

CC-Link **IE TSN**



QY20-CCT Coupler module User Manual

Preface

The QY20-CCT coupler module allows a CC-Link IE TSN slave device to connect to CC-Link IE TSN. Through this module, you can expand local QY20 series digital, analog, and temperature modules to be compatible with CC-Link IE TSN master devices.

This manual covers product information, installation, electrical setup, configuration, debugging, and troubleshooting. The illustrations are for explanation purposes and may differ slightly from the actual product. Due to product upgrades, there might also be slight differences, so please refer to the actual product.

Please keep this manual safe for future reference, inspections, or maintenance. If you have any questions, don't hesitate to contact us or our company representatives, and we'll be happy to help you.

- Version Change Log

Change Time	Release version	Change Notes
2025-7	V00	The manual was released for the first time

- Related info

Name	Number	Summary
QY20-CCT Coupler User Manual (This Manual)	QY20-CCT	Introducing product information, product installation, electrical installation, program debugging, and troubleshooting, etc.

Safety Precautions

● Safety Statement

This chapter explains the safety precautions you need to pay attention to when using this product correctly. Before using this product, please read the manual and properly understand the safety-related information. Failure to follow the safety precautions could result in death, serious injury, or equipment damage.

The 'Danger,' 'Warning,' and 'Caution' notes in the manual do not cover all the safety precautions that must be followed—they are only meant to supplement all safety measures.

This product should be used in an environment that meets the design specifications; otherwise, it may malfunction, and any functional issues or component damage caused by not following the regulations are not covered under the product warranty.

We are not legally responsible for any personal injury, safety incidents, or property damage resulting from not following this manual or operating the product improperly.

● Safety level definition



危险

Indicates that not following the rules could lead to death or serious injury。



警告

Indicates that not following the rules could lead to death or serious injury。



注意

Indicates that not following the rules could lead to death or serious injury。

● Safety Precautions

In the illustrations of the product in this manual, the product is sometimes shown with the cover or safety guard removed to display certain details. When using this product, be sure to properly attach the cover or guard as specified and follow the instructions in the manual. The product images in this manual are for reference only and may differ slightly from the product you ordered, so please refer to the actual product you received.

Unboxing and inspection



警告

● If you find the product or its accessories damaged, rusted, or showing signs of use when unboxing, do not install it!

- If you find water inside the product, missing parts, or damaged parts when unboxing, do not install it!
- Please carefully check the packing list. If you find that the packing list doesn't match the product name, don't install it!



注意

- Before unboxing, please check if the outer packaging of the device is intact and whether there are any damages, wet spots, moisture, or deformation.
- 1 Please open the package layer by layer, and avoid hitting it hard!
 - 1 When unboxing, please check the device and accessories for any damages, rust, or scratches.
 - 1 After unboxing, please carefully check the packing list and make sure all equipment, accessories, and documents are complete.

Storage and Transport



注意

- 1 Please make sure to store and transport the product according to its required conditions, otherwise there's a risk of damaging it.
- 1 Avoid storing and transporting in places where there's splashing water, direct sunlight, strong electric fields, strong magnetic fields, or intense vibrations.
- 1 Avoid storing the product for more than 3 months. If it needs to be stored longer, make sure to take extra precautions and do the necessary checks.
- 1 Please make sure to pack the products securely before transporting them by vehicle, and use a closed container for long-distance transport.
- 1 This product must not be transported together with equipment or items that may affect or damage this product.

Install



危险

- 1 Only qualified professionals with electrical training and knowledge are permitted to operate this equipment. Operation by unqualified personnel is strictly prohibited !



警告

- 1 Please read the product instruction manual and safety precautions carefully before installation!
- 1 Do not install this product in locations with strong electric fields or strong electromagnetic interference!

1 Before installation, ensure that the mechanical strength of the installation location is sufficient to support the weight of the equipment; otherwise, it may lead to mechanical hazards.

1 Do not wear loose clothing or jewelry while performing installation work, as this may pose a risk of electric shock!

1 When installing the product in an enclosed environment (such as a cabinet or chassis), please use a cooling device (such as a cooling fan or air conditioner) to cool it thoroughly to meet the requirements of the installation environment; otherwise, it may cause the product to overheat or catch fire.

1 Modification of this product is strictly prohibited!

1 It is strictly forbidden to loosen the fixing bolts of product parts and components, or the bolts marked in red !

1 When this product is installed in a cabinet or terminal equipment, the cabinet or terminal equipment must be provided with appropriate fireproof enclosures, electrical protective enclosures, and mechanical protective enclosures, and the protection level should meet relevant standards. EC standards and local laws and regulations are required.

1 When installing equipment that is subject to strong electromagnetic interference, such as transformers, please install shielding protection devices to prevent this product from malfunctioning!

1 Please install the product on flame-retardant objects such as metal. Do not allow flammable materials to come into contact with the product or attach flammable materials to the product , otherwise there may be a risk of fire.



注意

1 During installation, please cover the top of the product with a cloth or paper to prevent metal shavings, oil, water, or other foreign objects from entering the product and causing malfunction. After installation, please remove the cover to prevent it from blocking the ventilation holes and affecting heat dissipation, which could lead to abnormal overheating of the product.

1 Resonance may occur when a machine that operates at a constant speed is subjected to variable speed operation . In this case, installing anti-vibration rubber under the motor frame or using vibration damping functions can effectively reduce resonance.

wiring



危险

1 Non-professionals are strictly prohibited from installing, wiring, maintaining, inspecting, or replacing parts of the equipment!

1 Before wiring, please disconnect the power supply to all devices. After disconnecting the power, residual voltage may remain in the internal capacitors of the devices . Please wait at least the time specified on the warning label on the product before performing any wiring operations. Measure the DC voltage of the main circuit to ensure it is below a safe voltage; otherwise, there is a risk of electric shock.

1 Do not perform wiring work, remove product covers, or touch circuit boards with the power off, otherwise there is a risk of electric shock .

1 Please ensure that the equipment and products are properly grounded, otherwise there is a risk of electric shock.



警告

1 It is strictly forbidden to connect the input power supply to the output terminal of the equipment or product, otherwise it will cause damage to the equipment or even cause a fire.

1 When connecting the drive device to the motor, please ensure that the phase sequence of the product and the motor terminals is accurate and consistent to avoid causing the motor to rotate in the opposite direction.

1 The cables used in wiring must meet the corresponding requirements for wire diameter and shielding. The shielding layer of shielded cables must be reliably grounded at one end!

1 Please tighten the terminal screws according to the tightening torque specified in the manual. Insufficient or excessive tightening torque may cause the connection to overheat, be damaged, or cause a fire hazard.

1 After wiring is complete, please ensure that all cables are connected correctly and that there are no loose screws, washers or exposed cables inside the product, otherwise there may be a risk of electric shock or damage to the product.



注意

1 Please follow the procedures outlined in the Electrostatic Discharge (ESD) Prevention Measures and wear an anti-static wrist strap when performing wiring operations to avoid damaging the internal circuitry of the equipment or product.

1 When wiring the control circuit, please use a twisted shielded cable and connect the shield to the grounding terminal of the product for grounding; otherwise, the product may malfunction.



危险

1 Before powering on, please ensure that the product is properly installed, the wiring is secure, and the motor is ready to restart .

1 Before powering on, please ensure that the power supply meets the product requirements to avoid product damage or fire !

1 It is strictly forbidden to open the product cabinet door or product protective cover, touch any wiring terminals of the product, or disassemble any device or component of the product while it is powered on , otherwise there is a risk of electric shock!



警告

1 After the wiring and parameter settings are completed, please conduct a trial run of the machine to confirm that it can operate safely; otherwise, it may cause personal injury or equipment damage.

1 Before powering on, ensure that the product's rated voltage matches the power supply voltage. Using an incorrect power supply voltage may cause a fire.

1 Before powering on, ensure that there are no people around the product, motor, and machinery, otherwise it may result in injury or death.

run



危險

1 Non-professionals are strictly prohibited from operating the product, as this could result in injury or death!

1 It is strictly forbidden to touch any terminals of the equipment, disassemble any device or component of the equipment or product while it is running , otherwise there is a risk of electric shock!



警告

1 Do not touch the equipment casing, fan, or resistors to test the temperature, as this may cause burns!

1 During equipment operation, prevent other items or metal objects from falling into the equipment, otherwise it may cause a fire or damage to the product!

repair



危险

1 Non-professionals are strictly prohibited from installing, wiring, maintaining, inspecting, or replacing parts of the equipment!

1 It is strictly forbidden to perform equipment maintenance while the power is on, otherwise there is a risk of electric shock!

1 After disconnecting the power to all devices, please wait at least the time specified on the warning label on the product before performing any equipment inspections , repairs, or other operations.



警告

1 Please report the equipment for repair in accordance with the product warranty agreement.

1 When a fuse blows, a circuit breaker trips, or an ELCB trips, please wait at least the time specified on the warning label on the product before turning on the power or operating the machine . Otherwise, it may result in personal injury or equipment damage.

1 When equipment malfunctions or is damaged, it is essential that professional personnel troubleshoot and repair the equipment and products in accordance with the maintenance guidelines, and keep proper maintenance records.

1 Please follow the product's consumable parts replacement instructions for replacement.

1 Do not continue to use the damaged machine, as this may cause personal injury or further damage to the product .

1 After replacing the equipment, please be sure to check the equipment wiring and re-set the parameters.

Table of Contents

1. Product Information	1
1.1 System Power Supply 5V bus current consumption calculation	1
1.2 Auxiliary Power Supply Calculation of current consumption on 24V bus ..	3
1.4 Technical Specifications	6
1.4.1. Basic Specifications	6
1.4.2 Power specifications	6
1.4.3 Interface Specifications	6
1.5 Module Channel and Software Component Correspondence Table	7
1.5.1 Overview	7
1.5.2 Assignment of Linked Soft Components	8
2. Product Installation	9
2.1 Installation Environment Requirements	9
2.2 Installation Dimensions	9
2.3 Installation Precautions	11
2.4 Installation Method	11
3. Electrical installation	15
3.1 Cable Selection	15
3.1.1 Connect the power supply and ground wire	15
3.1.2 Connection CC-Link IE TSN Network	15
3.1.3 External Interface Specifications	15
3.2 Terminal wiring	16
4. Program debugging	17
4.1 GX Works3 Environment	17
5. Fault Diagnosis	30
appendix	31
Related Product Model Ordering Index	31

1. Product Information

1.1 System Power Supply 5V bus current consumption calculation

This module supports a maximum of 32 QY20 series expansion modules (hereinafter referred to as expansion modules), if they exist QY20-PS Relay Power Module (hereinafter referred to as...) QY 20- PS (Modules), the actual number of supported extension modules needs to be determined based on... Calculation of total current consumption of the 5V bus.

