StellarSpace

SP Series
AC Servo Catalogue

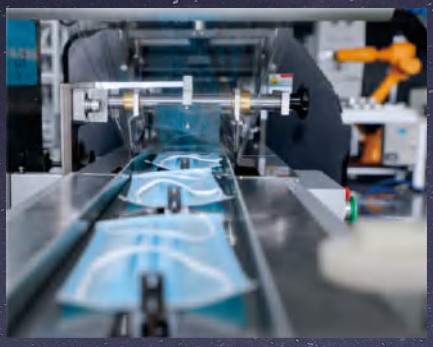
About

StellarSpace focuses on industrial automation, digitalization, and intelligence, offering core technologies across the information, control, drive, and execution layers.

The company specializes in the development, production, and sales of automation products such as PLCs, servo systems, inverters, and industrial motors. Widely applied in light and heavy industries, including high-end equipment, its solutions enable smart, precise, and efficient operations, driving smart manufacturing and supporting industrial digital transformation.

APPLICATION

Punching Machine



Packaging Machine

Bending Machine

CNC Machine tool

Cutting Machine

Printing Machiney

Manipulator

Electronic Manufacturing

Engraving Machine

Product Features

SP SERIES AC SERVO SYSTEM

High-Quality Motor

Support IP65 with enhanced protection rating, delivering outstanding overall motor performance.

High Precision

Utilize high-speed DSP chips to achieve superior control accuracy.

Intelligent Adaptation

Intelligently adapt to absolute encoder motors, optimizing motor performance.

Wide Power Coverage

Compatible with new generation servo motors, covering the 100W to 7500W power range.

Reduced Signal Interference

Pulse modules support independent 5V and 24V connections and feature a built-in 24V power supply, effectively minimizing signal interference.

Rich Functionality

Support pulse, RS485, and EtherCAT control methods.

CONTENTS >>>

01

Pulse AC Servo Drive

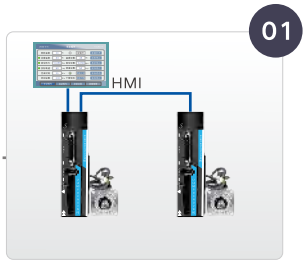
Pulse AC Servo Drive

Drive Features

Strong internal motion control functions which can realize position, speed, torque, homing controlling modes. It also supports I/O control and standard Modbus RTU protocol. It can replace PLC partly, which helps to save cost.

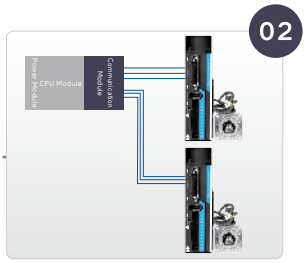
Easy to connect with HMI

- Easy control system
- Save wirings
- Set parameters and state monitoring



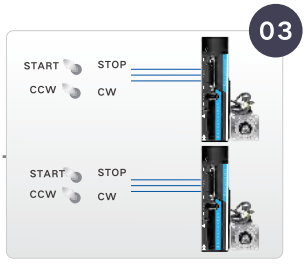
Realize RS485 to make motion through PLC

- PLC with RS485 terminal
- Easy controlling and programming
- Save PLC output points



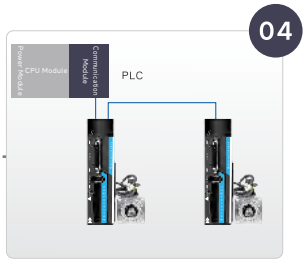
Directly to control through swithes

- Simple motion control case
- Low cost design
- Circular control of point movement



Through I/O module of PLC

- Need PLC pulse output module
- Reduce system design cost
- Easier control and operation



Pulse AC Servo Drive

Drive Naming Rules

SP	100	H	-	40
①	②	③		④

①	Product Series
–	SP Series Servo Drive

②	Power Range
100	100W~1000W
200	1000W~2600W
300	2600W~4000W
500	4000W~7500W

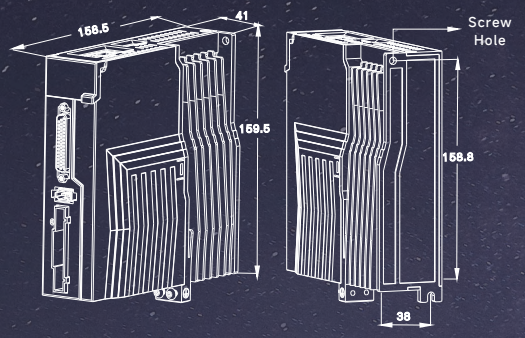
③	Product Type
H	Pulse + Rs485
E	EtherCAT

④	Power Segment
40	100W~400W
75	750W~1000W

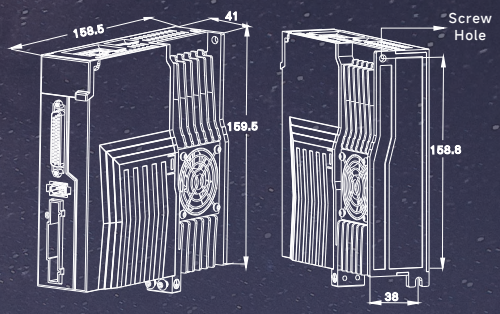
Drive Specification

Model	SP100H-40	SP100H-75	SP200H	SP300H	SP500H
Output Power	0.1kW~0.4kW	0.75kW~1kW	1kW~2.6kW	2.6kW~4kW	4kW~7.5kW
Power Supply	1-Phase AC220V -15%~+10% 50/60Hz		1/3-Phase AC220V -15%~+10% 50/60Hz	3-Phase AC380V -15%~+10% 50/60Hz	
Control Mode	0: Position control 1: Velocity control 2: Torque control 3: Velocity and position control 4: Position and torque control 5: Velocity and torque control				
Protection	Overspeed/ Under voltage/ Over current/ Over load/ Encoder error/ Over position etc.				
Monitoring	Velocity/ Current position/ Command pulse accumulation/ Position deviation/ Torque/ Current/ Working state etc.				
Digital Input	1: Servo enable 2: Alarm clear 3: CCW prohibition 4: CW prohibition 5: Deviation counter clearing 6: Command pulse suppression 7:CCW torque limit 8: CW toruqe limit				
Digital Output	Servo ready/ Alarm/ Positioning completion/ Mechanical brake etc.				
Braking Resisitor	Build-in/ Build-out				
Load	Less than 3 times of motor load				
Display	Digital tubes and 4 operation keys				
Communication	RS485				
Position Control	Input Mode	0: Pulse+direction 1: CCW/CW pulses 2: A/B phases orthogonal pulse 3: Internal position control			
	Electric Gear Ratio	Gear ratio numerator: 1-32767			
		Gear ratio denominator: 1-32767			

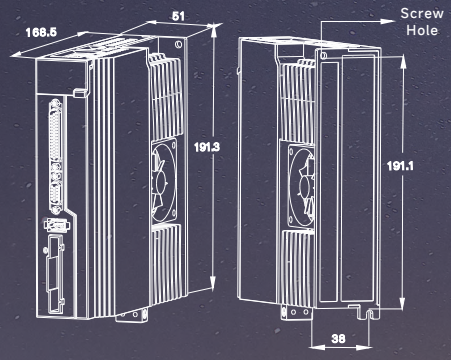
Drive Dimension



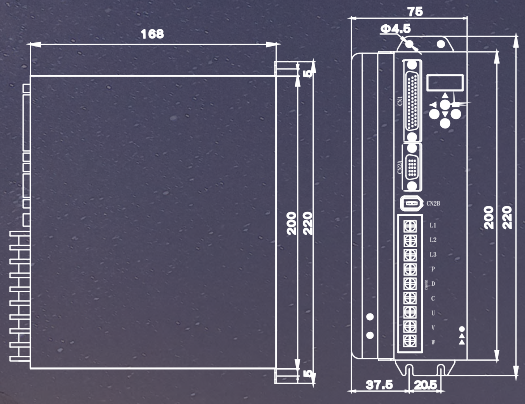
● SP100H-40(Unit: mm)



