

*Leading the Way with Intelligent Motion Control*

# AC SERVO PRODUCT CATALOGUE

R5 High performance series

RS General series

RSC Economic series

RS Multi-axis integrated series



Shenzhen Rtelligent Technology Co.,Ltd

+86(0)755- 27440012 / +86(0)755-27440023

info@rtelligent.cn / info@szruitech.com

website : www.rtelligentglobal.com

5F,Building A,Rtelligent Technology Park,Xingyu Road,Xixiang,Bao'an District,Shenzhen,China

Shenzhen Rtelligent Technology Co.,Ltd



Leading the Way with Intelligent Motion Control

# COMPANY PROFILE



Shenzhen Rtelligent Technology Co., Ltd. located in Shenzhen, China, is a national high-tech enterprise dedicated in R & D, marketing and sales of high performance motion control products, the company gathered a large number of graduates from well-known engineering high-tech motion control senior practitioners, and actively cooperate with major scientific research institutes and universities, In the servo, stepper, motion control card, PLC and other fields continue to deepen, committed to creating an excellent national brand, we always continues to be deeply committed to the field of automation, seek to better understand our customer's needs and develop intelligent products and solutions to create values for customers around the world,

**Management Idea**  
Strive for innovation and excellence

**Talent Concept**  
Great virtue promotes growth, put people first

**Quality Policy**  
Customer first, quality first, full participation, the pursuit of excellence

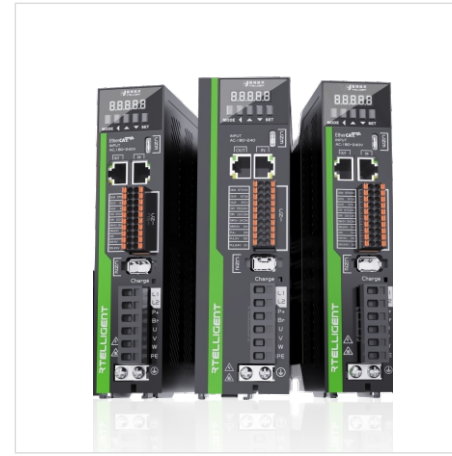


Founded in **2015**      **2** Major production bases      **30+** Offices in China

**60+** Core Technology Patents      **70+** Sales Countries And Regions      **100+** Distributors      **10000+** Sales Customers      **5million+** Stepper Servo Sales Volume



P05 **Introduction of the 5th generation AC Servo System**



P09 **AC Servo Drive**

P9 R5 Series Servo Drive Naming Rule  
P10 RS Series Servo Motor Naming Rule

P11 **R5 Series Servo Drive**

P12 R5 Pulse type Servo Drive  
P14 R5 EtherCAT Servo Drive



## CONTENTS

**AC Servo Motor** P51

Naming Rule P51  
RSNA Servo Motor P53  
RSHA Servo Motor P55  
RSDA Servo Motor P57  
RSM Servo Motor P59



**Matching Cable** P63

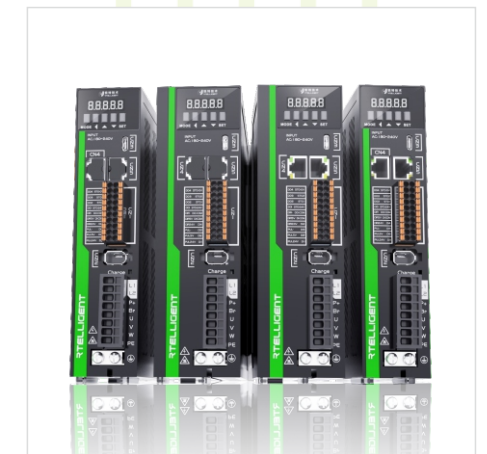
**Quick Selection Table** P65

**RS Series Servo Drive** P25  
RS Pulse Type Servo Drive P25



**RSE Series Servo Drive** P26  
RS EtherCAT Servo Drive P26

P35 **RSC Series Servo Drive**  
P35 RSC Pulse Type Servo Drive

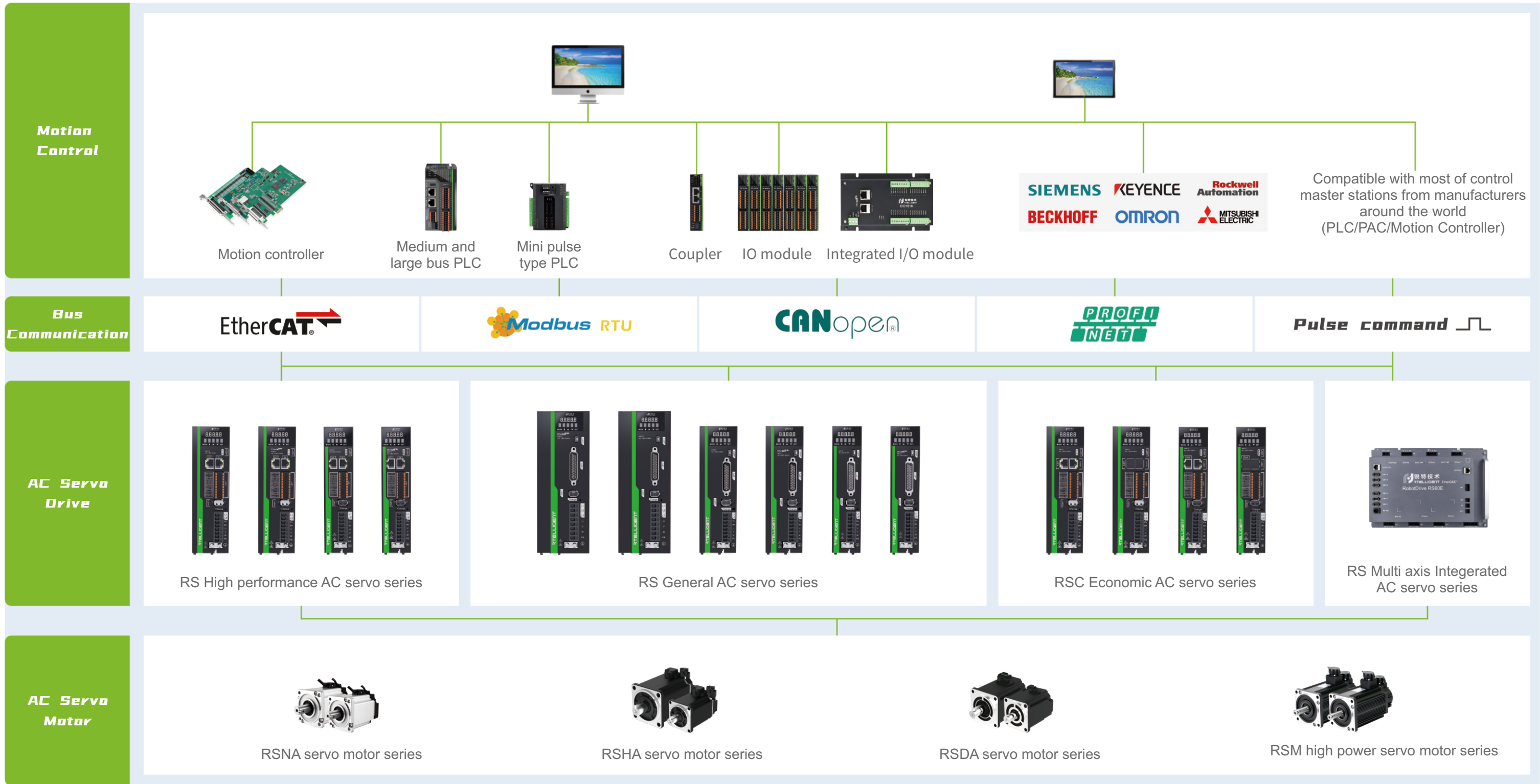


P43 **RS60 Series 6 Axis Integrated Servo Drive**





# AC Servo Products Portfolio





# The 5th Generation of High Performance AC Servo System

## R5 Series Servo Drive

### Eight highlights

STO

Easy configure

High rigidity

Highly reliable

High precision

Compact size

High performance

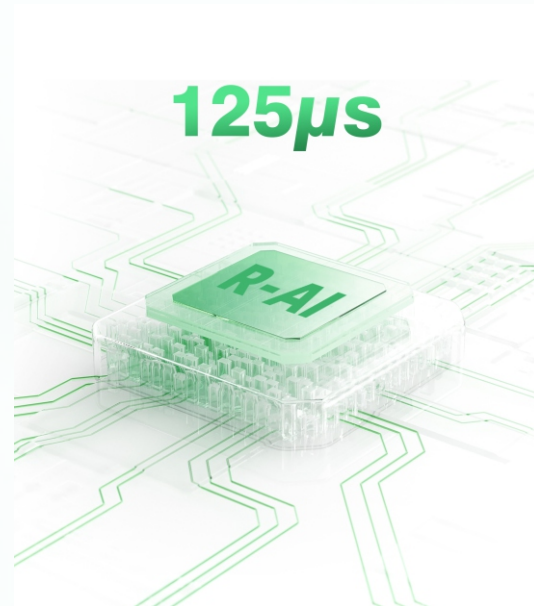
Customizable





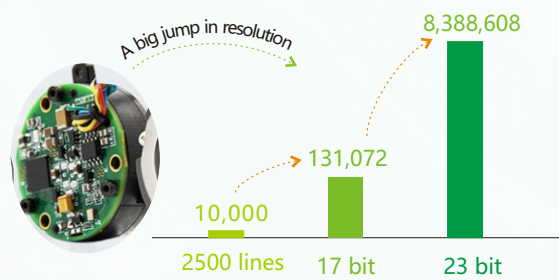
## High Performance

The new generation of servos incorporates a powerful **R-AI** algorithm, with performance **1.5** times higher than the previous generation; Adopting a new high-performance main control chip to improve communication interaction capabilities, the EtherCAT high-speed communication cycle can reach **125us**; The RS series has more advanced high and low frequency vibration suppression capabilities, supports two-way probe auxiliary functions, latch position function, and has better performance in trajectory control such as interpolation and cam.



## High Precision

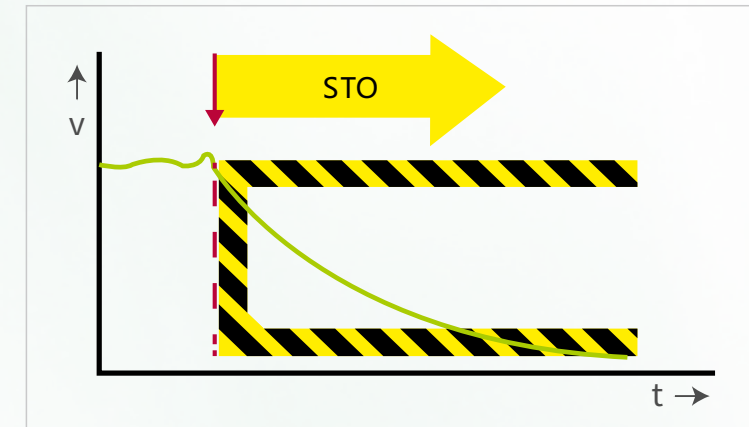
The new generation of servo motor encoders adopt high-speed communication protocols, with optional 17-bit and 23-bit absolute encoders and higher resolution; **high-resolution** encoders bring higher position feedback accuracy.



Multi-turn absolute encoder with external battery power supply can still remember the position when the drive is powered off

## STO

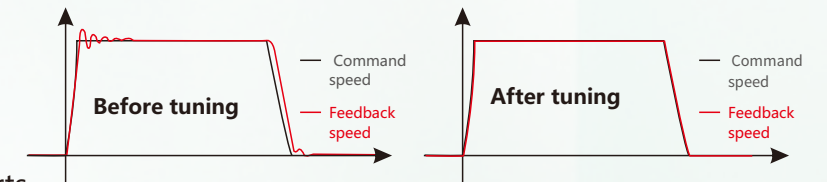
With safe torque off function: no output contactor is required to prevent electric shock or mechanical damage in the event of a fault, **thereby protecting personal and equipment safety.**



## Easy Configure

### Auto-tuning

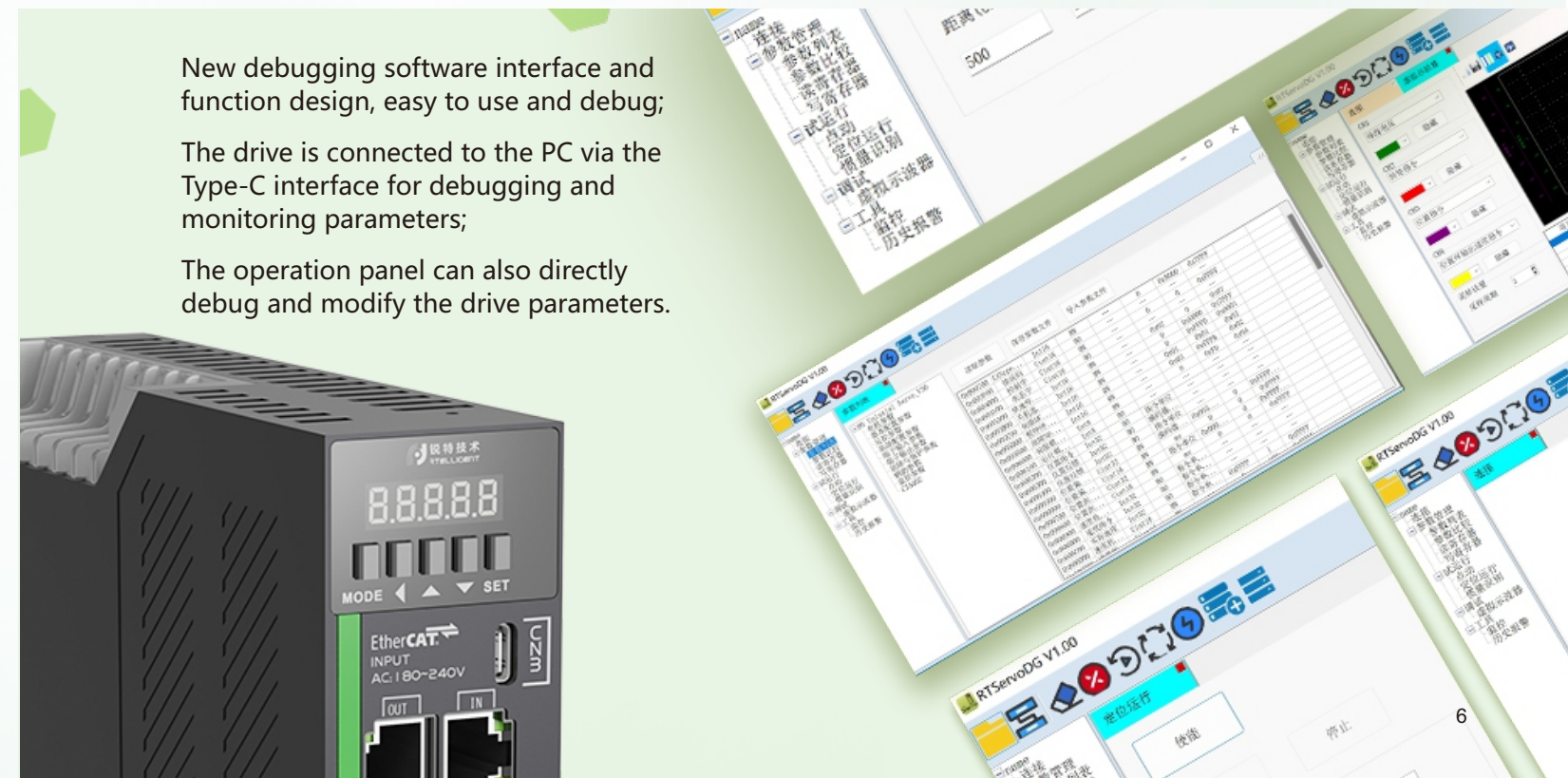
Based on the powerful **R-AI** algorithm, inertia self-identification can be realized which greatly shortens the system positioning time and supports the selection of rigidity levels.



New debugging software interface and function design, easy to use and debug;

The drive is connected to the PC via the Type-C interface for debugging and monitoring parameters;

The operation panel can also directly debug and modify the drive parameters.





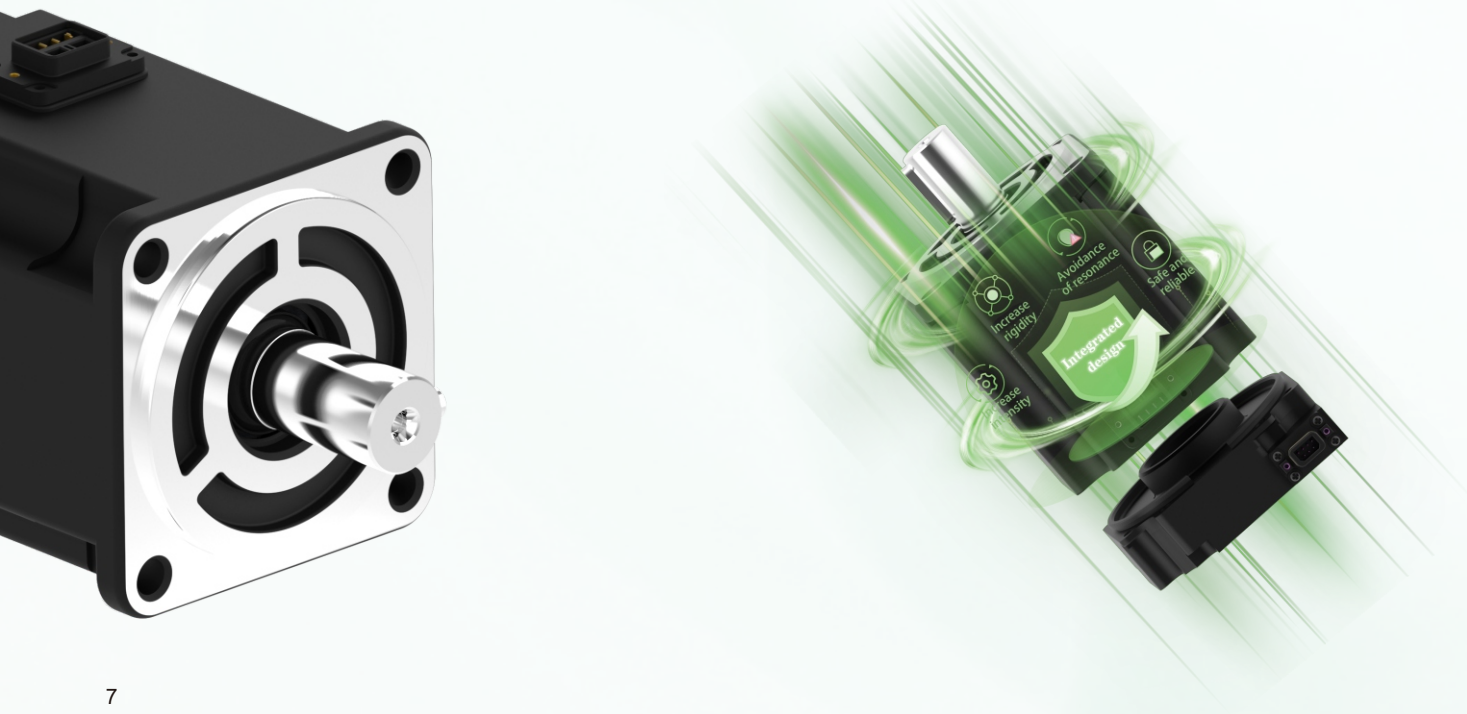
## Highly Reliable

Lock type connector, greatly improves reliability against water vapor, oil pollution, vibration, etc., protection level up to **IP67**



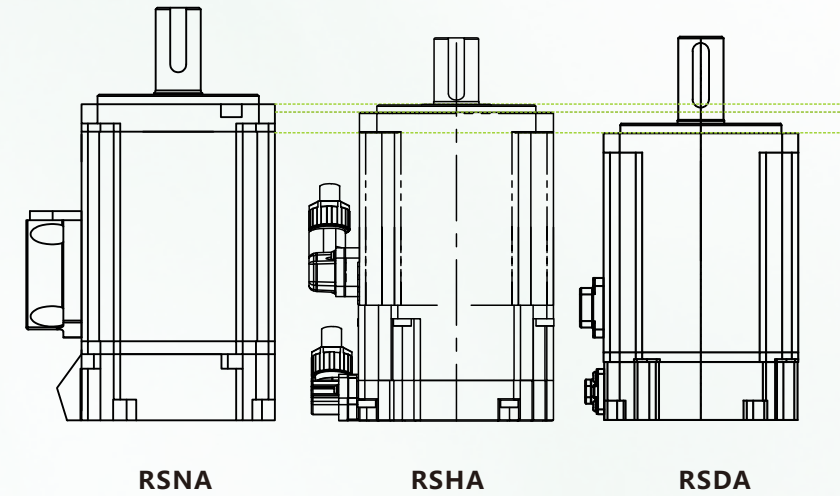
## High Rigidity

The **integrated structure design of front flange** effectively avoids resonance, improves structural strength, rigidity and energy efficiency, and ensures motor consistency by optimizing the internal structure.



## Compact Size

With a shorter body design and smaller installation size, the body length is shortened by about **10%** compared to the previous generation of products.



Take 400w as an example

Specifications	RSNA	RSHA	RSDA
Flange	60	60	60
Shaft diameter	14	14	14
Length	98	96	89
	Brake127	Brake123	Brake119

Unit(mm)

## Customizable

With independent development, design, and manufacturing capabilities, we can **customize** different driver functions and motor requirements according to customer needs.





