

禾川科技官方网站  
HCFA Website<https://www.hcfa.cn>

访问官网或扫描二维码下载最新版安装使用说明书

Download the latest installation sheets via the official website or QR code.

浙江禾川科技股份有限公司

浙江省衢州市龙游县工业园区亲善路5号

Zhejiang Hechuan Technology Co.,Ltd

No.5, Qinshan Road, Longyou Industrial Zone, Quzhou City, Zhejiang Province

900101000449

Date 2026-06-10

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.

## 2. 命名规则 (Model identification)

**SV-X4 E A - 040 A A S - 00 000**

1 2 3 4 5 6 7 8

1	产品系列 (Product series)
SV-X4	X4系列 (X4 series)
2	系列型号 (Series type)
E	标准型 (Standard type)
3	控制类型 (Control type)
A	脉冲型 (Pulse type)

4	功率等级 (Power class)
010	100W
040	400W
075	750W
100	1000W
5	电压等级 (Voltage class)
A	220V

6	控制电类型 (Control power type)
A	交流控制电 (AC control power)
7	迭代版本 (Iteration version)
E	E版本 (Version E)
S	S版本 (Version S)

8	软件/固件定制代码 (Customized software/firmware code)
X	0-9/A-Z/空 (N/A)

## 3. 适用型号 (Applicable model)

型号 (Model)	电流 (Current) : Arms	功率 (Power) : W
SV-X4EA010A-AS-00	1.2	100
SV-X4EA040A-AS-00	3	400
SV-X4EA075A-AS-00	4.5	750
SV-X4EA100A-AS-00	6	1000

## 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)

项目 (Item)		Size A		Size B	
SV-X4EAXXA-AS-00		010	040	075	100
驱动器功率 (Servo drive power) [W]		100	400	750	1000
连续输出电流 (Continuous output current) [Arms]		1.2	3	4.5	6
最大输出电流 (Maximum output current) [Arms]		3.6	9	13.5	18
最大适用电机容量 (Maximum applicable motor capacity) [W]		100	400	750	1000
主电路 (Main circuit)		单相交流200~240V±10% 50/60Hz (Single-phase AC 200~240V ±10% 50/60Hz)			
输入电压 (Input voltage) [V]					
额定输入电流 (Rated current) [Arms]		2.5	4	7.9	9.6
控制电源 (Control circuit power supply)		共用主回路电源 (Shared main circuit power supply)			
制动电阻 (Braking resistor)		外接制动电阻 (External braking resistor)			
电阻类型 (Resistance type)					
电阻阻值 (Resistance value) [Ω]		≥40		≥30	
电阻功率 (Resistance power) [W]		≥50		≥80	
冷却方式 (Cooling method)		自然冷却 (Natural air cooling)		风冷* (Cooling fan)	
过电压等级 (Overvoltage level)		III			

\*注：风扇更换需联系厂家，禁止自行更换。

\*Note: Fan replacement requires contacting the manufacturer; self-replacement is prohibited.

### 4.2 环境规格 (Environmental requirements)

项目	Item	规格	Specifications
海拔高度	Altitude	≤2000m (1000m以上每上升100m降额1%)	≤2000m (Derating: 1% per 100m above 1000m)
使用环境	Operating environment	控制柜内安装，开放性及室内使用	Installation within a control cabinet, open-type and indoor use
工作温度	Operating temperature	0~55°C (环境温度为45~55°C时，负载率不得超过80%)	0~55°C (When the ambient temperature is between 45 and 55°C, the load factor must not exceed 80%)
储存温度	Storage temperature	-20~65°C	-20~65°C
环境湿度	Ambient humidity	≤90%RH (无结露)	≤90%RH (non-condensing)
振动耐受	Vibration resistance	4.9m/s <sup>2</sup>	4.9m/s <sup>2</sup>
污染等级	Pollution degree	污染度2	Pollution degree II
防护等级	IP rating	IP20	IP20

\*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。

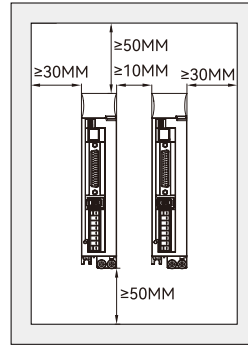
\*Note: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

## 5. 安装说明 (Installation instructions)

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

CN 请保证安装方向与墙壁垂直, 使用自然对流或风扇对设备进行冷却, 通过螺钉固定安装在控制柜。请参考右侧示意图, 在设备周围留有足够的空间。并排安装时, 建议横向两侧预留 30mm\* 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. Fix and install it in the control cabinet with screws. 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 30mm on both sides.



