

TCP/IP communication based on Ethernet

User manual

WUXI XINJE ELECTRIC CO., LTD.

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• Basic explanation

Thank you for purchasing Xinje Ethernet PLC.

This manual mainly introduces Ethernet function of PLC.

Please read this manual carefully before using and wire after understanding the content.

About software and programming instructions, please refer to related manuals.

Please hand this manual over to operation users.

• Notices for users

Only experienced operator can wire the plc. If any problem, please contact our technical department.

The listed examples are used to help users to understand, so it may not act.

Please confirm that PLC specifications and principles are suitable when connect PLC to other products. Please conform safety of PLC and machines by yourself when use the PLC. Machines may be damaged by PLC errors.

• Responsibility declaration

The manual content has been checked carefully, however, mistakes may happen.

We often check the manual and will correct the problems in subsequent version. Welcome to offer advices to us.

Excuse us that we will not inform you if manual is changed.

• Contact information

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1 Ethernet communication overview

1-1. The basic concept of Ethernet

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

1-1-1. IP allocation

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

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

1-1-2. PC network address

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

1. Open the network and sharing center:



eneral		Access type: Internet
Connection IPv4 Connectivity: IPv6 Connectivity:	Internet No Internet access	HomeGroup: Available to join Connections: Ethernet
Media State: Duration: Speed:	Enabled 03:06:57 100.0 Mbps	on; or set up a router or access point.
Details		t troubleshooting information.
Activity	Received	
Bytes: 37,397,155	106,854,928	

- 2. Click the Ethernet connections, choose properties:
- E control and rectron and internet rectron and ording conte

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

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

Networking Sharin	g		General Alternate Configuration	n
Connect using:	e GBE Family Controller #	2		ed automatically if your network supports need to ask your network administrator
This connection us	es the following items:	Configure	Obtain an IP address auto	5655 F. (100 F.)
 ✓ Microsoft ✓ Alicrosoft ✓ Alicrosoft ✓ Link-Laye ✓ Alicrosoft ✓ Internet P 	Network Adapter Multiple» LLDP Protocol Driver r Topology Discovery Map r Topology Discovery Res rotocol Version 6 (TCP/IP	oper I/O Driver ponder v6)	 O Use the following IP address: Default gateway: Obtain DNS server address 	
<	rotocol Version 4 (TCP/IP	>	Use the following DNS ser	
Install	Uninstall	Properties	Preferred DNS server:	221.228.255.1
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.			Alternate DNS server:	8.8.8.8
			Validate settings upon ex	xit Advanced

1-1-3. PING command

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



2. input "ping 127.0.0.1" to check the local TCP/IP protocol, it is normal when the receiving and



1. open the command prompt

4. input 'ping network device ip'' command to check whether the PC can connect to other PC in the LAN.

(1) input the command "ping 192.168.40.146", if the result shows "0% loss", this PC can connect the PC with IP 192.168.40.146.

CA	Command Prompt	-	×
C:\Users\TXB>pir	og 127.0.0.1		^
Pinging 127.0.0.	1 with 32 butes of data:		
0 0).0.1: bytes=32 time<1ms TTL=128		
Reply from 127.0	1.0.1: bytes=32 time<1ms TTL=128		
Reply from 127.0).0.1: bytes=32 time<1ms TTL=128		
Reply from 127.0).0.1: bytes=32 time<1ms TTL=128		
Ping statistics	for 127 0 0 1.		
	it = 4. Received = 4. Lost = 0 (0% loss).		
	d trip times in milli-seconds:		
	ns, Maximum = Oms, Average = Oms		
C:\Users\TXB>pir	og 192.168.40.146		
	40.146 with 32 bytes of data:		
	.68.40.149: Destination host unreachable.		
	.68.40.149: Destination host unreachable.		
Reply from 192.1	.68.40.149: Destination host unreachable.		
Reply from 192.1	.68.40.149: Destination host unreachable.		
Ping statistics	for 192.168.40.146:		
Packets: Ser	t = 4, Received = 4, Lost = 0 (0% loss),		
			33
C:\Users\TXB>			~

(2) input the command "ping 192.168.40.127", it shows "100% loss", which means cannot connect to the PC with IP 192.168.40.127.

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

The "ping network device IP" command can only ping four times. If you want to ping continuously, you can use the "ping network device IP -t" command, as shown in the following figure:



1-2. TCP IP protocol

TCP/IP protocol is a popular Ethernet communication protocol, compared with ISO open interconnection model, adopts a more open way, it has been recognized by the U.S. department of defense, and is widely used in practical engineering. TCP/IP protocol can be used in a variety of channels and the underlying protocol (such as T1, X.25 and RS232 serial interface). Specifically, TCP/IP protocol is including TCP protocol, IP protocol, the UDP protocol, ICMP protocol and some other groups.

1-2-1. Port number

In Ethernet, the communication based on TCP or UDP must use the port number to communicate with the upper application, port range is from 0 to 65535, some port numbers have default functions, such as port 80 for browsing the web service, port 21 for FTP service, port 502 for MODBUS TCP communications, and so on.

1-2-2. UDP protocol

UDP is the user data protocol, which is a simple connectionless transmission model with min protocol . UDP protocol doesn't have handshake mechanism, so the reliability of protocol is only equal to the underlying network. It cannot provide protection for receiving and sending message. UDP also provides checksum to ensure the integrity of data, and addresses different functions via different port numbers.

1-2-3. TCP protocol

1. The basic principle of TCP

TCP is transport control protocol, a connection-oriented, reliable transport layer protocol. Connection-oriented means a normal TCP transporting needs to build special virtual circuit between the TCP client and TCP server. To transmit data via TCP, a connection between the ends of the host must be established.

TCP provides reliable, orderly and error checking message function for application program running in the host machine which communicates through Ethernet. TCP can guarantee all the receiving and sending bytes have the same content and sequence. TCP protocol creates connections between active devices (i.e., a building connection device) and passive devices (i.e., receiving connection device). Once the connection is established, either party may initiate data transmission.

TCP protocol is a kind of "flow", which means that the message does not exist end flag, all received message is considered to be part of the data stream. For example, the client device sends three pieces of message to the server, each one is 20 bytes. Server only received a 60-byte "flow"

(assuming the server performs a receive operation after received three pieces of message).

2. The basic principle of socket

Socket (Socket) is the foundation of communication and basic operation unit to support the TCP/IP network communication. It is the abstract representations of the endpoint in the network communication process, contains five kinds of information for network communication: connection protocol, the IP address of the local host, port of the local process, the IP address of the remote host, the port of remote process.

When the application layer communicates through the transport layer, TCP will meet the problem of providing concurrent service for multiple application processes. Multiple TCP connections or more application processes may need pass through the same TCP port to transmit data. To distinguish different application processes and connection, many computer operating system provides a socket interface for the application and the TCP/IP protocol interaction. Application layer and transport layer can distinguish communication from different application processes or network connections through the socket interface, realize the data transmission of concurrent service.

3. Establish a socket connection

To establish a socket connection needs a pair of sockets at least, one runs on the client (also called the TCP client), called ClientSocket, another run on the server (also called the TCP server), called ServerSocket.

Socket connection process is divided into three steps: the server monitoring, the client request, connection confirmation.

Server monitoring: the server socket does not locate specific client socket, but is in a state of waiting for the connection, and real-time monitors network state, waits for the client's connection request.

Client requests: the client socket connection requests are put forward, the target is a server socket. For this reason, the client socket must first describe the server socket, and point out the server socket address and port number, and then the server socket connection requests are put forward.

Connection confirm: when the server socket receives the client socket connection request, it will response to the request of the client socket, set up a new thread, send a description of the server socket to the client, once the client confirms the description, the two sides have established connection. The server socket is in the listening state, continues to receive other client socket connection requests.

When creating a socket connection, you can specify the transport layer protocol, the socket can support different transport layer protocol (TCP or UDP), when using TCP protocol to connect the socket, the connection is a TCP connection.

TCP communication diagram:



In above diagram, the server socket is in the listening state, client connection requests to the server, the server receives a connection request and sends the reply to confirm the information to the client, after the client received message, it sends confirmation information to the server. After completion of the allocation of resources, a TCP connection is established successfully, this process is called "three-way handshake".

After the connection is established, the client and the server can send and receive data, after data transceiver is completed, the client or the server can request to close the connection, after the fourth "handshake", TCP connection is closed, all data transceiver interrupts.

2 Ethernet parameters

2-1. Ethernet parameters

2-1-1. IP address parameters

It needs to set the IP address in the Ethernet communication as the unique identification of each device. There are four parameters, the following charts are the IP setting interface of programming software.

	PLC1 - ethernet Set	×
PLC Config 	general remote communication ethemet port: 8 Automatically obtain IP address IP: . subnet mask: . Default gateway: .	
	Read From PLC Write To PLC OK	Cancel

Obtain the IP

Support obtain the IP address automatically, static setting function, PLC initial setting is automatical obtain.

Automatic obtain mode: when there is a DHCP server in the subnet, IP, subnet mask, default gateway are assigned by the DHCP server. Without a DHCP server, network parameters use the default values:

IP address: 192.168.6.6

Subnet mask: 255.255.255.0

The default gateway: 192.168.6.1

Static specified mode: users assigned IP, subnet mask, default gateway information. Only supports private IP address information.

IP address type	IP address range	IP device quantity
Class A private address	10.0.0-10.255.255.255	16777216
Class B private address	172.16.0.0-172.31.255.255	1048576
Class C private address	192.168.0.0-192.168.255.255	65535

UDP multicast address

IP address type	IP address range	IP address
Type D address	224.0.0.0~224.0.0.255	Reserved multicast address (permanent
		group address)
	224.0.1.0~224.0.1.255	Public multicast address
	224.0.2.0~238.255.255.255	Available multicast addresses for users
		(temporary group addresses)
	239.0.0.0~239.255.255.255	administratively scoped addresses

Note: It is recommended that users use IP addresses between $224.0.2.0 \sim 238.255.255.255$.

2-1-2. Function specification

Item	Parameter		
Number of communication channels	Ethernet series: 2 channels (same IP)		
Number of communication channels	XDH/XLH/XG2/XL5H series: 1 channel		
Communication speed	100Mbps		
Maximum space between stations	100m		
Network topology	Linear, star shape		

Communication type	Maximum number of network nodes		
Free format TCP	32		
UDP unicast	32		
UDP multicast	32		
Modbus TCP Client	XDH/XLH, Ethernet model: 32		
	XL5H: 4		
	XD3E: 8		
	Number of supported clients:		
Modbus TCP Server	XL5H: 4		
widdbus i Cr Selvel	XDH/XLH: 16		
	Ethernet model: 8		

Note:

There are a maximum of 32 TCP protocols, including free format TCP and Modbus TCP; Up to 32 UDP protocols, including UDP unicast and UDP multicast;

XDH and XLH series firmware versions 3.7.3 and above support UDP multicast functionality;

Ethernet PLC 3.7.2 and above firmware versions support UDP multicast functionality.

The UDP multicast function is only supported for Ethernet based PLCs with firmware versions

3.7.2 and above.

When using PLC as a server, Ethernet models of firmware version 3.7.2 and above support 8 clients; Ethernet models below version 3.7.2 support four clients. XDH/XLH models with firmware versions 3.7.2 and above support 16 clients, while XDH/XLH models with versions below 3.7.2 support 4 clients.

Ethernet models include: XD3E, XD5E, XDME, XL5E, XL5N, XLME.

2-2. Configure the Ethernet parameters in the software

Open the XINJE PLC programming software, click the ethernet in the left side, refer to below figure. This function is only available for Ethernet model.



Select remote communication in the above figure, you can configure the remote parameter, it no needs to set these parameters when communicating in the local area network (LAN), after completion of all the parameters, please restart the PLC to make the settings effective.

	PLC1 - ethernet Set
PLC Config	general remote communication enable remote:
	Read From PLC Write To PLC OK Cancel

2-3. Configure ethernet parameters in XINJEConfig

When configuring in XINJEConfig for Ethernet models, use a programming cable to connect the PLC and computer. Open the XINJEConfig configuration tool (using v2.3.0.9 version as an example), and select PLC from the configuration tool.

📑 Welcome to u	se config tool			 Ē	×	
File(F) Tool(T)	Environment(<u>E</u>)	Help(<u>H</u>)				L
触 PC 🌚 WBox	PLCCOBox	TouchWin	🥪 4GBox			
Online						
On line						

Method 1: Connect in Modbus TCP mode

In the pop-up dialog box, select Ethernet for the communication interface and Modbus for the communication protocol. At this time, connect the PLC using the Modbus TCP protocol, as shown in the following figure.

					Help
Cor	nnection m	ode			
Inte	erface:	Ethemet		~	
Pro	tocol:	Modbus		~	
Con	nm config	parameters			
1.1	IP:	192 <u>1</u> 68 (66	<scan< td=""><td></td></scan<>	
			C	onnecting	

Method 2: Connect in Xnet mode

Select Ethernet for the communication interface, XNet for the communication protocol, and the specified address for the connection method. At this time, connect the PLC using the XNet protocol, set the device IP and corresponding network card, and click to connect the device, as shown in the following figure.

CLinkForm	9. <u>5</u> -		×
Connection m	ode		Help
Interface:	Ethemet	1	
Protocol:	XNet	1	
connection:	SpecifiedAddress	1	
Comm config p	parameters		
IP:	192 168 6 6	<scan< td=""><td></td></scan<>	
Adapter:	Ethernet 2	~	
	Co	nnecting	1
	Connection m Interface: Protocol: connection: Comm config ; IP :	Connection mode Interface: Ethemet Protocol: XNet connection: SpecifiedAddress Comm config parameters IP: 192 168 6 6 Adapter: Ethemet 2	Connection mode Interface: Ethemet Protocol: XNet connection: SpecifiedAddress Comm config parameters IP: 192 168 6 6 <scan< td=""></scan<>

When configuring Ethernet parameters, select Ethernet configuration. Please refer to Section 2-1-1 for the description of configuration items, and the functions are the same as those of XDPPro configuration.

General Re	emote Advanced			Help
Ethe	met Port 9 🗘]		
You Port	can set different ip for	each Ethernet		
	Get IP By DHCP			
	Use Static IP			
	IP address	192 168 6	6	
		255 255 255	0	
	Mask	233 235 233		
	Mask Gate	233 233 233	1	

3 Wiring and communication protocol

3-1. Wiring mode

The physical interface of Ethernet model is RJ45, the wiring cable is recommended to use UTP and STP cable, single length cannot be more than 100 meters. Switch type is recommended to use MB/GB adaptive switch.

3-2. MODBUS TCP protocol

3-2-1. MODBUS TCP overview

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

MODBUS TCP/IP has two type of devices: Modbus TCP/IP clinet and server.

MODBUS client:

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

When the Ethernet model is the MODBUS TCP client, it establishes a TCP connection through S_OPEN instruction, initiates MODBUS request by M_TCP instruction.

MODBUS server:

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

Ethernet devices defaulted open this service when power on, the maximum response is shown in the table below.

Firmware version	PLC model	Number of
Filliwate version		supported clients
Below 3.7.2	XD5E/XL5E/XDME/XLME/XDH/XLH	4
2.7.2	XL5H	4
3.7.2 and up	XD3E/XD5E/XL5E/XL5N/XDME/XLME	8

Note: The number of clients supported by PLC is as follows:

Firmware version	PLC model	Number of supported clients
	XDH/XLH	16

3-2-2. MODBUS address

When the programmable controller serves as a Modbus server, the internal software component numbers and corresponding Modbus address numbers are as follows.

(1) Modbus address and internal software component comparison table for XD3E series PLC

Note: For the calculation of Modbus addresses for X and Y, please refer to the bottom of the table.

Туре	Component	Range	Quantity	Modbus address (hex)	Modbus address (decimal)
	М	M0~M7999	8000	0~1F3F	0~7999
		X0~X77 (main body)	64	5000~503F	20480~20543
		X10000~X10077 (#1 module)	64	5100~513F	20736~20799
		X10100~X10177 (#2 module)	64	5140~517F	20800~20863
		X10200~X10277 (#3 module)	64	5180~51BF	20864~20927
		X10300~X10377 (#4 module)	64	51C0~51FF	20928~20991
	Х	X10400~X10477 (#5 module)	64	5200~523F	20992~21055
Coil, bit		X10500~X10577 (#6 module)	64	5240~527F	21056~21119
object		X10600~X10677 (#7 module)	64	5280~52BF	21120~21183
		X10700~X10777 (#8 module)	64	52C0~52FF	21184~21247
		X11000~X11077 (#9 module)	64	5300~533F	21248~21311
		X11100~X11177 (#10 module)	64	5340~537F	21312~21375
		X20000~X20077 (#1 BD)	64	58D0~590F	22736~22799
		X20100~X20177 (#2 BD)	64	5910~594F	22800~22863
		X30000~X30077 (#1 ED)	64	5BF0~5C2F	23536~23599
		Y0~Y77 (main body)	64	6000~603F	24576~24639
	Y	Y10000~Y10077 (#1 module)	64	6100~613F	24832~24895

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
51	1	6		(hex)	(decimal)
		Y10100~Y10177 (#2		6140~617F	24896~24959
		module)	64		
		Y10200~Y10277 (#3	64	6180~61BF	24960~25023
		module)			
		Y10300~Y10377 (#4	64	61C0~61FF	25024~25087
		module)			
		Y10400~Y10477 (#5	64	6200~623F	25088~25151
		module)			
		Y10500~Y10577 (#6	64	6240~627F	25152~25215
		module)			
		Y10600~Y10677 (#7	64	6280~62BF	25216~25279
		module)			
		Y10700~Y10777 (#8	64	62C0~62FF	25280~25343
		module)			
		Y11000~Y11077 (#9	64	6300~633F	25344~25407
		module)			
		Y11100~Y11177 (#10	64	6340~637F	25408~25471
		module)			
		Y20000~Y20077 (#1 BD)	64	68D0~690F	26832~26895
		Y20100~Y20177 (#2 BD)	64	6910~694F	26896~26956
		Y30000~Y30077 (#1 ED)	64	6BF0~6C2F	27632~27695
	S	S0~S1023	1024	7000~73FF	28672~29695
	SM	SM0~SM2047	2048	9000~97FF	36864~38911
	Т	T0~T575	576	A000~A23F	40960~41535
	С	C0~C575	576	B000~B23F	45056~45631
	ET	ET0~ET31	32	C000~C01F	49152~49183
	SEM	SEM0~SEM31	32	C080~C09F	49280~49311
	HM ^{*1}	HM0~HM959	960	C100~C4BF	49408~50367
	HS^{*1}	HS0~HS127	128	D900~D97F	55552~55679
	HT^{*1}	HT0~HT95	96	E100~E15F	57600~57695
	HC ^{*1}	HC0~HC95	96	E500~E55F	58624~58719
	HSC ^{*1}	HSC0~HSC31	32	E900~E91F	59648~59679
	D	D0~D7999	8000	0~1F3F	0~7999
		ID0~ID99 (main body)	100	5000~5063	20480~20579
Register,		ID10000~ID10099 (#1	100	5100~5163	20736~20835
word		module)	100	5100~5105	20130~20033
object	ID	ID10100~ID10199 (#2	100	5164~51C7	20836~20935
		module)	100	J10T J10/	20030-20733
		ID10200~ID10299 (#3	100	51C8~522B	20936~21035
		module)			2000 21000

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		ID10300~ID10399 (#4	100	522C~528F	21026 21125
		module)			21036~21135
		ID10400~ID10499 (#5	100	5290~52F3	21126 21225
		module)			21136~21235
		ID10500~ID10599 (#6	100	52F4~5357	21236~21335
		module)			21230~21333
		ID10600~ID10699 (#7	100	5358~53BB	21336~21435
		module)			21550-21455
		ID10700~ID10799 (#8	100	53BC~541F	21436~21535
		module)			21450-21555
		ID10800~ID10899 (#9	100	5420~5483	21536~21635
		module)			21000 21000
		ID10900~ID10999 (#10	100	5484~54E7	21636~21735
		module)			
		ID20000~ID20099 (#1 BD)	100	58D0~5933	22736~22835
		ID20100~ID20199 (#2 BD)	100	5934~5997	22836~22935
		ID30000~ID30099 (#1 ED)	100	5BF0~5C53	23536~23635
		QD0~QD99 (main body)	100	6000~6063	24576~24675
		QD10000~QD10099 (#1	100	6100~6163	24832~24931
		module)			
		QD10100~QD10199 (#2	100	6164~61C7	24932~25031
		module)			
		QD10200~QD10299 (#3	100	61C8~622B	25032~25131
		module)	100		
		QD10300~QD10399 (#4	100	622C~628F	25132~25231
		module)	100		0.5000 0.5001
D . (QD10400~QD10499 (#5	100	6290~62F3	25232~25331
Register, word	OD	module) QD10500~QD10599 (#6	100		25222 25421
object	QD	module)	100	62F4~6357	25332~25431
object		QD10600~QD10699 (#7	100		25432~25531
		module)	100	6358~63BB	25452~25551
		QD10700~QD10799 (#8	100		25532~25631
		module)	100	63BC~641F	25552 25051
		QD10800~QD10899 (#9	100		25632~25731
		module)		6420~6483	
		QD10900~QD10999 (#10	100		25732~25831
		module)		6484~64E7	
		QD20000~QD20099 (#1	100		
		BD)	100	68D0~6933	26832~26931

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		QD20100~QD20199 (#2	100	6934~6997	26932~27031
		BD)			
		QD30000~QD30099 (#1	100	6BF0~6C53	27632~27731
		ED)	100	0110 0000	27052 27751
	SD	SD0~SD2047	2048	7000~77FF	28672~30719
	TD	TD0~TD575	576	8000~823F	32768~33343
	CD	CD0~CD575	576	9000~923F	36864~37439
	ETD	ETD0~ETD31	32	A000~A01F	40960~40991
	$HD^{\otimes 1}$	HD0~HD999	1000	A080~A467	41088~42087
	HSD ^{*1}	HSD0~HSD499	500	B880~BA73	47232~47731
	HTD ^{*1}	HTD0~HTD95	96	BC80~BCDF	48256~48351
	HCD ^{*1}	HCD0~HCD95	96	C080~C0DF	49280~49375
	HSCD ^{*1}	HSCD0~HSCD31	32	C480~C49F	50304~50335
	FD ^{*2}	FD0~FD5119	5120	C4C0~D8BF	50368~55487
	SFD ^{*2}	SFD0~SFD1999	2000	E4C0~EC8F	58560~60559
	FS ^{*2}	FS0~FS47	48	F4C0~F4EF	62656~62703

(2) XD5E, XDME, XL5E, XL5N, XL5H, XLME series Modbus address and internal software component comparison table.

Туре	Component	Range	Quantity	Modbus address (hex)	Modbus address (decimal)
	М	M0~M20479	20480	0~4FFF	0~20479
		X0~X77 (main body)	64	5000~503F	20480~20543
		X10000~X10077 (#1 module)	64	5100~513F	20736~20799
	Х	X10100~X10177 (#2 module)	64	5140~517F	20800~20863
0.11		X10200~X10277 (#3 module)	64	5180~51BF	20864~20927
Coil, bit object		X10300~X10377 (#4 module)	64	51C0~51FF	20928~20991
		X10400~X10477 (#5 module)	64	5200~523F	20992~21055
		X10500~X10577 (#6 module)	64	5240~527F	21056~21119
		X10600~X10677 (#7 module)	64	5280~52BF	21120~21183
		X10700~X10777 (#8	64	52C0~52FF	21184~21247

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		module)			
		X11000~X11077 (#9	64	5300~533F	21248~21311
		module)			
		X11100~X11177 (#10	64	5340~537F	21312~21375
		module)			
		X11200~X11277 (#11	64	5380~53BF	21376~21439
		module)			
		X11300~X11377 (#12	64	53C0~53FF	21440~21503
		module)			
		X11400~X11477 (#13	64	5400~543F	21504~21567
		module)			
		X11500~X11577 (#14	64	5440~547F	21568~21631
		module)			
		X11600~X11677 (#15	64	5480~54BF	21632~21695
		module)			
		X11700~X11777 (#16	64	54C0~54FF	21696~21759
		module)			
		X20000~X20077 (#1 BD)	64	58D0~590F	22736~22799
		X20100~X20177 (#2 BD)	64	5910~594F	22800~22863
		X30000~X30077 (#1 ED)	64	5BF0~5C2F	23536~23599
		Y0~Y77 (main body)	64	6000~603F	24576~24639
		Y10000~Y10077 (#1	64	6100~613F	24832~24895
		module)	Ŭ.		
		Y10100~Y10177 (#2	64	6140~617F	24896~24959
		module)			
		Y10200~Y10277 (#3	64	6180~61BF	24960~25023
		module)			
		Y10300~Y10377 (#4	64	61C0~61FF	25024~25087
		module)			
	Y	Y10400~Y10477 (#5	64	6200~623F	25088~25151
		module)			
		Y10500~Y10577 (#6	64	6240~627F	25152~25215
		module)			
		Y10600~Y10677 (#7	64	6280~62BF	25216~25279
		module)			
		Y10700~Y10777 (#8	64	62C0~62FF	25280~25343
		module)			
		Y11000~Y11077 (#9	64	6300~633F	25344~25407
		module)			
		Y11100~Y11177 (#10	64	6340~637F	25408~25471

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
		č		(hex)	(decimal)
		module)			
		Y11200~Y11277 (#11	64	6380~63BF	25472~25535
		module)			
		Y11300~Y11377 (#12	64	63C0~63FF	25536~25599
		module)			
		Y11400~Y11477 (#13	64	6400~643F	25600~25663
		module)			
		Y11500~Y11577 (#14	64	6440~647F	25664~25727
		module)			
		Y11600~Y11677 (#15	64	6480~64BF	25728~25791
		module)			
		Y11700~Y11777 (#16	64	64C0~64FF	25792~25855
		module)			
		Y20000~Y20077 (#1 BD)	64	68D0~690F	26832~26895
		Y20100~Y20177 (#2 BD)	64	6910~694F	26896~26956
		Y30000~Y30077 (#1 ED)	64	6BF0~6C2F	27632~27695
	S	S0~S7999	8000	7000~8F3F	28672~36671
	SM	SM0~SM4095	4096	9000~9FFF	36864~40959
	Т	T0~T4095	4096	A000~AFFF	40960~45055
	С	C0~C4095	4096	B000~BFFF	45056~49151
	ET	ET0~ET39	40	C000~C027	49152~49191
	SEM	SEM0~SEM127	128	C080~C0FF	49280~49407
	HM ^{*1}	HM0~HM6143	6144	C100~D8FF	49408~55551
	HS^{*1}	HS0~HS999	1000	D900~DCEF	55552~56551
	HT ^{*1}	HT0~HT1023	1024	E100~E4FF	57600~58623
	HC ^{*1}	HC0~HC1023	1024	E500~E8FF	58624~59647
	HSC ^{*1}	HSC0~HSC39	40	E900~E927	59648~59687
	D	D0~D20479	20480	0~4FFF	0~20479
		ID0~ID99 (main body)	100	5000~5063	20480~20579
		ID10000~ID10099 (#1	100	5100~5163	20736~20835
		module)	100	5100~5105	20730~20833
		ID10100~ID10199 (#2	100	5164~51C7	20836~20935
Register,		module)	100	5104~5107	20830~20933
word	ID	ID10200~ID10299 (#3	100	51C8~522B	20936~21035
object	ID	module)			20750-21055
		ID10300~ID10399 (#4	100	522C~528F	21036~21135
		module)			21030-21133
		ID10400~ID10499 (#5	100	5290~52F3	21136~21235
		module)			21150 21255
		ID10500~ID10599 (#6	100	52F4~5357	21236~21335

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
			· ·	(hex)	(decimal)
		module)			
		ID10600~ID10699 (#7	100	5358~53BB	01006 01405
		module)			21336~21435
		ID10700~ID10799 (#8	100	53BC~541F	01406 01505
		module)			21436~21535
		ID10800~ID10899 (#9	100	5420~5483	21526 21625
		module)			21536~21635
		ID10900~ID10999 (#10	100	5484~54E7	21(2(21725
		module)			21636~21735
		ID11000~ID11099 (#11	100	54E8~554B	21726 21925
		module)			21736~21835
		ID11100~ID11199 (#12	100	554C~55AF	21836~21935
		module)			21830~21933
		ID11200~ID11299 (#13	100	55B0~5613	21936~22035
		module)			21930~22033
		ID11300~ID11399 (#14	100	5614~5677	22036~22135
		module)			22030-22133
		ID11400~ID11499 (#15	100	5678~56DB	22136~22235
		module)			22130-22233
		ID11500~ID11599 (#16	100	56DC~573F	22236~22335
		module)			22230 22333
		ID20000~ID20099 (#1 BD)	100	58D0~5933	22736~22835
		ID20100~ID20199 (#2 BD)	100	5934~5997	22836~22935
		ID30000~ID30099 (#1 ED)	100	5BF0~5C53	23536~23635
		QD0~QD99 (main body)	100	6000~6063	24576~24675
		QD10000~QD10099 (#1	100	6100~6163	24832~24931
		module)	100	0100 0100	21032 21931
		QD10100~QD10199 (#2	100	6164~61C7	24932~25031
		module)			
		QD10200~QD10299 (#3	100	61C8~622B	25032~25131
		module)		0100 0222	
	QD	QD10300~QD10399 (#4	100	622C~628F	25132~25231
		module)			
		QD10400~QD10499 (#5	100	6290~62F3	25232~25331
		module)			
		QD10500~QD10599 (#6	100	62F4~6357	25332~25431
		module)			
		QD10600~QD10699 (#7	100	6358~63BB	25432~25531
		module)			
		QD10700~QD10799 (#8	100	63BC~641F	25532~25631

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		module)			
		QD10800~QD10899 (#9	100	6420 6482	25632~25731
		module)		6420~6483	
		QD10900~QD10999 (#10	100	6484~64E7	25732~25831
		module)		0484~041.7	
		QD11000~QD11099 (#11	100	64E8~654B	25832~25931
		module)		04E6~054B	
		QD11100~QD11199 (#12	100	654C~65AF	25932~26031
		module)		0340-03711	
		QD11200~QD11299 (#13	100	65B0~6613	26032~26131
		module)		0500-0015	
		QD11300~QD11399 (#14	100	6614~6677	26132~26231
		module)		0011 0077	
		QD11400~QD11499 (#15	100	6678~66DB	26232~26331
		module)			
		QD11500~QD11599 (#16	100	66DC~673F	26332~26431
		module)			
		QD20000~QD20099 (#1	100	68D0~6933	26832~26931
		BD)			
		QD20100~QD20199 (#2	100	6934~6997	26932~27031
	QD	BD)			
		QD30000~QD30099 (#1	100	6BF0~6C53	27632~27731
	CD	ED)	4007	7000~7FFF	28(72) 227(7
	SD TD	SD0~SD4095	4096		28672~32767
	TD CD	TD0~TD4095 CD0~CD4095	4096 4096	8000~8FFF 9000~9FFF	32768~36863 36864~40959
	ETD	ETD0~ETD39	4096	9000~9FFF A000~A027	36864~40939 40960~40999
	HD ^{*1}		6144		
	$\frac{\text{HD}^{\text{MA}}}{\text{HSD}^{\text{MA}}}$	HD0~HD6143		A080~B87F	41088~47231
	HSD ^{**1} HTD ^{**1}	HSD0~HSD1023 HTD0~HTD1023	1024 1024	B880~BC7F BC80~C07F	47232~48255 48256~49279
	HID ^{**1} HCD ^{**1}	HTD0~HTD1023 HCD0~HCD1023	1024	BC80~C07F C080~C47F	48236~49279
	HSCD ^{**1}	HSCD0~HSCD39	40	C080~C47F C480~C4A7	49280~30303
	FD ^{**2}	FD0~FD8191	8192	C480~C4A7 C4C0~E4BF	50304~50343
	SFD ^{**2}	SFD0~SFD4095	4096	E4C0~E4BF	58560~62655
	FS ^{*2}	FS0~FS47	4096	F4C0~F4BF	62656~62703
	1.2	ГЗО~ГЗ4/	40	1'4UV~F4EF	02030~02703

		Series Modous Addresses and I		Modbus	Modbus
Туре	Component	Range	Quantity	address	address
		-		(hex)	(decimal)
	М	M0~M20479	20480	0~4FFF	0~20479
		X0~X77 (main body)	64	5000~503F	20480~20543
		X10000~X10077 (#1	()	5100~513F	20736~20799
		module)	64		
		X10100~X10177 (#2	64	5140~517F	20800~20863
		module)	04		
		X10200~X10277 (#3	64	5180~51BF	20864~20927
		module)			
		X10300~X10377 (#4	64	51C0~51FF	20928~20991
		module)			
		X10400~X10477 (#5	64	5200~523F	20992~21055
		module)			
		X10500~X10577 (#6	64	5240~527F	21056~21119
		module)			
		X10600~X10677 (#7	64	5280~52BF	21120~21183
	Х	module)			
		X10700~X10777 (#8	64	52C0~52FF	21184~21247
		module)			
Coil, bit		X11000~X11077 (#9	64	5300~533F	21248~21311
object		module)		5240 5255	21212 21275
_		X11100~X11177 (#10	64	5340~537F	21312~21375
		module)		5200 52DE	21276 21420
		X11200~X11277 (#11	64	5380~53BF	21376~21439
		module) X11300~X11377 (#12	64	53C0~53FF	21440~21503
		module)	04	55C0~55FF	21440~21505
		X11400~X11477 (#13	64	5400~543F	21504~21567
		module)	04	5400~5451	21504-21507
		X11500~X11577 (#14	64	5440~547F	21568~21631
		module)		5440-5471	21500-21051
		X11600~X11677 (#15	64	5480~54BF	21632~21695
		module)	0.	2100 2121	21032 21033
		X11700~X11777 (#16	64	54C0~54FF	21696~21759
		module)			
		X20000~X20077 (#1 BD)	64	58D0~590F	22736~22799
		X20100~X20177 (#2 BD)	64	5910~594F	22800~22863
		X30000~X30077 (#1 ED)	64	5BF0~5C2F	23536~23599
		Y0~Y77 (main body)	64	6000~603F	24576~24639
	Y	Y10000~Y10077 (#1	64	6100~613F	24832~24895

(3) X	DH and XLH	Series Modbus Addresses a	nd Internal Soft	ware Componen	ıts.