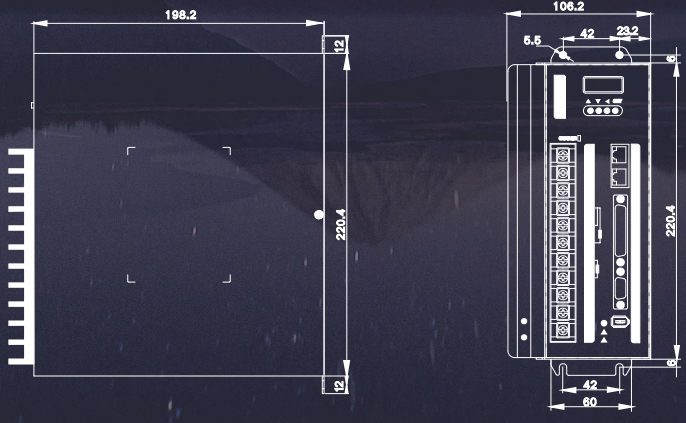
● SP100H-75(Unit: mm)



●SP200H(Unit: mm)



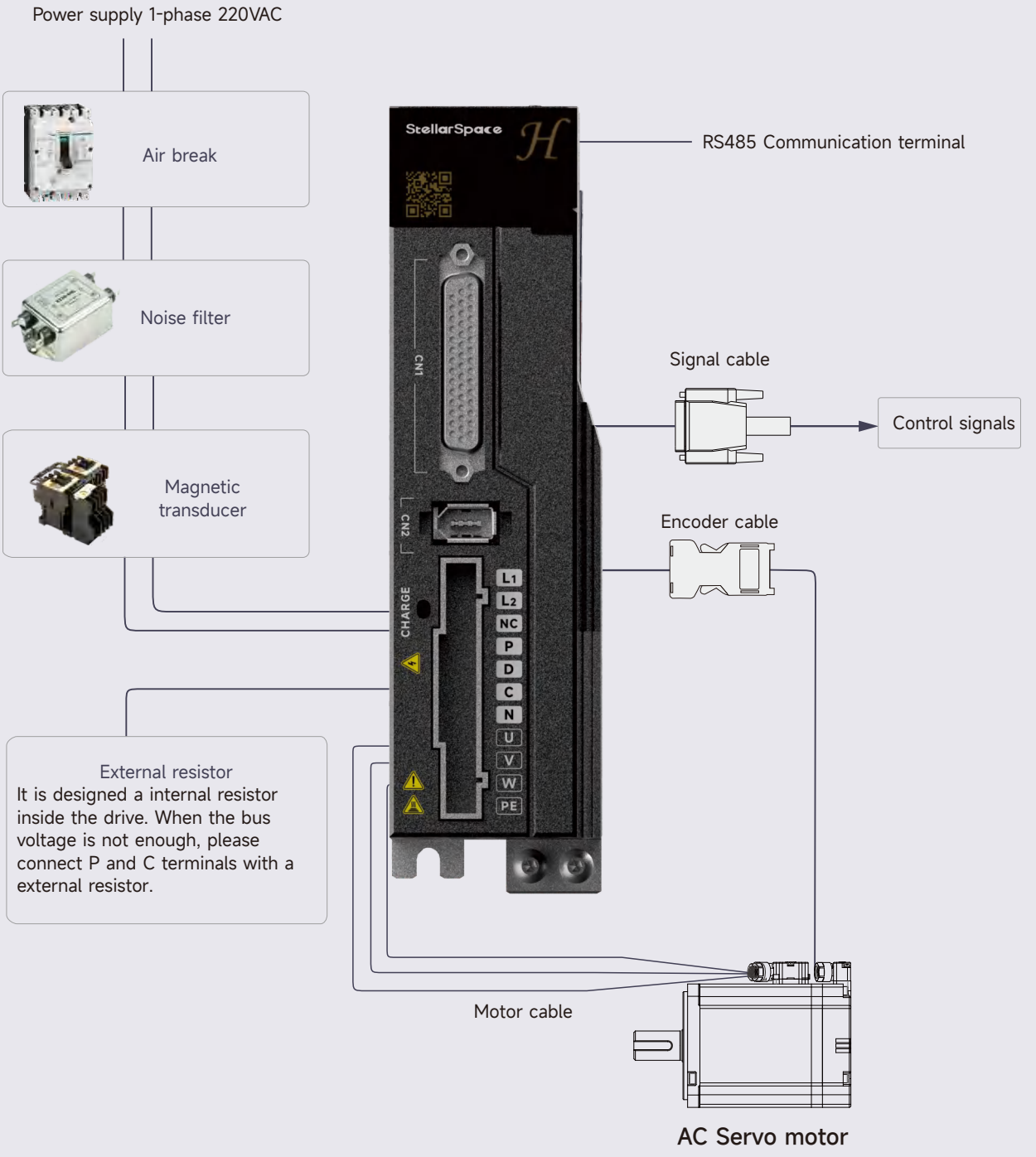
●SP300H(Unit: mm)



● SP500H(Unit: mm)

