

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 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 QX 系列硬件手册。  
Please refer to the QX series hardware manual for more detailed information.

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
HCQX-AD08-D4	1.2	1.2	DC24V, 电压范围: DC20.4~28.8V

		Rated voltage
		DC24V, voltage range: DC20.4~28.8V

\* 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 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	-10~55℃	-10~55℃
储存温度	Storage temperature	-40~75℃	-40~75℃
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: The equipment may be damaged if used in a manner not specified by the manufacturer.

3. 安装说明 (Installation instructions)

3.1 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.

出风口

Air outlet

≥50mm

≥20mm

≥20mm

≥50mm

进风口

Air inlet

垂直柜壁安装

Install the product perpendicular to the wall

3.2 导轨拆装 (DIN rail mounting and dismounting)	
CN	安装模块时, 将模块侧面导槽对准 Q 系列控制器导槽后, 向内按压模块, 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 Q series controller to engage them together, and then press the module towards the DIN rail 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.

将双向联动卡扣上部紧扣在 DIN 导轨上并向导轨侧按压模块

Position the upper part of the mounting latch on the DIN rail, and then press the module towards the DIN rail

①向上拉动卡扣  
Pull the latch upwards

②取下模块  
Detach the module

紧锁状态 (Locked)

释放状态 (Unlocked)

3.3 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形斜向下施力, 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.

②向内按压  
Press inwards

①对准卡槽  
Align the hook with the guide

①施力超过30N  
Apply a force of more than 30N

②取下端子  
Detach the terminal block


3.4 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 30 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.

①施力超过30N  
Apply a force of more than 30N

②将线缆插到圆孔中  
Insert the cable into the circular hole

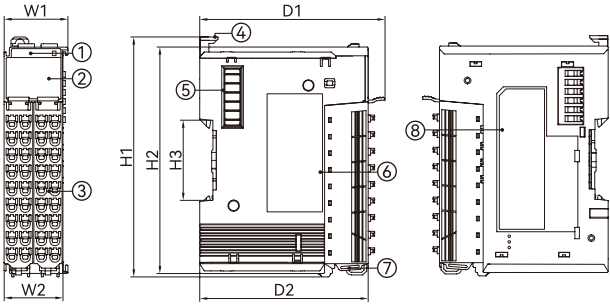
①施力超过30N  
Apply a force of more than 30N

②将线缆拔出  
Unplug the cable

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)	拔线力: N (Wire pulling force)	 剥线长度 Wire stripping length
18Pin	24~17	8~9	30	50	
警告: 仅使用铜导线。 Warning: Use copper conductors only. Attention: Utilisez uniquement des conducteurs en cuivre.					

4. 接口及配线说明 (Interface and wiring instructions)

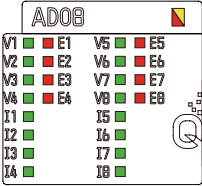
序号(No.)	项目	Item
1	产品型号	Product model
2	模块状态指示灯	Module status indicator
3	18Pin IO端子	18Pin IO terminal
4	双向联动卡扣	DIN rail mounting latch
5	扩展模块通讯接口	Expansion module communication interface
6	侧边丝印	Side silk screen printing
7	集线结构	Cable collector
8	标签	Label



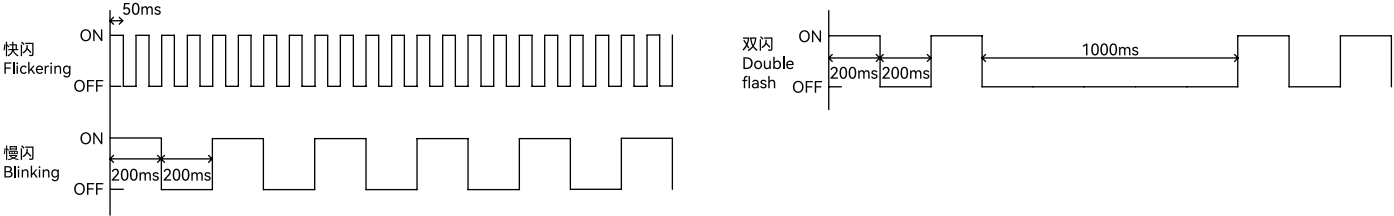
型号 (Model)	外形尺寸 (Dimension) : mm							重量 (Weight) :g
	W1	W2	H1	H2	H3	D1	D2	
HCQX-AD08-D4	28.20	26.00	106.00	100.00	35.40	81.90	74.50	120 approx.

5. 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)	黄色 (Yellow)		熄灭 Not lit	Init (初始化状态)	Initialization
			快闪 Fast blinking	Preop (预操作状态)	Pre Operational
			慢闪 Slow blinking	Safeop (安全操作状态)	Safe Operational
			常亮 Lit	OP (可操作状态)	Operational
			双闪 Double blinking	Boot (引导程序状态)	Bootstrap
丝印 (Screen printing)	红色 (Red)		慢闪 Slow blinking	总线信号输入状态异常	The module is in an abnormal state
			熄灭 Not lit	通道 N 电压模式未使能	The voltage mode of channel N is not enabled
			常亮 Lit	通道 N 电压模式使能	The voltage mode of channel N is enabled
			熄灭 Not lit	通道 N 电流模式未使能	The current mode of channel N is not enabled
I N(1~8)	绿色 (Green)		常亮 Lit	通道 N 电流模式使能	The current mode of channel N is enabled
			熄灭 Not lit	通道 N 无错误发生	No error occurs in channel N
E N(1~8)	红色 (Red)		闪烁 Blinking	输入超出用户限制 / 转换范围限制	The input exceeds the user limit/conversion range limit
			常亮 Lit	通道 N 有错误发生	An error occurs in channel N



指示灯闪烁频率如下图所示:  
The patterns of flickering, blinking and flashing are shown below.



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

端子说明 (Terminal description)			AD08				接线 (Wiring)			
0		10	VI1+	VI1-	VI5+	VI5-	<div>两线制: Two-wire:</div>		<div>两线制: Two-wire:</div>	
1		11	SHT1+	SHT1-	SHT5+	SHT5-				
2		12	VI2+	VI2-	VI6+	VI6-				
3		13	SHT2+	SHT2-	SHT6+	SHT6-				
4		14	VI3+	VI3-	VI7+	VI7-				
5		15	SHT3+	SHT3-	SHT7+	SHT7-				
6		16	VI4+	VI4-	VI8+	VI8-				
7		17	SHT4+	SHT4-	SHT8+	SHT8-				
8		18	24V	0V	AGND	AGND				

\* 注 1: AGND 为内部模拟地, 当输入信号为差分信号时, 将 AGND 与所接设备的 AGND 相连可以消除设备间的共模压差。

\* 注 2: 电流输入需要短接对应通道的 SHT 端子。

\*Note 1: AGND is an internal analog ground. When the input signal is differential, join the AGND of the module to that of the connected device so that the common-mode pressure difference between them can be eliminated.

\*Note 2: The current input needs to be shorted to the SHT terminal of the corresponding channel.