsRetained)	(ProjectValue)	
3	MICRO850_Output	BOOL	[1..20]			Var	ReadWrite			FALSE		
4	MICRO850_Output[1]	BOOL								FALSE		
5	MICRO850_Output[2]	BOOL								FALSE		
6	MICRO850_Output[3]	BOOL								FALSE		
7	MICRO850_Output[4]	BOOL								FALSE		
8	MICRO850_Output[5]	BOOL								FALSE		
9	MICRO850_Output[6]	BOOL								FALSE		
10	MICRO850_Output[7]	BOOL								FALSE		
11	MICRO850_Output[8]	BOOL								FALSE		
12	MICRO850_Output[9]	BOOL								FALSE		
13	MICRO850_Output[10]	BOOL								FALSE		
14	MICRO850_Output[11]	BOOL								FALSE		
15	MICRO850_Output[12]	BOOL								FALSE		
16	MICRO850_Output[13]	BOOL								FALSE		
17	MICRO850_Output[14]	BOOL								FALSE		
18	MICRO850_Output[15]	BOOL								FALSE		
19	MICRO850_Output[16]	BOOL								FALSE		
20	MICRO850_Output[17]	BOOL								FALSE		
21	MICRO850_Output[18]	BOOL								FALSE		
22	MICRO850_Output[19]	BOOL								FALSE		
23	MICRO850_Output[20]	BOOL								FALSE		
24	MICRO850_Input	BOOL	[1..28]			Var	ReadWrite			FALSE		
25	MICRO850_Input[1]	BOOL								FALSE		
26	MICRO850_Input[2]	BOOL								FALSE		
27	MICRO850_Input[3]	BOOL								FALSE		
28	MICRO850_Input[4]	BOOL								FALSE		
29	MICRO850_Input[5]	BOOL								FALSE		

4. If you wants to use the default I/O Tags(staring with _IO_) in HMI, you need to input them manually.

Required information: Name, DataType, Direction, Attribute, IsRetained

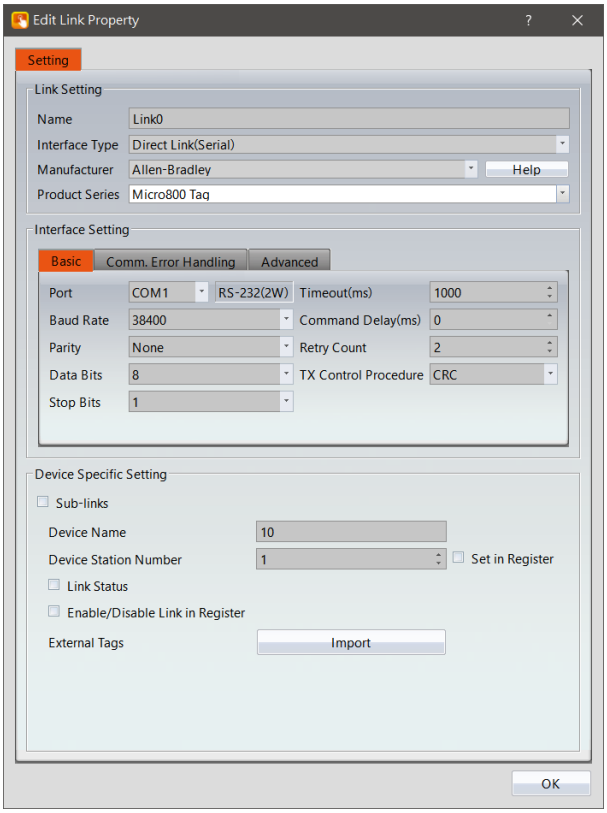
The String Size is required if the datatype is STRING

The Tags staring with __SYSVA_ is a system variable, is not supported for access, will cause communication failure if used.

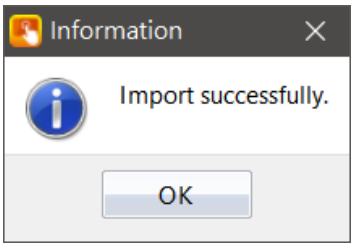
5064	MICRO850_Input[27]	BOOL								
5065	MICRO850_Input[28]	BOOL								
5066	_IO_EM_DO_00	BOOL				Var	ReadWrite			FALSE
5067	_IO_EM_DO_01	BOOL				Var	ReadWrite			FALSE
5068	_IO_EM_DO_02	BOOL				Var	ReadWrite			FALSE
5069	_IO_EM_DO_03	BOOL				Var	ReadWrite			FALSE
5070	_IO_EM_DO_04	BOOL				Var	ReadWrite			FALSE
5071	_IO_EM_DO_05	BOOL				Var	ReadWrite			FALSE
5072	_IO_EM_DO_06	BOOL				Var	ReadWrite			FALSE
5073	_IO_EM_DO_07	BOOL				Var	ReadWrite			FALSE
5074	_IO_EM_DO_08	BOOL				Var	ReadWrite			FALSE
5075	_IO_EM_DO_09	BOOL				Var	ReadWrite			FALSE
5076	_IO_EM_DO_10	BOOL				Var	ReadWrite			FALSE
5077	_IO_EM_DO_11	BOOL				Var	ReadWrite			FALSE
5078	_IO_EM_DO_12	BOOL				Var	ReadWrite			FALSE
5079	_IO_EM_DO_13	BOOL				Var	ReadWrite			FALSE

2.22.1.5 Import the Tags into HMI project:

1. open the Link property of Micro800 Tag, click Import button and select the required xlsx file to import external Tags.

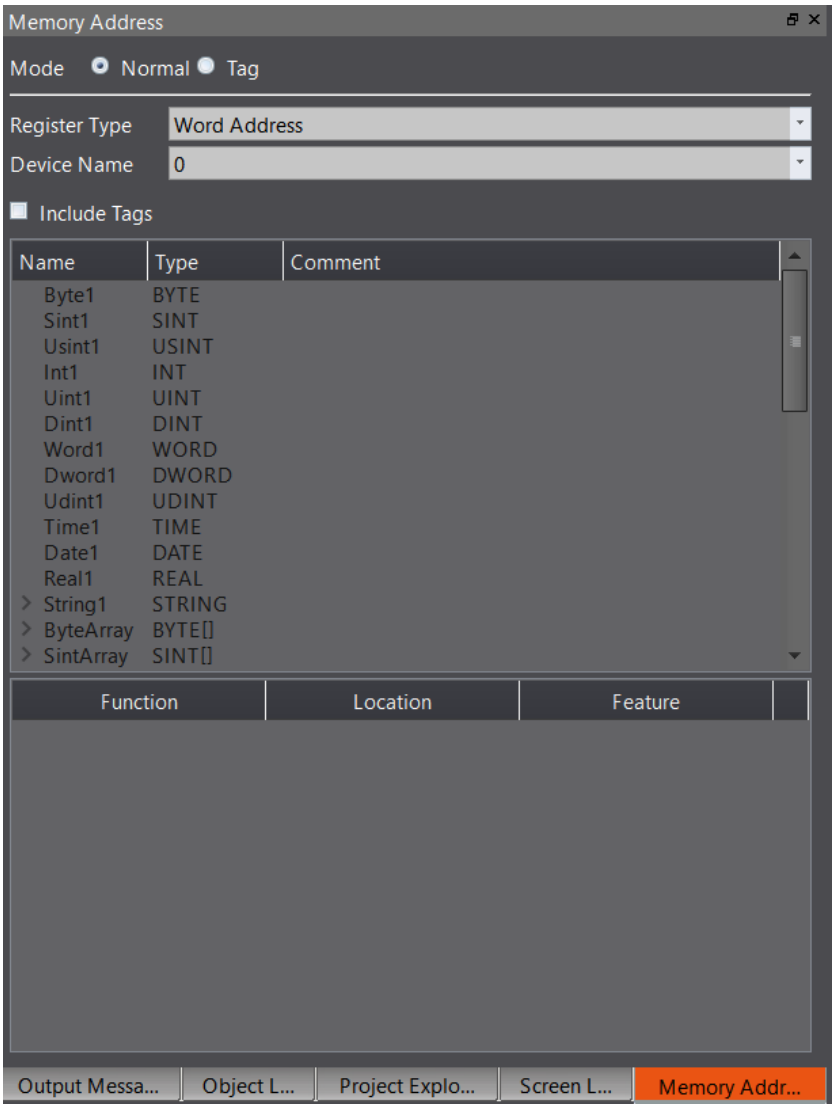


2.It will show import successfully after import is finished.



3. you can see the imported Tags and datatype at memory address page.

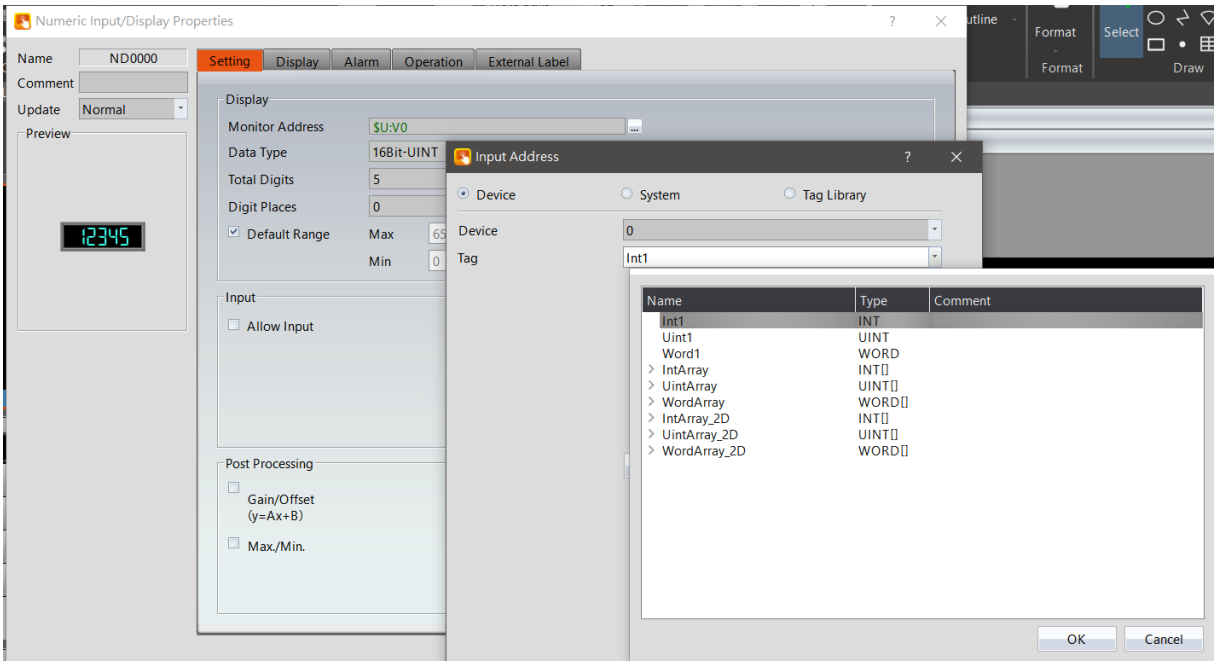
Because the exported Tags file contain the subtag message, so the Datatype would automatically build when import, and user don’t need to set up.



Tags use method:

Take the numeric display for example, would show relative Tags according to the Datatype setting .

Note: Not all the customize datatype subtag , can be access by external devices, could cause communication failure if the subtag be used.



2.22.2 Micro 800 Tag (EtherNet/IP)

2.22.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.0.2	
Port	44818	
Communication Method	EtherNet/IP	

2.22.2.2 PLC Resource Review

DataType		bits	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

UDINT	---	32	Unsigned double integer value
TIME	---	32	Time
DATE	---	32	Date
REAL	---	32	Float number
STRING	---	8	String
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
UDINT []	UDINT	32*n	Array of Unsigned double integer value
TIME []	TIME	32*n	Array of Time
DATE []	DATE	32*n	Array of Date
REAL []	REAL	32*n	Array of Float number
STRING []	STRING	8*n	Array of String

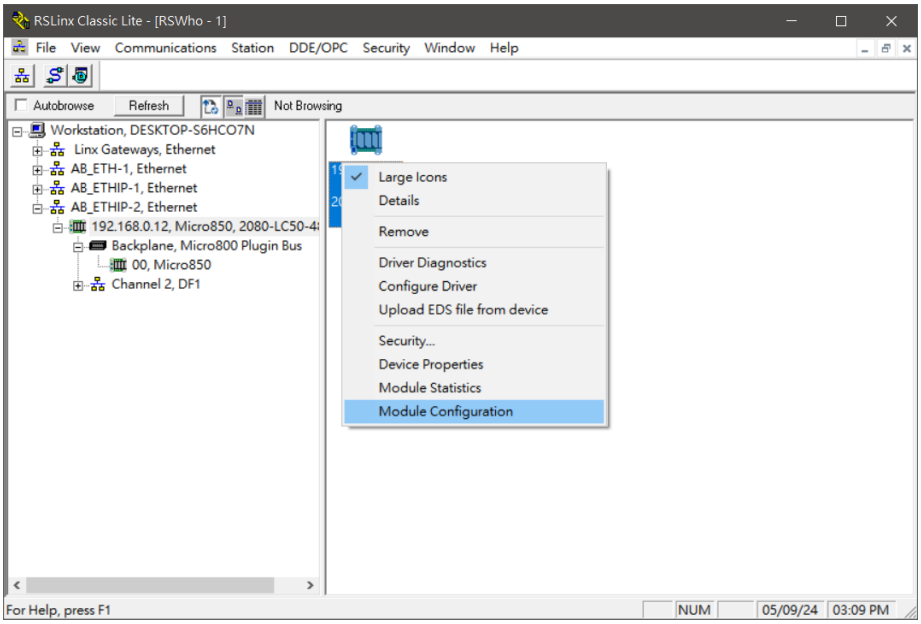
2.22.2.3 Connected Setting

Configuring IP Address on PLC

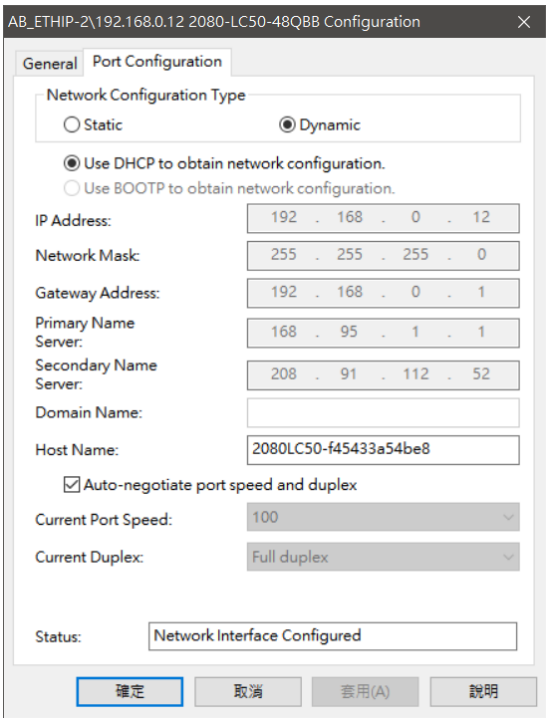
Modify the parameter of PLC address with **RSLinx Classic Lite**.

In the **Project** tree structure graph, press **Parameter**, then select **PLC Parameter.**

Select the PLC, then right click, and select **Module Configuration**.

