



## HR3-PR Series Servo Drive Quick Start Guide(EN24.10)

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# 1 Specification and Installation

## 1.1 Model Number

**HR3 - P R 5R5 S2**  
 ①                      ②                      ③                      ④                      ⑤

①: **Serial number**

HR3: HR3 Series

③: **Motor Type**

R: Rotary servo motors

⑤: **Voltage class**

S2: Single/Three phase 220V

T3: Three phase 380V

②: **Product category**

P: Pulse/Analog/RS485

④: **Rating**

Single phase 220V	001	1R6	2R8	5R5	7R6
Cont [A rms]	1.0A	1.6A	2.8A	5.5A	7.6A
Cont [P w]	100W	200W	400W	750W	1000W

Single/Three phase 220V	012	014
Cont [A rms]	11.6A	14.0A
Cont [P w]	1500W	2000W

Three phase 380V	3R5	5R4	8R4
Cont [A rms]	3.5A	5.4A	8.4A
Cont [P w]	1000W	1500W	2000W

## 1.2 Electrical Specifications

Physical Dimensions	SIZE-A			SIZE-B		SIZE-C					
	HR3-PR	001S2	1R6S2	2R8S2	5R5S2	7R6S2	012S2	014S2	3R5T3	5R4T3	8R4T3
Continuous output current Arms		1.0	1.6	2.8	5.5	7.6	11.6	14.0	3.5	5.4	8.4
Maximum output current Arms		3.9	5.8	10.1	16.9	23.0	32.0	42.0	11.0	14.0	20.0
Continuous input current Arms	1.3	2.3	4.0	7.9	9.6	Single phase 12.8	Single phase 16.0	2.4	3.6	6.6	
						Three phase 8.0	Three phase 10.2				
Power supply of main circuit	Single phase AC200V~240V -10%~+10%, 50/60Hz					Single /Three phase AC200V~240V -10%~+10%, 50/60Hz		Three phase AC380V~440V -10%~+10%, 50/60Hz			
Brake release function <sup>1</sup>	No Built-in regenerative resistor			Optional 50Ω/50W Built-in	Optional 25Ω/80W Built-in regenerative resistor			Optional 100Ω/80W Built-in regenerative resistor			

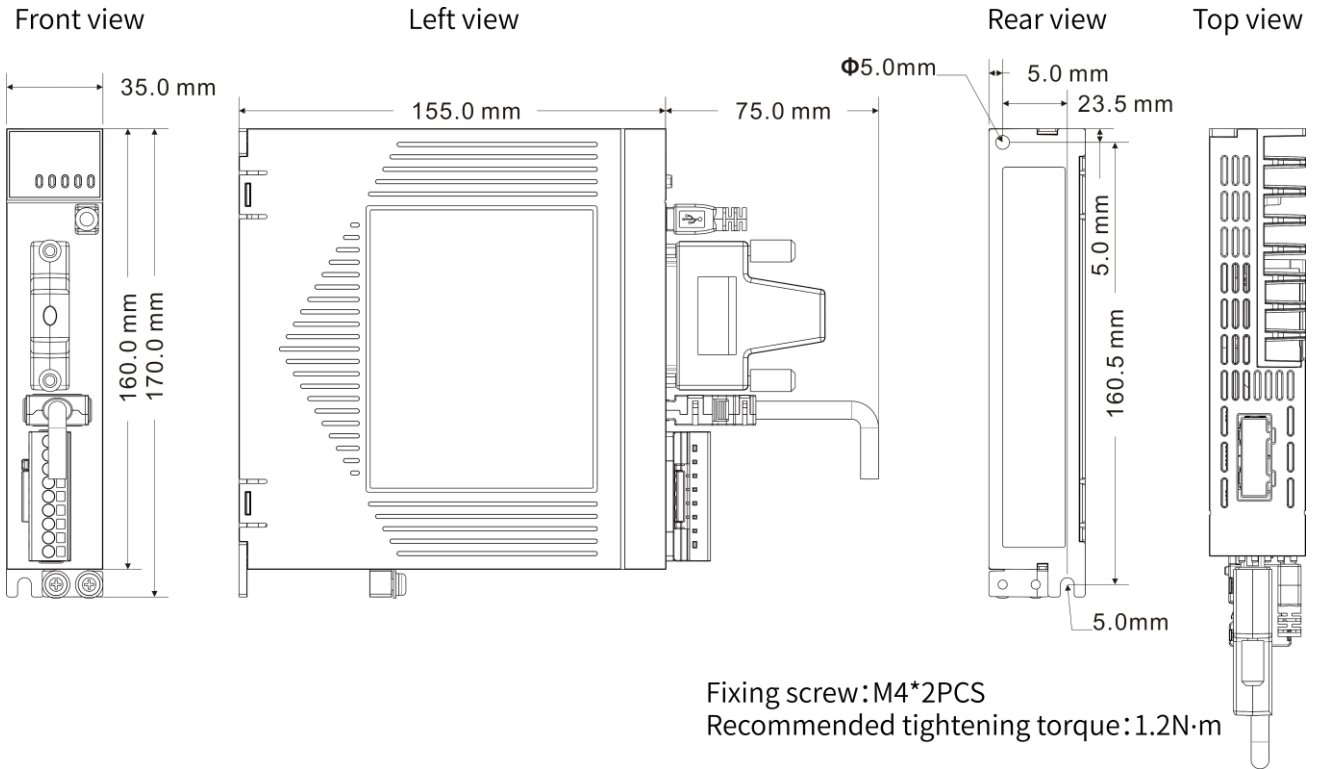
Note1: HR3-PR Serial support External regenerative resistor.

### 1.3 General Specifications

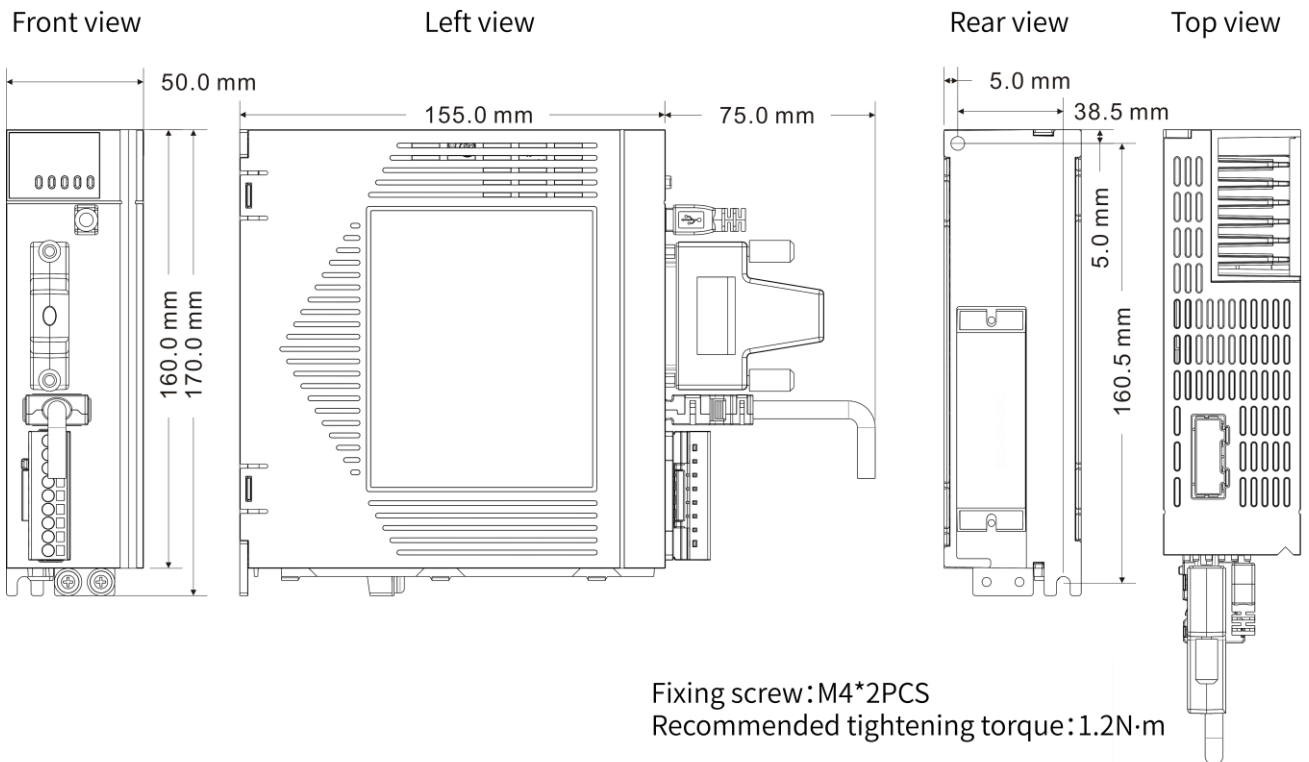
Item		Description	
Basic specifications	Control mode	IGBT SVPWM control, sine wave current drive mode 220V, 380V: Single/Three-phase full bridge rectification.	
	use Conditions	Use/Storage temperature	0~+40°C / -20~+70°C
		Use /Storage humidity	Below 90% RH (without condensation)
		Vibration/Impact resistance	4.9m/s <sup>2</sup> / 19.6m/s <sup>2</sup>
		IP rating	IP20
		Pollution degree	PD2
Altitude	Maximum altitude:5,000m. For altitudes lower than or equal to 1000m, derating is not required. For altitudes above 1000m but lower than 2000m, derate 1% for every additional 100m. For altitudes above 2000m, please contact the manufacturer.		
Position control mode	Performance	Shaping of instructions	Position instruction low-pass filtering, mean filtering
		Feed forward compensation	Support speed feedforward (0~100.0%) setting, eliminate follow up deviation.
	Frequency division output	Output mode	Phase A, phase B,phase Z: differential output
		Frequency division range	The motor rotates one circle, and the frequency can be divided into any pulse in the range of 140 to 1048576.
Speed/Torque control mode	Performance	current loop	Step Response Time: 187.5μs (0~100%) Frequency response: -3dB (Amplitude attenuation bandwidth) , 2000Hz (Reference Command: ±25%) ; -90°(Phase shifted bandwidth) , 3500Hz (Reference Command: ±25%)
		Speed control range	0~12000rpm, If the speed exceeds 6000rpm, please contact the manufacturer.
		Speed loop	Step Response Time: 562.5μs (0~1000rpm) Frequency response: -3dB (Amplitude attenuation bandwidth) , 1000Hz (Reference Command: ±500rpm) ; -90°(Phase shifted bandwidth) , 630Hz(Reference Command: ±500rpm)
		Torque control accuracy	±2%
Digital Input/output signa	Digital input signal	Function configurable: positive limit switch, negative limit switch, HomeSwitch, etc	
	Digital output signal	Function configurable: Servo ready, zero speed signal, speed arrival, position arrival, positioning approach signal, torque limit medium, warning, servo failure, etc.	
Built-in functions	Electronic gear ratio	Built-in two sets of electronic gear ratio, support gear ratio switching function	
	Overtravel (OT) prevention	The servo drive stops immediately at P-OT or N-OT actions.	
	Protections	Overcurrent, overvoltage, undervoltage, overload, main circuit detection abnormal, heatsink overheating, overspeed, encoder abnormal, parameter abnormal, etc.	
	display function	5-digit LED display, Main power CHARGE indicator	
	Debug interface	USB	
	vibration suppression	Four notches, 50Hz~5000Hz, four of which are self-adaptive.	
	usability	Self-tuning, velocity observer, model tracking.	
Others	Status display, alarm record, JOG running, etc.		
Note 1: Please install the servo driver at ambient temperatures in this range.			

## 1.4 Installation Dimensions

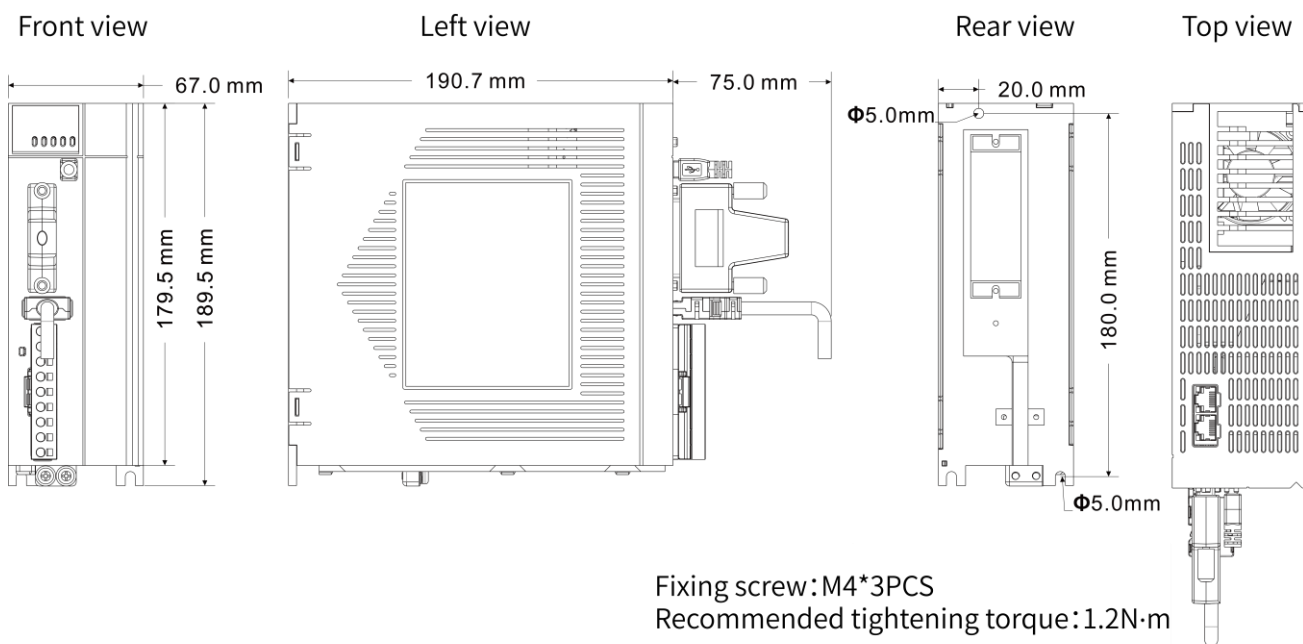
### SIZE-A:



### SIZE-B:



**SIZE-C:**



## 2 Wiring

### 2.1 Servo System Wiring Diagram

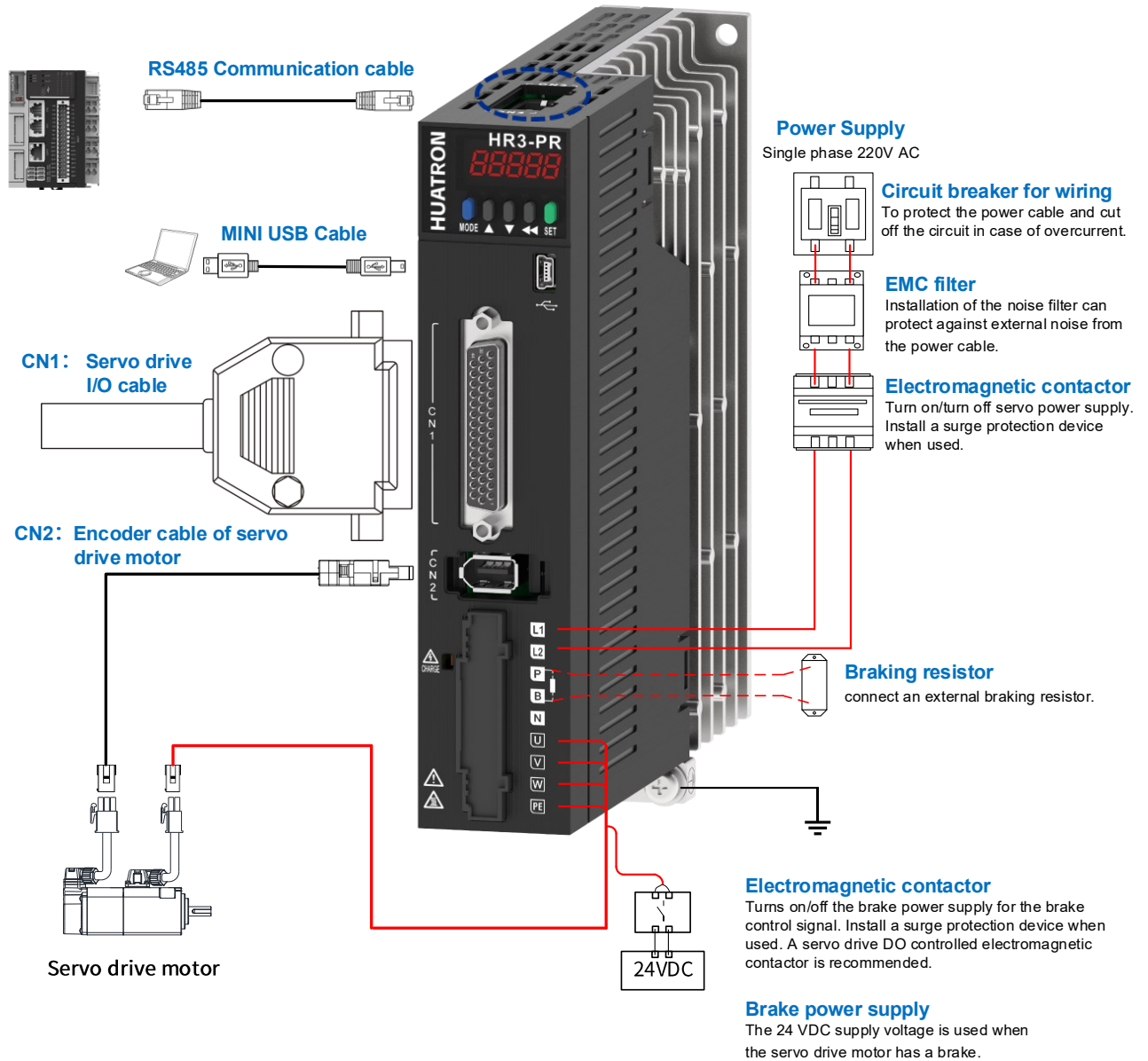


Figure2-1 Layout diagram of the SIZE-A system

- Please use a circuit breaker with leakage protection and a noise filter between the power supply and the main power supply terminals;
- The voltage and power of the holding brake power supply must meet the requirements of the motor holding brake parameters;
- When SIZE-A does not have a built-in regenerative resistor and requires the use of an external regenerative resistor, please select the appropriate resistor. Do not exceed the minimum external resistance value allowed in Table 2-3, otherwise it may cause damage to the driver.

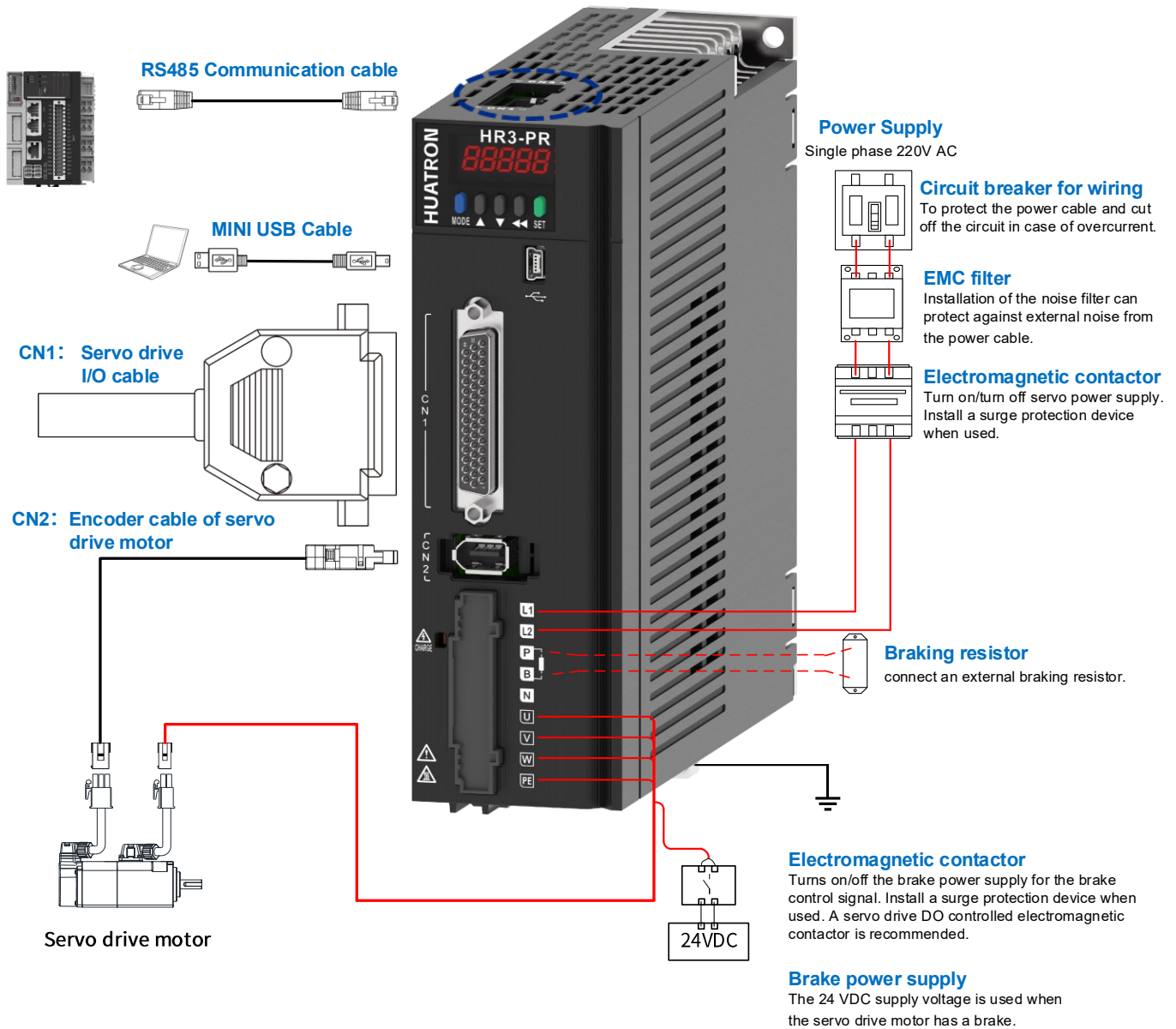


Figure2-2 Layout diagram of the SIZE-B system

- Please use a circuit breaker with leakage protection and a noise filter between the power supply and the main power supply terminals;
- The voltage and power of the holding brake power supply must meet the requirements of the motor holding brake parameters;
- When SIZE-B does not have a built-in regenerative resistor and requires the use of an external regenerative resistor, please select the appropriate resistor. Do not exceed the minimum external resistance value allowed in Table 2-3, otherwise it may cause damage to the driver.