垂直柜壁安装  
Install the product perpendicular to the wall

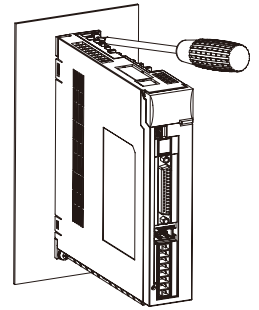
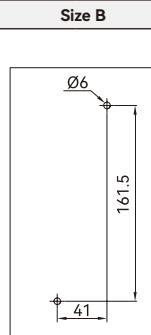
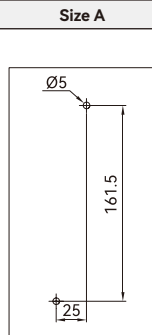
\*注: 无线缆状态下建议最小间距

\*Note: Recommended minimum clearance in cableless state.

### 5.2 背板安装 (Backplane mounting)

CN 安装时请参考孔位图在机柜背板上开孔, 使用合适的螺丝固定, 锁紧扭矩为 3.5N.m.

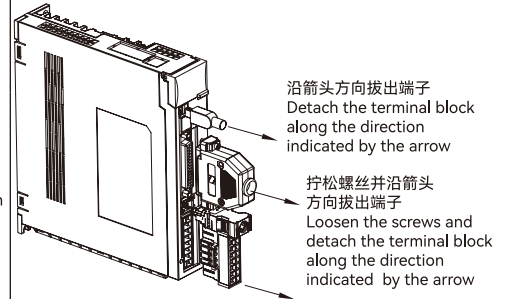
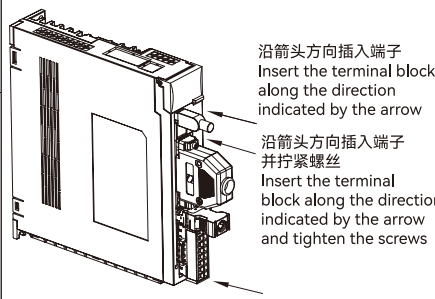
EN Please refer to the hole location map to drill holes on the back panel of the cabinet. Secure it with suitable screws and apply a tightening torque of 3.5 N.m.



### 5.3 端子拆装 (Terminal block mounting and dismounting)

CN 端子拆装如右图所示。

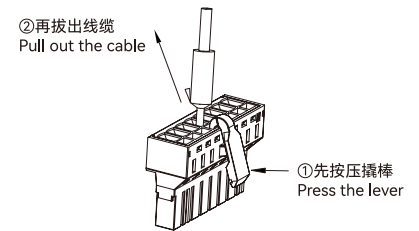
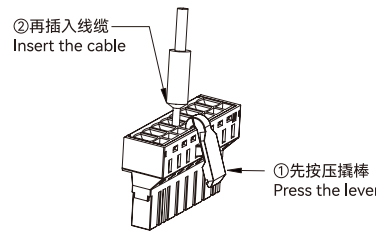
EN The mounting and dismounting of the removable terminal block are shown in the figures on the right side.

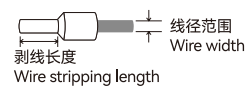


### 5.4 动力输入输出线缆拆装 (Power supply cable connecting and disconnecting)

CN 安装线缆时, 先按压撬棒, 再施加一定的力将线缆垂直插入端子的孔中, 轻拽线缆, 线缆不松动即完成配线。拆卸线缆时, 先按压撬棒, 再施加一定的力拔出线缆即可。

EN To install the cable, first press the lever, then apply moderate force to insert the cable vertically into the hole of the terminal. Give the cable a gentle tug, if it is secure, wiring is complete. To remove the cable, first press the lever, then apply moderate force to pull out the cable.



