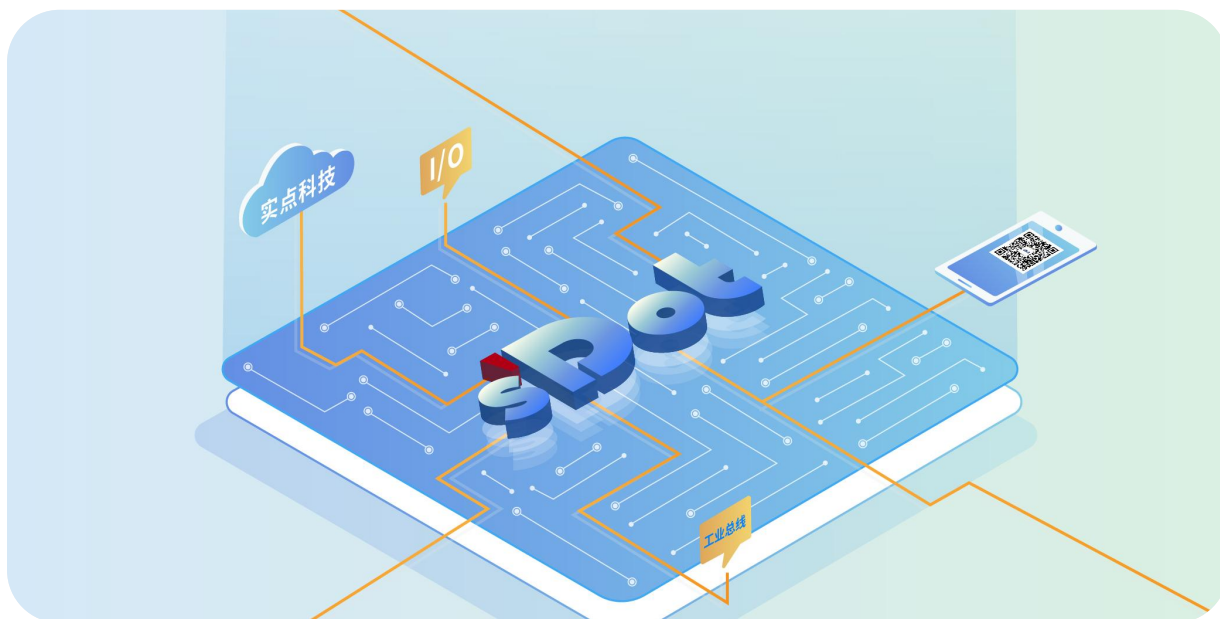




MECHATROLINK-III

XB6 Series Slice I/O

User Manual



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1 Product Overview

1.1 Product Introduction

The XB6 series plug-in I/O modules feature a structure combining a coupler and I/O modules. The XB6-M32002ST is a kit comprising an XB6 series plug-in power module and a MECHATROLINK-III coupler module. The coupler connects expandable I/O modules to a real-time industrial Ethernet system. The I/O module communication backplane utilizes the X-bus system, ensuring high real-time performance. with a diverse range of modules. This ensures high-speed data acquisition, optimized system configuration, simplified field wiring, and enhanced system reliability for users.

1.2 Product Features

- **Few nodes occupied**

A node consists of a bus coupler, 1 to 32 X-bus series I/O modules, and an end cap.

- **Rich functionality**

It supports flexible expansion and has a complete range of I/O types; it can integrate digital, analog, temperature, pulse and other modules to meet the needs of different applications.

- **Flexible configuration**

Various types of plug-in I/O modules can be combined arbitrarily.

- **High compatibility**

The coupler communication interface conforms to communication standards and supports mainstream MECHATROLINK-III master stations.

- **Support parameter configuration**

Supports parameter configuration and automatic saving.

- **Small size**

It has a compact structure and occupies little space.

- **Easy to diagnose**

The innovative channel indicator design is placed close to the channel, making the channel status clear at a glance and facilitating inspection and maintenance.

- **High speed**

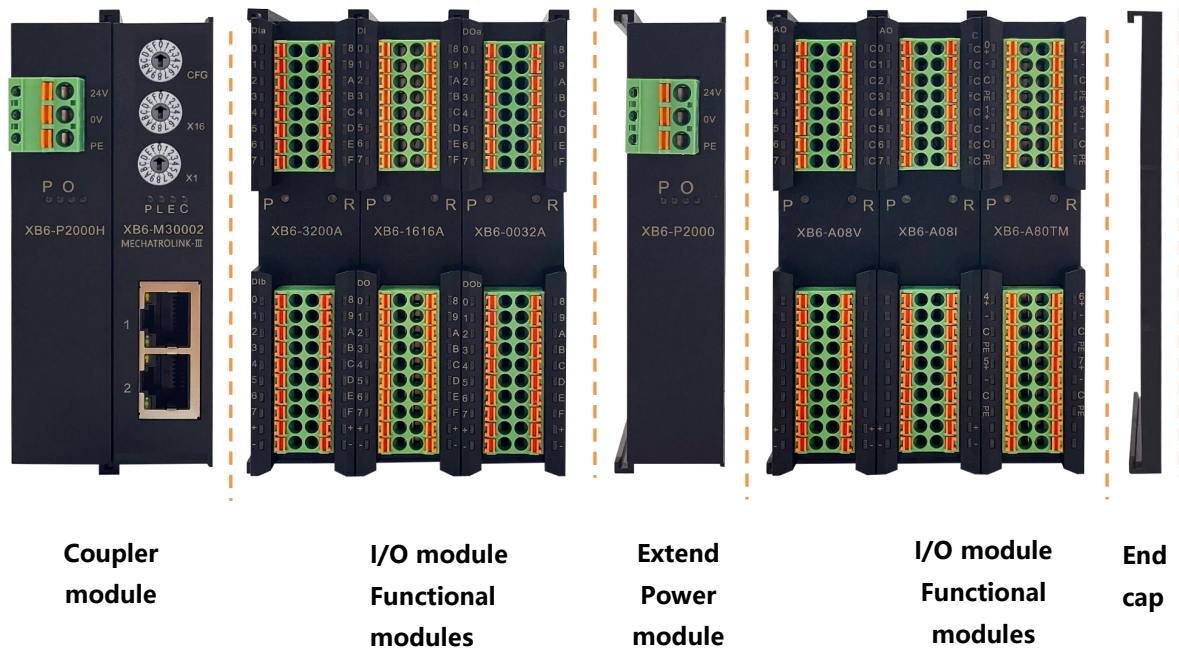
The backplane uses an X-bus bus with a maximum scan cycle of 1 ms.

- **Easy to install**

Mounted on DIN 35 mm standard rails.

It adopts spring-loaded terminal blocks, making wiring convenient and quick.

1.3 Application Configuration



Application method:

Applications employ a combination of modules such as power supply modules, couplers, digital signals, analog signals, relays, and temperature sensors.

Application configuration:

Depending on the requirements of the main station's access capabilities, number of stations, number of I/O points, and function types, it can adapt to different models of I/O module combinations and configurations.

Configuration rules:

The modules, from left to right, consist of a power module, a coupler module, an I/O module, and an end cap (which is necessary).

2 Naming Rules

2.1 Naming Rules

2.1.1 Coupler naming rules

XB 6 - M3 20 02 ST
(1) (2) (3) (4) (5) (6)

serial number	meaning	Value description
(1)	Bus type	XB: X-bus
(2)	Product Series	6: Insert type
(3)	bus protocol	M3: MECHATROLINK-III MT: Modbus TCP CL: CC-Link PN: PROFINET EI: EtherNet/IP EC: EtherCAT CB: CC-Link IE Field Basic CT: CC Link IE TSN
(4)	Power supply	20: 2A
(5)	Number of bus interfaces	02: Dual network ports
(6)	Module type	ST: Power Modules and Coupler Kits

2.1.2 I/O module naming rules

XB **6** - **A** **8** **0** **V**
(1) **(2)** **(3)** **(4)** **(5)** **(6)**

serial number	meaning	Value description				
(1)	Bus type	XB: X-bus				
(2)	Product Series	6: Insert type				
(3)	Types of I/O modules	A: Analog Empty: digital				
(4)	Number of input signal points	Analog: 0, 4, 8 Number: 0, 8, 16, 32				
(5)	Number of output signal points	Analog: 0, 4, 8 Number: 0, 8, 16, 32				
(6)	Input/output characteristics	Digital quantity			Analog quantity	
		Code	Input	Output	Code	Description
		A	NPN	NPN, 0.5 A	V	-10~+10 V, 0~+10 V
		B	PNP	PNP, 0.5 A	I	4~20 mA, 0~20 mA
		BW	PNP	PNP, 0.25 A	TM	RTD, TC
		N	NPN/PNP	-		
		AN	-	NPN, 0.1 A		
		BN	-	PNP, 0.1 A		

2.2 List of commonly used modules

Model	Product Description	
XB6-M32002ST	MECHATROLINK-ⅢCoupler kit (Power supply XB6-P2000H, Coupler XB6-M30002)	
XB6-P2000	Extended power module	
XB6-3200A	32-channel digital input module, NPN type	
XB6-3200B	32-channel digital input module, PNP type	
XB6-0032A	32-channel digital output module, NPN type	
XB6-0032B/XB6-0032BW	32-channel digital output module, PNP type	
XB6-1600A	16-channel digital input module, NPN type	
XB6-1600B	16-channel digital input module, PNP type	
XB6-0016A	16-channel digital output module, NPN type	
XB6-0016B/XB6-0016BW	16-channel digital output module, PNP type	
XB6-0800A	8-channel digital input module, NPN type	
XB6-0800B	8-channel digital input module, PNP type	
XB6-0008A	8-channel digital output module, NPN type	
XB6-0008B/XB6-0008BW	8-channel digital output module, PNP type	
XB6-1616A	16-channel digital input/output module, NPN type	
XB6-1616B/XB6-1616BW	16-channel digital input/output module, PNP type	
XB6-3200N	32-channel digital input, NPN/PNP compatible	
XB6-0032AN	32-channel digital output, NPN type	
XB6-0032BN	32-channel digital output, PNP type	
XB6-A80V	8-channel analog voltage input module	Range adjustable:0~+10 V-10~-+10 V
XB6-A40V	4-channel analog voltage input module	
XB6-A08V	8-channel analog voltage output module	
XB6-A04V	4-channel analog voltage output module	
XB6-A80I	8-channel analog current input module	Range adjustable:0~20mA4~20mA
XB6-A40I	4-channel analog current input module	
XB6-A08I	8-channel analog current output module	
XB6-A04I	4-channel analog current output module	
XB6-0012J	12-channel relay output module	
XB6-A40TM	4-channel RTD and TC temperature acquisition module	
XB6-A80TM	8-channel RTD and TC temperature acquisition module	
XB6-P20D	Encoder counting module	

XB6-P20DS	Encoder counting module
XB6-VT16	Insert-type valve terminal
XX6-C18_2	Common end Expansion module

3 Product Parameters

3.1 General parameters

General technical parameters		
Dimensions	Power module	106 × 61 × 22.5 mm
	Coupler module	106 × 61 × 22.5 mm
	I/O module	106 × 73 × 25.7 mm
Weight	Power module	110 g
	Coupler module	80 g
	I/O module	90 g
Operating temperature	-10°C to +60°C	
Storage temperature	-20°C~+75°C	
Relative humidity	95%, no condensation	
Protection level	IP20	

3.2 Power parameters

Power parameters		
Power module	working power supply	24 VDC (18V~30V)
	Output voltage	5 VDC
	Output current	2 A
Coupler module	working power supply	5 VDC
	Operating current	400 mA
I/O module	working power supply	5 VDC

3.3 Interface parameters

Interface parameters	
bus protocol	MECHATROLINK-III
Station type	Slave
Station address setting range	03~EF (HEX)
Transmission rate	100 Mbps
Number of bytes transferred	64 bytes
Data transmission medium	MECHATROLINK-III Dedicated Cable
Transmission distance	≤100 m (station-to-station distance)
Minimum station spacing	0.2 m (distance between stations)
Bus interface	2×RJ45

3.4 Digital parameters

Digital input	
Rated voltage	24 VDC (18V~30V)
signal points	8, 16, 32
signal type	NPN/PNP
"0" signal voltage (PNP)	-3~+3 V
"1" signal voltage (PNP)	15~30V
"0" signal voltage (NPN)	15~30V
"1" signal voltage (NPN)	-3~+3 V
Input filter	3 ms
Input current	4 mA
Isolation methods	Optical isolation
Isolation and withstand voltage	500 VAC
Channel indicators	Green LED
Digital output	
Rated voltage	24 VDC (18V~30V)
signal points	8, 16, 32
signal type	NPN/PNP
Load type	Resistive load, inductive load
Single-channel rated current	NPN type Max: 500 mA PNP type, maximum: 500 mA BW type Max: 250mA
Port protection	Overvoltage and overcurrent protection
Isolation methods	Optical isolation
Isolation and withstand voltage	500 VAC
Channel indicators	Green LED

Relay output	
Rated voltage	24 VDC (18V~30V)
signal points	12
Isolation methods	Optocouplers, relays
Rated load	2 A
Channel indicators	Green LED

3.5 Analog parameters

3.5.1 Technical parameters

Analog input			
Input points	4, 8		
Input signal (voltage type)	0~+10 V, -10~+10 V (range adjustable)		
Input signal (current type)	0~20 mA, 4~20 mA (range adjustable)		
resolution	16 bit		
Sampling rate	XB6-A40V, XB6-A80V, XB6-A40I, XB6-A80I	≤1 ksps	
accuracy	XB6-A40V, XB6-A80V, XB6-A40I, XB6-A80I	±0.1%	
Input impedance (voltage type)	≥2 kΩ		
Input impedance (current type)	100 Ω		
Isolation and withstand voltage	500 VAC		
Channel indicators	Green LED		
Temperature input			
Number of channels	4, 8		
Sensor type	TC	RTD	Resistance
Connection method	2-wire	2-wire and 3-wire	2-wire
	K: -200~1370℃ J: -200~1200℃ E: -200~1000℃ S: -50~1690℃ B: 50~1800℃	Pt100: -200~850℃ Pt200: -200~600℃ Pt500: -200~600℃ Pt1000: -200~600℃	15Ω~3kΩ
accuracy	±0.3%	±1℃	±0.1%
Sensitivity	0.1℃		±0.1Ω
resolution	16-bit (int type)		
Channel indicators	Green LED		

Analog output		
Output points	4, 8	
Output signal (voltage type)	0~+10 V, -10~+10 V (range adjustable)	
Output signal (current type)	0~20 mA, 4~20 mA (range adjustable)	
resolution	16 bit	
accuracy	XB6-A04V, XB6-A08V, XB6-A04I, XB6-A08I	±0.1%
Load impedance (voltage type)	≥2 kΩ	
Load impedance (current type)	≤500 Ω (partial existing modules) ≤200 Ω (see note below for details)	
Isolation and withstand voltage	500 VAC	
Channel indicators	Green LED	

Note: Analog voltage modules do not support overflow and overshoot, while analog current modules do support overflow and overshoot.

The load impedance of the analog current output module XB6-A08I with an S/N starting with 2949 ≤ 500 Ω, load impedance of other S/N modules ≤ 200 Ω; Load impedance of modules with serial numbers starting with 2950 in XB6-A04I ≤ 500 Ω, load impedance of other S/N modules ≤ 200 Ω.

3.5.2 Voltage input/output range selection and code value table

Voltage input/output range selection and code value range				
Range selection	0	1	2	3
Measuring range	-10~+10 V	0~+10 V	-10~+10 V	0~+10 V
Code value range	-32768~32767	0~32767	-27648~27648	0~27648
Voltage input Calculation formula	$D=(65535/20)*U$	$D=(32767/10)*U$	$D=(55296/20)*U$	$D=(27648/10)*U$
Voltage output Calculation formula	$U=(D*20)/65535$	$U=(D*10)/32767$	$U=(D*20)/55296$	$U=(D*10)/27648$
Code value Correspondence table	See Table 3- 1 Voltage code value table.			

Note: D represents code value, and U represents voltage.

Sheet3- 1 Voltage code value table

range Voltage	0 (default)	1	2	3
	-10~+10 V	0~+10 V	-10~+10 V	0~+10 V
	code value	code value	code value	code value
-10	-32768	-	-27648	-
-9	-29491	-	-24883	-
-8	-26214	-	-22118	-
-7	-22937	-	-19354	-
-6	-19661	-	-16589	-
-5	-16384	-	-13824	-
-4	-13107	-	-11059	-
-3	-9830	-	-8294	-
-2	-6554	-	-5530	-
-1	-3277	-	-2765	-
0	0	0	0	0
1	3277	3277	2765	2765
2	6554	6553	5530	5530
3	9830	9830	8294	8294
4	13107	13107	11059	11059
5	16384	16384	13824	13824
6	19661	19660	16589	16589
7	22937	22937	19354	19354
8	26214	26214	22118	22118
9	29491	29490	24883	24883
10	32767	32767	27648	27648
	Code value = (65535/20) * voltage	Code value = (32767/10) * voltage	Code value = (55296/20) * voltage	Code value = (27648/10) * voltage
	Voltage = (Code value * 20) / 65535	Voltage = (Code value * 10) / 32767	Voltage = (Code value * 20) / 55296	Voltage = (Code value * 10) / 27648

Note: For analog voltage input modules, the maximum code value will be displayed when the channel input voltage exceeds 10V. For analog voltage output modules, the channel will output 10V voltage when the code value setting exceeds the maximum code value corresponding to the range in the table.

3.5.3 Current input/output range selection and code value table

Analog current input/output range selection and code value range				
Range selection	0	1	2	3
Measuring range	4~20 mA	0~20 mA	4~20 mA	0~20 mA
Code value range	0~65535		0~27648	
Current input calculation formula	$D=(65535/16)*I-16384$	$D=(65535/20)*I$	$D=(27648/16)*I-6912$	$D=(27648/20)*I$
Current output calculation formula	$I=(D+16384)*16/65535$	$I=(D*20)/65535$	$I=((D+6912)*16)/27648$	$I=(D*20)/27648$
code value Correspondence table	Refer to Table 3- 2Current code value table.			

Note: D represents code value, and I represents current.

sheet3- 2 Current code value table

Range Current	0 (default)	1	2	3
	4~20mA	0~20mA	4~20mA	0~20mA
	code value	code value	code value	code value
0	-	0	-	0
1	-	3277	-	1382
2	-	6554	-	2765
3	-	9830	-	4147
4	0	13107	0	5530
5	4096	16384	1728	6912
6	8192	19661	3456	8294
7	12288	22937	5184	9677
8	16384	26214	6912	11059
9	20479	29491	8640	12442
10	24575	32768	10368	13824
11	28671	36044	12096	15206
12	32767	39321	13824	16589
13	36863	42598	15552	17971
14	40959	45875	17280	19354
15	45055	49151	19008	20736
16	49151	52428	20736	22118
17	53247	55705	22464	23501
18	57343	58982	24192	24883
19	61439	62258	25920	26266
20	65535	65535	27648	27648
twenty one	65535	65535	29376	29030
twenty two			31104	30413
22.814			32511	31538

22.962				31743
twenty three				31795
23.518			32767	32511
23.703				
twenty four				32767
25				
	Code value = (65535/16) * current - 16384	Code value = (65535/20) * current	Code value = (27648/16) * current - 6912	Code value = (27648/20) * current

Note: When the input current of range 2 is greater than 22.81 mA, the code value is displayed as 32767; when the specified code value is greater than 32511, the output current is 22.81 mA.

When the input current in range 3 is greater than 23.52 mA, the code value is displayed as 32767; when the specified code value is greater than 32511, the output current is 23.52 mA.

3.6 Common End Expansion module Parameters

Common terminal	
Rated voltage	125 VDC/AC 250V
Rated current	8 A
Number of common terminals	2 groups

4 Panel

4.1 Coupler panel

4.1.1 Coupler structure

Product Part Names and Functional Descriptions

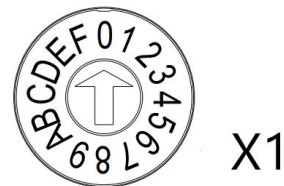
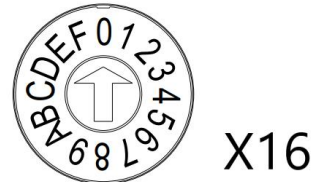
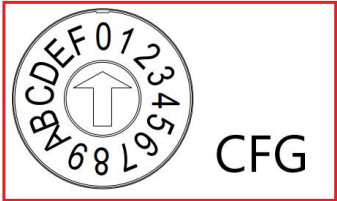
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serial number	name	Description
①	Power terminal	spring-loaded terminal blocks
②	Guide rail slot	Suitable for mounting on DIN 35 mm guide rails
③	Power markings and indicator	Indicates power status

④	Rotary switches and markings	Configure IP slave address
⑤	System markings and indicators	Indicates power supply and module operating status
⑥	Bus interface	2×RJ45

4.1.2 Rotary switch

CFG rotary switch



The CFG switch is used to clear/hold and erase permanent parameters of the module settings output. Specific functions are shown in the table below:

Setting value (decimal)	Function definition
0	Clear output
1	Output hold
2	Erase permanent parameters
Other	Invalid value

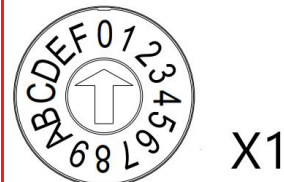
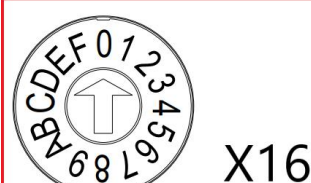
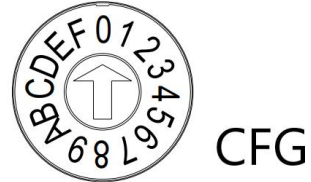
- CFG = 0/1: Output clear/hold function is for I/O modules with outputs. This function configuration can set the output action of the module in the event of a bus abnormality.