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		module)			
		Y10100~Y10177 (#2		6140~617F	24896~24959
		module)	64		
		Y10200~Y10277 (#3	64	6180~61BF	24960~25023
		module)			
		Y10300~Y10377 (#4	64	61C0~61FF	25024~25087
		module)			
		Y10400~Y10477 (#5	64	6200~623F	25088~25151
		module)			
		Y10500~Y10577 (#6	64	6240~627F	25152~25215
		module)			
		Y10600~Y10677 (#7	64	6280~62BF	25216~25279
		module)			
		Y10700~Y10777 (#8	64	62C0~62FF	25280~25343
		module)			
		Y11000~Y11077 (#9	64	6300~633F	25344~25407
		module)			
		Y11100~Y11177 (#10	64	6340~637F	25408~25471
		module)			
		Y11200~Y11277 (#11	64	6380~63BF	25472~25535
		module)			
		Y11300~Y11377 (#12	64	63C0~63FF	25536~25599
		module)			
		Y11400~Y11477 (#13	64	6400~643F	25600~25663
	Y	module)			
		Y11500~Y11577 (#14	64	6440~647F	25664~25727
		module)			
		Y11600~Y11677 (#15	64	6480~64BF	25728~25791
		module)			
		Y11700~Y11777 (#16	64	64C0~64FF	25792~25855
		module)			
		Y20000~Y20077 (#1 BD)	64	68D0~690F	26832~26895
		Y20100~Y20177 (#2 BD)	64	6910~694F	26896~26956
		Y30000~Y30077 (#1 ED)	64	6BF0~6C2F	27632~27695
	S	S0~S7999	8000	7000~8F3F	28672~36671
	SM	SM0~SM4095	4096	9000~9FFF	36864~40959
	Т	T0~T4095	4096	A000~AFFF	40960~45055
	С	C0~C4095	4096	B000~BFFF	45056~49151
	ET	ET0~ET39	40	C000~C027	49152~49191
	SEM	SEM0~SEM127	128	C080~C0FF	49280~49407

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
	HM ^{*1}	HM0~HM6143	6144	C100~D8FF	49408~55551
,	HS ^{*1}	HS0~HS999	1000	D900~DCEF	55552~56551
	HT*1	HT0~HT1023	1024	E100~E4FF	57600~58623
,	HC ^{*1}	HC0~HC1023	1024	E500~E8FF	58624~59647
	HSC ^{*1}	HSC0~HSC39	40	E900~E927	59648~59687
	D	D0~D20479	20480	0~4FFF	0~20479
		ID0~ID99 (main body)	100	5000~5063	20480~20579
		ID10000~ID10099 (#1	100	5100 5160	20726 20025
		module)	100	5100~5163	20736~20835
		ID10100~ID10199 (#2	100		20026 20025
		module)	100	5164~51C7	20836~20935
		ID10200~ID10299 (#3	100	51C8~522B	20026 21025
		module)			20936~21035
		ID10300~ID10399 (#4	100	522C~528F	21026 21125
		module)			21036~21135
		ID10400~ID10499 (#5	100	5290~52F3	21126 21225
		module)			21136~21235
		ID10500~ID10599 (#6	100	52F4~5357	21226 21225
		module)			21236~21335
		ID10600~ID10699 (#7	100	5358~53BB	21336~21435
		module)			21330~21433
Register,		ID10700~ID10799 (#8	100	53BC~541F	21436~21535
word	ID	module)			21430~21333
object	ID	ID10800~ID10899 (#9	100	5420~5483	21536~21635
		module)			21550~21055
		ID10900~ID10999 (#10	100	5484~54E7	21636~21735
		module)			21030-21733
		ID11000~ID11099 (#11	100	54E8~554B	21736~21835
		module)			21750-21055
		ID11100~ID11199 (#12	100	554C~55AF	21836~21935
		module)			21030 21733
		ID11200~ID11299 (#13	100	55B0~5613	21936~22035
		module)			21950 22055
		ID11300~ID11399 (#14	100	5614~5677	22036~22135
		module)			22030 22133
		ID11400~ID11499 (#15	100	5678~56DB	22136~22235
		module)			
		ID11500~ID11599 (#16	100	56DC~573F	22236~22335
		module)			
		ID20000~ID20099 (#1 BD)	100	58D0~5933	22736~22835

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		ID20100~ID20199 (#2 BD)	100	5934~5997	22836~22935
		ID30000~ID30099 (#1 ED)	100	5BF0~5C53	23536~23635
		QD0~QD99 (main body)	100	6000~6063	24576~24675
		QD10000~QD10099 (#1 module)	100	6100~6163	24832~24931
		QD10100~QD10199 (#2 module)	100	6164~61C7	24932~25031
		QD10200~QD10299 (#3 module)	100	61C8~622B	25032~25131
	QD	QD10300~QD10399 (#4 module)	100	622C~628F	25132~25231
		QD10400~QD10499 (#5 module)	100	6290~62F3	25232~25331
		QD10500~QD10599 (#6 module)	100	62F4~6357	25332~25431
		QD10600~QD10699 (#7 module)	100	6358~63BB	25432~25531
		QD10700~QD10799 (#8 module)	100	63BC~641F	25532~25631
		QD10800~QD10899 (#9 module)	100	6420~6483	25632~25731
		QD10900~QD10999 (#10 module)	100	6484~64E7	25732~25831
		QD11000~QD11099 (#11 module)	100	64E8~654B	25832~25931
		QD11100~QD11199 (#12 module)	100	654C~65AF	25932~26031
		QD11200~QD11299 (#13 module)	100	65B0~6613	26032~26131
	QD	QD11300~QD11399 (#14 module)	100	6614~6677	26132~26231
		QD11400~QD11499 (#15 module)	100	6678~66DB	26232~26331
		QD11500~QD11599 (#16 module)	100	66DC~673F	26332~26431
		QD20000~QD20099 (#1 BD)	100	68D0~6933	26832~26931
		QD20100~QD20199 (#2 BD)	100	6934~6997	26932~27031
		QD30000~QD30099 (#1	100	6BF0~6C53	27632~27731

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		ED)			
	SD	SD0~SD4095	4096	7000~7FFF	28672~32767
	TD	TD0~TD4095	4096	8000~8FFF	32768~36863
	CD	CD0~CD4095	4096	9000~9FFF	36864~40959
	ETD	ETD0~ETD39	40	A000~A027	40960~40999
	HD ^{*1}	HD0~HD6143	6144	A080~B87F	41088~47231
	HSD ^{*1}	HSD0~HSD1023	1024	B880~BC7F	47232~48255
	HTD ^{*1}	HTD0~HTD1023	1024	BC80~C07F	48256~49279
	HCD ^{*1}	HCD0~HCD1023	1024	C080~C47F	49280~50303
	HSCD ^{*1}	HSCD0~HSCD39	40	C480~C4A7	50304~50343
	FD ^{*2}	FD0~FD8191	8192	C4C0~E4BF	50368~58559
	SFD ^{*2}	SFD0~SFD4095	4096	E4C0~FC2F	58560~64559
	FS ^{*2}	FS0~FS47	256	F4C0~F4EF	62656~62911

(4) XG Series Modbus Address and Internal Software Components:

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
	М	M0~M20479	20480	0~4FFF	0~20479
		X0~X77 (main body)	64	5000~503F	20480~20543
		X10000~X10077 (#1	64	5100~513F	20736~20799
		module)			
		X10100~X10177 (#2	64	5140~517F	20800~20863
		module)	04		
		X10200~X10277 (#3	64	5180~51BF	20864~20927
		module)			
		X10300~X10377 (#4	64	51C0~51FF	20928~20991
		module)			
Coil, bit		X10400~X10477 (#5	64	5200~523F	20992~21055
object	X	module)			
		X10500~X10577 (#6	64	5240~527F	21056~21119
		module)			
		X10600~X10677 (#7	64	5280~52BF	21120~21183
		module)			
		X10700~X10777 (#8	64	52C0~52FF	21184~21247
		module)			
		X11000~X11077 (#9	64	5300~533F	21248~21311
		module)			
		X11100~X11177 (#10	64	5340~537F	21312~21375
		module)			

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		X11200~X11277 (#11	64	5380~53BF	21376~21439
		module)			
		X11300~X11377 (#12	64	53C0~53FF	21440~21503
		module)			
		X11400~X11477 (#13	64	5400~543F	21504~21567
		module)			
		X11500~X11577 (#14	64	5440~547F	21568~21631
		module)			
		X11600~X11677 (#15	64	5480~54BF	21632~21695
		module)			
		X11700~X11777 (#16	64	54C0~54FF	21696~21759
		module)			
		Y0~Y77 (main body)	64	6000~603F	24576~24639
		Y10000~Y10077 (#1	64	6100~613F	24832~24895
		module)	04		
		Y10100~Y10177 (#2	64	6140~617F	24896~24959
		module)	01		
		Y10200~Y10277 (#3	64	6180~61BF	24960~25023
		module)			
		Y10300~Y10377 (#4	64	61C0~61FF	25024~25087
		module)			
		Y10400~Y10477 (#5	64	6200~623F	25088~25151
		module)			
		Y10500~Y10577 (#6	64	6240~627F	25152~25215
		module)			
		Y10600~Y10677 (#7	64	6280~62BF	25216~25279
	Y	module)			
		Y10700~Y10777 (#8	64	62C0~62FF	25280~25343
		module)			
		Y11000~Y11077 (#9	64	6300~633F	25344~25407
		module)	64	(240 (275	25400 25451
		Y11100~Y11177 (#10	64	6340~637F	25408~25471
		module)		(200 (200	25472 25525
		Y11200~Y11277 (#11	64	6380~63BF	25472~25535
		module)	64	62C0 62EE	25526 25500
		Y11300~Y11377 (#12 module)	64	63C0~63FF	25536~25599
		,	64	6400, 642E	25600, 25662
		× ×	64	6400~643F	25600~25663
		module) Y11500~Y11577 (#14	64	6440~647F	25664~25727
		(#14) module)	04	୰╅╅Ѵ∼Ѡ҈┽╷Г	23004~23727
		module)			

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
		-		(hex)	(decimal)
		Y11600~Y11677 (#15	64	6480~64BF	25728~25791
		module)			
		Y11700~Y11777 (#16	64	64C0~64FF	25792~25855
		module)			
	S	S0~S7999	8000	7000~8F3F	28672~36671
	SM	SM0~SM4095	4096	9000~9FFF	36864~40959
	Т	T0~T4095	4096	A000~AFFF	40960~45055
	С	C0~C4095	4096	B000~BFFF	45056~49151
	ET	ET0~ET39	40	C000~C027	49152~49191
	SEM	SEM0~SEM127	128	C080~C0FF	49280~49407
	HM ^{*1}	HM0~HM6143	6144	C100~D8FF	49408~55551
	HS^{*1}	HS0~HS999	1000	D900~DCEF	55552~56551
	HT ^{*1}	HT0~HT1023	1024	E100~E4FF	57600~58623
	HC ^{*1}	HC0~HC1023	1024	E500~E8FF	58624~59647
	HSC ^{*1}	HSC0~HSC39	40	E900~E927	59648~59687
	D	D0~D20479	20480	0~4FFF	0~20479
		ID0~ID99 (main body)	100	5000~5063	20480~20579
		ID10000~ID10099 (#1	100	5100~5163	20736~20835
		module)	100	5100~5105	20730~20833
		ID10100~ID10199 (#2	100	5164~51C7	20836~20935
		module)	100	5104~5107	20830~20933
		ID10200~ID10299 (#3	100	51C8~522B	20936~21035
		module)			20750-21055
		ID10300~ID10399 (#4	100	522C~528F	21036~21135
		module)			21050-21155
		ID10400~ID10499 (#5	100	5290~52F3	21136~21235
Register,		module)			
word	ID	ID10500~ID10599 (#6	100	52F4~5357	21236~21335
object		module)			
		ID10600~ID10699 (#7	100	5358~53BB	21336~21435
		module)			
		ID10700~ID10799 (#8	100	53BC~541F	21436~21535
		module)			
		ID10800~ID10899 (#9	100	5420~5483	21536~21635
		module)			
		ID10900~ID10999 (#10	100	5484~54E7	21636~21735
		module)			
		ID11000~ID11099 (#11	100	54E8~554B	21736~21835
		module)			
		ID11100~ID11199 (#12	100	554C~55AF	21836~21935

				Modbus	Modbus
Туре	Component	Range	Quantity	address	address
				(hex)	(decimal)
		module)			
		ID11200~ID11299 (#13	100	55B0~5613	21936~22035
		module)			
		ID11300~ID11399 (#14	100	5614~5677	22036~22135
		module)			
		ID11400~ID11499 (#15	100	5678~56DB	22136~22235
		module)			
		ID11500~ID11599 (#16	100	56DC~573F	22236~22335
		module)			
		QD0~QD99 (main body)	100	6000~6063	24576~24675
		QD10000~QD10099 (#1 module)	100	6100~6163	24832~24931
		QD10100~QD10199 (#2 module)	100	6164~61C7	24932~25031
		QD10200~QD10299 (#3 module)	100	61C8~622B	25032~25131
		QD10300~QD10399 (#4	100	622C~628F	25132~25231
		module) QD10400~QD10499 (#5	100	6290~62F3	25232~25331
		module) QD10500~QD10599 (#6	100	62F4~6357	25332~25431
		module)			
		QD10600~QD10699 (#7 module)	100	6358~63BB	25432~25531
	QD	QD10700~QD10799 (#8 module)	100	63BC~641F	25532~25631
		QD10800~QD10899 (#9 module)	100	6420~6483	25632~25731
		QD10900~QD10999 (#10 module)	100	6484~64E7	25732~25831
		QD11000~QD11099 (#11 module)	100	64E8~654B	25832~25931
		QD11100~QD11199 (#12 module)	100	654C~65AF	25932~26031
		QD11200~QD11299 (#13 module)	100	65B0~6613	26032~26131
		QD11300~QD11399 (#14	100	6614~6677	26132~26231
		module) QD11400~QD11499 (#15	100	6678~66DB	26232~26331
		module)			

	Component	Range	Quantity	Modbus	Modbus
Туре				address	address
				(hex)	(decimal)
		QD11500~QD11599 (#16	100	66DC~673F 26332~2	26332~26431
		module)		00DC~073F	
	SD	SD0~SD4095	4096	7000~7FFF	28672~32767
	TD	TD0~TD4095	4096	8000~8FFF	32768~36863
	CD	CD0~CD4095	4096	9000~9FFF	36864~40959
	ETD	ETD0~ETD39	40	A000~A027	40960~40999
	HD ^{*1}	HD0~HD6143	6144	A080~B87F	41088~47231
	HSD ^{*1}	HSD0~HSD1023	1024	B880~BC7F	47232~48255
	HTD ^{*1}	HTD0~HTD1023	1024	BC80~C07F	48256~49279
	HCD ^{*1}	HCD0~HCD1023	1024	C080~C47F	49280~50303
	HSCD ^{*1}	HSCD0~HSCD39	40	C480~C4A7	50304~50343
	FD*2 FD0~FD8191 SFD*2 SFD0~SFD4095 FS*2 FS0~FS47		8192	C4C0~E4BF	50368~58559
			4096	E4C0~FC2F	58560~64559
			48	F4C0~F4EF	62656~62911

Note :

*1: The area marked with *1 is the power failure retention area; Flash area marked with *2.

*2: The addresses in the above table are used when the PLC is used as the lower computer and Modbus RTU or Modbus ASCII protocol communication is used. Generally, the upper computer is: configuration/touch screen/PLC.

*3: If the upper computer is a PLC, write the program according to the Modbus-RTU or Modbus-ASCII protocol.

%4: If the upper computer is SCADA or HMI, there are two situations: the first one has a Xinje driver, such as Xinje HMI, which can be directly written using the PLC internal software components (Y0/M0); The second type does not have a Xinje driver, so choose Modbus-RTU or Modbus-ASCII protocol, and then use the addresses in the above table to define data variables.

※5: The input and output points are in octal. Please calculate the corresponding input and output point Modbus address according to octal. For example, the Modbus address corresponding to Y0 is H6000, the Modbus address corresponding to Y10 is H6008 (not H6010), and the Modbus address corresponding to Y20 is H6010 (not H6020).

%6: When the Modbus address exceeds K32767, it needs to be represented in hexadecimal and the address needs to be preceded by "0". For example, the Modbus address of HD0 is 41088 in decimal (beyond K32767), and K41088 cannot be written to the software, so it needs to be represented as H0A080 in hexadecimal.

%7: Modbus address calculation for X and Y, taking X as an example, the Modbus address calculation for Y is the same as for X.

X0: 20480 X10: 20480+8 X20: 20480+16 X30: 16384+24.... X10000: 20736 X10010: 20736+8 X10020: 20736+16....

X1020: 20800 X10210: 20800+8 X10220: 20800+16....

3-2-3. MODBUS function code

Function code	Function	Descriptions
01H	Read coil	Read 0X address, max quantity is 2000
01H 02H	Read input coil	Read 1X address, max quantity is 2000
03H	Read holding register	Read 4X address, max quantity is 125
04H	Read input register	Read 3X address, max quantity is 125
05H	Write single coil	Write single 0X address
06H	Write single register	Write single 4X address
0FH	Write multiple coils	Write 0X address, max quantity is 1976
10H	Write multiple registers	Write 4X address, max quantity is 123

Ethernet model PLC supports the following Modbus communication function codes:

3-3. Modbus TCP graphics configuration

3-3-1. Overview

ModbusTCP, as a standard protocol for industrial communication, is widely used on site. Ethernet models integrate the MODBUS-TCP protocol, including servers and clients. In order to easily achieve communication data interaction with MODBUS-TCP devices, for XDH/XLH models, V3.7.3 and above firmware can support MODBUS-TCP graphical configuration. If users need to flexibly use MODBUS-TCP to achieve specific requirements, or if the device to be connected does not support MODBUS-TCP and only supports free format TCP/IP, communication data interaction can be achieved by establishing sockets. The establishment of sockets does not conflict with the establishment of connection resources through graphical configuration.

3-3-2. Modbus TCP master station configuration

Modbus TCP master (client) configuration for XDH/XLH models, supports establishing connections with 32 Modbus TCP slaves (server) simultaneously, and establishes a maximum of 3000 connection instructions for sharing with 32 Modbus TCP slaves (server). The process of establishing connection configuration is as follows:

Open the XDPpro software, click Modbus TCP in the left project bar to enter the configuration interface.
le <u>E</u> dit <u>S</u> earch <u>V</u> iew O <u>n</u> li] 🏳 📕 🐰 🗎 🖡		
+ 몸 ☆ 露 - + +		2 🗨 🏙 🤫
ect 📮	X PLC1 - Ladder	•
BD 	ModbusTCP Config	
4GBOX	E Master station	
WBOX		
PLC Communication		
Ethernetip		
EipScanner		
EipExplicit		
ModbusTcp		
Motion control(H movement)	Add Delete Copy Attribute	
Axis configuration	Slave configuration	
Axis debug		
CAM		
PLC Status		
CPU Detail		
Expansion Details		
BD Details		
ED Details		
Clock Details		
Error Details		
Record		

1. Modbus TCP Graphical Configuration Table

	Name breik Inc	ert Delete Move Up Mo	a Davia Class Japanet	OutBast				×
E Master station PLC Master		Slave number Trigger m			Slave address	Slave offset	Count	Map address
Add Delete Copy Attribute 2			4					
2]192.168.6.3.502	Number of instruc	zions built: 0/3000 (5)			6	ead PLC Write PL	C OK	Cancel

【Area 1】: Display the configuration information of the master station;

[Area 2]:

•	Support the addition, deletion, replication, and attribute functions of a slave node
Add	Add a default slave node at the bottom and position the cursor to the added slave
	node.
Delete	Delete the selected slave node by the user. Clicking this function is invalid when the
	current tree node is empty.
Сору	The user clicks the copy button to copy a selected slave information
	(attribute+instruction configuration information) and automatically paste it to the
	bottom of the tree node. At the same time, the IP address is changed to the default IP

Support the addition, deletion, replication, and attribute functions of a slave node

		positioned to the pasted slave node ttings interface of the selected slav	
-	ousTCP Set	5	×
Devi	ce selection:	Xinje PLC Equipment	\sim
IP A	ddress:	192.168.6.3	
Port	number:	502	
Time	out time(ms):	500	
Num	ber of retransmissions:	1	
	nable control software :		
	Connection flag bit :		
		Ok Can	cel

• The following contents can be set in the Modbus TCP configuration interface

Device selection	Xinje PLC and other Modbus equipment; Default Xinje PLC device
IP address	The IP address of the target PLC; Default 192.168.6.1, starting from 1, the next
	item defaults to the previous address +1
Port number	Fill in 502 by default
Time out	Default setting 500ms, range: 10-65535
Enable control	By default, it is not enabled. Enabling can set the coil control of the PLC.
software	When not enabled: PLC automatically establishes a TCP connection to the
component	target IP after running;
	When enabled: Only bit registers are supported, and TCP connections are only
	established to the target IP when the coil is set ON. When the conditions are
	not met, close the TCP connection
Connection flag	Store the result of the successful connection of this device in the corresponding
bit	connection flag bit register

[Area 3] : Display slave configuration information;

[Area 4]:

- Support users to select relevant instruction configuration functions for slave nodes, including create, insert, delete, move up, down, clear, import, and export.
- Display the command information of the selected slave node.

Number	Name	Slave number	Trigger mode	Trigger condition	Function code	Slave address	Slave offset	Count	Map address
0	slave	1	Circulate(ms)	1000	Read register	D	0	1	DO
1	slave	1	Circulate(ms)	1000	Read register	D	0	1	DO
2	slave	1	Circulate(ms)	1000	Read register	D	0	1	DO
3	slave	1	Circulate(ms)	1000	Read register	D	0	1	DO

[Area 5]: Monitor the number of connections currently established and the number of instructions established

[Area 6]: Supports functions such as read PLC, writ PLC, and save data (confirm, cancel).

2. Add instructions

Number	Name	Slave number	Trigger mode	Trigger condition	Function code	Slave address	Slave offset	Count	Map address
0	slave	1	Circulate(ms)	1000	Read register	Ю	0	1	DO
1	slave	1	Circulate(ms)	1000	Write register	D	200	1	D100
2	slave	1	Circulate(ms)	1000	Read register	D	100	1	D200

- Name: The name of the current mapping instruction, which can be modified by the user;
- Slave station number: default 1, range 0-247;
- Triggering method: cycle (ms) and conditional triggering
 - Cycle (ms): When the triggering method is cycle, the value in the triggering condition is the cycle period, in ms; Range: 0-2 ^ 32-1;
 - Conditional trigger: When the trigger method is conditional trigger, the trigger condition is SM/M/HM coil or bit of word. Default to edge triggering, implemented by the PLC.
- Triggering conditions: Depending on the triggering method, check the validity of this item when "confirmed";
- Function code
 - When the user selects a Xinje PLC as the device

Read coil	The maximum number of reading coils supports
	2000
Write coil	The maximum number of write coils is 1960
Read register	The maximum number of read registers
	supported 125
Write register	The maximum number of write registers supports
	122

٠	When the user selects other MODBUS devices
---	--

• when the user selects of	
Read coil (01H)	Read 0X type addresses, maximum quantity 2000
Read input coil (02H)	Read 1X type addresses, maximum quantity 2000
Read register (03H)	Read 4X type addresses, maximum quantity 125
Read input register (04H)	Read 3X type addresses, maximum quantity 125
Write single coil (05H)	Write a single 0X type address
Write single register	Write a single 4X type address
(06H)	
Write multiple coils	Write 0X type addresses, with a maximum number
(0FH)	of 1960
Write multiple registers	Write 4X type addresses, with a maximum number
(10H)	of 122

• Slave station address space

If the current slave station is a Xinje PLC, this is the register type corresponding to the function code. The reference settings are as follows:

- Read and write coils, pull-down options: M, X, Y, HM, S, SM, T, C, ET, SEM, HS, HT, HC, HSC;
- Read and write registers, pull-down options: D, HD, ID, QD, SD, TD, CD, ETD, HSD, HTD, HCD, HSCD, FD, SFD, FS.
- Quantity: The length of data that can be read or written, with a default of 1. The

maximum length of data that can be read or written depends on the above function code.

• Mapping address: coil status, cache address in the master station. Default is D0.

3-3-3. Modbus TCP graphical application

By using Modbus TCP graphical configuration function, automatic connection and data exchange between two PLCs can be established upon power on. Taking the communication between two XDH-60T4 as an example, the IP address of PLC 1 (client) is 192.168.6.10, and that of PLC 2 (server) is 192.168.6.6.

The operation of this case is as follows:

1. The client performs a register write operation and writes the data from the 10 registers of the client D0-D9 to the 10 registers of the server HD0-HD9 in a loop of 500ms as a trigger;

2. The client performs a register reading operation and reads the data from the 10 registers of D100-D109 on the server into the 10 registers of HD100-HD109 on the client using the trigger method (M600);

3. The client performs a write coil operation and writes the status of the 10 coils of the client M0-M9 to the ten coils of the server HM0-HM9 in a loop of 500ms as the trigger method;

4. The client performs a coil reading operation by triggering (M601) to read the status of the 10 coils of the server's M0-M9 into the 10 coils of the client's HM0-HM9.