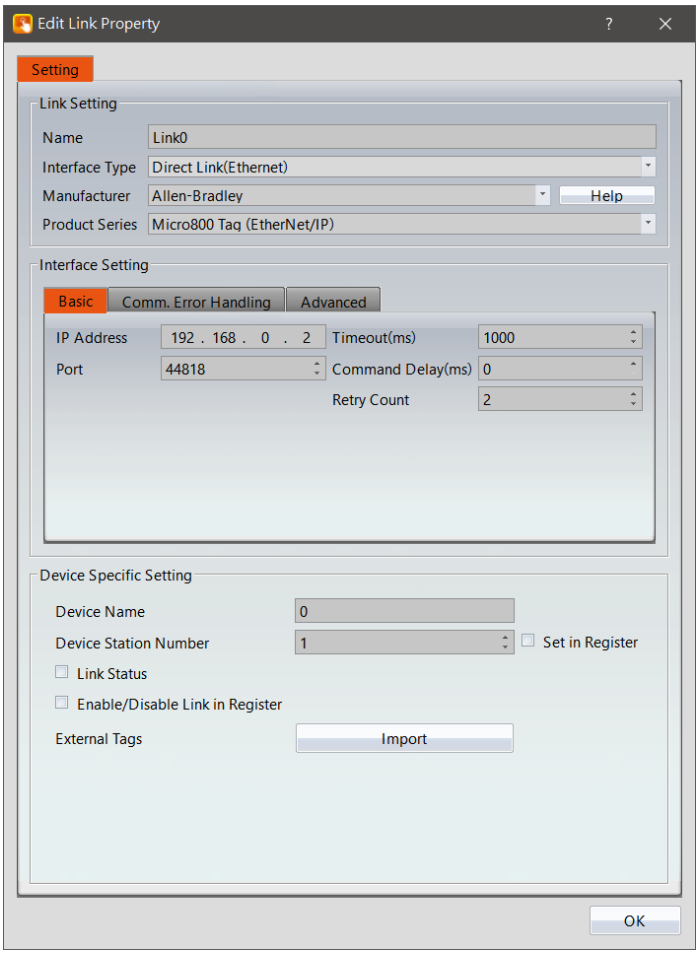


Under the Tag **Port Configuration**, can modify the PLC IP address and other parameters.



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 Allen-Bradley

Under **Product Series** select Micro 800 Tag (Ethernet).

Verify the parameters match the window above.

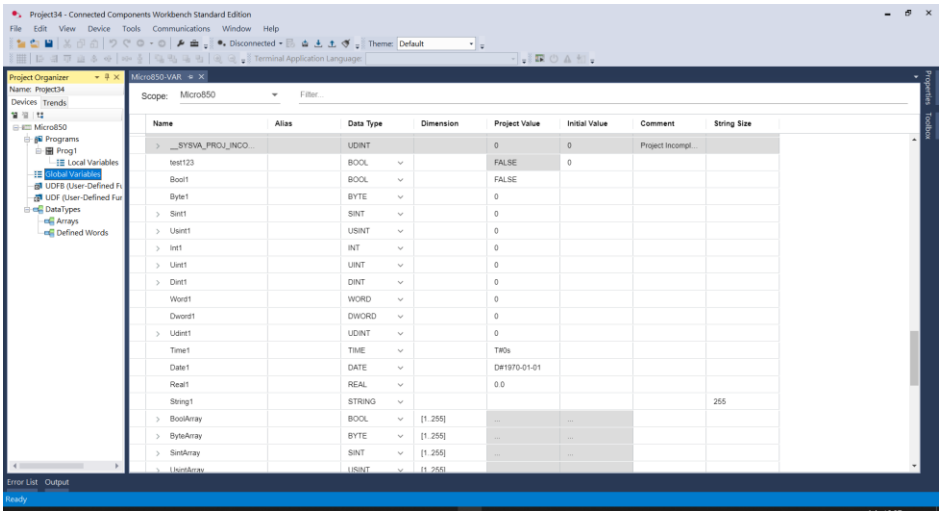
2.22.2.4 Tags setting

Allen-Bradley Micro800 Tags import description

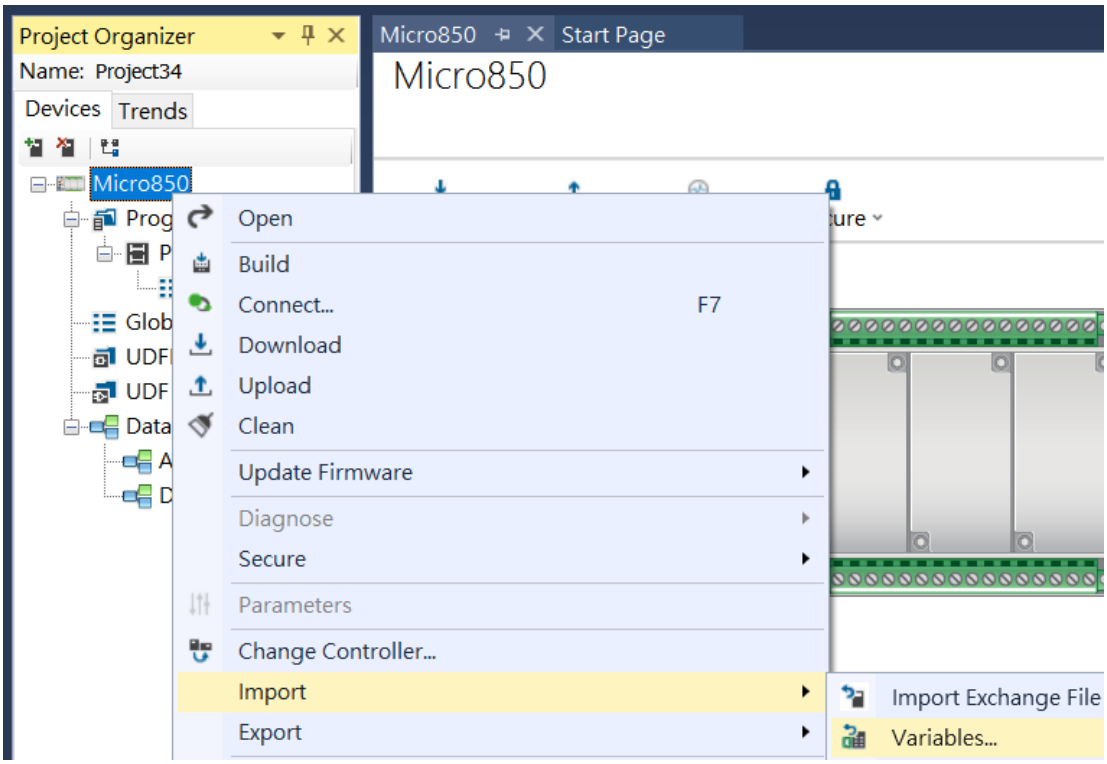
The edit soft of Allen-Bradley Micro800 series PLC is Connected Components Workbench (CCW)

Export the global variable tags of PLC project :

1. Edit the global variable through CCW.



2. Right click device → export → variable to export the xlsx file with Tags.



3. Below is the tag content of the xlsx file.

You can see the exported content from CCW, does not content the default I/O.

1	Name	Data Type	Dimension	String Size	Initial Value	Direction	Attribute	Comment	Alias	IsRetained	Project Value	Version=2
2	(Name)	(DataType)	(Dimension)	(StringSize)	(InitialValue)	(Direction)	(Attribute)	(Comment)	(Alias)	(IsRetained)	(ProjectValue)	
3	MICRO850_Output	BOOL	[1..20]			Var	ReadWrite			FALSE		
4	MICRO850_Output[1]	BOOL								FALSE		
5	MICRO850_Output[2]	BOOL								FALSE		
6	MICRO850_Output[3]	BOOL								FALSE		
7	MICRO850_Output[4]	BOOL								FALSE		
8	MICRO850_Output[5]	BOOL								FALSE		
9	MICRO850_Output[6]	BOOL								FALSE		
10	MICRO850_Output[7]	BOOL								FALSE		
11	MICRO850_Output[8]	BOOL								FALSE		
12	MICRO850_Output[9]	BOOL								FALSE		
13	MICRO850_Output[10]	BOOL								FALSE		
14	MICRO850_Output[11]	BOOL								FALSE		
15	MICRO850_Output[12]	BOOL								FALSE		
16	MICRO850_Output[13]	BOOL								FALSE		
17	MICRO850_Output[14]	BOOL								FALSE		
18	MICRO850_Output[15]	BOOL								FALSE		
19	MICRO850_Output[16]	BOOL								FALSE		
20	MICRO850_Output[17]	BOOL								FALSE		
21	MICRO850_Output[18]	BOOL								FALSE		
22	MICRO850_Output[19]	BOOL								FALSE		
23	MICRO850_Output[20]	BOOL								FALSE		
24	MICRO850_Input	BOOL	[1..28]			Var	ReadWrite			FALSE		
25	MICRO850_Input[1]	BOOL								FALSE		
26	MICRO850_Input[2]	BOOL								FALSE		
27	MICRO850_Input[3]	BOOL								FALSE		
28	MICRO850_Input[4]	BOOL								FALSE		
29	MICRO850_Input[5]	BOOL								FALSE		

4. If you wants to use the default I/O Tags(staring with _IO_) in HMI, you need to input them manually.

Required information: Name, DataType, Direction, Attribute, IsRetained

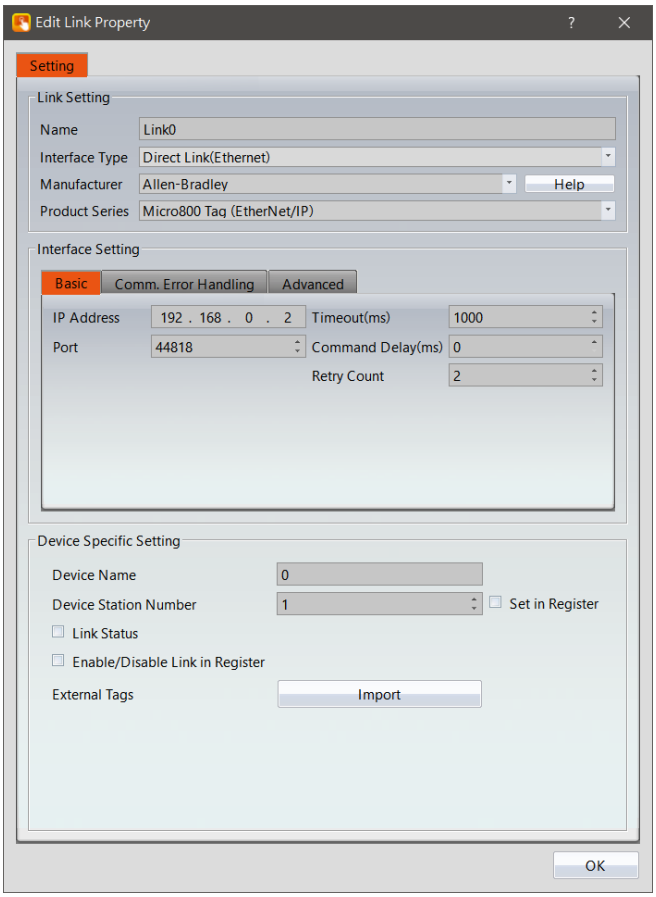
The String Size is required if the datatype is STRING

The Tags staring with __SYSVA_ is a system variable, is not supported for access, will cause communication failure if used.

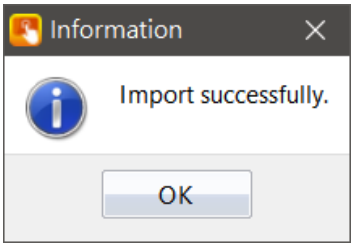
5064	MICRO850_Input[27]	BOOL								
5065	MICRO850_Input[28]	BOOL								
5066	_IO_EM_DO_00	BOOL				Var	ReadWrite			FALSE
5067	_IO_EM_DO_01	BOOL				Var	ReadWrite			FALSE
5068	_IO_EM_DO_02	BOOL				Var	ReadWrite			FALSE
5069	_IO_EM_DO_03	BOOL				Var	ReadWrite			FALSE
5070	_IO_EM_DO_04	BOOL				Var	ReadWrite			FALSE
5071	_IO_EM_DO_05	BOOL				Var	ReadWrite			FALSE
5072	_IO_EM_DO_06	BOOL				Var	ReadWrite			FALSE
5073	_IO_EM_DO_07	BOOL				Var	ReadWrite			FALSE
5074	_IO_EM_DO_08	BOOL				Var	ReadWrite			FALSE
5075	_IO_EM_DO_09	BOOL				Var	ReadWrite			FALSE
5076	_IO_EM_DO_10	BOOL				Var	ReadWrite			FALSE
5077	_IO_EM_DO_11	BOOL				Var	ReadWrite			FALSE
5078	_IO_EM_DO_12	BOOL				Var	ReadWrite			FALSE
5079	_IO_EM_DO_13	BOOL				Var	ReadWrite			FALSE

2.22.2.5 Import the Tags into HMI project:

1. open the Link property of Micro800 Tag, click Import button and select the required xlsx file to import external Tags.

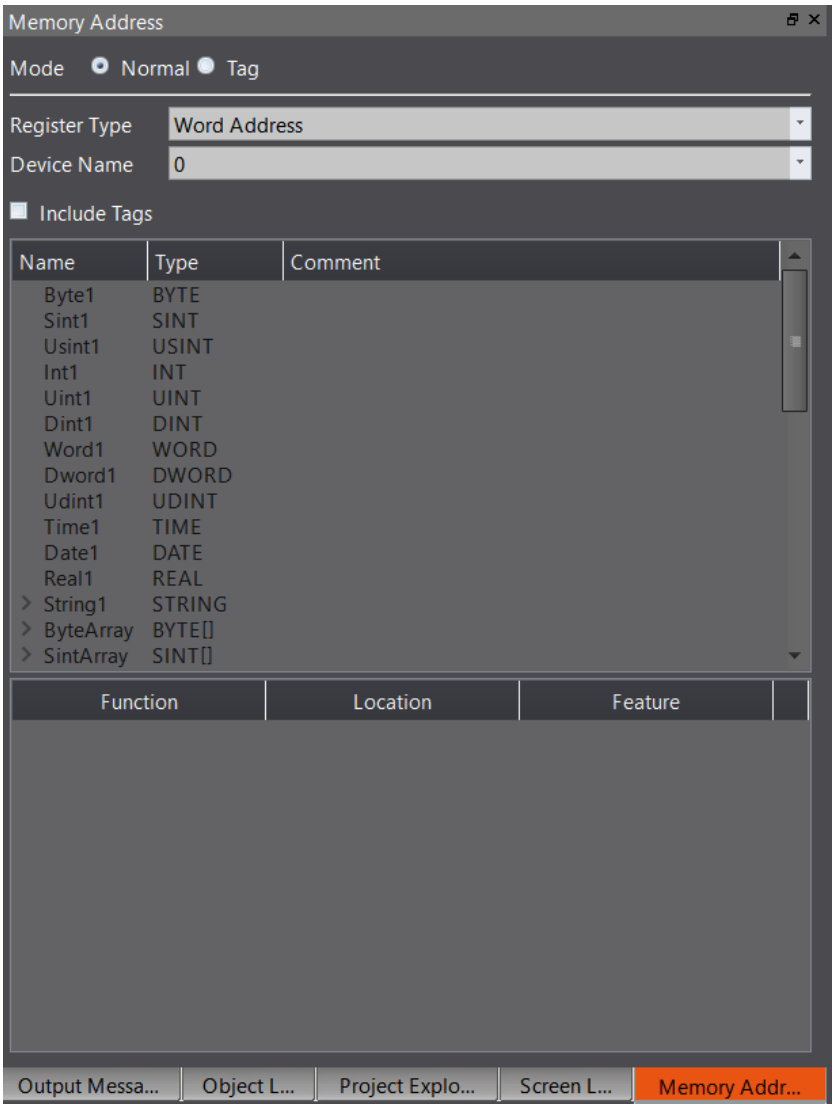


2.It will show import successfully after import is finished.