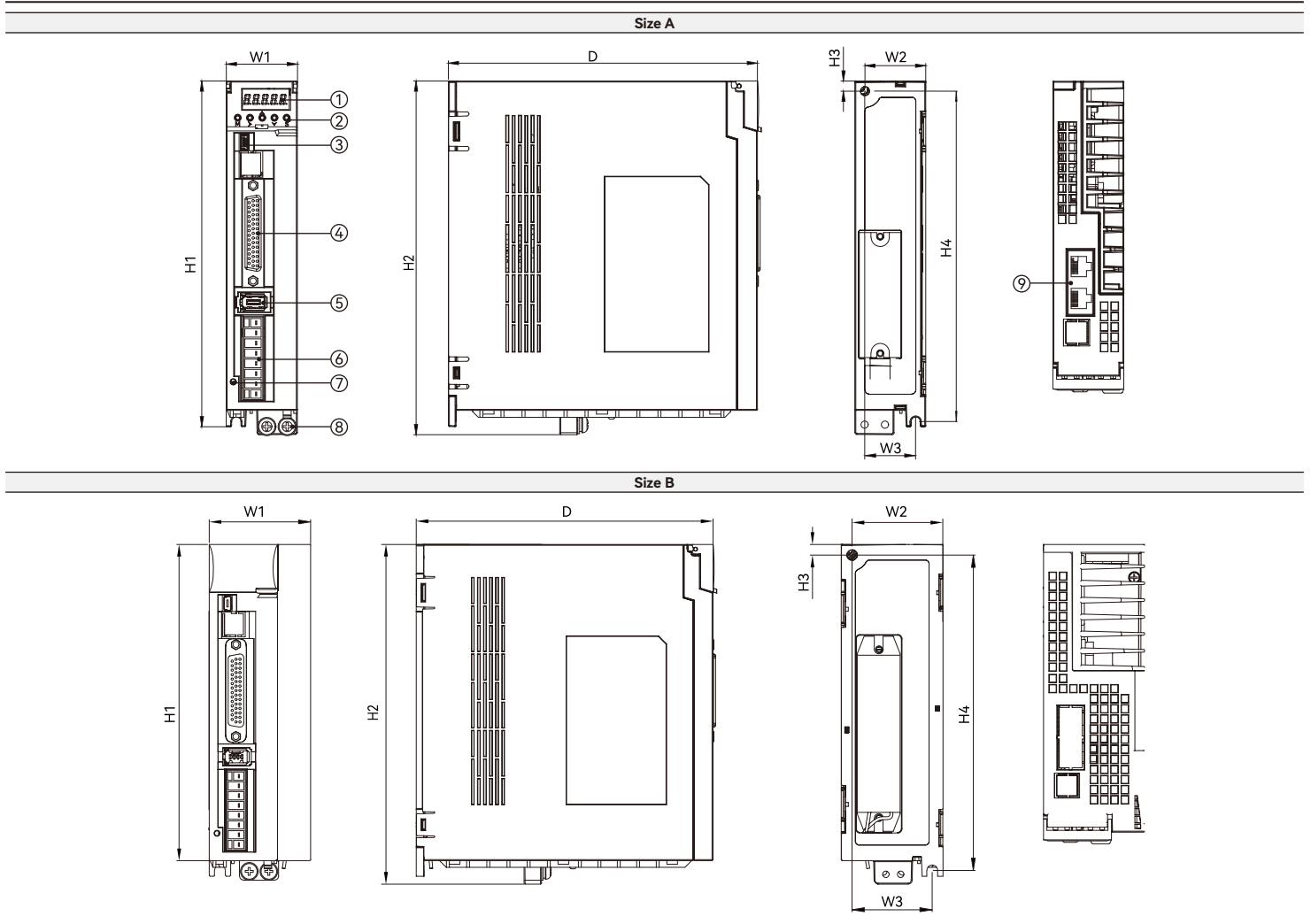
端子 (Terminal)	名称 (Name)	线径范围: AWG (Wire width)				剥线长度: mm (Wire stripping length)
		010	040	075	100	
L1, L2	主回路电源输入端子 (Main circuit power supply input terminal)					10~11 
U, V, W	伺服电机连接端子 (Servo motor connection terminal)	20	18	16	15	
N	母线负端 (Negative bus terminal)					
P	母线正端 (外接制动电阻连接端子) (Positive bus terminal (External braking resistor connection terminal))	根据外接电阻的实际功率确定, 可咨询电阻厂商或者我司技术人员 (Determined by the actual power of the external resistor, it is advisable to consult the resistor manufacturer or the company's technical personnel)				
BR	外接制动电阻连接端子 (External braking resistor connection terminal)					

警告: 只能使用铜导线。

Warning: Use only a copper conductor.