(1) Configure the IP address and related configuration information of the slave station as follows:

Haster station PLC Master		
	ModbusTCP Set	×
	Device selection:	Xinje PLC Equipment 🗸 🗸 🗸
	IP Address:	192.168.6.6
Add Delete Copy Attribute	Port number:	502
- Slave configuration	Timeout time(ms):	500
	Number of retransmissions:	1
	Enable control software :	M200
	Connection flag bit :	M201
		Ok Cancel

(2) Create instructions for the four data interaction operations mentioned above, as follows:

Master station PLC Master	New-built Insert Delete Move Up Move Down Clear Import OutPort									
- FLC Mdster	Number	Name	Slave number	Trigger mode	Trigger condition	Function code	Slave address	Slave offset	Count	Map address
	0	slave	1	Circulate(ms)	500	Write register	Ю	0	10	DO
	1	slave	1	Trigger	M600	Read register	D	0	10	HDO
	2	slave	1	Circulate(ms)	500	Write coil	HM	0	10	MO
	3	slave	1	Trigger	M601	Read the coil	м	0	10	HMO

(3) Check the status of the connection between the client and server, as well as information on data interaction, as shown in the following figure:

监控窗口 • 添加	修改删除	全部删除	余 上移 下種	多 置顶	置底	
名称	监控值	类型	映射地址/		ŝ	注释
- 🔷 M200	ON	BIT	位		使能控	制软元件
- 🔷 M201	ON	BIT	位		连接	标志位
- 🔷 D0	1	INT	单字	客户	端写操	作数据首地址
- 🔷 D1	2	INT	单字			
- 🔷 D2	3	INT	单字			
- 🔷 D3	_4	INT	单字			
-� D4	5	INT	单字			
- 🔷 D5	6	INT	单字			
-• D6	7	INT	单字			
-• D7	8	INT	单字			
- 🔷 D8	9	INT	单字			
- 🔷 D9	10	INT	单字			
- ID0	12	INT	单字	客户	端读操	作数据首地址
- 🔷 HD1	13	INT	单字			
-🔷 HD2	14	INT	单字			
-🔷 HD3	15	INT	单字			
- 🔷 HD4	0	INT	单字			
- 🔷 HD5	0	INT	单字			
- 🔷 HD6	0	INT	单字			
- 🔶 HD7	0	INT	单字			
-🔷 HD8	0	INT	单字			
-🔷 HD9	0	INT	单字			
- 🔷 M0	OFF	BIT	位	客户	端写线	圈状态首地址
- ◇ M1	OFF	BIT	位			
-🔷 M2	OFF	BIT	位			
-🔷 M3	OFF	BIT	位			
- ◇ M4	OFF	BIT	位			
- 🔷 M5	OFF	BIT	位			
- 🔷 M6	OFF	BIT	位			
- 🔷 M7	OFF	BIT	位			
- 🔷 M8	OFF	BIT	位			
- 🔷 M9	OFF	BIT	位			
-🔷 HMO	OFF	BIT	位	客户	端读线	圈状态首地址
- 🔷 HM1	OFF	BIT	位			
- 🖕 HM2	OFF	BIT	位			

3-4. Free format protocol

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

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

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

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

Free format communication parameters:

Data buffer mode: 8-bit, 16-bit

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

4 Ethernet communication instruction

4-1. Ethernet communication instruction overview

Ethernet communication instructions include: communication task opening and closing, send/receive data, MODBUS TCP. When using Ethernet instruction, please follow the following steps:

(1) open communications task: confirm the communication protocols and communication type, configure communication parameters, to create a TCP connection/UDP port listening, and bind socket ID.

(2) to realize the data communication: open successful communications task, achieve free Ethernet communication or MODBUS TCP data communications.

(3) close communications task: after communicating with target device, or TCP connection is abnormal, it needs to close communication tasks.

4-1-1. Create TCP connection/UDP port listening [S_OPEN]

1. Overview

Communication task creates the instruction, use together with abort communication task instruction S_CLOSE.

Create TCP	Create TCP connection /UDP port listening [S_OPEN]									
16-bit	S_OPEN	32-bit	-							
instruction		instruction								
Execution	Edge triggered	Suitable	XD3E, XD5E, XDME, XDH, XG,							
condition		model	XL5E, XL5N, XLME, XL5H,							
			XLH							
Firmware	V3.5.3 and up	Software	V3.5.3 and up							

2. Operand

Operand	Function	Туре
S1	Socket ID	16-bit, BIN
S2	Communication type	16-bit, BIN
S3	Local device communication mode	16-bit, BIN
S4	Parameter block start address	16-bit, BIN
S5	Flag start position	Bit

3. Suitable soft component

word	operand	System									constant	Module		
		D	FD	ED)	TD	CD	DX	DY	DM	DS	K/H	D	QD
	S1	•										•		
	S2	•										•		
	S3	•										•		
	S4	•												
Bit	operand				Sys	tem								
		X	Y	M*	S^*	Τ*	C*	Dnm						
	S5			•										

*Note: D means D HD ; TD means TD HTD ; CD means CD HCD HSCD HSD; DM means DM DHM;

DS means DS DHS. M means M HM SM; S means S HS; T means T HT; C means C HC.

Function and action



- Create the communication task, when M0 rising edge is coming, the instruction will create one TCP connection or open UDP port listening once.
- S1: socket ID, range: K0~K63. Note: the socket quantity cannot be more than 64, TCP quantity cannot over 32, UDP quantity cannot be more than 32.
- S2: communication type, range: K0, K1. K0 is UDP, K1 is TCP.
- S3: communication mode. Range: K0, K1. K0 is server, K1 is client.
- S4: parameter block start address, occupy 9 registers from S4 to S4+8.
- S5: flag start position, occupy 10 coils from S5 to S5+9.
- This instruction can be set through the following window

Note: 1. The server needs to first open the socket and wait for the client to connect,

otherwise the socket may not be established successfully.

2. The UDP multicast function is only supported for Ethernet PLC firmware version 3.7.2 and above, and XDH/XLH series firmware 3.7.3 and above versions.

	PID Config Pulse Config						
-	High Speed Co	unt Config					
1	Ethernet Conne	ction Config					
	Modbus Tcp Co						
			Ethernet Co	nnectio	on Config		
		S_OPEN	Parameter S	letting			3
Basic Setting							
Basic Setting Socket ID	KD	Communication	TCP(K1)	~	Mode Selection	Client(K1)	~
_	K0 HD0		TCP(K1) M0	•	Mode Selection The "Basic Settin after downloading	ngs" program wil	
Socket ID Reg Start	1425	Y type Rag Start	1	•	The "Basic Settin	ngs" program wil	
Socket ID Reg Start Position	1425	Y type Rag Start	1	~	The "Basic Settin	ngs" program wil	
Socket ID Reg Start	HDO	V type Flag Start Position Buffer type	MO		The "Basic Settir after downloading	ngs" program wil	

Note: the parameters in the red frame will be effective after power on the PLC again.

• Ethernet error flag SM1921 is ON when communication is abnormal, the error information will be stored in SD1920 and SD1921, please refer to chapter 4-3.

Take above image as an example, the address starting from HD0 and flag address starting from M0 are shown as below:

SOpen configuration instruction help interface									
Local Port	HD0	Connection start mark	MO						
Target IP Sec 1 (e.g. :192)	HD1 High Byte	Linked mark	M1						
Target IP Sec 2 (e.g. :168)	HD1 Low Byte	Sending mark	M2						
Target IP Sec 3 (e.g. :0)	HD2 High Byte	Passed mark	M3						
Target IP Sec 4 (e.g. :1)	HD2 Low Byte	Receiving mark	M4						
Destination Port	HD3	Received mark	M5						
The data buffering	HD4	Closing mark	M6						
Receiving Timeout	HD5	Modbus TCP communication mark	M7						
The reserved	HD6	TCP exception mark	M8						
Actual number of bytes received(Byte)	HD7	Error mark	M9						
Error Type	HD8								

Parameter explanation:

	1	5			1		
Communication	Local	destination	Destination	Buffer	Timesout	Received	Error
type	port	IP	port	type	Timeout	bytes	code
TCP client	-	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
TCP server	\checkmark	-	-	\checkmark	\checkmark	\checkmark	
UDP	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	

The communication task created by S_OPEN is divided into three categories: TCP client, TCP server, UDP. The parameters used by the three types are different, please refer to below table.

1. Local port

The range is 1 to 60000, port 502 and 531 is special port which can not be used. Local port only can be used by one communication task.

2. Destination IP

The target IP refers to the IP address of the target communication device, with a value range of 0-254, which is in the same subnet as the local machine.

3. Destination port

The net port no. of target device. The range is 1 to 65535. The port must be 502 for modbus tcp communication.

4. Data Buffer mode

When the value is 0, it is 8-bit mode. When the value is non-zero, it is 16-bit mode. The actual received data packet length is received based on the corresponding set buffer length.

5. Timeout

The time from PLC requests data receiving to the receiving data ends. The range is 0 to 65536. The unit is 10ms. 0 means the timeout is disabled, it will continue receiving data. Non-zero means the timeout function is enabled. The receiving timeout is effective for S_RCV and M_TCP.

If the timeout is set to 300ms, it will wait for 300ms when the request begins, and terminate at once when the data is received successfully. If it hasn't received data over 300ms, the present instruction will end and report the receiving timeout error.

Note: When the receive timeout time is set to 0 in versions V3.7.3 and above, M_TCP will default to a receive timeout time of 10 seconds, and S_RCV will default to no receive timeout time.

6. TCP keep alive

(1) the value is 0, TCP keep alive function is not enabled.

(2) the value is non-zero, TCP keep alive function is enabled.

Connection is in the inactive state over a period of time, when the keep alive function is enabled, it will send keep alive detection to the object, if the sender did not receive the response message, then the other host will be confirmed as unreachable. Triggering time is $1 \sim 5$ min, when it is abnormal, TCP abnormal flag is set on.

Note: The TCP keep alive function is only supported for Ethernet based PLCs with firmware versions 3.7.2 and above.

7. Data receiving mode

Automatic reception: If the other party sends too quickly during reception, the data that is not received will be automatically discarded; Not receiving or receiving timeout will also discard the data sent by the other party.

8. Receiving data length

Execute S_RCV instruction, the actual length of received data, in bytes.

9. Error code

The error message when Ethernet free format communication and Modbus TCP communication are abnormal, please refer to chapter 4-4.

10. Flag bit

The functional description of communication related flag bits is shown in the table below: (Address description starts with Mn)

Bit address	Flag bit	Function
Mn	Connecting	Creating the connection, M (n) is ON
M (n+1)	Connected	Creating connection completed, M (n+1) is ON
M (n+1)	Sending	Data is sending, M (n+2) is ON
M (n+3)	Sent	Sending data completed, M (n+3) is ON
M (n+4)	Receiving	Data is receiving, M (n+4)is ON
M (n+5)	Received	Data receiving completed, M (n+5) is ON
M (n+6)	Closing	The present connection is closing, M (n+6) is ON
M (n+7)	MODBUS TCP	When executing M_TCP instruction, M (n+7) is ON
	communicating	
M (n+8)	TCP abnormal	TCP connection is abnormal, M (n+8) is ON
M (n+9)	Error flag	Communication is error, M (n+9) is ON

4-1-2. Communication termination [S_CLOSE]

1. Instruction overview

Communication termination instruction, please use together with S_OPEN.

Communica	tion termination [S_CLOSE]		
16-bit	S_CLOSE	32-bit	-
Execution	Edge triggering	Suitable	XD3E, XD5E, XDME, XDH, XG,
condition		model	XL5E, XL5N, XLME, XL5H,
			XLH
Firmware	V3.5.3 and up	Software	V3.5.3 and up

2. Operand

Operand	Function	Туре
S1	Close socket ID	16-bit, BIN

3. Suitable soft component

word	operand					Syste	m				Constant	Мо	odule
		D	FD	ED	TD	CD	DX	DY	DM	DS	K/H	D	QD
	S1	٠									•		

*Note: D means D HD ; TD means TD HTD ; CD means CD HCD HSCD HSD; DM means DM DHM; DS means DS DHS.



- Terminate the communication task when the rising edge of M0 is coming. Note: this instruction must be used together with S_OPEN.
- S1: the socket ID which needs to close, the operand can be register or constant, the range is K0~K63.
- After this instruction is executed, the instruction M_TCP, S_SEND, S_RCV based on this socket ID cannot run anymore.

4-1-3. Free format communication send [S_SEND]

1. Instruction overview

Free format	t communication	send instruction	needs to	use together	with S	OPEN and S	CLOSE.

Free format	communication send [S_SEND]		
16-bit	S_SEND	32-bit	-
Execution	Edge triggering	Suitable	XD3E, XD5E, XDME, XDH, XG,
condition		model	XL5E, XL5N, XLME, XL5H,
			XLH
Firmware	V3.5.3 and up	Software	V3.5.3 and up

2. Operand

Operand	Function	Туре
S1	Socket ID	16-bit, BIN
S2	Send data local register head address	16-bit, BIN
S3	Send data quantity	16-bit, BIN

3. Suitable soft component

word	operand					Syste	m				Constant	Mo	dule
		D	FD	ED	TD	CD	DX	DY	DM	DS	K/H	ID	QD
	S1	•									•		
	S2	•											
	S3	•									•		

*Note: D means D HD ; TD means TD HTD ; CD means CD HCD HSCD HSD; DM means DM DHM; DS means DS DHS.



• Free format communication send instruction, it will send data when the M0 rising edge is coming.

Note: this instruction must be used together with S_OPEN and S_CLOSE.

- S1: socket ID, the operand can be register or constant, the range is K0~K63
- S2: local register sending head address
- S3: send data quantity, the operand can be register or constant
- Please input this instruction in the ladder chart
- When using, pay attention to the data buffer type in the S_OPEN instruction in the socket ID (16 bits/8 bits).
- When the buffer bit is 8 bits, only the low byte data of the register should be sent. For example, to send the low byte data in registers D100 to D107, S3 should be set to 8.
- When the buffer bit is 16 bits, both high and low byte data of the register will be sent. For example, to send high and low byte data from D100 to D107, S3 should be set to 16, and when sending, the low byte should be in front of the high byte.

4-1-4. Free format communication receive [S_RCV]

1. Instruction overview

Free format communication receive instruction needs to use together with S_OPEN and S CLOSE.

Free format	communication receive [S_RCV]		
16-bit	S_RCV	32-bit	-
Execution	Normally ON/OFF, edge	Suitable	XD3E, XD5E, XDME, XDH, XG,
condition	triggering	model	XL5E, XL5N, XLME, XL5H,
			XLH
Firmware	V3.5.3 and up	Software	V3.5.3 and up

2. Operand

Operand	Function	Туре
S1	Socket ID	16-bit, BIN
S2	Receive data local register head address	16-bit, BIN
S3	Receive data quantity	16-bit, BIN

3. Suitable soft component

word	operand					Syste	m				Constant	Mo	dule
		D	FD	ED	TD	CD	DX	DY	DM	DS	K/H	ID	QD
	S1	•									•		
	S2	•											
	S3	٠									•		

*Note: D means D HD ; TD means TD HTD ; CD means CD HCD HSCD HSD; DM means DM DHM; DS means DS DHS.

Function and action



- Free format communication receive instruction, it will receive data when the M0 rising edge is coming.
 Note: this instruction must be used together with S OPEN and S CLOSE.
 - _ _
- S1: socket ID, the operand can be register or constant, the range is K0~K63

- S2: local register receiving head address
- S3: receive data quantity, the operand can be register or constant
- Please input this instruction in the ladder chart
- When using, pay attention to the data buffer type in the S_OPEN instruction in the socket ID (16 bits/8 bits).
- When the buffer bit is 8 bits, only the low byte data of the register should be sent. For example, to send the low byte data in registers D100 to D107, S3 should be set to 8.
- When the buffer bit is 16 bits, both high and low byte data of the register will be sent. For example, to send high and low byte data from D100 to D107, S3 should be set to 16, and when sending, the low byte should be in front of the high byte.

4-1-5. MODBUS communication [M_TCP]

1. Instruction overview

When PLC is client, receive and send data in modbus tcp protocol. It can be used together with S OPEN and S CLOSE.

MODBUS T	CP communication [M_TCP]		
16-bit	M_TCP	32-bit	-
Execution	Edge triggering	Suitable	XD3E, XD5E, XDME, XDH, XG,
condition		model	XL5E, XL5N, XLME, XL5H,
			XLH
Firmware	V3.5.3 and up	Software	V3.5.3 and up

2. Operand

Operand	Function	Model
S1	Remote station no.	16-bit, BIN
S2	Modbus communication function code	16-bit, BIN
S3	Target head address	16-bit, BIN
S4	Register or coil quantity	16-bit, BIN
S5	Local head address	16-bit, BIN
S6	Socket ID	16-bit, BIN

3. Suitable soft component

Word	operand					Syste	m				Constant	Мо	dule
		D	FD	ED	TD	CD	DX	DY	DM	DS	K/H	D	QD
	S1	•									•		
	S2	•									•		
	S3	•									•		
	S4	•									•		
	S5	•											
	S6	•									•		

*Note: D means D HD ; TD means TD HTD ; CD means CD HCD HSCD HSD; DM means DM DHM; DS means DS DHS.

Function and action



- MODBUS TCP communication instruction, it will Modbus TCP communicate once when M0 rising edge is coming.
- S1: remote communication station no., the range is K0~K247
- S2: MODBUS communication function code
- S3: target head address, it is Modbus communication address.
- S4: communication data quantity
- S5: local head address
- S6: socket ID, specify the TCP connection, the target port must be 502.
- This instruction must be used together with S_OPEN and S_CLOSE.
- M_TCP is only effective when PLC is client, and receives and sends the data of Modbus TCP protocol.

Note: As a server, ModbusTCP has a port number of 502 and does not require writing communication instructions. The client can establish a socket and write communication instructions.

• This instruction needs to set through the following window



		WIO	ubus rep (configuration	
Socket ID	К1	<mark>∽</mark> S6	Local Strat Address	M100	S5
Mo <mark>d</mark> bus TCP					
Station No.	К1	✓ S1	Function Code	0x01 Read the coil	✓ S3
Data Address	К0	S2	Count	К1	S4
					OK Cancel

Function code:

Value	Function code	Value	Function code
K1	Read the coil	K3	Read the register
K2	Read the input discrete magnitude	K4	Read input register
K5	Write single coil	K6	Write single register
K15	Write multiple coil	K16	Write multiple register

4-1-6. Ethernet communication example

Example 1:

By using the following program, PLC can automatically create three forms of communication tasks: TCP client, TCP server, and UDP after power on, and achieve data transmission and reception based on each communication task. The IP address of PLC 1 is 192.168.1.12, and the IP address of PLC 2 is 192.168.1.6.

Note: The server needs to first open the socket and wait for the client's connection, otherwise the socket may not be established successfully.

Program operation:

(1) After PLC 1 is powered on, it actively establishes a TCP connection to the TCP server service port 1111 of PLC 2 as a TCP client and binds a socket ID of 1. After the connection is successfully established, it sends the low 8-bit of D1000~D1549 to PLC 2 D2600~D3149, while continuously receiving data from PLC 2 D2000~D2399 and storing it in the low 8-bit of registers D1600~D1999. When a TCP connection encounters an exception or the sender does not receive a response message within the set live time (where the live time is set to 2 seconds), the TCP connection is actively closed and rebuilt.

Due to the varying number of Ethernet ports in different series of PLCs, please distinguish which Ethernet port the network cable is connected to when using communication related coils SM1902 or SM1903. (SM1902 is the symbol for connecting network devices, used in the first network port of a dual port model or in a single port model to connect to a switch/router/other network device. SM1903 is the symbol for connecting network devices, used in the second network port of a dual port model to connect to a switch/router/other network port of a dual port model to connect to a switch/router/other network port of a dual port model to connect to a switch/router/other network port of a dual port model to connect to a switch/router/other network device).

PLC1 program:

	PLS M0
Nor mally ON coil	
SM1901 SM1902 M101 SM12 HM0	S_OPEN K1 K1 K1 HD100 M100
InitialConnectSocket 1100msBuildnetworkdeviceconnectedcoilconnectionflagflagflagflag	
M101 M1	S_SEND K1 D1000 K550
Socket 1 send connected data	
M2	S_RCV K1 D1600 K400
Socket 1 receive data	
M0	S_CLOSE K1
Close socket	5_05002 M
M109	
Socket	
1 error M108	
Socket 1 TCP	
error SM1902	
M Con nect device	
НМО	

Build connection

Basic Setting					
Socket ID	K1 ~	Communication type	TCP(K1) ~	Mode Selection	Client(K1) ~
Reg Start Position	HD100	Flag Start Position	M100	The "Basic Setting after downloading!	ıs" program will take effec
Local Port	0	Buffer type	8 bit 🗸 🗸	Timeout(10ms)	0
Destination IP	192.168.1.6	Destination Port	1111	AcceptMode	AutoMode 🗸 🗸
Keep-Alive(S)	0	Used Space:	HD100-HD109,M100	LM109	

The configuration information for the client socket **S_OPEN** is as follows:

PLC 2 program:



Build connection

PEN Parameter	Setting					?	
Basic Setting							
Socket ID	К1 ~	Communication type	TCP(K1)	~ Mode	Selection	Server(K0)	~
Reg Start Position	HD100	Flag Start Position	M100		Basic Setting: ownloading!	s" program will take	effect
	-	7	[01 m]				1
Local Port	1111	Buffer type	8 bit	✓ Timeo	ut(10ms)	0	
Destination IP	0.0.0.0	Destination Port	0	Accep	otMode	AutoMode 🗸	
Keep-Alive(S)	Þ E	Used Space:	HD100-HD109	,M100-M109			
			Read From PLC	Write To P		OK Car	ncel

The configuration information for server socket S_OPEN is as follows

(2) After PLC 1 is powered on, it actively listens to port 1001 as a TCP server and waits for the TCP client device of PLC 2 to establish a TCP connection and bind a socket ID of 2. After the connection is successfully established, it sends the low 8-bit of D3000-D3549 to the connected device PLC 2, while continuously receiving data from the connected device PLC 2. The data is stored in the low 8-bit of registers D3600-D3999. When a TCP connection encounters an exception or the sender does not receive a response message within the set live time (where the live time is set to 2 seconds), the TCP connection is actively closed and rebuilt.

PLC 1 program:

SM0	
	PLS M10
Normally	
ON coil	
SM1901 SM1902 M201 SM12 HM30	
	S OPEN K2 K1 K0 HD200 M200
Initial Connect Socket 2 100ms Build network device connected coil connection	
network device connected coil connection	
M201 M20	S SEND K2 D3000 K550
	3_SEND K2 D3000 K350
Socket 2 Socket 2	
connected send data	
M21	
	S_RCV K2 D3600 K400
Socket 2	
data	
	S CLOSE K2
Close socket	5_02002 112
when power on	
M209	
I1	
Socket	
2 error	
M208	
Socket 2	
ТСР	
error	
SM1902	
Connect	
device	
HM30	
Build	

connection

Basic Setting					
Socket ID	К2 ~	Communication type	TCP(K1) ~	Mode Selection	Server(K0) 🗸
Reg Start Position	HD200	Flag Start Position	M200	The "Basic Setting after downloading!	s" program will take effect
Local Port	1001	Buffer type	8 bit ~	Timeout(10ms)	0
Destination IP	0.0.0.0	Destination Port	0	AcceptMode	AutoMode 🗸 🗸
Keep-Alive(S)	2	Used Space:	HD200-HD209.M20	00.0000	

The configuration information for server socket **S_OPEN** is as follows

PLC 2 program:



connection

PEN Parameter	Setting				?
Basic Setting					
Socket ID	К2 ~	Communication type	TCP(K1)	✓ Mode Selection	Client(K1) ~
Reg Start Position	HD200	Flag Start Position	M200	The "Basic Setting after downloading	gs" program will take effect !
		1	012		
Local Port	1001	Buffer type	8 bit	✓ Timeout(10ms)	0
Destination IP	192.168.1.12	Destination Port	1001	AcceptMode	AutoMode 🛛 🗸
Keep-Alive(S)	2	Used Space:	HD200-HD209,	M200-M209	
			Read From PLC	Write To PLC	OK Cancel

The configuration information for client socket S_OPEN is as follows

(3) After powering on PLC 1, UDP communication is used with an IP address of 192.168.1.12. The local port is set to 1002, the target IP is 192.168.1.6, and the target port is 3000. The socket ID is bound to 3. After the connection is successfully established, the low 8-bit of D4000-D4549 are sent to PLC 2, and the data from PLC2 is continuously received and stored in registers D4600~D4999. When UDP unicast encounters abnormal connections, it actively closes the UDP unicast connection and reconstructs the connection.

PLC 1 program:

SM0	[]
	PLS M30
Nor mally ON coil	
SM1901 SM1902 M401 SM12 HM30	S_OPEN K3 K0 K1 HD400 M400
Initial network Connect Socket 3 100ms Build device connected coil connection	
M401 M32	S_SEND K3 D4000 K550
Socket 3 Socket 3 send data M33	
Socket 3	S_RCV K3 D4600 K400
receive data M30	
	S_CLOSE K3
Close socket when power on M409	
Socket 3 error	
M408	
Socket 3 TCP error	
SM1902 ─₩───	
Connect device	
НМ30 	
Build	

connection

Basic Setting					
Socket ID	КЗ ~	Communication type	UDP(K0) ~	Mode Selection	Client(K1) 🗸 🗸
Reg Start Position	HD400	Flag Start Position	M400	The "Basic Setting: after downloading!	s" program will take effect
Local Port	1002	Buffer type	8 bit ~	/ Timeout(10ms)	0
Destination IP	192.168.1.6	Destination Port	3000	AcceptMode	AutoMode 📃 🗸
	2	Used Space:	HD400-HD409.M40		

The configuration information for UDP socket S_OPEN is as follows

PLC 2 program:

SM0	
	PLS M30
Normally	
ON coil	
SM1901 SM1902 M401 SM12 HM30	
	S_OPEN K3 K0 K1 HD400 M400
Initial Connect Socket 3 100ms Build network device connected coil connection	
M401 M32	S_SEND K3 D4000 K400
Socket 3	_
Socket 3	
connected data	
M33	
<u>├</u> ─-┤├ <i>──</i> ────	S_RCV K3 D4600 K550
Socket 3	
receive	
data	
M30	
<u>├</u> ── <u> </u>	S_CLOSE K3
Close socket	
when power on	
M409	
Socket	
3 error	
M408	
Socket 3	
ТСР	
error	
31 (1002	
SM 1902	
Connect	
device	

connection

Basic Setting					
Socket ID	К3 🗸	Communication type	UDP(K0)	Mode Selection	Client(K1) 🗸
Reg Start Position	HD400	Flag Start Position	M400	The "Basic Settings after downloading!	" program will take effec
Local Port	3000	Buffer type	8 bit	 Timeout(10ms) 	0
Destination IP	192.168.1.12	Destination Port	1002	AcceptMode	AutoMode 🗸 🗸

The configuration information for UDP socket S_OPEN is as follows

Example 2:

Through the following program, the PLC can automatically communicate with MODBUS-TCP server devices A and B after power on. The IP address of the PLC is 192.168.1.12, the IP address of device A is 192.168.1.6, the Modbus station number is 1, the IP address of device B is 192.168.1.14, and the Modbus station number is 1.

Note: As a server, ModbusTCP does not require writing communication instructions.

Due to the varying number of Ethernet ports in different series of PLCs, when using communication related coils SM1902 or SM1903, please pay attention to distinguishing which Ethernet port is connected to the PLC by the network cable (SM1902 is the symbol for connecting network devices, used in the first Ethernet port of a dual port model or in a single port model to connect to switches/routers/other network devices). SM1903 is a symbol for connecting network devices, used in dual port models where the second network port is connected to a switch/router/other network devices.

Program operation:

(1) After the PLC is powered on, it actively establishes a TCP connection to the TCP server service port 502 of device A as a TCP client and binds the socket ID to 1. After the connection is successfully established, the value of D1000-D1019 is written to device A's 4x100-4x119 every 1 second. When a TCP connection encounters an exception or the sender does not receive a response message within the set live time (where the live time is set to 2 seconds), the TCP connection is actively closed and rebuilt.

(2) After the PLC is powered on, it actively establishes a TCP connection to the TCP server service port 502 of device B as a TCP client and binds a socket ID of 2. After the connection is successfully established, the value of D1000-D1019 is written to device B's 4x200-4x219 every 1 second. When a TCP connection encounters an exception or the sender does not receive a response message within the set live time (where the live time is set to 2 seconds), the TCP connection is actively closed and rebuilt.

Program:

Socket 1 SM 0 	[PLS M1
Nor mally ON coil		
SM1901 SM1902 M101 SM12	HM0	S_OPEN K1 K1 K1 HD100 M100
Initial network	Build connection	
M101 M2		M_TCP K1 K16 K100 K20 D1000 K1
Socket 1 Socket 1 connect ed send data		
M1		S_CLOSE K1
Close socket when power on	I	
M109		
Socket 1 error		
M108		
Socket 1 FCP error		
SM1902		
Con nect device		
нм1		
Build connection		

Socket 2	
SM 0	PLS M10
Nor mally ON coil	
SM1901 SM1902 M201 SM12 HM10	S_OPEN K2 K1 K1 HD200 M200
Initial Connect Socket 2 100ms Build device connected coil connection	1
M201 M11	M_TCP K1 K16 K200 K20 D1000 K2
Socket 2 connected data	
M10 The Close	S_CLOSE K2
sock et when	
power on M209	
Socket 2 error	
M208	
Socket 2 TCP error	
SM 1902	
Connect device	
HM10	
Build connection	

The co	onfigura	tion	info	ormation	for	socket	1	S	OPEN	is	as	follows:

Basic Setting					
Socket ID	K1 ~	Communication type	TCP(K1)	Mode Selection	Client(K1) ~
Reg Start Position	HD100	Flag Start Position	M100	The "Basic Setting after downloading!	s" program will take effect
Local Port	3000	Buffertype	8 bit	∠ Timeout(10ms)	0
D	192.168.1.6	Destination Port	502	AcceptMode	AutoMode 🗸 🗸
Destination IP					

The configuration information for socket 1 M_TCP is as follows

Modbus Tcp conf	iguration			×
Socket ID	K1 ~	Local Strat Address	D1000	
Modbus TCP				
Station No.	K1 ~	Function Code	0x10 Write multiple registers \sim	
Data Address	К1ро	Count	К20	
			ОК	Cancel

The configuration information for socket 2 S_OPEN is as follows

Basic Setting	[rea	Communication	TOD/(ct)		Ct. 18(1)
Socket ID	K2 ~	type	TCP(K1) ~	Mode Selection	Client(K1) ~
Reg Start Position	HD200	Flag Start Position	M200	The "Basic Settings after downloading!	" program will take effect
Local Port	3000	Buffer type	8 bit	 Timeout(10ms) 	0
Destination IP	192.168.1.1	Destination Port	502	AcceptMode	AutoMode 🗸 🗸
	2	Used Space:	HD200-HD209.M2		

The configuration information for socket 2 M_TCP is as follows

dbus Tcp conf	iguration			
Socket ID	K2 ~	Local Strat Address	D1000	
Modbus TCP				
Station No.	K1 ~	Function Code	0x10 Write multiple registers \checkmark	
Data Address	K2þ0	Count	К20	

Example 3: By using the following program, the PLC can automatically create a UDP multicast communication task after being powered on. When there is an abnormality in the connection, it can actively close the UDP multicast connection and rebuild it. Implement one send multiple receive. The IP address of PLC 1 is 192.168.1.6, PLC 2 is 192.168.1.12, and PLC 3 is 192.168.1.14.