3. you can see the imported Tags and datatype at memory address page.

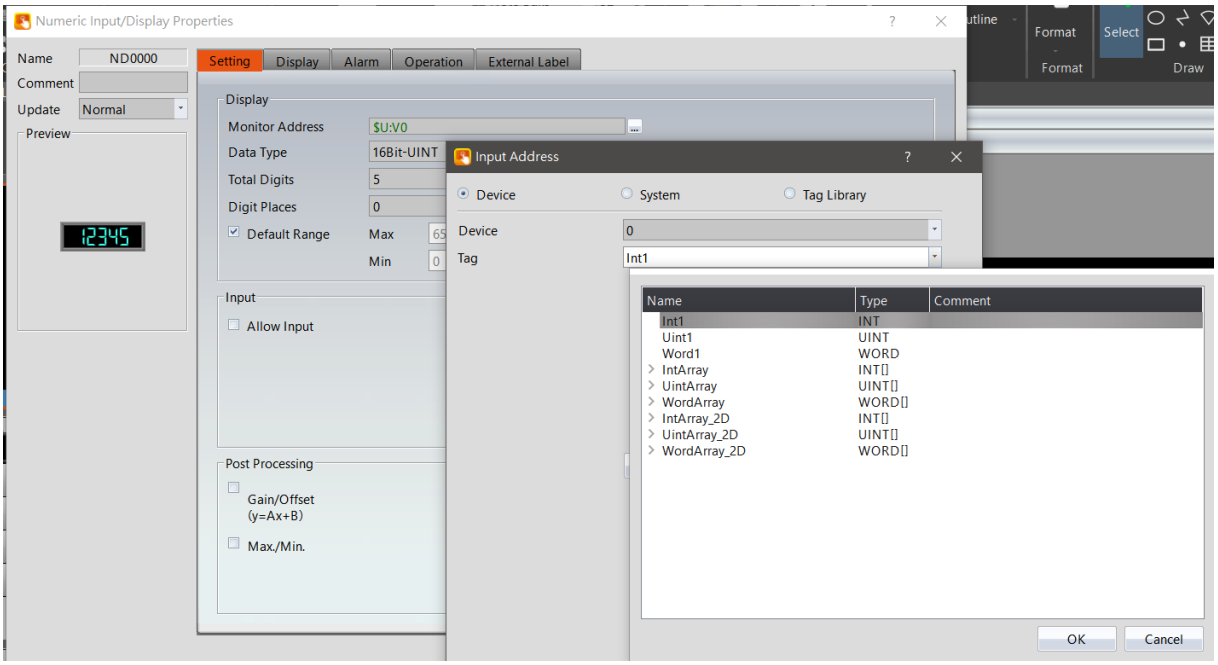
Because the exported Tags file contain the subtag message, so the Datatype would automatically build when import, and user don’t need to set up.



Tags use method:

Take the numeric display for example, would show relative Tags according to the Datatype setting .

Note: Not all the customize datatype subtag , can be access by external devices, could cause communication failure if the subtag be used.



2.23 Honeywell

2.23.1 BACnet Honeywell

2.23.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.15.2	
Port	47808	Bacnet IP default Port
Device Station num.	1	
Communication Method	UDP	Bacnet IP

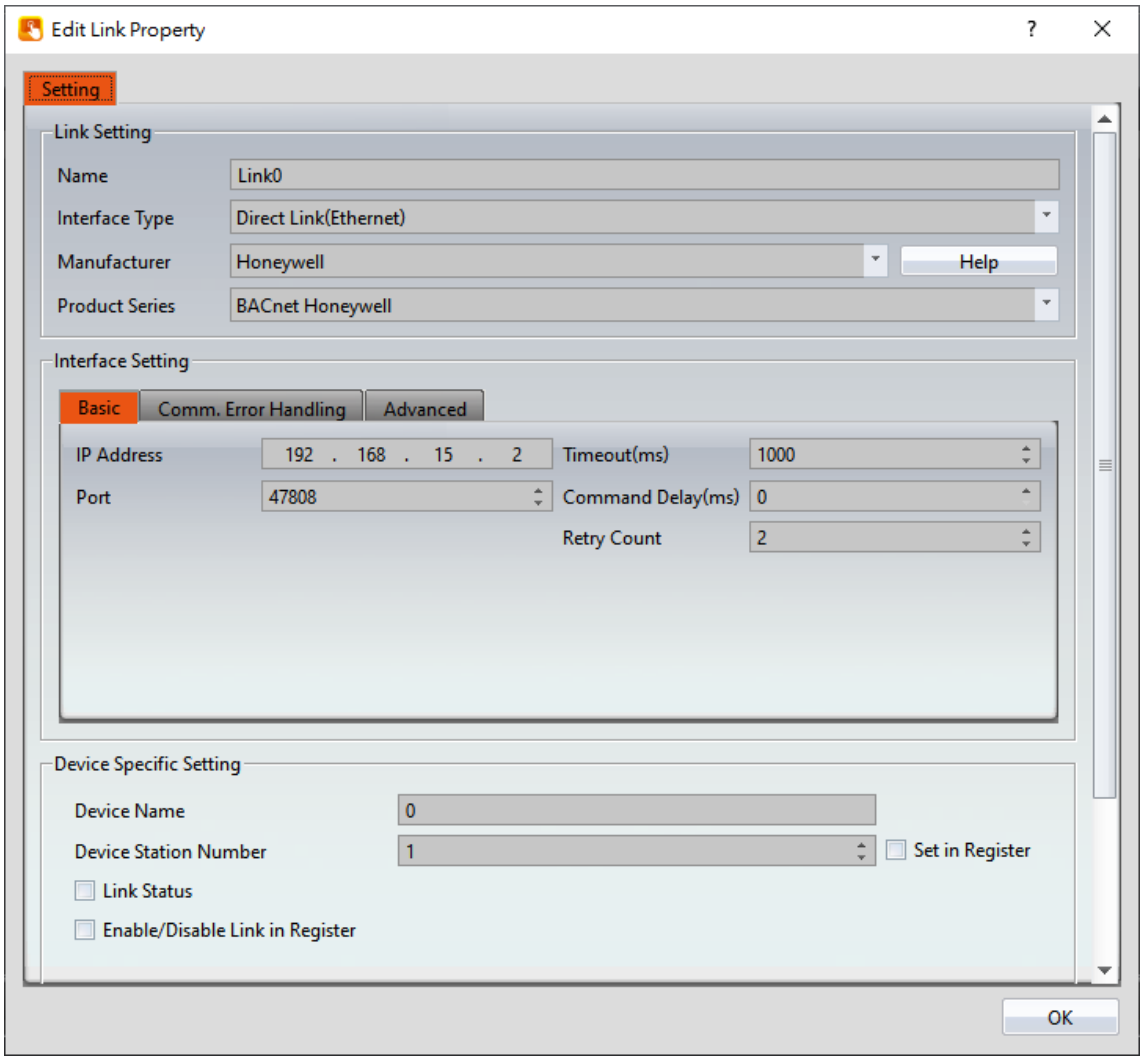
2.23.1.2 PLC Resource

Device	Data Bits	Address Format	Min.	Max.	Description
AI	32	DDDDD	0	65535	Analog Input
AO	32	DDDDD	0	65535	Analog Output
AV	32	DDDDD	0	65535	Analog Value
BI	1	DDDDD	0	65535	Binary Input

BO	1	DDDDD	0	65535	Binary Output
BV	1	DDDDD	0	65535	Binary Value

2.23.1.3 PLC Resource

HMI Setting



Settings in the FvDesigner link:

Select「Ethernet」for the communication interface type.

Choose「Honeywell」for the manufacturer.

Select「BACnet Honeywell」for the product series.

PLC Setting

The software requires a fee. Please refer to the equipment user manual for details.

2.24 MERITEK

2.24.1 MBs

2.24.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS232	
Baud Rate	9600	
Data Length	7	
Stop Bit	1	
Parity	Even	
Device Station num.	1	Must match PLC port setting
Communication Method	PLC Communication Protocol	

2.24.1.2 PLC Resource

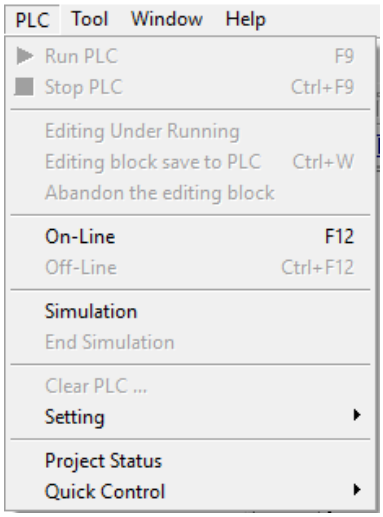
Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	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

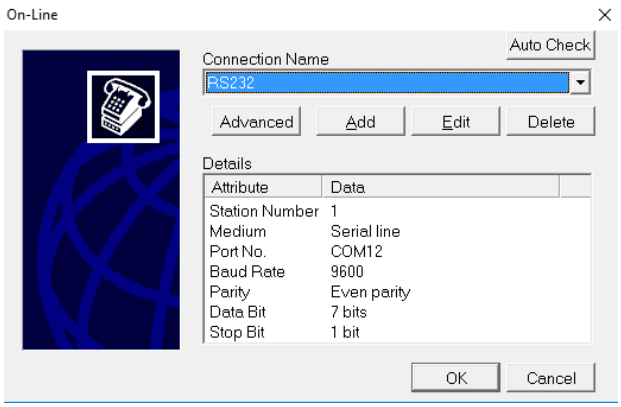
F	16	DDDD	0	8191	File Register

2.24.1.3 Connecting to PLC

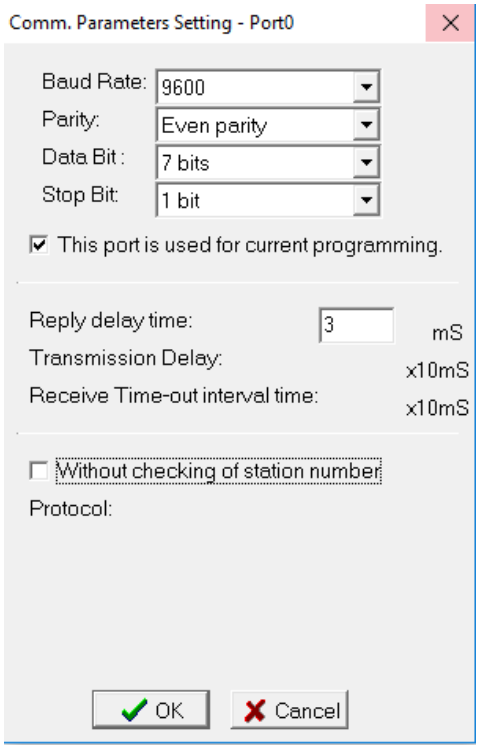
Configuring of PLC

Use the application **MeritekLadder** 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.



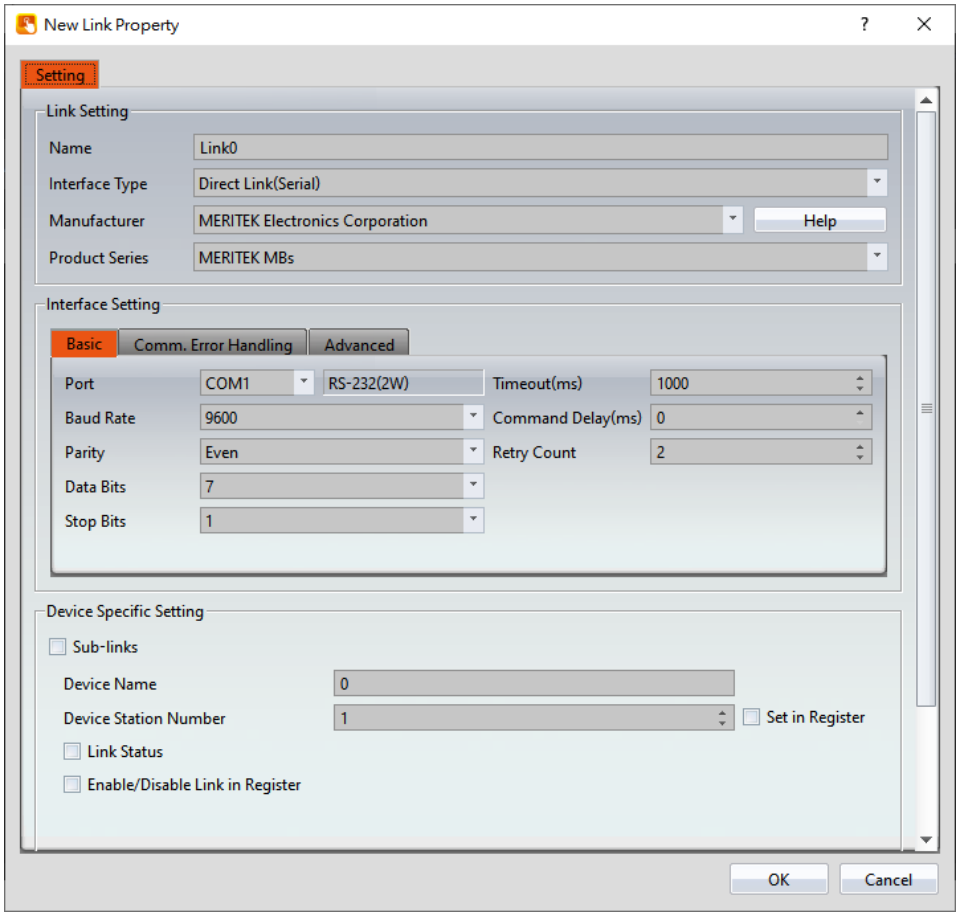


Under the **PLC** tab, select the **Setting** option and choose Port 0. Here, the Baud rate and other parameters of the serial port can be configured.