Output clear: When communication is disconnected, the module output channel will automatically clear the output.

Output hold: The module's output channel continues to output even when communication is interrupted.

- CFG = 2: Erase parameter data (such as module configuration parameters) in the flash space.

Station number rotary switch



The station number rotary switch is used to set the station address of the coupler.

- Station address = (Set value × 16) + (Set value × 1).
- The setting range is 0x03~0xE. The PLC will fail to scan values outside the range. When expanding multiple couplers, be careful to avoid duplicate station addresses.

Note: Mode (CFG) settings and station address settings must be made

with the power off. If you need to change the mode settings or station address during communication, you must power on again after the new settings are completed for them to take effect.

4.1.3 Indicator function

Power module labeling and indicator description			
logo	color	state	Status Description
P	green	Steady on	The power supply is normal.
		Flashing	Overload of 80% will disconnect the power supply to downstream loads.
		Extinguished	Product is not powered or power supply is abnormal
O	red	Extinguished	Not overloaded
		Steady on	Load reached 90%

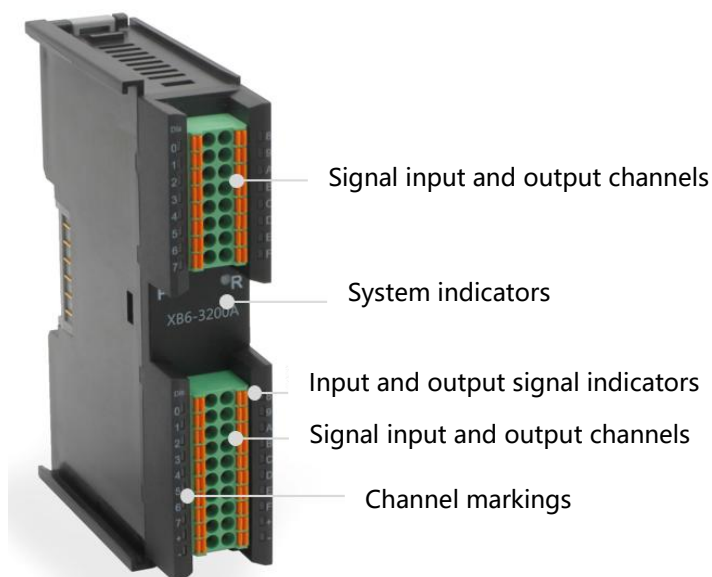
Network port status indicator			
logo	color	status	Status Description
1	yellow	Steady on	Establish network connection
		Extinguished	No network connection established or abnormal
	green	Flashing	Connection established and data exchanged
		Extinguished	No data interaction or anomaly
2	yellow	Steady on	Establish network connection
		Extinguished	No network connection established or abnormal
	green	Flashing	Connection established and data exchanged
		Extinguished	No data interaction or anomaly

Coupler module identification and indicators				
name	logo	color	status	Status Description
Power indicator	P(PWR)	green	Steady on	Power supply is normal
			Extinguished	The product is not powered on or the power supply is abnormal.
System indicators	L (LINK)	green	Steady on	The I/O module is connected, and the X-bus system is functioning normally.
			flickering 1Hz	I/O module connected, X-bus system ready to interact.
			5Hz flicker	I/O module not connected, X-bus system configuration error.
			Extinguished	I/O module not connected or malfunctioning
Alarm indicator	E(ERR)	red	Steady on	Bus status alarm or initialization error
			Extinguished	The equipment is operating normally.
CONNECT indicator	C (CONNECT)	green	Steady on	Received CONNECT command
			Extinguished	Received DISCONNECT command

4.2 I/O module panel

Module component names and function

descriptions



I/O Module Indicator Light Description			
logo	color	state	Status Description
P	green	Steady on	Power supply is normal
		Extinguished	The product is not powered on or the power supply is abnormal.
R	green	Steady on	The system is running normally.
		Flashing at 1Hz	I/O module connected, X-bus system ready to interact.
		Extinguished	Device not powered on, X-bus not exchanging data or malfunctioning
Input channel indicator	green	Steady on	The module detection channel has a signal input.
		Extinguished	The module channel has no signal input or the signal input is abnormal.
Output channel indication	green	Steady on	The module channel has signal output.
		Extinguished	The module channel has no signal output or the signal output is abnormal.

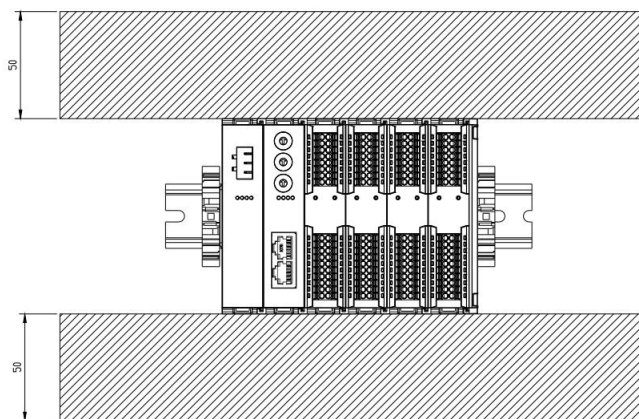
5 Installation and removal

5.1 Installation Guide

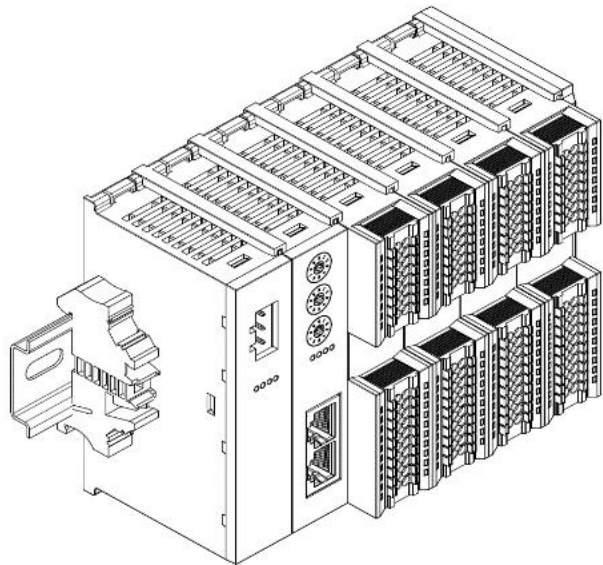
Installation/Disassembly Precautions

- Ensure that the server rack has good ventilation (such as installing exhaust fans in the server rack).
- Do not install this device next to or above equipment that may cause overheating.
- Make sure to install the module vertically and ensure that there is air circulation around it (there should be at least 50mm of air circulation space above and below the module).
- After the module is installed, be sure to install guide rail fasteners at both ends to secure the module.
- Installation and disassembly must be performed with the power off.

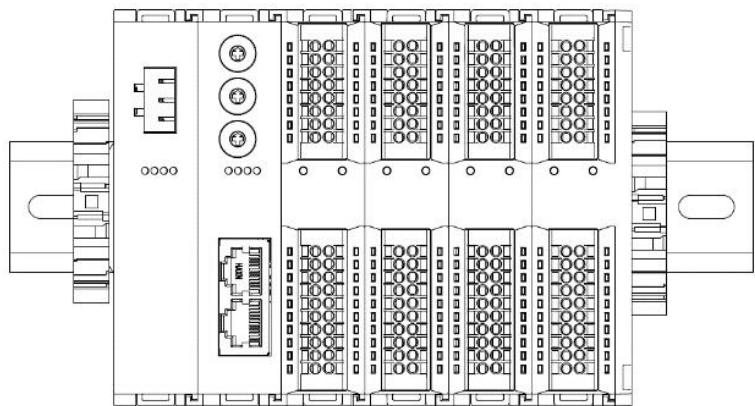
Minimum clearance for module installation ($\geq 50\text{mm}$)



Ensure the module is installed vertically.



Be sure to install the guide rail fasteners.



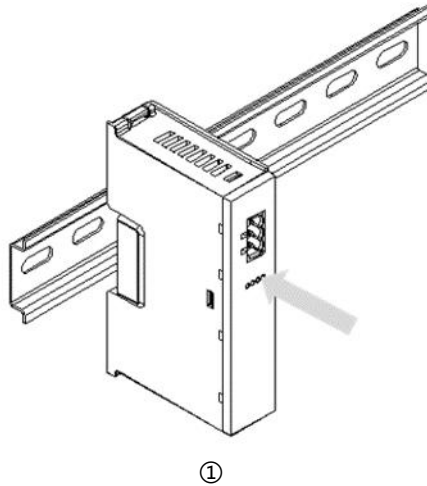
5.2 Installation and disassembly steps

Module installation and removal	
Module installation steps	1. First, install the power module on the fixed guide rail.
	2. Install the coupler and the required I/O modules in sequence on the right side of the power module.
	3. After installing all the necessary I/O modules, install the end caps to complete the module assembly.
	4. Install guide rail fasteners at both ends of the power module and end cover to secure the module.
Module disassembly steps	1. Loosen the guide rail fasteners at both ends of the module.
	2. Use a flathead screwdriver to pry open the module clips.
	3. Remove the disassembled module.

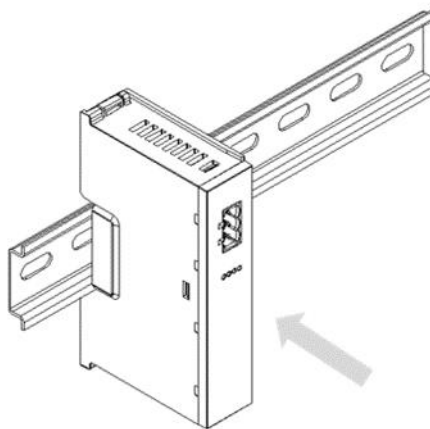
5.3 Installation diagram

Power module installation

step



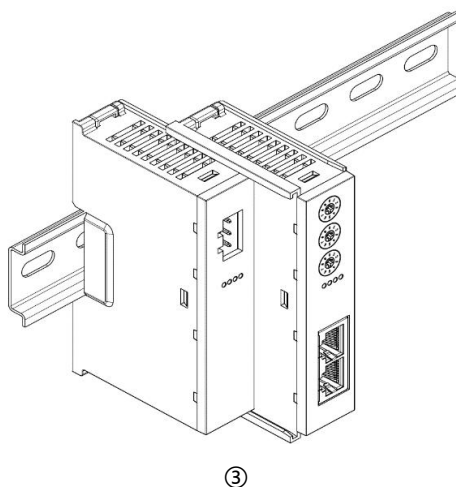
Align the power module guide rail slot vertically with the guide rail as shown in Figure ① on the left.



As shown in Figure ② on the left, press the power module firmly until you hear a "click" sound, and the module is installed in place.

Coupler module installation

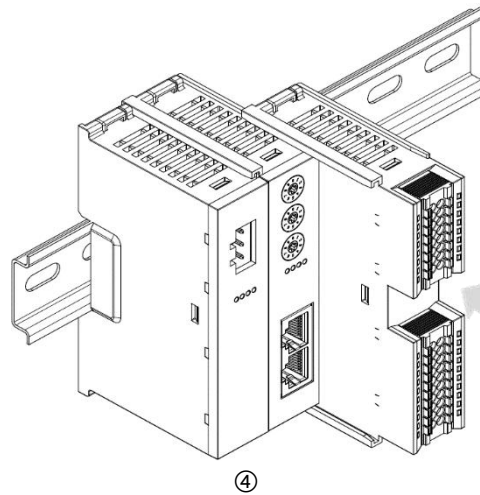
step



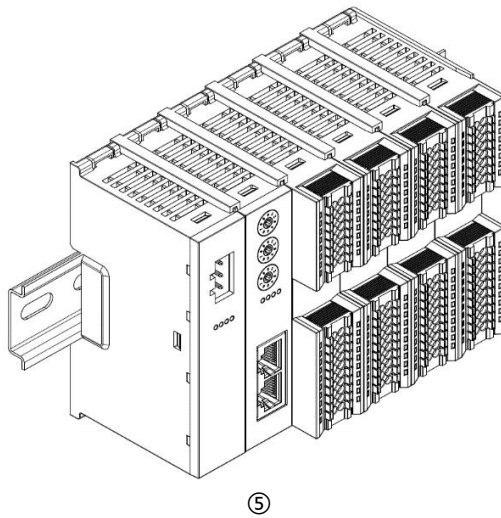
Align the left slot of the coupler module with the right side of the power supply module and push it in as shown in Figure ③ on the left. Press the coupler module firmly until you hear a "click" sound, indicating that the module is installed in place.

I/O module installation

step

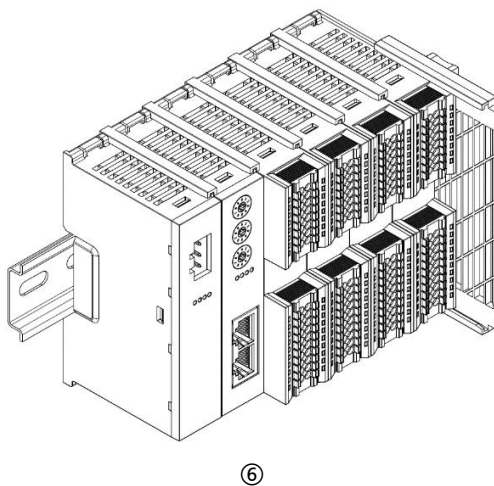


Following the steps for installing the coupler module in the previous step, install the required I/O modules one by one, as shown in Figure ④ and Figure ⑤ on the left.

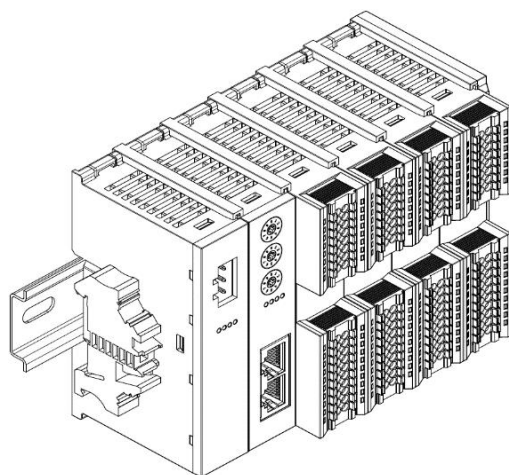


End cap addition

step

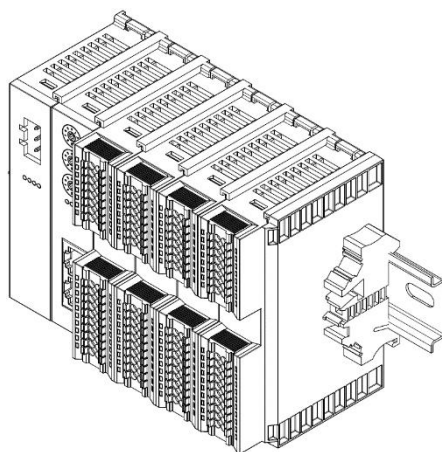


Install the end cap on the right side of the last module, as shown in Figure ⑥ on the left. Please refer to the installation method of the coupler module for the installation method.

Addition of guide rail fasteners**step**

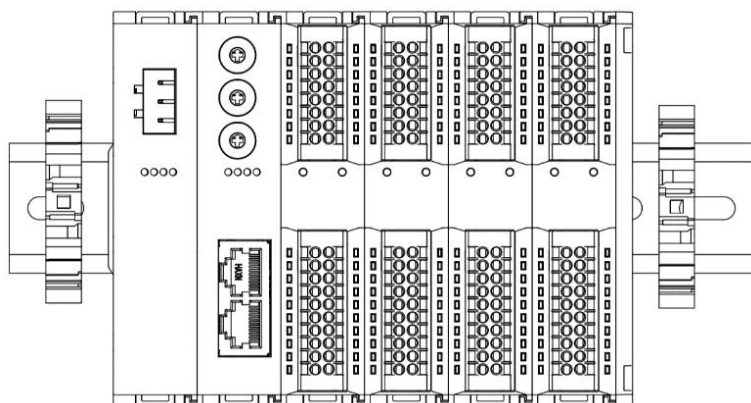
⑦

Install and lock the guide rail fastener close to the left side of the coupler, as shown in Figure ⑦ on the left.



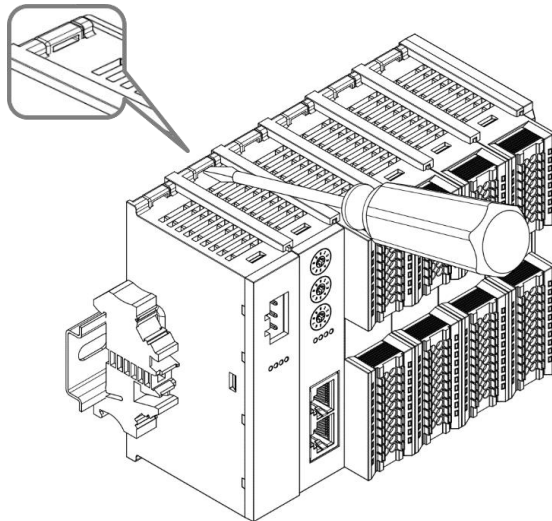
⑧

Install the guide rail fastener on the right side of the end cover. First, push the guide rail fastener towards the coupler to ensure that the module is installed securely, and then tighten the guide rail fastener with a screwdriver, as shown in Figure ⑧ on the left.

Disassembly**step**

⑨

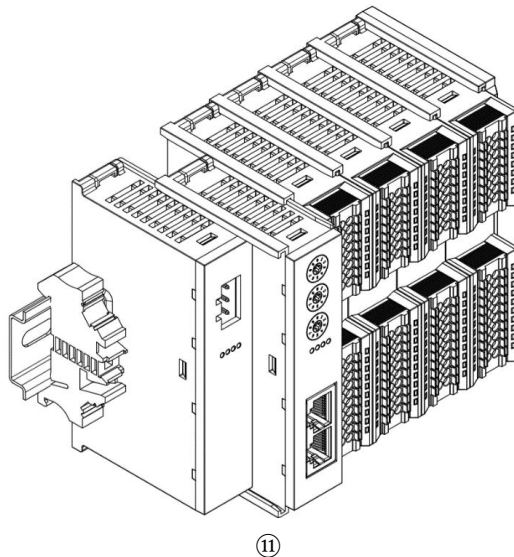
Loosen the guide rail fastener at one end of the module with a screwdriver and move it to one side, ensuring there is a gap between the module and the guide rail fastener, as shown in Figure ⑨ on the left.



⑩

Insert a flathead screwdriver into the clip of the module to be removed, and apply force from the side towards the module (you will hear a sound), as shown in Figure ⑩ on the left.

Note: Each module has a buckle at the top and bottom; operate in the same way for all modules.

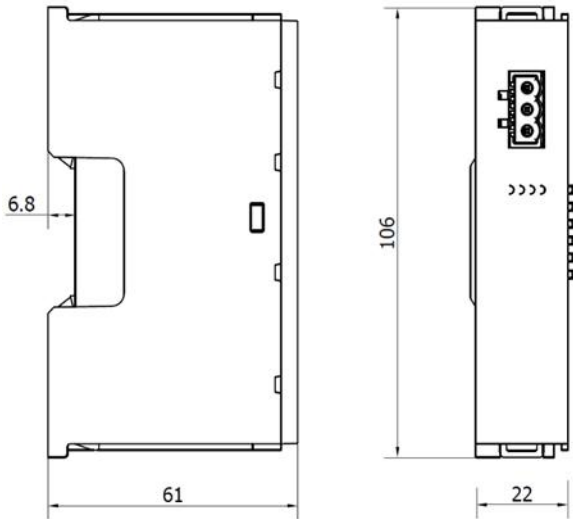


⑪

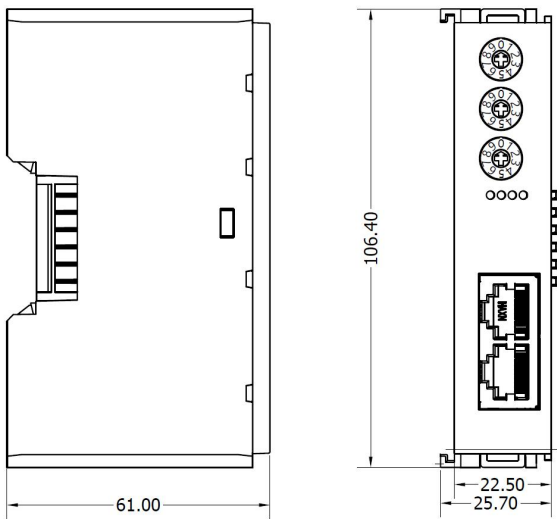
Disassemble the module by performing the reverse operation of installing the module, as shown in the left figure.⑪As shown.