Due to the varying number of Ethernet ports in different series of PLCs, please distinguish which Ethernet port the network cable is connected to when using communication related coils SM1902 or SM1903. (SM1902 is the symbol for connecting network devices, used in the first network port of a dual port model or in a single port model to connect to a switch/router/other network device. SM1903 is the symbol for connecting network devices, used in the second network port of a dual port model to connect to a switch/router/other network port of a dual port model to connect to a switch/router/other network port of a dual port model to connect to a switch/router/other network port of a dual port model to connect to a switch/router/other network device)

Program operation:

(1) After PLC1 is powered on, UDP multicast communication is used. The target IP is set to 230.0.0.0, the target port is 7000, and the socket ID is bound to 1. After establishing a successful connection, PLC 1 sends the low 8-bit of D1000-D1499 at a frequency of 1 second. PLCs 2 and 3 continuously receive data from PLC1 and store it in registers D1000-D1499.

(2) After PLC2 is powered on, it uses UDP multicast communication, sets the target IP to 230.0.0, the target port to 7000, and binds the socket ID to 1. After establishing a successful connection, PLC 2 continuously receives data from PLC1 and stores it in the lower eight bits of registers D1000~D1499.

(3) After PLC3 is powered on, it uses UDP multicast communication, sets the target IP to 230.0.0, the target port to 7000, and binds the socket ID to 1. After establishing a successful connection, PLC 3 continuously receives data from PLC1 and stores it in the lower eight bits of registers D1000~D1499.

PLC1 program:

SM0	
	PLS M0
Nor mally ON coil	
SM 1901 SM 1902 M101 SM 12 HM0	S_OPEN K1 K2 K1 HD100 M100
Initial Connect Socket 1 100ms Build device connected coil connection	
	S_SEND K1 D1000 K500
Socket 1 connected send data	
M0	S_CLOSE K1
Close socket when power on M109	
Socket 1 error	
Socket 1 TCP error	
SM1902 _₩	
Connect device	
HM0 W Build	
connection	

The UDP multicast S_OPEN parameter configuration is as follows:

Basic Setting					
Socket ID	K1 ~	Communication type)P multicast (K2)	Mode Selection	Client(K1) 🗸 🗸
Reg Start Position	HD100	Flag Start Position	M100	The "Basic Setting after downloading!	s" program will take effec
Local Port	0	Buffer type	8 bit	✓ Timeout(10ms)	0
Destination IP	230.0.0.0	Destination Port	7000	AcceptMode	AutoMode 🗸 🗸
	0 \$				

PLC2 program:



The UDP multicast S_OPEN parameter configuration is as follows:

Socket ID	K1 ~	Communication type)P multicast (K2) 🗸	Mode Selection	Client(K1) 🗸
Reg Start Position	HD100	Flag Start Position	M100	The "Basic Settings after downloading!	" program will take effec
Local Port	0	Buffer type	8 bit 🗸	Timeout(10ms)	0
		Destination Port	7000	AcceptMode	AutoMode 🗸
Destination IP	230.0.0.0				
PLC3 program:





Basic Setting		Communication			
Socket ID	К1 ~	type	0P multicast (K2) ↔	Mode Selection	Client(K1)
Reg Start Position	HD100	Flag Start Position	M100	The "Basic Setting after downloading!	s" program will take effect
Local Port	0	Buffer type	8 bit 🗸	Timeout(10ms)	0
Destination IP	230.0.0.0	Destination Port	7000	AcceptMode	AutoMode 🗸 🗸
	0 \$	Used Space:	HD100-HD109.M100-	121225	

4-2. Read write communication port parameters

To ensure the normal implementation of Ethernet communication, it is recommended to use communication port parameter read/write instructions when writing communication programs. Firstly, by calling the communication parameter read instruction, the corresponding parameters on the communication port are read into the specified register group. The user then modifies the corresponding values in the register group as needed, and then writes the modified values of the register group to the corresponding communication port configuration through the communication parameter write instruction.

4-2-1. Read serial port parameters [CFGCR]

(1) Overview

Read the serial port parameters into the specified registers in the local machine.

Read the ser	Read the serial port parameters [CFGCR]									
16-bit	CFGCR	32-bit	-							
instruction		instruction								
Execution	Normally ON/OFF coil, edge	Suitable	XD, XL, XG							
condition	triggering	model								
Firmware	-	Software	V3.4 and up							

(2) Operand

Operand	Function	Туре
D	Specify the first address of the local register	16 bits, BIN
S1	Specify the number of serial port parameters to be read	16 bits, BIN
S2	Specify the serial port number to be read	16 bits, BIN

(3) Suitable soft component

operand		Word									Bit							
		System							Constant	Mo	dule	System						
	D	FD	TD	CD	DX	DY	DM	DS	K/H	ID	QD	Χ	Y	М	S	Т	C	Dn.m
D	•																	
S1	•	•							•									
S2	•								K									

Note: D represents D and HD; TD represents TD and HTD; CD represents CD, HCD, HSCD, HSD; DM stands for DM and DHM; DS stands for DS and DHS.

Tor DW and DHW, DS stands for DS and DHS.

M represents M, HM, SM; S represents S and HS; T represents T and HT; C represents C and HC.

(4) Function and action



• Operand S1: The number of registers occupied by reading serial port parameters, usually 8

(Ethernet port parameters are 9).

- Operand S2: Serial port number range: K0~K5. K0: COM0, K1: COM1, K2: COM2, or COM2-RS232 or COM2-RS485, K3: COM3, K4: COM4, K5: COM5, K9: Ethernet port.
- Read the 8 parameters of serial port 2 into HD0~HD7. The specific parameter names and definitions can be found in sections 4-2-4.

4-2-2. Write serial port parameters [CFGCW]

(1) Instruction overview

Write the values from the specified registers in the local machine to the specified serial port.

Write serial	Write serial port parameters [CFGCW]								
16-bit	CFGCW	32-bit	-						
instruction		instruction							
Execution	Normally ON/OFF coil, edge	Suitable	XD, XL, XG						
condition	triggering	model							
Firmware	-	Software	V3.4 and up						

(2) Operand

Operand	Function	Туре
S1	Specify the first address of the local register	16 bits, BIN
S2	Specify the number of serial port parameters to be written	16 bits, BIN
S3	Specify the serial port number for writing	16 bits, BIN

(3) Suitable soft component

Operand		Word									Bit							
		System							constant	mo	dule	system						
	D	FD	TD	CD	DX	DY	DM	DS	K/H	ID	QD	Χ	Y	М	S	Т	C	Dn.m
S1	•																	
S2	•	•							•									
S3	•								K									

Note: D represents D and HD; TD represents TD and HTD; CD represents CD, HCD, HSCD, HSD; DM stands for DM and DHM; DS stands for DS and DHS.

M represents M, HM, SM; S represents S and HS; T represents T and HT; C represents C and HC.

(4) Function and action



• Operand S2: The number of registers occupied by writing serial port parameters, usually 8 (Ethernet port parameters are 9).

- Operand S3: Serial port number range: K0~K5. K0: COM0, K1: COM1, K2: COM2, or COM2-RS232 or COM2-RS485, K3: COM3, K4: COM4, K5: COM5, K9: Ethernet port.
- Write the values from HD0 to HD7 into the parameters of serial port 2. The specific parameter names and definitions can be found in sections 4-2-4.
- After writing, the PLC needs to power on again to make the parameters take effect.

4-2-3. Set the IP address [IPSET]

(1) Instruction overview

Set the IP address of the local device.

Set IP addre	ss [IPSET]		
16-bit	IPSET	32-bit	-
instruction		instruction	
Execution	Edge triggering	Suitable	XD3E, XD5E, XDME, XDH, XG,
condition		model	XL5E, XL5N, XLME, XL5H, XLH
Firmware	V3.5.3b and up	Software	V3.5.3 and up

(2) Operand

Operand	Function	Туре
S0	Specify local register address	16-bit integer
S1	Specify the register numbers (K4, K12)	16-bit integer
S2	Specify the local serial port no. (K9)	16-bit integer

(3) Suitable soft component

Operand		Word soft component								Bit soft component								
	System							Constant	Mo	dule	System							
	D	FD	TD	CD	DX	DY	DM	DS	K/H	ID	QD	Х	Y	М	S	Т	C	Dn.m
D0	٠								•									
D1	٠								•									
D2	٠								٠									

Note: D stands for D, HD; TD indicates TD and HTD. CD indicates CD, HCD, HSCD, and HSD. DM indicates DM and DHM. DS indicates DS and DHS.

M stands for M, HM, SM; S stands for S and HS; T stands for T and HT; C stands for C, HC.

(4) Function and action

Instruction format



• Write the network parameters in HD0-HD11 to the Ethernet port of PLC

Address	Function	Example	Data format		
HD0		192	Decimal		
HD1	IP	168	Decimal		
HD2	IP	51	Decimal		
HD3		103	Decimal		
HD4		Decimal			
HD5	Subnet mask	255	Decimal		
HD6	Sublict mask	255	Decimal		
HD7		0	Decimal		
HD8		192	Decimal		
HD9	Default actoway	168	Decimal		
HD10	Default gateway	51	Decimal		
HD11		1	Decimal		

- S0: Specifies the first address of the local register.
- S1: The value is K4 or K12.
 - K4: Write only the IP address, for example, IP address: 192.168.51.103.

K12: Write the IP address, subnet mask, default gateway to the Ethernet port of the PLC;

For example, IP address: 192.168.51.103

Subnet mask: 255.255.255.0

Default gateway: 192.168.51.1

• S2: the Ethernet port parameters of the PLC are fixed to K9.

Note:

(1) After the parameters are written, the PLC needs to be powered on again to take effect;

(2) When the current IP address is automatically obtained, executing the IPSET command will change the IP address to a fixed IP address;

(3) Set the IP to 0, you can change the fixed IP to automatically obtain IP.

Address	Function	Туре	Data format		
SD1930		Read only	Decimal		
SD1931	IP	Read only	Decimal		
SD1932		Read only	Decimal		
SD1933		Read only	Decimal		
SD1934		Decimal			
SD1935	subnet mask	Read only	Decimal		
SD1936	sublict mask	Read only	Decimal		
SD1937		Read only	Decimal		
SD1938		Read only	Decimal		
SD1939	default gateway	Read only	Decimal		
SD1940		Read only	Decimal		
SD1941		Read only	Decimal		

• Register address of Ethernet port parameters

Note: The Ethernet parameter registers are read-only. To change the IP address, you must use the IPSET instruction.

4-2-4. Serial port parameter name and setting

Assuming that HD0~HD14 correspond to serial port parameters, the parameter names and settings represented by each register are shown in the table below:

Parameter	Parameter name and setting						
address	MODBUS	Free format	X-NET com	munication	Ethernet		
	communication	communication	OMMS	TBN	communication		
	(HD0=1)	(HD0=2)	(HD0=3) (HD0=3)		(HD0=3)		
HD0	Network type:						
	1: MODBUS	2: free format 3: X-NET 4: MODBU-TCP					
HD1	MODBUS	Baud rate	Network	Network	Network number		
	station no.	Refer to table 1	number	number	IP high two		
	1~254		0~32767	0~32767	bytes		
HD2	Transmission	Frame format	Station no.	Station no.	Station no.		
	mode	Refer to table 2	0~100	0~100	IP low two bytes		
	0: RTU						
	128: ASCII						
HD3	Baud rate	Free property	Physical layer ty	pe			
	Refer to table 1	bit7:	0: PHY_RS485		•		
		1: Has a starting	_ `	nidirectional fiber	•		
		character		Fiber optic dot net	work)		
		0: no starting character	_				
		bit6:	4: PHY_RS422 5: PUV_TTL (TTL level network)				
		1: There is a	5: PHY_TTL (TTL level network)				
		terminator					
		0: No terminator					
HD4	frame format	Starting character	Link layer type				
	refer to table 2	6	0: TBN				
			1: HDN				
			2: CCN				
			3: PPFD				
			4: PPU				
			5: Ethernet				
HD5	retry count 0~5	terminator	OMMS	Baud rate	Subnet Mask		
			Properties	Refer to table	High Two Bytes		
			128: Supports	1			
			periodic				
			communication				
			, otherwise not				
			supported				
HD6	Response	Frame timeout	OMMS baud	token rotation	Subnet mask		
	overtime	time 0~255	rate	time 1~60000	low two bytes		
	0~65535		Refer to table 1	(ms)			

HD7	Delay	before	Response	OMMS Slave	Maximum	Gateway address
	sending		timeout 0~65535	List	number of	two bytes higher
	0~255		(0 is infinite	Each bit of	stations 1~100	
			waiting)	each byte in the		
				array		
				represents		
				whether the		
				slave station		
				can be accessed		
				(valid for the		
				master station,		
				i.e. the station		
				number is 1)		
HD8	-		-	-	-	Gateway address
						two bytes lower

[Note]: The table does not include "buffer bits" in free format communication mode, so "buffer bits" cannot be read and written using CFGCR and CFGCW instructions, but can be read and written using MOV instructions. The address of "buffer bits" is shown in Appendix 3.

Table 1: baud rate

Value	Baud rate	Value	Baud rate	Value	Baud rate	Value	Baud rate
1	300 bps	7	19200 bps	13	256000 bps	19	1000000 bps
2	600 bps	8	28800 bps	14	288000 bps	20	1200000 bps
3	1200 bps	9	38400 bps	15	384000 bps	21	1500000 bps
4	2400 bps	10	57600 bps	16	512000 bps	22	2400000 bps
5	4800 bps	11	115200 bps	17	576000 bps	23	3000000 bps
6	9600 bps	12	192000 bps	18	768000 bps		

Table 2: frame format

Stop	o bit	Parity bit		Data bit length				
Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
00: 1 bit		000: none			000: 5 bits			
01: 1.5 bit		001: odd			001: 6 bits			
10: 2 bits		010: even			010: 7 bits			
		011: vacant			011: 8 bits			
		100: Mask			100: 9 bits			

4-2-5. Read write port parameter application

Example 1: By using the parameter read instruction [CFGCR] and write instruction [CFGCW], the network parameters of the PLC are read into 9 consecutive registers D10~D18. After modification, the network parameters of the 9 consecutive registers D10~D18 are written into the serial port settings of the PLC.

PLC program:

	CFGCR D10 K9 K9 -
M2	CFGCW D10 K9 K9

寄存器	监控值	字长	进制	注释
D10	0003	単字	16进制	
D11	COA8	单字	16进制	IP地址前两位,CO对应K192,A8对应K168
D12	003C	単字	16进制	IP地址后两位,00对应KO,3C对应K60
D13	0000	单字	16进制	
D14	0005	单字	16进制	
D15	FFFF	单字	16进制	子网掩码前两位,分别对应255.255
D16	FFOO	单字	16进制	子网掩码后两位,分别对应255.0
D17	COA8	单字	16进制	默认网关前两位,分别对应192.168
D18	0001	单字	16进制	默认网关后两位,分别对应0.1

D11: IP address first two bits, C0 corresponds to K192, A8 corresponds to K168

D12: IP address last two bits, 00 corresponds to K0, 3C corresponds to K60

D15: subnet mask first two bits, correspond to 255.255

D16: subnet mask last two bits, correspond to 255.0

D17: default gateway first two bits, correspond to 192.168

D18: default gateway last two bits, correspond to 0.1

When M1 is set, it triggers the network parameter reading of the PLC. After modifying the network parameters, set ON M2 to write the modified network parameters into the PLC. After writing, the PLC will power off and then power on to make the serial port parameters effective.

4-3. Ethernet communication flag and register

Com	nunication re		
Address	Format	Function	Explanation
SD1905	Hex	IP net number	The first two bytes of IP address
SD1906	Hex	IP station no.	The last two bytes of IP address
SD1907	Hex	Subnet mask	The first two bytes of subnet mask
SD1908	Hex	Sublict mask	The last two bytes of subnet mask
SD1909	Hex	Defaulted actorion	The first two bytes of defaulted gateway
SD1910	Hex	Defaulted gateway	The last two bytes of defaulted gateway
SD1920	Decimal	Abnormal socket ID	Abnormal socket ID, only be effective
SD1920	Decimai	Abiofinal socket ID	when the connection is not created
SD1921	Decimal	Error code	 1: the socket ID is over the range 2: not registered socket ID sends a communication request 3: communication type error, out of the range 0TCP 1UDP 4: TCP connection quantity out of the range, max is 32 5: UDP connection quantity out of the range, max is 32 6: communication mode error, out of the range, 0Server 1Client 7: Abnormal flag bit (usually abnormal flag bit in XDPPRO software) 8: Target port error (check if the target port setting is 0) 9: Local port error (check if the local port setting is 0)
SD1020	Desimal	ID address	10: Communication busy
SD1930 SD1931	Decimal Decimal	IP address	IP address first byte
SD1931 SD1932	Decimal		IP address second byte IP address third byte
SD1932 SD1933	Decimal		IP address fourth byte
		Subnat mastr	-
SD1934	Decimal	Subnet mask	Subnet mask first byte
SD1935	Decimal		Subnet mask second byte
SD1936	Decimal		Subnet mask third byte
SD1937	Decimal	D.C. It	Subnet mask fourth byte
SD1938	Decimal	Default gateway	Default gateway first byte
SD1939	Decimal		Default gateway second byte
SD1940	Decimal		Default gateway third byte
SD1941	Decimal		Default gateway fourth byte

Communication registers:

Communication coils:

Address	Function	Explanation
SM1900	Log in remote server successfully flag	Set on when the remote connection
		succeeded
SM1901	Ethernet initialization completed flag	MODBUS TCP Server/TCP IP/ XNET
SM1902	Connect net device flag	First network port of dual network port
		models or single network port model
		connect to swither/router/ other net devices
SM1903	Connect net device flag	Second network port of dual network port
		models connect to swither/router/ other net
		devices
SM1921	Ethernet error flag	Set on when the error in any of the SD1921
		generated

4-4. Ethernet communication error list

Error code	Explaination
0	Communication normal
1	The socket which is needed to OPEN already created connection
2	Return error when creating the socket
3	Bind appointed port failed
4	TCPServerAccept failed
5	TCPClientConnect failed
6	When calling Send, Recv, Clos, the specified socket hasn't created
	connection
7	Call Send return failed
8	Call Recv return failed
10	The specified sending data length is out of the range
11	The specified receiving data length is out of the range
20	When UDP communicating, received data is not from specified IP
21	When UDP communicating, received data is not from specified port
30	Actual received data length is larger than specified length
31	Actual received data length is less than specified length
32	Received data length error (non specified length)
33	Sending data length error
40	Receive timeout
50	Specified target port error, MODBUS TCP is not port 502,
	The using port is out of range (1~60000)
51	Port reuse (indicating that the port is used for both TCP and Modbus TCP)
60	Socket communication busy
61	No receiving task when receiving data (usually when the PLC receives
	data without calling S_RCV)
62	Parameter setting error

63	Remote shutdown
64	Socket type error
65	Insufficient memory for task request (task request too fast)
66	Incorrect use of IP address
67	Port usage error
68	Sending blocking error
70	Socket index error
71	Socket connection status error
100	Receive error
101	Receive timeout
182	Station no. error
183	Send buffer overflow
400	Function code error
401	Address error
402	Length error
403	Data error
404	Slave station busy
405	Memory error (Erase Flash)

5. EtherNet/IP communication

EtherNet/IP using requirements					
Suitable model	XDH, XLH, XG2				
Firmware	V3.7.4 and higher	Software	V3.7.17a and up		

5-1. Ethernet/IP overview

EtherNet/IP (Ethernet/Industrial Protocol) uses standard IEEE 802.3 technology and is an industrial automation communication protocol based on Ethernet. EtherNet/IP uses standard Ethernet and TCP/IP technology to transmit CIP communication packets.

The EtherNet/IP protocol mainly has the following characteristics: based on Ethernet technology, supporting TCP/IP and UDP/IP protocols, providing explicit and implicit messages, supporting multiple data formats, and supporting device description files.

Based on Ethernet technology

The EtherNet/IP protocol uses Ethernet technology for communication, which has the advantages of high speed, wide area, and low cost of Ethernet, and can achieve real-time control and data communication in the field of industrial automation.

Support TCP/IP and UDP/IP protocols

The EtherNet/IP protocol supports TCP/IP and UDP/IP protocols, and different protocols can be selected for communication according to the needs of the application. The TCP/IP protocol ensures the reliability and integrity of data transmission, and is suitable for control and communication situations that require high reliability; The UDP/IP protocol is suitable for broadcasting and multicast communication scenarios, with the advantages of low latency and high efficiency.

Provide explicit and implicit messages

The EtherNet/IP protocol provides two communication methods: explicit and implicit messaging. Explicit messaging uses TCP/IP protocol for communication, with flexible message formats and expandable functionality; Implicit messaging uses UDP/IP protocol for communication, suitable for broadcasting and multicast scenarios, with the advantages of simple message format and low latency.

Supports multiple data formats

The EtherNet/IP protocol supports multiple data formats, including bits, bytes, integers, floating-point numbers, etc., and can meet the data transmission needs of different application scenarios.

Supporting device description files

The EtherNet/IP protocol supports device description files, which can identify and configure devices connected to the network, improving device interoperability and manageability.

In summary, EtherNet/IP protocol is a modern industrial automation communication protocol with flexible, efficient, and reliable characteristics, widely used in industrial control, intelligent manufacturing, robotics and other fields.

5-2. Ethernet/IP nouns overview

Abbreviation	Explanation				
IEEE 802.3	A standard specification in the field of communication technology, also known as Ethernet				
	protocol; This standard specification defines the transmission method and format of data in				
	Ethernet networks				
EIP	Ethernet/IP, Industrial Ethernet				
CIP	Common Industrial Protocol. Used to describe various industrial automation protocols				
EipScanner	EIP master station, referred to as scanner in Etehrnet/IP				
EipAdapter	EIP slave station, referred to as adapter in Ethernet/IP				
EDS	Electronic Data Sheets, used to describe Ethernet/IP device				
RPI	Request/Response Interval, also known as communication cycle				
PPS	Packet Per Second, the number of data packets transmitted per second				

5-3. Ethernet/IP communication specification

5-3-1. Implicit function specification

Scanner (Main Station)	Communication specification parameters
Suitable model	XDH, XLH, XG2
Slave station connection numbers	≤128
Number of shared connections	Adapter+Scanner≤256 pieces
Ethernet Maximum communication volume	4000pps
Data length	1~724 words (Note: 1 word=2 bytes)
RPI	1ms~65535ms
Adapter (Slave Station)	Communication specification parameters
Suitable model	XDH, XLH, XG2
Label name	≤64 bytes
Instance ID	100~199
Mapping first address	Support D/HD registers
Data length	1~724 word (Note: 1 word=2 bytes)
Number of shared connections	Adapter+Scanner ≤256 pieces
Allow configuration items	Input $(O \rightarrow T) + Output (T \rightarrow O) = 256 pieces$
RPI	1ms~65535ms

5-3-2. Explicit function specification

Client parameter	Communication specification parameters			
Suitable model	XDH, XLH, XG2			
Name	≤64 bytes			
Allow configuration items	32 slave stations share 3000 instructions			
Maximum byte length of communication	504 bytes (CIP packet head+CIP packet data)			
data packet				
Timeout time	10~65535ms			
Number of retransmissions	1~15			
Enable control	Only support M0~M199999, HM0~HM19999			
Connection flag bit	Only support M0~M199999, HM0~HM19999			

Server parameter	Communication specification parameters
Suitable model	XDH, XLH, XG2
Number of connected clients	≤16
Number of configurable labels	≤5000
Label name	≤64 bytes
Maximum byte length of communication	504 bytes (CIP packet head+CIP packet data)
data packet	

5-3-3. Client and server support variable types

Client variable type	Server variable types	Data length
-	BIT	Bit (8-bit)
BOOL	BOOL	Bool (8-bit)
SINT	SINT	Short integer (8-bit)
USINT	USINT	Unsigned short integer (8-bit)
INT	INT	Integer (16-bit)
UINT	UINT	Unsigned double integer (16-bit)
DINT	DINT	Double integer (32-bit)
UDINT	UDINT	Unsigned long integer (32-bit)
LINT	LINT	Long integer (64-bit)
ULINT	ULINT	Unsigned long integer (64-bit)
REAL	REAL	Real (32-bit)
LREAL	LREAL	Long real (64-bit)
BYTE	BYTE	A bit string with a length of 8 (8-bit)
WORD	WORD	A bit string with a length of 16 (16-bit)
DWORD	DWORD	A bit string with a length of 32 (32-bit)
LWORD	LWORD	A bit string with a length of 64 (64-bit)

5-4. Ethernet/IP explicit/implicit communication

In the Ethernet/IP protocol, there are two different data transfer methods between devices or between devices and multiple devices, namely implicit and explicit functions. Their functions and usage methods are not exactly the same. Below, we will provide corresponding functional introductions for these two communication methods

5-4-1. Implicit function

The implicit function in the Ethernet/IP protocol refers to the method of data transmission through I/O data tables, which is usually used in real-time control and monitoring applications. In implicit functionality, two important components need to be used: a scanner and an adapter.

5-4-1-1. Adapter configuration

Before conducting network data exchange, the device needs to configure the address and length of the implicit message to be transmitted in the corresponding adapter configuration interface. The label setting and signature must be configured, and the instance ID is an optional configuration. The operation method is as follows:

Comment Editor Free Monitor Master: Config	Adapter->S	canner (T->0)				Scanner->A	dapter(0->T)			
Data Monitor EtherNet/IP Adapter		an 2000 200 Million 200 Million					~39778538414326948			
Set Reg Init Value	Number	Tag name	Living	Map first	Enter data	Munber	Tag name	Living	Map first	Enter dat
Function Version Switch			example	address	length		and Balancia	example	address	length
PLC Config	0	tag_l	-	DO	1	0	tag_2	-	D0	1
NO VO										
Password						11				
PLC Serial Port						11				
ethernet						11				
Pulse						11				
1 Module						11				
BD						11				
ED						11				
4GB0X										
4GBOX										
4GBOX WBOX				bbd	Delete				bba	Delete
4GBOX WBOX SystemConfig				Add	Delete				Add	Delete
4GB0X WB0X SystemConfig Ccommunication				Add	Delete				Add	Delete
4880X 3 WBOX 5) SystemConfig 4) Communication 4) Ethernetip				Add	Delete				Add	Delete
4GB0X WB0X > SystemConfig LC Communication Ethermetip Ethermetic Ethermetic Ethermetic	Label set	ing		Add	Delete	Label set	ting		Add	Delete
4 GBOX VMEDX > SystemConfig C Communication € Ethernetp ₩ EpScanner ₩ EpScanner ₩ EpScanner ↓ EpScanner		ing L name	tar 1	Add	Delete		ting 1 name	tag 2	Add	Delete
4GBOX WBOX SystemConfig .C Communication Ethernetip Image: Episcanner		-	tag_1	Add	Delete			tag_2	bba	Delete
GBOX WBOX SystemConfig Communication Etherentlp EpScanner EpSchot ModbusTcp EhercatMaster	Labe	-	tsg_1		Delete	Labe		tag_2		Delete
<pre>4 GBOX 4 GBOX WBOX SystemConfig C. Communication Ethernetb Ethernetb U EpScanner U EpScanner Ethernetb Eth</pre>	Labe	l name	tag_1			Labe	l name	tag_2		
GBOX WBOX WBOX SystemConfig LC Communication Ethernetip Explose ModusTcp Explose Communication Ethernetip Explose SindowsTcp Ethernetin	Labe	l name ng example ID				Labe Livi	l name ng example ID			
4GBOX WBOX SystemConfig .C Communication Ethernetip W EpsCanner W EpsCanner W EpsCanner W EpsCanner It Bepschict Ethernetilser otion control(H movement) Axis debug	Labe	l name	tag_1			Labe Livi	l name	tag_2		
4GBOX WBOX SystemConfig C Communication Ethernet[p ■ EpScaner ■ EpScane	Labe Livi Map	l name ng example ID				Labe Livi Map	l name ng example ID		u	

(1) Double click to enter Ethernet/IP adapter configuration interface.

(2) Adapter—>Scanner(T->O) data configuration area:

The data configured in this configuration area is in the T ->O direction, and the data transmission direction is from the adapter to the scanner.

Add	Add one piece of Adapter—>Scanner(T->O) data configuration.
Delete	Delete the selected Adapter—>Scanner(T->O) data configuration.
Label name	As the target end, use the corresponding configured label name as the connection and respond to the
	connection establishment request. The label name can support a maximum of 64 bytes
Instance	As the target end, respond to the connection request by using the corresponding configured instance
ID^{*1}	ID as the connection path. The optional range of this instance ID is 100-199;
Map first	The starting address for data transmission in this connection;
address*2	
Data	The number of registers connected for data transmission.
length*3	

Note:

% 1: The label name must be set, and the instance ID is an optional configuration;

* 2: The starting address currently supports two register types, D and HD;

 \approx 3: When establishing a connection with the corresponding label or instance ID, it is important to note that the data length configured by the adapter should be consistent with the data length configured by the scanner to avoid communication anomalies when establishing the corresponding connection.

(3) Scanner—> Adapter(O->T) data configuration area.

The data configured in this configuration area is in the O \rightarrow T direction, and the data transmission direction is from the scanner to the adapter for data transmission.

Add	Add one piece of Scanner—> Adapter(O->T) data configuration
Delete	Delete the selected Scanner—> Adapter(O->T) data configuration
Label name	As the target end, use the corresponding configured label name as the connection and respond to the
	connection establishment request. The label name can support a maximum of 64 bytes
Instance	As the target end, respond to the connection request by using the corresponding configured instance
ID^{*1}	ID as the connection path. The optional range of this instance ID is 100-199;
Map first	The starting address for data transmission in this connection
address*2	

Data	The number of registers connected for data transmission
length*3	
Import	Import the configured information into the current configuration interface in the form of an XML
	file
Export	Export the configured information in the form of an XML file
Upload	Upload the configuration information downloaded to the PLC to the current configuration interface,
	and the uploaded configuration information will overwrite the existing configuration information
	on the current interface
Download	Download the configuration information of the current configuration interface to the PLC. The
	downloaded configuration information will overwrite the original configuration information in the
	PLC and take effect in real time with the new configuration information
Ok	Click OK to save the configuration information for the current page
Cancel	Click to cancel the configuration information for the current page and discard it

Note:

% 1: The label name must be configured, and the instance ID is an optional configuration;

* 2: The starting address currently supports two register types, D and HD;

 \times 3: When establishing a connection with the corresponding tag or instance ID, it is important to note that the data length configured by the adapter should be consistent with the data length configured by the scanner to avoid communication anomalies when establishing the corresponding connection.

