

支持的设备型号
Supported Models

HCM312-32MT6-D HCM511S-32MT4-D HCM511-32MT4-D
HCM512-32MT4-D HCM513-32MT4-D HCM514-32MT4-D



HPPP2090000-00B
Date 2024-08-27
CN 安装说明
EN Instruction Sheet

1. 安全注意事项 (Safety precautions)

本说明书涉及产品均为开放型外壳设计。要求用户使用产品时，务必将其安装于具有防尘、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 involved are all open-type housing designs. Therefore, they should be installed in a control cabinet that is free of airborne dust, humidity, electric shock, and vibration. The cabinet should prevent non-maintenance staff from operating the products or accidents from happening in case danger and damage may occur on the products.

更详细的信息请参考 M 系列硬件手册。

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

	M300/M500/M500S 系列 CPU 内置 CR-2032L/BN 的电池，更换的电池仅可从禾川购买。 The M300/M500/M500S series CPU is equipped with a built-in CR-2032L/BN battery, and the replacement battery can only be purchased from HCFA. Le CPU de la série M300/M500/M500S est équipé d'une batterie CR-2032L/BN intégrée, et la batterie de remplacement ne peut être achetée qu'à l'apprès de HCFA.
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2. 通用电气及环境规格 (General electrical and environmental specifications)

2.1 通用电气规格 (General electrical specifications)

型号 (Model)	额定功率: W	Rated power: W	额定电压	Rated voltage
HCM312-32MT6-D	5	5		
HCM511S-32MT4-D	5	5		
HCM511-32MT4-D	5	5	DC24V, 电压范围: DC20.4~28.8V	DC24V, voltage range: DC20.4~28.8V
HCM512-32MT4-D	5	5		
HCM513-32MT4-D	5	5		
HCM514-32MT4-D	5	5		

* 注：所有型号均为安全特低电压输入产品。

*Note: All models are featured by the SELV input type.

2.2 环境规格 (Environmental specifications)

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°C	-0~55°C
储存温度	Storage temperature	-25~70°C	-25~70°C
环境湿度	Ambient humidity	10~95%RH (无结露)	10~95%RH (non-condensation)
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II	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：如果以制造商未规定的方式使用设备，可能会损坏设备。

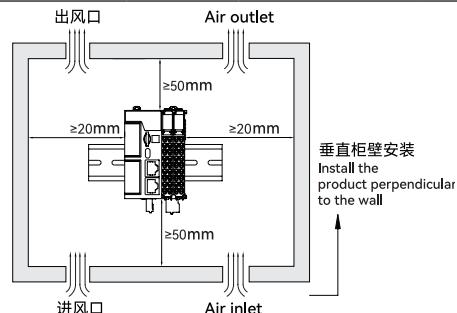
*NOTE: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

3. 安装说明 (Installation instructions)

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

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
CN 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。

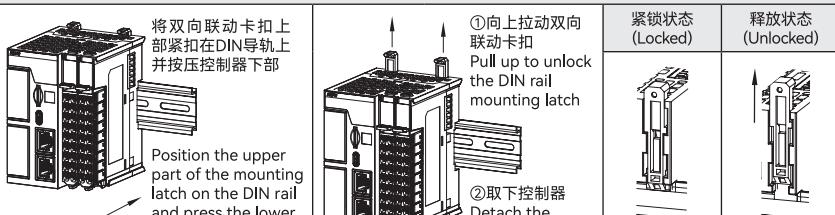
EN Please install the product perpendicular to the wall and ensure a sufficient cooling effect via natural air or a cooling fan. Please leave enough clearance around the product as shown in the right figure. During a side-by-side installation, please leave a horizontal clearance of more than 20 mm on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



3.2 导轨拆装 (DIN rail mounting and dismantling)

CN 安装控制器时，将控制器后方双向联动卡扣上部紧扣在 DIN 导轨上，并用力按压控制器下部，听到“咔哒”声，控制器即成功安装于 DIN 导轨上（安装前应保证双向联动卡扣处于紧锁状态，否则可能导致安装故障）；拆卸控制器时，将双向联动卡扣向上拉动一定距离，听到“咔哒”声后，取下控制器即可。