5.4 External dimensions

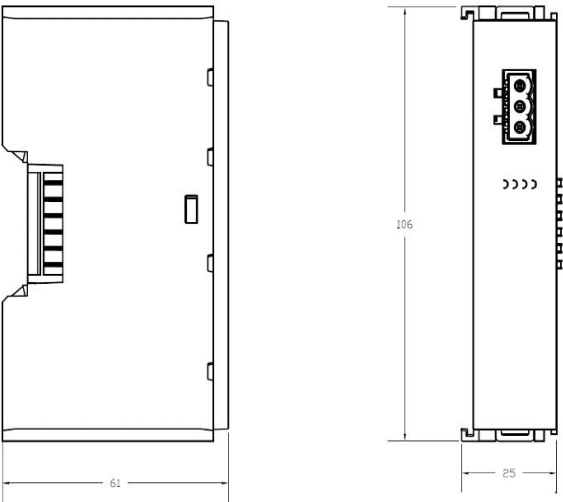
Power module dimensions (unit: mm)



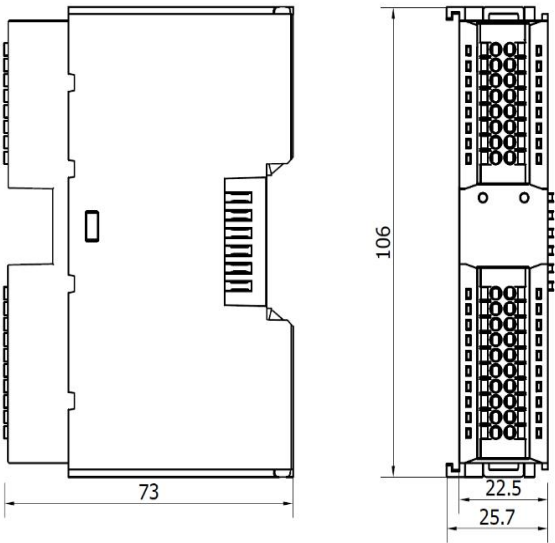
Coupler dimensions (unit: mm)

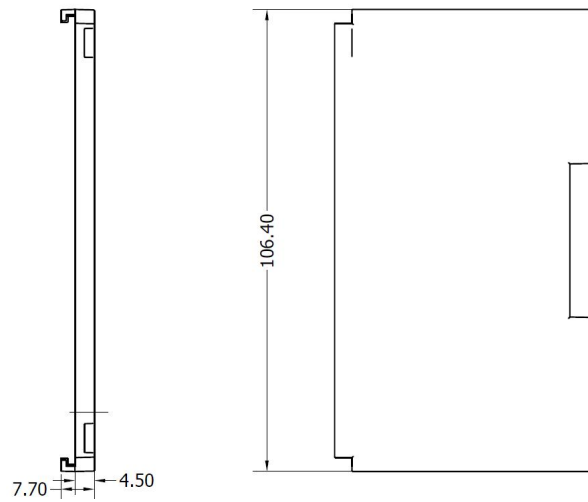


Extended power supply dimensions (unit: mm)



I/O module dimensions (unit: mm)



End cap dimensions (unit: mm)

Note: All installations use DIN 35 mm standard rails. DIN rail specifications are 35*7.5*1.0 and 35*15*1.0 (unit: mm).

6 Wiring

6.1 Terminal blocks

Terminal blocks		
Signal line terminals	Number of poles	16 P
	Number of poles	20 P
	Wire diameter	22~17 AWG 0.3~1.0 mm²
Power terminals	Number of poles	3P
	wire diameter	22~16 AWG 0.3~1.5 mm²
Bus interface	2*RJ45	UTP or STP of Category 5 or higher (STP recommended)

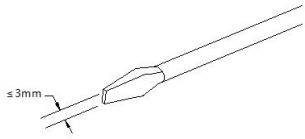
6.2 Wiring instructions and requirements

Power connection precautions

- The power supply for the module system side and the power supply for the field side should be configured and used separately. Do not mix them.
- The PE element must be reliably grounded.

Wiring tool requirements

The power terminals and signal terminals feature a screwless design, allowing for cable installation and removal using a flathead screwdriver (size: $\leq 3\text{mm}$).



Stripping length requirements

The recommended cable stripping length is 10 mm.



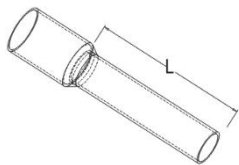
Wiring method

For a single-strand rigid wire, after stripping the wire to the corresponding length, press the button to insert the single-strand wire.



The multi-strand flexible wire, after being stripped to the corresponding length, can be directly connected or used with corresponding standard cold-pressed terminals (tubular insulated terminals, see the table below for reference specifications). Pressing down the button inserts the wire.

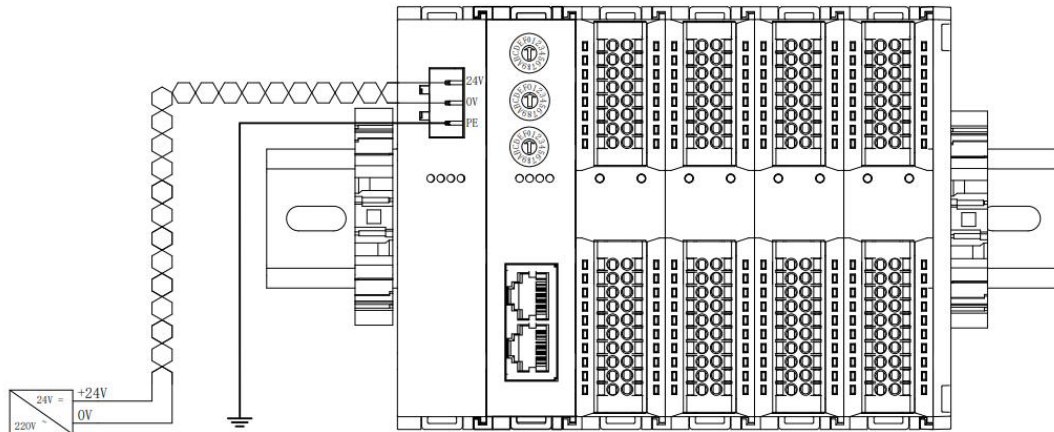


Specifications of tubular insulated ends		
Specifications	model	conductor cross-sectional area (mm ²)
 The length of tubular insulated terminals L is 10mm	E0310	0.3
	E0510	0.5
	E7510	0.75
	E1010	1.0
	E1510	1.5

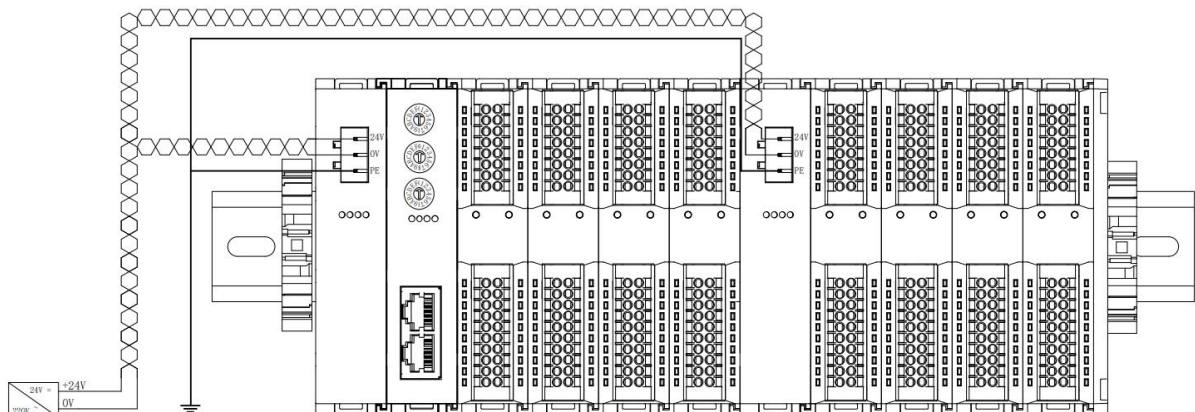
Power connection: Power module 3P terminal

Using a DC24V power module, refer to the wiring method and connect the power supply according to the circuit shown in the diagram below, while ensuring that the PE is reliably grounded (twisted pair cable is recommended for the power supply).

- Figure 6- 1 Coupler, I/O module, power supply wiring diagram



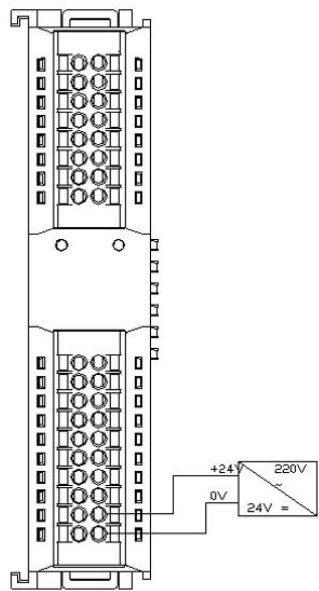
- Figure 6- 2 Coupler, I/O module, power supply module, I/O module, power supply wiring diagram



Load power supply wiring: Field side 20P terminal

Refer to the corresponding I/O module wiring diagram and wiring method to press the signal cables into the terminal blocks.

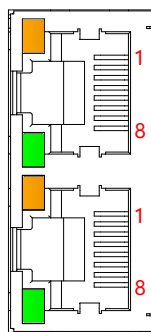
The load power supply uses a 24VDC power supply. Refer to the wiring method and connect the power supply according to the circuit diagram below [6.3 I/O Module Wiring Diagram](#).



Signal terminal wiring: 16P/20P terminals

Refer to the corresponding I/O module wiring diagram and wiring method to press the signal cables into the terminal blocks.

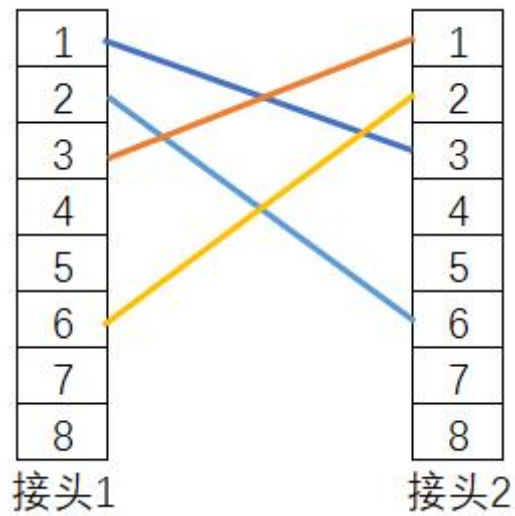
Bus wiring: Industrial Ethernet bus communication interface



pin number	Signal
1	TD+
2	TD-
3	RD+
4	—
5	—
6	RD-
7	—
8	—

- Category 5 or higher double-shielded (braided mesh + aluminum foil) STP cables are recommended for use as communication cables.

- The cables used in the MECHATROLINK-III network are all crossover cables, and the cable connection is shown in the figure below.

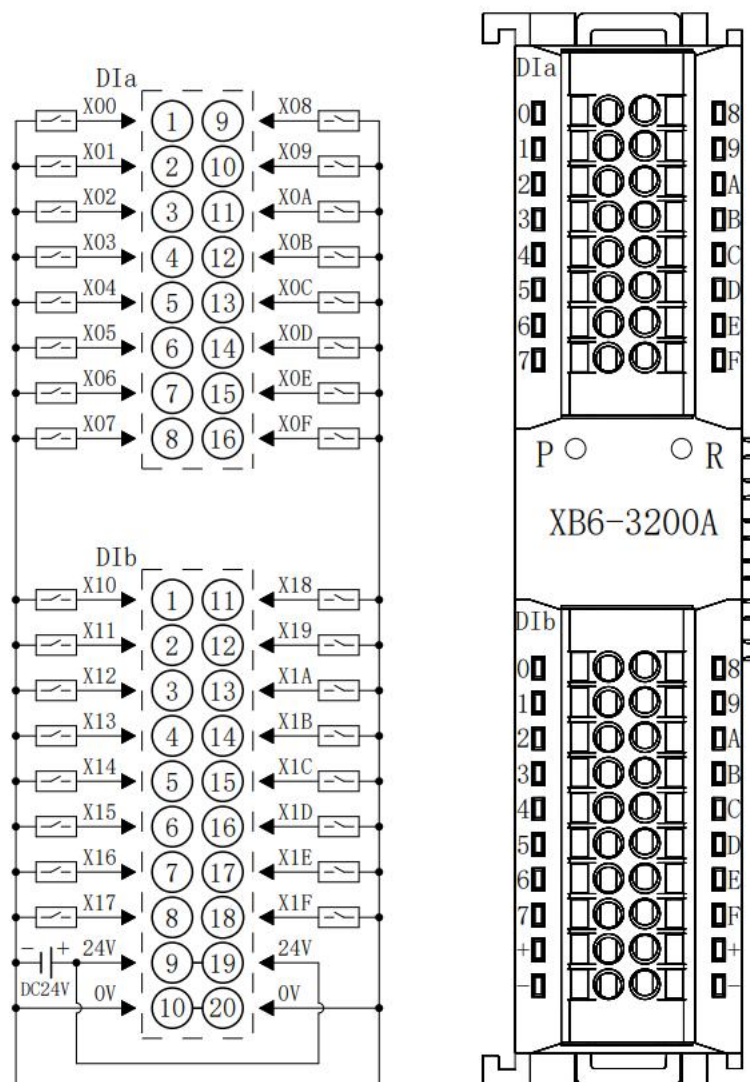


Note: The length of the cable between devices must not exceed 100 m.

6.3 I/O module wiring diagram

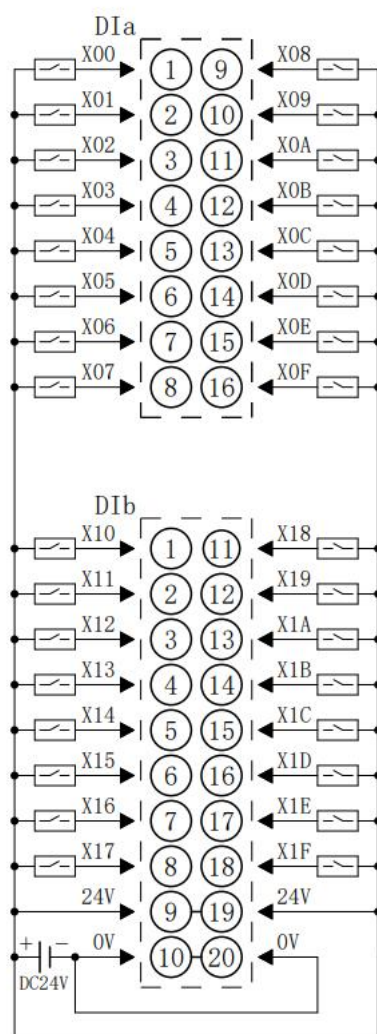
For wiring diagrams of XB6-3200N, XB6-0032AN, and XB6-0032BN, please refer to the "XB6 Series_MIL Connector Type IO User Manual".