When the number of extension modules exceeds 16 or more expansion modules The 5V bus consumes more current than this module. 5V bus power supply current value For 2A, it is necessary to add The QY20-PS module provides power to other subsequent expansion modules.

Extended Module The formula for calculating the total current consumption of the 5V bus is as follows:

Extended Module 5V bus total current consumption = expansion module 1 bus 5V current consumption + expansion module 2 -bus 5V consumes current + ... + Extension Modulen bus 5V consumes current

It does not increase QY20-PS module

Extended Module The total current consumed by the 5V bus must be less than or equal to the bus power supply current of this module. 2A That is, extension module 1 + extension module 2 + ... + Extension modules $n \leq 2A$; and the number of extension modules is the largest. 16.

example : QY20-4AD mold piece 5V total Wire remove Consumption electricity flow 250mA, Book mold piece most big Can by Expand $2A / 250mA = 8$ QY20-4AD module; QY20-0016P module bus 5V consumes current of 80mA This module can be expanded to a maximum of 16 QY20-0016P $80mA \times 16 = 1280mA \leq 2A$.

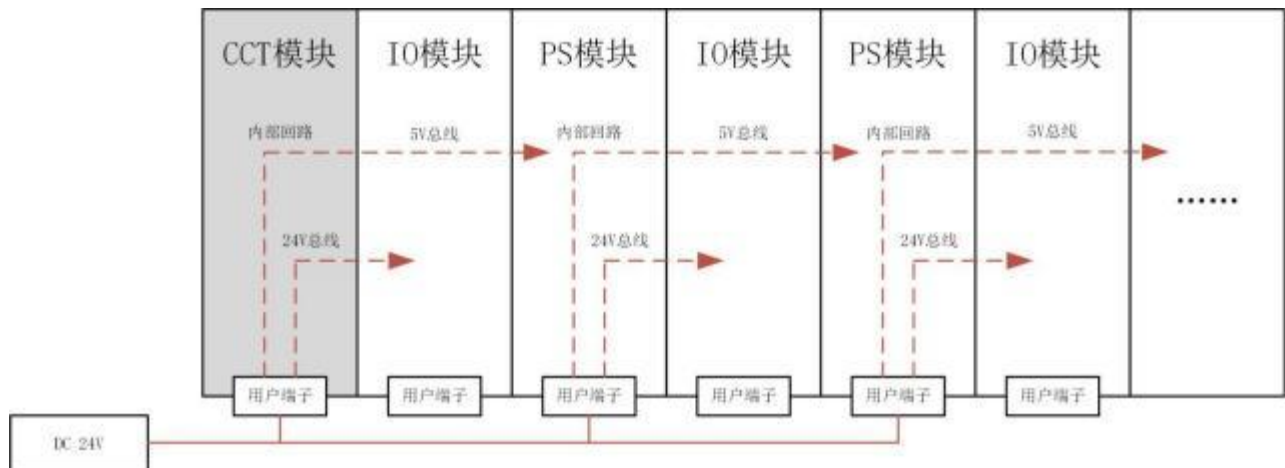
It increases QY20-PS module

The total current consumption of the expansion modules directly powered by this module is greater than the bus power supply current of this module. 2A or more expansion modules When there are 16, any additional expansion modules will be added by The QY20-PS module provides power. The number of expansion modules supported by the QY20 -PS module is determined by the number of expansion modules. The total current consumption of the 5V bus is determined by the calculation rules, which are the same as those for this module. It should be noted that this module or QY 20- PS... The module after 1 QY 20- PS Module The current consumed by the 5V bus needs to be calculated within the total power supply current of its power supply module.

Assuming this module has been expanded 8 QY20-4AD module or 16 When adding new expansion modules to the QY20-0016P module, you need to add... The QY20-PS module power supply needs to be reduced by at least [amount missing]. 1 QY20-4AD module or 1 QY20- The 0016P module has a reserved bus power supply current margin for this module. QY20-PS module is powered by bus.

QY20-PS module is 55mA The bus power supply current is 2A .by 1 unit of this module (2A power supply) + 7 units QY 20-4 AD Modules / 15 QY 20-0016P module + 1 QY 20- PS Module (2A) Power supply) +8 QY20-4AD modules / 16 Taking the QY20-0016P module as an example, it can carry... 15 QY20-4AD module ($15 \times 250\text{mA} = 3750\text{mA}$) / 31 QY20-0016P module ($31 \times 80\text{mA} = 2480\text{mA}$).

The power supply diagram for this module is shown below.



1.2 Auxiliary Power Supply Calculation of current consumption on 24V bus

This module supports a maximum of 32 QY20 series expansion modules (hereinafter referred to as expansion modules), if they exist QY20-PS Relay Power Module (hereinafter referred to as...) QY 20- PS (Modules), the actual number of supported extension modules needs to be determined based on... Calculation of total current consumption of the 24V bus.

When the number of extension modules exceeds The total current consumed by the 24V bus of 16 or more expansion modules exceeds the bus supply current of this module. At 4A, it is necessary to add The QY20-PS module provides power to other subsequent expansion modules.

Pay special attention to the extended modules PNP The output load current is drawn from the auxiliary power supply. The auxiliary power supply 24V bus consumes the same amount of current as all expansion modules. The current consumption of the 24V itself + the load current consumption of the PNP output.

The formula for calculating the total current consumption of the expansion module bus is as follows:

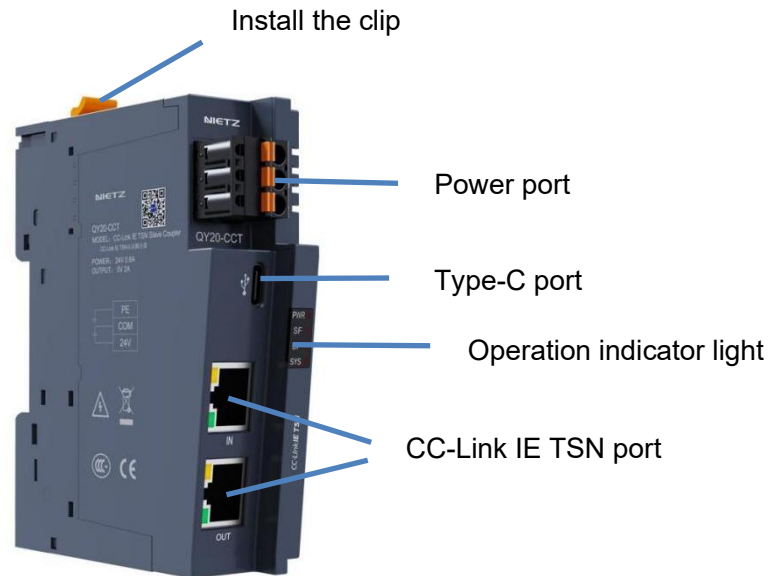
Extended Module 24V bus total current consumption = expansion module 1 bus 24V current consumption + expansion module 2 -bus 24V current consumption + ... + Extension Module n bus 24V current consumption + expansion module 1 (PNP) Output : Sum of load currents at all points + expansion module 2 (PNP) Output) Sum of load currents at all points + ... + Extension Module n (PNP) Output: Sum of load currents at all points

1 does not increase QY20-PS module

Extended Module The total current consumed by the 24V bus must be less than or equal to the bus power supply current of this module. 4A That is, extension module 1+ + Extension Module n+ All PNP output load current $\leq 4A$; and maximum number of expansion modules. 16 .

example QY 20-4 AD Module 24V The bus consumes current as 30 mA This module can be expanded to a maximum of 16 . QY 20-4 AD Module; QY 20-0016P module The 24V bus consumes current of 0 mA ,but PNP The output point needs to consume current, if 16 points per point 100mA, Requires consumption 1.6A, this module can be expanded to a maximum of 2 QY20- 0016P , $1.6A \times 2 = 3.2A \leq 4A$.

1.3 Component Description



	name	logo	definition	Component Description
1	Install clips	/	/	Pressing down indicates the open state, and lifting up indicates the locked state.
2	Power interface	PE	Functionally	
		COM	0V	
		24V	24V DC power input	
3	Type -C interface			Couplers and extensionsIO Module program upgrade
4	Signal indicator	PWR	Power indicator light	Chang Liang:Power supply is normal Extinguish:Power supply not working or abnormal power supply
		SF	Status indicator lights	Off: The slave device is in the initialization state. Slow flash (bright)200 ms, annihilation200 ms): The slave device is in the device startup state. Changliang: The slave device is in operation.
		BF	Operation indicator light	Slow flash (bright)200 ms, annihilation200 ms): CC - Link IE TSN communication is normal Turn off: CC - Link IE TSN Communication disconnection
		SYS	System communication indicator light	Off: Coupler and module connection is normal Slow flash (bright)200 ms, annihilation200 ms): Module-free communication Constantly lit: Coupler and module connection error (master station configuration does not match slave station actual configuration) Flash (bright)50 ms, annihilation50 ms): ModuleIO Communication error
5	CC-Link IE TSN interface	IN	CC - Link IE TSN Input Interface	connect CC - Link IE TSN Main station or preceding slave station
		OUT	CC - Link IE TSN Output interface	Connect to the next stage CC - Link IE TSN From the station

1.4 Technical Specifications

1.4.1. Basic Specifications

project	Specification
IP grade	IP 20
Dimensions (width × height × depth)	24 mm * 100 mm * 75 mm
weight	about 78g

1.4.2 Power specifications

project	Specification
Terminal input power supply rated voltage	24 V DC (20.4 V) DC ~ 28.8 V DC)
Terminal input power supply rated current	100 mA (typical at 24V)
Bus output power supply rated voltage	5V DC (4.75 V) DC ~ 5.25 V DC)
Bus output power supply rated current	2A (typical value at 5V)
Power output derating	At temperature When operating at 45°C under full load (output current not exceeding...), 2 A), in Load derating at 55 °C 85% (output current not exceeding) 1.7A)
isolation	isolation
Power protection	Overcurrent protection, reverse connection protection, surge absorption