Attention: Utilisez uniquement des conducteurs en cuivre.

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



功率 (Power)	外形尺寸 (Dimension) : mm								重量 (Weight) : kg	
	W1	W2	W3	H1	H2	H3	H4	D		
Size A	100W 400W	35.0	30.0	25.0	170.0	174.0	5.0	162.5	152.0	0.8
Size B	750W 1kW	52.0	46.4	41.0	162.0	174.0	5.5	161.5	152.0	1.0

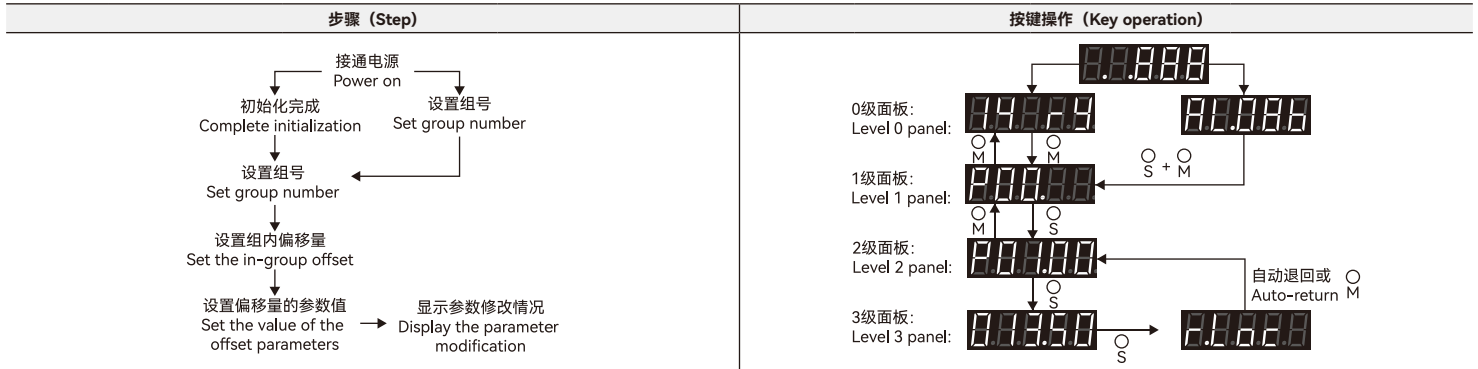
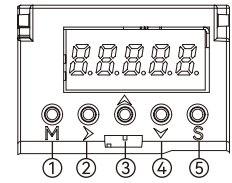
序号(No.)	名称	Name	功能	Function
1	显示面板	Display panel	显示伺服的运行状态和参数设定	Display the operating status and parameter settings of the servo
2	面板按键	Panel key	1. MODE键 2. SHIFT键 3. UP键 4. DOWN键 5. SET键	1. MODE key 2. SHIFT key 3. UP key 4. DOWN key 5. SET key
3	USB接口	USB interface	PC调试接口	PC debugging interface
4	D-Sub 44针接口	D-Sub 44-pin interface	功能I/O接口	Function I/O interface
5	编码器接口	Encoder interface	电机编码器接口	Motor encoder interface
6	动力输入输出接口	Power supply interface	L1/L2: 主回路AC220V电源输入端子 P: 母线正端 (与BR之间外接制动电阻) BR: 制动电阻连接端 (与P之间外接制动电阻) N: 母线负端 U/V/W: 伺服电机连接端子, 连接伺服电机 U、V、W 相	L1/L2: Main circuit AC220V power input terminal P: Positive bus terminal (External braking resistor connected between P and BR) BR: Braking resistor connection terminal (External braking resistor connected between P and BR) N: Negative bus terminal U/V/W: Servo motor connection terminals, connect to U, V, W phases of the servo motor
7	CHARGE	CHARGE	母线电压指示灯, 灯亮请勿触摸电源端子, 以免触电	Bus voltage indicator. When the light is on, do not touch the power terminal to avoid electric shock.
8	PE接地端子	PE grounding terminal	电机接地端子	Motor grounding terminal
9	RJ45接口	RJ45 interface	RS485通讯接口	RS485 communication interface

## 7. 指示灯和面板说明 (Indicator and LED panel description)

项目 (Item)	颜色	Color	状态	Status	详细说明	Description
电源指示灯 (Power supply indicator)	红色	Red	熄灭	Not lit	电源未接通	Power off
			常亮	Lit	电源接通	Power on