6.3.1 XB6-3200A

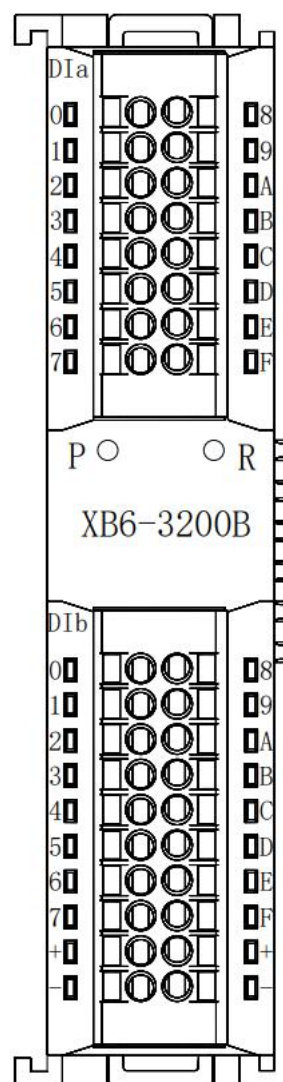


*24V内部导通;0V内部导通

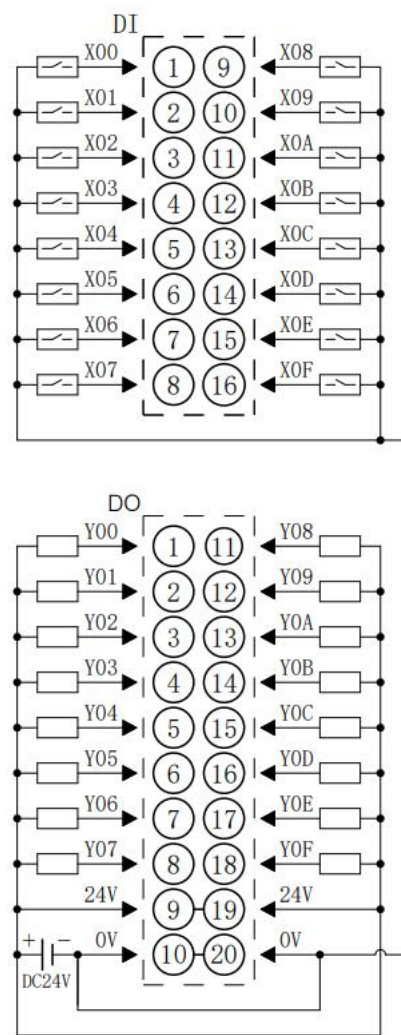
6.3.2 XB6-3200B



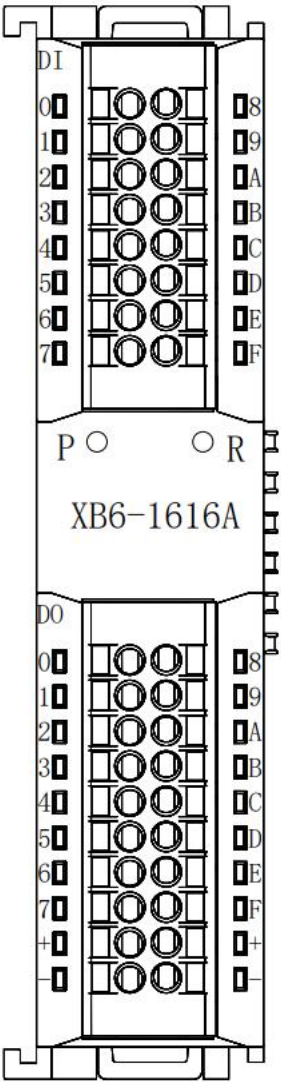
*24V内部导通;0V内部导通



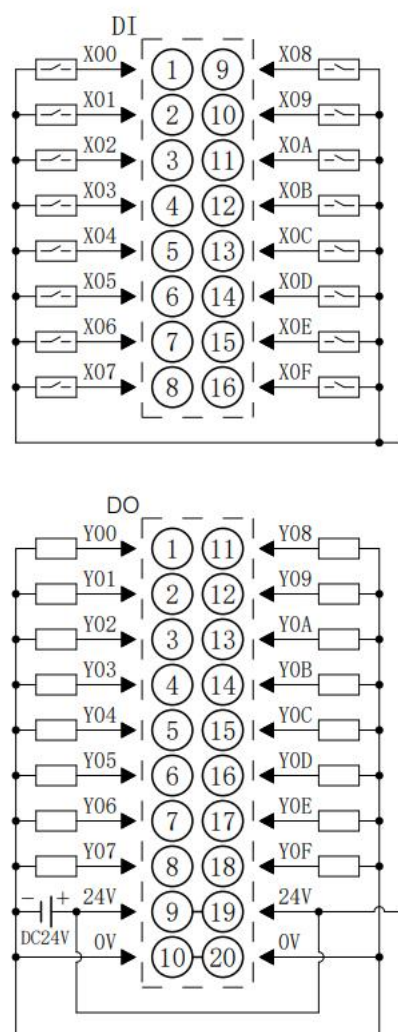
6.3.3XB6-1616A



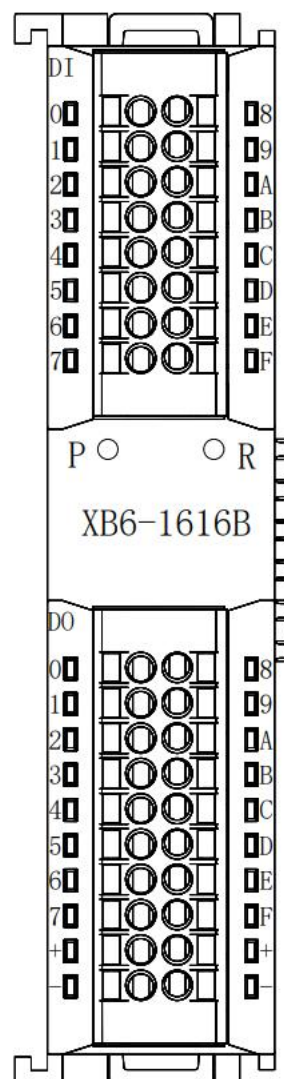
*24V内部导通;0V内部导通



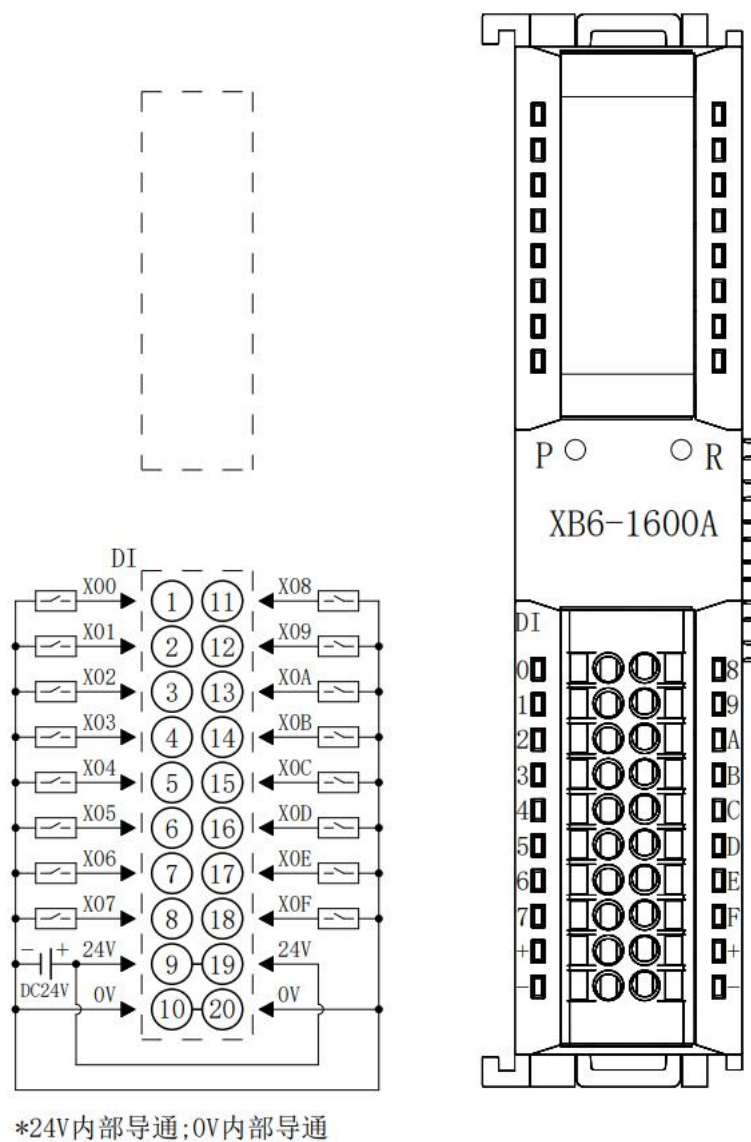
6.3.4XB6-1616B



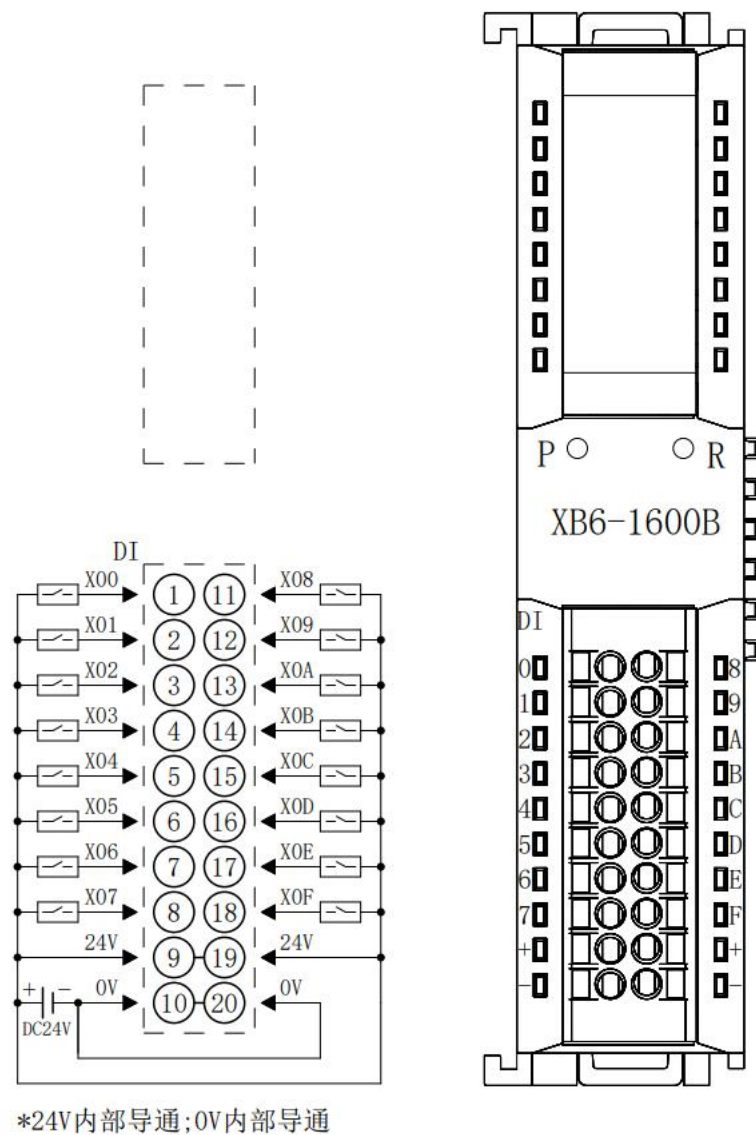
*24V内部导通;0V内部导通



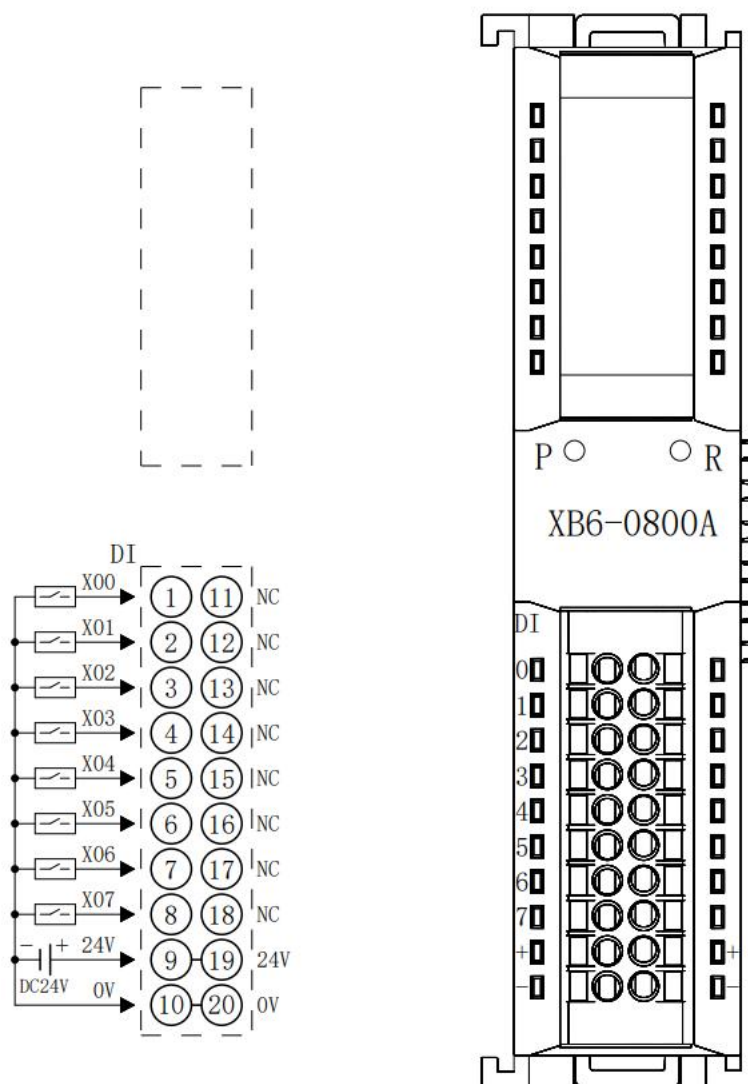
6.3.5 XB6-1600A



6.3.6 XB6-1600B

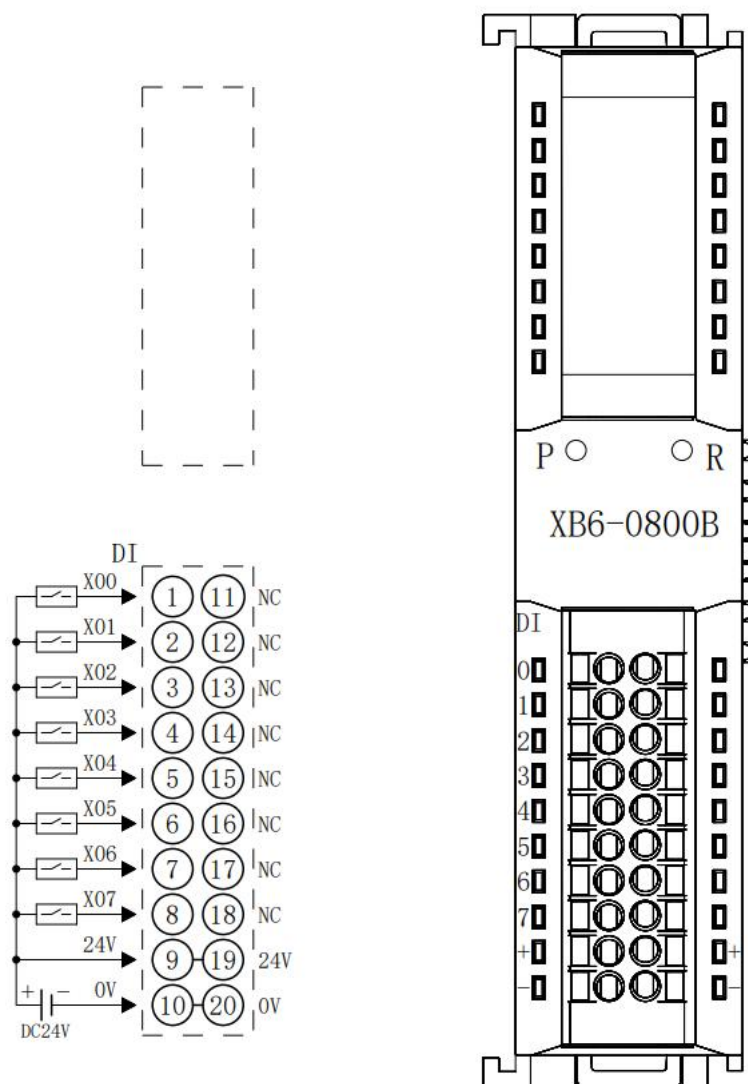


6.3.7 XB6-0800A



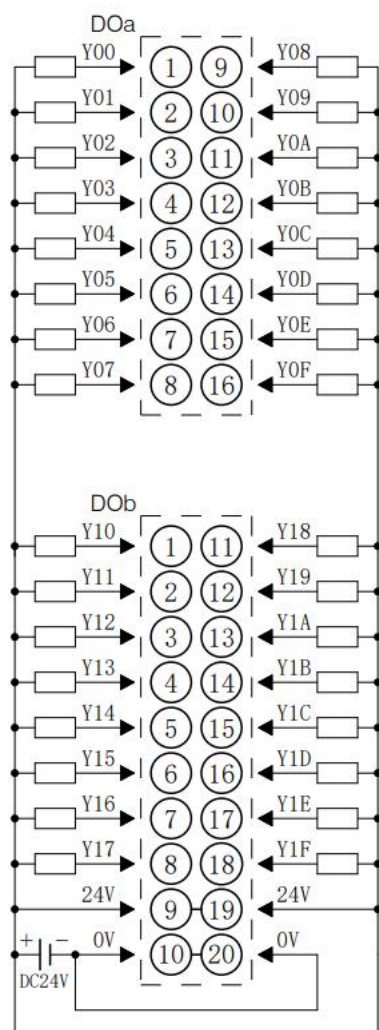
*24V内部导通;0V内部导通

6.3.8 XB6-0800B

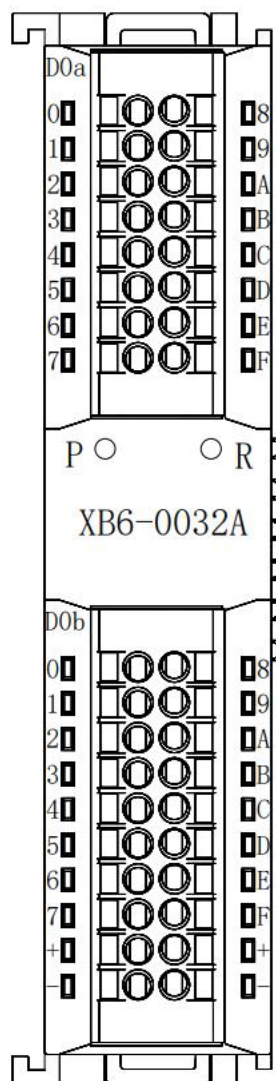


*24V内部导通;0V内部导通

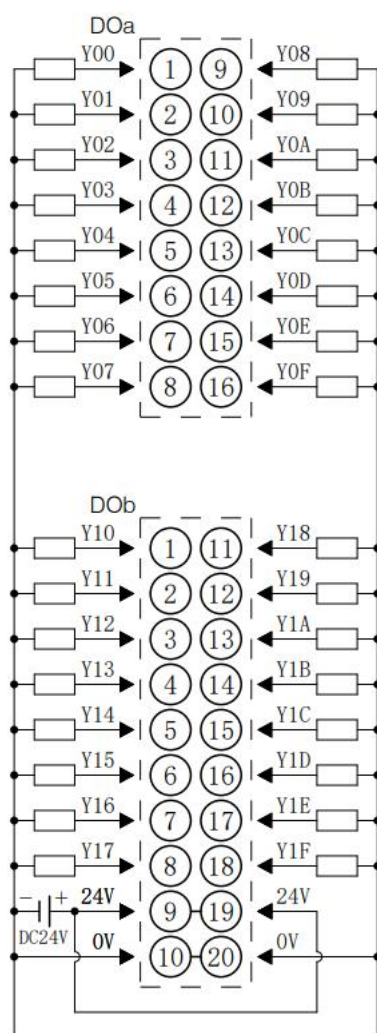
6.3.9 XB6-0032A



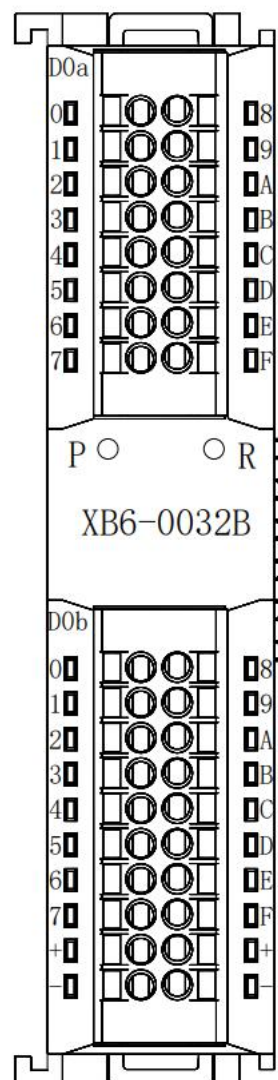
*24V内部导通;0V内部导通
 *负载公共端电源需与模块使用同一个电源



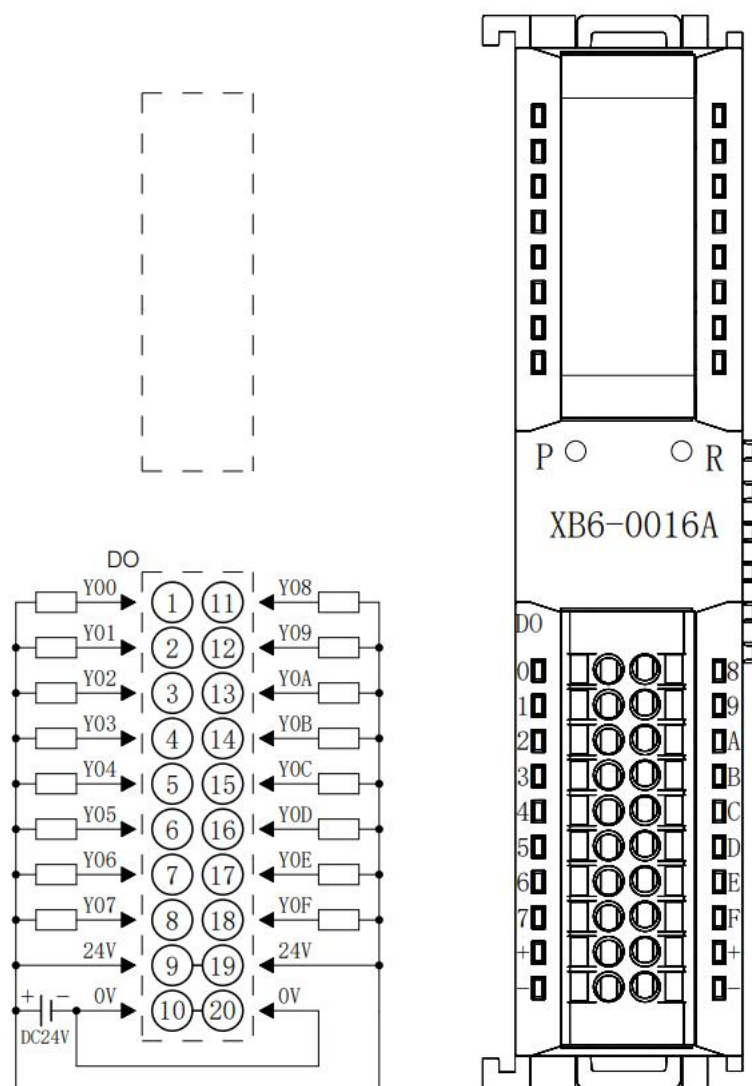
6.3.10 XB6-0032B



*24V内部导通;0V内部导通
 *负载公共端电源需与模块使用同一个电源

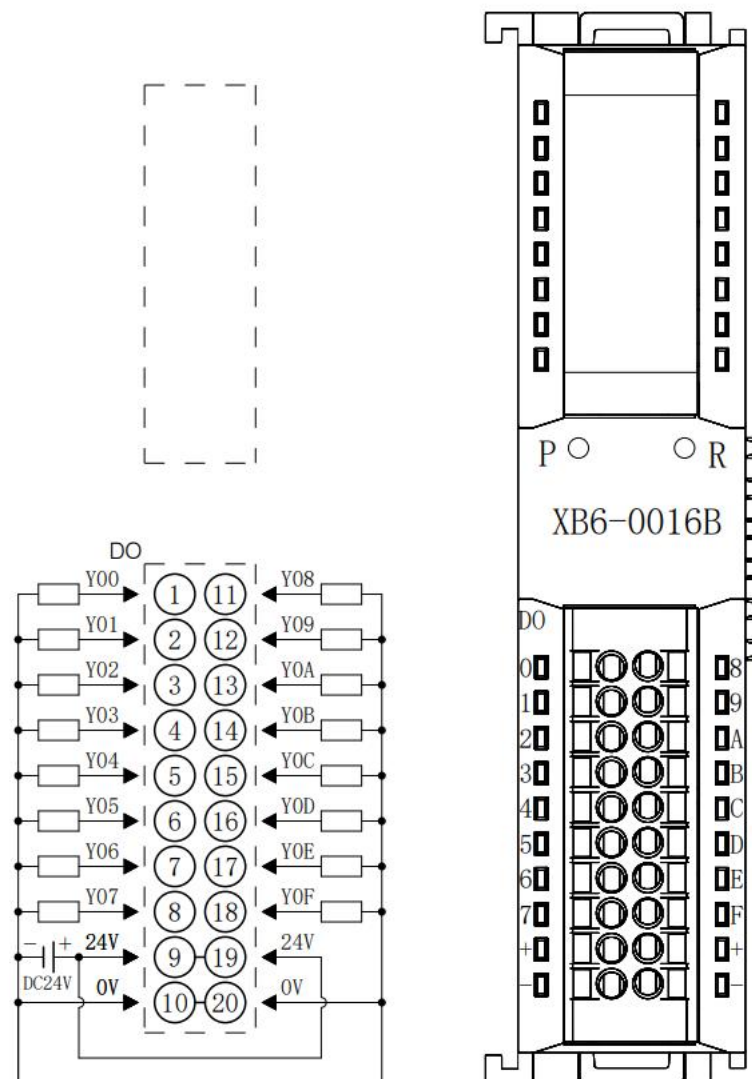


6.3.11 XB6-0016A



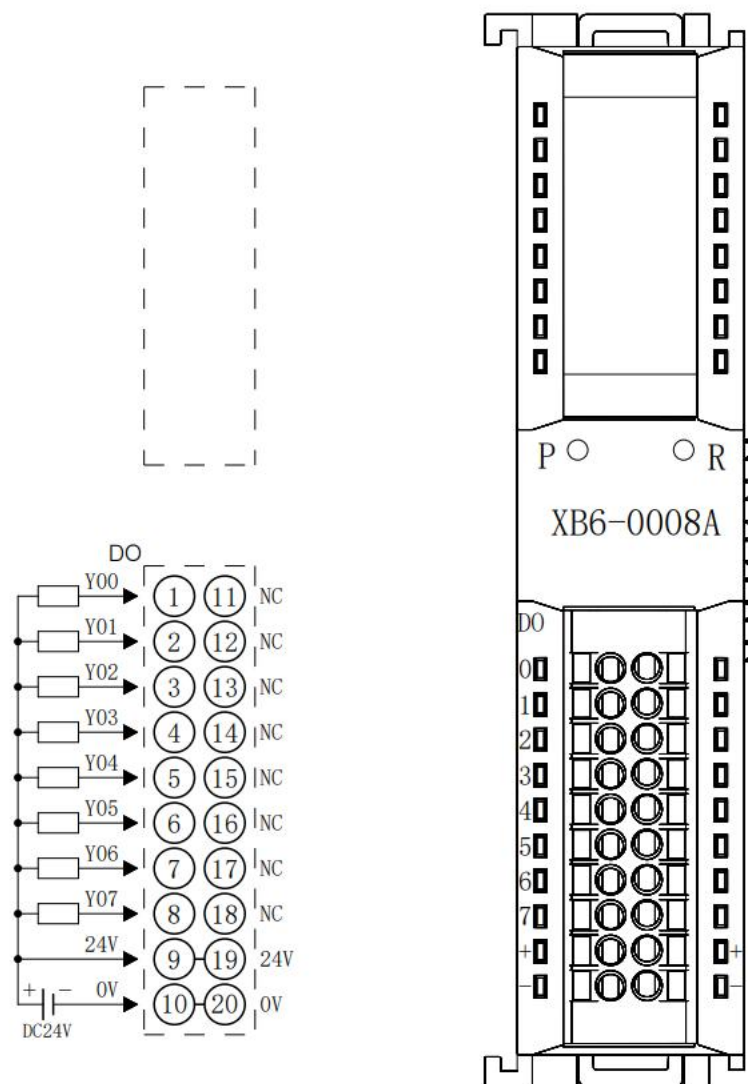
*24V内部导通;0V内部导通
 *负载公共端电源需与模块使用同一个电源

6.3.12 XB6-0016B



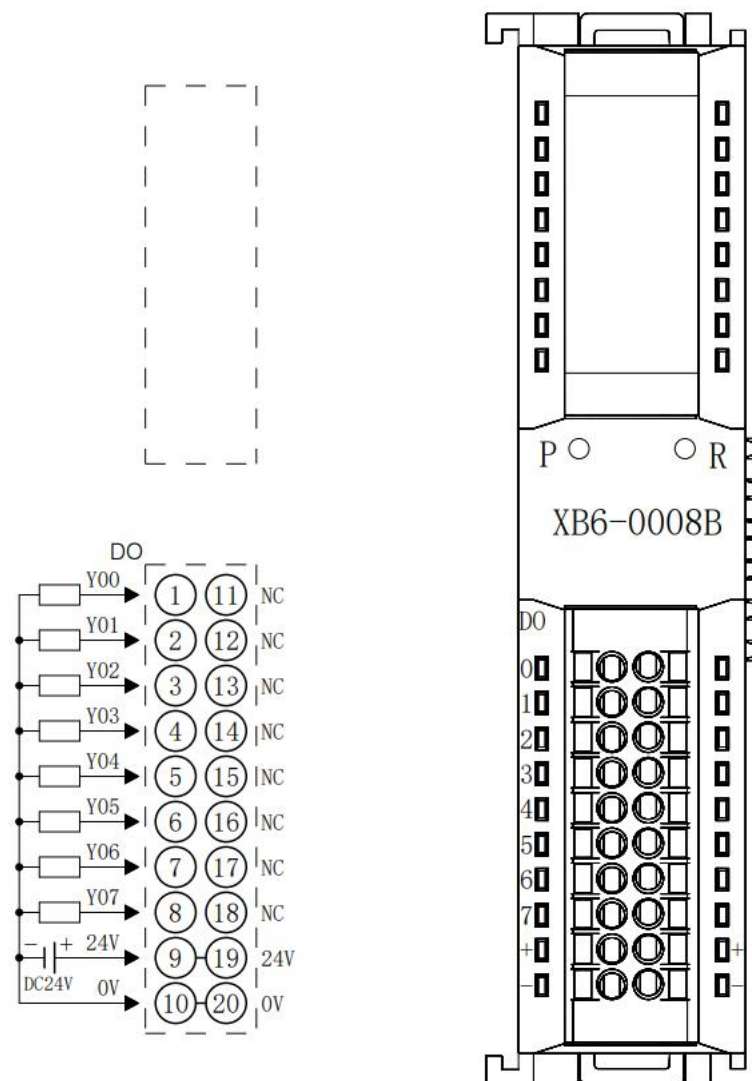
*24V内部导通;0V内部导通
 *负载公共端电源需与模块使用同一个电源

6.3.13 XB6-0008A



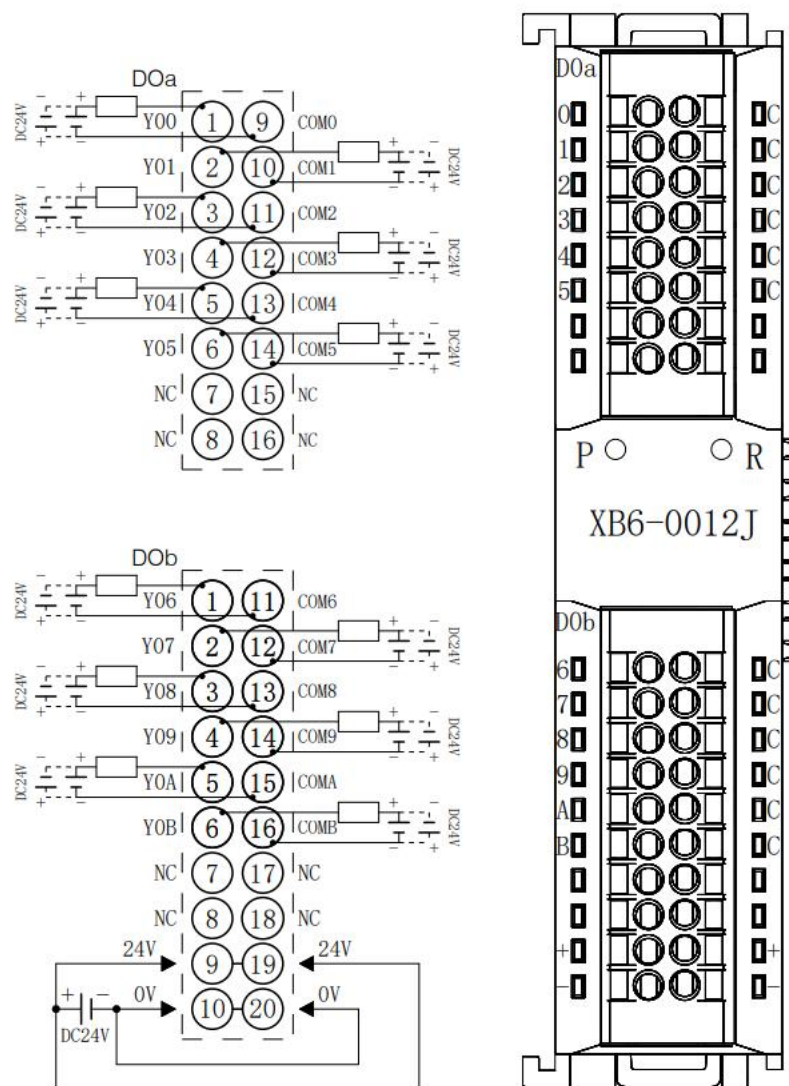
*24V内部导通;0V内部导通
 *负载公共端电源需与模块使用同一个电源

6.3.14 XB6-0008B



*24V内部导通;0V内部导通
 *负载公共端电源需与模块使用同一个电源

6.3.15 XB6-0012J

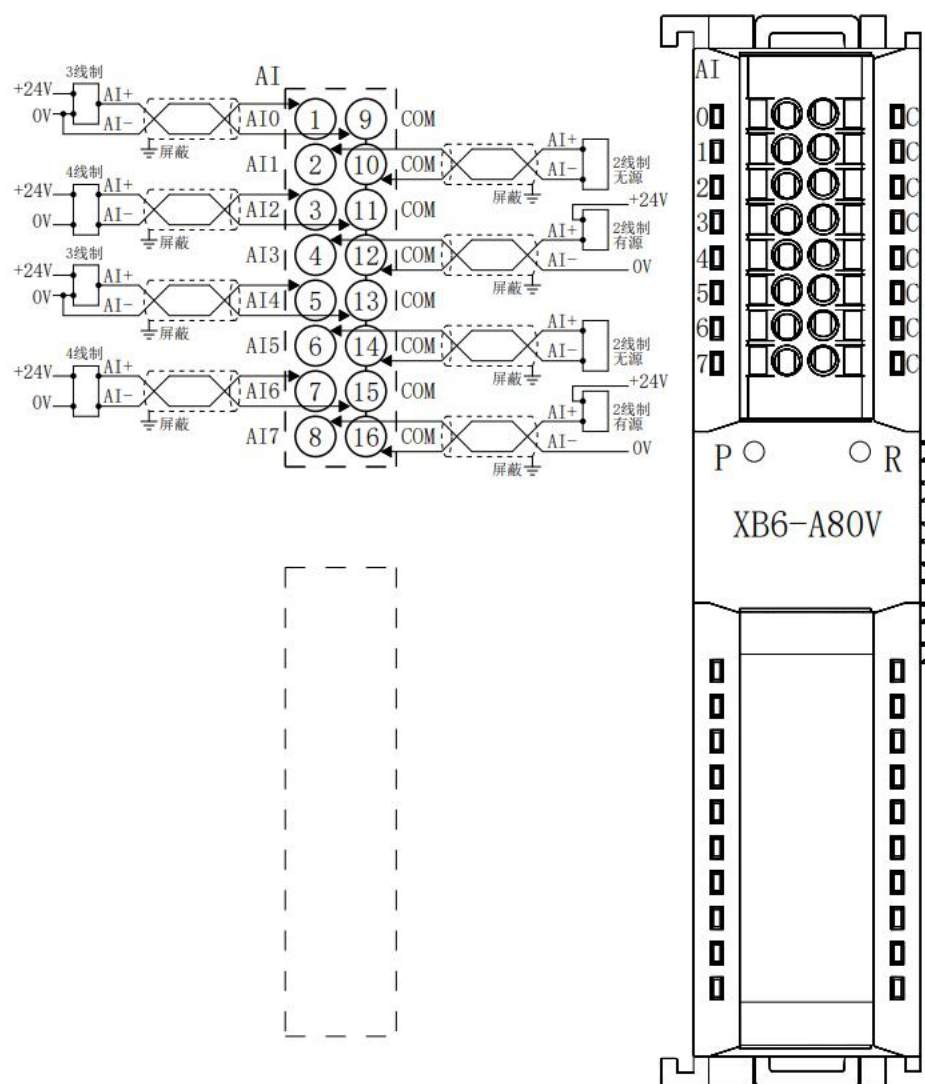


*24V内部导通;0V内部导通

*负载公共端电源需与模块使用同一个电源

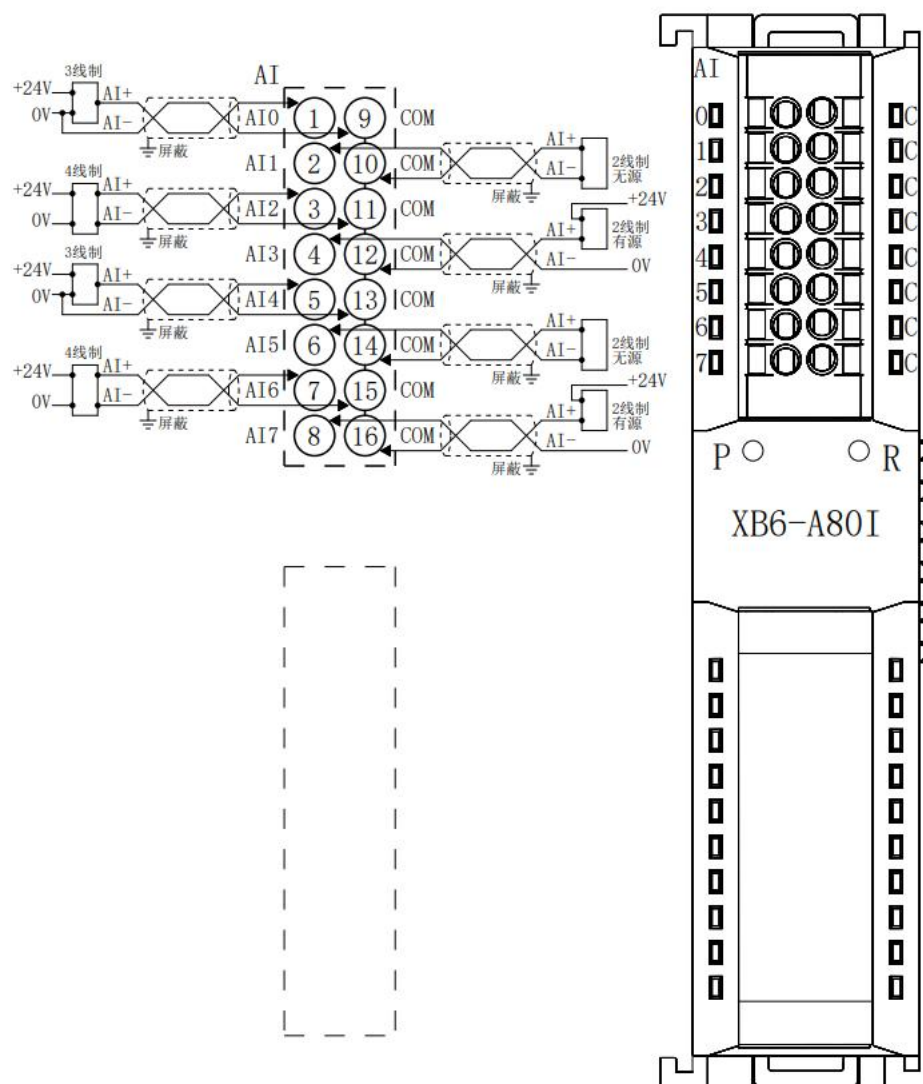
*COM可接正极或负极,内部不互通,支持DC0-48V

6.3.16 XB6-A80V



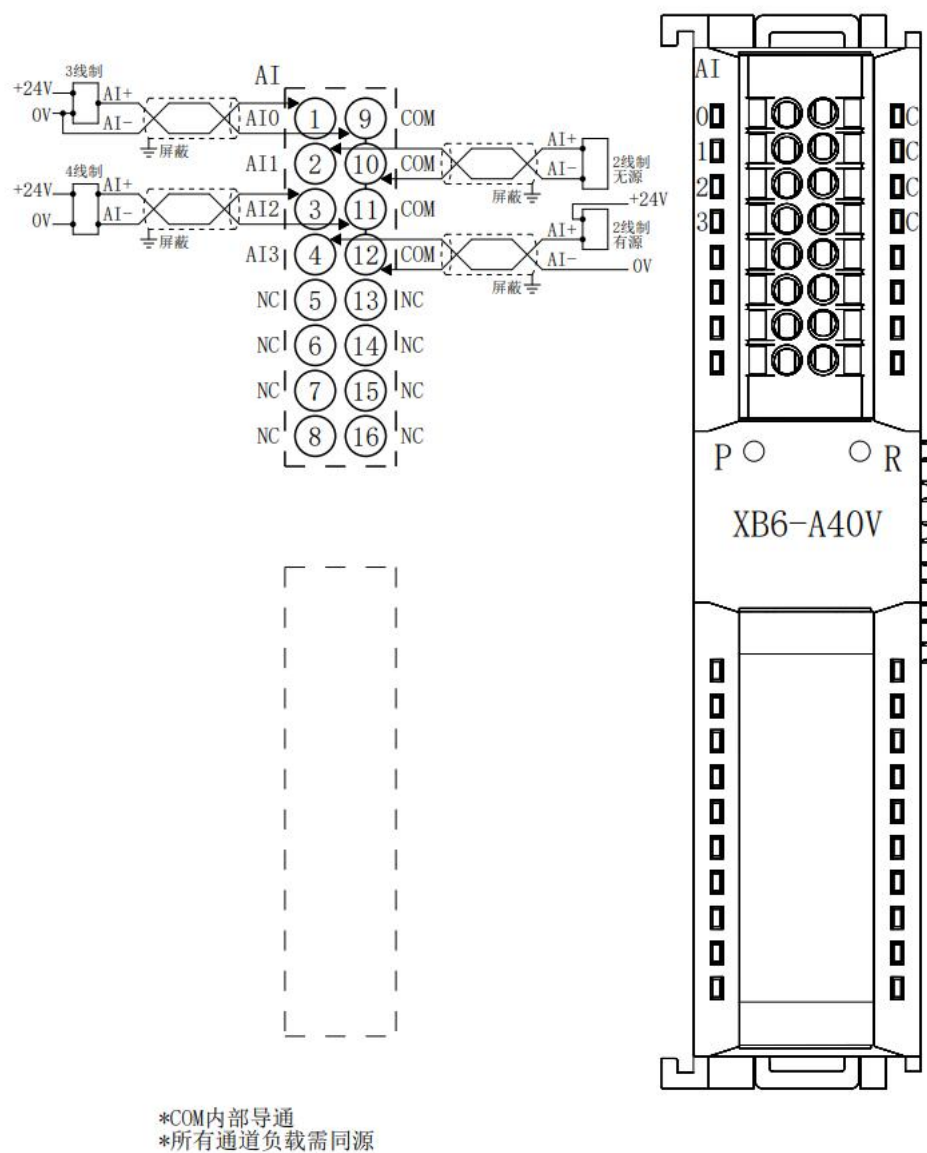
*COM内部导通
*所有通道负载需同源

6.3.17 XB6-A80I

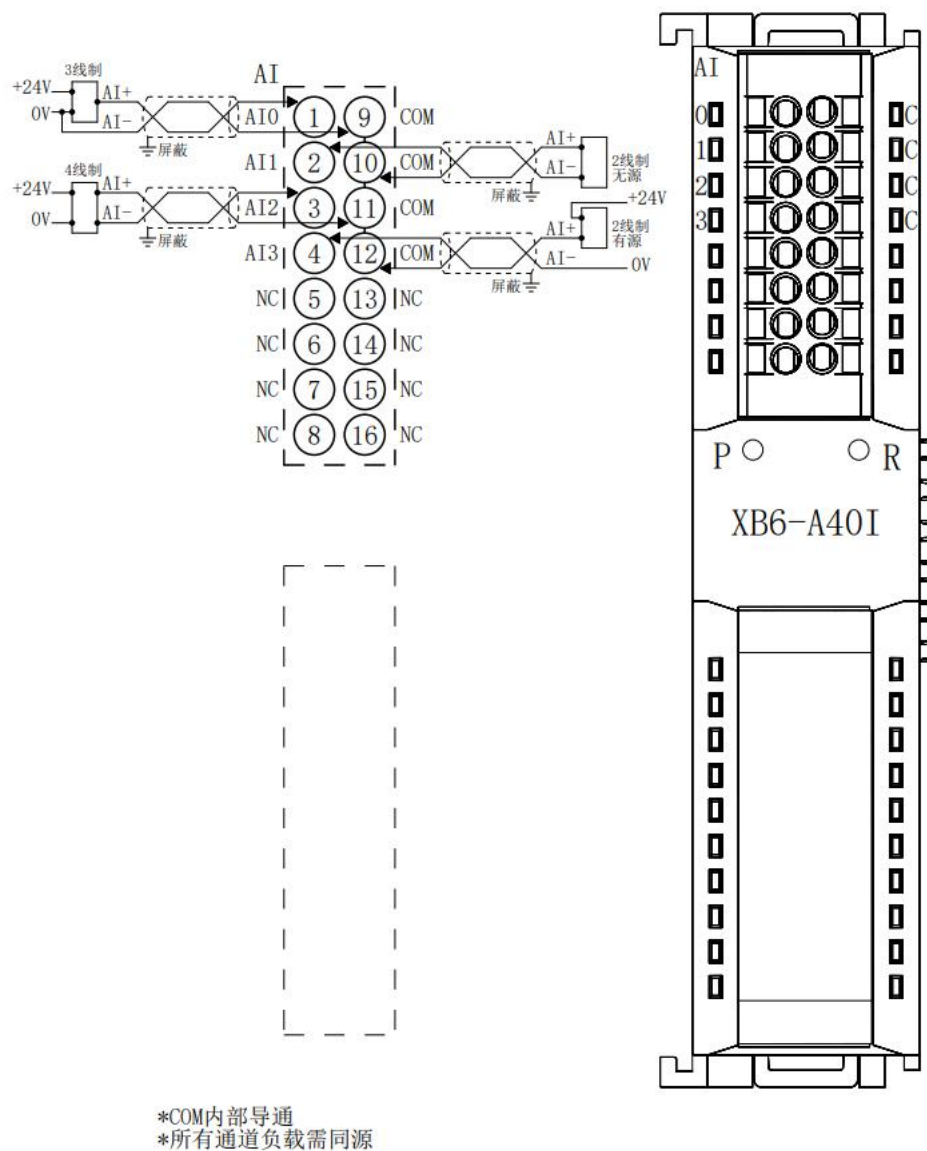


*COM内部导通
*所有通道负载需同源

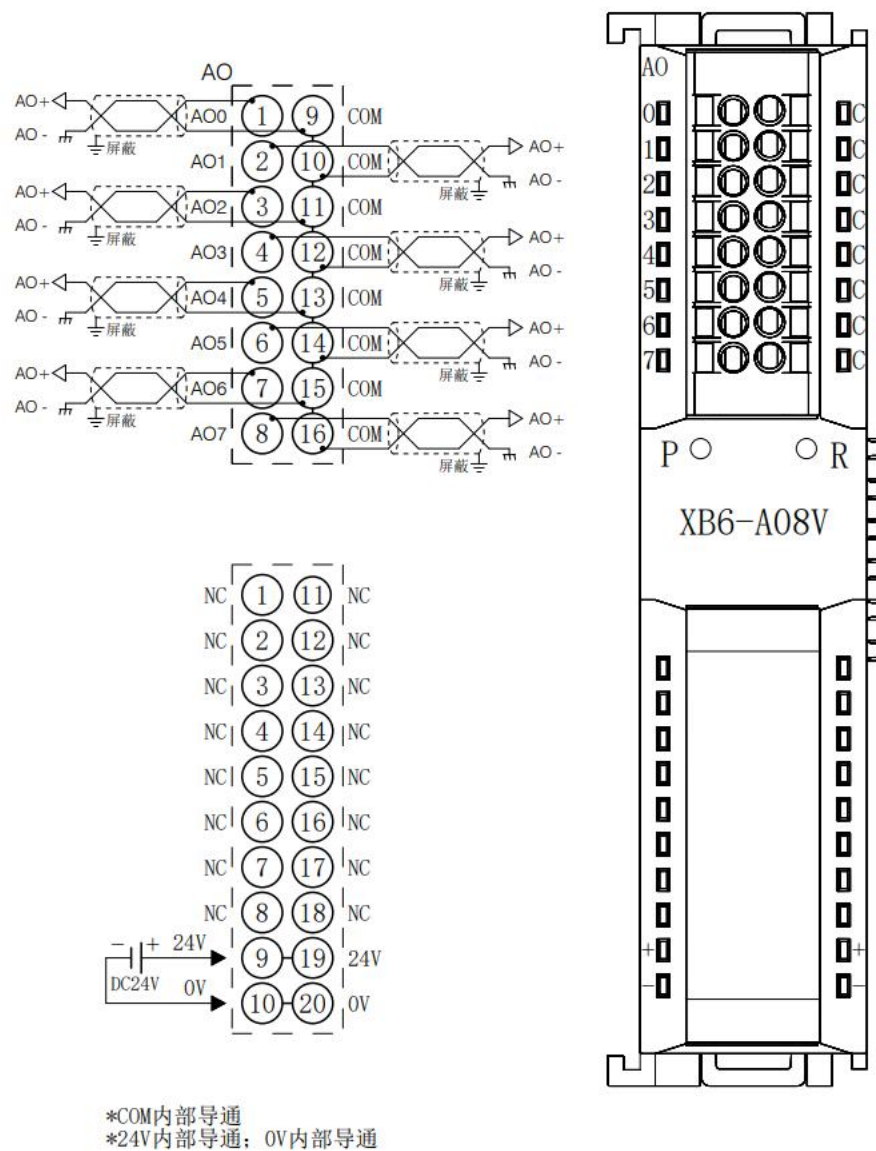
6.3.18 XB6-A40V



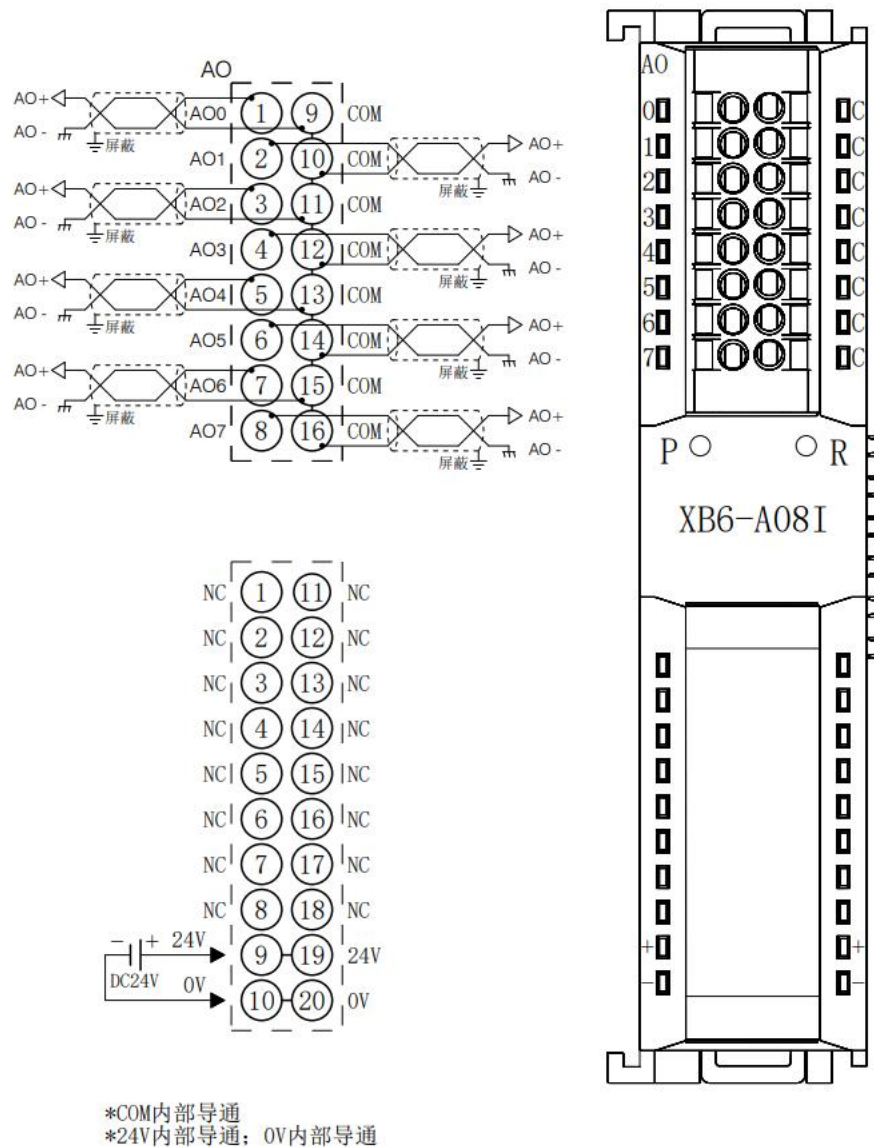
6.3.19 XB6-A40I



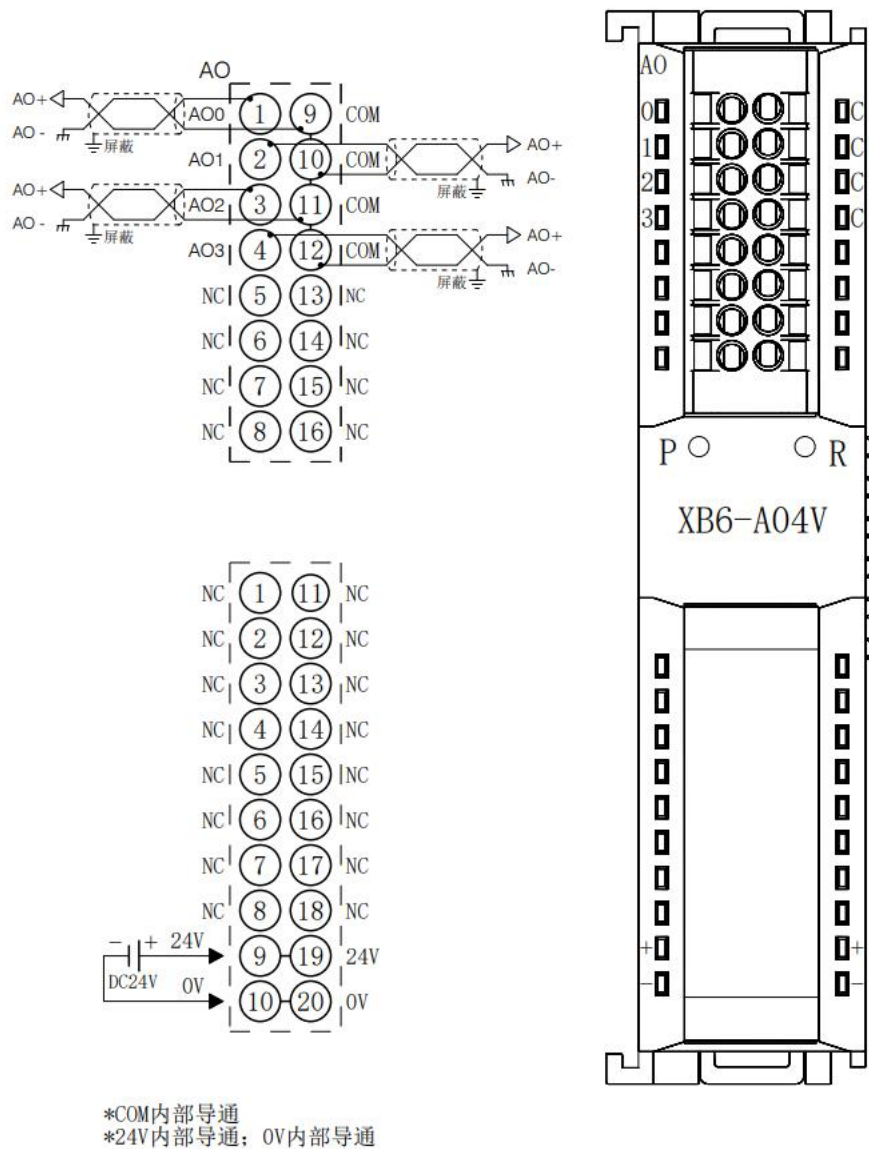
6.3.20 XB6-A08V



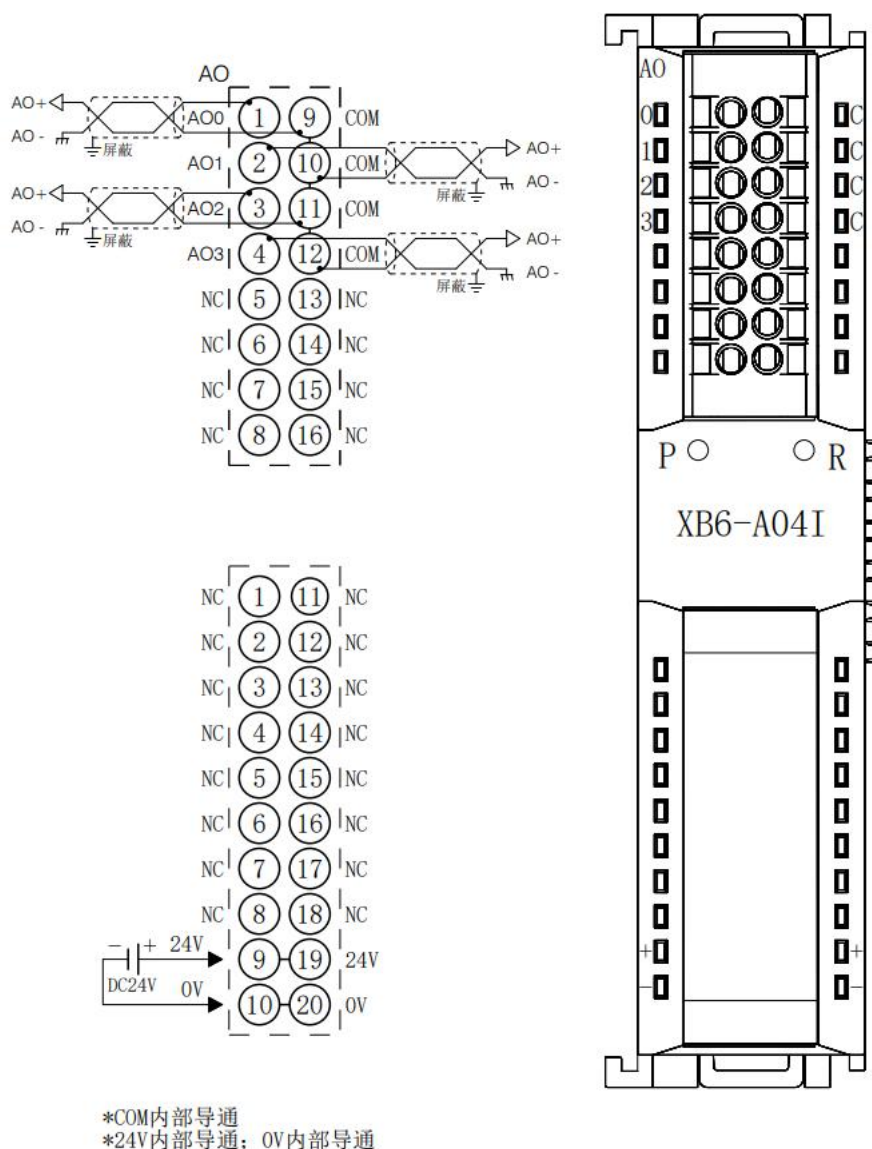
6.3.21 XB6-A08I



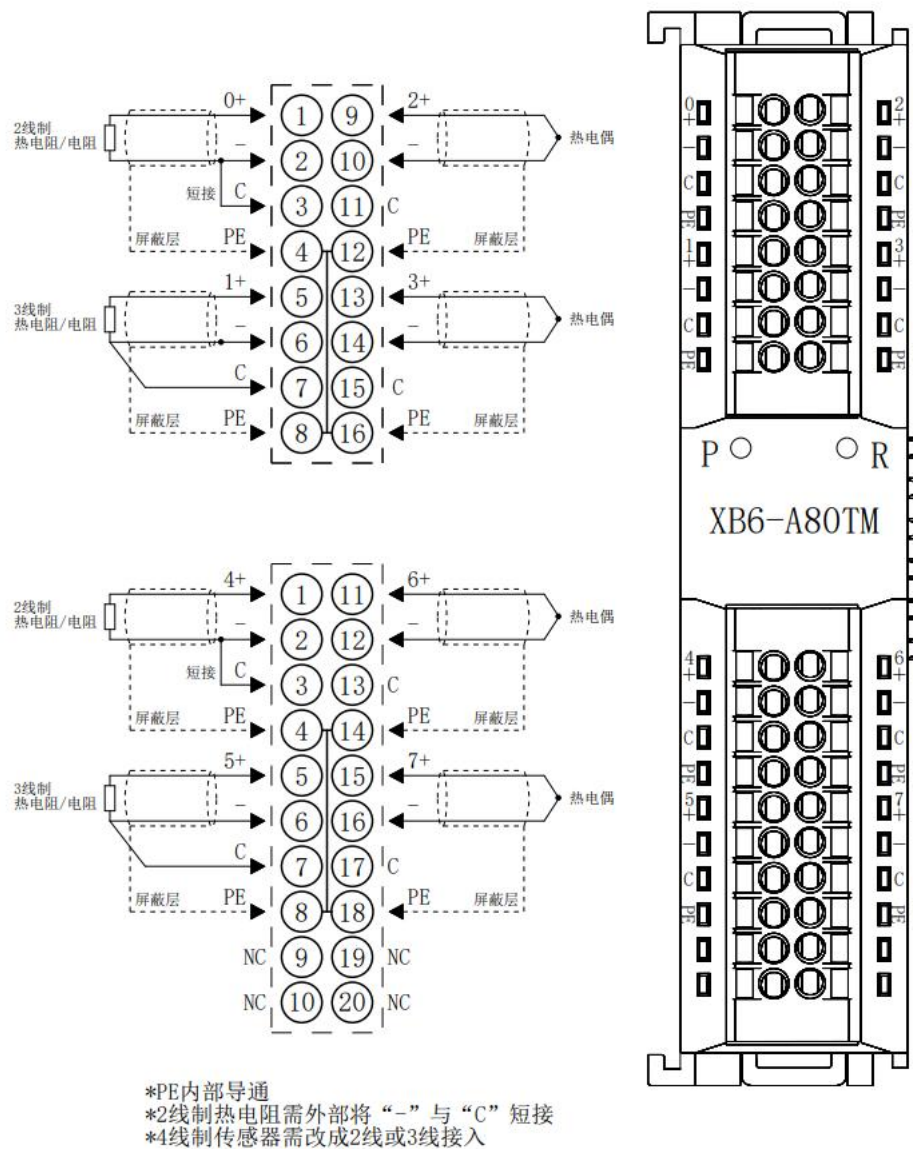
6.3.22 XB6-A04V



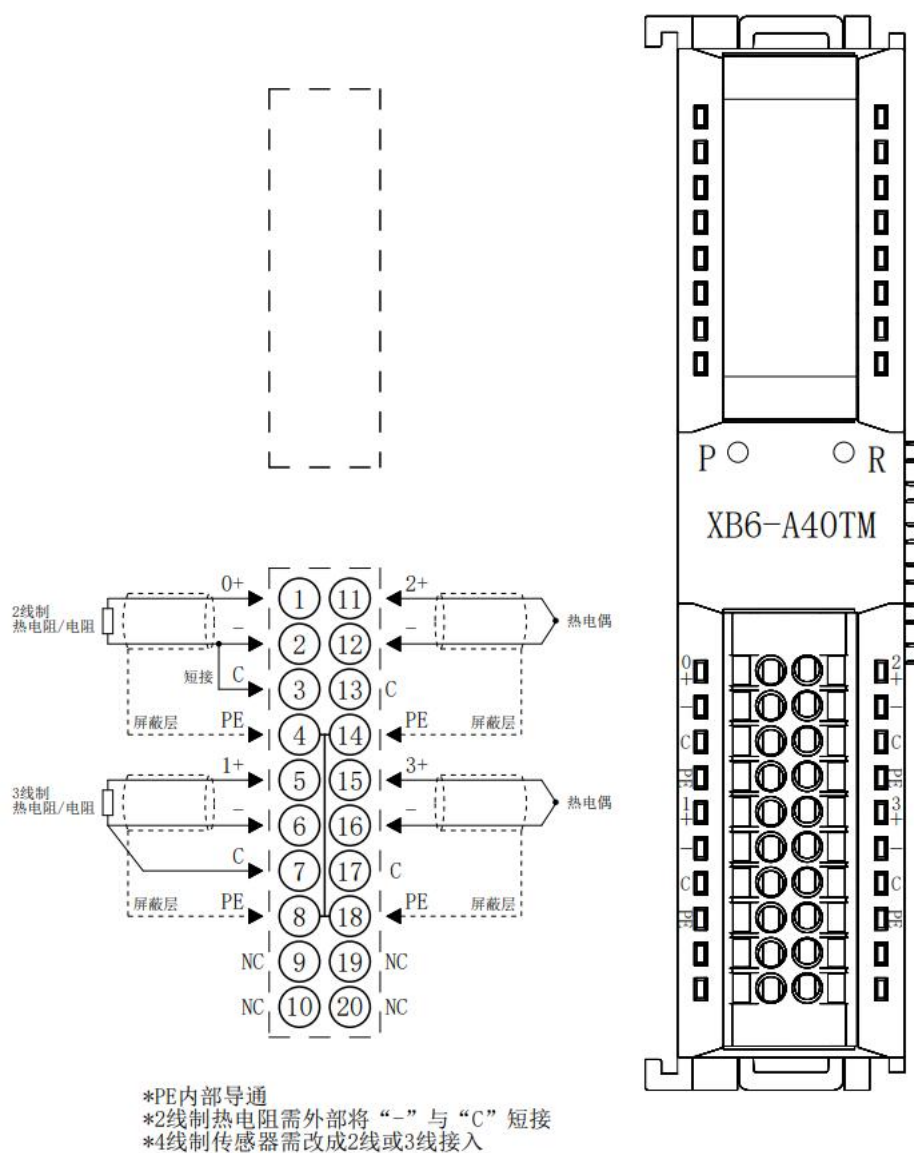
6.3.23 XB6-A04I



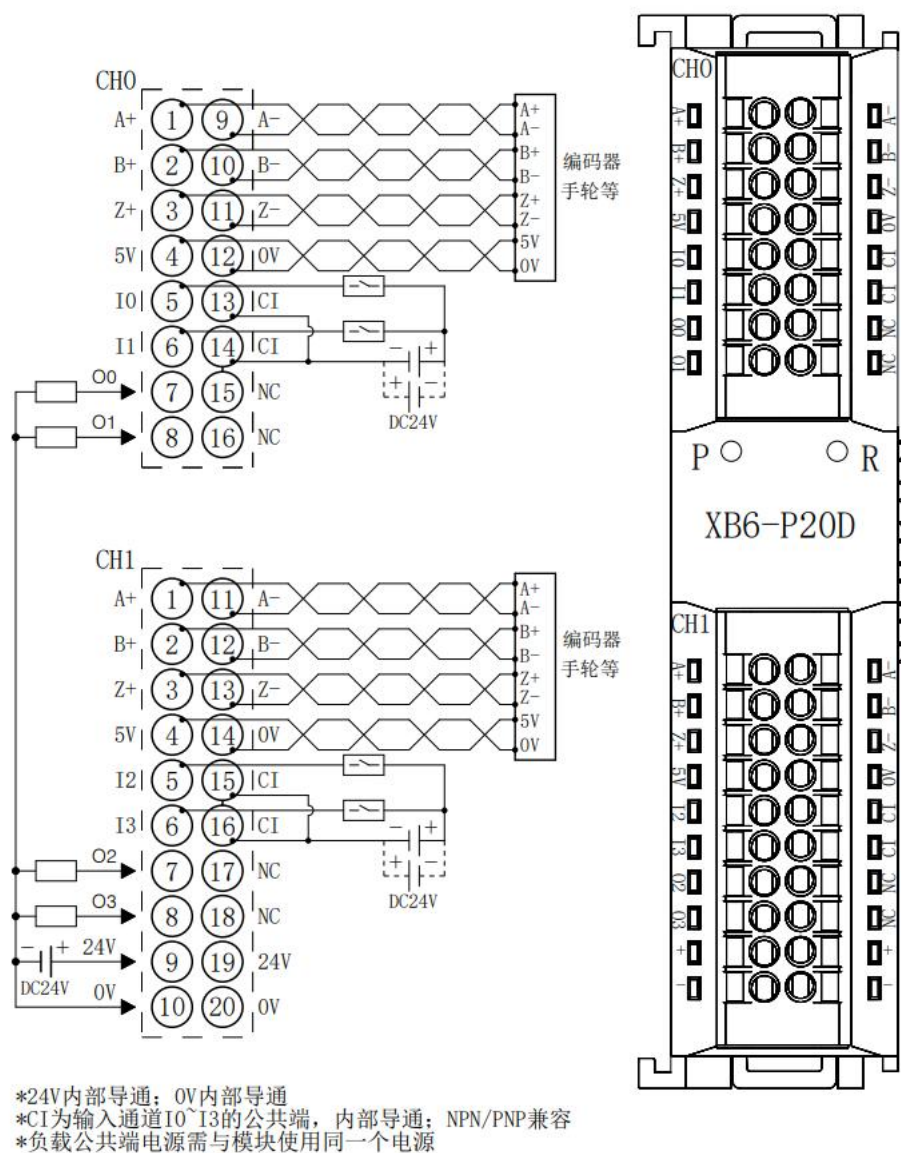