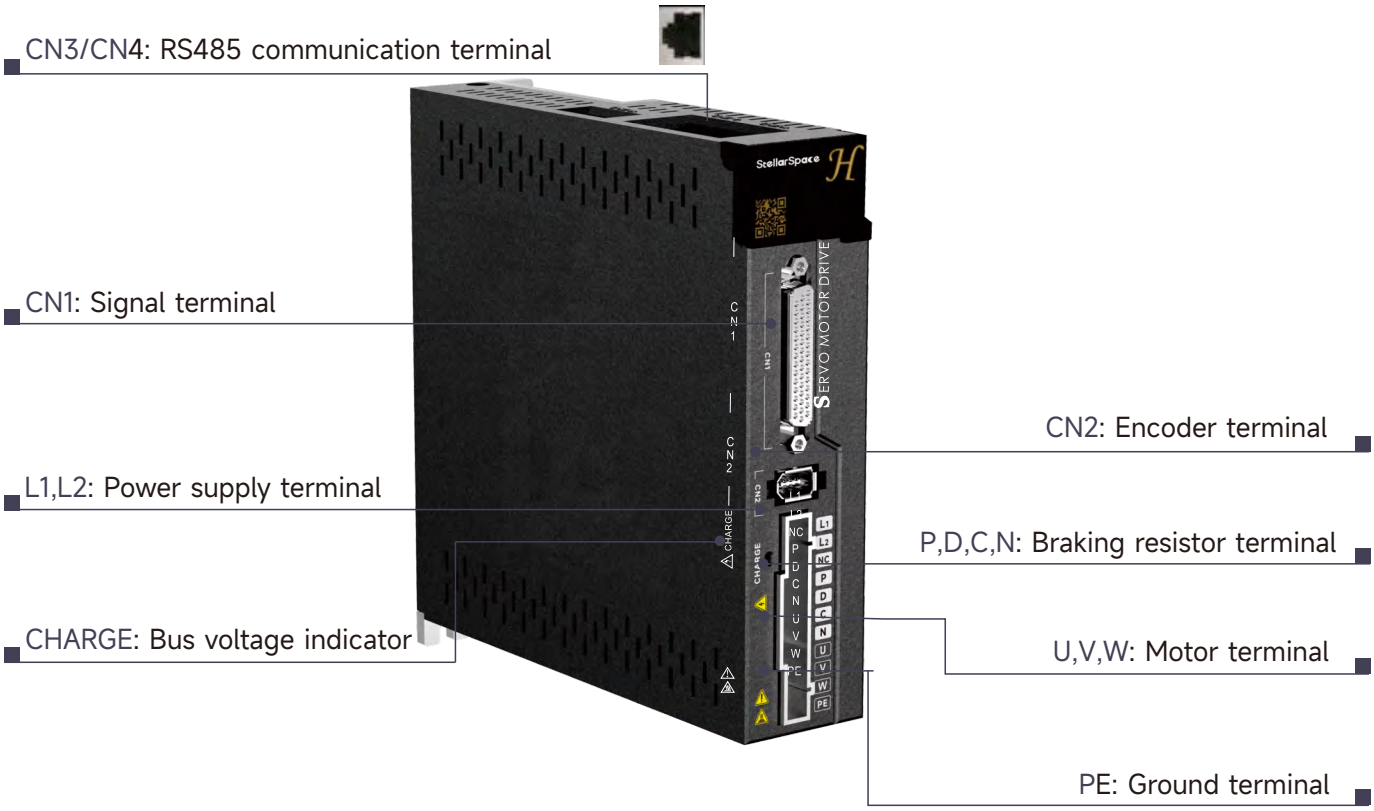
Drive System Wiring Diagram

SP100H and SP200H Drive

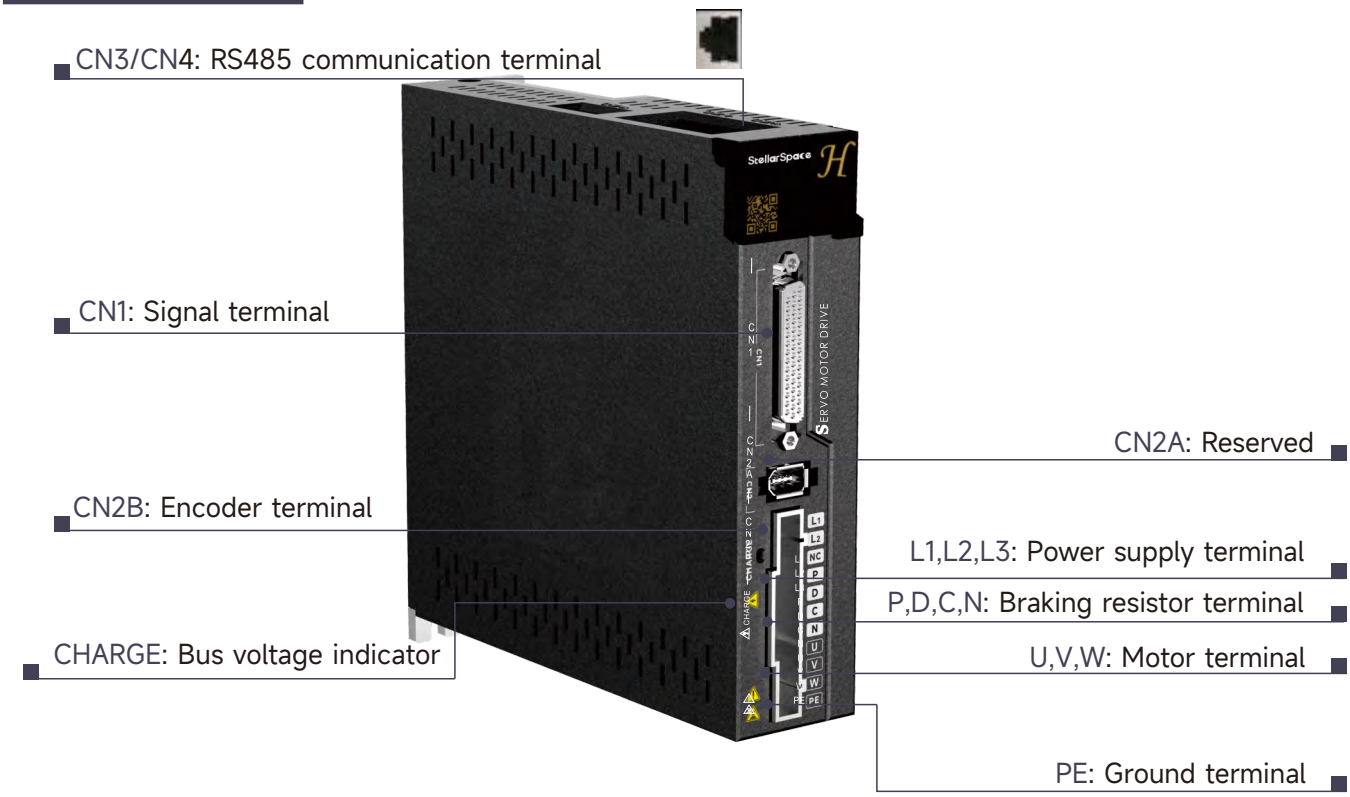


Drive Terminal Introduction

SP100H Drive



SP200H Drive



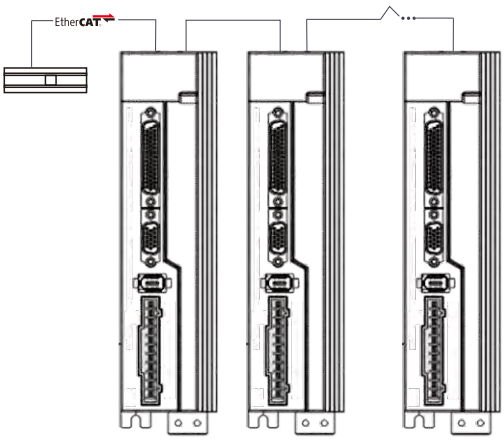
02

EtherCAT AC Servo Drive

EtherCAT AC Servo Drive

Drive Features

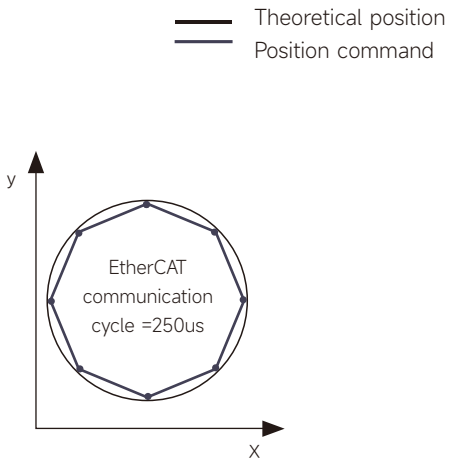
● Integrated EtherCAT for automated industrial Ethernet standards



The EtherCAT bus drive uses a standard RJ45 terminal and requires only one cable to realize real-time transmission of instructions, as well as status feedback of motors and drives.

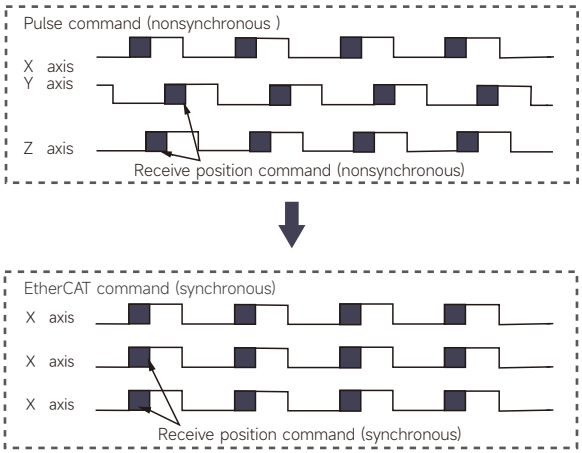
It provides a more reliable networking, and greatly reduces the complexity of the system.

● Microsecond communication cycle with more accurate and smooth position control



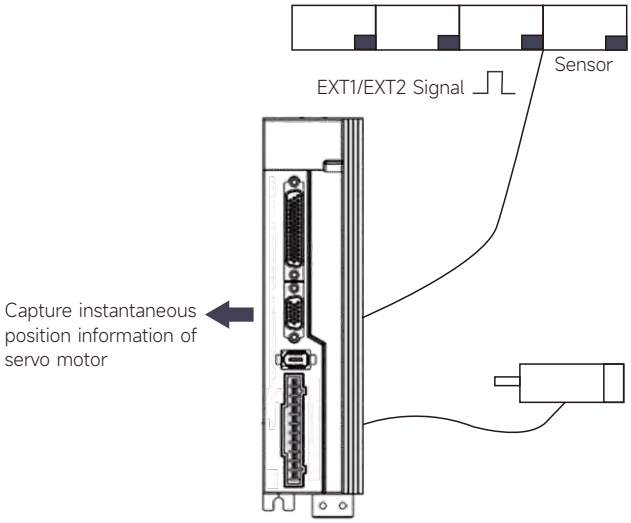
Data transmission is bi-directional 100Mbps supporting 1ms communication cycle. When it is less than 1ms, it supports 250us integer multiple (communication cycle related to PC specifications), with more accurate smooth position control. It is suitable for engraving machine and optical fiber machine and other real-time requirements for high occasions.

