



User Manual 用户手册

MR



MRS



MRM



MRMS



MR ☐ Panel Type Distributed I/O

CC LINK FIELD BASIC protocol
Remote IO Module
Distributed IO Module

CATALOGUE

1.Preface	3
1.1 Document Usage Instructions	4
1.2 Safety matters	4
1.3 Document History	4
2.Product Overview	5
2.1 Model list	6
2.2 MR□-CE Specification Parameters	7
2.2.1 DI specification	7
2.2.2 DQ Specification	7
2.2.3 CC-Link IE Field Basic Communication specification	8
2.2.4 Power supply specifications	8
3. Structure description	9
3.1 Appearance description of the MR series	10
3.2 Appearance description of the MRS series	11
3.3 Appearance description of the MRM series	12
3.4 Appearance description of the MRMS series	13
4.Hardware description	14
4.1 MR□ series remote I/O module wiring diagram	15
4.2 The usage method of e-CON terminals	23
4.2.1 E-CON Wiring	23
4.2.2 e-CON Selection Table	24
4.3 Communication interface	25
4.4 LED indication	25
4.4.1 System status indicates the working condition of the system as shown in the table.	25
4.4.2 I/O Status Indication	25
4.4.3 RJ45 indicator light	26
4.5 Communication power supply	26
4.6 Digital input interface	27
4.7 Digital output interface	27
5.Ethernet protocol	28
5.1 CC-Link IE Field Basic Industrial Ethernet Protocol	29
5.1.1What is CC-Link IE Field Basic ?	29
5.2 Network topology	29
5.3 Module parameters	31
6.Module connection and configuration	36
6.1 Connection and configuration of GX Words 3 with the CC-Link IE Field Basic protocol IO module	37
6.1.1 Distributed IO Address Configuration	37
6.1.2 New Construction Project	37
6.1.3 CC-Link IE Feild Basic Parameter settings	37
6.1.4 I/O Mapping Configuration	40
6.1.5 Diagnose communication status	41



1.Preface

1.1 Document Usage Instructions

This document describes the product's functional specifications, installation, operation and settings, as well as the content related to network protocols. This document is only applicable for trained electrical automation engineers.

(1) Disclaimer

The author has conducted necessary checks on the document, but as the product evolves and upgrades, the document may contain technical parameters or editing errors. We reserve the right to make adjustments and modifications without prior notice to users.

(2) Trademark

The Industrial Ethernet Protocol (CC-Link IE Field Basic) was developed by Mitsubishi.

(3) Patent Information

The designer of this product has applied for patent protection for the product's appearance and technical implementation methods. Any attempts to copy, imitate or reverse engineer may violate the law.

(4) Copyright

Without the author's authorization, it is prohibited to copy, distribute and use this document.

1.2 Safety matters

This product is a professional equipment for industrial use and can only be operated by personnel with electrical operation experience. Before use, please carefully read this manual and follow the instructions to operate it. Failure to do so may result in personal injury or product damage.

This product is designed with an IP20 protection level. When using it, it needs to be installed in a distribution cabinet with dust-proof and moisture-proof functions.

1.3 Document History

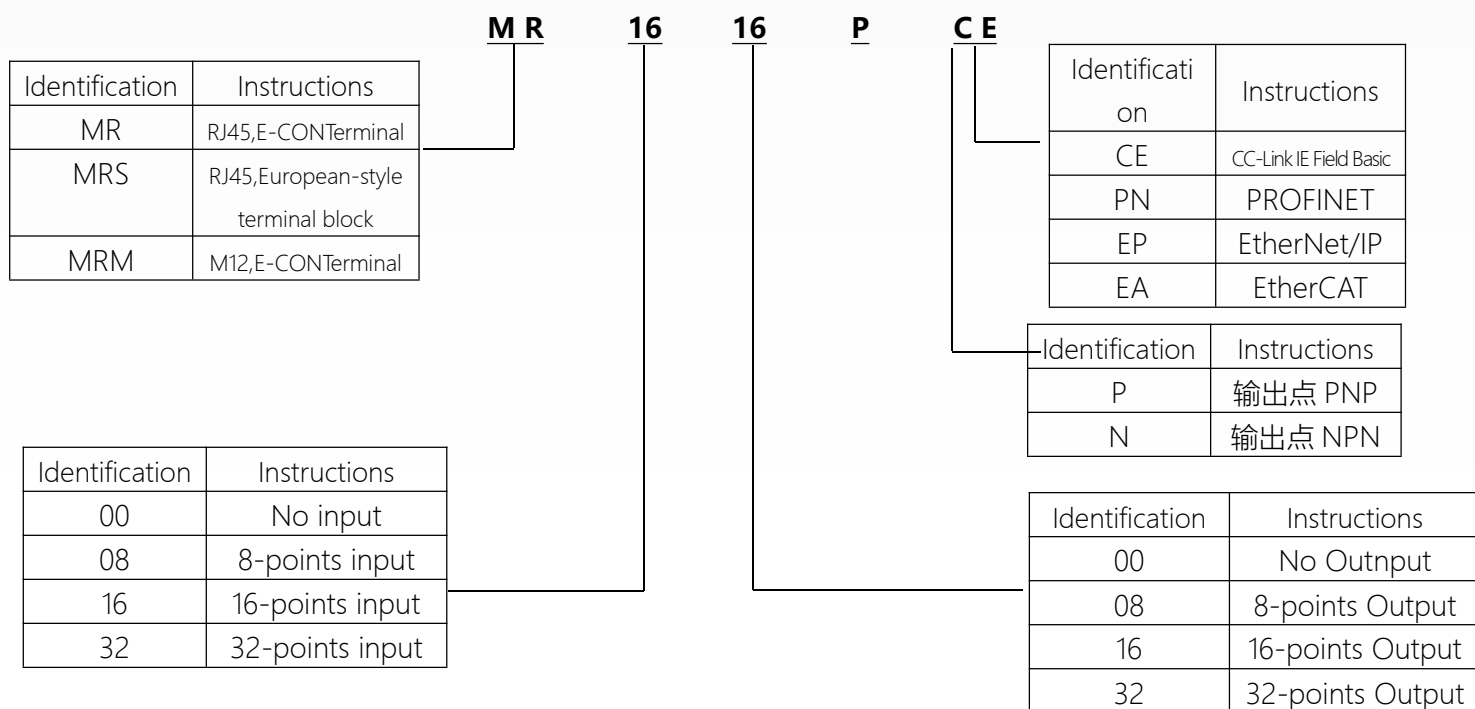
Version	Date	Explanation
V1.0	2021.11.03	First release



2.Product Overview

2.1 Model list

The MR□-CE series remote I/O products support the standard CC-Link IE Field Basic industrial Ethernet communication protocol. Through the digital integrated in the module body, they can directly provide high-performance input and output functions without the need for additional bus couplers.



Number	Model number	Explanation
1	MR□1600P-CE	16-bit digital input, PNP, CC-Link IE Field Basic slave station interface, 2×RJ45
2	MR□1600N-CE	Digital quantity 16-bit input, NPN, CC-Link IE Field Basic slave station interface 2×RJ45
3	MR□3200P-CE	Digital quantity 32-bit input, PNP, CC-Link IE Field Basic slave station interface 2×RJ45
4	MR□3200N-CE	Digital quantity 32-bit output, NPN, CC-Link IE Field Basic slave station interface 2×RJ45
5	MR□0016P-CE	Digital quantity 16-bit output, PNP, CC-Link IE Field Basic slave station interface 2×RJ45
6	MR□0016N-CE	Digital quantity 16-bit output, NPN, CC-Link IE Field Basic slave station interface 2×RJ45
7	MR□0032P-CE	Digital quantity 32-bit output, PNP, CC-Link IE Field Basic slave station interface 2×RJ45
8	MR□0032N-CE	Digital quantity 32-bit output, NPN, CC-Link IE Field Basic slave station interface 2×RJ45
9	MR□1616P-CE	Digital quantity 16-bit input and 16-bit output, PNP, CC-Link IE Field Basic slave station interface 2×RJ45
10	MR□1616N-CE	Digital quantity 16-bit input and 16-bit output, NPN, CC-Link IE Field Basic slave station interface 2×RJ45
11	MR□0808P-CE	Digital quantity 8-bit input and 8-bit output, PNP, CC-Link IE Field Basic slave station interface 2×RJ45
12	MR□0808N-CE	Digital quantity 8-bit input and 8-bit output, NPN, CC-Link IE Field Basic slave station interface 2×RJ45

Table 1 CC-Link IE Field Basic Remote I/O Module

2.2 MR□-CE Specification Parameters

This article only provides explanations regarding the product specification parameters of MR□-CE. For the specification parameters of other models, please contact your supplier for information.

2.2.1 DI specification

The specifications for digital input (DI) are shown in Table 2.

Number	Project	Specification
1	Number of channels	16
2	Access type	2 bytes
3	Ton	Type. 18uS / Max. 35uS
4	Toff	Type. 135uS / Max. 250uS
5	Input type	Source type or leakage type
6	Input connector	E-CON connector
7	Rated input voltage	24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
8	"0" signal level	-3...+5 V (IEC 61131-2, type 2)
9	"1" signal level	15...30 V (IEC 61131-2, type 2)
10	Input current	Typ. 10mA/Ch (IEC 61131-2, type 2)
11	Electrical isolation	Input/Control Area:500V DC

Table 2 Specifications for Digital Input Quantity

2.2.2 DQ Specification

The specifications and parameters of the MOSFET digital output (DQ) are shown in Table 3.

Number	Project	Specification
1	Number of channels	16
2	Access type	2 bytes
3	Ton	Type. 12uS / Max. 25uS
4	Toff	Type. 10mS / Max. 20mS (Empty load)
5	Output type	Source type or leakage type
6	Output connector	E-CON connector
7	Load type	Pure resistive, inductive, bulb
8	Rated output voltage	24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
9	Maximum output current	Max. 0.5 A /Ch, independent short-circuit protection for each channel
10	Power connector	1 group of 4-Pin spring connectors

Table 3 Output Specifications of MOSFET

2.2.3 CC-Link IE Field Basic Communication specification

The parameters of the CC-Link IE Field Basic communication specification are shown in Table 4.

Number	Project	Specification
1	Agreement	CC-Link IE Field Basic (IEC 61158 Type3)
2	Transmission rate	10/100 Mbaud, automatically detects transmission speed
3	Bus interface	Equipped with dual RJ45 switches (industrial Ethernet compliant with IEEE 802.xx standard, featuring auto negotiation and auto crossover functions)
5	Communication address	The only globally unique MAC address
6	Transmission cable	CAT5e shielded cable
7	CC-Link IE Field Basic features	Media redundancy protocol (MRP), shared devices, synchronous communication
8	Port protection	Transformer 1500V DC (IEC61000-4-2)

Table 4 CC-Link IE Field Basic Communication Specifications

2.2.4 Power supply specifications

The module power supply is divided into two independent parts: the control part, digital input and output, which are isolated from each other. Therefore, two independent power supplies need to be provided for each part of the circuit or they can be directly connected in parallel.

(1) The control voltage uses 24V DC (-15% / +20%), with a maximum current consumption of 0.5A, and has polarity reverse protection; the electrical isolation withstand voltage between it and other I/O parts is 500V DC.

(2) The digital input voltage uses 24V DC (-15% / +20%), with a maximum current consumption of 16*10mA; the electrical isolation withstand voltage between it and other I/O parts is 500V DC. The MOSFET digital output part uses 24V DC (-15% / +20%), with a maximum current consumption of 16*0.5A, and has channel-independent overcurrent protection; the electrical isolation withstand voltage between it and other I/O parts is 500V DC.