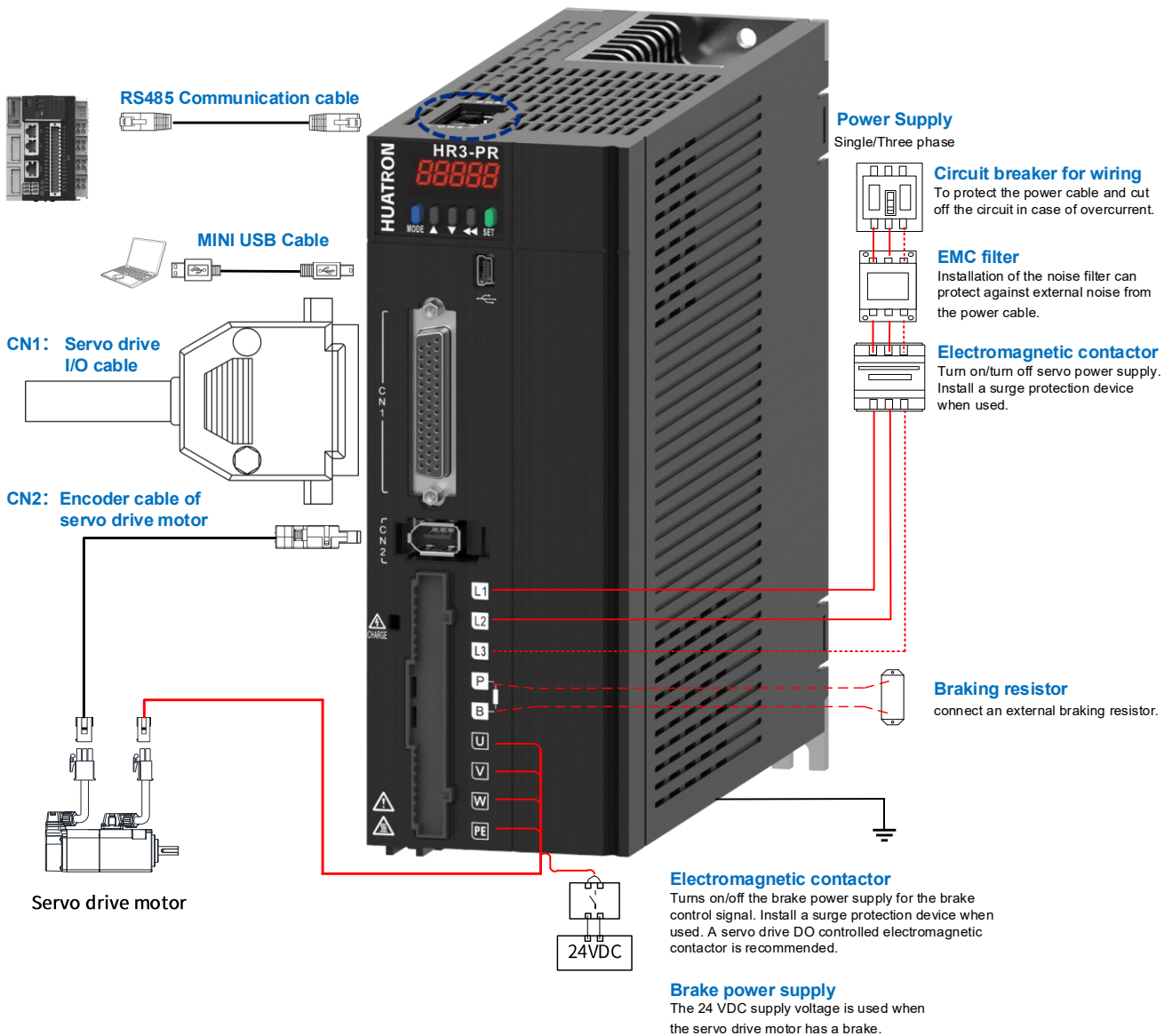


Figure2-3 Layout diagram of the SIZE-C system

- Please use a circuit breaker with leakage protection and a noise filter between the power supply and the main power supply terminals;
- The voltage and power of the holding brake power supply must meet the requirements of the motor holding brake parameters;
- When SIZE-C does not have a built-in regenerative resistor and requires the use of an external regenerative resistor, please select the appropriate resistor. Do not exceed the minimum external resistance value allowed in Table 2-3, otherwise it may cause damage to the driver.

## 2.2 Wiring of the Main Circuit

### 2.2.1 Main Circuit Terminals

Table2-1 SIZE-A/B main circuit connecting terminal definition

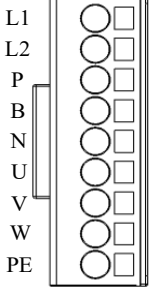
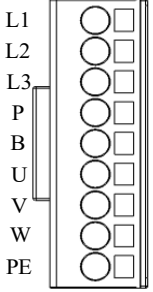
Junctor	Terminal number	Terminal label	Terminal function	Description
	1	L1	Main power input	Single-phase AC200V~240V, -10~+10%, 50/60Hz
	2	L2		
	3	P	Regenerati on function	If an external regenerative resistor is needed, connect it between terminals P and B.
	4	B		
	5	N	Motor Drive	Connected to U, V, W and PE phases of the servo motor.
	6	U		
	7	V		
	8	W		
	9	PE		

Table2-2 SIZE-C main circuit connecting terminal definition

Junctor	Terminal number	Terminal label	Terminal function	Description
	1	L1	Main power input	Single/Three-phase AC200V~240V, -10~+10%, 50/60Hz Three-phase AC380V~440V, -10~+10%, 50/60Hz
	2	L2		
	3	L3		
	4	P	Regenerati on function	If an external regenerative resistor is needed, connect it between terminals P and B.
	5	B		
	6	U	Motor Drive	Connected to U, V, W and PE phases of the servo motor.
	7	V		
	8	W		
	9	PE		

### 2.2.2 Circlip type terminal connection method

The power terminal uses a circlip connector for quick connection. When connecting the power terminal, follow the following flowchart to ensure reliable connection.

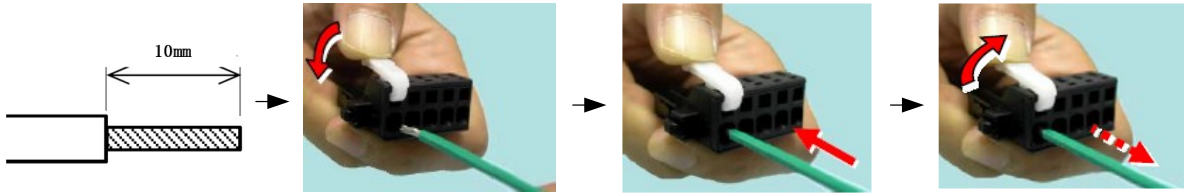


Figure2-4 Circlip type terminal connection method

- Peel off the insulation layer of the wire, with a bare wire length of 10mm.
- Press the operating lever to release the internal spring.
- Insert all bare wires into the connector.
- Release the operating lever, gently pull the wire to confirm secure connection, and then complete the wiring.

### 2.2.3 Specifications of Main Circuit Cables

Table2-3 Recommended main circuit cables

SIZE	Model	L1、L2、L3		P、B		U、V、W		PE	
		mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG
<b>Single-phase 220V</b>									
SIZE-A	001S2	2x0.75	18	2x0.75	18	3x0.75	18	0.75	18
	1R6S2	2x0.75	18	2x0.75	18	3x0.75	18	0.75	18
	2R8S2	2x0.75	18	2x0.75	18	3x0.75	18	0.75	18
SIZE-B	5R5S2	2x0.75	18	2x0.75	18	3x0.75	18	0.75	18
	7R6S2	2x1.00	17	2x1.00	17	3x1.00	17	1.00	17
SIZE-C	012S2	2x1.50	15	2x1.50	15	3x1.50	15	1.50	15
	014S2	2x2.00	14	2x2.00	14	3x2.00	14	2.00	14
<b>Three-phase 220V</b>									
SIZE-C	012S2	3x1.00	17	2x1.50	15	3x1.50	15	1.50	15
	014S2	3x1.50	15	2x2.00	14	3x2.00	14	2.00	14
<b>Three-phase 380V</b>									
SIZE-C	3R5T3	3x0.75	18	2x0.75	18	3x0.75	18	0.75	18
	5R4T3	3x0.75	18	2x0.75	18	3x0.75	18	0.75	18
	8R4T3	3x0.75	18	2x1.00	17	3x1.00	17	1.00	17

## 2.3 Wiring of the regenerative resistor

### 2.3.1 Wiring of external regenerative resistor

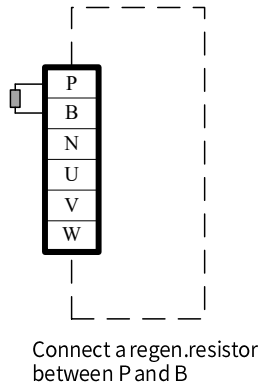


Figure2-5 Wiring of external regenerative resistor

- If an external regenerative resistor is needed for these models, please select the appropriate resistor. Do not exceed the min external resistance value allowed in Table 2-3, otherwise it may cause damage to the driver;
- External regeneration resistor connected between P and B;
- Do not connect the regeneration resistor to busbar P between N, otherwise it may cause damage to the drive and trigger a fire;
- Before using the servo, please confirm that the relevant parameters of the external regeneration resistor have been correctly set: P02.34 (regeneration resistor type) , P02.39 (power of external regenerative resistor) , P02.40 (resistance of external regeneration resistor).

### 2.3.2 Regenerative resistor specifications

Table2-4 Regenerative resistor specifications

Servo driver Rated voltage and current		Min resistance of external resistor	Max braking energy absorbed by capacitance EC
<b>Single phase 220V</b>	1.0A	50Ω	5J
	1.6A	50Ω	10J
	2.8A	45Ω	15J
	5.5A	40	26J
	7.6A	20Ω	26J
<b>Single/three phase 220V</b>	12A	15Ω	44J
	14A	15Ω	53J
<b>Three phase 380V</b>	3.5A	80Ω	39J
	5.4A	60Ω	39J
	8.4A	45Ω	57J

## 2.4 Wiring of the brake

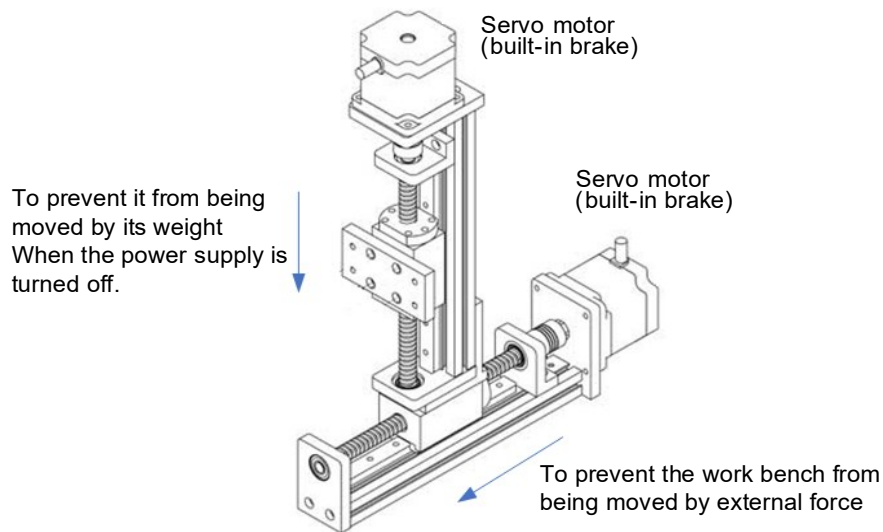


Figure2-6 Application of the motor brake

The brake is used to prevent the servo motor shaft from moving when the servo drive is in the non-operational status. This is to keep the motor and the mechanical load in locked positions.

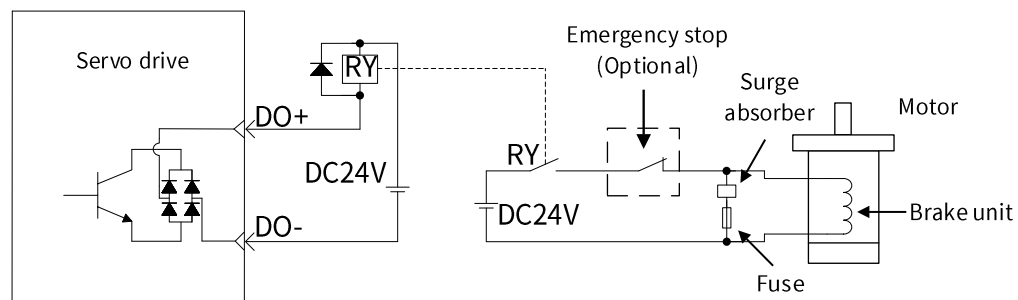


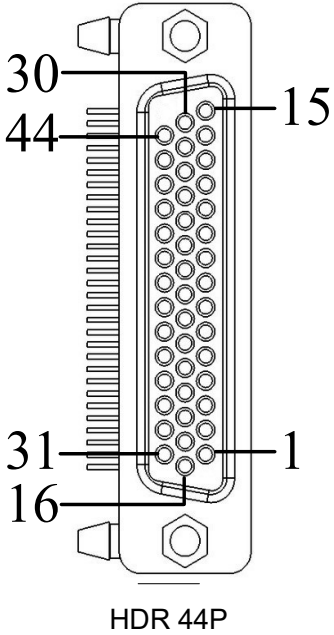
Figure2-7 Wiring of the brake

- The built-in brake in the servo motor is only used for position-lock purpose. Frequent use of the motor brake for emergency stop operations will shorten its service life. Only when the speed of the servo motor is less than 20rpm, use this brake for position-lock in the stop state;
- It is recommended to use an independent power supply for the brake to prevent voltage drop caused by abnormalities in other electrical appliances, which may cause the brake to malfunction;
- Use a single power supply to the brake and brake control signals, avoid electromagnetic interference with electronic devices.

## 2.5 Port definition and wiring of control terminal (CN1)

### 2.5.1 Port definition of control terminal (CN1)

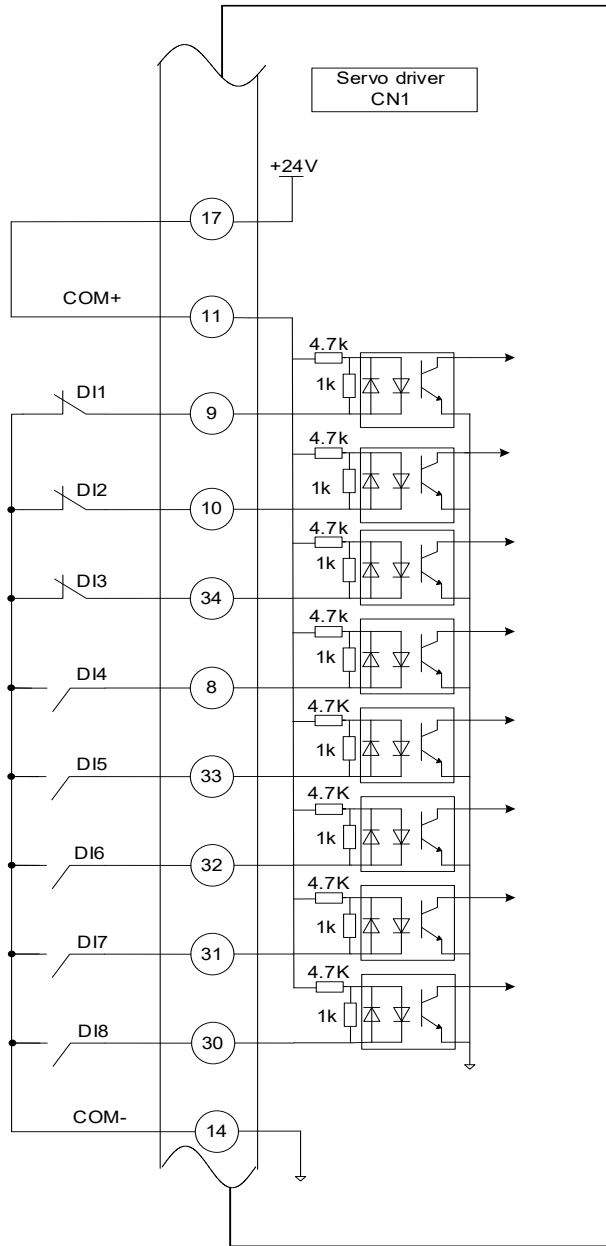
Table2-5 Control signal CN1 port definition

IF interface connector (CN1)	Module Name	Signal Name	Pin No	Default Function	
 <p>HDR 44P</p>	Digital input	DI1	9	Positive limit	
		DI2	10	Negative limit	
		DI3	34	Origin switch	
		DI4	8	Servo enable	
		DI5	33	Fault reset	
		DI6	32	Position deviation clearance	
		DI7	31	Zero speed hold	
		DI8	30	No definition	
			COM+	11	Common terminal of DI terminals
	Digital output	DO1+	7	Brake control	
		DO1-	6		
		DO2+	5	Servo running	
		DO2-	4		
		DO3+	3	Servo fault output	
		DO3-	2		
		DO4+	1	Position reached	
		DO4-	26		
		DO5+	28	Zero return completed	
		DO5-	27		
	Frequency division output	PAO+	21	A-phase frequency division output signal	
		PAO-	22		
PBO+		25	B-phase frequency division output signal		
PBO-		23			
PZO+		13	Z-phase frequency division output signal		
PZO-		24			
OCZ		44	Z-phase open collector output signal		

## Wiring

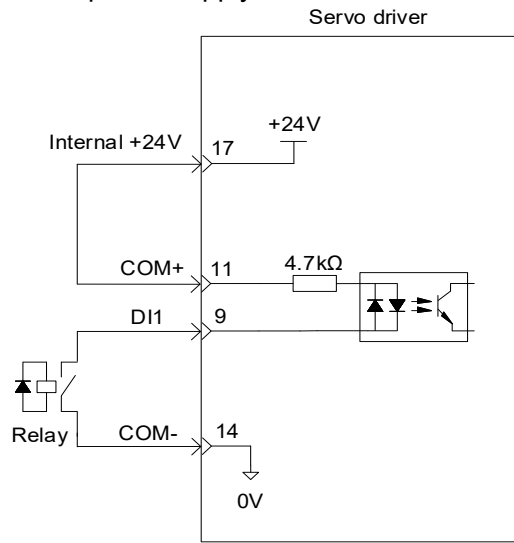
IF interface connector (CN1)	Module Name	Signal Name	Pin No	Default Function
		GND	29	Frequency division output signal ground
	Position reference	PULSE+	41	Low speed pulse reference input
		PULSE-	43	
		SIGN+	37	
		SIGN-	39	
		PULLHI	35	Power input for pulse reference
		HPULSE+	38	High speed pulse reference input
		HPULSE-	36	
		HSIGN+	42	High speed position reference sign
	HSIGN-	40		
	Analog input	AI1	20	Analog input signal 1
		AI2	18	Analog input signal 2
		GND-AI	16	Analog input signal ground
		GND-AI	19	Analog input signal ground
	24V output power supply	+24V	17	24V output power supply
		COM-	14	
	Enclosure	PE	—	Shield layer