# AC Servo Drive

## R5 Series Servo Drive Naming Rule

R 5 L 028 E  
 ① ② ③ ④ ⑤

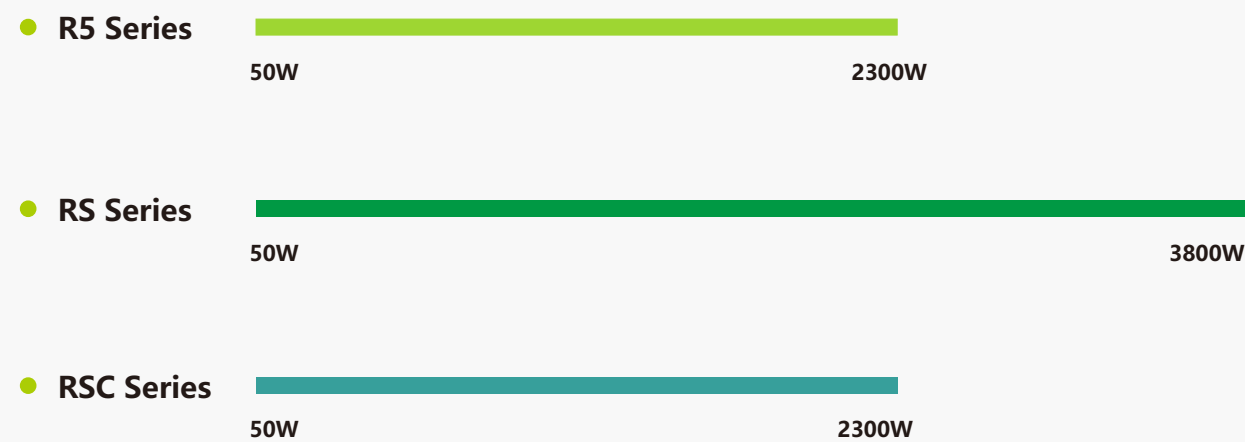
<b>① Product series</b> R: R series servo S: S series servo (economic version) D: D series low voltage DC servo	<b>② Product version</b> 5: 5th generation servo	<b>③ Voltage level</b> L: 220V H: 380V
<b>④ Rated current</b> 028: 2.8A 042: 4.2A 150: 15.0A	<b>⑤ Function code</b> Default: Pulse type E: EtherCAT bus type P: Profinet bus type C: CANopen bus type M: RS485 Modbus bus type	

## RS Series Servo Drive Naming Rule

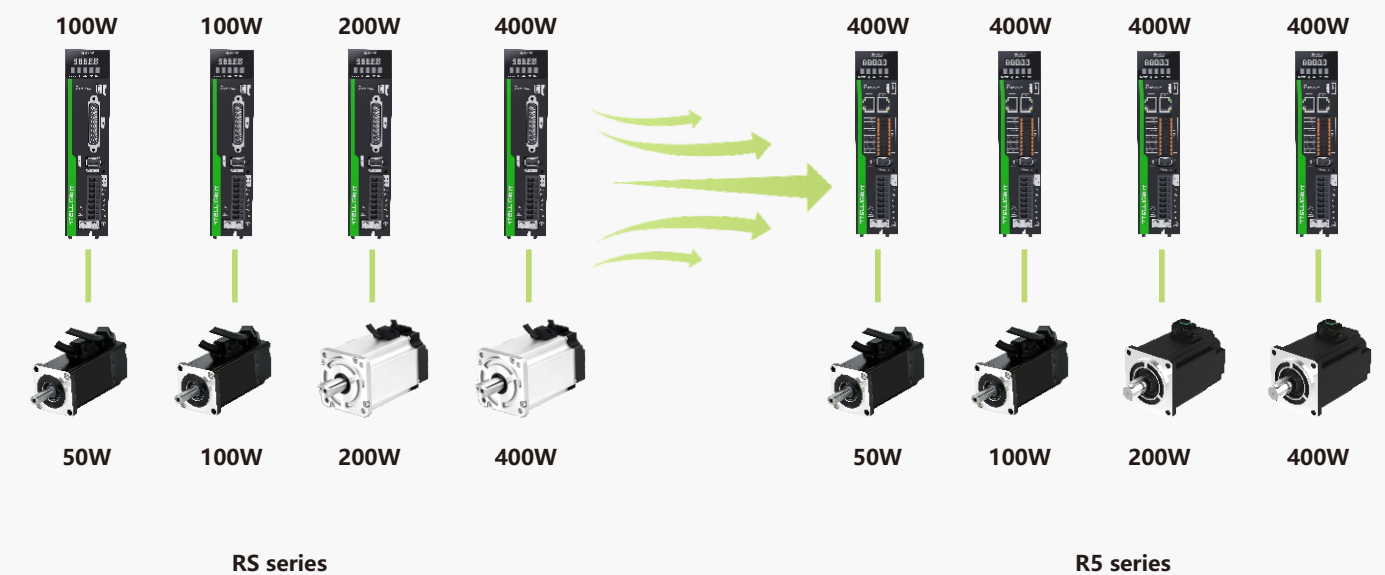
RS 400 E  
 ① ② ③

<b>① AC servo drive</b>	<b>② Adaptive motor power</b> 400: 400W 3000: 3000W	<b>③ Function code</b> Default: Pulse standard type + RS485 (DB44 terminal) E: EtherCAT bus type C: Pulse economic type (DB44 terminal) CS: Pulse economic type (push-type terminal) CR: Pulse economic type + RS485 (push-type terminal)
-------------------------	-----------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## More Flexible & Convenient Supporting Solutions



## Recommend to order



R5 series 400W drivers are compatible with motors below 400W, greatly reducing the number of stock models and facilitating customer procurement and management



# R5 Series

Rtelligent's 5th-generation high-performance servo R5 series is based on a powerful R-AI algorithm and a new hardware solution. With the rich experience Rtelligent has accumulated in servo development and application over the years, it has created a servo system with the characteristics of high performance, easy application, and low cost. The product has a wide range of applications in various high-end automation equipment industries such as 3C, lithium batteries, photovoltaics, logistics, semiconductors, medical, and lasers.

- 
- 
- 
- 
- Stay tuned



- |                                   |                          |                                  |
|-----------------------------------|--------------------------|----------------------------------|
| 01<br>Power range<br>0.05kw-2.3kw | 03<br>Auto tuning        | 05<br>STO safety function        |
| 02<br>High dynamic response       | 04<br>Rich IO interfaces | 06<br>Convenient panel operation |

## R5 Pulse Type (Incl. RS485) Servo Driver Specifications

### Basic Specifications

Item	R5L028	R5L028M	R5L042	R5L042M	R5L130	R5L130M
Communication function	-	485 communication	-	485 communication	-	485 communication
Overload capacity	Support 3 times overload		Support 3 times overload		Support 2 times overload	
Applicable power (W)	50~400		600~750		1000~2300	
Rated current (A)	2.8		4.2		13.0	
Maximum current (A)	8.4		12.6		24.0	
Input power	Single phase 220VAC ± 10%, 50/60Hz					
Size code	Type A		Type B		Type B	
Dimensions (mm)	175*156*40		175*156*51		175*156*51	
Brake resistor function	No brake resistor		With brake resistor (75W, 50Ω)			

### Environmental Specifications

Item	Requirements
Operating temperature	0°C ~ +45°C
Storage temperature	-20°C ~ +70°C
Environmental humidity	Working/storage ≤90%RH (no condensation)
Vibration resistance	10~57Hz 3.5mm, 57~150Hz 1g
Atmospheric environment	No corrosive gas, flammable gas, oil mist or dust, etc.
Altitude	Altitude ≤1000m

### Technical Specifications

Item	Description
Control mode	IPM PWM control, SVPWM drive mode
Encoder feedback	Absolute encoder
Isolation function	Power supply/communication isolation; encoder input isolation; digital input/output isolation
Protection function	Overvoltage, undervoltage, overcurrent, overload, overheating, overspeed, communication abnormality, register abnormality, encoder error, etc.
Display and operation	5-digit LED display, 5-digit key operation DC bus indicator
Parameter setting	Button or RTServoStudioV5
Power-off retention	Keep all optional parameters



## ■ Technical Specifications

Item		Description
Speed change rate (at rated speed)	Load change rate	0~100%: less than 0.1%
	Voltage change rate	Rated voltage ±10%: 0%
	Temperature change rate	25±25°C: less than ±0.1%
Digital input (4 channels DI)		Positive direction travel limit, reverse direction travel limit, latch signal, origin signal, etc. Note: Pin functions can be assigned through software configuration parameters to input valid logic levels
Digital output (4 channels DO)		Servo ready, alarm output, brake release, command completion output, positioning completion output, speed reached, torque limit reached, etc. Note: Pin functions can be assigned through software configuration parameters to output valid logic levels
Modbus communication	Number of communication interfaces	1 RS485 communication port
	Communication standard	Standard ModBus RTU communication protocol, supports master station to read and write single/multiple parameters
	Communication baud rate	4.8kbps, 9.6kbps, 19.2kbps, 38.4kbps, 57.6kbps, 115.2kbps
	Maximum number of stations	127
Soft start/stop		Acceleration and deceleration can be set from 0 to 10s/1000rpm
S-curve acceleration/deceleration		S-curve acceleration and deceleration time can be set in pp and pv mode
Return function		The speed, acceleration and origin return method can be specified, and 25 return modes are supported.
Probe function		The high-speed digital input position latch signal is used as the event trigger signal. The effective edge can store the current axis position for the parameterized event. The position data will be stored immediately by the control system without missing triggers due to delays.
Brake resistor protection function		The resistance and power of internal and external brake resistors can be set, and the driver automatically calculates the output duty cycle to limit the brake pipe discharge, preventing the driver and brake resistor from overheating and damage.
STO safety function		Support
Absolute value multi-turn data reset		Multi-turn data of the encoder can be cleared through host computer communication or key panel
Optional parameters can be stored in EEPROM		Communication change parameters can be set to be saved directly to EEPROM
Monitoring function		Internal oscilloscope, on Windows application software, can monitor operating parameters such as speed, position, voltage, current, etc.
Input pulse signal form		Pulse + direction, A phase + B phase, CW + CCW
Command control mode		External pulse command/16-segment communication register command
		Speed control mode: 8-segment internal speed command/32-segment communication register command
		Torque control mode: 32-segment communication register command
Command smoothing mode		Speed control mode: low-pass filter, smoothing time constant 0~2500 (x10us)
Torque limit (speed control mode)		Internal parameters
Speed limit (torque control mode)		
Feedforward compensation		0~1000% (set resolution 1%0)
Position error setting		0~32767 command units (set resolution to 1 command unit)
Electronic gear ratio	N	1/200<N/M<200
	M	

## R5 Series EtherCAT Communication Servo Drive Specifications

### ■ Basic Specifications

Item	R5L028E	R5L042E	R5L130E
Communication function	485 communication	485 communication	485 communication
Overload capacity	Support 3 times overload	Support 3 times overload	Support 2 times overload
Applicable power (W)	50~400	600~750	1000~2300
Rated current (A)	2.8	4.2	13.0
Maximum current (A)	8.4	12.6	24.0
Input power	Single phase 220VAC ± 10%, 50/60Hz		
Size code	Type A	Type B	Type B
Dimensions (mm)	175*156*40	175*156*51	175*156*51
Brake resistor function	No brake resistor	With brake resistor(5W, 50Ω)	With brake resistor(75W, 50Ω)

### ■ Environmental Specifications

Item	Requirements
Operating temperature	0°C ~ +45°C
Storage temperature	-20°C ~ +70°C
Environmental humidity	Working/storage ≤90%RH (no condensation)
Vibration resistance	10~57Hz 3.5mm, 57~150Hz 1g
Atmospheric environment	No corrosive gas, flammable gas, oil mist or dust, etc
Altitude	Altitude ≤1000m

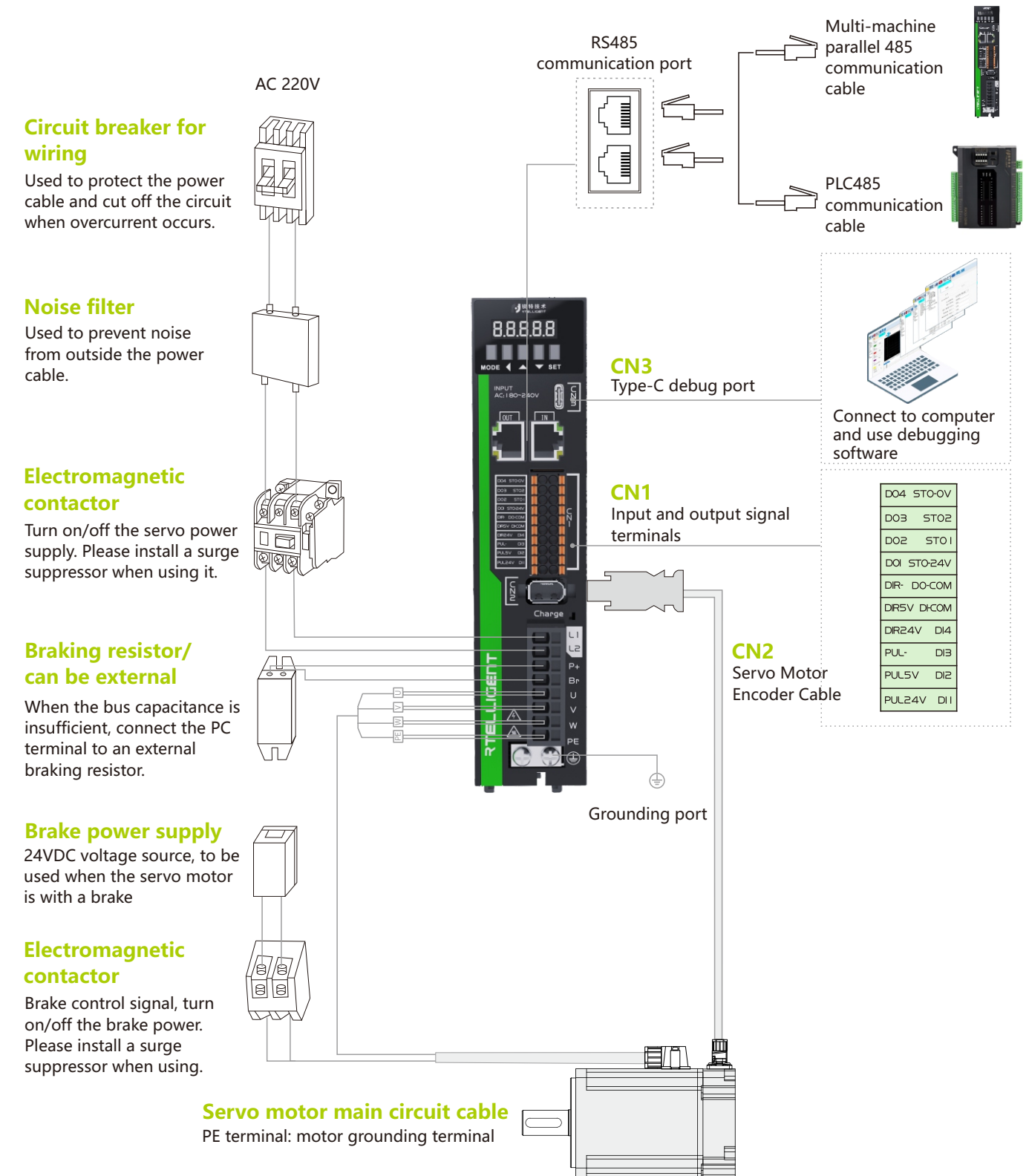
### ■ Technical Specifications

Item		Description
Control mode		IPM PWM control, SVPWM drive mode
Encoder feedback		Absolute encoder
Isolation function		Power supply/communication isolation; encoder input isolation; digital input and output isolation
Protection function		Overvoltage, undervoltage, overcurrent, overload, overheat, overspeed, communication abnormality, register abnormality, encoder error, etc.
Display and operation		5-digit LED display, 5-digit button operation
		DC bus indicator
Parameter setting		Button or RTServoStudioV5
Power-off retention		Keep all optional parameters
Speed change rate (at rated speed)	Load change rate	0~100%: less than 0.1%
	Voltage change rate	Rated voltage ±10%: 0%
	Temperature change rate	25±25°C: less than ±0.1%
Digital input (4 channels DI)		Positive direction travel limit, reverse direction travel limit, latch signal, origin signal, etc. Note: Pin functions can be assigned through software configuration parameters to input valid logic levels
Digital output (4 channels DO)		Servo ready, alarm output, brake release, command completion output, positioning completion output, speed arrival, torque limit arrival, etc. Note: Pin functions can be assigned through software configuration parameters, and valid logic levels can be output

## ■ Technical Specifications

Item	Description	
EtherCAT communication	Communication protocol	EtherCAT protocol
	Supported services	COE (PDO, SDO)
	Synchronization mode	DC-distributed clock
	Physical layer	100base-TX
	Baud rate	100Mbit/s
	Duplex mode	Full-duplex
	Topology	Linear, Circular
	Transmission medium	Shielded network cables exceeding Category 5 or electrical performance specification Category 6 or above
	Transmission distance	Less than 100M between two nodes (good environment, good cables)
	Slave station number	The protocol supports up to 65535, but the actual use does not exceed 100 units
	EtherCAT frame length	44 bytes to 1498 bytes
	Process data	A single Ethernet frame is up to 1486 bytes
	Synchronization jitter of two slaves	< 1us
	Refresh time	1000 switch input and output takes about 30us; 100 servo axes takes about 100us; different refresh times are defined for different interfaces
Communication bit error rate	10 <sup>-10</sup> Ethernet Standards	
EtherCAT configuration unit	Storage synchronization management unit	8
	Process data RAM	8KB
	Distributed clock	64-bit
	E2PROM capacity	32kbit
Soft start/stop	Acceleration and deceleration can be set from 0 to 10s/1000rpm	
S-curve acceleration/deceleration	S-curve acceleration and deceleration time can be set in pp and pv mode	
Return to original state function	The speed, acceleration and origin return method can be specified, and 25 return modes are supported.	
Probe function	The high-speed digital input position latch signal is used as the event trigger signal. The effective edge can store the current axis position for the parameterized event. The position data will be stored immediately by the control system without missing triggers due to delays.	
Braking resistor protection function	The resistance and power of internal and external brake resistors can be set, and the driver automatically calculates the output duty cycle to limit the brake pipe discharge, preventing the driver and brake resistor from overheating and damage.	
STO safety function	Support	
Absolute value multi-turn data clearing	The multi-turn data of the encoder can be cleared through the host computer communication or key panel	
Optional parameters to be stored in EEPROM	Communication changes can be set to save directly to EEPROM	
Monitoring function	Internal oscilloscope, on Windows application software, can monitor operating parameters such as speed, position, voltage, current, etc.	
Input pulse signal form	Pulse+direction, phase A+phase B, CW+CCW	
Command control mode	External pulse command/16-segment communication register command	
	Speed control mode: 8-segment internal speed command/32-segment communication register command	
	Torque control mode: 32-segment communication register command	
Command smoothing mode	Speed control mode: low-pass filter, smoothing time constant 0~2500 (x10us)	
Torque limit (speed control mode)	Internal parameters	
Speed limit (torque control mode)		
Feedforward compensation	0~1000‰ (setting resolution 1‰)	
Position error setting	0~32767 command units (set resolution to 1 command unit)	
Electronic gear ratio	N	1/200 < N/M < 200
	M	

## ■ R5 Series Pulse Type (Including RS485) Driver Wiring Diagram





## R5 Series Pulse Type (Including RS485) Driver Port Definition

### RS485 modbus communication interface definition

Signal name	Pin number	Function	
Communication signal	RS485+	1	RS485 communication port
	RS485-	2	
	-	3	-
	-	4	-
	-	5	-
	-	6	-
DGND	7	GND signal	
-	8	-	

### Encoder terminal definition

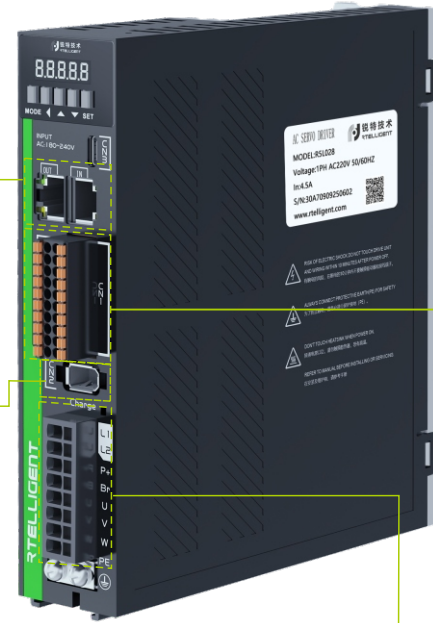
Signal name	Pin number	Function
+5V	1	Power output positive pole: +5V
GND	2	Power output negative pole: 0V
-	3	-
-	4	-
SD+	5	Encoder bus signal
SD-	6	
FG	-	Terminal metal housing

### Main circuit interface definition

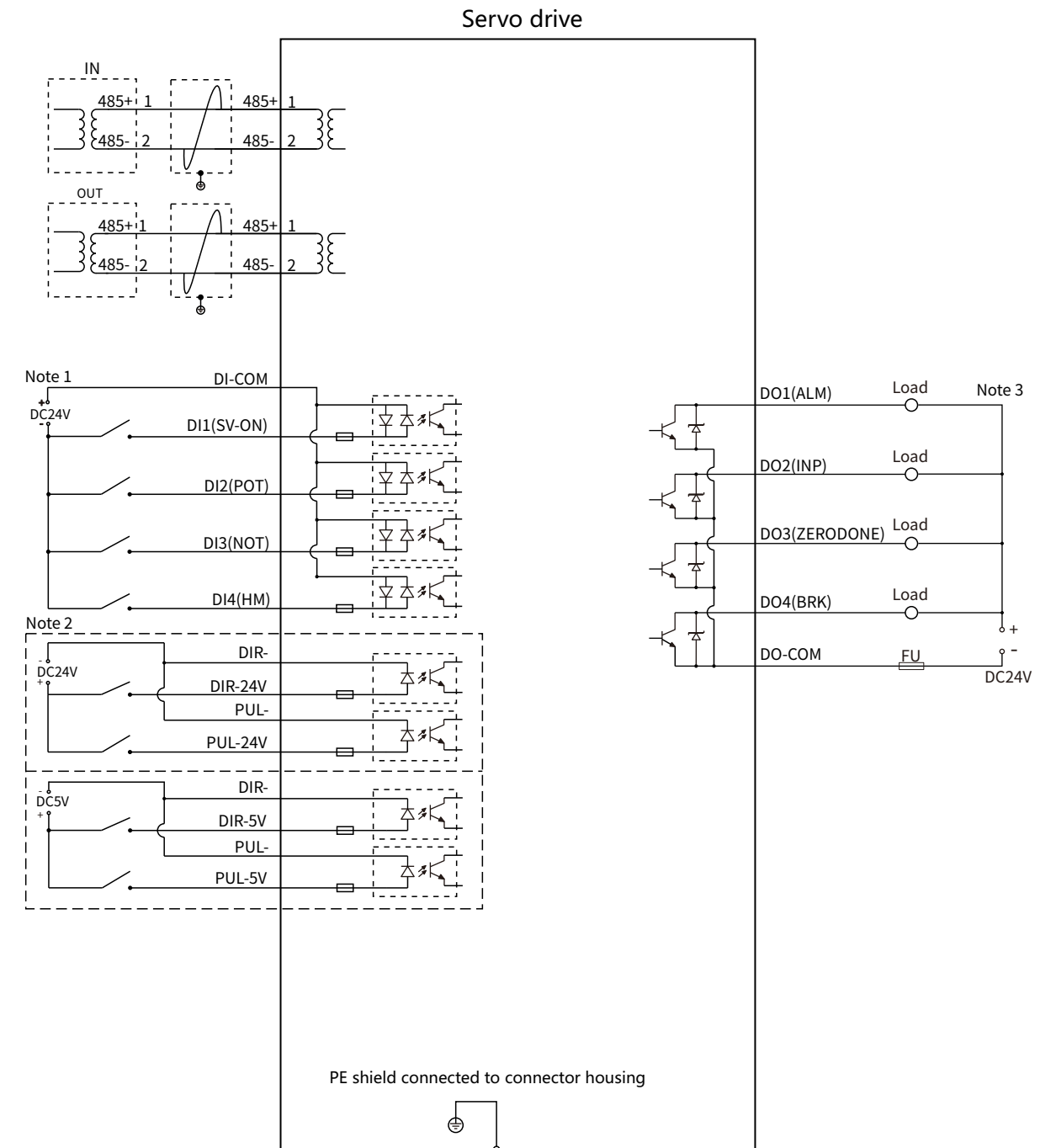
Terminal marking	Terminal name	Function
L1、L2、	Power supply input terminal	Servo drive power supply input terminal, single-phase 220VAC
P+、Br	Brake resistor terminal	External brake resistor connection terminal
U、V、W、PE	Servo motor connection terminal	The servo motor connection terminals must be connected to the motor U, V, W, and PE terminals accordingly.