3. Structure description

3.1 Appearance description of the MR series

Installation method: Standard DIN35 rail or hole drilling installation

Installation accessories: Spring-type metal clips x2, hole-drilling installation metal sheets x2

Power interface 1: 3Pin European spring terminal

Power interface 2: 4Pin European spring terminal

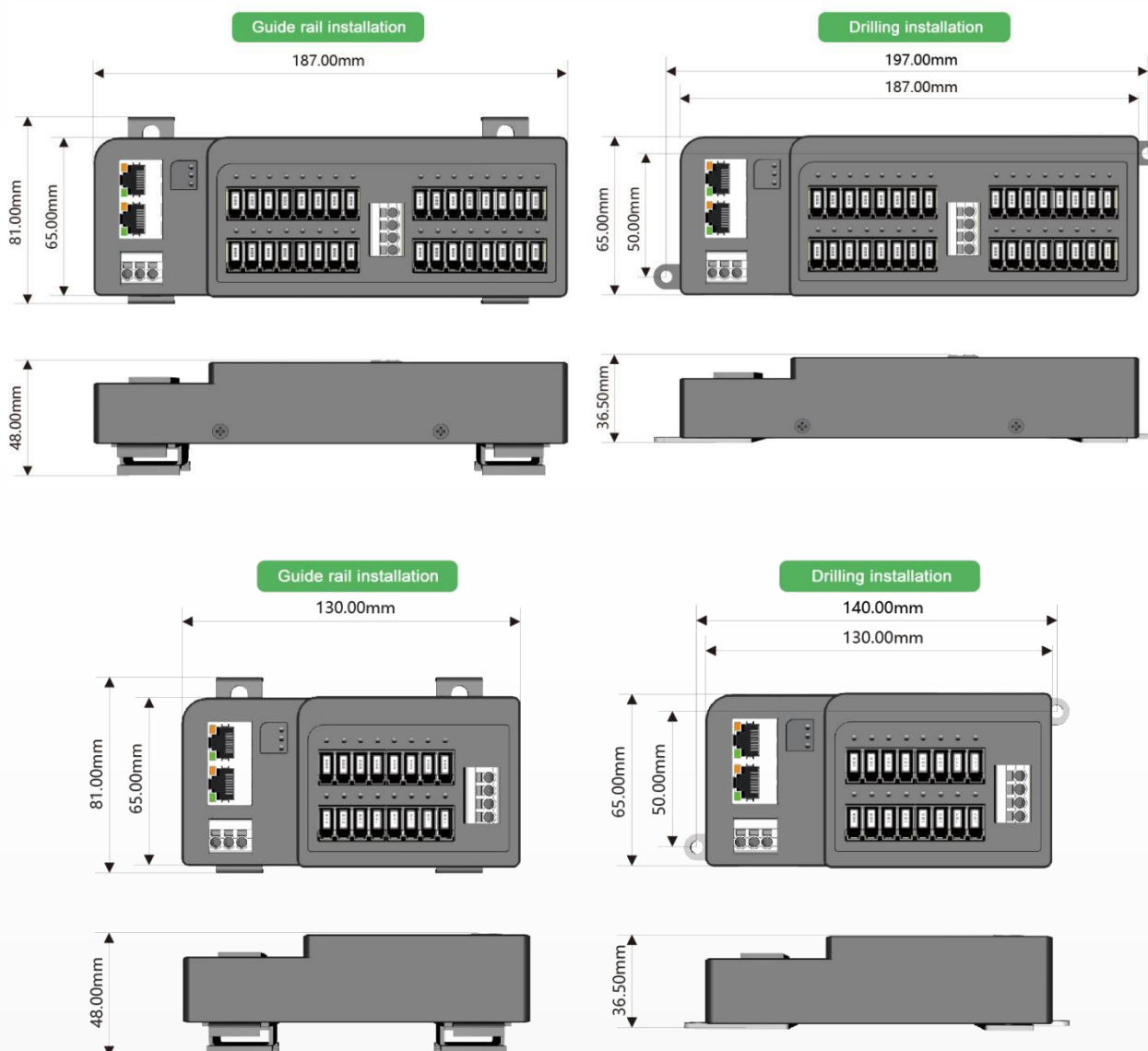
Network interface: RJ45 x2

I/O connector: Piercing-type e-CON connector

Shell material: Metal aluminum shell

Heat dissipation method: Shell heat dissipation

Protection level: IP50



3.2 Appearance description of the MRS series

Installation method: Standard DIN35 rail or hole drilling installation

Installation accessories: Spring-type metal clips x2, hole-drilling installation metal sheets x2

Power interface 1: 3Pin European spring terminal

Power interface 2: 4Pin European spring terminal

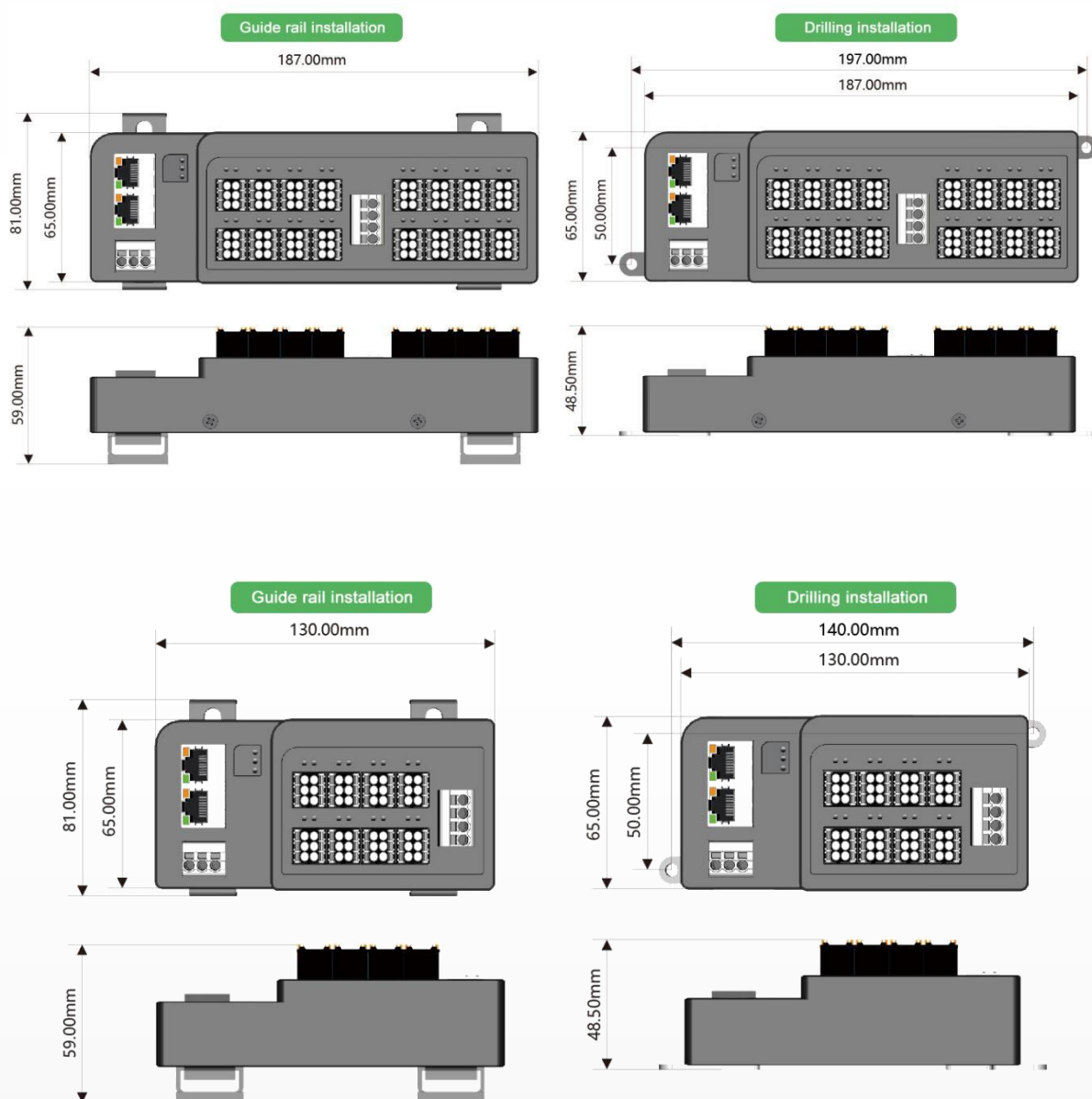
Network interface: RJ45 x2

I/O connector: Plug-in European spring terminal

Shell material: Metal aluminum shell

Heat dissipation method: Shell heat dissipation

Protection level: IP50



3.3 Appearance description of the MRM series

Installation method: Standard DIN35 rail or hole drilling installation

Installation accessories: Spring-type metal clips x2, hole-drilling installation metal sheets x2

Power interface 1: 3Pin European spring terminal

Power interface 2: 4Pin European spring terminal

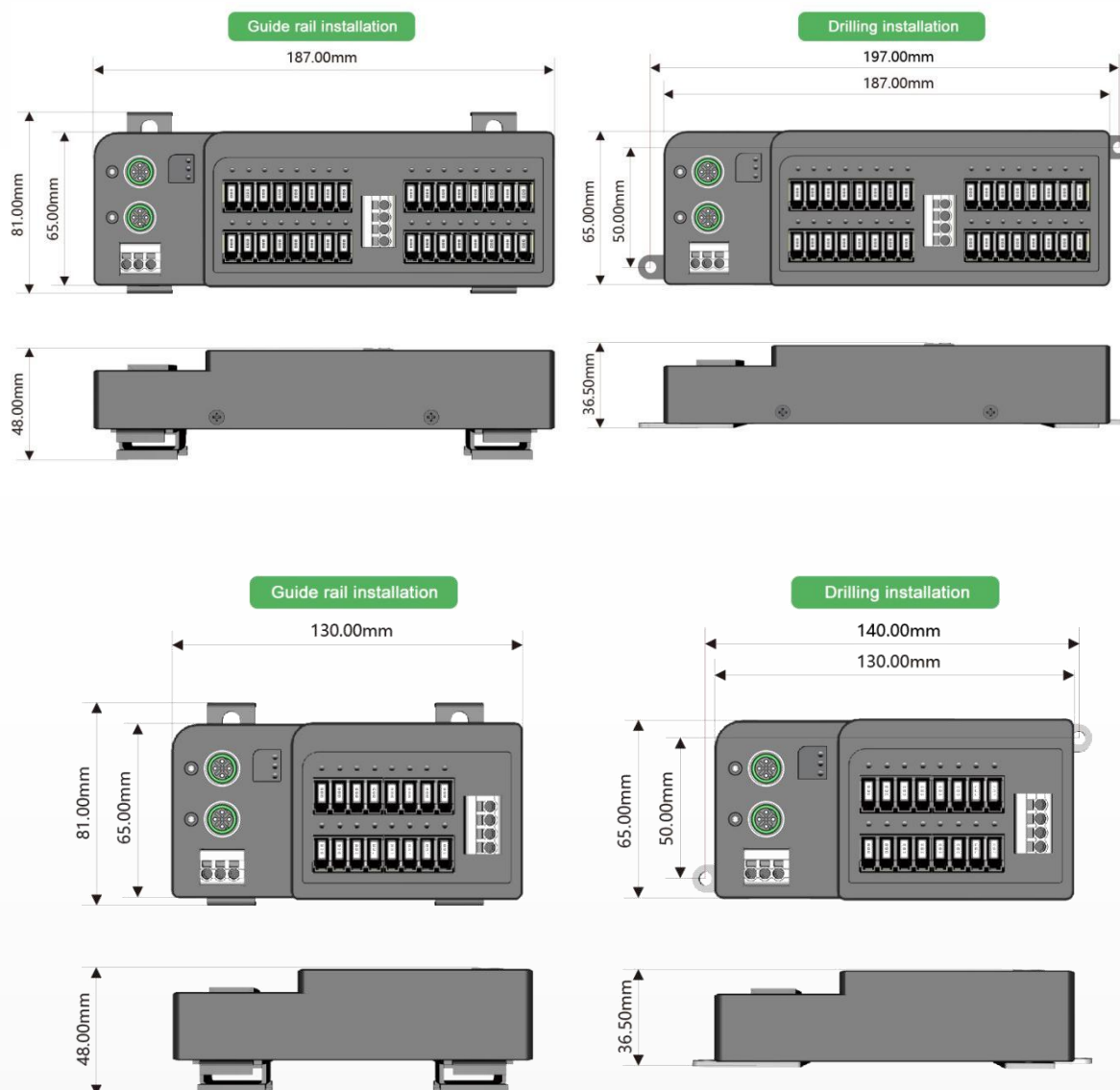
Network interface: M12x2

I/O connector: Piercing-type e-CON connector

Shell material: Metal aluminum shell

Heat dissipation method: Shell heat dissipation

Protection level: IP50



3.4 Appearance description of the MRMS series

Installation method: Standard DIN35 rail or hole drilling installation

Installation accessories: Spring-type metal clips x2, hole-drilling installation metal sheets x2