1.4.3 Interface Specifications

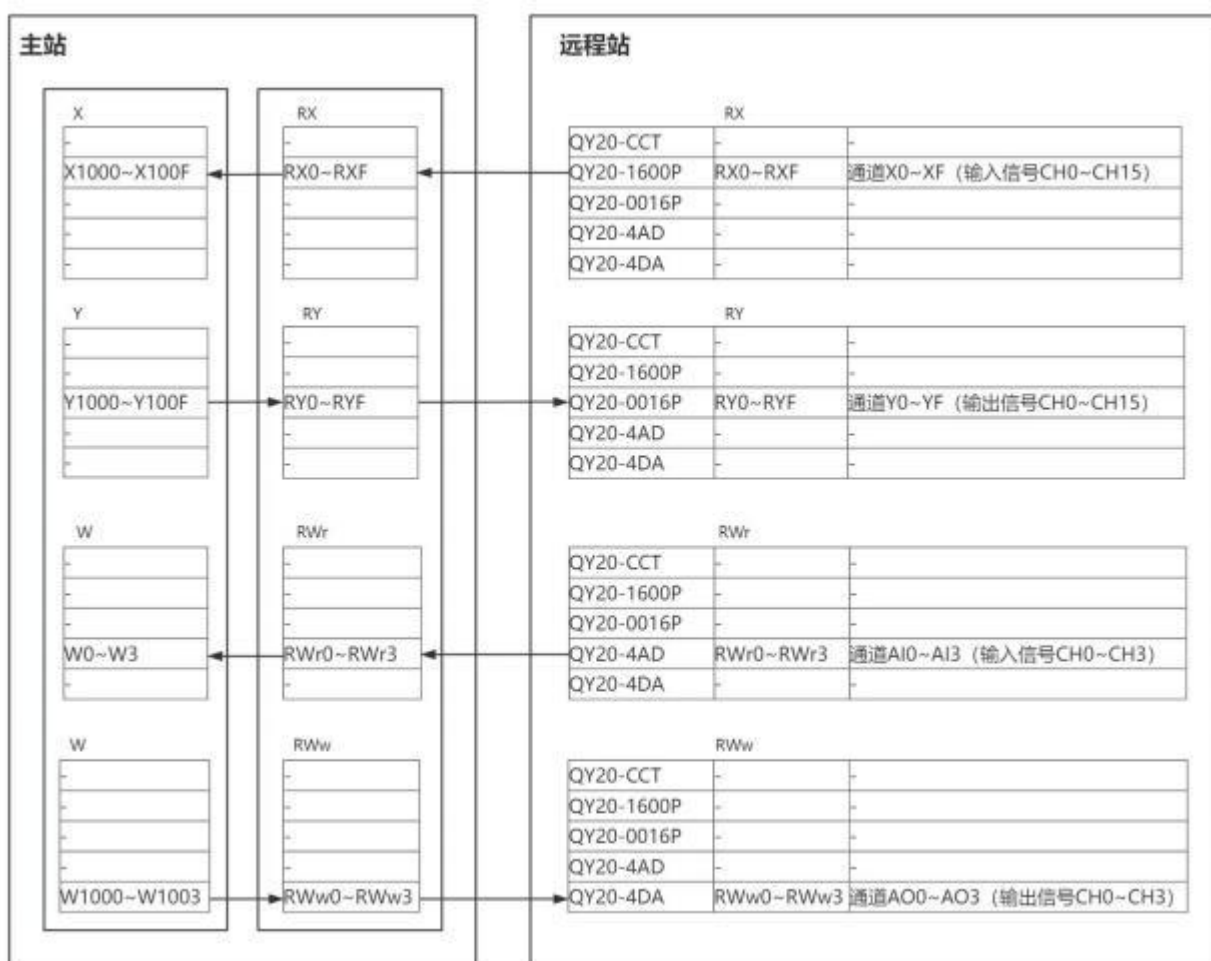
project	Specification
RX Data volume	maximum 1024 Bits, default 1024 Bits
RY Data volume	maximum 1024 Bits, default 1024 Bits
RWr Data volume	maximum 128 Bytes, default 128 Bytes
RWr Data volume	maximum 128 Bytes, default 128 Bytes
Number of stations	Depends on the main site
Transmission rate	100 Mbps (100 BASE - TX)/1 Gbps (1000 BASE -T)
transmission medium	Category 5 and above
Transmission distance	The distance between the two nodes is less than 100 meters
CC - Link IE TSN Number of interfaces	2
No configuration required when replacing equipment	Support (same type) CC - Link IE TSN (module)
Module factory reset	Not supported

1.5 Module Channel and Software Component Correspondence Table

1.5.1 Overview

Module type	Classification	Signal transmission direction	soft components No.	name
QY 20- 1600P	Digital input	Input module → Main site	RX 0~ RXF	aisleX0~ XF (Input signal) CH 0~ CH 15)
QY 20-0016P	Digital output	Main station → Output module	RY 0~ RYF	aisleY0~ YF (output signal) CH 0~ CH 15)
QY 20-4 AD	Analog input	Input Module → Main Site	RWr 0~ RWr 3	aisleAI 0~ AI 3 (Input signal) CH 0~ CH 3)
QY 20-4 DA	Analog output	Main station → Output module	RWw 0~ RWw 3	aisleAO 0~ AO 3 (output signal) CH 0~ CH 3)

1.5.2 Assignment of Linked Soft Components



2. Product Installation

2.1 Installation Environment Requirements

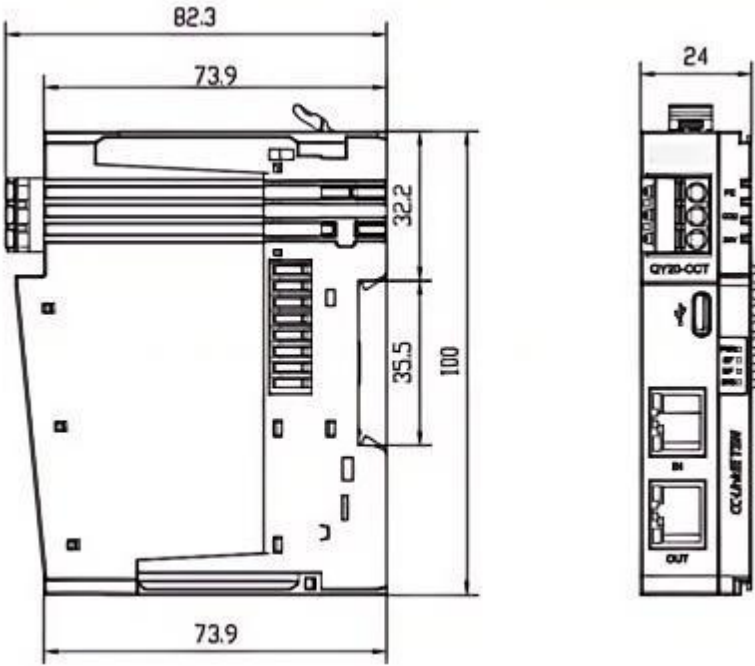
When installing the coupler onto the guide rail, operability, maintainability, and environmental resistance should be fully considered .

project	Specification
Usage Environment	there are no corrosive or flammable gases and the conductive dust (dust) is not severe .
altitude	≤2000m
Pollution level	2 class
immunity	power cord 2 kV (IEC 61000-4-4)
Overvoltage category	I
EMC Anti-interference level	Zone B IEC 61131-2
Vibration resistance	according to IEC 60068-2-6. Passed sinusoidal vibration test, 5 Hz ~ 8.4 Hz The amplitude is 3.5 mm 8.4 Hz ~ 200 Hz The acceleration is 1g ; X/Y/Z triaxial, each axis 10 cycles according to IEC 60068-2-64 meets the requirements for random vibration testing, 5 Hz ~ 100 Hz., 0.01g ² / Hz ; 200 Hz , 0.001g ² / Hz Grms for 1.14g X /Y/Z three axes, each axis 30 min
Impact resistance	according to It passed the impact test according to IEC 60068-2-27 , with peak acceleration... 15g pulse width 11 ms Six directions : ±X/Y/Z , 3 times / direction, total 18 times
Storage temperature	Storage temperature : -40 °C ~ 70 °C Relative humidity : < 90% RH No condensation
Operating temperature	Operating temperature: -20 °C ~ 55 °C Relative humidity: 10% RH ~ 90% RH No condensation Note: When the operating temperature exceeds the maximum temperature, be sure to install a forced fan or air conditioner in the direction of the ventilation holes.

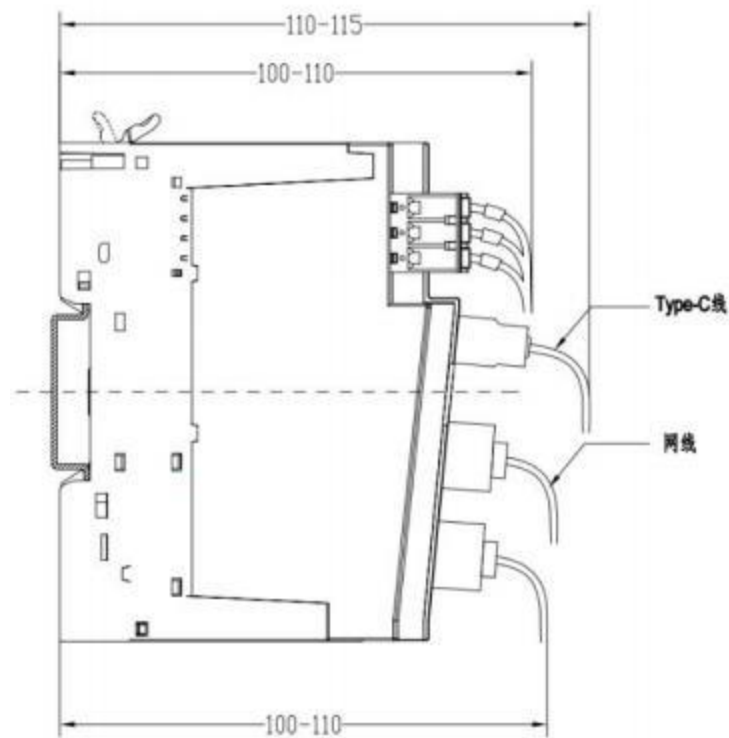
2.2 Installation Dimensions

● Module

The installation dimensions are shown in the figure below, in millimeters (mm).



- Connecting cables



2.3 Installation Precautions

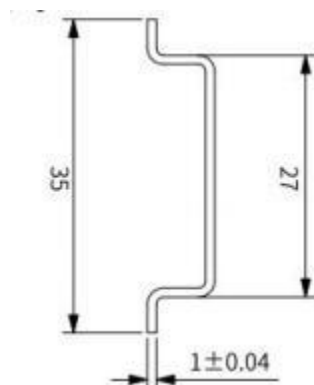
Before installing or removing the module, ensure that the module is powered off.

