



PRODUCT

USE INSTRUCTIONS

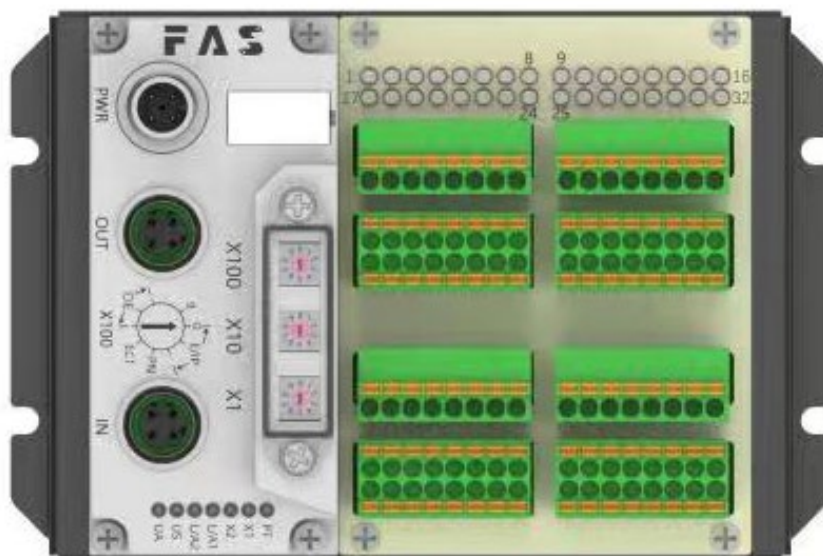


Ordering code: 009D31

Part number: FNI CCL-106-104-K54

CC-Link IP20 bus module user manual

32 DI NPN



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■ Expected use

This manual describes as decentralized input and output modules for connecting to an industrial network.

■ Installation and start-up

Precautions!

Installation and start-up may only be performed by trained personnel. A qualified individual is one who is familiar with the installation and operation of the product and has the necessary qualifications to perform such operations. Any damage caused by unauthorized operation or illegal and improper use is not covered by the manufacturer's warranty. The equipment operator is responsible for ensuring that appropriate safety and accident prevention regulations are observed.

■ Corrosion resistance

Precautions!

FNI modules generally have good chemical and oil resistance. When used in corrosive media (e.g. high concentrations of chemicals, oils, lubricants, coolants and other material media (i.e. very low water content), these media must be checked before the corresponding application material compatibility. If a module fails or is damaged due to this corrosive medium, a defect claim cannot be made.

■ Dangerous voltage

Precautions!

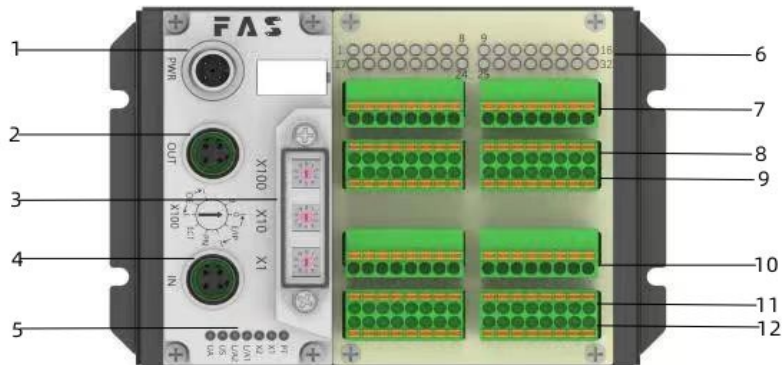
Disconnect all power before using the device!

■ General security

Debugging and inspection	Fault	Owner/operator obligations	Expected use
Before debugging, read the user manual carefully.	If the defect or equipment failure cannot be corrected, the operation of the equipment must be stopped to avoid damage that may be caused by unauthorized use.	This equipment is an EMC Class A compliant product. This device produces RF noise.	The warranty and limited liability statement provided by the manufacturer does not cover damage caused by: ·Unauthorized tampering ·Improper use operation ·The instructions provided in the user manual explain the use, installation and handling of discrepancies
This system cannot be used in an environment where the safety of personnel depends on the functionality of the equipment.	Only after the housing is fully installed can the intended use be assured.	The owner/operator must take appropriate precautions to use this equipment. This device can only use the power supply that matches this device, and can only connect cables approved for application.	