### 2.5.2 Wiring of Digital input

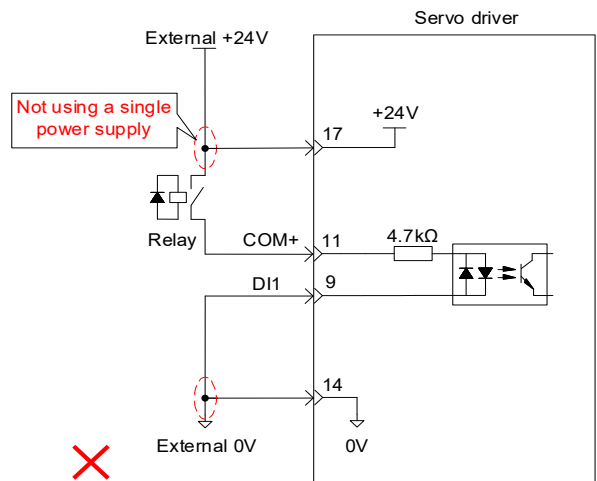
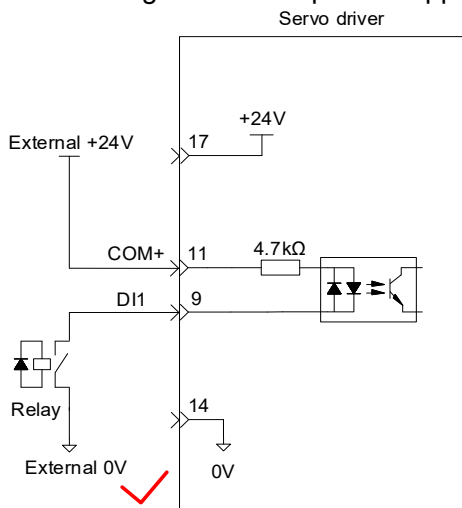


(1) The host controller provides relay output

a) When using the internal 24V power supply:

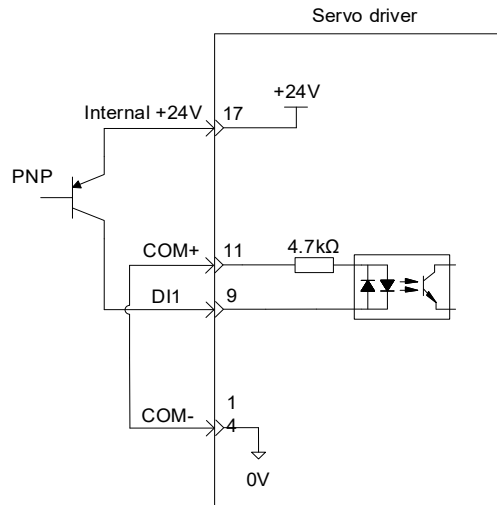
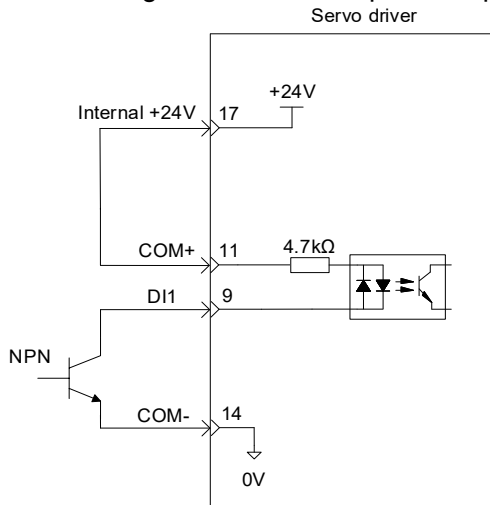


b) When using an external power supply:

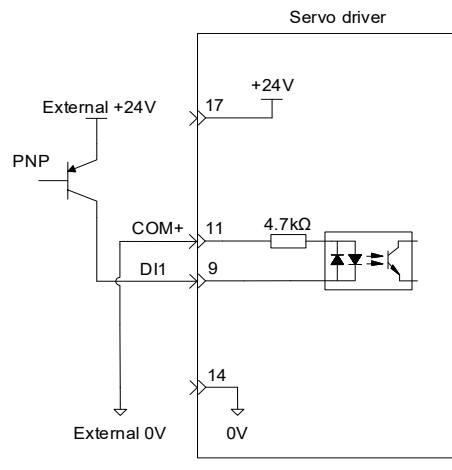
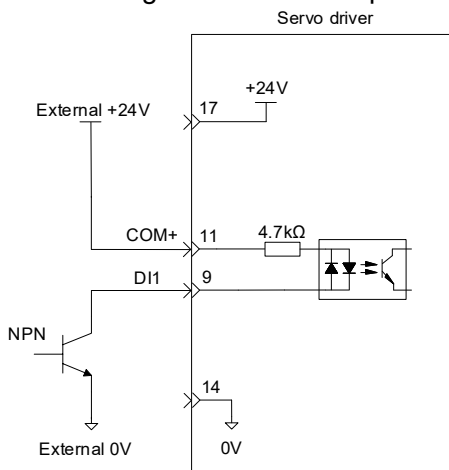


**(2) The host controller provides open-collector output**

a) When using the internal 24V power supply:

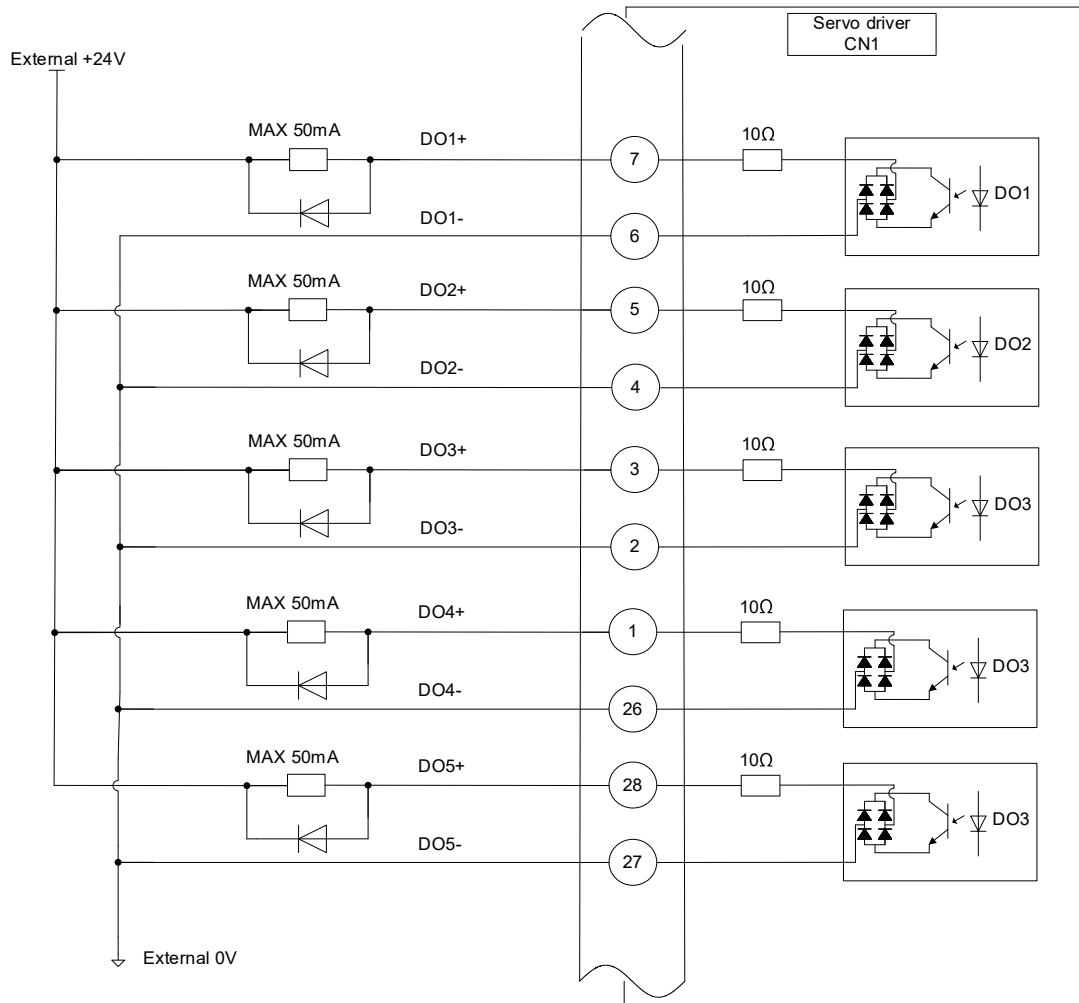


b) When using an external 24V power supply:



➤ PNP and NPN input cannot be used together in the same circuit.

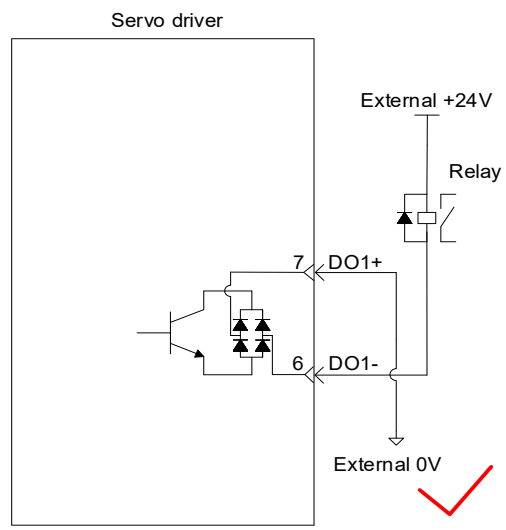
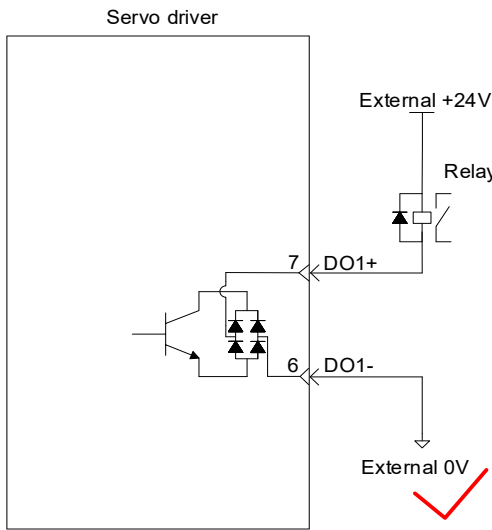
### 2.5.3 Wiring of Digital output



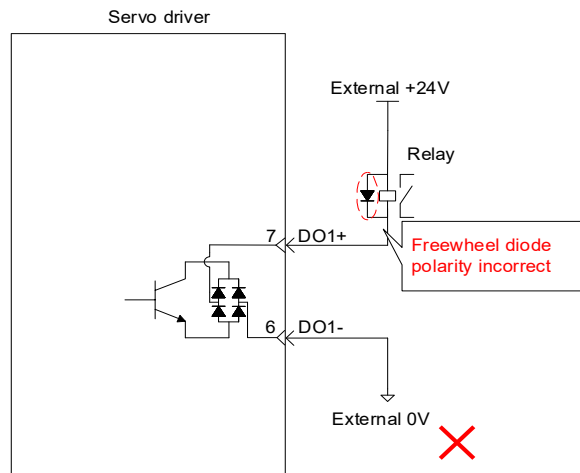
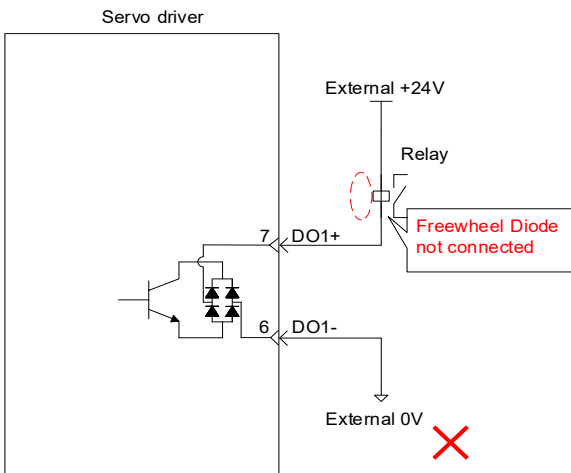
- The maximum permissible voltage and current capacity of the optocoupler output circuit inside the servo drive are as follows:
  - Maximum voltage: DC30V;
  - Maximum current: DC50mA;

(1) The host controller provides relay input

- Correct wiring:

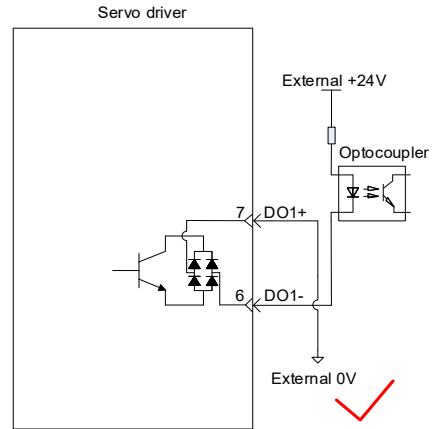
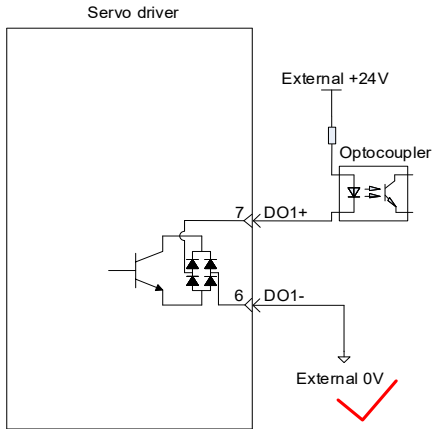


- Incorrect wiring:

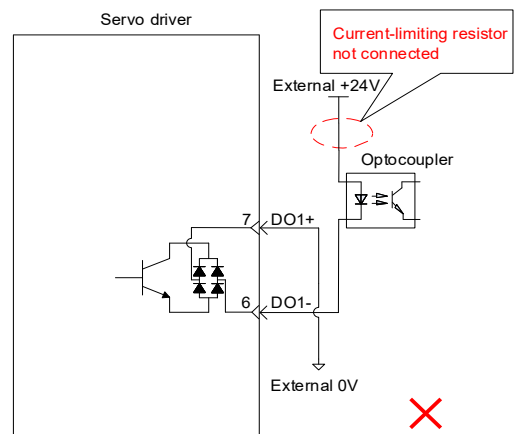
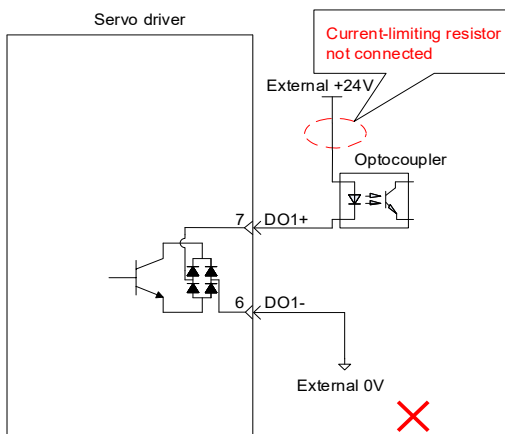


(2) The host controller provides optocoupler input:

- Correct wiring:



- Incorrect wiring:



### 2.5.4 Wiring of encoder frequency division output signals

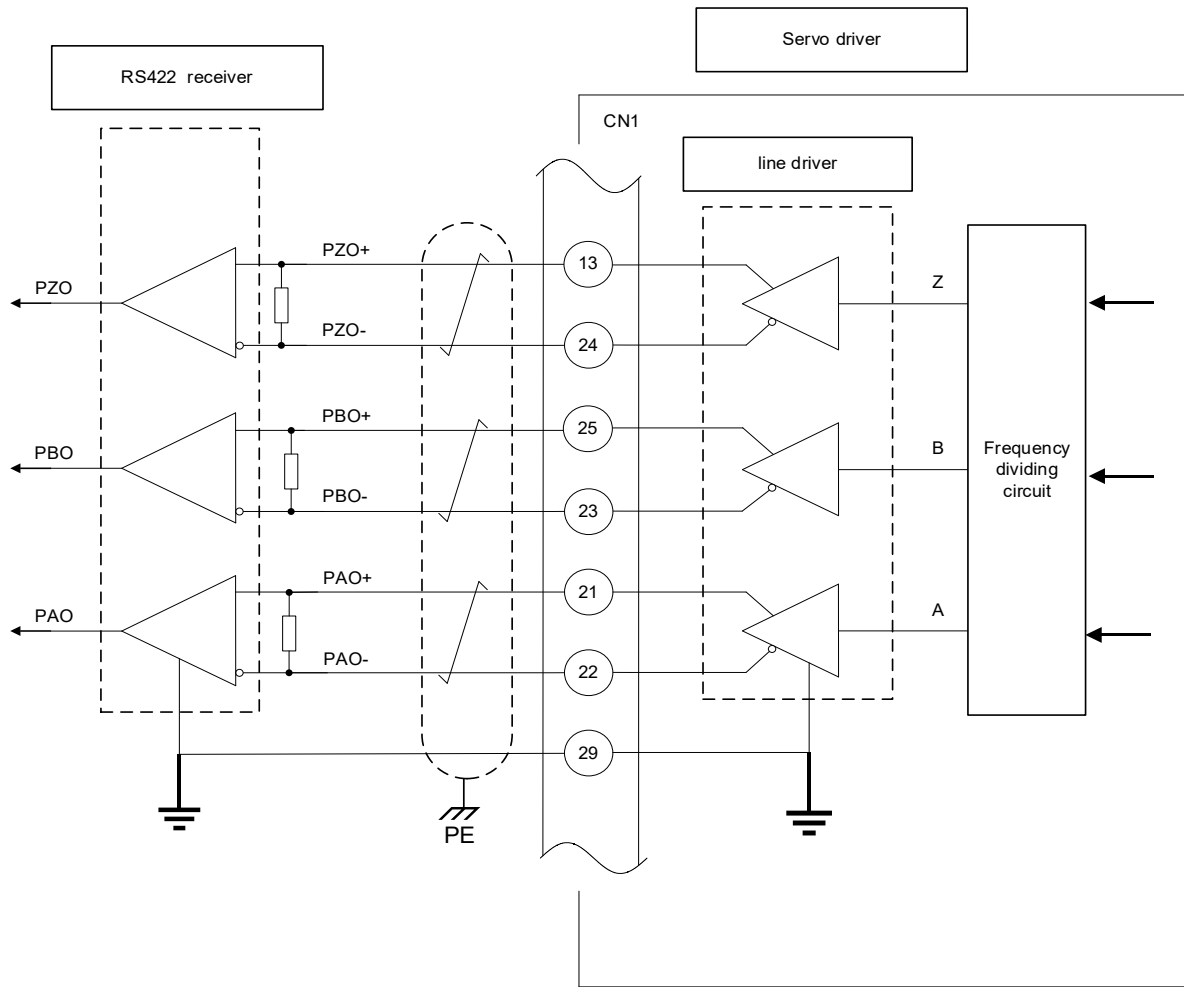


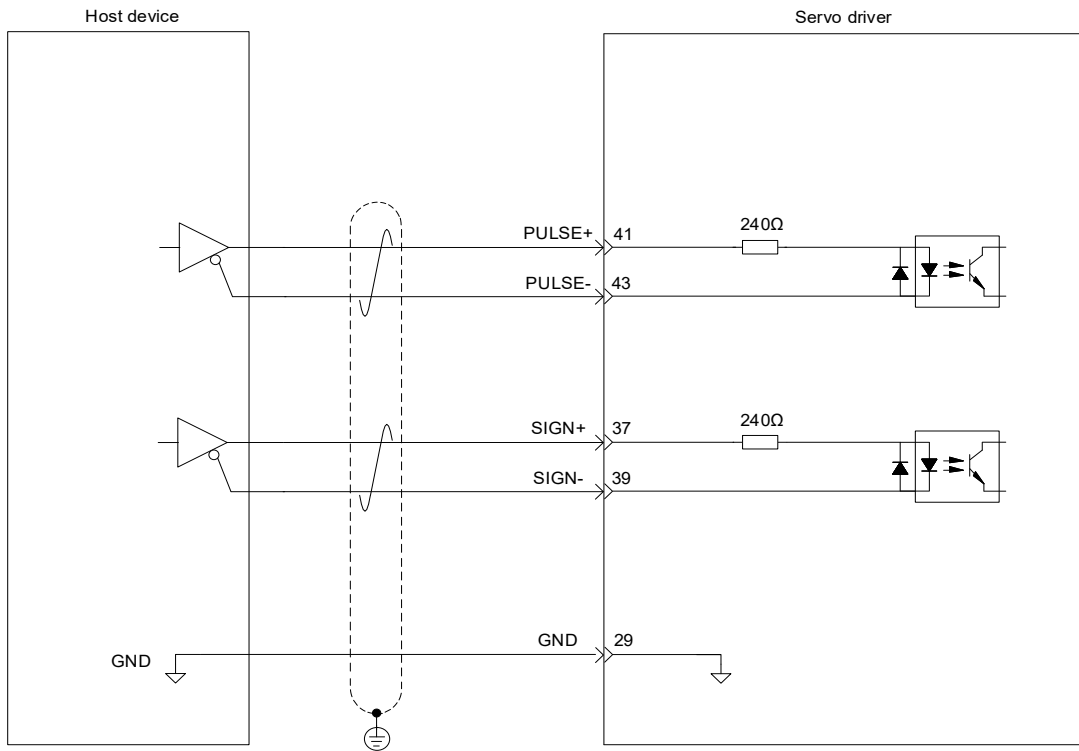
Figure2-8 Wiring of encoder frequency division output signals