6.3.24 XB6-A80TM



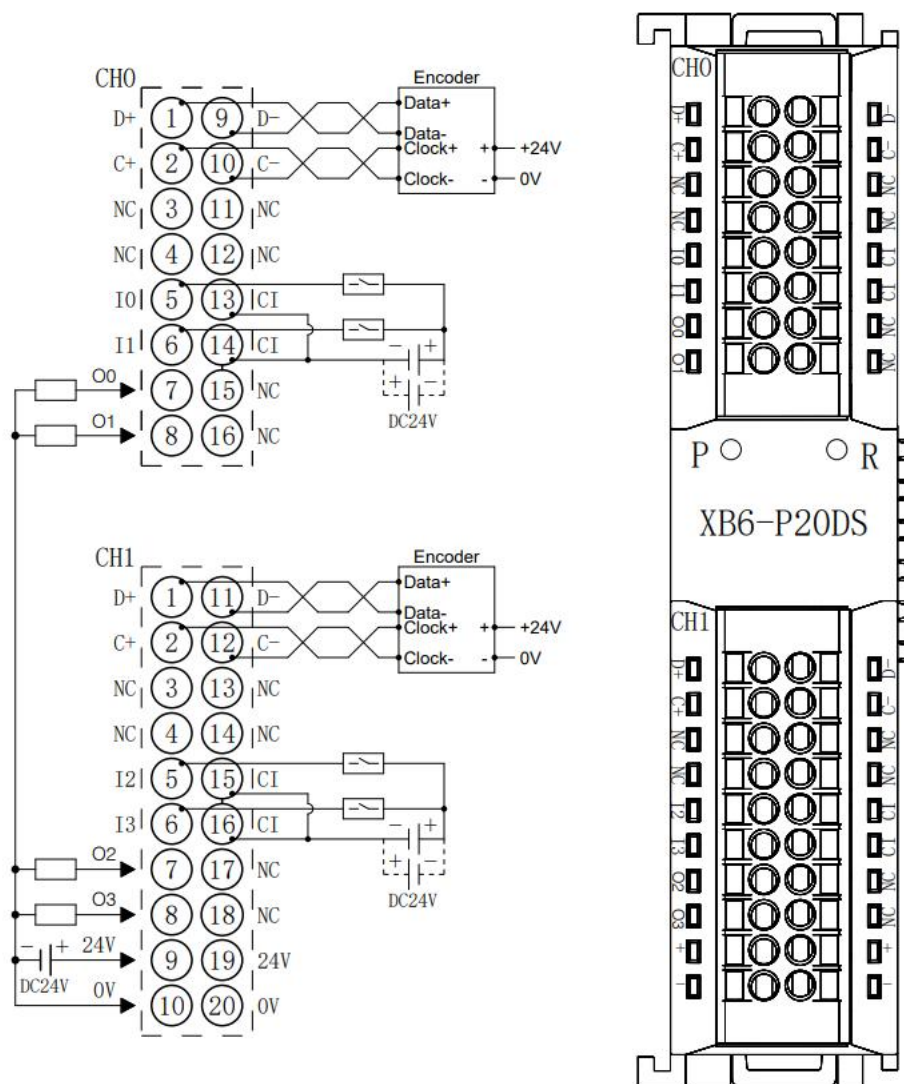
6.3.25 XB6-A40TM



6.3.26 XB6-P20D



6.3.27 XB6-P20DS

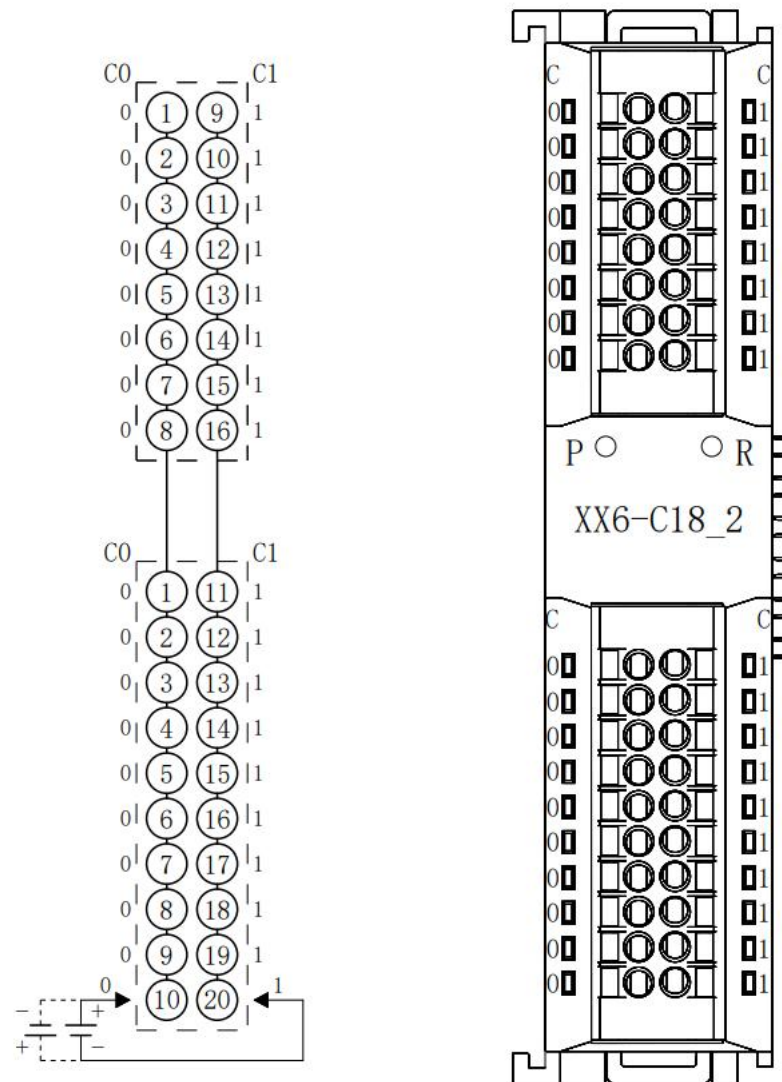


*24V内部导通；0V内部导通

*CI为输入通道I0~I3的公共端，内部导通；NPN/PNP兼容

*负载公共端电源需与模块使用同一个电源

6.4 Wiring diagram of common terminal expansion module



*C0—列内部导通；C1—列内部导通

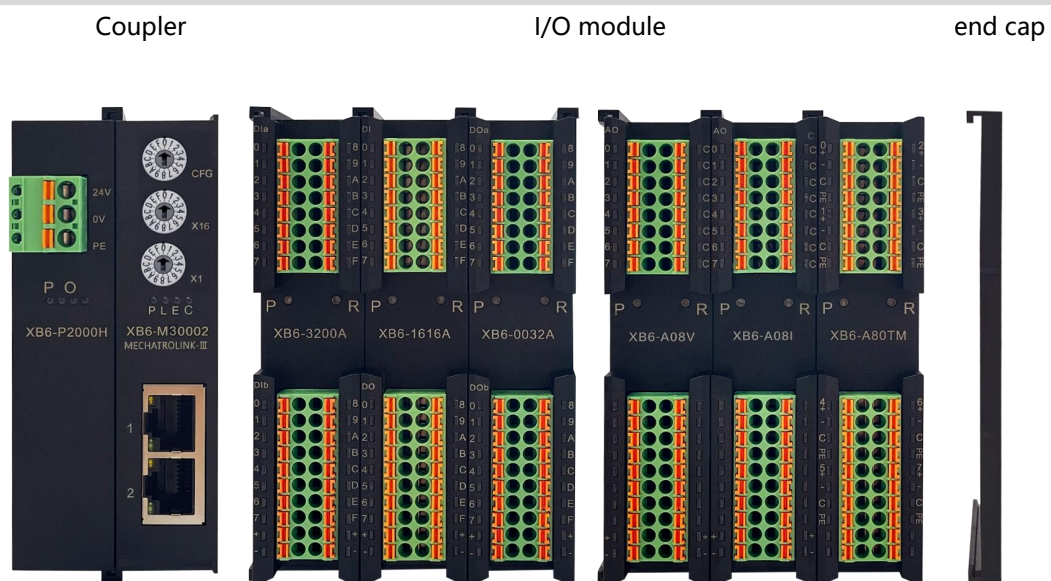
7 use

7.1 Module application

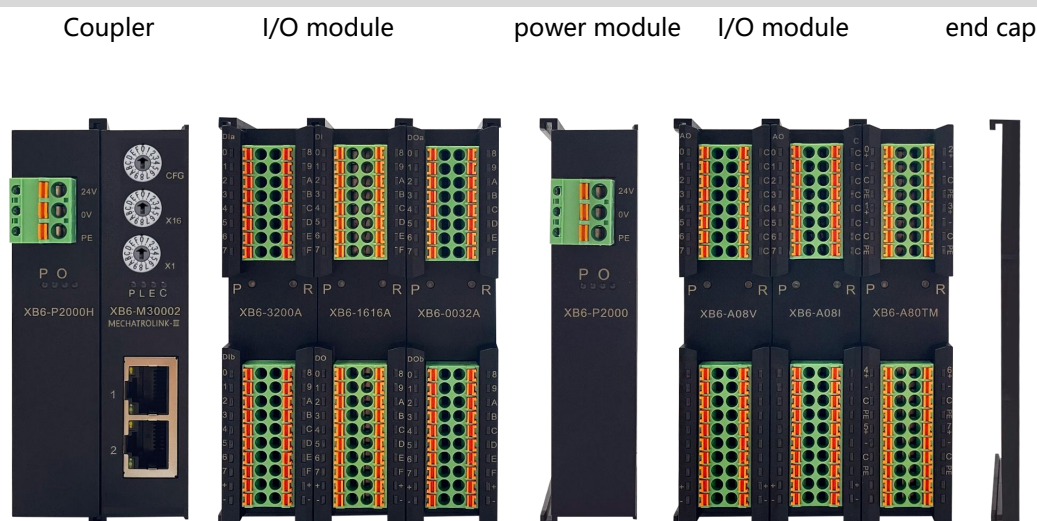
7.1.1 Application methods

The product uses a combination of coupler, I/O module, and end cap, and there are two possible combinations.

Product combination option 1 (coupler, I/O module, end cap)



Product combination option two (coupler, I/O module, power module, I/O module, end cap)



Module configuration quantity limit:

1. The coupler can be configured with ≤ 32 I/O modules.
2. The number of analog input modules cannot exceed 12, and the number of 8-channel analog inputs is not allowed to exceed 8.

Limitations on the number of power supply and expansion power modules that can be configured:

1. If the number of I/O modules configured in the system exceeds 10, an expansion power supply module needs to be added. After the expansion power supply module is added, the number of I/O modules configured should be ≤ 12 .

7.1.2A list of standard I/O module commands

Command code (HEX)	name	Description
0	Data input/output	Perform data input/output between I/O modules
1	Alarm and warning reading	Read alarm and warning information from I/O modules
2	Alarm and warning clearing	Clear alarm and warning information on I/O modules
3	Parameter reading	Read parameters from I/O modules
4	Parameter writing	Set parameters in I/O modules
5	Non-volatile Parameter Reading	Read parameters from the non-volatile memory of I/O modules
6	Non-volatile Parameter Writing	Set parameters in the non-volatile memory of I/O modules

Note: When setting module parameters or output data via commands, settings can only be made at the output register.

7.2 Bus module configuration instructions