Never hot-swap modules. Hot-swapping modules poses a risk of overcurrent and overvoltage surges, potentially damaging them. This also applies to communication interface modules or... The PLC host may cause restarts, loss or corruption of user data, etc.

Do not allow the module's casing or terminals to fall or be subjected to impact, to avoid damage to the module.

2.4 Installation Method

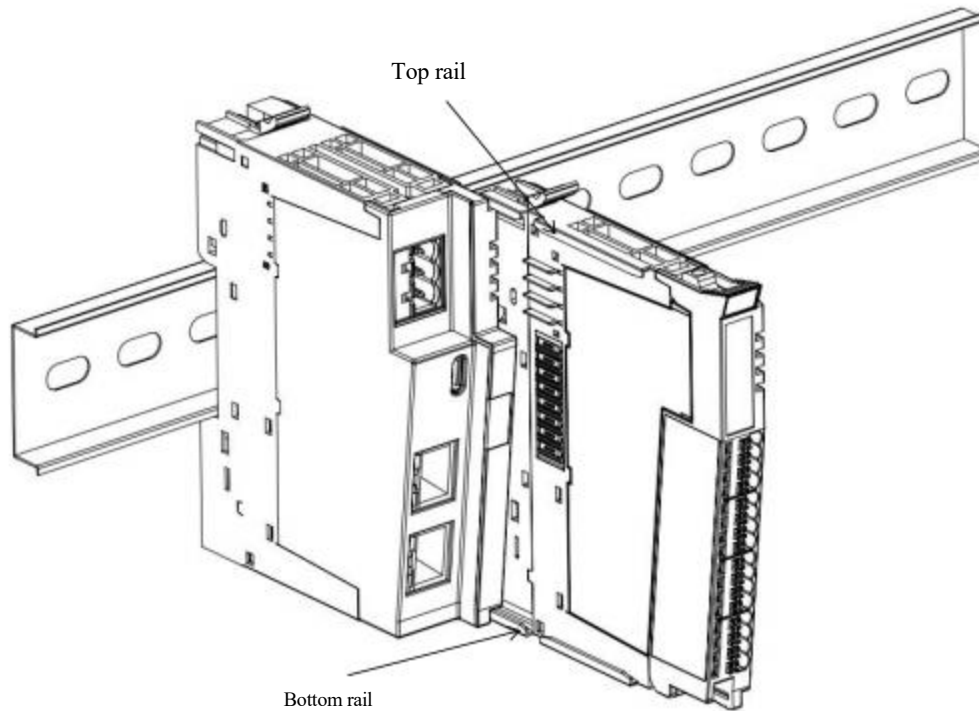
The module is mounted using a DIN rail, and the DIN rail must conform to... The IEC 60715 standard (35mm wide, 1mm thick) has the following dimensions, as shown in the figure below. The unit is millimeters (mm).



If this product is installed on a DIN rail other than the recommended ones (especially if the DIN rail thickness isn't 1.0mm), it can cause the DIN rail clip to fail, making it impossible to properly mount the product and causing it to not work correctly.

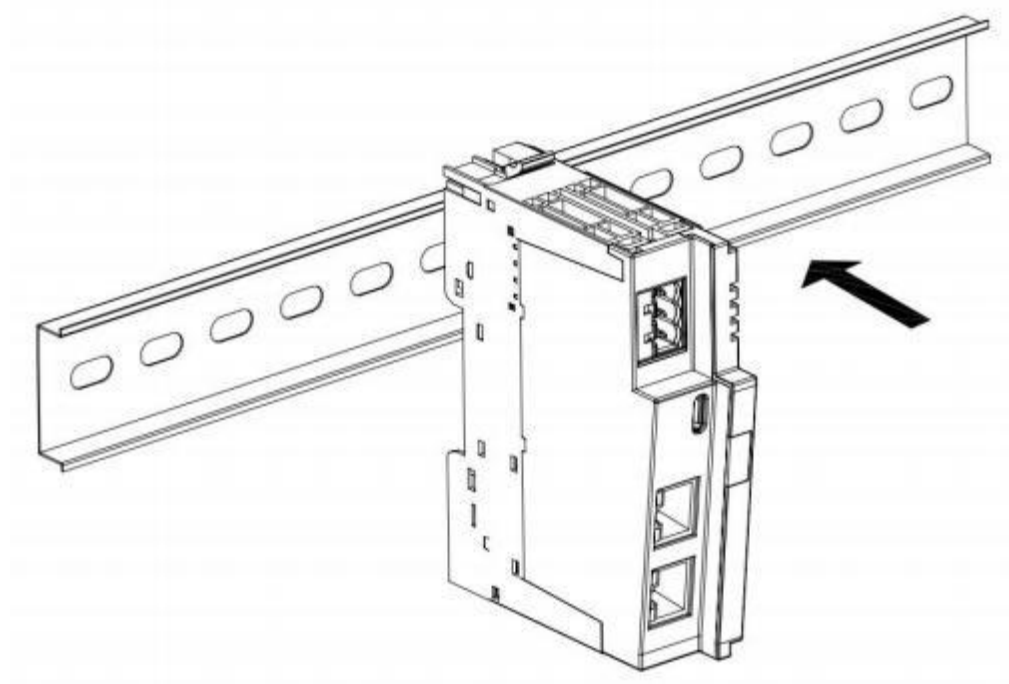
between modules

The IO modules are assembled by sliding them together using the top and bottom rails, as shown in the figure below.

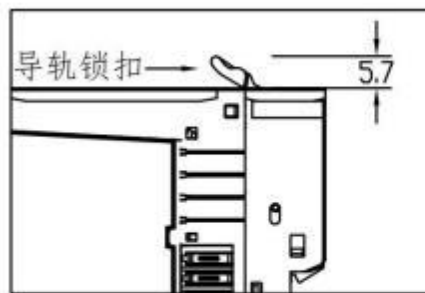


The module is mounted on the guide rail.

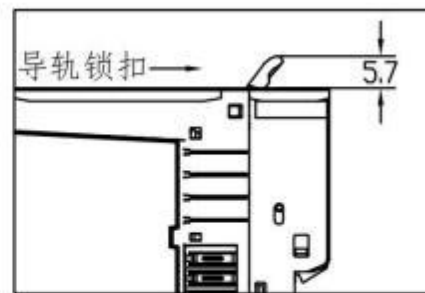
1. Align the module during installation. DIN rail, press the module in the direction of the arrow.



2. After installation, move the latch in the opposite direction of the arrow to lock it in place. Confirm the module's... The DIN rail latch is in the locked state. The locked and unlocked states of the rail latch are shown in the figure below.



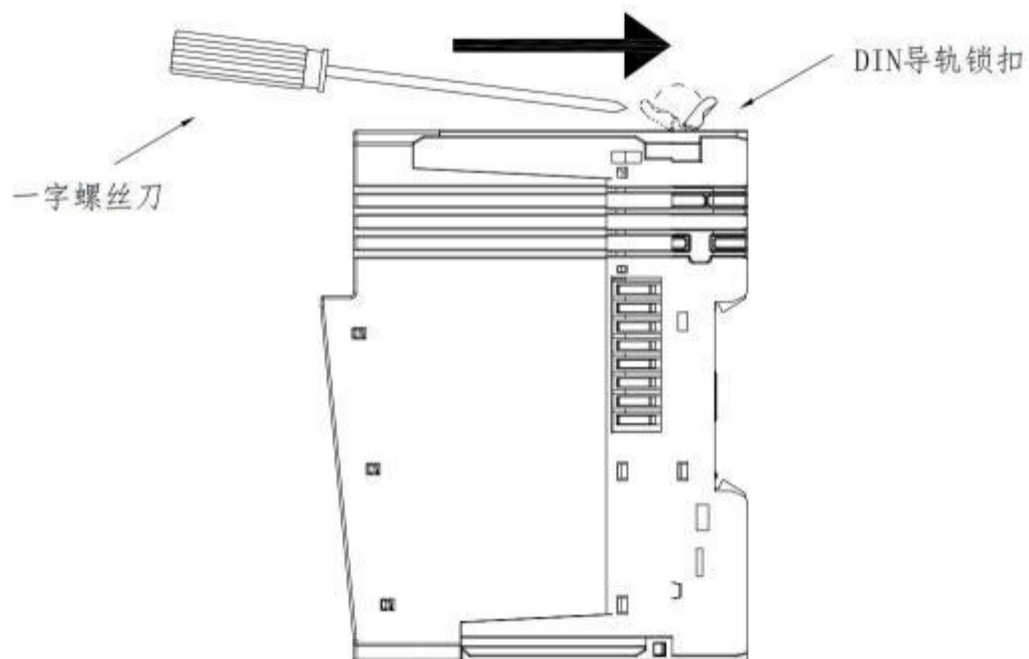
锁定状态



解锁状态

1 Disassembly

Use a flathead screwdriver or similar tool to pry the rail latch in the direction of the arrow and pull the module straight forward, as shown in the picture below.



3. Electrical installation

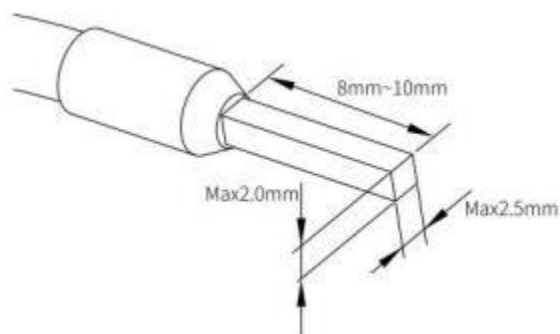
3.1 Cable Selection

3.1.1 Connect the power supply and ground wire

The wire diameter of the power terminal cable is referenced in the table below. It can be reasonably calculated and adjusted according to actual use.

Supporting material name	Compatible wire diameter	
	National Standard / mm ²	American Standard (AWG)
tubular wire lug	0.3	twenty two
	0.5	20
	0.75	18
	1.0	18
	1.5	16

If using other tubular lugs, crimp them onto the stranded wire, with the shape and size requirements shown in the diagram below.