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 Electronics Corporation」

Under **Product Series** select「MERITEK MBs」

Under **Port** select COM1

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

2.24.2 MBs (TCP)

2.24.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP Address	192.168.1.100	
Port	500	
Device Station num.	0	
Communication Method	TCP	

2.24.2.2 PLC Resource

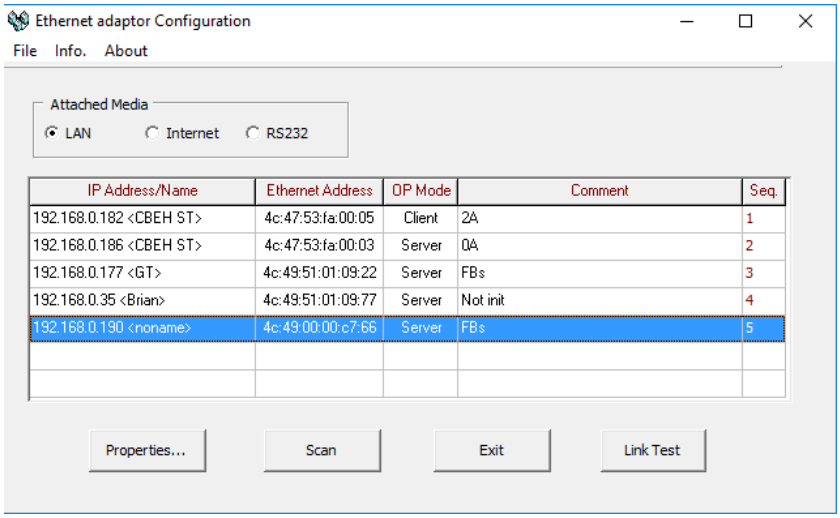
Device	Data Bits	Address Format	Min.	Max.	Description
X	1	DDDD	0	255	Input Discrete
Y	1	DDDD	0	255	Output Relay
M	1	DDDD	0	2001	Internal Relay
S	1	DDDD	0	999	Step Relay
T	1	DDDD	0	255	Timer Discrete
C	1	DDDD	0	255	Counter Discrete
WX	16	DDDD	0	255	Input Discrete
WY	16	DDDD	0	255	Output Relay
WM	16	DDDD	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

2.24.2.3 Connected Setting

Configuring IP Address on PLC

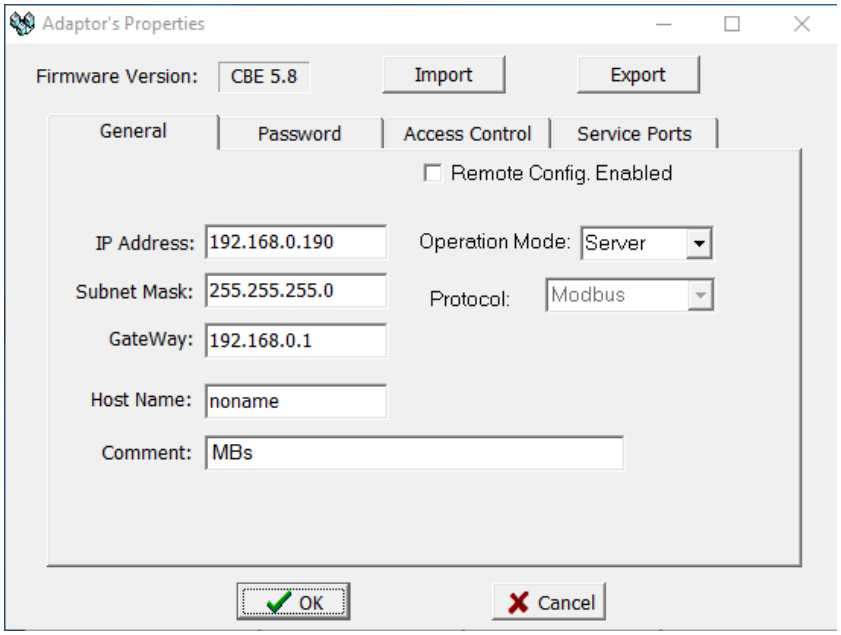
Use the application **Ethernet_Configuration_Tool** to configure the IP address of the PLC. Connect an Ethernet cable to the PLC. Under **Attached Media**, select LAN and press scan.



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

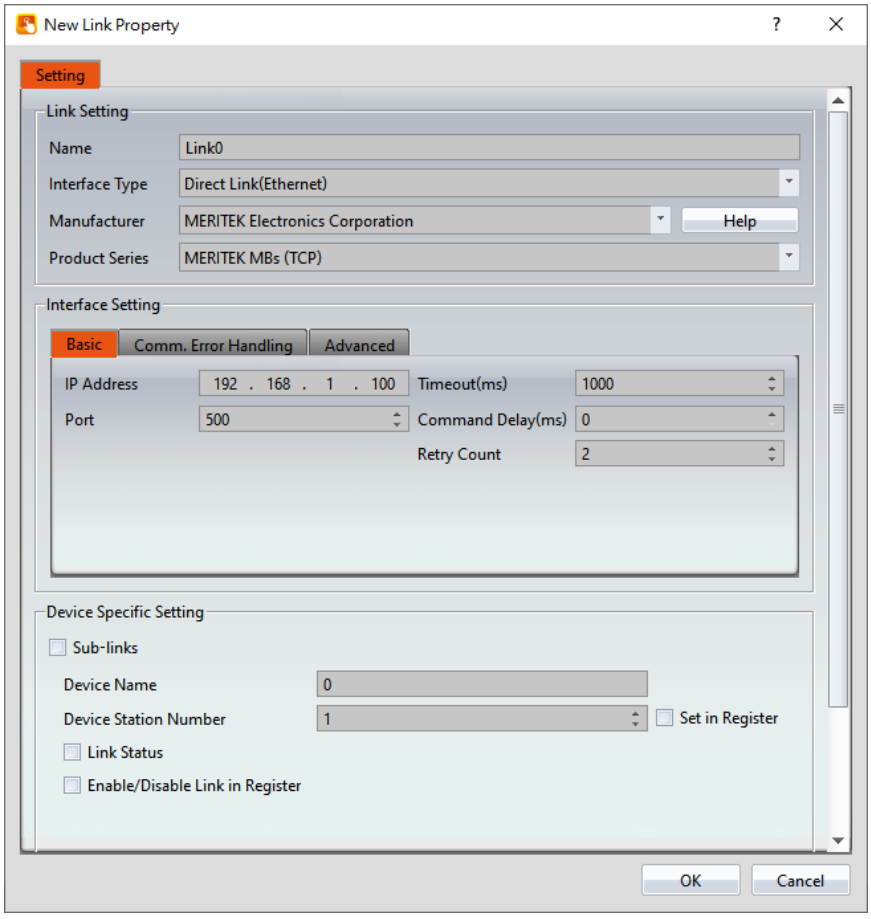
Note: The default IP address for the PLC has 1 for its third octet. If the IP address of the computer has a different number at that position, the PLC will not show up in the scan. Configure network settings on the computer to be able to see the PLC in the local network.

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



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

Under **Interface Type** select Ethernet

Under **Manufacturer** select「MERITEK Electronics Corporation」

Under **Product Series** select「MERITEK MBs (TCP)」

Use the IP address and port number assigned on the PLC

2.24.3 MBs (UDP)

2.24.3.1 Communication Setting

Item	Default Settings	Remark
Interface Type	Ethernet	
IP Address	192.168.1.100	
Port	500	
Device Station num.	0	
Communication Method	UDP	

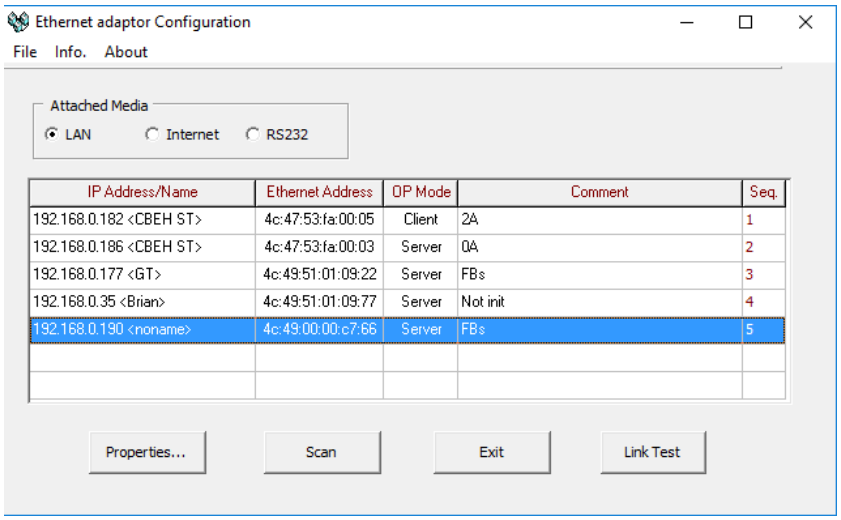
2.24.3.2 PLC Resource

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

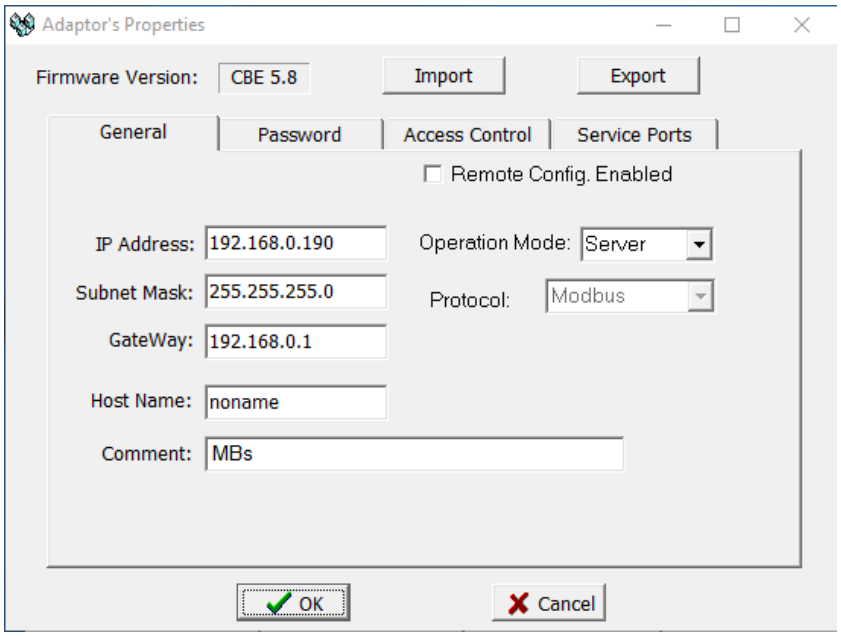
2.24.3.3 Connected Setting

Configuring IP Address on PLC

Use the application **Ethernet_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.

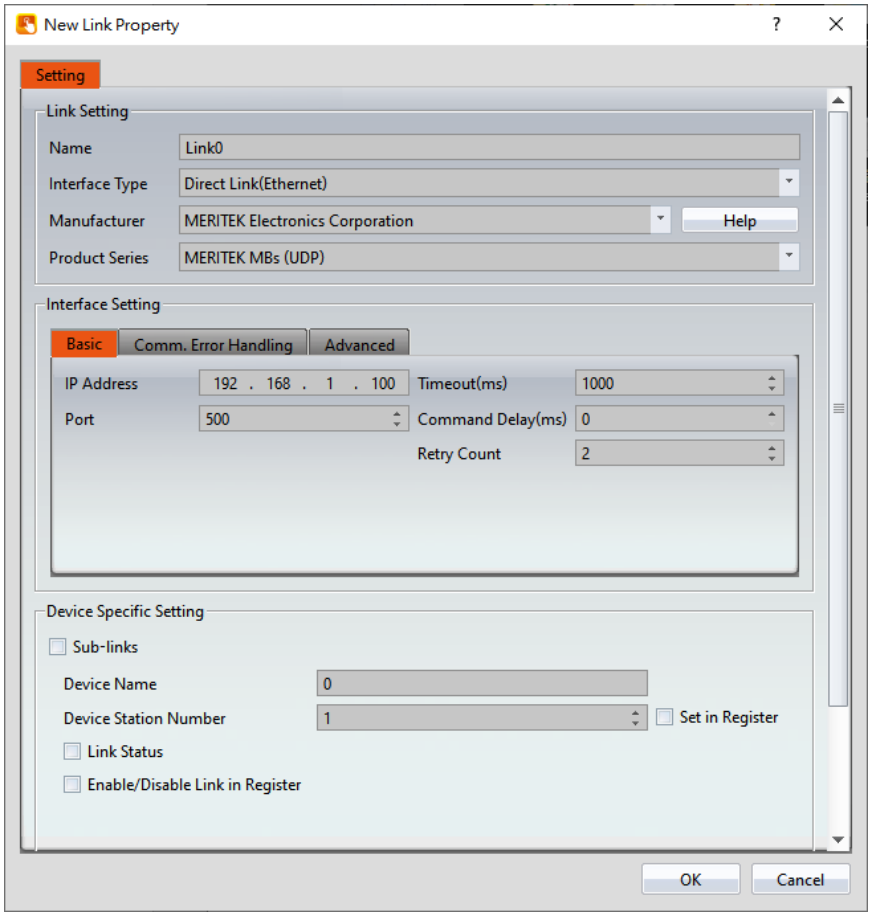


In the dialog window, the IP address and other parameters of the PLC can be configured.



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

Configuring of HMI



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

Under **Interface Type** select Ethernet

Under **Manufacturer** select「MERITEK Electronics Corporation」

Under **Product Series** select「MERITEK MBs (UDP)」

Use the IP address and port number assigned on the PLC

2.25 BACnet

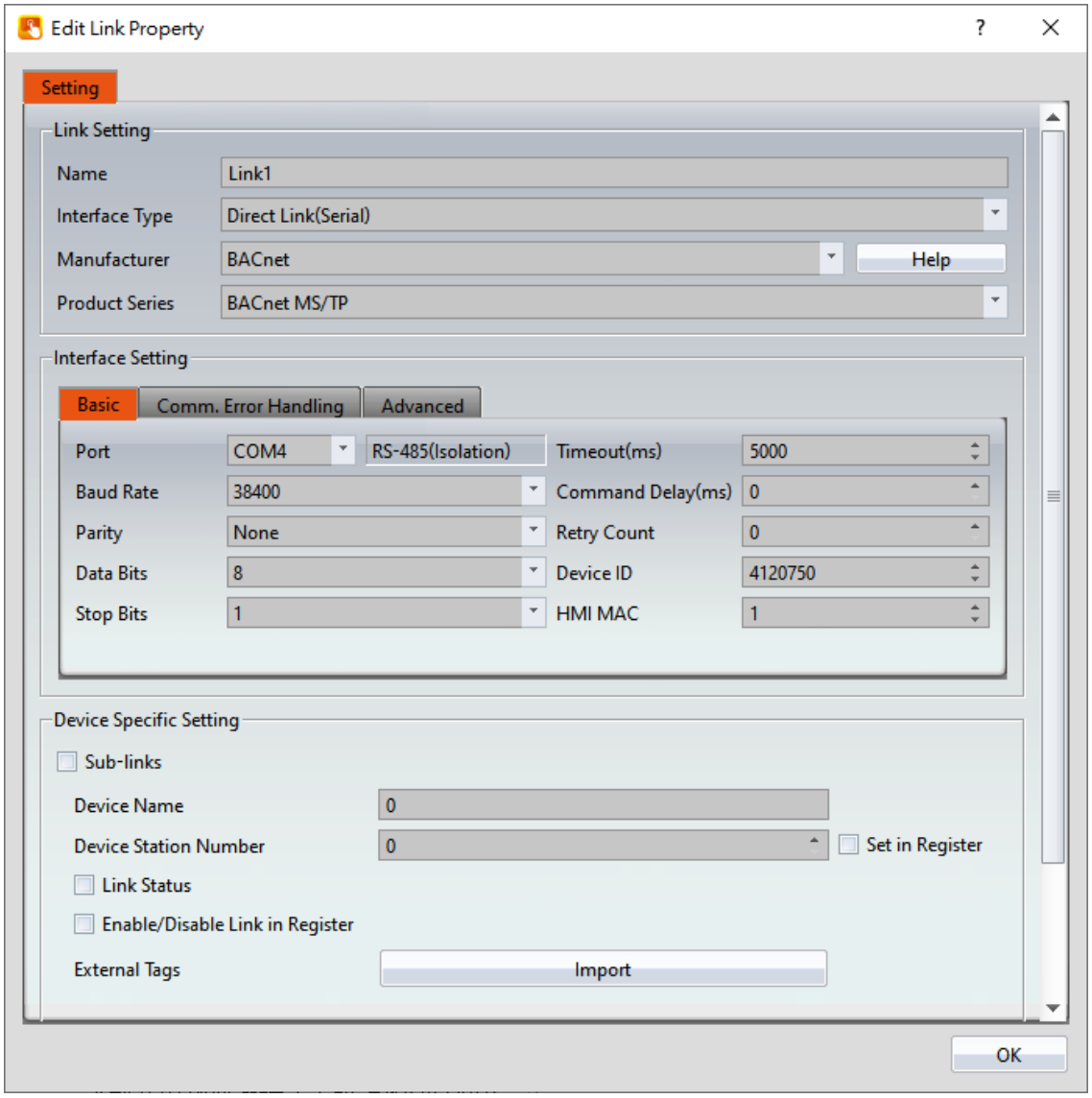
2.25.1 BACnet MS/TP

2.25.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	RS485	
Baud Rate	38400	
Data Length	8	
Stop Bit	1	
Parity	None	
HMI MAC	0	Set the HMI's own MAC address. Please do not duplicate with other devices' MAC addresses.
Device ID	0	
Device MAC	1	Device MAC address
Communication Method	BACnet MS/TP	