1. Getting Started Guide

1.1 Module overview



- 1 Power supply interface
- 2 CC-Link output port
- 3 DIP switch
- 4 CC-Link input port
- 5 Module status indicator
- 6 Signal status indicator

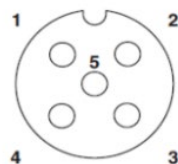
- 7 Sensor actuator power supply +24V
- 8 1-16 signal interface
- 9 Sensor actuator power supply 0V
- 10 Sensor actuator power supply +24V
- 11 17-32 signal interface
- 12 Sensor actuator power supply 0V

1.2 Mechanical connection

The module is installed using 4 M4 bolts or DIN35 rail snaps.

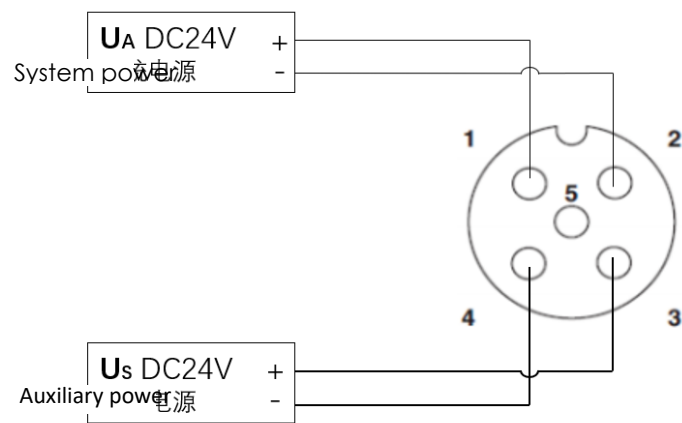
1.3 Electrical connection

1.3.1Power interface (A-coded)



Pin	Function	
1	UA	+24V(Brown)
2	GND	0V(White)
3	Us	+24V (Blue)
4	GND	0V(Black)

Power interface



Note:

- 1. It is recommended to provide Us power supply and UA power supply separately;
- 2. The total current of UA power supply is <4A, and the total current of Us power supply is <4A;
- 3. The FE connection from the housing to the machine must be low impedance and kept as short as possible.

1.3.2 Communication interface (A-coded)

Bus communication	Pin	Function	Remark
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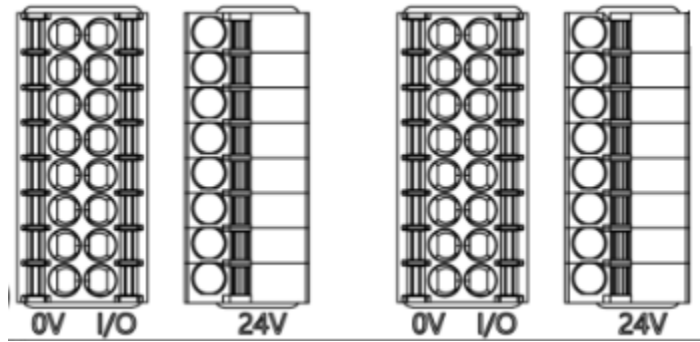
interface (LINK1)				
	1	SLD	Shield	M12 4Pin A code Female
	2	DB	Send and receive data	
	3	DG	Data Ground+	
	4	DA	Send and receive data	

Bus communication interface (LINK2)	Pin	Function		Remark
	1	SLD	Shield	M12 4Pin A code Female
	2	DB	Send and receive data	
	3	DG	Data Ground+	
	4	DA	Send and receive data	

Note:

Unused I/O port sockets must be covered with end caps to meet IP20 protection rating

