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浙江禾川科技股份有限公司 | Zhejiang Hechuan Technology Co.,Ltd
浙江省衢州市龙游县工业园区亲善路 5 号 | No.5, Qinshan Road, Longyou Industrial Zone, Quzhou City, Zhejiang Province



07060201-0840-001
Date 2025-12-29
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 M 系列硬件手册。
Please refer to the M series hardware manual for more detailed information.

2. 命名规则 (Model identification)

HC MXB - MA03 - 200 - BD - XXXX
1 2 3 4 5 6

1	产品名称 (Product name)	3	系列型号 (Series model)	5	固定后缀 (Fixed suffix)
HC	禾川 (Hechuan Technology)	MA03	模拟量2AD+1DA (Analog 2AD+1DA)	BD	BD选配卡 (Optional BD card)
2	选配卡系列 (Expansion card series)	4	固定后缀 (Fixed suffix)	6	软件/固件定制代码和其他标识 (Software/ Firmware customized code and other identifiers)
MXB	M系列选配扩展 (M-Series optional expansion)	200	M200系列选配卡 (M200 series optional card)	XXXX	0~9/A~Z/空 (N/A)

3. 适用型号 (Applicable model)

名称 (Name)	型号 (Model)	适配的主机型号 (Applicable controller model)	模块简要说明	Brief description of expansion card
模拟量扩展卡 Analog expansion card	HCMXB-MA03-200-BD	HCM211-20MR-A HCM211-20MT4-A HCM211-32MR-A HCM211-32MT6-A HCM211-42MR-A HCM211-42MT8-A HCM211-60MR-A HCM211-60MT10-A HCM212-32MT4-A HCM212-60MT8-A	2通道模拟量单端输入，1通道模拟量单端输出	2-channel analog single-ended input, 1-channel analog single-ended 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	模拟量输入 / 输出范围	Analog input/output range
HCMXB-MA03-200-BD	DC5V/0.15W	DC5V/0.15W	模拟量输入: 0~10V, 0~5V, 1~5V, 0~20mA, 4~20mA 模拟量输出: 0~10V, 0~5V, 1~5V, 0~20mA, 4~20mA	Analog input: 0~10V, 0~5V, 1~5V, 0~20mA, 4~20mA Analog output: 0~10V, 0~5V, 1~5V, 0~20mA, 4~20mA

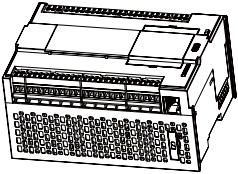
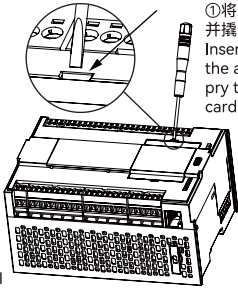
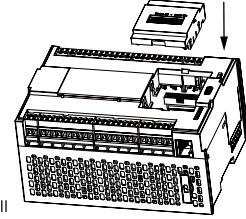
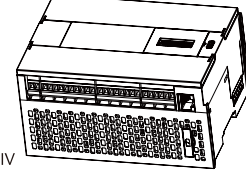
* 注: 1. 所有型号仅能在由有限功率电源 (LPS) 提供的安全特低电压 (SELV) 下运行。
2. 此处标识的额定功率为满负载运行时的最大功率。
*Note: 1. All models can only operate under the safety extra low voltage (SELV) provided by a limited power source (LPS).
2. The power rating indicated here is the maximum power under full-load operation.

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

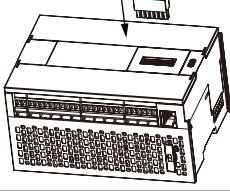
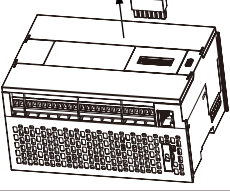
* 注: 若设备未依制造商指定方式使用，设备所提供的保护可能会被减弱。
*Note: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

5. 安装说明 (Installation instructions)

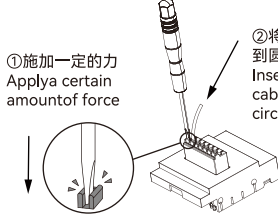
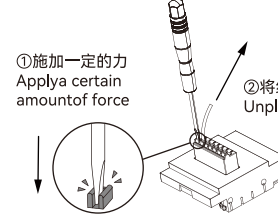
5.1 扩展卡拆装 (Expansion card mounting and dismounting)