序号(No.)	项目 (Item)	说明	Description
1	MODE	退回低一级面板显示或由0级面板进入1级面板	Return to lower level panel or enter level 1 panel from level 0 panel
2	SHIFT	用于移动修改的数字位	Move the modified digit
3	UP	以步长1乘以相应权限值, 递增数字值	Increase the number value by multiplying the corresponding authority value by step 1
4	DOWN	以步长1乘以相应权限值, 递减数字值	Decrease the number value by multiplying the corresponding authority value by step 1
5	SET	进入到内存的面板显示或确认参数修改	Access to memory panel display or confirm parameter modification



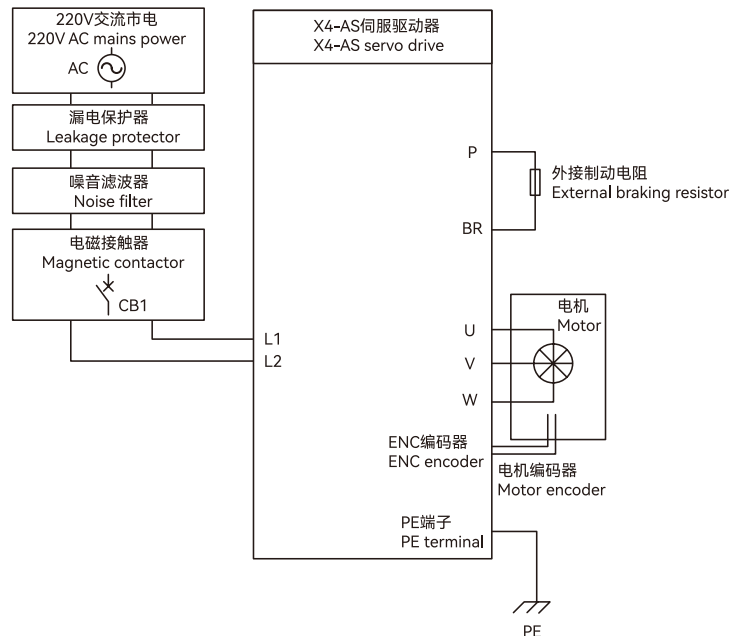
显示面板 (LED display)	说明	Description	显示面板 (LED display)	说明	Description
0级面板 Level 0 panel		接通电源 Power on	1级面板 Level 1 panel		显示参数组号 Parameter group number
		显示警告 Warning	2级面板 Level 2 panel		显示参数组号和组内偏移量 Parameter group number and in-group offset
		显示故障 Fault	3级面板 Level 3 panel		显示偏移量的参数值 Parameter value of the offset
		显示无故障 No fault			显示参数修改情况 Parameter modifications
		位置模式下运行 Running in the position mode			
		速度模式下正在运行 Running in the speed mode			
		转矩模式下正在运行 Running in the torque mode			

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

#### 动力输入输出接口 (Power supply interface)

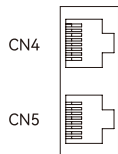
序号 (No.)	引脚 (Pin)	说明	Description
1	L1	主回路AC220V电源输入端子	Main circuit AC220V power input terminal
2	L2		
3	P		
4	BR	母线正端 (与BR之间外接制动电阻)	Positive bus terminal (external braking resistor connected between P and BR)
5	N	母线负端	Negative bus terminal
6	U	电机动力 U 相输出	Motor power U-phase output
7	V	电机动力 V 相输出	Motor power V-phase output
8	W	电机动力 W 相输出	Motor power W-phase output

#### 接线 (Wiring)

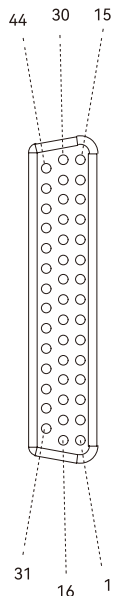


**CN3: USB接口 (CN3: USB interface)**


序号 (No.)	引脚 (Pin)	说明	Description
1	VBUS	USB电源 (+5V)	USB power (+5V)
2	D-	USB数据信号-	USB data signal -
3	D+	USB数据信号+	USB data signal +
4	NC	-	-
5	GND	信号地	Signal ground