This manual uses the MPE720 Ver.7 software platform, combined with the YASKAWA MP3300 CPU301 (32axes), to introduce the configuration and operation methods of coupler and I/O modules.

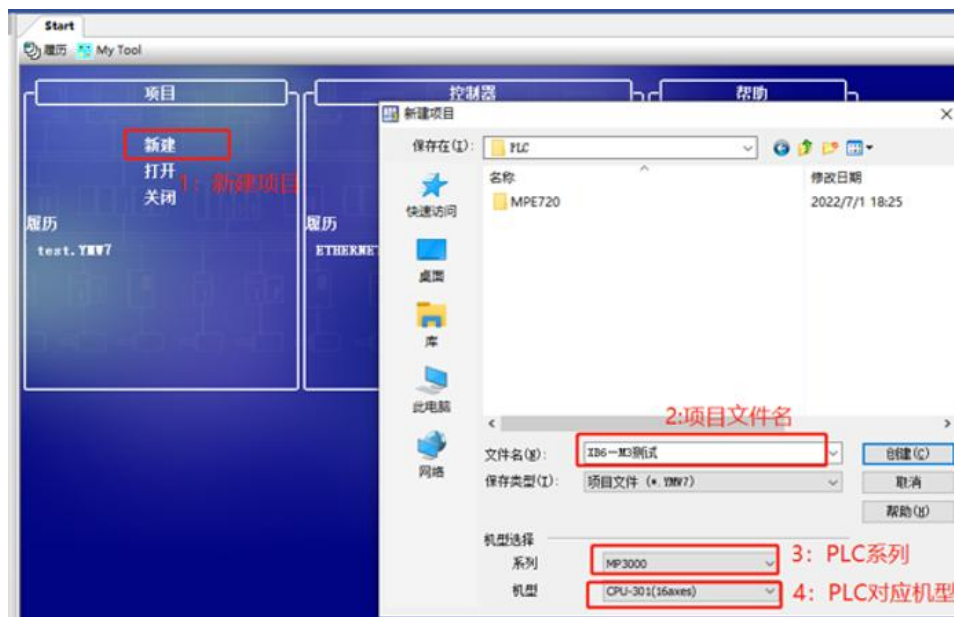
7.2.1 Environmental preparation

- One computer, pre-installed with MPE720Ver.7 software.
- MECHATROLINK-III Dedicated Interface Cable
- YASKAWA MP3300 CPU301(32axes)
- Power supply module, coupler (XB6-M32002ST), I/O modules (several), end cap
- For hardware configuration and wiring, please follow the instructions in the "[Installation and removal](#)" "[wiring](#)"

7.2.2 Configuration Description

1. New construction projects

- Open the MPE720Ver.7 software.
- Select "Project > New".
- Enter a file name, select the corresponding model, and click "Create", as shown in the image below.



2. Communication settings

- Select "Online > Communication Settings".
- Select the communication port, select the target IP address, and click "Search" to automatically scan for the connected PLC.
- Click "Connect" to establish communication between the host computer and the PLC, as shown in the figure below.

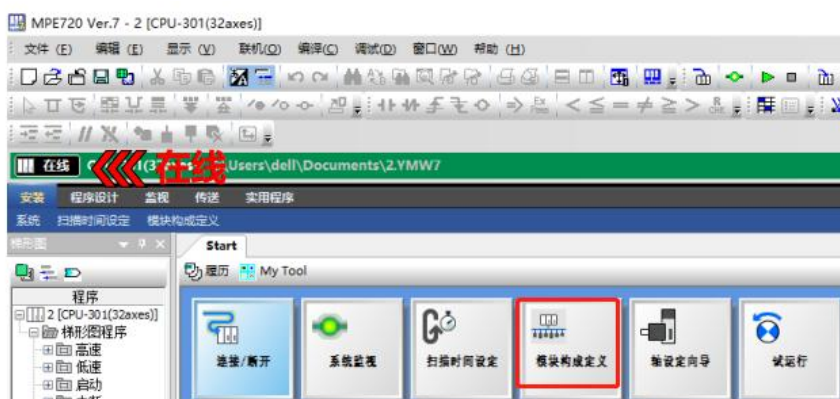


Configuration instructions:

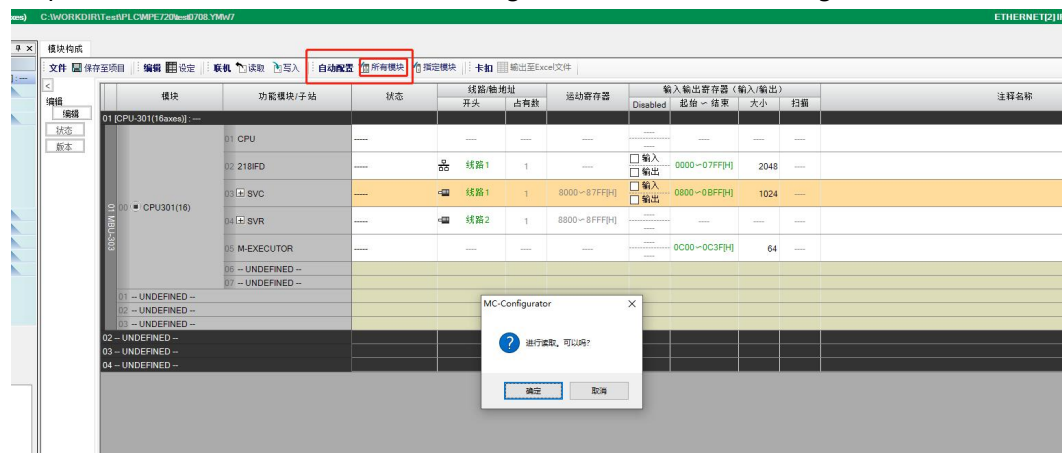
- Communication Port: Select the local Ethernet gateway for direct network connection from the drop-down list.
- Target IP address for connection: The IP address of the PLC to be connected.
- Please ensure that the Ethernet IP address of the PC and the IP address of the PLC are on the same network segment.

3. Module composition definition

- After a successful connection, the PLC status bar will display "Online", as shown in the image below.



- b. Click "Module Composition Definition" to enter the configuration interface.
- c. Click on "All Modules" after automatic configuration. The "MC-Configurator" dialog box will pop up. Click "OK" to execute automatic configuration, as shown in the figure below.



4. SVC32 Deployment Controller

You can then see the number of controller slots allocated to the coupler, which displays the device status, station address, register address, input/output register address, and transmission byte size, etc.

