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禾川科技官方网站

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CN 安装说明
EN Instruction Sheet

⚠ 1. 安全注意事项（Safety precautions）

本说明书涉及产品为工业产品，并且均为开放型外壳设计。要求用户使用产品时，务必将产品安装于具有防尘、防潮以及免于电击 / 冲击等意外的控制柜内，并且需要设置保护措施以防止非维护人员不当操作或意外导致设备故障或损坏，造成不可避免的人员危险和财产损失。

The products in this manual are industrial products and are all open-type housing designs. It is essential to install these products within a control cabinet that is safeguarded against dust, moisture, and accidents such as electric shocks or physical impacts. Additionally, protective measures must be taken to prevent malfunctions or damage caused by improper operation or accidents involving non-maintenance personnel. Failure to do so may lead to serious risks to personnel safety and potential loss of property.

更详细的信息请参考 MX 系列硬件手册。

Please refer to the MX series hardware manual for more detailed information.

2. 命名规则（Model identification）

HC MX - MD 16 □ - D - XXXX
1 2 3 4 5 6 8

1	产品名称（Product name）
HC	禾川（Hechuan Technology）

2	产品系列（Product series）
MX	M系列通用扩展（M-series general-purpose expansion）

3	功能模块（Function module）
ID	数字量输入（Digital input）
OD	数字量输出（ Digital output）
OC	继电器输出（Relay output）
MD	数字量混合（Mixed DI/DO ）

4	通道数量（Number of channels）
16	16通道（16 channels）

5	端子类型（Terminal type）
空(N/A)	标准端子（Standard terminal）
C	牛角端子（Horn terminal）

6	电源类型（Power supply type）
D	直流电源（DC power supply）

8	软件/固件定制代码（Customized software/firmware Code）
X	0~9/A~Z/空(N/A)
PNP	源型

3. 适用型号（Applicable model）

名称（Name ）	型号（Model）	模块简要说明	Brief description
数字量输入模块 Digital input module	HCMX-ID08-D	8通道数字量输入，支持NPN和PNP	8-channel digital input, supports NPN and PNP
	HCMX-ID16-D	16通道数字量输入，支持NPN和PNP	16 channel digital input, supports NPN and PNP
	HCMX-ID32-D	32通道数字量输入，支持NPN和PNP	32 channel digital input, supports NPN and PNP
数字量输出模块 Digital output module	HCMX-OD08-D	8通道数字量输出，芯片输出，支持NPN	8-channel digital output, transistor output, supports NPN
	HCMX-OD08-D-PNP	8通道数字量输出，芯片输出，支持PNP	8-channel digital output, transistor output, supports PNP
	HCMX-OD16-D	16通道数字量输出，芯片输出，支持NPN	16-channel digital output, transistor output, supports NPN
	HCMX-OD16-D-PNP	16通道数字量输出，芯片输出，支持PNP	16-channel digital output, transistor output, supports PNP
	HCMX-OD32-D	32通道数字量输出，芯片输出，支持NPN	32-channel digital output, transistor output, supports NPN
	HCMX-OD32-D-PNP	32通道数字量输出，芯片输出，支持PNP	32-channel digital output, transistor output, supports PNP
	HCMX-OC08-D	8通道数字量输出，继电器类型	8-channel digital output, relay type
数字量混合模块 Mixed digital input/digital output module	HCMX-MD16-D	8通道数字量输入8通道数字量输出，芯片输出，支持NPN和PNP型输入方式和 NPN型输出方式	8-channel digital input & 8-channel digital output, transistor output, supports NPN and PNP input and NPN output
	HCMX-MD16-D-PNP	8通道数字量输入8通道数字量输出，芯片输出，支持NPN和PNP型输入方式和 PNP型输出方式	8-channel digital input & 8-channel digital output, transistor output，supports NPN and PNP input and PNP output
	HCMX-MD32-D	16通道数字量输入16通道数字量输出，芯片输出，支持NPN和PNP型输入方式和 NPN型输出方式	16-channel digital input & 16-channel digital output, transistor output, supports NPN and PNP input and NPN output
	HCMX-MD32-D-PNP	16通道数字量输入16通道数字量输出，芯片输出，支持NPN和PNP型输入方式和 PNP型输出方式	16-channel digital input & 16-channel digital output, transistor output, supports NPN and PNP input and PNP output