1.3.3 Signal port (screwless spring terminal)

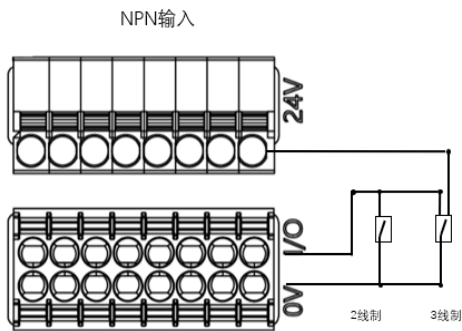


- Note:
1. Input signal type support: three-wire NPN, two-wire NPN, dry contact;
 2. Pin +24V, single input power supply, maximum load 200mA;

Common I/O

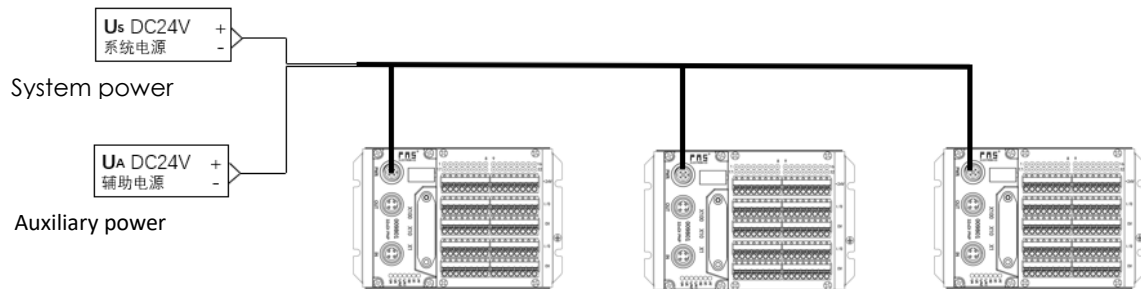
NPN input

普通I/O



1.3.4 Module wiring method

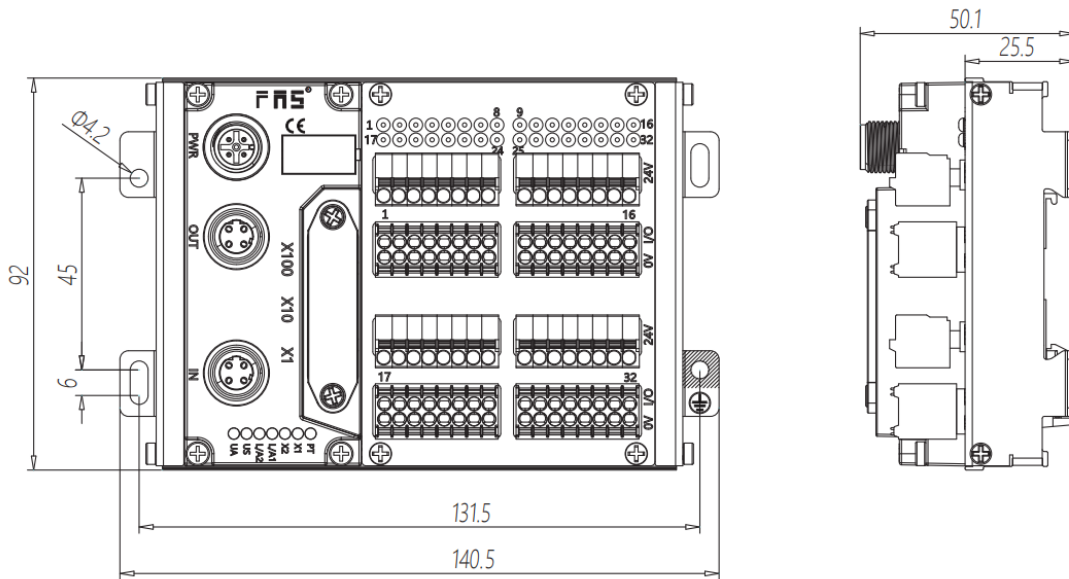
Independent power supply



In independent power supply mode, the maximum current of each module can reach 4A.

