# **11 PLC Protocol**

Last modified by Hunter on 2023/02/04 11:08

Manage

- Actions
- Viewers

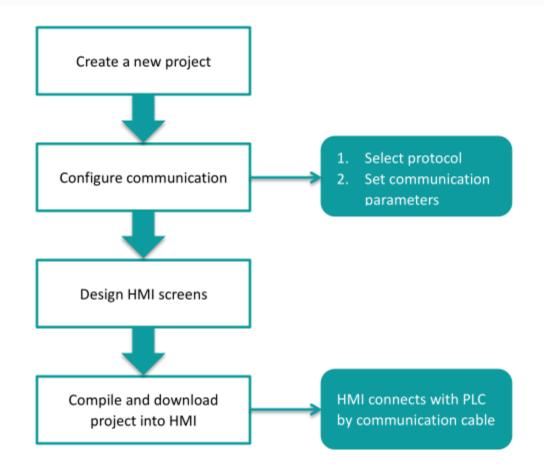
#### Introduction

This chapter contains information on configuring the communication between device and HMI.

### **General Procedure**

During configuring communication in PIStudio. The following components and conditions is indeed at least.

- One PI HMI
- One connected controller (for example PLC)
- One Cable Wiring



User need to select controller protocol and set communication parameters in HMI project. Please note to set same communication parameter between controller and HMI project. After finishing project, user could download HMI project into HMI and connect HMI with controller by Cable Wiring. Thena simple automation system would be established.

## **Communication Settings**

For example, controller is WECON LX3V series PLC and HMI is PI8070. Please set communication protocol, and set communication parameters in the [Communication].

### Timeout

The follwoing are description for the timeout settings from [Communication].

-												
Connec	tion:							PLC Con	nection			
No.	Commun		Device ty			Tim	eout				×	]
1	COM1	RS232	WECON SIMU	JTOCOL								
							1	Wait Timeout	(ms): [	10		
							1	Receive Timeout	(ms):	10		
								Retry C	ount:	2		
	New	Delete	Se	etting		1		Retry Timeo	ut(s):	3		ns!
Station	No.					1		Delay Time	(ms):	0		
	HMI No.:	0	Device No.: 0					Continuous Le	ngth:	0		
	ſ	COM1						Maximum	span:	5		
СОМ		COMI										
Protoco	I [	WECON SIMUTOCO	L					OK		Cancel		
HMI Mo	del [	PI3070ig						HMI Pin	definitio	on:		
COM:	[	(RS232, 9600, 1, 8	3, NONE )	Setting		СОМ	1PIN	Definiti	on			
	[ IP: [	( RS232, 9600, 1, 8 None	3, NONE )	Setting Setting		COM PIN	1	Definiti finition	ON PIN	D	efinitior	1
COM: Device I Timeout	[						De		PIN	D RS232		1
Device I	[	None		Setting		PIN	De	efinition TX+/RS485 A1+	PIN	_	RXD	l
Device I	[	None		Setting	/	<b>PIN</b> 1 3	De RS422	efinition TX+/RS485 A1+	<b>PIN</b> 2	RS232 RS485	RXD	
Device I	[	None		Setting	/	<b>PIN</b> 1 3 5	<b>D</b> ¢ RS422 RS232	efinition TX+/RS485 A1+ TXD	<b>PIN</b> 2 4	RS232 RS485	RXD B2- TX-/RS485	
Device I	[	None		Setting	/	<b>PIN</b> 1 3 5 7	De RS422 RS232 GND	efinition TX+/RS485 A1+ TXD A2+	PIN 2 4 6	RS232 RS485 RS422	RXD B2- TX-/RS485	
Device I	t: [	None		Setting	/	<b>PIN</b> 1 3 5 7	De RS422 RS232 GND RS485	efinition TX+/RS485 A1+ TXD A2+	PIN 2 4 6	RS232 RS485 RS422	RXD B2- TX-/RS485	

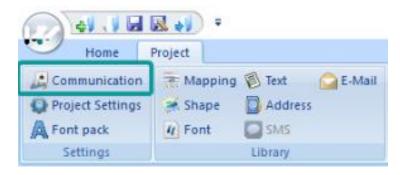
- Wait Timeout(ms): The time HMI waits for a response from the PLC.
- Receive Timeout(ms): The longest waiting interval between the HMI receiving two characters.
- Retry Count: The number of retries when there is no response in the communication between HMI and PLC.
- Retry Timeout(s): The PLC will not be accessed during the Retry Timeout period when there is no response in the communication between HMI and PLC.
- Delay Time(ms): The speed at which the HMI communicates with the device.
- Continuous Length: Default value 0 means the maximum length specified by each protocol. Addresses dealt by Maximum Span settings, its read length for single time, if the Continuous Length is 1, which means it will

read/write the every register one by one. If the length of Maximum Span is greater than or equal to the Continuous Length, the continuous read/write will be performed in groups according to Continuous Length.

• Maximum Span: Set the interval for reading PLC addresses. If there exists two same register type addresses, their interval is less than the set value of Maximum Span, then they will be integrated into a continuous address, otherwise it will be divide into two independent addresses.

### **Operating Procedure**

After creating the [Quick\_Start] project, select the [Project]->[Communication].



Click "Setting" to open protocol setting windows.

Select communication protocol, users could select serial port, Ethernet port, CAN port or USB.

• Serial port:

C	Communication	n device		×
	Communication	Serial port	Device type:	
2	COM1 COM2 COM3 Ethernet USB	RS232 RS485 RS422	WECON       ModBus         Drip Molding       WECON LX1S         Emerson       WECON LX2N         megmeet       WECON LX2V         Siemens       WECON LX2V         Delta       WECON LX3VP         OMRON       WECON LX3VP         VLZ       WECON LX3VE         DIFFUS       CHINSC         ALPHA       V	
e	Do not commur	iicate with any P	c	
			OK Cancel	

• Ethernet port:

(	Communicatio	n device		×
	Communication COM1 COM2 COM3 Ethemet USB	Serial port	Device type: ModBus Siemens OMRON Mtsubishi Allen-Bradley Delta User-defined Keyence FATEK SmartIO Schneider-Bectric IEC60870-5-104	
ŧ	HMI send data	to device active	ly, the device is master, receive data passively, address start from 0, use for ethernet device OK Cancel	

• CAN port (In COM1):

Communication	n device		×
Communication	Serial port	Device type:	
COM1 COM2 COM3 Ethemet CAN1 USB		CANDevice OpenCAN Charger-BMS 1939	
Configure Oper	nCAN Assistant f	OK Cancel	

• USB port:

About parameters for communication, PLC default communication parameters have been written to PIStudio, the user can adjust them according to the actual situation.

• Serial port:

			COM po	ort setting			×
COM	COM1			<b>.</b>	00.005		
Protocol	ModBus RTU Slave(All Fuction)			Connection:	K5485	~	
				Baud rate:	19200	~	
HMI Model	P18102			Stop bits:	1	$\sim$	
COM:	(RS485, 19200, 1, 8, NONE)	Setting	C	Data bits:	8	$\sim$	
Device IP:	None	Setting		Parity:	NONE	~	
Timeout:	( 300, 50, 2, 3, 0, 1 )	Setting		OK		Cancel	

• Ethernet port

Please note, during using Ethernet port, please set HMI IP in [Project Setting], the detailed, please refer to [Project Setting] chapter.

СОМ	Ethemet		TCP/IP parameters	×
Protocol	Allen-Bradley Ethernet DF1		PLC IP Address: 192 . 168 . 1 . 10	00
HMI Model	PI8102		PLC port No.: 44818 Network: TCP_Client_2N	
COM:	None	Setting	Broadcast address	
Device IP:	192.168.1.100:44818	Setting	Broadcast No.: 0	
Timeout:	( 1500, 50, 2, 3, 0, 0 )	Setting	OK Cancel	12

Click [OK] button to save settings and close the dialog;

## **Create communication with WECON PLC**

## **LX3V Serial Protocol**

Supported series: WECON LX2V/ LX2E/ LX3V/LX3VP/LX3VE/LX3VM

## HMI Settings

Item	Settings	Note
Protocol	WECON LX2V/ LX2E/ LX3V/LX3VP/LX3VE/LX3VM	

Connection	RS422/RS485	
Baud rate	9600	
Data bit	7	
Parity	EVEN	
Stop bit	1	
PLC station No.	1	

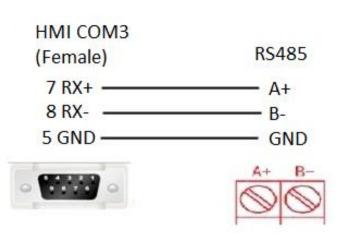
### Address List

Туре	Device registers	HMI registers	Format	Range	Note
	Х	Х	Хо	0~303237	
	Y	Y	Yо	0~303237	
Bit	Μ	М	M d	0~99999	
	Т	т	Τd	0~99999	
	С	С	C d	0~99999	
	S	S	Sd	0~99999	
Word	X	Х	Хо	0~303237	
	Y	Y	Υo	0~303237	

Μ	Μ	M d	0~99999
Т	Т	Τd	0~99999
С	С	C d	0~199
D	D	D d	0~7999
S	S	Sd	0~99999
SD	SD	SD d	8000~9999

Cable Wiring

• RS485



• RS422

WECON	
HMI COM1	PLC RS422
1 TX+	2 RX+
6 TX-	1 RX-
9 RX+	7 TX+
8 RX-	4 TX-
5GND	3 SG
• •	

### Note:

- HMI COM3 is available in PI8000 series and COM3 is in COM2(hardware PIN 7 and PIN 8).
- If PLC <= 20 points, such as LX3V-1208/LX3V-0806 PLC, PLC RS485A and RS485B mean PLC COM2 RS485+ and RS485- .PLC COM2 can support modbus. Please refer to PLC COM2 setting manual.

#### https://drive.google.com/drive/folders/13rgso7oUlatZQN\_SNEcJCcN4toEdDPoP?usp=sharing

#### **HMI settings**

#### **Download PIStudio Software**

Please visit the link below to get the latest version Plstudio for HMI programming:

Download link

### Create a new HMI project connect with PLC

Check the link below for the video to show you how to get started with a new project

• Video

For more videos, please visit our Youtube channel: http://www.youtube.com/user/Wecon2004/videos

#### General

HMI could communicate with PLC and support many PLC protocols. It is easy to operate and set communication parameters. This demo shows how to make a communication with PLC device, use WECON LX3V Series PLC as an example.

#### **Protocol settings**

The communication between two devices requires a protocol. The following contents show the steps of protocol settings.

Please select the protocol, when creating a new project.

1. Select the COM port for communication;

- 2. PLC type: It means PLC brand, like WECON;
- 3. PLC model: It shows the model of PLC, such as LX3V;

Communication		
Connection:	PLC Manufacturer:	
СОМ1 1	WECON 2	^
COMZ	ABB	
Ethernet	ALPHA	
USB	Anda	
	ARESTEK	
	ATEKON	$\mathbf{v}$
WECON LX3V 3		^
WECON LX3VM		
WECON LX3VE		
WECON LX3VE		$\mathbf{v}$
WELLIN TXSV SPRE	ις 	-

If you want to change the protocol for existing project, please click [Program]  $\rightarrow$  [Communication] to open the [Communication] windows, shown as the following figure.

	₹ 🚺 🗧		I	PIStudio Project	path:C:\Users\Adminis	strator\D
Home P	roject 1					
Communication 2	🖲 Mapping 🔳	Text 📄 E-Mail	🕕 Bit Alarm	💉 Trend Chart	💄 User Permission 🛛 🧉	Cloud
Real Project Settings	💦 Shape 🛛 🧟	Address	🔔 Word Alarm	🕂 History XY Plot	📑 MessagePrompt	
Aa Font pack	Font 🖂	SMS	🔒 Recipe	Data record	🔒 Traditional Recipe	
Settings	Font Library	brary		Data	Tool	

The steps to change the protocol for project are as follows.

- 1. Click [Setting] to open the [Communication device] window;
- 2. Select communication port, such as COM1;
- 3. Select Serial port for communication, such as RS422;
- 4. Select device type (device brand), such as WECON;
- 5. Select the protocol for communication, such as WECON LX3V;

Conne	ection:			PLC Connection	
No.	Commun	Protocol	Device type		
1	COM1	RS422	WECON LX3V	WECON LX RS422	
				HMI com1 9 pin (female)	RS422
				1 TX+	2 RX+
				6 TX	
Ctatio	New	Delete	Setting	9 RX+ 8 RX-	7 TX+ 4 TX-
	nmunication de	vice			×
Cor	mmunication 2	rial port 🖉	vice type	Search:	
	OM1	S232	ECON	▲ WECON 8000B	^
	hernet		PHA	WECON LX1S WECON LX2E	
US	SB		nda RESTEK	WECON LX2V 5	
н		A	TEKON bil	WECON LX3V	
d		C	INSC	WECON LX3VM	
			OMPASS ROUZET	WECON LX3VP WECON LX5V Series	
C			anfoss ELTA	VECON LX6V FreeTag Series	~
1	] [				
			ок	Cancel	
Cha	nge communicat	tion parameters (			
	User-Define		ОК	Cancel Help	
	User-Deline		OK	Cancer	

### **Parameter settings**

The parameters settings are in [Communication] window, shown as following below.

- Click [Setting] to open the [COM port setting] window;
   Set the parameters such as [connection], [Baud rate] and so on;

Commun	nication		
Connec	ction:		
No. 1	Commun	Protocol RS422	Device type WECON LX3V
Station		Delete	Setting
сом	HMI No.:	COM1	evice No.: 0
Protoco	) I	WECON LX3V	
HMI Mod	L	PI3070	
COM:	[	( RS422, 9600, 1, 7,	EVEN ) Setting
Device I	IP: [	None	Setting 3
Timeout	t: [	( 300, 50, 2, 3, 0, 0 ,	5) Setting
L Chan		ed protocol	ОК

3. Click [Setting] to open [Timeout] setting window, you could set the parameters according your requirements, or just use the default value.

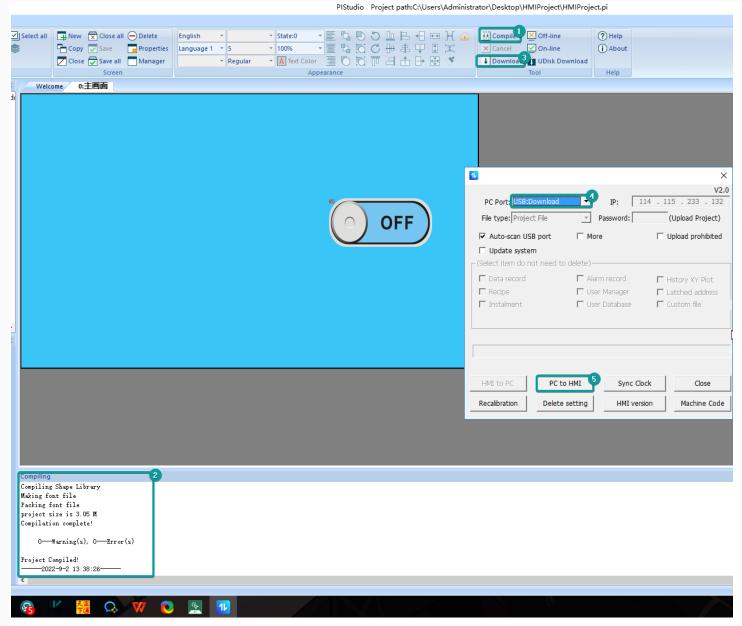
Timeout	×
Wait Timeout(ms):	200
Receive Timeout(ms):	
Retry Count:	
Retry Timeout(s):	
Delay Time(ms)	
Continuous Length:	
Maximum span:	
ОК	Cancel

### Set PLC address in HMI screen

- 1. Place the objects to HMI screen;
- 2. Double-click the object to open the setting window;
- Click "Edit" to open the address setting windows;
   Connection: select the serial port in HMI;
- 5. Address type: All the PLC address types will be display in this list, such as M;
- 6. Address No.: Please input the number of this address, such as 0;

Empling Capiler attpt:	Bit switch       X         General Text Graphic Security Anmaton       X         Read Address       Edit         Write Address       Edit         Write Address       Edit         Mode       Same read-write address         Edit       Set OFF         Display       Ouck Read         Blink       Imma         Min.Hold Time       Imma         Blank       Imma         Min.Hold Time       Imma         Display       Ouck Read	Edit     Connection     Address Type     Address Type     Data Format     Bit order     Address No.     Extended tag1     PC Staten No.     Defraid     PC Staten No.     Defraid     Prom Address Lib     Prom Address Lib	Common Object
Compiler output	Write Address		
			Button/Switch
	确定 取消 帮助		Input/Display
			Chart
			Meter
			Display
			Draw
			Custom Object

### HMI Compilation Download



### **Communication cable**

In order to ensure the stability of communication, please use the twisted-pair communication cable with good grounding. The following figure shows the pin out definition.

WECON	
WECON	
HMI com1	RS422
1 TX+	2 RX+
6 TX-	1 RX-
9 RX+	7 TX+
8 RX-	4 TX-
5 GND	3 SG
CENTRO	
· · · · · ·	

### HMI communication PLC use Modbus

- HMI setting: https://docs.we-con.com.cn/bin/view/PIStudio/12.PLC%20protocols/
- PLC setting: https://docs.we-con.com.cn/bin/view/PLC%20Editor/8.1.%09Communication/

### **PLC settings**

### **Download PLC Software**

Please visit below link to get the latest version PLC Editor for HMI programming

- LX3V:Download link
- LX5V:Download link

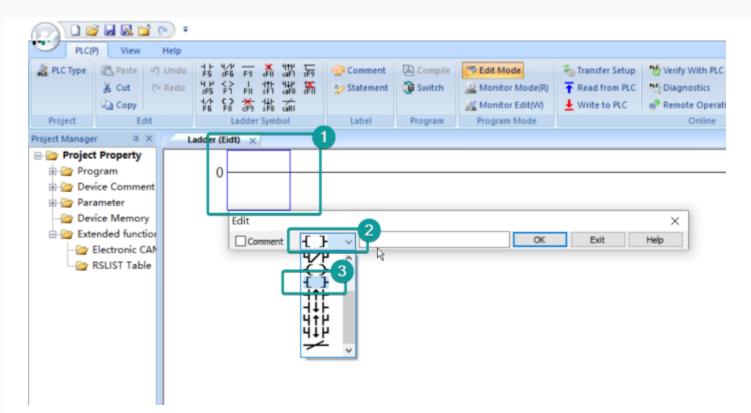
### Start a new PLC project

Start a new PLC project by clicking "New" on the left top corner of screen, select the PLC mode from the drop-down list.

File PLC(P)	ew Help					
	Cut Predo	4 H ↔ I +1 sF5 F1 FII sI 4/+ €3 ★ 4 F6 F8 cF3 sI	K 4111 III aafi sFS aafis h 4111 III III III III III III IIII IIII	🗐 Comment 割 Statement	Compile	Monitor Model
Project	Clipboard	1	Symbol	Edit	Program	Program Mode
Project manager 🔻 👎	× Subrouti	ne 平行四边形	Scanning M/	AIN Subro	utine 4轴	Subroutine 出厂参
🖃 / Program	[Write] 0	1	2	3		4 5
□····································		SM100 C model change PLC Series(S) LX5CPU PLC Model(T) LX5V Change the PLC ty	-pe here.	Execution	2 E0	]

Add a new instruction

Double click on the ladder, select the ladder symbol (instruction) from the drop-down list, then enter the address for this symbol.



You could also select the ladder symbol from the menu bar directly.

							- 🛛 ×
PLC(P) View Help							
A PLC Type B Paste D Undo	FS dill dell des 📿 Commen	nt 🔛 Compile 🔫 Edit Mode	🐁 Transfer Setup 🛛 😁 Verify With PLC	Device Monitor	Check Program 🛛 🔂 Device encryption	A PLC Guide	
K Cut (≌ Redo 45 €	님 밝 ໝ K 🤒 🥶 Stateme	nt 🗿 Switch 🔐 Monitor Mode(R		Module Monitoring		e 💼 USB flash disk download	
	rii sri aro srii ★ 14	Monitor Edit(W)	Write to PLC Remote Operation		Auto-save setting		
	adder Symbol Label	Program Program Mode		Inline	Tool		
Instructions	a × Ladder (Eidt) ×						
Basic Instructions	<u>^</u>						^
ANB(And Block)	0				END }		
AND(And)					(2012)		
ANDF(And Trailing Pulse)							
ANDP(AND Pulse)	Edit			×			
ANI(And Inverse)	Comm	ent 🗸 INV	OK Exit	Help			
END(End)							
	Help	×				×	
LD(LORD)						~	
LDF(Load Trailing Pulse)	Instruction Selection Instruction	Retrieval	INV	P	Pulsed		
LDI(Load Inverse)	Search Instruction	1	The Available	Device			
LDP(Load Pulse)							
MC(Master Control)     MCR(Master Control Reset)	INV	0					
MPP(Read and Reset)	Forword Match	Partial Match					
MPS(Storage)							
MRD(Read)	Corresponding Instruction						
NOP(No Operation)	ENV [0]						
🗋 OR(Or)							
ORB(Or Block)							
ORF(Or Falling Pulse)			2-6	* optional, gray is a constant, cyan is variable)			
ORI(Or Inverse)							
ORP(Or Pulse)			OP P	I N X Y M S K H KnX H	KnY KnM KnS T C D V Z E F	Str	
OUT(Out)							
PLF(Pulse Falling)							
PLS(Pulse) RST(Set)							
SET(Set)	Inverse						
B b Step Ladder					6		
🗉 🦢 Program Flow	Details OK	Exit	Directions			Return	
Transfer and Compare	Details OK	Exit	The INV ins position.	truction is used to change(invert) the logical state o	of the current ladder network at the inserted	Redain	
🔅 🗁 Arithmetic						ок	
🖶 🦢 Cycle and Shift							
🖶 🦢 Data Processing						Cancel	
🕀 🦢 High Speed Processing							
Common Instruction							
Peripheral Device IO     Peripheral Device SER							~
Peripheral Device SER     Floating	Devices List						# ×
Locator							^
B Clock	Device	~ Sta	t Device V Search	Range			
Project Manager Instructions	Information Output	🖹 Search / Replace 📑 PLC Verifiy 📃 (	ross reference list				Ů
English CAP NUM OVR		LX3V 0/1	Devices List				

Add comment to PLC program

PLC(P) View Help PLC(P) View Help PLC Type Paste =) Undo Grado Cut (P Redo Copy Project Edit	ra wa ro on or wo	Comment Statement Label Program	Edit Mode Monitor Mode(R)	-	
Project Manager 4 × Project Property Program Parameter Device Comment Extended function Extended function RSLIST Table	0 Edit Comment Edit Device/ Note M0 start	H v M0	OK Execute Close	Exit Help	

### Add the statement to PLC program

Add the statement by single click on "Statement", when finished, single click on "Statement" again to go back to Ladder edit.

C Type	Paste O Undo & Cut (~ Redo Copy Edit		許 3% M	Comment Statement Label	Program	Edit Mode Monitor Mode(R) Monitor Edit(W) Program Mode	Transfer Setup Read from PLC Write to PLC	Verify With PLC	4	🛞 Clock settin
Manage	Property	adder (Eidt) 🗙	0							
Pari Dev Exte	ice Comment	0		Statemer	ıt Edit		Execute Close			

### Compile

You need to compile the PLC program before downloading or running Off-line simulator. The background color will be changed from purple to white when there is no error.

	i 🖬 🔣 🖬	•														-	o ×	
PLC(P	7) View	Help																
🎎 PLC Type	🖺 Paste	🔊 Undo	1 F 4/1	¥ 41₽ aFI aFI	ज्ञ 📀	Comment	Compile	📑 Edit Mode	🀐 Transfer Setup	Nerify With PLC	Monitor	🛞 Clock setting	Check Program	🔒 Device encryption	🔏 PLC Guide			
	🐰 Cut	(= Redo	4 P ↔ 1 #5 F1 FII	tth 44P sF1 caf8	ሹ 👳	Statement	🄯 Switch	🔬 Monitor Mode(R)	TRead from PLC	Diagnostics	🛷 Module Monitoring		🖏 Simulator	🍃 Generate download file	💼 USB flash disk download			
	🝙 Сору		能器춣	ᇔᇔ				🌋 Monitor Edit(W)	🞍 Write to PLC	Remote Operation	💸 Clear PLC Memory		🔄 Auto-save setting	🔒 Program encryption				
Project	Edi	t	Ladder	Symbol		Label	Program	Program Mode		Or	line			Tool				
Project Manager	r		<i>a</i> >	( / Li	adder (Eid	0* ×												ł.
Projec	igram vice Comme	nt			0	MO 								( <sup>Y001</sup> )			,	
👉 Dev 🍲 Exte	vice Memory ended functi Electronic C RSLIST Tabl	ion AM table			2			ß						-{END }				

### **Download setting**

Click on "Transfer Setup" to select download mode.

	*						
View Help							
Baste ≤) Und X Cut (≃ Redu Gopy Edit		Statement 🖉 Switch	Edit Mode     Transfe       Monitor Mode(N)     Transfe       Monitor Edit(W)     Write t       Program Mode	Diagnostics	<ul> <li>Clock setting</li> <li>n</li> </ul>	Check Program Simulator	Device encryption Generate download Program encryption Tool
A × Property am AIN STL Subroutine Interrupt-R Statement = Comment heter = Memory ded function ectronic CAN LIST Table	Ladder (Eidt) ×	Transfer Setup USB Conne USB Pol O Serial conn COM Pol Baud Rat More	ection rt COM15-Virtual Serial Port (Eltim		Connection test OK Device Info	(Y	000 } D }

### Download PLC program to PLC

Quick select the parameters and main program of PLC program, then download to PLC, "Yes"-"Yes"-"OK"

PLCP View Help ACR/ View Hel	Comment D Compile Edit Model Statement D Switch A Monitor Hd Label Program M	ode(R) Tread from PLC Diagnostics Module Monitoring	- CI × k setting Check Program
	r (Eidt) X	on on one	T T T T T T T T T T T T T T T T T T T
Project Property  Program  Project Comment  Project Property  Program  Project Project Project  Project Project Project  Project Project Project  Project Project  Project Project  Project Project  Pro		Module Name/Data Name     Detail     Upload ∧       □ LXCPU/LX3VE     □     □       □ DCD Data     □     □       □ Ø Program     □       □ Ø Program     □	(Y000) (END) (END) (END) (ancel al select(M) Comment Setup: Default Memory Setup: Default Program Sse(real(capacity)) 3 / 8000 Cose

## Upload PLC program from PLC

Read the PLC program from PLC to computer.

	— Ō ×
PLC(P) View Help	
Rec Type     Chype     Chype	Ceptice Monitor     Clock setting     Clock
Project Manager # × Ladder (Eidt) ×	
Project Property         Project Property         Powice Comment         Parameter         Device Memory         Electronic CAM table         RSUST Table	(Y000) [END] Select AK(a) Cancel al select(1) Detail Memory Setup: Unset Unset Unset Stop Cose

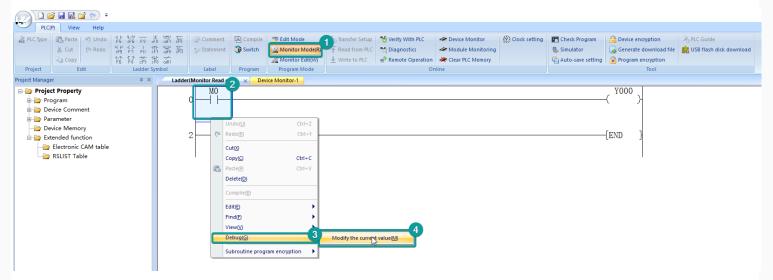
### **Device monitor**

Monitor the value of certain address in PLC, double click "Current value" to change the value in this address.

🕥 🗋 📽 🖬 📓 🖬 🐑 🔻						- 0 >
PLC(P) View Help			•			
	許 326 孫 ≫ Statement @ Switch 🔐 Monitor 診 流言	Mode(R)     The Read from PLC     Diagnostics       idit(W)     Write to PLC     Remote Operation	Module Monitoring Clear PLC Memory	Check Program     Device encryption     Simulator     Critical Auto-save setting     Tool	R PLC Guide	
oject Manager 🌐 🗸 🛪	Ladder (Eidt) Device Monitor-1 ×					
Project Property     Program     Device Comment     Parameter	Device © Device O Buffer Memory Module Station 0	Address 0 Dec	V			
Device Memory     Extended function     Electronic CAM table     RSLIST Table	Monitor Start Monitor End	Set Current Value Close	Form	3		
	Device         Contact         Coll           Device         0         0           C1         0         0           C2         0         0           C3         0         0           C3         0         0           C6         0         0           C7         0         0           C11         0         0           C12         0         0           C13         0         0           C14         0         0           C15         0         0           C16         0         0           C17         0         0           C18         0         0           C21         0         0           C22         0         0           C23         0         0           C24         0         0           C25         0         0	Setting Value         Current Value            0         0         0           0         0 <td>Bit     Bit     Bit     Bit     Bit     Mitpont-byte     Multpont-word     Bit     Snee     Snee     Sole     Sole     Sole     Sole     Asccl</td> <td>Sect the Fund Device (SRD (0 199 ) (SRD (0 1</td> <td></td> <td></td>	Bit     Bit     Bit     Bit     Bit     Mitpont-byte     Multpont-word     Bit     Snee     Snee     Sole     Sole     Sole     Sole     Asccl	Sect the Fund Device (SRD (0 199 ) (SRD (0 1		

### **Online monitor**

Monitor the each address in PLC by online monitor. Changing the state or value in PLC is also allowd.



### Monitor edit

In this mode, you could edit the PLC program during PLC is running.

Propert East		紧 篇 🤤 Statement	Cat Made		🖉 🖉 Oscila setting	Check Program Simulator Caludo-core setting
Project Property Project Property Project Property Program MAIN Subroutine Statement Device Comment Parameter Device Memory Extended function Extended function Reserved Table	Ladden(Monitor Write d 0	Edit		CK Dat Help	2	( ¥000 }

## **LX5V Serial Protocol**

This example introduces the establishment of serial port communication between Wecon HMI and LX5V, including three parts: PLC software configuration, HMI software configuration, and hardware wiring.

### Software configuration of PLC

PLC programming software

About Wec	on PLC Editor2	×
	Wecon PLC Editor2 2.1.204 Release Date:2022/6/21 (C)2016 Fuzhou Fuchang Wecon Electronic Technology Co., Ltd. OK	

### **New PLC project**

Click "New Project" and select the PLC model.

🚆 🗋 🚰 🔜 🔚 🕫 🔍 =	1	Wecon PLC Editor2		-	₽ ×
C Create a new project Swcp2	Comment Compile Statement Compile all Edit Program Program Mode	Read from PLC     PLC diagnostics     Module	monitor 🔂 PL	utomatic backup II Udisk download .C encryption tool Generate download file oject encrypt tool Calculation of total program steps Tool	▲ Style ▼
Save(5)     3. ModbustCP客户端wcp.2       4. ModbustCP服务展/wcp.2     4. ModbustCP服务展/wcp.2       5. ModbustCP客户端/wcp.2     5. ModbustCP客户端/wcp.2       6ModbustCP客户端/wcp.2     7. coba tcp Ix5s-n.wcp.2       Close(C)     Close(C)		Crane	Progress	1001	<b>→ ∓</b> ×
X Exit20	New project PLC Series(S) UXSCPU PLC Model(T) UXSV Programming Ladder	× • • • Cancel			
Project mana. Instructions English CAP Number Rewrite			<	🛢 Search / Repl 🛢 PLC check re 🛢 Device usage	> Progress

### Set Serial port parameters

Follow the steps below to configure Serial port parameters.

- Baud rate : 115200
- Data bit : 8
- Stop bit : 1
- Parity : No verification

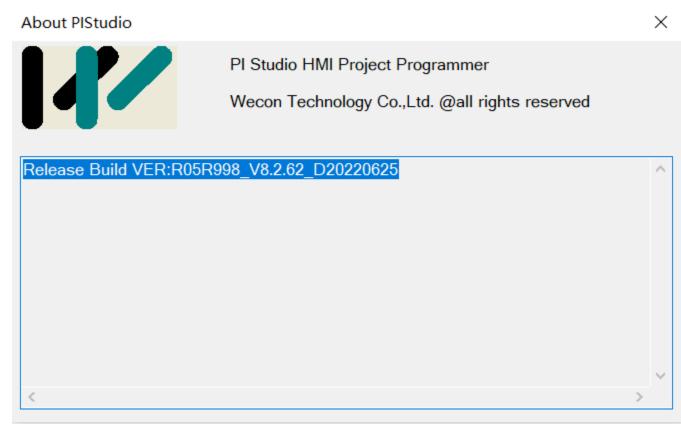
🛒 L) 💣 🗐 風 D	<b>i</b> ≌) (≥ ∓								Wecon PLC Edito	2 - Scanning M	dN				
File PLC(P)	View Help														▲ Style ▼
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Project manager	▼ ₽ ×	Scanni	ng MAIN	ĸ									<ul> <li>Progress</li> </ul>		<b>→</b> ∓ ×
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<	> Instructions	_											<	on 🛢 Search / Repl 🛢 PLC check re 🛢 Device usage	Progress
English CAP	P Num	iber	Rewrite		LX5V	0/2									

## **Registers list**

Classification	Length	Description	Register	Range	Number
	Bit	Input	х	0 to 1777	Octal number
	Bit	Output	Υ	0 to 1777	Octal number
	Bit	Internal relay	Μ	0 to 7999	Decimal number
	Bit	Step relay	s	0 to 4095	Decimal number
User registers	Bit/word	Timer	т	0 to 511	Decimal number
Oser registers	Bit/word	Counter	С	0 to 255	Decimal number
	Bit/double word	Long counter	LC	0 to 255	Decimal number
	Bit/double word	High-speed counter	HSC	0 to 15	Decimal number
	Word	Data Register	D	0 to 7999	Decimal number
	Word	Data Register	R	0 to 29999	Decimal number
System registers	Bit	Special	SM	0 to 4095	Decimal number
System registers	Word	Special register	SD	0 to 4095	Decimal number
	Word	Index register	[D]	0 to 7999	Decimal number
Index registers	Word	Index register	V	0 to 7	Decimal number
	Double word	Long index register	Z	0 to 7	Decimal number
Nested	Bit	Nested	N	0 to 7	Decimal number
Pointer	-	Pointer	Р	0 to 4095	Decimal number
	-	Decimal constant	к	-	Decimal number
Constant	-	Hexadecimal constant	н	-	Hexadecimal number
	Single precision floating point	Real constant	E	-	-

### HMI software configuration

HMI programming software



### New HMI project

Click New Project and select the HMI model.

41.1	- (- S				PIStud	io - Welcome					- o ×
-											Style *
Save as	Recent project (rl+N) sers\\HMIProject.pi		e English • Language 1 • 5 Iger • Regular		- 畫 點 的 (	)ኴ╞-日⊟ਮ≦ シ╊-₽₽₽≍ ╹╡古┠┣ず	× Cancel	le Off-line On-line oad UDisk Download Tool	<ul> <li>(?) Help</li> <li>(1) About</li> <li>Help</li> </ul>		
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🔹 🕽 Close project	4 C:\Users\\HMIProject12.pi 5 C:\Users\\HMIProject2.pi		,	New Project				×		^	Common Object
	<u>6</u> C:\Users\\ssss\ssss.pi	-		Location and Na	me						Bit Switch
	7 C:\Users\\3070i\3070i.pi			Name:	HMIProject						
	8 C:\Users\\CSV函数_线程\CSV函	9数.pi	Recent Project	Location:	C:\Users\297	09\Desktop	Browse	d Date>			Word Switch
	9 C:\Users\\luaDemo.pi		C:\Users\29709\Deskt	HMI Carina	That has dob	Angle HMI+		3-10 16:37:05			
	10 C:\Users\\网口modbus通讯\从	λ从.pi		HMI Series: General Series	HMI Model:	Angle HMI+	800*480				Function Switch
	C:\Users\\dvp6.pi			i Series ie Series	PI3070HE PI3070N-25	90° 180°	000 100	o Topics			888
	C:\Users\\dvp6.pi			ig Series	PI3102	270°		-			Numeric Input/Display
	C:\Users\dvp6.pi				PI3102H PI3102H-25 PI3102HE V			1			ABC Character Input/Display
	C:\Users\\dvp6.pi			Communication							
	touch screen Greatest Pet Care.pi			Connection:	PLC Manufactu	irer:					09 Date
		X Exit		COM1 COM2 Ethernet USB WECON SIMU WECON Motion			~				Time Time Text
				WECON LX1S WECON LX2N WECON LX2V			~			~	
		<			unicate with any PLC					>	
S	creen Preview	Compiling								ů ×	Button/Switch
		Compiler output									Input/Display
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											Draw
											Custom Object
完成											CAP NUM SCRL

Set communication port parameters

Click the communication configuration button on the left to find the communication protocol with LX5V. After selecting the protocol, configure the communication parameters of the COM port.