3.1.2 Connection CC-Link IE TSN Network

CC-Link IE TSN bus communication uses shielded network cables for network data transmission, eliminating short circuits, misalignments, and poor connections; the length of the cable between devices cannot exceed [a certain limit]. 100m Exceeding this length will cause signal attenuation and affect normal communication . We recommend using network cables of the following specifications.

project	Specification
Cable type	Flexible crossover cable, S- FTP Category 5 cable
Meets standards	EIA / TIA 568A EN 50173 ISO / IEC 11801 EIA / TI A bulletin TSBEIA / TIA SB 40- A& TSB 36
conductor cross-section	AWG 26
Wire type	Twisted pair
Line Pair	4

3.1.3 External Interface Specifications

Port type	Interface Name	Cable type / maximum length	Function definition	User Terminal	Performance indicators
CC-Link IE TSN interface	CC-Link IE TSN	Shielded network cable, 100 meters	CC-Link IE TSN communication interface	RJ 45 Network ports *2	100 Mbps (100 Base - TX)

power supply	24V input	3- core unshielded cable, 20 meters	24V Power input	3 PIN Pluggable terminals	24V/1A
--------------	-----------	-------------------------------------	-----------------	---------------------------	--------

3.2 Terminal wiring

The power terminal wiring diagram is shown below .

4. Program debugging

4.1 GX Works3 Environment

1. New construction projects

a. start up GX Works3 Select "Project (P)" from the menu bar. → "New (N)" In the pop-up window, select the series (S) and model (T) you are using . Then select the programming language you want to use and click "OK". "



b. Ensure the computer and CPU are working properly. Inter-module communication USB
Alternatively, after connecting the Ethernet cable, select "Online" in the menu bar. " → "Current connection target (N)" In the pop-up window, select " Direct CPU Module Connection Settings (D) ". "Choose and" CPU

Methods for direct module connection.



c. After setting up After connecting the CPU module directly, click "Communication Test".

After confirming that the computer and CPU are communicating normally, click "OK".



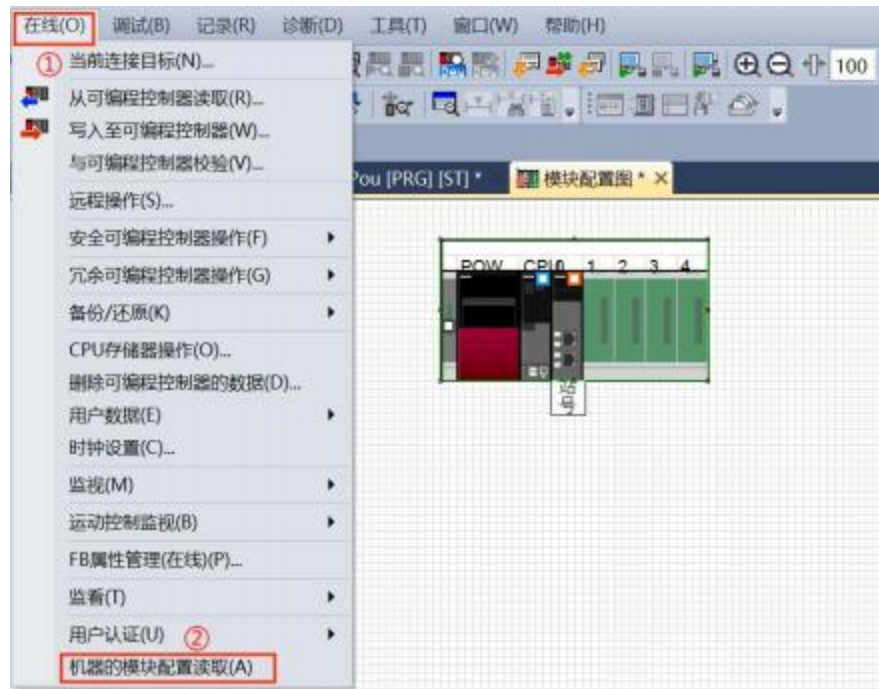
d. In "CPU memory operations" Select "Data Storage" Click "Initialize". Then select "File Storage Area". Click "Initialize". After initialization is complete, click "Close".



2. Create module configuration

u Automatic mode

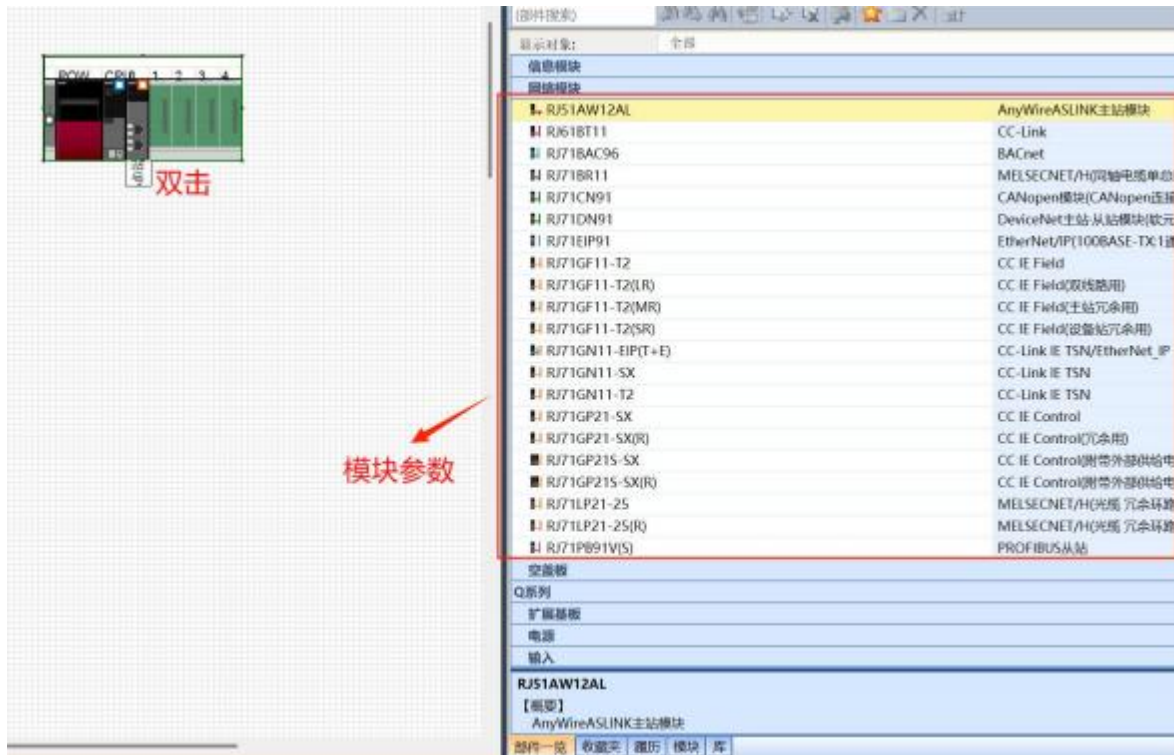
- a. By clicking "Online" in the menu bar → Read the machine's module configuration "" can read the configuration of connected modules.



u Manual mode

- a. Select the substrate you are using from the component selection view and drag it into the module configuration diagram.
- b. Drag the remaining modules (power module, CPU module, master station module, etc.) to the corresponding positions on the baseboard.

c. Double-clicking



a module allows you to view its parameter configuration

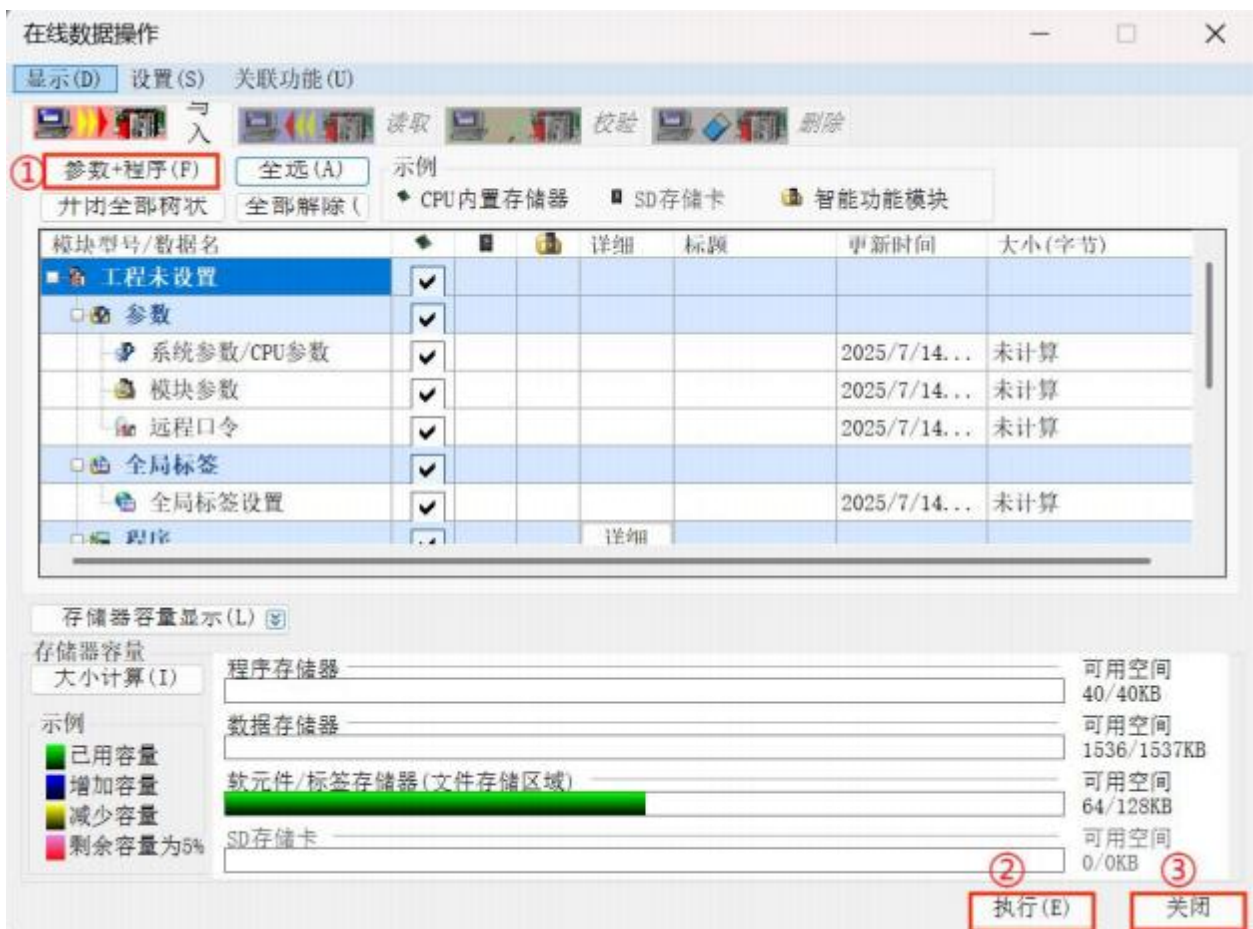
d. After setting up, click "Apply". Click the "Close" button to close the parameter editor.