2 Technical data

2.1. Size



2.2 Mechanical data

Shell material	Aluminum shell
Housing rating according to IEC 60529	IP20
Power interface	A-Code
Input port/output port	Pluggable screw-free quick connect terminals
Size(W*H*D)	113mm*92mm*50.1mm
Installation type	Screw fixing or DIN35 rail mounting
Weight	About 670g

2.3 Operating conditions

Operating temperature	-5°C ~ 80°C
Storage temperature	-25°C ~ 85°C

2.4 Electrical data

Supply voltage	18~30V DC, conform to EN61131-2
voltage fluctuation	<1%
Input current when power supply voltage is 24V	<130mA

Maximum load current, sensor/channel	1A
Total current Us	≤4A
Total current Ua	≤4A

2.5 Network port

Station type	remote equipment station
Communication type	Use CCLINK dedicated cable
Support agreement	CC-Link
Cable type	Shielded twisted pair minimum STP CAT5/STP CAT 5e, compliant with IEEE 802.3
Data transfer rate	Maximum 10Mbps (CCLINK)

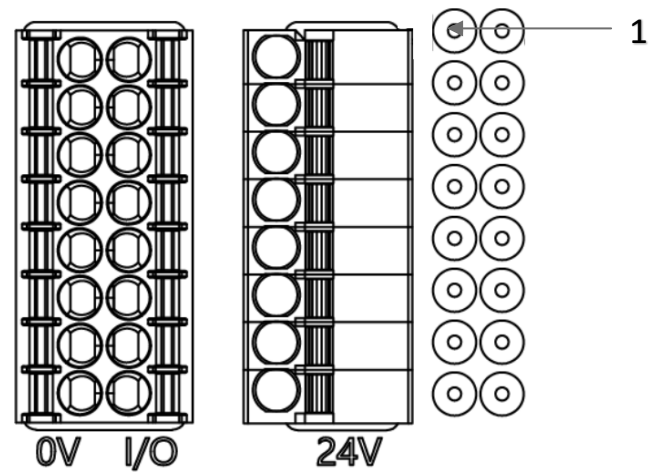
2.6 Function indicator



Meaning of indicator light status during CC-Link communication protocol		
LED	Show	Function
PT	Always extinguished	CCLINK protocol
RUN	Green light off	Device is in INIT state
	Green light flashes 2.5HZ	Pre-operation: The device is in pre-operation state
	Green light flashes 1HZ	Safe operation: The equipment is in safe operation.
	Steady green	Running: The device is running
ERR	closure	No error: device CCLINK communication is working
	Red light flashes 2.5HZ	Invalid configuration
	Red light flashes 1HZ	local error
	Red light double flash	Application monitoring timeout
SD	Steady green	The device is sending and receiving data
	Flashing green	The device is sending and receiving data
	Closure	Device is not sending data
RD	Steady green	The device is receiving data

	Flashing green	The device is receiving data
	Closure	Device not receiving data
US	Green	Input voltage is normal
	Flashing red	Input voltage low (< 18 V)
UA	Green	Output voltage is normal
	Flashing red	Output voltage low (< 18 V)
	Red always on	No output voltage present (< 11 V)

I/O port status



LED	State	Function
1	Closure	The status of the I/O pin input is 0
1	Yellow	The status of the I/O pin input is 1

3 Integrated

3.1 Module configuration

3.1.1 Communication parameter settings

CCLINK node address setting:

By dialing settings (1~64), the device needs to be powered off. The X10 dialing code is the tens digit of the address, and the X1 dialing code is the ones digit of the address. For example, dial X10 to 1 and X1 to 5. Just power on again, that is The current station number is 15.



3.1.2 Set baud rate

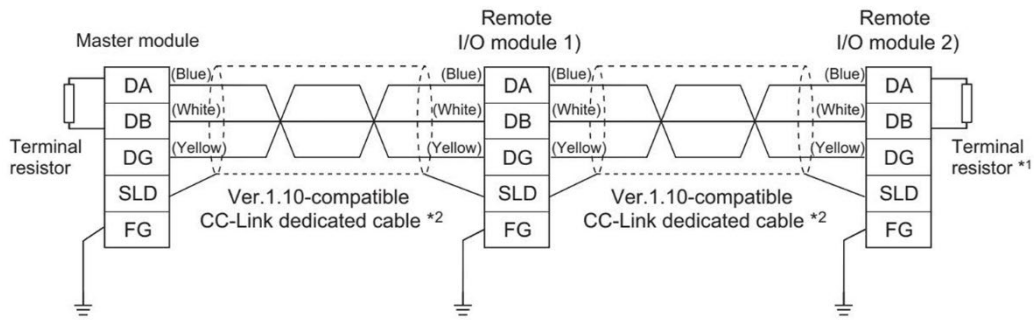
The module baud rate is determined based on the CCLINK module of the actual PLC and the PLC configuration. For example, first power off the device, set the B RATE dial to 0, and then power on again. The baud rate of the module is 156kbps.