● Precision synchronization



The synchronization error is less than 15 ns and shake is ± 20ns by the accurate adjustment of the EtherCAT distributed clock, which can realize multi-axis synchronous communication and is suitable for mechanical devices with high synchronization accuracy.

● Real-time position capture



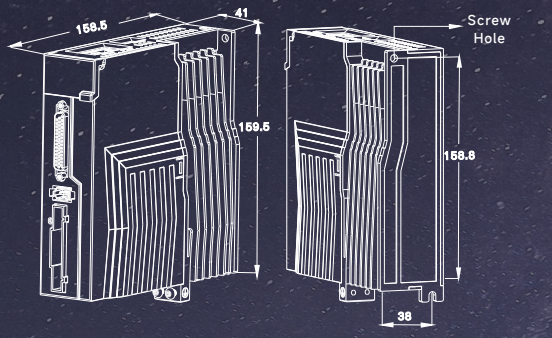
The real-time position information of the motor can be acquired and recorded by instantly high speed input signal (EXT1/EXT2) with probe function.

EtherCAT AC Servo Drive

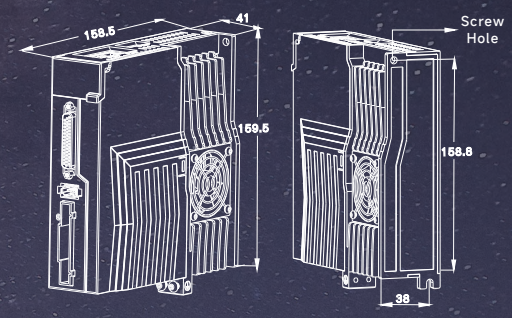
Drive Specification

Model	SP100E-40	SP100E-75	SP200E	SP300E	SP500E
Output Power	0.1kW~0.4kW	0.75kW~1kW	1kW~2.6kW	2.6kW~4kW	4kW~7.5kW
Power Supply	1-Phase AC220V -15%~+10% 50/60Hz		1/3-Phase AC220V -15%~+10% 50/60Hz	3-Phase AC380V -15%~+10% 50/60Hz	
Control Mode	Position control/ Velocity control/ JOG control/ Torque control				
Protection	Overspeed/ Under voltage/ Over current/ Over load/ Encoder error/ Over position etc.				
Monitoring	Velocity/ Position/ Command pulse accumulation/ Position deviation/ Torque/ Current/ Working state etc.				
Digital Input	8 Digital inputs: Servo enable, Aalarm clearance, CCW/CW prohibition, Zero speed clamp, Zero command, Command reverse, Speed selection, Torque selection, Pulse input prohibition, Homing signal, Probe, POT, NOT				
Digital Output	6 Digital outputs: Servo ready, Alarm, Zero speed, Positioning completion, Velocity arrival, Torque arrival, Magnetic brake, Servo working, Near positioning, Torque limit, Velocity limit				
Braking Resisitor	Buid-in/ Build-out				
Load	Less than 3 times of motor load				
Display	5 Digital tubes and 4 operation keys				
Communication	EtherCAT				

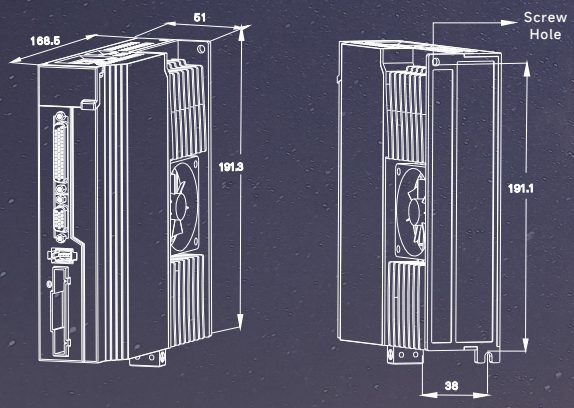
Drive Dimension



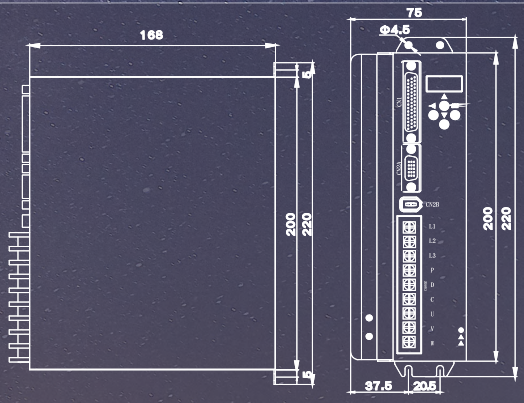
● SP100E-40(Unit: mm)



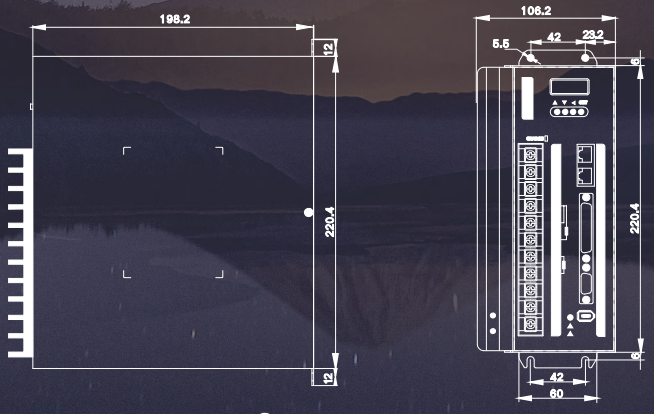
● SP100E-75(Unit: mm)



● SP200E(Unit: mm)



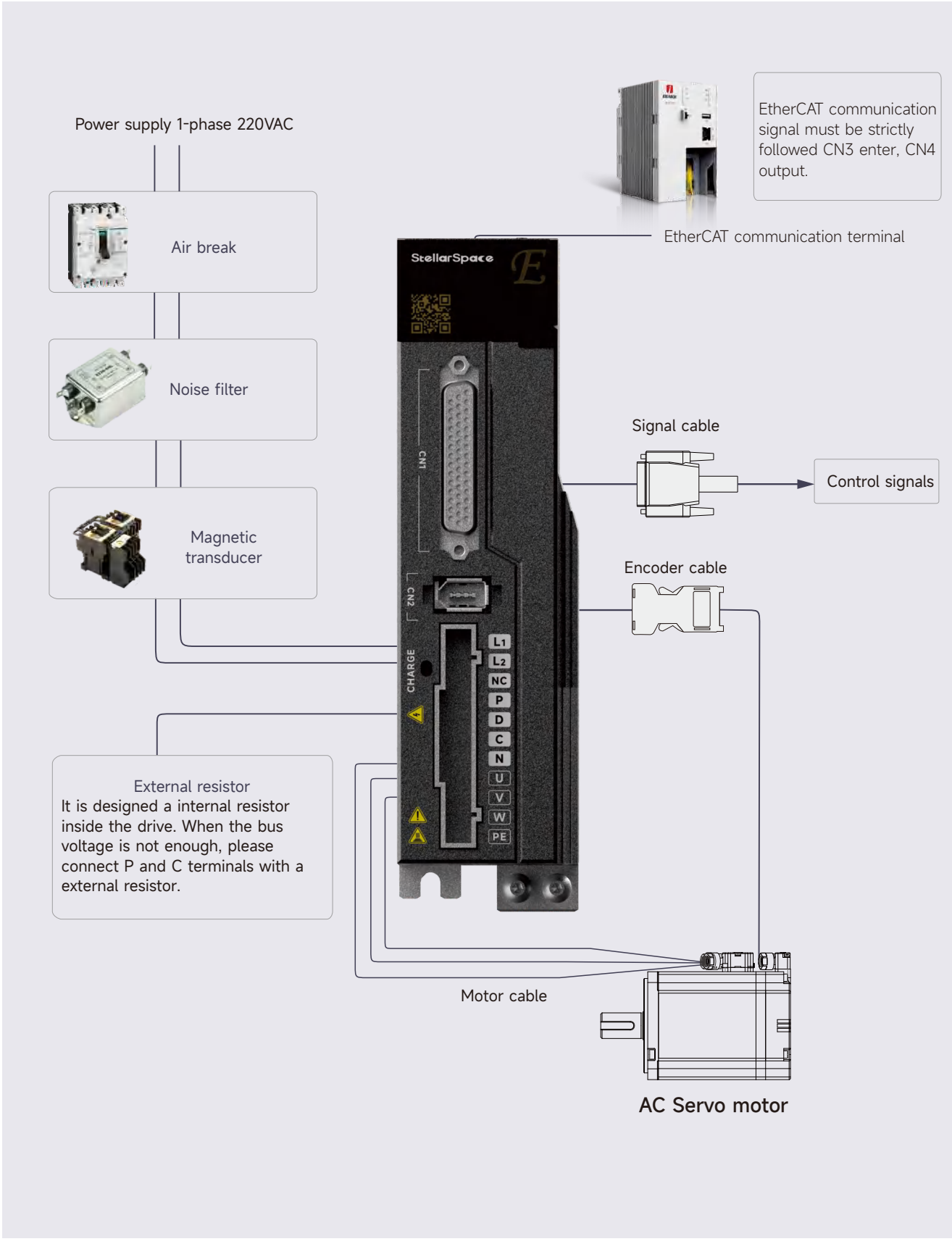
●SP300E(Unit: mm)