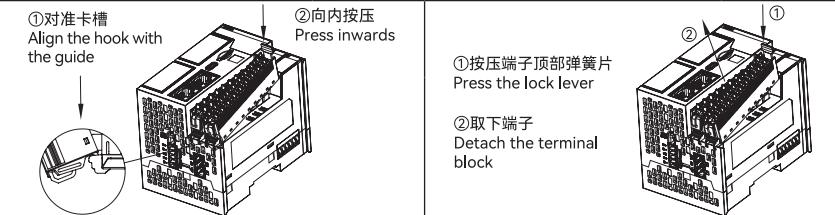
EN Before installation, check that the DIN rail mounting latch is in a locked state. During mounting, position the upper part of the mounting latch of the module on the DIN rail, and then press the controller against the DIN rail until a clear click is heard (which indicates the latch is momentarily opened and locked onto the rail). During dismantling, pull the latch upwards until a clear click is heard (which indicates the latch is unlocked), and then directly remove the controller.



3.3 可拆卸端子拆装 1 (Removable terminal block mounting and dismantling I)

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。

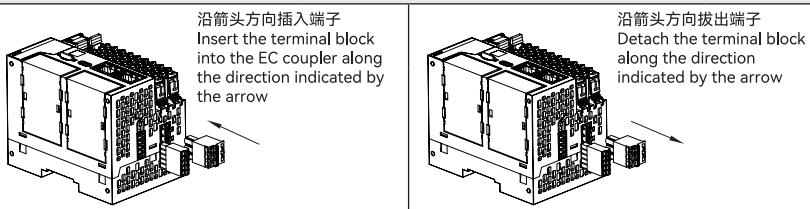
EN During mounting, align the mounting hook at the bottom of the terminal block to the guide of the module and press inwards on the terminal block until a clear click is heard (which indicates the terminal block has been locked to the module). During dismantling, press the lock lever on the terminal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



3.4 可拆卸端子拆装 2 (Removable terminal block mounting and dismounting II)

CN 可拆卸端子拆装如右图所示。

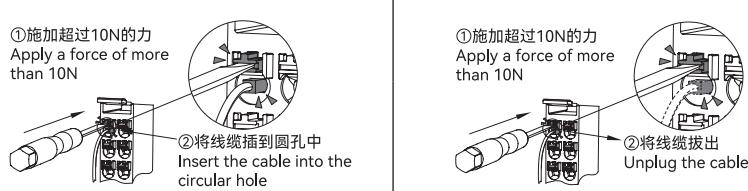
EN The mounting and dismounting of the removable terminal block are shown in the figures on the right side.



3.5 线缆拆装 1 (Cable connecting and disconnecting I)

CN 安装线缆时,将赠送的一字螺丝刀垂直插入可拆卸端子压块内,施加超过10N的力,此时圆孔打开,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。

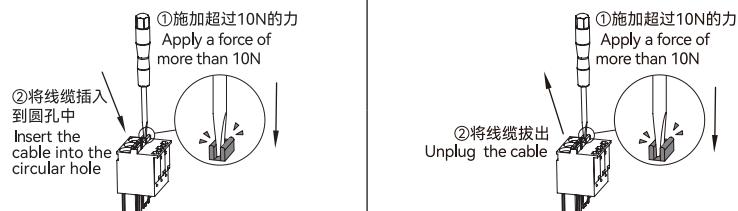
EN During connecting, insert the flat-blade screwdriver into the unlocking tab with a force of more than 10 N. Then insert a cable into the circular hole. Gently tug the cable after pulling out the screwdriver. If the cable is secured firmly, then the connection is finished. The reverse is the procedure for unplugging the cable. The terminal specifications and wiring diagram are shown in the right figure.



3.6 线缆拆装 2 (Cable connecting and disconnecting II)

CN 安装线缆时,将赠送的一字螺丝刀垂直插入可拆卸端子压块内,施加超过10N的力,此时圆孔打开,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 10 N. 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.