3. Program conversion and writing configuration parameters

a. After writing the program, you need to select "Convert (B)" from the menu bar. "or Convert all (R)" .



b. Access it via the "Online" menu.→ Write to programmable controller"Online Data Operations" In the menu, select the parameters you want to write and click "Execute". Click the "Close" button. Once the writing is complete, click "Close". "Button".



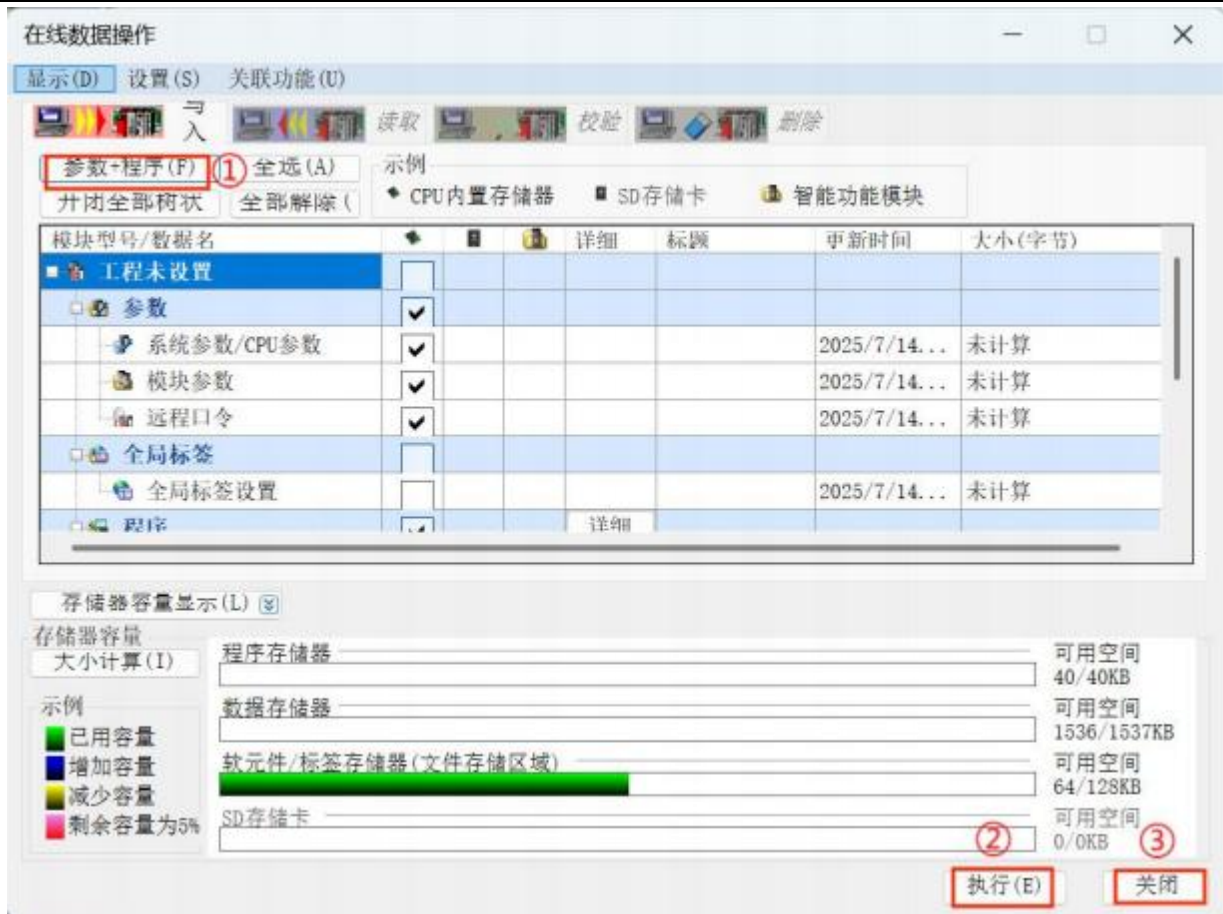
4. GX Works3 System Configuration Example

a. Select Parameters → Module Information → RJ71GN11-T2 in the navigation view. In the pop-up window, select "Required Settings". → "Site Type Settings" "Site Type" Set as "Main Site" Select " Required " → " Network number setting

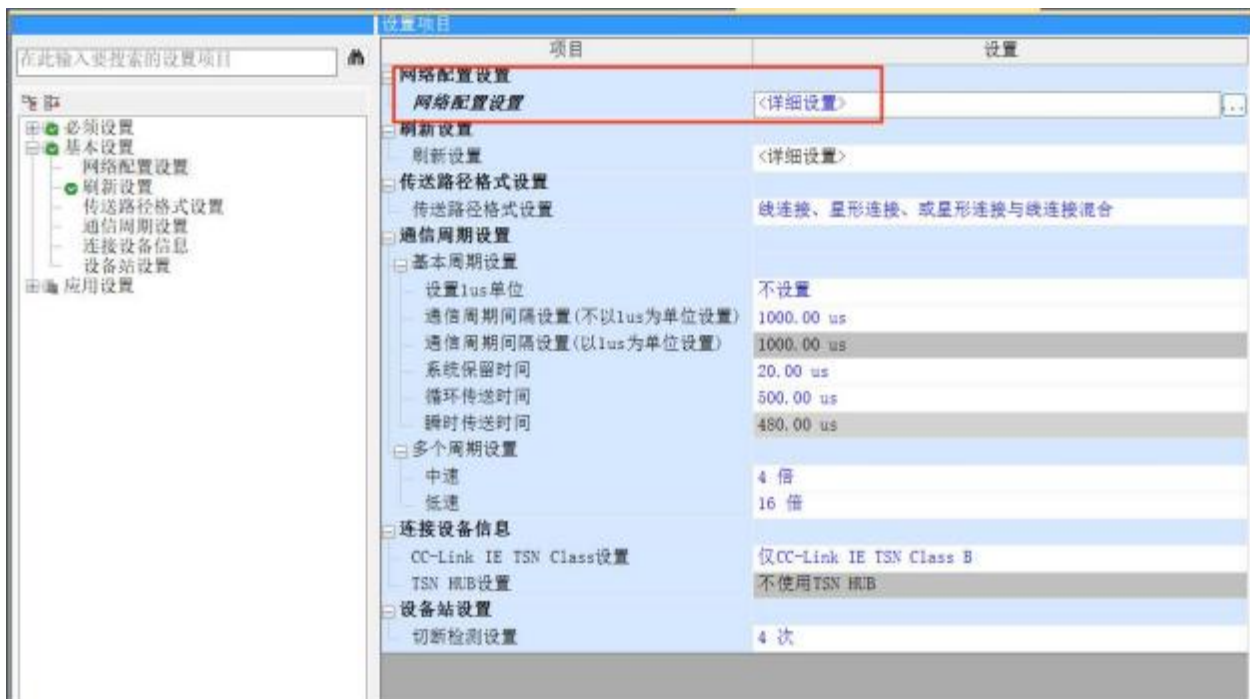
Place , set the network number; select "Required" → "Station Number /IP Address Settings " → IP address settings ", set up The IP address of the RJ71GN11-T2 module "and subnet mask" After setting up , click "Apply". "



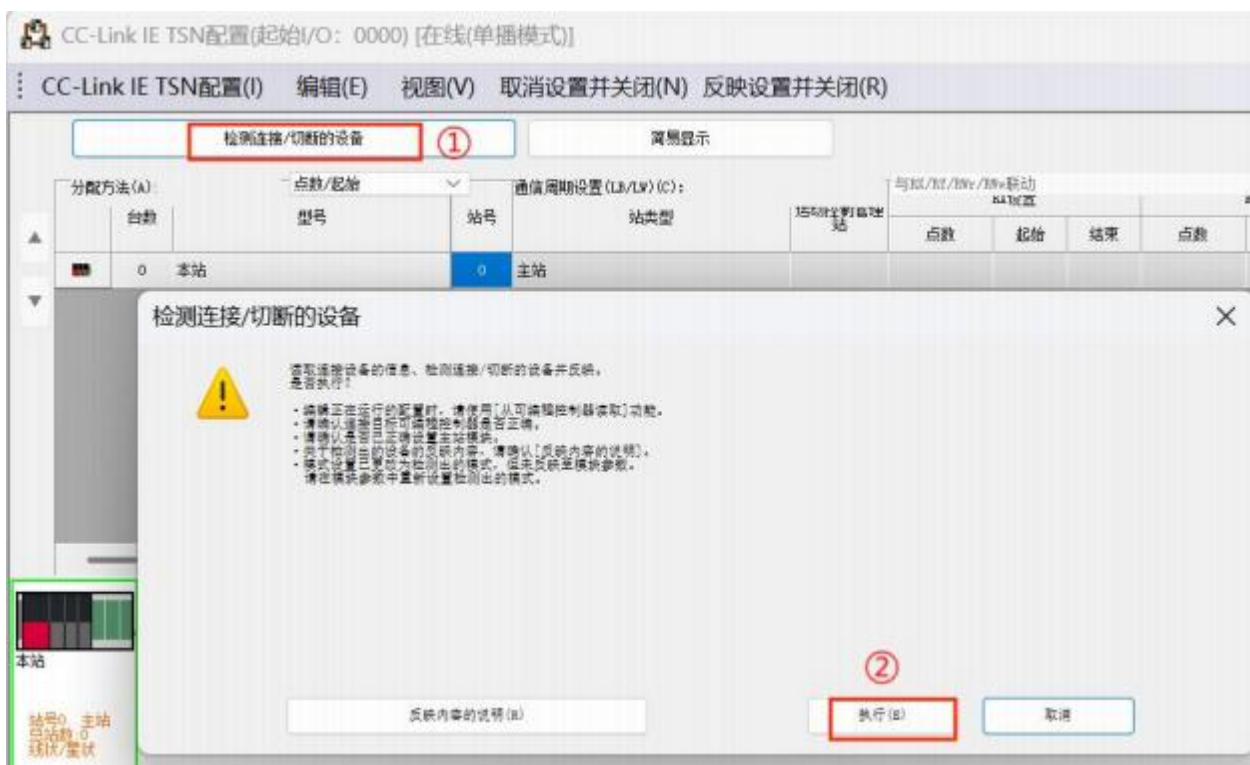
b. Click "Online"→ Write to programmable controllerIn the pop-up window, click "Parameters + Program (F) ".", Click "Execute"After the writing is complete, reset the programmable controller or power on the device again.



c. exist In the RJ71GN11-T2 module, select " Network configuration settings Double-click "Detailed Settings" This involves connecting and configuring the coupler .



d. In the pop-up window " CC-Link IE TSN Configuration" In the settings , click "Detect connected / disconnected devices ". Click "Execute" ".



e. After execution, you will see the configuration window displaying the connection to the programmable controller. Information on the QY20-CCT coupler.



f. Right-click QY20-CCT coupler, select "Online" → "set up IP address", can be carried out IP address settings.