● SP 500E(Unit: mm)

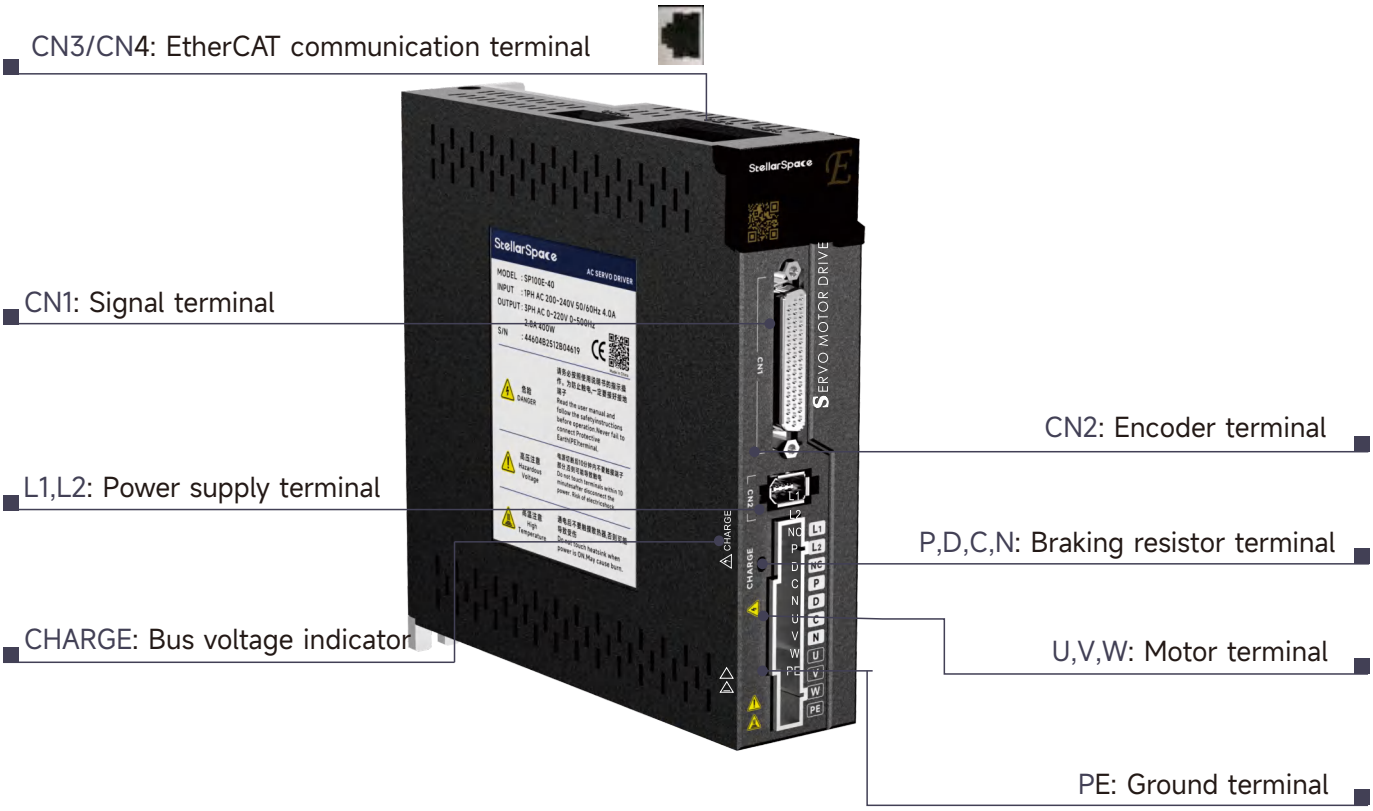
Drive System Wiring Diagram

SP100E and SP200E Drive

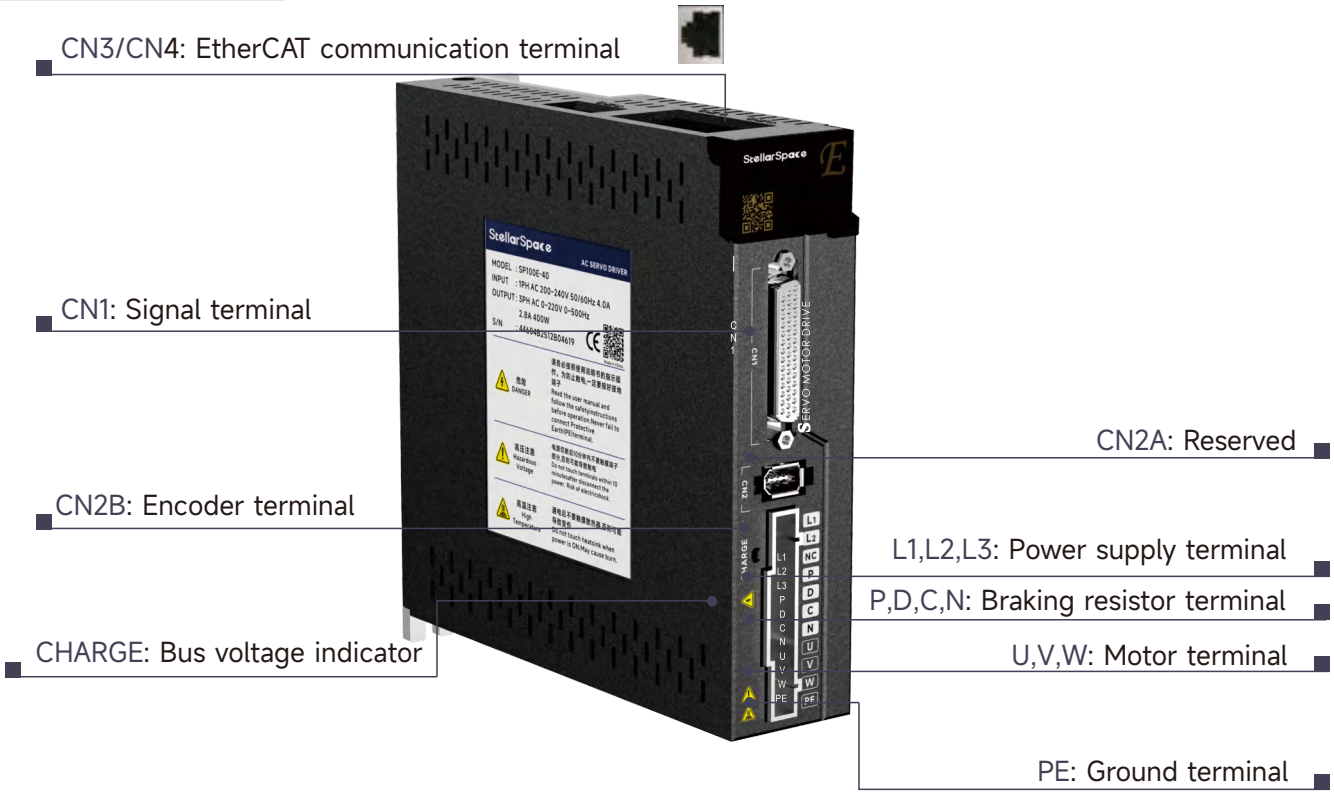


Drive Terminal Introduction

SP100E Drive



SP200E Drive



03

AC Servo Motor

AC Servo Motor

Motor Naming Rules

SD ① 80 ② - 024 ③ 30 ④ A7 ⑤ - A ⑥ - B ⑦

①	Motor Type
SD	AC Servo motor, 220V
SDH	AC Servo motor, 380V

②	Frame Size
40	40mm
60	60mm
80	80mm
110	110mm
130	130mm
180	180mm

③	Rated Torque (×0.1N.m)
024	2.4N.m

④	Rated Speed (×100rpm)
30	3000rpm

⑤	Encoder Type
A7	21-bit magnetic single-turn
A1	17-bit magnetic multi-turn
I2	2500-line incremental