Power interface 1: 3Pin European spring terminal

Power interface 2: 4Pin European spring terminal

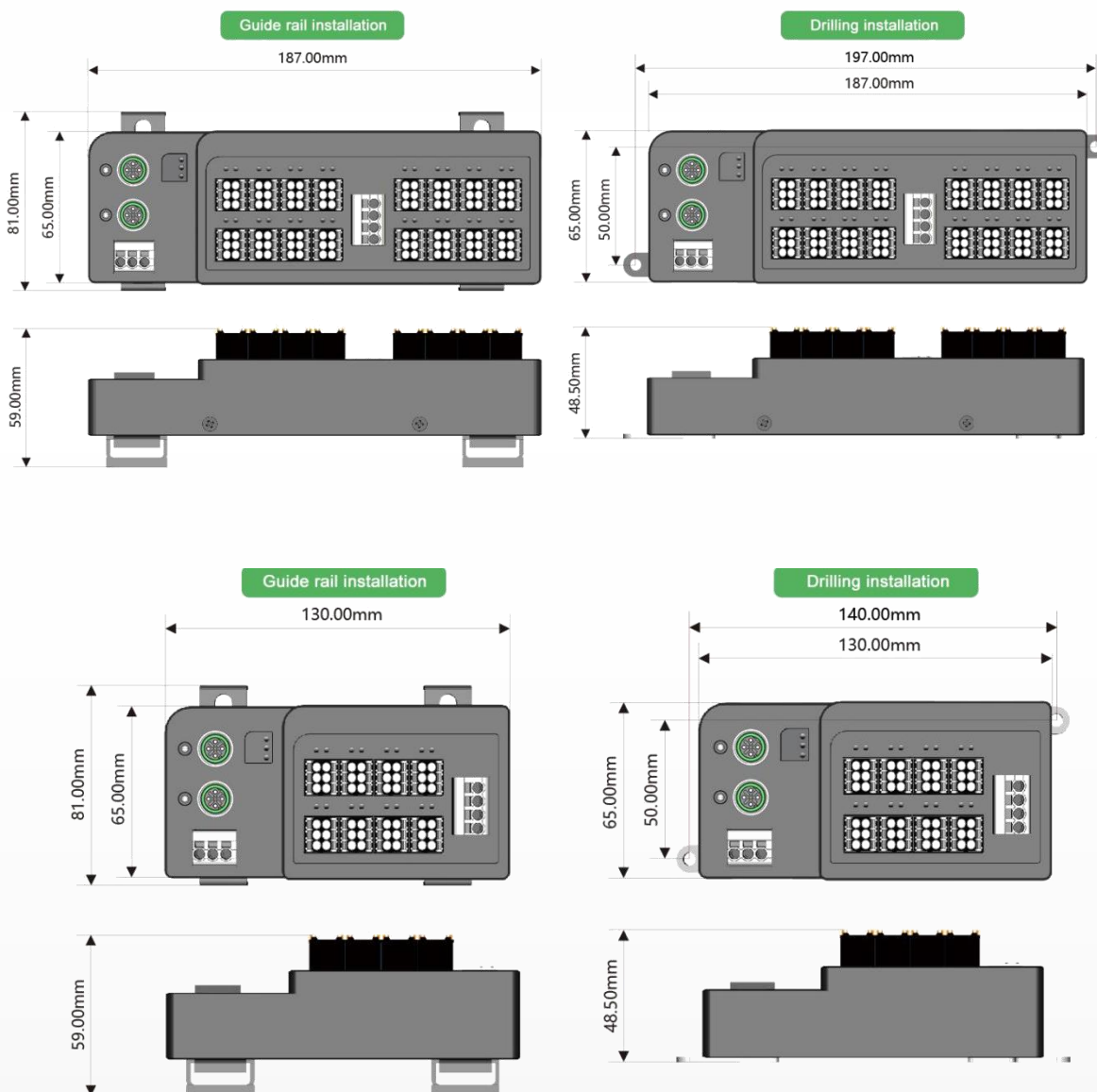
Network interface: M12x2

I/O connector: Plug-in European spring terminal

Shell material: Metal aluminum shell

Heat dissipation method: Shell heat dissipation

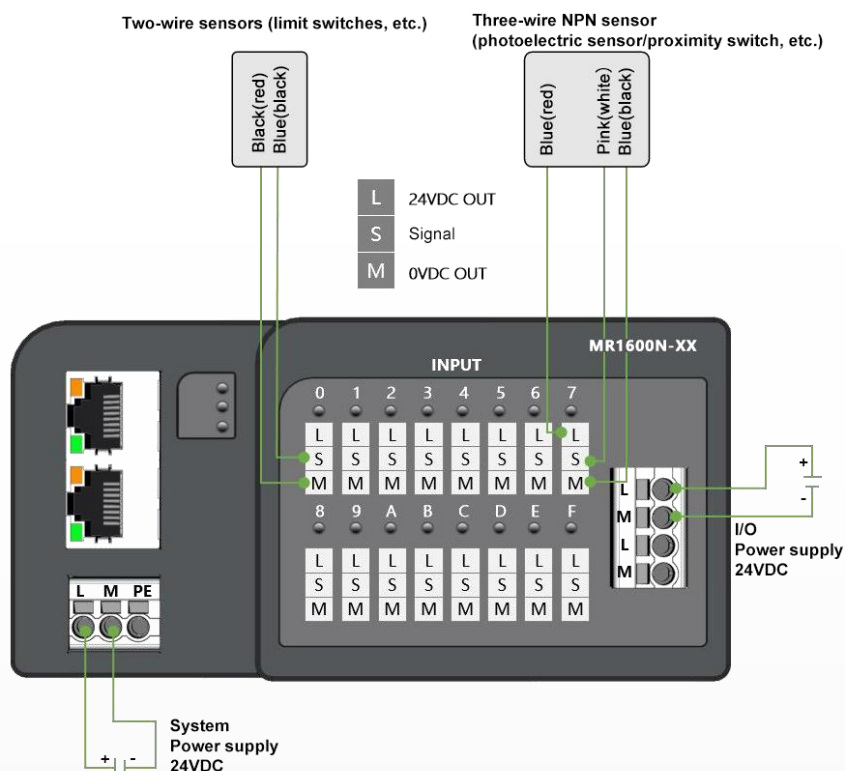
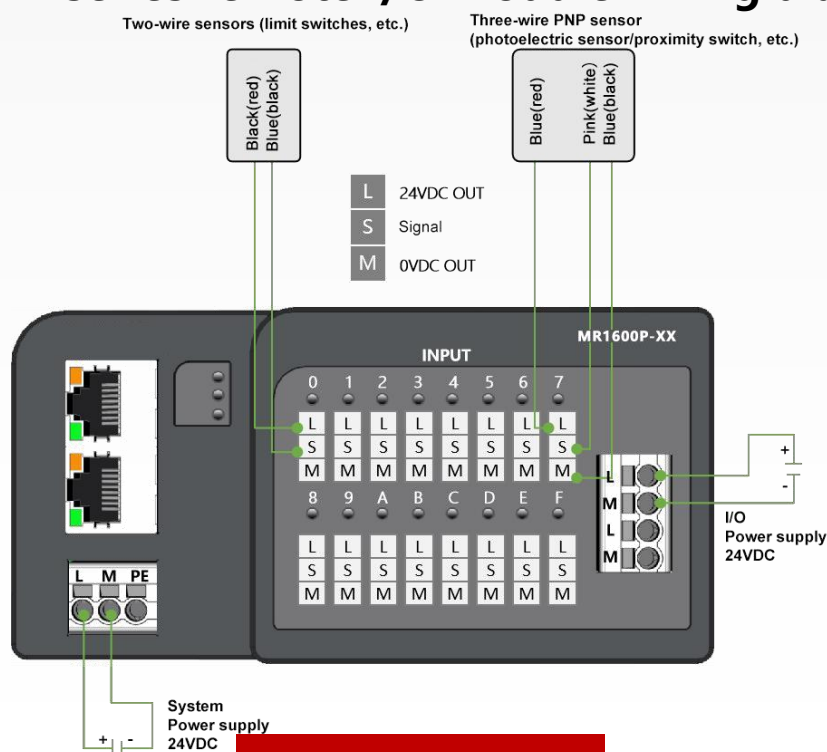
Protection level: IP50