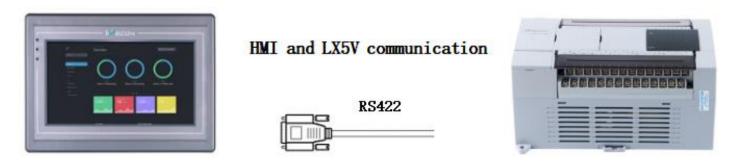
- Baud rate : 115200
- Data bit : 8
- Stop bit : 1
- Parity : No verification

	PIStudio Pro	ject path:C:\Users\29709\Desktop\RS422串囗通讯\LX5V系列.pi
Home Project		
Communication 💿 Mapping 🗐 Text 🔗 E-	Communication	×
Regional Project Settings Shape Address	Connection:	PLC Connection
Aa Font pack A Font SMS	No. Commu Protocol Device type	
Settings Library	1 COM1 RS422 WECON LX5V Series	
Project 4 ×		WECON LX RS422
<ul> <li>□ 125V系列.pi{C:\Users\29709\Desktop\RS</li> <li>□ ④ Screen</li> <li>□ □ 0: RS422串口通信</li> </ul>		HMI com1 RS422 9 pin (female)
		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
	New Delete Setting	9 RX+ 7 TX+ 8 RX 4 TX-
	Station No.	5 GND
	HMI No.: 0 Device No.: 1	• • • •
	COM COM1	U
	Protocol WECON LX5V Series	COM port setting X
	HMI Model PI8102	4. Connection: R5422
< >	COM: 3. (RS422, 115200, 1, 8, NONE ) Setting	
Preview 🕂 🗸 🛪	Device IP: None Setting	Baud rate: 115200 ~
	Device IP: None Setting	Stop bits: 1
	Timeout: ( 300, 50, 2, 3, 0, 0, 0) Setting	Data bits: 8 🗸 🗸
		Parity: NONE V
		OK Cancel
Screen Preview		
	Change communication parameter	
	User-Defined protocol OK	Cancel Help

### hardware connection

### Hardware wiring diagram

This example introduces WeconHMI with LX5V PLC to establish communication through serial port. The connection diagram is as follows:



HM	AI com	1	RS	5422
9 <b>针</b>	(fema	1e)	8 <b>针</b>	(male)
1	TX+		2	RX+
6	TX-		<b>—</b> 1	RX-
9				TX+
8			-	TX-
5	GND		<b>—</b> 3	SG
0 (	54321 9876	0	(	

The above are all the steps for establishing serial port communication between Wecon HMI with LX5V PLC.

## **LX5V-N Ethernet protocol**

This example introduces the establishment of Ethernet communication between Wecon HMI and LX5V, including three parts: PLC software configuration, HMI software configuration, and hardware wiring.

### Software configuration of PLC

### PLC programming software

About Weo	on PLC Editor2	×
	Wecon PLC Editor2 2.1.204 Release Date:2022/6/21 (C)2016 Fuzhou Fuchang Wecon Electronic Technology Co., Ltd. OK	

### **New PLC project**

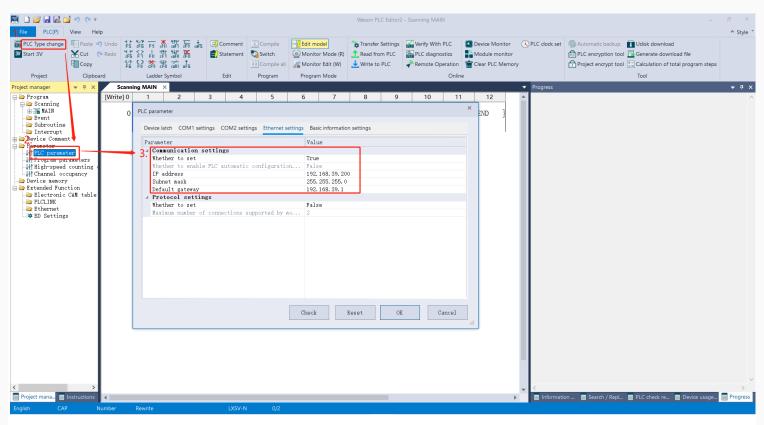
Click New Project and select the PLC model.

🛒 🗋 🞽 🖬 🐼	l <u>⊑</u> i≌) (≥ ∓					Wecon PL	C Editor2			-	8 ×
File											↑ Style *
New(N)	Recent projects New (Ctrl+N) Create a new project	p2 p2	Comment Statement	Nwitch	Edit model Monitor Mode (R) Monitor Edit (W) Program Mode	1 Read from PLC	Verify With PLC	Clear PLC Memory		Automatic backup     Udisk download     Decencryption tool     Generate download file     Project encrypt tool     Calculation of total program steps     Tool	
Save(S)	<u>3</u> ModbusTCP客户端								Progress		<b>-</b> 4 ×
	4 ModbusTCP服务器 5 ModbusTCP客户端										^
Save as(A)	<u>6</u> ~ModbusTCP客户。										
Print(P)	7 coba tcp lx5s-n.wc										
		🗙 Exit(X)						_			
					New project PLC Serigs (S) LXSCPU PLC Hodel(T) LXSV-N Programming Ladder	-	OK Cancel				
											~
Project mana									<	on 📕 Search / Repl 📕 PLC check re 📕 Device usage	> Progress
	CAP Number										<u> </u>

### Set Ethernet port parameters

Follow the steps below to configure Ethernet parameters

- PLC IP address : 192.168.39.200
- default gateway : 192.168.39.1
- subnet mask : 255.255.255.0

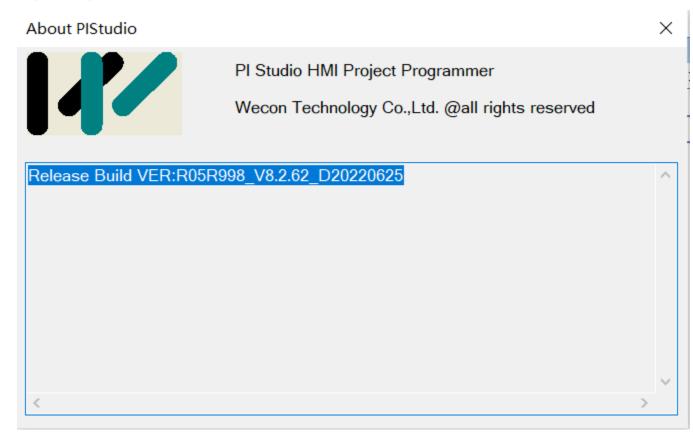


#### **Registers list**

Classification	Length	Description	Register	Range	Number
	Bit	Input	х	0 to 1777	Octal number
	Bit	Output	Υ	0 to 1777	Octal number
	Bit	Internal relay	м	0 to 7999	Decimal number
	Bit	Step relay	S	0 to 4095	Decimal number
User registers	Bit/word	Timer	т	0 to 511	Decimal number
Oser registers	Bit/word	Counter	С	0 to 255	Decimal number
	Bit/double word	Long counter	LC	0 to 255	Decimal number
	Bit/double word	High-speed counter	HSC	0 to 15	Decimal number
	Word	Data Register	D	0 to 7999	Decimal number
	Word	Data Register	R	0 to 29999	Decimal number
	Bit	Special	SM	0 to 4095	Decimal number
System registers	Word	Special register	SD	0 to 4095	Decimal number
	Word	Index register	[D]	0 to 7999	Decimal number
Index registers	Word	Index register	V	0 to 7	Decimal number
	Double word	Long index register	Z	0 to 7	Decimal number
Nested	Bit	Nested	N	0 to 7	Decimal number
Pointer	-	Pointer	Р	0 to 4095	Decimal number
	-	Decimal constant	к	-	Decimal number
Constant	-	Hexadecimal constant	н	-	Hexadecimal number
	Single precision floating point	Real constant	E	-	-

#### HMI software configuration

HMI programming software



### New HMI project

Click New Project and select the HMI model.

	PIStudio - Welcome	- o ×
•		Style *
New         Recent project           V DP         New (Ctrl+N)           Save project         Save project           Save project         C\USers\_HMIProject.pi           Save as         2 C\USers\_HMIProject.pi           Print         3 C\USers\_HMIProject.pi	e English • • StateO • E • O • D • D • P • H • F • O • O • O • O • O • O • O • O • O	
		Common Object
Close project 4 C:\Users\\HMIProject12.pi C:\Users\\HMIProject2.pi	New Project X	Common Object
<u>6</u> C:\Users\\ssss\ssss.pi	Location and Name	Bit Switch
<u>Z</u> C:\Users\\3070i\3070i.pi	Name: HNIProject	
& C:\Users\\CSV函数_线程\CSV函数.pi	Recent Project Location: C:\Users\29709\Desktop Browse d Date>	Word Switch
2 C:\Users\\UaDemo.pi	C:\Users\29709\Deskt         HMI         3-10 16:37:05           HMI Series:         HMI Model:         Angle         HMI 4	
10 C:\Users\\网口modbus通讯\从\从.pi	General Series P13070 A 09 Screen Resolution 800*480	Function Switch
C:\Users\\dvp6.pi	i Series P13070H-25 180° i Serie Resolutin Bour-Hou p Topics	888
C:\Users\\dvp6.pi	g Series P13102 270° P13102H	Numeric Input/Display
C:\Users\\dvp6.pi	P13102H-25 P13102HE V	ABC
C:\Users\\dvp6.pi	Communication	Character Input/Display
touch screen Greatest Pet Care.pi	Connection: PLC Manufacturer:	09 Date
	COM1 WECON ^	555
	Ethemet ALPHA USB Anda ARESTEK ATEKON WECON INIUTOCOL WECON INIUTOCOL WECON INION Control WECON INIS WECON INIS WECON INIS	Time
<	WECON LX2V V	
Screen Preview Compiling	g Do not communicate with any PLC	Button/Switch
	rr output	Input/Display
	<上一步(B) 完成 取消 帮助	Chart
		Meter
		Display
		Draw
		Custom Object
完成		CAP NUM SCRL

### Set communication port parameters

Click the project setting button on the left to configure the IP address of the HMI machine to ensure that the HMI and PLC IP remain in a local area network.

- HMI IP address : 192.168.39.201
- Default gateway : 192.168.39.1
- Subnet mask : 255.255.255.0

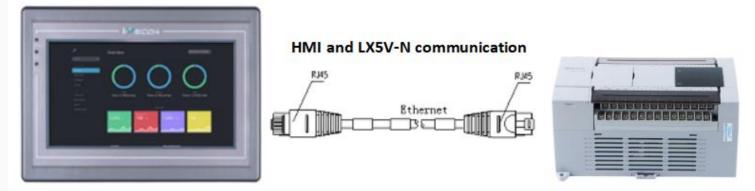
	PlStudio Project path:C:\Users\29709\Desktop\RS422串口通讯\LXSV系列.pi - 0:RS422串口通信	- 0 ×
Home Project		Style *
Image: Communication     Image: Communication       Image: Communication     Ima	-Mail       ● Bit Alarm       ■ Trend Chart       ▲ User Permission       ▲ Cloud       ▼ Project Window       ■ Report       ● Format       Ⅲ Decompile       Ⅲ Compile       ◎ Off-line       ③ About         ▲ Word Alarm       + History XY Pot       ● MessagePrompt       ♥ Project Window       ■ Delte report       ◎ Project Window       ● Delte report       ◎ Project Window       ● Compiling window       ● Shape       ● Address List       ● Respect       ● Data record       ● Online       ● About       ● Delte report       ● Project Window       ● Delte report       ● Project Window       ● Project Window	
		Common Object
E 圖 LVSV系列。pi(C:\Users\29709\Desktop\RS	Project Settings HMI IP Instalment Extend       RS 422         IP:       2.       192.       168.       39.       201         Sub mask:       255.       255.       0       0       0         Gateway:       192.       168.       39.       1       0         Remote access password       100       100       100       100	Common Object
< >> Preview # ×	password: @88888 Server of HMI remote access Server address: Server 2	Character Input/Display
Screen Preview	4 ×	Button/Switch
		Chart Meter
		Display
	确定 取消 帮助	Draw
		Custom Object

Next, click Communication Settings to configure the IP of the HMI communication object.

	PIStudio Project path:C:\Users\29709\Desktop\RS422串口通讯\LX5V系列.pi - 0:RS422串口通信	- 0 ×
3 Home Project		Style *
Communication Mapping Text Project Settings Shape Address An Font pack Font SMS	E-Mail 10 Bit Alarm Interface V Diel Compile Couple Compile Co	
Settings Library	Connection: PLC Connection Tool Help	
Project # ×		Common Object
日本 日本 日本 日本	New     Delete     Setting       Station No.     HMI No.:     Device No.:       1     OK	Common Object
review .4 ×	Protocol WECON LXSV Ethernet HMI Pn definition: HMI Model PI8102 COM: None Setting	Character Input/Display 09 Date 555
	5. 192.168.39.200:502 Setting	Time
	Prive Press         Definition         PIN         Definition           Timeout:         (1500, 50, 2, 3, 0, 0, 0)         Setting         1         RS422 TX/RS485 A+ 2         RS232 RXD           3         RS232 TXD         4         CAN1           5         GND         6         RS422 TX/RS485 B-	Text
Screen Preview	7 CANH 8 R5422 RX-	Button/Switch
	9 R5422 RX+	Input/Display
		Chart
		Meter
	Change communication parameter	Display
	User-Defined protocol OK Cancel Heb	Custom Object
		CAP NUM SCRL

Hardware connection

This example introduces WeconHMI with LX5V-N PLC to establish communication through ethernet. The connection diagram is as follows:



The above are all the steps for establishing ethernet communication between Wecon HMI with LX5V PLC.

## **Create communication with ABB PLC**

## AC500 Protocol

Support Series: ABB AC500

### HMI Settings

Item	Recommended	Note
Protocol	ABB AC500	
Connection	RS232	
Baud rate	19200	
Stop bits	1	
Data bits	8	
Parity	EVEN	
PLC Station No.	1	

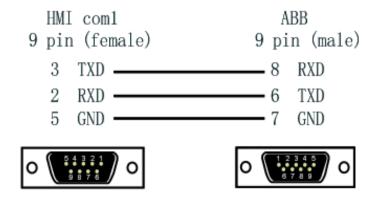
HMI Station No.	0	

### **Address List**

Туре	Device registers	Format	Range	Note
Bit	MX	MXdddd.oo	0.0~8191.7	
Word	MW0	MW0ddddd	0~32767	
	MW1	MW1ddddd	0~32767	

Cable Wiring

## ABB AC500 RS232



## **Create communication with Rockwell PLC**

## **DF1 Protocol**

MicroLogix 1000/1100/1200/1400/1500; SLC 5/03 5/04 5/05; PLC-5

### **HMI Settings**

ltem

Recommended

Note

Protocol	Rockwell DF1	
Connection	RS232	
Baud rate	19200	
Stop bits	1	
Data bits	8	
Parity	None	
PLC Station No.	1	
HMI Station No.	0	

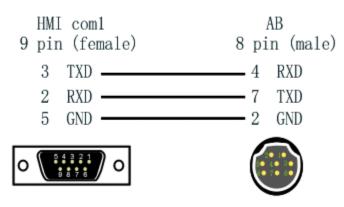
### Address List

Туре	Device registers	Format	Range	Note
	1	l ddd.dd	0.0~255.15	Only able to communicate with file number I1
Bit	0	O ddd.dd	0.0~255.15	Only able to communicate with file number O0
2.1	В	B nnhh.dd	0.0~ffff.15	Only able to communicate with file number B3
	S	S ddd.dd	0.0~255.15	Only able to communicate with file number S2

	Ν	N nnhh.dd	0.0~ffff.15	Only able to communicate with file number N7
	S	S ddd	0~255	Only able to communicate with file number S2
	TS	TS nnhh	0~ffff	Only able to communicate with file number T4 (Timer Preset Value)
Word	ТР	TP nnhh	0~ffff	Only able to communicate with file number T4 (Timer Accumulator Value)
Word	CS	CS nnhh	0~ffff	Only able to communicate with file number C5 (Counter Preset Value)
	СР	CP nnhh	0~ffff	Only able to communicate with file number C5 (Counter Accumulator Value)
	Ν	N nnhh	0~ffff	Only able to communicate with file number N7

**Cable Wiring** 

AB RS232



## **DF1 Advanced Protocol**

## MicroLogix 1000/1100/1200/1400/1500; SLC 5/03 5/04 5/05; PLC-5

## **HMI Settings**

Item	Recommended	Note
Protocol	Rockwell DF1 Advanced	
Connection	RS232	
Baud rate	19200	
Stop bits	1	
Data bits	8	
Parity	None	
PLC Station No.	1	
HMI Station No.	0	

### Address List

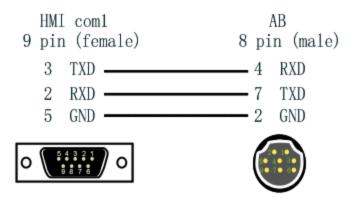
Туре	Device registers	Format	Range	Note
	11	l1ddd.dd	0.0~255.15	Only able to communicate with file number I1
Bit	00	O0ddd.dd	0.0~255.15	Only able to communicate with file number O0
	S2	S2ddd.dd	0.0~255.15	Only able to communicate with file number S2

	В3	B3ddd.dd	0.0~255.15	Only able to communicate with file number B3
	BN	BNddddd.dd	0.0~99255.15	Bit data file B0~B99 First two digits is for file number For example, BN13001.00 represents file number B13, address 001, the 0th bit.
	N7	N7ddd.dd	0.0~255.15	Only able to communicate with file number N7
	NN	NNddddd.dd	0.0~99255.15	Integer data file bit format N0~N99 First two digits is for file number For example, NN13001.00 represents file number N13, address 001, the 0th bit.
	S2	S2ddd	0~255	Only able to communicate with file number S2
	T4S	T4Sddd	0~255	Only able to communicate with file number T4 (Timer Preset Value)
	T4P	T4Pddd	0~255	Only able to communicate with file number T4 (Timer Accumulator Value)
Word	TNS	TNSddddd	0~99255	Timer Preset Value First two digits is for file number For example, TNS99255 represents file number T99, address 255.
	TNP	TNPddddd	0~99255	Timer Accumulator Value First two digits is for file number For example, TNP99255 represents file number T99, address 255.

	C5S	C5Sddd	0~255	Only able to communicate with file number C5 (Counter Preset Value)
	C5P	C5Pddd	0~255	Only able to communicate with file number C5 (Counter Accumulator Value)
	CNS	CNSddddd	0~99255	Counter Preset Value First two digits is for file number For example, CNS99255 represents file number C99, address 255.
	CNP	CNPddddd	0~99255	Counter Accumulator Value First two digits is for file number For example, CNP99255 represents file number C99, address 255.
	N7	N7ddd	0~255	Only able to communicate with file number N7
	NN	NNddd	0~99255	Integer data file First two digits is for file number For example, NN99255 represents file number N99, address 255.
	F8	F8ddd	0~255	Only able to communicate with file number N7
Double Word	FN	FNddddd	0~99255	Floating point data file First two digits is for file number For example, FN99255 represents file number F99, address 255.
	LN	LNddddd	0~99255	Long
Cahla Wi	RID OL			

Cable Wiring

AB RS232



## **MicroLogix Protocol**

MicroLogix 1000/1100/1200/1400/1500; SLC 5/03 5/04 5/05 PLC-5

## **HMI Settings**

Item	Settings	Note
Protocol	Allen-Bradlley MicroLogix	
Connection	RS232	
Baud rate	19200	
Data bit	8	
Parity	None	
Stop bit	1	
PLC station No.	1	
Address List		

		Range	Note
I	l d.d	0.0~255.15	
0	O d.d	0.0~255.15	
В	B nnhh.dd	0.0~ffff.15	nn: block number (hex)
S	S d.d	0.0~255.15	
Ν	N nnhh.dd	0.0~ffff.15	nn: block number (hex)
S	S d	0~255	
TS	TS nnhh	0~ffff	
ТР	TP nnhh	0~ffff	
CS	CS nnhh	0~ffff	
СР	CP nnhh	0~ffff	nn: block number (hex)
Ν	N nnhh	0~ffff	
С	C nnhh	0~ffff	
Т	T nnhh	0~ffff	
R	R nnhh	0~ffff	
	B S N S TS TP CS CP N C	BB nnhh.ddSS d.dNN nnhh.ddSS dTSS dTPTS nnhhCSCS nnhhCPCS nnhhNN nnhhCCnnhhTT nnhhRR nnhh	Image: A stand bound

## RS232 AB

HMI COM1/2	AB PIN8
(Famale)	(Male)
3 TXD	4 RXD
2 RXD	7 TXD
5 GND	2 GND
•	

## **CompactLogix FreeTag Ethernet protocol**

Allen-Brandly CompactLogix

### **HMI Settings**

Items	Settings	Note
Protocol	Allen-Brandley FreeTag Ethernet/IP (CompactLogix)	
Connection	Ethernet	
Port No.	44818	

#### PLC Setting

Create new tags

Edit Yew Search Logic Communications	Icols Window Help						
🚔 🖬 🗸 🐴 🖺 🕫 🗠		🚽 🏕 💁 💁 💽 📝 💇 🔍	Q. Solect a Language	🖌 😥			
ne 🛛 🗸 🗐 RUN	LA_ Path AB_ET	TH-1\192.168.1.159\Backplane\D*	▼ 35				
droes	9						
dts 🔒 🖬 1/0	4 H H h	/ -1E -4E <> <0> <0>	F				
	E Contraction Free Principal Statement Prin	🖌 Add-On 🔏 Safety 🔏 Alarma 🔏 Bit	A Timer/Ci				
Controller Organizer V 🔍 🗮 🗙	Controller Tags - AB(c	controller)					ſĒ
🖉 Controller Tags	Scope: DAB	Shore All Tags		👻 😨 Enter Norce	Shu.		
Controller Faut Handler     Power-Up Handler	Name	Value	<ul> <li>Farce</li> </ul>	e Mask • Style	Data Type	Description	-
E Tasks	+ 6003	•	{}	() Decimal	INT[1000]		-
B 🖓 MainTask	(∓-Anax2D		()	() Decimal	DINT[25,5]		
B A Matteromer	T ArrayBool		()	() Decimal	B00L[256]		
🖉 Program Tags	+ AnayDINT		()	{} Decimal	DINT[130]		
Mankouche	+ AnayReal				REAL(125)		-
🛞 🖼 ppp			()	() Float			
Unscheduled Programs	± 8001		()	() Decimal	INT[15]		
🗟 🔄 Motion Groups	b1		2#0	Binary	BOOL		
- Call Ungrouped Axes	± 8131		{}	<pre>{} Decimal</pre>	B00L[256]		
B-C Data Types	±-8132		{}	{} Decimal	INT[256]		
B R User-Defined			()	()	TestTypeA		۰.
B C Strings	Contraction of the second				T .T D		×
Add-On-Defined	Monitor Tags (Edit	Tags /	<	14			>
R 🙀 Predefined	Program Tags - MainP						
in 🙀 Module-Defined	Program rags - scame	TVSTON			~0	-	
🗑 🧰 Trends	Scope: 🕞 MainProgram	<ul> <li>Show: All Tags</li> </ul>		👻 🏹, Enter Name	Stat		
E Configuration	Name	Value	<ul> <li>Faice</li> </ul>	Mask • Style	Data Type	Description	
CompactLogi:5323E-Q81 5y 1769-L23E-Q81 AD	aice	1.000	0	Decinal	BOOL	C-Cropping	-
□ 1769-L23E-Q81 Ab	- dive Fide		()		ALARM		
Ethernet				{}	AB:Embedded IQ16F.C.0		
E CompactBus Local			{}	{}			-
😑 🔄 Enbedded 1/0	Output_Light		1	Decimal	BOOL		
- f [1] Embedded IC	P8		0	Decinal	800L		
d Differentieto			0	Decimal	DINT		
C	Tony		0.0	Float	REAL.		

Export tags to CSV file. ([Tools] » [Export] » [Tags and Logic Comments])

👪 RSLogix 5000 - AB [1769-L23E-QB1 18.11]	* - [C	ontroller Tags - AB(contro	ller)]
Pile Edit View Search Logic Communication	s To	ols Window Help	_
		Options Security	• 😼 📴 🕼 🐨 🔍 Q
Rem Run  Bun Mode No Forces Controller OK	00  -   90	Documentation Languages	3.1.130\Backplane\0* 🗸 🗸
No Edits		Iranslate PLC5/SLC	+/+ -( )(U)(L)-
	Ľ	Import +	K Safety K Alarms K Bit K Tim
Controller Organizer 🚽 🕂 🗸	×	<u>E</u> xport	Tags and Logic Comments
🗐 🔄 Controller AB	×		Tags and Logic Comments Component
	×	<u>E</u> xport	Component
Controller AB		Export <u>Motion</u> Monitor Equipment Phases	Component
Controller AB Controller Tags Controller Fault Handler Power-Up Handler Tasks	× •	Export	Component
Controller AB		Export <u>Motion</u> Monitor Equipment Phases	Component

Import labels, please open [Communication] window and click [Import label];

Select csv file, all tags will be displayed as belows;

Commun	ication						×
Connec	tion:				PLC Connect	tion	
No. 1 2	Commu COM1 Ethernet	Protocol RS422	Device type MIT FX5U Allen-Bradley Free Tag Ether				
TagNam B B3 DINT F8 INT1 N N N N N N N N N N N R R A S	T1		DataType DINT[255] DINT[255] INT[255] INT[255] INT[255] INT[255] INT[255] INT[255] REAL[255] INT[255]	Description			
Tagnam	e:					确定	取消
Chan	nge communicat	tion parameters					
	Import	label	ОК	Cancel	Help		

#### Note:

Because in different region, the separation symbol is different, we suggest you check this before you want to import your tags. To open csv file as text format.

A	8	С	D	E	F	G	н	1	J	K	L	М	N	
TYPE	SCOPE	NAME	DESCRIPTI	DATATYPE	SPECIFIER	ATTRIBUT	TES						1000	
TAG		Local:1 <sup>C</sup>		AB Embed	ded_Discre	(External/	Access := Re	ad/Write)	1					
TAG		Local:1:1		AB:Embed	ded_Discre	(External/	Access := Re	ad/Write)						
TAG		Local:1 O		AB:Embed	ded_Discre	(External/	Access := Re	ad/Write)						
TAG		B3		DINT[255]		(RADIX =	Decimal, C	onstant :=	false, Ex	ternalAccess	= Read/Write	)		m
TAG		DINT1		DINT[255]		(RADIX :=	Decimal, C	onstant :=	false, Ex	ternalAccess	= Read/Write	)		
TAG		F8		DINT[255]		(RADIX :=	Decimal, C	onstant :=	false, Ex	ternalAccess	:= Read/Write	)		
TAG		INT1		INT[255]		(RADIX :=	Decimal, C	onstant =	false, Ex	ternalAccess	= Read/Write	)		
TAG		N		INT[255]		(RADIX :=	Decimal, C	onstant :=	false, Ex	ternalAccess	= Read/Write	)		
TAG		N7		INT[255]		(RADIX :=	Decimal, C	onstant :=	false, Ex	ternalAccess	:= Read/Write	)		
TAG		Nw		INT[255]		(RADIX :=	Decimal, C	onstant :=	false, Ex	ternalAccess	= Read/Write	)		
TAG		Nx		INT[255]		(RADIX :=	Decimal, C	onstant :=	false, Ex	ternalAccess	= Read/Write	)		
TAG		Nz		INT[255]		(RADIX :=	Decimal, C	onstant :=	false, Ex	ternalAccess	= Read/Write			
TAG		REAL1		REAL[255]		(RADIX :=	Float, Cons	tant := fal	se, Exten	nalAccess :=	Read/Write)			
TAG		S		INT[255]		(RADIX :=	Decimal, C	onstant =	false, Ex	ternalAccess	= Read/Write	)		

The directory of changing system settings: [Control Panel] -> [Date, Time, Language,and Regional Options] -> [Change the format of numbers, dates, and times]->[Customize]-> [List separator]. Please select [,] and export CSV file after setting.

#### Communication settings in HMI

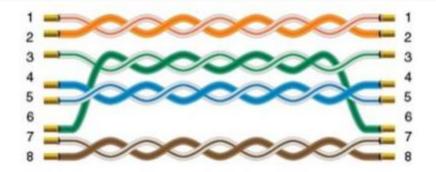
Enable HMI Ethernet in [Project Settings];

MMI IP		
IP:	192 . 168 . 1	. 66
Sub mask:	255 . 255 . 25	. 0
Gateway:	192 . 168 . 1	. 1

#### Set PLC IP in [Device IP] settings;

Protocol	Allen-Bradley Free Tag Ethemet/IP(Coi	TCP/IP parameters	×
		PLC IP Address: 192 . 168 . 1 . 100	
HMI Model	PI8102	PLC port No.: 44818	
COM:	None Setting	Network: TCP_Client_2N ~	
Device IP:	192.168.1.100:44818 Setting	Broadcast address	
Timeout:	( 1500, 50, 2, 3, 0, 0 ) Setting	Broadcast No.: 0	
		OK Cancel	

#### **Cable Wiring**



## MicroLogix 1200 protocol

The operational address is determined by the connection of Allen-Bradley PLC to HMI. For extension modules or other special conditions, refer to allen-Bradley PLC instruction manual. The following is an example of allen-bradley MicroLogix1200.

- **Bit address I:** The address ranges from 0.0 to 255.15. The value of the data before the decimal point ranges from 0 to 255 (decimal). The value from 0 to 15 after the decimal point is the sub address (decimal).
- **Bit address B:** The address ranges from 000.0 to fff.15. The first f from left to right represents the block number (hexadecimal); The second and third f from left to right represent the word address (hexadecimal). The value 0 to 15 after the decimal point represents the sub address (decimal).
- Word address S: The word address ranges from 0 to 255 (decimal).
- Word address TS: The address ranges from 000.0 to ffff. The first and second f from left to right represents the block number (hexadecimal); The third and fourth f from left to right represent the word address (hexadecimal).

PLC bit address type	Address format	Address range
I	dd.dd	l 0.0 ~ 255.15
0	dd.dd	O 0.0 ~ 255.15
В	fff.dd	B 000.0 ~ fff.15
S	dd.dd	S 0.0 ~ 255.15
Ν	ffff.dd	N 000.0 ~ fff.15
PLC word address type	Address format	Address range

**Note:** Register address TP, CS, CP, N, F and TS address edit are same. D indicates decimal, and F indicates hexadecimal. Different PLC models may support different registers. See the following table.

S	ddd	S0 ~ 255
TS	ffff	TS0 ~ FFFF
ТР	ffff	TP0 ~ FFFF
CS	ffff	CS0 ~ FFFF
СР	ffff	CP0 ~ FFFF
Ν	ffff	N0 ~ FFFF
F	ffff	F0 ~ FFFF

# **Create communication with Siemens PLC**

## **S7-200 Smart Ethernet Protocol**

Supported Series: Siemens S7-200 SMART Series Ethernet Module.

Website: http://www.siemens.com/entry/cc/en/

## **HMI Setting**

Items	Settings	Note
Protocol	Simens S7-200 Smart Ethernet	
Connection	Ethernet	
Port No.	102	
PLC station No.	2	
Address List		

Туре	Device register	HMI register	Format	Range	Note
	I	I	I ddddd.o	0.0~99999.7	
	Q	Q	Q ddddd.o	0.0~99999.7	
	V	VWbit	VWbit ddddd.o	0.0~999999.7	
	V	V	V ddddd.o	0.0~999999.7	
Bit	М	Μ	M ddddd.o	0.0~999999.7	
	SM	SM	ddddd.o	0.0~99999.7	
	S	S	ddddd.o	0.0~999999.7	Read only
	Т	Т	ddddd	0~99999	Timer state, read only
	С	С	ddddd	0~99999	Counter state, read only
	I	IW	IW ddddd	0~99999	
	Q	QW	QW ddddd	0~99999	
Word	AI	AIW	AIW ddddd	0~99999	
	AQ	VB	VB ddddd	0~99999	
	V	VW	VW ddddd	0~99998	VW0=VB (0~1) VW2=VB (2~3)

				Address value is a multiple of 2
V	VD	VD ddddd	0~99998	VD0=VB (0~3) VD2=VB (4~7) Address value is a multiple of 4
Μ	MB	MB ddddd	0~99999	
Μ	MW	MW ddddd	0~99999	MW0=MB(0~1) MW2=MB(2~3) Address value is a multiple of 2
Μ	MD	MD ddddd	0~99999	MD0=MB(0~3) MD4=MB(4~7) Address value is a multiple of 4
Т	TW	TW ddddd	0~99999	Value of timer
С	CW	CW ddddd	0~99999	Value of counter
W	SW	SW ddddd	0~99999	

## **Communication Settings**

Enable HMI Ethernet in [Project Settings];

HMI IP				
IP:	192 .	168 .	1 .	66
Sub mask:	255	255	255	0
Gateway:	192 .	168 .	1	1

Set PLC IP in [Device IP] settings;

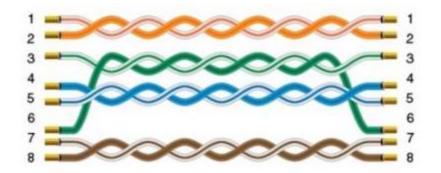
			TCP/IP parameters	$\times$
Protocol	Siemens S7-200 Smart(Ethernet)		RICIR Advers 102 100 1 202	
HMI Model	PI8070		PLC IP Address: 192 . 168 . 1 . 202 Ploport No.: 102	
COM:	None	Setting	Network: TCP_Client_2N ~	
Device IP:	192.168.1.202:102	Setting	Broadcast address	
Timeout:	(1500, 50, 2, 3, 0, 0)	Setting	Broadcast No.: 0	
			OK Cancel	

- PLC IP Address: PLC IP
- PLC pot No.: 102(fixed)
- Network:TCP\_Client\_2N(fixed)

Timeout	×
Wait Timeout(ms): 1500	
Receive Timeout(ms): 50	
Retry Count: 2	
Retry Timeout(s): 3	
Delay Time(ms): 0	
Continuous Length: 0	
OK Cancel	

• Wait timeout: depend on actual network situation (more than 1500 ms)

### **Cable Wiring**



## **S7-300 Ethernet Protocol**

## Supported Series: Siemens S7-300 series PLC

## HMI Setting

Items	Settings	Note
Protocol	Simens S7-300 Ethernet	
Connection	Ethernet	
Port No.	102	
PLC station No.	2	Need to be same as the PLC setting

#### Address List

Туре	Device register	HMI register	Format	Range	Note
	1	I	l ddddd.o	0.0~99999.7	
Bit	Q	Q	Q ddddd.o	0.0~99999.7	
Dit	Μ	Μ	M ddddd.o	0.0~99999.7	
	DB0.DB~DB99.DB	DBxDBD	DBxDB nndddd.o	0.0~99999999.7	nn: block number; dddd: address;
	I	IVV	IW ddddd	0~99999	
	Q	QW	QW ddddd	0~99999	
		MB	MB ddddd	0~99999	
Word	М	MW	MW ddddd	0~99999	MW0=MB(0~1) MW2=MB(2~3) Address value is a multiple of 2

		MD	MD ddddd	0~99999	MD0=MB(0~3) MD4=MB(4~7) Address value is a multiple of 4
	DB0.DB~DB99.DB	DBxDBB	DBxDBB nndddd	0~99999999	
		DBxDBW	DBxDBW nndddd	0~99999999	nn: block number; dddd: address
		DBxDBD	DBxDBD nndddd	0~99999999	

### **Communication Settings**

Enable HMI Ethernet in [Project Settings];

HMI IP				
IP:	192 .	168 .	1.	66
Sub mask:	255 .	255 .	255 .	0
Gateway:	192 .	168 .	1.	1

### Set PLC IP in [Device IP] settings;

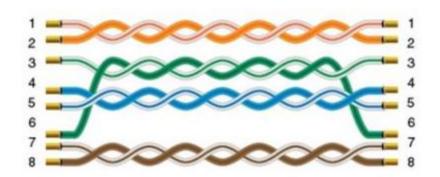
COM	Linemer		TCP/IP parameters	$\times$
Protocol	Siemens S7-300 Ethernet		PLC IP Address: 192 . 168 . 1 . 202	
HMI Model	PI8070		PLC port No.: 102	
COM:	None	Setting	Network: TCP_Client_2N V	
Device IP:	192.168.1.202:102	Setting	Broadcast address	
Timeout:	(1500, 50, 2, 3, 0, 0)	Setting	Broadcast No.: 0	
			OK Cancel	

- PLC IP Address: PLC IP •
- •
- PLC pot No.: 102(fixed) Network:TCP\_Client\_2N(fixed) •

Timeout	×
Wait Timeout(ms): 1500	]
Receive Timeout(ms): 50	]
Retry Count: 2	
Retry Timeout(s): 3	]
Delay Time(ms): 0	]
Continuous Length: 0	]
OK Cancel	

• Wait timeout: depend on actual network situation (more than 1500 ms)

## **Cable Wiring**



## **S7-1200 Ethernet Protocol**

Supported Series: Siemens S7-1200

#### **HMI Setting**

Items	Settings	Note
Protocol	Siemens S7-1200	
Connection	Ethernet	
Port No.	102	

PLC station No.	2	

## Address List

Туре	Device register	HMI register	Format	Range	Note
	1	I	M d.o	d:09999 o:0-7	
	Q	Q	Q d.o	d:09999 o:0-7	
Bit	М	Μ	M d.o	d:09999 o:0-7	
	DB0.DB- DB99.DB	DBxDB	DBxDBnndddd.o	nn:0-9999, dddd:0- 9999, o:0-7	nn:DB No. dddd:address value o: digit address
	Μ	MB	MB d	d:0-99999	
	М	MW	MW d	d:0-99999	MW0=MB(0~1) MW2=MB(2~3) Address value is a multiple of 2
Word	Μ	MD	MD d	d:0-99999	MD0=MB(0~3) MD4=MB(4~7) Address value is a multiple of 4
	I	IW	IW d	d:0-99999	
	Q	QW	QW d	d:0-99999	
	DB0.DB- DB99.DB	DBxDBB	DBxDBBnndddd	nn:0-9999	nn:DB No. dddd:address value

			dddd:0- 9999	
DB0.DB- DB99.DB	DBxDBW	DBxDBWnndddd	nn:0-9999 dddd:0- 9999	nn:DB No. dddd:address value Address value is a multiple of 2
DB0.DB- DB99.DB	DBxDBD	DBxDBDnndddd	nn:0-9999 dddd:0- 9999	nn:DB No. dddd:address value Address value is a multiple of 4

#### **Communication Settings**

Enable HMI Ethernet in [Project Settings];

IP:	192 .	168 .	1 .	66
Sub mask:	255 .	255 .	255 .	0
Gateway:	192 .	168 .	1 .	1

#### Set PLC IP in [Device IP] settings;

COM	Ethemet	TCP/IP parameters ×
Protocol	Siemens S7-1200 Ethemet	PLC IP Address: 192 . 168 . 1 . 202
HMI Model	P18070	PLC port No.: 102
COM:	None Setting	Network: TCP_Client_2N ~
Device IP:	192.168.1.202:102 Setting	Broadcast address
Timeout:	(1500, 50, 2, 3, 0, 0) Setting	Broadcast No.: 0
		OK Cancel

#### Note:

- The S7-1200 supports simultaneous connection of three devices, so the driver supports simultaneous access to PLC by three touch screens.
- HMI access PLC, use S7 protocol, access PLC TSAP 02.01 (S7-1200 PROFINET interface only supports three connections, the default support), detailed reference to the system manual of S7-1200.
- S7-1200 String type, the default first two bytes are used to store the maximum character and valid characters, so the text data will be shifted back one word address. When interacting with the data, what way this address plc is displayed with is unknown. And because of an extra word of data causes us to display the wrong. The solution

is if we use String, then the actual data address we want to operate on is actually shifted back two bytes, so as long as the address on the project is shifted back 2 bits to correspond with the actual data address.