⑥	Connector Type
A	AMP type
D	Terminal type
H	Aviation connector

⑦	Brake
Default	Without brake
B	With brake

Cable Naming Rules

P ① 100P ② - 03 ③ - G ④ - 4PA ⑤

①	Cable Type
P	Motor cable
E	Encoder cable
B	Brake cable

②	Applicable Drive Series
100P	For SP100 series
200P	For SP200 series
500/300P	For SP500 and SP300 series

③	Cable Length
03	3 meters
0.5	0.5 meters

④	Cable Material
G	High flex cable

⑤	Motor-Side Terminal Type
2PA	2-pin AMP connector
4PA	4-pin AMP connector
9PA	9-pin AMP connector
6TP	6-pin terminal type (without brake)
6TP-B	6-pin terminal type (with brake)
7TP	7-pin terminal type
3PH	3-pin aviation connector
4PH	4-pin aviation connector
7PH	7-pin aviation connector
4PH-180	4-pin aviation connector (for 180 flange)
15PH-180	15-pin aviation connector (for 180 flange)

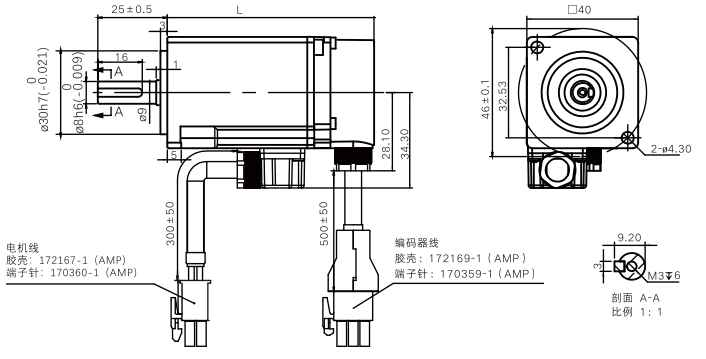
AC Servo Motor

SD40 Series Motor Specification

Model	L without brake(mm)	L with brake(mm)
SD40-00330A1-A	80.8	114

Model	SD40-00330A1-A
Rated Power（kW）	0.1
Rated Voltage（V）	220
Rated Current（A）	1.1
Peak Current（A）	3.5
Rated Torque（N.m）	0.318
Peak Torque（N.m）	0.954
Rated Speed（rpm）	3000
Max speed （rpm）	6000
Back EMF Constant（V/krpm）	23
Torque Constant（N.m/A）	0.29
Line-line Resistance（Ω）	20.6
Line-line Inductance（mH）	10.3
Inertia（$Kg.m^2$）	0.066×10^{-4}
Insulation Class	F(155℃)

Motor Dimension



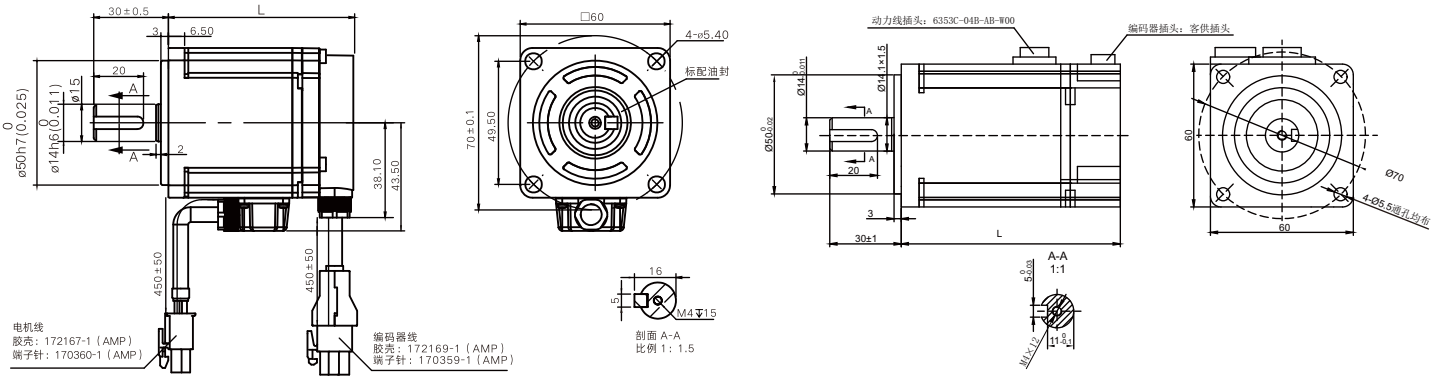
AC Servo Motor

SD60 Series Motor Specification

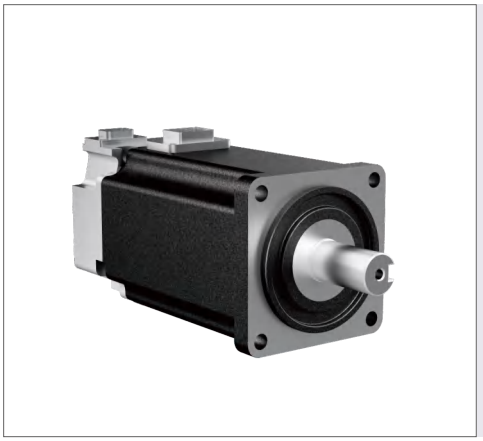
Model	L without brake(mm)	L with brake(mm)
SD60-01330A7-A	92	121.5
SD60-01330A1-D	93	125
SD60-01930A7-A	109	138.5
SD60-01930A1-D	114	/

Model	SD60-01330A7-A	SD60-01330A1-D	SD60-01930A7-A	SD60-01930A1-D
Rated Power（kW）	0.4		0.6	
Rated Voltage（V）	220			
Rated Current（A）	2.5		3.6	
Peak Current（A）	7.5		11.2	
Rated Torque（N.m）	1.27		1.91	
Peak Torque（N.m）	3.81		5.73	
Rated Speed（rpm）	3000			
Max speed （rpm）	6000			
Back EMF Constant （V/krpm）	31	30.5	35	32.7
Torque Constant （N.m/A）	0.51		0.53	
Line-line Resistance（Ω）	3.24	3.63	2.2	2.32
Line-line Inductance（mH）	5.8		4.3	
Inertia（$Kg.m^2$）	0.52×10^{-4}	0.49×10^{-4}	0.76×10^{-4}	
Insulation Class	F(155℃)			