CCLINKver2 compatible cable (uses 110Ω terminating resistor)

Baud rate dialing Communication speed Distance between stations Cable maximum delay length

CCLINK ver2 兼容电缆（使用110Ω终端电阻）				
波特率拨码	通信速度	站间距离	缆最大延迟长度	
0	156kbps	20CM以上	1200m	
1	625kbps		900m	
2	2.5Mbps		400m	
3	5Mbps		160m	
4	10Mbps		100m	

3.1.3 CCLINK wiring definition



3.2 PLC integration tutorial

3.2.1 Integration in Mitsubishi GX Works2 (CCLINK)

Here, you will see an example of how to integrate this module into Mitsubishi GXWORK2. Taking the CCLINK module of Mitsubishi L02CPU and 009D31 as an example, click GXWORK2 to create a new project:

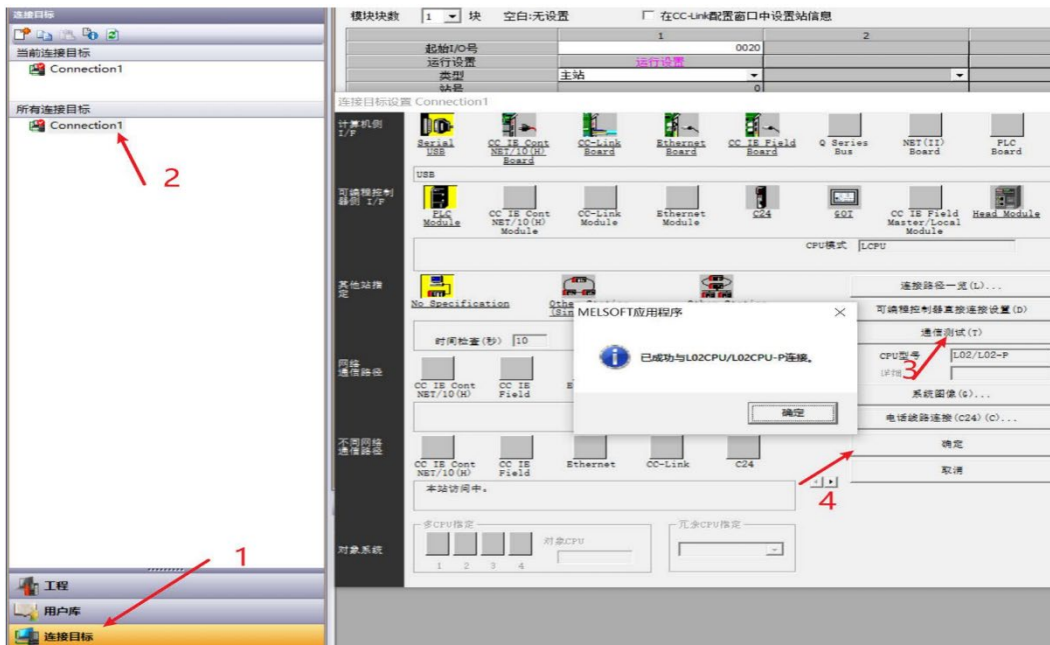
1. Click GXWORK2 to create a new project to add the PLC path.