**CN4/CN5: RS485通讯接口 (CN4/CN5: RS485 communication interface)**


序号 (No.)	引脚 (Pin)	说明	Description
1	NC		
2	NC	-	-
3	NC		
4	RS485+	来自上位控制装置的RS485+信号	RS485+ signal from the host controller
5	RS485-	来自上位控制装置的RS485-信号	RS485- signal from the host controller
6	NC		
7	NC	-	-
8	NC		

**CN6: 功能I/O接口 (CN6: Function I/O interface)**


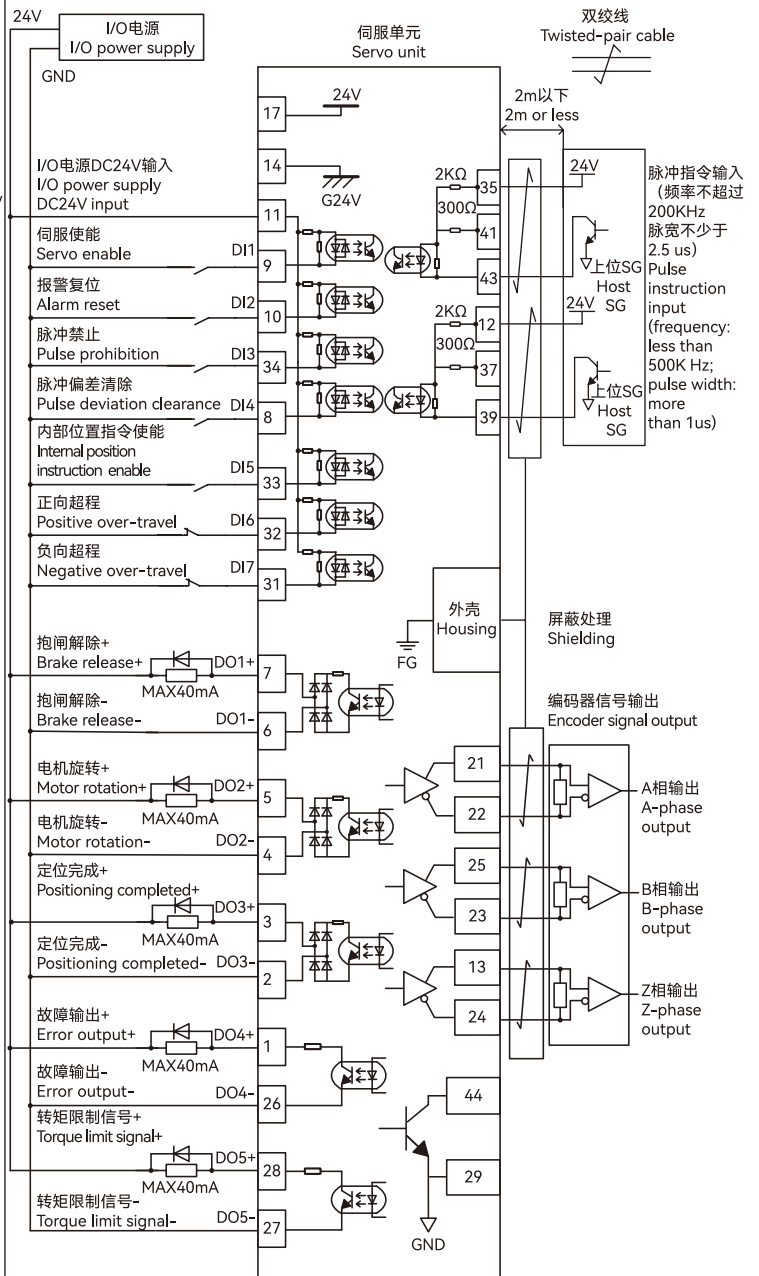
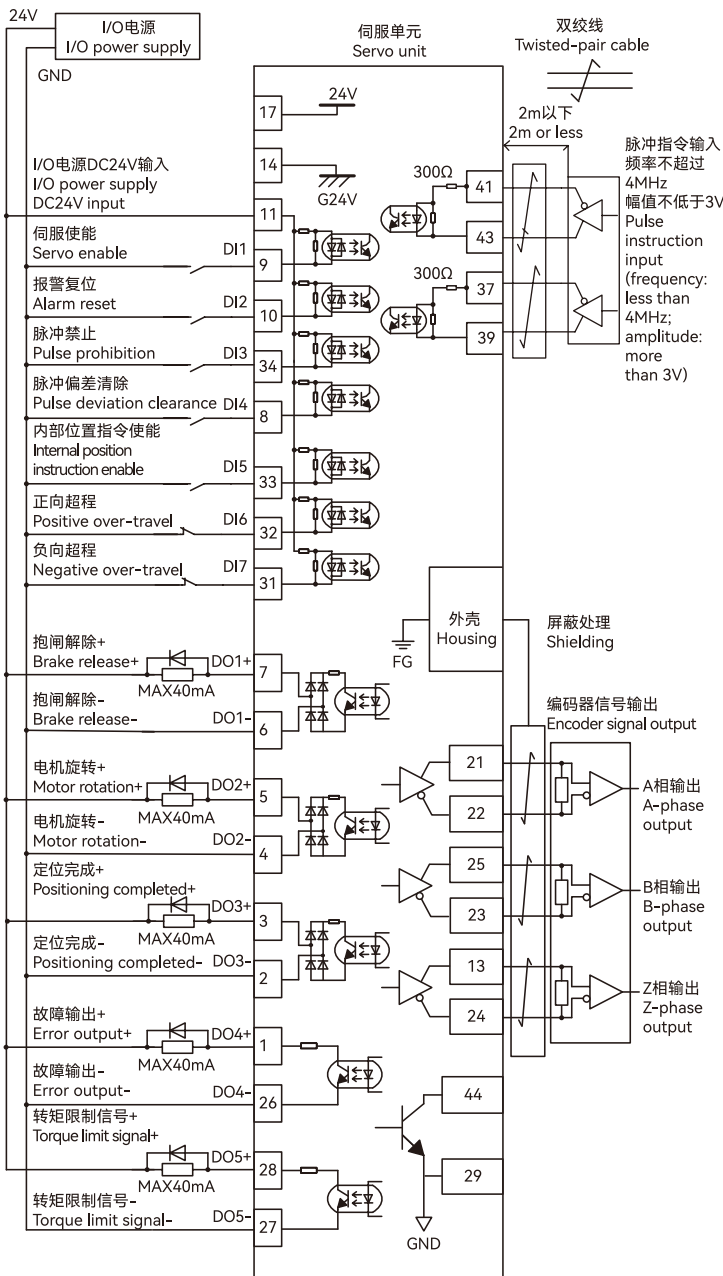
序号 (No.)	引脚 (Pin)	说明	Description
1	DO4+	数字信号输出+	Digital signal output +
2	DO3-	数字信号输出-	Digital signal output -
3	DO3+	数字信号输出+	Digital signal output +
4	DO2-	数字信号输出-	Digital signal output -
5	DO2+	数字信号输出+	Digital signal output +
6	DO1-	数字信号输出-	Digital signal output -
7	DO1+	数字信号输出+	Digital signal output +
8/9/10	DI4/DI1/DI2	数字信号输入	Digital signal input
11	DI_COM	数字信号输入公共端	Digital signal input common terminal
12	CC-D	集电极脉冲指令输入SIGN电源 (24V)	Collector pulse instruction input SIGN power supply (24V)
13	OUTZ+	脉冲输出Z信号+	Pulse output Z signal +