Motor Dimension



AC Servo Motor

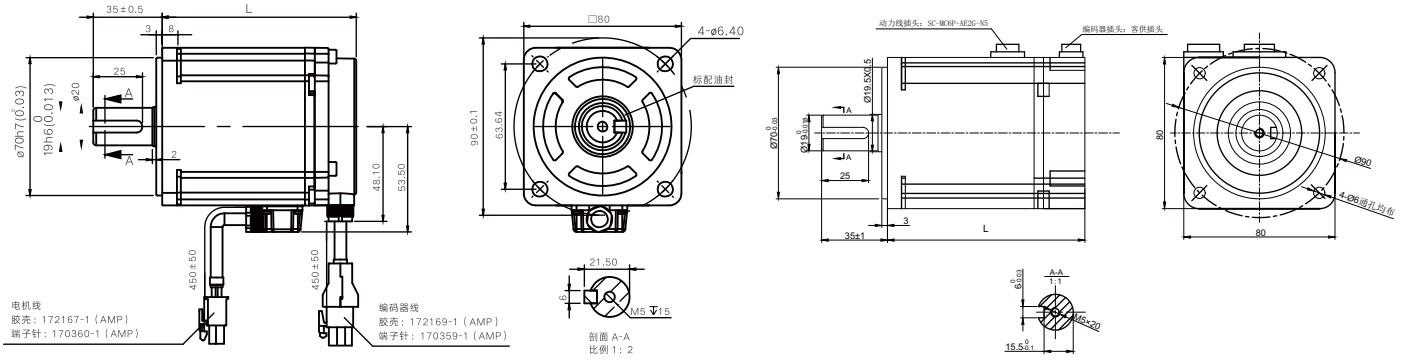


SD80 Series Motor Specification

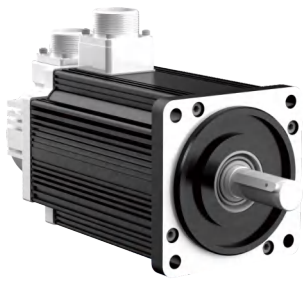
Model	L without brake(mm)	L with brake(mm)
SD80-02430A7-A	98.5	128.5
SD80-02430A1-D	103	143
SD80-03230A7-A	111.5	145.5
SD80-03230A1-D	117	157

Model	SD80-02430A7-A	SD80-02430A1-D	SD80-03230A7-A	SD80-03230A1-D
Rated Power（kW）	0.75		1.0	
Rated Voltage（V）	220			
Rated Current（A）	4.7	4.8	5.8	5.9
Peak Current（A）	14.5		18.1	
Rated Torque（N.m）	2.39		3.18	3.2
Peak Torque（N.m）	7.17	7.2	9.54	9.6
Rated Speed（rpm）	3000			
Max speed （rpm）	6000			5500
Back EMF Constant （V/krpm）	33	31.5	34	36
Torque Constant （N.m/A）	0.51	0.5	0.55	0.54
Line-line Resistance（Ω）	1.09	1.16	0.73	0.94
Line-line Inductance（mH）	4.6		2.7	
Inertia（$Kg.m^2$）	1.48×10^{-4}	1.51×10^{-4}	2.27×10^{-4}	2.01×10^{-4}
Insulation Class	F(155℃)			

Motor Dimension



AC Servo Motor

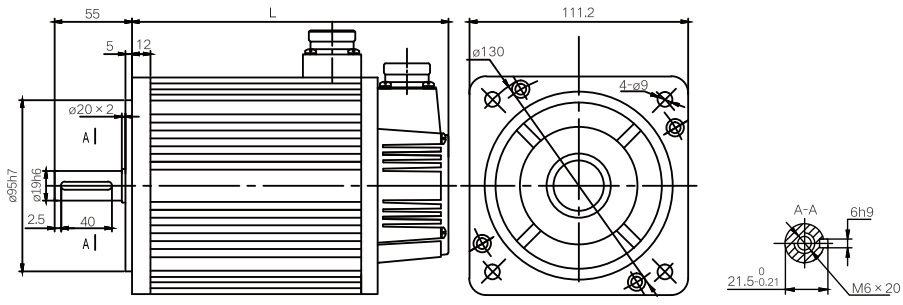


SD110 Series Motor Specification

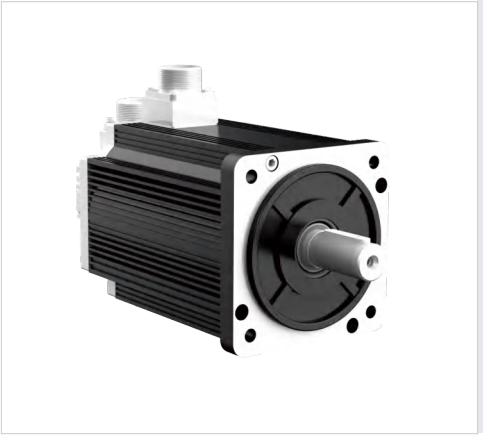
Model	L without brake(mm)	L with brake(mm)
SD110-04030A7-H	189	245
SD110-05030A7-H	204	260
SD110-06030A7-H	219	275

Model	SD110-04030A7-H	SD110-05030A7-H	SD110-06030A7-H
Rated Power（kW）	1.2	1.5	1.8
Rated Voltage（V）	220		
Rated Current（A）	5.0	6.0	
Rated Torque（N.m）	4.0	5.0	6.0
Peak Torque（N.m）	12	15	18
Rated Speed（rpm）	3000		
Back EMF Constant（V/krpm）	54	62	60
Torque Constant (N.m/A)	0.8	0.83	1.0
Line-line Resistance（Ω）	1.09	1.03	0.81
Line-line Inductance（mH）	3.3	3.43	2.59
Electrical time constant（ms）	3.0	3.33	3.2
Inertia（$Kg.m^2$）	0.54×10^{-3}	0.63×10^{-3}	0.76×10^{-3}
Net Weight（Kg）	6.0	6.8	7.9
Insulation Class	Class F		

Motor Dimension



AC Servo Motor

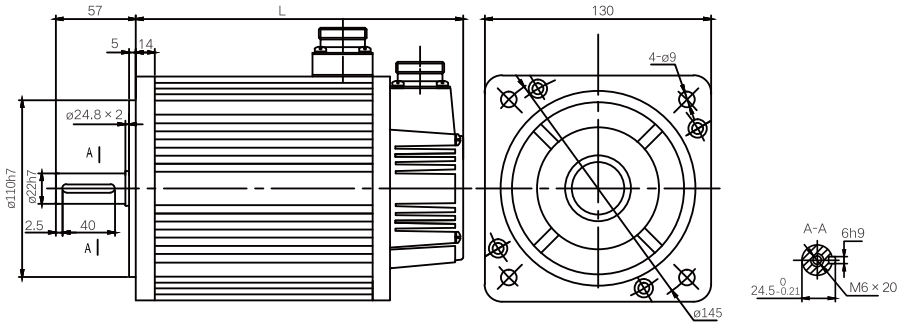


SD130 Series Motor Specification

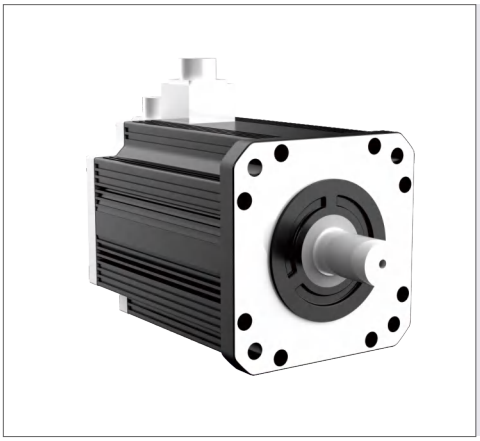
Model	L without brake(mm)	L with brake(mm)
SD130-04025A7-H	166	236
SD130-05025A7-H	171	241
SD130-06025A7-H	179	249
SD130-07725A7-H	192	262
SD130-10015A7-H	213	283
SD130-10025A7-H	209	279
SD130-15015A7-H	241	311
SD130-15025A7-H	231	301