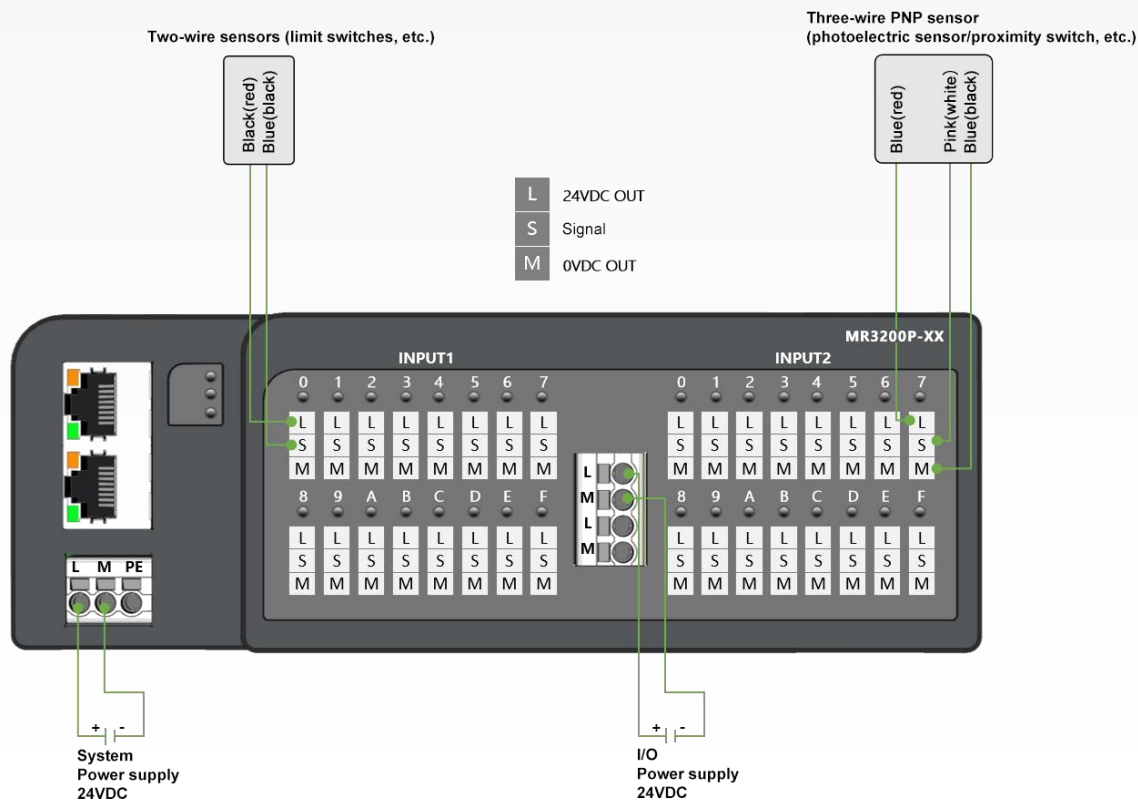




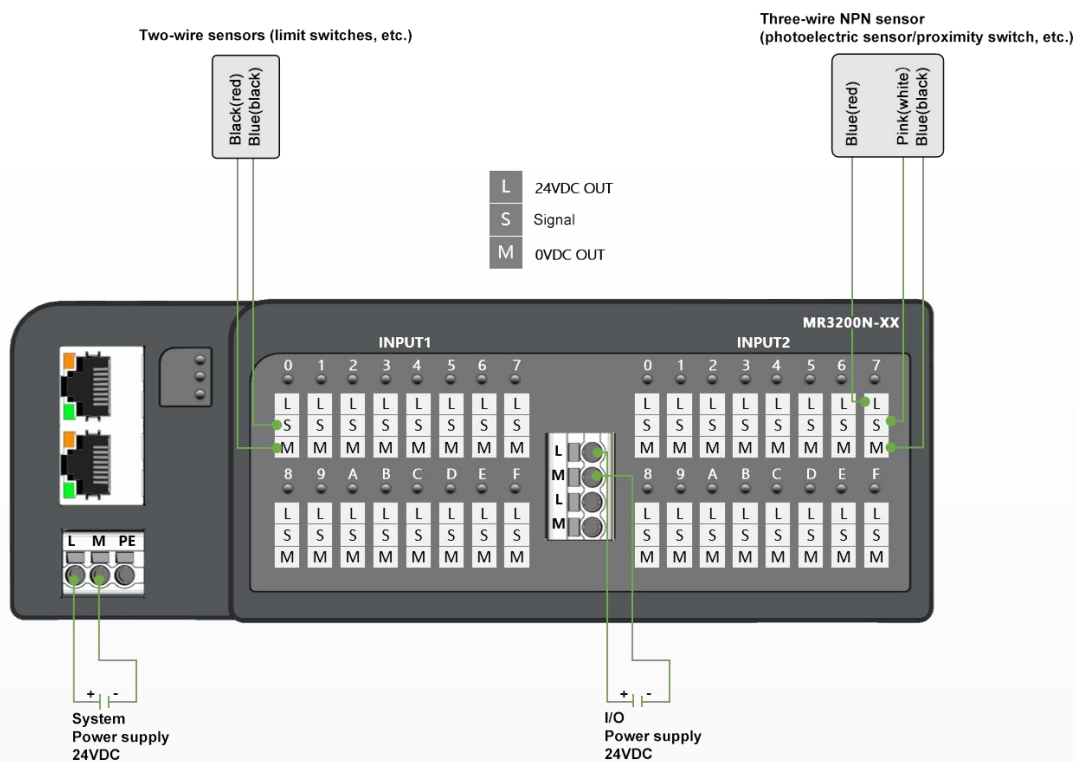
4.Hardware description

4.1 MR□ series remote I/O module wiring diagram

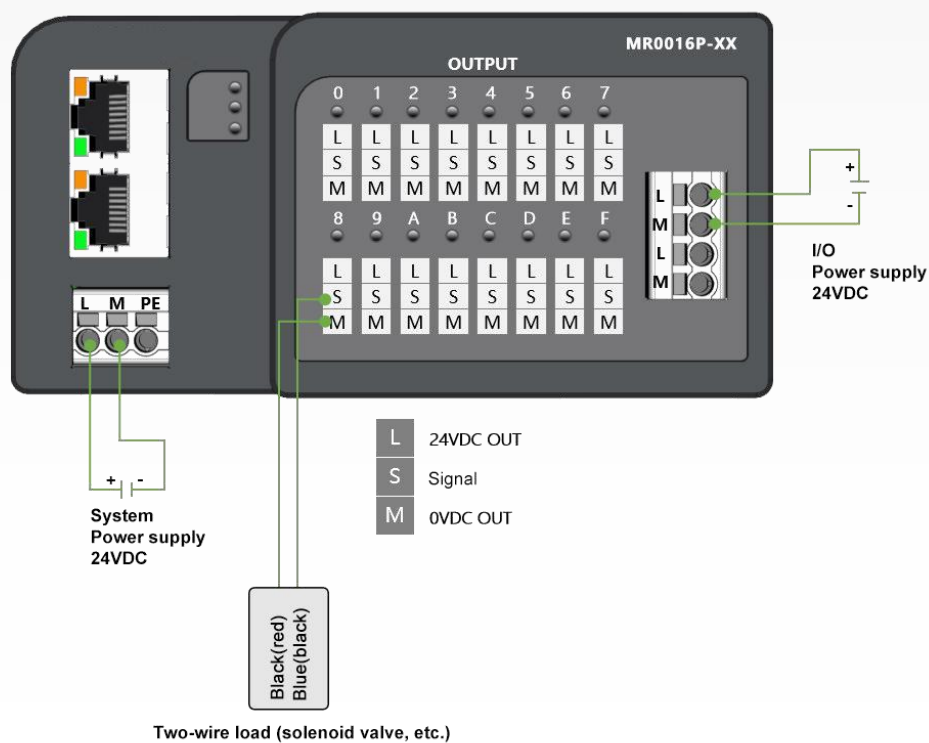




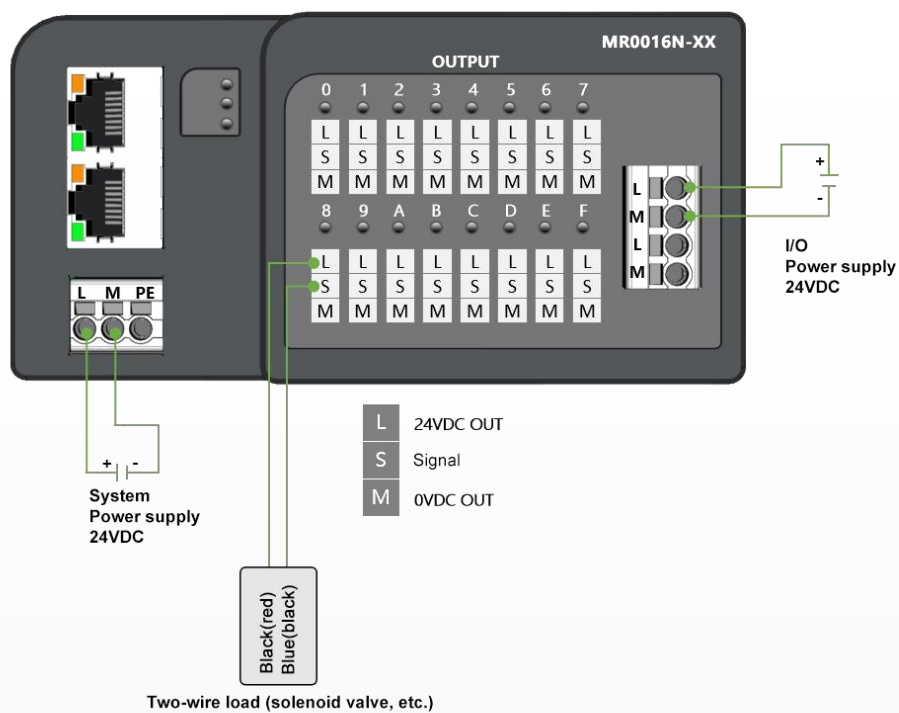
32 points input PNP



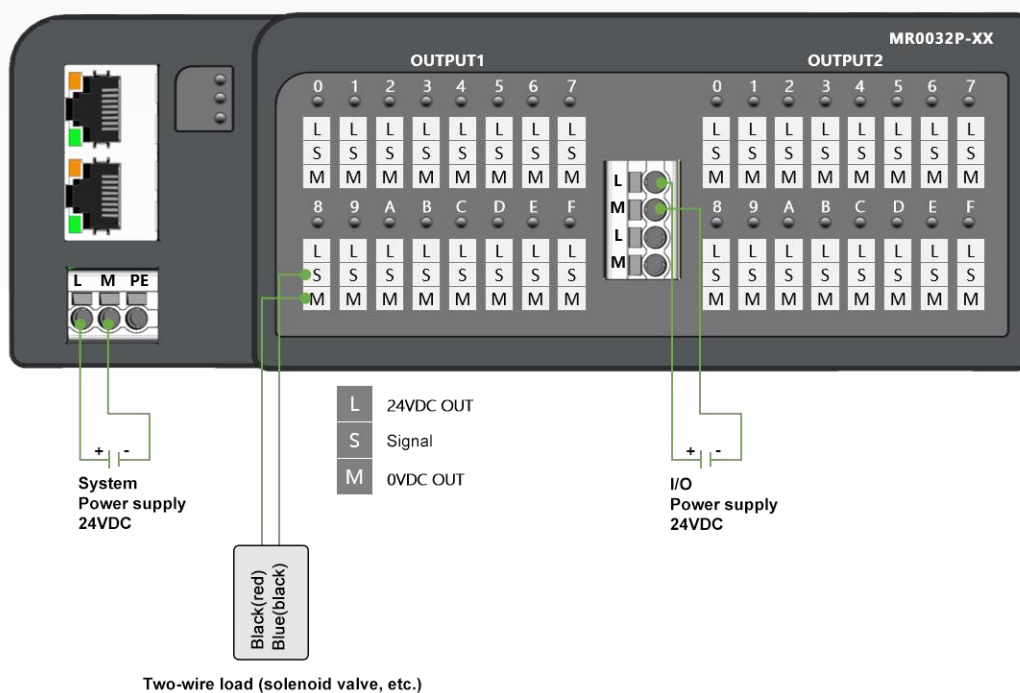
32 points input NPN



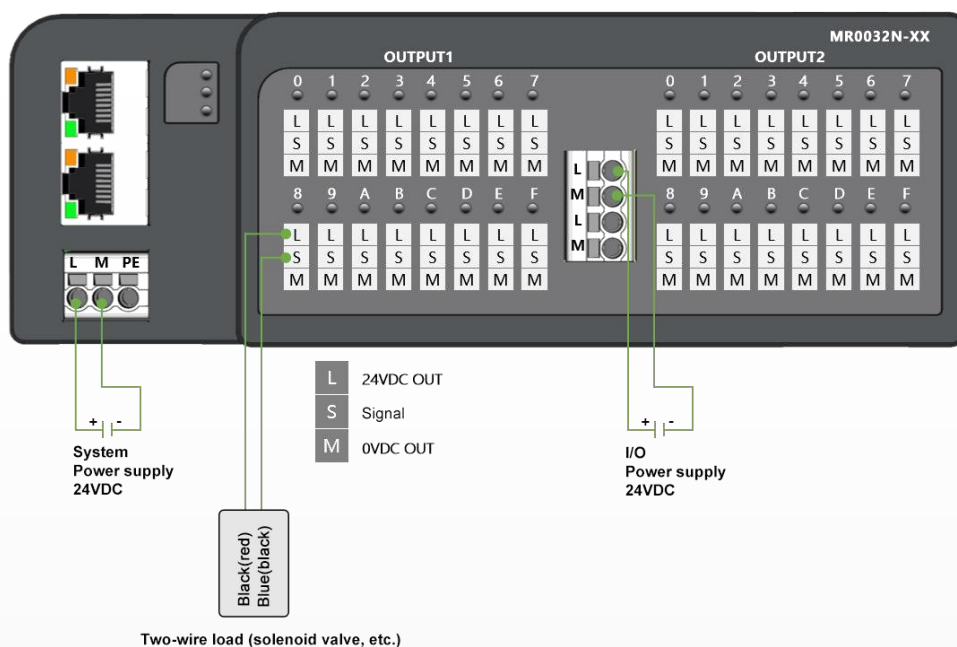
16 points output PNP



16 points output NPN

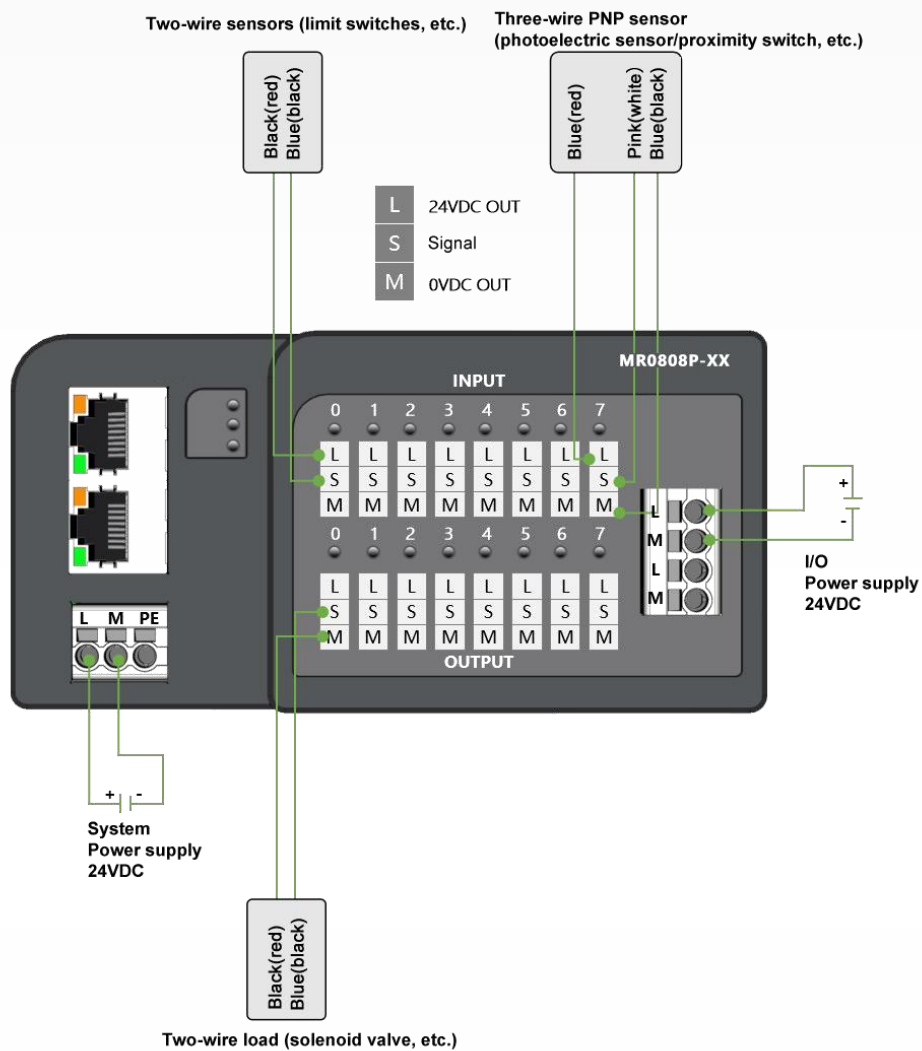


32 points output PNP



32 points output NPN

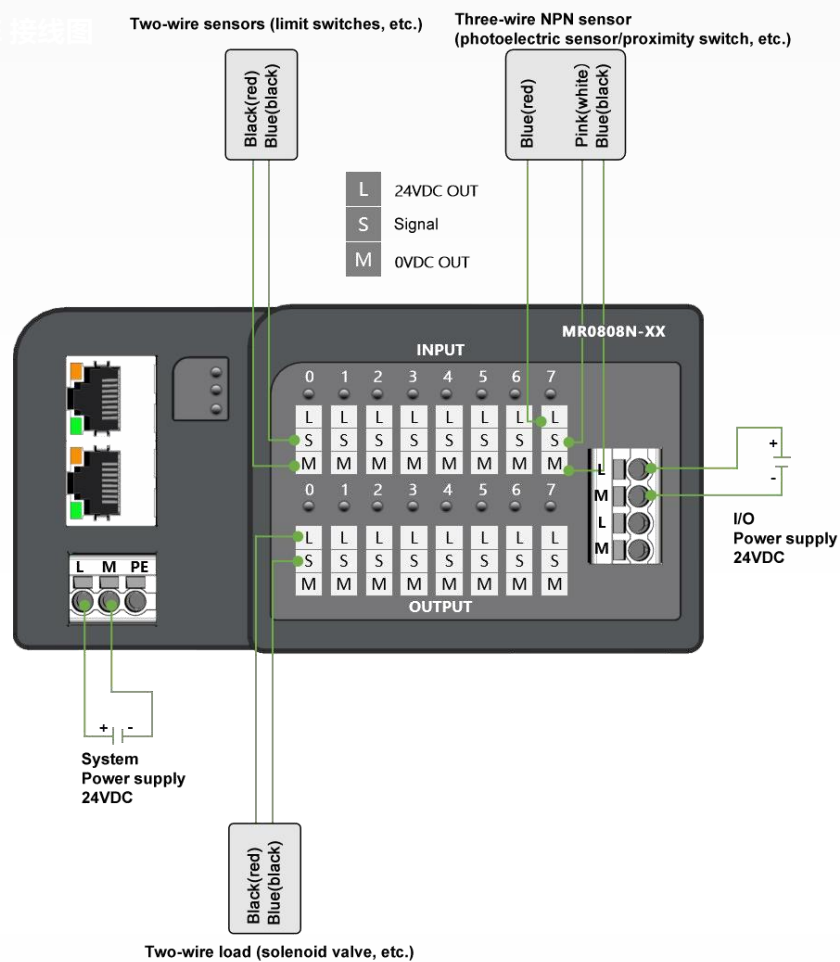
MR2102-CE 接线图



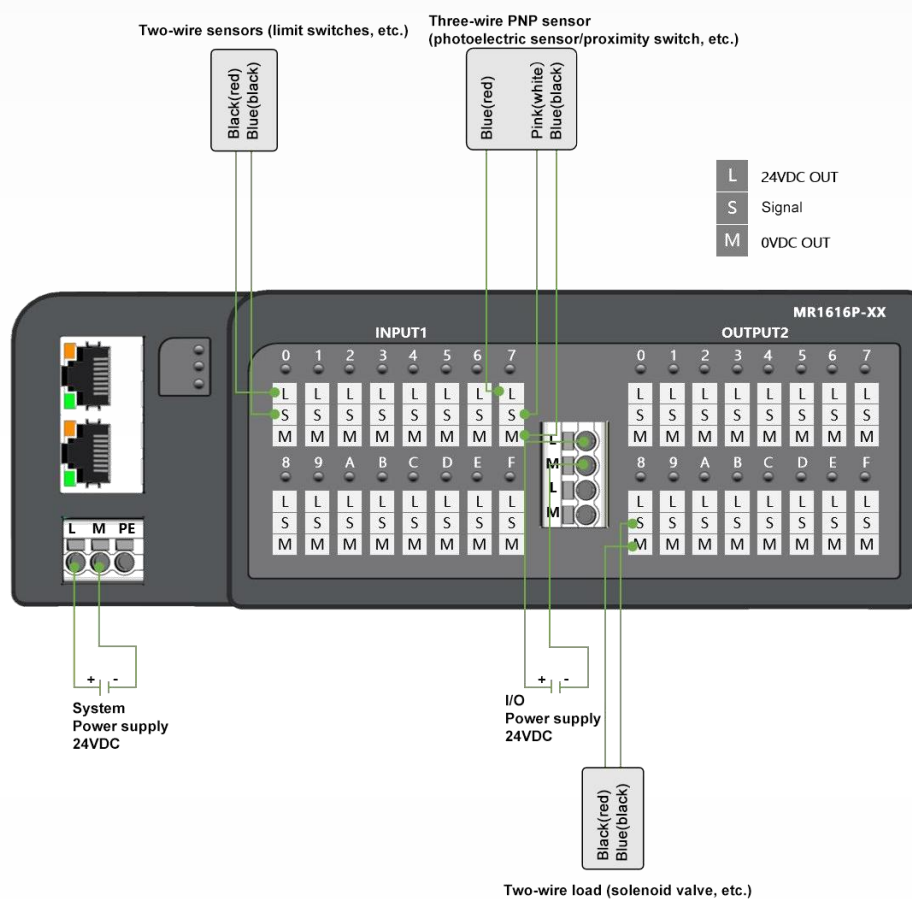
8 input, 8 output PNP

图例

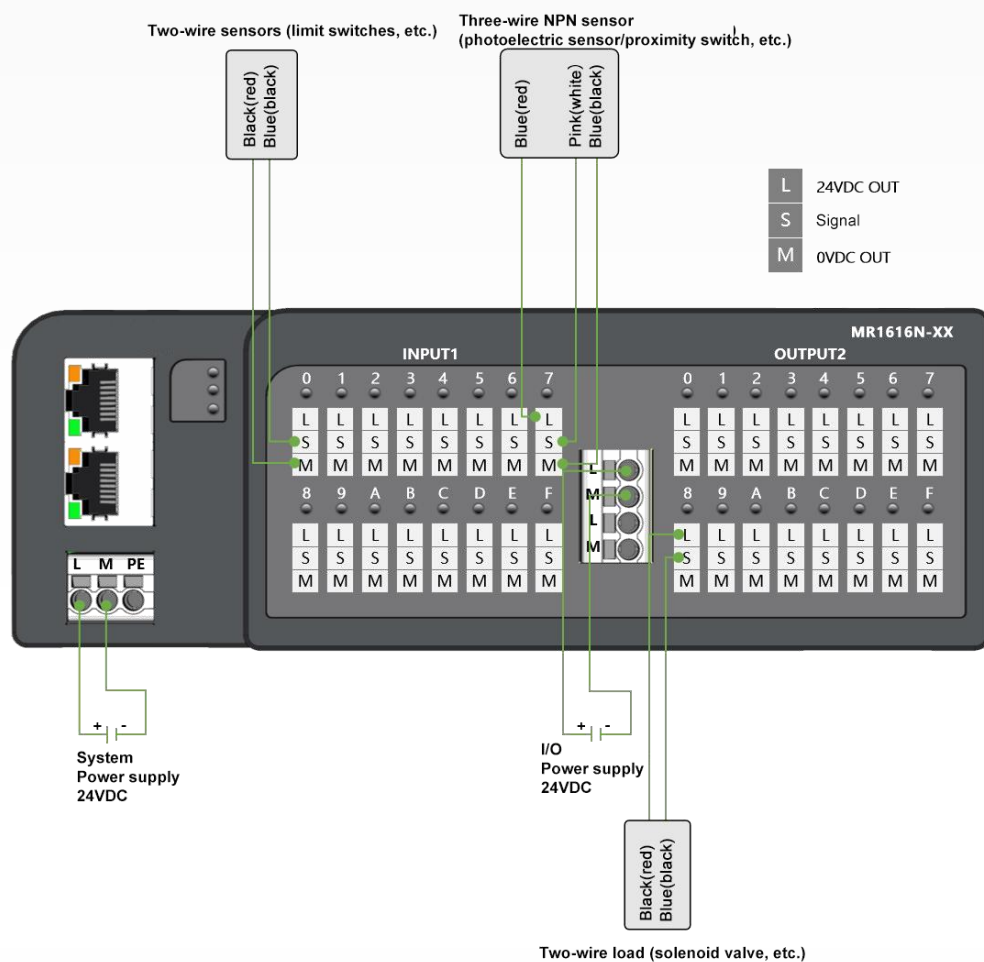
MR5101-CE 接线图



8 input, 8 output NPN



16 input, 16 output PNP



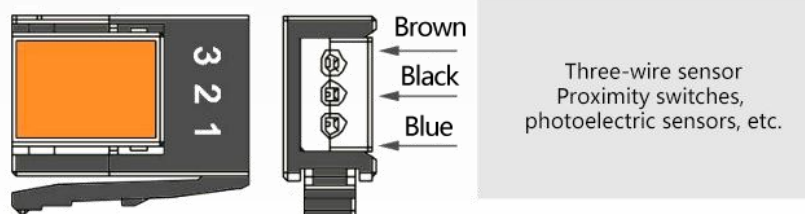
16 input, 16 output NPN

4.2 The usage method of e-CON terminals

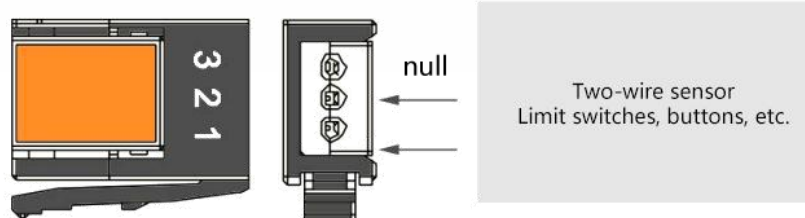
4.2.1 E-CON Wiring

① MR series INPUT input (NPN) connection method

E-con connector 3-pin male terminal

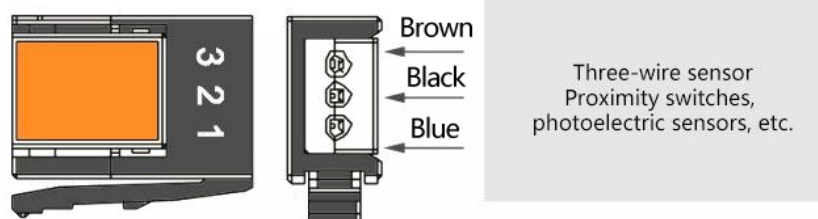


E-con connector 3-pin male terminal

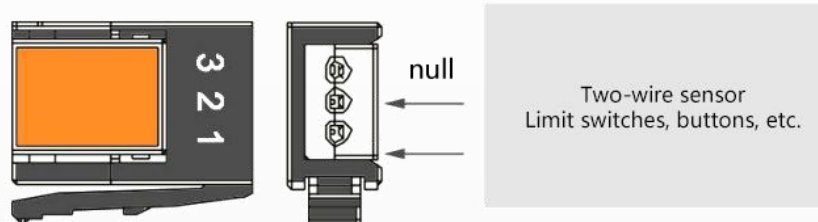


② MR series INPUT input (PNP) connection method

E-con connector 3-pin male terminal

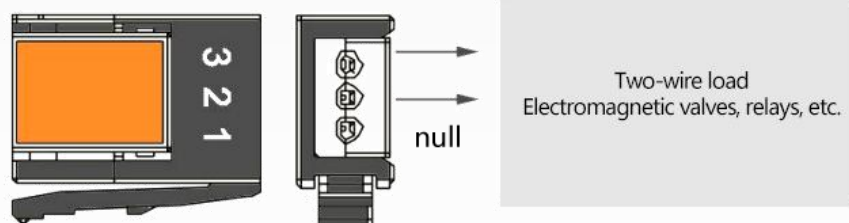


E-con connector 3-pin male terminal



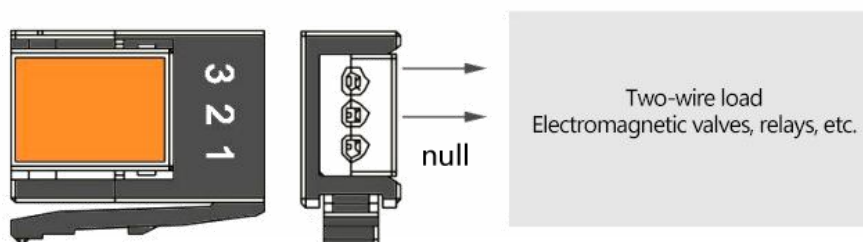
③ MR series OUTPUT input (NPN) connection method

E-con connector 3-pin male terminal



④ MR series OUTPUT input (PNP) connection method

E-con connector 3-pin male terminal



4.2.2 e-CON Selection Table

- ① No need to strip the wires
- ② Use the special wire pressing pliers to firmly press the cover in place



连接器选型表



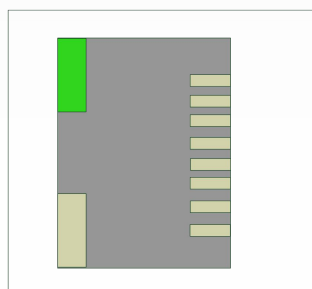
如选型不匹配将会影响接线效果，导致信号不良，务必请精准选型！

订货号	外观	压盖颜色	电线外径 (mm)	导体规格
EK-03P-VTG		紫色 (灰色外壳)	0.6~0.8	AWG28-26 0.08~0.13mm ²