• HMI operation character length needs to be set to 2 times the length of the Siemens character for proper display.

#### **PLC Settings**

#### Add BD

• Please uncheck [Symbolic access only] option;

ata_block_2					
-	Type:	Global DB	<u>.</u>	14	
	Language:	DB	*	222	
organization block	Number:	3 \$			
(08)		Manual			
-		Automatic			
		Symbolic access	only		
		the first should be a set of the should be			
Function	Description:				
block	Data blocks (DBs	) are data areas in the prog	ram that contain	user data.	
	Data blocks (DBs Select one of the - A global data bl	) are data areas in the prog following types: ock	ram that contain	user data.	
block	Data blocks (DBs Select one of the	) are data areas in the prog following types: ock	ram that contain	user data.	
block	Data blocks (DBs Select one of the - A global data bl	) are data areas in the prog following types: ock	ram that contain	user data.	
block (FB)	Data blocks (DBs Select one of the - A global data bl	) are data areas in the prog following types: ock	ram that contain	user data.	
block (FB)	Data blocks (DBs Select one of the - A global data bl	) are data areas in the prog following types: ock	ram that contain	user data.	
block (FB)	Data blocks (DBs Select one of the - A global data bl	) are data areas in the prog following types: ock	ram that contain	user data.	
block (FB)	Data blocks (DBs Select one of the - A global data bl	) are data areas in the prog following types: ock	ram that contain	user data.	
block (FB)	Data blocks (DBs Select one of the - A global data bl	) are data areas in the prog following types: ock	ram that contain	user data.	

Address settings, using BD2 as example.

- DBxDBB2xxxx, DBxDBW2xxxx, DBxDBD2xxxx for accessing data of DB2 in B1.
- 2 represent DB block number
- xxxx represent address

Such as:

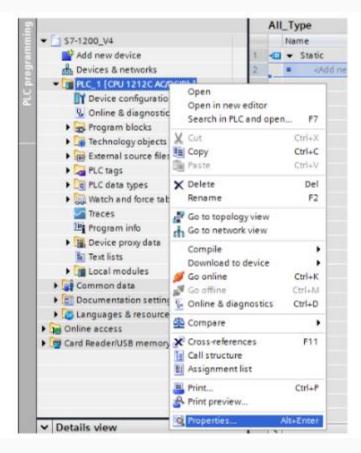
- DBxDBB20000 = DB2.DBB0
- DBxDBW20004 = DB2.DBW4

0	1	-	p 💀 💀 🕅						
		D	ata_block_1						
dBusTcp_Sample			Name	Data type		Offset	Initial value	Retain	Comm
Add new device		1							
Devices & Networks		2	B1	Byte		0.0	0		
PLC_1 [CPU 1211C AC/DC/Rly]		3	81_1_1	Word	+	2.0	0		
Y Device configuration									
😼 Online & diagnostics									
Program blocks									
Add new block									
🖀 Main (081)									
2 PAC [F8500]	Ξ								
Data_block_1 [DB2]									
PAC_DB [DB1]									
PAC_TXRx_Buffer [DB502]									
Technological Objects									

#### How to connect with S7-1200 Firmware V4.0

PLC configuration

- Double click [device configuration] in Siemens via software
- Double click [protection] to enter protection configuration screen



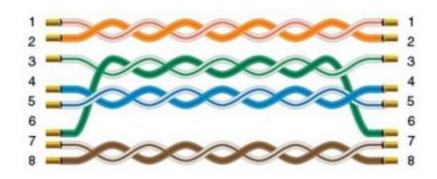
• Check [Permit access with PUT / GET communication from remote partner (PLC, HMI, OPC, ...)]

<ul> <li>General</li> </ul>	Select the access level for the PLC.					
Project information						
Catalog information	Access level		Access		Access permission	
identification & Maintenance		HM	Read	Write	Pessword	
<ul> <li>PROFINET interface</li> </ul>	<ul> <li>Full access (no protection)</li> </ul>		1	1	la la	
General	Read access		j.	*		
Ethemet addresses	HMI access		*			
Time synchronization	No access (complete protection)					
Operating mode	O no access (comprete protection)					
<ul> <li>Advanced options</li> </ul>						
Hardmare identifier						
DISIDO6	Full access (no protection):					
AI2	<ul> <li>TA Portal users and HM applications will No password is required.</li> </ul>	have access to a	Il functions.			
High speed counters (HSC)	No password is required.					
Pulse generators (PTO/PVM)	-					
Startup						
Cycle						
Cycle						
Cycle Communication load System and clock memory						
Cycle Communication load System and clock memory						
Cycle Communication load System and clock memory Web server Time of day						
Cycle Communication load System and clock memory Web server	Connection mechanisms					
Cycle Communication load System and clock memory Web server Time of day User interface languages	Connection mechanisms					
Cycle Communication load System and clock memory Web server Time of day User interface languages					stemote partner (FLC, H&B, OPC,)	

#### DB settings

- Right click [DB], select [properties]
- Uncheck [optimized block access]

### **Cable Wiring**



## **S7-XXX Ethernet Protocol**

Supported Series: Siemens S7-400, S7-1200 and S7-1500

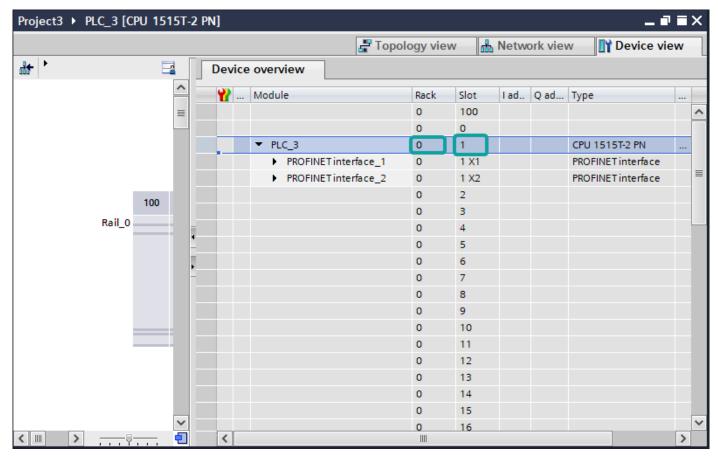
#### HMI Setting

Items	Settings	Note
Protocol	Siemens S7-XXX	

Connection	Ethernet	
Port No.	102	
Device No.	Slot (Default 1 for S7-1500/ 2 for S7-1200/ 3 for S7-400)	
HMI No.	Rack (Default as 0)	

Slot from TIA Portal is equal to Device No. of PIStudio

Rack from TIA Portal is equal to HMI No. of PIStudio



Commun	ication				$\times$
Connec	tion:			PLC Connection	
No.	Commun.	Protocol	Device type		
1	Ethernet		SIEMENS S7-xxx Ethernet		
	New	Delete	Setting	Did not find any wiring instructions!	
Station	No.				
	HMI No.:	0	Device No.: 1		
СОМ		Ethernet			
Protocol		SIEMENS S7-xxx E	thernet	HMI Pin definition:	
HMI Mod	del	PI3070ig		]	
COM:		None	Setting		
Denies 1	<b>D</b> _	192.168.1.202:10			
Device I	P:	192.100.1.202.10	)2 Setting	_	
Timeout	:	(1500, 50, 2, 3, 0	), 0 ,5) Setting		
Chang		ation parameters (			
	User-Defi	ned protocol	ОК	Cancel Help	

#### Address List

Туре	Device register	HMI register	Format	Range	Note
	I	I	M d.o	d:099999 o:0-7	
Bit	Q	Q	Q d.o	d:099999 o:0-7	
	Μ	Μ	M d.o	d:09999	

				o:0-7	
	DB0.DB- DB99.DB	DBxDB	DBxDBnndddd.o	nn:0-9999, dddd:0- 9999, o:0-7	nn:DB No. dddd:address value o: digit address
	Μ	MB	MB d	d:0-99999	
	М	MW	MW d	d:0-99999	MW0=MB(0~1) MW2=MB(2~3) Address value is a multiple of 2
	М	MD	MD d	d:0-99999	MD0=MB(0~3) MD4=MB(4~7) Address value is a multiple of 4
	I	IW	IW d	d:0-99999	
Word	Q	QW	QW d	d:0-99999	
	DB0.DB- DB99.DB	DBxDBB	DBxDBBnndddd	nn:0-9999 dddd:0- 9999	nn:DB No. dddd:address value
	DB0.DB- DB99.DB	DBxDBW	DBxDBWnndddd	nn:0-9999 dddd:0- 9999	nn:DB No. dddd:address value Address value is a multiple of 2
	DB0.DB- DB99.DB	DBxDBD	DBxDBDnndddd	nn:0-9999 dddd:0- 9999	nn:DB No. dddd:address value Address value is a multiple of 4

## **Communication Settings**

Enable HMI Ethernet in [Project Settings];

MMI IP		
IP:	192 . 168 . 1 . 66	
Sub mask:	255 . 255 . 255 . 0	
Gateway:	192 . 168 . 1 . 1	

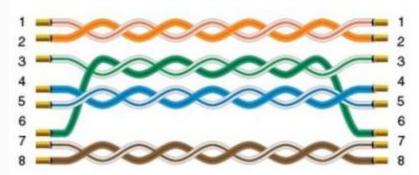
#### Set PLC IP in [Device IP] settings;

COM	Ethernet	TCP/IP parameters	$\times$
Protocol	Siemens S7-1200 Ethernet	PLC IP Address: 192 . 168 . 1 . 202	
HMI Model	P18070	PLC port No.: 102	
COM:	None Setting	Network: TCP_Client_2N V	
Device IP:	192.168.1.202:102 Setting	Broadcast address	
Timeout:	(1500, 50, 2, 3, 0, 0) Setting	Broadcast No.: 0	
		OK Cancel	

#### Note:

- The S7-1200 supports simultaneous connection of three devices, so the driver supports simultaneous access to PLC by three touch screens.
- HMI access PLC, use S7 protocol, access PLC TSAP 02.01 (s7-1200 PROFINET interface only supports three connections, the default support), detailed reference to the system manual of S7-1200.

#### **Cable Wiring**



## **LOGO Ethernet Protocol**

Supported Series: Siemens Logo 0BA0, 0BA1 series

#### **HMI Settings**

Items	Settings	Note	

Protocol	Siemens LOGO	
Connection	Ethernet	
Port No.	102	
PLC station No.	2	

## Address List

Number	Address Type	Data Type	Range	DB Address	PLC Address
1	RTC	Word	1-7	DB1.DBX984.0	0x001ec0
2	VB	Byte	0-1469	DB1.DBX0.0	0x000000
3	VD	Double Word	0-1466	DB1.DBX0.0	0x000000
4	VW	Word	0-1468	DB1.DBX0.0	0x000000
5	NAQ	Word	1-32	DB1.DBX1406.0	0x002bf0
6	NAI	Word	1-64	DB1.DBX1262.0	0x002770
7	AM	Word	1-64	DB1.DBX1118.0	0x0022f0
8	AQ	Word	1-16	DB1.DBX1072.0	0x002180
9	AI	Word	1-16	DB1.DBX1032.0	0x002040
10	I	Bit	1-64	DB1.DBX1024.0	0x002000

11	Q	Bit	1-64	DB1.DBX1064.0	0x002140
12	М	Bit	1-112	DB1.DBX1104.0	0x002280
13	NI	Bit	1-128	DB1.DBX1246.0	0x0026f0
14	NQ	Bit	1-128	DB1.DBX1390.0	0x002b70
15	V	Bit	0-14697	DB1.DBX0.0	0x000000

## PLC Settings in LOGO Software:

Click [Tools]--[Ethernet Connections], shown as below.

## M LOGO!Soft Comfort

<u>File Edit Format View</u>	Tools	<u>W</u> indow <u>H</u> e	elp		_		
📑 ± 💽 🦻 🖩 🚍		T <u>r</u> ansfer			>	Ē.	<b>h</b> ?
Diagram Mode	<b>a</b> .	Determine LO	F2				
Tools		Select <u>H</u> ardw	are	Ctrl+H			
✓ Diagrams		Compara		Ctrl+Minus	-[		<u>∏</u> +⊦
💣 Add New Diagram		Compare		Ctri+Minus		a 🗄	
5° Circuit Diagram1	DTD- SIM	Simulation		F3		1 X	
		Simulation Par	rameters				
	ß	Connect Mod	em		-		
	a	Disconnect M					
			_				
	ф.	Ethernet Conr			-		
		Parameter VI	Mapping		_		
		Options					
			. : : : :		: :		
✓ Instructions				· · · · · · ·			
Instructions		<b>^</b>		· · · · · · · ·	• •		
▼ Constants ▼ Digital							
Input							
	Cursor key						
F LOGO! TD	LOGO! TD Function key						
	Shift register bit						
	Status 0 (low)						
Q Output	Status 1 (high)						
× Open con							
<pre></pre>		>					

Set Ethernet connection parameter. IP, Subnet Mask, shown as below.

		×	
Module Address			
IP Address	192.168. 54. 55	]	
Subnet Mask:	255.255.255. 0	]	
Default gateway	192.168.54.1	]	
Ethernnet connecti			
	tion1(S7 Client of19	2. 168. 54. 66)	
	ОК	Cancel Help	

**TSAP set**: The value set by local TSAP is the remote TSAP set in HMI. PLC's remote TSAP is the opposite, shown as below.

×		
Module Address	Connection1(S7 Client of192.168.54.66)	×
IP Address 192.168.54.55 Subnet Mask: 255.255.255.0	Local Properties (Client) TSAP: 20.00	
Default gateway 192.168. 54. 1	Durante Descenting (Secure)	
Ethernnet connections Ethernet Connections Ethernet Connections Connection1 (S7 Client of192.168.54.66)	Remote Properties (Server)	
	ID Address (Local) Length (1	Bytes) Direction Address (Remote) Length (Bytes)
	1 VB 🕶	
OK Cancel Help		
		OK Cancel Help

**Download Project**: Click "Address book" to add the IP address to be downloaded (fi."Detect" to check whether the IP address can be detected. Then click "ok", and the system will prompt that PLC will be "STOP" mode. Click "YES" to start download.

192. 168. 54. 55 255. 255. 255. 0 192. 168. 54. 1 E0−DC−A0−6B−0F−3C	∼ Realtek PCIe GBE Family Co	ntroller v
Target IP address: 192.168.54.55       Address book         Address book         MAC address Device Type         IP Address Subnet Mask Gateway MAC address Device Type         192.168.54.55       255.255.255.0       192.168.54.1       E0-DC-A0-6B-0F-3C         Copy to SD card       In order to protect plants, systems, machines and networks against cyber threats, it is necessary to		
Target IP address:       192.168.54.55       Address book         Accessible LOGO!       Image: Tread address for the start of th		
Target IP address: 192.168.54.55       Address book         Address book         MAC address Device Type         192.168.54.55       255.255.255.0       192.168.54.1       E0-DC-A0-6B-0F-3C         Image: Copy to SD card       Image: Copy to SD card       Image: Copy to SD card	~	<b></b>
Accessible LOGOI:          Name       IP       Address       Subnet Mask       Gateway       MAC address       Device Type         192.168.54.55       255.255.0       192.168.54.1       EO-DC-AO-6B-OF-3C         Copy to SD card       In order to protect plants, systems, machines and networks against cyber threats, it is necessary to	Test	
Accessible LOGOI:          Name       IP       Address       Subnet Mask       Gateway       MAC address       Device Type         192.168.54.55       255.255.255.0       192.168.54.1       EO-DC-AO-6B-OF-3C         Copy to SD card       In order to protect plants, systems, machines and networks against cyber threats, it is necessary to	Idress: 102 168 54 55	ss book
192. 168. 54. 55 255. 255. 255. 0 192. 168. 54. 1 E0−DC−A0−6E−0F−3C	Autos. 132.100.34.33	55 000K
Copy to SD card In order to protect plants, systems, machines and networks against cyber threats, it is necessary to	Subnet Mask Gateway MAG	
Copy to SD card In order to protect plants, systems, machines and networks against cyber threats, it is necessary to	255, 255, 255, 0 192, 168, 54, 1 E0-DC-/	A0-6B-0F-3C
In order to protect plants, systems, machines and networks against cyber threats, it is necessary to		
implement - and continuously maintain - a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept. For more information about industrial security, please visit http://www.siemens.com/industrialsecurity.		
	uously maintain - a holistic, state-of-the-art ind I solutions only form one element of such a co	dustrial security concept. ncept. For more information

## **HMI** Communication Settings

Set PLC IP in [Device IP] settings;

ommuni	cation			
Connect	tion:			PLC Connection
No. 1	Commun Ethernet	Protocol	Device type SIEMENS LOGO Ethernet	
-	Ethemet			
	New	Delete	Setting	Did not find any wiring instructions!
Station I	No. HMI No.: 0	)	Device No.: 2	
ЮМ	I	Ethernet		
rotocol	•	SIEMENS LOGO Eth	ernet	HMI Pin definition:
IMI Mod	el I	PI3070ig		The Fill Generation.
COM:	[	Vone	Setting	
evice IP	·: [	192.168.54.55:102	2 Setting	
Timeout:	:	1500, 50, 2, 3, 0,	0 ,5) Setting	
Chang	ie communica	tion parameters (		
_ chang		ed protocol	ОК	Cancel Help

Enable HMI Ethernet in [Project Settings];

Home	Rroject ₹											PISt
Communication Mapping Text E-Mail Project Settings Shape Address A Font pack Settings Library			U Bit Alam	larm 🕂 H	istoŋ	y XY Plot	E R	Messag Traditio	ePro		Cloud	<ul> <li>Project Wi</li> <li>Preview W</li> <li>Compiling</li> </ul>
Screen Pre	:view	Project Settings Project Settings Project Settings Project Settings IP: Sub mas Gateway DNS1 DNS2	k:	talment E 192 255 192 0 0	. [1 . [2 . [1 . [0	d Sec 168 255 168	:urit; ] . ] . ] .	y 54 255 54 0 0	]. ]. ].	66 0 1 0	] ] ]	

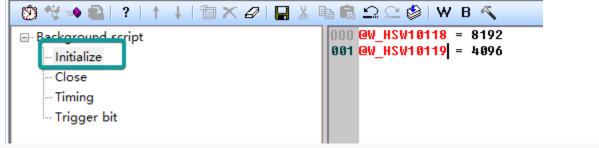
**TSAP** setting

- Regarding the setting of PLC TSAP, HMI provides system special address for setting, it is recommended to run in HMI script initialization, write PLC TSAP to corresponding system special register.
- HSW10118/HSW1200 = local TSAP of HMI, this is remote TSAP of PLC.
- HSW10119/HSW1201 = Remote TSAP of HMI, this is local TSAP of PLC.
- PI, PI+, i series (1.0 system): use HSW10118, HSW10119.
- ie, ig series: use HSW1200, HSW1201.

HMI V2.0: use HSW1200, HSW1201.

#### Note:

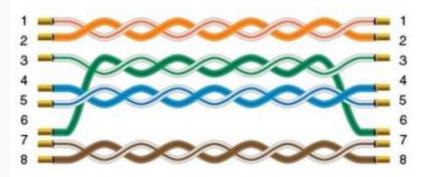
- The data of TSAP is hexadecimal format. For example: the remote TSAP configured in the PLC is set to 20.00, then HSW10118/HSW1200 should be set to 0x2000, that is, HSW10118/HSW1200=8192.
- HSW10119/HSW1201 is set up as shown.



	🕲 😤 🔹   ?   † 🕴 🕲 X 🖉   🔒	🀰 🖻 🛱 <u>그</u> 오 🕸 🛛 W B 🔨
•	<ul> <li>Background script</li> <li>Initialize</li> <li>Close</li> <li>Timing</li> <li>Trigger bit</li> </ul>	000 <mark>aw_HSW1200 = 8192</mark> 001 <mark>aw_HSW1201 = 4096</mark>

- Al word address and Ibit address are read-only and cannot be written on HMI.
- VW address should be even number address, such as VW0, VW2, VW4..., because in the address rule of Siemens PLC, the value of odd number address is equal to the value of previous even number address. For example VW1 = VW0.
- VD address should be multiple of 4, because it occupies two VW addresses, such as VD0, VD4, VD8...
- Written value of RTC cannot exceed 255.

#### **Cable Wiring**



## S7-300 232

#### HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	SIEMENS S7-300		
PLC I/F	RS232		
Baud rate	19200	9600,19200	
Data bits	8		

Parity	Odd	
Stop bits	1	
PLC sta. no.	2	Must be same as the PLC setting.

**Device Address** 

Bit/Word	Device type	Format	Range	Memo
Bit	I	DDDDo	0 ~ 40957	Input (I)
Bit	Q	DDDDo	0 ~ 40957	Output (O)
Bit	М	DDDDo	0 ~ 40957	Bit Memory
Word	DB1 to DB99	DDDDDo	0 ~ 655327	
Word	IW	DDDD	0 ~ 4095	Input (I)
Word	QW	DDDD	0 ~ 4095	Output (O)
Word	MW	DDDD	0 ~ 4095	Bit Memory
Double word	MD	DDDD	0 ~ 4094	
Double word	DBDn	FFFFFDDDD	0 ~ 655359999	Data Register Double Word (must be even)
Byte	MB	DDDD	0 ~ 4095	Bit Memory Byte
Cable Wiring				

#### Siemens S7-300PLC 232 S7-300 RS232 HMI com1 9 pin (female) 9 pin D-SUB (male) 2 RXD 3 TXD — - 3 2 RXD ------TXD -5 GND 5 GND -----7 8 54321 9878 o ( 0

# **Create communication with Mitsubishi PLC**

# FX1S, 1N, 2N Series Protocol

Supported Series: Mitsubishi FX1S, FX1N, FX2N series

#### **HMI Settings**

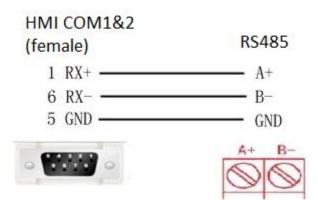
Item	Settings	Note
Protocol	Mitsubishi FX1S/FX1N/FX2N	
Connection	RS422/RS485/RS232	
Baud rate	9600~115200	
Data bit	7/8	
Parity	EVEN/Odd/None	
Stop bit	1/2	
PLC station No.	1~255	

**Address List** 

Туре	Device registers	HMI registers	Format	Range	Note
	Х	Х	Хо	0~303237	
	Y	Υ	Υo	0~303237	
	М	Μ	M d	0~99999	
Bit	Т	Т	Τd	0~99999	
	С	С	C d	0~99999	
Word	S	S	Sd	0~99999	
	SM	SM	SM d	8000~9999	
	Х	Х	Хо	0~303237	
	Υ	Υ	Yо	0~303237	
	М	Μ	M d	0~99999	
	т	Т	Τd	0~99999	
	С	С	C d	0~199	
	D	D	D d	0~7999	
	S	S	S d	0~99999	
	SD	SD	SD d	8000~9999	

#### **Cable Wiring**

• RS485





• RS422

RS422 Mitsubishi FX HMI COM1	
(Female)	PLC PIN8 (Male)
1 TX+ 6 TX- 9 RX+ 8 RX- 5 GND	2 RX+ 1 RX- 7 TX+ 4 TX- 3 SG

**Note:** COM3 only available in PI8000/PI9000 series.

# FX3U/3G/3GA serial protocol

### **HMI Settings**

Item	Settings	Note
Protocol	Mitsubishi FX3U/3G/3GA	
Connection	RS422	
Baud rate	9600~115200	
Data bit	7/8	
Parity	EVEN/Odd/None	
Stop bit	1/2	
PLC station No.	1~255	

Address List

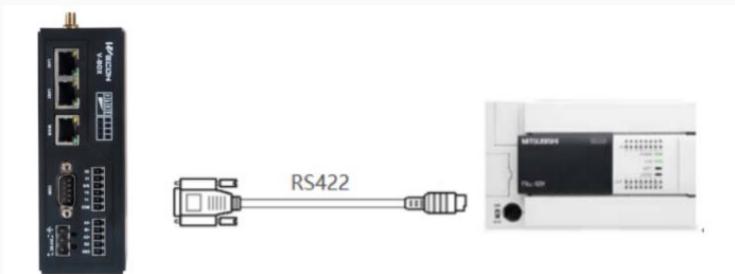
Туре	Device registers	HMI registers	Format	Range	Note
	Х	Х	Хо	0~303237	
	Y	Υ	Υo	0~303237	
	Μ	Μ	M d	0~99999	
Bit	т	Т	Τd	0~99999	
	С	С	C d	0~99999	
	S	S	Sd	0~99999	
	SM	SM	SM d	8000~9999	
	Х	Х	Хо	0~303237	
	Y	Υ	Yо	0~303237	
	Μ	Μ	M d	0~99999	
Word	т	т	Τd	0~99999	
	С	С	C d	0~199	
	D	D	D d	0~7999	
	S	S	Sd	0~99999	
	SD	SD	SD d	8000~9999	

Configure the communication protocol

General SeriesPI3070 PI3070HE PI3070N-2S PI3102H PI3102HEO° 90° 180° 270°Screen Resolution 800*480General SeriesPI3070N-2S PI3102H PI3102H-2S PI3102HEO° 90° 180° 270°Screen Resolution 800*480	Name:	HMIProject	
HMI Series:       HMI Model:       Angle       HMI H         General Series       PI3070       0       Screen Resolution 800*480         i Series       PI3070N-25       90°       180°         ig Series       PI3102       90°       180°         PI3102H       PI3102H       0°       Screen Resolution 800*480         Communication       PLC Manufacturer:       0°         Connection:       PLC Manufacturer:       (°)         COM1       Koyo       Liquid Level Meter       (°)         USB       MITSUBISHI FX2N       (°)       (°)         MITSUBISHI FX2N       (°)       (°)       (°)         MITSUBISHI FX3U Imitate       MITSUBISHI FX3U Imitate       (°)	Location:	C:\Users\29709\Deskto	p Browse
General Series       PI3070       0       Screen Resolution 800*480         i Series       PI3070N-25       90°       180°         ig Series       PI3102H       270°       Screen Resolution 800*480         Ormunication       PI3102H-25       270°       Screen Resolution 800*480         Communication       PLC Manufacturer:       Immunication       Immunication         Connection:       PLC Manufacturer:       Immunication         COM1       Koyo       Liquid Level Meter       Is         USB       Immunication       Immunication       Immunication         MITSUBISHI FX2N       Immunication       Immunication       Immunication         MITSUBISHI FX2N       Immunication       Immunication       Immunication         MITSUBISHI FX3U Immunication       Immunication       Immunication       Immunication         COM1       Koyo       Immunication       Immunication       Immunication         MITSUBISHI FX2N       Immunication       Immunication       Immunication       Immunication         MITSUBISHI FX3U Immunication       Immunication       Immunication       Immunication       Immunication         MITSUBISHI FX3U Immunication       Immunication       Immunication       Immunication       Immunication <td>HMI</td> <td></td> <td></td>	HMI		
i Series PI3070HE   ie Series PI3070N-2S   ig Series PI3102   PI3102H PI3102H-2S   PI3102HE PI3102HE   Communication Connection: PLC Manufacturer:   COM1 Koyo   COM2 Liquid Level Meter   LS MEGMEET   MITSUBISHI FX2N   MITSUBISHI FX2N   MITSUBISHI FX3U Imitate   MITSUBISHI FX2V	HMI Series:	HMI Model: Angle	HMI+
Connection:       PLC Manufacturer:         COM1       Koyo         COM2       Liquid Level Meter         LS       MEGMEET         MIKOM       MITSUBISHI FX2N         MITSUBISHI FX2N          MITSUBISHI FX3U/3G/3SA         MITSUBISHI FX3U Imitate         MITSUBISHI FX Protocol	i Series ie Series	PI3070HE PI3070N-2S PI3102 PI3102H PI3102H-2S	Screen Resolution 800*480
COM1       Koyo          COM2       Liquid Level Meter       LS         USB       MEGMEET       MKOM         MITSUBISHI FX2N           MITSUBISHI FX3U/3G/3SA           MITSUBISHI FX3U Imitate       MITSUBISHI FX Protocol			
COM2       Liquid Level Meter         Ethernet       LS         WEGMEET       MIKOM         MITSUBISHI FX2N       •         MITSUBISHI FX3U/3G/3SA       •         MITSUBISHI FX3U Imitate       •			
MITSUBISHI FX2N MITSUBISHI FX3U/3G/3SA MITSUBISHI FX3U Imitate MITSUBISHI FX Protocol	COM2 Ethernet	Liquid Level Meter LS MEGMEET MIKOM	
MITSUBISHI FX3U/3G/3SA MITSUBISHI FX3U Imitate MITSUBISHI FX Protocol			
	MITSUBISHI FX MITSUBISHI FX MITSUBISHI FX	BU/3G/3SA BU Imitate Protocol	

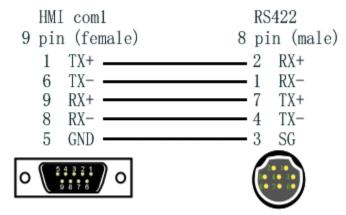
ommu	nication								
Connec	tion:				PLC	Connectio	on		
No. 1	Commu COM1	Protocol RS422	Device type MITSUBISHI FX3U/3G/3SA	СОГ	M port setting			×	
					Connection: R		~		
					Baud rate: 90	500	~	_	
	New	Delet	e Setting	_ /	Stop bits: 1		$\sim$	!	
		Delet	Security	_ /	Data bits: 7		$\sim$		
Station	No. HMI No.:	0	Device No.: 0		Parity: EV	/EN	$\sim$		
СОМ		COM1			ОК		Cancel		
Protoco	I	MITSUBISHI FX3	3U/3G/3SA					_	
HMI Mo	odel	PI3070	4		HM	I Pin defini	ition:		
COM:		(RS422,9600,1	, 7, EVEN ) Setting		11 PIN Defin	ition			
Device I	IP:	None	Setting	PIN			Definiti		1
Timeou	t:	( 300, 50, 2, 3, 0	), 0 ,5) Setting		RS422 TX+/RS485 A	PIN + 2	RS232 RXD	on	
	1			3	RS232 TXD	+ 2	GND		-
				6	RS422 TX-/RS485 B		RS422 RX-		-
				9	RS422 RX+				
									]
Char		cation parameter					1		
	User-Def	ned protocol	ОК	Cance	He	elp			

Wiring



Pin Definition Diagram

### MIT FX RS422



# **FX3U Ethernet Protocol**

#### Mitsubishi FX3U series PLC

#### **HMI Settings**

Items	Settings	Note
Protocol	Mitsubishi FX3U	
Connection	Ethernet	

Port No.	5009	Must be the same as the PLC setting
PLC station No.	0	

### Address List

Туре	Device registers	HMI registers	Format	Range	Note
	Х	Х	X 000	0~377	
	Υ	Y	Y 000	0~377	
	М	Μ	M DDDD	0~7679	
Bit	SM	SM	SM DDDD	8000~8511	
Word	S	S	S DDDD	0~4095	
	TS	TS	TS DDD	0~511	
	CS	CS	CS DDD	0~255	
	CN	CN	CN DDD	0~199	
	TN	TN	TN DDD	0~511	
vvoru	D	D	D DDDD	0~7999	
	SD	SD	SD DDDD	8000~8511	

#### **Ethernet Module Settings**

FX3U-ENET-L module configuration Set up the FX3U-ENET-L Ethernet module settings as follows. Select the module location, which in this document is Module 0.

FX3U-ENET-L Configuration Tool (Unset file)	- [Ethernet settings]			×
File View Help				
Ethernet Module settings Module None Module 0 Module 1 Module 2 Module 3 Module 4 E-mail settings				
Necessary setting( No setting / Already set ) Set if it is needed( No setting / Already set ) Online	Default Check			
Transfer setup PLC remote operation	on Diagnostics			
Write Read	Verify			
Ready	FX3U-ENET	-L	NUM	

Select "Operational setting" to enter the following screen.

The Ethernet module IP is set to 192.168.39.254 in this document, and other options are default.

JE FX3U-ENET-L Configuration Tool (Unset file) - [Ethernet operational settings]	-		×
<u>F</u> ile <u>V</u> iew <u>H</u> elp			
Communication data code			
P address Send frame setting			
Input format DEC.  C Ethernet(V2.0)			
IP address 192 168 39 254 (• IEEE802.3			
C Use the KeepAlive C Use the Ping			
End Cancel			
Ready	FX3U-ENET-L	NUM	

Select "Open setting" to enter the setting interface, the settings are as follows.

The third item "Protocol" selects TCP, and "Open system" selects MELSOFT connection, which allows the

Mitsubishi programming software GX works2 to communicate with the FX3U via the Ethernet module.