4. 通用电气及环境规格（General electrical and environmental specifications）

4.1 通用电气规格（General electrical specifications）

型号（Model）*1	额定电压 / 功率 *2	Rated voltage/power*2	数字量输入 / 输出类型	Digital input/output type
HCMX-ID08-D	DC24V/1W	DC24V/1W	数字量输入：DC24V(DC20.4~28.8V), 5mA/Ch	Digital input: DC24V(DC20.4~28.8V), 5mA/Ch
HCMX-ID16-D				
HCMX-ID32-D				
HCMX-OD08-D			数字量输出：DC24V, 500mA/Ch, 4A/8Ch*3 负载类型：电阻/电感/电灯负载	Digital output: DC24V, 500mA/Ch, 4A/8Ch*3 Load type: Resistive/Pilot duty/Tungsten
HCMX-OD08-D-PNP				
HCMX-OD16-D			数字量输出：DC24V, 500mA/Ch, 4A/16Ch*3 负载类型：电阻/电感/电灯负载	Digital output: DC24V, 500mA/Ch, 4A/16Ch*3 Load type: Resistive/Pilot duty/Tungsten
HCMX-OD16-D-PNP				
HCMX-OD32-D	DC24V/1.5W	DC24V/1.5W	数字量输出：DC24V, 500mA/Ch, 8A/32Ch*3 负载类型：电阻/电感/电灯负载	Digital output: DC24V, 500mA/Ch, 8A/32Ch*3 Load type: Resistive/Pilot duty/Tungsten
HCMX-OD32-D-PNP				
HCMX-OC08-D			继电器输出：AC250V/DC24V, 2A/Ch, 8A/8Ch 负载类型：电阻/电感/电灯负载	Relay output: AC250V/DC24V, 2A/Ch, 8A/8Ch Load type: Resistive/Pilot duty/Tungsten
HCMX-MD16-D	DC24V/1W	DC24V/1W	数字量输入：DC24V(DC20.4~28.8V), 5mA/Ch 数字量输出：DC24V, 500mA/Ch, 4A/8Ch*3 负载类型：电阻/电感/电灯负载	Digital input: DC24V(DC20.4~28.8V), 5mA/Ch Digital output: DC24V, 500mA/Ch, 4A/8Ch*3 Load type: Resistive/Pilot duty/Tungsten
HCMX-MD16-D-PNP				
HCMX-MD32-D	DC24V/1.5W	DC24V/1.5W	数字量输入：DC24V(DC20.4~28.8V), 5mA/Ch 数字量输出：DC24V, 500mA/Ch, 4A/16Ch*3 负载类型：电阻/电感/电灯负载	Digital input: DC24V(DC20.4~28.8V), 5mA/Ch Digital output: DC24V, 500mA/Ch, 4A/16Ch*3 Load type: Resistive/Pilot duty/Tungsten
HCMX-MD32-D-PNP				

* 注：1. 所有型号仅能在由有限功率电源（LPS）提供的安全特低电压（SELV）下运行。
2. 此处标识的额定功率为满负载运行时的最大功率。
3. 考虑温升影响，降额使用。

*Note: 1. All models can only operate under the safety extra low voltage (SELV) provided by a limited power source (LPS).
2. The power rating indicated here is the maximum power under full-load operation.
3. Consider the effect of temperature rise and derate during using.