14	G24V	驱动器电源GND	Drive power supply GND
15/16	-	-	-
17	+24V	驱动器电源24V输出	Drive power supply 24V output
18/19	AI1/AI2	模拟量输入	Analog input
20	GND	模拟量参考GND	Analog reference GND
21	OUTA+	脉冲输出A信号+	Pulse output A signal +
22	OUTA-	脉冲输出A信号-	Pulse output A signal -
23	OUTB-	脉冲输出B信号-	Pulse output B signal -
24	OUTZ-	脉冲输出Z信号-	Pulse output Z signal -
25	OUTB+	脉冲输出B信号+	Pulse output B signal +
26/27	DO4-/DO5-	数字信号输出-	Digital signal output-
28	DO5+	数字信号输出+	Digital signal output +
29	GND_OZ	集电极Z信号输出参考地	Collector Z signal output reference ground
30/31/32/33/34	DI8/DI7/DI6/DI5/DI3	数字信号输入	Digital signal input
35	CC-P	集电极脉冲指令输入PULS电源 (24V)	Collector pulse instruction input PULS power supply (24V)
36	-	-	-
37	SIGN+	脉冲指令SIGN+	Pulse instruction SIGN+
38	-	-	-
39	SIGN-	脉冲指令SIGN-	Pulse instruction SIGN-
40	/	/	/
41	PULS+	脉冲指令PULS+	Pulse instruction PULS+
42	/	/	/
43	PULS-	脉冲指令PULS-	Pulse instruction PULS-
44	OZOUT	集电极Z信号输出	Collector Z signal output