EK-03P-RDG		红色 (灰色外壳)	0.8~1.0	
EK-03P-VT		紫色	0.6~0.8	AWG26-24 0.13~0.21mm ²
EK-03P-RD		红色	0.8~1.0	
EK-03P-YW		黄色	1.0~1.2	
EK-03P-OG		橙色	1.2~1.6	
EK-03P-GN		绿色	1.0~1.2	AWG22-24 0.32~0.50mm ²
EK-03P-BL		蓝色	1.2~1.6	
EK-03P-GY		灰色	1.6~2.0	

4.3 Communication interface

The module uses a physical interface with two RJ45 sockets for communication. The module itself has the function of a switch. They are respectively labeled as X1P1 and X1P2. Each port has an independent MAC address that is adjacent to the identifier on the module.

Table 5 CC-Link IE Field Basic Communication Interface



Pin	Signal	Description
1	TD+	Data transmission positive terminal
2	TD-	Data transmission negative terminal
3	RD+	Data reception positive terminal
4	NC	Unused
5	NC	Unused
6	RX-	Data reception negative terminal
7	NC	Unused
8	NC	Unused

4.4 LED indication

The LED indicators of the module are divided into three parts: system status indicator, I/O status indicator, and RJ45 link indicator.

4.4.1 System status indicates the working condition of the system as shown in the table.

ERR(red)	RUN(green)	PWR(green)	Explanation
○	○	○	Power supply abnormality
●	○	●	Communication interface failure
○	●	●	The module has successfully entered the operating (operate) state and successfully established a cyclic data exchange with the main station.

Table 8 System Status Indicators ● Indicates that the green light remains constantly on

● Indicates that the red light remains constantly on ○ Indicates that it is not lit

4.4.2 I/O Status Indication

The digital input/output ports use green LEDs to indicate the status of the corresponding channels. When the light is on, it indicates that the logic state of the input/output port is "1", and when the light is off, it indicates that the logic state of the input/output port is "0".