控制器端子 (Terminal)	线径范围: AWG (Wire width)	剥线长度: mm (Wire stripping length)	按压力: N (Pressure)	拔线力: N (Wire pulling force)
18Pin IO端子 (18Pin IO terminal)	24~17	8~9	10	50
5Pin 串行通讯端子 (5Pin serial communication terminal)	24~16	8~10	16	40
DC24V 电源端子 (DC24V power supply terminal)	26~12	9~10	25	60

线径范围
Wire width
剥线长度
Wire stripping length

警告: 仅使用铜导线。

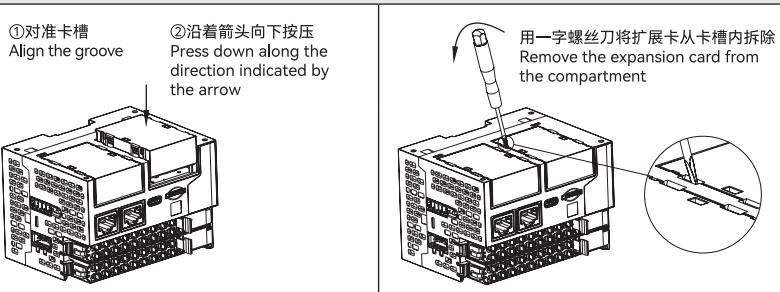
⚠ Warning: Use copper conductors only.

Attention: Utilisez uniquement des conducteurs en cuivre.

3.7 扩展卡拆装 (Expansion card mounting and dismounting)

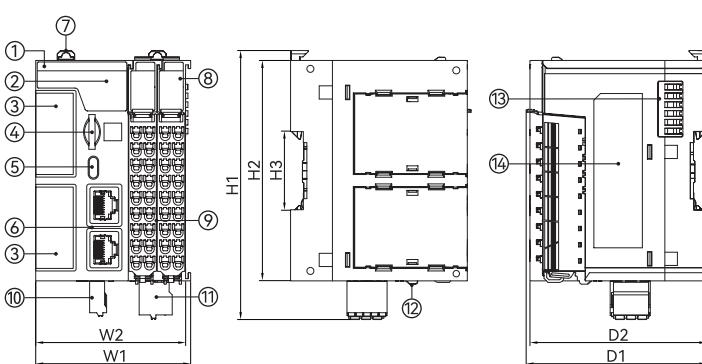
CN 安装扩展卡时,水平放置控制器,将扩展卡沿着卡扣垂直放入控制器的卡槽中,并向下按压扩展卡。当听到明显声音后,检查表面是否平齐,若平齐,则扩展卡安装完成;拆卸扩展卡时,将一字螺丝刀插入卡扣,按箭头方向撬动扩展卡。当听到明显声音时,扩展卡与控制器脱离,此时将扩展卡垂直拿出,扩展卡拆卸完成。

EN During dismounting, place the controller horizontally, put the expansion card into the slot of the controller along the card slot, and press the expansion card downwards. When a distinct sound is heard, check whether the surface is flush, if flush, the expansion card installation is complete; when removing the expansion card, insert a screwdriver into the card slot and pry the expansion card in the direction of the arrow. When you hear the obvious sound, the expansion card is detached from the controller, at this time, the expansion card will be taken out vertically, the expansion card disassembly is complete.



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

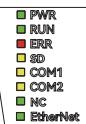
序号(No.)	项目	Item
1	产品型号	Product model
2	系统状态指示灯	System status indicator
3	上方 扩展卡槽1	Up Expansion card slot I
	下方 扩展卡槽2	Down Expansion card slot II
4	SD卡槽	SD card slot
5	Type-C接口	Type-C interface
6	RJ45 接口	RJ45 interface
7	双向联动卡扣	DIN rail mounting latch
8	通道状态指示灯	Channel status indicator
9	18Pin IO 端子 左侧 输入	18Pin IO terminal Left Input
	右侧 输出	Right Output
10	5Pin 串行通讯端子	5Pin serial communication terminal
11	DC24V 电源端子	DC24V power supply terminal
12	RUN/STOP开关	RUN/STOP DIP switch
13	扩展模块通讯接口	Expansion terminal communication interface
14	标签	Label



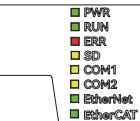
5. 指示灯说明 (Indicator description)