4.2 环境规格（Environmental requirements）

项目	Item	规格	Specifications
海拔高度	Altitude	≤2000m	≤2000m
使用环境	Operating environment	控制柜内安装，开放式及室内使用	Installation within a control cabinet, open-type and indoor use
工作温度	Operating temperature	0~55℃	0~55℃
储存温度	Storage temperature	-25~70℃	-25~70℃
环境湿度	Ambient humidity	10~95%RH（无结露）	10~95%RH (non-condensing)
振动耐受	Vibration resistance	5~150Hz（X/Y/Z方向，1g/3.5mm位移）	5~150Hz (X/Y/Z direction, 1g /3.5mm displacement)
污染等级	Pollution degree	污染度2	Level 2
冷却方式	Cooling method	自然冷却	Natural air cooling
防护等级	IP rating	IP20	IP20
外壳材质	Enclosure material	阻燃材料	Self-extinguishable

* 注：若设备未依制造商指定方式使用，设备所提供的保护可能会被减弱。

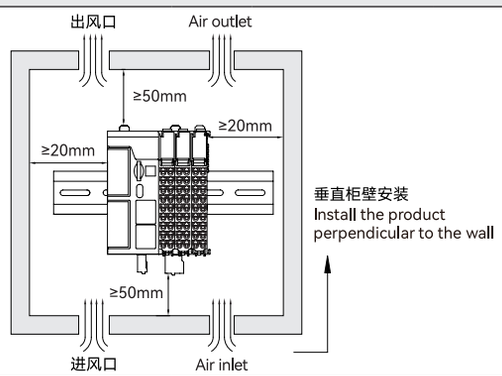
*Note: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

5. 安装说明（Installation instructions）

5.1 控制柜安装（Installation within a control cabinet）

CN 设备冷却方式为自然冷却或通过加装风扇进行冷却，请保证安装方向与柜壁垂直；请参考右侧示意图，在设备的周围留有足够的空间， 并排安装时，建议横向两侧预留20mm 以上间距。

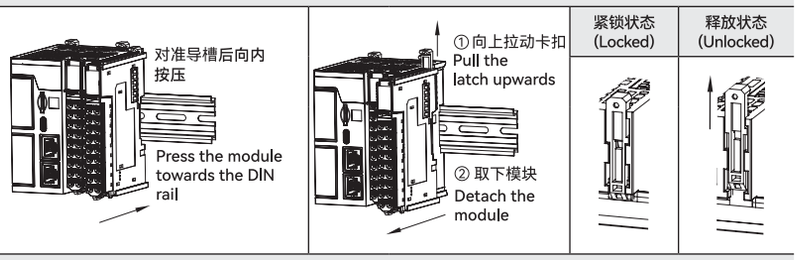
EN Please install the product perpendicular to the wall and ensure a sufficient cooling effect via natural air or a cooling fan. Please leave enough clearance around the product as shown in the right figure. During a side-by-side installation, please leave a horizontal clearance of more than 20 mm on both sides.



5.2 导轨拆装（DIN rail mounting and dismounting）

CN 安装模块时，将模块侧面导轨对准左侧模块的导槽后，沿导槽向内摁压，听到“咔哒”声，模块成功安装于 DIN 导轨上（安装前保证双向联动卡扣处于紧锁状态，否则可能导致安装故障）拆卸模块时，将卡扣向上拉动一定距离，听到“咔哒”声后，取下模块即可。

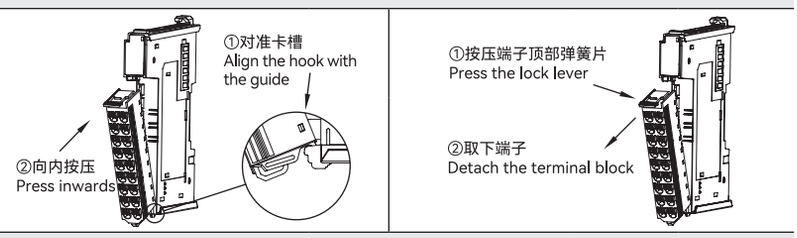
EN Before installation, check that the DIN rail mounting latch is in a locked state. During mounting, align the groove of the module to that of the module on the left side to engage them together, and then press the module inwards until a clear click is heard (which indicates the latch is momentarily opened and locked onto the rail). During dismounting, pull the latch upwards until a clear click is heard (which indicates the latch is unlocked), and then directly remove the module.