4.4.3 RJ45 indicator light

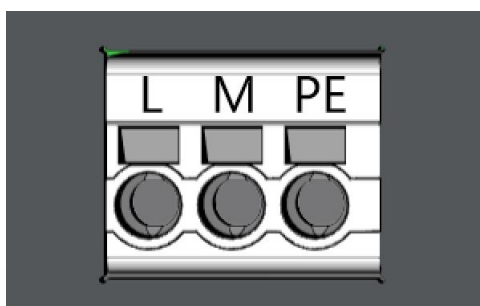
Under normal circumstances, the RJ45 port indicator lights should be the green light constantly on and the yellow light flashing. If this is not the case, it indicates that a fault has occurred. If the green light is not on, it means there is a connection fault with the RJ45 port that is connected to a Hub or switch; if the yellow light is not on, it might be a fault with the module itself.

As shown in Table 7: RJ45 Indicator Light Explanation

LINK1/LINK2	ACT1/ACT2	Explanation
○	Not related	The RJ45 port is not connected to a network cable or the connection is poor.
●	Not related	The RJ45 port has correctly identified the Ethernet network.
Not related	○	There is no data exchange at the RJ45 port.
Not related	●	There is data exchange at the RJ45 port.

Table 7 RJ45 Indicator Light Explanation

4.5 Communication power supply



24V	24V, positive terminal of the DC power supply
0V	0V, negative terminal of the DC power supply
PE	Connect to the ground

Table 8 Power Connection Terminals

The control voltage uses 24V DC (-15% / +20%), with a maximum current consumption of 0.5A, and has polarity reverse protection; the electrical isolation withstand voltage between it and other I/O components is 500V DC.

4.6 Digital input interface

The digital input interface is connected using e-CON connectors. There are a total of 16 input signals, which are divided into 0-F (or 8 input signals are divided into 0-7).

4.7 Digital output interface

The digital output interface is connected using e-CON connectors. There are a total of 16 input signals, which are divided into 0-F (or 8 input signals are divided into 0-7). Each digital output port is equipped with an independent 0.5A overcurrent protection.



5.Ethernet protocol

5.1 CC-Link IE Field Basic Industrial Ethernet Protocol

5.1.1 What is CC-Link IE Field Basic ?

- In small-scale on-site network equipment, CC-Link IE Field Basic communication is achieved using standard Ethernet.
- The communication of CC-Link IE Field Basic using standard Ethernet technology is very easy to apply to small-scale devices. It does not require high-speed control or more convenient application and development. The cyclic communication of CC-Link IE Field Basic is realized by software.
- The system is easier to develop and provides more abundant corresponding equipment more quickly.
- This communication can also be completed using standard Ethernet TCP/FTP communication (HTTP, FTP, etc.).
- There is no need for dedicated wiring control. Use the unified Ethernet.
- The master station can be conveniently realized using IPC or personal computers.
- The master station does not require a dedicated interface to achieve.
- The cyclic communication is completed based on the example source code through the development of application software on the Ethernet.
- The field network system compatible with standard Ethernet communication can be constructed at a low cost.

5.2 Network topology

The following figure illustrates the typical network layout of CC-Link IE Field Basic IO. As shown in Figures 6-1, 6-2, and 6-3

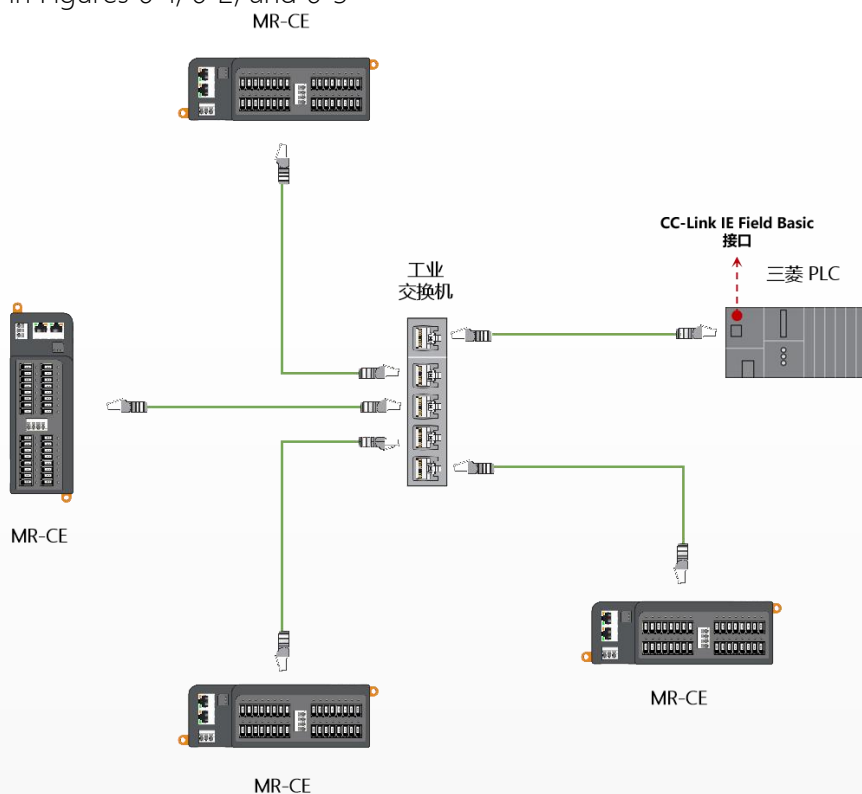


Figure 6-1 CC-Link IE Field Basic Star Network Topology Structure

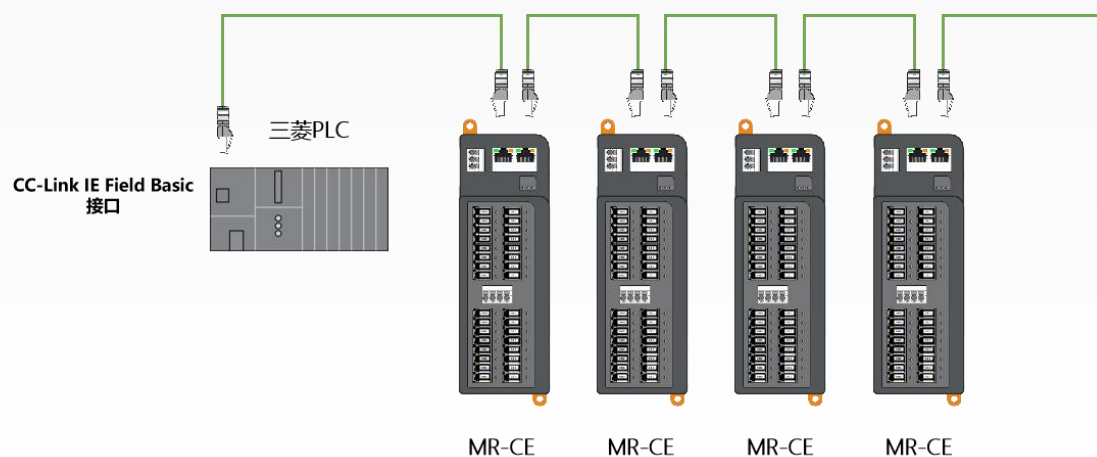


Figure 6-2 CC-Link IE Field Basic Daisy Chain Topology Structure

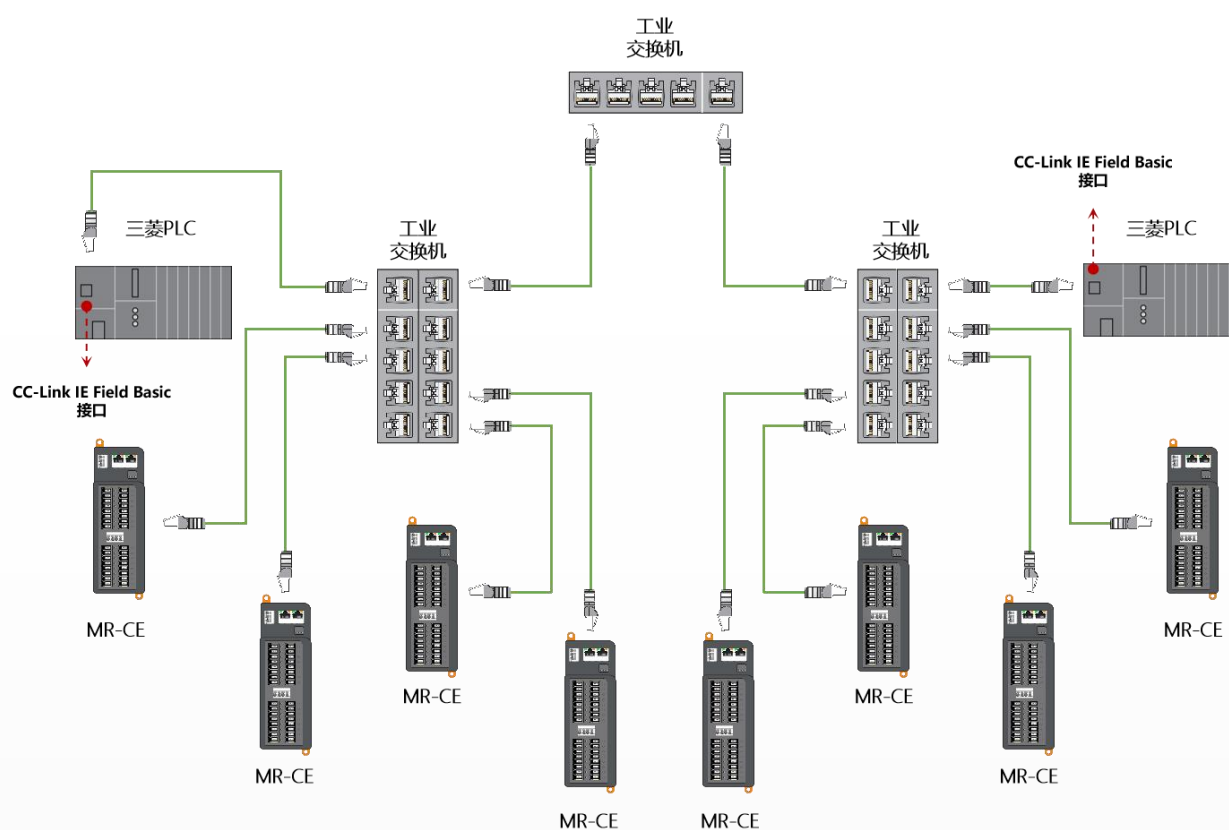


Figure 6-3 CC-Link IE Field Basic Tree Network Topology Structure

5.3 Module parameters

Each module has specific parameters, which need to be flexibly configured in the hardware setup according to the actual situation. The parameters can be configured and downloaded using the LAEconfig software. For detailed instructions, please refer to the LAEconfig manual.

MR□0016X-CE Parameter configuration definition

Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	IP address allocation method							
BYTE 1	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode
(DO Error_ Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 2	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_ Value bits 0-7)	7	6	5	4	3	2	1	0
Data Explanation								
Parameter Name		Organiz ation	Format	Input range	Explanation			
Chinese	English							
IP address allocation method	DHCP config	-	Decimal system	0, 1 (Default: 0)	0: Dynamic Allocation (DHCP) 1: Static Allocation (LAECONFIG software settings - IP address modification)			
Fault mode enable Fault value - Safe state value	DO Error_ Mode bits	-	Decimal system	0-255 (Default: 0)	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value [7..0]" is output to the respective DQ0.x port.			
IP address allocation method	DO Error_ Value bits	-	Decimal system	0-255 (Default: 0)	If the binary bit corresponding to the "Error Mode [7..0]" parameter is set to enable, when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.			

MR□1600X-CE Parameter configuration definition

Input data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	IP address allocation method							
BYTE 1	Input filtering time (Filter)							
Data Explanation								
Parameter Name		Organizati on	Format	Input range	Explanation			
Chinese	English							
IP address allocation method	DHCP config	-	Decimal system	0, 1 (Default: 5)	0: Dynamic Allocation (DHCP) 1: Static Allocation (LAECONFIG software settings - IP address modification)			
Input filtering time	Filter	ms	Decimal system	0-255 (Default: 5)				

MR□3200X-CE Parameter configuration definition

Input data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	IP address allocation method							
BYTE 1	Input filtering time (Filter)							
数据说明:								
Parameter Name		Organiza tion	Format	Input range	Explanation			
Chinese	English							
IP address allocation method	DHCP config	-	Decimal system	0, 1	0: Dynamic Allocation (DHCP) 1: Static Allocation (LAECONFIG software settings - IP address modification)			
				(Default: 5)				
Input filtering time	Filter	ms	Decimal system	0-255				
				(Default: 5)				

MR□0032X-CE Parameter configuration definition

Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	IP address allocation method							
BYTE 1	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 2	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
BYTE 3	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 8-15)	For 15	For 14	For 13	For 12	For 11	For 10	For 9	For 8
BYTE 4	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 8-15)	15	14	13	12	11	10	9	8
.	16-31 Refer to the above configuration							

Data Explanation:

Parameter Name		Organization	Format	Input range	Explanation
Chinese	English				
IP address allocation method	DHC config	-	Decimal system	0, 1 (Default: 0)	0: Dynamic Allocation (DHCP) 1: Static Allocation (LAECONFIG software settings - IP address modification)
Fault mode enable Fault value - Safe state value	DO Error_Mode bits	-	Decimal system	0-255 (Default: 0)	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value[7..0]" is output to the respective DQ0.x port.
IP address allocation method	DO Error_Value bits	-	Decimal system	0-255 (Default: 0)	If the binary bit corresponding to the "Error Mode[7..0]" parameter is set to enable, when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.