### Control signal terminal definition (CN1)

Functional classification	Signal name	Signal Definition	Default function	Description
External pulse interface	PUL5V	Differential pulse +	-	Differential input, 5V
	PUL-	Differential pulse -		
	DIR5V	Differential direction +		
	DIR-	Differential direction -		
	PUL24V	24V pulse positive	-	24V positive
	DIR24V	24V direction positive		
Universal input interface	DI1(SV-ON)	Input 1	Servo enabled	Below 24V, supports common anode or common cathode, does not support mixed use of NPN and PNP
	DI2(POT)	Input 2	Positive limit	
	DI3(NOT)	Input 3	Negative limit	
	DI4(ALMRST)	Input 4	Alarm cleared	
	DI-COM	Input common terminal	-	
Universal common cathode output interface	DO1(ALM)	Output 1	Alarm output	Below 24V, common cathode output, current does not exceed 200mA
	DO2(INP)	Output 2	Positioning completed	
	DO3(ZERODONE)	Output 3	Return to zero completed	
	DO4(BRK)	Output 4	Brake	
	DO-COM	Output common ground	-	
STO safety interface	STO-24V	-	-	Disable STO function: Connect STO to STO-24V
	STO1	-	-	Enable STO function: Connect STO to STO-0V
	STO2	-	-	
	STO-0V	-	-	



## R5 Series Pulse Type (Incl. RS485) Driver Control Mode Wiring Diagram

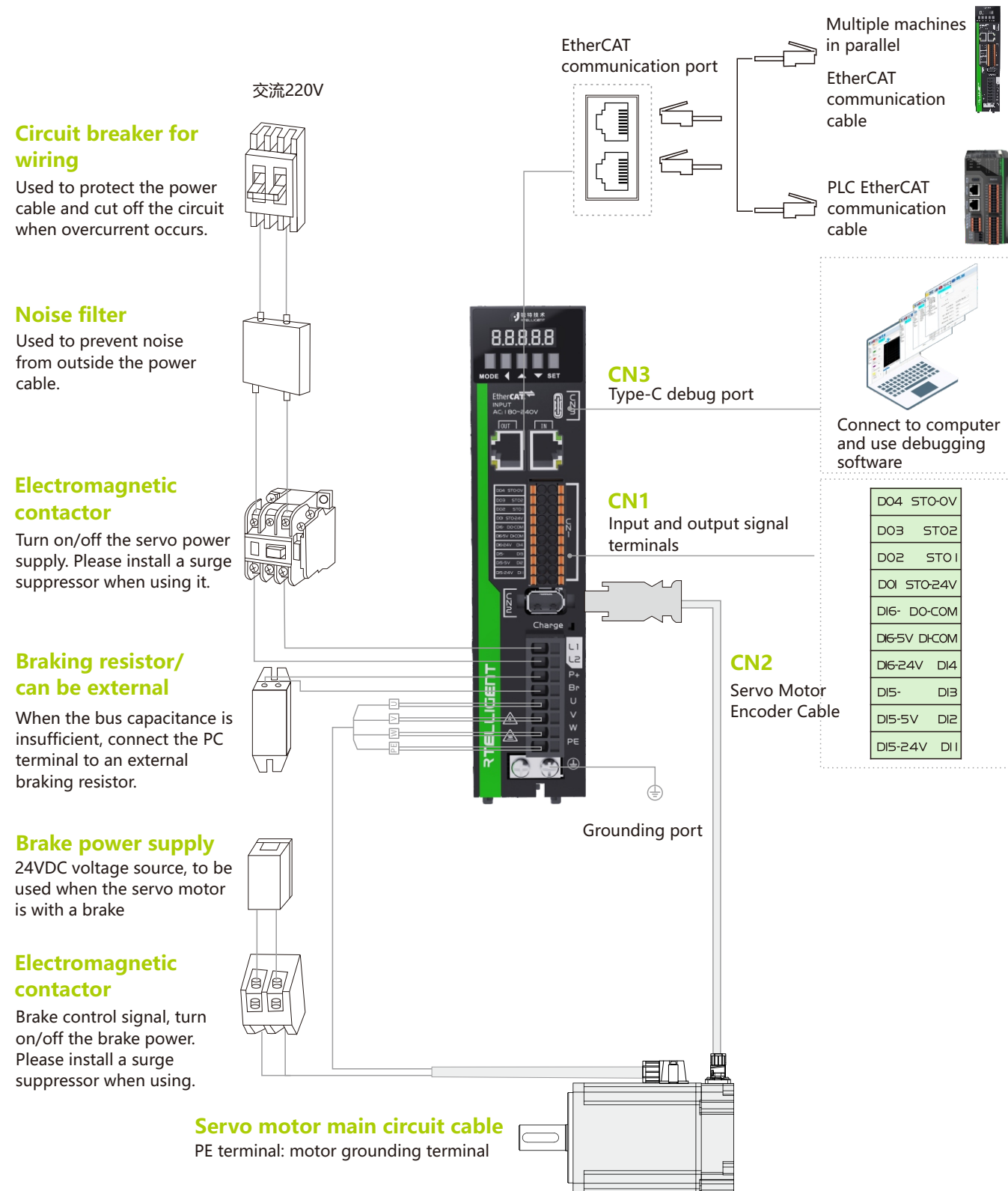


Note 1: Below 24V, common anode or common cathode is supported, and mixing of NPN and PNP is not supported;

Note 2: Differential input, 24V and 5V cannot be used together, choose one;

Note 3: Below 24V, common cathode output, current does not exceed 200mA.

## R5 Series EtherCAT Communication Driver Wiring Diagram



## R5 Series EtherCAT Communication Driver Port Definition

### Communication interface definition

Signal name	Pin number	Function	
Communication signal	TX+	1	Data send +
	TX-	2	Data send-
	RX+	3	Data receive+
	-	4	-
	-	5	-
	RX-	6	Data receive-
	-	7	-
	-	8	-

### Encoder terminal definition

Signal name	Pin number	Function
+5V	1	Power output positive pole: +5V
GND	2	Power output negative pole: 0V
-	3	-
-	4	-
SD+	5	Encoder bus signal
SD-	6	
FG	-	Terminal metal housing

### Main circuit interface definition

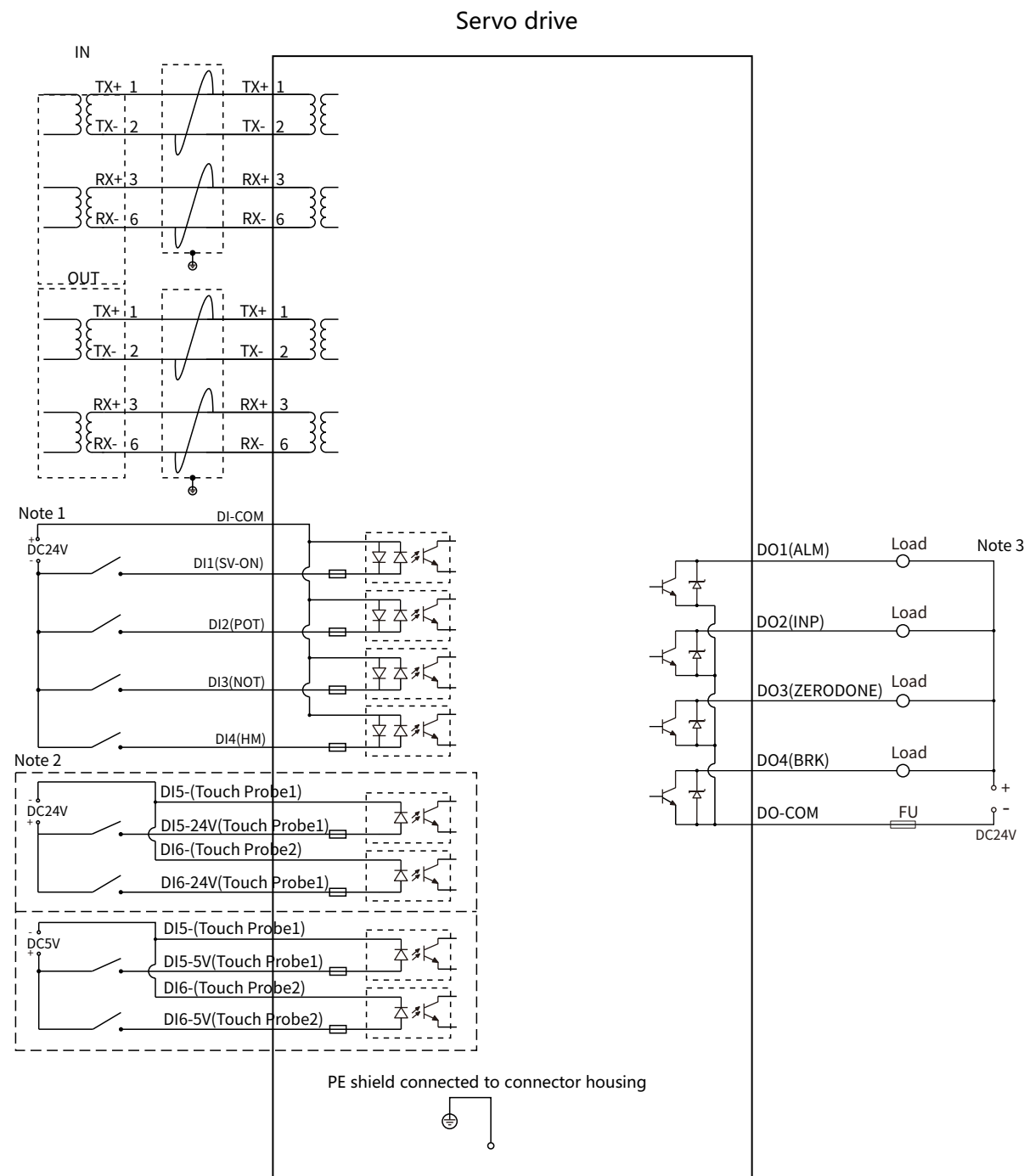
Terminal marking	Terminal name	Function
L1、L2、	Power supply input terminal	Servo drive power supply input terminal, single-phase 220VAC
P+、Br	Brake resistor terminal	External brake resistor connection terminal
U、V、W、PE	Servo motor connection terminal	The servo motor connection terminals must be connected to the motor U, V, W, and PE terminals accordingly.

### Control signal terminal definition (CN1)

Functional classification	Signal name	Signal Definition	Default function	Description
Differential interface	DI5-5V	D15 positive	Probe 1	Differential input
	DI5-	D15 negative		
	DI6-5V	D16 positive	Probe 2	
	DI6-	D16 negative		
	DI5-24V	DI5-24V positive	-	
Universal input interface	DI1(SV-ON)	Input 1	Servo enable	Below 24V, supports common anode or common cathode, does not support mixed use of NPN and PNP
	DI2(POT)	Input 2	Positive limit	
	DI3(NOT)	Input 3	Negative limit	
	DI4(HM)	Input 4	Alarm clear	
	DI-COM	Input common terminal	-	
Universal common cathode output interface	DO1(ALM)	Output 1	Alarm output	Below 24V, common cathode output, current does not exceed 200mA
	DO2(INP)	Output 2	Positioning completed	
	DO3(ZERODONE)	Output 3	Return to zero completed	
	DO4(BRK)	Output 4	Brake	
	DO-COM	Output common ground	-	
STO safety interface	STO-24V	-	-	Disable STO function: Connect STO to STO-24V Enable STO function: Connect STO to STO-0V
	STO1	-	-	
	STO2	-	-	
	STO-0V	-	-	



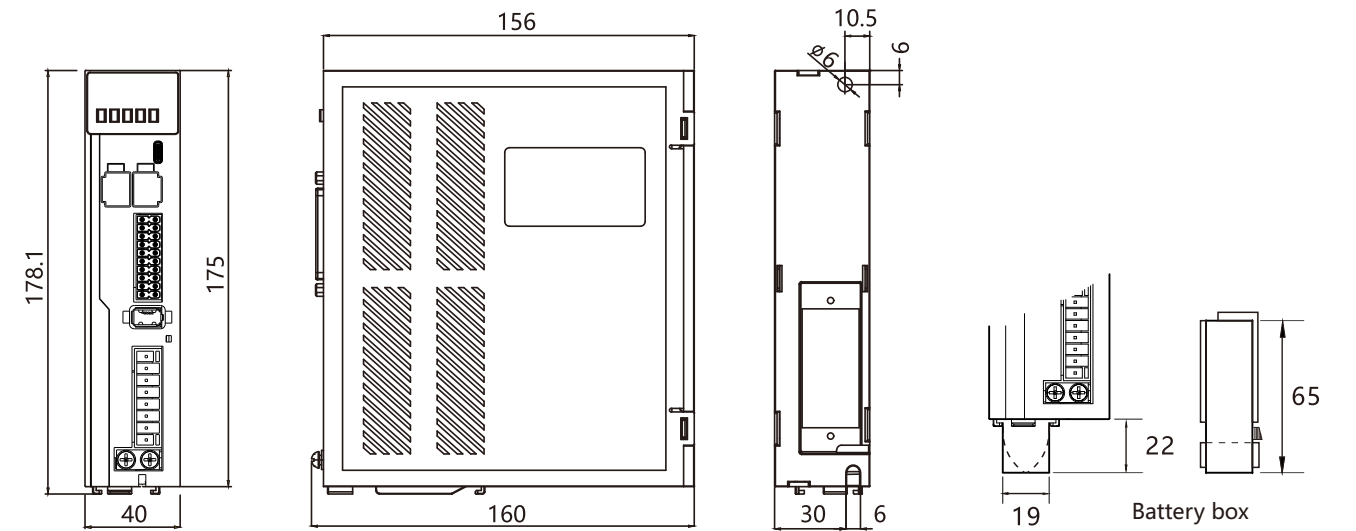
## R5 Series EtherCAT Communication Type Drive Control Mode Wiring Diagram



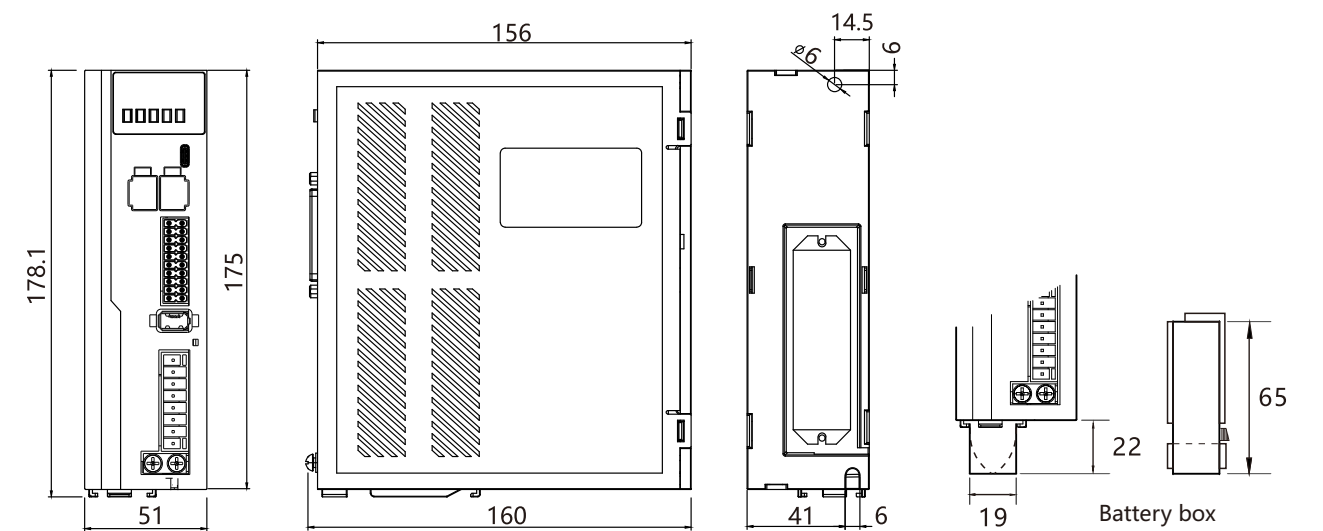
## R5 Series Servo Drive Installation Dimensions

Model	Dimensions (mm)	Mounting hole (mm)	Battery box (mm)
R5L028/R5L028M/R5L028E	A:175x156x40	∅6	A:65x19x22
R5L042/R5L042M/R5L042E	B:175x156x51	∅6	B:65x19x22
R5L130/R5L130M/R5L130E	B:175x156x51	∅6	B:65x19x22

### Size A driver external dimensions



### Size B driver external dimensions



# RS Series General AC Servo Drive

## RS

Series Standard  
AC Servo Drive

## RSE

RSE Series Fieldbus  
AC Servo Drive

DSP+FPGA  
hardware platform

Minimum CSP mode with 200 $\mu$ s  
synchronisation period

RS485  
EtherCAT

Field weakening  
control

Orthogonal  
pulse

Vibration  
suppression

Frequency  
dividing  
output





# RS Series

## RS Series Pulse(incl. RS485) Servo Drive Specifications

### Basic Specifications

Item	RS100	RS200	RS400	RS750	RS1000	RS1500	RS3000
Communication type	485 Communication	485 Communication	485 Communication	485 Communication	485 Communication	485 Communication	485 Communication
Overload capacity	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload
Adapted power (W)	100	200	400	750	1000	1500	3000
Rated current (A)	3.0	3.0	3.0	5.0	7.0	9.0	12.0
Maximum current(A)	9.0A	9.0	9.0	15.0	21.0	27.0	36.0
Input supply	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase or 3 phases 220V AC
Size code	Type A	Type A	Type A	Type B	Type B	Type B	Type B
Dimensions (mm)	175*156*40	175*156*40	175*156*40	175*156*51	175*156*51	175*156*51	196*176*72
Brake resistor function	No brake resistor	No brake resistor	No brake resistor	With brake resistor (75W, 50Ω)	With brake resistor (75W, 50Ω)	With brake resistor (100W, 50Ω)	With brake resistor (100W, 50Ω)

### Environmental Specifications

Item	Requirements
Operating temperature	0-55°C (operating temperatures above 45°C are subject to an average load factor of no more than 80 per cent)
Storage temperature	-20 ~ 85°C
Operating/Storage temperature	Below 90% RH (no condensation)
Vibration/shock resistance	4.9m/s <sup>2</sup> /19.6m/s <sup>2</sup>
Protection class	IP10
Altitude	Less than 1000m

### Electrical Parameters

Item	Content
Control method	IPM PWM control, SVPWMM drive method
Encoder type	Matched 17bit optical, 23bit magnetic absolute encoder
Pulse input specifications	5V differential pulse/2000KHZ; 24V single-ended pulse centre/200KHZ
Analogue input specifications	2 channels, -10~+10V analogue input channels Note: Only RS standard servo exists analogue interface
Universal input	9 channels, supports 24V common positive or common negative
Universal output	4 single-ended + 2 differential outputs, single-ended (200mA) supportable / differential (200mA) supportable
Encoder output	ABZ 3-channel differential output (5V) + ABZ 3-channel single-ended output (5-24V) Note: Only RS standard servo exists encoder crossover output interface

# RSE Series

## RS Series EtherCAT Servo Drive Specifications

### Basic Specifications

Item	RS100E	RS200E	RS400E	RS750E	RS1000E	RS1500E	RS3000E
Communication type	EtherCAT Communication	EtherCAT Communication	EtherCAT Communication	EtherCAT Communication	EtherCAT Communication	EtherCAT Communication	EtherCAT Communication
Overload capacity	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload	Support 3 times overload
Adapted power (W)	100	200	400	750	1000	1500	3000
Rated current (A)	3.0	3.0	3.0	5.0	7.0	9.0	12.0
Maximum current(A)	9.0A	9.0	9.0	15.0	21.0	27.0	36.0
Input supply	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase 220V AC	Single phase or 3 phases 220V AC
Size code	Type A	Type A	Type A	Type B	Type B	Type B	Type B
Dimensions (mm)	175*156*40	175*156*40	175*156*40	175*156*51	175*156*51	175*156*51	196*176*72
Brake resistor function	No brake resistor	No brake resistor	No brake resistor	With brake resistor (75W, 50Ω)	With brake resistor (75W, 50Ω)	With brake resistor (100W, 50Ω)	With brake resistor (100W, 50Ω)

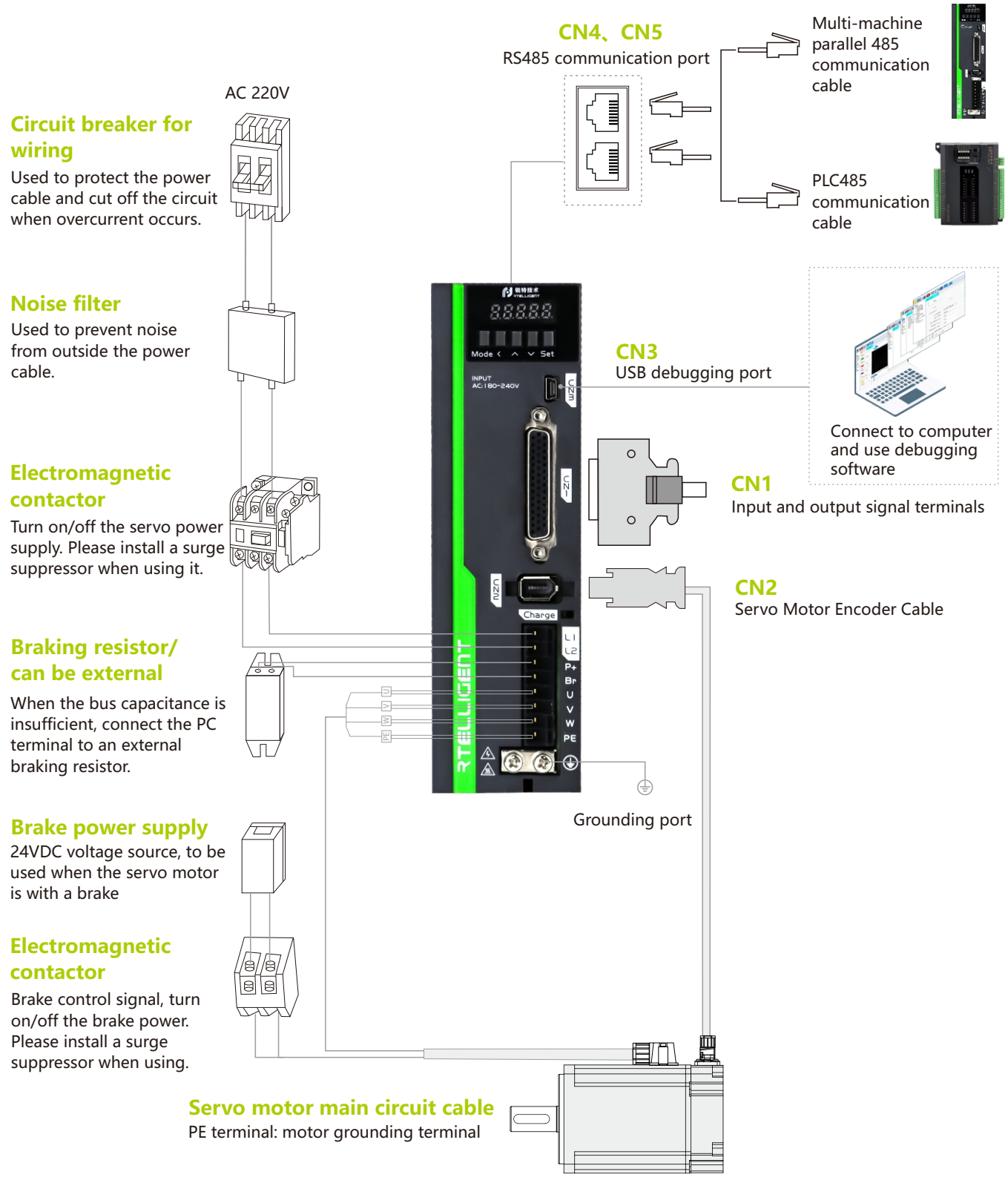
### Environmental Specifications

Item	Requirements
Operating temperature	0-55°C (operating temperatures above 45°C are subject to an average load factor of no more than 80 per cent)
Storage temperature	-20 ~ 85°C
Operating/Storage temperature	Below 90% RH (no condensation)
Vibration/shock resistance	4.9m/s <sup>2</sup> /19.6m/s <sup>2</sup>
Protection class	IP10
Altitude	Less than 1000m

### Electrical Parameters

Item	Content
Control method	IPM PWM control, SVPWMM drive method
Encoder type	Matched 17bit optical, 23bit magnetic absolute encoder
Pulse input specifications	5V differential pulse/2000KHZ; 24V single-ended pulse centre/200KHZ
Universal input	9 channels, supports 24V common positive or common negative
Universal output	4 single-ended + 2 differential outputs, single-ended (200mA) supportable / differential (200mA) supportable

## ■ RS Series Pulse (including RS485) Drive Wiring Diagram



## ■ RS Series Pulse (incl. RS485) Drive port definition

### RS485 modbus communication interface definition

Signal name	Pin number	Function
RS485+	1	RS485 Communication port
RS485-	2	
-	3	-
CAN_H	4	CAN Communication port
CAN_L	5	
-	6	-
DGND	7	GND signal
-	8	-

### Encoder terminal definition

Signal name	Pin number	Function
+5V	1	Power output positive pole: +5V
GND	2	Power output negative pole: 0V
BAT+	3	Encoder Battery
BAT-	4	
SD+	5	Encoder bus signal
SD-	6	
FG	-	Terminal metal housing

### Main circuit interface definition

Terminal marking	Terminal name	Function
L1、L2、L3	Power supply input terminal	Servo drive power supply input terminal, single-phase 220VAC or three-phase 220VAC
P+、Br	Brake resistor terminal	External brake resistor connection terminal
U、V、W、PE	Servo motor connection terminal	The servo motor connection terminals must be connected to the motor U, V, W, and PE terminals accordingly.