- Please use an RS422 line receiver (AM26C32 or equivalent) to receive the pulse output signal;
- The maximum output current is 20mA;
- Use shielded twisted pairs to connect PE , and connect the GND of the receiver to the GND of the frequency division output signal

## 2.5.5 Wiring of position reference input signals

### (1) Low speed pulse reference input

#### 1) Differential mode

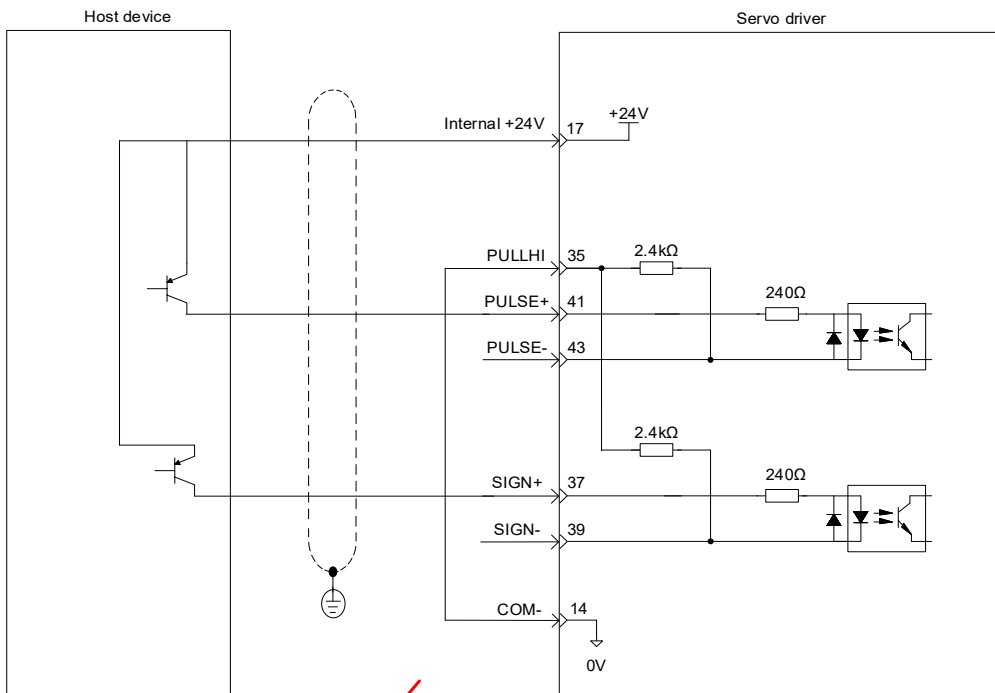
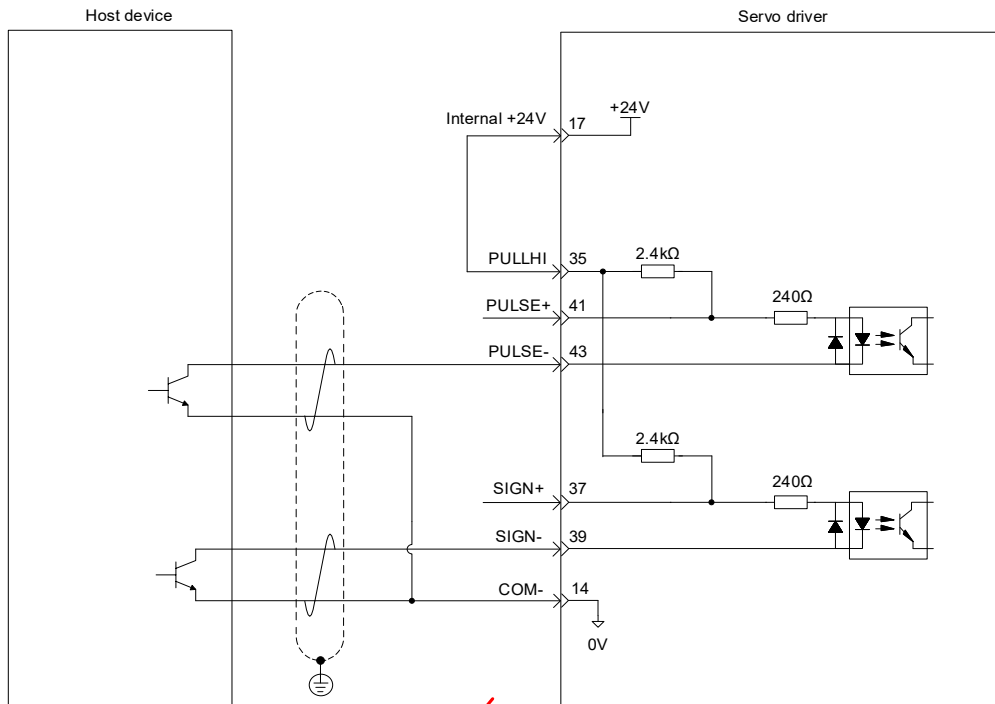


# Wiring

## 2) Open collector mode

a) When using the internal 24V power supply:

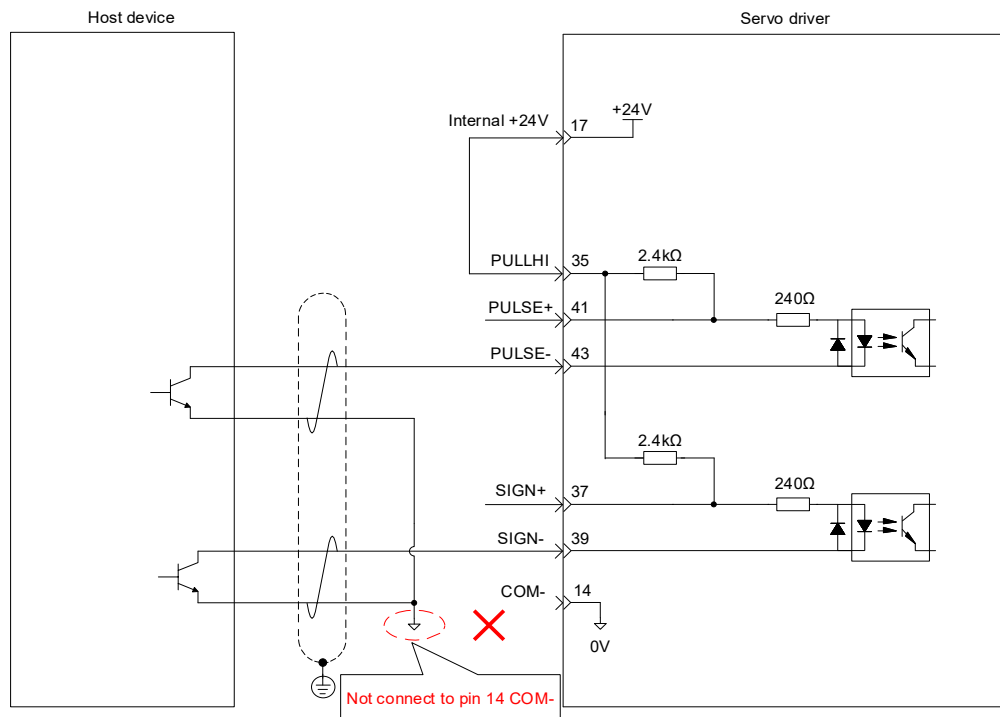
- Correct wiring:



## Wiring

- Incorrect wiring:

Pin 14 (COM - ) is not connected, leading to failure in forming a closed-loop circuit.

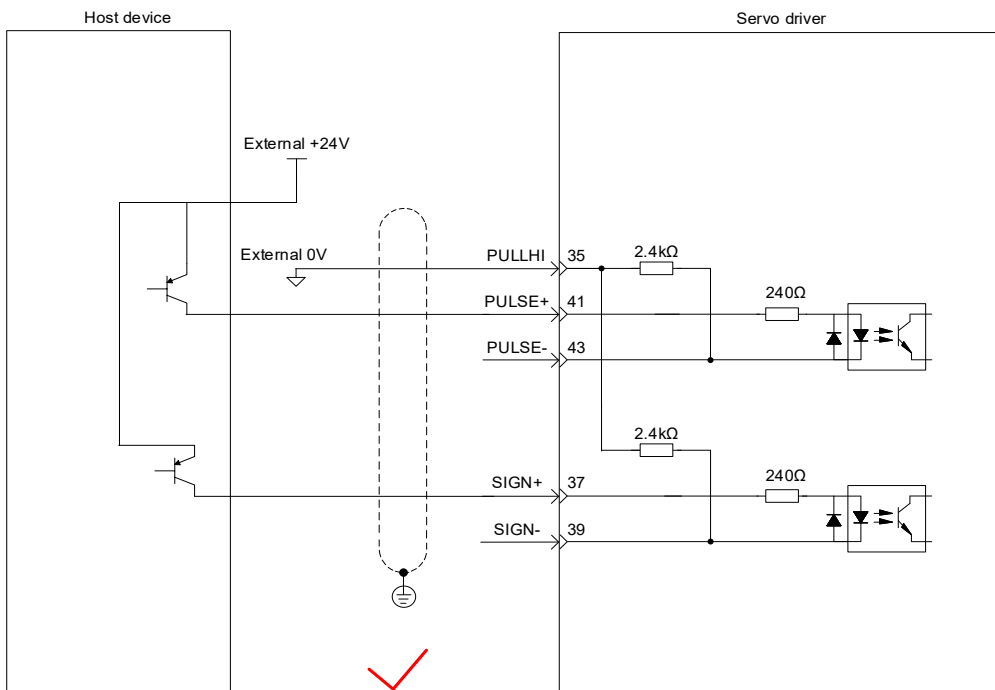
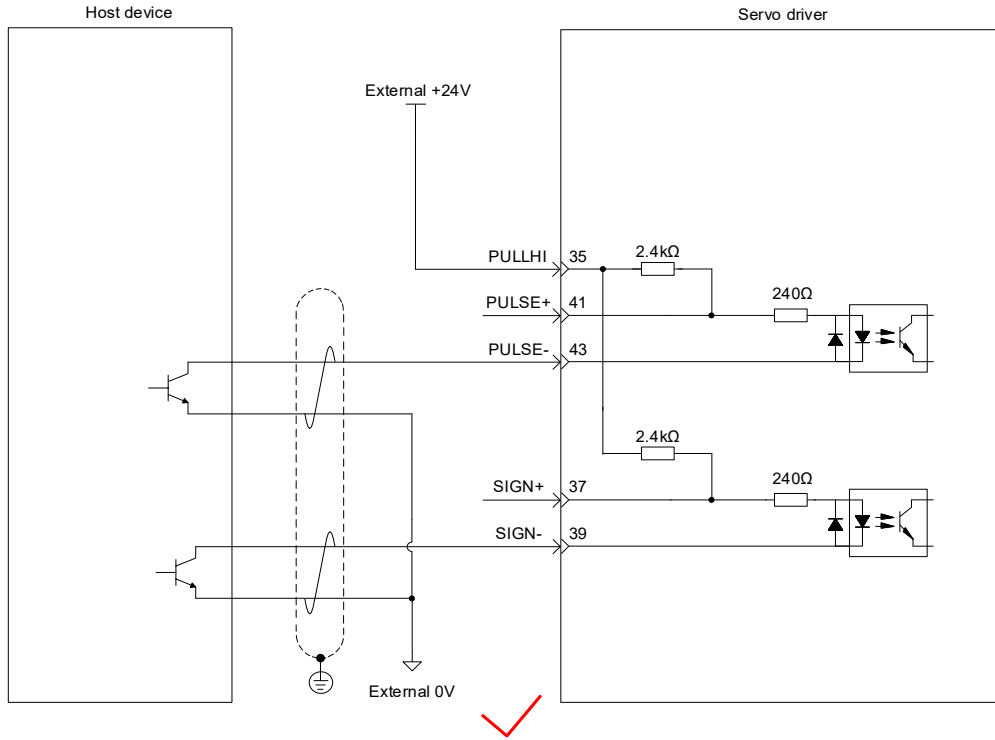


## Wiring

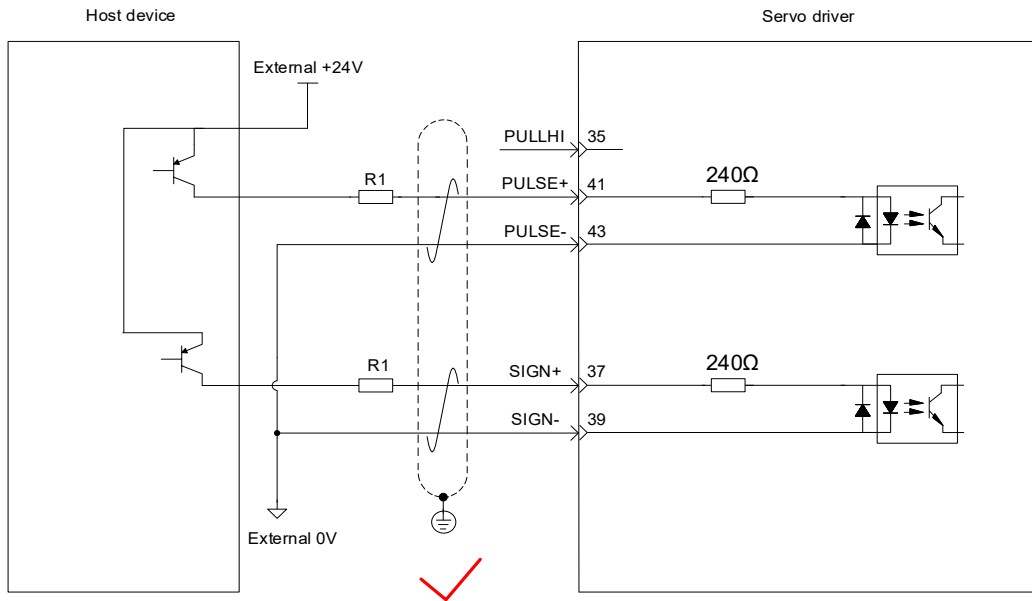
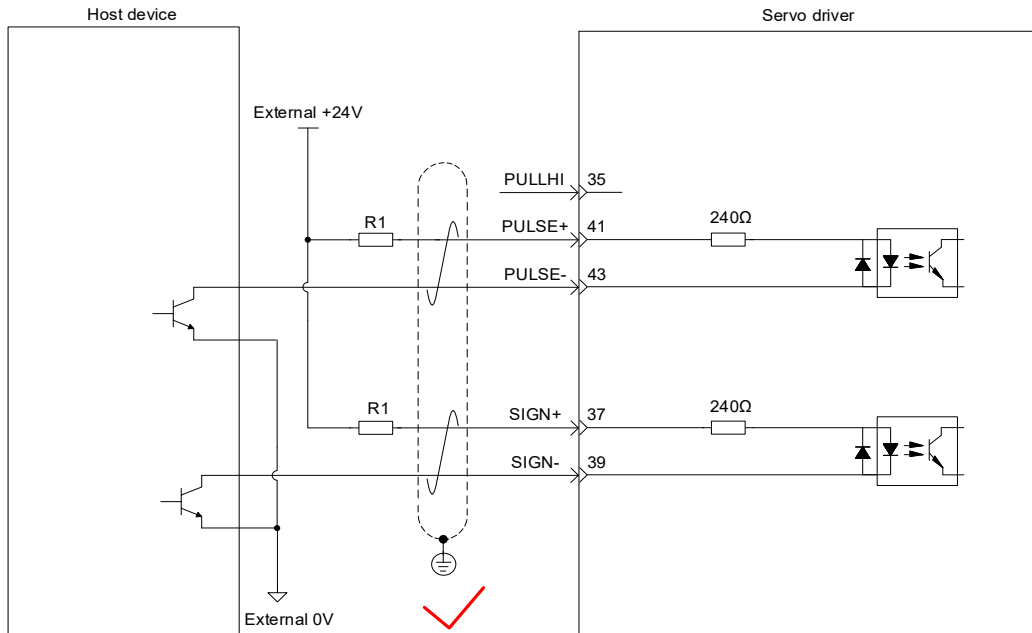
b) When using an external 24V power supply:

- Correct wiring:

Scheme 1: Using the built-in resistor



Scheme 2: Using the external resistor



Select resistor R1 based on the following formula:  $\frac{V_{cc}-1.5}{R1+240}=10\text{mA}$

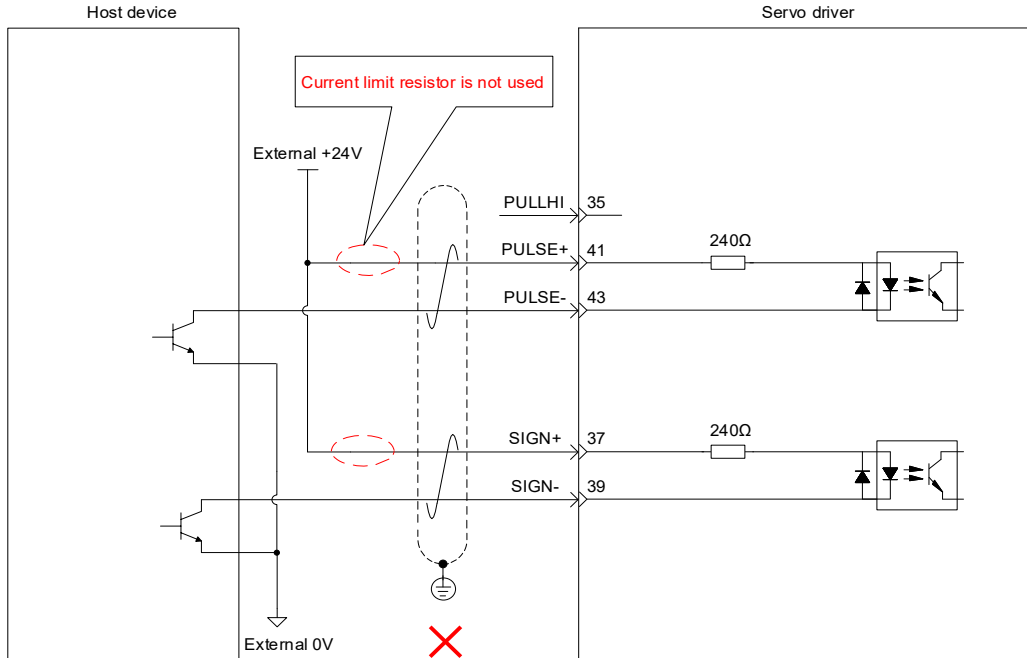
Table2-6 Recommended resistance of R1

Vcc voltage	R1 resistance	R1 power
24V	2.4kΩ	0.5kΩ
12V	1.5kΩ	0.5kΩ

## Wiring

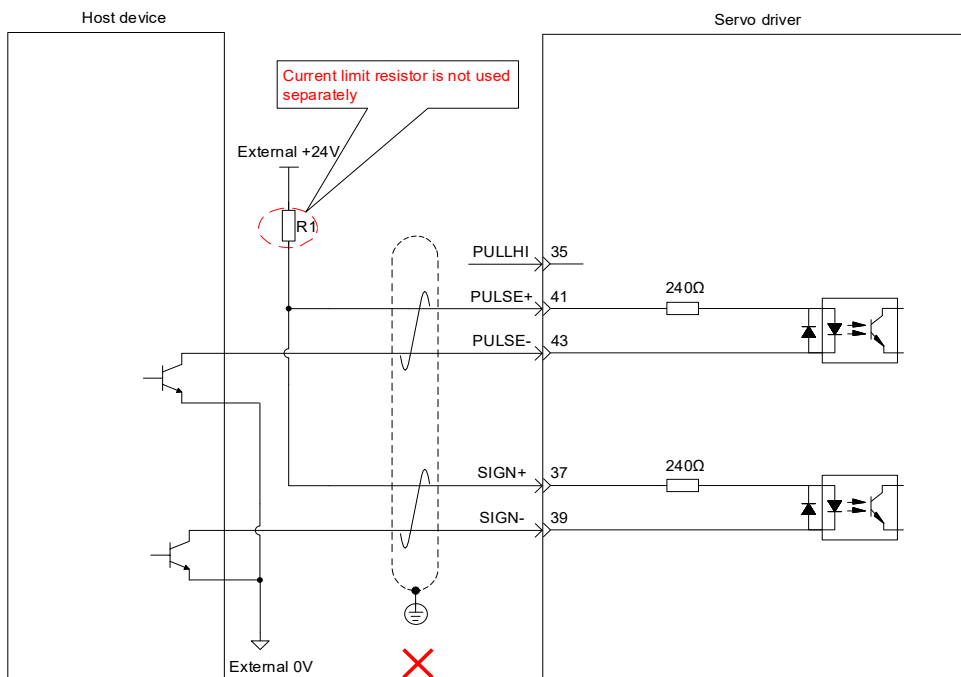
- Incorrect wiring 1:

The current limiting resistor is not connected, resulting in terminal burnout.