MR□0808X-CE Parameter configuration definition

Input data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	IP address allocation method							
BYTE 1	Input filtering time (Filter)							

Data Explanation:

Parameter Name		Organization	Format	Input range	Explanation
Chinese	English				
IP address allocation method	DHCP config	-	Decimal system	0, 1 (Default: 5)	0: Dynamic Allocation (DHCP) 1: Static Allocation (LAECONFI G software settings - IP address modification)
Input filtering time	Filter	ms	Decimal system	0-255 (Default: 5)	

Output data

BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error_Value For	DO Error_Value For	DO Error_Value For	DO Error_Value For	DO Error_Value For	DO Error_Value For	DO Error_Value For	DO Error_Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0

Data Explanation

Parameter Name		Organization	Format	Input range	Explanation
Chinese	English				
Fault mode enable Fault value - Safe state value	DO Error_Mode bits	-	Decimal system	0-255 (Default: 0)	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value[7..0]" is output to the respective DQ0.x port.
Fault mode enable	DO Error_Value bits	-	Decimal system	0-255 (Default: 0)	If the binary bit corresponding to the "Error Mode[7..0]" parameter is set to enable, when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.

MR□1616X-CE Parameter configuration definition

Input data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	IP address allocation method							
BYTE 1	Input filtering time (Filter)							
Data Explanation:								
Parameter Name		Organization	Format	Input range	Explanation			
Chinese	English							
IP address allocation method	DHCP config	-	Decimal system	0, 1	0: Dynamic Allocation (DHCP) 1: Static Allocation (LAECONFIG software settings - IP address modification)			
				(Default: 5)				
Input filtering time	Filter	ms	Decimal system	0-255				
				(Default: 5)				
Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode
(DO_Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For
(DO_Error_Value bits 0-7)	7	6	5	4	3	2	1	0
BYTE 2	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode	DO_Error_Mode
(DO_Error_Mode bits 8-15)	For 15	For 14	For 13	For 12	For 11	For 10	For 9	For 8
BYTE 3	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For	DO_Error_Value For
(DO_Error_Value bits 8-15)	15	14	13	12	11	10	9	8
数据说明:								
Parameter Name		Organization	Format	Input range	Explanation			
Chinese	English							
Fault mode enable Fault value - Safe state value	DO_Error_Mode bits	-	Decimal system	0-255	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value[7..0]" is output to the respective DQ0.x port.			
				(Default: 0)				
Fault mode enable	DO_Error_Value bits	-	Decimal system	0-255	If the binary bit corresponding to the "Error Mode[7..0]" parameter is set to enable, when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.			
				(默认: 0)				



6.Module connection and configuration

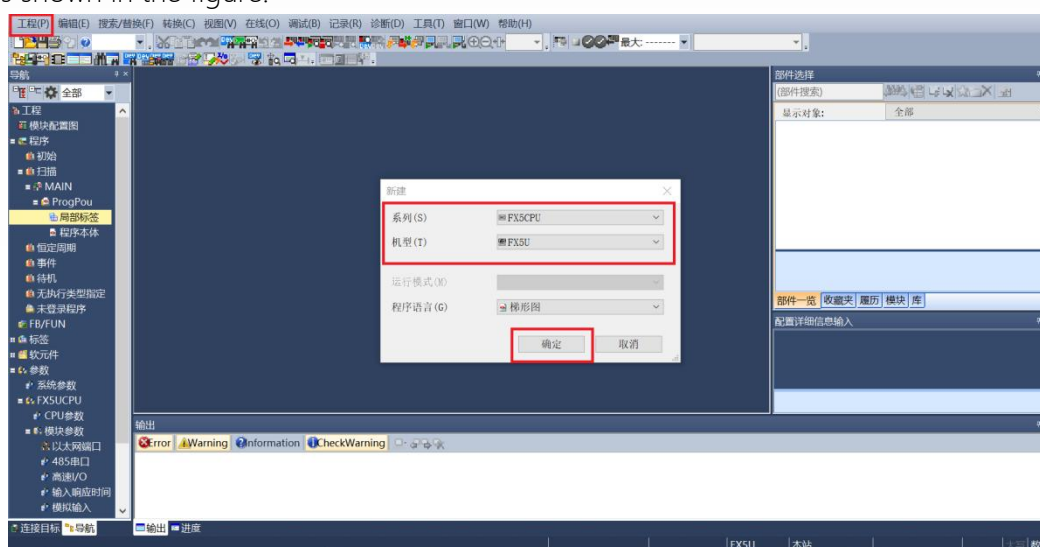
6.1 Connection and configuration of GX Words 3 with the CC-Link IE Field Basic protocol IO module

6.1.1 Distributed IO Address Configuration

Before communication, set the addresses of the distributed IOs. For address settings, please refer to the user manual of the LAEConfig software.

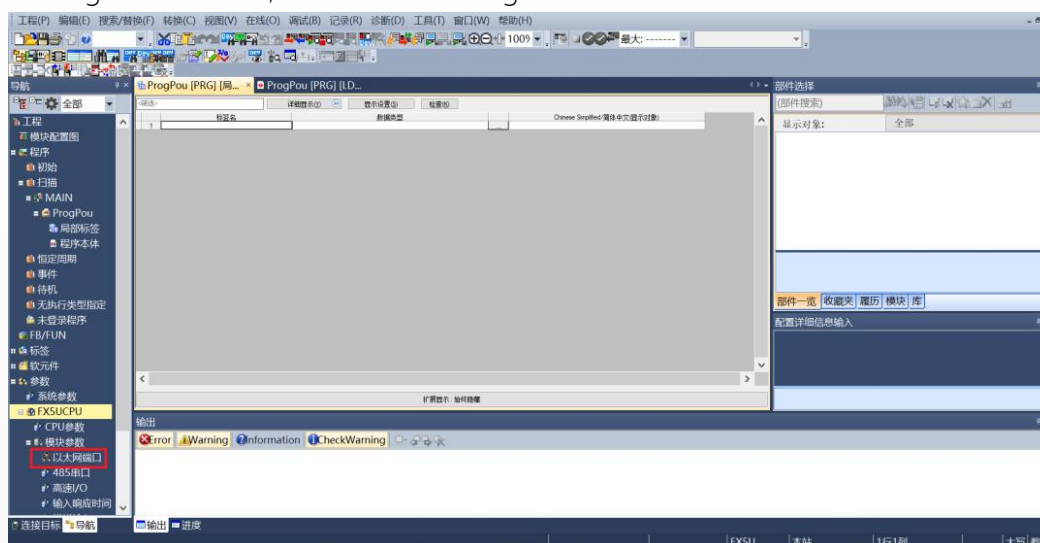
6.1.2 New Construction Project

Open the GX Words 3 software, select "Project" and then "New" from the menu bar. Choose the PLC series and select the CPU model. Take the 5U series CPU as an example, as shown in the figure.

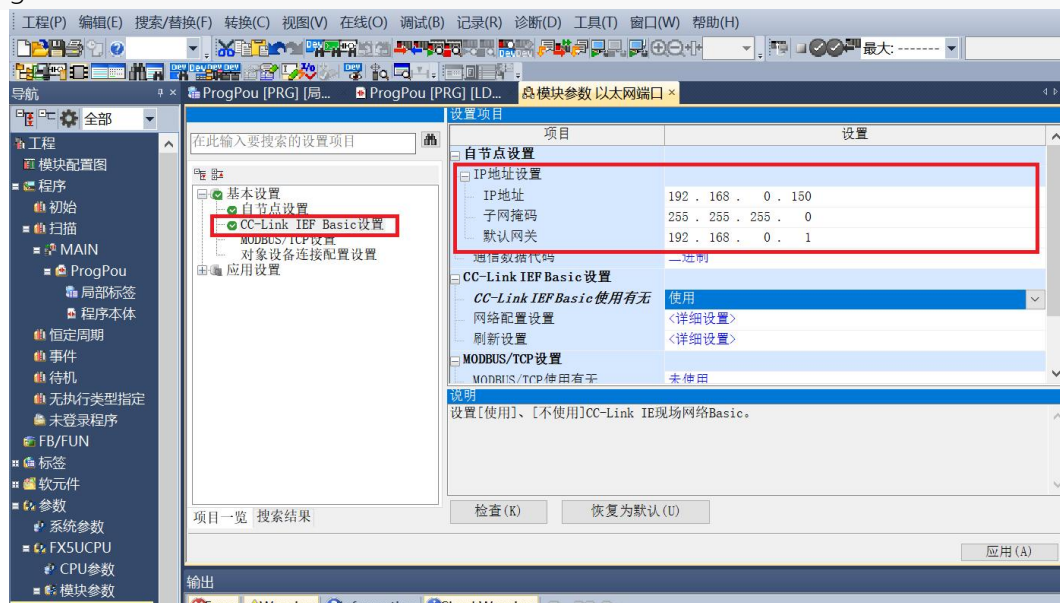


6.1.3 CC-Link IE Field Basic Parameter settings

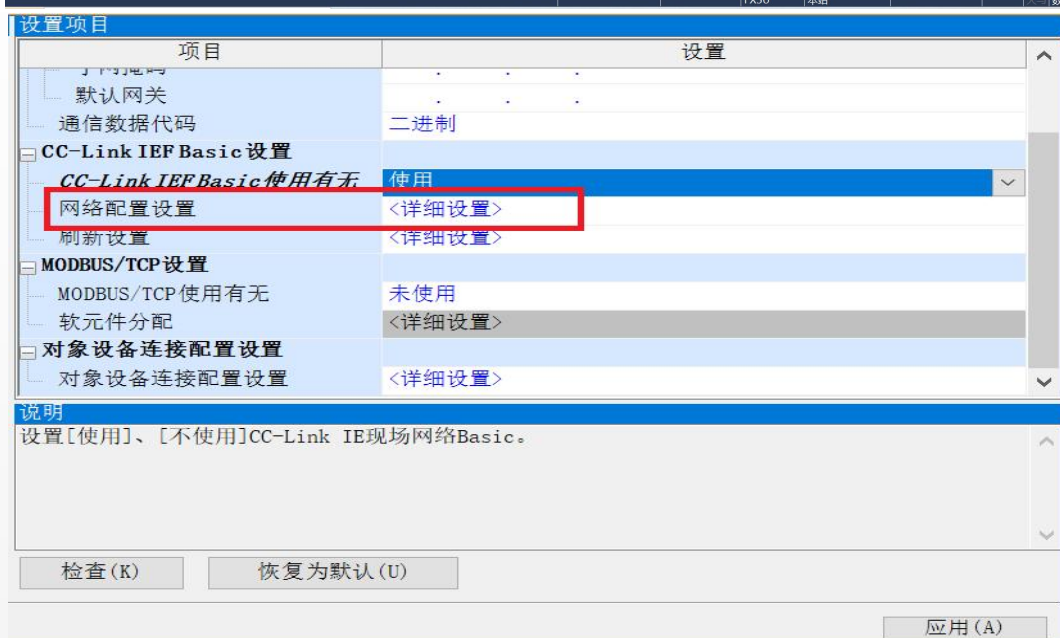
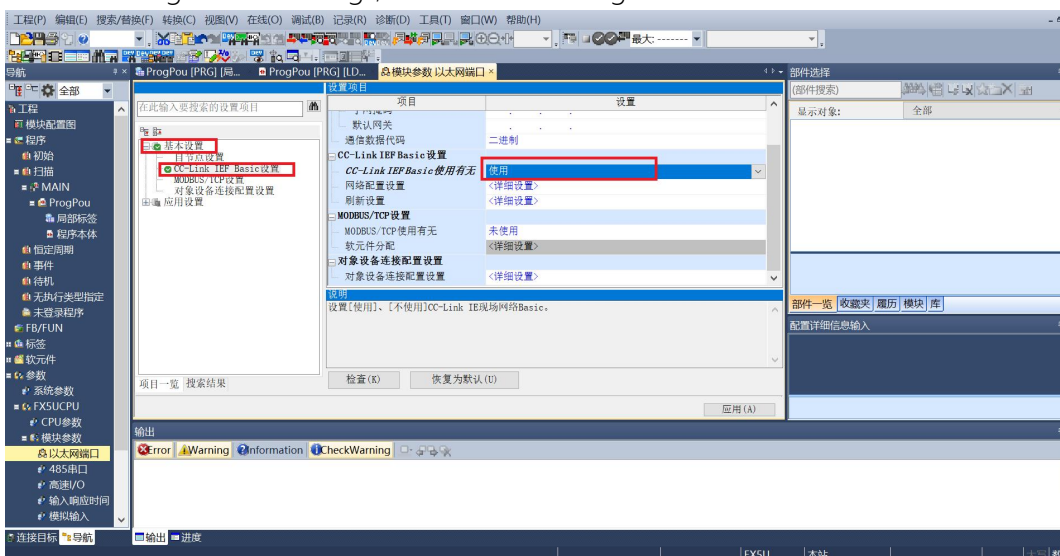
Select the "Parameters/FX5UCPU/Module Parameters/Ethernet Port" option in the left navigation window, as shown in the figure.