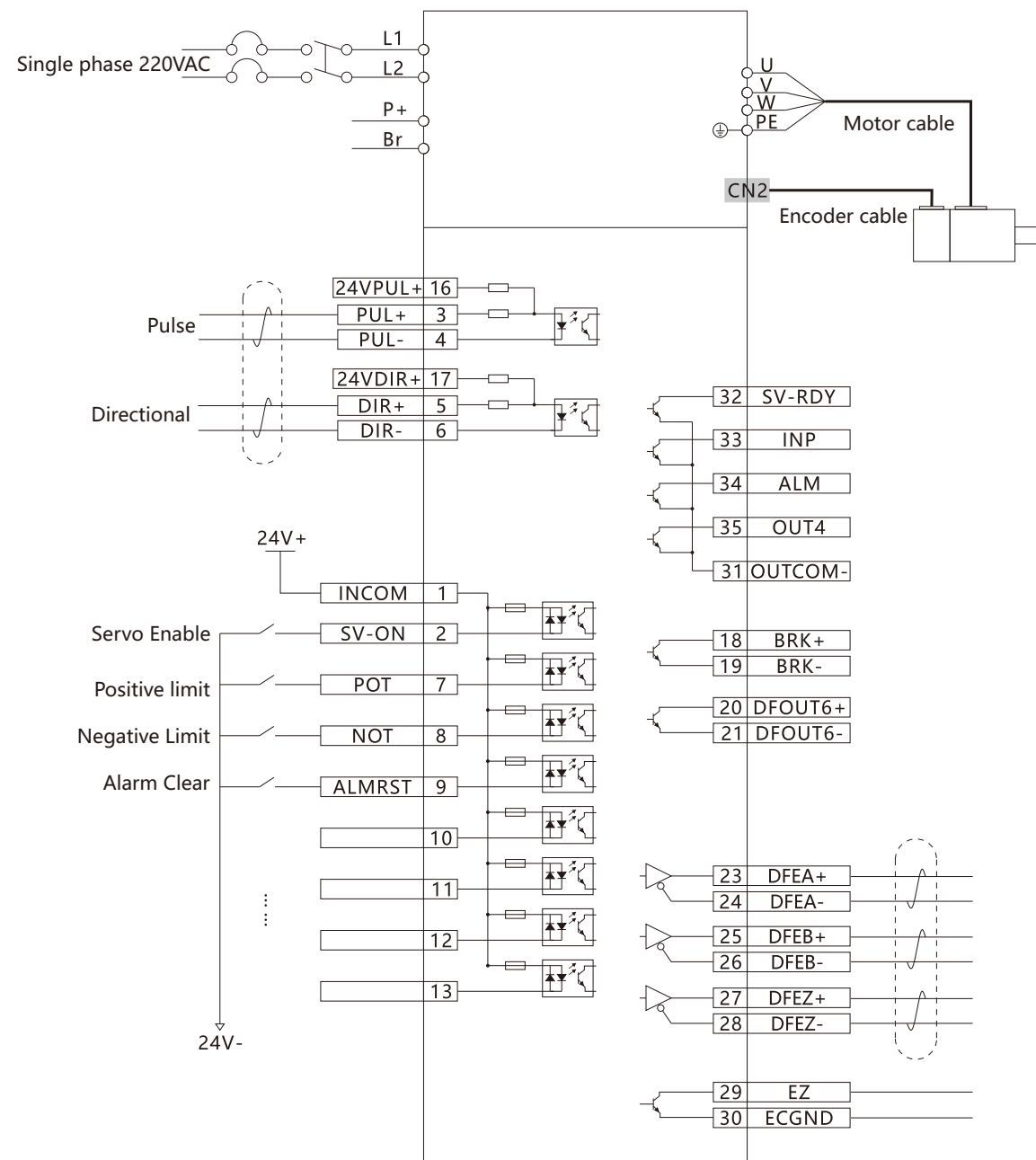
### Control signal terminal definition (CN1)

Functional classification	Signal name	Pin number	Signal definition	Default function	Description
External Pulse Interface	PUL+	3	Differential Pulse +	-	Differential Input, 5V
	PUL-	4	Differential Pulse -	-	
	DIR+	5	Differential direction +	-	
	DIR-	6	Differential directional -	-	
	24V positive	24VPUL+	16	24V Pulse +	-
		24VDIR+	17	24V positive -	-
Universal Input Interface	IN1(SV-ON)	2	Input 1	Servo Enable	Below 24V Support common anode or common cathode Does not support NPN and PNP mixing
	IN2(POT)	7	Input 2	Positive limit	
	IN3(NOT)	8	Input 3	Negative Limit	
	IN4(ALMRST)	9	Input 4	Alarm Clear	
	IN5(PULStop)	10	Input 5	Pulse Inhibit	
	IN6(Home)	11	Input 6	Home input	
	IN7(ZEROStart)	12	Input 7	Homing start	
	IN8(EMESStop)	13	Input 8	Emergency stop	
	IN9(GAIN)	14	Input 9	Gain switching	
	INCOM	1	Input common	-	
Common cathode universal output interface	OUT1(SV-RDY)	32	Output 1	Servo ready	Below 24V Common Cathode Output Current not exceeding 200mA
	OUT2(INP)	33	Output 2	Positioning complete	
	OUT3(ALM)	34	Output 3	Alarm output	
	OUT4(ZERODONE)	35	Output 4	Homing complete	
	OUTCOM-	31	Output common ground	-	



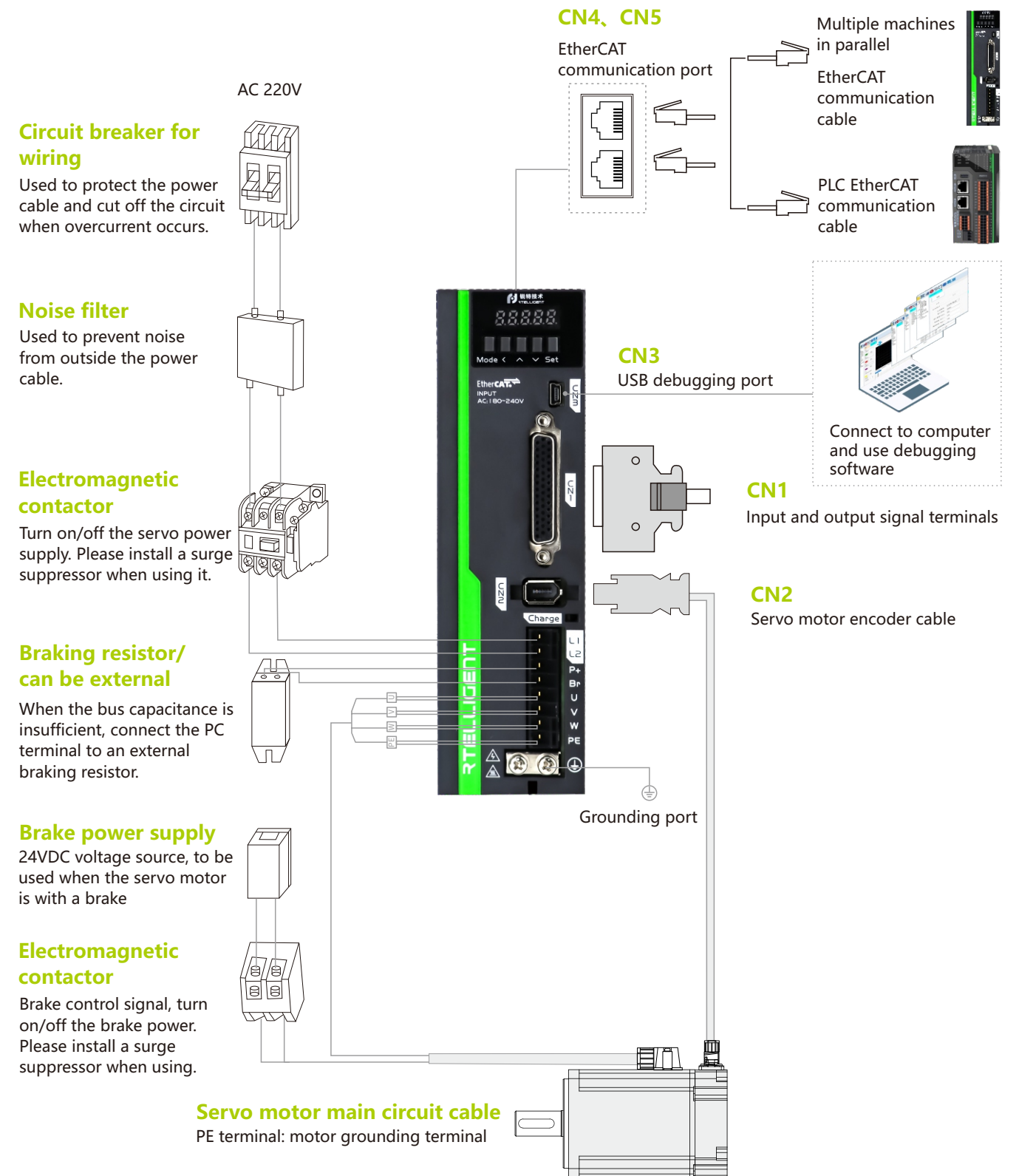


## ■ RS Series Pulse (incl. RS485) Drive Position Control Mode Operating Instructions



1. Universal input signal is a bidirectional optocoupler circuit, which can be accessed individually as common anode or common cathode (pin 1 is the common terminal), common sun and common cathode cannot be mixed.
2. Universal output signal is common cathode connection, 31 pins for the common ground. The maximum current of the output circuit is 200mA, and the maximum current of the differential output signal output circuit is 200mA, which can be used to drive the relay switch.
3. The encoder output signal Z signal has a single-ended output (pins 29 and 30).
4. Input pulse frequency up to 500KHZ.

## ■ RS Series EtherCAT Communication Drive Wiring Diagram



**Circuit breaker for wiring**  
Used to protect the power cable and cut off the circuit when overcurrent occurs.

**Noise filter**  
Used to prevent noise from outside the power cable.

**Electromagnetic contactor**  
Turn on/off the servo power supply. Please install a surge suppressor when using it.

**Braking resistor/ can be external**  
When the bus capacitance is insufficient, connect the PC terminal to an external braking resistor.

**Brake power supply**  
24VDC voltage source, to be used when the servo motor is with a brake

**Electromagnetic contactor**  
Brake control signal, turn on/off the brake power. Please install a surge suppressor when using.

**Servo motor main circuit cable**  
PE terminal: motor grounding terminal

**CN4, CN5**  
EtherCAT communication port  
Multiple machines in parallel  
EtherCAT communication cable  
PLC EtherCAT communication cable

**CN3**  
USB debugging port  
Connect to computer and use debugging software

**CN1**  
Input and output signal terminals

**CN2**  
Servo motor encoder cable

## RS Series EtherCAT Communication Drive Port Definition

### Communication Signal Terminal

Pin number	Defination	Function
1	TX+	Data sending+
2	TX-	Data sending-
3	RX+	Data received +
4	NULL	-
5	NULL	-
6	RX-	Data received -
7	NULL	-
8	NULL	-

### Encoder terminal definition

Signal name	Pin number	Function
+5V	1	Power output positive pole: +5V
GND	2	Power output negative pole: 0V
BAT+	3	Encoder Battery
BAT-	4	
SD+	5	Encoder bus signal
SD-	6	
FG	-	Terminal metal housing



### Main circuit interface definition

Terminal marking	Terminal name	Function
L1, L2, L3	Power supply input terminal	Servo drive power supply input terminal, single-phase 220VAC or three-phase 220VAC
P+, Br	Brake resistor terminal	External brake resistor connection terminal
U, V, W, PE	Servo motor connection terminal	The servo motor connection terminals must be connected to the motor U, V, W, and PE terminals accordingly.

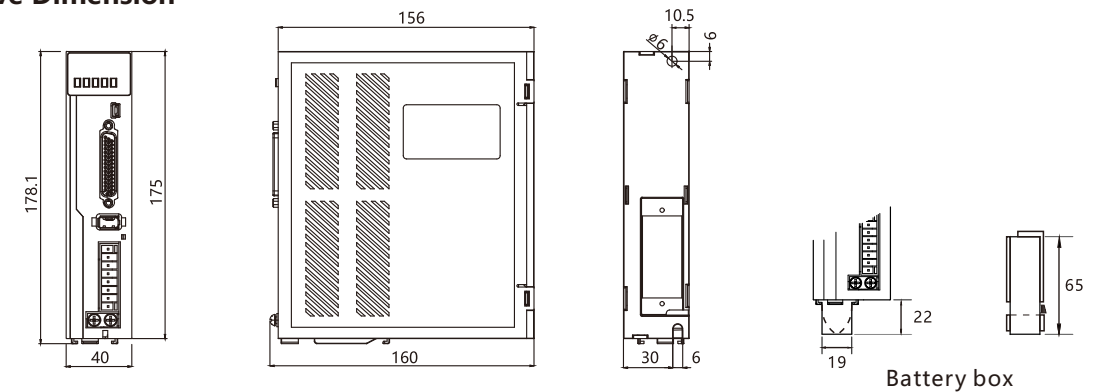
### Control Signal Terminal Definition (CN1)

Function classification	Signal name	Pin number	Signal difinition	Default function	Description	
Universal Input Interface	INCOM	1	Input common terminal	-	24V signal input Support common anode or common cathode connection method Does not support NPN and PNP mixing at the same time	
	IN1	2	Input 1	-		
	IN2	3	Input 2	Probe 1		
	IN3	4	Input 3	Probe 2		
	IN4	5	Input 4	Positive limit		
	IN5	6	Input 5	Negative limit		
	IN6	7	Input 6	Home signal		
	IN7_24V+	16	Input 7	-		Differential input terminals: 24V signal to IN7 24V and IN7- terminals 5V signal to IN7 5V+ and IN7- terminals
	IN7_5V+	17				
	IN7-	18				
IN8_24V+	19	Input 8	Emergency stop	Differential input terminals: 24V signal to IN8 24V+ and IN8- terminals 5V signal to IN8 5V+ and IN8- terminals		
IN8_5V+	20					
IN8-	21					
Universal Output Interface	OUTCOM-	31	Output common terminal	-	Common cathode output	
	OUT1	32	Output 1	Servo ready	-	
	OUT2	33	Output 2	Alarm output	Current not exceeding 200mA	
	OUT3-	34	Output 3	Position reached	Differential output	
	OUT3+	35				
	OUT4+	36	Output 4	Brake output	Current not exceeding 200mA	
OUT4-	37					

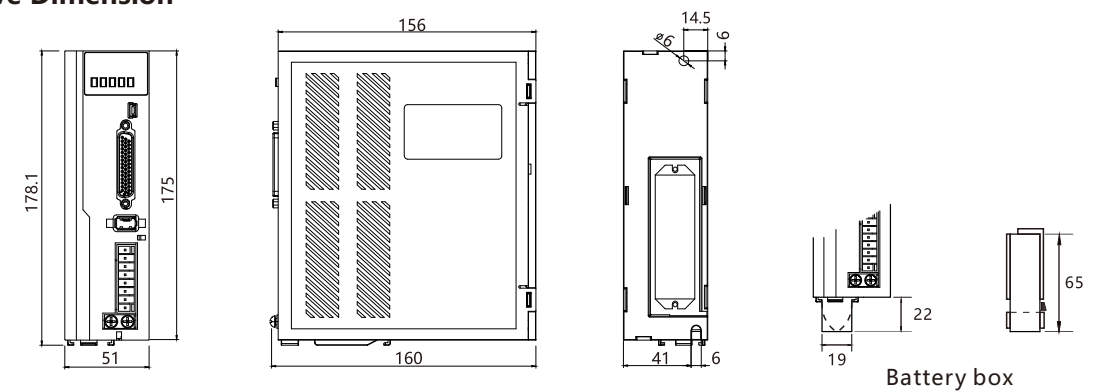
## RS/RSE Series Servo Drive Installation Dimension

Model	Dimensions (mm)	Mounting hole (mm)	Weight (kg)	Battery box (mm)
RS100/RS100E	A:175x156x40	Ø6	1.0	65x19x22
RS200/RS200E	A:175x156x40	Ø6	1.0	65x19x22
RS400/RS400E	A:175x156x40	Ø6	1.0	65x19x22
RS750/RS750E	B:175x156x51	Ø6	1.2	65x19x22
RS1000/RS1000E	B:175x156x51	Ø6	1.2	65x19x22
RS1500/RS1500E	B:175x156x51	Ø6	1.2	65x19x22
RS3000/RS3000E	C:196x176x72	Ø6	2.1	65x19x22

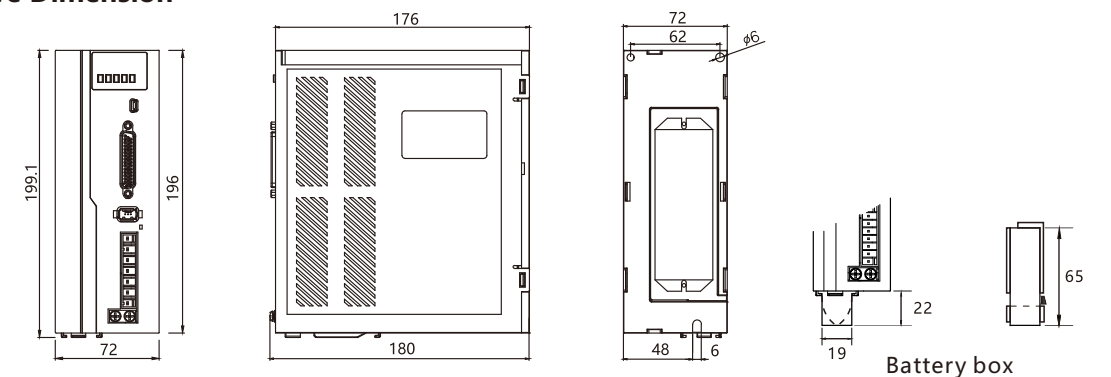
### SizeA Drive Dimension



### SizeB Drive Dimension



### SizeC Drive Dimension





# RSC Series Enconomic AC Servo Drive

- No frequency dividing output function
- No analogue speed and torque control

Highly cost effective

485 communication optional  
(RS-CR series)

Press terminal

Matching motor  
power up to 2.3kW

Type-C  
debugging port



# RSC Series

## RSC Series Pulse Servo Drive Specifications

### Basic Specifications

Item	RS400CS	RS400CR	RS750CS	RS750CR	RS2000CS	RS200CR
Communication function	-	485 communication	-	485 communication	-	485 communication
Overload capacity	Support 3 times overload		Support 3 times overload		Support 3 times overload	
Adapted power (W)	50~400		750		2300	
Rated current (A)	3.0		5.0		9.0	
Maximum current (A)	9.0A		15.0		27.0	
Input power	Single phase 220AC		Single phase 220AC		Single phase 220AC	
Size code	Type A		Type B		Type B	
Dimensions (mm)	175*156*40		175*156*51		175*156*51	
Brake resistor function	No brake resistor		With brake resistor(75W, 50Ω)		With brake resistor(100W, 50Ω)	

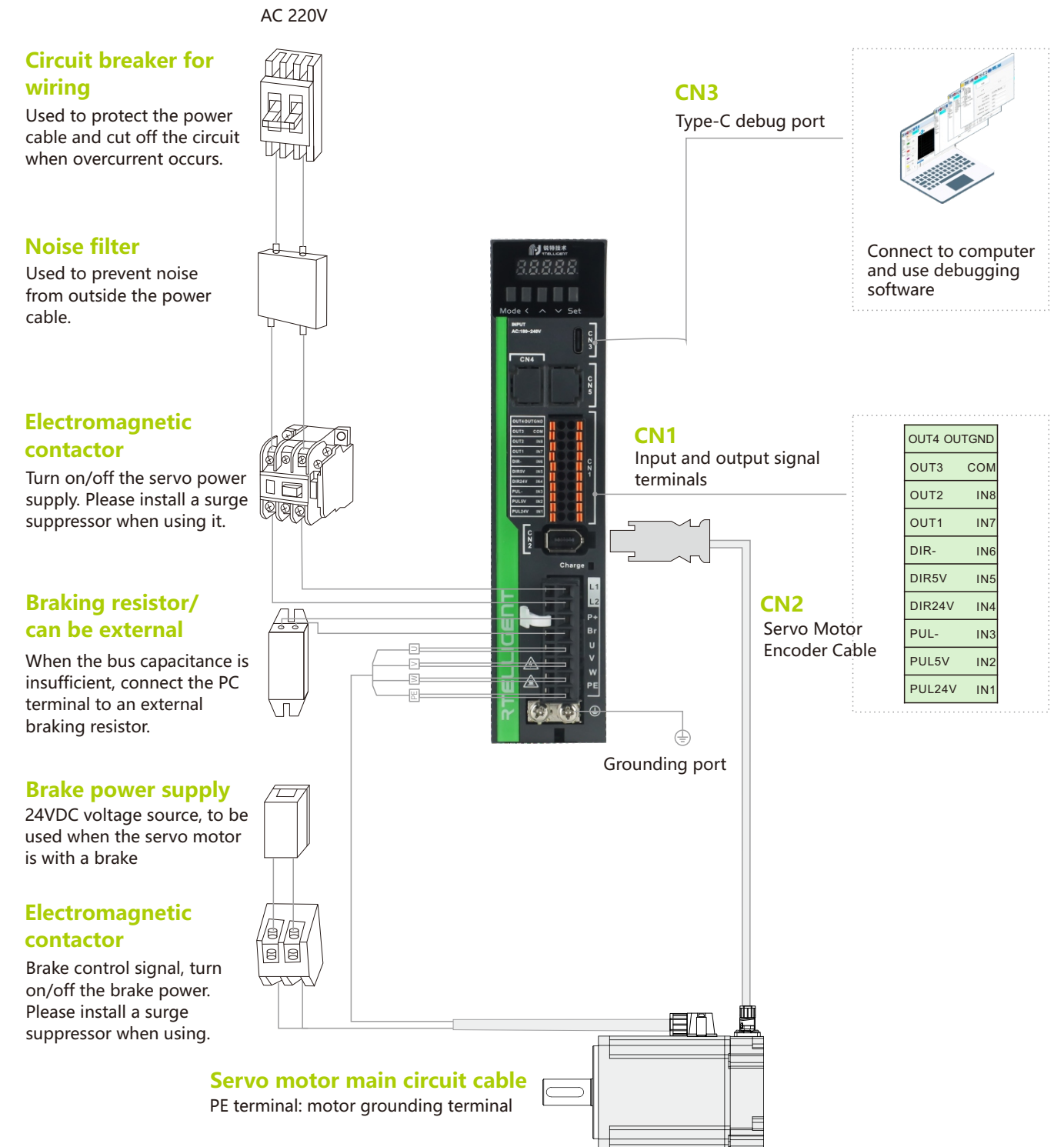
### Environmental Specifications

Item	Requirement
Operating temperature	0-55°C (operating temperatures above 45°C are subject to an average loadfactor of no more than 80 per cent)
Storage temperature	-20 ~ 85°C
Operating/Storage temperature	Below 90% RH (no condensation)
Vibration/shock resistance	4.9m/s <sup>2</sup> /19.6m/s <sup>2</sup>
Protection class	IP10
Altitude	Less than 1000m