For example, when the connection module is as shown in the figure

below:

电源模块 XB6- P2000H	耦合器 XB6- M3000 2	XB6- A80I	XB6- 1616B	XB6- 0012J	XB6- A80V	XB6- 0032A	XB6- 1616A	XB6- 1616A	XB6- 0032B	XB6- 0032B	XB6- A80V	XB6- A80I	XB6- 0032A	XB6- 0032A	XB6- 0032A	XB6- 1616A	XB6- A08V	
模块数据区大小(字)	8	1	1	8	2	1	1	2	2	8	8	2	2	2	2	1	8	
模块站号	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	.....	
传输字节数(字)	32字(64字节)																	
命令头数据大小(字)	2字(4字节), 可用数据区大小30字(60字节)																	
该槽可用数据区大小	22	21	20	12	10	9	8	6	4	22	14	12	10	8	7	22	.....	
控制器插槽数	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	.....	

默认分配32字(64字节)空间的控制器插槽1, 去除命令头数据, 可供用户使用的数据区大小为30字, 根据I/O模块的排列依次占用可用数据区空间

此时第10个模块所需的数据区大小为8字, 但是此时控制器插槽1的可用数据区只剩4字, 不足存放该模块数据, 故在此自动另起一组新控制器插槽2

此时第16个模块所需的数据区大小为8字, 但是此时控制器插槽2的可用数据区只剩7字, 不足存放该模块数据, 故在此自动另起一组新控制器插槽3

The result of the above connection modules being scanned by the PLC is shown in the figure below.

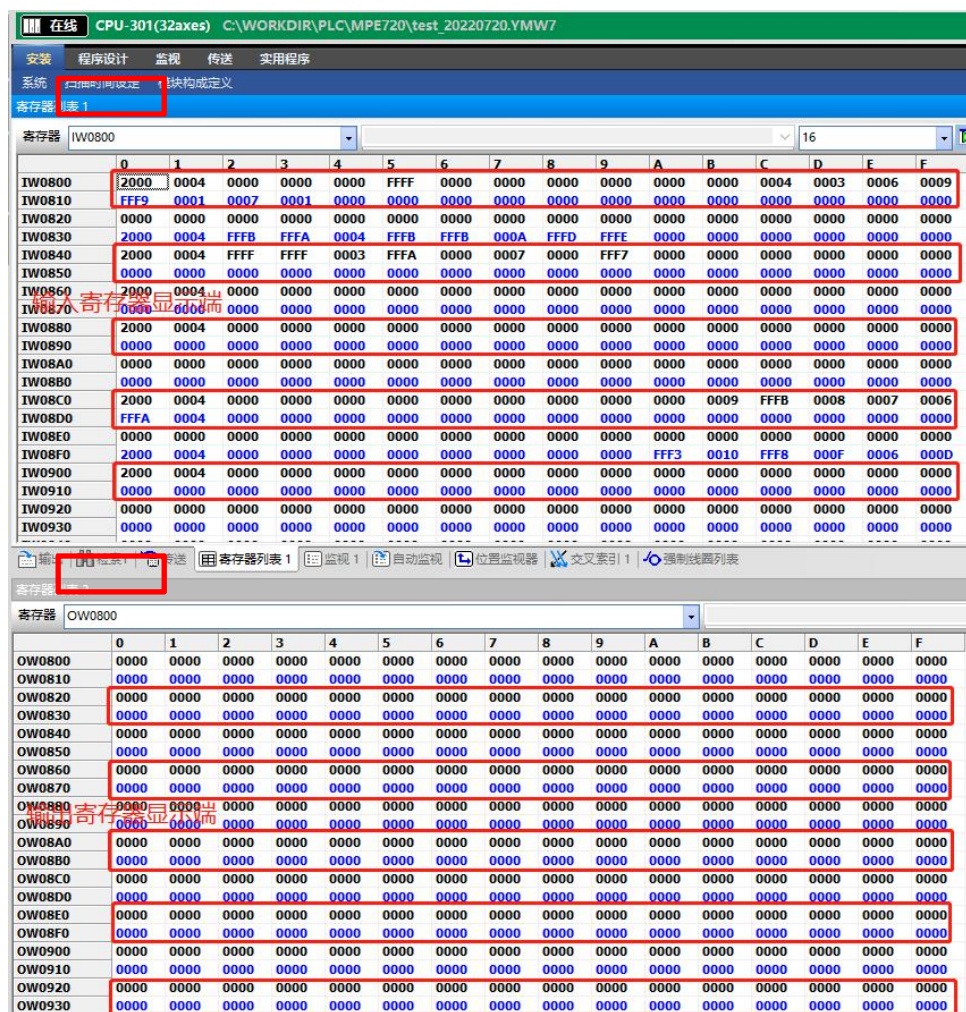
模块	功能模块/子站	状态	线路/轴地址		运动寄存器	输入输出寄存器 (输入/输出)			
			开头	占有数		Disabled	起始 ~ 结束	大小	扫描
01 [CPU-301(32axes)] :--									
01 CPU		运行中							
02 218IFD		运行中	品	线路1	1				
03 SVC32 控制器插槽1		运行中	线路1		2				
01 UnSupportDevice (30003232)		正常	04[H]	0	8000~807F[H]		0800~081F[H]	32	传输字节大小
02 UnSupportDevice (30003232)		正常	04[H]	0	8080~80FF[H]		0820~083F[H]	64byte	
03 UnSupportDevice (30003232)		正常	04[H]	0	8100~81FF[H]		0840~085F[H]	32	
04 UnSupportDevice (30003232)		正常	04[H]	0	8180~81FF[H]		0860~087F[H]	64byte	
05 UnSupportDevice (30003232)		正常	04[H]	0	8200~827F[H]		0880~089F[H]	32	
04 SVR32		运行中	线路3	2	9000~9FFF[H]		08A0~08BF[H]	64byte	
05 M-EXECUTOR		运行中					08C0~08DF[H]	32	
06 -- UNDEFINED --							08E0~08FF[H]	64byte	
07 -- UNDEFINED --							0900~091F[H]	32	
01 -- UNDEFINED --[---]							0920~093F[H]	64byte	
02 -- UNDEFINED --[---]									

5. download

- After completing the automatic configuration, click "Save to Project".
- Click "Write" to write the configuration to the PLC, as shown in the figure below.