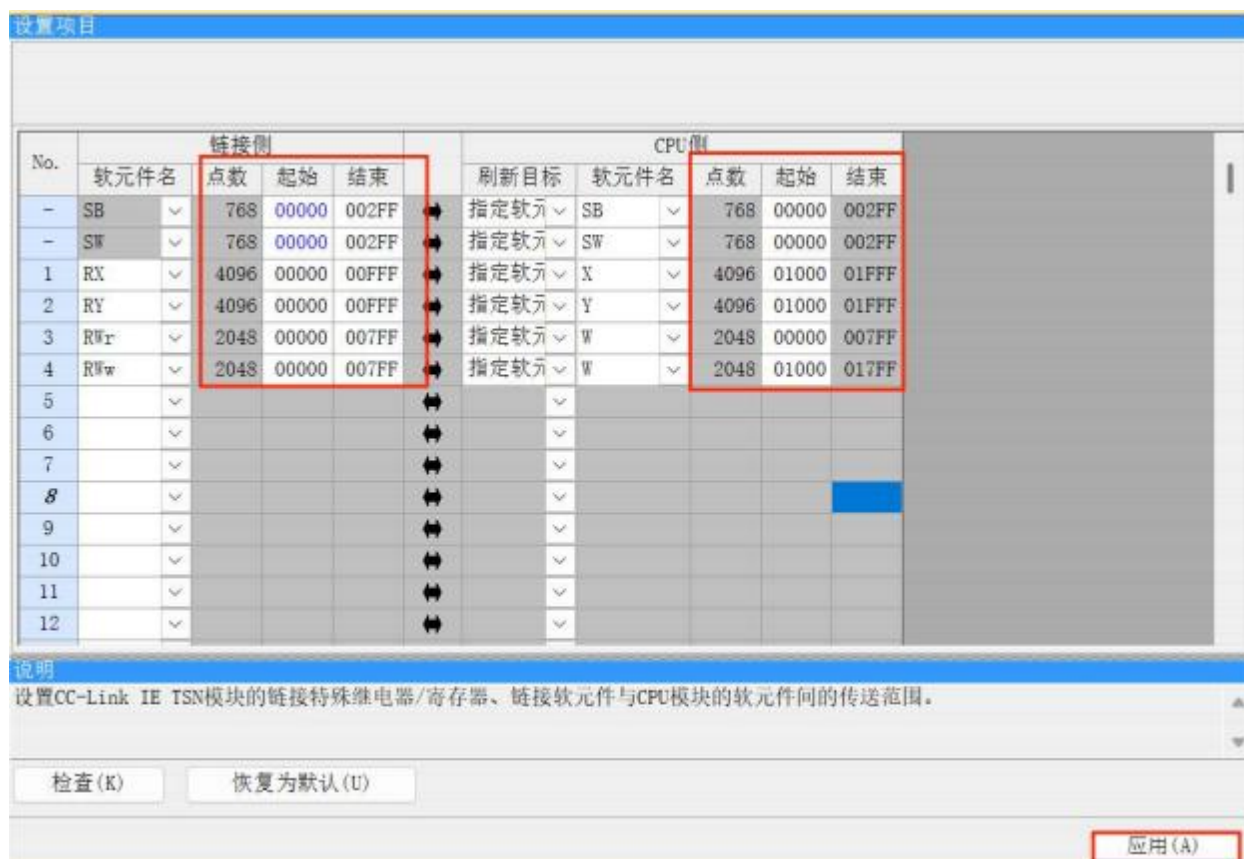
g. In settings In the IP address pop-up window, click "Check Real Machine Information (T)". "and execute. After setting up the coupler..." After the IP address, click "Settings". Then power on the coupler again and click "Detect Real Machine Information" again. "confirm Has the IP address been successfully configured?"



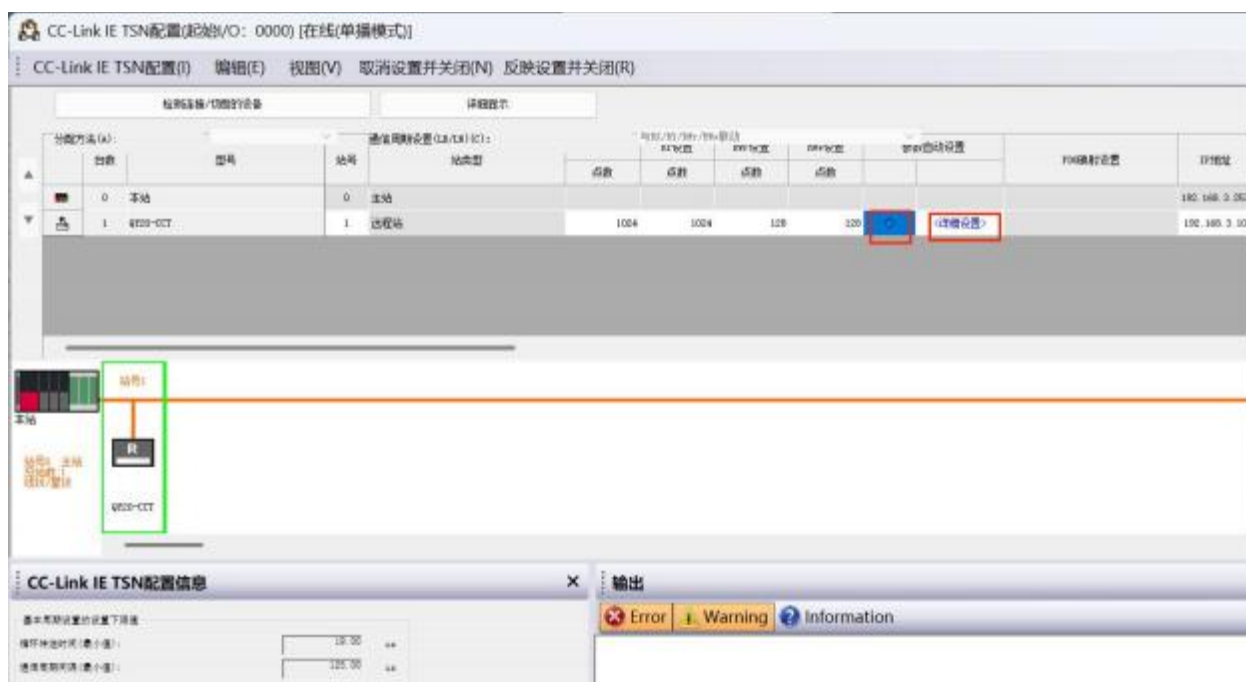
h. exist in the RJ71GN11-T2 module, double-click "Refresh Settings". For detailed settings, refresh the settings.



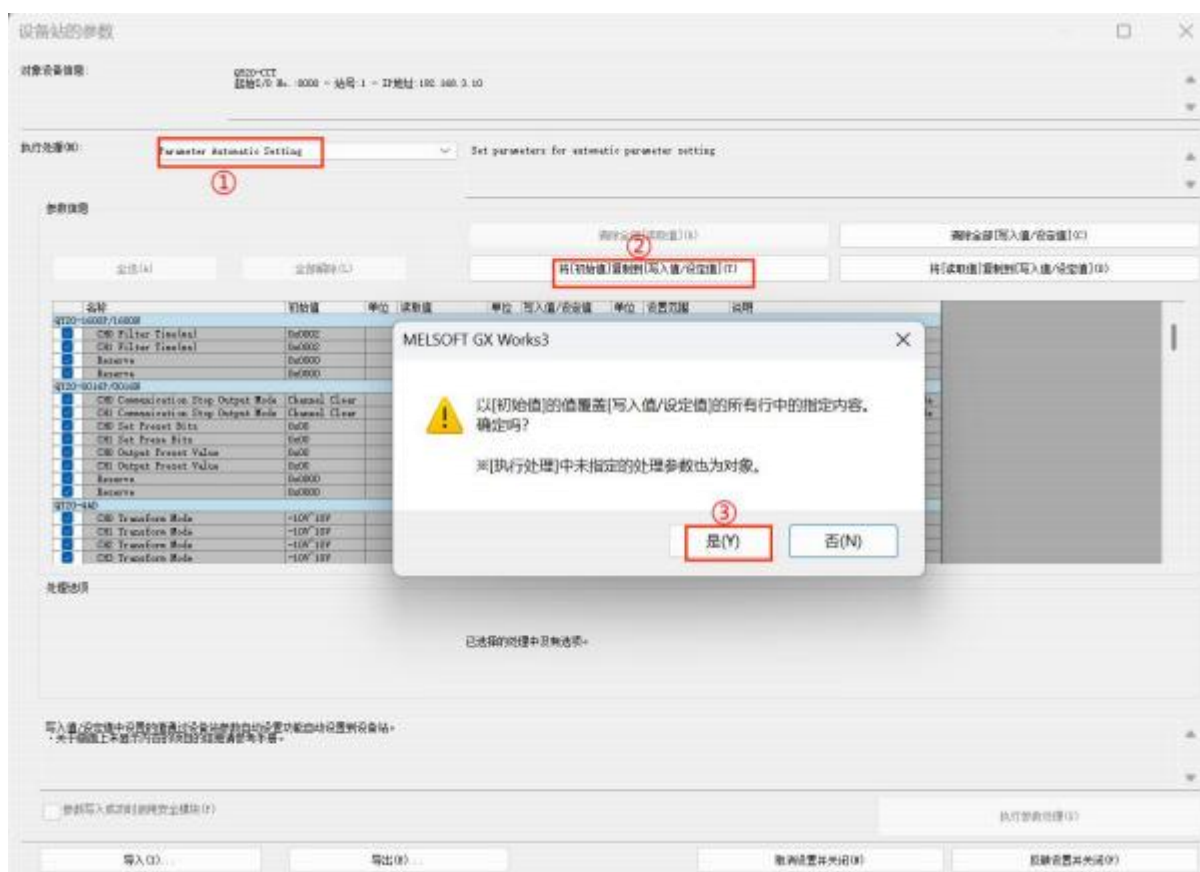
i. In the pop-up window, configure the link side and CPU. Set the range for the soft components on the side. After setting, click "Apply". Then click on the menu bar → Online → Write to Programmable Controller. After writing is complete, reset the CPU module or a power cycle may be required.