### Electrical Parameters

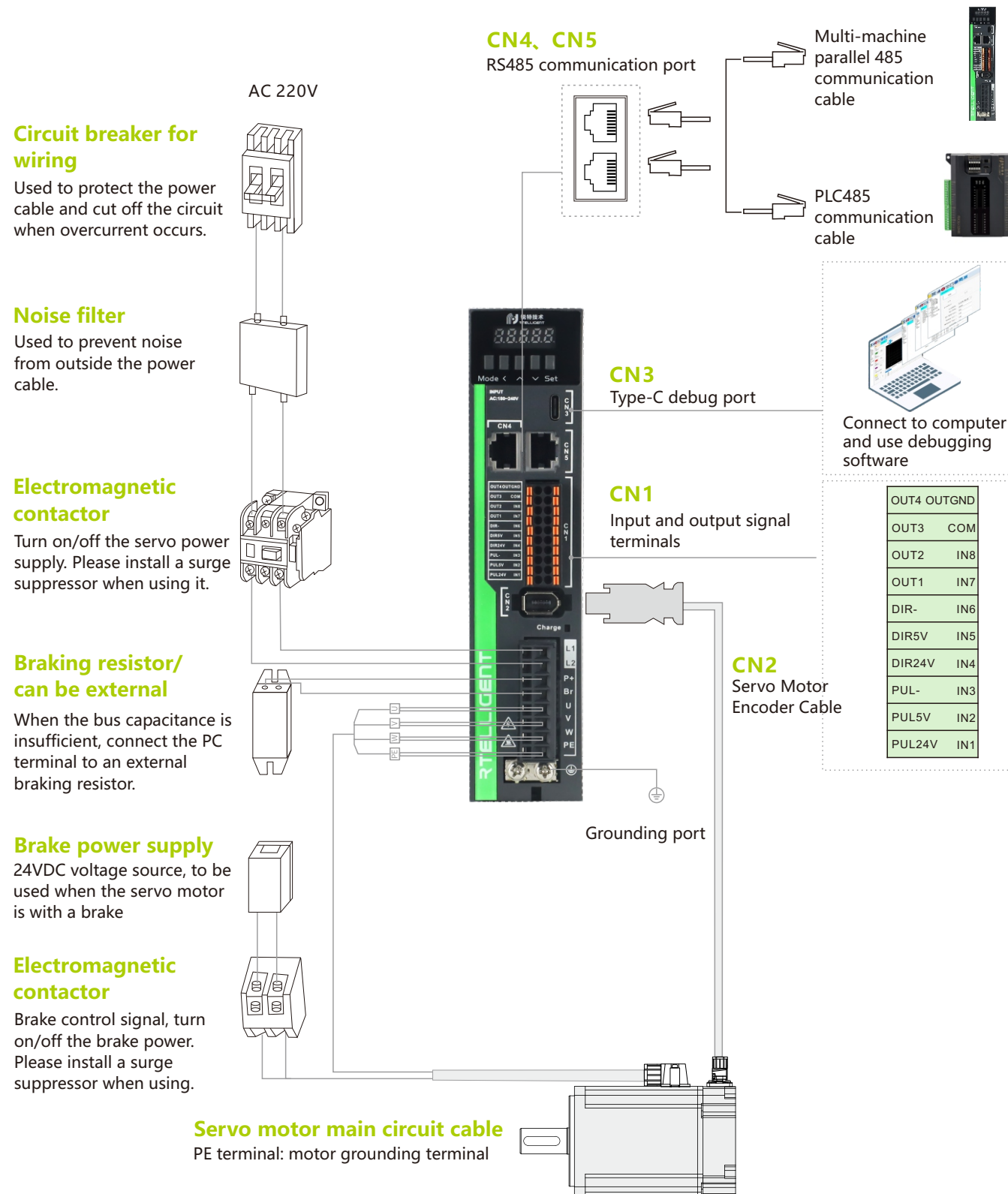
Item	Content
Control method	IPM PWM control, SVPWMM drive method
Encoder type	Matching 17bit optical, 23bit magnetic absolute encoder
Pulse input specifications	5V differential pulse/2000KHz; 24V single-ended pulse/200KHz
Universal input	8 channels, support 24V common anode or common cathode
Universal output	44 channels single-ended, single-ended (200mA)

### RSCS Series Pulse Drive Wiring Diagram





## RSCR Series Pulse (incl. RS485) Drive Wiring Diagram



## RSC Series Pulse Drive Port Definition

### RS485 modbus communication interface definition

Signal name	Pin number	Function
RS485+	1	RS485 Communication port
RS485-	2	
-	3	-
CAN_H	4	CAN Communication port
CAN_L	5	
-	6	-
DGND	7	GND signal
-	8	-

### Encoder terminal definition

Signal name	Pin number	Function
+5V	1	Power output positive pole: +5V
GND	2	Power output negative pole: 0V
BAT+	3	Encoder Battery
BAT-	4	
SD+	5	Encoder bus signal
SD-	6	
FG	-	Terminal metal housing

### Main circuit interface definition

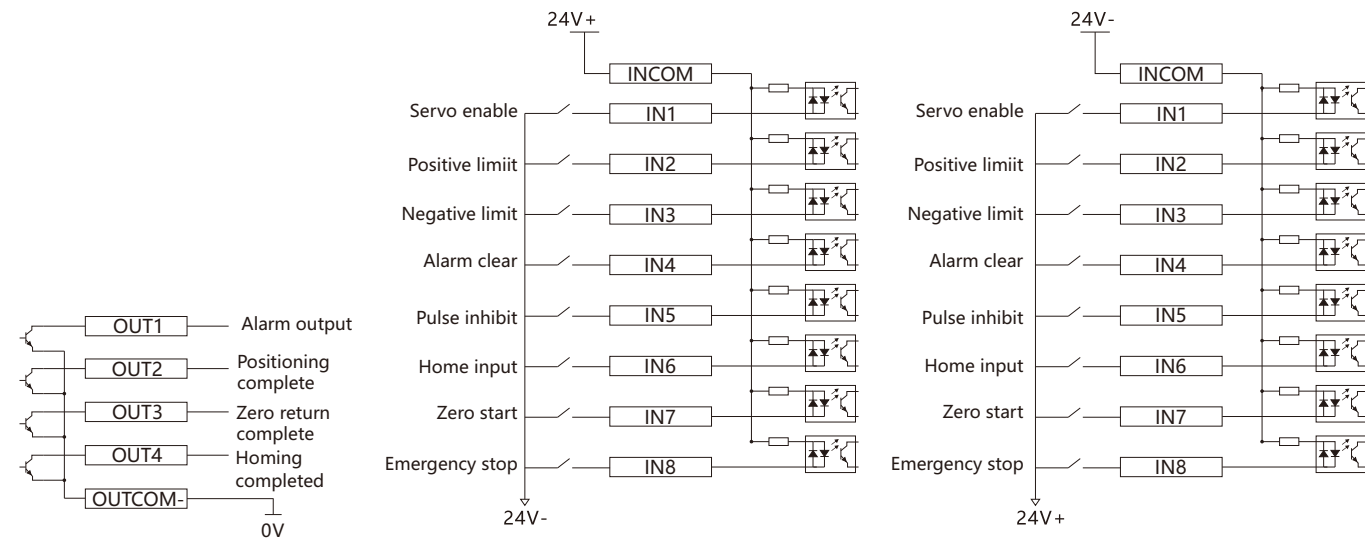
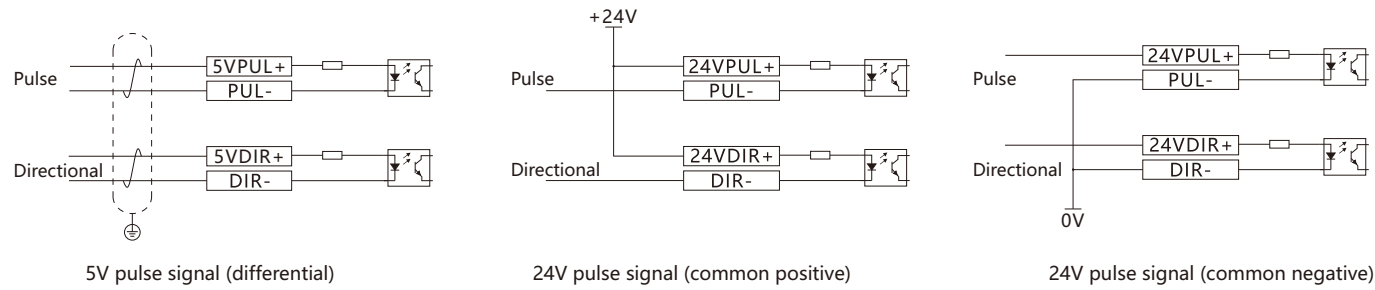
Terminal marking	Terminal name	Function
L1、L2、	Power supply input terminal	Servo drive power supply input terminal, single-phase 220VAC
P+、Br	Brake resistor terminal	External brake resistor connection terminal
U、V、W、PE	Servo motor connection terminal	The servo motor connection terminals must be connected to the motor U, V, W, and PE terminals accordingly.

### Control signal terminal definition (CN1)

Functional classification	Signal name	Signal Definition	Default function	Description
External pulse interface	5VPUL+	Differential Pulse +	-	Differential Input, 5V
	PUL-	Differential Pulse -	-	
	5VDIR+	Differential direction +	-	
	DIR-	Differential directional-	-	24V positive
	24VPUL+	24V pulse +	-	
	24VDIR+	24V positive -	-	
Universal input interface	IN1(SV-ON)	Input 1	Servo enable	Below 24V Support common anode or common cathode Does not support NPN and PNP mixing
	IN2(POT)	Input 2	Positive limit	
	IN3(NOT)	Input 3	Negative limit	
	IN4(ALMRST)	Input 4	Alarm clear	
	IN5(PULStop)	Input 5	Pulse inhibit	
	IN6(Home)	Input 6	Home input	
	IN7(ZEROStart)	Input 7	Homing start	
	IN8(EMESStop)	Input 8	Emergency stop	
	INCOM	Input common	-	
Common cathode universal output interface	OUT1(ALM)	Output 1	Servo ready	Below 24V Common cathode output current not exceeding 200mA
	OUT2(INP)	Output 2	Positioning complete	
	OUT3(ZERODONE)	Output 3	Alarm output	
	OUT4(BRK)	Output 4	Homing complete	
	OUTGND-	Output common ground	-	



## Control Signal Wiring Diagram

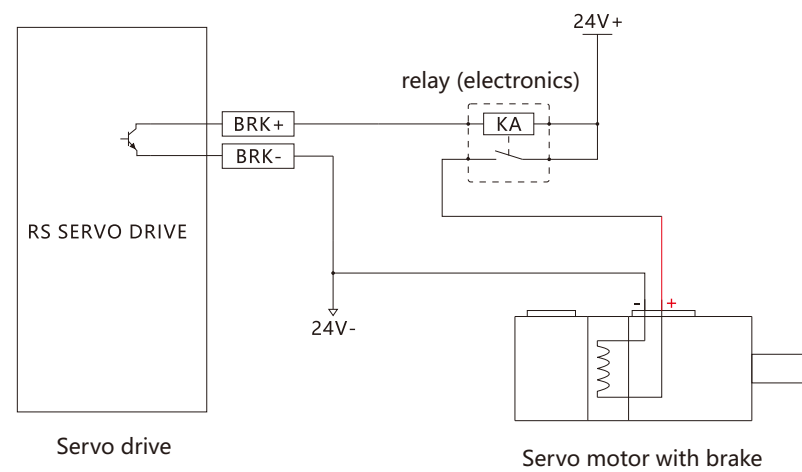


Universal output signal (common negative)

Universal input Signal (common positive)

Universal input signal (common negative)

## Holding Brake Wiring Diagram

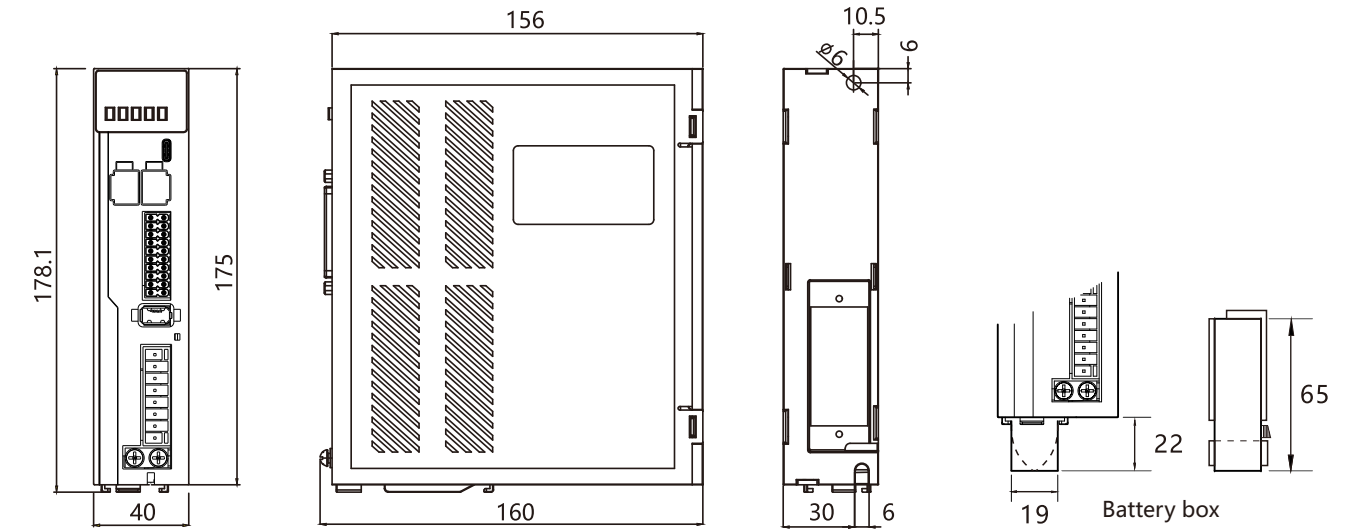


• Remark: please pay attention to differentiation in polarity of motor brake cable

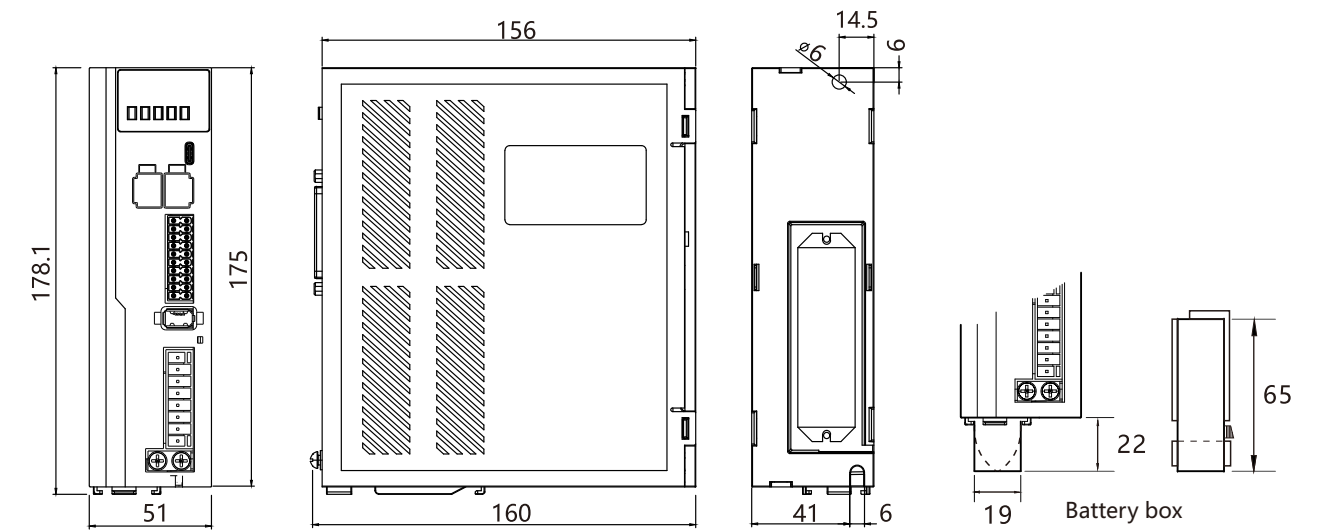
## RSC Series Installation Dimension

Model	Dimensions (mm)	Mounting hole (mm)	Weight (kg)	Battery box (mm)
RS400CS/RS400CR	A:175x156x40	Ø6	1.0	65x19x22
RS750CS/RS750CR	B:175x156x51	Ø6	1.2	65x19x22
RS2000CS/RS2000CR	B:175x156x51	Ø6	1.2	65x19x22

### SizeA Drive Dimension



### SizeB Drive Dimension





# RS60 Series 6-Axis Integrated Servo Drive

EtherCAT  
CANopen

Highly  
synchronized

Easy setting

Fast  
response

Low cost

High  
accuracy

Compact  
size



# RS60 Series

RS60 series 6-axis integrated servo drive is an integrated high-performance servo drive launched by Rtelligent, specifically for the urgent need of servo drive in the robotics industry. With high precision, fast response, high synchronization, easy to adjust, small size, low cost, etc. RS60 series products with excellent performance, easy operation, excellent quality and other characteristics, in the field of robotics to provide a perfect solution for customers to continue to create value.

## Naming Rule

**RS60** - **E** - **L** - **050402** - **BO** - **000**

①
②
③
④
⑤
⑥

<b>① Product series</b> RS60: ROBOT SERVO Series 6-axis integrated high-performance servo drive	<b>② Function code</b> E: EtherCAT C: CANopen	<b>③ Voltage rating</b> L: 220V H: 380V
<b>④ Current rating of each axis</b> 05:5.0A rated current for 1 and 2 axis 04:3 and 4 axis rated current 4.0A 02:5 and 6 axis rated current 2.0A	<b>⑤ Encoder type</b> BO: Tamagawa absolute encoder	<b>⑥ Customized</b> Non-standard function

## Technical Specifications

	Item	Specification
Electrical specification	Input voltage	Single-phase AC220V±15%, 50/60Hz;Three-phase AC220V±15%, 50/60Hz
	Input rated current	Single-phase AC20Arms;Three-phase AC12arms
	Output voltage	0V~input voltage
	Output frequency	0Hz ~ 500Hz
	Continuous output current	1 & 2 axis:5.0A; 3 & 4 axis:2.5A; 5 & 6 axis:2.5A
	Maximum output current	15.0A; 3&4 axis:7.5A; 5&6 axis:7.5A
	Braking resistor	External braking resistor
	Auxiliary power supply voltage	DC24V -15%/+20%
	Auxiliary power supply current	DC5.0A
	Motor Brake	DC24V; 500mA
Basic specifications	Control mode	Input: single-phase or three-phase full-wave rectifier; Output: PWM control
	Operating/Storage temperature	0° C ~ +45° C (ambient temperature above 45° C need to be derated use, every 5° C derated 20%)

## Technical Specifications

	Item	Specification
Basic specification	Vibration resistance grade	4.9m/s <sup>2</sup>
	Protection grade	IP10
	Cooling method	External forced air cooling
	Environmental pollution level	PD2
	Overvoltage class	Overvoltage class III
Control performance	Minimum control cycle of current loop	62.5us
	Minimum control cycle of speed ring	250us
	Minimum control period of position loop	250us
Encoder	Tamagawa	Tamagawa absolute encoder, multi-turn 16bit/single-turn 17bit,2.5Mbps; Tamagawa absolute encoder, single-turn 17bit,2.5Mbps; Tamagawa absolute encoder, multi-turn 16bit/single-turn 23bit,2.5Mbps; Tamagawa absolute encoder, single-turn 23bit,2.5Mbps;
	Nikon	Nikon absolute encoder, multi-turn 16bit/single-turn 17bit,2.5Mbps/4Mbps; Nikon absolute encoder,single-turn 17bit,2.5Mbps/4Mbps; Nikon absolute encoder, multi-turn 16bit/single-turn 20bit, 2.5Mbps/4Mbps; Nikon absolute encoder, single-turn 20bit, 2.5Mbps/4Mbps;
	Panasonic	Panasonic absolute encoder,multi-turn 16bit/single-turn 17bit, 2.5Mbps; Panasonic absolute encoder, multi-turn 16bit/single-turn 20bit, 2.5Mbps; Panasonic absolute encoder,single-turn 17bit,2.5Mbps; Panasonic absolute encoder, single-turn 20bit,2.5Mbps; Panasonic absolute encoder, multi-turn 16bit/single-turn 23bit,2.5Mbps;
EtherCAT communication method	Bus type	EtherCAT
	Minimum communication period	500us
	Support services	CoE (PDO、SDO)
	Synchronization	DC-distributed clock
	Baud rate	100Mbit/s
	Duplex	Full duplex
	Topology	Circular, Linear
	Transmission media	Super category 5 shielded cable
Safety functions	Number of slaves	65535 supported by protocol, not more than 100 in practice
	EtherCAT frame length	44 bytes ~ 1498 bytes
Energy consumption braking	Safe torque off (STO)	When the STO function is triggered, the hardware immediately blocks the drive PWM. the motor stops output and the motor stops freely. Conformity: EN60204-1 part 5.4;EN60204-1 stop category 0
	Braking resistor connection	External braking resistor
	DC bus voltage during braking	DC 385V
	Minimum braking resistor power value	5.9kW
	Minimum external braking resistance value	25Ω