CN	安装扩展卡时，将控制器水平放置，拆除上下两个翻盖。将一字螺丝刀插入箭头位置并撬动空白扩展卡，空白扩展卡与控制器脱离，取下空白扩展卡。沿箭头方向向下按压扩展卡，对准控制器连接器的公头与扩展卡连接器的母头。最后安装上下两个翻盖，至此安装完成。反之则为扩展卡的拆卸过程。	 拆除上下两个翻盖 Remove the cover plates	 ①将螺丝刀插入箭头位置并撬动空白扩展卡 Insert a screwdriver into the arrowed position and pry the blank expansion card ②取下空白扩展卡 Remove the blank expansion card
EN	During mounting, first place the controller horizontally and remove the top and bottom cover plates. Insert a screwdriver into the arrow position and pry the blank expansion card, the blank expansion card is detached from the controller, remove the blank expansion card. Press the expansion card downwards in the direction of the arrow to align the male connector of the controller connector with the female connector of the expansion card connector. Finally, install the upper and lower flaps, and the installation is completed. The reverse is the process of dismantling the expansion card.	 向下按压扩展卡，连接器公母端需对准 Align the male connector with the female connector and press downwards on the expansion card	 安装上下两个翻盖 Install the cover plates

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

CN	可拆卸端子拆装如右图所示。	 沿箭头方向插入端子 Insert the terminal block along the direction indicated by the arrow	 沿箭头方向拔出端子 Detach the terminal block along the direction indicated by the arrow
EN	The mounting and dismantling of the removable terminal block are shown in the figures on the right side.		

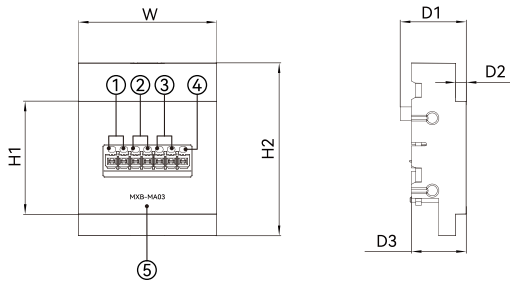
5.3 线缆拆装 (Cable connecting and disconnecting)

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，施加一定的力，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。	 ①施加一定的力 Apply a certain amount of force ②将线缆插入到圆孔中 Insert the cable into the circular hole	 ①施加一定的力 Apply a certain amount of force ②将线缆拔出 Unplug the cable
EN	During connecting, insert the flat-blade screwdriver into the unlocking tab of the terminal with a certain amount of force. 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.		

扩展卡端子 (Terminal)	线径范围: AWG (Wire width)	剥线长度: mm (Wire stripping length)	按压力: N (Pressure)	剥线长度 Wire stripping length
7Pin 接线端子 (7-pin terminal block)	28~16	8~9	25	线径范围 Wire width

警告：仅使用铜导线。
Warning: Use copper conductors only.
Attention: Utilisez uniquement des conducteurs en cuivre.

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



序号 (No.)	名称	Name	功能	Function
1	模拟量输入通道1	Analog input channel 1	电压/电流输入	Voltage/Current input
2	模拟量输入通道2	Analog input channel 2	电压/电流输入	Voltage/Current input
3	模拟量输出通道1	Analog output channel 1	电压/电流输出	Voltage/Current output
4	PE	PE	接地	Ground
5	产品型号	Product model	显示扩展卡型号	Display expansion card model

型号 (Model)	外形尺寸 (Dimension) : mm						重量 (Weight) : g
	W	H1	H2	D1	D2	D3	
HCMXB-MA03-200-BD	40.80	33.40	51.00	19.50	3.10	16.20	20 approx.

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

端子说明(Terminal description)			模拟量输入接线 (Analog input wiring)*1	模拟量输出接线 (Analog output wiring)*1
模拟量输入通道1+ (Analog input channel 1+)	IN	VI1+		
模拟量输入通道1- (Analog input channel 1-)		VI1-		
模拟量输入通道2+ (Analog input channel 2+)		VI2+		
模拟量输入通道2- (Analog input channel 2-)		VI2-		
模拟量输出通道1+ (Analog output channel 1+)	OUT	VI1+		
模拟量输出通道1- (Analog output channel 1-)		VI1-		
接地 (Ground)	PE			

* 注：1. 模拟量信号线应使用带屏蔽层的双绞线。
2. 屏蔽层需要接地。
3. 干扰较大时，电压 输入 / 输出 需要和 0.1~0.47μF 25V 的电容相连接。

*Notes: 1. Shielded twisted pair should be used for analog signal cables.
2. The shielding layer needs to be grounded.
3. When interference is high, voltage input/output needs to be connected to a capacitor of 0.1~0.47μF 25V.