The screenshot shows the '新建' (New) dialog box in Mitsubishi GX Works2. The fields are as follows:

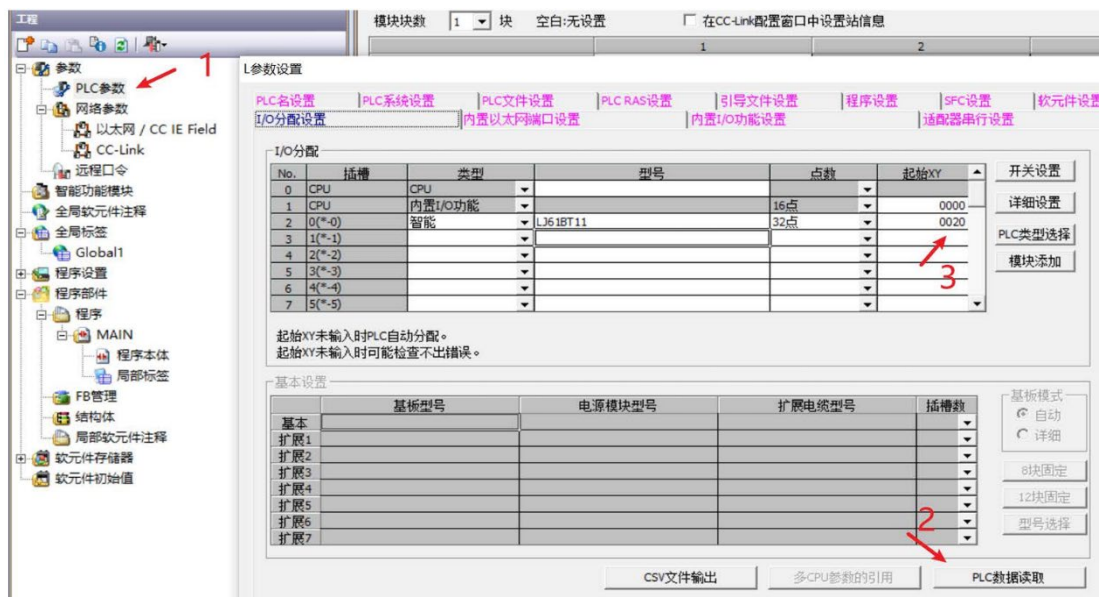
- 系列(S): L02CPU
- 机型(T): L02/L02-P
- 工程类型(P): 简单工程
- 程序语言(G): 梯形图
- 使用标签(L): ☐

The '确定' (OK) and '取消' (Cancel) buttons are at the bottom right.

Here, USB is used to directly connect to the PLC USB port. Click on the connection target, click on Connection1, select the USB driver, click on the communication test to show that the connection is successful, and finally click OK.

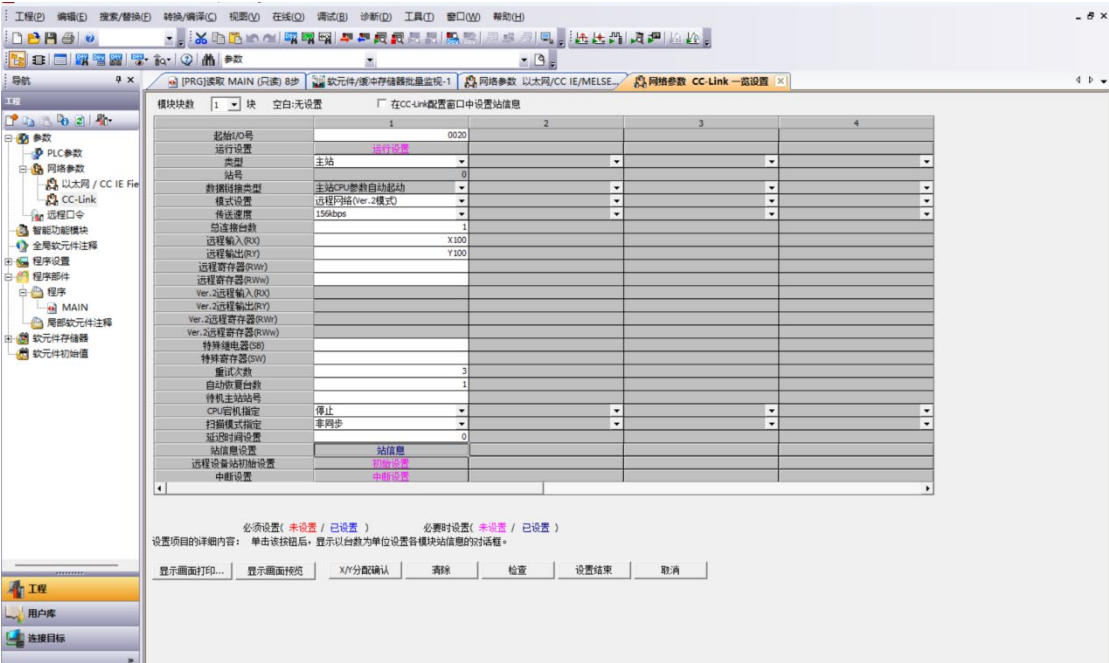


Click PLC parameters, click IO allocation, you can manually add the actual installed module, or read the module information through PLC data, and then assign the starting XY address