\*注: 12、35 脚均需接 24V 电源, 高速脉冲和低速脉冲共用引脚。

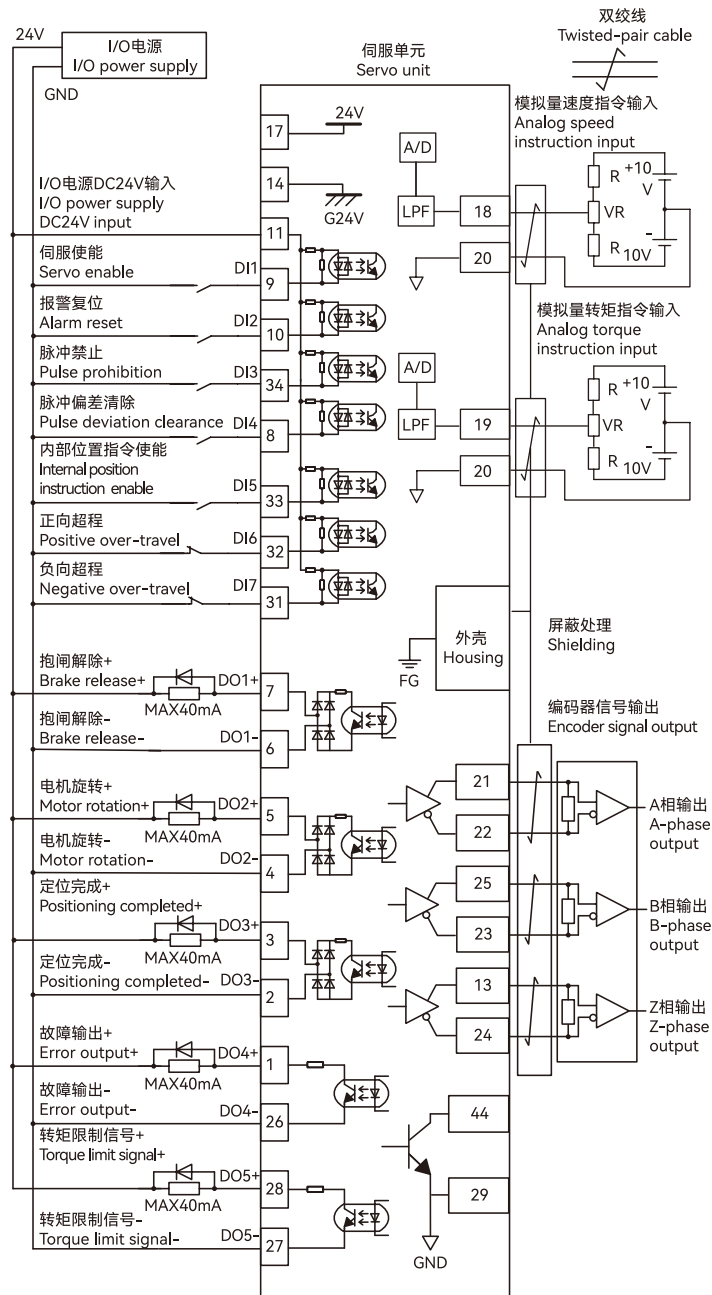
\*Note: Both pins 12 and 35 need to be connected to a 24V power supply. High-speed pulses and low-speed pulses share the same pins.

脉冲指令差分输入 (Pulse instruction differential input)

脉冲指令24V集电极开路输入 (Pulse instruction 24V open collector input)



模拟量指令输入 (Analog instruction input)



CN7: 编码器接口 (CN7: Encoder interface)

序号 (No.)	引脚 (Pin)	说明	Description
1	VCC	编码器电源输出 (+5V)	Encoder power output (+5V)
2	GND	信号地	Signal ground
3	NC	-	-
4	NC	-	-
5	D+	编码器数据信号+	Encoder data signal +
6	D-	编码器数据信号-	Encoder data signal -
-	FG	屏蔽接地 (接至连接器金属外壳)	Shield ground (connect to connector metal shell)