2.25.1.2 Connected Setting

HMI Setting



Within the Link configuration window in FvDesigner:

Under Interface Type select「Serial」

Under Manufacturer select「BACnet」

Under Product Series select「BACnet MS/TP)」

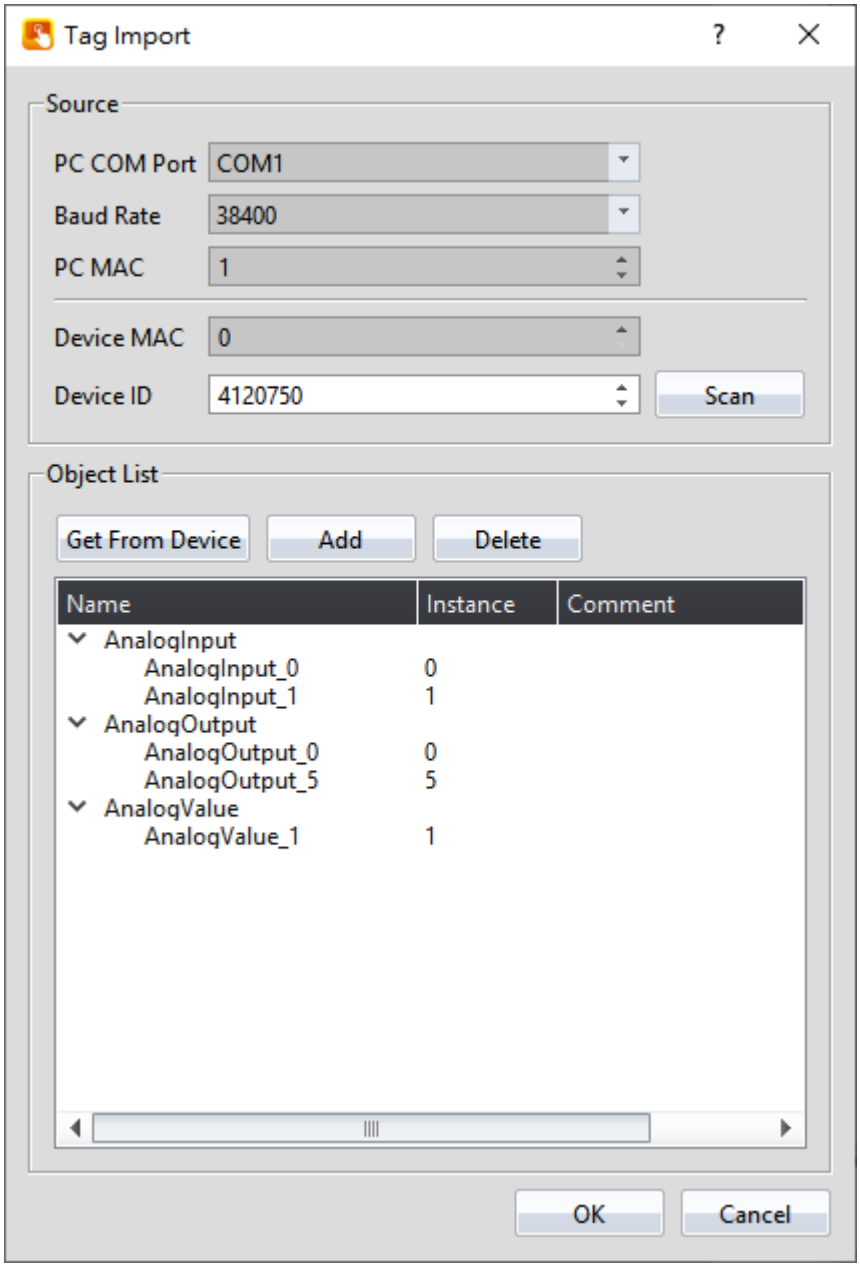
PLC Setting

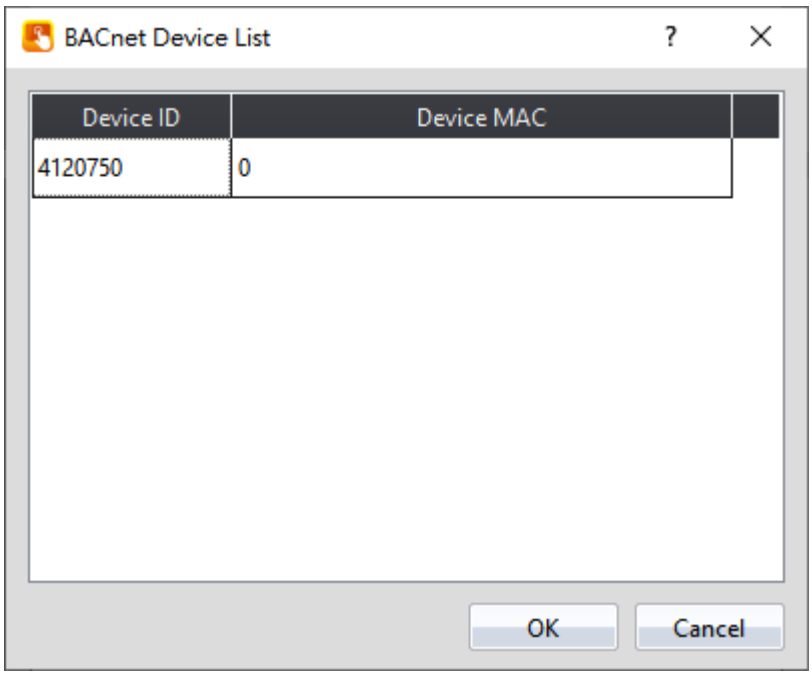
The software requires a fee. Please refer to the equipment user manual for details.

2.25.1.3 Tag Import

After clicking "Import" under External Tags, a pop-up window will appear. Select the

communication parameters based on the connection method between the PC and the device. Then, press "Scan" to search for devices that respond. If a device is found, you can select the corresponding Device ID to establish a connection.





After detecting the device, click "Get From Device" to read the tags. You can then use "Add" or "Delete" to add or remove tags.

2.25.1.4 Object list

Object	Property
AnalogInput	AckedTransitions NotificationClass DeadBand EventEnable EventState HighLimit LimitEnable LowLimit NotifyType ObjectIdentifier ObjectName ObjectType OutOfService PresentValue TimeDelay Units

AnalogOutput	AckedTransitions NotificationClass DeadBand EventEnable EventState HighLimit LimitEnable LowLimit NotifyType ObjectIdentifier ObjectName ObjectType OutOfService PresentValue PriorityArray RelinquishDefault TimeDelay Units
AnalogValue	AckedTransitions NotificationClass DeadBand EventEnable EventState HighLimit LimitEnable LowLimit NotifyType ObjectIdentifier ObjectName ObjectType OutOfService PresentValue PriorityArray RelinquishDefault

	TimeDelay Units
BinaryInput	AckedTransitions AlarmValue NotificationClass EventEnable EventState NotifyType ObjectIdentifier ObjectName ObjectType OutOfService Polarity PresentValue TimeDelay
BinaryOutput	AckedTransitions AlarmValue NotificationClass EventEnable EventState NotifyType ObjectIdentifier ObjectName ObjectType OutOfService Polarity PresentValue PriorityArray RelinquishDefault TimeDelay
BinaryValue	AckedTransitions AlarmValue NotificationClass EventEnable

	EventState NotifyType ObjectIdentifier ObjectName ObjectType PresentValue PriorityArray RelinquishDefault TimeDelay
Device	ApduSegmentTimeout ApduTimeout ApplicationSoftwareVersion DaylightSavingsStatus FirmwareRevision MaxApduLengthAccepted ModelName NumberOfApduRetries ObjectIdentifier ObjectName ObjectType ProtocolVersion SegmentationSupported SystemStatus UtcOffset VendorIdentifier VendorName ProtocolRevision BackupFailureTimeout DataBaseRevision MaxSegmentsAccepted
MultistateInput	AckedTransitions EventState NumberOfStates ObjectIdentifier

	ObjectName ObjectType OutOfService PresentValue
MultistateOutput	AckedTransitions EventState NumberOfStates ObjectIdentifier ObjectName ObjectType OutOfService PresentValue PriorityArray RelinquishDefault
MultistateValue	AckedTransitions EventState NumberOfStates ObjectIdentifier ObjectName ObjectType OutOfService PresentValue PriorityArray RelinquishDefault

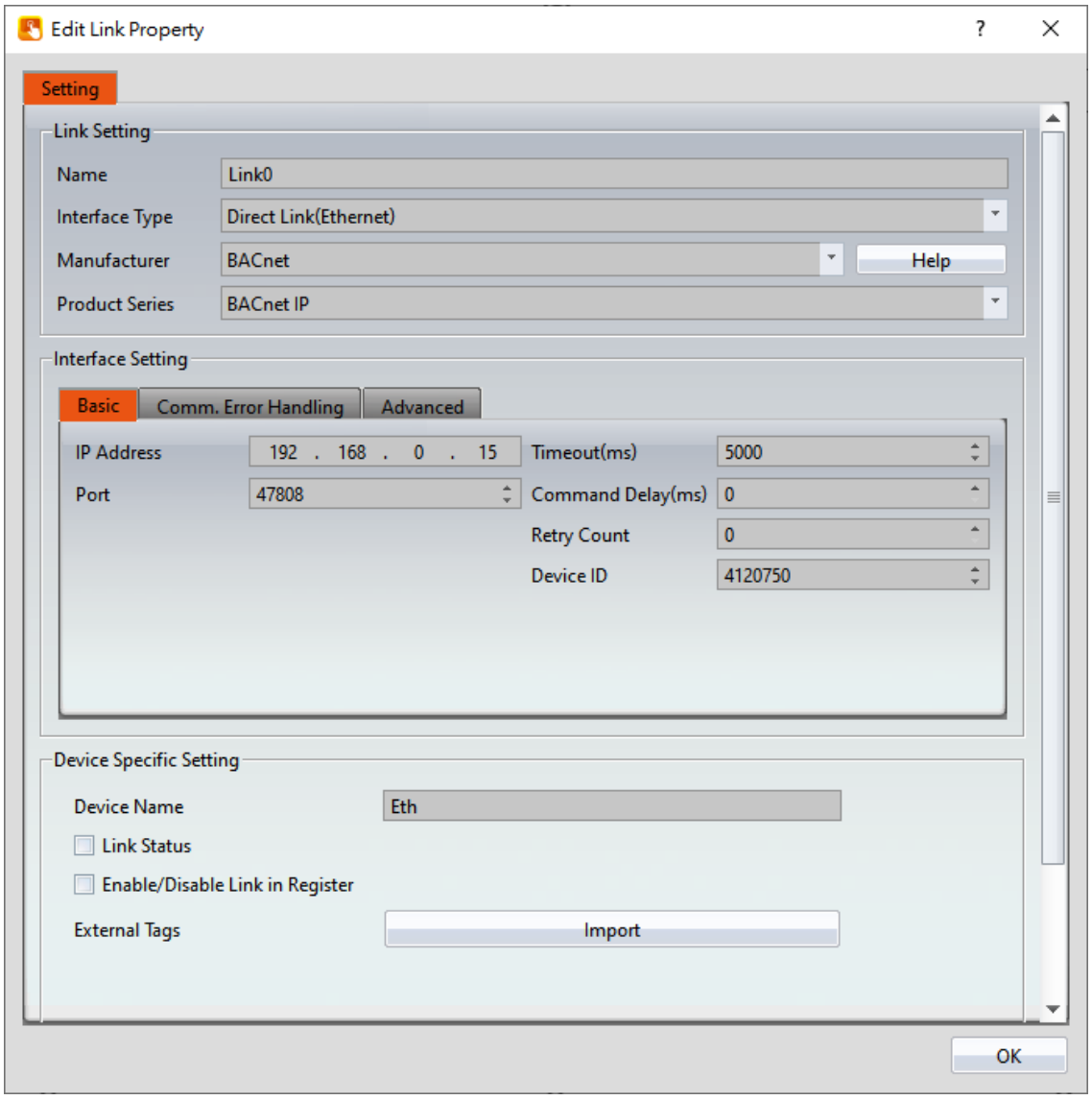
2.25.2 BACnet IP

2.25.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP	192.168.1.111	
Port	47808	BACnet IP default Port
Device ID	0	
Communication Method	UDP	

2.25.2.2 Connected Setting

HMI Setting



Within the Link configuration window in FvDesigner:

Under Interface Type select「Ethernet」

Under Manufacturer select「BACnet」

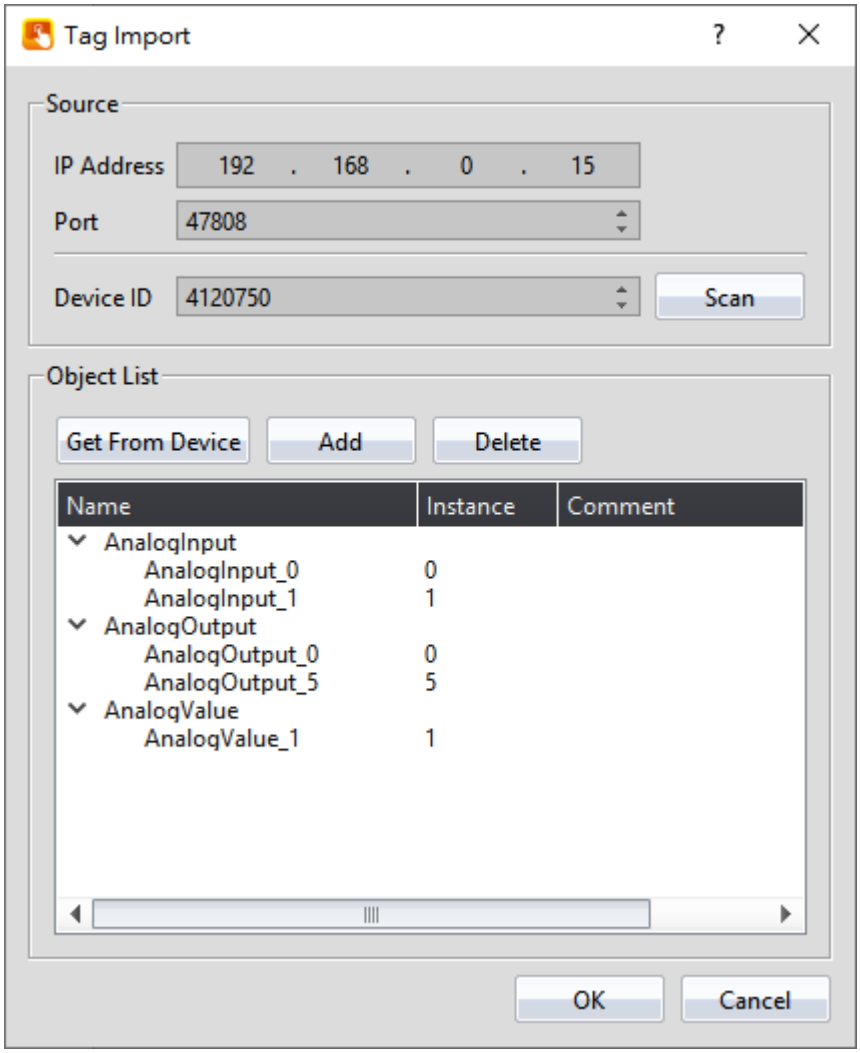
Under Product Series select「BACnet IP」

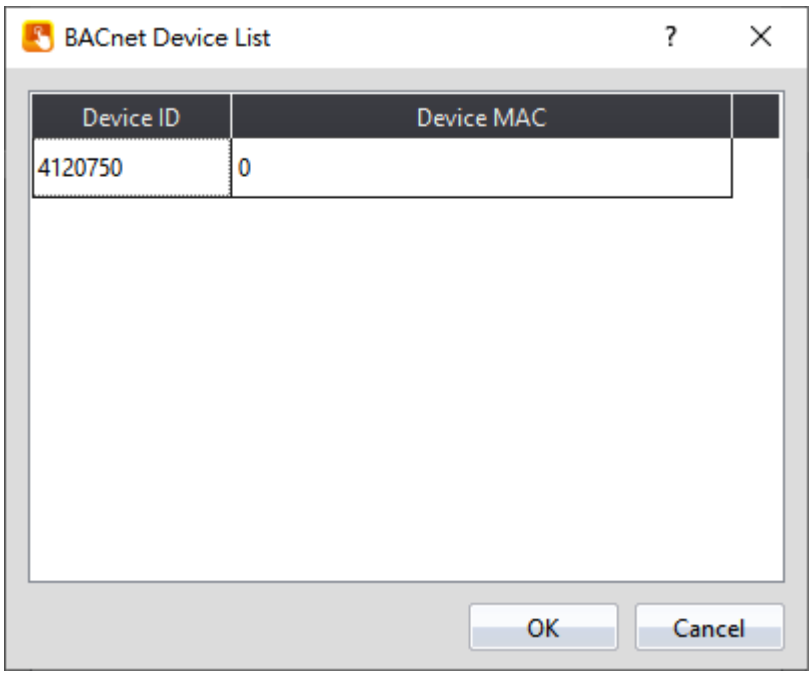
PLC Setting

The software requires a fee. Please refer to the equipment user manual for details.

2.25.2.3 Tag Import

After clicking "Import" under External Tags, a pop-up window will appear. After entering the device's IP address, press "Scan" to search for responding devices. If a device is found, you can select the corresponding Device ID to establish a connection.





After detecting the device, click "Get From Device" to read the tags. You can then use "Add" or "Delete" to add or remove tags.

2.25.2.4 Object list

Object	Property
AnalogInput	AckedTransitions
	NotificationClass
	DeadBand
	EventEnable
	EventState
	HighLimit
	LimitEnable
	LowLimit
	NotifyType
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	TimeDelay
	Units
AnalogOutput	AckedTransitions

	NotificationClass
	DeadBand
	EventEnable
	EventState
	HighLimit
	LimitEnable
	LowLimit
	NotifyType
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	PriorityArray
	RelinquishDefault
	TimeDelay
	Units
AnalogValue	AckedTransitions
	NotificationClass
	DeadBand
	EventEnable
	EventState
	HighLimit
	LimitEnable
	LowLimit
	NotifyType
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	PriorityArray
	RelinquishDefault
	TimeDelay
	Units
BinaryInput	AckedTransitions
	AlarmValue

	NotificationClass
	EventEnable
	EventState
	NotifyType
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	Polarity
	PresentValue
	TimeDelay
BinaryOutput	AckedTransitions
	AlarmValue
	NotificationClass
	EventEnable
	EventState
	NotifyType
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	Polarity
	PresentValue
	PriorityArray
	RelinquishDefault
	TimeDelay
BinaryValue	AckedTransitions
	AlarmValue
	NotificationClass
	EventEnable
	EventState
	NotifyType
	ObjectIdentifier
	ObjectName
	ObjectType
	PresentValue
	PriorityArray

	RelinquishDefault
	TimeDelay
Calendar	DateList
	ObjectIdentifier
	ObjectName
	ObjectType
	PresentValue
Command	AllWritesSuccessful
	InProcess
	ObjectIdentifier
	ObjectName
	ObjectType
Device	ApduSegmentTimeout
	ApduTimeout
	ApplicationSoftwareVersion
	DaylightSavingsStatus
	FirmwareRevision
	MaxApduLengthAccepted
	ModelName
	NumberOfApduRetries
	ObjectIdentifier
	ObjectName
	ObjectType
	ProtocolVersion
	SegmentationSupported
	SystemStatus
	UtcOffset
	VendorIdentifier
	VendorName
	ProtocolRevision
	BackupFailureTimeout
	DataBaseRevision
	MaxSegmentsAccepted
File	Archive
	FileSize
	FileType
	ObjectIdentifier

	ObjectName
	ObjectType
	ReadOnly
MultistateInput	AckedTransitions
	EventState
	NumberOfStates
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
MultistateOutput	AckedTransitions
	EventState
	NumberOfStates
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	PriorityArray
	RelinquishDefault
NotificationClass	NotificationClass
	ObjectIdentifier
	ObjectName
	ObjectType
	RecipientList
Program	ObjectIdentifier
	ObjectName
	ObjectType
Schedule	ExceptionSchedule
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	PriorityForWriting
	Reliability

	WeeklySchedule
	ScheduleDefault
Averaging	ObjectIdentifier
	ObjectName
	ObjectType
	AttemptedSamples
	AverageValue
	MaximumValue
	MinimumValue
	ValidSamples
	WindowInterval
	WindowSamples
MultistateValue	AckedTransitions
	EventState
	NumberOfStates
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	PriorityArray
	RelinquishDefault
TrendLog	ObjectIdentifier
	ObjectName
	ObjectType
	BufferSize
	Enable
	RecordCount
	StopWhenFull
	TotalRecordCount
LifeSafetyPoint	EventState
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	Reliability

	Mode
	Silenced
	TrackingValue
LifeSafetyZone	EventState
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	PresentValue
	Reliability
	Mode
	Silenced
	TrackingValue
Accumulator	EventState
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	Units
	Scale
PulseConverter	EventState
	ObjectIdentifier
	ObjectName
	ObjectType
	OutOfService
	Units
	AdjustValue
	Count
	ScaleFactor

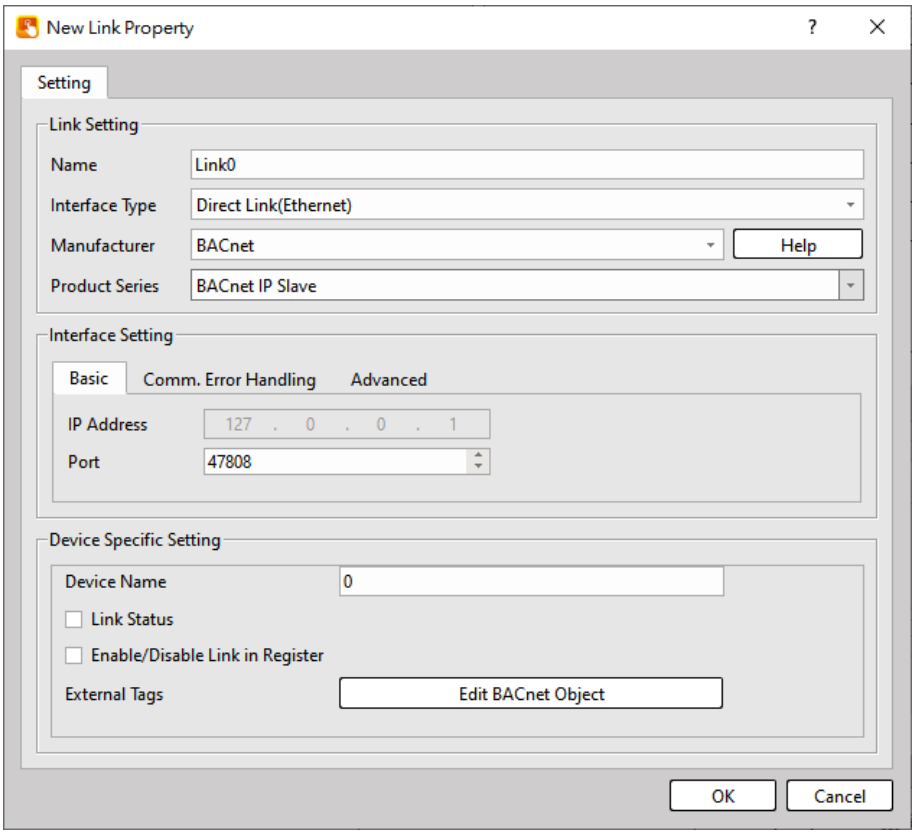
2.25.3 BACnet IP Slave

2.25.3.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Ethernet	
IP	192.168.1.111	
Port	47808	BACnet IP default Port
Communication Method	UDP	

2.25.3.2 Connected Setting

HMI Setting



Within the Link configuration window in FvDesigner:

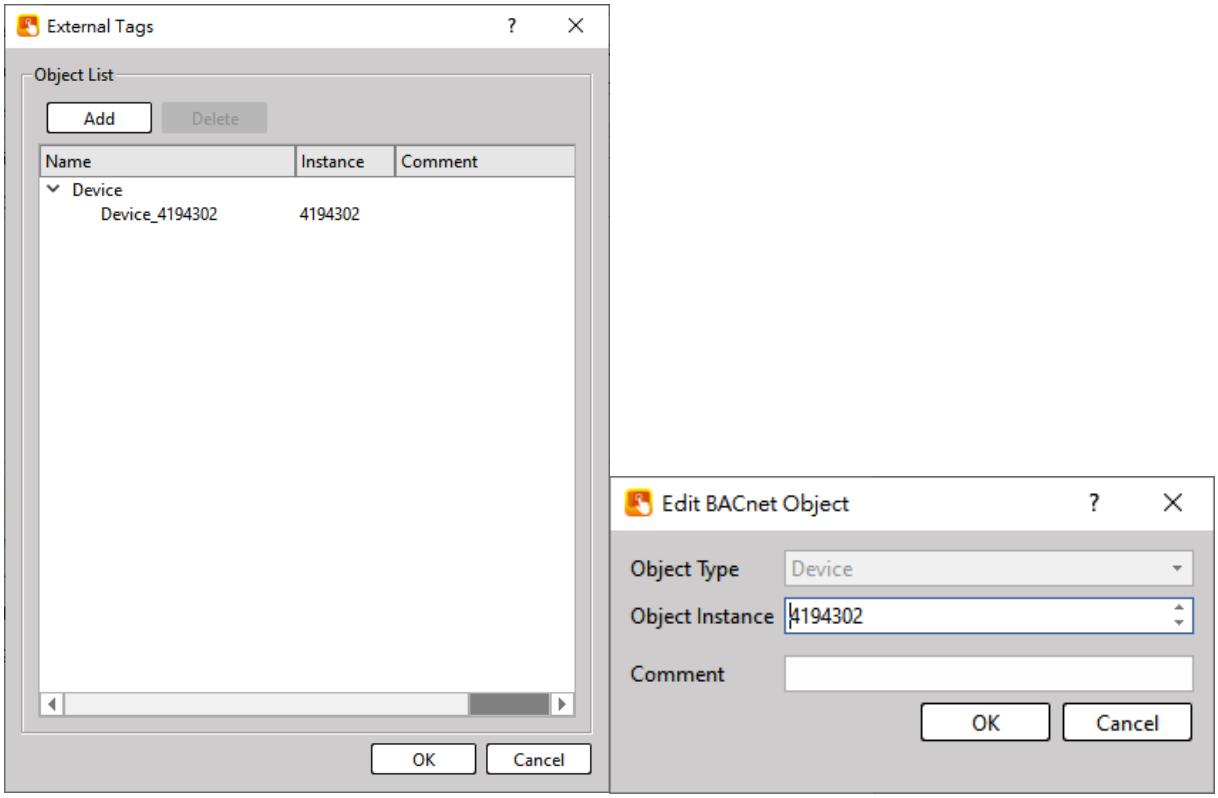
Under Interface Type select「Ethernet」

Under Manufacturer select「BACnet」

Under Product Series select「BACnet IP Slave」

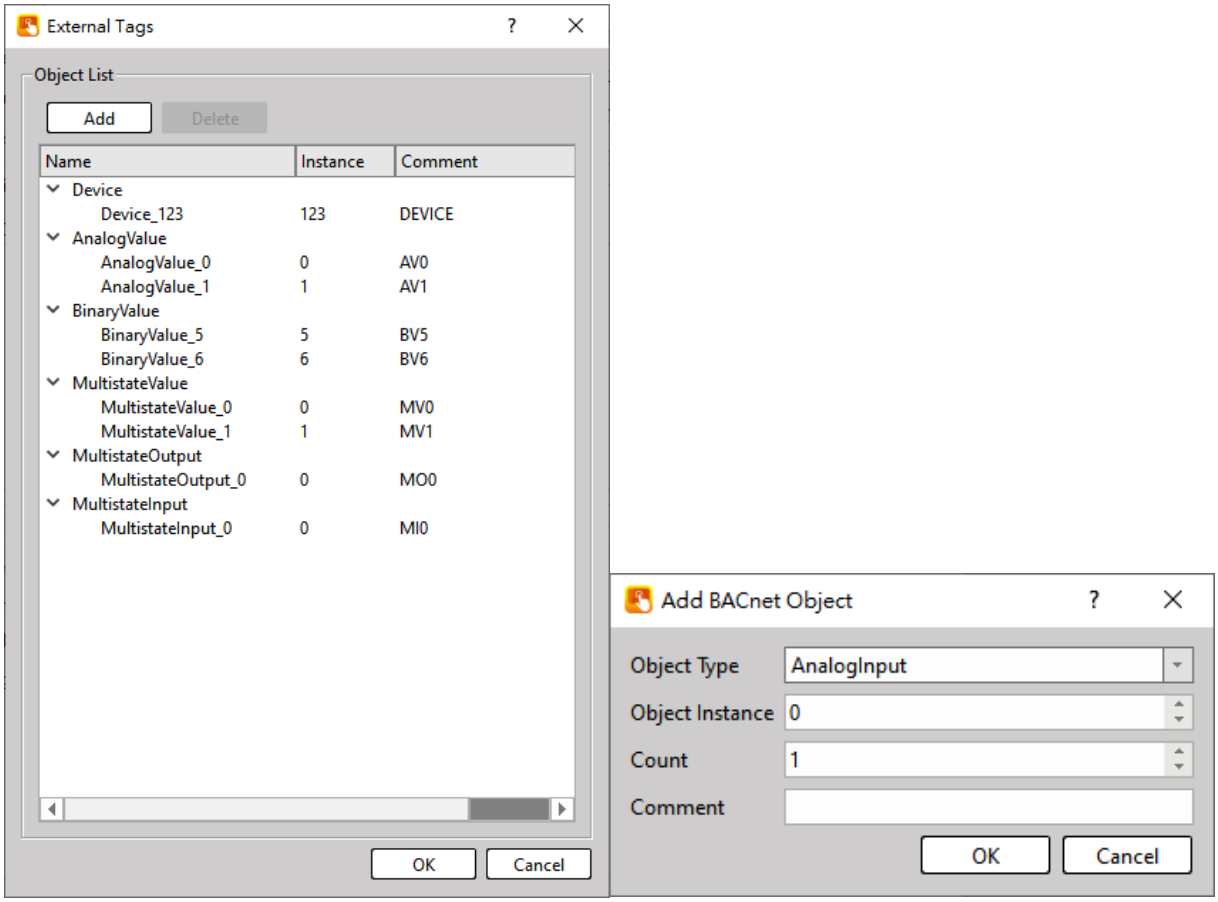
2.25.3.3 Tag Setting

After selecting "Edit" of External Tags, a pop-up window will appear.