2. Configure CCLINK parameters

Click the network parameter CCLINK module number to select 1 block, enter the previously assigned starting address of the cclink module, here CCLINK is Ver.2 version, this time use 156kbps baud rate, corresponding to the B RATE dial code of 009D31, dial 0 when power off , then power on again, then configure the plc configuration, and fill in the address mapped to the PLC in turn.

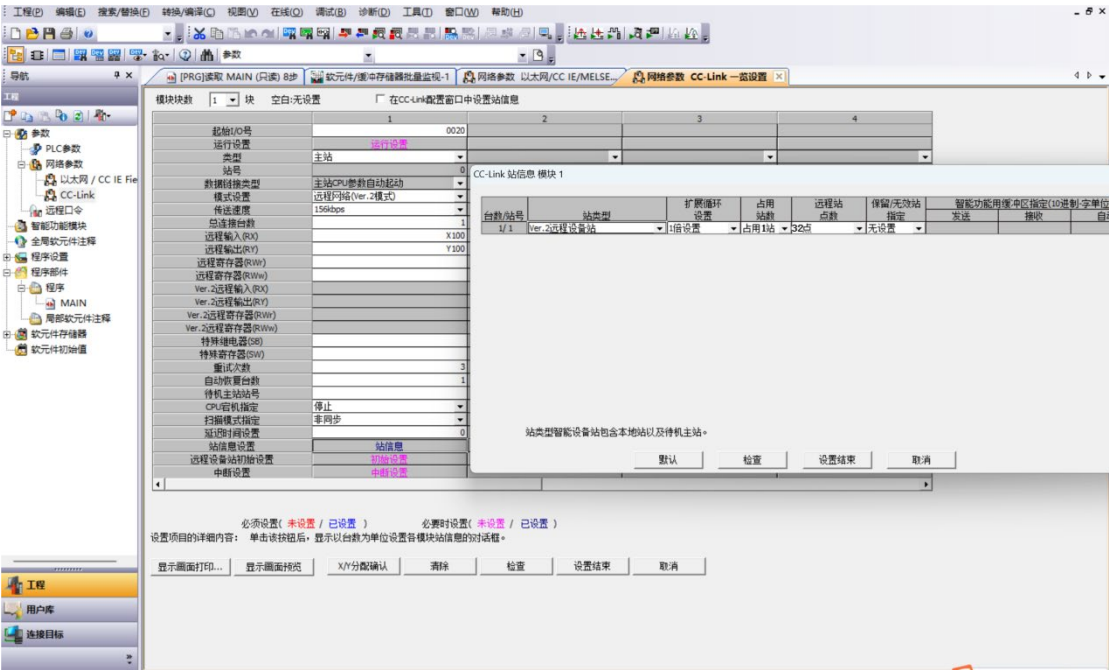


根据规格表里的控制规格和硬件设备单元所占点数（Bit位数量）进行设置
以下为CC-LINK V1.10/CC-LINK V2通讯的规格表，因为CC-LINK通讯迭代升级变强，V2的逻辑站还可以按倍数进行拓展控制规格容量