				Configuration Tool	(U	nset file) - [	Ethernet open set	ting	gs]				—		×
-		iew <u>I</u>													
Ļ					_			_							
		Proto	col	Open system		Fixed buffer	Fixed buffer communication procedure		Pairin open	_	Existence confirmatio		Host station Port No. (DEC.)	target	smissior device ddress
	1		•		•	-		•		•		•			
	2	TCP	•	MELSOFT connection	• •	• •		• •		• •		• •			
	4	TCP	+		•			-		-	No confirm	-	5009		
							End	]	Ca	nce	4				
<															>
Re	eady										FX3U-EN	NET	I-L NU	JM	1

Click on "transter setup" - "PC side I/F setting", see the following figure.

After setting, the first download must use the programming cable, as shown in the figure; after that, can use the IP set in the "Ethernet board" to communicate directly with the network cable.

🔢 FX3U-ENET-L Configuration Tool (Unset Re) - [Ethernet settings]	- 0 ×
Be View Help	
Eternet kode estings Wroke with person Set if is acceled; (bysichy / Altrady set ) Check Write Read Write Rea	
Ready (P31	U-ENET-L NUM

Read and write data from the Ethernet module

JE FX3U-ENET-L Configuration Tool (Unset file) - [Ethernet settings]	-		×
<u>File View H</u> elp			
Ethernet Module settings			
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Ready	FX3U-ENET-L	-	NUM	

## PLC Settings (GX Works 2)

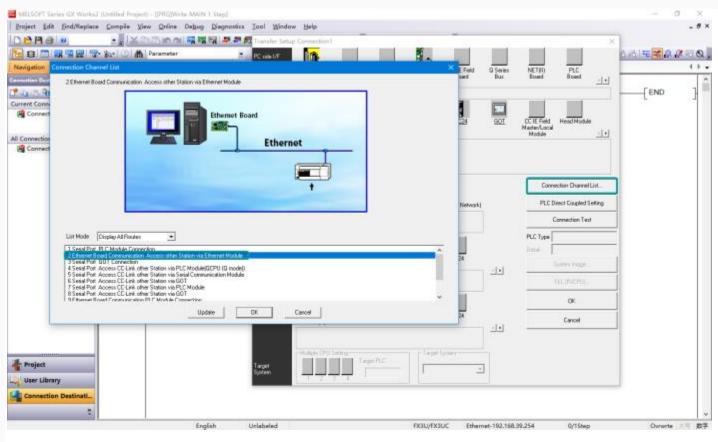
Create a blank FX5U project

Find Current Connection in the navigation

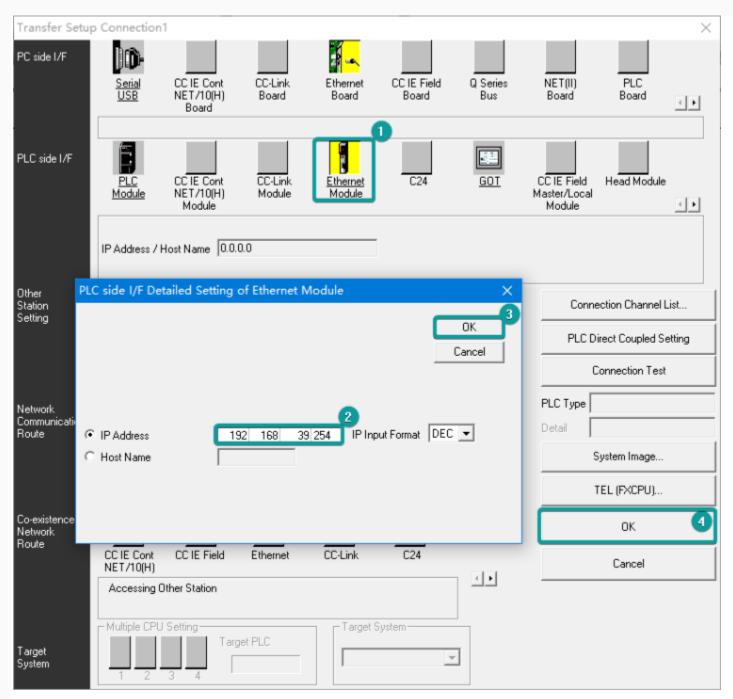
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Select Connection Channel List

Select Ethernet board communication



Select Ethernet Module Set the IP address of the PLC



Read or write PLC data, in this document is read

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# **FX5U Serial Port Protocol**

Mitsubishi FX5U series PLC

### HMI Settings

Item	Settings	Note
Protocol	Mitsubishi FX5U	
Connection	RS422/RS485	
Baud rate	9600	
Data bit	7	
Parity	Odd	

Stop bit	1	
PLC station No.	1~255	Need to be the same as PLC settings

### Address List

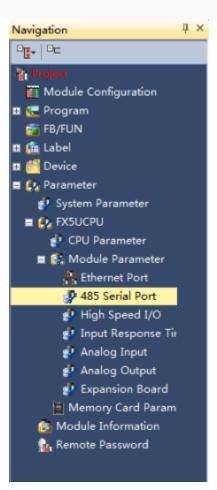
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	X	Х	Хо	0~303237	
	Y	Υ	Yо	0~303237	
	Μ	Μ	M d	0~99999	
	В	В	B h	0~7FFF	
	F	F	Fd	0~32767	
Bit	SB	SB	SB h	0~7FFF	
	TS	TS	TS d	0~1023	
	тс	тс	TC d	0~1023	
	STS	STS	STS d	0~1023	
	STC	STC	STS d	0~1023	
	CS	CS	CS d	0~1023	
	СС	СС	CC d	0~1023	

	SM	SM	SM d	0~9999
	L	L	Ld	0~32767
	S	S	S d	0~4095
	W	W	W h	0~3FF
	TN	TN	TN d	0~1023
	STN	STN	STN d	0~1023
	CN	CN	CN d	0~1023
Word	R	R	R d	0~32767
	SW	SW	SW h	0~7FFF
	Z	Z	Z d	0~23
	D	D	D d	0~7999
	SD	SD	SD d	0~11999

PLC Settings (GX Works 3)

Create a blank FX5U project

Find the 485 serial port module in the system navigation bar and double click to enter the settings.



Select protocol in the setting item, and set parameters.

Setting Item List	Setting Item	
Input the Setting Item to Search	ltem	Setting
Input the Second term to Search	Communication Protocol Type	Set communication protocol type.
	Communication Protocol Type	MC Protocol
1월 8월	Advanced Settings	Set detailed setting.
Basic Settings	- Data Length	7bit
Communication Protocol Type	- Parity Bit	Odd
Advanced Settings	Stop Bit	1bit
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	Explanation	
	Set sum check code.	~
ten Liel Find Rosult	Check Re	estore the Default Settings
		Apply

Set station number, and [Message Pattern] (Pattern 1 or Pattern 4)

Setting Item List	Setting item	
Input the Setting Item to Search	Item Setting Station Number Set the station number of the PLC.	
Basic Settings → Communication Protocol Type → Advanced Settings → Communication Protocol Type → Advanced Settings → Communication Protocol Type → Station Number → Message Fattern → Time out Pariod ⊕ SM/SD Setting	Station Number     Message Pattern     Message Pattern     Message Pattern     Message Pattern     Time-out Period     Set time-out period     10 ms	
	Explanation	
	Set the MC Protocol message pattern.	< >
tem List Find Result	Check Restore the Default Settings	
	Apply	

Click the [Apply] button to finish the setting.

Click download and select the items as below, then click [execute] to download the configuration to PLC.

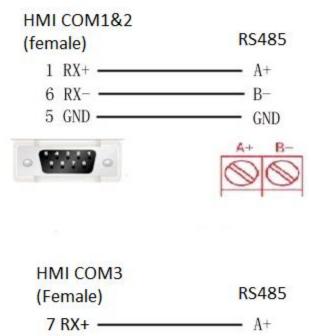
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As soon as download is completed, connect PLC with serial port, then configure it in the [Specify Connection Destination Connection].

Done.

#### **Cable Wiring**

• RS485







• RS422

RS422 Mitsubishi FX HMI COM1	
(Female)	PLC PIN8 (Male)
1 TX+ 6 TX- 9 RX+ 8 RX- 5 GND	2 RX+ 1 RX- 7 TX+ 4 TX- 3 SG
-	

**Note:** COM3 only available in PI8000/PI9000 series.

# **L02 Serial Protocol**

Mitsubishi L02 series CPU built-in serial port.

### **HMI Settings**

ltem	Settings	Note
Protocol	Mitsubishi L02	
Connection	RS422	
Baud rate	115200	
Data bit	8	
Parity	Odd	
Stop bit	1	
PLC station No.	1~255	Need to be the same as PLC settings
Address List		

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Х	Х	X h	0~FFFF	
Bit	Y	Y	Υh	0~FFFF	
Bit	М	М	M d	0~9999	
Bit	L	L	Ld	0~9999	
Bit	F	F	Fd	0~9999	
Bit	В	В	Βh	0~FFFF	
Bit	V	V	V d	0~2047	
Bit	тс	тс	TC d	0~9999	
Bit	SS	SS	SS d	0~9999	
Bit	SC	SC	SC d	0~9999	
Bit	CS	CS	CS d	0~9999	
Bit	СС	СС	CC d	0~9999	
Bit	SB	SB	SB h	0~FFFF	
Bit	SM	SM	SM d	0~2047	
Bit	STS	STS	STS d	0~1023	

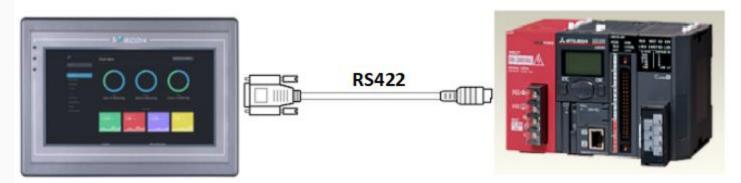
Bit	S	S	Sd	0~9999
Bit	DX	DX	DX h	0~FFFF
Bit	DY	DY	DY h	0~FFFF
Bit	TS	TS	TS d	0~9999
Bit	Dbit	Dbit	Dbit d.d	0~99999.0~15
Word	W	W	W h	0~FFFF
Word	TN	TN	TN d	0~99999
Word	SN	SN	SN d	0~99999
Word	CN	CN	CN d	0~99999
Word	R	R	R d	0~99999
Word	SW	SW	SW h	0~FFFF
Word	Z	Z	Zd	0~99999
Word	ZR	ZR	ZR h	0~FFFF
Word	D	D	D d	0~99999

**Communication Settings** 

New Project			×
1 Location and Nam	10		
Name:	HMIProject		
Location:	C:\Users\297	09\Desktop	Browse
2 нмі		•	
HMI Series:	HMI Model:	Angle HMI+	
General Series i Series ie Series ig Series	PI3070       ^         PI3070HE	90° 180° 270°	ution 800*480
3 Communication Connection:	PLC Manufacto MEGMEET MIKOM	urer:	^
Ethernet USB	MITSUBISHI MODBUS Modicon Nardi		~
MITSUBISHI FX MITSUBISHI FX MITSUBISHI L0 MITSUBISHI QJ	(2N 485BD/ADP 2 CPU Port		^
MITSUBISHI (J			~
	< 上一歩(B)	完成 取消	帮助

	tion:					PLC C	onnectio	n	
No. 1	Commu COM1	Protocol RS422	Device type MITSUBISHI L02 (		COM	port setting			×
						Connection: RS42	22	$\sim$	
					1	Baud rate: 1152	200	$\sim$	
						Stop bits: 1		$\sim$	
	New	Delete	Settir	ng		Data bits: 8		$\sim$	
Station N	No.					Parity: ODD	1	$\sim$	
	HMI No.: 0		Device No.: 0			ОК		Cancel	
COM	C	OM1							
Protocol	М	ITSUBISHI LO2	CPU Port						
HMI Moo	del PI	13070	4			HMI P	in defini	tion:	
COM:	(	RS422, 115200,	1, 8, ODD )	Setting					
Device II	P: N	lone		Setting	COM1	PIN Defini	tion		
		300, 50, 2, 3, 0,	0.5)		PIN	Definition	PIN	Definiti	on
	: (	500, 50, 2, 5, 0,	, 0, 3)	Setting		RS422 TX+/RS485 A+	2	RS232 RXD	
Fimeout						2000 mm	5	GND	
Fimeout:						RS232 TXD	_		
Fimeout:					6 1	RS422 TX-/RS485 B-	8	RS422 RX-	
Fimeout.					6 1		_	RS422 RX-	
Fimeout:					6 1	RS422 TX-/RS485 B-	_	RS422 RX-	
		ation parameter			6 1	RS422 TX-/RS485 B-	_	RS422 RX-	

### Cable Wiring



Pin Definition Diagram

R	6422		RS422		
9	RX+		SDA		
8	RX-		SDB		
1	ТХ+ —		RDA		
6	ТХ- —		RDB		
5	GND —		SG		
0 ( <sup>24221</sup> 5575) 0					

# L02 MELSEC (Ethernet) Protocol

Mitsubishi Q series CPU built-in Ethernet port.

#### **HMI Settings**

Items	Settings	Note
Protocol	MIT L02 CPU MELSEC	
Connection	Ethernet	
Port No.	1025	Must be the same as the PLC setting
PLC station No.	0	Must be the same as the PLC setting

#### Address List

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Х	Х	X h	0~FFFF	
Bit	Y	Υ	Y h	0~FFFF	
Bit	М	М	M d	0~9999	
Bit	L	L	Ld	0~9999	
Bit	F	F	Fd	0~9999	
Bit	В	В	B h	0~FFFF	
Bit	V	V	V d	0~2047	
Bit	тс	тс	TC d	0~9999	
Bit	SS	SS	SS d	0~9999	
Bit	SC	SC	SC d	0~9999	
Bit	CS	CS	CS d	0~9999	
Bit	СС	CC	CC d	0~9999	
Bit	SB	SB	SB h	0~FFFF	
Bit	SM	SM	SM d	0~2047	

Bit	STS	STS	STS d	0~1023
Bit	S	S	Sd	0~9999
Bit	DX	DX	DX h	0~FFFF
Bit	DY	DY	DY h	0~FFFF
Bit	TS	TS	TS d	0~9999
Bit	Dbit	Dbit	Dbit d.d	0~99999.0~15
Word	W	W	W h	0~FFFF
Word	TN	TN	TN d	0~99999
Word	SN	SN	SN d	0~99999
Word	CN	CN	CN d	0~99999
Word	R	R	R d	0~99999
Word	SW	SW	SW h	0~FFFF
Word	Z	Z	Zd	0~99999
Word	ZR	ZR	ZR h	0~FFFF
Word	D	D	D d	0~99999

Communication Settings

Enable HMI Ethernet in [Project Settings];

Set PLC IP in [Device IP] settings;

	Dharach	TCP/IP parameters	$\times$
COM	Ethemet	PLC IP Address: 192 . 168 . 1 . 10	
Protocol	MIT L02 CPU MELSEC PROTOCOL	PLC port No.: 1025	
HMI Model	P13070	Network: TCP_Client_2N ~	
COM:	None Setting	Broadcast address	
Device IP:	192.168.1.10:1025 Setting	Broadcast No.: 0	
Device IP:	192.168.1.10:1025 Setting		
Timeout:	(1500, 50, 2, 3, 0, 0) Setting	OK Cancel	

## PLC Settings (GX Works2)

Create a project

Set PLC IP, subnet mask and gateway;

Select [Binary Code] as communication data code;

meter s	Setting							
iame n Ethern	PLC System net Port Setting	PLC File	PLC RAS Built-in I/O Func	Boot File	Program	SFC	Device er Serial Setting	I/O Assignment
IP Addr	ress Setting				Open Setting	Ethernet C	Setting in Configuration wind	ow
		Input For	mat DEC	•	FTP Setting			
IP Ad	ddress	192	168 1	10	rir setting			
Subr	net Mask Pattern	255	255 255	0	Client Setting			
			· · ·	_	-mail Setting			
Defa	ault Router IP Address	192	168 1	1 -				
Commu	unication Data Code	_			DNS Setting			
	inary Code				Time Setting			
-	SCII Code						1	
			_		CC-Link IEF Ba	asic Setting		
	nable online change (FTF	, MC Protocol)						
E Di	sable direct connection t	to MELSOFT						
<b>—</b> •		(						
1 De	o not respond to search	for CPU (Built-	in Ethernet port) or	network				
-			188 1000 112	1. 1055				
	PLC Communication Sett		-IP packet transfe		1			
Sinc	ale PLC Communication S	etting	IP packet	transfer setting				
						Set if it is	needed( Default	/ Changed )
			15					
			- A					
nt Window	w Print Window	Preview	Ackno	wledge XY Assign	ment Def	ault C	heck	End Car

Set PLC port number, for example 1025

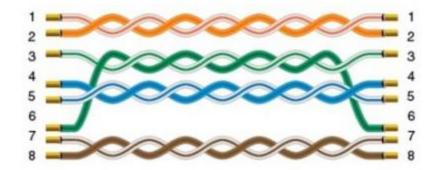
ľ							IP Ad	dress/Port No.	Input DEC -	]
		Protocol	Open System		TCP Connection	Host	Destination IP Address	Destination Port No.	Start Device to Store Predefined Protocol	
	1	TCP .	MC Protocol	¥		1025	ar Hourcas	Porcho.	Predenined Protocol	t -
	2	TCP .	MELSOFT Connection	•						1
	3			٠	•					
	4		MELSOFT Connection	٠						
	5		MELSOFT Connection	٠	•					
- <b>q</b>	6			٠	*					
	7			•	*					ł .
	8		MELSOFT Connection MELSOFT Connection	÷	*					ł .
	10		MELSOFT Connection	÷						ł .
	11			÷						t -
	12									1
	13			•	•					1
	14	TCP -	MELSOFT Connection	•						1
	15	TCP .	MELSOFT Connection	٠	*					1
	16	TCP -	MELSOFT Connection	•						]
3			No. will be displayed by th according to the selected n			Cancel				

Save settings;

Download project into PLC device;

Restart PLC device;

### **Cable Wiring**



# **QJ71C24N MELSEC Protocol**

Mitsubishi QJ71C24N communication module built-in serial port;

## **HMI Settings**

Items	Settings	Note
Protocol	MIT QJ71 MELSEC	
Connection	422	
Baud rate	9600	
Data bit	8	
Parity	ODD	
Stop bit	1	
PLC station No.	1~255	Need to be the same as PLC settings

Туре	Device registers	HMI registers	Format	Range	Note
	Х	х	X FFFF	0~1FFF	
	Y	Y	Y FFFF	0~1FFF	
Bit	М	Μ	M DDDDD	0~99999	
	L	L	L DDDD	0~8191	
	F	F	F DDDD	0~2047	

	V	V	V DDDD	0~2047
	В	В	B FFFF	0~1FFF
	TS	TS	TS DDDD	0~2047
	тс	тс	TC DDDD	0~2047
	SS	SS	SS DDDD	0~2047
	SC	SC	SC DDDD	0~2047
	CS	CS	CS DDDD	0~1023
	СС	СС	CC DDDD	0~1023
	SB	SB	SB FFF	0~7FF
	S	S	SD	0~8191
	DX	DX	DX FFFF	0~1FFF
	DY	DY	DY FFFF	0~1FFF
	SM_	SM_	SM_ DDDD	8000~9999
	SM	SM	SM DDDD	0~2047
Word	SD	SD	SD DDDD	0~2047
	D	D	D DDDDD	0~12287

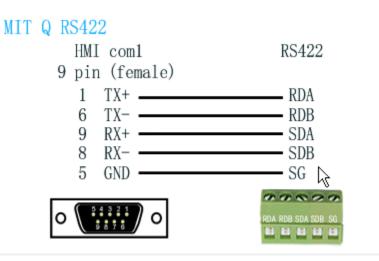
	W	W	W FFFF	0~1FFF
	TN	TN	TN DDDD	0~2047
	SN	SN	SN DDDD	0~2047
	CN	CN	CN DDDD	0~1023
	R	R	R DDDDD	0~32767
	SW	SW	SW FFF	0~7FF
	Z	Z	ZD	0~15
	ZR	ZR	ZR FFFFF	0~FE7FF
Commun	ication Sottings			

**Communication Settings** 

New Project				×	<
Location and Name Name: Location:	HMIProject	t .dministrator\De	sktop	Browse	
HMI HMI Series: General Series i Series	HMI Model: PI3070 PI3070HE	Angle	Resolution 800*480	HMI+	
ie Series ig Series	PI3070N-2S PI3102 PI3102H PI3102H-2S PI3102HE	180° 270°			
Communication Connection:	PLC Manufa	cturer:			
COM1 COM2 Ethernet USB	LS MEGMEET MIKOM MITSUBISH MODBUS Modicon	łI			
3 MITSUBISHI Q02 MITSUBISHI L02 MITSUBISHI 037 MITSUBISHI FX50	CPU Port 1 MELSEC				
	< 上一歩(B)	完成	取消	帮助	

Connect	tion:			PLC Connection
No. 1	Commun COM1	Protocol RS422	Device type MITSUBISHI QJ71 MELSEC	COM port setting X
	New	Delete	Setting	Connection: RS422 ~ Baud rate: 9600 ~ Stop bits: 1 ~ Data bits: 8 ~
Station OM	HMI No.:	COM1	Device No.: 0	Parity: ODD ~ OK Cancel
rotocol IMI Mod COM:	lel [	MITSUBISHI QJ71 PI3070i-A ( RS422, 9600, 1,	4	HMI Pin definition:
evice I	P: [	None	Setting	PIN Definition PIN Definition
ïmeout	:	( 300, 50, 2, 3, 0,	0,5) Setting	1 RS422 TX+/RS485 A+ 2 RS232 RXD
				3 RS232 TXD 5 GND
				6 RS422 TX-/RS485 B- 8 RS422 RX-
				9 RS422 RX+
			$\searrow$	
		tion parameters (	×0	

Pin Definition Diagram



# **QJ71E71 MELSEC Protocol**

Mitsubishi QJ71E71 Ethernet communication module;

## **HMI Settings**

Items	Settings	Note
Protocol	MIT QJ71E71 MELSEC	
Connection	Ethernet	
Port No.	1025	Must be the same as the PLC setting
PLC station No.	0	Must be the same as the PLC setting

Туре	Device registers	HMI registers	Format	Range	Note
	Х	Х	X h	0~1FFF	
	Y	Υ	Υh	0~1FFF	
	М	Μ	M d	0~99999	
Bit	L	L	Ld	0~8191	
	F	F	Fd	0~2047	
	В	В	Βh	0~1FFF	
	V	V	V d	0~2047	

	TS	TS	TS d	0~2047
	тс	тс	TC d	0~2047
	SS	SS	SS d	0~2047
	SC	SC	SC d	0~2047
	CS	CS	CS d	0~1023
	СС	СС	CC d	0~1023
	SB	SB	SB h	0~7FF
	S	S	Sd	0~8191
	DX	DX	DX h	0~1FFF
	DY	DY	DY h	0~1FFF
	SM	SM	SM d	8000~9999
	SD	SD	SD d	0~2047
	D	D	D d	0~12287
Word	W	W	W h	0~1FFF
	TN	TN	TN d	0~2047
	SN	SN	SN d	0~2047

CN	CN	CN d	0~1023
R	R	R d	0~32767
SW	SW	SW h	0~7FF
Z	Z	Zd	0~15
ZR	ZR	ZR h	0~FE7FF

## HMI Communication Settings

1) Enable HMI Ethernet in [Project Settings];

2) Set PLC IP in [Device IP] settings

Commun	ication				$\times$
Connec	tion:			PLC Connection	
No.	Commun	Protocol	Device type		
1	Ethernet		MITSUBISHI QJ71E71 MELSEC		
Station	New	Delet	e Setting	Did not find any wiring instructions!	
COM	HMI No.:	0 Ethernet	Device No.: 1		
Protocol	· [	MITSUBISHI QJ71	E71 MELSEC	HMI Pin definition:	
HMI Moo	del	P13070ig		TCP/IP parameters X	
COM:	[	None	Setting		
Device 1	P: [	192.168.39.254	S009 Setting	PLC IP Address: 192 . 168 . 39 . 254 PLC port No.: 5009	
Timeout	t: [	( 1500, 50, 2, 3,	0, 0 ,5) Setting	Network: TCP_Client_2N V	
				Broadcast address Broadcast No.: 0 OK Cancel	
Chan	-	ation parameters on the protocol	ОК	Cancel Help	

## PLC Settings(GX Works2)

- Click [Ethernet/CC IE/MELSECNET];
  Please select [Ethernet] as network type;
  Set station I/O number according to situation (For example, 0020 means that the module is connected to PLC CPU in first order);
- Select [Online] as Mode; •

🧱 MELSOFT Series OX Works2 (Untitled Proje	ect) - (Network Parameter - MELSECNE	//CC IE/Ethernet Module Configuration)			-	d X
Project Edit Find/Replace Compile )	(iew Online Debug Diagnostics	Icol Window Help				- 0
inemale 📲 🗰	Reithing and 🐺 🖬 🖼 🚚 🖉 👧		法法罚 透声的的 法	3.000ves		
		× B .				
Navigation + x	(PRG)Monitor Executing MAL.	A Network Parameter - ME.				4.0
Project						
1 20 15 30 21 45			10.01.0			_
8 Parameter	Network Type	Module 1	Module 2	Module 3	Module 4	
PLC Parameter	Start 1/0 No.	0020		1000		
B A Network Parameter	Network Ne.					
Ethernet / CC IE / MELSECNET	Total Stations					
CC-Link	Group No.					
Se Remote Password	Station No.					
- Intelligent Function Module	Mode	Online .			•	
11 Se Program Setting		Operation Setting				
B-49 POU		Initial Setting	1			
B D Program		Open Setting				
MAIN		Router Raley Parameter				
18 👜 Local Device Comment		Station No. < ->07 Shirtwatton				
8-6 Device Memory		FTF Perameters				
Device Initial Value		E-mail Setting				
Device initial value		Interrupt Settings				
	4					•
	Startig Transmission Researchers Start 1/0		dek( <u>110 Sectory</u> / <u>Altready Sec</u> ) Valid Module During Other Station Access 1 module is mounted.	×		
	Acknowledge XY Assignment Routing Parameters	Assignment Image Onsup Setting	Check End	Cancel		
	Print Window Print Window Preview					
Project						
User Library						
Connection Destination						

- Click [Operation setting] to set IP; •
- Select [Binary Code] as [Communication Data Code]; •

d b \_

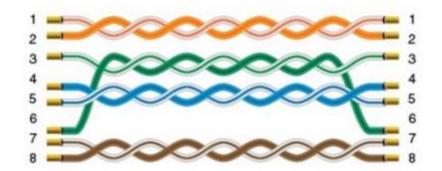
	Module 1	Module 2	Module 3	Hodule 4	
Network Type	Ethernet	None	+ None	+ None	
Start I/O No.	00.2	1			
Network No.		1			
Total Stations					
Group No.	Ethernet Operation Setting				
Station No.	- Communication Data Code	Timing			
Mode			-	*	
		o not wait for OPEN (Communications possible at STOP time)			
	C ASCII Code G A	ways wait for OPEN (Communication souble at STOP time)			
	IP Address Setting	-Send Frame Setting -			
	InputFormat DEC +	(F Ethernet(V2.0)			
	TP Address 192 100	39 254 C mman2.a			
	Prasoness 192 100	39 254 C TEEE802.3			
	Enable Online Change	-TOP Existence Confirmation Setting			
	_	C Use the KeepAlive			
		C Use the Ping			
	End	Cancel			
Necessary Setting	(N				
Start	I/O No. :	Valid Nodule During Other Station Access	1 -		
nk Transmission Parametera Pleas	e input 16-point unit(HEX) to start I/O No. in which	module is mounted.			
nowledge XY	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )				
ssignment Routing Parameters	Assignment Image Group Setting	Check Dnd	Cancel		
Print Window					
t Window Preview					

- •
- Click [Open setting] Set protocol: TCP; Set [unpassive] in [Open system]; •
- •
- Set [receive] in [Fixed buffer]; Set [procedure Exist] in [Fixed buffer communication]; •

- •
- Disable [Pairing open]; Set [No confirm] in [Existence confirmation]; •
- Host station port number: 5009; •
- Save settings; •

_	Protocol	Open System		roard Buff	er	Fixed Buffer Communication		Pairing Open		Existence Confirmation	Host Station Port No.	Destination IP Address	Destination Port No.	
1	TCP +	Unpastive	Ψ R	eceive	÷	Procedure Exist		Dirable		No Confirm			10110.	
	-		•		-		-		•					
	¥		•		•		۳		٠	Ŧ				
	-		•				-		-	-				
_	-		•		-		•		-				_	
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	-		•											
	÷		•		-		•		•					
P	Address and	Port No. will be displaye	• d by	the select	ted	formet.	•		•					
P	Address and	Port No. will be displayed	• d by	the select	ted	format.	•		•	•		Cancel		
P	Address and	Port No. will be displayed	• d by	the select	ted	formet.	•		•			Cancel		
P	Address and	Port No. will be displayed	• d by	the select	ted	format.	-		•			Cancel		
P	Address and	Port No. will be displayed	• d by	the select	ted	format.	-		•			Centrel		
P	Address and	Port No. will be displayed	• d by	the select	ted	format.	-		•			Centrel		
P	Address and	Port No. will be displayed	• d by	the select	ted	format.	-		•			Centrel		
P	Address and	Port No. will be displayed	• d by	the select	ted	formut.	•		•			Ontol		

#### **Cable Wiring**



# **Create communication with Delta PLC**

## DVP serial protocol

Supported Series: Delta DVP EH/ES/SS/EX/EH2/SV/SA/SC/SX Controller

**HMI Settings** 

ltem	Settings	Note
Protocol	DELTA DVP Series	
Connection	RS485	
Baud rate	9600	
Data bit	7	
Parity	Even	
Stop bit	1	
PLC station No.	1~255	Need to be the same as PLC settings

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Х	Х	X d	0~303237	
Bit	Υ	Y	Υd	0~303237	
Bit	Μ	Μ	M d	0~99999	
Bit	Т	Т	Τd	0~99999	
Bit	С	С	Τd	0~99999	
Bit	S	S	Τd	0~99999	

Word	D	D	D d	0~99999	
Word	т	т	Τd	0~99999	
Word	С	С	C d	0~99999	

Configure the communication protocol

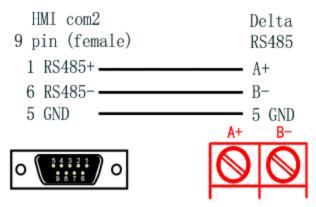
New Project				;	×
Location and Name					
Name:	HMIPro	oject			
Location:	C:\Use	rs\29709\Deskto	р	Browse	
2 нмі					
HMI Series:	HMI Model:	Angle	HMI+		
General Series i Series ie Series ig Series	PI3102HE PI3104 PI8070 PI8070C PI8070H PI8102 PI8102C		Screen Resolutio	n 800*480	
3 Communication Connection:	PLC Mar	nufacturer:			
COM1 COM2 COM3 Ethernet CAN1 USB	Danfos DELTA DIFFUS Emerso FATEK Fuji	5			
DELTA DVP Serie DELTA DVP Hex DELTA DVP-10M DELTA VFD Inve DFI TA VFD-B In DVP EH/ES/SS/E	ddr 11T PLC M ter(address erter MODF	typel) MODBUS	;	<b>^</b>	
	< 上一步(且	3) 完成	取消	帮助	

No. Co	mmu	Protocol	Device ty	(De		PLC Con		
	COM1	RS485	DELTA DVP					
					COM p	oort setting		×
						, j		
						Connection: RS485		$\sim$
						Baud rate: 9600		~
Ne	w	Delete	Se	tting		Stop bits: 1		~
Station No.								
	No.: 0		Device No.: 1			Data bits: 7		~
						Parity: EVEN		~
OM	CO	M1				OK	-	
rotocol	DEL	TA DVP Series				ОК	C	ancel
		400						
MI Model	PI8	102						
				4				
OM:	( R	5485, 9600, 1,		4 Setting				
				Setting	Сом	1 PIN Definit	ion	
	Nor	ne	7, EVEN )		COM	1 PIN Definit	ion PIN	Definition
evice IP:	Nor		7, EVEN )	Setting		1		Definition RS232 RXD
evice IP:	Nor	ne	7, EVEN )	Setting Setting	PIN	Definition	PIN	
evice IP:	Nor	ne	7, EVEN )	Setting Setting	<b>PIN</b> 1	Definition RS422 TX+/RS485 A+	<b>PIN</b> 2	RS232 RXD
evice IP:	Nor	ne	7, EVEN )	Setting Setting	<b>PIN</b> 1 3	Definition RS422 TX+/RS485 A+ RS232 TXD	<b>PIN</b> 2 4	RS232 RXD CAN1
:OM: Device IP: Timeout:	Nor	ne	7, EVEN )	Setting Setting	<b>PIN</b> 1 3 5	Definition RS422 TX+/RS485 A+ RS232 TXD GND	<b>PIN</b> 2 4 6	RS232 RXD CAN1 RS422 TX-/RS485 B-
evice IP:	Nor	ne	7, EVEN )	Setting Setting	PIN 1 3 5 7	Definition RS422 TX+/RS485 A+ RS232 TXD GND CANH	<b>PIN</b> 2 4 6	RS232 RXD CAN1 RS422 TX-/RS485 B-
ievice IP: ïmeout:	Nor	ne )0, 50, 2, 3, 0,	7, EVEN )	Setting Setting	PIN 1 3 5 7	Definition RS422 TX+/RS485 A+ RS232 TXD GND CANH	<b>PIN</b> 2 4 6	RS232 RXD CAN1 RS422 TX-/RS485 B-
imeout:	Nor ( 30	ne 00, 50, 2, 3, 0, on parameter	7, EVEN )	Setting Setting Setting	<b>PIN</b> 1 3 5 7 9	Definition RS422 TX+/RS485 A+ RS232 TXD GND CANH RS422 RX+	<b>PIN</b> 2 4 6	RS232 RXD CAN1 RS422 TX-/RS485 B-
Device IP: Timeout:	Nor	ne 00, 50, 2, 3, 0, on parameter	7, EVEN )	Setting Setting	PIN 1 3 5 7	Definition RS422 TX+/RS485 A+ RS232 TXD GND CANH RS422 RX+	<b>PIN</b> 2 4 6	RS232 RXD CAN1 RS422 TX-/RS485 B-
imeout:	Nor ( 30	ne 00, 50, 2, 3, 0, on parameter	7, EVEN )	Setting Setting Setting	<b>PIN</b> 1 3 5 7 9	Definition RS422 TX+/RS485 A+ RS232 TXD GND CANH RS422 RX+	<b>PIN</b> 2 4 6	RS232 RXD CAN1 RS422 TX-/RS485 B-





## Delta RS485



## **DVP Ethernet Protocol**

Supported Series: Delta DVP ES2/EX2/SS2/SA2/SX2/SE Controller

## HMI Settings

ltems	Settings	Note
Protocol	DELTA DVP Modbus TCP	
Connection	Ethernet	
Port No.	201	Must be the same as the PLC setting
PLC station No.	0	Must be the same as the PLC setting

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Х	Х	Хо	0~377	
Bit	Y	Y	Υo	0~377	

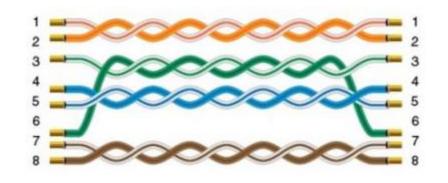
Bit	МО	MO	M0 d	0~1535
Bit	M1	M1	M1 d	1536~4095
Bit	Т	Т	Τd	0~255
Bit	С	С	C d	0~255
Bit	S	S	S d	0~1023
Word	D0	D0	D0 d	0~4095
Word	D1	D1	D1 d	4096~11999
Word	Т	Т	Τd	0~255
Word	С	С	C d	0~199

Configure the communication protocol

New Project								×
1 Location and Nam								
Norrie.	м Ц	IMIProject	t					
Location:	C	:\Users\2	9709	\Deskto	р		Browse	
HMI Series:	HMI M	1odel:		Angle	HMI+			
General Series i Series ie Series ig Series	PI307 PI307 PI307 PI310 PI310 PI310 PI310	0HE 0N-2S 2 2H 2H-2S	<b>^</b>	0° 90° 180° 270°	Screen Res	solution	800*480	
3 Communication								
Connection:	PL	.C Manufa	octure	er:				
COM1 COM2		restek Tekon					^	
Ethernet		ELTA						
USB		ATEK						
		itachi EC 60870-	5-104	1			~	
DELTA AS300 M		ТСР					~	
DELTA DVP Mod								
							~	
ES2/EX2/SS2/S/	A2/SX2/	SE						
	<上-	-步( <u>B</u> )	3	完成	取氵	肖	帮助	