5-4-1-2. Scanner configuration

PLC Config VO Password PLC Serial Port ethernet EtherNet/IP Scanner Config × Master Config Library × Add Device Puise Install EDS File Uninstall EDS File Module BD ED M ED WBOX Title Vendor Slave Config -XINJE ElectricCo., Ltd -XINJE EtherNet/IP XINJE ElectricCo., Ltd SystemConfig PLC Communicatio Ethernetip EipExplicit IbusTcp EthercatMaster Motion control(H movement) - Axis configuration < Vendor Axis group configuration Device Name Device ID CPU Detail PLC Project Message Expansion Details BD Details Version Description ED Details 6 Scan Cycle Add Close Re Error Details Slave Number: 0 Connection Number: 0/256 Theory throughput: 0 PPS Actual throughput 0 PPS Import Export Upload DownLoad Ok Cancel ord

1. Load EDS file, add slave device.

(1) Double click on EipScanner to enter the EtherNet/IP Scanner parameter configuration interface;

(2) Right click on EtherNet/IP Scanner to add devices;

(3) Load or unload third-party EDS files in the device library to prepare for the next communication configuration step;

(4) Double click or click to add the EDS file to be communicated, and add the specified slave to the slave configuration information bar.

2. Configure General Settings for Slave Stations

EtherNet/IP Scanner Config		X
Master Config	Routine Connection IOMapping Connection Status	
EtherNet/IP Scanner	Address config IP Address: 192 168 6 1 3	
Slave Config -StationIdO:XINJE EtherNet/IP	Compatible check	
	Vendor ID: 1723	
	Device Type: 12	
	Product Code: 14	
	Major Revisions: 1	
	Minor Revisions: 1	
6	6 0	l .
Slave Number: 1 Connection Number: 0/25	56 Theory throughput: 0 PPS Actual throughput: 0 PPS Import Export Upload D	lownLoad Ok Cancel

1	Double click on the node corresponding to the slave station configuration bar to configure						
	relevant communication information						
2	Click on Routine to configure the IP address and compatibility check accordingly						
3	The IP address is the IP address of the slave device under the corresponding node						
4	If compatibility check is conditional, check the checked conditions to determine whether						
	EDS file matches the slave device. If compatibility check is checked, all relevant inform						
	will be matched with the information in the EDS file by default. It should be noted that						
	compatibility checks are conducted during the connection period. If the check fails, the						
	connection cannot be made						
5	The slave number is used to count the number of slave stations connected under the current						
	master station, and the connection number is used to count the number of connections						
	established between the master station and all connected slave stations. The specific						
	specifications for the slave number or supported connections supported by Ethernet/IP						
	communication can be found in 5-3. Ethernet/IP communication specifications						
6	Theoretical throughput *1 is used to display the network throughput of the current connection,						
	while actual throughput is used to display the throughput of the entire Ethernet network of the						
	current device;						
Import	Import the configured information into the current configuration interface in the form of an						
	XML file						
Export	Export configured information in the form of an XML file						
Upload	Upload the configuration information downloaded to the PLC to the current configuration						
	interface, and the uploaded configuration information will overwrite the existing configuration						
	information on the current interface						
Download	Download the configuration information of the current configuration interface to the PLC. The						
	downloaded configuration information will overwrite the original configuration information in						
	the PLC and take effect in real time with the new configuration information						
	Click OK to save the configuration information for the current page						
Cancel	Click to discard the configuration information for the current page.						
	3 4 5 5 6 Import Export Upload Download						

× 1: pps is the unit of network throughput, also known as Packet Per Second, represents the total number of packet data packets that can be sent and received within 1 second.

■ When used as an InputOniy connection, the calculate formula for each connection:

When RPI<100ms, the theoretical throughput pps=1000ms/RPI+10;

When RPI>100ms, the theoretical throughput pps=1000ms/RPI * 2.

Example: Two PLCs establish implicit communication, and two InputOniy type connections are established in the Scanner connection configuration interface. One connection has an RPI communication cycle of 110ms, and the other connection has an RPI communication cycle of 10ms. So the total theoretical throughput pps=1000/110*2+(1000/10+10)=128pps.

pps=1000/110/2+(1000/10+10)=120pps.

■ When used as an ExclusiverOwner connection, the calculate formula for each connection:

RPI_1: Communication cycle from adapter input (T ->O) direction;

RPI_2: Communication cycle in the direction of output to adapter (O ->T);

Theoretical throughput pps=1000ms/RPI_1+1000ms/RPI_2.

Example: Two PLCs establish implicit communication and establish an ExclusiverOwner connection on the Scanner connection configuration interface. The communication period from the input (T ->O) direction of the adapter RPI_1 is 100ms, and the communication period from the output to the adapter (O ->T) direction RPI_2 is 10ms. The total theoretical throughput pps is 1000/100+1000/10=110 pps.

therNet/IP Scanner Config					_				
Master Config EtherNet/IP Scanner	Routin	e Connection I Connection	OMapping Conr Input Connection Point	DataSize	15 IN Addres:	OUT Connection Point	DataSize	OVT Address	Connectior ID
	0	InputOnly(ID	. IN_100	1	DO	- Torne			0
leve Config -StationIdO:XINJE EtherNet/I	P				0				
	Ti	ection Name Inp me out(T4 RFI put from the adapt	- 20 C		3 0VT:1600ms)	Configure Instance		2 Add	Delect
			er) int to point		~	Connection Type	Point to po	int	~
	Conn	ection Point IN	_100		~	Connection Point	0UT_254		×.
		Data Size 1 apMaddres DO		(1-724Wor	d)	Data Size MapMaddres		(1-1%	(ord)
	10000	nd trigger Cyc communication 100 cycle)		(1-65535m	~ s)	RPI(communication cycle)	100		535ms)
lave Number: 1 Connection Nur	nber: 1/256 Theor	y throughput: 0 PPS	Actual throughpu	t OPPS	Import	Export	Upload D	lownLoad 01	Cance
Connection display area	The con information		splay box	can show	connect	tion types and	d corresp	onding con	figuration
Connection II	-	Assign a unique connection ID to the added connection, which will not change with the addition or removal of the connection							e with the
Add		g on add wi							
Delete		he correspo				on, click dele	ete to dele	ete the sele	cted
Connection	• Or	nlv input, su	upports tw	o types:	ID Type	and Tag Typ	e, used b	v the scan	ner to rea

3. Add the connection

name

transmission is in the T ->O direction.

data from the adapter. The adapter can only send data to the scanner, that is, data



	 Multicast: data exchange between multiple devices in the network. In this way, multiple scanners can simultaneously obtain data in the T ->O direction sent from the same adapter, and only one corresponding data frame needs to be sent during data exchange, which can save adapter network resources to a certain extent. (Note: The implementation arrow represents the data frames that need to be sent, and the dashed arrow represents the fewer data frames sent compared to point-to-point transmission in multicast.) Scanner Scanner Scanner InputOnly ListenOnly multicast Adapter When using ListenOnly (ID Type) multicast, it must be attached to an InputOnly (ID Type) or ExclusiveOwner (ID Type) connection, and the corresponding connection type attached to InputOnly or ExclusiveOwner must also be multicast. The configured data size and RPI communication cycle must be consistent with the attached connection type, otherwise the
Connection point ^{*1}	establishment will not be successful. The tag name or instance ID required to establish communication.
Data size	The number of registers connected for data transmission
Map first address *2	The starting address for data transmission in this connection
Send trigger	 Loop: Trigger the scanner periodically based on the set RPI; State change: When the status of the adapter changes, the scanner is triggered. If the status of the adapter changes periodically and is less than 1/4 of the RPI, the scanner is triggered periodically at 1/4 of the RPI; Application trigger: Trigger rules are consistent with state changes.
RPI	Used to set the communication time for the corresponding connection cycle, with a default of 100ms and a setting range of 1-65535ms. RPI (communication cycle) can be set according to the priority of data transmission and reception, so as to adjust the overall communication volume for data transmission and reception.

Note:

 \times 1: When establishing a connection with the corresponding tag or instance ID, it is important to note that the data length configured by the adapter should be consistent with the data length configured by the scanner to avoid communication abnormalities when establishing the corresponding connection;

% 2: The starting address currently supports two register types, D and HD.

4. IO mapping

The IO mapping interface can display mapping addresses for different connection configurations and view the status of data in real-time.

	Routine Connection	1 IOMapping	Connection Status			
Master Config StherNet/IP Scanner	Tag ⊟-InputOnly(ID Type)	Channel	MapAdress	Value		
	100					
21 22 22 22 2	100[0]	InPut	DO	0		
Slave Config	-	bit0	DO. O	OFF		
-StationIdO:XINJE EtherNet/IP	-	bit1	DO. 1	OFF		
		bit2	DO. 2	OFF		
		bit3	DO. 3	OFF		
		bit4	DO. 4	OFF		
		bit5	DO. 5	OFF		
		bit6	DO. 6	OFF		
	— — ·	bit7	DO. 7	OFF		
		bit8	DO. 8	OFF		
		bit9	DO. 9	OFF		
		bit10	DO. 10	OFF		
		bit11	DO. 11	OFF		
	_	bit12	DO. 12	OFF		
	-	bit13	DO. 13	OFF		
	-	bit14	DO. 14	OFF		
		bit15	DO. 15	OFF		

5. Connection status

You can view the status information of each connection in real-time, where the connection ID on the "Connection" configuration interface is consistent with that on the "Connection Status" configuration interface.

Master Config EtherNet/IP Scanner		Routine Connect Connection B		g Connection	27				
Slave Config —StationIdO:XINJE EtherNet/IF		Connection Conection statu Configure statu General status Extend status Status descri	15 code						
	No	Connection	Input Connection Point	DataSize	IN Address	OUT Connection Point	DataSize	OVT Address	Connection ID
	0	InputOnly(ID	IN_100	1	DO		-		0

Connection	Select the various connections that have been added to the current slave station's
name	"connections".
Connection ID	The connection ID corresponding to the connection.
Connection	Display the current connection status in hexadecimal.

status code	
Configure status	Display the current configuration status in hexadecimal.
code	
General status	Display the current general status in hexadecimal.
code	
Extend status	Display the current extended status code in hexadecimal.
code	
Status	Used to display the status information of the current connection.
description	

Note: For detailed extension status codes, please refer to Appendix Ethernet/IP communication extension codes.

6. Rules for judging descriptive information

The combination of information that is not in the following three states is prompted in the "state description": Undefined Error!

- When the "Connection Status Code"=3, "General Status Code"=0, and "Extended Status Code"=0, the configuration status code does not need to be determined, and the status description prompts "Connection successful, communication normal";
- When "Connection Status Code"=1 and "Configure Status Code"=4, the status description prompts "Unable to find IP or the IP does not support EIP";
- When the "Connection Status Code"=1 and the "General Status Code"=1, there is no need to determine the configure status code. The specific information in the status description is prompted based on the "Extended Status Code".

7. Viewing Connection Status of Structural System Variables

In the ladder diagram, the system structure variables can be directly called to view the current connection status. When calling the ladder diagram or freely monitoring the connection status, the corresponding structure number is the "connection ID" of the corresponding connection.

Example: View the communication status with connection ID 0 through a ladder diagram to determine if the corresponding connection status code is 3. If the connection status code is 3, it indicates successful communication.

	SM12									
0						 	 	 DMOV	EIPScanner[0].ConnectedStatus	Connected1 3
		DMOV EIPScanner[0].								
1		ConfigationStatus	DINT	配置状态码						
		ConnectedStatus	DINT	连接状态码						
2		ConnectionID ExtendedStatus	DINT	连接ID 扩展状态码						
-		♂ GeneralStatus	DINT	通用状态码						
	1				_					



5-4-1-3. Implicit communication application

Application 1: Implicit communication by using two XDH-60T-E PLCs with InputOnly connection type.

Use PLC1: XDH-60T-E (IP 192.168.6.6) as the adapter and PLC2: XDH-60T-E (IP 192.168.6.7) as the scanner to achieve implicit communication between two PLCs. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with that of the adapter.



Step 1: Create and add a communication type with test_1 as the label in the adapter, mapping the first address to D0, and inputting a data length of 5. Use the communication type with test_2 as the label for instance ID100 (check the use of instance ID), the mapping first address is D10 and the data length is 5.

Master Config StherNet/IP Adapter	Adapter->S	Scanner (T->0)				Scanner->Adapter(0->T)					
	Number	Tag name	Living example	Map first address	Enter data length	Mumber	Tag name	Living example	Map first address	Enter data length	
	0	tag_1		DO	1						
	1	tag_2	100	D10	1						
		tting		Add	Delete	Label set			Add	Delete	
		al name	Lance o			Labe	Inome				
		el name	tag_2			Labe	l name				
	Labe	el name ing example ID	tag_2	V u	se (100-199)		l name ng example ID		u	se (100-199)	
	Labo		100	V u	se (100-199)	Livi			u	se (100-199)	

Step 2: Add slave devices to the scanner and perform relevant configuration operations on the adapter's IP address and compatibility check:

EtherNet/IP Scanner Config		×
Master Config EtherNet/IP Scanner	Routine Connection IOMapping Connection Status Address config IP Address: 192 , 168 , 6 , 6	
Slave Config —StationIdD:XINJE EtherNet/IP	Compatible check	
	Verdor ID: 1723 🗹 Device Type: 12 🗸	
	Product Code: 14	
	Minor Revisions; 1	
Slave Number: 1 Connection Number:	1/256 Theory throughput: 0 PPS Actual throughput 0 PPS Import Export Upload DownLoad 0k Can	icel

Step 3: Add two types of connections, InputonIy (Tag Type) and InputonIy (ID Type), and establish the first connection of InputonIy (ID Type). Use the Adapter ->Scanner input connection point as IN_100 and the connection type as point-to-point to receive data into five registers with D0 as the starting address. Establish the second connection of InputonIy (Tag Type), and use the Adapter ->Scanner input connection point as test_1, The data with point-to-point connection type is received in 5 registers starting from D10.

100 - 100 - 100	Routine Connectio	n IOMapping C	onnection Stat	15				
Master Config EtherNet/IP Scanner	No Connection	Input	12	IN Addres	OVT ss Connection Point	DataSize	OVT Address	Connection ID
	0 InputOnly(ID IN_100	5	DO		14	-	0
Slave Config	1 InputOnly(Tag test_1	5	D10				1
	Connection Name	InputOnly(Tag T	ype)	~			bbk	Delect
	Time out(T)	RPI*16	(IN:1600ms)		Configure Instance		¥	
	Time out(T)		✓ (IN:1600ms)		Configure Instance	adapter)	~	
			✓ (IN:1600ms)		- Martine - Inc For - Martine	adapter) Foint to po		×
	IN(Input from the	adapter)	✓ (IN:1600ms	OVT:1600ms)	-OUT (Output to the			>
	IN(Input from the Connection Type	adapter) Point to point	✓ (IN: 1600ms) (1-724₩∞2)	OVT:1600ms)	-OUT(Output to the Connection Type			
	IN(Input from the Connection Type Connection Point	adapter) Point to point test_1		OVT:1600ms)	-OUT (Output to the Connection Type Connection Point Data Size MapMaddres		int	d)
	IN(Input from the Connection Type Connection Point Data Size	adapter) Point to point test_1 5		OVT:1600ms)	-OUT (Output to the Connection Type Connection Point Data Size		int	

Step 4, enter the connection status to check the connection status of IN_100 and test_1. When the connection status shows successful connection and communication is normal, it indicates that the communication has been successfully established. You can also check whether the data is correct through the corresponding mapped register.

Application 2: Implicit communication by using two XDH-60T-E PLCs with ExclusiveOwner connection type

Use PLC1: XDH-60T-E (IP 192.168.6.6) as the adapter and PLC2: XDH-60T-E (IP 192.168.6.7) as the scanner to achieve implicit communication between two PLCs. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with that of the adapter.



Step 1:

---Create two connections in Adapter ->Scanner (T ->O) direction.

Connect1: communication type with the label as test_3 on the adapter. Map the first address as D0 and input data length as 10.

Connection 2: communication type with instance ID100, label name test_5 on the adapter. Map the first address as D20 and input data length as 10.

---Create two connections in Scanner->Adapter(O->T) direction.

Connection 1: communication type with the label as test_4 on the adapter. Map the first address as D100 and input data length as 10.

Connection 2: communication type with the instance ID101, label name test_6 on the adapter. Map the first address as D120 and input data length as 10.

EtherNet/IP Adapter Config										X
Master Config EtherNet/IP Adapter	Adapter->S	Scanner (T->O)				Scanner->/	Adapter(O->T)			
	Number	Tag name	Living example	Map first address	Enter data length	Mumber	Tag name	Living example	Map first address	Enter data length
	0	test_3	1000	DO	10	0	test_4	1000	D100	10
	1	test_5	100	D20	10	1	test_6	770	D120	10
	Label set			Add	Delete	Label set			Add	Delete
	Labe	el name	test_5			Labe	el name	test_6		
	Livi	ing example ID	100		15e (100-199)	Livi	ing example ID		u	se (100–199)
	Мар	Map first address D20				Мар	first address	D120		
	Date	a length	10	(1-)	'24word)	Date	a length	10	(1-7	24word)
]				Import	Outport	Upload	Downlo	ad Ok	Cancel

Step 2: Add slave devices to the scanner and configure the IP address and compatibility check of the adapter accordingly.

EtherNet/IP Scanner Config		×
Master Config EtherNet/IP Scanner	Routine Connection IOMapping Connection Status Address config IP Address: 192 168 6 6	
Slave Config —StationIdO:XINJE EtherNet/IP	Compatible check	
	Vendor ID: 1723	
	Product Code: 14	
	Major Revisions: 1	
Slave Number: 1 Connection Number:	2/256 Theory throughput: 0 PPS Actual throughput: 0 PPS Import Export Upload DownLoad 0k	Cancel

Step 3: Add two types of connections on the scanner: ExclusiveOwner (Tag Type) and ExclusiveOwner (ID Type); Establish the first connection for ExclusiveOwner (ID Type), and receive data from Adapter ->Scanner with input connection point IN_100 and connection type point-to-point into 10 registers starting from D20. Send out 10 data from Scanner ->Adapter with output connection point OUT_101 and connection type point-to-point, D30 as the starting address. Establish a second connection for ExclusiveOwner (Tag Type), and receive data from Adapter ->Scanner with input connection point test_3 and connection type point-to-point into 10 registers with D40 as the starting address. Send out 10 data from Scanner ->Adapter with output connection type point-to-point, connection point test 4 and D50 as the starting address.

w	Routine Conne	ection IOMa	apping Conr	nection Statu	ıs				
Master Config EtherNet/IP Scanner	No Conne	ection	Input Connection Point	DataSize	IN Address	OUT Connection Point	DataSize	OVT Address	Connection ID
	0 Exclus	siveOwne	IN_100	10	D20	00T_101	10	D30	0
Slave Config —StationIdO:XINJE EtherNet/IP	1 Exclu	siveOwne	test_3	10	D40	test_4	10	050	1
								Add	Delect
	Connection Na	Contraction of the second seco	siveOwner (Tag		V	94 94500 1515m 102			Delect
	Time out(T) RPI*16	6 ~			Configure Instance		bba ~	Delect
	Time out(T IN(Input from) RPI*16 the adapter)	6 ~)		OVT:1600ms)	OVT (Output to the s	KOOTA AND AND AND AND AND AND AND AND AND AN	~	
	Time out(T) RPI*16 the adapter)	6 ~				dapter) Point to po	~	Delect
	Time out(T IN(Input from) RPI*16 the adapter) Type Point	6 ~) to point		OVT:1600ms)	OVT (Output to the s	KOOTA AND AND AND AND AND AND AND AND AND AN	~	
	Time out(T IN(Input from Connection T	r) RFI*16 the adapter) Sype Point oint test_3	6 ~) to point		OVT:1600ms)	OUT(Output to the a Connection Type	Point to po	~	~
	Time out(T IN(Input from Connection T Connection Pe	r) RFI*16 the adapter) Type Point oint test_3 a 10	6 ~) to point	(IN: 1600ms	OVT:1600ms)	OUT(Output to the a Connection Type Connection Point Data Size MapMaddres	Point to po test_4	v	~
	Time out(T IN(Input from Connection T Connection Pa Data Size	r) RPI*10 the adapter) Type Point coint test_ a 10 s D40	6 ~) : to point 3	(IN: 1600ms	OVT:1600ms)	OUT (Output to the a Connection Type Connection Point Data Size	Point to post test_4	v	v ord)

Step 4: Enter the connection status to check the connection status of IN_101 and test_3. When the connection status shows successful connection and communication is normal, it indicates that the communication has been successfully established. The corresponding mapped register can also be used to check if the data is correct.

Application 3: Implicit communication by using three XDH-60T-E PLCs with ListenOnly connection type.

Using PLC1: XDH-60T-E (IP 192.168.6.6) as the adapter, PLC2: XDH-60T-E (IP 192.168.6.7) as the scanner, and PLC2: XDH-60T-E (IP 192.168.6.20) as the scanner, to achieve multicast transmission of the 60 register data of adapter D0-D59 to the other two scanners' HD0-HD59 registers. During the connection creation process, attention should be paid to the connection type used, connection point, data size set, and RPI (communication cycle). The configuration needs to be consistent with the adapter.



Step 1: Create a communication type with an instance ID100 labeled as test_aa in Adapter ->Scanner (T ->O) direction on the adapter, mapping the initial address to D0, and entering a data length of 60 (check the use of instance ID).

Master Config StherNet/IP Adapter	Adapter=>So	canner (T->O)				Scanner->	.dapter(0->T)			
	Number	Tag name	Living example	Map first address	Enter data length	Mumber	Tag name	Living example	Map first address	Enter data lenzth
	0	test_aa	100	DO	60					
				Ya	97. D				15 22	
				Add	Delete				Add	Delete
	Label sett	12				Label set	74			
	Label	L name	test_aa			Labe	l name			
	Livin	ng example ID	100		15e (100–199)	Livi	ng example ID		u	se (100-199)
	Map i	first address	DO			Map	first address			
	Data	length	60	(1-7	24word)	Date	length		(1-7)	24word)
	Data	Tength	1000		24801 0/	Dars	r tenêrn		14 14	Lea or d)

Step 2: Add slave devices to the scanner of PLC2: XDH-60T-E (IP 192.168.6.7) and perform relevant configuration operations on the adapter's IP address and compatibility check:

EtherNet/IP Scanner Config			×
Master Config EtherNet/IP Scanner	Routine Connection IOMapping Connection Status Address config IP Address: 192 , 168 6 , 6		
Slave Config StationIdU:XINJE EtherNet/IP	Compatible check Vendor ID: 1723 Device Type: 12 Product Code: 14 Major Revisions: 1 Minor Revisions: 1		
Slave Number: 1 Connection Number:	2/256 Theory throughput: 0 PPS Actual throughput 0 PPS Import Export Upload DownLoad	Ok	Cancel

Step 3: Add an InputOnly (ID) connection type on the scanner of PLC2: XDH-60T-E (IP 192.168.6.7), with multicast as the connection type, IN_100 as the connection point, 60 words in data size, HD0 as the mapping address, and 100ms as the RPI (communication cycle).

Master Config	Routine Connecti	on IOMapping Conr	nection Statu	15				
EtherNet/IP Scanner	No Connecti	on Connection Point	DataSize	IN Address	OUT Connection Point	DataSize	OUT Address	Connection ID
and an	0 InputOnly	(ID IN_100		100				
Slave Config —StationIdO:XINJE EtherNet/IP								
							Add	Delect
	Connection Name	InputOnly(ID Type)		~				
	Connection Name Time out(T)	InputOnly(ID Type) RFI*16 ~			Configure Instance	1	~	
	ANALY AND ANALY	RFI*16 ~	-		Configure Instance OVT(Output to the s		~	
	Time out(T)	RFI*16 ~	-					×
	Time out(T) -IN(Input from the	RFI*16 ~ adapter) Multicast	-	OVT:1600ms)	-OUT (Output to the s	adapter)		× ×
	Time out(T) IN(Input from the Connection Type	RFI*16 ~ adapter) Multicast	-	OUT:1600ms)	-OUT(Output to the s Connection Type	adapter) Point to po		e do
	Time out(T) IN(Input from the Connection Type Connection Point	RPI*16 ~ adapter) Multicast IN_100	(IN: 1600ms	OUT:1600ms)	-OUT (Output to the e Connection Type Connection Point	adapter) Point to po	int	~ ~ (b
	Time out(T) IN(Input from the Connection Type Connection Point Data Size	RPI*16 ~ adapter) Multicast IN_100 60	(IN: 1600ms	OUT:1600ms)	-OUT (Output to the a Connection Type Connection Point Data Size	adapter) Point to po	int	

Step 4: Enter the connection status to check the connection status of InputOnly---IN_100. When the connection status shows successful connection and communication is normal, it indicates that the communication has been successfully established. The corresponding mapped register can also be used to check if the data is correct.

Step 5: Add slave devices to the scanner of PLC3: XDH-60T-E (IP 192.168.6.20) and perform relevant configuration operations on the adapter's IP address and compatibility check:

EtherNet/IP Scanner Config			×
Master Config EtherNet/IP Scanner	Routine Connection IOMapping Connection Status Address config IP Address: 192 . 168 . 6 . 6		
Slave Config StationIdO:XINJE EtherWet/IP	Compatible check Vendor ID: 1723 Ø Device Type: 12 Ø Product Code: 14 Ø Major Revisions: 1 Ø Minor Revisions: 1		
Slave Number: 1 Connection Number:	: 1/256 Theory throughput: 0 PPS Actual throughput: 0 PPS Import Export Upload DownLoad	Ok	Cancel

Step 6: On the scanner of PLC3: XDH-60T-E (IP 192.168.6.20), add a ListenOnly (ID Type) connection type to listen for the T ->O direction data sent by PLC1 to PLC2. Select multicast as the connection type, IN_100 as the connection point, 60 words in data size, HD0 as the mapping address, and 100ms as the RPI (communication period).

Master Config	Routine Connec	TOWS	apping Conn	ection Status	5				
EtherNet/IP Scanner	No Connec	tion	Input Connection Point	DataSize	IN Address	OUT Connection Point	DataSize	OUT Address	Connection ID
	0 Listen(Only(ID	IN_100		HBO				
Slave Config —StationIdO:XINJE EtherNet/IP									
								Add	Delect
	Connection Nam	ne Lister	nOnly(ID Type))	~			Add	Delect
	Connection Nam Time out(T)	Construction of the second sec				Configure Instance	1	Add	Delect
		RPI*16	8 v			Configure Instance -OVT(Output to the s		A CALON	Delect
	Time out(T)	RPI*16	ŝ v	(IN:1600ms 0				~	Delect
	Time out(T) IN(Input from t	RPI*16 the adapter) pe Multic	ô ~ cast	(IN:1600ms 0	UT:1600ms)	-OUT (Output to the s	adapter)	~	Delect
	Time out(T) IN(Input from t Connection Ty	RPI*16 the adapter) pe Multic	ô ~ cast	(IN:1600ms 0	UT:1600ms)	-OUT(Output to the s Connection Type	dapter) Foint to po	~	×
	Time out(T) IN(Input from t Connection Ty, Connection Poi	RPI*16 the adapter) pe Multio int IN_100 60	ô ~ cast	(IN:1600ms 0	UT:1600ms)	-OUT (Output to the a Connection Type Connection Point	dapter) Foint to po	v	×
	Time out(T) IN(Input from t Connection Ty Connection Poi Data Size	RPI*16 the adapter) ppe Multic int IN_100 60 HD0	3 ✓ 1 0	(IN: 1600ms 0	UT:1600ms)	-DUT (Output to the s Connection Type Connection Point Data Size	dapter) Foint to po	v	~ ~ d)

Step 7: Enter the connection status to check the connection status of ListenOnly---IN_100. When the connection status shows successful connection and communication is normal, it indicates that the communication has been successfully established. The corresponding mapped register can also be used to check if the data is correct.

Application 4: Using Xinje PLC XDH-60T-E as an adapter and Omron PLC NJ501-1500 as a scanner for implicit communication.

PLC1: XDH-60T-E (IP 192.168.250.20) as the adapter and PLC2: NJ501-1500 (IP 192.168.250.1) as the scanner to achieve implicit communication between two PLCs. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with the data size of the adapter.



Step 1: Add four connections on the adapter XDH-60T4-E in the direction of Adapter->Scanner(T->O).

Connection 1: Label name test a, mapping first address D0, data length 10.

Connection 2: Label name test_c, instance ID100, mapping first address is D30, data length 10.

Connection 3: Label name test e, mapping first address D60, data length 10.

Connection 4: Label name test_f, instance ID 102, mapping first address D80, data length 10.

Add two connections in the direction of Scanner->Adapter(O->T).

Connection 1: Label name test_b, mapping first address D100, data length 10.

Connection 2: Label name test_d, instance ID101, mapping first address D130, data length 10.

EtherNet/IP Adapter Config										2
Master Config EtherNet/IP Adapter	Adapter->So	canner (T->O)			Scanner->Adapter(0->T)					
	Number	Tag name	Living example	Map first address	Enter data length	Mumber	Tag name	Living example	Map first address	Enter data length
	0	test_a		DO	10	0	test_b		D100	10
	1	test_c	100	D30	10	1	test_d	101	D130	10
	2	test_e	- <u></u>	D60	10					
	3	test_f	102	D80	10					
	Label sett	ing				Label set	ting			
	Label	L name	test_a			Labe	el name	test_d		
	Livin	ng example ID		u	se (100–199)	Livi	ing example ID	101	V 1	se (100-199)
	Map f	first address	DO			Мар	first address	D130		
	Data	length	10	(1-7	24word)	Date	a length	10	(1-7	24word)
					Import	Outport	Upload	Downlo	ad Ok	Cancel

Step 2: Define the variables that require EIP communication in the Omron Sysmac Studio programming software. Global variables that require data reception and processing with the communication object during EIP communication are selected as inputs in the network public, while global variables that require data transmission and processing with the communication object are selected as outputs in the network public.