项目			规格					
			Ver.1.10	Ver.2.00 (V2)				
控制规格	最大链接点数	远程I/O (RX, RY)	各2048点	各8192点				
		远程寄存器 (RWr)	256字	2048字 (从站到主站)				
		远程寄存器 (RWw)	256字	2048字 (主站到从站)				
	扩展循环设置		-	1值设置	2值设置	4值设置	8值设置	
	每个单元的最大链接容量	占用1个逻辑站	RX, RY	各32点		各32点	各64点	各128点
			RWr, RWw	4字		各8字节	各16字节	各32字节
		占用2个站时	RX, RY	各64点		各96点	各192点	各384点
			RWr, RWw	8字		各16字节	各32字节	各64字节
		占用3个站时	RX, RY	各96点		各160点	各320点	各640点
			RWr, RWw	12字		各24字节	各48字节	各96字节
		占用4个站时	RX, RY	各128点		各224点	各448点	各896点
			RWr, RWw	16字		各32字节	各64字节	各128字节
	最大占用逻辑数		4站					
	通信速度		10M/5M/2.5M/625k/156kbps					
		CSDN @失枫508						
通信系统			广播-轮询方式					
同步系统			瞬时同步系统					
编码系统			NRZI					
传输路径格式			总线方式 (基于EIA RS485)					
传输格式			HDLC					
差错控制			CRC ($X^{16}+X^{12}+X^5+1$)					
最大连接单元数量			64个	最多可以连接64个设备				
从站数量			1-64					

3. Site information configuration

Click on the station information. This remote IO module 009D31 belongs to the Ver.2 version of the remote device station. The expansion cycle is doubled and occupies 32 points of one station.

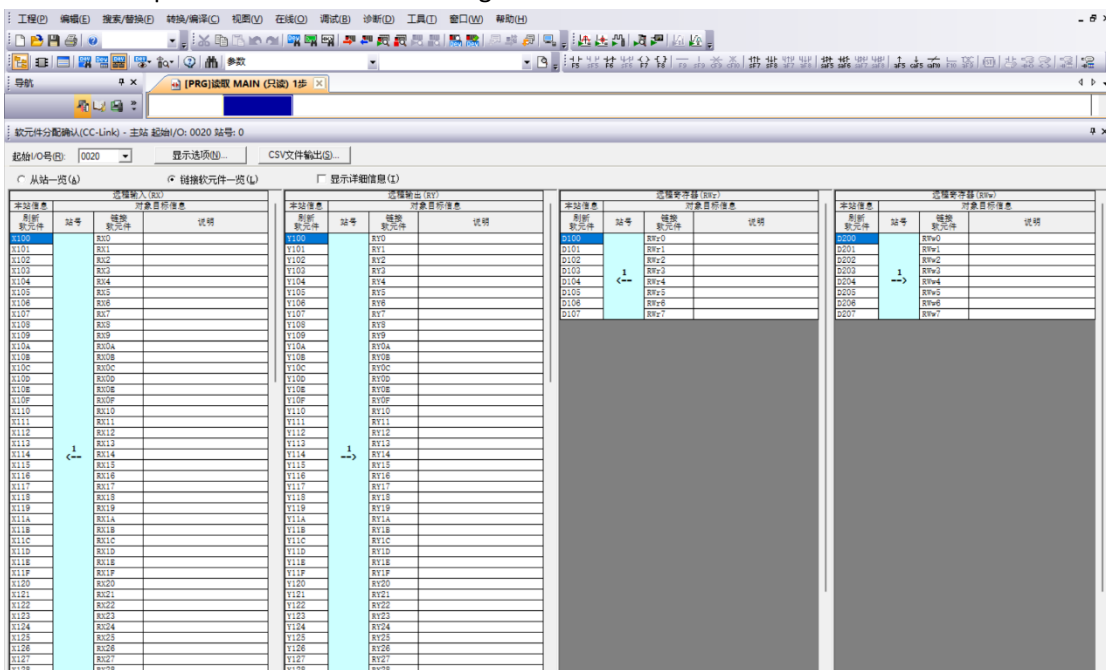


After the module parameters are configured, click Set to finish, otherwise the parameters may not be set successfully. After the parameter settings are completed, download them to the PLC.



4. Quick query of PLC mapping address

Click the PLC shortcut window and select the soft component allocation window. Here is the mapping address of CCLINK. Its input first address is a 32-bit signal from X100-X11F.



5. The corresponding input can be monitored by monitoring X100~X11F.

4 Appendix

4.1 Ordering Information

Product Order Code	Ordering code
FNI CCL-106-104-K54	009D31

■ High Quality Product / Sincere Service



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