Commu	nication							$\times$
Connec	tion:					PLC Connectio	n	
No. 1	Commu Ethernet		Device type DELTA DVP Modb					
					TCP/IP par	ameters		×
					A PLC	IP Address: 192 . 168	. 1 . 201	
					P	PLC port No.: 502		
	New	Delete	Settir	a		Network: TCP_Client_	2N ×	
			Joccu	9		Iroadcast address		
Station	No. HMI No.:	0	Device No.: 1		Bro	oadcast No.: 0		
СОМ		Ethernet				ОК	Cancel	
Protocol	I	DELTA DVP Modb	us TCP		/			
HMI Ma	odel	PI3070			/	HMI Pin definit	ion:	
COM:		None	4	Setting				
Device ]	IP:	192.168.1.201:5	02	Setting				
Timeout	t:	( 1500, 50, 2, 3,	0, 0 ,5)	Setting				
Chan	nge commur	ication parameter						
	User-Def	fined protocol		ОК	Cancel	Help		

## **Cable Wiring**



# AS serial protocol

Supported Series: Delta AS200/AS300

## **HMI Settings**

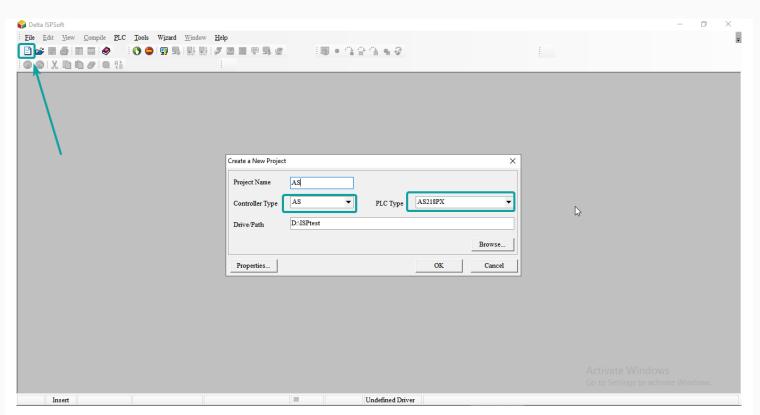
Item	Settings	Note
Protocol	DELTA AS300 MODBUS RTU	
Connection	RS485	
Baud rate	9600	
Data bit	8	
Parity	NONE	
Stop bit	1	
PLC station No.	1	

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Х	х	Xdd.dd	0~63.15	Read only
Bit	Υ	Y	Ydd.dd	0~63.15	
Bit	D	D	Dddddd	0~29999	
Bit	М	М	Mdddd	0~8191	

Bit	SM	SM	SMdddd	0~4095	
Bit	S	S	Sdddd	0~2047	
Bit	т	т	Tddd	0~511	
Bit	С	С	Cddd	0~511	
Bit	HC	HC	HCddd	0~255	Double Word
Word	Х	Х	Xdd	0~63	
Word	Υ	Y	Ydd	0~63	
Word	SR	SR	SRdddd	0~2047	Special register
Word	D	D	Dddddd	0~29999	
Word	т	Т	Tddd	0~511	
Word	С	С	Cddd	0~511	
Word	E	E	Ed	0~9	

Configure the communication protocol

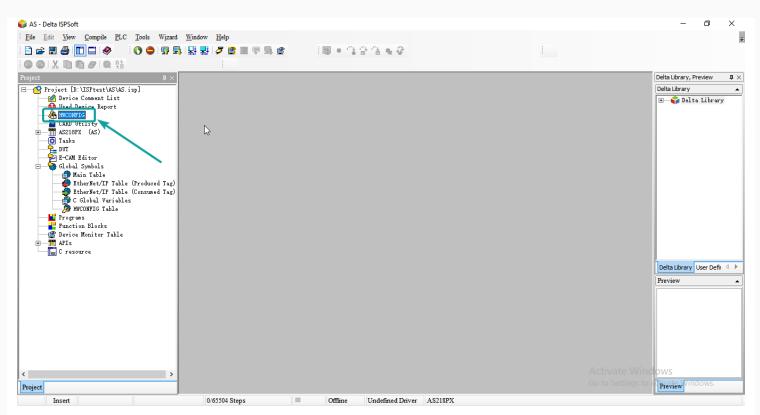
Create project



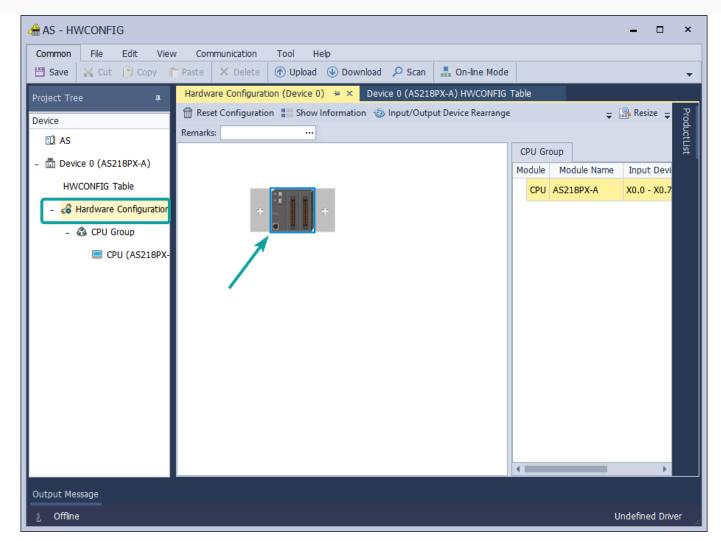
Open the tool COMMGR, to communicate with PLC, if know the IP, we can directly click Add to input PLC IP. Or search the PLC IP from LAN.

	Driver Properties X	
	Driver Name Driver1	
COMMG		– 🗆 X
Name	Ethernet Card Description Realtek PCIe GbE Family Controller	<u>A</u> dd
	169.254.133.48	Configure
	IP Address Setting           Add         Delete         All Delete         Search	Delete
	IP Address Port Label Type	
		Language
l	Setup Responding Time	About
	Connect Retries 3 + Connection Time-Out (Units: 100ms) 30 +	
	<u>OK</u> <u>Cancel</u>	

Double click the HWCONFIG to open the communication settings window.



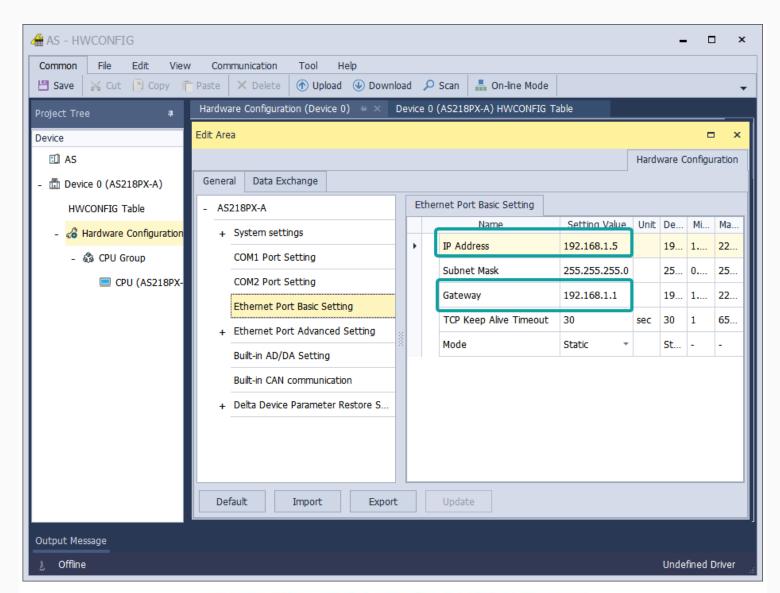
Expand the Project Tree, open the hardware configuration, double click the PLC icon.

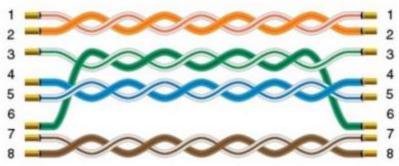


Click COM1 Port Setting, the default Modbus mode is ASCII, need to change to RTU.

Common Save	File	Edit	View		nmunica × D		Tool	Help oad 🐠 [	Downloa	ad 🔎	Scan	晶 On-	line Mode					
roject Tre	e		д.	Hardwa	are Con	ifiguratio	n (Dev	ice 0) 😑	× D	evice 0	(AS218	PX-A) HV	NCONFIG Ta	able				
evice				Edit Are	ea													ı x
🗓 AS															Hard	ware C	Configu	iration
🗄 Devi	ce 0 (AS2	218PX-A)		Gener	al D	Data Exchange												
HWCONFIG Table				- AS	218PX-	A				СОМ	1 Port S	etting						
- 🔏 Hardware Configuration + Sy			Syster	m setting	gs					Name		Setting Value	Unit	De	Mi	Ма		
- 1	👶 CPU G	roup		COM1 Port Setting					COM1	ID No.		1		1	1	254		
CPU (AS218PX-			8PX-	COM2 Port Setting Ethernet Port Basic Setting					Protoc	tol Setup	Opportu	Stop> *		St	-	-		
							ettina			Baud I	Rate		9600 -	bps	96	-	-	
							-			Custo	m Baud R	late	96	0	96	1	5000	
				+	+ Ethernet Port Advanced Built-in AD/DA Setting				-		Data b	oit		8 -	bit	7	-	-
								-	-		Parity	bit		Even -		Ev	-	-
						n CAN co			_		Stop b	oit		1 -	bit	1	-	-
				+	Delta	Device P	aramet	er Restore	S	•	MODB	US mode		RTU -		AS	-	-
											Delay	time to s	ending	0	ms	0	0	3000
											Receiv	ved Data	Timeout	200	ms	200	0	3000
				De	fault	]	import	E	Export		Updat	e			<u> </u>		1	

Click Ethernet Port Basic Setting, set the PLC IP and Gateway. Make sure the IP and Gateway is same segment. Then download into PLC.

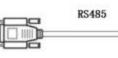




ommun	nication									$\times$
Connect	tion:	<				PL	C Connectio	n		
No. 1	Commu COM1	Protocol RS485	Device type DELTA AS300 MODBUS	RTU	CON	/ port setting			×	
	New	Delet	e Setting			Connection: Baud rate: Stop bits:	9600	~		
Station	No. HMI No.:	0	Device No.: 1			Data bits: 4 Parity: 1		~		
COM Protocol HMI Mo COM:		COM1 DELTA AS300 M0 PI3070 ( RS485, 9600, 1	4	tting	Сом	ок  1 PIN Defi	nition	Cancel		
Device I	P:	None	Se	tting	PIN	Definition	PIN	Definiti	ion	
Timeout	:	( 300, 50, 2, 3, 0	), 0 ,5) Se	tting	1	RS422 TX+/RS485	A+ 2	RS232 RXD		
					3	RS232 TXD	5	GND		
					6	RS422 TX-/RS485	в- 8	RS422 RX-		
					9	RS422 RX+				
Chan		ication parameter						1		
	User-Def	îned protocol	OK		Cancel	H	lelp			

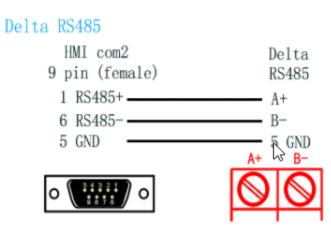
## Cable Wiring







Pin Definition Diagram



## AS Ethernet Protocol

## **HMI Settings**

Items	Settings	Note
Protocol	DELTA AS300 MODBUS TCP	
Connection	Ethernet	
Port No.	502	
Device No.	1	

HMI No.	0	

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Х	Х	X d	0~63	
Bit	Υ	Y	Υd	0~63	
Bit	D	D	D d	0~29999	
Bit	М	М	M d	0~8191	
Bit	SM	SM	SM d	0~4095	
Bit	S	S	Sh	0~2047	
Bit	т	т	Τd	0~511	
Bit	С	С	C d	0~511	
Bit	HC	HC	HC d	0~255	
Word	Х	Х	X h	0~63	
Word	Υ	Y	Υd	0~63	
Word	SR	SR	SR d	0~2047	
Word	D	D	D d	0~29999	

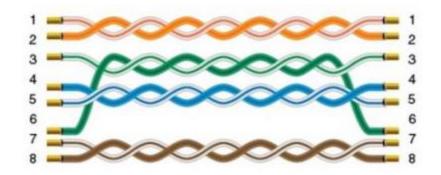
Word	т	т	Τd	0~511
Word	С	С	C h	0~511
Word	E	E	Ed	0~9

Configure the communication protocol

New Project						×	
Name:	Name:		HMIProject				
Location:	Location:		C:\Users\29709\Desktop			Browse	
2 HMI							
HMI Series:	HMI	Model:		Angle	HMI+		
General Series i Series ie Series ig Series	PI3 PI3 PI3 PI3 PI3	070HE 070N-2S	~	0° 90° 180° 270°	Screen Resolutio	n 800*480	
3 Communication Connection: PLC Manufacturer:							
COM1 COM2 Ethernet USB		ARESTEK ATEKON DELTA FATEK Hitachi IEC 6087(	)-5-10	14		~	
DELTA AS300 MODBUS TCP DELTA DVP Modbus TCP						<b>^</b>	
	< _	上一步( <u>B</u> )		完成	取消	帮助	

Communication	×
Connection:	PLC Connection
No. Commu Protocol Device type	
1 Ethernet DELTA AS300 MODBUS TCP	
	TCP/IP parameters ×
	PLC IP Address: 192 . 168 . 1 . 201 PLC port No.: 502
	Network: TCP_Client_2N V
New Delete Setting	Broadcast address
Station No.	Broadcast No.: 0
HMI No.: 0 Device No.: 1	
	OK Cancel
COM Ethernet	
Protocol DELTA AS300 MODBUS TCP	
HMI Model PI3070	HMI Pin definition:
COM: None 4 letting	
Device IP: 192.168.1.201:502 Setting	
Timeout: ( 1500, 50, 2, 3, 0, 0, 5) Setting	
Change communication parameter	
User-Defined protocol OK	Cancel Help
Cable Wiring	
Cable Wiring	
BMBCON	
	- Anna
	and the second s
<u>лиз</u>	themet P45

#### Pin Definition Diagram



# **Create communication with Omron PLC**

## CJ TCP FINS Ethemet Protocol

Supported device:CJ series、CJ1W-EIP21

#### **HMI Settings**

Items	Settings	Note
Protocol	OMRON CJ TCP FINS Ethemet	
Connection	Ethernet	
Port No.	9600	
Device No.	0	
HMI No.	0	

#### **Address List**

Туре	Device registers	HMI registers	Format	Range	Note
Bit	CIO	CIO	CIO d	0~99999	

Bit	W	W	W d	0~99999
Bit	D	D	D d	0~99999
Bit	Н	Н	H d	0~99999
Bit	А	А	A d	0~99999
Bit	т	т	Τh	0~99999
Bit	CF	CF	CF d	0~99999
Bit	FF	FF	FF d	0~99999
Bit	С	С	C d	0~99999
Bit	EMO	EMO	EM0 d	0~99999
Bit	EM1	EM1	EM1 d	0~99999
Bit	EM2	EM2	EM2 d	0~99999
Bit	EM3	EM3	EM3 d	0~99999
Bit	EM4	EM4	EM4 d	0~99999
Bit	EM5	EM5	EM5 h	0~99999
Bit	EM6	EM6	EM6 d	0~99999
Bit	EM7	EM7	EM7 d	0~99999

Bit	EM8	EM8	EM8 d	0~99999
Bit	EM9	EM9	EM9 d	0~99999
Bit	EMA	EMA	EMA d	0~99999
Bit	EMB	EMB	EMB d	0~99999
Bit	EMC	EMC	EMC d	0~99999
Bit	Lamp	Lamp	Lamp d	0~0
Word	CIO	CIO	CIO d	0~99999
Word	W	W	W d	0~99999
Word	D	D	D d	0~99999
Word	Н	Н	Ηd	0~99999
Word	А	А	A d	0~99999
Word	т	т	Τh	0~99999
Word	CF	CF	CF d	0~99999
Word	FF	FF	FF d	0~99999
Word	С	С	C d	0~99999
Word	EMO	EMO	EM0 d	0~99999

Word	EM1	EM1	EM1 d	0~99999
Word	EM2	EM2	EM2 d	0~99999
Word	EM3	EM3	EM3 d	0~99999
Word	EM4	EM4	EM4 d	0~99999
Word	EM5	EM5	EM5 h	0~99999
Word	EM6	EM6	EM6 d	0~99999
Word	EM7	EM7	EM7 d	0~99999
Word	EM8	EM8	EM8 d	0~99999
Word	EM9	EM9	EM9 d	0~99999
Word	EMA	EMA	EMA d	0~99999
Word	EMB	EMB	EMB d	0~99999
Word	EMC	EMC	EMC d	0~99999
Word	IR	IR	IR d	0~99999
Word	DR	DR	DR d	0~99999

## Configure the communication protocol

New Project				>
1 Location and Nam	e			
Name:	HMIPro	ject		
Location:	C:\Use	rs\29709\Deskto	р	Browse
2 нмі			,	
HMI Series:	HMI Model:	Angle	HMI+	
General Series i Series ie Series ig Series	PI3070 PI3070HE PI3070N-2S PI3102 PI3102H PI3102H-2S PI3102HE	270°	Screen Resolutio	n 800*480
3 Communication Connection:	PLC Mar	nufacturer:		
COM1 COM2 Ethernet USB	LS MITSUE MODBU Nardi OMRON Panasor	IS I		
OMRON CJ UDP				^
OMRON CJ TCP OMRON NX Ethe				~
	< 上一步(B	)  完成	取消	帮助

Connec	tion:			PLC Connection
No.	Commu	. Protocol	Device type	
1	Ethernet		OMRON CJ TCP FINS Ethe	
				TCP/IP parameters X
				PLC IP Address: 192 . 168 . 1 . 200
				PLC port No.: 9600
				Network: UDP_Client V
	New	Delet	e Setting	
Station	No			Broadcast address
Judion	HMI No.:	0	Device No.: 0	Broadcast No.: 0
	L			
COM	[	Ethernet		OK Cancel
	l			
rotocol		OMRON CJ TCP	FINS Ethernet	
	[	PT-0-70		HMI Pin definition:
IMI Mo	del	PI3070		
COM:	[	None	1 etting	/
	l		4 etting	
Device I	:P:	192.168.1.200:9	9600 Setting	
	ſ	-		1
Fimeout	:	(1500, 50, 2, 3,	0, 0 ,5) Setting	
_ Chan	ge communi	ication parameter		

Configure CJ1W-EIP21 connect with HMI

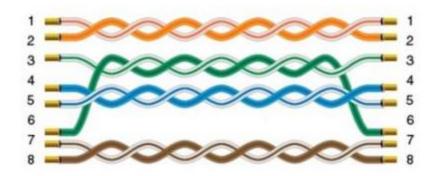
New Project		×
<ol> <li>Location and Name – Name: Location:</li> </ol>	HMIProject C:\Users\Administrator\Desktop\HMI\工程 Brows	se
General Series i Series ie Series ig Series	IMI Model:     Angle     Resolution     HN       213070     •     0°     90°     800*480       213070HE     90°     180°     270°     270°       213102H     270°     180°     270°     180°       213102H     •     •     •     •       213102H     •     •     •     •	lI+ ✓
3 Communication Connection: COM1 COM2 Ethernet USB	PLC Manufacturer: Nardi OMRON Panasonic Rockwell Schneider SIEMENS	^ •
OMRON CJ UDP FIN OMRON CJ TCP FIN OMRON NX Ethern OMRON NJ Etherne	S Ethernet et/IP	~
	< 上一步(B) 完成 取消	帮助

Select TCP\_Client\_2N

Connect	tion:			PLC Connection
No. 1	Commun Ethernet	Protocol	Device type OMRON CJ UDP FINS Ethernet	
Station	HMI No.:	Delet	e Setting Device No.: 0	Did not find any wiring instructions!
Protocol HMI Mod		OMRON CJ UDP F PI3070	INS Ethernet	HMI Pin definition:
COM: Device If	L	None 192.168.1.200:9	600 Setting	PLC IP Address: 192 . 168 . 1 . 200 PLC port No.: 9600
Timeout	: [	( 1500, 50, 2, 3,	0, 0 ,5) Setting	Network: TCP_Client_2N 2 Broadcast address Broadcast No.: 0
				OK Cancel
Chang	ge communica	tion parameters		

## **Cable Wiring**

Pin Definition Diagram



# **CP1E/CP1H serial protocol**

Supported device: OMRON CS1(CP1E/CP1H)

**HMI Settings** 

Items	Settings	Note
Protocol	OMRON CS1 (CP1E/CP1H)	
Connection	RS232 (9600, 2, 7, EVEN)	
Port No.	None	
PLC station No.	0	

### Address List

Туре	Device registers	HMI registers	Format	Range	Note
Bit	CIO	CIO	CIO d	0~99999	
Bit	W	W	W d	0~99999	
Bit	D	D	D d	0~99999	
Bit	Н	Н	H d	0~99999	
Bit	А	А	A d	0~99999	
Bit	TF	т	Τh	0~99999	
Bit	CF	CF	CF d	0~99999	
Bit	Т	FF	FF d	0~99999	
Bit	С	С	C d	0~99999	

Bit	EMO	EMO	EM0 d	0~99999
Bit	EM1	EM1	EM1 d	0~99999
Bit	EM2	EM2	EM2 d	0~99999
Bit	EM3	EM3	EM3 d	0~99999
Bit	EM4	EM4	EM4 d	0~99999
Bit	EM5	EM5	EM5 h	0~99999
Bit	EM6	EM6	EM6 d	0~99999
Bit	EM7	EM7	EM7 d	0~99999
Bit	EM8	EM8	EM8 d	0~99999
Bit	EM9	EM9	EM9 d	0~99999
Bit	EMA	EMA	EMA d	0~99999
Bit	EMB	EMB	EMB d	0~99999
Bit	EMC	EMC	EMC d	0~99999
Word	CIO	CIO	CIO d	0~99999
Word	W	W	W d	0~99999
Word	D	D	D d	0~99999

Word	Н	Н	H d	0~99999
Word	А	А	A d	0~99999
Word	Т	Т	Τh	0~99999
Word	CIO	CF	CF d	0~99999
Word	С	С	C d	0~99999
Word	EMO	EMO	EM0 d	0~99999
Word	EM1	EM1	EM1 d	0~99999
Word	EM2	EM2	EM2 d	0~99999
Word	EM3	EM3	EM3 d	0~99999
Word	EM4	EM4	EM4 d	0~99999
Word	EM5	EM5	EM5 h	0~99999
Word	EM6	EM6	EM6 d	0~99999
Word	EM7	EM7	EM7 d	0~99999
Word	EM8	EM8	EM8 d	0~99999
Word	EM9	EM9	EM9 d	0~99999
Word	EMA	EMA	EMA d	0~99999

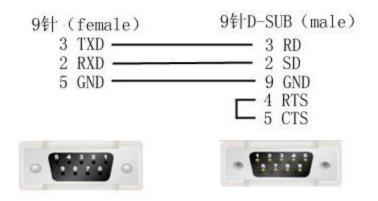
Word	EMB	ЕМВ	EMB d	0~99999
Word	EMC	EMC	EMC d	0~99999
Word	IR	IR	IR d	0~99999
Word	DR	DR	DR d	0~99999

## Configure the communication protocol

New Project							×
1 Location and Na	me						
Name:		HMIProje	ect				
Location:		C:\Users	\2970	9\Deskto	p	Browse	
2 нмі							
HMI Series:	HMI	[ Model:		Angle	HMI+		
General Series i Series ie Series ig Series	PI3 PI3 PI3 PI3 PI3 PI3	070 070HE 070N-2S 102 102H 102H-2S 102HE	<b>^</b>	0° 90° 180° 270°	Screen Resolutio	n 800*480	
3 Communication Connection:		PLC Manu	factur	er:	-		
COM1 COM2 Ethernet USB		MIKOM MITSUBI MODBUS Modicon Nardi OMRON				^ ~	
OMRON HOST	LINK	- • -				~	
OMRON CS1(C OMRON CV/C OMRON E5CC			6			~	
	< _	上一步( <u>B</u> )		完成	取消	帮助	

ommu Connec	nication				DLC Co	on a sti		
No.	Commu	. Protocol	Device type	1	PLC Co	nnectio	n	
1	COM1	RS232	OMRON CS1(CP1E/CP1H)	C	DM port setting	2	×	
					Baud rate: 9600		~	
	New	Delete	e Setting		Stop bits: 2 Data bits: 7		~ !	
Station	No. HMI No.:	0	Device No.: 0		Parity: EVEN		~	
СОМ		COM1			ОК		Cancel	
Protoco	ıl	OMRON CS1(CP1	E/CP1H)		HMI Pir	n defini	ition:	
HMI Mo	odel	PI3070	4	/				
COM: Device	ID.	( RS232, 9600, 2	, 7, EVEN ) Setting	co	M1 PIN Definit	ion		
Jevice	16.			PI	N Definition	PIN	Definition	
Timeou	it:	( 300, 50, 2, 3, 0	), 0 ,5) Setting	1	RS422 TX+/RS485 A+	2	RS232 RXD	
				3	RS232 TXD	5	GND	
				6	RS422 TX-/RS485 B-	8	RS422 RX-	
				9	RS422 RX+			
Char	-	ication parameter		Carry	-1 11-1-		1	
	User-Dei	fined protocol	ОК	Cano	el Help			
le Wi	irina							
	0							
		000	5	RS232				
	1			R3232			NAME IN CONTRACTOR OF	
					10	LA LA LA	angleteleteletetetetetet	

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## **EC55 Protocol**

Supported device: EC55 temperature instrument

### 1) HMI Settings

Items	Settings	Note
Protocol	Omron EC55	
Connection	RS485 (9600, 2, 7, EVEN)	
Port No.	None	
PLC station No.	0	

#### 2) Address List

Туре	Register	Device range	HMI range	Function
	C0	0-13 (Hex)	0-19	Set read only parameter for area 0
Double word	C1	0-4D(Hex)	0-77	Set Read/Write parameter for area 0
	C3	0-CD(Hex)	0-205	Set Read/Write parameter for area 1

	80	0-13(Hex)	0-19	Set read only parameter in area 0
	81	0-4D(Hex)	0-77	Set Read/Write parameter in area 0
Word	83	0-CD(Hex)	0-205	Set Read/Write parameter in area 1
	СР	-	0-6	Read controller intrinsic property
	CS	-	0-2	Read controller states
	CA	-	0-17	Action command

### 3) Device Settings

#### Omron E5CC PLC configuration

After entering the Communication Settings menu, please set the parameters to the default values for the following table. Press the cycle key of the instrument to enter the next setting.

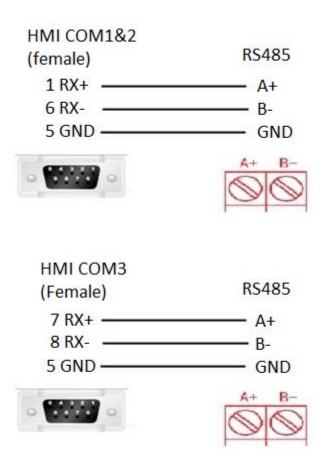
1	Press the C Key for at least 3 seconds in the Operation Level. The No. 1 display will flash when the keys are pressed for 1 s or longer. The display will change from the Operation Level to the Initial Setting Level.	Operation Level
2	Press the  Key for less than 1 second in the Initial Setting Level. The display will change from the Initial Setting Level to the Communications Setting Level.	Initial Setting Level
		EHF Protocol Setting

According to PLC configuration and communication port configuration information of the HMI, provide the corresponding steps and configuration screenshots. This configuration needs to communicate properly with the above PLC configuration. The project settings are as follows

Item	Display	Set values	Settings	Default
Protocol setting	PSEL	CWF Mad	CompoWay/F/Modbus	EWF
Communications Unit No.	U-Nõ	0 to 99	0 to 99	1
Communications baud rate	ьPS	9.6/19.2/38.4/57.6 (Kbps)	9.6/19.2/38. 4/57.6 (kbps)	9.6
Communications data length	LEN	7 or 8 bits	7 or 8 bits	ŋ
Stop bits	SPEF	1 or 2 bits	1 or 2 bits	5
Communications parity	PREY	NGNE EVEN Gdd	None, Even, Odd	EVEN
Send data wait time	SdWE	0 to 99	0 to 99 (ms)	20

**Note:** The communication settings for HMI should be consistent with this setting.

#### **Cable Wiring**



#### Note:

- COM3 only available in PI8000/PI9000 series.
- CA address could not support continuous writing function ;

- Because of CP address intrinsic property: read control intrinsic property, so please place the character input part in use. Set address with CP0 and character length 10, used to display controller type. And place a number input part, set address with CP5 (cache size). Do not place other CP type address without CP0 in screen, otherwise CP type address is invalid
- When set value into read & write address, it is necessary to switch the temperature instrument meter to the corresponding interface according to the menu of the instrument where the address locates, so that the value could be written, otherwise, the value could not be written; When the communication write setting of the instrument is turned off, the writing function is invalid. Writing function could be opened by using the 00 address of the CA register, which write 01 value.
- When continuous writing of a value to a read-write address, please make sure all continuous writing address
  could be written. Otherwise, if one of these addresses could not be written, then all continuous writing
  commands will fail.
- Because of the mechanism problem, this protocol could not support CompoWay/F function that is read-write function of variables in protocol document.
- When using double-word address, set the data format to 32 bits, otherwise the read/write function is unable.
- Please set the communication delay time of 10ms in setting, to avoid that the instrument may not be able to communicate in a short time due to too fast data access and too much connection requests.

Timeout		×
	Wait Timeout(ms): 300	
R	leceive Timeout(ms): 50	
	Retry Count: 2	
	Retry Timeout(s): 3	
	Delay Time(ms): 10	
	Continuous Length: 0	
	OK Cancel	

Because of the particularity of the instrument, it is

necessary to write the value of the address in the menu interface corresponding to the address, and to enter the menu where the address locates, so that the value could be written.

## **EtherNet/IP NX series Protocol**

Supported series: Omron NX/NJ series

#### **HMI Setting**

Items	Settings	Note
Protocol	Omron NX Ethernet/IP	
Connection	Ethernet	

Port No.	44818	
PLC station No.	1	

#### Instruction

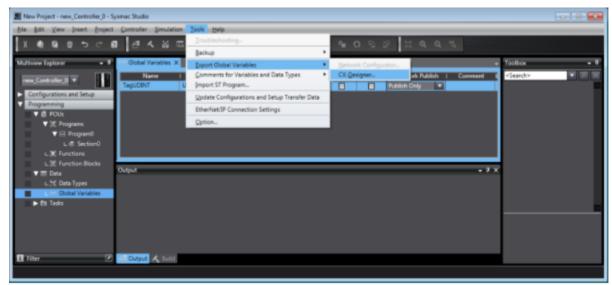
1) In Sysmac Studio, please select [Publish Only] for [Network Publish] when setting address tag.

2) When [Do not publish] is selected for a tag, different import methods may lead to different results. When import tags by [Get Tags from Device], the tag will be eliminated. If [Import tags] is selected, the tags will be imported, but the communication will not succeed.

🕱 New Project - new_Controller_0 - Sysmac Studio	
File Edit View Insert Project Controller Simulation Tools Help	
X & B B D C B B A M R M B R A M A A A A A A A A A A A A A A A A A	
Multiview Explorer + 4 Global Variables X .	Toolbax • 9
Image Controlleg I       Image Data Type Initial Value       AT       Retain   Constant   Network Publich       Comment         Configurations and Setup       Programming       Image Data Type       Image Data Type       Image Data Type         Image Programming       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Programming       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Programming       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Programming       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Programming       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Data Type       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Data Type       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Data Type       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Data Type       Image Data Type       Image Data Type       Image Data Type       Image Data Type         Image Data Type       Image Data Type       Image Da	eSearch>

#### **Export labels from Sysmac Studio**

Launch Sysmac Studio, under Global Variables create the address labels, and thenselect [Tools] -> [Export Global Variables];



Launch PIStudio, in [Communication] Settings add Omron NX Ethernet/IP protocol;

Click [Label manage];

Communit	cation			×
Connecti	ion.			FLC Connection
Ne. 1	Commu COM1 Ethernet	Protocol RS485	Device type ModBus RTU Slave/Al Fust . ORFON NX Ethernet/12	
Station N	HMI No.:	Delete 3 Dherst	Device No. [1	Did not find any wiring instructions!
Protocol		OMRON MX EINe P19150	net/12	HMI Pix definition:
COM: Device P		None 192.168.1.100-44	Setting 818 Setting	
Timeout		( 1580, 58, 2, 3, 8		
		ation parameters		Did not find any wiring instructions!
		manage	ок	Cancel Help

Click [Import labels] and then select the file exported in step 1;

Labels se	tting					×
	New	Delete	Import labels	Get labels from	device	
ID	Label name	Data type	Address typ	pe [	Description	
-						
		ОК		Cancel		

The Import Status field shows the result, click [OK] to finish importing address labels;

ID	Label name	Data type	Address type	Description	
0	100	BOOL	Bit address		
1	101	BOOL	Bit address		
2	i02	BOOL	Bit address		
3	103	BOOL	Bit address		
4	i04	BOOL	Bit address		
5	105	BOOL	Bit address		
6	106	BOOL	Bit address		
7	107	BOOL	Bit address		
8	108	BOOL	Bit address		
9	109	BOOL	Bit address		
10	110	BOOL	Bit address		
11	i11	BOOL	Bit address		
12	i12	BOOL	Bit address		
13	i13	BOOL	Bit address		
14	i14	BOOL	Bit address		
15	i15	BOOL	Bit address		
16	i16	BOOL	Bit address		
<		L.			>

## **Communication Settings**

Enable HMI Ethernet in [Project Settings];

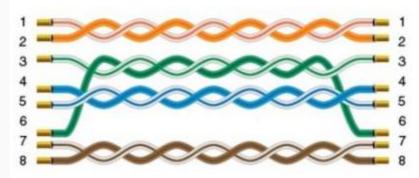
HMI IP		
IP:	192 . 168 .	1 . 66
Sub mask:	255 . 255 .	255 . 0
Gateway:	192 . 168 .	1.1

## Set PLC IP in [Device IP] settings;

Plie edit View Insert Project Cont	roller Simulation Tools Help
X & Q O D C O (	<b>3 A 24 45 A 15 R A 2 A 4 4 4 4 4 4 6 4 7 4 0 9 2 1 1 9</b>
Multiview Explorer 🔹 🎙 🕼	0 Map (IP Built-in EtherNet/IP Port 5 X
new_Controller_0	TCP/IP Settings
Configurations and Setup	
2// EtherCAT	* IP ADDRES
The CPU/Expansion Racks	Fixed setting
L == CPU Rack	B <sup>2</sup> address 192 - 1681 -100
📕 🧈 UO Map	Subnet mask  255 - 255 - 2550
T Controller Setup	O Obtain from BOOTP server.
L Coperation Settings	P Fix at the IP address obtained from BOOTP server.
L # Built-in EtherNet/IP F	* DNS
L Built-in 1/O Settings	DNS 🔵 Do not use 🔘 Use
E Coption Board Setting	P Priority DNS server
L Memory Settings	Secondary DNS server
Motion Control Setup	Domain name
📕 of Cam Data Settings	
Event Settings	
Task Settings	
Data Trace Settings	
▼ Programming Sold	

COM	Ethemet	TCP/IP parameters	Х
Protocol	OMRON NX Ethernet/IP	PLC IP Address: 192 . 168 . 1 . 100	
HMI Model	PI9150	PLC port No.: 44818	
COM:	None Setting	Network: TCP_Client_2N ~	
		Broadcast address	
Device IP:	192.168.1.100:44818 Setting	Broadcast No.: 0	
Timeout:	(1500, 50, 2, 3, 0, 0) Setting	OK Cancel	

## **Cable Wiring**



# CV/CJ1M/CS1H

HMI Setting:

Parameters	Recommended
PLC type	OMRON CV/CJ1M/CS1H Series
PLC I/F	RS232
Baud rate	9600
Data bits	7
Parity	Even
Stop bits	2

PLC sta. no.	0	
PLC Setting:		

Host Link Protocol / PLC must be set to monitor mode

#### **Device Address:**

**Communication mode** 

Bit/Word	Device type	Format	Range	Memo
В	CIO	DDDDdd	0 ~ 409515	I/O and Internal Relay
В	W	DDDDdd	0 ~ 409515	Hold Relay
В	D	DDDDdd	0 ~ 409515	Link Relay
В	Н	DDDDdd	0 ~ 409515	
В	A	DDDDdd	0 ~ 409515	
В	TF	DDDDdd	0 ~ 409515	
В	CF	DDDDdd	0 ~ 409515	Auxiliary Relay
В	т	DDDD	0 ~ 4095	
В	С	DDDD	0 ~ 4095	

В	EMO	DDDDDdd	0 ~ 99999.15
В	EM1	DDDDDdd	0 ~ 99999.15
В	EM2	DDDDDdd	0 ~ 99999.15
В	EM3	DDDDDdd	0 ~ 99999.15
В	EM4	DDDDDdd	0 ~ 99999.15
В	EM5	DDDDDdd	0 ~ 99999.15
В	EM6	DDDDDdd	0 ~ 99999.15
В	EM7	DDDDDdd	0 ~ 99999.15
В	EM8	DDDDDdd	0 ~ 99999.15
В	EM9	DDDDDdd	0 ~ 99999.15
В	EMA	DDDDDdd	0 ~ 99999.15
В	EMB	DDDDDdd	0 ~ 99999.15

В	EMC	EMC			0 ~ 99999.15	
В	Lamp	Lamp		D	0~0	
Bit/Word	Device type	Format	R	lange	Mem	0
W	LR_W	DDDD	0 ~ 4095			
W	тс	DDD	0 ~ 511			
W	DM	DDDD	0~9	999	Data Registe	r

#### Wiring Diagram:

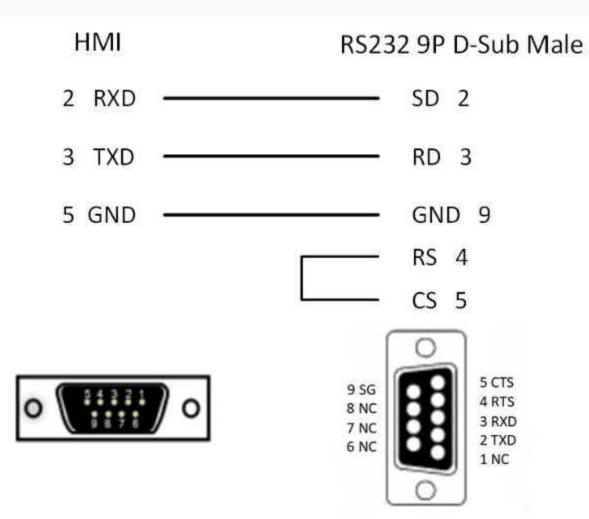
#### RS-232

CPU Port (CPM2A,CQM1/1H,C200H/HS/ALPHA series)

Communication Module:

CPM1-CIF01 adapter (for CPM1/CPM1A/CPM2A series, CQM1/CQM1H series) CPM1H-SCB41 communication module (for CQM1H-CPU51/61)

The serial port pin assignments may vary between HMI models, please click the following link for more information.