5.3 可拆卸端子拆装（Removable terminal block mounting and dismounting）

CN 安装可拆卸端子时，将端子底部对准模块底部凹槽并紧扣，上部对齐模块，当听到“咔哒”声即完成了端子的组装；拆卸端子时，向下按压端子顶部卡扣，使其脱离模块本体并以底部卡扣呈圆弧状斜向下施力，将端子取下。

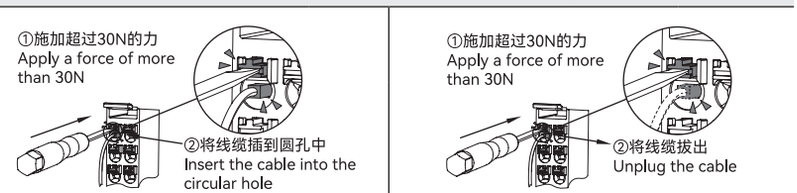
EN During mounting, align the mounting hook at the bottom of the terminal block to the guide of the module and press inwards on the terminal block until a clear click is heard (which indicates the terminal block has been locked to the module). During dismounting, press the lock lever on the terminal block and then detach it from the module.



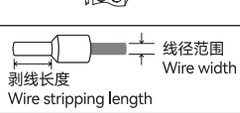
⚠ 5.4 线缆拆装（Cable connecting and disconnecting）

CN 安装线缆时，将一字螺丝刀垂直插入可拆卸端子压块内，施加超过 30N 的力，将准备好的线缆插入到圆孔中，拔出一字螺丝刀，轻拽线缆，线缆不松动即成功完成配线；反之即可取出线缆。端子规格及配线示意图如右图所示。

EN During connecting, insert the flat-blade screwdriver into the unlocking tab with a force of more than 30N. Then insert a cable into the circular hole. Gently tug the cable after pulling out the screwdriver. If the cable is secured firmly, then the connection is finished. The reverse is the procedure for unplugging the cable. The terminal specifications and wiring diagram are shown in the right figure.

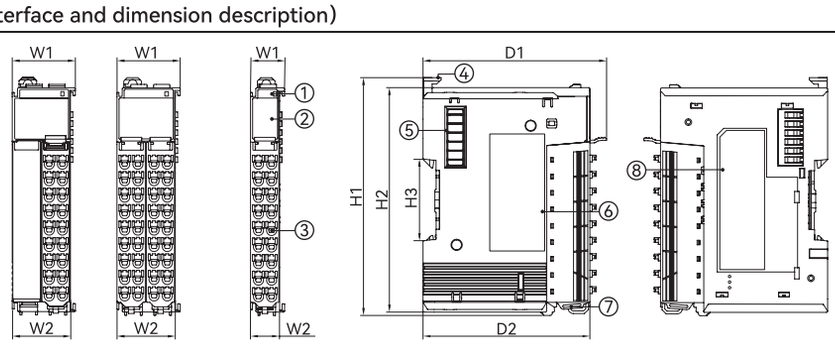


模块端子（Terminal）	线径范围：AWG (Wire width)	剥线长度：mm (Wire stripping length)	按压力：N (Pressure)
18Pin	24~17	8~10	30



⚠ 警告：只能使用 75℃铜导线。
Warning: Use only a copper conductor that is 75° C.
Attention: Utilisez uniquement un conducteur en cuivre à 75° C.

6. 接口和尺寸说明（Interface and dimension description）



R 双排模块 T
Dual-row module

T 单排模块
Single-row module

图例：
R 继电器类型 Relay type
T 晶体管类型 Transistor type

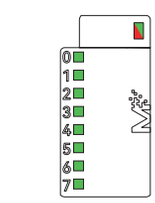
序号(No.)	名称	Name	功能	Function
1	产品型号	Product model	模块型号	Module model numbers
2	模块状态指示灯	Module status indicator	显示模块与通道状态	Display module and channel status
3	18Pin IO端子	18Pin IO terminal	输入输出信号接口	Input and output signal interface
4	双向联动卡扣	DIN rail mounting latch	固定模块在DIN导轨上	Mount the module onto a DIN rail
5	扩展模块通讯接口	Expansion module communication interface	主机和IO模块或IO模块间通讯及供电接口，不支持热插拔	The interface for the communication and power supply between the host and the IO module or between IO modules, does not support hot-swapping
6	侧边丝印	Side silk screen printing	模块配线图	Module wiring diagram
7	集线结构	Cable collector	收纳IO线缆	Organize IO cables
8	标签	Label	显示模块型号、规格参数、内部序列号等基本信息	Display the basic information including module model, specification parameters, and internal serial number