## RS60E Drive Wiring Diagram

### Circuit breaker for wiring

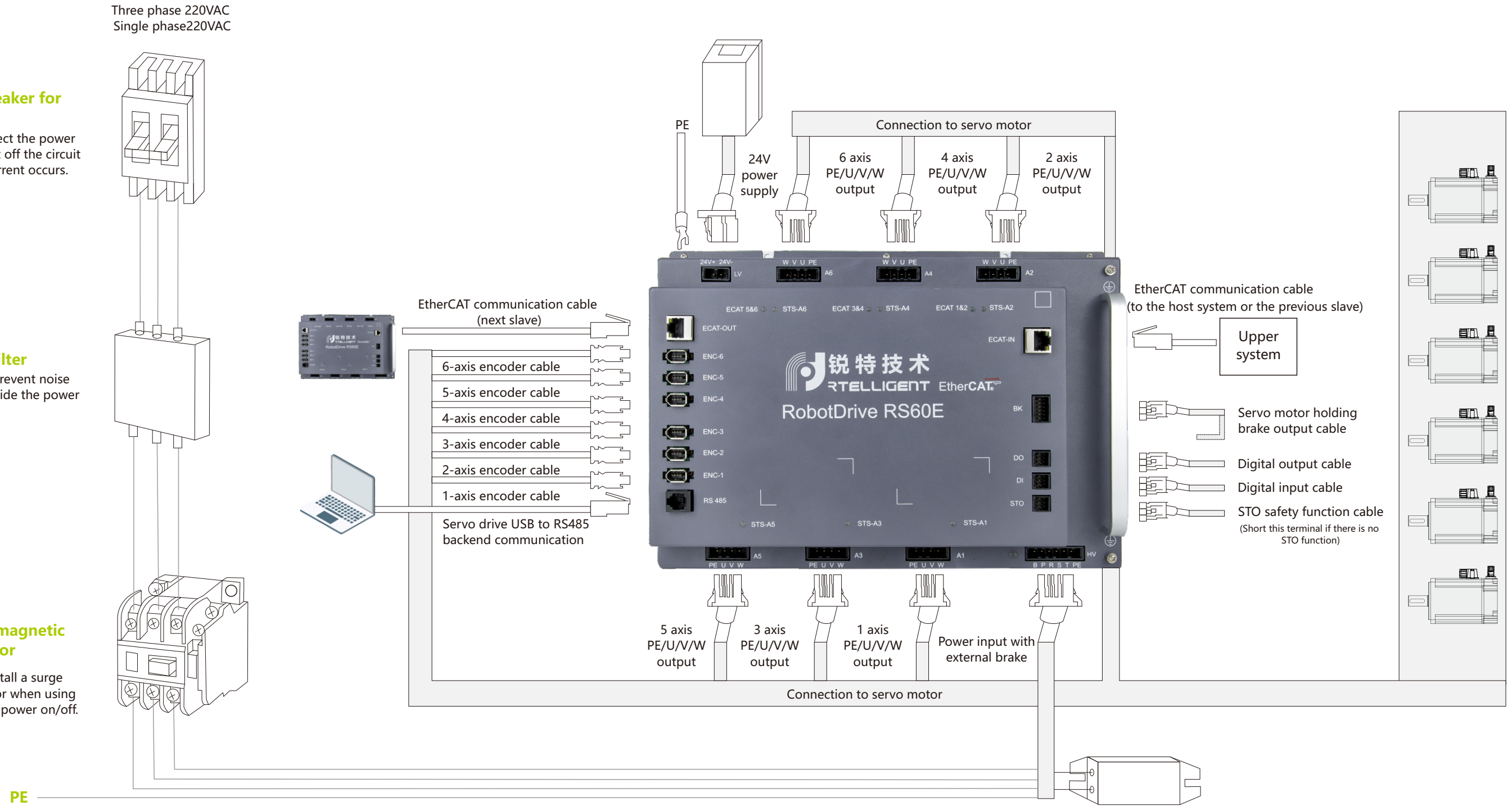
Used to protect the power cable and cut off the circuit when overcurrent occurs.

### Noise filter

Used to prevent noise from outside the power cable.

### Electromagnetic contactor

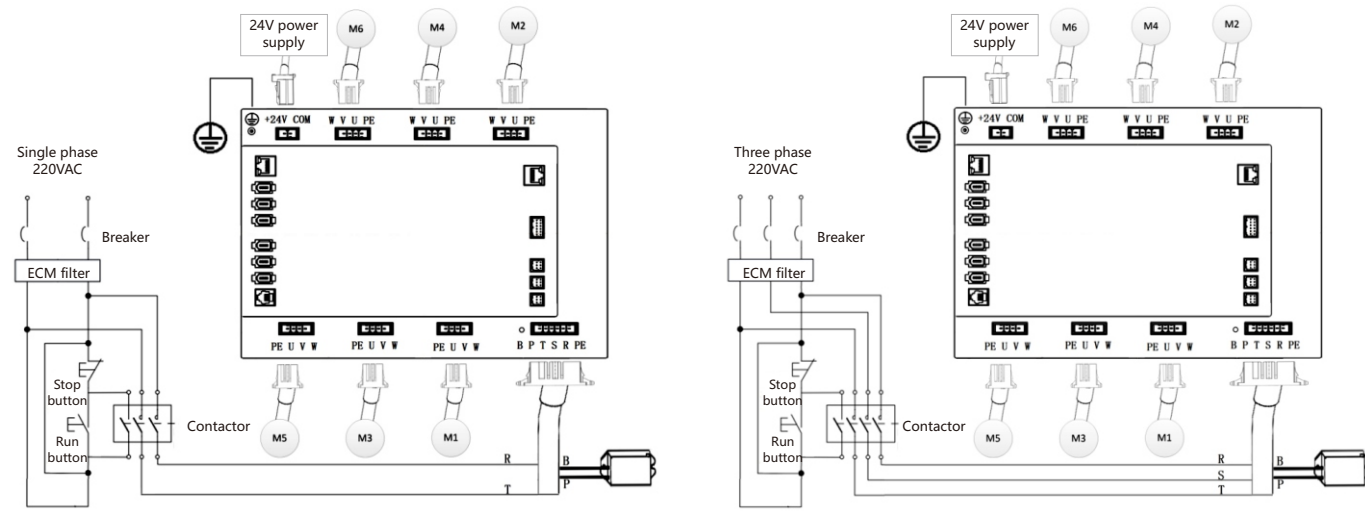
Please install a surge suppressor when using the servo power on/off.



### Braking resistor/can be external

When the busbar capacitance is insufficient, connect the PC terminal to the external brake resistance.

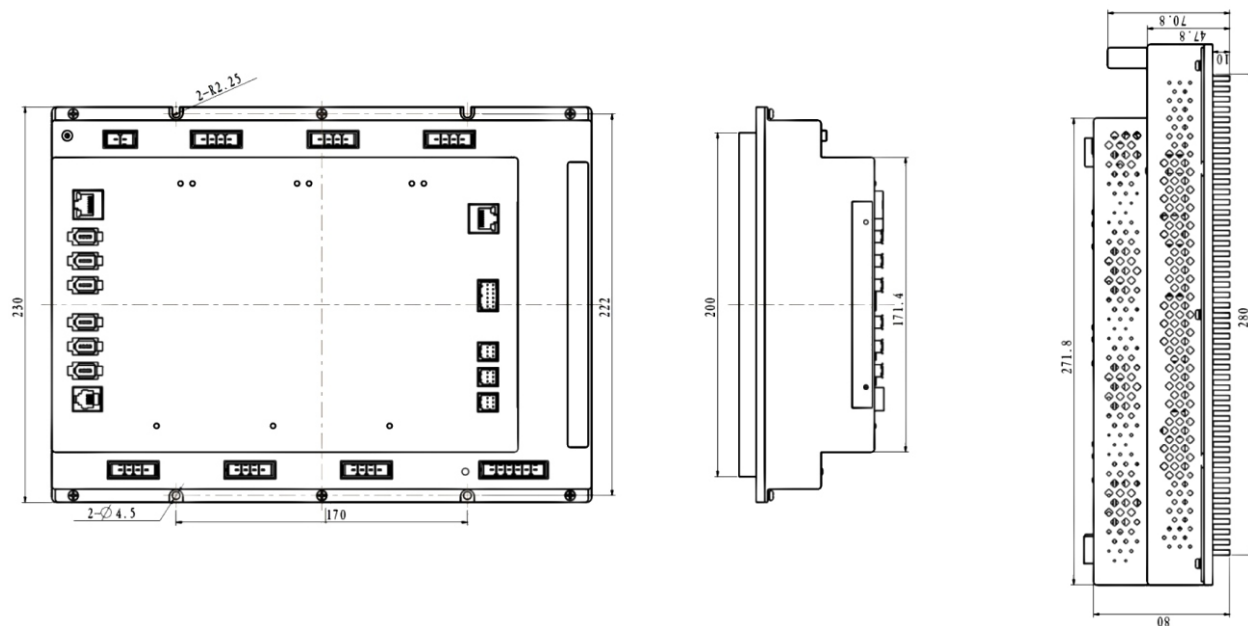
## ■ Wiring Diagram for RS60 Series Drives



Single-phase 220VAC power system wiring diagram

Three-phase 220VAC power supply system wiring diagram

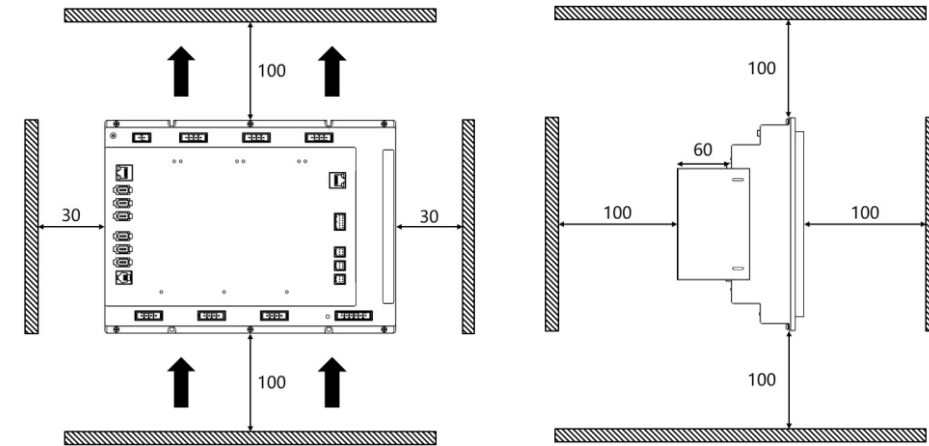
## ■ RS60 Series Drive Installation Dimensions



## ■ RS60 Series Drives Installation Space Requirements

Servo drives dissipate heat from the bottom to the top, and are usually required to be installed vertically. In cases where upper and lower rows are required, the heat from the lower rows can cause the temperature of the upper rows to rise and lead to malfunctions, so countermeasures such as the installation of heat-insulating deflectors should be taken.

The recommended minimum mounting distance for servo drives is shown in the figure in mm:

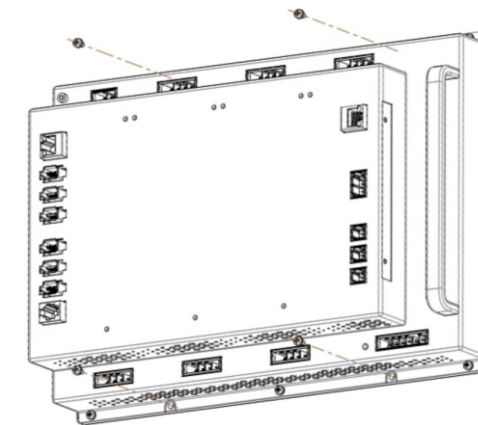


## ■ RS60 Series Drive Installation Method

1) Installation method:

This product is wall-mounted, through the product body to get 4 mounting spaces, using M4 screws. Fix the product to the mounting plane. Mark the location of the mounting threaded holes on the base plate, and drill a screw hole for each fixing screw in the base plate for fixing.

The product must be mounted vertically on the substrate and installed as shown in the following figure:



Use M4 screws for mounting and fixing, recommended torque is 1.2N.M

2) Cooling:

Please make sure the installation direction is perpendicular to the wall, and use natural convection or fan to cool the product.

3) Grounding:

Please make sure the grounding terminal is grounded, otherwise there may be a risk of electric shock or malfunction due to annoyance.

4) Wiring Requirements:

When wiring the drive, please route the cable downwards as far as possible to avoid liquid flowing down the line into the drive when there is a liquid load on the cable at the site.



# AC Servo Motor Series



**RSHA Series**



**RSNA Series**



**RSDA Series**



**RSM Series**



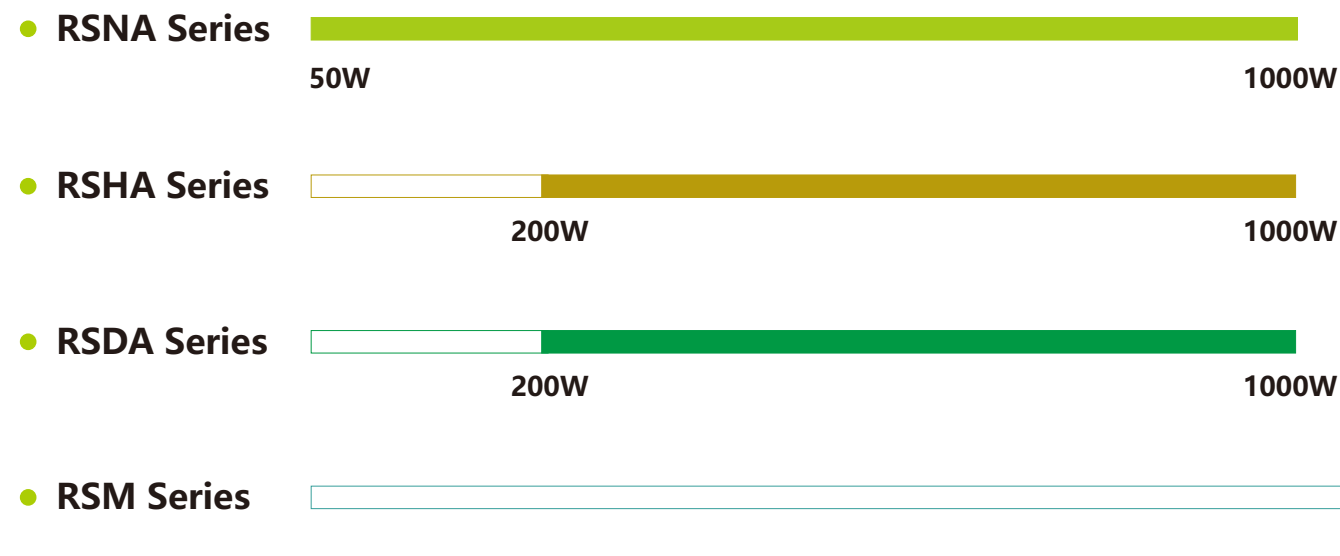
## AC Servo Motor

### Naming Rule

RSNA M 06 J 13 30 A - Z  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Product series	④ Encoder resolution J: 17 bits magnetic programmed single figure absolute value G: 17 bits magnetic programmed multi-turn absolute value L: 23-bit optical multi-turn absolute value	⑥ Motor rated speed 30: 3000rpm
② Motor inertia code S: small inertia M: medium inertia H: large inertia	⑤ Motor rated torque 13: 1.3N.M 150: 15N.M	⑦ Output mode A: Wire type C: Connector type
③ Motor flange size 06: 60mm 13: 130mm	⑧ Brake code Z: With brake	

Wide range of products, flexible matching, to meet the needs of different working conditions




## Shorter Body with Super Power

-  **Magnetic encoder optical encoder single-turn multi-turn**  
Various types of encoders are available. Including Magnetic, Optical, Multiturn Absolute.
-  **Permanent magnet brake Z-axis applications**  
Fast start/stop, low heat generation.  
Suitable for Z-axis application environment, in the event of drive power failure or alarm, holding brake, to protect the workpiece locking, avoiding the free slip





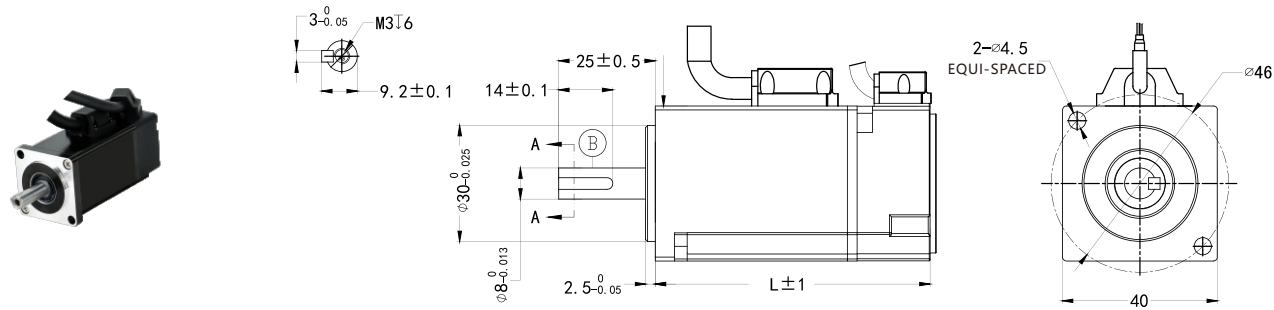
# RSNA Series Servo Motor

## Motor Specifications

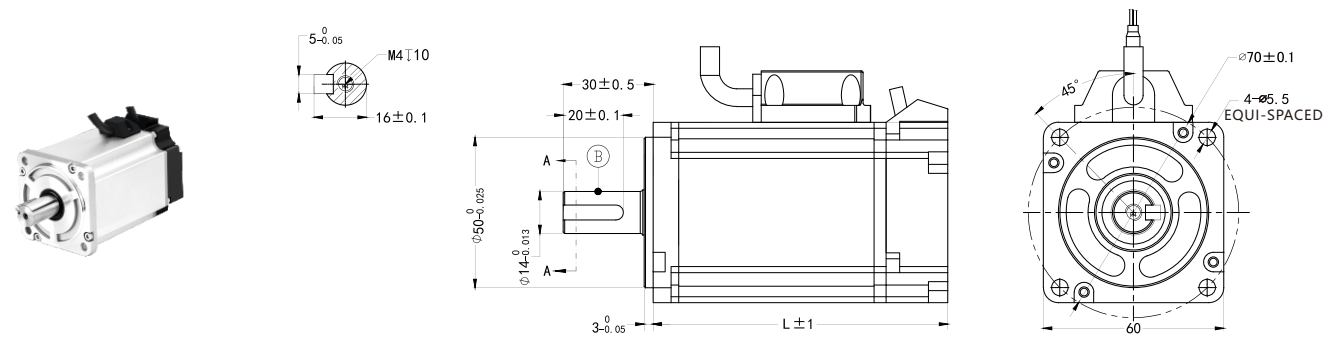
Motor	RS□A-M 04J0130A	RS□A-M 04J0330A	RSNA-M 06J0630A	RSNA-M 06J1330A	RSNA-M 08J2430A	RSNA-M 08J3230A
Rated power (W)	50	100	200	400	750	1000
Rated voltage (V)	220	220	220	220	220	220
Rated current (A)	1.1	1.1	1.9	2.3	4.2	5.6
Rated torque (N.M)	0.16	0.32	0.64	1.27	2.39	3.20
Maximum torque (N.M)	0.48	0.96	1.92	3.81	7.17	9.60
Rated speed (rpm)	3000	3000	3000	3000	3000	3000
Maximum speed (rpm)	6500	6500	6000	6000	6000	6000
Back EMF (V/Krpm)	10.5	18.8	26.6	37.0	35.7	34.6
Torque constant (N.M/A)	0.14	0.29	0.33	0.55	0.57	0.57
Wire resistance (Ω,20°C)	14.30	14.90	10.72	6.60	2.03	1.26
Wire inductance (mH,20°C)	14.80	14.80	21.04	20.56	10.20	6.86
Rotational inertia(X10 <sup>-4</sup> kg.m <sup>2</sup> )	0.036	0.079	0.26	0.61	1.71	2.11
Weight (kg)	0.35	0.46	0.84	1.19	2.27	2.95
		Brake 0.66	Brake 1.21	Brake 1.56	Brake 3.05	Brake 3.73
Length L (mm)	61.5	81.5	80	98	107	127
		Brake 110	Brake 109	Brake 127	Brake 144	Brake 163

\*The encoder comes standard with 17bit magnetic encoding, 23bit optical encoding is optional, and multi-turn absolute value specifications are available.