- Incorrect wiring 2:

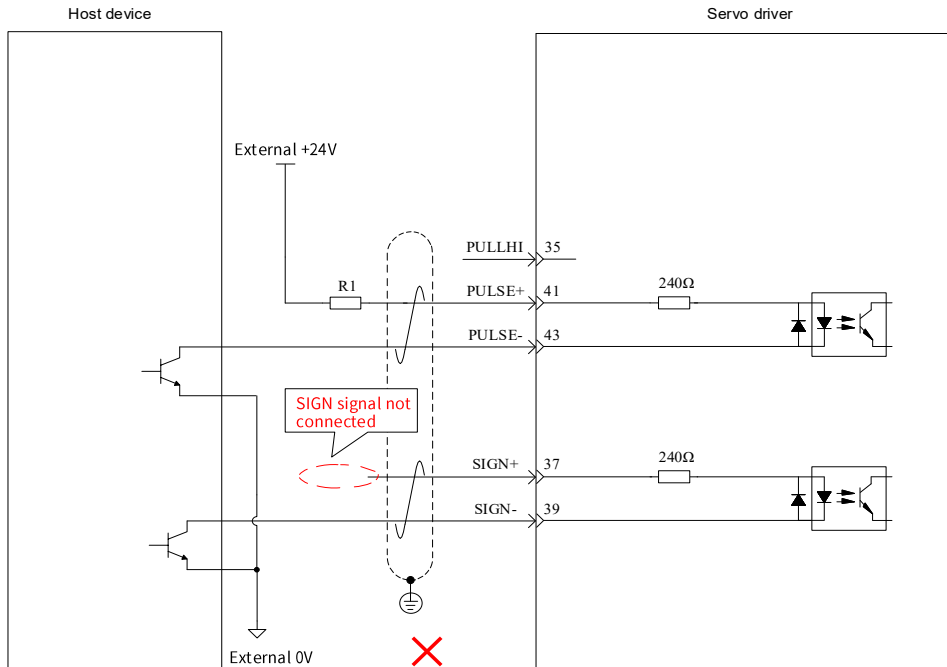
Multiple terminals share the same current limiting resistor, resulting in pulse receiving error.



## Wiring

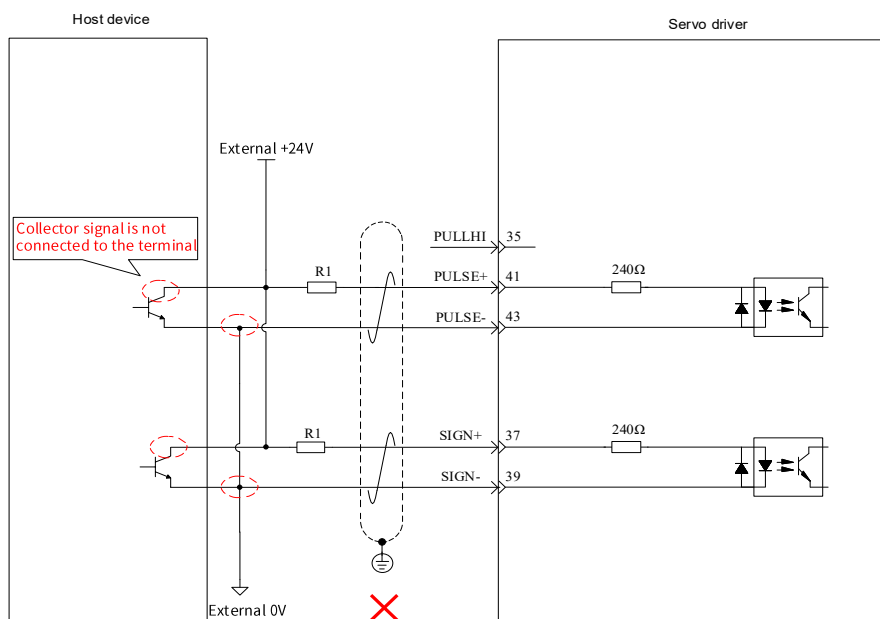
- Incorrect wiring 3:

The SIGN port is not connected, preventing these two ports from receiving pulses.



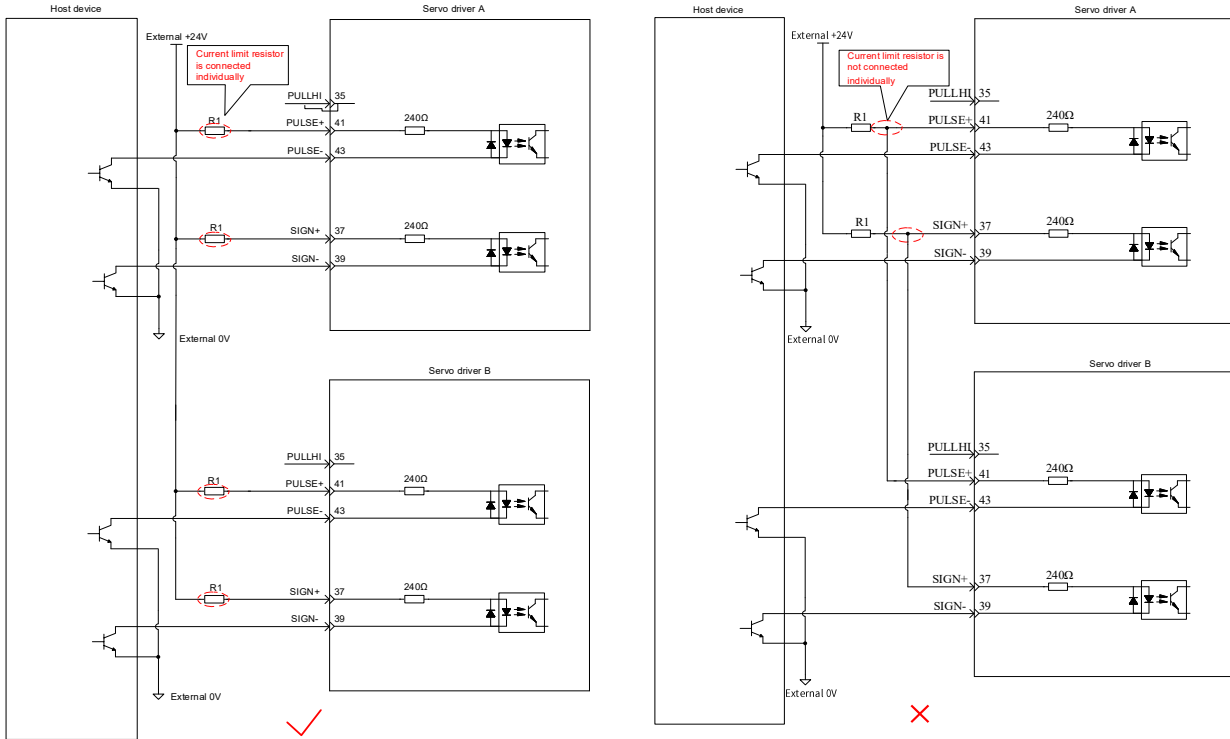
- Incorrect wiring 4:

Terminals are connected incorrectly, resulting in terminal burnout.



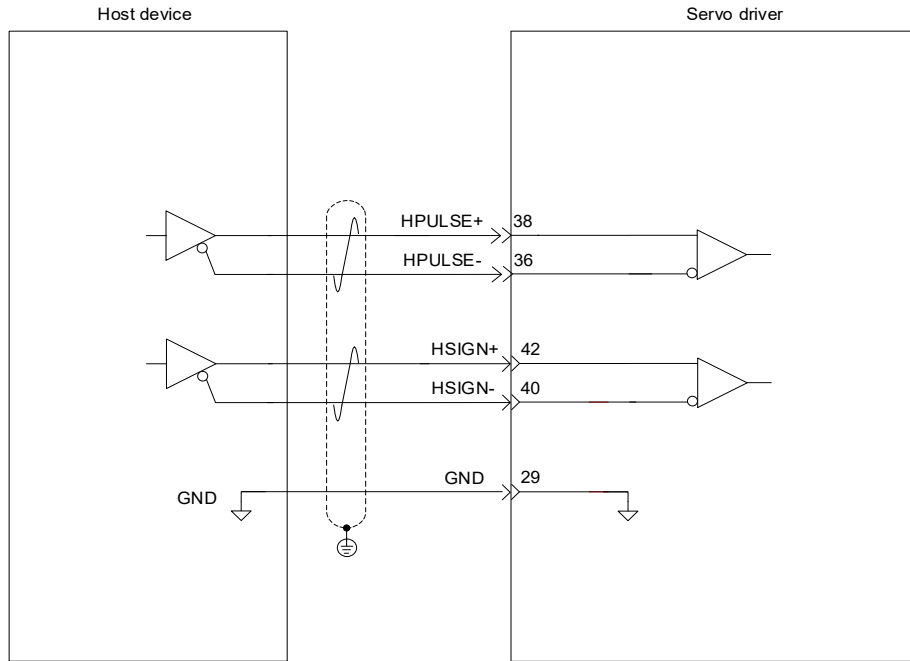
- Incorrect wiring 5:

Multiple terminals share the same current limiting resistor, resulting in pulse receiving error.



(2) High speed pulse reference input

High-speed reference pulses and signs on the host controller side can be outputted to the servo drive through the differential drive only.



NOTE:

- Please ensure that the differential input is a 5V system, otherwise the input pulse of the servo drive will be unstable. This can lead to the following situations:
- When inputting pulse reference, there is a phenomenon of pulse loss;
- When inputting instruction direction, there is a phenomenon of instruction reversal;
- Please make sure to connect the 5V system ground of the host device to the GND of the servo driver to reduce noise interference.

### 2.5.6 Wiring of Analog input

The input terminal for analog speed and torque signals is AI1 and AI2.

- Voltage input range:  $-10\text{V}\sim+10\text{V}$ ;
- Maximum permissible voltage:  $\pm 12\text{V}$ ;
- Input impedance: approx.  $9\text{k}\Omega$ .

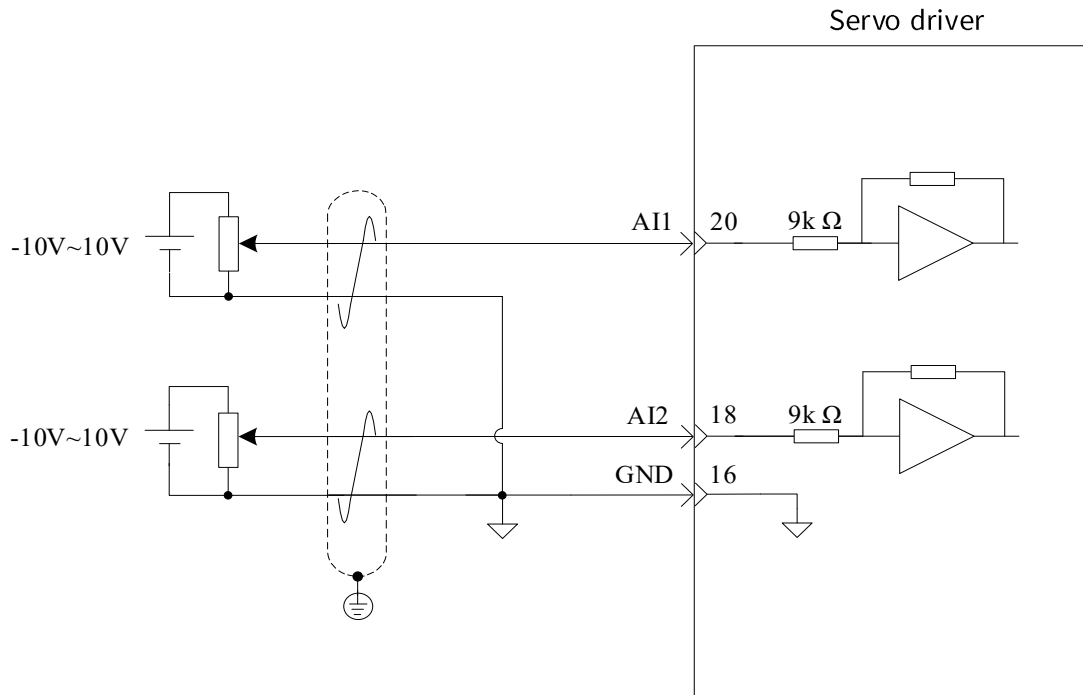
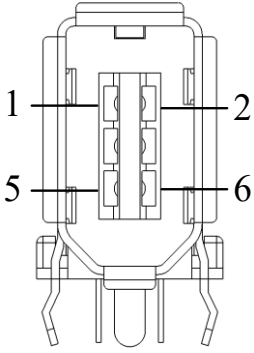


Figure2-9 Analog Input Wiring Diagram

## 2.6 Port definition and wiring of encoder terminal (CN2)

### 2.6.1 Motor encoder

Table2-7 Definition of the motor encoder interface

Motor encoder CN2	Signal Name	Pin No	Wiring method	Function
 <p>IEEE 1394 6P</p>	5V	1	Twisted pair	5V power supply
	GND	2		
	—	3	—	
	—	4		
	SD+	5	Twisted pair	Encoder signal
	SD-	6		
	PE	enclosure	Shield layer	shield

- This terminal is used for the connection of the driver and the motor encoder , the cable and the main circuit wiring need to be 30cm away during use;
- Use a twisted pair shielded cable of 26AWG or above according to UL2464 for encoder cable;
- The encoder cable length needs to consider the voltage drop caused by line resistance and signal attenuation caused by distributed capacitance, and the recommended cable length is within 10m.

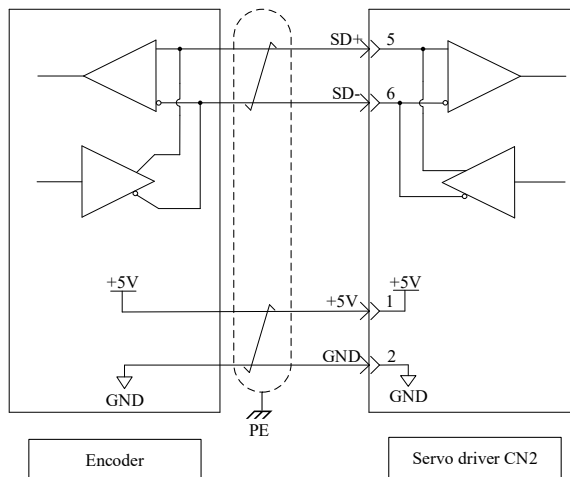
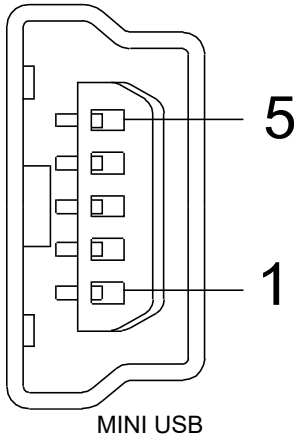


Figure2-10 Motor encoder signal input

## 2.7 Definition of Communication Terminal (MINI USB)

### 2.7.1 Communication terminal (MINI USB)

Table2-8 Definition of communication terminal MINI USB

Communication Terminal	Signal Name	Pin No	Function
 <p>MINI USB</p>	VBUS	1	PC communication
	D-	2	
	D+	3	
	—	4	
	GND	5	
	PE	Enclosure	

- This terminal is a commissioning port connected with the PC. Supports online trial operation and download and upload of parameters, and driver firmware update ex.

## 2.8 Wiring diagram in control mode

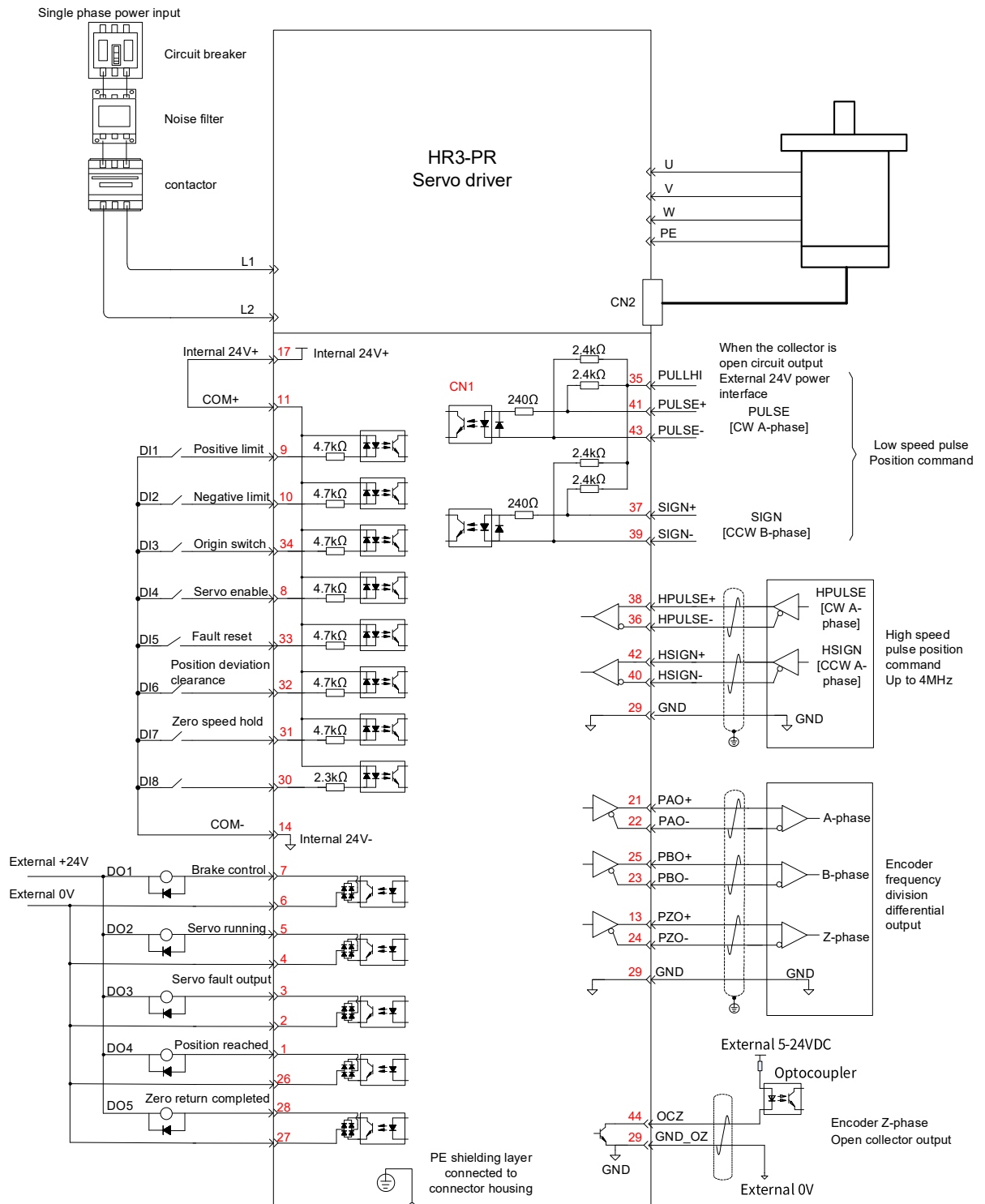


Figure2-11 Wiring diagram in position mode

- Internal +24V power supply, voltage range: 20 to 28 V, maximum output current: 200 mA.
- Use the shielded twisted pair as the cables of the pulse terminals, with both ends of the shielded layer tied to PE. Connect GND to the signal ground of the host controller reliably.
- A user needs to provide the power supply for DOs, with voltage range 5–24 V. The DO terminals support 30 VDC voltage and 50 mA current to the maximum.
- Use the shielded twisted pair as the encoder frequency-division cables, with both ends of the shielded layer tied to PE. Connect GND to the signal ground of the host controller reliably.