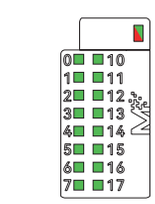
型号（Model）			外形尺寸（Dimension）：mm							重量（Weight）：g
			W1	W2	H1	H2	H3	D1	D2	
单排模块 (Single-row module)		HCMX-ID08-D	15.20	13.00	106.00	100.00	35.40	81.90	74.50	70 approx.
		HCMX-ID16-D								
		HCMX-OD08-D								
		HCMX-OD08-D-PNP								
		HCMX-OD16-D								
		HCMX-OD16-D-PNP								
		HCMX-MD16-D								
		HCMX-MD16-D-PNP								
双排模块 (Dual-row module)	T	HCMX-ID32-D	28.20	26.00						120 approx.
		HCMX-OD32-D								
		HCMX-OD32-D-PNP								
		HCMX-MD32-D								
		HCMX-MD32-D-PNP								
	R	HCMX-OC08-D								

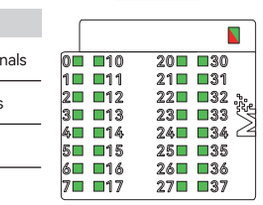
7. 指示灯说明（Indicator description）

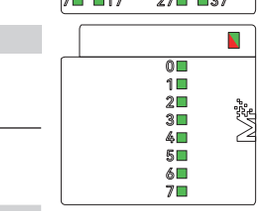
指示灯含义 (Indicator meaning)	颜色 (Color)	状态	Status	说明	Description
模块状态 (Module status)	绿色 (Green)	熄灭	Not lit	未供电 / 损坏	Not powered on / Damaged
		闪烁	Blinking	初始化 / 停止状态	Initialization / Stop
		常亮	Lit	运行状态	Run
	红色 (Red)	熄灭	Not lit	无错误	No error
		常亮	Lit	模块错误状态	The module is in an abnormal state

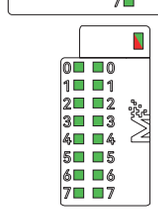
丝印 (Screen printing)	指示灯含义 (Indicator meaning)	颜色 (Color)	状态	Status	说明	Description
ID08/OD08/OD08-PNP						
I N (0~7)	输入 (Input)	绿色 (Green)	熄灭	Not lit	输入通道 N 未检测到输入信号	The input channel N has not detected input signals
			常亮	Lit	输入通道 N 检测到输入信号	The input channel N has detected input signals
Q N (0~7)	输出 (Output)	绿色 (Green)	熄灭	Not lit	输出通道 N 无信号输出	There is no output signal for this channel
			常亮	Lit	输出通道 N 有信号输出	There are output signals for this channel
ID16/OD16/OD16-PNP						
I N (0~7,10~17)	输入 (Input)	绿色 (Green)	熄灭	Not lit	输入通道 N 未检测到输入信号	The input channel N has not detected input signals
			常亮	Lit	输入通道 N 检测到输入信号	The input channel N has detected input signals
Q N (0~7,10~17)	输出 (Output)	绿色 (Green)	熄灭	Not lit	输出通道 N 无信号输出	There is no output signal for this channel
			常亮	Lit	输出通道 N 有信号输出	There are output signals for this channel
ID32/OD32/OD32-PNP						
I N (0~7,10~17, 20~27,30~37)	输入 (Input)	绿色 (Green)	熄灭	Not lit	输入通道 N 未检测到输入信号	The input channel N has not detected input signals
			常亮	Lit	输入通道 N 检测到输入信号	The input channel N has detected input signals
Q N (0~7,10~17, 20~27,30~37)	输出 (Output)	绿色 (Green)	熄灭	Not lit	输出通道 N 无信号输出	There is no output signal for this channel
			常亮	Lit	输出通道 N 有信号输出	There are output signals for this channel
OC08						
Q N (0~7)	输出 (Output)	绿色 (Green)	熄灭	Not lit	输出通道 N 无信号输出	There is no output signal for this channel
			常亮	Lit	输出通道 N 有信号输出	There are output signals for this channel
MD16/MD16-PNP						
I N (0~7)	输入 (Input)	绿色 (Green)	熄灭	Not lit	输入通道 N 未检测到输入信号	The input channel N has not detected input signals
			常亮	Lit	输入通道 N 检测到输入信号	The input channel N has detected input signals
Q N (0~7)	输出 (Output)	绿色 (Green)	熄灭	Not lit	输出通道 N 无信号输出	There is no output signal for this channel
			常亮	Lit	输出通道 N 有信号输出	There are output signals for this channel
MD32/MD32-PNP						
I N (0~7,10~17)	输入 (Input)	绿色 (Green)	熄灭	Not lit	输入通道 N 未检测到输入信号	The input channel N has not detected input signals
			常亮	Lit	输入通道 N 检测到输入信号	The input channel N has detected input signals
Q N (0~7,10~17)	输出 (Output)	绿色 (Green)	熄灭	Not lit	输出通道 N 无信号输出	There is no output signal for this channel
			常亮	Lit	输出通道 N 有信号输出	There are output signals for this channel