多视图浏览器 🗸 🖡	hard 全局变量 × EtherNe	t/IP设备列表 内置EtherNet/IP端口	设置连						
new_Controller_0 🔻	组筛选器 🍸 (没有组)								
▶ 配置和设置	名称	数据举型	初始值	分配到	保持	常量	网络公开	注释	
▼ 编程	test_1	ARRAY[110] OF INT					输入	1	
V 🖉 POUs	test_2	ARRAY[110] OF INT			1		输出	2	
▼ 嘂 程序	test_3	ARRAY[110] OF INT			X		输入	(
🔻 🖃 Program0	test_4	ARRAY[110] OF INT			×		输入		
L 큰 Section0	test_5	ARRAY[110] OF INT			X		输入		
∟圖 功能	test_6	ARRAY[110] OF INT			X		输出	2	
∟ 测功能块									
▼■ 数据									
11 2. 数据类型									
■ 全局変量									
▶ 由 任务									
1									
1.25									
	输出								- I >
┇ 筛选器									
1 902235									

- Double click on the global variable to create a new one and add the variable type and data length to be transferred;
- Customize the name of the created variable;
- Define data types and lengths based on the length of input/output;
- Select the corresponding input and output types for the defined variable in the network public as needed.

Step 3: Enter the Ethernet/IP connection settings operation page, click on Tools in the function bar, select and click on Ethernet/IP connection settings, and finally double-click on the built-in Ethernet/IP port settings to enter the Ethernet/IP configuration interface.



Step 4: Enter the built-in Ethernet/IP port setting operation page, select the label group operation page, and register the global variables for input and output in the relevant network public. You can click on input/output to view the registered variable information.

	a 🛛 📼 🗗	く &	0 K A	a a k	· O 및	e c e	Q "2		
多视图浏览器 → ₽	-		erNet/IP端口设置 连 >	_					-
new_Controller_0 ▼	D- 1	▋- 标签组							
▼ 编程 ▼ 1 POUs	□ <u>+</u> 8	▼ 设备信息 型号名称 NJ501-1500 修订版 1.01							
▼ III 程序 ▼ III Program0 ∟ き Section0		描述 节点地址 192.168.250.1 序列号 00000000		同步识别					
□圓 功能 □圖 功能块 ▼■ 数据		▼ 标签组 标签组/最大: 6 / 32 标签/1	偈大: 6 / 256				2	全部注册 导入	
■ L営数据类型			位选择	大小(字节)	大小(位)	I 实例ID	控制器状态		1
■ 全局变量 ▶ □ 任务		▼ test_1		20		Auto	不包含		
► @ 1135		test_1			0				
		▼ test_4		20		Auto	不包含		
		test_4			0				
		▼ test_5		20	0	Auto	不包含		
		test_5		20	0		TEA		
		▼ test_3 test 3		20	0	Auto	不包含		
		test_s		20	0				
		重度						L V	全部返回到默认值
							传送到控制	相語 从控制器传送	比较
	输出								- I ×

Step 5: Go to the built-in Ethernet/IP port setting operation page and select the connection operation page. Right click on the blank space in the toolbox on the right side of the connection operation page to enter the displayed EDS library. Add the EDS file corresponding to Xinje Ethernet/IP to it.

文件(F) 编辑(E) 视图(V) 插入(I)	工程(P) 控制器(C) 模拟(S) 工具(T) 窗口(W) 帮助(H)		
		4 P I Q Q R	
	EtherNet/PI设备列表 内面EtherNet/P算口段音 连×		- I月初
new_Controller_0 V	П. •••••••••••••••••••••••••••••••••••		目标设备
 配置和设置 编程 		■ EDS库 - □ ×	
 ● 監理 ♥ at POUs ♥ at RUK ♥ at Pogram0 C at Section0 <l< td=""><td>▲ 通報/長さの / 32 「日本になる / 1 直接会体 」 直接会体 」 直接会体 (1 直接会体) (1 i i i i i i i i i i i i i i i i i i</td><td>Wendor Waskaw Electric America, Inc. OMKON Corporation Omron Adept Technologies, Inc. Omron Microscan Systems, Inc. XINIE ElectricCo.Ltd</td><td></td></l<>	▲ 通報/長さの / 32 「日本になる / 1 直接会体 」 直接会体 」 直接会体 (1 直接会体) (1 i i i i i i i i i i i i i i i i i i	Wendor Waskaw Electric America, Inc. OMKON Corporation Omron Adept Technologies, Inc. Omron Microscan Systems, Inc. XINIE ElectricCo.Ltd	
	1938 <mark>≸ 100 mail ANU mail । । 1 3938 - 1 103≉ । 0238 1</mark>	安莱 3 英团	

Step 6: Click the add button + in the toolbox on the right side of the connection operation page, and three operation requirements for adding objects will appear: node address (IP address of the object to be connected), model name (matching EDS file of the object to be connected), revised version (select the version of the EDS file of the connected object), and the operation is shown in the figure. After the establishment is completed, click the add button, and the addition and configuration information will be completed as shown in the figure below:

EtherNet/IP设备	函列表 内置EtherNet/IP端口设置连 ×			▼ 工具箱
-	•••••••••••••••••••••••••••••••••••••			目标设备
世	▼ 连接 连接/ 優大:0 / 32 日标设备 连接名称 连接//0类型	I输入/输出 目标变量 大小(字节] 起始变量	- (大小字节) 连接关型 (RPI(毫约 超时值)	支量名 大小(字节)
	★ 回 ○ □ □			
	重启		全部返回到默认(传送到控制器 从控制器传送 比较	
and the second sec	します。 説明 I 程序 I	位置	•	1 ×

EtherNet/IP设	例表 内置EtherNet/P論目设置该×	工具箱 → ↓
0-		节点地址 192.168.250.20 型号名称 XINJE EtherNet/IP ▼ 修订版 1 ▼
	▼连接 连连发展大:0 / 32 目标设备 连接名称 连接//0类型 H输入/输出 目标变量 大小/字节] 起始变量 大小/字节] 连接类型 RPI[零秒 超时值 [
1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	→ 1 x 減用 程序 位置	
输出编译		添加取消

Step 7: Right click on the blank space in the toolbox or the blank space in the connection area to add a connection.

EtherNet/IP设台	各列表 内置EtherNet/IP端	111设置连×				~	工具箱 🚽 🕂
.	■提连接						目标设备 192.168.250.20 XINJE Ethe
	▼ 连接						
of8	连接/最大: 0 / 32 目标设备		俞入/输出 目标变量	 336安量 (大小[字节])	连接类型 IRPI[毫秒] 超时值		4
- 40	日彻收留	建後有称 建後1/0米型 :			JEBGROUP INPIGERATING MEMORE		
	添加(A)	1					
	删除(D)						1 + 💼
	更改节点地址(N) 更改目标设备(I)						
	更改且你设备(1) 撤消(U)						· 交量名 │ 大小[字节]
	重做(R)						
	全部选择(S)						
	设备带宽						
	56 B1020						
	重启					全部返回到默认值	
				传送到控制	川器 从控制器传送	比较	
				141219111	2013 2012 中国1925	L HURX	
编译						- 1 X	
20 错误							
1 1	说明	程序	位置			I	
							TO A ROAD
輸出 编译							导入标签组

Step 8: Add ExclusiveOwner (Tag Type), ExclusiveOwner (ID Type), and IputOnIy (Tag Type) and IputOnIy (ID Type) connections, and communicate with tag variables or instance IDs respectively. The configured variable types are shown in the following figure:

1월 全局交量	EtherNet/IP设备列表	内置EtherNet,	1P端口设置 连 🗙									•	工具箱 🗸 🕂
	<mark>□</mark>												目标设备 192.168.250.20 XINJE Ethe
	▼ 连接	_				_		_			_		
of8	连接/最大: 6 / 32 目标设备	▲ ▲ 连接名称		输入/输出	目标变量	大小[字节	11 起始变量	大小[字节]	连接类型	IRPII臺利	り 超时值	1	
	192.168.250.20 XINJE Ethe				test_a	20	test_1		Point to Point connection		RPI x 4		
				輸出	test_b	20	test_2	20	Point to Point connection	1			
	192.168.250.20 XINJE Ethe	default_002	ExclusiveOwner(ID Type	输入	100	20	test_3	20	Point to Point connection	50.0	RPI x 4		
				输出	101	20	test_6	20	Point to Point connection				
	192.168.250.20 XINJE Ethe	default_003	InputOnly(Tag Type)	输入	test_e	20	test_4	20	Point to Point connection	50.0	RPI x 4		🖶 🛨 👼
	192.168.250.20 XINJE Ethe	default_004	InputOnly(ID Type)	输入	102	20	test_5	20	Point to Point connection	50.0	RPI x 4		
	+												
	设备带宽												
	重启								[全部返回	回到默认值]	
							f	传送到控制器	从控制器传送	E	缺]	
輸出												ı ×	

Step 9: After completing the information configuration, click on "online", then click on "synchronize" to download the project information to the controller, and finally click on "transfer to controller" to transfer the connection configuration information to the controller.

21年1日 - 21日 - 210	变量 EtherNet/IP设备列表	内藏EtherNet/	19第日段第15×								÷	工具箱 目标设备	
ontroller_0 V				192.16	8.250.20 XINJ								
	▼ 连接												
t POUs ▼ 注 程序	连接/最大:6 / 32 目标设备 ▲	连接名称	连接1/0类型	198入/98出	1 目标变量	大小時	市) 起始変量	大小 字节	1) 连接类型	IRDICES	9 超时值		
	192.168.250.20 XINJE Ether				test a	20	test 1	20	Point to Point connection	50.0			
▼ 🕀 Program0	TOLITODESCED MILDE EURO	denden _ ee r	Coclasticouncillag typ	輸出	test_b	20	test 2	20	Point to Point connection	5010	1017.4	19 +	1
L.#. Section0	192.168.250.20 XINJE Ether	default 002	ExclusiveOwner/ID Type		100	20	test 3	20	Point to Point connection	50.0	RPI v 4		
山東 功能	The real state state conce		cheldshe conner(to Type	輸出	101	20	test 6	20	Point to Point connection			安量名	大小
.宝 功能块	192.168.250.20 XINJE Ether	default 003	InputOnly(Tag Type)	输入	test e	20	test 4	20	Point to Point connection	50.0	RPI x 4		
数据 14 数据类型	192.168.250.20 XIN/E Ether			输入	102	20	test 5	20	Point to Point connection	50.0			
	+ 1												
	重启									全部返回	间默认道		
							3 16	送到控制器	从控制器传送	B	比较		

Step 10: Control the input and output data, and check whether the sending and receiving data is normal through the monitoring window.

121 全局交量	EtherNet/IP设备列表	内置EtherNet/	咿端□设置 连 ×									目标设备	- 1 168.250.20 XINJE Ethe
U *													TOB.250.20 XINDE Ethe
	▼ 连接 连接/最大: 6 / 32												
of0		」 连接名称	连接I/O类型	输入/输出	目标变量	大小[字节]	起始变量	大小[字节] 连接类型	RPI[毫	約 超时值		
	192.168.250.20 XINJE Ether	default_001	ExclusiveOwner(Tag Typ	输入	test_a	20	test_1	20	Point to Point connection	50.0	RPI x 4		
				输出	test_b	20	test_2	20	Point to Point connection				Ū.
	192.168.250.20 XINJE Ether	default_002	ExclusiveOwner(ID Type	输入	100	20	test_3	20	Point to Point connection	50.0	RPI x 4	安量	名 大小[字节]
				输出	101	20	test_6	20	Point to Point connection			×#	
	192.168.250.20 XINJE Ether	default_003	InputOnly(Tag Type)	输入	test_e	20	test_4	20	Point to Point connection	50.0	RPI x 4		
	192.168.250.20 XINJE Ether	default_004	InputOnly(ID Type)	输入	102	20	test_5	20	Point to Point connection	50.0	RPI x 4		
	重启						传	送到控制器	从控制器传送		回到默认值 比较		
监视(工程)1						1995000000000000000						×	
设备名 new_Controll	2011	名称	在线值	修改		辉	I 数据类型 INT			示格式 imal ▼			
new_Controll	Contraction of the International Contractional	_	1212	_			INT		and an and a second sec	imal 🔻	2.,	导入标签	
new_Controll		_	1215				INT			imal 🔻		-37/W023	R.
new_Controll			1214				INT			imal 🔽	and a second	控制器状态	÷
new_Controll			1010	1010			INT			imal 🔻			X
new_Controll			1020	1020			INT			imal 🔽		在线	
new_Controll				. OLO						Long to the local division of the local divi		ERR/ALM	● 运行模式
ter Config erNet/IP Adapter	Adapter->S	canner(T->O)				Scanner->/	Adapter(O->T)						
--------------------------------	------------	---------------	-------------------	----------------------	----------------------	------------	----------------	-------------------	----------------------	---------------------			
	Number	Tag name	Living example	Map first address	Enter data lensth	Mumber	Tag name	Living example	Map first address	Enter dat length			
	0	test_a	-	DO	10	0	test_b	-	D100	10			
	1	test_c	100	D30	10	1	test_d	101	D130	10			
	2	test_e	<u>1999</u>	D60	10								
	3	test_f	102	D80	10								
				Add	Delete				Add	Delete			
	Label set	ting				Label set	ting						
	Labe	l name	test_a			Labe	el name	test_d					
	Livi	ng example ID		u	se (100–199)	Livi	ing example ID	101	🗹 u	se (100-199			
	Мар	first address	DO			Map	first address	D130					
	Data	length	10	(1-7	24word)	Data	a length	10	(1-7)	24word)			
					Import	Outport	Upload	Downlo	ad Ok	Can			
	PLC1	-自由监控1											
	监括				除 上移 下	種							
	名称		监控机	类型	映射地								
	-• E	0	1212	INT	单字								
	-• 1		1213	INT	单字								
	- • E		1214		单字								
	-• I	(Thipson)	1215		単字								
	- • I	100	1010	INT	単字								
					单字								

Application 5: Use Xinje PLC XDH-60T-E as the scanner and Omron PLC NJ501-1500 as the adapter for implicit communication.

Use PLC1: XDH-60T-E (IP 192.168.250.20) as the scanner and PLC2: NJ501-1500 (IP 192.168.250.1) as the adapter to achieve implicit communication between two PLCs. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with the data size of the adapter.

Step 1: Define the variables that need to be used for EIP communication in the Omron Sysmac Studio programming software. During the EIP communication process, the global variables that need to be sent and processed with the communication object are selected as output in the network public.

2111111111111111111111111111111111111			口收直 注							
_Controller_0	组筛选器 🝸 (没有维	≣) ▼								
置和设置		数据类型	初始值	分配到	保持	常量	网络公开		注释	
끎 EtherCAT	test_aa	ARRAY[110] OF INT					輸出	v		
▣ CPU/扩展机架	test_bb	ARRAY[110] OF INT					输出	7		
.≄ I/O 映射										
■ 控制器设置										
◎ 运动控制设置										
✔ Cam数据设置										
▶ 事件设置										
■ 任务设置										
🖂 数据跟踪设置										
2										
POUs										
▼ ፪ 程序										
🔻 🖂 Program0										
∟ 🕾 Section0										
∟罵 功能										
L図 功能块										
■ 数据										
∟呂 数据类型										
全局变量										

- Double click on the global variable to create a new one and add the variable type and data length to be transferred;
- Customize the name of the created variable;
- Define the data type and length based on the length of the output;
- Select the corresponding output type for the defined variable in the network public as needed.

Step 2: Enter the Ethernet/IP connection settings operation page, click on Tools in the function bar, select and click on Ethernet/IP connection settings, and finally double-click on the built-in Ethernet/IP port settings to enter the Ethernet/IP configuration interface.



Step 3: Go to the built-in Ethernet/IP port setting operation page, select the label group operation page, and register the output global variables in the relevant network public. You can click on the output to view the registered variable information.

₩ 全局变量	: Et	herNet/IP设备列表内置EtherNet,	/IP端口设置 连 ×							•
0-	1	▶ 标签组								
af9	型制度	段备信息 3名称 NJ501-1500 約1版 1.01 描述 課地址 192.168.250.1 時列号 0000000		同步识别						
	-	示签组	er anderer							
		际签组/最大:2 / 32 标签/最大:	2 / 256					全部注册	导入	导出
1	输	入 輸出 前出 市	位选择	大小(字节)	大小(位)	│ 实例ID	控制器状态	输出严重错误		
						and the second sec		1 副山/ 里頂灰		ť
	•	test_aa		20 20	0	100	不包含			
	▼ ▼	test_aa test_aa		20		and the second sec		清除		
		test_aa test_aa		20 20		100	不包含			
		test_aa test_aa test_bb		20 20 20	0	100	不包含	清除		
		test_aa test_aa test_bb		20 20 20	0	100	不包含	清除		
		test_aa test_aa test_bb		20 20 20	0	100	不包含	清除	1 	部返回到默认值
		test_aa test_bb test_bb		20 20 20	0	100	不包含	清除		
		test_aa test_bb test_bb		20 20 20	0	100	不包含 不包含	清除		靜返回到默认值 比较

Step 4: After completing the information configuration, click on "online", then click on "synchronize" to download the project information to the controller, and finally click on "transfer to controller" to transfer the connection configuration information to the controller.

2	30	-5ª <	. 24 53	Fin 199	H 🖲	民	A 🔉	63 6 3	% %	0	21 69	<u> </u>	Q, "Q									
	Vari 全局变	编 Ef	therNet/IP该	格列表 🔥]置EtherNet/	1P端口设计	≝连 ×				2								•	工具箱		÷ (
	0.		- 标签	翅															Ĩ	目标设备		
	0-10 0-10	型:	设备信息 号名称 NJ50 修订版 1.01 描述 点地址 192.		-															1		
I			亨列号 0000	0000				同步	识别											变量名	i I	大小[字节]
l			标签组 标签组/最大	: 2 / 32	标签/最大:	2 / 25	6								全部注册	导入		导出				
I		输	入輸出	标签组名称			选择	· L.I.m	-	大小(他	** .	实例ID	控制器		輸出严重错							
I			test_aa	机应温着树	,		西岸	1 大小(字 20	(CT:	大小(1)	10		不包含	祆念	制出产里错	₹			-			
I			test_aa			F -		20	0				1 44		清除				- 11			
I			test_bb					20			10	1	不包含									
I			test_bb					20	0						清除							
l		L																				
l			重启														全部進	回到默认值	1			
													「「「「」」「「」」「「」」「「」」「「」」「「」」「「」」」「「」」「」」「	关到控制	器 <u>从</u> :	空制器传送		比較	1	导入标签组		
	輸出																	••••••		控制器状态 在线 ERR/ALM	•	↓ (】) 192.168.250. 运行模式

Step 5: In the Xinje XDPPRO programming software scanner, add the Omron NJ501-1500 slave device and perform relevant configuration operations on the adapter's IP address and compatibility check:

EtherNet/IP Scanner Config		×
Master Config EtherNet/IP Scanner	Routine Connection IOMapping Connection Status Address config IP Address: 192 168 250 1	
Slave Config —StationIdO:NJ501-1500	Compatible check	
	Vendor ID: 1723 🗹 Device Type: 12	
	Product Code: 14	
	Minor Revisions: 1	
	er: 0/256 Theory throughput: 0 PPS Actual throughput: 0 PPS Import Export Upload	DownLoad Ok Cancel

Step 6: Click on the connection to add two types of connections, Input Only (ID Type) and Input Only (tag Type). Connection 1: label name test_bb, data length 10, mapping first address HD10. Connection 2: instance ID (IN_100), input data length 10, mapping first address HD10.

After configuration is completed, click download to download configuration to the PLC. The configured variable types are shown in the following figure:

laster Config	Routine Connection				1.2220			
therNet/IP Scanner	No Connectio	on Connection Point	DataSize	IN Address	OUT Connection Point	DataSize	OUT Address	Connectio ID
	0 InputOnly	(ID IN_100	10	НОО		1 <u>11</u> 1	-	0
ave Config StationIdO:NJ501-1500	1 InputOnly	(Tag test_bb	10	HD10			-	1
	Connection Name	InputOnly(Tag Type	e)	~			Add	Delect
	Connection Name Time out(T)	Energia de la consecuencia de la pela	e) - (IN:800ms 0		Configure Instance		Add	Delect
		RFI*16			Configure Instance	adapter)		Delect
	Time out(T)	RFI*16			- Martin Contractor	adapter) Foint to po	×	Delect
	Time out(T) IN(Input from the	RPI*16 v adapter) Point to point		VT:1600ms)	OUT (Output to the s		×	Delect
	Time out(T) IN(Input from the Connection Type	RPI*16 v adapter) Point to point		VT : 1600ms)	-OUT(Output to the s Connection Type		×	~
	Time out(T) IN(Input from the Connection Type Connection Point	RPI*16 adapter) Point to point test_bb	(IN:800ms 0	VT : 1600ms)	-OUT (Output to the a Connection Type Connection Point Data Size MagMaddres		v	~
	Time out(T) IN(Input from the Connection Type Connection Point Data Size	RFI*16 calapter) Point to point test_bb 10 HD10 Cycle	(IN:800ms 0	VT : 1600ms)	-OUT (Output to the a Connection Type Connection Point Data Size		v	g) ~

Step 7: Click on IO mapping or connection status to view the current communication data or connection status.

输入 輸出 ↓ test_aa ↓ test_aa ↓ test_bb ↓ test_bb] 2] 2	大小(字节)				
test_aa test_aa test_bb test_bb] 2] 2] 2	20		实例ID 控制器状	态 输出严重错误	1
▼ test_bb test_bb] 2		100	不包含		
test_bb			0 0			清除	
			20	101	不包含		
重启		2	0			清除	
					传送到	測控制器 从控制	全部返回到默认
	名称	在线值	修改	注释	数据类型	分配到	显示格式
	_aa[1]	100	100	1174	INT	71803	Decimal
	_aa[2]	101	101		INT		Decimal 💌
105 105 CO	_bb[1]	102	102		INT		Decimal 🔻
ew_Controller_0 test	_bb[2]	103	103		INT		Decimal 🔻
ew_Controller_0	名称						
站配置 herNet/IP Scanner	常规 连 标签 □Input On]	通道	映射地址	数值			
	IN_100						
	100						
	🕀 IN_1	00[0] InPut	HDO	100			
	+ IN_1	00[0] InPut 00[1] InPut	HD1	101			
	IN_1	00[0] InPut					
	IN_1. IN_1. IN_1. IN_1. IN_1. IN_1. IN_1.	00[0] InPut 00[1] InPut 00[2] InPut 00[3] InPut 00[4] InPut	HD1 HD2 HD3 HD4	101 0 0 0			
	IN_1. IN_1. IN_1. IN_1. IN_1. IN_1. IN_1. IN_1. IN_1.	000[0] InPut 000[1] InPut 000[2] InPut 000[3] InPut 000[4] InPut 000[5] InPut	HD1 HD2 HD3 HD4 HD5	101 0 0 0 0			
站配置 StationId0:NJ501-1500	H IN_1'	00[0] InPut 00[1] InPut 00[2] InPut 00[3] InPut 00[4] InPut	HD1 HD2 HD3 HD4	101 0 0 0			
		000[0] InPut 000[1] InPut 000[2] InPut 000[3] InPut 000[4] InPut 000[5] InPut 000[6] InPut 000[6] InPut 000[8] InPut	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8	101 0 0 0 0 0 0 0 0 0 0			
	Image: The second sec	00[0] InPut 00[1] InPut 00[2] InPut 00[3] InPut 00[4] InPut 00[5] InPut 00[5] InPut 00[6] InPut 00[8] InPut 00[9] InPut	HD1 HD2 HD3 HD4 HD5 HD6 HD7	101 0 0 0 0 0 0 0 0			
		00[0] InPut 00[1] InPut 00[2] InPut 00[3] InPut 00[4] InPut 00[5] InPut 00[6] InPut 00[7] InPut 00[9] InPut 00[9] InPut	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8	101 0 0 0 0 0 0 0 0 0 0			
		00[0] InPut 00[1] InPut 00[2] InPut 00[3] InPut 00[4] InPut 00[5] InPut 00[6] InPut 00[7] InPut 00[8] InPut 00[9] InPut 00[9] InPut 0	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD9 HD9	101 0 0 0 0 0 0 0 0 0 0 0 0			
	+ IN 1 + IN	00[0] InPut 00[1] InPut 00[2] InPut 00[3] InPut 00[4] InPut 00[5] InPut 00[5] InPut 00[7] InPut 00[7] InPut 00[8] InPut 00[9] InPut 00[9] InPut _b InPut	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD7 HD8 HD9 HD10 HD11	101 0 0 0 0 0 0 0 0 0 102 103			
	Image:	00(0) InFut 00(1) InFut 00(2) InFut 00(3) InFut 00(4) InFut 00(5) InFut 00(5) InFut 00(6) InFut 00(7) InFut 00(9) InFut 00(9) InFut b InFut b InFut b InFut b InFut	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD9 HD10 HD10 HD11 HD12 HD13	101 0 0 0 0 0 0 0 0 0 102 103 0 0 0 0 0 0 0 0 0 0 0 0 0			
	Image: Image in the i	00(0) InFut 00(1) InFut 00(2) InFut 00(2) InFut 00(3) InFut 00(4) InFut 00(5) InFut 00(6) InFut 00(7) InFut 00(8) InFut 00(9) InFut 0 InFut InFut InFut InFut	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD7 HD8 HD7 HD8 HD10 HD11 HD11 HD12 HD13 HD14	101 0 0 0 0 0 0 0 0 102 103 0 0 0 0 0 0 0 0 0 0 0 0 0			
		00(0) InFut 00(1) InFut 00(2) InFut 00(3) InFut 00(4) InFut 00(5) InFut 00(6) InFut 00(6) InFut 00(7) InFut 10(7)	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD9 HD10 HD10 HD11 HD12 HD13 HD14 HD15	101 0 0 0 0 0 0 0 102 103 0 0 0 0 0 0 0 0 0 0 0 0 0			
	Image: Image in the i	00(0) InFut 00(1) InFut 00(2) InFut 00(3) InFut 00(4) InFut 00(5) InFut 00(6) InFut 00(7) InFut 00(8) InFut 00(8) InFut b InFut b InFut b InFut b InFut b InFut b InFut b InFut b InFut	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD7 HD8 HD7 HD8 HD10 HD11 HD12 HD11 HD12 HD14 HD14 HD15 HD16 HD17	101 0 0 0 0 0 0 0 0 102 103 0 0 0 0 0 0 0 0 0 0 0 0 0			
	Image: Image of the state of the s	00(0) InFut 00(1) InFut 00(2) InFut 00(3) InFut 00(3) InFut 00(4) InFut 00(5) InFut 00(6) InFut 00(7) InFut 00(8) InFut 00(9) InFut b InFut b InFut b InFut b InFut b InFut b InFut b InFut	HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD7 HD8 HD7 HD9 HD10 HD11 HD11 HD11 HD13 HD14 HD15 HD16	101 0 0 0 0 0 0 0 102 103 0 0 0 0 0 0 0 0 0 0 0 0 0			

Application 6: Use Xinje PLC XDH-60T-E as the adapter and Keyence PLC KV-5500 as the scanner for implicit communication.

PLC1: XDH-60T-E (IP 192.168.6.6) as the adapter and PLC2: KV-5500 (IP 192.168.6.10) as the scanner, implicit communication between two PLCs can be achieved. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with that of the adapter.

Step 1: Add three connections in the adapter XDH-60T4-E in the direction of Adapter->Scanner(T->O).

Connection 1: instance ID100, label name test_a, mapping first address D0, data length 20.

Connection 2: label name test_c, mapping first address D200, data length 100.

Connection 3: instance ID102, label name test_d, label name test_d, mapping first address D300, data length 80.

Add a connection in the direction of Scanner->Adapter(O->T), instance ID101, label name test_b, mapping first

address D100, data length 20.

aster Config therNet/IP Adapter	Adapter->Sc	anner (T->0)				Scanner->A	dapter(0->T)			
	Number	Tag name	Living example	Map first address	Enter data length	Mumber	Tag name	Living example	Map first address	Enter data length
	0	test_a	100	DO	20	0	test_b	101	D100	20
	1	test_c	No.	D200	100					
	2	test_d		D 300						
				Add	Delete				Add	Delete
	-Label setti Label	ing	test d	Add	Delete	Label set	ting 1 name	test b	Add	Delete
	Label	. name	test_d			Labe	l name	test_b		
	Label		test_d		Delete	Labe		test_b		Delete
	Label	. name				Labe	l name	101		

Step 2: In the Keyence KV STUDIO programming software, after connecting to the PLC to be communicated, double-click KV-5500 under the unit configuration to enter the unit editor - edit mode. Double click the CUP unit to configure its IP address, ensuring that it is in the same network segment as the adapter.

	Main X			
= [0] KV-5500 R000/R500 1	📟 单元编辑器 - 编辑模式		- 🗆 X	
EtherNet/IP R30000 DM10000	文件(E) 編輯(E) 转换(P) 视图(V) 选项(Q) 窗口(W) 帮助(H)		9	10
🥼 切换单元配置	8			
- 些 软元件注释				
- 📅 标号 - 🛃 CPV 系统设定		单元	¢	
■ 🚔 程序: EIP_test	意: 98mm KV-5500 Ind Unit	选择单元(1) 设定单元(2)		
■ 🧰 每次扫描执行型模块 ■ 🔜 Main	深: SOmm	카루 부= 🖸 🖷 🐏 🛋 👫 🖏	[0] KV-5500	
- 前 初始化模块	消耗电流: 320mA	□基本	^	
- 🦰 后备模块	-507	首 IM 编号 IM10000		
🔰 🔄 固定周期模块	R30000	占用 Ⅲ 数 230		
	-33915	首继电器编号(按通道设定) R30000		
	L	占用继电器数 640		
- 黑 软元件初始值	2	通信速度 100/10Mbps自动(大)		
🗇 设定文件寄存器		· IF 地址设定方法 固定 IF 地址(火)		
	3	IP 地址 192.168.6.10		
		子阿撞码 255.255.255.0		
		默认网关 0.0.0.0		
		DMS 服务器 0.0.0.0		
		接收超时[s] 10		
		Keep Alive[s] 600	v	
		端口号		
		M H 5		
	消息		4	
	处理 行 编号 代码 消息			
	2.22 11 清ち NH /12			
		<	>	
库 项目		编编器 1行,1列 OK 耶	20消 应用	
就绪		formation of the second		益以太网 192.168.6.10
				ma 200013 1321700.010

Step 3: In the programming mode of the unit editor, find the Ethernet/IP settings, click the function key on the right side of the Ethernet/IP settings, and enter the Ethernet/IP settings configuration interface.