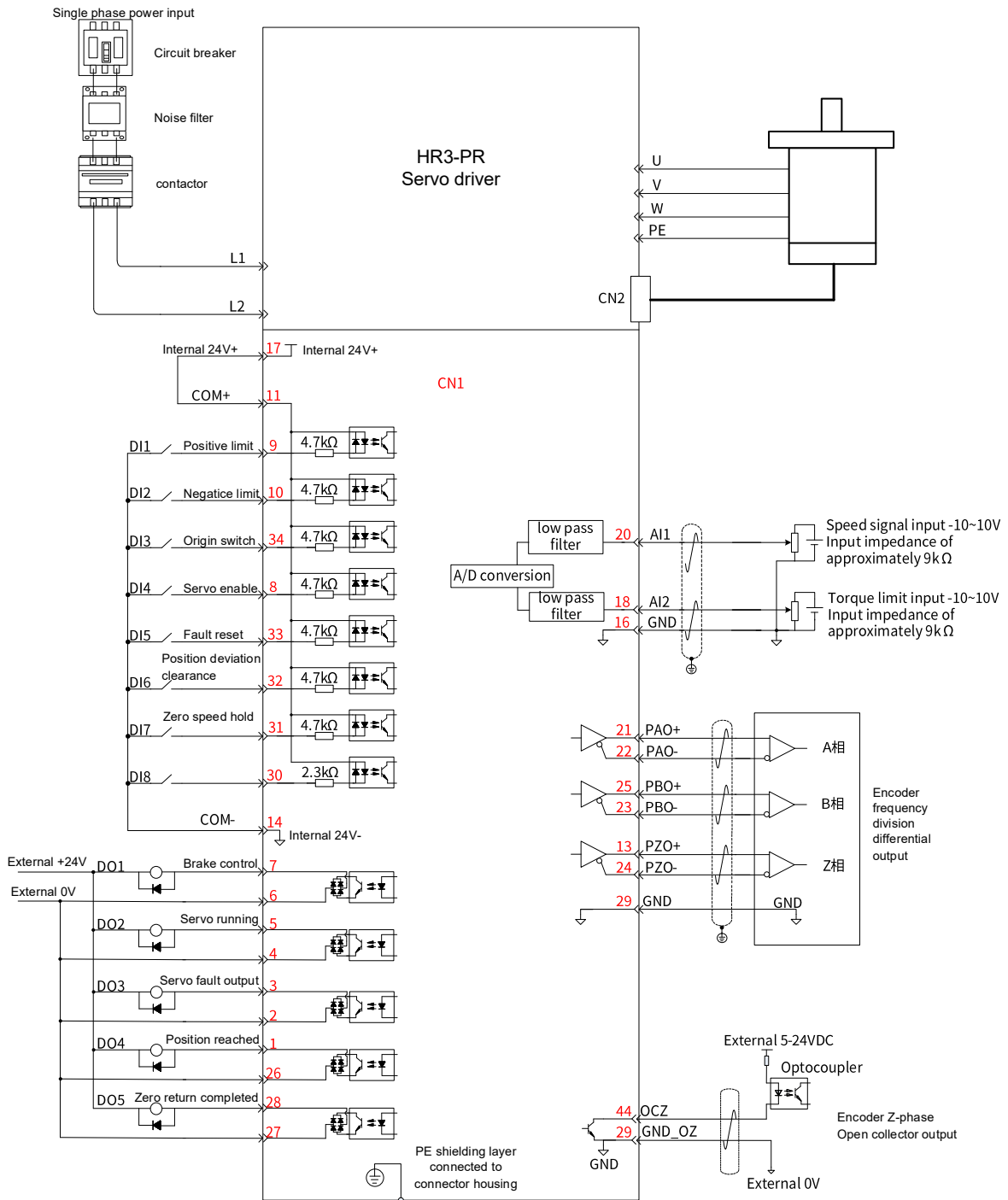


Figure 2-12 Wiring diagram in speed mode

- Internal +24V power supply, voltage range: 20 to 28 V, maximum output current: 200 mA.
- Use the shielded twisted pair as the cables of the pulse terminals, with both ends of the shielded layer tied to PE. Connect GND to the signal ground of the host controller reliably.
- A user needs to provide the power supply for DOs, with voltage range 5–24 V. The DO terminals support 30 VDC voltage and 50 mA current to the maximum.
- Use the shielded twisted pair as the encoder frequency-division cables, with both ends of the shielded layer tied to PE. Connect GND to the signal ground of the host controller reliably.

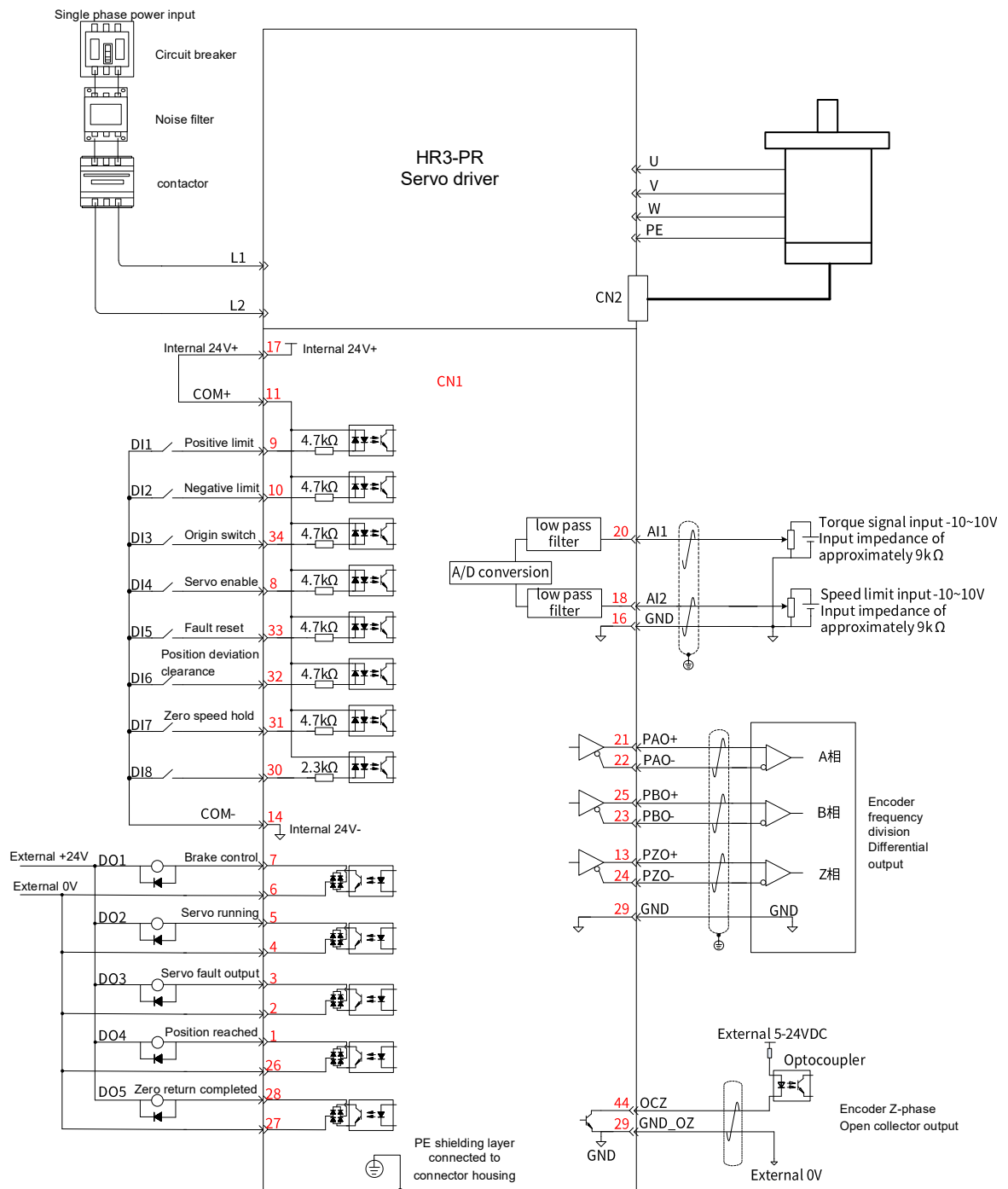


Figure2-13 Wiring diagram in torque mode

- Internal +24V power supply, voltage range: 20 to 28 V, maximum output current: 200 mA.
- Use the shielded twisted pair as the cables of the pulse terminals, with both ends of the shielded layer tied to PE. Connect GND to the signal ground of the host controller reliably.
- A user needs to provide the power supply for DOs, with voltage range 5–24 V. The DO terminals support 30 VDC voltage and 50 mA current to the maximum.
- Use the shielded twisted pair as the encoder frequency-division cables, with both ends of the shielded layer tied to PE. Connect GND to the signal ground of the host controller reliably.

### 3 Keypad Display and Operations

- The keypad of the drive consists of a 5-digit, 8-segment LED screen .
- The keypad is used for value display, parameter setting, user password setting and general function execution.

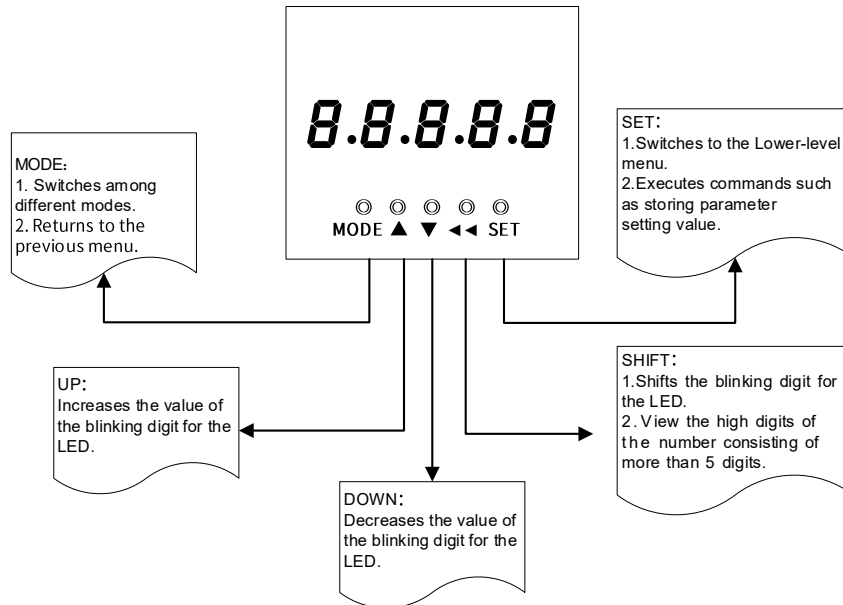
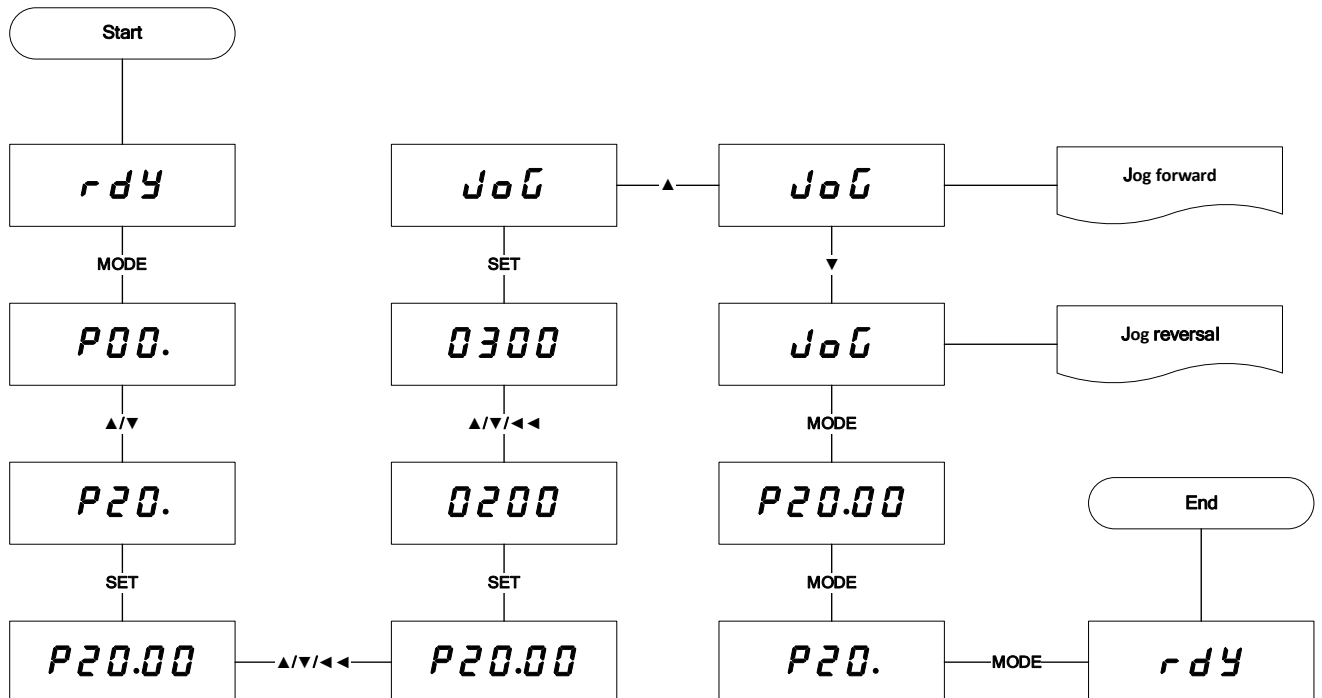


Figure3-1 Functions of keys

Ex: Use panel keys to jog at a speed of 300rpm.



## 4 Fault and Warning

Fault Code	Fault Name	Fault Cause	Solution Measure
E.010.0	Software Parameter Fault	1. Upgraded the new firmware. 2. Wrote abnormal parameters	Restore factory parameters (P0501=1) and check if the "manufacturer parameters" are abnormal.
E.013.X	Software Internal Interrupt Timeout Fault	1. FPGA fault. 2. Internal hardware abnormality	Replace the servo drive.
E.015.X	Current Sampling Timeout Fault	1. Power line output disconnection or poor contact. 2. Current sampling fault.	1. Check the Power line connection for damage. 2. Replace servo drive.
E.018.X	Parameter Out of Range Fault	1. Software has been updated 2. EEPROM fault.	1. Restore factory parameters (P0501=1) and check if the "manufacturer parameters" are abnormal. 2. Replace servo drive.
E.019.X	Product Matching Fault	1. Product number (encoder or motor or drive) does not exist. 2. The rated current of the motor is greater than the rated current of the driver.	1. Set the correct encoder type (P0100). 2. Replace with a higher power driver.
E.210.X	Hardware Overcurrent Fault	1. Driver fault. 2. The motor is burnt out. 3. Unreasonable gain parameter settings and motor vibration Dang.	1. Replace the drive. 2. Replace the motor. 3. Perform gain adjustment again.
E.211.X	Ground Short Circuit Fault	1. Short circuit between the motor and ground. 2. Servo drive fault. 3. The main line voltage release point (P0219) is set too low.	1. Check the insulation of the drive power cable. 2. Replace the drive. 3. Correctly set the main line voltage release point (P0219).
E.212.0	UVW Phase Sequence Error	The Uvw phase sequence of the driver and motor does not match.	Correctly connect the UVW cables in the right phase sequence.
E.213.0	Overcurrent Fault	1. Incorrect UVW phase sequence wiring. 2. incorrect initial rotor phase of the motor. 3. The vertical axis is overloaded.	1. Correctly connect the UVW cables in the right phase sequence. 2. Redo the angle self-learning. 3. Reduce the vertical axis load or shield the fault without compromising safety.
E.910.X	Encoder Parameter Fault	1. The type of the driver and motor do not match. 2. Parameter error or not stored in encoder.	1. Set the correct motor type. 2. Write the correct motor parameters.
E.911.X	Encoder Communication Fault	1. Encoder wiring error. 2. Encoder cable loose. 3. Encoder signal interference (related to EMC issues).	1. Reconnect according to the correct wiring diagram. 2. Ensure tight connection of encoder wiring terminals. 3. Use our standard encoder cable.
E.912.0	Encoder Parameter Verification Error	1. Encoder disconnected or loose. 2. Encoder parameter read/write abnormality.	1. Check the encoder wiring. 2. Rewrite the motor parameters.

## Fault and Warning

Fault Code	Fault Name	Fault Cause	Solution Measure
E.219.0	Driver Overtemperature Fault	1.After the overload is cleared, the drive runs repeatedly. 2.Fan damaged.	1.wait 30 seconds after overload before resetting,deceleration times and reduce the load. 2.Check the fan.
E.411.X	DI Function Allocation Fault	1.DI function number exceeds. 2.Duplicate DI Function Assignment.	1.After restoring system parameters to default (P0501=1), power on again. 2.Do not assign DI function numbers beyond the DI function definition table.
E.412.0	DO Function Allocation Fault	DO function number exceeds.	Do not assign DO function numbers beyond the DO function definition table.
E.414.0	DC Bus Undervoltage Fault	1.Momentary power outage occurs. 2.Voltage drop in power supply during operation. 3.Three phase input only connected to single-phase	Check the input power supply.
E.415.0	DC Bus Overvoltage Fault	1.Main circuit input voltage too high. 2.The motor is in a rapid deceleration state, and the brake resistor has failed.	1.Check the input power supply. 2.Replace the brake resistor.
E.416.0	Overspeed Fault	1.Incorrect phase sequence of motor cables U, V, W. 2.Incorrect motor or encoder parameter settings. 3.Initial angle identification error of motor. 4.Motor speed closed-loop overshoot.	1.Wire the U, V, W phases correctly. 2.Set motor parameters or encoder resolution correctly. 3.Re angle identification. 4.Perform gain adjustment again.
E.711.X	Inertia Identification Fault	Offline inertia identification is not completed.	Contact the manufacturer's technical support.
E.712.0	Pole Identification Fault	Failure in identifying the initial magnetic pole angle of the motor.	Disconnect the motor shaft and re-identify the angle.
E.B10.0	Motor Overload Fault	1.The processing cycle is frequent, the acceleration and deceleration time is set too short, and the load is too heavy. 2.The motor power model has been selected too small.	1.Reduce processing speed and increase acceleration and deceleration time. 2.Replace with a higher power motor.
E.B11.0	Motor Stall Fault	1.Incorrect phase sequence of motor cables U, V, W. 2.Motor angle error. 3.The encoder communication protocol (P0100) is set incorrectly. 4.Motor stalling caused by mechanical factors, resulting in excessive load during operation.	1.Wire the U, V, W phases correctly. 2.Re angle identification. 3.Set the correct P0100 parameter. 4.Check the mechanical structure.
E.017.X	Parameter Storage Fault	Abnormal storage of drive parameters	1.After restoring initialization (P0501=1), set P0510=0. 2.Replace servo drive.
E.217.X	Input Phase Loss Fault	1.Three-phase drive connected to single-phase input. 2.Poor wiring of three-phase input. 3.Unbalanced or low three-phase voltage.	1.Connect three-phase input power supply. 2.Check the three-phase power supply wiring. 3.For three-phase rated drives that allow single-phase operation (below 1kW), disable alarms (set P0800=2).
E.218.0	Servo Emergency Stop Fault	Emergency stop triggered.	Under the premise of confirming safety, the emergency stop function can be released (emergency stop release, automatic reset of

## Fault and Warning

<b>Fault Code</b>	<b>Fault Name</b>	<b>Fault Cause</b>	<b>Solution Measure</b>
			emergency stop fault)
E.227.X	Output Phase Loss Fault	1.Motor U or V or W phase power line disconnected. 2.Hardware damage	1.Check the motor power cable connection. 2.Replace the drive.
E.418.X	Servo Repeated Enable Fault	When the servo is internally enabled, it is externally repeatedly enabled.	Close the internal enable of the servo.
E.419.0	Driver Overload Fault	1.The processing cycle is frequent, the acceleration and deceleration time is set too short, and the load is too heavy. 2.The power model of the driver has been selected too small.	1.Reduce processing speed and increase acceleration and deceleration time. 2.Replace with a higher power driver.
E.421.X	Electronic Gear Ratio Setting Error	The set value of electronic gear ratio exceeds the range.	Set the gear ratio according to the range of the electronic gear ratio.
E.423.X	Excessive Position Deviation Fault	1.The U, V, W outputs of the driver lack phase or disconnection. 2.The encoder is inserted incorrectly. 3.Motor stalling due to mechanical factors. 4.The gain of the servo drive is low. 5.The incremental position command is too large. 6.The deviation threshold 6065h/P0806 is too small.	1.Check the UVW output cable. 2.Check the encoder cable. 3.Investigate mechanical factors. 4.Perform manual or automatic gain adjustment. 5.Increase the acceleration and deceleration ramps of the position command. 6.Increase the deviation threshold 6065h/P0806.
E.424.X	Position Command Overspeed Fault	1.The position command increment received by the servo is too large. 2.The motor speed limit is set incorrectly.	1.Decrease the target position command increment. 2.Set the planned speed of the upper computer to be less than the maximum speed of the motor.
E.917.0	Encoder Battery Fault	1.Absolute encoder is not connected to the battery. 2.Encoder battery voltage is too low.	1.Reconnect the battery or replace it with a new one. 2.Set P2005=1 to clear the fault.
E.918.0	Encoder Multi-turn Counting Error	Encoder internal fault.	Set P2005=2 to clear the fault and power on again. If the fault cannot be eliminated, the motor needs to be replaced.
E.919.X	Encoder multi turn counter overflow fault	The multi circle data is 32767 or 32768.	Set P2005=2 to clear the encoder's multi turn data and power on again.
E.B13.0	Motor Vibration Fault	Motor vibration occurs	1.Adjust the gain parameters. 2.Enable vibration suppression.
E.D26.X	EtherCAT Communication Abnormality	1.When the servo is enabled, the EtherCAT network switches out of the OP state. 2.The synchronization signal SYNC is abnormal.	Check the upper computer network status switching program. Contact manufacturer technical support.
E.D29.0	EtherCAT XML File Not Burned	1.The XML file has not been burned. 2.The internal XML file of the drive is damaged.	Re burn the XML file.
E.D31.0	EtherCAT Sync Period Setting Error	Synchronization period setting error.	The synchronization period needs to be set as an integer multiple of the position loop period (250us).