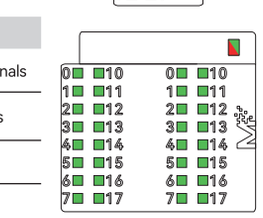










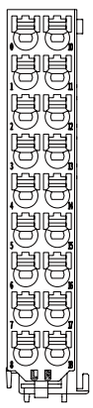


8. 端子及配线说明（Terminal and wiring description）

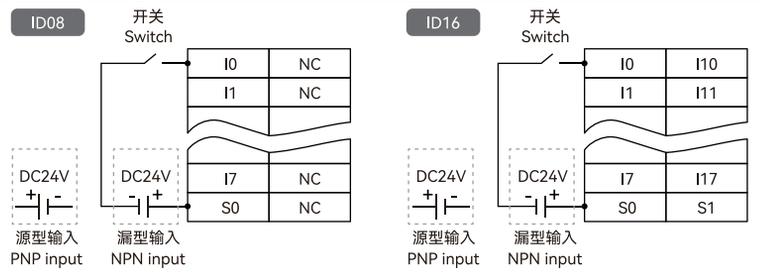
类型(Type) \ 型号(Model)		ID08	ID16	ID32	OD08	OD08-PNP	OD16	OD16-PNP	OD32	OD32-PNP	MD16	MD16-PNP	MD32	MD32-PNP	OC08
输入 (Input)	NPN	○	○	○	-	-	-	-	-	-	○	○	○	○	-
	PNP	○	○	○	-	-	-	-	-	-	○	○	○	○	-
输出 (Output)	NPN	-	-	-	○	-	○	-	○	-	○	-	○	-	-
	PNP	-	-	-	-	○	-	○	-	○	-	○	-	○	-

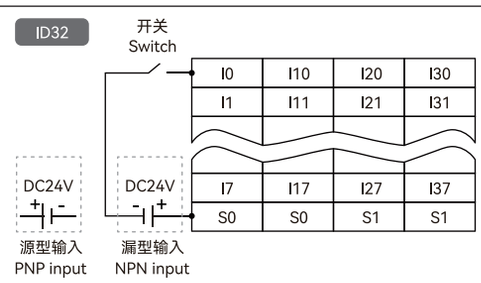
* 注：○：代表支持该类型；-：代表不支持该类型。

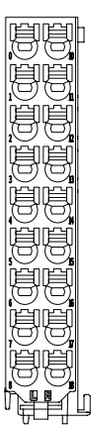
*Note: The symbol " ○ " indicates that the type is supported. The symbol "-" indicates that the type is not supported.