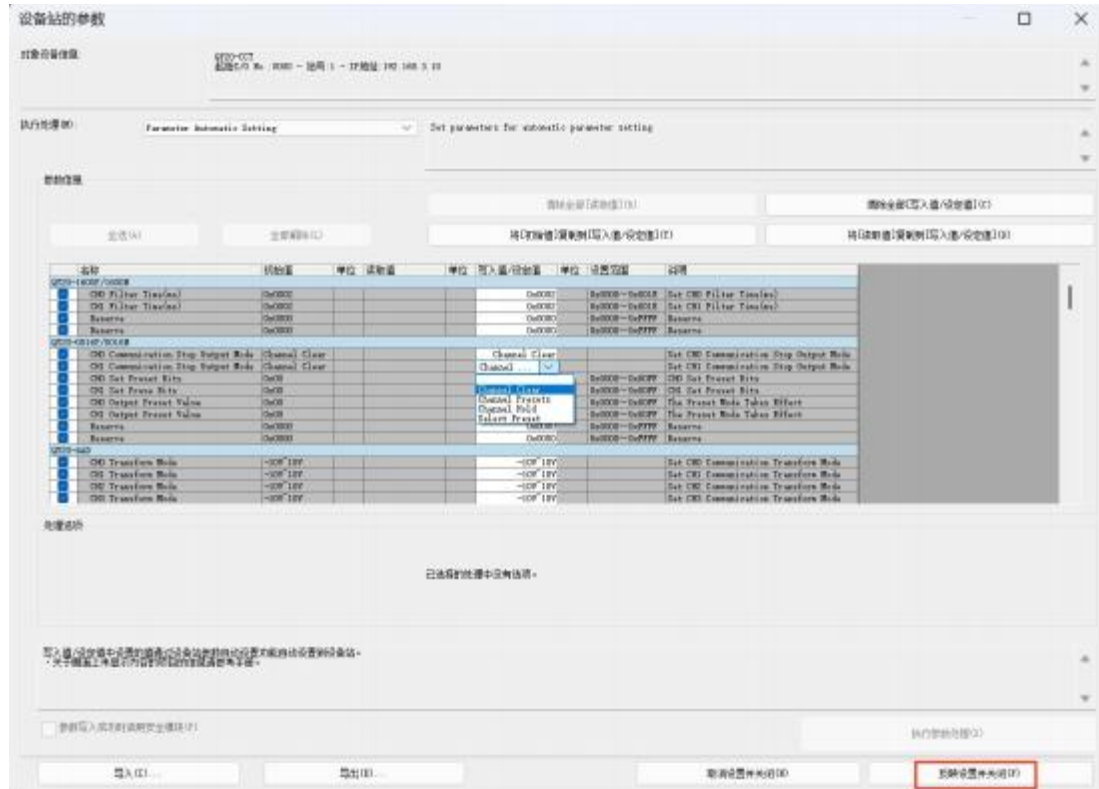
- j. After successfully connecting the coupler, in the automatic parameter setting options, check "Automatic parameter setting"., and double-click " Detailed Settings", to set the configuration parameters.



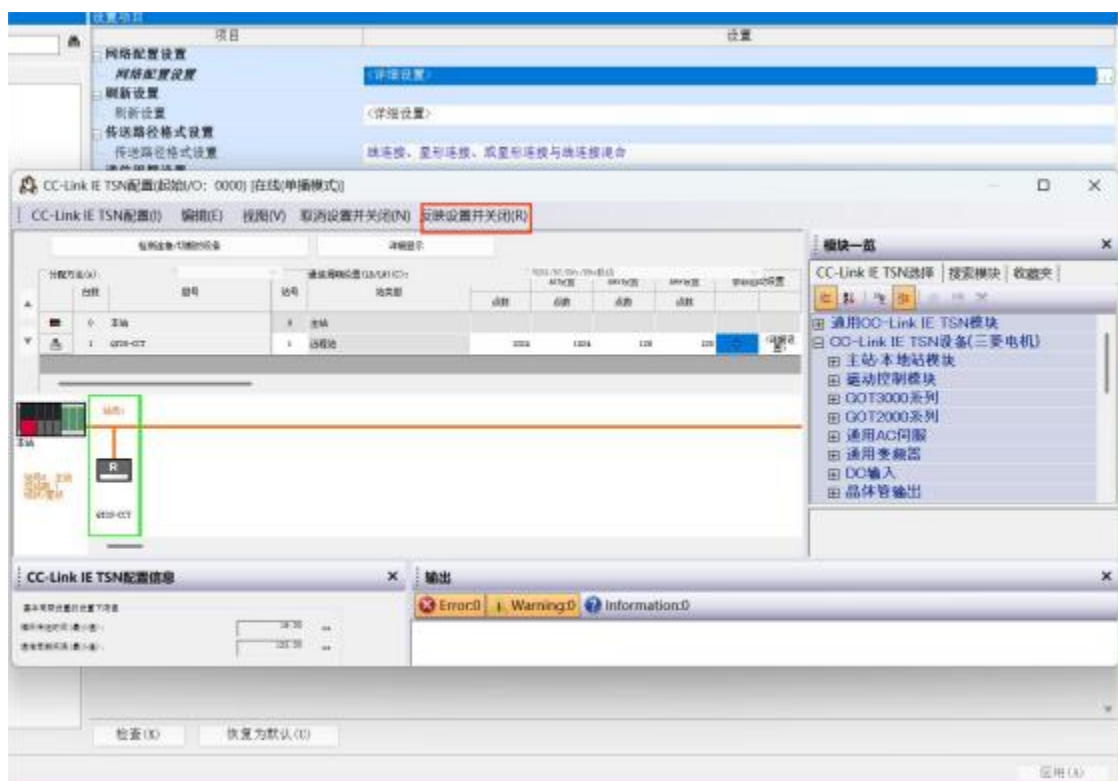
- k. Parameters of the "Equipment Exhibition" In the pop-up window, select "Parameter Automatic" under "Execute Process (M)". Setting ", and click " Copy [Initial Value] to [Write To / Set Value] (T)" ", Select "Yes (Y)" ".



1. After writing the initial values, you can configure the parameters of each module as needed. Once the configuration is complete, click "Reaction Settings and Close (F)". Then close the configuration interface. For detailed instructions on using the module parameters, please refer to the User Manual .



m. Click "Reaction Settings and Turn Off (R)", And click "Apply (A)", Select "Online" in the menu bar." → "Write to programmable controller".



5. Fault Diagnosis

led indicator lights		meaning	Solution
SF	Extinguish	The slave device is in the initialization state.	abnormalities in the communication and contact of the expansion module , or power it on again.
	Slow flash	The slave device is in the device startup state.	abnormalities in the communication and contact of the expansion module , or power it on again.
BF	Extinguish	CC - Link IE TSN Communication disconnection	• Check if the network cable is damaged or has poor contact.
SYS	Slow flash	Module-free communication	• Check for faults in the coupler and module hardware.
	Flash mob	ModuleIO Communication error	• Check if module communication is being interfered with.
	Chang Liang	Coupler and module connection error (master station configuration does not match slave station configuration)	whether the software configuration matches the actual module configuration.

appendix

Related Product Model Ordering Index

coding	Product Model	describe
CPU : ZQ 600 series PLC		
45.02.0023	ZQ 601	medium PLC Main control module
45.02.0002	ZQ 602	medium PLC Main control module
QY 20 series coupler modules		
45.02.0001	QY 20- ECT	EtherCAT bus coupler
45.02.0007	QY 20- PN	PROFINET bus coupler
45.02.0020	QY 20- CCT	CC - Link IE TSN bus coupler
QY 20 series IO Module		
45.02.0006	QY 20-0016P	16- channel digital output module, PNP
45.02.0004	QY 20-0016N	16- channel digital output module, NPN
45.02.0003	QY 20- 1600P	16- channel digital input module, PNP
45.02.0005	QY 20- 1600N	16- channel digital input module, NPN
45.02.0013	QY 20-0808P	8 digital inputs + 8 digital outputs, PNP
45.02.0019	QY 20-0808N	8 digital inputs + 8 digital outputs, NPN
45.02.0008	QY 20-4 AD	4- channel analog input module (16 -bit). $\pm 10V/0\sim 10V/ \pm 5V/0\sim 5V/1\sim 5V/0\sim 20mA / 4\sim 20 mA$
45.02.0009	QY 20-4 DA	4- channel analog output module (16 -bit). $\pm 10V/0\sim 10V/ \pm 5V/0\sim 5V/1\sim 5V/0\sim 20mA / 4\sim 20 mA$
45.02.0014	QY 20-8 AI	8- channel analog input module, current type (16 -bit), $0\sim 20 mA / 4\sim 20 mA$
45.02.0011	QY 20-8 AV	8- channel analog input module, voltage type (16 -bit). $\pm 10V /0\sim 10V/ \pm 5V/0\sim 5V/1\sim 5V$
45.02.0012	QY 20-8 AI -L	8- channel analog input module, current type (12 -bit), $0\sim 20 mA / 4\sim 20 mA$
45.02.0021	QY 20-8 AV -L	8- channel analog input module, voltage type (12 -bit), $0\sim 10V/0\sim 5V/ 1\sim 5V$
45.02.0015	QY 20-4 PT	4- channel RTD temperature detection module, PT 100 PT 500 PT 1000 CU 100 KTY 84 NTC 5K NTC 10K
45.02.0016	QY 20-4 TC	4- channel thermocouple temperature detection module, B E N J K R S T
45.02.0017	QY 20-2 HC	2- channel encoder high-speed counting module, 5V differential or 24V single-ended
45.02.0018	QY 20-4 PO	4- channel pulse output module, 24 V NPN type
45.02.0022	QY 20- PS	Relay power module, 5V 2A