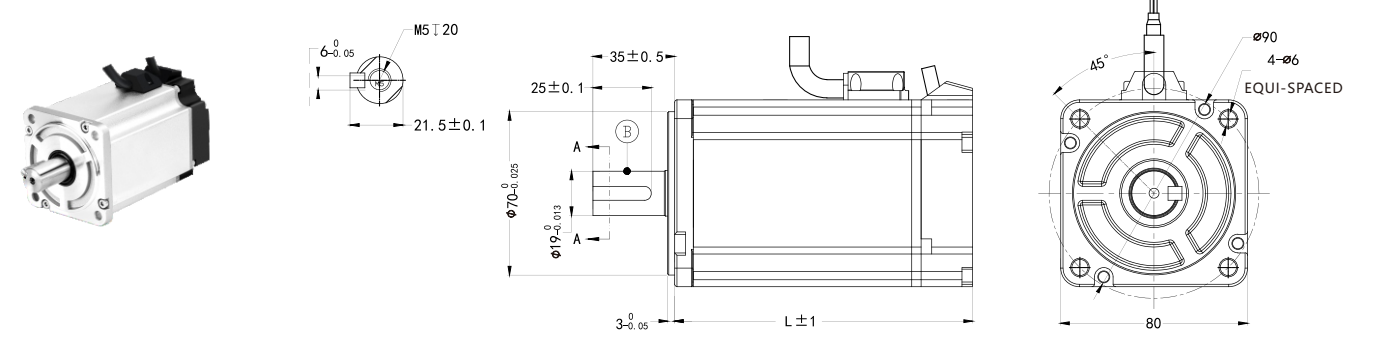
## Frame 40 Dimension(mm)



## Frame 60 Dimension(mm)

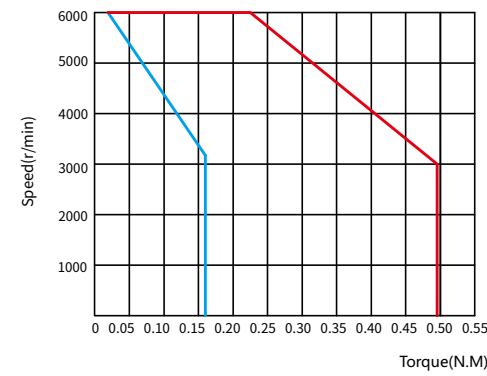


## Frame 80 Dimension(mm)

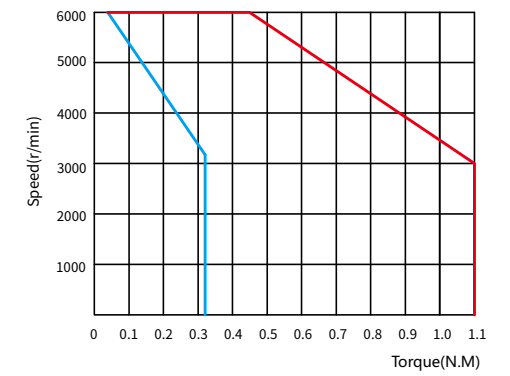


## Torque-speed Characteristic Curve

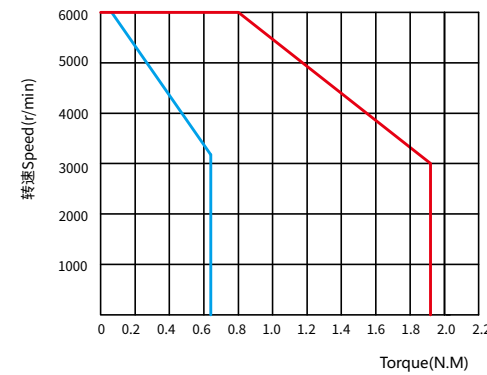
— A Continuous operating region — B Short-time operating region



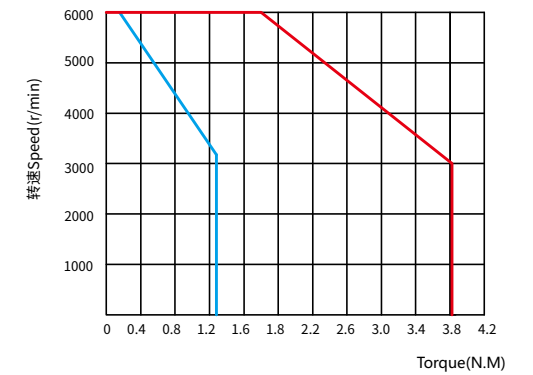
RS□A-M04J0130A



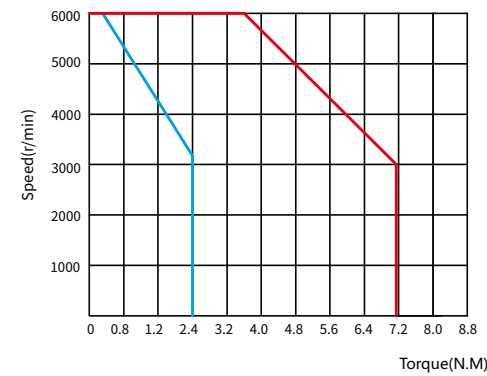
RS□A-M04J0330A



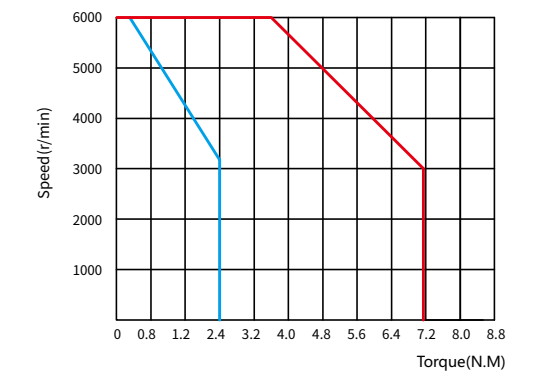
RSNA-M06J0630A



RSNA-M06J1330A



RSNA-M08J2430A



RSNA-M08J3230A

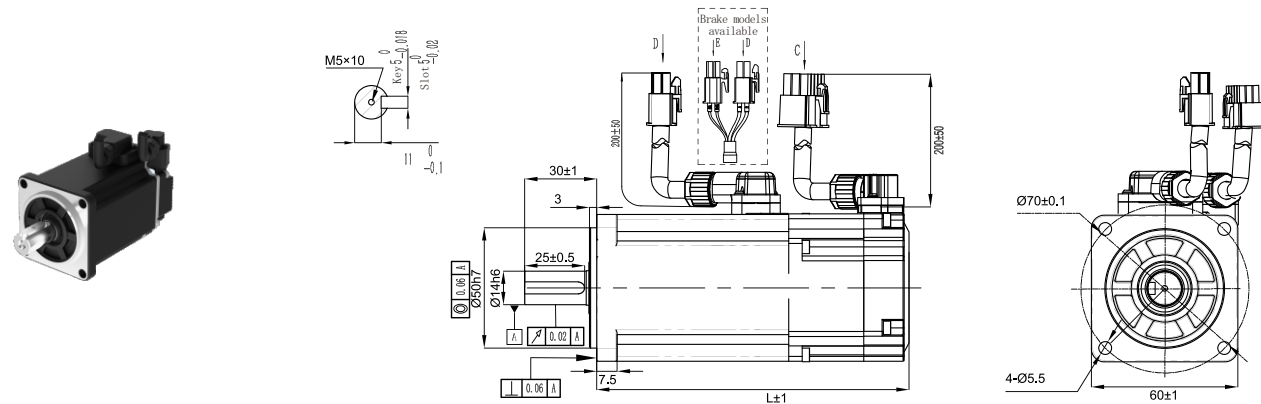
# RSHA Series Servo Motor

## Motor Specifications

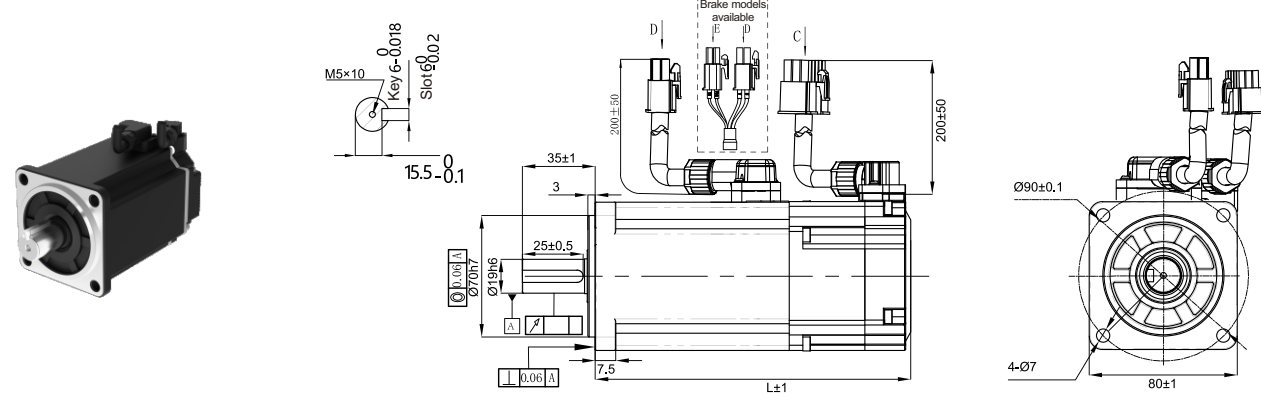
Motor	RSHA-H06J0630A	RSHA-H06J1330A	RSHA-H06J2030A	RSHA-H08J2430A	RSHA-H08J3230A
Rated power (W)	200	400	600	750	1000
Rated voltage (V)	220	220	220	220	220
Rated current (A)	1.8	3.6	4	4.8	4.8
Rated torque (N.M)	0.64	1.27	1.91	2.4	3.2
Maximum torque (N.M)	1.92	3.82	5.73	8	9.6
Rated speed (rpm)	3000	3000	3000	3000	3000
Maximum speed (rpm)	6000	6000	5000	5000	5000
Back EMF (V/Krpm)	21.8	23.2	32.7	35	42
Torque constant (N.M/A)	0.36	0.36	0.54	0.5	0.7
Wire resistance ( $\Omega$ ,20°C)	4.4	1.95	3.2	1.4	1.4
Wire inductance (mH,20°C)	11	4.7	8.5	6.8	7.2
Rotational inertia( $\times 10^{-4}$ kg.m <sup>2</sup> )	0.32	0.68	0.84	1.72	2.4
Length L (mm)	77	96	114	106	120
	Brake 104	Brake 123	Brake 141	Brake 140	Brake 154

\*The encoder comes standard with 17bit magnetic encoding, 23bit optical encoding is optional, and multi-turn absolute value specifications are available.

## Frame 60 Dimension(mm)

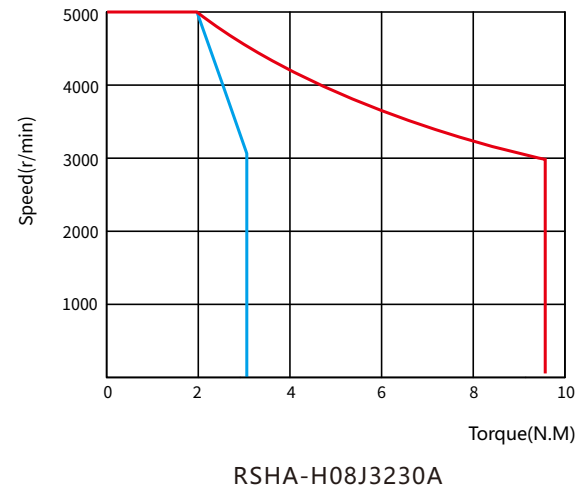
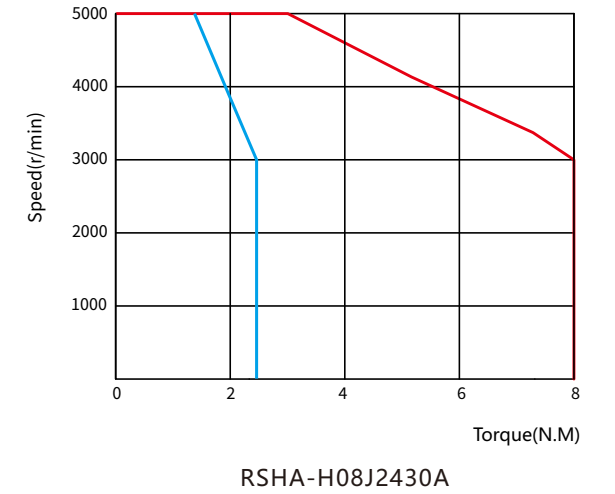
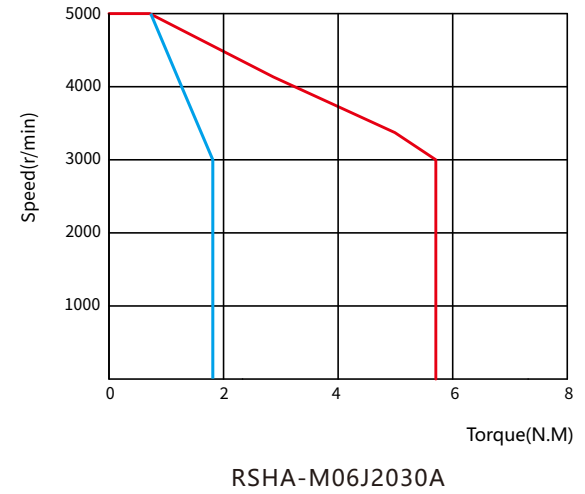
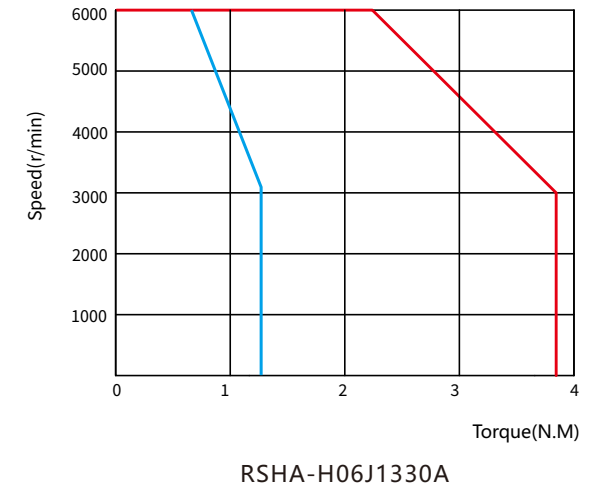
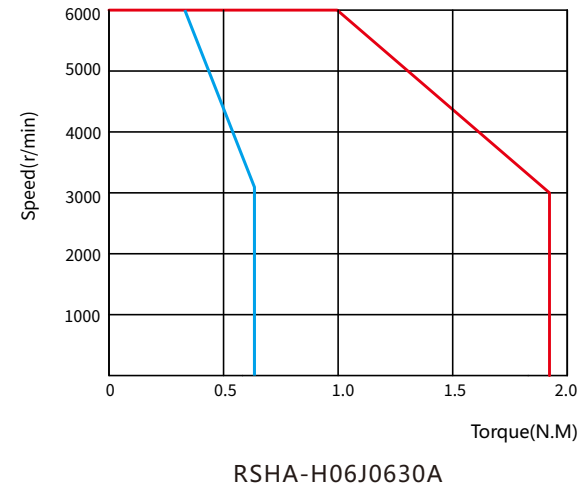


## Frame 80 Dimension(mm)



## Torque-speed Characteristic Curve

— A Continuous operating region — B Short-time operating region





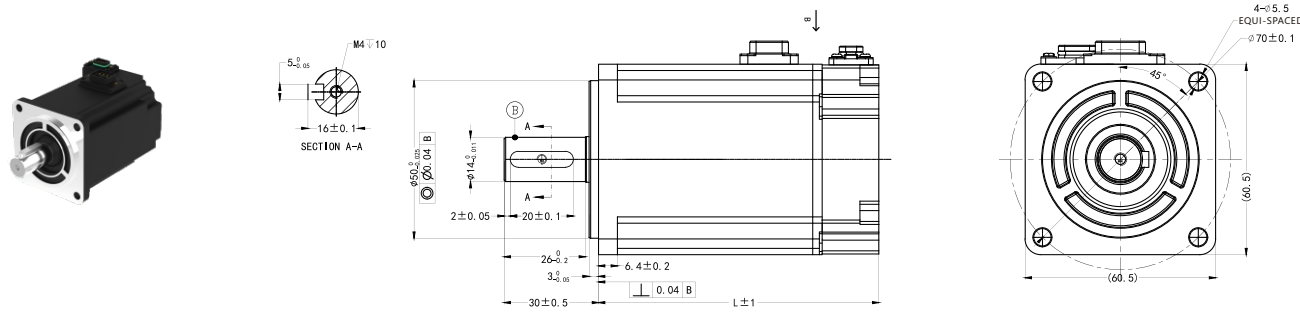
# RSDA Series Servo Motor

## Motor Specifications

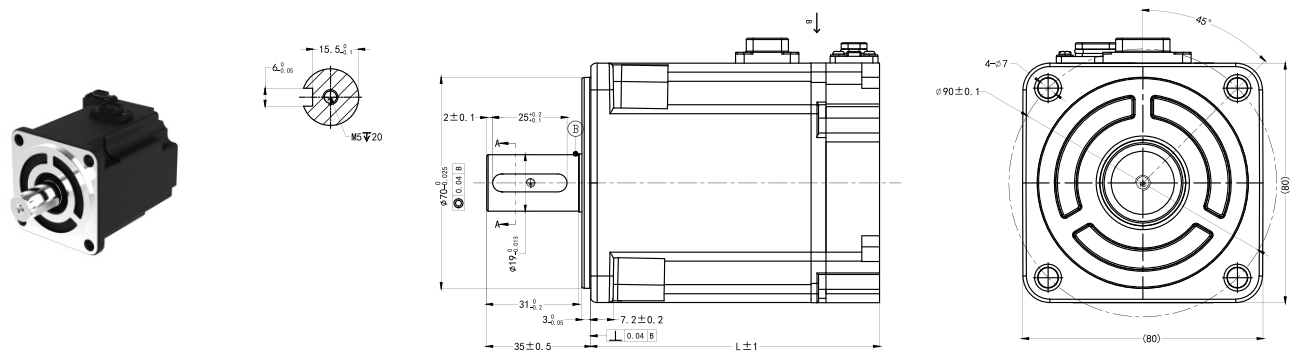
Motor	RSDA-H06J0630C	RSDA-H06J1330C	RSDA-H08J2430C	RSDA-H08J3230C
Rated power (W)	200	400	750	1000
Rated voltage (V)	220	220	220	220
Rated current (A)	1.9	2.5	4.9	4.9
Rated torque (N.M)	0.64	1.27	2.39	3.2
Maximum torque (N.M)	1.28	2.54	4.78	4.8
Rated speed (rpm)	3000	3000	3000	3000
Maximum speed (rpm)	6000	6000	6000	5000
Back EMF (V/Krpm)	22.6	34.6	35	45.7
Torque constant (N.M/A)	0.33	0.5	0.49	0.65
Wire resistance ( $\Omega$ ,20°C)	5.8	5.75	1.26	1.55
Wire inductance (mH,20°C)	9.6	9.7	4.43	5.58
Rotational inertia( $\times 10^{-4}$ kg.m <sup>2</sup> )	0.2	0.5	1.5	1.9
	Brake 0.25	Brake 0.55	Brake 1.7	Brake 2.1
Length L (mm)	70 Brake 100.5	89 Brake 119	97 Brake 135	109 Brake 147

\*The encoder comes standard with 17bit magnetic encoding, 23bit optical encoding is optional, and multi-turn absolute value specifications are available.

## Frame 60 Dimension(mm)

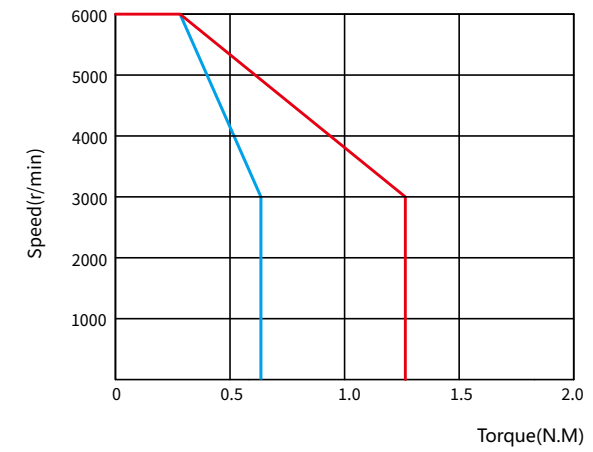


## Frame 80 Dimension(mm)

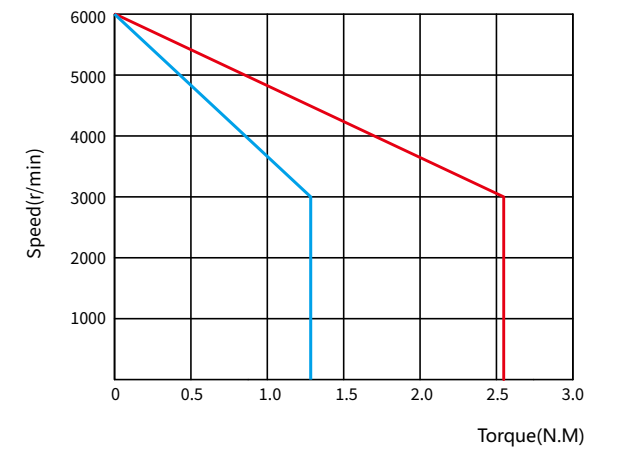


## Torque-speed Characteristic Curve

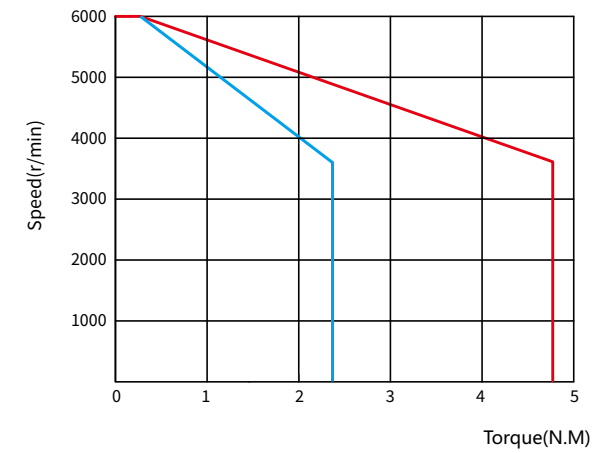
— A Continuous operating region — B Short-time operating region



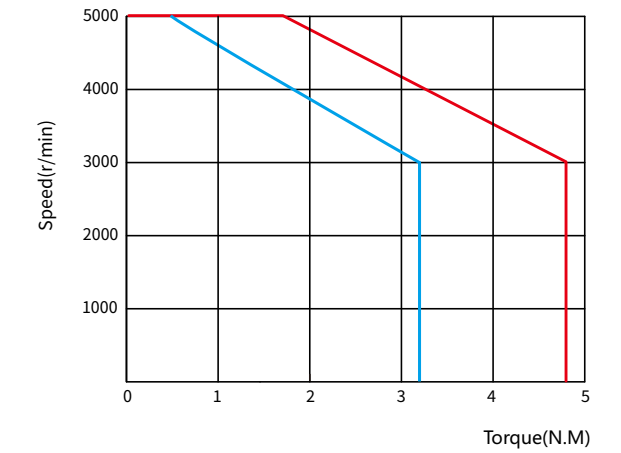
RSDA-H06J0630C



RSDA-H06J1330C



RSDA-H08J2430C



RSDA-H08J3230C

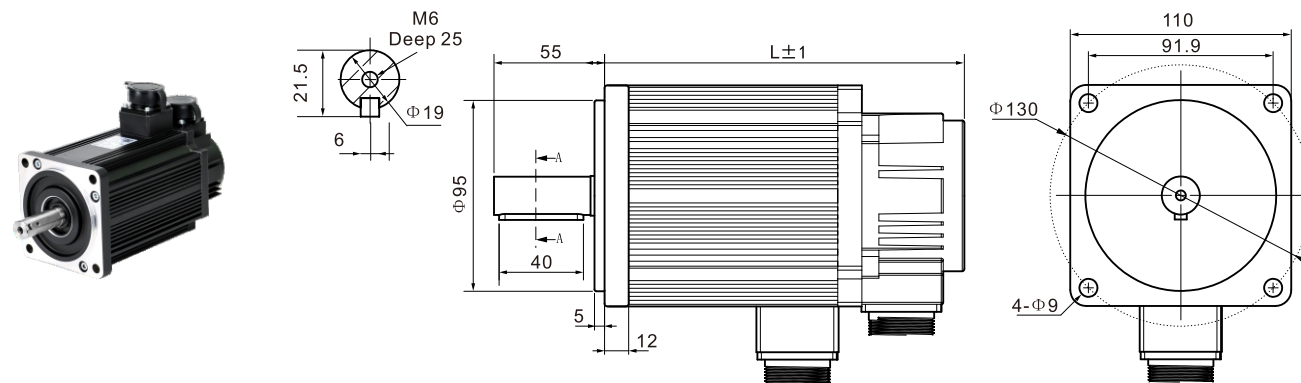
# RSM Series Servo Motor

## Motor Specifications

Motor	RS□- M11J4030A	RS□-M11J5030A	RS□-M11J6020A	RS□-M11J6030A
Rated power(kW)	1.2	1.5	1.2	1.8
Rated voltage(V)	220	220	220	220
Rated current(A)	5.0	6.0	4.5	6.0
Rated torque(N.M)	4.0	5.0	6.0	6.0
Maximum torque(N.M)	12	15	12	18
Motor pole pair	4	4	4	4
Encoder specification	17bit	17bit	17bit	17bit
Rated speed(rpm)	3000	3000	2000	3000
Maximum speed(rpm)	4500	4500	3000	4500
Reverse potential(V/Krpm)	54	62	83	60
Line resistance( $\Omega$ ,20°C)	1.09	1.03	1.46	0.81
Line inductance(mH,20C)	3.3	3.43	4.7	2.59
Rotational inertia( $\times 10^{-4}$ kg.m <sup>2</sup> )	5.4	6.3	7.6	7.6
Weight(kg)	6.0	6.8 Brake 7.3	7.9 Brake 8.4	7.9 Brake 8.4
Length L(mm)	189	Brake 264	219 Brake 279	Brake 294

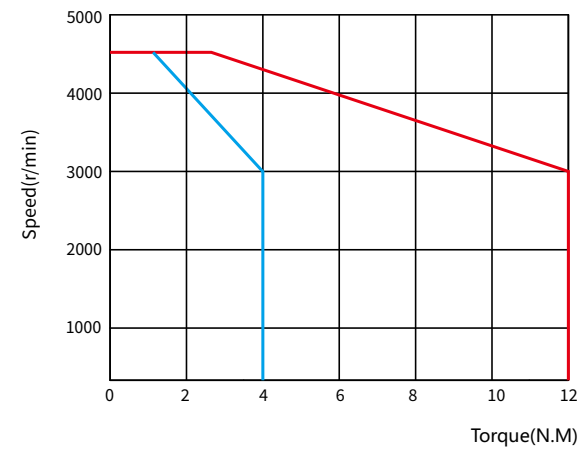
\*The encoder comes standard with 17bit magnetic encoding, 23bit optical encoding is optional, and multi-turn absolute value specifications are available.