端子说明 (Terminal description)			ID08		ID16		ID32			
0		10	I0	NC	I0	I10	I0	I10	I20	I30
1		11	I1	NC	I1	I11	I1	I11	I21	I31
2		12	I2	NC	I2	I12	I2	I12	I22	I32
3		13	I3	NC	I3	I13	I3	I13	I23	I33
4		14	I4	NC	I4	I14	I4	I14	I24	I34
5		15	I5	NC	I5	I15	I5	I15	I25	I35
6		16	I6	NC	I6	I16	I6	I16	I26	I36
7		17	I7	NC	I7	I17	I7	I17	I27	I37
8		18	S0	NC	S0	S1	S0	S0	S1	S1

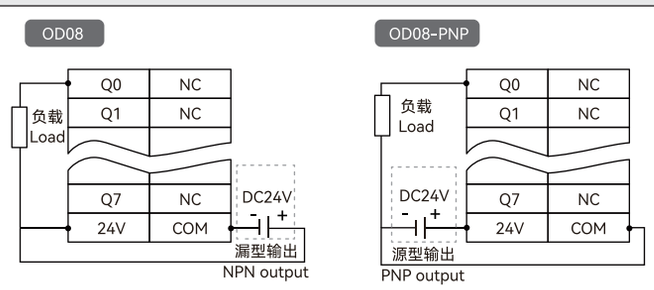
接线（Wiring）

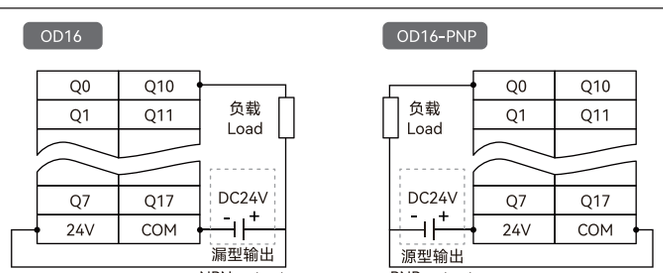


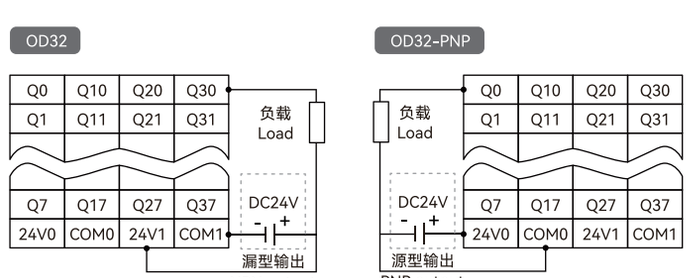


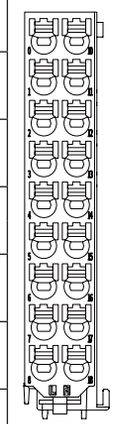
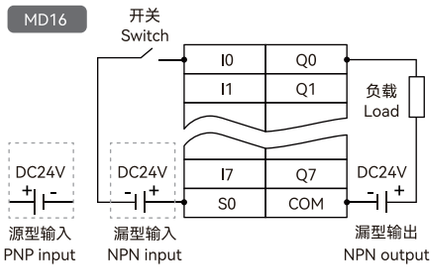
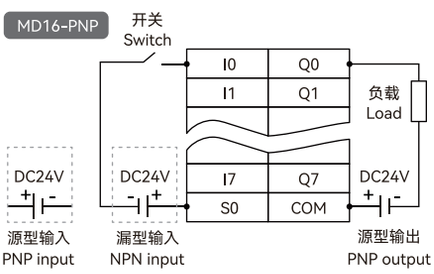
端子说明 (Terminal description)			OD08/ OD08-PNP		OD16/ OD16-PNP		OD32/OD32-PNP			
0		10	Q0	NC	Q0	Q10	Q0	Q10	Q20	Q30
1		11	Q1	NC	Q1	Q11	Q1	Q11	Q21	Q31
2		12	Q2	NC	Q2	Q12	Q2	Q12	Q22	Q32
3		13	Q3	NC	Q3	Q13	Q3	Q13	Q23	Q33
4		14	Q4	NC	Q4	Q14	Q4	Q14	Q24	Q34
5		15	Q5	NC	Q5	Q15	Q5	Q15	Q25	Q35
6		16	Q6	NC	Q6	Q16	Q6	Q16	Q26	Q36
7		17	Q7	NC	Q7	Q17	Q7	Q17	Q27	Q37
8		18	24V	COM	24V	COM	24V0	COM0	24V1	COM1