Object	Property
Add	Used to add objects
Delete	Delete selected objects
Device	Device is a fixed object that cannot be added or deleted. Double-clicking with the mouse will open the edit interface. Object Instance is used to set the Device ID for this server.
Comment	Edit the comment of this object

Click【Add】to add a new object.



Object	Property
Object Type	Select the type of object to add
Object Instance	Set the starting number for the new objects
Count	Specify how many objects to add at once
Comment	Enter a description for the objects

2.25.3.4 Object list

Object	Property		Write from HMI	Write from device	Default
AnalogInput	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"AnalogInput_" + (Instance)
	79	ObjectType	X	X	0
	28	Description			""
	85	PresentValue		Cannot write when OutOfService is false	0
	36	EventState		X	0
	81	OutOfService			FALSE
	22	CovIncrement			0
	117	Units			95
AnalogOutput	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"AnalogOutput_" + (Instance)
	79	ObjectType	X	X	1
	28	Description			""
	85	PresentValue			0
	36	EventState		X	0
	81	OutOfService			FALSE
	22	CovIncrement			0
	87	PriorityArray	X	X	Null
	104	RelinquishDefault			0
	117	Units			95
		Priority		X	8
AnalogValue	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"AnalogValue_" + (Instance)
	79	ObjectType	X	X	2
	28	Description			""
	85	PresentValue			0
	36	EventState		X	0
	81	OutOfService			FALSE
	22	CovIncrement			0
	87	PriorityArray	X	X	Null
	104	RelinquishDefault			0
	117	Units			95
		Priority		X	8
BinaryInput	75	ObjectIdentifier	X	X	(ObjectType

					+Instance)
	77	ObjectName			"BinaryInput_" + (Instance)
	79	ObjectType	X	X	3
	28	Description			""
	8	PresentValue		Cannot write when OutOfService is false	0
	36	EventState		X	0
	81	OutOfService			FALSE
	117	Units			95
BinaryOutput	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"BinaryOutput_" + (Instance)
	79	ObjectType	X	X	4
	28	Description			""
	85	PresentValue			0
	36	EventState		X	0
	81	OutOfService			FALSE
	87	PriorityArray	X	X	Null
	104	RelinquishDefault			0
	117	Units			95
		Priority		X	8
BinaryValue	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"BinaryValue_" + (Instance)
	79	ObjectType	X	X	5
	28	Description			""
	85	PresentValue			0
	36	EventState		X	0
	81	OutOfService			FALSE
	87	PriorityArray	X	X	Null
	104	RelinquishDefault			0
	117	Units			95
		Priority		X	8
Device	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"Device_" + (Instance)
	79	ObjectType	X	X	8
	28	Description			""
	121	VendorName	X	X	"FatekAutomation Corp."
	120	VendorIdentifier	X	X	407
	70	ModelName	X	X	(ObjectName)

	44	FirmwareRevision	X	X	"1.0.0"
	112	SystemStatus	X	X	0
MultistateInput	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"MultistateInput_" + (Instance)
	79	ObjectType	X	X	13
	28	Description			""
	85	PresentValue		Cannot write when OutOfService is false	0
	36	EventState		X	0 (normal)
	81	OutOfService			FALSE
	74	NumberOfStates		X	0
MultistateOutput	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"MultistateOutput_" + (Instance)
	79	ObjectType	X	X	14
	28	Description			""
	85	PresentValue			0
	36	EventState		X	0
	81	OutOfService			FALSE
	87	PriorityArray	X	X	Null
	104	RelinquishDefault			0
	117	Units			95
	74	NumberOfStates		X	0
		Priority		X	8
MultistateValue	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"MultistateValue_" + (Instance)
	79	ObjectType	X	X	19
	28	Description			""
	85	PresentValue			0
	36	EventState		X	0
	81	OutOfService			FALSE
	87	PriorityArray	X	X	Null
	117	Units			95
	104	RelinquishDefault			0
	74	NumberOfStates		X	0
		Priority		X	8
LifeSafetyPoint	75	ObjectIdentifier	X	X	(ObjectType+Instance)
	77	ObjectName			"LifeSafetyPoint_" + (Instance)
	79	ObjectType	X	X	21

	28	Description			""
	85	PresentValue		X	0
	36	EventState		X	0
	81	OutOfService			FALSE
	160	Mode			14
	163	Silenced		X	0
LifeSafetyZone	75	ObjectIdentifier	X	X	(ObjectType +Instance)
	77	ObjectName			"LifeSafetyZone_" + (Instance)
	79	ObjectType	X	X	22
	28	Description			""
	85	PresentValue		X	0
	36	EventState		X	0
	81	OutOfService			FALSE
	160	Mode			14
	163	Silenced		X	0

2.26 Modbus

2.26.1 Modbus Slave (ASCII / RTU / TCP)

2.26.1.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Com Port	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	N	
Device Station num.	1	
Communication	**Modbus Slave ASCII/RTU**	**(Master)**

Item	Default Setting	Remark
Interface Type	Ethernet	
IP	-	
Port	502	
Communication	**Modbus Slave TCP**	**(Master)**

2.26.1.2 PLC Resource

Device	Data Bits	Max.	Min.	Description
0x	1	65535	1	Coil Status
0xS	1	65535	1	Single Coil Status
1x	1	65535	1	Input Status
3x	16	65535	1	Input Register
4x	16	65535	1	Holding Register
4xS	16	65535	1	Single Holding Register
3xD	16	65535	1	Input Register (DWord)
4xD	16	65535	1	Holding Register (DWord)
3xQ	16	65535	1	Input Register (QWord)
4xQ	16	65535	1	Holding Register (QWord)

2.26.1.3 Function Code

Code	**Description**
01	Read Coil
02	Read Discrete Input

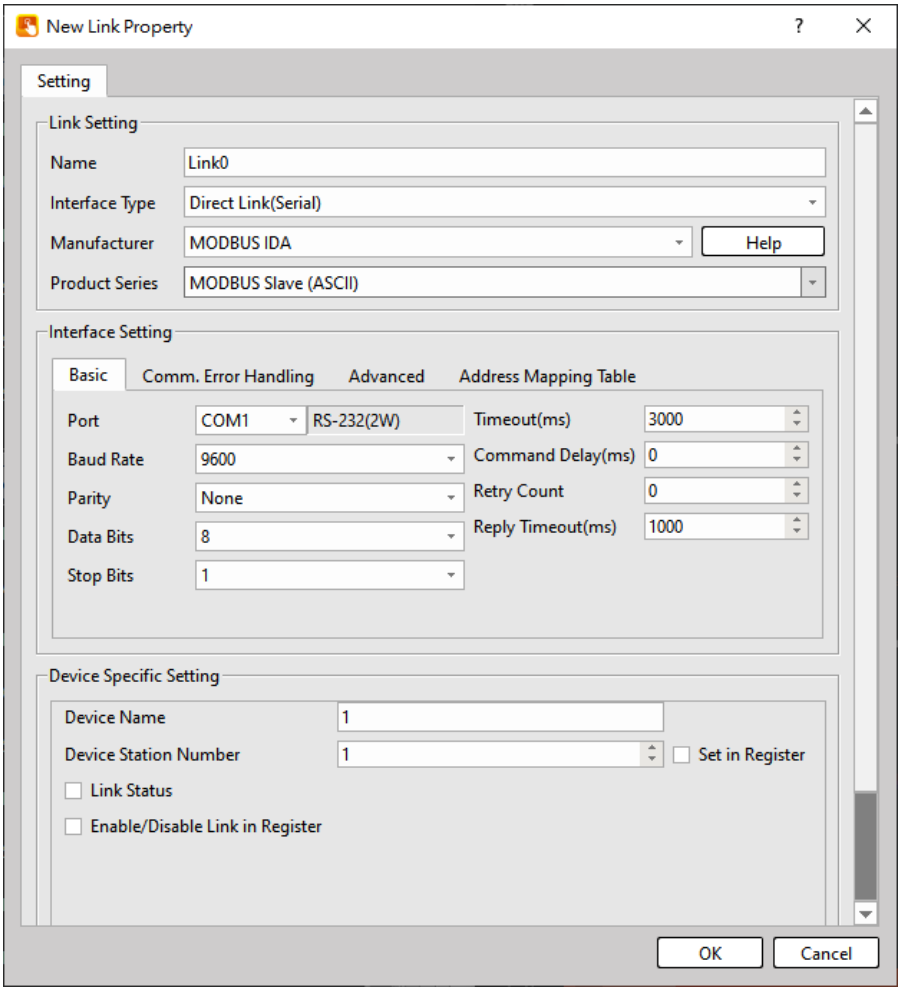
03	Read Holding Registers
04	Read Input Registers
05	Write Single Coil
06	Write Single Register
15	Write Multiple Coils
16	Write Multiple Registers
22	Mask Write Register
23	Read/Write 4X Registers

2.26.1.4 Error Code

Code	Description
0x01	Illegal Function
0x02	Illegal Data Address
0x03	Illegal Data Value
0x06	Slave or Server Busy

2.26.1.5 Connected Setting

HMI Setting



Within the Link configuration window in FvDesigner:

Interface Type select 「Serial」

Manufacturer select 「MODBUS IDA」

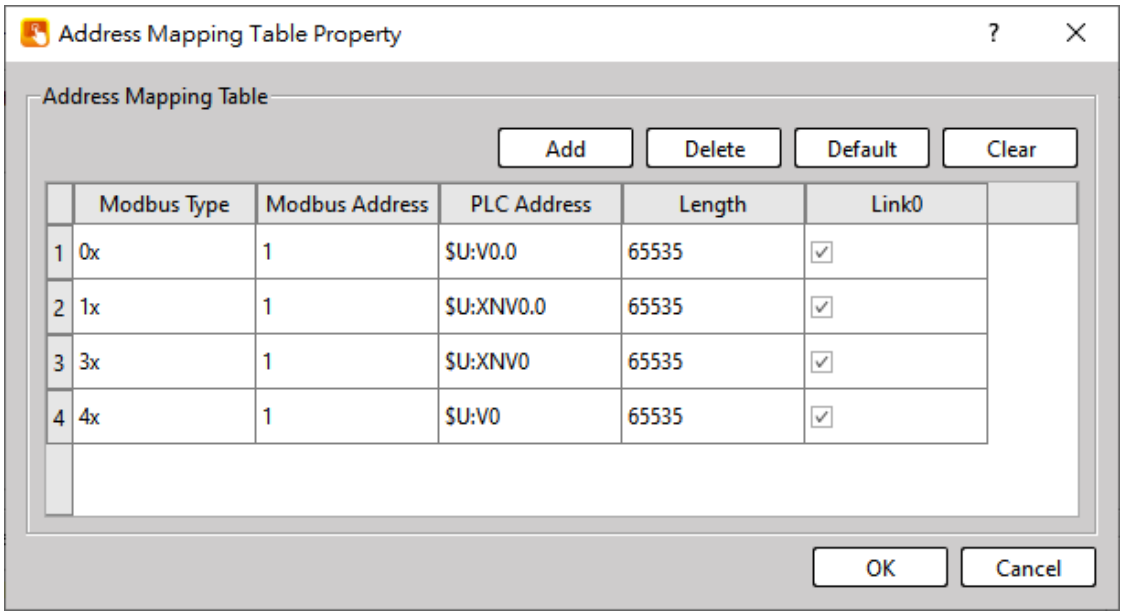
Product Series select 「MODBUS Slave (ASCII/RTU)」

Interface Type select 「Ethernet」

Manufacturer select 「MODBUS IDA」

Product Series select 「MODBUS Slave (TCP)」

2.26.1.6 Address Mapping Table



When using Modbus Slave, you can configure the「Address Mapping Table」 in the 「PLC Setting」. This table is used to define how requested Modbus addresses are mapped to internal HMI addresses. For example, as shown above, when an external device queries 4x1, it will correspond to the HMI's $U:V0.

This table can be configured flexibly. For instance, 4x1–4x5 can be mapped to V0–V4, and 4x6–4x10 can be mapped to V10–V14. However, note that addresses of the same Modbus type must not overlap (the software will check this when you click OK), and any unmapped Modbus addresses will not return a response.

2.26.2 Modbus ASCII / RTU / TCP

2.26.2.1 Communication Setting

Item	Default Setting	Remark
Interface Type	Com Port	
Baud Rate	9600	
Data Length	8	
Stop Bit	1	
Parity	N	
Device Station num.	1	
Communication	**Modbus ASCII/RTU/HEX**	**(Client)**

Item	Default Setting	Remark
Interface Type	Ethernet	
IP	192.168.0.2	
Port	502	
Communication	**Modbus TCP**	**(Client)**

2.26.2.2 PLC Resource

Device	Data Bits	Max.	Min.	Description
0x	1	65535	1	Coil Status
0xS	1	65535	1	Single Coil Status
1x	1	65535	1	Input Status
3x	16	65535	1	Input Register
4x	16	65535	1	Holding Register
4xS	16	65535	1	Single Holding Register
3xD	16	65535	1	Input Register (DWord)
4xD	16	65535	1	Holding Register (DWord)
3xQ	16	65535	1	Input Register (QWord)
4xQ	16	65535	1	Holding Register (QWord)

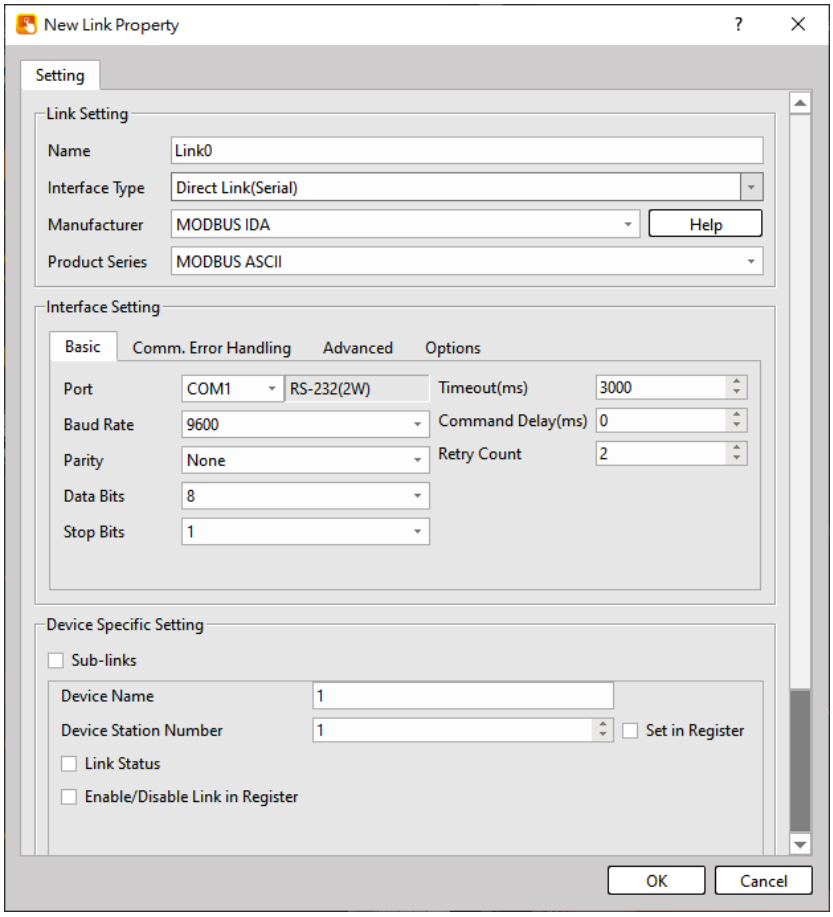
2.26.2.3 Function Code

Code	Description
01	Read Coil
02	Read Discrete Input
03	Read Holding Registers
04	Read Input Registers
05	Write Single Coil