- c. The contents of the corresponding input/output registers can be viewed through the register list, as shown in the figure below.



6. Set transmission period

You can select the transmission period by double-clicking SVC32, as shown in the figure below.



7.3 Product Code Definition

To facilitate user identification of module models during automatic configuration, the module product code is defined as follows.

- Product code definition: 0 xab 0 0 cdef
- A: 1 is a digital input module; 2 is an analog input module; 3 is a coupler.
- B: 0 represents a coupler; 1 represents an NPN coupler; 2 represents a PNP coupler; 3 represents voltage; 4 represents current.
- 0: Reserved
- 0: Reserved
- c&d: Number of input channels; Coupler 32
- e&f: Output flux; Coupler 32

When automatically configured, the effect is displayed as shown in the figure below.

1 [CPU-301(32axes)] : --					
01 MRU-301/302	00 CPU301(32)(运行中]	01 CPU	运行中	---	---
		02 218IFD	运行中	线路1	1
		03 SVC32	运行中	线路1	2
		01 UnSupportDevice (30003232)	● 正常	14[H]	0
		02 UnSupportDevice (30003232)	● 正常	(00[H]	0
		03 UnSupportDevice (30003232)	● 正常	14[H]	0
		04 UnSupportDevice (30003232)	● 正常	(01[H]	0
		03 UnSupportDevice (30003232)	● 正常	14[H]	0
		04 UnSupportDevice (30003232)	● 正常	(02[H]	0
		04 SVR32	运行中	线路3	2
		05 M-EXECUTOR	运行中	---	---

7.4 Input/output data

7.4.1 Input/output register contents description

Taking the input/output register of control slot 1 as an example

Register Number	meaning
IWXX00/ OWXX20	Command Area: The area for displaying and setting module commands, occupying a total of 2 characters (4byte)
IWXX01 / OWXX21	
IWXX02 / OWXX22	Data Area: The read/write region of the I/O module, totaling 30 words (60 bytes).
• • •	
IWXX0F/ OWXX2F	
IWXX10 / OWXX30	
• • •	
IWXX1F/ OWXX3F	

The data area layout of the I/O module on the input/output registers (taking the input/output register of control slot 1 as an example).

Register Number	meaning
IW0800/ OW0820	Command area:The display and settings area for module commands occupies a total of 2 characters(4bytes)
IW0801/ OW0821	
IW0802 / OW0822	The data area of the first module occupies 8 register spaces if the module requires an 8-byte data area. For example, the first module connects to the XB6-A08V module.
IW0803 / OW0823	
IW0804 / OW0824	
IW0805 / OW0825	
IW0806 / OW0826	
IW0807 / OW0827	
IW0808 / OW0828	
IW0809 / OW0829	
IW080A/ OW082A	The data area of the second module occupies the space required for the corresponding data area, for example, connecting...XB6-3200AThe module occupies 2 register spaces.
IW080B / OW082B	
IW080C / OW082C	Data area for the third module, such as the XB6-0016B module
IW080D / OW082D	The data area for the fourth module occupies the corresponding required data area size. For example, when connecting the XB6-A04V module, it occupies 4 words of space.
IW080E / OW082E	
IW080F/ OW082F	
IW0810 / OW0830	
IW0811 / OW0831	Based on the connection order of the connected modules and the data area size required by each module, the corresponding data area size is automatically occupied sequentially from the input/output register data area. If the remaining data area is smaller than the required data area of the module, a new control slot will be created, and the module and subsequent modules will sequentially occupy the required data area size
• • •	
IW081D/ OW083D	
IW081E/ OW083E	
IW081F/ OW083F	

	from the data area of this group.
--	-----------------------------------

7.5 Standard I/O Communication Command Description

7.5.1 Read/write I/O module data

Read and write the input and output data of the corresponding module at the corresponding input and output register.

Command code: 0 (also the default value)

The data format is shown in the table below:

模块输入输出数据格式(命令码:0)																
参数命令与响应格式			输出寄存器端	0		1		2		3		4		.....	F	
字节	命令	响应	OW0820	0000(H)		0000(H)										
0	CMD	CMD	OW0830													
1	WDT	RWDT	.....													
2																
3	CMD_CTRL	CMD_STAT	命令 (字节)	1	0	3	2	5	4	7	6	9	8	.....	31	30
4	设置对应模块的输出数据	显示对应模块的输入数据	WDT CMD CMD_CTRL													
5			CMD:命令码, 取值(0-6)参考 “标准I/O模块命令一览表”													
6																
7																
8																
.....																
30			WDT、CMD_CTRL等参考M3协议通信指令说明, 一般无需设置, 使用默认值0													
31																
.....																

在对应模块的数据区里设置对应模块的输出数据, 对没有输出功能的模块设置无效, 对模拟量输出的模块, 一个寄存器对应设置其一个通道的输出数据

For example, when the modules are connected as shown in the table below:

电源模块 XB6- P2000H	耦合器 XB6- M30002	XB6- A80I	XB6- 1616B	XB6- 0012J	XB6- A80V	XB6- 0032A	XB6- 1616A	XB6- 1616A	XB6- 0032B	XB6- 0032B	
模块数据区大小(字)	8(16字节)	1	1	8	2	1	1	2	2	.....	
模块站号	1	2	3	4	5	6	7	8	9	.....	
该槽可用数据区大小	22字	21	20	12	10	9	8	6	4	.....	

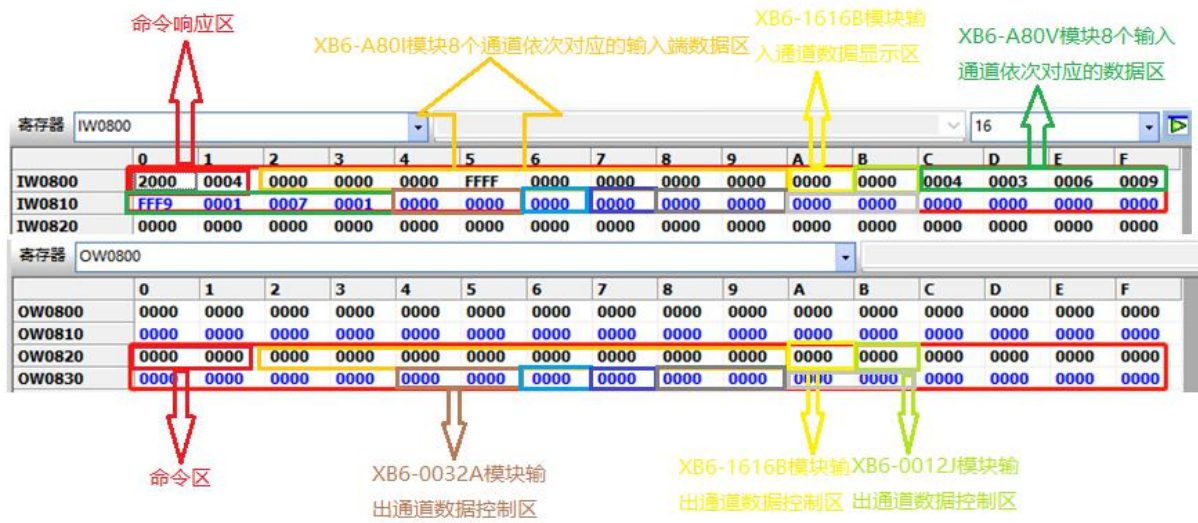
The table below shows how to read and write the data area of the corresponding I/O module using control slot 1:

输入寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
IW0800	命令头数据(00H)		模块1 XB6-A80I的8个通道输入信息显示区, 8个通道各占一字										模块2	模块3	模块4 XB6-A80V 8通道显示区		
IW0810	模块4 XB6-A80V 8通道显示区		模块5 (无输入)		模块6	模块7	模块8 (无输入)		模块9								
在底色高亮的区域显示对应输入模块的输入信息																	
输出寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
oW0820	命令头数据(00H)		模块1 (无输出)										模块2	模块3	模块4		
oW0830	模块4 (无输出)		模块5		模块6	模块7	模块8		模块9								
在底色高亮的区域显示对应输出模块的输出信息																	

Configuration instructions:

Based on the size of the data area required by the connected I/O module, the system automatically allocates the required data area space from the data area forward. In order to maintain the consistency of the input and output data areas, even if there is only input or output, the module still occupies the register space of the input and output space at the same time.

An example of a read/write I/O module is shown in the following figure:



7.5.2 Digital input filter time

Digital input filter prevents unexpected rapid changes in input signals from causing program responses, such as switch contact skipping or electrical noise. The default setting for digital input filter is 3ms, which filters out noise within 3ms. Individual channel configuration is not available.

A 3ms input filter time means that a single signal changing from "0" to "1" or from "1" to "0" takes 3ms to be detected, while a single high pulse or low pulse shorter than 3ms will not be detected.

7.5.3 Analog parameter settings

The parameter settings for analog signals mainly include the range, filter, and enable settings for the corresponding channels. See Appendix "[I/O Module Parameter Table](#)" for details. Use the parameter read (write) or permanent parameter read (write) commands to configure the parameters of the corresponding module.

Command codes: 3, 4, 5, 6

The data format is as follows:

参数设置数据格式(命令码:3、4、5、6)																
参数命令与响应格式			输出寄存器端													
字节	命令	响应	OW0820	0004(H)	0000(H)	选择设置第几个模块, 即I/O模块的站号,如设置第4个模块的参数即填04(H), 第10个模块填0A(H), 第29个模块填1D(H)										
0	CMD	CMD	OW0830													
1	WDT	RWDT	.....													
2																
3	CMD_CTRL	CMD_STAT	命令(字节)	1	0	3	2	5	4	7	6	9	8	.....	31	30
4	NO	NO		WDT	CMD	CMD_CTRL	Station No	NO	SIZE(0X20)	Param						FF
5	Station_No	Station_No														
6	SIZE(0x20)	SIZE														
7	Reserve	Reserve														
8	Param	Param														
.....																
30																
31																
.....																

CMD:命令码, 取值(0-6)参考
"标准I/O模块命令一览表"

NO:通道编码ID, 取值参考
"I/O模块参数表"

Param:设置参数值(功能码),
取值参考"I/O模块参数表"

FF: 参数写入命令标志

WDT、CMD_CTRL等参考M3协议通信指令说明,
一般无需设置, 使用默认值0

SIZE:参数数据大小,固定32字节
即16进制0X20

Using [Module composition definition](#) as an example, this section explains how to set the range for Channel 0 of the fourth module (XB6-A80V) to "0V to 10V, 0 to 32767".

1. Check I/O Module Parameter Table Find the parameter settings information for the corresponding voltage input module.

The channel code ID for the selected channel 0 range is 1, and NO=1 is set in the corresponding parameter setting data format.

When the range is set to "0V~10V 0~32767", the corresponding function code is 1, that is, the parameter Param is set to 1. This module belongs to the 4th module, so Station_No=4.

The setup example is shown in the figure below.

寄存器列表 1

寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
IW0800	2004	0004	0401	0020	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
IW0810	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
IW0820	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

寄存器列表 2

寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OW0800	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0810	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0820	0004	0000	0401	0020	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0830	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0840	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0850	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

Note: After successful setup, the value can be viewed in the input register.

2. Parameters are sent.

When the return value at the input terminal is equal to the set value, it means that the data has been written to the coupler buffer. The parameters of other channels or modules can be set in sequence. When all parameters are set, enter "FF" in the Fth register to send all configuration parameters to the I/O module.

寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OW0800	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0810	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0820	0004	0000	0401	0020	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	00FF
OW0830	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

Configuration instructions:

- The parameter writing (command code: 4) and permanent parameter writing (command code: 6) operations are the same, but parameter writing and permanent parameter writing operations cannot be performed simultaneously.
- After writing or reading parameters, clear the data in the data area first. After clearing the parameter data in the data area, clear the data in the command area to avoid abnormal output

phenomena such as repeated writing or overwriting of parameters or switching of command codes.

3. Clear configuration

- a. To reset the parameters, you need to clear the data area, then clear the command area, and then re-enter the parameters to write the command, setting the parameters for the corresponding channel of the module, as shown in the figure below.

2.再清空命令区

1.先清空数据区

寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OW0820	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0830	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

- b. After the module parameters are written, you can use the parameter call command to view the parameter information of the corresponding module, as shown in the figure below.

在输入寄存器端查看其对应值

寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
IW0800	2003	0004	0401	0000	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
IW0810	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
IW0820	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

寄存器列表 2

寄存器	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OW0820	0003	0000	0401	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
OW0830	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

参数调出命令 查看第4模块第0通道的功能码值

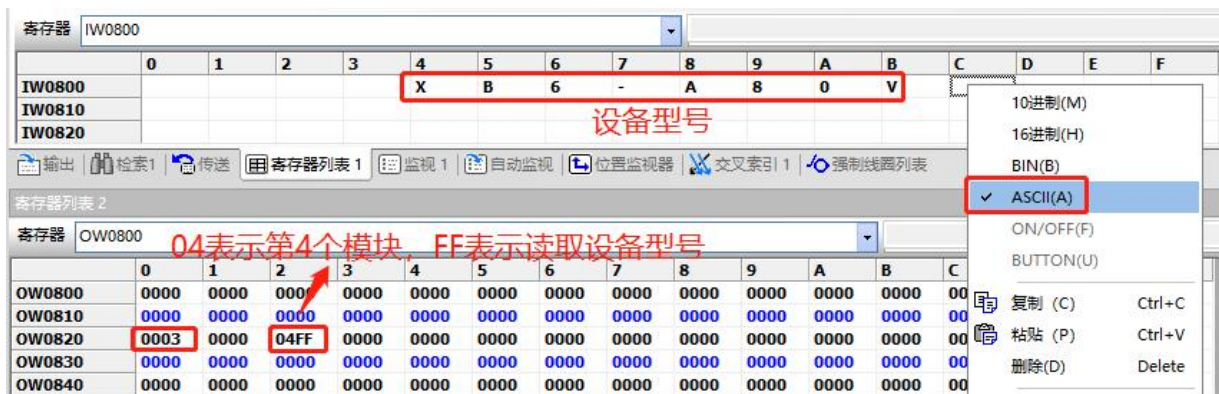
Configuration instructions:

- Output parameter call command in output register: 3.
- 0401: Channel 0 of Module 4.
- View the configuration values in the 4-parameter response area corresponding to the input register.

7.5.4 View device information

1. Check the device model.

You can also view the module's device model by using the parameter call command. Right-click in any area of the register and check "ASCII(A)", as shown in the figure below.



Configuration instructions:

- XXFF: View the device name of the Xth module.
- XXFE: Check the software version of the corresponding module.
- Configure the range, filter, and enable/filter parameters for the analog signal channels, as well as the temperature module. The parameter format is the same as described above. Refer to [I/O Module Parameter Table](#) for details. To set the parameters, find the channel code ID (i.e., parameter NO in the data format) corresponding to the channel or filter to be set, then find the function code (i.e., parameter Param in the data format) corresponding to the range or filter to be set, and then issue the setting command according to the parameter setting data format.

2. Issue setting command

For example, enable channel 1 of module 10 (XB6-A40TM), as shown in the figure below.



8 Appendix

8.1 I/O Module Parameter Table

Overview of Digital Input Filter			
ID	Time (ms)	Function code	default value
1	NULL	0	3
	0.25ms	125	
	0.50ms	150	
	1ms	1	
	2ms	2	
	3ms	3	
	4ms	4	
	5ms	5	
	6ms	6	
	7ms	7	
	8ms	8	
	9ms	9	
	10ms	10	
	11ms	11	
	12ms	12	
	13ms	13	
	14ms	14	
	15ms	15	
	16ms	16	
	17ms	17	
	18ms	18	
	19ms	19	
	20ms	20	

Current input module parameter settings (8-channel XB6-A80I)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
2	Channel 1 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
3	Channel 2 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
4	Channel 3 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
5	Channel 4 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
6	Channel 5 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
7	Channel 6 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
8	Channel 7 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
9	Channel 0 Filter	Text input field	[1,200]	10
a	Channel 1 Filter	Text input field	[1,200]	10
b	Channel 2 Filter	Text input field	[1,200]	10
c	Channel 3 Filter	Text input field	[1,200]	10
d	Channel 4 Filter	Text input field	[1,200]	10
e	Channel 5 Filter	Text input field	[1,200]	10
f	Channel 6 Filter	Text input field	[1,200]	10
10	Channel 7 Filter	Text input field	[1,200]	10

Current input module parameter settings (4-channel XB6-A40I)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
2	Channel 1 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
3	Channel 2 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
4	Channel 3 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
5	Channel 0 Filter	Text input field	[1,200]	10
6	Channel 1 Filter	Text input field	[1,200]	10
7	Channel 2 Filter	Text input field	[1,200]	10
8	Channel 3 Filter	Text input field	[1,200]	10

Voltage input module parameter settings (8-channel XB6-A80V)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
2	Channel 1 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
3	Channel 2 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
4	Channel 3 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
5	Channel 4 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
6	Channel 5 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
7	Channel 6 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
8	Channel 7 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
9	Channel 0 Filter	Text input field	[1,200]	10
a	Channel 1 Filter	Text input field	[1,200]	10
b	Channel 2 Filter	Text input field	[1,200]	10
c	Channel 3 Filter	Text input field	[1,200]	10
d	Channel 4 Filter	Text input field	[1,200]	10
e	Channel 5 Filter	Text input field	[1,200]	10
f	Channel 6 Filter	Text input field	[1,200]	10
10	Channel 7 Filter	Text input field	[1,200]	10

Voltage input module parameter settings (4-channel XB6-A40V)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
2	Channel 1 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
3	Channel 2 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
4	Channel 3 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
5	Channel 0 Filter	Text input field	[1,200]	10
6	Channel 1 Filter	Text input field	[1,200]	10
7	Channel 2 Filter	Text input field	[1,200]	10
8	Channel 3 Filter	Text input field	[1,200]	10

Voltage output module parameter settings (8-channel XB6-A08V)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
2	Channel 1 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
3	Channel 2 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
4	Channel 3 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
5	Channel 4 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
6	Channel 5 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
7	Channel 6 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
8	Channel 7 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	

Voltage output module parameter settings (4-channel XB6-A04V)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
2	Channel 1 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
3	Channel 2 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	
4	Channel 3 Range Selection	-10V~10V -32768~32767	0	0
		0V~10V 0~32767	1	
		-10V~10V -27648~27648	2	
		0V~10V 0~27648	3	

Current output module parameter settings (4-channel XB6-A04I)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
2	Channel 1 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
3	Channel 2 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
4	Channel 3 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	

Current output module parameter settings (8-channel XB6-A08I)				
ID	Function	content	Function code	default value
1	Channel 0 range selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
2	Channel 1 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
3	Channel 2 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
4	Channel 3 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
5	Channel 4 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
6	Channel 5 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
7	Channel 6 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	
8	Channel 7 Range Selection	4mA~20mA 0~65535	0	0
		0mA~20mA 0~65535	1	
		4mA~20mA 0~27648	2	
		0mA~20mA 0~27648	3	

Temperature module parameter settings (8-channel XB6-A80TM)				
ID	Function	content	Function code	default value
Coupler unified clear	Clear	Clear	0	0
	Keep	Hold	1	
1	Sensor Selection	PT100	0	
		PT200	1	
		PT500	2	
		PT1000	3	
		Reserved	4	
		RESISTANCE MEASUREMENT	5	
		THERMOCOUPLE_K	6	
		THERMOCOUPLE_J	7	
		Reserved	8	
		THERMOCOUPLE_E	9	
		Reserved	10	
		THERMOCOUPLE_S	11	
		Reserved	12	
		THERMOCOUPLE_B	13	
		Reserved	14	
2	Channel 0 Filter	Text input field	[1,10]	1
3	Channel 1 Filter	Text input field	[1,10]	1
4	Channel 2 Filter	Text input field	[1,10]	1
5	Channel 3 Filter	Text input field	[1,10]	1
6	Channel 4 Filter	Text input field	[1,10]	1
7	Channel 5 Filter	Text input field	[1,10]	1
8	Channel 6 Filter	Text input field	[1,10]	1
9	Channel 7 Filter	Text input field	[1,10]	1
a	Channel 0 Enable	Text input field	[0,1]	0
b	Channel 1 Enable	Text input field	[0,1]	0
c	Channel 2 Enable	Text input field	[0,1]	0
d	Channel 3 Enable	Text input field	[0,1]	0
e	Channel 4 Enable	Text input field	[0,1]	0
f	Channel 5 Enable	Text input field	[0,1]	0
10	Channel 6 Enable	Text input field	[0,1]	0
11	Channel 7 Enable	Text input field	[0,1]	0

Temperature module parameter settings (4-channel XB6-A40TM)				
ID	Function	content	Function code	default value
Coupler unified clear	Clear	Clear	0	0
	Keep	Hold	1	
1	Sensor Selection	PT100	0	
		PT200	1	
		PT500	2	
		PT1000	3	
		Reserved	4	
		RESISTANCE MEASUREMENT	5	
		THERMOCOUPLE_K	6	
		THERMOCOUPLE_J	7	
		Reserved	8	
		THERMOCOUPLE_E	9	
		Reserved	10	
		THERMOCOUPLE_S	11	
		Reserved	12	
		THERMOCOUPLE_B	13	
		Reserved	14	
2	Channel 0 Filter	Text input field	[1,10]	1
3	Channel 1 Filter	Text input field	[1,10]	1
4	Channel 2 Filter	Text input field	[1,10]	1
5	Channel 3 Filter	Text input field	[1,10]	1
6	Channel 0 Enable	Text input field	[0,1]	0
7	Channel 1 Enable	Text input field	[0,1]	0
8	Channel 2 Enable	Text input field	[0,1]	0
9	Channel 3 Enable	Text input field	[0,1]	0