## Frame 110 Dimension(mm)

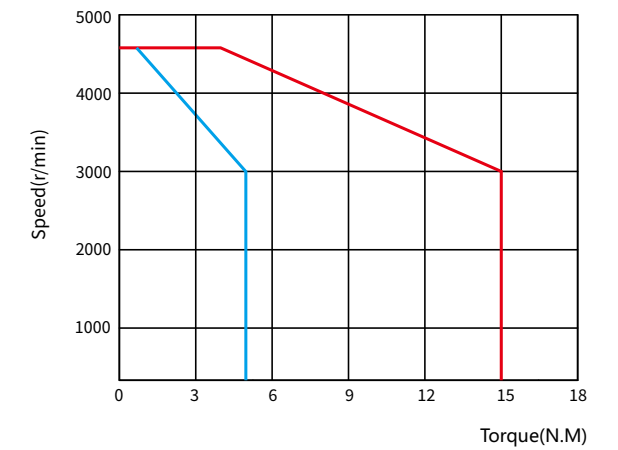


## Torque-speed Characteristic Curve

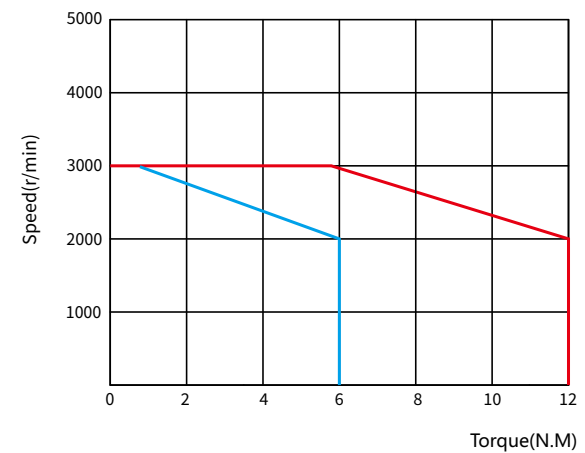
— A Continuous operating region — B Short-time operating region



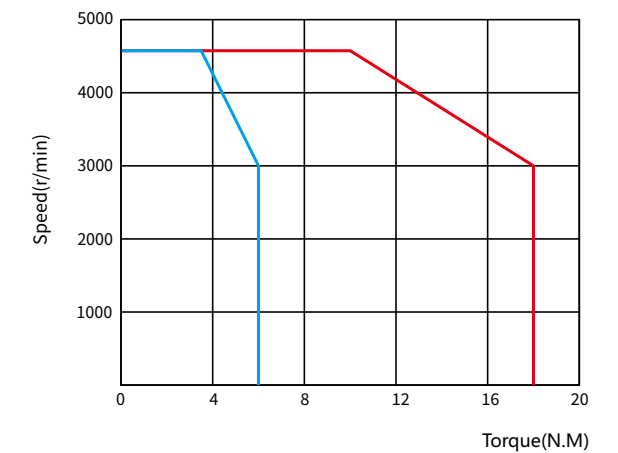
RS□- M11J4030A



RS□- M11J5030A



RS□-M11J6020A



RS□-M11J6030A



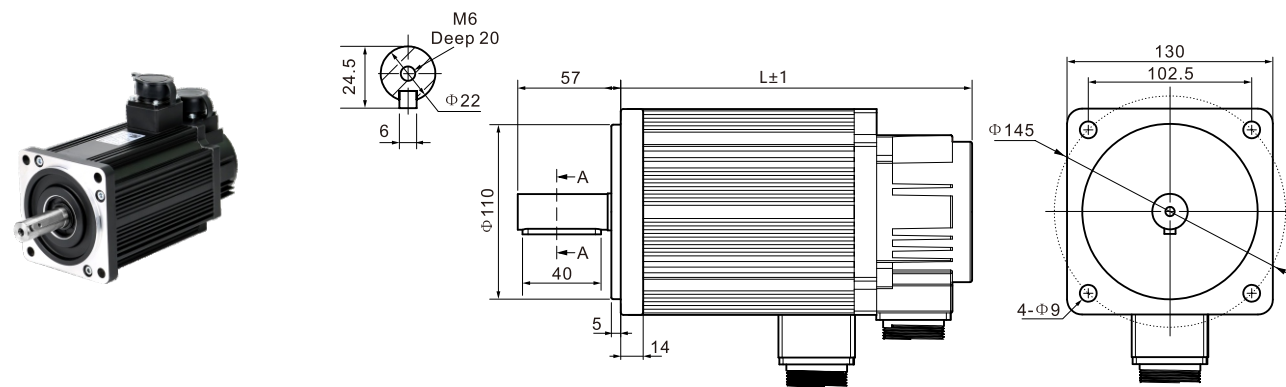
# RSM Series Servo Motor

## Motor Specifications

Motor	RS□-M 13J4025A	RS□-M 13J6025A	RS□-M 13J7725A	RS□-M 13J10025A	RS□-M 13J15015A	RS□-M 13J15025A
Rated power(kW)	1.0	1.5	2.0	2.6	2.3	3.8
Rated voltage(V)	220	220	220	220	220	220
Rated current(A)	4.0	6.0	7.5	10	9.5	13.5
Rated torque(N.M)	4.0	6.0	7.7	10	15	15
Maximum torque(N.M)	10	18	22	25	30	30
Motor pole pair	4	4	4	4	4	4
Encoder specification	17bit	17bit	17bit	17bit	17bit	17bit
Rated speed(rpm)	2500	2500	2500	2500	1500	2500
Maximum speed(rpm)	3000	4000	4000	3500	3000	3500
Reverse potential(V/Krpm)	67	65	68	70	114	67
Line resistance(Ω,20°C)	2	1.21	1.01	0.73	1.1	0.49
Line inductance(mH,20C)	9.5	3.87	2.94	2.45	4.46	1.68
Rotational inertia(X10 <sup>-4</sup> kg.m <sup>2</sup> )	9.6	1.25	1.53	1.94	2.77	2.77
Weight(kg)	5.5	7.4 Brake 9.0	8.3 Brake 9.9	9.8 Brake 11.4	12.6 Brake 14.2	11.7 Brake 13.3
Length L(mm)	166	179 Brake 236	192 Brake 249	209 Brake 290	241 Brake 322	231 Brake 303

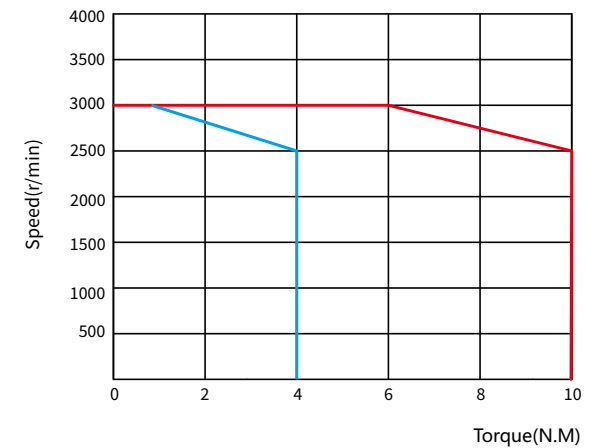
\*The encoder comes standard with 17bit magnetic encoding, 23bit optical encoding is optional, and multi-turn absolute value specifications are available.

## Frame 130 Dimension(mm)

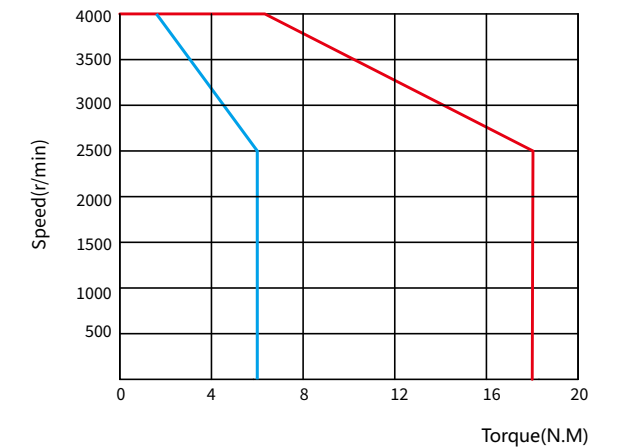


## Torque-speed Characteristic Curve

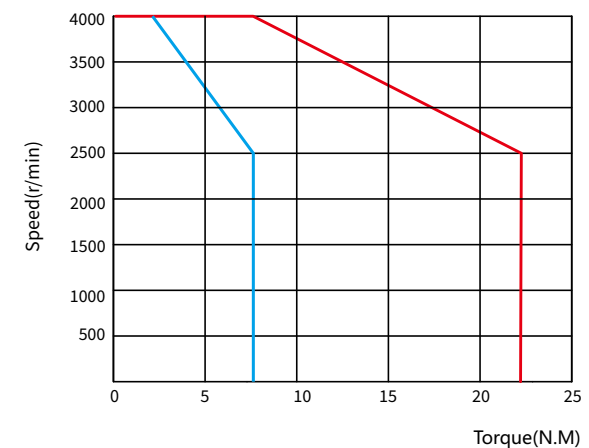
— A Continuous operating region — B Short-time operating region



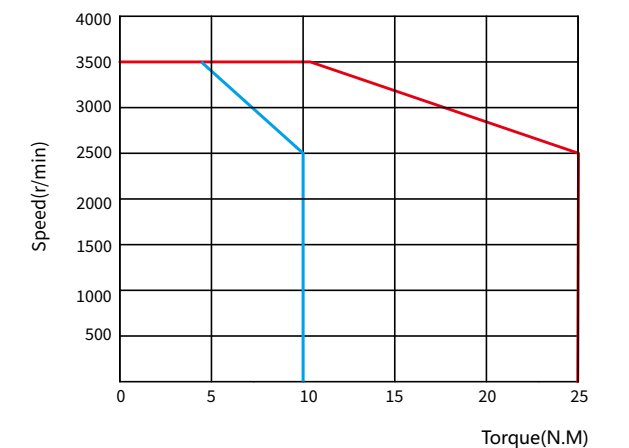
RS□- M13J4025A



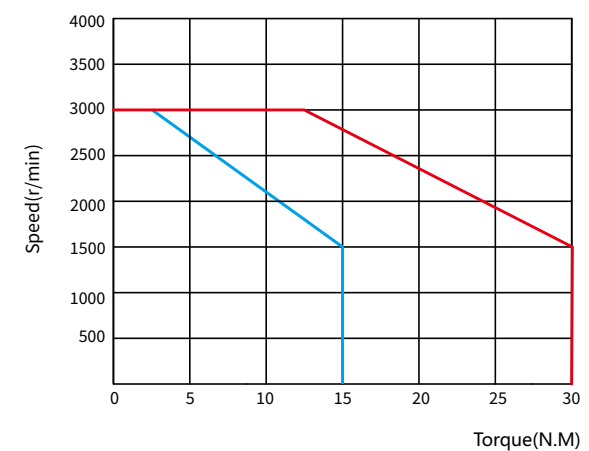
RS□- M13J6025A



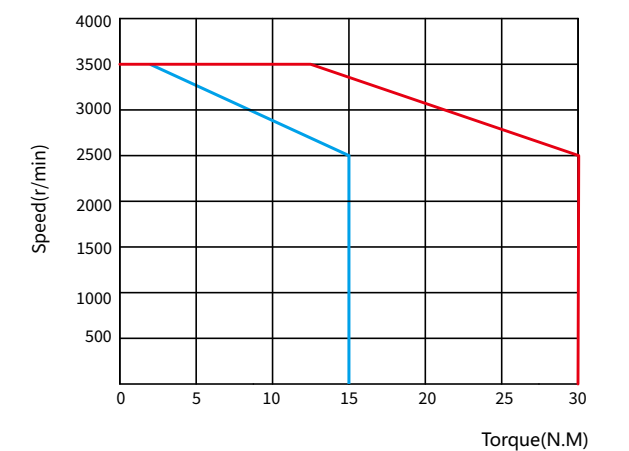
RS□- M13J7725A



RS□- M13J10025A



RS□- M13J15015A



RS□- M13J15025A

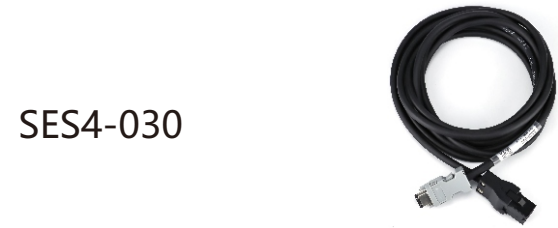
# Matching Cables

## Naming Rule

**S** **E** **C** **4** - **030**  
 ① ② ③ ④ ⑤

① High voltage servo extension cable	④ Number of cable cores
② E: Encode cable M: Motor power cable B: Brake cable	⑤ Length 030: 3000mm
③ S: AMPconnector C: connector	

## Single-turn Absolute Servo Encoder Extension Cable



SES4-030

VCC	GND	SD+	SD-
RED	WHT	BLU	BLU&WHT

Matching products: servo motor below 1kw with single-turn absolute encoder



SEH4-030

VCC	GND	SD+	SD-
RED	WHT	BLU	BLU&WHT

Matching products: servo motor above 1kw with single-turn absolute encoder

## Multi-turn Absolute Servo Encoder Extension Cable



SES6-030

VCC	GND	PS+	PS-	BAT+	BAT-
RED	BLK	BLU	BLU&BLK	GRN	GRN&BLK

Matching products: servo motor below 1kw with multi-turn absolute encoder



SEH6-030

VCC	GND	PS+	PS-	BAT+	BAT-
RED	BLK	BLU	BLU&BLK	GRN	GRN&BLK

Matching products: servo motor above 1kw with multi-turn absolute encoder

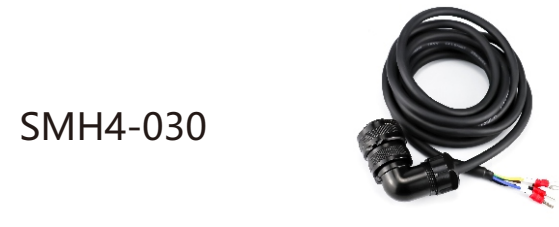
## Motor Power Extension Cable



SMS4-030A

U	V	W	PE
RED	WHT	BLK	YEL&GRN

Matching products: AC servo motor below 1kw



SMH4-030

U	V	W	PE
BRN	BLU	BLK	YEL&GRN

Matching products: AC servo motor above 1kw

## Servo Brake Cable

SBS2-030  
(for option)

VCC	GND
RED	BLK



Note: High power servo motor select SZH2-030

## Multi-turn Encoder Battery Box

MR-J3BAT

VCC	GND
RED	BLK



Matching products: servo motor with multi-turn encoder

## Mini USB Interface Tuning Cable

MINI USB  
(for option)

Matching products: RS series



## Network Cable (Short)

E0035 (for option)

Matching products: EtherCAT series



## RSDA-C Series Motor Special Cable

## Single-turn Absolute Servo Encoder Extension Cable Multi-turn Absolute Servo Encoder Extension Cable

SEC4-030S

VCC	GND	NC	NC	SD+	SD-
RED	BLK			BLU	BLU&BLK

Matching products: servo motor below 1kw with single-turn absolute encoder



SEC6-030S

VCC	GND	NC	NC	SD+	SD-
RED	BLK			BLU	BLU&BLK

Matching products: servo motor below 1kw with multi-turn absolute encoder



## Motor Power Extension Cable

SMC4-030S

U	V	W	PE
RED	WHT	BLK	YEL&GNK

Matching products: AC servo motor below 1kw



## Motor Power Ext.Cable & Brake Cable Set

SMC6-030S

U	V	W	PE	Brake+	Brake-
RED	WHT	BLK	YEL/GRN	BRN	BLU

Matching products: AC servo motor below 1kw





# Quick Selection Table

## AC Servo Drive

Model	Matching motor*	Control type	Power supply voltage	External debug interface
RS100CS	100W AC servo motor	Pulse control	220VAC	Type-C
RS200CS	200W AC servo motor	Pulse control	220VAC	Type-C
RS400CS	400W AC servo motor	Pulse control	220VAC	Type-C
RS750CS	750W AC servo motor	Pulse control	220VAC	Type-C
RS1000CS	1kW AC servo motor	Pulse control	220VAC	Type-C
RS1500CS	1.5kW AC servo motor	Pulse control	220VAC	Type-C
RS100	100W AC servo motor	Pulse control/RS485	220VAC	Mini USB
RS200	200W AC servo motor	Pulse control/RS485	220VAC	Mini USB
RS400	400W AC servo motor	Pulse control/RS485	220VAC	Mini USB
RS750	750W AC servo motor	Pulse control/RS485	220VAC	Mini USB
RS1000	1kW AC servo motor	Pulse control/RS485	220VAC	Mini USB
RS1500	1.5kW AC servo motor	Pulse control/RS485	220VAC	Mini USB
RS3000	3.8kW AC servo motor	Pulse control/RS485	220VAC	Mini USB
RS100E	100W AC servo motor	EtherCAT	220VAC	Mini USB
RS200E	200W AC servo motor	EtherCAT	220VAC	Mini USB
RS400E	400W AC servo motor	EtherCAT	220VAC	Mini USB
RS750E	750W AC servo motor	EtherCAT	220VAC	Mini USB
RS1000E	1kW AC servo motor	EtherCAT	220VAC	Mini USB
RS1500E	1.5kW AC servo motor	EtherCAT	220VAC	Mini USB
RS3000E	3.8kW AC servo motor	EtherCAT	220VAC	Mini USB
R5L028	400W AC servo motor	Pulse control	220VAC	Type-C
R5L042	750W AC servo motor	Pulse control	220VAC	Type-C
R5L130	2.3kW AC servo motor	Pulse control	220VAC	Type-C
R5L028M	400W AC servo motor	Pulse control/RS485	220VAC	Type-C
R5L042M	750W AC servo motor	Pulse control/RS485	220VAC	Type-C
R5L130M	2.3kW AC servo motor	Pulse control/RS485	220VAC	Type-C
R5L028E	400W AC servo motor	EtherCAT	220VAC	Type-C
R5L042E	750W AC servo motor	EtherCAT	220VAC	Type-C
R5L130E	2.3kW AC servo motor	EtherCAT	220VAC	Type-C

The matching motor spec is for reference only, smaller motor is also compatible.

## AC Servo Motor

Encoder type	Motor base	Rated current (W)	Rated torque (N.M)	Model	Body length (mm)	Marching R5 servo drive	Matching RS servo drive	Extension cable *		
17bit magnetic single-turn absolute encoder	40	50	0.16	RSTA-M04J0130A	61.5	R5L028 R5L028M R5L028E	RS100 RS100E RS100CS/CR	Encoder cable SES4-030		
		100	0.32	RSTA-M04J0330A	81.5					
				RSTA-M04J0330A-Z	110					
	60	200	0.64	RSHA-H06J0630A	77		R5L042 R5L042M R5L042E		RS200 RS200E RS200CS/CR	Motor power cable SMS4-030A
				RSHA-H06J0630A-Z	104					
				RSNA-M06J0630A	80					
		400	1.27	1.27	RSNA-M06J0630A-Z	109				
					RSHA-H06J1330A	96				
					RSHA-H06J1330A-Z	123				
	80	600	1.91	RSNA-M06J1330A	98	R5L130 R5L130M R5L130E	RS400 RS400E RS400CS/CR	Servo brake cable ( for option) SBS2-030		
				RSNA-M06J1330A-Z	127					
				RSHA-H06J2030A	114					
		750	2.39	2.39	RSHA-H06J2030A-Z		141			
					RSHA-H08J2430A		106			
					RSHA-H08J2430A-Z		140			
					RSNA-M08J2430A		107			
	1000	3.20	3.20	RSNA-M08J2430A-Z	144					
				RSHA-H08J3230A	120					
				RSHA-H08J3230A-Z	154					
				RSNA-M08J3230A	127					
			RSNA-M08J3230A-Z	163						

\* The standard length of the extension cable is 3 meters, if you need other sizes, please specify when ordering.

\*\*For the motor of high power servo motor, please refer to the details page or consult with our engineer.

■ AC Servo Motor

Encoder type	Motor base	Rated current (W)	Rated torque (N.M)	Model	Body length (mm)	Marching R5 servo drive	Matching RS servo drive	Extension cable *	
17 bit magnetic multi-turn absolute encoder	40	50	0.16	RSTA-M04G0130A	61.5	R5L028 R5L028M R5L028E	RS100 RS100E RS100CS/CR	Encoder cable SES6-030	
		100	0.32	RSTA-M04G0330A	81.5				
					RSTA-M04G0330A-Z				110
		200	0.64		RSHA-H06G0630A				77
					RSHA-H06G0630A-Z				104
					RSNA-M06G0630A				80
	1.27			RSNA-M06G0630A-Z	109				
				RSHA-H06G1330A	96				
				RSHA-H06G1330A-Z	123				
	60	400	1.27	RSNA-M06G1330A	98				
				RSNA-M06G1330A-Z	127				
				RSHA-H06G2030A	114				
		600	1.91	RSHA-H06G2030A-Z	141				
				RSHA-H08G2430A	106				
				RSHA-H08G2430A-Z	140				
	80	750	2.39	RSNA-M08G2430A	107				
				RSNA-M08G2430A-Z	144				
				RSHA-H08G3230A	120				
				RSHA-H08G3230A-Z	154				
				RSNA-M08G3230A	127				
				RSNA-M08G3230A-Z	163				
		1000	3.20		R5L130 R5L130M R5L130E	RS1000 RS1000E RS1000CS/CR			
23bit optical multi-turn absolute encoder	40	50	0.16	RSTA-M04L0130A	61.5	R5L028 R5L028M R5L028E	RS100 RS100E RS100CS/CR	Encoder cable SES6-030	
		100	0.32	RSTA-M04L0330A	81.5				
					RSTA-M04L0330A-Z				110
		200	0.64		RSHA-H06L0630A				77
					RSHA-H06L0630A-Z				104
					RSNA-M06L0630A				80
	1.27			RSNA-M06L0630A-Z	109				
				RSHA-H06L1330A	96				
				RSHA-H06L1330A-Z	123				
	60	400	1.27	RSNA-M06L1330A	98				
				RSNA-M06L1330A-Z	127				
				RSHA-H06L2030A	114				
		600	1.91	RSHA-H06L2030A-Z	141				
				RSHA-H08L2430A	106				
				RSHA-H08L2430A-Z	140				
	80	750	2.39	RSNA-M08L2430A	107				
				RSNA-M08L2430A-Z	144				
				RSHA-H08L3230A	120				
		1000	3.20	R5L130 R5L130M R5L130E	RS1000 RS1000E RS1000CS/CR				

\* The standard length of the extension cable is 3 meters, if you need other sizes, please specify when ordering.

\*\*For the motor of high power servo motor, please refer to the details page or consult with our engineer.

Cooperative Partners



Marketing & Sales network



# The 6th General-purpose High Performance Servo R6 Series

## Coming Soon

# R6