## Fault and Warning

<b>Fault Code</b>	<b>Fault Name</b>	<b>Fault Cause</b>	<b>Solution Measure</b>
E.D32.0	EtherCAT Sync Signal Deviation Too Large	Sync period error value exceeds the threshold	Increase the synchronization deviation threshold (P0A32).
A.220.0	Positive Travel Exceeding Warning	Positive limit input active	Under confirmed safety, give the motor a negative command to invalidate the forward limit.
A.221.0	Negative Travel Exceeding Warning	Negative limit input active	Under confirmed safety, give the motor a forward rotation command to invalidate the negative limit.
A.222.0	Input Phase Loss Warning	Missing phase in three-phase power input.	1. Check the three-phase power supply connection. 2. For three-phase rated drives that allow single-phase operation (below 1 kW), disable alarms (set P0800=2).
A.224.0	Regenerative Resistor Overload Warning	1. Regeneration resistor is not connected or connected incorrectly. 2. The power of the connected regenerative resistor is too low. 3. Incorrect parameter settings for regenerative resistors: type, resistance, power, etc.	1. Check the wiring of the regeneration resistor. 2. Replace with a higher power regeneration resistor. 3. Set the regeneration resistor parameters correctly.
A.225.X	Regenerative Resistor Not Connected Warning	No regeneration resistor connected.	Refer to the user manual to check the connection of the regeneration resistor.
A.226.0	Regenerative Resistor Not Connected Warning	The value of the external regeneration resistor is less than the minimum allowable value specified in the specifications.	Correctly set the parameters related to the external regeneration resistor.
A.425.0	Origin Return Timeout Warning	1. The itinerary is too long, and the time limit for finding the origin is too short. 2. The speed of searching for the origin switch signal is too slow. 3. Switch abnormality: Positive limit or negative limit or origin switch are simultaneously activated or the switch signal cannot be detected.	1. Increase the origin search time P1349. 2. Increase the homing high speed 6099-01h. 3. Check the switch signal.
A.426.0	Require Reboot Warning	Modified the parameters that need to be re-powered on to take effect.	Power on again or reset the software.
A.921.0	Encoder Battery Low Voltage Warning	The voltage of the absolute value encoder battery is below 3.0V	Check the power supply cable of the encoder or replace it with a new battery.
A.D35.0	Zero Return Method Setting Error Warning	The reset method is set incorrectly.	Correctly set 6098h (does not support zeroing methods such as 15/16/31/32).

**Note:**

1. The 'X' in the fault code represents a sub fault code;

## 5 Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
<b>00 Motor Parameters</b>						
P0003	Motor SN	-	0~65535	UINT16	0	At stop
P0010	Rated voltage	V	0-220V	UINT16	0	At stop
P0011	Rated current	0.01A	0~65535	UINT16	470	At stop
P0012	Rated power	0.01kW	0~65535	UINT16	75	At stop
P0013	Rated torque	0.01Nm	0~4294967295	UINT32	239	At stop
P0017	Rated speed	rpm	0~65535	UINT16	3000	At stop
<b>01 Encoder Parameters</b>						
P0100	Bus encoder type	-	0~65535	UINT16	11233	At stop
P0103	Encoder version	-	0~65535	UINT16	0	Unchangeable
P0105	Customized No.	-	0~4294967295	UINT32	1048576	At stop
<b>02 Servo Drive Parameters</b>						
P0200	MCU software version	-	0~65535	UINT16	0	Unchangeable
P0201	FPGA software version	-	0~65535	UINT16	0	Unchangeable
P0202	MCU Customized No.	-	0~4294967295	UINT32	0	Unchangeable
P0204	FPGA Customized No.	-	0~4294967295	UINT32	0	Unchangeable
P0212	Voltage class	-	0~65535	UINT16	220	Unchangeable
P0213	Rated power	0.01kW	1~65535	UINT16	75	Unchangeable
P0215	Rated current	0.01A	1~65535	UINT16	550	Unchangeable
P0234	Regenerative resistor type	-	0- Built-in	UINT16	0	At stop
			1- External, natural ventilated			
			2- External, forced air cooling			
			3- Not needed			
P0235	Resistor heat dissipation coefficient	-	10~100	UINT16	30	At stop
P0236	Power of built-in regenerative resistor	W	1~65535	UINT16	40	Unchangeable
P0237	Resistance of builtin regenerative resistor	Ω	1~1000	UINT16	50	Unchangeable
P0238	Min.Resistance of external regenerative resistor	Ω	1~1000	UINT16	40	Unchangeable
P0239	Power capacity of external regenerative resistor	W	1~65535	UINT16	40	At stop
P0240	Resistance of external regenerative resistor	Ω	1~1000	UINT16	50	At stop
<b>03 IO Parameters</b>						
P0300	DI1 function	-	0- null	UINT16	9	At stop
			1-SON			
			2- Emergency stop			

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
			3- Position reference inhibited			
			4- ClrPosErr			
			5- ALM-RST			
			6- ZCLAMP			
			7- JOGCMD+			
			8- JOGCMD-			
			9- P-OT			
			10- N-OT			
			11- HomeSwitch			
			12- HomingStart			
			13- speed limit source			
			14- Positive external torque limit			
			15- Negative external torque limit			
			16- Multi-position reference enable			
			19- Torque reference direction			
			20- Speed reference direction			
			21- Position reference direction			
			22- Gain switchover switch			
			23- Switchover between main and auxiliary commands			
			24- Mode switchover 1			
			25- Mode switchover 2			
			26- Electronic gear ratio selection			
			27- Multi-reference switchove 1			
			28- Multi-reference switchove 2			
			29- Multi-reference switchove 3			
			30- Multi-reference switchove 4			
			31- through DI in Home switch			
P0301	DI1 logic selection	-	0- Active low 1- Active high	UINT16	0	At stop
P0302	DI2 function selection	-	See P0300	UINT16	10	At stop
P0303	DI2 logic selection	-	0- Active low 1- Active high	UINT16	0	At stop
P0304	DI3 function selection	-	See P0300	UINT16	11	At stop
P0305	DI3 logic selection	-	0- Active low 1- Active high	UINT16	0	At stop
P0306	DI4 function selection	-	See P0300	UINT16	1	At stop
P0307	DI4 logic selection	-	0- Active low 1- Active high	UINT16	0	At stop
P0308	DI5 function selection	-	See P0300	UINT16	5	At stop
P0309	DI5 logic selection	-	0- Active low 1- Active high	UINT16	0	At stop

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P0310	DI6 function selection	-	See P0300	UINT16	4	At stop
P0311	DI6 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0312	DI7 function selection	-	See P0300	UINT16	6	At stop
P0313	DI7 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0314	DI8 function selection	-	See P0300	UINT16	0	At stop
P0315	DI8 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0318	DI function allocation 1 (activated upon power-on)	-	0- null	UINT16	0	At stop
			1-SON			
			2- Emergency stop			
			3- Position reference inhibited			
			4- ClrPosErr			
			5- ALM-RST			
			6- ZCLAMP			
			7- JOGCMD+			
			8- JOGCMD-			
			9- P-OT			
			10- N-OT			
			11- HomeSwitch			
			12- HomingStart			
			13- speed limit source			
			14- Positive external torque limit			
			15- Negative external torque limit			
16- Multi-position reference enable						
P0319	DI function allocation 2 (activated upon power-on)	-	0- null	UINT16	0	At stop
			19- Torque reference direction			
			20- Speed reference direction			
			21- Position reference direction			
			22- Gain switchover switch			
			23- Switchover between main and auxiliary commands			
			24- Mode switchover 1			
			25- Mode switchover 2			
			26- Electronic gear ratio selection			
			27- Multi-reference switchove 1			
			28- Multi-reference switchove 2			
			29- Multi-reference switchove 3			
			30- Multi-reference switchove 4			
			31- through DI in Home switch			
P0320	DO1function selection	-	0-null	UINT16	17	At stop
			1-rdy			
			2-Run			

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
			3-Warn			
			4-Alm			
			5-TGon			
			6-Zero			
			7-VCmp			
			8-VArr			
			9-TArr			
			10-(Near			
			11-Coin			
			12-Clt			
			13-VIt			
			14-HomeOK			
			15-eHomeOK			
			17-BK			
			18-DB			
19-AngRdy						
P0321	DO1 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0322	DO2 function selection	-	See P0320	UINT16	2	At stop
P0323	DO2 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0324	DO3 function selection	-	See P0320	UINT16	4	At stop
P0325	DO3 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0326	DO4 function selection	-	See P0320	UINT16	11	At stop
P0327	DO4 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0328	DO5 function selection	-	See P0320	UINT16	14	At stop
P0329	DO5 logic selection	-	0- Active low	UINT16	0	At stop
			1- Active high			
P0330	Forced DI/DO selection	-	0- No operation	UINT16	0	Immediate
			1- Forced DI enabled, forced DO disabled			
			2- Forced DO enabled, forced DI disabled			
			3- Forced DI and DO enabled			
P0331	Forced DI setting	-	0~511	UINT16	511	Immediate
P0332	Forced DO setting	-	0~31	UINT16	0	Immediate
P0334	Communication Forced DO selection	-	0~7	UINT16	0	At stop
P0344	AI1 input filter time	0.01ms	0~65535	UINT16	200	Immediate
P0345	AI1 input filter enable	-	0~1	UINT16	1	Immediate
P0348	AI2 input filter time	0.01ms	0~65535	UINT16	200	Immediate
P0349	AI1 input filter enable	-	0~1	UINT16	1	Immediate
P0362	Speed corresponding to AI 10V	rpm	0~6000	UINT16	3000	At stop

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P0363	torque corresponding to AI 10V	倍	0~800	UINT16	100	At stop
<b>04 Motion Control Parameters</b>						
P0400	Control Mode	-	0- Speed Control Mode	UINT16	1	At stop
			1- Position control mode			
			2- Torque Control Mode			
			3- Torque Control Mode -> Speed Control Mode			
			4- Speed Control Mode -> Position control mode			
			5- Torque Control Mode -> Position control mode			
			6- Torque Control Mode -> Speed Control Mode -> Position control mode			
P0401	Forward direction	-	0- Counterclockwise (CCW) as forward direction	UINT16	0	At stop
			1- Clockwise (CW) as forward direction			
P0402	Absolute position detection system	-	0- Incremental position mode	UINT16	0	At stop
			1- Absolute position linear mode			
			2- Absolute position rotation mode			
P0410	Stop mode at No.1 fault	-	0- Coast to stop, keeping deenergized state	UINT16	2	At stop
			1- DB stop, keeping de-energized state			
			2- DB stop, keeping DB state			
P0411	Stop mode at No.2 fault	-	0- Coast to stop, keeping deenergized state	UINT16	2	At stop
			1- Stop at zero speed, keeping deenergized state			
			2- Stop at zero speed, keeping dynamic braking state			
			3- DB stops, keeping operation state			
			4- DB stop, keeping DB state			
P0412	Stop mode at S-OFF	-	0- Coast to stop	UINT16	2	At stop
			1- DB stops			
			2- Stop at zero speed			
P0413	Stop state at S-OFF	-	0- keeping operation state	UINT16	1	At stop
			1- keeping DB state			
P0414	Stop mode upon main circuit power-off	-	0-P0412	UINT16	0	At stop
			1- Forced zero speed			
P0415	Stop mode at overtravel	-	0- Coast to stop, keeping deenergized state	UINT16	1	At stop
			1- Stop at zero speed, keeping position lock state			
			2- Stop at zero speed, keeping deenergized state			
P0423	Torque at T-OFF	0.1%	0~3000	UINT16	1000	At stop
<b>05 Function Parameters</b>						
P0500	Manufacturer password	-	0~65535	UINT16	0	Immediate
P0501	Parameter	-	0- No operation	UINT16	0	At stop

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
			1- Restore default settings			
P0510	Communication memory	-	0- Disabled 1- Enabled	UINT16	1	Immediate
P0511	Power-off memory	-	0- Disabled 1- Enabled	UINT16	0	Immediate
P0512	BK switch	-	0- Disabled 1- Enabled	UINT16	1	At stop
P0513	S-ON brake open delay	ms	0~500	UINT16	250	Immediate
P0514	S-ON brake zero speed time	ms	1~1000	UINT16	150	Immediate
P0515	S-ON brake speed	rpm	0~3000	UINT16	30	Immediate
P0516	S-ON brake time	ms	1~1000	UINT16	500	Immediate
P0519	power-on test	-	0- Disabled 1- Enabled	UINT16 UINT16	1	At stop
P0523	Output pulse phase	-	0-Phase A leads phase B 1-Phase A lags behind phase B	UINT16	0	At stop
P0543	Software limit selection	-	0-No operation 1-Activated immediately 2-Activated after homing is done	UINT16	0	At stop
<b>06 Gain Parameters</b>						
P0600	Speed loop gain	0.1Hz	1~20000	UINT16	250	Immediate
P0601	Speed loop integral time constant	0.01ms	15~51200	UINT16	3183	Immediate
P0602	Position loop gain	0.1Hz	0~20000	UINT16	400	Immediate
P0608	Speed feedforward gain	0.1%	0~1000	UINT16	0	Immediate
P0609	Torque feedforward gain	0.1%	0~2000	UINT16	0	Immediate
P0610	Load moment of inertia ratio	-	0~12000	UINT16	200	Immediate
<b>07 Filter time Parameters</b>						
P0700	Position FIR filter	0.1ms	0~65535	UINT16	0	At stop
P0701	Time constant of moving average filter	0.1ms	0~1280	UINT16	0	At stop
P0702	Torque filter 1	0.01ms	0~3000	UINT16	79	Immediate
P0706	Speed feedforward filter	0.01ms	0~6400	UINT16	50	Immediate
P0707	Torque feedforward filter	0.01ms	0~6400	UINT16	50	Immediate
P0710	Frequency of the 1st notch	Hz	50~5000	UINT16	5000	Immediate
P0711	Width level of the 1st notch	-	0~20	UINT16	2	Immediate
P0712	Depth level of the 1st notch	-	0~99	UINT16	0	Immediate
P0713	Frequency of the 2st notch	Hz	50~5000	UINT16	5000	Immediate
P0714	Width level of the 2st notch	-	0~20	UINT16	2	Immediate
P0715	Depth level of the 2st notch	-	0~99	UINT16	0	Immediate
P0716	Frequency of the 3st notch	Hz	50~5000	UINT16	5000	Immediate

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P0717	Width level of the 3st notch	-	0~20	UINT16	2	Immediate
P0718	Depth level of the 3st notch	-	0~99	UINT16	0	Immediate
P0719	Frequency of the 4st notch	Hz	50~5000	UINT16	5000	Immediate
P0720	Width level of the 4st notch	-	0~20	UINT16	2	Immediate
P0721	Depth level of the 4st notch	-	0~99	UINT16	0	Immediate
P0747	Frequency of the A notch	Hz	10~1000	UINT16	1000	At stop
P0774	Low-speed filter	25ns	0~255	UINT16	30	At stop
P0775	High -speed filter	25ns	0~255	UINT16	3	At stop
P0776	speed reach filter	ms	0~5000	UINT16	10	At stop
<b>08 Protection Parameters</b>						
P0800	Power input phase loss protection	-	0- Enable phase loss fault	UINT16	0	Immediate
			1- Enable phase loss fault and warning			
			2- Disabled			
P0801	Encoder multi-turn overflow fault	-	0- Disabled	UINT16	1	At stop
			1- Enabled			
P0803	Runaway speed threshold	rpm	0~10000	UINT16	0	Immediate
P0808	Clear action	-	0- Clear position deviation upon SOFF	UINT16	0	At stop
			1- Clear position deviation upon SOFF and Clear position deviation by ClrPosErr signal input from DI			
P0809	Runaway protection	-	0- Disabled	UINT16	1	Immediate
			1- Enabled			
P0810	Runaway current threshold	0.1%	1000~4000	UINT16	2000	Immediate
P0811	Runaway speed threshold	rpm	1~1000	UINT16	10	Immediate
P0812	Runaway Speed feedback filtering time	0.1ms	1~1000	UINT16	20	Immediate
P0813	Runaway protection detection time	ms	10~1000	UINT16	30	Immediate
P0814	Motor overload protection gain	%	50~300	UINT16	100	At stop
P0816	Motor overload detection	-	0- Disabled	UINT16	1	At stop
			1- Enabled			
P0817	Motor stall detection	-	0- Disabled	UINT16	1	Immediate
			1- Enabled			
P0818	Motor stall overtemperature protection time	ms	10~65535	UINT16	200	Immediate
P0821	Over temperature threshold	°C	0~100	UINT16	0	At stop
<b>09 Display Parameters</b>						
P0900	Position speed reference	rpm	-32767~32767	INT16	0	Unchangeable
P0901	Speed reference	rpm	-32767~32767	INT16	0	Unchangeable
P0902	torque reference	0.1%	-32767~32767	INT16	0	Unchangeable

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P0903	Motor speed feedback	rpm	-32767~32767	INT16	0	Unchangeable
P0904	speed actual value	rpm	-32767~32767	INT16	0	Unchangeable
P0906	speed actual value (0.1rpm)	rpm	-2147483648~2147483647	INT32	0	Unchangeable
P0910	Bus voltage	0.1V	0~65535	UINT16	0	Unchangeable
P0911	Ctr voltage	0.1V	0~65535	UINT16	0	Unchangeable
P0912	RMS value of phase current (U)	0.01A	0~65535	UINT16	0	Unchangeable
P0913	RMS value of line voltage	0.1V	0~65535	UINT16	0	Unchangeable
P0914	Average load rate	0.1%	0~8000	UINT16	0	Unchangeable
P0915	temperature	°C	0~65535	UINT16	0	Unchangeable
P0917	Electrical angle	0.1°	0~65535	UINT16	0	Unchangeable
P0918	Monitored DI status	-	0~65535	UINT16	0	Unchangeable
P0920	Monitored DO status	-	0~65535	UINT16	0	Unchangeable
P0922	value of AI1 voltage	V	-32767~32767	INT16	0	Unchangeable
P0923	value of AI2 voltage	V	-32767~32767	INT16	0	Unchangeable
P0925	Total power-on time	0.1s	0~4294967295	UINT32	0	Unchangeable
P0927	Current power on time	-	0~4294967295	UINT32	0	Unchangeable
P0930	Input position reference counter	Reference unit	-2147483648~2147483647	INT32	0	Unchangeable
P0932	Position reference counter	Reference unit	-2147483648~2147483647	INT32	0	Unchangeable
P0934	Position feedback counter	Reference unit	-2147483648~2147483647	INT32	0	Unchangeable
P0936	Encoder Position feedback counter	Encoder unit	-2147483648~2147483647	INT32	0	Unchangeable
P0938	position deviation counter	Reference unit	-2147483648~2147483647	INT32	0	Unchangeable
P0940	Encoder position deviation counter	Encoder unit	-2147483648~2147483647	INT32	0	Unchangeable
P0942	Number of revolutions recorded in the absolute encoder	Reference unit	0~65535	UINT16	0	Unchangeable
P0943	Single-turn position fed back by the absolute encode	p	0~2147483647	UINT32	0	Unchangeable
P0945	Absolute position fed back by the absolute encoder (low 32 bits)	Encoder unit	-2147483648~2147483647	INT32	0	Unchangeable
P0947	Absolute position fed back	Encoder unit	-2147483648~2147483647	INT32	0	Unchangeable