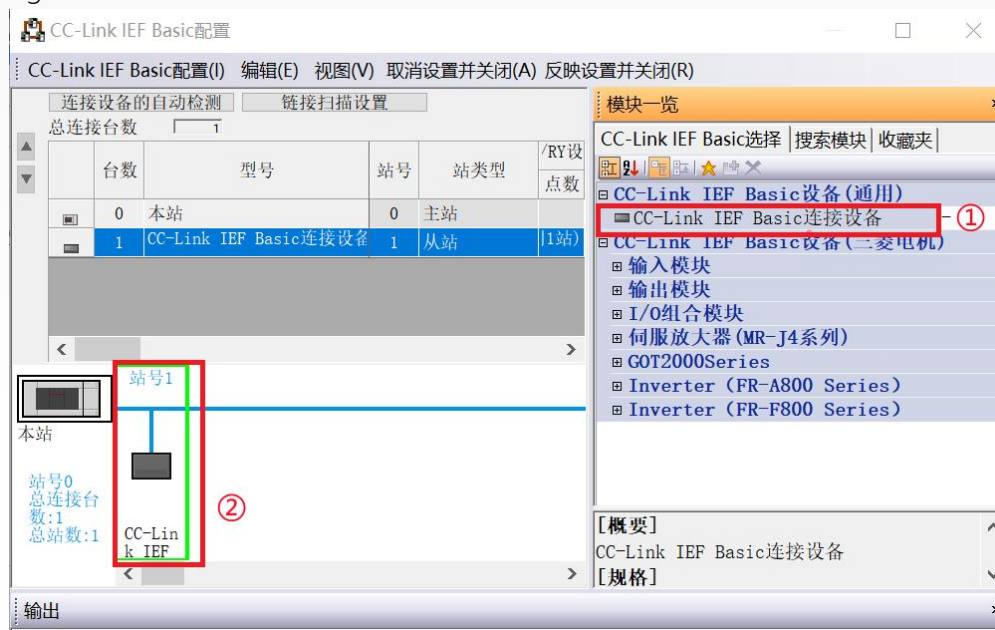
Set the IP address and subnet mask of the PLC master station as shown in the figure.



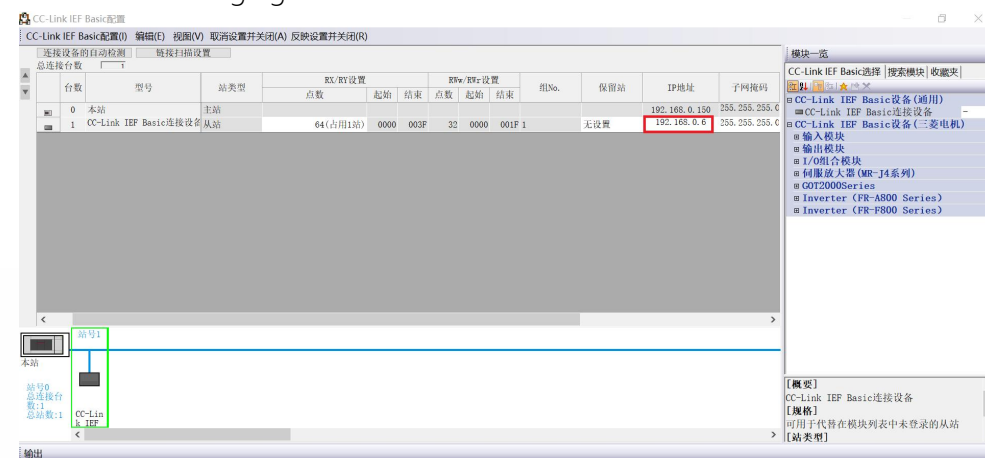
After setting the main station address and subnet mask, in the CC-Link IE Field Basic settings window, check the option to use CC-Link IE Field Basic and set the network configuration settings, as shown in the figure.



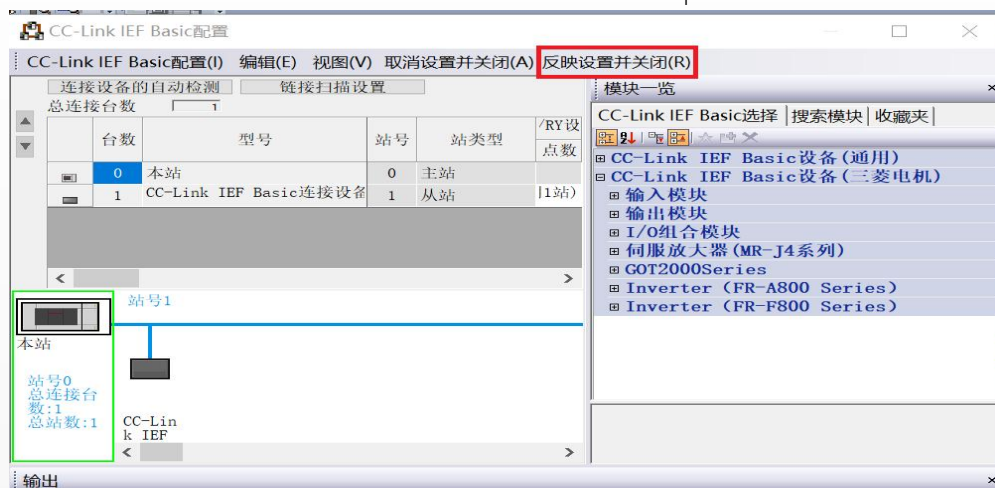
Manually add the module. In the CC-Link IE Field Basic configuration window, directly drag the right IO module onto the CPU configuration area below, as shown in the figure.



Change the IP address of CC-Link IE Field to be the same as the module address, as shown in the following figure.

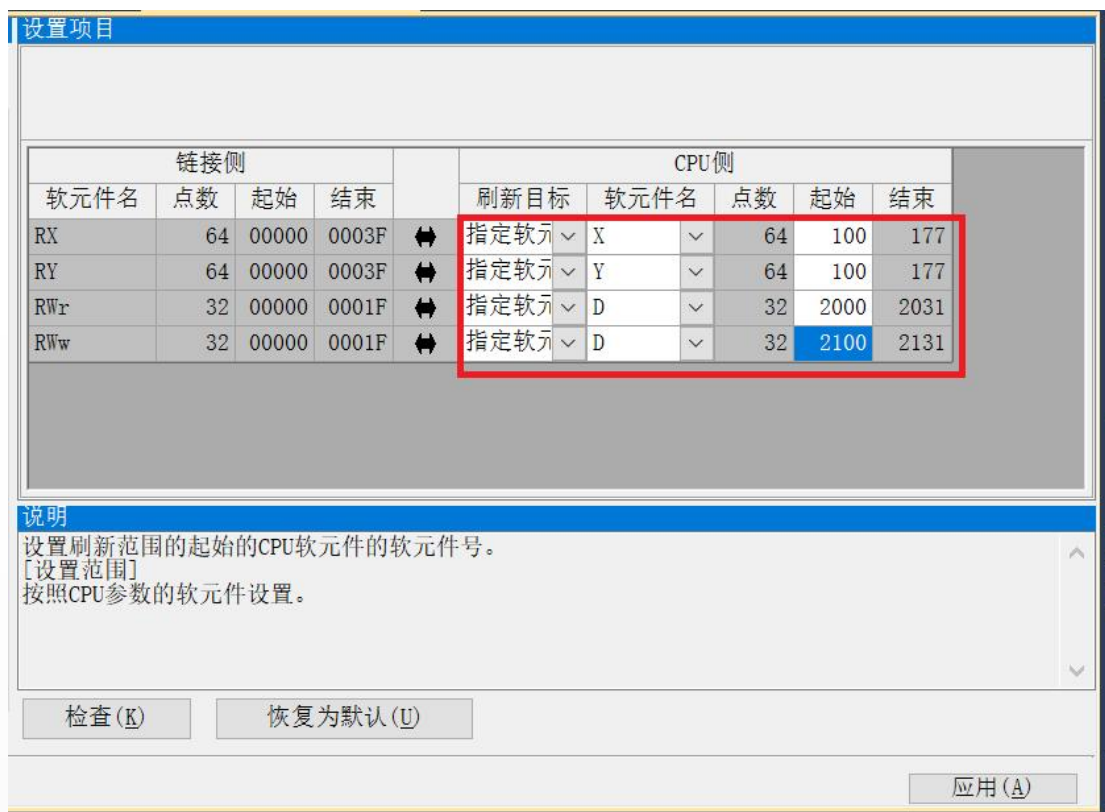


Then click "Set Feedback and Close" as shown in the picture.

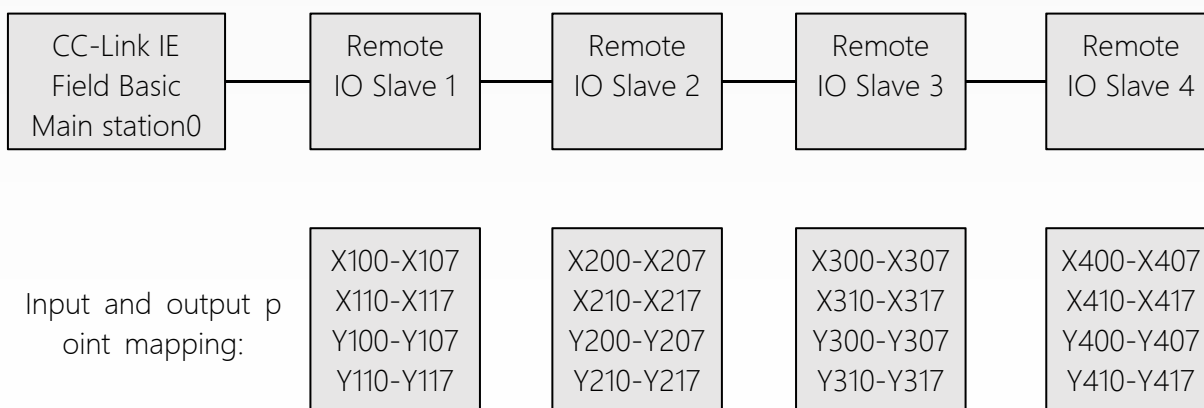


6.1.4 I/O Mapping Configuration

In the CC-Link IE Field Basic configuration window, set the starting points of the input and output of the remote IO module as shown in the figure.



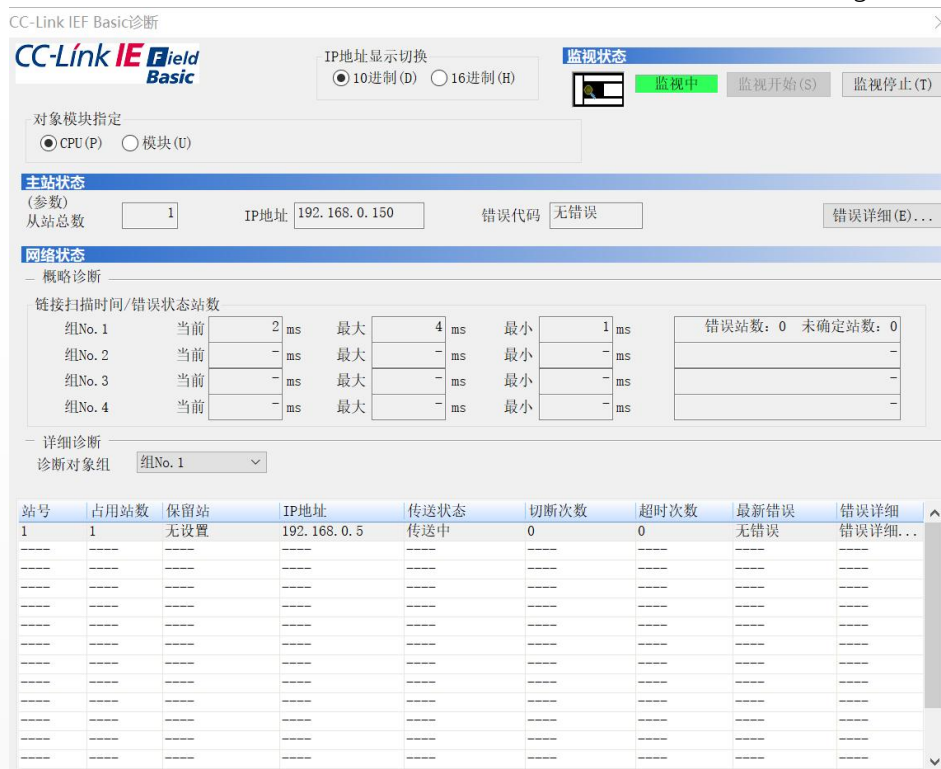
CC-Link IE Field Basic output point mapping method: Each slave station occupies 64 points, namely 64 DI and 64 DO. The input and output points set here correspond to the starting points X100 and Y100. The mapping of the slave station's IO points is shown in the figure.



Note: X120 - X170 are empty; Y120 - Y170 are also empty.

6.1.5 Diagnose communication status

After completing the parameter configuration, the project can be downloaded to the PLC. Then, the communication status can be detected through online diagnosis. In the menu bar, select "Diagnosis", and in the CC-Link IE Field Basic diagnosis window, you can view the status of the slave station IO module, as shown in the figure.



Official website



先进自动化控制及工业网络技术



Copyright © 2023Wuxi Latcos Automation Technology, Inc. All rights reserved.

Wuxi Lingke Automation Technology Co., Ltd. www.latcos.cn

Company Tel: **0510-85888030**