	单元		ņ
XY-5500 End Unit	选择单元(1) 设定单元(2)		
8000	PE 🚝 🖂 🖷 🐏 📫 🏪 🖏	[0]	KV-5500
	路由设定	不执行(*)	^
-507	□ EtherWet/IP 设定		
R30000 -33915	自动分配设定	有效(*)	_
	分配位软元件起始编号	B0000	
	分配字软元件起始编号	90000	
	刷新上限数(字/扫描)	252	
	隐式(I/0)报文通信自动开始	执行(*)	
	隐式(I/O)报文通信错误检测掩码时间	60	
	隐式(I/O)报文通信错误检测掩码时间	5	
	显式报文通信超时 [ms]	10000	
	重试时间(系统扩展)[s]	60	
	组播用 TTL	1	
	组播地址指定方法	自动分配(大)	
	组播地址数	256	
	组播起始地址	239.255.0.0	
	启用 IGHP 查询发送	无效(*)	
	IGMP 查询发送间隔[s]	60	
	EtherNet/IP 设定	〈设定〉	
	□ FIP 客户端设定		
	FTP 客户端设定	〈设定〉	
	□ FTP 服务器设定		~
	EtherWet/IP 设定 启动 EtherNet/IP 设定。		
			ņ

LtherNet/IP 设定						- 🗆	\times
文件(E)编辑(E)设定(S)视图(V)转	换(C) EDS 文件(D)) 通信(<u>N</u>)	工具(T)	帮助(H)			
📲 🛈 👷 🕾 👗 🖿 👌							
KV-5500[0] : 192.168.6.10			Press and	et/IP设备			ņ
			设备列表	表(1) 设备设定(2)	设f	备查找(3)	
				ŢE ♀= ▓Ē			
				设备名称	Rev.	EDS 文件注释	^
				eyence Corpora			
			EDS	KV-5500	1.1	KV-5500 CPU Unit	
				KV-7500	1.1		
				KV-8000 Series	1.34125	KV-8000 Series C	
			the second secon	KV-EP02		EtherNet/IP Comm	
				KV-N16ER		16-point relay o	
				KV-N16ET*		16-point transis.	
				KV-N16EX		16-point input uni	
				KV-N3AM		2+1ch analog I/O	
				KV-NSER	1.1	8-point relay ou.	· ·
			<				>
輸出							ņ
ra ita M 🎜 🕏 🦓 🔛							
节点节点名称	IP地址		连接名	3称	RPI[I (ms)		超时
	ut						
▶ \消息 < 校验 > 设定列表 /							>
		编辑器	8	OK		取消 应用	

Step 4: Right click on the blank space of "EtherNet/IP Device" or "EDS File (D)" on the function bar to add XDH-60T4-E as the EDS file for the adapter. After adding, you can view the corresponding XINJE EtherNet/IP EDS file in "EtherNet/IP Device".

EtherNet	/IP 设定	evice.	2					_		×
	辑(E) 设定(S)	视图(⊻) 转换	(C) EDS 文件(D)	通信(N)	工具(工) 帮助	(LL)				~
			and the second second	There are a compared to	1.兵(1) 特别					
	106 He He	計 町 67	6 🙉 🔍 💌	la 11 0						
KV-	500[0] : 192.1	68. 6. 10			EtherNet/IP设	諸				3
- 55					设备列表(1)	设备设定(2)	设备查	我(3)		
					TE					
					1.11.00.000	备名称	Rev.	EDS	文件注释	1
					170	e Corpora				
						Corporation ElectricC	1			_
						EtherNet/IP	1.1 XI	NJE Eth	erNet/IP	S
					٢	-)
輸出										3
à ià M ,	🗊 🗟 🖳 🖡	R								
节点	节点名和	尔	IP地址		连接名称		RPI[IN] (ms)	RPI[C (ms	DUT] 2)	超时
14 4) 1	消息人校验入设	定列表 /								>
				u -						
				编辑器		OK	取	Mr.	应用	1

Step 5: Double click on the XINJE EtherNet/IP EDS file to use it as an adapter, and configure its adapter IP address in the adapter initial settings dialog box.

📕 EtherNet/IP 设定					- 🗆	×
文件(F) 编辑(E) 设定(S) 视图(V) 转	换(C) EDS 文件(D)) 通信(N) 工具(T) 帮助	(H)			
📲 🕼 🐕 🖏 🖧 🐘 🛤 🚳	/ 🙃 🙉 🔍 🗹	la li 🕜				
KV-5500[0] : 192.168.6.10		EtherNet/IP设	备			ņ
		设备列表(1)	设备设定(2)	设备查	找(3)	
1: XINJE EtherNet/IP : 192.	168. 6. 1		备名称	Rev.	EDS 文件注	释
			e Corpora Corporation			
适配器初始设定		- XINJE I	ElectricC	1		
		EDS XINJE	EtherNet/IP	1.1 XI	NJE EtherNet/	IP S
节点地址(A)						
IP地址(I) 192 . 168	. 6 . 1					
连接名称		/0				
InputOnly(ID Type)	E t IN					
		<				>
	OK III		rHet/IP[1.1] et/IP Slave S			
输出						¢
🖻 💼 M 🎜 🕏 🛼 🏪						
节点 节点名称	IP地址	连接名称		RPI[IN] (ms)	RPI[OUT] (ms)	超时

Step 6: Click the "+" corresponding to the added adapter to enter the connection setting configuration interface. Click "Add" in the configuration interface to add the specified connection name according to the application type. Select the corresponding connection name and click on parameter settings. According to the size of the adapter's configured data, configure the data size in the scanner accordingly. After completing the configuration, click OK to complete the parameter configuration. Finally, click Download to download the configuration information to the PLC controller.

EV-5500[0] : 192.168.6.10	连接设定 - 1:XINJE E	therNet/IP ?		EtherNet/IP设备
KV-5500[0] : 192.188.6.10	连接列表(L) No.	连接名称 应用类型 er(II Type) [IW 100 exclusive owner	参数设定 ×	设备列表(1) 设备设定(2) 设备重线(3) 行 デービ
ti nanja stantov or - tič atl. 6.6 Bizlativečner (B. 1779) Bizlativečner (B. 1779) Bizlativečner (B. 1779)	2 InputOnly(Ta 3 InputOnly(ID 2	まり知らい[TS_102] Prinput only Type)[TS_102] Prinput only (日) ExclusiveOver(TD Type) EFX×16 ~ (TF:1600.0ms / OT:1600.0ms) 一般 教行分類(少) (第二時発電(少)	********************************	 新聞通知会 市点地址 日2:168.6.6 日が出 市点各様 1373.7.2.164.7.8×127 戸点各様 1373.7.2.164.7.8×127 戸点各様 1373.7.2.164.7.8×127 戸点各様 1373.7.2.164.7.8×127 戸点各様 1373.7.2.164.7.8×127 戸点各様 1373.7.2.164.7.12 原本
	连接点 数据大小 发送触发器 BFI(通信周期) 最小发送间隔 QUT(输出到话配器)	20 20 20	 > 10月 Dat Size 10日 Dat Size 	件成器品的 否 Ⅲ 兼容性检查 产品化称 设备的条件。
H	连接类型 连接点	The second se		
 ● ● ● ■ ■ ● ● ● ● ● ● ● ● ● ■ ■ XINJE EtherNet/IP 192.108 	数据大小 RPI(通信周期)	20 20 20 20 5 100.0 es (1.0 - 10000.0es) ○ 与IN保持一致 6 05 取消	■ 細野 制新 取F1×16 一般 RF1×16 一般 RF1×16 一般	

Step 7: Double click XINJE Ethernet/IP in monitor mode, operate and monitor the corresponding data in the IO monitoring table, and verify whether communication is normal.

📂 🗄 🗎 😭 📫 🗟 🖶 🗋 🔕 🔅 🗄 🏦 🌌 🐼 📾 🎆 編 🏅 🗞 🗞 🧣	and the second se		H > ◎ 4 ₽	■ (金冊) [유 꽃 유 游 강 왕 위 위 의 편] (2011)	•
ų x	Main X			1	
单元配置					
[0] KV-5500 R000/R500					
E bEtherNet/IP R30000 DM10000	€ 传感器IO监控:K	/-5500[0].XINJE Etl	herNet/IP[1]	3 - 11	×
[1] XINJE EtherNet/IP				-	
切除单元配置		- 77.			
软元件注释 2	软元件	当前值	显示格式	注释	^
标号	¥00		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[0]</pre>	
CPV 系统设定	W01		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]IN_100[1]	
程序: EIP_test	w02		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[2]</pre>	
□ 每次扫描执行型模块	W03		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[3]</pre>	
	¥04		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[4]</pre>	
■ 初始化模块	¥05		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[5]</pre>	
	W06		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[6]</pre>	
□ 后备模块	¥07		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[7]</pre>	
🛅 固定周期模块	w08		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]IN_100[8]	
宏	W09		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[9]</pre>	
🛃 子程序型宏	WOA		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]IN_100[10]	
🎰 自保持型宏	W0B		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[11]</pre>	
软元件初始值	W0C		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]IN_100[12]	
设定文件寄存器	WOD		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]IN_100[13]	
	WOB		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]IN_100[14]	
	WOF		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]IN_100[15]	
	w010		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[16]</pre>	
	W011		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[17]</pre>	
	W012		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[18]</pre>	
	w013		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]IN_100[19]</pre>	
	W014		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[0]</pre>	
	W015		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[1]</pre>	
	W016		16 位十进制数	<pre>KV-5500[0].XINJEEtherNet/IP[1]OUT_101[2]</pre>	
	W017		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[3]</pre>	
	W018		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[4]	
	W019		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[5]</pre>	
	W01A		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[6]</pre>	
	W01B		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[7]</pre>	
	W01C		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[8]</pre>	
	W01D		16位十进制数	<pre>KV-5500[0].XINJEEtherNet/IP[1]OUT_101[9]</pre>	
	WOIE		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]0UT_101[10]	
	W01F		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]0UT_101[11]	
	w020		16 位十进制数	<pre>KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[12]</pre>	
	W021		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]0UT_101[13]	
	w022		16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]0UT_101[14]	
	w023	0 :	16 位十进制数	KV-5500[0]. XINJE EtherNet/IP[1]OUT_101[15]	~

Application 7: Use Xinje PLC XDH-60T-E as the scanner and Keyence PLC KV-5500 as the adapter for implicit communication.

PLC1: XDH-60T-E (IP 192.168.6.6) as the scanner and PLC2: KV-5500 (IP 192.168.6.10) as the adapter, implicit communication between two PLCs can be achieved. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with that of the adapter.

Step 1: In the Keyence KV STUDIO programming software, after connecting to the PLC to be communicated, double-click KV-5500 under the unit configuration to enter the unit editor - edit mode. Double click the CUP unit to configure its IP address, ensuring that it is in the same network segment as the scanner.

[0] KV-5500 R000/R500	Main X		-			
EtherNet/IP R30000 DM10000	文件(E)编辑(E)转换(P)视图(V)选项(O) 窗口(W)報助(H)				9	10
▶ 切换单元配置 欧元件注释	8	0				
褐		单元				
♡ 系统设定 【序: EIP_test	0 意: 88mm	选择单元(1) 设定单元(2)				
	ま: SSam kv-5500 tnd Unit 高: 90am k0000 tnd Unit	PE P= 🖂 🖷 🖶 🚅 👫 🖏				
初始化模块	/消耗电流: 320mA	□基本		^		
后备模块	-507	首 Ⅲ 编号	IM10000			
固定周期模块	R30000 -33915	占用 패 数	230			
子程序型宏	-33910	首继电器编号(按通道设定)	R30000	_		
ナ柱序型宏 自保持型宏		占用继电器数	640			
■ 目保持型宏 次元件初始値	2	通信速度	100/10Mbps自动(大)			
定文件寄存器		17 地址设定方法	固定 IP 地址(火)	-		
UEXITETTE	3	IP 地址	192.168.6.10			
		子阿掩码	255.255.255.0			
		默认网关	0.0.0.0			
		DMS 服务器	0.0.0			
		接收超时[s]	10			
		Keep Alive[s]	600	~		
		嶺口号				
	消息			¢		
	处理 行 编号 代码 消息					
	((()))、酒豊/					
		编辑器 1行,1	列 OK 取消	应用		

Step 2: In the programming mode of the unit editor, find the Ethernet/IP settings, click the function key on the right side of the Ethernet/IP settings, and enter the Ethernet/IP settings configuration interface.



Step 3: Double click KV-5500 to enter the label setting interface, click add to add label connection, configure the data size corresponding to the added label, click OK to complete the corresponding information configuration, and finally click download to download the configuration information to the PLC controller.

	92.168.6.10	标签设定		×				EtherNet/IP设备	
				^				设备列表(1) 设备设定(2)	设备查找(2)
		标题列表(L) No. 标		7				9월 12 12 12 12 12 12 12 12 12 12 12 12 12	
		1 text 1						□ 扫描器设定	
		2 test_2 3 test_3	1	00				IP地址	192.168.6.10
		4 test_4	1	01				单元注释 产品名称	EV-6500
								广 四 4 标 供 应 商 名 称	Keyence Corporatio
		造加(A) 翻除(B	D					版本	1.1
		标至设定						标签设定 曰 传感器应用	《设定》
		标签名(I)	test_1	1				日 我越盗放用 後感器设定备份设定	〈设定〉
		实例ID(I)	(IJ)	* 				传感器设定批量传输设定	(设定)
		待机过程中的职新周期 较元性均率应该(1) 区域1 100	合计: 10 个字						
								适配器设定	
n <i>2</i> 12 0) (m					剧新 优先权			

Step 4: In the Xinje XDPPRO programming software scanner, add the Omron KV-5500 slave device and perform relevant configuration operations on the adapter's IP address and compatibility check:

EtherNet/IP Scanner Config		×
Master Config EtherNet/IP Scanner	Routine Connection IOMapping Connection Status Address config IP Address: 192 168 6 10	
Slave Config —StationId0:KV-5500	Compatible check Vendor ID: 1723 V Device Type: 12 V Product Code: 14 V Major Revisions: 1 V Minor Revisions: 1	
Slave Number: 1 Connection Number	ber: 2/256 Theory throughput: 0 PPS Actual throughput: 0 PPS Import Export Upload DownLoad 0	k Cancel

Step 5: Add two types of connections: Input Only(ID Type) and Input Only(tag Type).
Connection 1: label name test_1, data length 10, mapping first address D0.
Connection 2: instance ID (IN_100), data length 10, mapping first address D20.
Connection 3: label name test_3, data length 10, mapping first address D40.
Connection 4: instance ID (IN_101), data length 10, mapping first address D60.
After completing the configuration, click download to download the configuration to the PLC. The variable

	configured	1	· /1	C 11	•	C
tyneg	configured	are chown	in the	tollow	ina	tioure
types.	configureu		III uic	10110 W	mg	nguic.

1	EtherNet/IP	Scanner	Conf

Master Config StherNet/IP Scanner	No Connectio		DataSize	IN Address	OUT Connection	DataSize	OUT Addre	ss ID
	0 InputOnly	Point (Tag test_1	10	DO	Point	1		0
Slave Config	1 InputOnly	Contraction of the second s	10	D20		1	_	1
-StationIdO:KV-5500	2 InputOnly		10	D40				2
	3 InputOnly	The second s	10	D60				3
		10					h.c.	
	Connection Name Time out(T)	InputOnly(ID Type) RPI*16 ~		✓ OUT:1600ms)	Configure Instance	1	~	
		RPI*16		OVT:1600ms)	Configure Instance OVT(Output to the a		×	
	Time out(T)	RPI*16		OVT:1600ms)				~
	Time out(T) IN(Input from the	RPI*16 v		OVT:1600ms)	OUT(Output to the s	idapter)		> >
	Time out(T) IN(Input from the Connection Type	RFI*16 v adapter) Point to point		OUT:1600ms)	OUT (Output to the a Connection Type	dapter) Foint to po	vint	-1Word)
	Time out(T) -IN(Input from the Connection Type Connection Point	RPI*16 v adapter) Point to point IN_101	(IN:1600ms	OUT:1600ms)	OUT(Output to the a Connection Type Connection Point	dapter) Foint to po	vint	∨ −1Word)
	Time out(T) -IN(Input from the Connection Type Connection Point Data Size	RFI*16 ~ adapter) Point to point IN_101 10	(IN:1600ms	OUT:1600ms)	-DUT(Butput to the a Connection Type Connection Point Data Size	dapter) Foint to po	vint (i	∨ -1Word) -65535ms)

Step 6: Click on IO mapping or connection status to operate and monitor corresponding data, and verify whether communication is normal.

站配置	常规 连接	IO映射 连					
herNet/IP Scanner	标签	通道	映射地址	数值			
	Input Only						
	test_1						
	test_1[DO	1			
站配置	🕂 test_1[D1	2			
StationId0:KV-5500	test_1[D2	3			
	test_1[D3	100			
	test_1[D4	14			
	test_1[D5	10071			
	test_1[D6	15			
	test_1[7] InPut	D7	16			
	🕀 test_1[D8	17			
	test_1[] InPut	D9	18			
	test_3						
	test_3[] InPut	D40	7			
	🗄 test_3[D41	8			
	🕀 test_3[2] InPut	D42	9			
	test_3[3] InPut	D43	300			
	test_3[4] InPut	D44	0			
	test_3[5] InPut	D45	0			
	test_3[b] InPut	D46	0			
	test_3[] InPut	D47	0			
	test_3[D48	0			
	+ test_3[] InPut	D49	0			
	Input Only.						
	-IN 100						
	H IN 100[] InPut	D20	4			
	H IN 100[] InPut	D21	5			
	HIN_100[D22	6			
	H IN 100[D23	200			
	HIN_100[D24	0			

Application 8: Implicit communication between Xinje PLC XDH-60T4-E as adapter and Xinje PLC XSDH-60A32-E as scanner.

PLC1: XDH-60T-E (IP 192.168.6.6) as the adapter and PLC2: XSDH-60A32-E (IP 192.168.6.200) as the scanner to achieve implicit communication between two PLCs. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with the data size of the adapter.

Step 1: Add three connections in adapter XDH-60T4-E in the direction of Adapter->Scanner(T->O).

Connection 1: instance ID100, label name test1, mapping first address D0, data length D10.

Connection 2: label name test11, mapping first address D200, data length 5.

Connection 3: label name test22, mapping first address D250, data length 20.

Add one connection in the direction of Scanner->Adapter(O->T). Instance ID101, label name test2, mapping first address D20, data length 10.

Master Config EtherNet/IP Adapter	Adapter->Sca	anner (T->0)				Scanner->A	.dapter(0->T)			
	Number	Tag name	Living example	Map first address	Enter data length	Mumber	Tag name	Living example	Map first address	Enter data length
	0	test1	100	DO	10	0	test2	101	D20	10
	1	test11	100	D200	5					
	2	test22	-	D250	20					
				LL A	Balata				111	Talaka
	Label setti Label		test22	Add	Delete	Label set	ting 1 name	test2	Add	Delete
	Label		test22		Delete 	Labe		test2		Delete
	Label	name	test22 D250			Labe	l name	100000000		

Step 2: In the XS Studio programming software, click on the tool to import the EDS file as an adapter.



Step 3: Click on Network Configuration, add an EthernetIP master station in the network configuration, create an Ethernet-IP_Scanner, double-click Ethernrt to select the network card to use.









Step 5: Double click on XINJE EtherNetIP to enter the corresponding configuration interface, click on General to configure the IP address of the adapter.

Devices 👻 👎 🗙	Network configuration	Ethernet	XINJE_EtherNetIP X
■	General	Address Settings	
😑 🎥 Network configuration	Connections	IP address 192 . 168 . 6 . 6	EtherNet/IP
PLC Logic PLC Logic Application	Assemblies		
Library Manager	User-Defined Parameters	Electronic Keying	
a Task Configuration	Log	Compatibility check	
ENIPScannerIOTask	EtherNet/IP I/O Mapping	Vendor ID 1723 Check match	
😑 😻 ENIPScannerServiceTask 🕀 EtherNet_IP_Scanner.ServiceCyde	EtherNet/IP IEC Objects	Device type 12 Check match Product code 14 Check match	
⊟ 😂 MainTask ⊕⊞ PLC_PRG	Status	Major revision 1 Check match	
Ethernet (Ethernet) EtherNet IP Scanner (EtherNet/IP Scanner)	Information	Minor revision 1 Check match	
XINJE_EtherNetIP (XINJE EtherNetIP) SortMotion General Axis Pool			
Local High Speed IO			

Step 6: Click on the connection to add a label connection that matches the adapter data size. The first connection is to establish an exclusive owner transmission type, with a point-to-point connection type and a data size of 20 bytes. The second connection is to create a label name test11, with a transmission type of input only and a connection type of point-to-point and a data size of 10 bytes. The third connection is to create a label name test22, with a transmission type of input only and a connection type of point-to-point and a data size of 40 bytes.

Devices 👻 🕈 🗙	Network configuration	Ethernet	_Scanner	XINJE_EtherNetI	РХ		
🗏 🗿 Untitled2				14.008			
🖻 🌐 Device (XSDH-60A32)	General	Connection Name	RPI (ms)	O>T Size (Bytes)	T>O Size (Bytes)	Proxy Config Size (Bytes)	Target Confi
Retwork configuration	Connections	1. ExclusiveOwner(ID Type)	100	20	20		
- III CPU Frame		2. Generic connection	10	0	10		
P O Application	Assemblies	3. Generic connection	10	20	40		
Library Manager	User-Defined Parameters	Edit Connection					
Task Configuration	Log	Connection Path Settings					ОК
ENIPScannerIOTask	EtherNet/IP I/O Mapping	O Automatically generate					Cancel
EtherNet_IP_Scanner.ServiceCyde	EtherNet/IP IEC Objects	Class ID: 16#4	Instand	te ID: 16# 0 At	tribute ID: 16#3		
B S MainTask → B PLC_PRG	Status	Class ID: 16#4		:e ID: 16# 0 At	tribute ID: 16# 3		
Ethernet (Ethernet) EtherNet_IP_Scanner (EtherNet/IP Scanner)	Information	Producing assemb	iy (T->0)				
INJE_EtherNetIP (XINJE EtherNetIP)		Class ID: 16≢4	Instand	te ID: 16# 0 At	tribute ID: 16#3		
 SoftMotion General Axis Pool Local High Speed IO 		O User-defined path					
Local High Speed 10		Path defined by symbol	olic name				
		General Parameters					
		Symbolic name test1:	1				
		Trigger type Cyclic		~ R	PI (ms) 10	÷	
		Transport type Input	only	~ T	imeout multiplier 4	~	
		Scanner to Target (Output)		Tar	get to Scanner (Input)		
		0>T size (bytes)	0	Т	>0 size (bytes) 10		
		Proxy config size (bytes)	0				
		Target config size (bytes)	0				
		Connection type Mul	ticast	~ C	onnection type Poin	it to Point v	
		Connection Priority Low	v	~ C	onnection priority Low		
		Fixed/Variable Fixe	ed	~ F	ixed/Variable Fixe	ed 🗸 🗸	
	Configure device information output	Transfer format 32-	bit run/idle	~ T	ransfer format 32-t	oit run/idle 🗸 🗸	
	Device Information List	Inhibit time (ms)	¢	I	nhibit time (ms) 0	* *	
	Machine slot Device name	De Heartbeat multiplier	0				
	Bevice nume						

Note:

(1) When creating a new connection using the "instance ID" and "exclusive owner" connection type, the configuration information is roughly as follows:

	reely configurable)			ОК
Predefined connectio	n (EDS file)			Cance
 Automatically ger Automatically ger Configuration Class ID: 6: Consuming a: Class ID: 6: Producing as Class ID: 6: Ouser-defined path 	nerated path assembly #4 Instance ID: 1(#0 ssembly (0>T) #4 Instance ID: 1(#0 sembly (T>0) #4 Instance ID: 1(#0	Attribute ID: 15#3 Attribute ID: 15#3 Attribute ID: 15#3 Attribute ID: 15#3		
L	20 04 24 00 2C 00 2C 00			
	Cyclic V	RPI (ms)	10	
Transport type	Exclusive owner 🗸 🧐	Timeout multiplier	4 ~	
anner to Target (Outp	put)	Target to Scanner (Inp	out)	
0>T size (bytes) Proxy config size (by Target config size (by		T>0 size (bytes)	0 7	
	Multicast 🗸	Connection type	Multicast 🗸 🦉	
	Mulucdst		the second se	
Connection type	Low ~	Connectionpriority	Low	
Connection type Connection Priority		Connection priority Fixed/Variable	Low ~ Fixed ~	
Connection type Connection Priority Fixed/Variable Transfer format	Low			

1	Select automatic path generation to enable instance ID configuration					
2	Check the corresponding boxes for configuration assembly, consuming assembly, and producing					
	assembly					
3	Class ID is default value 4					
4	Instance ID: The instance ID for configuration assembly is set to 1 by default. When creating a					
	"exclusive owner" connection, the instance ID for consuming assembly (O ->T) should be					
	consistent with the instance ID configured by the adapter. If "input only" connection is created, data					
	in the direction of configuration (O ->T) will not be configured. The instance ID for consuming					
	assembly (O ->T) must be filled in as FE, and the instance ID for producing assembly (T ->O)					
	should be consistent with the instance ID configured in adapter.					
5	Attribute ID is default value 3					
6	Transport type select as actual using condition					
7	The size of data to be transmitted for corresponding configuration					
8	Configure the corresponding connection types as needed					

(2) When creating a new connection using the "tag" and "exclusive owner" connection type, the configuration information is roughly as follows:

The connection path needs to be generated based on the tag name configured by the adapter, and the connection path in the T ->O direction needs to be placed before the connection path in the O ->T direction;

Quick generation of connection path: Click on the path defined by symbolic name, fill in the required label name, and then click on user-defined path to obtain a connection path code.

Connection Path Setting	S					ОК
O Automatically ger	nerated path					UN
Configuration	i assembly					Cancel
Class ID: 16	#4 In	istance ID; 16# 0	Attribute ID: 16# 3			
Consuming as	ssembly (0->1	D				
Class ID: 16	#4 In	stance ID: 16# 0	Attribute ID: 16# 3			
Producing as:	sembly (T->0)	1				
Class ID: 16	#4 In	stance ID: 16# 0	Attribute ID: 16# 3			
() User-defined path	n T	>0	0>T			
O Path defined by s	ymbolic name	1	-			
eneral Parameters						
	91 06 74 65 73 : Cyclic	~	RPI (ms)	10		
Trigger type		~	RPI (ms) Timeout multiplier			
Trigger type	Cyclic Exclusive owner	~		4 ~		
Trigger type (Transport type (Gcanner to Target (Outp	Cyclic Exclusive owner put)	~	Timeout multiplier Target to Scanner (Inj	4 v		
Trigger type Transport type Geanner to Target (Outp O>T size (bytes)	Cyclic Exclusive owner put) 10	~	Timeout multiplier	4 v		
Trigger type Transport type icanner to Target (Outp 0>T size (bytes) Proxy config size (byt	Cyclic Exclusive owner put) 10 tes) 0	~	Timeout multiplier Target to Scanner (Inj	4 v		
Trigger type Transport type Geanner to Target (Outp O>T size (bytes)	Cyclic Exclusive owner put) 10 tes) 0	~	Timeout multiplier Target to Scanner (Inj	4 v		
Trigger type Transport type icanner to Target (Outp 0>T size (bytes) Proxy config size (byt	Cyclic Exclusive owner put) 10 tes) 0		Timeout multiplier Target to Scanner (Inj	4 v		
Trigger type Transport type Canner to Target (Outp O>T size (bytes) Proxy config size (byt Target config size (byt	Cyclic Exclusive owner out) 10 tes) 0 /tes) 0		Timeout multiplier Target to Scanner (In T>0 size (bytes)	4 ~ put) 10 Point to Point		
Trigger type Transport type Genner to Target (Outp O>T size (bytes) Proxy config size (byt Target config size (byt Connection type	Cyclic Exclusive owner out) 10 tes) 0 ytes) 0 Point to Point		Timeout multiplier Target to Scanner (Ing T>0 size (bytes) Connection type	4 ~ put) 10 Point to Point		
Trigger type Transport type Canner to Target (Outp O>T size (bytes) Proxy config size (byt Target config size (byt Connection type Connection Priority	Cyclic Exclusive owner out) 10 tes) 0 ytes) 0 Point to Point Low		Timeout multiplier Target to Scanner (In T>O size (bytes) Connection type Connection priority	4 ~ put) 10 Point to Point Low	~	
Trigger type Transport type Canner to Target (Outp O>T size (bytes) Proxy config size (byt Target config size (byt Connection type Connection Priority Fixed/Variable	Cyclic Exclusive owner out) (10 (tes) 0 (vtes) 0 Point to Point Low Fixed		Timeout multiplier Target to Scanner (In T>O size (bytes) Connection type Connection priority Fixed/Variable	4 ~ put) 10 Point to Point Low Fixed	~	

Step 7: Click on the assemblies to configure the data types in the specified connection input/output components as needed.

General	Connections									
Connections	Connection Name		O>T Size (Bytes)	T>O Size (Bytes)	Proxy Config Size (Bytes)	Target Co	onfig Size (Bytes)			
	1. ExclusiveOwner(ID Type)	20	20						
Assemblies	2. Generic connecti	on I	0	10						
	3 Generic connecti	on 1	1	10						
User-Defined Parameters	0 L L L L 10 L	1(0					Input Assembly "Gather	"(T>0)		
Log	Output Assembly "Gath						Add X Delete	2	Maria Davin	
209	Add X Delete	I Move Up	Move Down			10	Contract of Contra	-		Testerio de la companya de la
EtherNet/IP I/O Mapping	Name	Data Type	Bit Length	Help String			Name	Data Type	Bit Length	Help String
, .	ProduceDataSize	UINT	16 1	Data Size			ProduceDataSize	UINT	16	Data Size
EtherNet/IP IEC Objects	Gather_Param1	BYTE	8				Gather_Param1	BYTE	8	
	Gather_Param2	BYTE	8				Gather_Param2	BYTE	8	
Status	Gather_Param3	BYTE	8				Gather_Param3	BYTE	8	
	Gather_Param4	BYTE	8				Gather_Param4	BYTE	8	
Information	Gather_Param5	BYTE	8				Gather_Param5	BYTE	8	
	Gather_Param6	BYTE	8				Gather_Param6	BYTE	8	
	Gather_Param7	BYTE	8				Gather_Param7	BYTE	8	
	Gather_Param8	BYTE	8				Gather_Param8	BYTE	8	
	Gather_Param9	BYTE	8				Gather_Param9	BYTE	8	
	Gather_Param10	BYTE	8				Gather_Param 10	BYTE	8	
	Gather_Param11	BYTE	8				Gather_Param11	BYTE	8	
	Gather_Param12	BYTE	8				Gather_Param12	BYTE	8	
	Gather_Param13	BYTE	8				Gather_Param 13	BYTE	8	
	Gather_Param14	BYTE	8				Gather_Param 14	BYTE	8	
	Gather_Param15	BYTE	8				Gather_Param15	BYTE	8	
	Gather_Param16	BYTE	8				Gather_Param 16	BYTE	8	
	Gather_Param17	BYTE	8				Gather_Param17	BYTE	8	
	Gather_Param 18	BYTE	8				Gather_Param18	BYTE	8	

Step 8: Check the current communication status of the corresponding left tree, click on IO mapping to monitor whether data transmission is normal.