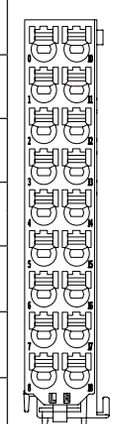
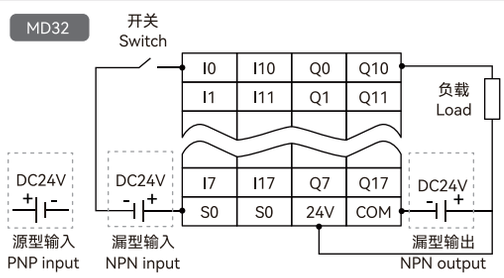
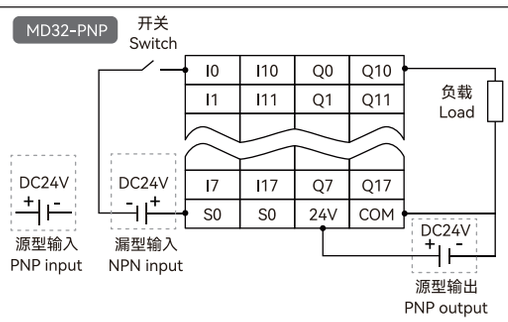
接线（Wiring）

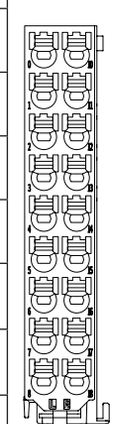
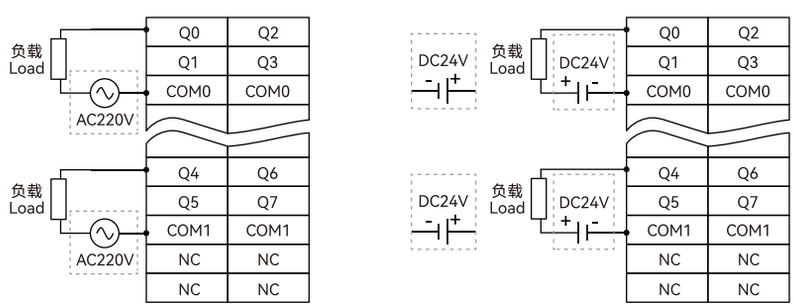






端子说明 (Terminal description)			MD16/ MD16-PNP		接线（Wiring）
0		10	I0	Q0	
1		11	I1	Q1	
2		12	I2	Q2	
3		13	I3	Q3	
4		14	I4	Q4	
5		15	I5	Q5	
6		16	I6	Q6	
7		17	I7	Q7	
8		18	S0	COM	

端子说明 (Terminal description)			MD32/MD32-PNP				接线（Wiring）
0		10	I0	I10	Q0	Q10	
1		11	I1	I11	Q1	Q11	
2		12	I2	I12	Q2	Q12	
3		13	I3	I13	Q3	Q13	
4		14	I4	I14	Q4	Q14	
5		15	I5	I15	Q5	Q15	
6		16	I6	I16	Q6	Q16	
7		17	I7	I17	Q7	Q17	
8		18	S0	S0	24V	COM	

端子说明 (Terminal description)			OC08		接线（Wiring）
0		10	Q0	Q2	
1		11	Q1	Q3	
2		12	COM0	COM0	
3		13	NC	NC	
4		14	Q4	Q6	
5		15	Q5	Q7	
6		16	COM1	COM1	
7		17	NC	NC	
8		18	NC	NC	