# **Create communication with Xinje PLC**

# XC serial protocol

## HMI Settings

Item	Settings	Note
Protocol	XINJE XC MODBUS	
Connection	RS232	
Baud rate	19200	

Data bit	8	
Parity	EVEN	
Stop bit	1	
PLC station No.	1	

## Address List

Туре	Device registers	HMI registers	Format	Range Note
Bit	М	М	M d	0~8511
Bit	Х	Х	Хо	0~1747
Bit	Y	Y	Υo	0~1747
Bit	S	S	Sd	0~1023
Bit	т	Т	Τd	0~4095
Bit	С	С	C d	0~634
Word	D	D	D d	0~8511
Word	TD	TD	TD d	0~618
Word	CD	CD	CD d	0~634
Word	FD	FD	FD d	0~8511

Configure the communication protocol

New Project			×
1 Location and Name	e		
Name:	HMIProject		
Location:	C:\Users\2970	9\Desktop	Browse
	L		
HMI Series:	HMI Model:	Angle HMI+	
General Series i Series ie Series ig Series	PI3070       ^         PI3070HE       PI3070N-2S         PI3102       PI3102H         PI3102H-2S       PI3102H-2S         PI3102HE       ~	0° Screen Resolutio 90° 180° 270°	on 800*480
3 Communication Connection:	PLC Manufactur	er:	
COM1 COM2 Ethernet USB	WINMO WONWAY XINJE YASKAWA YLZ YOKOGAWA		
XINJE XC MODB XINJE FC MODB XINJE XD/XE MC	US US		
Xinjie XC Series I	PLC		
	< 上一步(B)	完成 取消	帮助

Connec	tion:	6					PLC Co	nnectio	n
No. 1	Commu COM1	Protocol RS232	Device XINJE XC N			CON	/ port setting		×
							Connection: R523 Baud rate: 1920 Stop bits: 1		~
	New	Delete	5	Setting			Data bits: 8		~
Station	No. HMI No.:	0	Device No.: 1		/		Parity: EVEN	I	~
COM Protocol HMI Ma	l I [	COM1 XINJE XC MODBU PI3070	S				OK HMI Pir	n defini	Cancel
COM:		( RS232, 19200, 1	, 8, EVEN )	4 Setting		COM	1 PIN Definit	ion	
Device ]	IP:	None		Setting		PIN	Definition	PIN	Definition
Timeout	t: [	( 300, 50, 2, 3, 0,	0 ,5)	Setting		1	RS422 TX+/RS485 A+	2	RS232 RXD
						3	RS232 TXD	5	GND
						6	RS422 TX-/RS485 B-	8	RS422 RX-
						9	RS422 RX+		
Char	nge communi	cation parameter							
				ОК		Cancel	Help		

## Figure

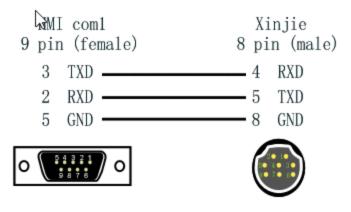






Pin Definition Diagram

## Xinjie RS232



# XD serial protocol

### **HMI Settings**

Supported Series: Xinjie XD/XE Series PLC

Item	Settings	Note
Protocol	XINJE XD/XC MODBUS	
Connection	RS232	
Baud rate	19200	
Data bit	8	
Parity	EVEN	
Stop bit	1	
PLC station No.	1	

## Address List

Type         Device registers         HMI registers         Format         Range         I	Note
--	------

Bit	Μ	Μ	M d	0~74999
Bit	X1xx	X1xx	X1xx o	0~1177
Bit	X2xx	X2xx	X2xx o	0~277
Bit	Х	Х	Хо	0~77
Bit	Y1xx	Y1xx	Y1xx o	0~1177
Bit	Y2xx	Y2xx	Y2xx o	0~277
Bit	Υ	Υ	Υo	0~4095
Bit	SM	SM	SM d	0~4999
Bit	т	Т	Τd	0~4999
Bit	С	С	C d	0~4999
Bit	ET	ET	ET d	0~31
Bit	SE	SE	SE d	0~31
Bit	HM	HM	HM d	0~11999
Bit	HSC	HSC	HSC d	0~39
Bit	HS	HS	HS d	0~999
Bit	HT	HT	HT d	0~1999
Bit	HC	HC	HC d	0~1999
Bit	S	S	Sd	0~7999
Word	D	D	Dd	0~69999
Word	ID	ID	ID d	0~99
Word	ID1xx	ID1xx	ID1xx d	0~999

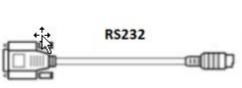
Word	ID2xx	ID2xx	ID2xx d	0~299
Word	QD	QD	QD d	0~99
Word	QD1xx	QD1xx	QD1xx d	0~999
Word	QD2xx	QD2xx	QD2xx d	0~299
Word	SD	SD	SD d	0~4999
Word	TD	TD	TD d	0~575
Word	CD	CD	CD d	0~575
Word	ETD	ETD	ETD d	0~31
Word	HD	HD	HD d	0~24999
Word	HSD	HSD	HSD d	0~1023
Word	HTD	HTD	HTD d	0~95
Word	HCD	HCD	HCD d	0~95
Word	HSCD	HSCD	HSCD d	0~31
Word	FD	FD	FD d	0~8191
Word	SFD	SFD	SFD d	0~5999
Word	FS	FS	FS d	0~47

Configure the communication protocol

1       Location and Name         Name:       HMI         Name:       C:\Users\29709\Desktop         2       HMI         General Series       PI3070HE         PI3070HE       Pi3070HE         PI3102       PI3102         PI3102H       PI3102H         PI3102H       PI3102H         PI3102H       PI3102H         PI3102H       PI3070HE         PI3102H       PI302TON-25         PI302TON-25       PI302TON-25         PI302TON-25       PI302TON-25         PI302TON-25       PI302TON-25         PI302TON-25       PI302TON-	New Project			
Location:       C:\Users\29709\Desktop       Browse         1       HMI       HMI Series:       HMI Model:       Angle       HMI H         Image: Series       PI3070       Image: Screen Resolution 800*480       90°       80°         1       Series       PI3070HE       Image: Screen Resolution 800*480       90°       180°         1       Series       PI3070H-2S       Image: Screen Resolution 800*480       90°       180°         2       PI3102H       PI3102H       Image: Screen Resolution 800*480       180°         2       PI3102H       PI3102H       Image: Screen Resolution 800*480         3       Communication       PLC Manufacturer:       Image: Screen Resolution 800*480         2       VINIE       VINMO       Image: Screen Resolution 800*480       Image: Screen Resolution 800*480         3       Image: Screen Resolution 800*480       Image: Screen Resolution 800*480       Image: Screen Resolution 800*480	Location and Name	e		
2       HMI         HMI Series:       HMI Model:       Angle       HMI H         General Series       PI3070       0       Screen Resolution 800*480         90°       180°       270°       180°         23       Communication       PI3102H       PI3102H         PI3102H       PI3102H       0°       Screen Resolution 800*480         30       Communication       PLC Manufacturer:         COM1       WINMO       WINMO         VISB       YASKAWA       YLZ         YOKOGAWA       V       XINJE XC MODBUS         XINJE XC MODBUS       XINJE XD/XE MODBUS       V	Name:	HMIProject		
HMI Series: HMI Model: Angle HMIH          General Series       PI3070         i Series       PI3070HE         ig Series       PI3070N-2S         PI3102H       PI3102H         PI3102HE       PI3102H         PI3102HE       PISI02H         Or       Screen Resolution 800*480         3 Communication       PLC Manufacturer:         COM1       WINMO         VUNMO       WONWAY         Ethernet       VINIE         VSB       YASKAWA         YLZ       YOKOGAWA         XINJE XC MODBUS       XINJE XD/XE MODBUS         XINJE XD/XE MODBUS       VINMOBUS	Location:	C:\Users\2970	9\Desktop	Browse
HMI Series:       HMI Model:       Angle       HMI H         General Series       PI3070       PI3070HE       Pi3070HE       Pi3070HE         PI3070HE       PI3070HE       PI3070HE       Pi3070HE       Pi3070HE       Pi3070HE         PI3070HE       PI3070HE       PI3070HE       Pi3070HE       Pi3070HE       Pi3070HE       Pi3070HE         PI3102H       PI3102H       PI3102H-2S       PI3102H-2S       PI3102H-2S       PI3102H-2S       PI3102H-2S         PI3102H-E       VIINO       VIINMO       VIINMO       VIINMO         Communication       PLC Manufacturer:       VIINE       VIINE         COM1       WIINMO       VONWAY       VIINE         Ethernet       VIINE       VINVE       VIVIE         VSB       YASKAWA       VIZ       VIVIE         YOKOGAWA       VIIIE       VIVIE       VIVIE       VIVIE	<b>О</b> НМІ	L		
i Series       PI3070HE       90°         ie Series       PI3070N-2S       PI3102         PI3102H       PI3102H-2S       270°         PI3102H-2S       PI3102HE       90°         PI3102H-2S       PI3102HE       90°         Ommunication       PLC Manufacturer:         Connection:       PLC Manufacturer:         COM1       WINMO         VONWAY       VINUE         YASKAWA       YLZ         YOKOGAWA       VINJE XC MODBUS         XINJE XC MODBUS       XINJE FC MODBUS         XINJE XD/XE MODBUS       VINUE	HMI Series:	HMI Model:	Angle HMI+	
Connection: PLC Manufacturer:   COM1 WINMO   COM2 WONWAY   Ethernet XINJE   VSB YASKAWA   YLZ YOKOGAWA     XINJE XC MODBUS   XINJE FC MODBUS   XINJE XD/XE MODBUS	i Series ie Series	PI3070HE PI3070N-2S PI3102 PI3102H PI3102H-2S	90° 180°	ution 800*480
Ethernet   USB   YASKAWA   YLZ   YOKOGAWA     XINJE XC MODBUS   XINJE FC MODBUS   XINJE XD/XE MODBUS	Connection:		er:	^
XINJE XC MODBUS XINJE FC MODBUS XINJE XD/XE MODBUS	Ethernet	XINJE YASKAWA		-
XINJE FC MODBUS XINJE XD/XE MODBUS		YOKOGAWA		~
Xinjie XD/XE Series PLC	XINJE FC MODB	US		^
Xinjie XD/XE Series PLC				~
	Xinjie XD/XE Ser	ies PLC		
< 上一步(B) 完成 取消 帮助		ر الــــــــــــــــــــــــــــــــــــ		主日日

Connection:	Droto col	Davias hitta			PLC	Connectio	///	
No. Comn 1 CON		Device type XINJE XD/XE MODB	JS					
		,		СОМ	port setting			×
					Connection: RS2	232	$\sim$	
				1				
					Baud rate: 192	200	~	
New	Delete	Setting		/	Stop bits: 1		$\sim$	s !
Station No.					Data bits: 8		$\sim$	
HMI No	p.: 0	Device No.: 1			Parity: EVE	EN	$\sim$	
COM	COM1				ОК		Cancel	
.014					UK		Cancer	
rotocol	XINJE XD/XE MO	DBUS			LIM	[ Pin defin		_
MI Model	PI3070	4			HM	l Pin defin	luon:	
COM:	( RS232, 19200, 1	8 EVEN )						
UM:	(13232, 13200, 1		tting	сом	1 PIN Defin	ition		
evice IP:	None	S	tting	PIN	Definition	PIN	Definition	
imeout:	( 300, 50, 2, 3, 0	, 0 ,5) Si	tting	1	RS422 TX+/RS485 A		RS232 RXD	
	L			3	RS232 TXD	5	GND	
				6	RS422 TX-/RS485 B		RS422 RX-	
				9	RS422 RX+			
						[		
Change com	nunication parameter							
	-Defined protocol	ОК		Cancel	He	elp		
0301								
0301								
Wiring								







Pin Definition Diagram

	HMI		PLC
	COM1		Xinje
	RS232		8p male
	9P female		
TXD	3	$\leftarrow$	4 RXD
RXD	2	$\leftarrow \rightarrow$	5 TXD
GND	5	$\leftarrow \rightarrow$	8 GND

# **Create communication with Inovance PLC**

# H3U serial protocol

## **HMI Settings**

ltem	Settings	Note
Protocol	INOVANCE H3U PLC	
Connection	RS422	
Baud rate	9600	
Data bit	7	
Parity	EVEN	
Stop bit	1	
PLC station No.	0	

#### Address List

Туре	Device registers	HMI registers	Format	Range	Note	

Bit	Х	Х	Хо	0~303237
Bit	Y	Y	Υo	0~303237
Bit	Μ	М	M d	0~99999
Bit	Т	Т	Τd	0~99999
Bit	С	С	C d	0~99999
Bit	SM	SM	SM d	8000~999
Bit	S	Т	S d	0~99999
Bit	Lamp	Lamp	Lamp d	0~0
Word	Х	Х	Хо	0~303237
Word	Υ	Y	Yо	0~303237
Word	Μ	Μ	M d	0~99999
Word	Т	т	Τd	0~99999
Word	С	С	C d	0~199
Word	D	D	D d	0~7999
Word	S	S	S d	0~99999
Word	SD	SD	SD d	8000~9999

Word	R	R	R d	0~32767

### Configure the communication protocol

New Project		×
Location and Nam	e	
Name:	HMIProject	
Location:	C:\Users\29709\Desktop Browse	
HMI Series:	HMI Model: Angle HMI+	
General Series i Series ie Series ig Series	PI3070         O°         Screen Resolution 800*480           PI3070HE         90°         180°           PI3070N-2S         270°         270°           PI3102H         270°         180°           PI3102H         270°         270°           PI3102H          270°	
3 Communication Connection: COM1 COM2	PLC Manufacturer:	
Ethernet USB	INVT KEYENCE Koyo Liquid Level Meter	
INOVANCE H1U INOVANCE H2U INOVANCE H3U	PLC	
	· · · · · · · · · · · · · · · · · · ·	
	< 上一步(B) 完成 取消 帮	助

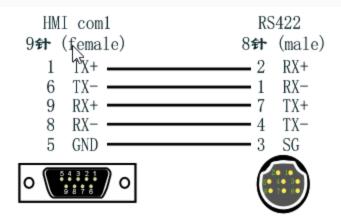
ommur	nication								
Connec	tion:					PLC Co	onnectio	n	
No. 1	Commu COM1	. Protocol RS422	Device type INOVANCE H3U PLC	C	OM p	oort setting			×
					1	Connection: RS42		~	
			2			Baud rate: 9600	)	~	
					/	Stop bits: 1		$\sim$	
	New	Delete	Setting			Data bits: 7		$\sim$	
Station	-					Parity: EVE	N	~	
	HMI No.:	0	Device No.: 0			ОК		Cancel	
COM		COM1							
Protocol		INOVANCE H3U PI	LC	/ _		LIMED	in defini		
HMI Mo	del	PI3070	4 /			HIM P	in denin	lion.	
COM:	[	( RS422, 9600, 1,	7, EVEN ) Setting						
Device I	IP:	None	Setting	L L		PIN Definit		Definition	
Timeout	t: (	( 300, 50, 2, 3, 0,	0, 5 ) Setting			S422 TX+/RS485 A+	PIN 2	RS232 RXD	
	l					S232 TXD	5	GND	
				-		S422 TX-/RS485 B-	8	RS422 RX-	
				-	9 R	S422 RX+			
Chan	ige commun	ication parameter							
	User-Def	ined protocol	ОК	Car	cel	Help			

### Cable Wiring





### Pin Definition Diagram



# **Create communication with Panasonic PLC**

# FP serial protocol

### 1) HMI Settings

Item	Settings	Note
Protocol	Panasonic FP MFWTOCOL	
Connection	RS232	
Baud rate	9600	
Data bit	8	
Parity	ODD	
Stop bit	1	
PLC station No.	1	

Туре	Device registers	HMI registers	Format	Range	Note
------	------------------	---------------	--------	-------	------

Bit	Х	Х	X d	0~9999
Bit	Υ	Υ	Yd	0~9999
Bit	R	R	R d	0~9999
Bit	Т	Т	Τd	0~9999
Bit	С	С	C d	0~9999
Bit	L	L	Ld	0~9999
Word	WX	WX	WX d	0~9999
Word	WY	WY	WY d	0~9999
Word	WR	WR	WR d	0~9999
Word	WL	WL	WL d	0~9999
Word	LD	LD	LD d	0~9999
Word	DT	DT	DT d	0~65535
Word	FL	FL	FL d	0~9999
Word	EV	EV	EV d	0~9999
Word	SV	SV	SV d	0~9999

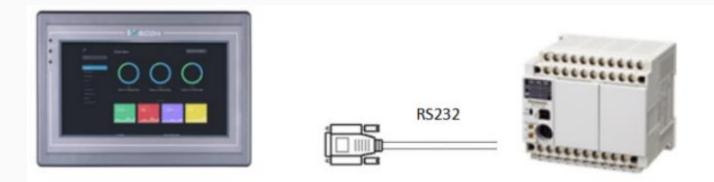
3) Configure the communication protocol

Now Project		×
New Project		^
Location and Name		
Name:	HMIProject	
Location:	C:\Users\29709\Desktop Browse	
HMI		
2 HMI Series: HI	1I Model: Angle 🗌 HMI+	
i Series PI ie Series PI ig Series PI PI PI	3070         ^         0°         Screen Resolution 800*480           3070HE         90°         180°         270°           3102         270°         270°         180°           3102H         270°         270°         180°           3102H         270°         270°         180°           3102H         270°         270°         180°	
3 Communication		
Connection:	PLC Manufacturer:	_
COM1 COM2	Modicon /	
Ethernet USB	OMRON Other Protocol OVADRIVES	
	Panasonic	-
Panasonic FP MEW Panasonic FP MEW Panasonic FP MEW Panasonic FP MEW	OCOL(Bit NO Dot)	
NAIS FP PLC Serials		
<	上一步(B) 完成 取消 帮	助

Commun	nication									×
Connect	tion:					PLC	Connectio	on		
No. 1	Commu COM1	. Protocol RS232	Device type Panasonic FP MEWTOO	COL	СОМ	port setting			×	
					1	Connection: RS2 Baud rate: 960 Stop bits: 1		~		
	New	Delete	Setting			Data bits: 8		~		
Station I	No. HMI No.:	0	Device No.: 1	_ /		Parity: OD	D	$\sim$		
СОМ		COM1		_/		<u>⊳</u> ок		Cancel		
Protocol HMI Mo		Panasonic FP ME				HMI	Pin defin	ition:		
COM:		( RS232, 9600, 1		ting	COMI	PIN Defin:	Ition			
Device I	P:	None	Se	tting	PIN	Definition	PIN	Definiti	ion	1
Timeout	:	( 300, 50, 2, 3, 0	, 0 ,5) Se	tting		RS422 TX+/RS485 A+		RS232 RXD		-
					3	RS232 TXD	5	GND		1
					6	RS422 TX-/RS485 B-	8	RS422 RX-		
					9	RS422 RX+				
Chan	ge commun	ication parameter								
	User-Def	ined protocol	ОК		Cancel	Hel	р			

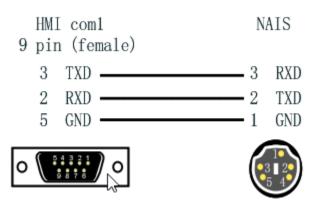
### 4) Cable Wiring

Figure



Pin Definition Diagram

### NAIS RS232



# **Create communication with LS PLC**

# XGB serial protocol

#### **HMI Settings**

Item	Settings	Note
Protocol	LS XGB CPU DRIECT	
Connection	RS232	
Baud rate	115200	

Data bit	8	
Parity	NONE	
Stop bit	1	
PLC station No.	1	

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Ρ	Ρ	P DDDD.f	0~2047	
Bit	Μ	М	M DDDD.f	0~2047	
Bit	L	L	L DDDDD.f	0~11263	
Bit	К	К	K DDDD.f	0~2559	
Bit	F	F	F DDDD.f	0~2047	
Bit	S	S	S DDDDD	0~12799	
Bit	D	D	D DDDDD.f	0~32767	
Bit	U	U	U FFFF.f	0~7f31	
Bit	Т	Т	T DDDD.f	0~2047	
Bit	С	С	C DDDD.f	0~2047	

Word	Р	Ρ	P DDDD	0~2047
Word	Μ	Μ	M DDDD	0~2047
Word	L	L	L DDDDD	0~11263
Word	К	К	K DDDD	0~2559
Word	F	F	F DDDD	0~2047
Word	С	С	C DDDD	0~2047
Word	Т	т	T DDDD	0~2047
Word	D	D	D DDDDD	0~32767
Word	Ν	Ν	N DDDDD	0~21503
Word	U	U	U FFFF	0~7f31
Word	Z	Z	Z DDD	0~127
Word	R	R	R DDDDD	0~32767
Word	ZR	ZR	Z DDDDD	0~32767
Word	TS	TS	TS DDDD	0~2047
Word	CS	CS	CS DDDD	0~2047
Word	S	S	S DDDDD	0~12799

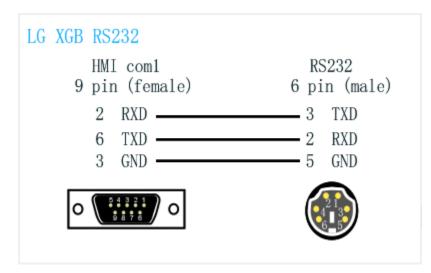
Configure the communication protocol

New Project					×
Location and Name	9				
Name:	HMIProject				
Location:	C:\Users\Adm	ninistrator\D	esktop	Browse	
2 нмі					
HMI Series:	HMI Model:	Angle	Resolution	HMI+	
General Series i Series ie Series ig Series	PI3070         A           PI3070HE         PI3070N-2S           PI3102         PI3102H           PI3102H-2S         PI3102H-2S           PI3102HE         A	90° 180° 270°	800*480	~	
3 Communication Connection:	PLC Manufactu	irer:			
COM1 COM2 Ethernet USB	Liquid Level M LS MEGMEET MIKOM MITSUBISHI MODBUS	leter		<b>^</b>	
LS MASTER K120 LS MASTER K300 LS XGB CPU DRIE	)S ECT			^	
LS Inverter(LG-B				~	
	< 上一步(图)	完成	取消	帮助	

mmun	ication							
Connec	tion:				PLC	Connection	ı	
No.	Commun	. Protocol						
1	COM1	RS232	LS XGB CPU DRIECT	LG	COM port setting			×
				1	Connection: R	5232	$\sim$	
					Baud rate: 1	15200	~	
					Stop bits: 1		~	
	New	Delete	Setting		Data bits: 8		~	
Station								
	HMI No.:	0	Device No.: 1		<sup>V3</sup> Parity: N	DNE	~	
СОМ	[	COM1			ОК		Cancel	
Protocol	I [	LS XGB CPU DRIECT	•					
	L			/	HMI	Pin definiti	on:	
HMI Moo	del	PI3070ie	4					
COM:	[	(RS232, 115200, 1	, 8, NONE ) Setting	Сом	1 PIN Defini	tion		
Device I	IP:	None	Setting	PIN	Definition	PIN	Definit	ior
Timeout	t: [	( 100, 30, 2, 3, 50,	0 ,5) Setting	] 1	RS422 TX+/RS485 A+	2	RS232 RXD	
				3	RS232 TXD	5	GND	
				6	RS422 TX-/RS485 B-	8	RS422 RX-	
				9	RS422 RX+			
Chan		ation parameters (						
			01			_		
	User-Defin	ned protocol	ОК	Can	cel Hel	0		

ommun								
Connec	tion:					PLC Cor	nnection	1
No.	Commun		Device type	r				
1	COM1	RS232	LS XGB CPU DRIECT		Timed	out		×
					1	Wait Timeout(m Receive Timeout(m	ıs): 30	Ie)
	New	Delete	Setting			Retry Cou	nt: 2	
Station	No					Retry Timeout	(s): 3	
Station	HMI No.:	0	Device No.: 1			Delay Time(m	ns): 50	
	r			- 1		Continuous Leng	th: 0	
СОМ		COM1				Maximum spa	an: 5	
Protoco	I [	LS XGB CPU DRIECT	Г			ОК	Car	ncel
HMI Moo	del	PI3070ie		J I I				
COM:	[	(RS232, 115200, 1	, 8, NONE ) Setting		COM	1 PIN Definit	ion	
Device I	P: [	None	1 Setting		PIN	Definition	PIN	Definition
Fimeout	t: [	( 100, 30, 2, 3, 50,	. 0 ,5) Setting		1	RS422 TX+/RS485 A+	2	RS232 RXD
					3	rs232 txd	5	GND
			6		6	RS422 TX-/RS485 B-	8	RS422 RX-
					9	RS422 RX+		
Chan	ge communic	ation parameters (						
	User-Defi	ned protocol	ОК		Can	cel Help		

#### **Pin Definition Diagram**



# **Create communication with LS PLC**

# **XBC serial protocol**

#### **HMI Settings**

Item	Settings	Note
Protocol	LS XBC CNet	
Connection	RS232	
Baud rate	115200	
Data bit	8	
Parity	NONE	
Stop bit	1	
PLC station No.	1	

Туре	Device registers	HMI registers	Format	Range	Note
Bit	Р	Р	Ρd	0~2047	
Bit	Μ	М	M d	0~2047	
Bit	L	L	Ld	0~11263	
Bit	К	К	K d	0~16183	

Bit	F	F	Fd	0~2047
Bit	D	D	D d	0~32767
Bit	R	R	R d	0~32767
Bit	U	U	U d	0~4095
Word	Ρ	Ρ	Ρd	0~2047
Word	М	М	M d	0~2047
Word	L	L	Ld	0~11263
Word	К	К	K d	0~16183
Word	F	F	Fd	0~2047
Word	С	С	C d	0~2047
Word	т	Т	Τd	0~2047
Word	D	D	D d	0~32767
Word	Ν	Ν	N d	0~21503
Word	R	R	R d	0~32767
Word	U	U	U d	0~4095
Word	Z	Z	Zd	0~127

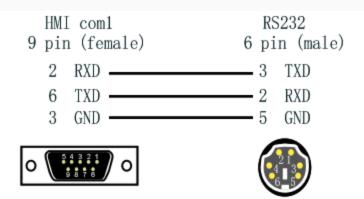
Word	S	S	S d	0~127	

### Configure the communication protocol

Name:	HMIProject	
Location:	C:\Users\29709\Desktop Brows	e
HMI		
HMI Series:	HMI Model: Angle HMI+	
General Series i Series ie Series ig Series	PI3070       ^       0°       Screen Resolution 800*48         PI3070HE       90°       180°         PI3070N-2S       180°       270°         PI3102H       270°       180°         PI3102H       270°       180°         PI3102H       270°       180°         PI3102H       270°       180°	D
Communication		
Connection:	PLC Manufacturer:	
COM1 COM2	INOVANCE INVT	^
Ethernet USB	KEYENCE Koyo	
	Liquid Level Meter	
		~
LS XGB CPU D LS Inverter(LG LS MASTER-K	-BUS ASCII)	
LS XBC CNet		~

ommunica							
Connection	:				PLC Cor	nectio	n
No. C 1	Commu COM1	Protocol RS232	Device type LS XBC CNet 다	Сом	Connection: RS232 Baud rate: 11520		×
Station No. HN	4I No.: 0	Delete Dev	Setting		Stop bits: 1 Data bits: 8 Parity: NONE OK		<ul> <li>Cancel</li> </ul>
COM Protocol HMI Model COM:	L P	S XBC CNet I3070 RS232, 115200, 1, 8		СОМ	HMI Pin 1 PIN Definit		tion:
Device IP: Timeout:		300, 50, 2, 3, 0, 0 ,	5) Setting	PIN 1 3 6 9	Definition RS422 TX+/RS485 A+ RS232 TXD RS422 TX-/RS485 B- RS422 RX+	PIN 2 5 8	Definition RS232 RND GND RS422 RX-
		ation parameter ed protocol	ОК	Cancel	Неф		]
le Wirin	-			RS232			

Pin Definition Diagram



## **XGK FEnet Ethernet protocol**

Supported Series: LS XGT series XGK CPU with XGL-EFMT Ethernet module

#### **HMI Settings**

Items	Settings	Note
Protocol	LG XGK FEnet(Ethernet)	
Connection	Ethernet	
Port No.	2004	

Туре	Register	Range	Format	Note
	Ρ	0~2047	Pd	
	Μ	0~2047	M d	
Word	К	0~2047	K d	
	F	0~2047	Fd	
	Т	0~2047	Τd	

С	0~2047	C d	
Z	0~127	Zd	
S	0~127	Sd	
L	0~11263	Ld	
Ν	0~21503	N d	
D	0~32767	Dd	
R	0~32767	R d	
ZR	0~65535	ZR d	
UxDD	0~6331	UxDD nndd	nn: 0~63, dd: 0~31

#### Note:

- In addition to the "UxDD" register, the others correspond to the PLC register one by one. UxDD corresponds to U in the PLC;
- The [UxDD] register, defined in the PLC is Ux.dd, x represents the block, and dd represents 0-31 of each block. There are 64 blocks in the PLC;
- All bit registers are in the form of bits in word, and the range is the same as the word register;

#### Communication settings in HMI

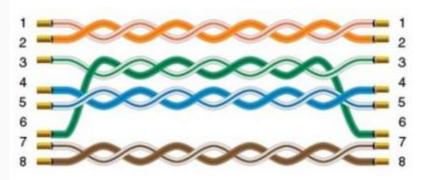
Enable HMI Ethernet in [Project Settings];

IP:	192 .	168 .	1 .	66
Sub mask:	255	255 .	255 .	0
Gateway:	192 .	168 .	1 .	1

Set PLC IP in [Device IP] settings;

	· .		TCP/IP parameters	×
COM	Ethemet		PLC IP Address: 192 . 168 . 0 . 10	
Protocol	LG XGK FEnet(Ethernet)	]	PLC port No.: 2004	
HMI Model	PI8102		Network: TCP_Client_2N ~	
COM:	None	Setting	Broadcast address	
Device IP:	192.168.0.10:2004	Setting	Broadcast No.: 0	
Timeout:	(1500, 50, 2, 3, 0, 1)	Setting	OK Cancel	

#### **Cable Wiring**



# **Create communication with LS PLC**

# **XBC serial protocol**

#### **HMI Settings**

Item	Settings	Note
Protocol	LS XBC CNet	
Connection	RS232	
Baud rate	115200	
Data bit	8	
Parity	NONE	

Stop bit	1	
PLC station No.	1	

Туре	Device registers	HMI registers	Format	Range Note
Bit	Ρ	Ρ	Pd	0~2047
Bit	М	М	M d	0~2047
Bit	L	L	Ld	0~11263
Bit	К	К	K d	0~16183
Bit	F	F	Fd	0~2047
Bit	D	D	D d	0~32767
Bit	R	R	R d	0~32767
Bit	U	U	U d	0~4095
Word	Ρ	Ρ	Ρd	0~2047
Word	М	Μ	M d	0~2047
Word	L	L	Ld	0~11263
Word	К	К	K d	0~16183

Word	F	F	Fd	0~2047
Word	С	С	C d	0~2047
Word	т	т	Τd	0~2047
Word	D	D	D d	0~32767
Word	Ν	Ν	N d	0~21503
Word	R	R	R d	0~32767
Word	U	U	U d	0~4095
Word	Z	Z	Z d	0~127
Word	S	S	S d	0~127

Configure the communication protocol

New Project							×
1 Location and Nam	e						
Name:		HMIProje	ct				
Location:		C:\Users\	2970	9\Deskto	p	Browse	
2 нмі		L					
HMI Series:	HMI	Model:		Angle	HMI		
General Series i Series ie Series ig Series	PI3 PI3 PI3 PI3	070HE 070N-2S	~	0° 90° 180° 270°	Screen Resolutio	n 800*480	
3 Communication Connection: COM1 COM2		PLC Manuf INOVANC INVT		èr:		^	
Ethernet USB		KEYENCE Koyo Liquid Levo LS	el Met	ter		~	
LS XGB CPU DRI LS Inverter(LG-E LS MASTER-K CI LS XBC CNet	BUS A	SCII)				^	
						~	
	< _	上一步(B)		完成	取消	帮助	

Connection:			_		PLC Con	nectio	n
	mu Protocol	Device type	C	OM port	setting		×
1 CC	M1 RS232	LS XBC CNet					
		5		7 Co	nnection: RS232		$\sim$
					aud rate: 11520	0	~
						0	
				9	Stop bits: 1		$\sim$
New	Delete	Setting		[	Data bits: 8		$\sim$
Station No.					Parity: NONE		$\sim$
HMI N	o.: 0 De	evice No.: 1					
				[	ОК		Cancel
COM	COM1						
	LS XBC CNet		/ L				
Protocol	LS ADC CIVEL	/			HMI Pin	dofini	tion:
HMI Model	PI3070	4				uenini	lon.
COM:	(RS232, 115200, 1,	8, NONE ) Setting					
Device IP:	None	Setting	CC	MI PI	N Definit:	101	
		0000019	PI	N De	efinition	PIN	Definition
Fimeout:	( 300, 50, 2, 3, 0, 0	,5) Setting		RS422	TX+/RS485 A+	2	RS232 RXD
			3	RS232	TXD	5	GND
			6	RS422	TX-/RS485 B-	8	RS422 RX-
			Ľ	10122	12()		
Change com	munication parameter						
Use	-Defined protocol	ОК	Cano	el	Help		
					•		
Viring							
wining							

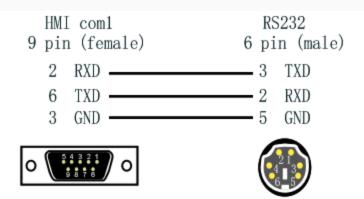
RS232

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-

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Pin Definition Diagram



## **XGK FEnet Ethernet protocol**

Supported Series: LS XGT series XGK CPU with XGL-EFMT Ethernet module

#### **HMI Settings**

Items	Settings	Note
Protocol	LG XGK FEnet(Ethernet)	
Connection	Ethernet	
Port No.	2004	

Туре	Register	Range	Format	Note
	Ρ	0~2047	Pd	
	Μ	0~2047	M d	
Word	К	0~2047	K d	
	F	0~2047	Fd	
	Т	0~2047	Τd	

С	0~2047	C d	
Z	0~127	Zd	
S	0~127	Sd	
L	0~11263	Ld	
Ν	0~21503	N d	
D	0~32767	Dd	
R	0~32767	R d	
ZR	0~65535	ZR d	
UxDD	0~6331	UxDD nndd	nn: 0~63, dd: 0~31

#### Note:

- In addition to the "UxDD" register, the others correspond to the PLC register one by one. UxDD corresponds to U in the PLC;
- The [UxDD] register, defined in the PLC is Ux.dd, x represents the block, and dd represents 0-31 of each block. There are 64 blocks in the PLC;
- All bit registers are in the form of bits in word, and the range is the same as the word register;

#### Communication settings in HMI

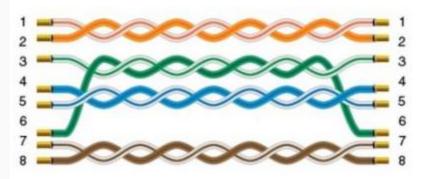
Enable HMI Ethernet in [Project Settings];

IP:	192 .	168 .	1 .	66
Sub mask:	255	255 .	255 .	0
Gateway:	192 .	168 .	1 .	1

Set PLC IP in [Device IP] settings;

	•	_	TCP/IP parameters	×
COM	Ethemet		PLC IP Address: 192 . 168 . 0 . 10	
Protocol	LG XGK FEnet(Ethemet)		PLC port No.: 2004	
HMI Model	P18102		Network: TCP_Client_2N ~	
COM:	None	Setting	Broadcast address	
Device IP:	192.168.0.10:2004	Setting	Broadcast No.: 0	
Timeout:	(1500, 50, 2, 3, 0, 1)	Setting	OK Cancel	

#### **Cable Wiring**



# **Create communication with SHIMADEN PLC**

## **FP23 series protocol**

Supported series: SHIMADEN FP23 series

#### **HMI Setting**

Items	Settings	Note
Protocol	SHIMADEN FP23 series	
Connection	RS485 (9600, 1, 7, EVEN)	
Port No.	None	
PLC station No.	0	
Address List		

Device address	HMI register	Address range	Туре
0040-0043(HEX)	FP040	100064-200067	Read only
0100-010B(HEX)	FP100	100256-200267	Read only
0110-0142(HEX)	FP110	100272-200322	Read only
0182-0252(HEX)	FP182	100386-200594	Write only
0280-0281(HEX)	FP280	100640-200641	Read only
0300-030B(HEX)	FP300	100768-200779	Read and write
0380-039F(HEX)	FP380	100896-200927	Read and write
0400-04D7(HEX)	FP400	101024-201239	Read and write
0500-05B0(HEX)	FP500	101280-201456	Read and write
0600-0670(HEX)	FP600	101536-201814	Read and write
0720-0738(HEX)	FP720	101824-201848	Read and write
0800-083F(HEX)	FP800	102048-202111	Read and write
0900-0952(HEX)	FP900	102304-202386	Read and write
	Ctrl	0-2	
Note:			

- The upper 2 bits of the address of the HMI register are taken as the sub address, and the real address is the last four bits (for example, if the address is 100256, then 10 is the sub address as 1, and 0256 is the real address);
- The address range in the table is only divided by the start and end addresses, and some of the addresses in the range have no corresponding address in FP23;
- The Ctrl register is used to store the control group number and BCC check mode.