06	Write Single Register
15	Write Multiple Coils
16	Write Multiple Registers
22	Mask Write Register
23	Read/Write 4X Registers

2.26.2.4 Connected Setting

HMI Setting



Within the Link configuration window in FvDesigner:

Interface Type select 「Serial」

Manufacturer select 「MODBUS IDA」

Product Series select 「MODBUS ASCII/RTU」

Interface Type select 「Ethernet」

Manufacturer select 「MODBUS IDA」

Product Series select 「MODBUS TCP」

2.27 KNXnet

2.27.1 KNXnet IP

2.27.1.1 Connection Settings

Item	Default Setting	Remark
通訊介面	Ethernet	
IP	192.168.0.100	
Port	3671	
通訊方法	UDP	

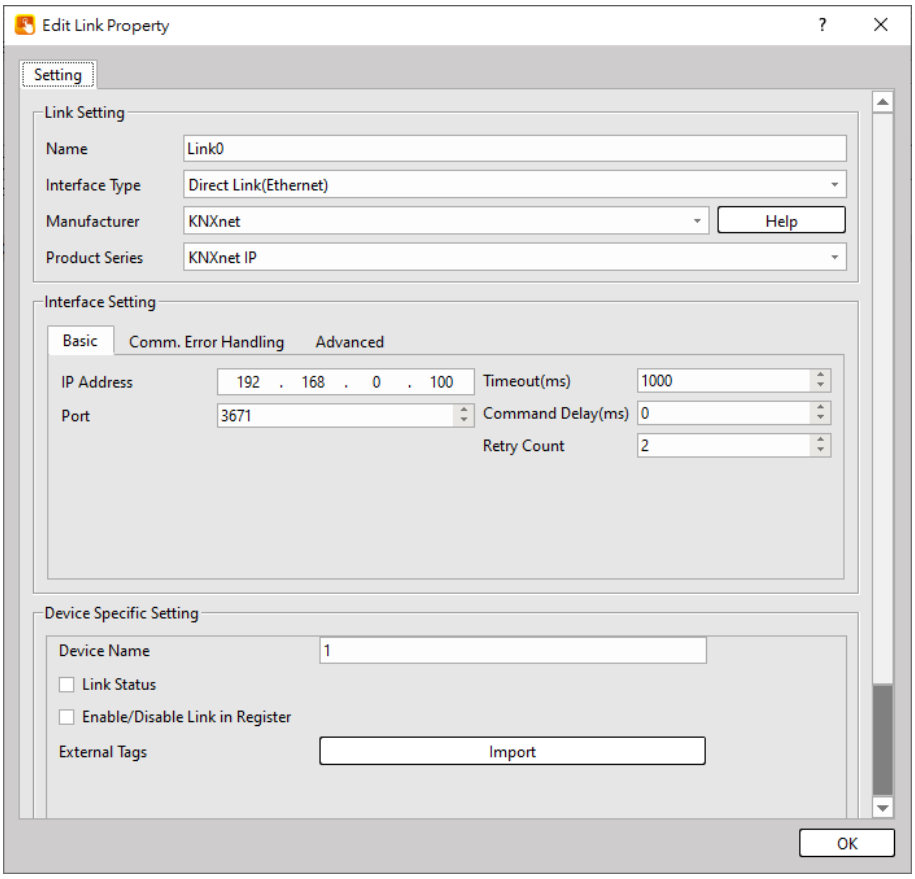
2.27.1.2 Data Type

DPT main number	HMI Datatype
1	BOOL
2	USINT
3	USINT
4	CHAR
5	USINT
6	SINT
7	UINT
8	INT
9	REAL
10	USINT[3]
11	USINT[3]
12	UDINT
13	DINT
14	REAL
16	STRING
20	SINT
23	SINT
31	SINT
202	USINT[2]
204	SINT[2]
211	USINT[2]

212	INT[3]
213	INT[4]
222	REAL[3]

2.27.1.3 Connected Setting

HMI Settings



Under **Interface Type** select **Ethernet**

Under **Manufacturer** select **KNXnet**

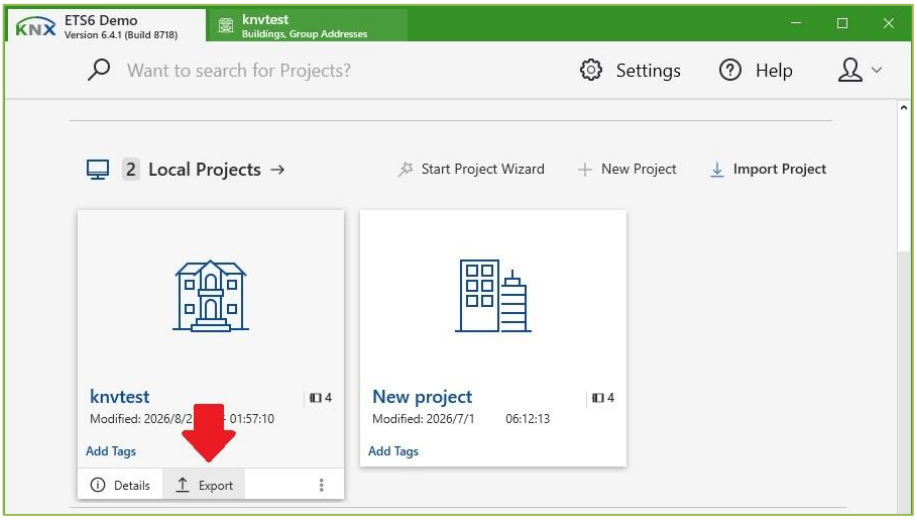
Under **Product Series** select **KNXnet IP**

Use the IP address assigned on the PLC

Leave the Port at the default value

2.27.1.4 Importing Tags

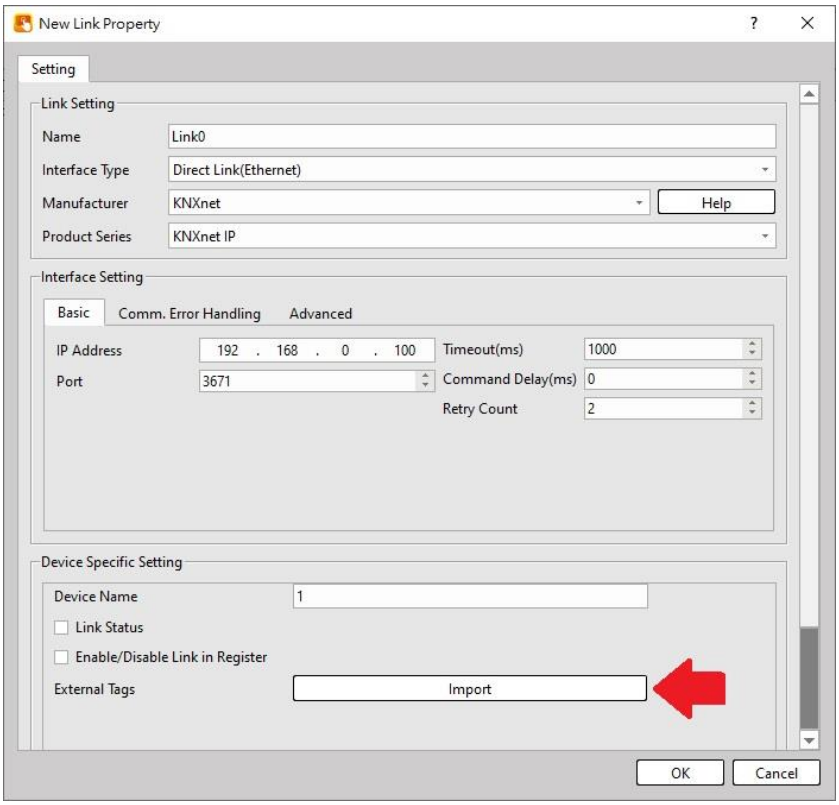
1. Export KNX project tags using ETS6. On the ETS6 home page, select Export under the project section.



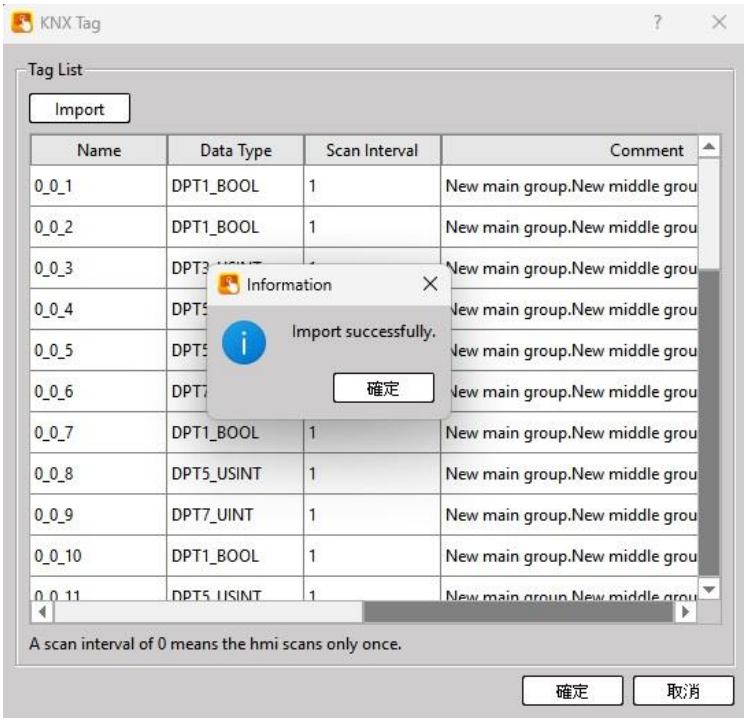
Set the file type to OPC Export (*.esf).



2. Import the file into FvDesigner.



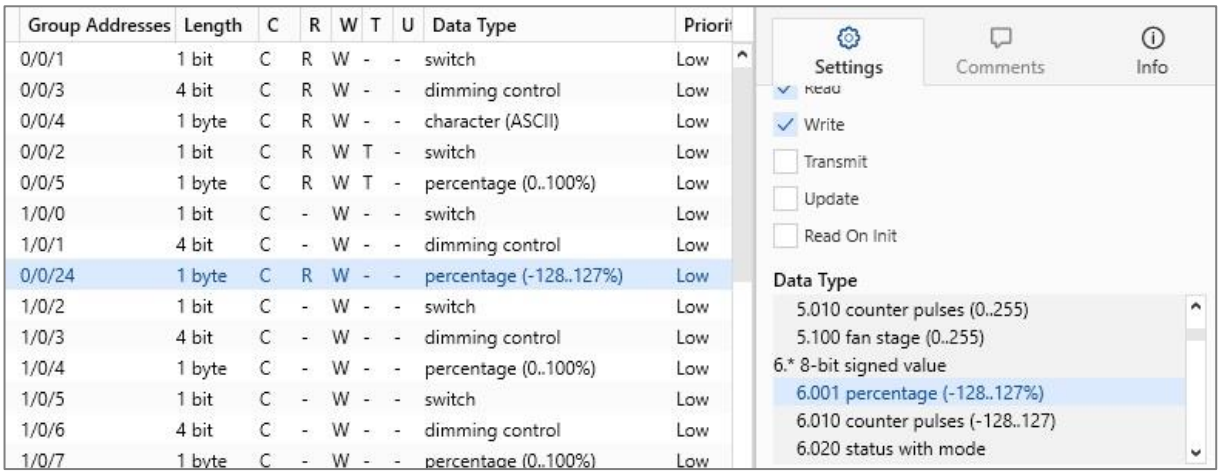
3. Confirm the import result.

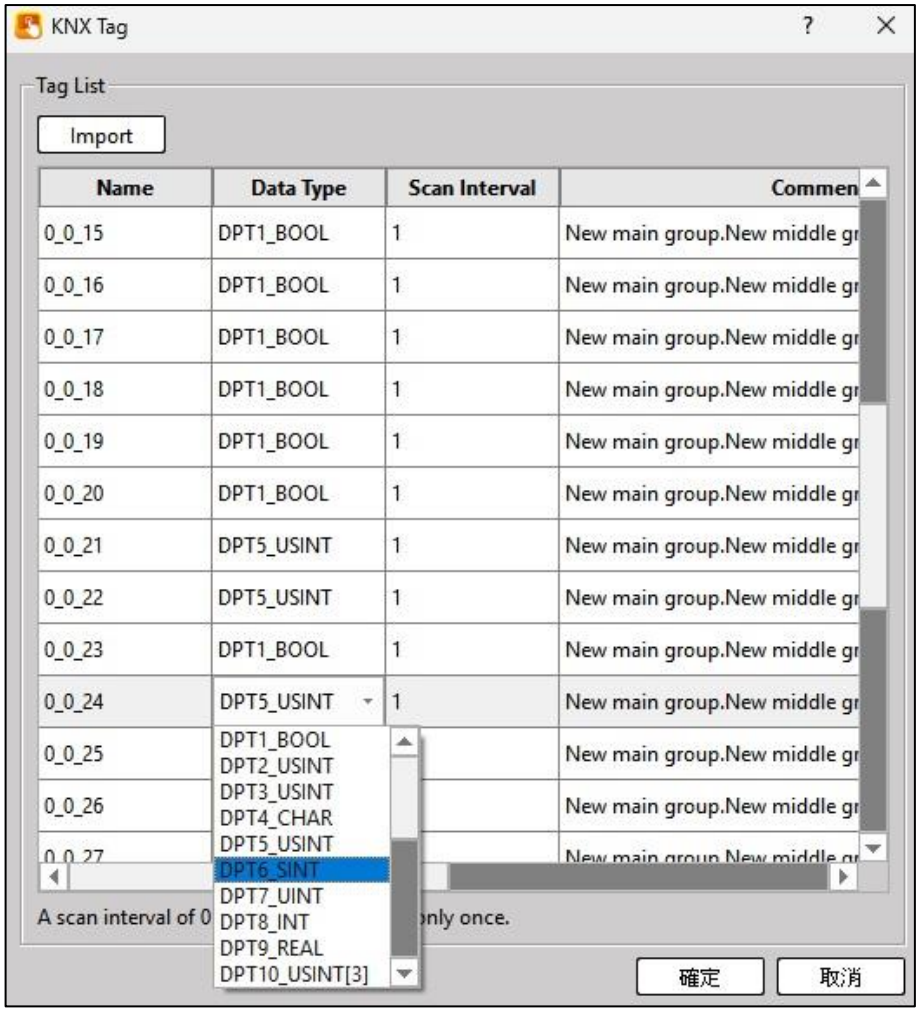


4. Since the ESF file does not contain the exact KNX Datatype information, FvDesigner can only perform an approximate mapping of the corresponding Datatypes based on the contents of the ESF file during import.

Please verify that the Datatype settings in FvDesigner match those in the KNX project. If they do not match, the user must modify them manually.

For example, if Group Address 0/0/24 is configured with Datatype 6 in the KNX project, the corresponding tag 0_0_24 in FvDesigner must also be configured with DPT6.





5. When configuring an object, simply select the corresponding address directly from the available tags.