丝印 (Screen printing)	指示灯含义 (Indicator meaning)	颜色 (Color)	状态 Status	说明 Description
PWR	电源 (Power)	绿色 (Green)	熄灭 Not lit	电源未接通 Power off
			常亮 Lit	电源接通 Power on
RUN	运行 (Run)	绿色 (Green)	熄灭 Not lit	停止状态 Stop
			常亮 Lit	正常运行 Run
ERR	系统故障 (System error)	红色 (Red)	熄灭 Not lit	无故障发生 No error
			常亮 Lit	发生故障 Error
SD	SD 卡状态 (SD card status)	黄色 (Yellow)	熄灭 Not lit	未插入 SD 卡 SD card is not inserted
			闪烁 Blinking	正在读写 SD 卡 SD card is being read/written
			常亮 Lit	已插入 SD 卡 但未进行读写 SD card is inserted but is not being read/written
COM1	RS485 通讯 (RS485 communication)	黄色 (Yellow)	熄灭 Not lit	未发送数据 No data is being sent to other devices
			闪烁 Blinking	正在发送数据给其他设备 Data is being sent to other devices
EtherNet	通讯 (Communication)	绿色 (Green)	熄灭 Not lit	未建立物理连接 No physical connection
			闪烁 Blinking	建立物理连接且有通讯数据 Physical connection with communication data
			常亮 Lit	建立物理连接但无通讯数据 Physical connection without communication data

M312



M511S/ M511/M512/
M513/M514

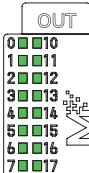
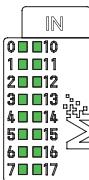


M312

NC

M511S/ M511/M512/M513/M514

丝印 (Screen printing)	指示灯含义 (Indicator meaning)	颜色 (Color)	状态 Status	说明 Description
EtherCAT	通讯 (Communication)	绿色 (Green)	熄灭 Not lit	未建立物理连接 No physical connection
			闪烁 Blinking	建立物理连接且有通讯数据 Physical connection with communication data
			常亮 Lit	建立物理连接但无通讯数据 Physical connection without communication data
IN 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
OUT 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 in this channel
			常亮 Lit	输出通道 N 有信号输出 There are output signals in this channel



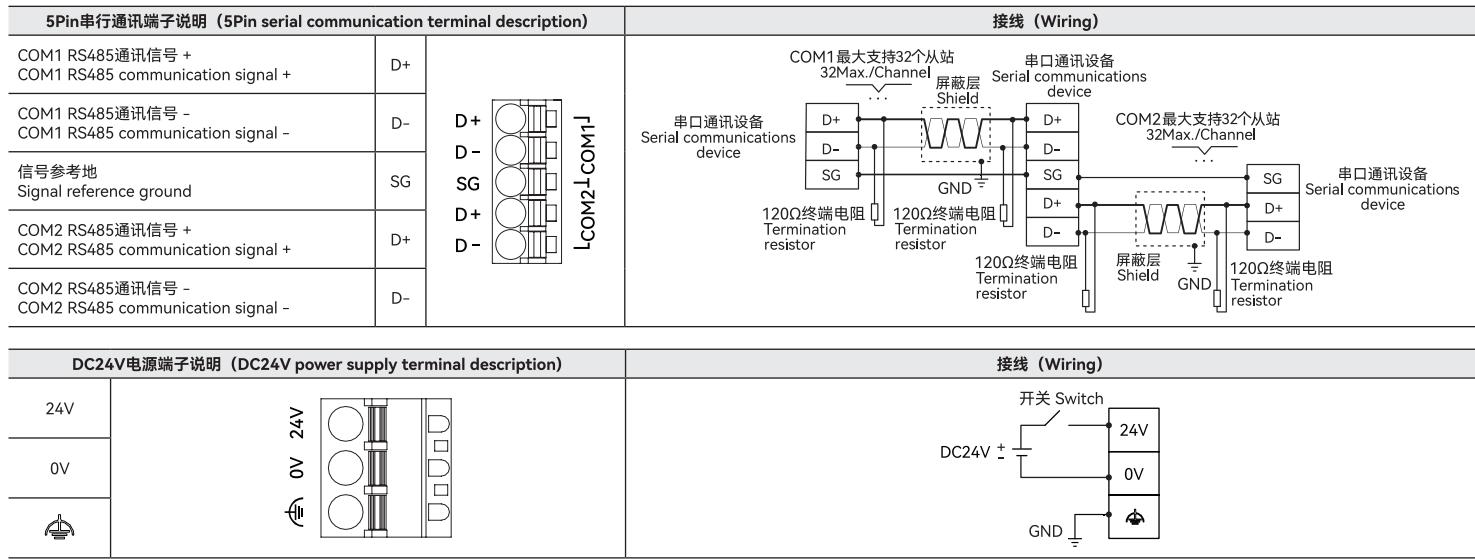
6. 端子及配线说明 (Terminal and wiring description)