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
	by the absolute encoder (high 32 bits)					
P0949	Mechanical absolute position (low 32 bits)	Encoder unit	-2147483648~2147483647	INT32	0	Unchangeable
P0951	Mechanical absolute position (high 32 bits)	Encoder unit	-2147483648~2147483647	INT32	0	Unchangeable
P0953	Load position within one turn in absolute position rotation mode (low 32 bits)	Encoder unit	0~4294967295	UINT32	0	Unchangeable
P0955	Load position within one turn in absolute position rotation mode (high 32 bits)	Encoder unit	0~4294967295	UINT32	0	Unchangeable
P0957	Load position within one turn in absolute position rotation mode	Reference unit	0~4294967295	UINT32	0	Unchangeable
<b>0A Communication Parameters</b>						
P0A00	Drive axis address	-	1~247	UINT16	1	Immediate
P0A02	Serial baud rate	-	0-2400bps	UINT16	6	Immediate
			1-4800bps			
			2-9600bps			
			3-19200bps			
			4-38400bps			
			5-57600bps			
6-115200bps	UINT32					
P0A03	Modbus data format	-	0- No parity, 2 stop bits (8-N-2)	UINT16	0	Immediate
			1- Even parity, 1 stop bit (8-E-1)			
			2- Odd parity, 1 stop bit (8-O-1)			
			3- No parity, 1 stop bit (8-N-1)			
<b>13 Position Control Parameters</b>						
P1300	Torque Control Parameters	-	0- Pulse reference	UINT16	0	At stop
			1- Pulse reference			
P1301	Pulses per revolution	1P/REV	0~1048576	UINT32	0	At stop
P1303	Electronic gear ratio 1 (numerator)	-	1~1073741824	UINT32	4	Immediate
P1305	Electronic gear ratio 1 (denominator)	-	1~1073741824	UINT32	1	Immediate
P1307	Condition for positioning completed signal output	-	0- Absolute position deviation lower than the setpoint of P13.08	UINT16	0	Immediate
			1- Absolute position deviation lower than the setpoint of P13.08 and the			

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
			filtered position reference is 0			
			2- Absolute position deviation lower than the setpoint of P13.08 and the unfiltered position reference is 0			
			3- Absolute position deviation kept lower than the setpoint of P13.08 within the time defined by P13.10 and the unfiltered position reference is 0			
P1308	Threshold of positioning completed	Encoder unit	1~65535	UINT16	7	Immediate
P1309	Proximity threshold	Encoder unit	1~65535	UINT16	65535	Immediate
P1310	Hold time of positioning completed	ms	0~30000	UINT16	0	Immediate
P1312	Speed feedforward control	-	0- No speed feedforward	UINT16	1	At stop
			1- Internal speed feedforward			
			2-AI1			
			3-AI2			
P1313	Position pulse reference input terminal	-	0- Low speed	UINT16	0	At stop
			1- High speed			
P1314	Pulse reference form	-	0- Direction + Pulse, positive logic	UINT16	0	At stop
			1- Direction + Pulse, negative logic			
			2- Phase A + phase B quadrature pulse, quadrupled frequency			
			3-CW+CCW			
P1315	Servo pulse output source	-	0- Encoder frequency division output	UINT16	0	At stop
			1- Pulse reference synchronous output			
			2- Frequency division or synchronous output inhibited			
P1316	Number of encoder frequency-division pulses	P/REV	35~1073741824	UINT32	2500	At stop
P1318	Position pulse edge	-	0- Falling edge-triggered	UINT16	0	Immediate
			1- Rising edge-triggered			
P1323	Encoder multi-turn data offset L32	Encoder unit	-2147483648~2147483647	INT32	0	At stop
P1325	Encoder multi-turn absolute position HR32	Encoder unit	-2147483648~2147483647	INT32	0	At stop
P1327	Mechanical gear ratio in absolute position rotation mode (numerator)	-	1~65535	UINT16	1	At stop
P1328	Mechanical gear ratio in absolute	-	1~65535	UINT16	1	At stop

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Param.	Name	Unit	Value	Data Type	Default	Change
	position rotation mode (denominator)					
P1329	Mechanical position L32	Encoder unit	0~4294967295	UINT32	0	At stop
P1331	Mechanical position HR32	Encoder unit	0~4294967295	UINT32	0	At stop
P1344	homing function	-	0- Disabled	UINT16	0	Immediate
			1-DI			
			2- real time			
P1345	Homing mode	-	-2~35	INT16	1	At stop
P1346	Speed of highspeed search for home switch signal	rpm	0~3000	UINT16	100	Immediate
P1347	Speed of lowspeed search for home switch signal	rpm	0~1000	UINT16	10	Immediate
P1348	Speed of lowspeed search for home switch signal	rpm/s	0~65535	UINT16	1000	Immediate
P1349	Home search time limit	s	0~655.35	UINT16	500.00	Immediate
P1351	Mechanical home offset	Reference unit	-1073741824~1073741824	INT32	0	Immediate
P1356	Mechanical torque limit	-	0~3000	UINT16	1000	Immediate
P1359	Electronic gear ratio switchover condition	-	0- position reference is kept 0	UINT16	0	At stop
			1- Switched in real time			
P1360	Positioning window time	ms	0~30000	UINT16	0	Immediate
P1363	Forward position of software limit	Reference unit	-2147483648~2147483647	INT32	2147483647	At stop
P1365	Reverse position of software limit	Reference unit	-2147483648~2147483647	INT32	-2147483648	At stop
<b>14 Speed Control Parameters</b>						
P1400	Speed reference source	-	0- A	UINT16	0	Keyboard At stop
			1- B			
			2- A+B			
			3- Switched between A/B DI			
			4- Communication			
P1401	Source of main speed reference A	-	0- keypad	UINT16	0	At stop
			1- Multi-speed			
			2-AI1			
			3-AI2			
P1402	Source of main speed reference B	-	0- keypad	UINT16	1	At stop
			1- Multi-speed			
			2-AI1			
			3-AI2			
P1403	Maximum speed limit	rpm	0~60000	UINT16	10000	Immediate
P1404	Forward speed threshold	rpm	0~60000	UINT16	10000	Immediate

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P1405	Reverse speed threshold	rpm	0~60000	UINT16	10000	Immediate
P1406	Jog speed setpoint	rpm	0~60000	UINT16	100	Immediate
P1407	Speed reference set through keypad	rpm	-9999~30000	INT16	200	Immediate
P1408	Acceleration ramp time constant of speed reference	ms	0~65535	UINT16	0	Immediate
P1409	Deceleration ramp time constant of speed reference	ms	0~65535	UINT16	0	Immediate
P1410	Zero clamp speed threshold	rpm	0~6000	UINT16	10	Immediate
P1411	Torque feedforward control	-	0- No torque feedforward	UINT16	1	Immediate
			1- Internal torque feedforward			
P1412	Threshold of TGON (motor rotation) signal	rpm	0~1000	UINT16	20	Immediate
P1413	Threshold of VCmp (speed matching) signal	rpm	0~100	UINT16	10	Immediate
P1414	Threshold of speed reach signal	rpm	10~6000	UINT16	1000	Immediate
P1415	Threshold of zero speed output signal	rpm	1~6000	UINT16	10	Immediate
<b>15 Torque Control Parameters</b>						
P1500	Torque reference source	-	0-A	UINT16	0	At stop
			1-B			
			2-A+B			
			3- Switched between A/B DI			
			4- Communication			
P1501	Source of main torque reference A	-	0- Keypad	UINT16	0	At stop
			1-AI1			
			2-AI2			
P1502	Source of main torque reference B	-	0- Keypad	UINT16	0	At stop
			1-AI1			
			2-AI2			
P1503	Torque limit source	-	0- internal torque limit 1	UINT16	0	Immediate
			1- external torque limit AI			
			2-Switched between external torque limit 1 and 2 selected by DI			
			3-Switched between external torque limit 1 and AI selected by DI			
			4- internal torque limit 1 and external torque limit AI			
P1504	Torque limit AI	-	1-AI1	UINT16	0	Immediate
			2-AI2			
P1505	Positive internal torque limit 1	%	0~3000	UINT16	3000	Immediate
P1506	Negative internal torque limit 1	%	0~3000	UINT16	3000	Immediate

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P1507	Positive internal torque limit 2	%	0~3000	UINT16	3000	Immediate
P1508	Negative internal torque limit 2	%	0~3000	UINT16	3000	Immediate
P1509	Speed limit source	-	0- Internal speed limit (in torque control)	UINT16	1	Immediate
			1- DI			
			2- AI			
P1510	Speed limit AI	-	1-AI1	UINT16	1	Immediate
			2-AI2			
P1511	Forward speed limit/1st speed limit in torque control	rpm	0~6000	UINT16	3000	Immediate
P1512	Reverse speed limit/2nd speed limit in torque control	rpm	0~6000	UINT16	3000	Immediate
P1513	Keypad reference in torque control	%	-3000~3000	INT16	0	Immediate
P1516	Base value for torque reach	-	0~3000	UINT16	0	Immediate
P1517	Torque reach valid value	-	100~3000	UINT16	200	Immediate
P1518	Torque reach invalid value	-	0~5393	UINT16	100	Immediate
P1523	Field weakening selection	-	0~1	UINT16	0	Immediate
P1524	Speed limit window in the torque control mode	-	5~300	UINT16	10	Immediate
<b>16 Multi- Speed Function Parameters</b>						
P1600	Multi-speed operation mode	-	0- Single run	UINT16	1	At stop
			1- Cyclic operation			
			2- DI-based operation			
P1601	Number of speed references in multispeed mode	-	1~16	UINT16	16	At stop
P1602	Operating time unit	-	0-s	UINT16	0	At stop
			1-min			
P1603	Acceleration time 1	ms	0~65535	UINT16	10	At stop
P1604	Deceleration Time1	ms	0~65535	UINT16	10	At stop
P1605	Acceleration time 2	ms	0~65535	UINT16	50	At stop
P1606	Deceleration Time2	ms	0~65535	UINT16	50	At stop
P1607	Acceleration time 3	ms	0~65535	UINT16	100	At stop
P1608	Deceleration Time3	ms	0~65535	UINT16	100	At stop
P1609	Acceleration time 4	ms	0~65535	UINT16	150	At stop
P1610	Deceleration Time4	ms	0~65535	UINT16	150	At stop
P1620	Speed reference 1	rpm	-6000~6000	INT16	0	At stop

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P1621	Operating time of speed 1	P1602	0~65535	UINT16	50	At stop
P1622	Acceleration/Deceleration time of speed 1	-	0- Zero acceleration/deceleration time	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
P1623	Reference t 2	rpm	-6000~6000	INT16	100	At stop
P1624	Operating time of speed 2	P1602	0~65535	UINT16	50	At stop
P1625	Acceleration/Deceleration time of speed 2	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
P1626	Reference 3	rpm	-6000~6000	INT16	300	At stop
P1627	Operating time of speed 3	P1602	0~65535	UINT16	50	At stop
P1628	Acceleration/Deceleration time of speed 3	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
P1629	Reference 4	rpm	-6000~6000	INT16	500	At stop
P1630	Operating time of speed 4	P1602	0~65535	UINT16	50	At stop
P1631	Acceleration/Deceleration time of speed t 4	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
P1632	Reference 5	rpm	-6000~6000	INT16	700	At stop
P1633	Operating time of speed 5	P1602	0~65535	UINT16	50	At stop
P1634	Acceleration/Deceleration time of speed t 5	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
P1635	Reference 6	rpm	-6000~6000	INT16	900	At stop
P1636	Operating time of speed 6	P1602	0~65535	UINT16	50	At stop
P1637	Acceleration/Deceleration time of speed t 6	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
P1638	Reference 7	rpm	-6000~6000	INT16	600	At stop
P1639	Operating time of speed 7	P1602	0~65535	UINT16	50	At stop
P1640	Acceleration/Deceleration time of speed t 7	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
P1641	Reference 8	rpm	-6000~6000	INT16	300	At stop

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P1642	Operating time of speed 8	P1602	0~65535	UINT16	50	At stop
P1643	Acceleration/Deceleration time of speed t 8	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1644	Reference 9	rpm	-6000~6000	INT16	100	At stop
P1645	Operating time of speed 9	P1602	0~65535	UINT16	50	At stop
P1646	Acceleration/Deceleration time of speed t 9	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1647	Reference 10	rpm	-6000~6000	INT16	-100	At stop
P1648	Operating time of speed 10	P1602	0~65535	UINT16	50	At stop
P1649	Acceleration/Deceleration time of speed t 10	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1650	Reference 11	rpm	-6000~6000	INT16	-300	At stop
P1651	Operating time of speed 11	P1602	0~65535	UINT16	50	At stop
P1652	Acceleration/Deceleration time of speed t 11	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1653	Reference 12	rpm	-6000~6000	INT16	-500	At stop
P1654	Operating time of speed 12	P1602	0~65535	UINT16	50	At stop
P1655	Acceleration/Deceleration time of speed t 12	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1656	Reference 13	rpm	-6000~6000	INT16	-700	At stop
P1657	Operating time of speed 13	P1602	0~65535	UINT16	50	At stop
P1658	Acceleration/Deceleration time of speed t 13	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1659	Reference 14	rpm	-6000~6000	INT16	-900	At stop
P1660	Operating time of speed 14	P1602	0~65535	UINT16	50	At stop
P1661	Acceleration/Deceleration time of speed t 14	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1662	Reference 15	rpm	-6000~6000	INT16	-600	At stop
P1663	Operating time of speed 15	P1602	0~65535	UINT16	50	At stop
P1664		-	0-0S	UINT16	0	At stop

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
	Acceleration/ Deceleration time of speed t 15		1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
P1665	Reference 16	rpm	-6000~6000	INT16	-300	At stop
P1666	Operating time of speed 16	P1602	0~65535	UINT16	50	At stop
P1667	Acceleration/ Deceleration time of speed t 16	-	0-0S	UINT16	0	At stop
			1- Acc/Dec time 1			
			2- Acc/Dec time 2			
			3- Acc/Dec time 3			
			4- Acc/Dec time 4			
<b>17 Multi- Position Operation References</b>						
P1700	Multi-position operation mode	-	0- Individual operation	UINT16	1	At stop
			1- Cyclic operation			
			2- DI-based operation			
			3- Sequential operation			
P1701	Number of displacement references in multiposition mode	-	1~16	UINT16	1	At stop
P1702	Starting displacement No. after pause	-	0- Continue to execute the unexecuted displacements	UINT16	0	At stop
			1- Start from displacement 1			
P1703	Interval time unit	-	0-ms	UINT16	0	At stop
			1-s			
P1704	Displacement reference type	-	0- Relative displacement reference	UINT16	0	At stop
			1- Absolute displacement reference			
P1705	Starting displacement No. in sequential operation	-	0~16	UINT16	0	At stop
P1712	Displacement 1	Refer ence unit	-1073741824~1073741824	INT32	10000	Immediate
P1714	Speed of displacement 1	rpm	1~6000	UINT16	200	Immediate
P1715	Acc/Dec time of displacement 1	ms	0~65535	UINT16	10	Immediate
P1716	Interval time after displacement 1	P1703	0~10000	UINT16	10	Immediate
P1717	Displacement 2	Refer ence unit	-1073741824~1073741824	INT32	10000	Immediate
P1719	Speed of displacement 2	rpm	1~6000	UINT16	200	Immediate
P1720	Acc/Dec time of displacement 2	ms	0~65535	UINT16	10	Immediate
P1721	Interval time after displacement 2	P1703	0~10000	UINT16	10	Immediate
P1722	Displacement 3	Refer ence unit	-1073741824~1073741824	INT32	10000	Immediate
P1724	Speed of displacement 3	rpm	1~6000	UINT16	200	Immediate

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P1725	Acc/Dec time of displacement 3	ms	0~65535	UINT16	10	Immediate
P1726	Interval time after displacement 3	P1703	0~10000	UINT16	10	Immediate
P1727	Displacement 4	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1729	Speed of displacement 4	rpm	1~6000	UINT16	200	Immediate
P1730	Acc/Dec time of displacement 4	ms	0~65535	UINT16	10	Immediate
P1731	Interval time after displacement 4	P1703	0~10000	UINT16	10	Immediate
P1732	Displacement 5	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1734	Speed of displacement 5	rpm	1~6000	UINT16	200	Immediate
P1735	Acc/Dec time of displacement 5	ms	0~65535	UINT16	10	Immediate
P1736	Interval time after displacement 5	P1703	0~10000	UINT16	10	Immediate
P1737	Displacement 6	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1739	Speed of displacement 6	rpm	1~6000	UINT16	200	Immediate
P1740	Acc/Dec time of displacement 6	ms	0~65535	UINT16	10	Immediate
P1741	Interval time after displacement 6	P1703	0~10000	UINT16	10	Immediate
P1742	Displacement 7	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1744	Speed of displacement 7	rpm	1~6000	UINT16	200	Immediate
P1745	Acc/Dec time of displacement 7	ms	0~65535	UINT16	10	Immediate
P1746	Interval time after displacement 7	P1703	0~10000	UINT16	10	Immediate
P1747	Displacement 8	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1749	Speed of displacement 8	rpm	1~6000	UINT16	200	Immediate
P1750	Acc/Dec time of displacement 8	ms	0~65535	UINT16	10	Immediate
P1751	Interval time after displacement 8	P1703	0~10000	UINT16	10	Immediate
P1752	Displacement 9	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1754	Speed of displacement 9	rpm	1~6000	UINT16	200	Immediate
P1755	Acc/Dec time of displacement 9	ms	0~65535	UINT16	10	Immediate

Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P1756	Interval time after displacement 1	P1703	0~10000	UINT16	10	Immediate
P1757	Displacement 10	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1759	Speed of displacement 10	rpm	1~6000	UINT16	200	Immediate
P1760	Acc/Dec time of displacement 10	ms	0~65535	UINT16	10	Immediate
P1761	Interval time after displacement 10	P1703	0~10000	UINT16	10	Immediate
P1762	Displacement 11	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1764	Speed of displacement 11	rpm	1~6000	UINT16	200	Immediate
P1765	Acc/Dec time of displacement 11	ms	0~65535	UINT16	10	Immediate
P1766	Interval time after displacement 11	P1703	0~10000	UINT16	10	Immediate
P1767	Displacement 12	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1769	Speed of displacement 12	rpm	1~6000	UINT16	200	Immediate
P1770	Acc/Dec time of displacement 12	ms	0~65535	UINT16	10	Immediate
P1771	Interval time after displacement 12	P1703	0~10000	UINT16	10	Immediate
P1772	Displacement 13	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1774	Speed of displacement 13	rpm	1~6000	UINT16	200	Immediate
P1775	Acc/Dec time of displacement 13	ms	0~65535	UINT16	10	Immediate
P1776	Interval time after displacement 13	P1703	0~10000	UINT16	10	Immediate
P1777	Displacement 14	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1779	Speed of displacement 14	rpm	1~6000	UINT16	200	Immediate
P1780	Acc/Dec time of displacement 14	ms	0~65535	UINT16	10	Immediate
P1781	Interval time after displacement 14	P1703	0~10000	UINT16	10	Immediate
P1782	Displacement 15	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1784	Speed of displacement 15	rpm	1~6000	UINT16	200	Immediate
P1785	Acc/Dec time of displacement 15	ms	0~65535	UINT16	10	Immediate
P1786	Interval time after displacement 15	P1703	0~10000	UINT16	10	Immediate

## Parameter List

Param.	Name	Unit	Value	Data Type	Default	Change
P1787	Displacement 16	Reference unit	-1073741824~1073741824	INT32	10000	Immediate
P1789	Speed of displacement 16	rpm	1~6000	UINT16	200	Immediate
P1790	Acc/Dec time of displacement 16	ms	0~65535	UINT16	10	Immediate
P1791	Interval time after displacement 16	P1703	0~10000	UINT16	10	Immediate
P1792	Current number of segments	-	0~16	UINT16	0	At stop