<i>未命名106</i> ● ■ Device [连摘印] (XSDH-60A32)	囲	查找		过滤 显示所有	ĩ			- 给10	動道添加	IFB, → 转到实例	
● 副 PLC 逻辑		变量	映射	通道	地址	美型	当前值	预备值	单元	描述	
= 〇 Application (运行)	摘	+ 🔁 ExclusiveOwner(ID Type)								ExclusiveOwner	
1 床管理器	件	= 🤤 普通连接									
PLC_PRG (PRG)		(ii) - Ng		Input_Param0	%IB20	BYTE	43			Data Size	
三 🧱 任务配置	1户参数	8-4		Input_Param1	%I821	BYTE	2				
😑 🍪 ENIPScannerIOTask	虑	(ii) - Np		Input_Param2	%IB22	BYTE	154				
EtherNet_IP_Scanner.IOCycle	140	8-30		Input_Param3	%IB23	BYTE	2				
ENIPScannerServiceTask	herNet/IPI/O映射	18- 1 9		Input_Param4	%IB24	BYTE	9				
EtherNet_IP_Scanner.ServiceCycle	1 1 12	- N - N p		Input_Param5	%IB25	BYTE	3				
🗏 🍪 MainTask	herNet/IPIEC对象	18- 1 9		Input_Param6	%IB26	BYTE	120				
B) PLC_PRG	流	iii		Input_Param7	%IB27	BYTE	3				
🗄 🚱 🗊 Ethernet (Ethernet)		(B- Mp		Input_Param8	%IB28	BYTE	0				
🖻 😳 🌐 EtherNet_IP_Scanner (EtherNet/IP Scanner)	息	iii.−*p		Input_Param9	%IB29	BYTE	0				
S I XINJE_EtherNetIP (XINJE EtherNetIP)		😑 🧰 普通连接									
😏 🏅 SoftMotion General Axis Pool		iii - 🍫		Input_Param0	%IW15	INT	1				
- 5 る 本地10		· · · · · · · · · · · · · · · · · · ·		Input_Param1	%IW16	INT	2				
- 😏 🏅 扩展模块		(B) - 🍫		Input_Param2	%IW17	INT	3				
		18- Mp		Input_Param3	%IW18	INT	4				
		0 - *		Input_Param4	%IW19	INT	5				
		18 - 19		Input_Param5	%IW20	INT	6				
		90 - 10		Input_Param6	%IW21	INT	7				
		🕀 - 🍫		Input_Param7	%IW22	INT	8				
		18- 19		Input_Param8	%IW23	INT	9				
		18- 1 9		Input_Param9	%IW24	INT	10				
		18- 1 9		Input_Param10	%IW25	INT	11				
		19- 19		Input_Param11	%IW26	INT	12				
		ExclusiveOwner		复位映	射 -	直更新变量	144	能2(一直在	总线 循环	7((冬山)	

Application 9: Using Xinje PLC XDH-60T4-E as a scanner and Xinje PLC XSDH-60A32-E as an adapter for implicit communication.

PLC1: XDH-60T-E (IP 192.168.6.6) as the scanner and PLC2: XSDH-60A32-E (IP 192.168.6.200) as the adapter to achieve implicit communication between two PLCs. During the connection creation process, it is important to ensure that the data size of the connection point used is consistent with the data size of the adapter.

Step 1: Click on Network Configuration. Add an EthernetIP slave to the network configuration and create an Ethernet_IP_Adapter. Double click on Ethernet to select the network card to use.



Step 3: Right click on Ethernet IP Adapter to add the required Ethernet/IP module.

	Add Device				>
Vevices Vevices Volted2 Device (XSDH-60A32) Retwork configuration CPU Frame	名称 EtherNet_IP_Module 动作 ④ Append device 〇 Insert device 〇) <u>Plug</u> device O	⊔pdate device		
EPU Frame	String for a full text search	Vendor	<all vendors=""></all>		~
Application Ibrary Manager DEC_PRG (PRG) Task Configuration Strength Configuration Strength Configuration Strength Configuration Strength Configuration	Name Fieldbuses EtherNet/IP EtherNet/IP Module	Vendor			
EtherNet_IP_Adapter.IOCyde Set Set Set Set Set Set Set Set Set	EtherNet/IP Module	35 - Smart Softv	vare Solutions GmbH	3.5.14.0	A device that wor
EtherNet_IP_Adapter (EtherNet/IP Adapter) SoftMotion General Axis Pool Local High Speed IO					

Step 4: Double click on the corresponding Ethernet/IP module to be added, and select Word Output Module and Word Input Module on the usual interface.



Step 5: Double click Ethernet IP Adapter to export the configured information in the form of an EDS file.



Step 6: On the Xinje XDPPro programming software scanner, load the exported EDS file, add the corresponding slave device after loading, and perform relevant configuration operations on the adapter's IP address and compatibility check:

EtherNet/IP Scanner Config		×
Master Config EtherNet/IF Scanner	Routine Connection IOMapping Connection Status Address config IP Address: 192 , 168 , 6 , 200	
Slave Config —StationIdD:EtherNet/IP Adapter	Compatible check Vendor ID: 1723 Device Type: 12	
	Product Code: 14	
	Minor Revisions: 1	
Slave Number: 1 Connection Number: 0/	0/256 Theory throughput: 0 PPS Actual throughput: 0 PPS Import Export Upload DownLoad	Ok Cancel

Step 7: Click on the connection to view the connection type, and the imported connection type can also be modified according to actual needs.

ister Config :herNet/IP Scanner	No Connecti	ion Input Connection Point	DataSize	IN Address	OUT Connection Point	DataSize	OUT Address	Connectio ID
 NOT 	0 Exclusiv	eOwne IN_101	1	HDO	00T_100	1	HD10	0
ave Config			Read .		1			
StationIdD:EtherNet/IP Adapter								
							Add	Delect
	Connection Name	ExclusiveOwner (Tag	g Type)	~				
	Time out(T)	RPI*16 ~	(IN:1600ms 0	VT:1600ms) C	onfigure Instance		~	
	IN(Input from the	e adapter)		0)VT(Output to the a	dapter)		
	Connection Type	Point to point	,	<i>x</i>	Connection Type	Point to poi	int	~
	Connection Point	t IN_101			Connection Point	OVT_100		
		1	(1-724Word	ŷ	Data Size	1	(1-724Wo	rd)
	Data Size							
	Data Size MapMaddres	Ю			MapMaddres	11010		
		HDD Cycle			MapMaddres RPI(communication cycle)	НD10 100	(1-65535	ms)

Step 8: Click on IO mapping or connection status to operate and monitor corresponding data, and verify whether communication is normal.

EtherNet/IP Scanner Config									2
	Routine Connection	IOMapping	Connection Status						
Master Config EtherNet/IP Scanner	Tag -ExclusiveOwner(-IN_101 -IN_101[0]	Channel InPut	MapAdress HDO	Value					
Slave Config	E-0VT_100	Infut	NDO .	U					
-StationIdO:EtherNet/IP Adapter		OutPut	HD10	0					
lave Number: 1 Connection Number:	1/2EF Theory throughout 0	DDC Antural Alexan	about 0.PDS	Import	Export	Upload	DownLoad	Ok	Cancel

5-4-2. Explicit communication

Explicit message is a point to point communication method in which the client sends a request to the server and waits for the server to respond; Label communication is a communication method based on label address that reads or writes data by accessing the label address in the device. Explicit messages consist of two parts: the client and the server.

5-4-2-1. Explicit server

The name (case insensitive), label type, data type, length, and mapping address of explicit messages need to be defined in the global variable table of the server in advance. After definition, click download to download the configuration to the PLC and wait for the client to establish a connection with it.

Add Delete	Move-Up Move-I	Down Imp	ort Export	Searc	h		
Name	Туре	Кеер	Initial va	Con	Network status	Map address	Comment
-tag_1	INT		1725		Public		
-tag_2	INT		122		Public	3	
-tag_3	INT		122		Public	1	
—tag_4 🚺	INT		2 -		Public		

- (1) Names are not case sensitive, meaning tag_1 is equivalent to TAG_1.
- (2) The mapping address is power off holding registers, please select this to maintain the value.
- (3) The network status please set to public.

5-4-2-2. Explicit client

1. Add device

EtherNet/IP Explicit Setting			×
EtherNet/IP Explicit Setting Master configuration EtherNet/IP (display commun Add Device Slave configuration	Target device configu IP Address: Port: Time out(ms): Reissued Number: Enable control: Connection flag:	192 168 6 7 44818 500 500 : 1 : M0 g: M100	×
Slave Numbers: 0 Connection Numbers: 0/3000		OK Cancel	Cancel

1))	EthetNet/IP (Display Communication) in the main station configuration to add devices.
	Configure the	target devices for adding slave stations accordingly.
	IP address	As the IP address of the server PLC; Default 192.168.6.1, starting from 1, the next one defaults
		to the previous address +1
	Port	Default 44818, fixed and cannot be modified.
	Time out	The default setting is 500ms, with a range of 1-65535.
	Reissue	When the triggering method is conditional triggering, if the communication timeout occurs, it
2	number	will be resent with a default number of times of 1, and the allowed input range is 1-15.
2	Enable	By default, it is not enabled. Enabled to set local coil control.
	control	When not enabled: PLC automatically establishes a connection to the target IP after running;
		When enabled: Only bit registers are supported, and a connection to the target IP is only
		established when the coil is normally ON. Close the connection when the conditions are not
		met.
	Connection	Store the result of the successful connection of this device in the corresponding connection flag
	flag	register.
	Import	Import the configured information into the current configuration interface in the form of an
		XML file.
	Export	Export the configured information in the form of an XML file.
	Upload	Upload the configuration information downloaded to the PLC to the current configuration
		interface, and the uploaded configuration information will overwrite the existing configuration
3		information on the current interface.
	Download	Download the configuration information of the current configuration interface to the PLC. The
		downloaded configuration information will overwrite the original configuration information in
		the PLC and take effect in real time with the new configuration information.
	OK	Click OK to save the configuration information for the current page.
	Cancel	Click to discard the configuration information for the current page.

2. Add connection

EtherNet/IP Explicit Setting	Normal IOM				10. 			×
Master configuration EtherNet/IP (display communication)	and show and	Clear Up Down]					
3	No.	Name(Tag)	Data type	Quantity	Trigger mode	Trigger condition	Function code	Mapping address
	0	tag_1	INT	1	Condition trigger	Ml	Read the label	DO
StationIdD:192.168.6.7;44818								
Slave Numbers: 1 Connection Numbers: 2/3	000 4				Import Expor	t UpLoad	DownLoad	1K Cancel

1	Normal	Add the specified node to the slave station in this interface to establish a connection.
	IO mapping	View or monitor detailed address information for adding connection mappings.
	Add	Clicking on add will create a new connection.
	Delete	Select the corresponding established connection, click delete to delete the selected
2		connection.
2	Clear	Delete all configuration information on this interface.
	Up	For the selected established connection, click Move Up to move it up by one unit.
	Down	For the selected established connection, click move down to move down one unit.
	No.	Click on add to create a connection. This number will automatically increase by 1
	Name	The name of the connection should be consistent with the label of the explicit server,
		ensuring the correct label name and data type. Note: The number of data corresponding to
		the name must not exceed the data defined by the server, otherwise communication will fail
	Data type	For specific supported data types, please refer to 5-3-3. client and server support variable
		types
	Quantity	The number of label variables corresponding to the read or write operation of this
		connection
3	Trigger mode	Cyclic triggering: Triggering in cycles according to the set triggering conditions;
		Conditional triggering: When the set triggering condition changes state, it triggers the
		explicit client
	Function code	Read tag (0x4c): Read tag service, where the client reads the specified tag data from the
		server;
		Write tag (0x4d): Write tag service, where the client writes the specified tag data to the
		server;
		Mapping address: Maps read label data or cached label data to be written into PLC
		registers.
4	Slave number	Count the number of slave stations connected under the current master station.
	Connection	Count the number of connections established between the master station and all connected
	number	slave stations. The specific specifications for the number of slave stations or supported

	connections	supported	by	Ethernet/IP	communication	can	be	found	in	section	5-3.
	Ethernet/IP c	ommunicat	ion	specifications	s.						

5-4-2-3. Application

Application 1: Two Xinje XDH-60T-E for explicit label communication.

PLC1: XDH-60T-E (IP 192.168.6.6) as the explicit server and PLC2: XDH-60T-E (IP 192.168.6.7) as the explicit client to achieve explicit label communication between two PLCs.



Step 1: Create corresponding variables in the global variable table on the server, and select the network state corresponding to the label as public state. The specific operation configuration is as follows:

File Edit Search View Online Co		findow Help	3 ➡ ₿	6	. 🔳 🧯	i 🗓 🗓 🕄	🔯 🗟 - 🗯	A ,
++⊦ 뭄 ⊗ 몸 +⊦ +/- +†⊦			≻	- *	• *	10 ×0 I	• 🖬 • 🔽	- S + +
oject 🏾 🖓 Project		er Global Variable T			Leccores			
PLC1	Add Delete	Move-Up Move-Dov	T martine	Initial va	Constant	Network status	Map address	Comment
Ladder	⊞-tag_1	INT[2]		-		Public	[D0,D1]	Common
Address Management	-tag_2	INT		-		Public	D2	
Global Variable	-tag_3	INT		- 20		Not public	D3	2
SYS_AXIS	-tag_4	INT		-		Public	D4	
Global Variable Table								
POU Feature Library								

Step 2: Add a server device to the client and configure the corresponding IP address and related parameters for the specified communication server:



Step 3: Add a connection to the client. Users can choose the corresponding triggering method and triggering conditions based on the actual application situation, and perform tag reading and writing operations on the server to the mapping address specified by the client.

	Manual 1014				trigger tag 1	at the rising e	dae of M10	
Master configuration	Normal IOM	apping			angger ag_	de die Hang e	age of first	
EtherNet/IP (display communication)	Add Del	Clear Up Down						
	No.	Name(Tag)	Data type	Quantity	Trigger mode	Trigger condition	Function code	Mapping address
	0				Condition trigger	M10		
Slave configuration	1	tag_2	INT	1	Loop trigger(ms)	1000	Write the labe	D10
-StationId0:192.168.6.6:44818							1	
					trigger tag	2 every 1 seco	nd	
					unggen ung_			
Slave Numbers: 1 Connection Numbers: 2	/3000			Ĩ	Import Expo	t UpLoad	DownLoad 0	K Cancel

Step 4: After adding the configuration, click "Download" to download the configuration information to the PLC. After downloading, monitor the corresponding mapping address and check its communication status.

		14⊢ 1	1	-		-()	≺R≻	-(S)			×-	1	* 20 *0	I - I -	C •
ųχ	PLC1 - 桃田	10									-	x	PLC1-自由监控2		ą
	F												监控窗口 • 添加	修改删除 全	部删除
											1		名称	监控值	类型
1 扩展模块	0	Client											- 🔷 SB1 720	0	INT
BD模块											L		- 🔷 SD1 721	0	INT
ED模块	1.34			-1-1-	4								- 🔷 SD1 722	0	INT
4GBOX		l0 is O				TAC							- 🔷 SD1 723	0	INT
WBOX		to ser			00 0	UN,	write	client					- 🔷 SD1 724	0	INT
	1.00.010		0.120.100				uar D	0, D1	+0				— 🧇 MD	0M	BIT
Ethernetip		t D0, 1)1x, 1	eau	I SEI	ver L	10, D1	10			1	- 🔷 DO	100	INT
EipScanner	Chen	1 1/0, 1											- 🔷 D2	0	INT
EipAdapter													- 🔷 M100	0M	BIT
EipExpácit													- M10	ON	BIT
ModbusTcp	<							-				>	1		1
- 四川 EthercatMaster う 运动対空制(H运动)	PLC1-数据监控		_	_	_	_	_				n	×			
	In the Party of th	D11		х	Y	M	S	SM 1	FT	с	HM	~			
			1.1		+3	1.0.001	+5	+6	+7		1.01.00.00.00	-			
- 高 轴配置 - 高 轴调试	Selet Item								+/	+8	+9	. iii			
		+0	+1	+2		+4	1.00	1.00							
	DO	100	20	0	0	0	0	0	0	0	0				
 一局 抽配置 →局 抽调成 →局 抽组配置 →● CAM → PLC信息 		-		1.551	0	100	1.00	1.00	0	0	0				
 ○ 抽配置 ○ 抽调成 ○ 袖调成 ○ CAM ○ CAM ○ PLC信息 ○ PLC本体信息 	DO	100	20	0	0	0	0	0		100					
 一 商 抽配置 一 廠 抽调試 - ● A 抽 4 和 4 和 5 配置 - ● C A M - ● L C 信息 	D0	100 300	20 0	0 0	0	0	0	0	0	0	0				

統劃				-++1	-1+1	- 1	1	1	+		-(R≻	-(S)-	-0-		*	1	*	20	
1.4	全局	安康表																	
1.4	修 下移	导入	导出	搬	ŧ														
	角型			保持	1	明値	常里	F	赌状	态		映射地	蚍	注	15				
	NT[2]					-		4	5开			[D0,D1]							
	NT					20		4	۳			02							
	INT					20		4	Э #			D3							
	INT					20		4	\ #			D4							
									se	rver									
1¢.	_		-																
E Di	2	- x	Y	M	5	SM	T	ET	с	HM	HS	HT	HC	HSC	D	SD	ID	QD	
	+0	+1		+2	a 11	+1		-	+4	10200220	+5	al sus	+6	+7	10000	+8		+5	5
+	100	20		300		0	0.1		0	1	0		0	0		0		0	Ì
1	0	0		0		0		_	0	1	0		0	0		0	-	0	1
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	.0	0	-			0		_					n	.0					
进制	16进制	无符号	ASC	30.															

Application 2: Use Xinje XDH-60T-E as the client and Omron NJ501-1500 as the server for explicit tag communication.

Step 1: Define the variables that need to be communicated in the Omron Sysmac Studio programming software, and select the public state of the established label network as public.

	全局变	🖩 🗙 📅 内置Et	herNet/IP端口设置								×	STANS CON 55
	组筛选器	▼ (没有组)	V									<检索> ▼ 2 ×
	-	名称	数据类型	▲ 初始値	分配到	保持	常量		网络公开	注释		
	🔤 test_	хх	ARRAY[09] OF INT			2		公开	V			
	test_	zz	ARRAY[09] OF INT			X		公开	T			
:												
H	観(工程)	1									- 1 ×	控制器状态 🚽 🗸

Step 2: Add a server device to the client and configure the corresponding IP address and related parameters for the specified communication server:

EtherNet/IP Explicit Setting								×
Master configuration EtherNet/IP (display communication)								
Slave configuration	Target device configu IP Address: Port: Time out(ms): Reissued Number: ☑ Enable control: ☑ Connection flag:	192 168 250 1 44818 500 1 1 1 M0 100 100	Cancel					
Slave Numbers: 0 Connection Numbers: 0/30	00		Import	Export	UpLoad	DownLoad	OK	Cancel

Step 3: Add a connection in the client, with the first connection established as a read label method and the second connection established as a write label method.

0 tag_zz INT 10 Loop trigger(ms) 1000 Read the label D50									
BetherNet/IP (display communication) i Add Del Clear Up Down No. Name(Tag) Data type Quantity Trigger mode Trigger condition Function code Mapping 0 tag_zz INT 10 Loop trigger(ms) 1000 Read the label D50 Slave configuration 1 tag_xx INT 10 Loop trigger(ms) 1000 Write the labe D60	2 2	Normal IOM	apping						
No. Name(Tag) Data type Quantity Trigger mode Trigger condition Function code Mapping 0 tag_zz INT 10 Loop trigger(ms) 1000 Read the label D50 Slave configuration 1 tag_xx INT 10 Loop trigger(ms) 1000 Write the labe D60	15	Add Del	Clear Up Down						
0 tag_zz INT 10 Loop trigger(ms) 1000 Read the label D50 Slave configuration 1 tag_xx INT 10 Loop trigger(ms) 1000 Write the label D60	nerwet/if (display communication)	No.	Name(Tag)	Data type	Quantity	Trigger mode	Trigger condition	Function code	Mapping addre
		0		5 1 H H H H H H H H H H H H H	10	and the second sec			D5000
-StationId0:192.168.250.1:44818	ave configuration	1	tag_xx	INT	10	Loop trigger(ms)	1000	Write the labe	D6000
	StationId0:192.168.250.1:44818								
Slave Numbers: 1 Connection Numbers: 2/3000 Import Export UpLoad DownLoad 0K									

Step 4: After setting ON M0, when the M100 enable connection flag is set successfully, it indicates that the connection has been established. Click on the IO mapping to check if the communication between read and write data is normal.

示签	通道	类型	映射地址	数值			
test_zz	读标签(4C)	INT[10]	[D500, D509]				
-test_zz[0]	读标签(4C)	INT	D500	456			
test_zz[1]	读标签(4C)	INT	D501	0			
-test_zz[2]	读标签(4C)	INT	D502	0			
-test_zz[3]	读标签(4C)	INT	D503	0			
-test_zz[4]	读标签(4C)	INT	D504	0			
test_zz[5]	读标签(4C)	INT	D505	0			
-test_zz[6]	读标签(4C)	INT	D506	0			
-test_zz[7]	读标签(4C)	INT	D507	0			
-test_zz[8]	读标签(4C)	INT	D508	0			
test_zz[9]	读标签(4C)	INT	D509	0			
test_xx	写标签(4D)	INT[10]	[D600, D609]				
test_xx[0]	写标签(4D)	INT	D600	123			
-test_xx[1]	写标签(4D)	INT	D601	0			
test_xx[2]	写标签(4D)	INT	D602	0			
-test_xx[3]	写标签(4D)	INT	D603	0			
-test_xx[4]	写标签(4D)	INT	D604	0			
test_xx[5]	写标签(4D)	INT	D605	0			
-test_xx[6]	写标签(4D)	INT	D606	0			
-test_xx[7]	写标签(4D)	INT	D607	0			
-test_xx[8]	写标签(4D)	INT	D608	0			
Ltest_xx[9]	写标签(4D)	INT	D609	0			

全局变量 🗙 🗗 内置	EtherNet/IP端口设置								
筛选器 🍸 (没有组)	_								
名称	数据类型	▲ 初始值	分配到	保持	常量	网络公开	注释		
test_xx	ARRAY[09] OF INT					公开			
test_zz	ARRAY[09] OF INT			X		公开	▼		
				_	_				
[(工程)1 200000000									
设备名称	名称	在线值	修改	注	E释	数据类型	分		显示格式
w_Controller_0	test_xx[0]	123				INT			Decimal 🔻
w_Controller_0	test_zz[0]	456	456			INT		1	Decimal 🔻
w_Controller_0	输入名称								
							8.0		

Appendix

Code	Explanation	Reason and solution
0xFF	No extension	-
0x100	FWD repeated opening	-
0x103	Class triggering invalid	-
0x106	Conflict of ownership	Error reason: The connection point in the O ->T direction of the slave station configuration has already been used. Problem point: The connection point in the O>T direction of the slave station configuration has already been used. Solution: Replace the connection points in the O ->T direction of the main station.
0x107	Connection not found	Error reason: Connection not found. Problem point: It is highly likely that EDS does not match or is missing configuration items. Solution: Determine if the EDS of the slave station is correct.
0x108	Invalid connection type	-
0x109	Invalid connection size	Reason for error: T ->O or O ->T data size setting error, or configuration data length setting error. Problem point: T ->O or O ->T data size setting error, or configuration data length setting error. Solution: Modify the length of the master station data and modify the length of the slave station data
0x110	Device not configured	-
0x111	RPI not support	Error reason: The RPI slave (adapter) setting is not supported. Problem point: It is highly likely that EDS does not match. Solution: Choose the correct EDS.
0x112	RPI value is unacceptable	Error reason: ListenOnly (ID type) RPI configuration error. Problem point: ListenOnly (ID type) RPI requires the same configuration as RPI that depends on InputOnly and ExclusiveOwner. Solution: Learn the correct usage of ListenOnly.
0x113	Connection limit reached	-
0x114	Supplier product code mismatch	Reason for error: Supplier ID or product code check error in compatibility check. Problem point: The EDS selected for the configuration of the slave station equipment does not match that of the master station. Solution: Choose the correct EDS.
0x115	Product type mismatch	Error reason: Device type check error in compatibility check. Problem point: The EDS selected for the configuration of the

Code	Explanation	Reason and solution
		slave station equipment does not match that of the master station.
		Solution: Choose the correct EDS.
0x116	Revision mismatch	Reason for error: The main revision check error in compatibility check. Problem point: The EDS selected for the configuration of the slave station equipment does not match that of the master station. Solution: Choose the correct EDS.
0x117	Invalid connection point	Reason for error: The connection point selection for T ->O or O ->T is incorrect. Problem point: The connection points selected by the master station (scanner) for T ->O or O ->T do not match the configuration of the slave station (adapter). Solution: Choose the correct connection point.
0x118	Invalid configuration format	-
0x119	No control connection	Error reason: ListenOnly (ID type) connection type configuration error. Problem point: The ListenOnly (ID type) connection type cannot be configured as point-to-point, or when configured as multicast, it requires an InputOnly and ExclusiveOwner connection point to also be configured as multicast. Solution: Learn the correct usage of ListenOnly.
0x11A	Reaching target connection limit	-
0x11B	RPI is less than the limit	-
0x11C	Transfer class not supported	
0x11D	Production trigger not supported	
0x11E	Direction not supported	
0x11F	O-T fixed variable invalid	
0x120	T-O fixed variable invalid	Problem point: These issues basically belong to EDS mismatch. Solution: Choose the correct EDS.
0x121	O-T priority invalid	
0x122	T-O priority invalid	
0x123	O-T connection type invalid	
0x124	T-O connection type invalid	
	O-T redundant owner	_
0x125	invalid	

Code	Explanation	Reason and solution
	invalid	
0x127	O-T size invalid	 Reason for error: (1) The data size setting for O ->T connection is incorrect; (2) Connection point option configuration error. Problem points: (1) The data size setting for O ->T connection is incorrect; (2) The connection point selected by the master station does not match the connection point configured by the slave station. Solution: (1) Modify the O ->T data length of the main station for connection or modify the data length of the consumer connection point configured by the slave station. (2) Modify the connection points of the master station for connection or modify the connection points of the master station for slave station.
0x128	T-O size invalid	Error reason: The data size setting for T ->O connection is incorrect. Problem point: The data size setting for T ->O connection is incorrect. Solution: Modify the T ->O data length of the main station's connection or modify the data length of the slave station's configuration producer connection point.
0x129	Invalid configuration path	-
0x12A	Invalid consumption path	Error reason: Connection point option configuration error. Problem point: The connection point selected by the master station does not match the connection point configured by the slave station. Solution: Modify the connection points of the master station for connection or modify the connection points configured by the slave station.
0x12B	Production path is invalid	Error reason: Connection point option configuration error. Problem point: The connection point selected by the master station does not match the connection point configured by the slave station. Solution: Modify the connection points of the master station for connection or modify the connection points configured by the slave station.
0x12C	No configuration symbol	-
0x12D	No consumption symbol	Error reason: Connection label name configuration error. Problem point: The connection label name selected by the master site does not match the connection label name configured by the

Code	Explanation	Reason and solution
		slave station. Solution: Modify the connection label name of the master station for connection or modify the connection label name configured by the slave station.
0x12E	No production symbol	Error reason: Connection label name option configuration error. Problem point: The connection label name selected by the master site does not match the connection label name configured by the slave station. Solution: Modify the connection label name of the master station for connection or modify the connection label name configured by the slave station.
0x12F	Invalid application path combination	-
0x130	Inconsistent consumption data format	-
0x131	Inconsistent production data format	-
0x132	Not support empty FORWARD OPEN	-
0x133	Wrong connection timeout multiplier	-
0x134	T-O connector size mismatch	-
0x135	T-O fixed variable mismatch	-
0x136	T-O connection priority mismatch	-
0x137	Transport category mismatch	-
0x138	T-O production trigger mismatch	Error reason: ListenOnly (ID type) trigger condition configuration error. Problem point: The trigger conditions for ListenOnly (ID type) need to be configured the same as those for InputOnly and ExclusiveOwner. Solution: Learn the correct usage of ListenOnly.
0x139	T-O production inhibition mismatch	-
0x203	Connection timeout	Error reason: Communication timeout. Problem point: There is no data packet within the timeout multiple time in the O ->T or T ->O direction.
		Solution: Usually, set PRI higher.

Code	Explanation	Reason and solution		
	timeout			
0x205	parameter error	-		
0x206	Message too large	-		
0x207	Unconnected packet			
0x207	without reply	-		
0x208	Service demand			
0X208	connection	-		
0x301	No available buffer			
0,301	memory	-		
0x302	Bandwidth unavailable	-		
0x303	Label filter not			
0x303	available	-		
0x304	Real time data not			
04304	configured			
0x311	Port unavailable	-		
0x312	Link address not	_		
0X312	available	-		
		Reason for error: The default connection point for O ->T is		
0x315	Invalid segment type	incorrect.		
0.0015	value	Problem point: EDS mismatch.		
		Solution: Replace with the correct EDS.		
0x316	Path connection	_		
0.0010	mismatch			
0x317	Invalid network	_		
0.1017	segment			
0x318	Invalid link address	-		
0x319	The second resource is	_		
	not available			
0x31A	Connection established	-		
0x31B	Established direct	_		
	connection			
0x31C	Others	-		
0x31D	Redundant connection	_		
	mismatch			
0x31E	No more consumer	-		
	resources available			
0x31F	No target path resources	-		
0x320	Supplier specific	-		
0x813	Unconfigured outside	_		
	subnet mask			



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