端口说明 (Terminal description)		IN		OUT		类型 (Type)	通用IO接线 (General IO wiring)	高速IO接线 (High-speed IO wiring)
0		10	I0	I10	Q0	Q10	漏型输入 NPN Input	
		11	I1	I11	Q1	Q11		
		12	I2	I12	Q2	Q12		
		13	I3	I13	Q3	Q13	源型输入 PNP Input	
		14	I4	I14	Q4	Q14		
		15	I5	I15	Q5	Q15		
		16	I6	I16	Q6	Q16	漏型输出 NPN Output	
		17	I7	I17	Q7	Q17		
		18	S0	S0	24V	COM		

* 注 1：外部负载电流较小时，建议在输出点和 24V 之间接入约 500Ω 的电阻。

*Note 1: Connect a resistor of about 500 Ω between the output terminal and the 24V terminal when the external load current is small.

端子配置 (I/O configuration)																		
序号 (No.)	0	1	2	3	4	5	6	7	8	10	11	12	13	14	15	16	17	18
输入端子名称 (General input name)	I0	I1	I2	I3	I4	I5	I6	I7	S0	I10	I11	I12	I13	I14	I15	I16	I17	S0
M312/M511/M512/M512/M514高速输入支持通道 (High-speed input channels)	通道1 (Channel1)	通道2 (Channel2)	-	-	公共端 (Common terminal)	-	-	-	公共端 (Common terminal)	-	-	-	-	-	-	-	-	
高速输入定义 (High-speed input definition)	脉冲+方向(Pulse + Direction)	脉冲(Pulse)	方向(Direction)	脉冲(Pulse)	方向(Direction)	-	-	-		-	-	-	-	-	-	-	-	
AB相(AB Phase)	A	B	A	B	-	-	-	-		-	-	-	-	-	-	-		
单脉冲 (Single pulse)	脉冲(Pulse)	-	脉冲(Pulse)	-	-	-	-	-	DC24V	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	COM
输出端子名称 (General output name)	Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7		-	-	-	-	-	-	-	-	-
M312高速输出通道 (High-speed output channels)	通道1 (Channel1)	通道2 (Channel2)	通道3 (Channel3)	通道4 (Channel4)	通道5 (Channel5)	通道6 (Channel6)	-	-		-	-	-	-	-	-	-	公共端 (Common terminal)	
M511/M512/M513/M514高速输出通道 (High-speed output channels)	通道1 (Channel1)	通道2 (Channel2)	通道3 (Channel3)	通道4 (Channel4)	-	-	-	-		-	-	-	-	-	-			
高速输出定义 (high-speed output definition)	脉冲+方向(Pulse + Direction)	脉冲(Pulse)	方向(Direction)	脉冲(Pulse)	方向(Direction)	脉冲(Pulse)	方向(Direction)	脉冲(Pulse)		脉冲(Pulse)	方向(Direction)	脉冲(Pulse)	方向(Direction)	-	-	-		



RJ45 接口说明 (RJ45 interface description)		接口说明 (Interface description)		型号 (Model)	接口说明 (Interface description)	
HCM511S-32MT4-D HCM511-32MT4-D HCM512-32MT4-D HCM513-32MT4-D HCM514-32MT4-D	Port1	EtherNet* ²		HCM312-32MT6-D	Port1	-
	Port2	EtherCAT			Port2	EtherNet* ²

*注 2: EtherNet 通讯网口可用于以太网通信，支持 Modbus TCP、自定义通讯协议。默认 IP:192.168.1.8。

*Note 2: EtherNet communication port supports EtherNet communication, Modbus TCP, customized communication protocols, and default IP :192.168.1.8.