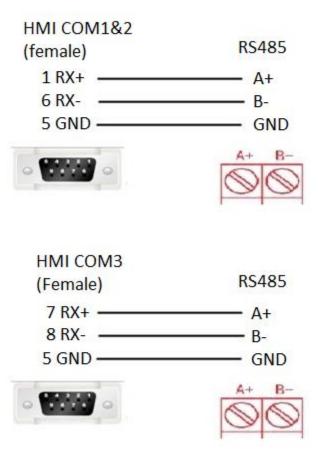
#### **Ctrl Register Description**

- The Ctrl register is a special register that does not communicate with the temperature controller. User needs to assign value in the screen according to the settings as in the temperature controller.
- Ctrl0 indicates the setting of the control character, the valid values are 1, 2, 3 respectively, and the corresponding control group is: STX\_ETX\_CR , STX\_ETX\_CR LF and @\_:\_CR .
- Ctrl1 indicates the BCC block check mode. The valid value range is 1-4. The corresponding check mode is: 1.ADD, 2.ADD\_two's cmp, 3.XOR, 4.None;
- Ctrl3 reserved

#### Note:

After reloading the HMI project or restarting the HMI, HMI will reset the value of ctrI0 and ctrI1 as 1, so user need to set these two values to make it the same as it in the temperature controller, then communication will be normal.

#### **Cable Wiring**



Note: COM3 only available in PI8000/PI9000 series.

# SR90 protocol

Supported series: SHIMADEN SR90 series

### **HMI Setting**

Items	Settings	Note
Protocol	SHIMADEN SR90 protocol	
Connection	RS485 (1200, 1, 7, EVEN)	
Port No.	None	
PLC station No.	0	

Device address	HMI register	Address range	Туре
0040-0043 (HEX)	SR040	100064-100067	Read only
0100-010A(HEX)	SR0100	100256-100266	Read only
0182-018C(HEX)	SR0182	100386-100396	Write only
0300-04FE(HEX)	SR0300	100768-101278	Write/read
0500-050B(HEX)	SR0500	101280-101291	Write/read
0590-0611(HEX)	SR0590	101424-101553	Write/read
0701-0709(HEX)	SR0701	101793-101801	Write/read

	Ctrl	0-2	
A AL.C.			

#### Note:

- The upper 2 bits of the address of HMIs are taken as the sub address, and the real address is the last four bits (for example, if the address is 100256, then 10 is the sub address as 1, and 0256 is the real address);
- The address range in the table is only divided by the start and end addresses, and some of the addresses in the range have no corresponding address in SR90;
- The Ctrl register is used to store the control group number and BCC check mode. See how to use it below;

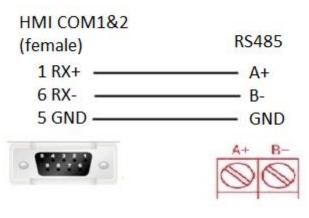
#### **Ctrl Register Description**

- The Ctrl register is a special register that does not communicate with the temperature controller. User needs to assign value in the screen according to the settings as in the temperature controller.
- Ctrl0 indicates the setting of the control character, the valid values are 1, 2, 3 respectively, and the corresponding control group is: STX\_ETX\_CR , STX\_ETX\_CR LF and @\_:\_CR .
- Ctrl1 indicates the BCC block check mode. The valid value range is 1-4. The corresponding check mode is: 1.ADD, 2.ADD\_two's cmp, 3.XOR, 4.None;
- Ctrl3 reserved

#### Note:

After reloading the HMI project or restarting the HMI, HMI will reset the value of ctrI0 and ctrI1 as 1, so user need to set these two values to make it the same as it in the temperature controller, then communication will be normal.

#### **Cable Wiring**



HMI COM3 (Female)	RS485
7 RX+	—— A+
8 RX 5 GND	B- GND
-	A+ B-

**Note:** COM3 only available in PI8000/PI9000 series.

# MR13 series(standard protocol)

Supported series: SHIMADEN MR13 series

### **HMI Setting**

Items	Settings	Note
Protocol	SHIMADEN standard protocol	
Connection	RS485 (1200, 1, 7, EVEN)	
Port No.	None	
PLC station No.	0	

Device address	HMI register	Address range	Туре
0100-010B(HEX)	MR100	100256-300267	Read only
0111-0126(HEX)	MR111	100273-300294	Read only

0184-0192(HEX)	MR184	100388-300402	Write only
0280-0282(HEX)	MR280	100640-300642	Read only
0300-030B(HEX)	MR300	100768-300779	Read/write
0314-0317(HEX)	MR314	100788-300791	Read/write
031A(HEX)	MR31A	100794-300794	Read/write
0320-0321(HEX)	MR320	100800-300801	Read/write
0400-0504(HEX)	MR400	101024-301284	Read/write
0506(HEX)	MR506	101286-301286	Read/write
0510-0514(HEX)	MR510	101296-301300	Read/write
0516-0524(HEX)	MR516	101302-301316	Read/write
0526(HEX)	MR526	101318-301318	Read/write
0580-08C3(HEX)	MR580	101408-302243	Read/write
	Ctrl	0-2	

#### Note:

- The upper 2 bits of the address of the HMI register are taken as the sub address, and the real address is the last four bits (for example, if the address is 100256, then 10 is the sub address as 1, and 0256 is the real address);
- The address range in the table is only divided by the start and end addresses, and some of the addresses in the range have no corresponding address in MR13;
- The Ctrl register is used to store the control group number and BCC check mode.

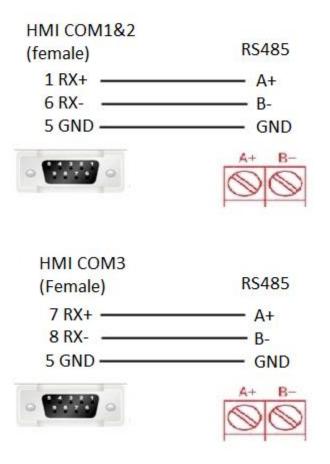
#### **Ctrl Register Description**

- The Ctrl register is a special register that does not communicate with the temperature controller. User needs to assign value in the screen according to the settings as in the temperature controller.
- Ctrl0 indicates the setting of the control character, the valid values are 1, 2, 3 respectively, and the corresponding control group is: STX\_ETX\_CR, STX\_ETX\_CR LF and @\_:\_CR.
- Ctrl1 indicates the BCC block check mode. The valid value range is 1-4. The corresponding check mode is: 1.ADD, 2.ADD\_two's cmp, 3.XOR, 4.None;
- Ctrl3 reserved

#### Note:

After reloading project or restarting the HMI, HMI will reset the value of ctrl0 and ctrl1 as 1, so user need to set these two values to make it the same as it in the temperature controller, then communication will be normal.

#### Cable Wiring



**Note:** COM3 only available in PI8000/PI9000 series.

## **Create communication with MODBUS**

### **MODBUS RTU Master**

Supported Series: MODBUS RTU CONTROLLER

HMI works as MODBUS SLAVE connecting with MASTER

New Pr	roject		2
	Location and Nam	e	
1	Name:	RTU Slave	
	Location:	C:\Users\WECON\Desktop Browse	
		C. (USEIS/WECON/DESKOP	
2	HMI Carian	ung weder weeks Dung.	
5	HMI Series:	HMI Model: Angle HMI+	
	General Series i Series ie Series ig Series	PI3070         O°         Screen Resolution 800*480           PI3070HE         90°         180°           PI3070N-2S         180°         270°           PI3102H         270°         18102           PI3102H-2S         913102H-2S         1410           PI3102HE         V         1410	
	Communication		
3	Connection:	PLC Type:	_
	COM1 COM2	MIKOM Aitsubishi	
	Ethernet	ModBus	
	USB	Modicon	
		NAIS NanDaAoTuo PLC	
	ModBus RTU Sh	ve(All Fuction OneBaseAddress)	
	ModBus RTU Ma	ster	
	ModBus (ASCII) ModBus ASCII M	Slave	
	MOOBUS ASCII M	aster	/
		to send data, and respond to device ta(the device send data activelv)	
		< 上一步(B) 完成 取消 帮	锄

Connection: -	1							LC Conn	e di se		
	mmun	Protocol	Device ty	pe		COM	Port setting	LC Conn	ection		×
1 (	COM1	RS485	ModBus RTU	Master	Мо		Connection:	RS485		~	0
						17	Baud rate:	19200	)	~	
						17	Stop bits:	1		~	
Nev	w	Delete	Se	tting		/	Data bits:	8		~	
Station No.	I No.: 0		Device No.: 0				Parity:	NONE		~	
:OM Irotocol IMI Model	PI3	dBus RTU Master	•	]				MI Pin d		n:	
IOM: Device IP;	No	5485, 19200, 1, 0 ne	8, NONE	Setting Setting	PI CC		PIN Defi		PIN	Defin	ition
Timeout:	(3	00, 50, 2, 3, 0, 0	,5)	Setting	1	RS4	22 TX+/RS485		2	RS232 RHD	
					3	RS2	32 TXD		5	GND	
					6	i RS43	22 TX-/RS485	B-	8	R5422 RX-	
					9	ned.	22 RX+				

Connect	tion:					PLC Co	nnection	
No. Commu								
1	COM1	RS485	ModBus RTU Ma	ster	ModE	us RS485		
	New	Delete	Settir	ng		HMI com1 9 pin (female) 1 RXD — 6 TXD —		RS485 A+ B-
Station	No			-		5 GND		GND
СОМ	HMI No.:	0 D	evice No.: 0			0 ( <u>****</u> ) 0		
	l							
Protocol	l	ModBus RTU Master				HMT Dir	definitio	
HMI Mod	MI Model PI3070				101210	- Contractor		
COM:	[	(R5485, 19200, 1, 8	3, NONE )	Setting	COM	1 PIN Definit	tion	
Device II	»: [	None		Setting	PIN	Definition	PIN	Definition
Timeout	: [	( 300, 50, 2, 3, 0, 0	,5)	Setting	1	RS422 TX+/RS485 A+	2	RS232 RMD
					3	RS232 TRD	5	GND
					6	RS422 TX-/RS485 B-	8	R5422 KX-
					9	R5422 RX+		
							-	
- charac		ation parameters (						

### HMI Settings

Items	Settings	Note
Protocol	MODBUS RTU Master	
Connection	RS485/RS232	
Baud rate	2400~187500	
Data bit	8	
Parity	Even/ Odd/ None	

Stop bit	1/2	
Station No.	0~255	

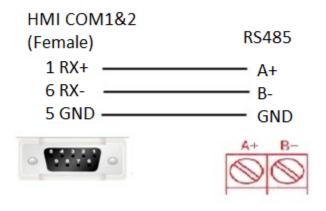
#### Address List

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

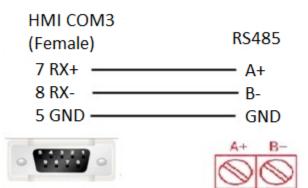
Cable Wiring

• RS485

# RS485 MODBUS



# **RS485 MODBUS**



• RS232

RS232 MODBUS	
HMI COM1&2	D-SUB
PIN9 female	PIN 9
2 RXD	3 TXD
3 TXD	2 RXD
5 GND ———	5 GND
	- 9889 -

Note: COM3 only available in PI8000/PI9000 series.

# MODBUS RTU Slave (All function)/(All function OneBaseAddress)

Supported Series: MODBUS RTU CONTROLLER

HMI works as MODBUS MASTER connecting with SLAVE.

The addresses in [All function] start from 0, while the addresses in [All function OneBaseAddress] start from 1 (offset 1).

	Name:	RTU Master		
	Location:	C:\Users\WEC	CON\Desktop	Browse
2	HMI HMI Series:	HMI Model:	Angle	
	General Series i Series ie Series ig Series	P13043ie P13043ieS P13070ie P13070ind P13102ie P13102ind	0° Screen Resolution 90° 180° 270°	on 480*272
3	Communication Connection:	PLC Type:		
	COM1 Ethernet USB	MIKOM Mitsubishi ModBus Modicon NAIS NanDaAoTuo	PLC	~
	ModBus RTU Slave ModBus RTU Maste ModBus (ASCII) Sl ModBus ASCII Mas	er ave	seAddress)	~
	HMI send data to er, receive data p	device actively, the assively, address st	e device is mast art from 1, c	

mmunic	cation									
Connec	tion:						PLC Conne	ection		
No. 1	Commun COM1	. Protocol RS485	Device typ ModBus RTU Slave(/		СОМ	port setting			×	
					11	Connection:	RS485		~	
						Baud rate:	9600		~	
						Stop bits:	1		~	
	New	Delet	te Sett	ing		Data bits:	8		~	
Station	No. HMI No.:	0	Device No.: 1	_ /	<b>'</b>	Parity:	NONE		~	
сом	l	COM1				OK		C	incel	
Protocol	· .		e(All Fuction OneBas		_		HMI Pin de	efinitio	in:	
HMI Mod	del	PI3070ie								
COM:	[	( R5485, 9600, 1	I, 8, NONE ) 4	Setting	COM1	PIN Def	finiti	оп		
)evice 1	P: [	None		Setting	PIN	Definitio	on F	PIN	Definition	1
Timeout	= [	( 300, 50, 2, 3, (	0, 0 ,5)	Setting	1	RS422 TX+/RS48	85 A+	2	RS232 RAD	
					3	RS232 TXD		5	GRD	
					6	RS422 TX-/RS48	85 B-	8	RS422 RM-	
					9	RS422 RX+				
Chan	ge communic	ation parameters	1							
	User-Defi	ned protocol		ОК	Canco	el	Help			

	tion:				PLC Con	nection	
No.	Commun		Device type				
1	COM1	RS485	ModBus RTU Slave(All Fuctio	Mod	Bus RS485		
					HMI com1 9 pin (female)		RS485
					_		
							A+
	New	Delet	e Setting		6 TXD		B- GND
Station COM	HMI No.: 0	COM1	Device No.: 1		0 <b>(******</b> ) 0		
Protocol	Ν	ModBus RTU Slav	e(All Fuction OneBas		HMI Pin	definitio	
HMI Mod	iel P	PI3070ie			THE PU	Centiloc	
COM:	(	(R5485, 9600, 1	, 8, NONE ) Setting	COM	1 PIN Definit	ion	
		None	Setting	PIN	Definition	PIN	Definition
Device 1	P: [*			1. 1.1			
	· ·	300, 50, 2, 3, 0	, 0 ,5) Setting	1	RS422 TX+/RS485 A+	2	RS232 100
	· ·	300, 50, 2, 3, 0	, 0 ,5) Setting				RS232 ROD GRD
Device II Timeout	· ·	300, 50, 2, 3, 0	, 0 ,5) Setting	1	RS422 TX+/RS485 A+	2	
	· ·	300, 50, 2, 3, 0	, 0 ,5) Setting	1	RS422 TX+/RS485 A+ RS232 TXD	2	GND
	· ·	300, 50, 2, 3, 0	, 0 ,5) Setting	1 3 6	RS422 TX+/RS485 A+ RS232 TXD RS422 TX-/RS485 B-	2	GND

## HMI Settings

Items	Settings	Note
Protocol	MODBUS RTU Slave (All function)/( All function OneBaseAddress)	
Connection	RS485/RS232	
Baud rate	2400~187500	
Data bit	8	
Parity	Even/ Odd/ None	

Stop bit	1/2	
PLC station No.	0~255	

### Address List

Туре	Address Type	Function code & Description
		04 (read input register: read current binary value in one or more input registers)
	3	06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses )
		03 (read holding register: read current binary value in one or more holding registers)
	4	06 (write single register: write a binary value to a holding register)
Word		10 (write values to multiple addresses )
		03 (read holding register: read current binary value in one or more holding registers)
	W6	06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses )
	W16	03 (read holding register: read current binary value in one or more holding registers)
		10 (write values to multiple addresses )

		01 (Read coil state)
	0	05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits, ie write continuously)
		02 (Read the input state)
	1	05 (Force a single coil to force the on/off state of a logic coil)
Bit		0F (Write multiple bits)
	W5	01 (Read coil state to obtain the current state of a set of logic coils)
		05 (Force a single coil to force the on/off state of a logic coil)
		0F (Write multiple bits)
	W15	01 (Read coil state to obtain the current state of a set of logic coils)
		0F (Write multiple bits)

#### Note:

- Modbus can also support getting bit from the word, which could access the address such as 100.1 and other formats.
- The function codes sent out are the same as those that read and write words.

#### Station number for more than one slaves

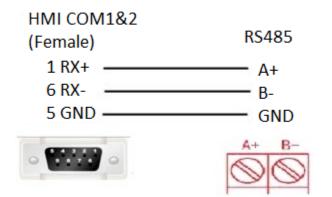
If there are more than one slaves connected to HMI, please set slave station number during editing address, as below shows.

Edit					×
				$\sim$	
Connection		1 -	COM1	$\sim$	
Address	Address Type			$\sim$	Note:Word Address.
Data Fo	rmat	We	ord	$\sim$	Mark:4. No.:0~999999. Decimal
Byte ord	ler	12	(Normal)	$\sim$	Decimal
Address	No.	0			
Extende		0			
Extende	ed tag2	0			
А	В	С	DE	F	PLC Station No.
7	8	9	←		☑ Default Station No. 2   🜩
4	5	6	Clear		Address Source
1	2	3	Close		Oser Input
0	•	Oł	( NON	E	O From Address Lib
	Help				O System Address

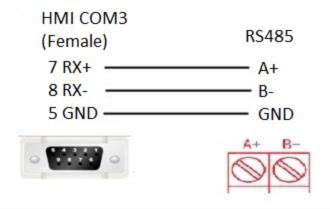
## **Cable Wiring**

• RS485

# **RS485 MODBUS**



# RS485 MODBUS



• RS232

RS232 MODBUS	
HMI COM1&2	D-SUB
PIN9 female	PIN 9
2 RXD	3 TXD
3 TXD	2 RXD
5 GND	5 GND
	- 91119 -

**Note:** COM3 only available in PI8000/PI9000 series.

# **MODBUS TCP Slave (All function)**

Supported series: MODBUS TCP controller

Note: Although the protocol selected for the HMI is MODBUS TCP Slave, the HMI is working as a MODBUS TCP Master connected to TCP SLAVE.

New Pro	oject		×
1	Location and Name		
	Name:	TCP Master	
	Location:	C:\Users\WECON\Desktop Brows	se
	HMI		
2	HMI Series: HI	4I Model: Angle 🗌 HMI+	
	i Series P ie Series P ig Series P P P	Image: System in the second system         0°         Screen Resolution 800*48           I3070HE         90°         180°         180°           I3070N-2S         180°         270°         1810°           I3102H         270°         1810°         1810°           I3102H         910°         1810°         180°           I3102H         910°         180°         180°           I3102H         910°         180°         180°           I3102H         910°         180°         180°           I3102H         910°         180°         180°	0
3	Communication Connection:	PLC Type:	
	COM1 COM2 Ethernet	LG Mitsubishi ModBus	^
	USB	NAIS NanDaAoTuo PLC Nardi Elettronica	~
	ModBus TCP Slave(A ModBus TCP Master ModBus ASCII TCP S	Slave	^
	ModBus ASCII TCP M ModBus RTH Save(F		¥
		evice actively, the device is mast sivelv. address start from 0. u	
		< 上一步(B) 完成 取消	帮助

No.       Commun       Protocol       Device type         1       Ethernet       ModBus TCP Slave(AI Fuction)         New       Delete       Setting         Station No.       Image: Setting         Station No.       Device No.: 1         DOM       Ethernet         ModBus TCP Slave(AI Fuction)       Device No.: 1         Dimeters       OK         ModBus TCP Slave(AI Fuction)       HHI Pin definition:	Connection:				
I       Ethemet       ModBus TCP Slave(Al Fuction)         I       Image: Cancel       Image: Cancel         New       Delete       Setting         Station No.       Image: Cancel       Image: Cancel         MMI No.:       0       Device No.:       Image: Cancel         Com       Ethemet       Ethemet       Image: Cancel         Wrotocal       ModBus TCP Slave(All Fuction)       Image: Cancel       Image: Cancel         Dow       Ethemet       Setting       Image: Cancel       Image: Cancel         Dow       Image: Cancel       Image: Cancel       Image: Cancel       Image: Cancel         Device IP:       192.166.1.201:502       Setting       Image: Cancel       Image: Cancel         Device IP:       192.166.1.201:502       Setting       Setting       Image: Cancel       Image: Cancel         Change communication parameters (       Change communication parameters)       Setting       Image: Cancel       Image: Cancel				PLC Connection	
New Delate     Station No.   HME No.:   Device No.:     Device No.:     Device No.:     ModBus TCP Skive(All Fuction)     HMI Paidefinition:     HMI Paidefinition:     Device IP:   192.166.1.201:502   Setting   Timeout:      (1500, 50, 2, 3, 0, 0, 5)     Setting     Change communication parameters •				PLC IP Address: 192 . 168 . 1 . 201 PLC port No.: 502	
Station No.   HMI No.: 0   Device No.: 1   DOM   Ethemet   Protocol   Model   P13070   DM:   None   Setting   Device IP:   192.166.1.201:502   Setting   Timeout: (1500, 50, 2, 3, 0, 0, 5) Setting Change communication parameters i	New	Delet	a Setting	D tions!	
COM Ethemet   Protocol ModBus TCP Skre(All Fuction)   HMI Model P13070   COM: None   Setting   Device IP: 192.166.1.201:502   Setting   Timeout: ( 1500, 50, 2, 3, 0, 0, 5) Satting	Station No.			broadcast No.: 0	
Image: communication parameters (	HMI No.	: 0	Device No.: 1	OK Cancel	
Protocol ModBus TCP Skrve(All Fuction)   HMI Model P13070   COM: None   Oevice IP: 192.166.1.201:502   Setting   Timeout: ( 1500, 50, 2, 3, 0, 0, 5) Setting	COM	Ethemet			
IMI Model       P13070         COM:       None         Device 1P:       192.166.1.201:502         Setting         Timeout:       (1500, 50, 2, 3, 0, 0, 5)         Setting	Protocol	ModBus TCP Slave	(All Fuction)		
Device IP: 192.168.1.201:502 Setting Timeout: (1500, 50, 2, 3, 0, 0, 5) Satting Change communication parameters	HMI Model	P13070		HMI Pin definition:	
Device IP: 192.168.1.201:502 Setting Timeout: (1500, 50, 2, 3, 0, 0, 5) Satting Change communication parameters	COM-	None	Setting		
Timeout: (1500, 50, 2, 3, 0, 0, 5) Setting		100 100 1 0010			
Change communication parameters (	Device IP:	192,166,1,201;5	02 Setting		
	-	efined protocol		Cancel Help	>
Project Settings HMI IP Instalment Extend	user-D roject Settin Proje <mark>ct Se</mark> t	efined protocol ngs ttings HMI I	ОК	Cancel Help	>
	User-D roject Settin Project Sel	efined protocol ngs ttings HMI IF	ок Instalment Extend		>
	User-D roject Settin Project Set	efined protocol ngs ttings HMI IF HMI IP P:	ок Instalment Extend 192 . 168	. 1 . 66	>

## **HMI Setting**

Items	Settings	Note
Protocol	MODBUS TCP Slave (All function)	
Connection	Ethernet	
Port No.	502	

PLC station No.	1	

### Address List

Туре	Register	Function code & Description
	3	04 (read input register: read current binary value in one or more input registers)
		06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses )
	4	03 (read holding register: read current binary value in one or more holding registers)
		06 (write single register: write a binary value to a holding register)
Word		10 (write values to multiple addresses )
		03 (read holding register: read current binary value in one or more holding registers)
	W6	06 (write single register: write a binary value to a holding register)
		10 (write values to multiple addresses )
	W16	03 (read holding register: read current binary value in one or more holding registers)
		10 (write values to multiple addresses )
Bit	0	01 (Read coil state)

	05 (Force a single coil to force the on/off state of a logic coil)
	0F (Write multiple bits, ie write continuously)
	02 (Read the input state)
1	05 (Force a single coil to force the on/off state of a logic coil)
	0F (Write multiple bits)
	01 (Read coil state to obtain the current state of a set of logic coils)
W5	05 (Force a single coil to force the on/off state of a logic coil)
	0F (Write multiple bits)
W15	01 (Read coil state to obtain the current state of a set of logic coils)
	0F (Write multiple bits)

# Communication Settings

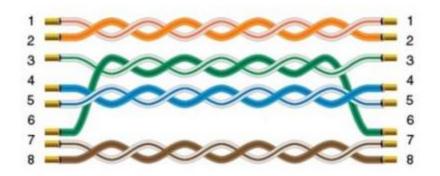
Enable HMI Ethernet in [Project Settings];

MHMI IP				
IP:	192 .	168 .	1.	66
Sub mask:	255	255 .	255 .	0
Gateway:	192	168 .	1	1

Set PLC IP in [Device IP] settings;

co	M	Ethernet		TCP/IP parameters		Х
Pre	atocol	ModBus TCP Slave(All Fuction)		PLC IP Address:	192 . 168 . 1 . 201	
		PI8070		PLC port No.:	502	
ни	MI Model			Network:	TCP_Client_2N $\sim$	
CO	DM:	None	Setting	Broadcast ad	idress	
De	evice IP:	192.168.1.201:502	Setting	Broadcast No.:	0	
Tin	neout:	( 1500, 50, 2, 3, 0, 0 )	Setting	OK	Cancel	

#### **Cable Wiring**



# Printer

# **TSPL label printer**

#### Introduction

TSPL label printer protocol supports following models.

- SPRT TL21: https://www.sprinter.com.cn/show-60-62-1.html
- DL-888D: https://www.deliworld.com/product/detail/7624

#### **Setting Step**

Select the protocol

• Create a new project, select the TSPL label printer protocol as shown below.

Communication device		
Communication Serial por	t Device type:	Search:
COM1 COM2 COM3 Ethernet CAN1 USB	Barcode PRINTER	SP-EU80 SP-RME3/RME4/RMD8 TSPL
Support TSPL printer		
	ок	Cancel

### Set parameters

• The connection between the TSPL label printer and the HMI is via the USB-A interface, no need to configure serial port parameters.

## Printer register

Register	System	Range	Function
TSPL_SP	decimal	0 - 1	Set the paper size
TSPL_PT	decimal	0 - 1999	Print text
TSPL_PQ	decimal	0 - 999	Print QR code
TSPL_PB	decimal	0 - 999	Print barcode
TSPL_PR	decimal	0 - 1	Print offset
TSPL_PN	decimal	0 - 0	Trigger printing

TSPL_PS de	ecimal	0 - 0	Print status
------------	--------	-------	--------------

- Set paper size:
  - TSPL\_SP0: width of paper, unit: mm.
  - TSPL\_SP1: height of paper, unit: mm.
- Print text:
  - TSPL\_PT can print up to 20 texts. TSPL\_PT0-TSPL\_PT99 is the first text; TSPL\_PT100-TSPL\_PT199 is the second text; ... TSPL\_PT1000-TSPL\_PT1999 is the 20th text.
  - Detailed parameter settings of each text is shown as below table. For example, first text, TSPL\_PT0-TSPL\_PT99.

Register	Function	Description
TSPL_PT0	X coordinate	Unit: dot
TSPL_PT1	Ycoordinate	Unit: dot
TSPL_PT2	Rotation angle	0: 0 degrees 1: 90 degrees 2: 180 degrees 3: 270 degrees
TSPL_PT3	Size	Range: 0-3
TSPL_PT4 - TSPL_PT99	QR code content(text content)	Use character input device to configure

By analogy, we can know the text information configuration of the 2nd to 20th QR codes

Print QR code:

- TSPL\_PQ can print up to 10 QR codes. TSPL\_PQ0-TSPL\_PQ99 is the first QR code; TSPL\_PQ100-TSPL\_PQ100 is the second QR code; TSPL\_PQ000 TSPL\_PQ900 is the tenth QR code;
- TSPL\_PQ199 is the second QR code; ...., TSPL\_PQ900-TSPL\_PQ999 is the tenth QR code.
- Specific parameter description of each item: for example, the first QR code, TSPL\_PQ0-TSPL\_PQ99:

Register	Function	Description
TSPL_PQ0	X coordinate	Unit: dot

TSPL_PQ1	Ycoordinate	Unit: dot	
TSPL_PQ2	Rotation angle	0: 0 degrees 1: 90 degrees 2: 180 degrees 3: 270 degrees	
TSPL_PQ3	Size	Range: 0-5	
TSPL_PQ4 - TSPL_PQ99	QR code content	Use character input device to configure	

• By analogy, we can know the text information configuration of the 2nd to 20th QR codes.

Print bar code:

- TSPL\_PB can print up to 10 barcodes. TSPL\_PB0-TSPL\_PB99 is the first bar code; TSPL\_PB100-TSPL\_PB199 is the second bar code; ..., TSPL\_PB900-TSPL\_PB999 is the tenth bar code.
- Specific parameter description of each item: for example, the first barcode, TSPL\_PB0-TSPL\_PB99:

Register	Function	Description	
TSPL_PB0	X coordinate	Unit: dot	
TSPL_PB1	Ycoordinate	Unit: dot	
TSPL_PB2	Rotation angle	0: 0 degrees 1: 90 degrees 2: 180 degrees 3: 270 degrees	
TSPL_PB3	height	Unit: dot	
TSPL_PB4	width	Range:0-2	
TSPL_PB5- TSPL_PB99	Bar code content	Use character input device to configure	

By analogy, we can know the text information configuration of the 2nd to 20th bar codes. Print offset:

• TSPL\_PR0: X coordinate offset, unit: mm;

• TSPL\_PR1: Y coordinate offset, unit: mm.

Trigger printing:

• TSPL\_PN0 = 1: trigger the printer to start printing.

Printing status:

- TSPL\_PS0 = 1: The printing is normal.
- TSPL\_PS0 = 1: The printing is abnormal.

#### Print picture

• For the function of printing pictures, please refer to the configuration of [Printer object].

Conversion between dot and mm

• Dot is the meaning of pixels. For the conversion between dot and mm, please refer to the printer manual or consult the customer service of the corresponding printer manufacturer. For example, SPRT TL21: 8 dots / mm, that is, 1mm = 8 dot.

# **EpsonTM series**

#### **HMI Settings**

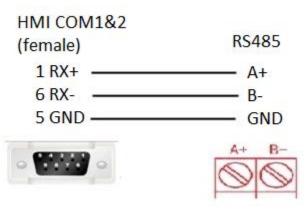
Item	Settings	Note
Protocol	EPSON-TM-T82II/TM-XXX	
Connection	RS232	
Baud rate	9600~115200	
Data bit	8	
Parity	None	
Stop bit	1	
PLC station No.	1	

Each printer protocol has default parameter. These parameters could be configured by addresses. Error parameters may cause print failure.

### **Printer Settings**

Address	Description	Value
HSW10603	Print direction (only valid for print function)	1
HSW10604	Dot Matrix Type	1
HSW10605	Print width (depending on printer and paper)	384
HSW10606	Printer instruction type	1
HSW10607	Paper cut	2
HSW10608	Alignment (only valid for print function)	1

## Cable Wiring



HMI COM3	00405
(Female)	RS485
7 RX+	—— A+
8 RX-	— В-
5 GND	GND
-	A+ B-

**Note:** COM3 only available in PI8000/PI9000 series.

# **Create communication with Schneider PLC**

# Schneider MODBUS RTU

**HMI Setting** 

Parameters	Recommended	Notes
Protocol	Schneider MODBUS RTU	
Connection	RS485	
Baud rate	19200	
Data bit	8	
Parity	Even	
Stop bit	1	
PLC station No.	1	
PLC Setting		

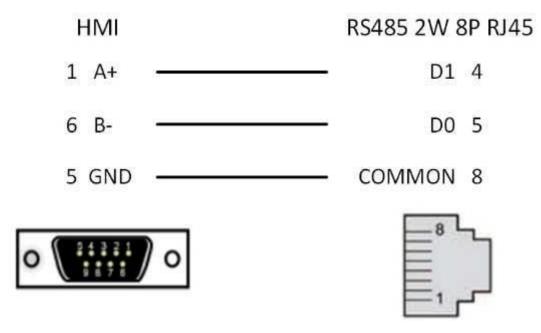
Communication mode Modbus RTU protocol
--

#### **Device Address**

Bit/Word	Device type	Format	Range	Memo
В	IX	DDDDDo	0 ~ 655357	Input bit (read only)
В	QX	DDDDDo	0 ~ 655357	Write multiple coils
В	MX	DDDDDDo	0 ~ 9999997	Output register bit (octal)
W	MW	DDDDDD	0 ~ 999999	Output register
DW	MD	DDDDDD	0 ~ 999999	Output register

#### Wiring Diagram

**RS-485 2W** (RJ45 Connector): The following is the view from the soldering point of a connector.



# **Barcode Scanner**

Supported: DELI 14880 barcode scanner

### **HMI Setting**

Items	Settings	Note
Protocol	Barcode Scanner	
Connection	USB	

# **Operating Procedures**

Select [Barcode Scanner];

Communication of	levice			×
Communication	Serial port	Device type:	Search:	
COM1 COM2 Ethernet USB		Barcode PRINTER	Barcode Scanner	
		ОК	Cancel	

Set address for receiving;

Set correct length;

Characters input/	′display ×
General Graphi	c Security Animation
General	
Read Address	Data0 2 Edit
🗹 Input	Same read-write address Read DWord
Write Address	Data0 Edit
Keypad:	1001: BuilKey 🗸
Note:	
Display	3
Exchange h	igh-low byte Length [128 ] (1~256)
Display as '	* Alignment Centre ~
Exchange h	iigh-low word Quick Read
	Keypad position
	○Default ○ ○ ○
	$\circ \circ \circ$
	000
- Indirect addre	ssing
Read addre	-
Write addre	ess
	OK Cancel Help

#### Note:

- The protocol uploads the information acquired by the USB scanner to the HMI;
- The acquired information is displayed in string mode, so it is necessary to use [characters input/display] object;
- Recommended model: DELI 14880 barcode scanner;

# Hitachi EHV Series (Ethernet)

## Supported series: Hitachi EHV series

## HMI Settings

Items	Settings	Note
Protocol	Hitachi EHV series	
Connection	Ethernet	
Port No.	3004~3007	

## Address List

Туре	Register	Range	Format	Note
	Т	0 - 2545	T DDDD	
	М	0 - 7FFF.f (Hex)	M HHHH.h	
	Х	0 – FFFF.f (Hex)	X H1H2H3H4.h	H1H2H3H4 Module main number H1: Remote number
Bit	Y	0 – FFFF.f (Hex)	Y H1H2H3H4.h	<ul> <li>H2: Unit number</li> <li>H3: Slot number</li> <li>H4: Word number of Module</li> <li>H Sub number of Module</li> <li>For example:X21.3</li> <li>Slot number 2</li> <li>Word number of module is 1</li> <li>Bit number of module is 3</li> <li>Remote number and unit number are 0</li> </ul>
	R	0-FF.f (Hex)	R HH.h	
	L	0 - 73FF.f (Hex)	L HHHH.h	
Word	WM	0 - 7FFF (Hex)	WM HHHH	

WX	0-FFFF (Hex)	WX H1H2H3H4	H1H2H3H4 Module main number
WY	0 – FFFF (Hex)	WY H1H2H3H4	<ul> <li>H1: Remote number</li> <li>H2: Unit number</li> <li>H3: Slot number</li> <li>H4: Word number of module</li> <li>For example:WX21</li> <li>Word number of module is 1</li> <li>Slot number is 2</li> <li>Remote number and unit number are 0</li> </ul>
WR	0 – FFFF (Hex)	WR HHHH	
WL	0 - 73FF (Hex)	WL HHHH	
тс	0 - 2559	TC DDDD	

## Communication settings in HMI

Enable HMI Ethernet in [Project Settings];

HMI IP		
IP:	192 . 168 . 1 . 66	
Sub mask:	255 . 255 . 255 . 0	
Gateway:	192 . 168 . 1 . 1	

# Set PLC IP in [Device IP] settings;

СОМ	Ethemet	TCP/IP parameters	×
Protocol	Hitachi EHV Serials(Ethernet)	PLC IP Address: 192 . 168 . 1 . 201	
HMI Model	P18070	PLC port No.: 3004 Network: TCP_Client_2N V	
COM:	None Setting	Broadcast address	
Device IP:	192.168.1.201:3004 Setting	Broadcast No.: 0	
Timeout:	( 1500, 50, 2, 3, 0, 0 ) Setting	OK Cancel	

# **PLC Configuration**

Connect with PLC, select[Online mode];

Image: Second Secon	File Edit View Onli	ine <u>D</u> ebug <u>T</u> ool	Window	v <u>H</u> elp								
Image: Second secon	N N 🗅 🖉 🖬 🔜	Mode	$\rightarrow$ $\checkmark$	Offline	2 🦻	1997						
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CPU settings   Calendar clock   Project password   Project password   Parameter settings   Parameters   Parameters   Program   Program   Program   Program   Program   Program   Program   Parameters   Program   Program <td></td> <td>in</td> <td></td>		in										
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Project password       2         Project password       3         Parameter settings       3         Parameter settings       3         Parameter settings       4         Parameters       4         Program       5         Program       5         Program       6         Program       6         Program       7         Random circuit m       7         Prime Chart Monitor       8	-											
Project password   Parameter settings   Image: Note of the im	🚨 Calendar clock											
Parameter settings 3   Image: Parameter settings 3   Image: Parameter settings 4   Image: Parameter settings 5   Image: Parameter settings 5   Image: Parameter settings 6   Image: Parameter settings 7   Image: Parameter settings 8	Project1	2										
Image: Weight of the set	Project password											
I/O Configuration   Image: Retentive area   Operation parameters   Image: Link parameters	🕬 Parameter settings											
Operation parameters   Link parameters   Program   Program1   I/O comment   I/O comment </td <td>- 👬 I/O Configuratio</td> <td>in: S</td> <td></td>	- 👬 I/O Configuratio	in: S										
Inik parameters         Inik parameters         Inik parameters         Inik program	- 🚰 Retentive area											
Ink parameters       Image: FL-net parameters       Program       Image: Program1       Image: FL-net parameters       Image: Program1       Image: Program1       Image: Program1       Image: Program2       Image: Program2       Image: Program3       Imag	- 🔛 Operation parar	me 🔺										
Program     5       Program1     5       I/O comment     6       I/I Circuit comment     6       I/I Multi-Comment     7       Random circuit m     7       Image: Time Chart Monitor     8	- 🛄 Link parameters											
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Program1       I/O comment       I/O comment       I/D Comment       I/D Multi-Comment       I/M FL-net Monitor       8	- Program	5										
I/O comment     6       If Circuit comment     6       If Multi-Comment     7       If Monitor     7       If Time Chart Monitx     8												
Image: Circuit comment     6       Image: Circuit comment     6       Image: Circuit comment     7       Image: Circuit comment     8												
Image: Second		6										
Image: Second structure     7       Image: Second structure     7       Image: Second structure     7       Image: Second structure     7												
- S Random circuit m - Time Chart Monitor - FL FL-net monitor 8	max -											
Time Chart Monitx												
E-FL FL-net monitor 8	_											
	I/O monitor she											

Set IP address, it is the same LAN parameters with HMI;

P Address	Setting Data 192.168.40.12	Current PLC Data
Subnet mask	255.255.255.0	
Default gateway	192.168.40.1	
Link Speed / Duplex	10Mbps/Half Duplex 🗸	
		-
Baud rate is fixed as Aut	o Negotiation for CPU Ver,*106 or	older

3) Save PLC communication parameter, and restart PLC

### PLC Monitor Mode

Connect with PLC and choose to "online" mode

Control Editor V6.00	[EHV] - Project1 - Proje	ect1 - [	Program1 *]								
🚍 File Edit View 🕻	<u>Online</u> <u>D</u> ebug <u>T</u> ool	Wind	ow <u>H</u> elp								
i 🐚 🐚 🗋 🚅 🖬	Mode	> -	Offline	2 🗟	1991						
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	Force input		3 4	4 5	6	7	8	9	10	11	12
PC communication :	settin M12										M13
CPU parameters	1										<u> </u>
💣 Project1 *											
- S Project passwork	d										
🖶 🏟 Parameter settin	gs 2										

Open I/O monitor sheet1

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22212121	- 6	I/O monitor sheet1		Monitor	- Insat 1/0			-Number of I/0			×
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I CPU parameters Project1 *		Open DHM	Read data(PRJ)	51,20	Word special int. output	Bit spec	ial int. cytput	©18ga ⊛1g			
<ul> <li>Project password</li> <li>Parameter settings</li> </ul>									5		R
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- Operation parameters		1 10	CALCULATION FRANK		Access Amore	IBC					
- Link parameters	-	2 MI				LBC					
R-net parameters		3 42				THE					
Program *		4 43				TIC.					
- Program1 *		5 14				IBC					
- To comment *		8 88				IBC					
En Circuit comment		Y M6				1BC					
H Multi-Comment		B M7				EBC					
✓ Monitor		9 MA		_		IRC					
- Random circuit monite		10 %				THC THC					
Time Chart Monitor		12 10				ID:					
E FL El-pet monitor		13 M0				IBC					

During monitoring bit address,1 pts should be selected; during monitoring word address, 16 pts should be selected

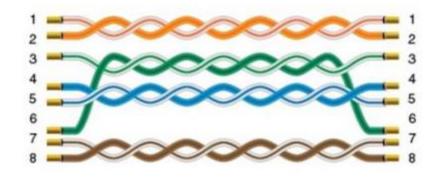
1	Number of 1/0
	○ 64 pts
	○ 16 pts
	● 1 <u>p</u> t

Enter the register address, click OK to view the value of the register.

File			Monitor	Insert I/O			Number of I/O	
Open	CSV Clear setting	value <u>R</u> ead data (PC<-PLC)	Start	I/O in program	Sne	cified I/D	○ 64 ptg	Close
Saye a:	s CSV	Write data (PC->PLC)	<u>-</u>	ivo inpiogram	ope	cilea 170	16 pts     16     16     15	Data Type (CT
Open [		Read data(PRJ)	Stop	Word special int, output	Bit spec	cial int. output	O1gt	
oponi	2 1º 10 1	incoa asiaji i wj					0.15	
/O add	ress Timer							A .
No.	I/O address	Current value	2	Setting value	Type	Retentive		connents
1	RM1				DEC			
2	9992		_		DEC			
3	00(3				DEC			
4	RM4 RM5				DEC			
6	MM6				DEC			
7	VM.7				DEC			
8	MM8				DEC			
9	8009				DEC			
10	RMA				DEC			
11	102				DEC			
12	MMC .				DEC			
13	8MD				DEC			
14	11/2				DEC			
15	1002				DEC			
16	MM10				DEC			
18	MD M1				DEC			
10					DEC			
19 < I/O m					DEC			>
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I/O m ile Open (	nonitor sheet1	value Bead data (PC<-PLC)	Monitor Start	Insert 1/0 1/0 in program		cijed 1/0	○ 64 pt <u>s</u>	Quose
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<ul> <li>I/O nr</li> <li>Open 0</li> <li>Saye as</li> <li>Open 0</li> <li>Saye as</li> <li>Open 0</li> <li>A0 adds</li> <li>No.</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> <li>21</li> <li>22</li> <li>23</li> <li>24</li> <li>25</li> <li>26</li> <li>27</li> </ul>	CSV Clear setting CSV Clear setting CSV Timer MM V MM V MM V MM V MM V MM V MM V MM	<u>W</u> rite data (PC⇒PLC) Read data(PRJ)	Start Stgp	1/0 in program Word special int. output	Spe Bit spec DBC DBC DBC DBC DBC DBC DBC DBC DBC DBC	cijied I/O ial int. ogtput	○ 64 ptg○ 16 pts	Dota Type (CT
<ul> <li>I/O m</li> <li>Dpen 0</li> <li>Saye as</li> <li>Open 0</li> <li>Mo.</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> <li>21</li> <li>223</li> <li>223</li> <li>224</li> <li>226</li> <li>227</li> <li>228</li> </ul>	CSV Clear setting CSV Clear setting CSV Timer MMD MI MD MI M1 M2 M3 M3 M4 M5 M6 M7 M4	<u>W</u> rite data (PC⇒PLC) Read data(PRJ)	Start Stgp	1/0 in program Word special int. output	Spe Bit spec DEC DEC DEC DEC DEC DEC DEC DEC DEC DEC	cijied I/O ial int. ogtput	○ 64 ptg○ 16 pts	Dota Type (CT
<ul> <li>I/O m</li> <li>Dpen 0</li> <li>Saye as</li> <li>Open 0</li> <li>A0 addm</li> <li>No.</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> <li>21</li> <li>22</li> <li>23</li> <li>24</li> <li>26</li> <li>27</li> <li>28</li> <li>29</li> </ul>	Imponitor sheet1           CSV         Clear setting           CSV         Clear setting           CSV         Timer           I/O         widdr +ss           I/O         wi	<u>W</u> rite data (PC⇒PLC) Read data(PRJ)	Start Stgp	1/0 in program Word special int. output	Spe Bit spec DEC DEC DEC DEC DEC DEC DEC DEC DEC DEC	cițied I/O ial int. output	○ 64 ptg○ 16 pts	Dota Type (CT
<ul> <li>I/O m</li> <li>Dpen 0</li> <li>Saye as</li> <li>Open D</li> <li>All adds</li> <li>No.</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> <li>21</li> <li>22</li> <li>23</li> <li>24</li> <li>26</li> <li>27</li> <li>28</li> <li>29</li> <li>30</li> </ul>	CSV Clear setting CSV Clear setting CSV Clear setting CSV MM CSV MA MA MA MA MA MA MA MA MA MA MA MA MA M	<u>W</u> rite data (PC⇒PLC) Read data(PRJ)	Start Stgp	1/0 in program Word special int. output	Spe Bit spec DBC DBC DBC DBC DBC DBC DBC DBC DBC DBC	cijied I/O	○ 64 ptg○ 16 pts	Dota Type (CT
<ul> <li>I/O m</li> <li>Dpen 0</li> <li>Saye as</li> <li>Open 0</li> <li>Mo.</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> <li>21</li> <li>22</li> <li>23</li> <li>24</li> <li>25</li> <li>26</li> <li>27</li> <li>28</li> <li>29</li> <li>30</li> <li>31</li> </ul>	Imponitor sheet1           CSV         Clear setting           CSV         Clear setting           CSV         Imponitor sheet1           CSV         Clear setting           CSV         Imponitor sheet1           CSV         Imponitor sheet1           CSV         Imponitor sheet1           CSV         Imponitor sheet1           MMD         MMD           MMD         MMD           MME         MMD           MME         MME           MME         Imponitor sheet1           MME         Imponitor sh	<u>W</u> rite data (PC⇒PLC) Read data(PRJ)	Start Stgp	1/0 in program Word special int. output	Spe Bit spec DBC DBC DBC DBC DBC DBC DBC DBC DBC DBC	cijied I/O	○ 64 ptg○ 16 pts	Dota Type (CT
<ul> <li>I/O m</li> <li>Dpen 0</li> <li>Saye as</li> <li>Open D</li> <li>All adds</li> <li>No.</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> <li>21</li> <li>22</li> <li>23</li> <li>24</li> <li>26</li> <li>27</li> <li>28</li> <li>29</li> <li>30</li> </ul>	CSV Clear setting CSV Clear setting CSV Clear setting CSV MM CSV MA MA MA MA MA MA MA MA MA MA MA MA MA M	<u>W</u> rite data (PC⇒PLC) Read data(PRJ)	Start Stgp	1/0 in program Word special int. output	Spe Bit spec DBC DBC DBC DBC DBC DBC DBC DBC DBC DBC	cijied I/O	○ 64 ptg○ 16 pts	Dota Type (CT

- Both word registers and bit registers support even continuous read/write functions; The range of registers is based on the specific PLC type; •
- •

### **Cable Wiring**



# IEC60870-5 104 Client

#### **HMI Setting**

Items	Settings	Note
Protocol	IEC60870-5 104 Client	
Connection	Ethernet	
Port No.	2404	

#### Address List

Туре	Register	Range
	SPTB	0~16777215.7
Bit	SCNA	0~16777215.7
	DPTB	0~16777215.7
	DCNA	0~16777215.7

	METF	0~16777215.7
	SENC	0~16777215.7
	SENA	0~16777215.7
	MENA	0~16777215.7
	METD	0~16777215.7
	SPTB	0~16777215
	SCNA	0~16777215
	DPTB	0~16777215
	DCNA	0~16777215
	SENA	0~16777215
Word	MENA	0~16777215
	METD	0~16777215
	INRO	0~16777215
	TIMESYN	0~16777215
	TIMEZ	0~16777215
	NTP	0~16777215

Double word	METF	0~16777215
	SENC	0~16777215

#### Address Configuration

The address registers of the IEC60870-5-104 protocol are SPTB, SCNA, DPTB, DCNA, METF, and SENC. The protocol needs to be added with an extension tag "ASDU", which could only be added in the [Address Identification Library], other places are not editable, that is, the read address in the object or script is not editable.

				Edit				>
Address Libra				Word addre	ess1			
Word A	Address 🔹 🔿 Bit A	ddress		Connection		1 - Ethe	rnet v	
ID □1	Address Name Word address0	Address SPTB0	Byte order 12(Normal)	Address Typ	æ	SPTB	~	Note:Word Address.
	Word addresso	SFIDU	(2(Normal)	Data Forma	t	Word	~	Mark:SPTB. No.:0~16777215.
				Byte order		12(Norn	nal) v	Decimal
				Address No.		0		1
				ASDU		200		ASDU: 0 ~ 65535
		/		Extended ta	sg2	0		PLC Station No.
				A I	В	C D	E F	Default
•				7	8	9	←	Station No.
Add	Insert	Edit	Delete	4	5	5	Clear	
				1 :	2	3	Close	
Export EXC	EL Import EXCEL		Clear	0	•	ОК	NONE	
						Help		

neral Graphic Security Advanced Animation General	Edit				
Read Address Edit	Word addr	ess0:[!	SPTBO]		
Input	Connection		1-6	themet v	
	Address Typ	pe	SPT	3 V	Note:Word Address.
Note:	Data Forma	it	Wor	d v	Mark:SPTB. No.:0~16777215.
	Byte order		120	lormal) 🗸 🗸	Dedmal
Display Font	Address No	• 0			ASDU: 0 ~ 65535 2
Display as '2' Alignment Centre	<ul> <li>ASDU</li> <li>Extended to</li> </ul>	202	0		ADD: 0 ~ 63333
Data format		-	_		PLC Station No.
16-bit unsigned	A	8	С	DEF	- Defe dt
0 - 65535 Setting	7	8	9	+	Default 0
Integer:5 Decimal:0	4	5	6	Clear	Address Source
Indirect addressing Read address					User Input
Write address	1	2	3	Close	
Lable	0		ОК	NONE	From Address Lib
Left Right		_			○ System Address
			Help	)	Coloca and con

Extended tag name

Address range for the extended tag.

### **Communication Settings**

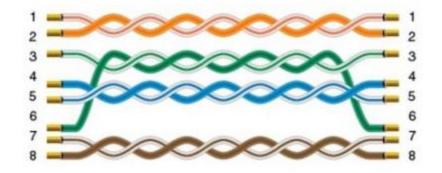
Enable HMI Ethernet in [Project Settings];

HMI IP				
IP:	192 .	168 .	1.	66
Sub mask:	255	255 .	255 .	0
Gateway:	192 .	168 .	1.	1

## Set PLC IP in [Device IP] settings;

COM	Ethernet		TCP/IP parameters	×
Protocol	IEC60870-5-104 Client		PLC IP Address: 192 . 168 . 0 . 10	
HMI Model	P18070		PLC port No.: 2404	
			Network: TCP_Client_2N ~	
COM:	None	Setting	Broadcast address	
Device IP:	192.168.0.10:2404	Setting	Broadcast No.: 0	
Timeout:	( 1500, 30, 2, 3, 0, 0 )	Setting	OK Cancel	

#### **Cable Wiring**



# **OpenCAN**

OpenCan is based on CAN2.0 standard; OpenCAN protocols that could be configured autonomously to accept and send frames.

This protocol is only available in PI8000 series HMI.

#### **HMI Settings**

Items	Settings	Note
Protocol	OPENCAN	
Connection	CAN port	
Baud rate	250000	

### CAN frame setting in HMI

Click [OpenCAN setting] button in communication setting window;

ommunicatio	on							3
Connection:						PLC Co	nnection	
	ommu CAN1	Protocol	Device ty OpenCA		HILI	CANH 120 Ω Device 1 CANL	Device 2	CANH 120 Q CANL
Ner Station No. – HN COM Protocol	41 No.: 0 C/	Delete	Device No.:1	ting	the beg	ou use CAN BUS,PIs ad pinning and end of CAN B between the H and L of	US device	Ω termination resistor al
HMI Model		8070				HMI Pir	definition:	
COM:	(.	250000, 1, 8, NC	DNE)	Setting	COM	l PIN Definit	tion	
Device IP:	N	one		Setting	PIN	Definition	PIN	Definition
limeout:	[2]	300. 50. 2. 3. 0. 0	1	Setting	1	RS422 TX+ (RS485+)	2	RS232 RXD
Imeout:	(5	00, 50, 2, 5, 0, 0	1	Setting	3	RS232 TXD	4	CANL
					5	GND	б	RS422 TX- (RS485-
					7	CANH	8	RS422 RX-
					9	RS422 RX+		
	OpenCAN	tion parameters I setting		ОК		Cancel Help		

Click [Add] to create a new frame;

	OpenC	AN Assistant							_	• >	<
		Add	2 Inse	rt						+	]
ſ		manager-3									1
	No.	ID	Frame ty	Frame for	Len	Send data(Hex)	Address	Ctrl	Multiple frame type	Lamp	
	1									•	
	0			•					8		
	Mo	dify	Сору	Delete	1	Empty 8 Brow	rse		0	К	

No	Items	Description
1	Add	add a frame related to register address
2	Insert	Select the position where you want to insert a frame, and click [Insert frame] to add a new frame in front of the current frame position
3	Frame manager	This list shows some of the main parameters for each frame that the user adds
4	Modify	Modify the frames in frame management
5	Сору	Copy one frame to another
6	Delete	Remove the selected frames from the list by modifying the frames in frame management. If no frames are selected in the list, the first frame is deleted.
7	Empty	All frames in the list are cleared
8	Browse	Displays configuration files in XML format in IE
9	ОК	Complete the configuration of the frame and exit

Set CANBUS frame in setting windows

Data access		Frame type Frame type Standar C Extende Data (Hex) 00 00 00 00	d Frame ed Frame	<ul> <li>Dat</li> </ul>	format a frame note Fram	ne Multiple packages
Use address 6 © Bit © WORD Edit CData0.0 Option Flag communication 9 Lamp: 10 Note: Data assign 11	Send after receiv No response C Confirm response Data response Response ID Differ with send	00 00 □ Res tim	00 00 00 00 00 00 00 00 00 00 00 00 00	0 00 ms	CtrlBit	supported address ually send
Address	Data forma	t	Start position	(Bit)	Lengt	h(Bit)

No	Items	Description
1	ID	Set the ID of a can frame in hexadecimal format;
2	ID assign	split the ID by PF, PS, and SA;
3	Frame type	Select Standard frame or Extended Frame;
4	Frame format	Select between data frame and remote Frame;

5	Data	Set the data part of CAN frame, with two Numbers representing a hexadecimal number and Spaces spaced; Maximum support of 8 bytes is defined according to CAN message;
6	Use address	Set the register address related to the CAN frame, which corresponds to the register address set on the main state one by one. The data obtained from the address is assigned continuously; <b>Edit:</b> Set a bit or word address by its format; <b>Option:</b> Set address options related to frame, enter "register address option" interface, specifically browse the following "register address option" interface;
	Data interactive configuration	There are two interactive modes of the touch screen. One is that the touch screen actively sends frames, and the device receives and processes and feeds back. The other, on the contrary, passively receives frames from the device for processing and feedback;
		Send after receiving: if this item is selected, the interaction of the touch screen will act as a passive party, and the touch screen will receive the CAN frame first and send feedback. Unchecked items interact in the opposite way;
		Feedback mode: feedback mode includes no response, confirm response and data response;
		No response: the device or touch screen will not receive feedback;
7		Confirm response: the device or the touch screen will receive feedback with confirmation, which could be used to compare the data parts. If this function is used, the 20 addresses before and after this address should not be used. All addresses of cata10-cata30 could not be used with the reply confirmation function of cata20;
		Data response: the device or touch screen will receive feedback with data, and the data to be separated from the feedback frame should be set to store in the register address;
		response ID: if the address wants to receive data on a frame with a different ID, set this, check "different from sender", and enter a different ID in the following input box. Without this setting, the screen will receive and process a frame with the same ID as the sender;
		Response timeout: sets whether the response frame timeout;
8	Control address	If ticked, enable sending when the value of the corresponding control bit number (address) is non-0.

		Control bit: CtrlBit register range 0~255, if the control bit is ON, can instruction will run normally. Otherwise, it doesn't run;
		Manually send: a manually send tick indicates only one send;
9	Flag configuration	Communication control for each frame. Display OFF when communication is normal, and ON when communication is abnormal;
10	Note	Fill the text to explain the meaning of the frame;
11	Data assign	Preview the display in this table based on the address and the corresponding number of digits;
12	Current operation display	Display the description of current operation;
13	Add	Add a new frame;
14	Save frame	Save the configured frame format;
15	Cancel	Cancel the frame configuration;

Set CAN address (Read or write operation);

Address option			$\times$
Current address 1 Type: Bit	Address	CData0.0	
<ul> <li>Trigger</li> <li></li></ul>			
Byte order 2 U16 little-endian			
Data operation 3 It won't read or write this address if set	0 in the setting	<b>]</b> .	
From frame data No. 0.0 E	Byte(Bit),to get		
0 Byte(Bit),display by the C	Objects		
Add	5	Close	

No.	Item	Description		
1	Current address	Displays the register type and register address set by the user in the data access interface		
	Trigger	Two operations, "read" and "write," are based on on-screen registers		
2		If "read" is selected, the register address is reading device data in a manner of sending frames set by the user in a loop.		
		If "write" is selected, the screen data of the register address will be written into the device. The writing mode is that the user makes a write operation on the screen, which will trigger the sending of a frame set by the user.		
	Data operation	The read and write operations in the trigger conditions are set accordingly.		
		If the trigger condition is a read operation, this section needs to set the position and length of the data to be obtained at the current address in the frame.		
3		<ul> <li>If the trigger condition is a writing operation, there are two situations:</li> <li>If the "add writing data to the frame" option is not selected, the frame set by the user will be sent directly when the user writes on the screen.</li> <li>Select the "add the written data to the frame" option, and when the user writes on the screen, the program will insert the data in the frame set by the user and send the written data to the frame set by the user according to the data insertion position and length set by the user.</li> </ul>		
	Position and length input	If the register type is a bit address, the decimal point is required to represent the bits in the byte. For example, 1.1 represents the first bit of the first byte of 8 bytes in the data frame, and the length is in bits, and so on.		
	format	If the register type is word address, the integer only needs to represent the byte, such as 1, which represents the first byte of 8-byte data in the data frame, and the unit of length is byte, and so on.		
4	Add	Add current configuration		

5 Close

Close the configuration window to exit

#### Multiple Packages Settings

K 01000000 🗆 1D assign	ard Frame © Da ded Frame © Re	e format ita frame imote Frame Multiple packages supported	
Jse address       SR     © WORD     Edit       CData100     Option       Flag communication amp:	lesponse m meout m	Control address CtrlBit	Multiple package Data 3 Receive: Edit Receive data Multiple package Data type: J1939 Multiple packageReceive data type: not defined
			Send: 4 Edit Send data
)ata assign			

Check [Multiple packages supported] to open [Multiple package data] window, as below show.

Select Multiple package type

- Not Multiple packages •
- •
- J1939 Multiple packages Customized Multiple packages •

Click [Edit Receive data] for [Receive] settings

Start code+ Total length (J1939) •

J1939 Multiple packages	×	
Data format Data + Data total length Data head+Data max length Data max length Data head:	Data total length: 25 Bytes Max.length: Bytes	
00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0	E OF	
57 1B	~	
OK Car	ncel	

As set above set, J1939 command is received by the HMI, only when its length is 25 bytes, and the start code is 0x57, 0x1B;

• Start code + Data max length (J1939)

J1939 Multiple packages	×
Data format C Data + Data total length C Data head+Data max length C Data max length Data head:	Data total length: 25 Bytes Max.length: 50 Bytes
00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0	DE OF
57 1B	
,	1
OK Car	ncel

As set above set, J1939 command is received by the HMI, only when its length less than 50 bytes, and the start code is 0x57, 0x1B;

• Data max length (J1939)

1939 Multiple packages	×
Data format O Data + Data total length O Data head+Data max length O Data max length Data head:	Data total length: 25 Bytes Max.length: 50 Bytes
00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0	E OF
57 1B	^
,	1
OK Car	icel

As set above set, J1939 command is received by the HMI, only when its length less than 50 bytes.

• Customized multiple package

Multiple package:Customized multiple package	×
Data(Hex):	
00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F	
57 1B	^
	~
Total length: 75 Bytes OK Tip: Hex: Cancel	
0a 0b means 0x0a 0x0b two byte	

As set above, It is received by the HMI, when the first frame starts with 0X57 0X1B, and the sum of the data lengths of multiple frames is equal to 79 bytes.

Click [Edit Send data] for [Send] setting

<ul> <li>J1939</li> </ul>	9
---------------------------	---

Dialogue		×
Data: 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 01 02 ff	^	Frame assign  C Default (8 Byte one frame)  C Customized  First frame:  Middle frame:  0
	~	OK Cancel

[Data] is all data to be sent.

Since the frame of the J1939 frame contains the number of the data packet, so the data sent is: the first byte (number) + 7 bytes of data. If it is less than 7 bytes, it is sent in the actual number of bytes.

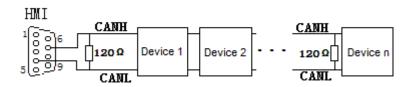
• Customized multiple package

Di	alogue		×
í	Data: 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F ee ef 00 00 00 00 00 00 00 00 00 00 00 00 00	^	Frame assign C Default (8 Byte one frame) Customized First frame: 2 Middle frame: 6
		~	OK

[Data] is all data to be sent.

As set above, fist frame length is 2 bytes, and others are sent with 6 bytes for every frame, if the last frame is less than 6 bytes, send according to the actual length.

#### Cable Wiring



**Note:** The address interval between each frame need to be more than a word address;

# **User Defined Protocol**

If the device does not support MODBUS standard, and the protocol is not list in PIStudio, then user can define the protocol by following instruction to realize simply communication functions like sending and receiving commands.

#### **HMI Settings**

Items	Settings	Note
Protocol	User defined protocol	
Connection	RS485/RS232	
Baud rate	2400~187500	
Stop bits	1/2	
Data bits	7/ 8	
Parity	None/ Even/ ODD	

#### **Operating Procedures**

Select [User defined protocol];

Click [User defined protocol] button to open setting window as below;

mmun	ication							
Connection:			PLC Connection					
No.	Commu	Commu Protocol Device type						
1	COM1	R5485	User-defined	Protocol				
	New	Delete	S	etting	Did n	ot find any wir	ing in	structions
Station	No. HMI No.:		Device No.: 1					
	104 60.	0	Device No. 1					
MO		COM1						
rotocol		User-defined Proto	ool					
MI Mos	del	P18070			]	HMI Pin de	intion:	
OM:		(RS485.9600.1.0	I. NONE)	Setting	COM1	PIN Definiti	on	
evice I	P:	None		Setting	PIN	Definition	PIN	Definition
ineout:	:	(300, 50, 2, 3, 0, 0	0	Setting	1	RS422 TX+ (RS485+)	2	RS232 RXD
					3	RS232 TXD	5	GND
					6	RS422 TX- (RS485-)	8	R\$422 RX-
					9	R5422 RX+		
10 an	COMPLET	ication parameters						
	-	ined protocol		ок	Car	cal Helo		
					1.00	- Adda		

Configure user defined command;

User-Defined Protocol				
Protocol Setting Project file;				, [
Instruction edit(Format:FF FF	): 🕦		Other 🕢 👘	
00 00 00 00 00 00 00 00 00 00 00 00 00 Send break signal first	0 00 00 00 00	Format 3	No receiving Send after receivi	ng
Note:		🗖 Manually send 🍤	Address:	
Check Objects Data length	Instruction length			
<ul> <li>Note</li> <li>The start position in instruction start from 1</li> </ul>	Add checking Checking type: Start position:	Leng	Setting	
Add control character:	Back checking Start position:	Length:		
• •	Differ with send	checking	Setting	
UserProtoInfo.xml is not found	in the project folder	!	6 Add 7	Cancel
-Instruction List 9		8 Instruction Add Edit Delete Clear		
I Import Expo	rt Brows	Advanced	Exit	

No	ltem	Description
1	Instruction edit	The required command.
2	Mode	Write to address or read from the address.
3	Format	Encode format: HEX or ASCII.
4	Other	<b>No receiving:</b> HMI does not respond to the receiving command. <b>Send after receiving:</b> HMI responds to the receiving command.
5	Manually send	Respond once after trigger the address.

		Address: set the trigger address.
6	Add	Save this setting.
7	Cancel	Cancel current settings.
	Add	Add a new command.
8	Edit	Edit the selected command.
0	Delete	Delete the selected command.
	Clear	Clear all the commands.
9	Instruction list	Display all current commands.
10	Address List	Display all the addresses added.
	Import	Import the command files to the instruction list.
	Export	Export current command settings to local storage.
11	Browse	Browse local command files.
	Advanced	Combine two commands.
	Exit	Complete editing and exit setting.

#### **Operating Procedures**

Click [Add] to create a new command, as below shows;

E	- Instruction -		
	Add		
	Edit		
	Delete		
Ľ		1	

Select mode, [Read] or [Write], and then select Format, there are two options [Hex] and [ASCII]. As below shows;

-Mode	
Read	O Write
Format	
• HEX	○ ASCII

Other settings: [No receiving] means HMI only sends command, and it would not process the reply command which from device. [Send after receiving] means HMI will be receiving the command which from device firstly, and then sending the command to device. From example, when HMI receiving [00 FF 00] firstly and then send command, as below shows

Other —			
No receiving			
Send after receiving			
00 FF 00	ОК		

Check [Manually send], and then please set the address for trigging, the setting range is 1~10, and please put Bit switch in project screen for it, and [OneCtrlBit] register is for [Manually send].

Instruction edit, when the data format is HEX, please use two numbers to represent one 16-bit number. ASCII format using characters to input;

Check settings;

Check Objects Data length	Instruction length			
Note The start position in instruction	Add checking			
start from 1	Checking type:	•	Setting	
	Start position:	Length:		
	Back checking 2			
Add control character: 3	Start position:	Length:		
<b>•</b> •	Differ with send checking		Setting	

No	Items	Description
1	Add checking	Add checking command when receiving the data.
2	Back checking	Add control character in ASCII format.
2	Differ with send check	Set return checking.
3	3 Add control character	Start position: select the start position of the data which need to check.
		Length: The data length need to be checked.
Objec	ct settings;	

Designer	Object setting 1
Relative Object to the this instruction.	Object type: Bit Object
	Address
	Note:
2 Byte order: U16 little-endian 💌	

No	Items	Description
		Object type: bit or word address;
1	1 Object settings	Address: the triggering address;
		Note: description to object;
2	Byte order	The numerical display order;

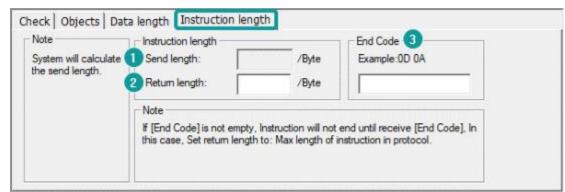
## Data length settings;

ength			
Abstract Read operation is used to read data from return instruction, and write operation is used to write data to send instruction.			
Write data 2 Add instruction there is no setting about data and parity in send instruction			
Add instruction  Position: Length:			

No	Item	Description
1	Return data	Position: the start position of the return data.
		Length: the return data length.

2	Write data	Position: the start position of the write data.
		Length: the write data length.

Instruction length settings

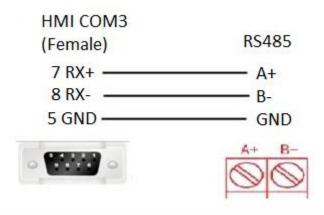


No	ltem	Description
1	Send length	The instruction data will only send designated data length.
2	Return length	The responds data length.
3	End code	Instruction will not be terminated until receiving [End code];

### Cable Wiring

• RS485

HMI COM1&2 (female)	RS485
1 RX+	A+
6 RX-	—— B-
5 GND ———	GND
	A+ B-



• RS232

HMI COM1&2 PIN9 female	D-SUB PIN 9
2 RXD	3 TXD
3 TXD	2 RXD
5 GND ———	5 GND
• •	- 9999 -

**Note:** COM3 only available in PI8000/PI9000 series.