Model	SD130-04025A7-H	SD130-05025A7-H	SD130-06025A7-H	SD130-07725A7-H	SD130-10015A7-H	SD130-10025A7-H	SD130-15015A7-H	SD130-15025A7-H
Rated Power (kW)	1.0	1.3	1.5	2.0	1.5	2.6	2.3	3.8
Rated Voltage (V)	220							
Rated Current (A)	4.0	5.0	6.0	7.5	6.0	10	9.5	13.5
Rated Torque (N.m)	4.0	5.0	6.0	7.7	10		15	
Peak Torque (N.m)	12	15	18	22	25		30	
Rated Speed (rpm)	2500				1500	2500	1500	2500
Back EMF Constant (V/krpm)	72	68	65	68	103	70	114	67
Torque Constant (N.m/A)	1.0			1.03	1.6	1.0	1.58	1.11
Line-line Resistance (Ω)	2.76	1.84	1.21	1.01	1.5	0.73	1.1	0.49
Line-line Inductance (mH)	6.42	4.9	3.87	2.94	4.37	2.45	4.45	1.68
Electrical time constant (Ms)	2.32	2.66	3.26	2.91	2.91	3.36	4.05	3.43
Inertia ($Kg.m^2$)	0.85×10^{-3}	1.06×10^{-3}	1.26×10^{-3}	1.53×10^{-3}	1.94×10^{-3}	1.94×10^{-3}	2.77×10^{-3}	2.77×10^{-3}
Net Weight (Kg)	6.2	6.6	7.4	8.3	10.2	9.8	12.6	11.7
Insulation Class	Class F							

Motor Dimension



AC Servo Motor

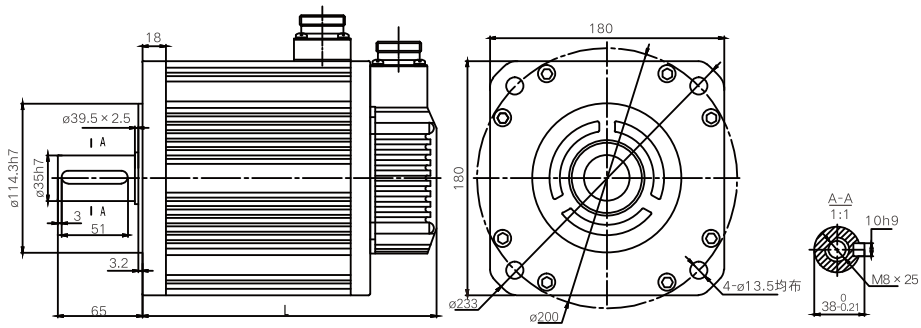


SD180 Series Motor Specification

Model	L without brake(mm)	L with brake(mm)
SDH180-17215I2-H	226	298
SDH180-19015I2-H	232	304
SDH180-21520I2-H	243	315
SDH180-35015I27-H	292	364
SDH180-48015I2-H	346	418

Model	SDH180-17215I2-H	SDH180-19015I2-H	SDH180-21520I2-H	SDH180-35015I27-H	SDH180-48015I2-H
Rated Power（kW）	2.7	3.0	4.5	5.5	7.5
Rated Voltage（V）	380				
Rated Current（A）	6.5	7.5	9.5	12	20
Rated Torque（N.m）	17.2	19	21.5	35	48
Peak Torque（N.m）	43	47	53	70	96
Rated Speed（rpm）	1500		2000	1500	
Back EMF Constant （V/krpm）	167	170	140	181	156
Torque Constant （N.m/A）	2.65	2.5	2.26	2.9	2.4
Line-line Resistance（Ω）	1.47	1.23	0.71	0.62	0.273
Line-line Inductance（mH）	7.8	7.3	4.0	4.0	2.14
Electrical time constant (Ms)	5.3	5.93	5.6	6.45	7.8
Inertia（Kg.m^2）	3.4×10^{-3}	3.8×10^{-3}	4.7×10^{-3}	8.6×10^{-3}	16.72×10^{-3}
Net Weight（Kg）	19.5	20.5	22.2	30.5	40
Insulation Class	Class F				

Motor Dimension



04

Typical Configuration

Typical Configuration

<table>
<tr><th colspan="5">Motor</th><th>Drive</th><th colspan="3">Cable</th></tr>
<tr><th>Frame (mm)</th><th>Voltage Class (V)</th><th>Rated Power (W)</th><th>Rated Speed (rpm)</th><th>Motor Model</th><th>Drive Model</th><th>Power Cable</th><th>Encoder Cable</th><th>Brake Cable</th></tr>
<tr><td>40</td><td rowspan="5">220</td><td>100</td><td rowspan="3">3000</td><td>SD40-00330A1-A</td><td rowspan="3">SP100H-40
SP100E-40</td><td rowspan="5">P100P-03-G-4PA</td><td rowspan="5">E100P-03-G-9PA
(without battery)
E100P-03-G-9PA-DC
(with battery)</td><td rowspan="5">B100P-03-G-2PA</td></tr>
<tr><td>60</td><td>400</td><td>SD60-01330A7-A</td></tr>
<tr><td rowspan="2">80</td><td>600</td><td>SD60-01930A7-A</td></tr>
<tr><td>750</td><td>SD80-02430A7-A</td><td>SP100H-75</td></tr>
<tr><td>1000</td><td>SD80-03230A7-A</td><td>SP100E-75</td></tr>
<tr><td colspan="9"></td></tr>
<tr><td rowspan="2">60</td><td rowspan="4">220</td><td>400</td><td rowspan="4">3000</td><td>SD60-01330A1-D</td><td>SP100H-40</td><td rowspan="4">P100P-03-G-6TP
(without brake power cable)
P100P-03-G-6TP-B
(with brake power cable)</td><td rowspan="4">E100P-03-G-7TP
(without battery)
E100P-03-G-7TP-DC
(with battery)</td><td rowspan="4">/</td></tr>
<tr><td>600</td><td>SD60-01930A1-D</td><td>SP100E-40</td></tr>
<tr><td rowspan="2">80</td><td>750</td><td>SD80-03230A1-D</td><td>SP100H-75</td></tr>
<tr><td>1000</td><td>SD80-03230A1-D</td><td>SP100E-75</td></tr>
<tr><td colspan="9"></td></tr>
<tr><td rowspan="3">110</td><td rowspan="13"></td><td>1200</td><td rowspan="3">3000</td><td>SD110-04030A7-H</td><td rowspan="13">SP200H
SP200E</td><td rowspan="13">P200P-03-G-4PH</td><td rowspan="13">E200P-03-G-7PH</td><td rowspan="13">B200P-03-G-3PH</td></tr>
<tr><td>1500</td><td>SD110-05030A7-H</td></tr>
<tr><td>1600</td><td>SD110-06030A7-H</td></tr>
<tr><td rowspan="6">130</td><td>1000</td><td rowspan="5">2500</td><td>SD130-04025A7-H</td></tr>
<tr><td>1300</td><td>SD130-05025A7-H</td></tr>
<tr><td>1500</td><td>SD130-06025A7-H</td></tr>
<tr><td>2000</td><td>SD130-07725A7-H</td></tr>
<tr><td>2600</td><td>SD130-10025A7-H</td></tr>
<tr><td rowspan="2">1500</td><td rowspan="3">1500</td><td>SD130-10015A7-H</td></tr>
<tr><td>2300</td><td>SD130-15015A7-H</td></tr>
<tr><td rowspan="5">180</td><td rowspan="5">380</td><td>2700</td><td>SDH180-17215I2-H</td><td>SP300H
SP300E</td><td rowspan="5">P500/300P
-03-G-4PH-180</td><td rowspan="5">E500/300P
-03-G-15PH-180</td><td rowspan="5">B500/300P
-03-G-4PH-180</td></tr>
<tr><td>3000</td><td>SDH180-19015I2-H</td></tr>
<tr><td>4500</td><td>2000</td><td>SDH180-21520I2-H</td><td>SP500H
SP500E</td></tr>
<tr><td>5500</td><td rowspan="2">1500</td><td>SDH180-35015I2-H</td></tr>
<tr><td>7500</td><td>SDH180-48015I2-H</td><td>SP500H
-750
SP500E
-750</td></tr>
</table>

Note:

1. All motor models listed above are non-brake versions, with corresponding brake-equipped models available for selection.
   Example: The brake-equipped counterpart for SD80-02430A7-A is SD80-02430A7-A-B.
2. The brake cables listed above are exclusively for use with brake-equipped motors.
3. For motors with 40/60/80mm frames:
- If equipped with a single-turn encoder, use the non-battery encoder cable for single-turn functionality.
- If equipped with a multi-turn encoder:
  Use the battery-equipped encoder cable for multi-turn functionality.
  Use the non-battery encoder cable for single-turn functionality.

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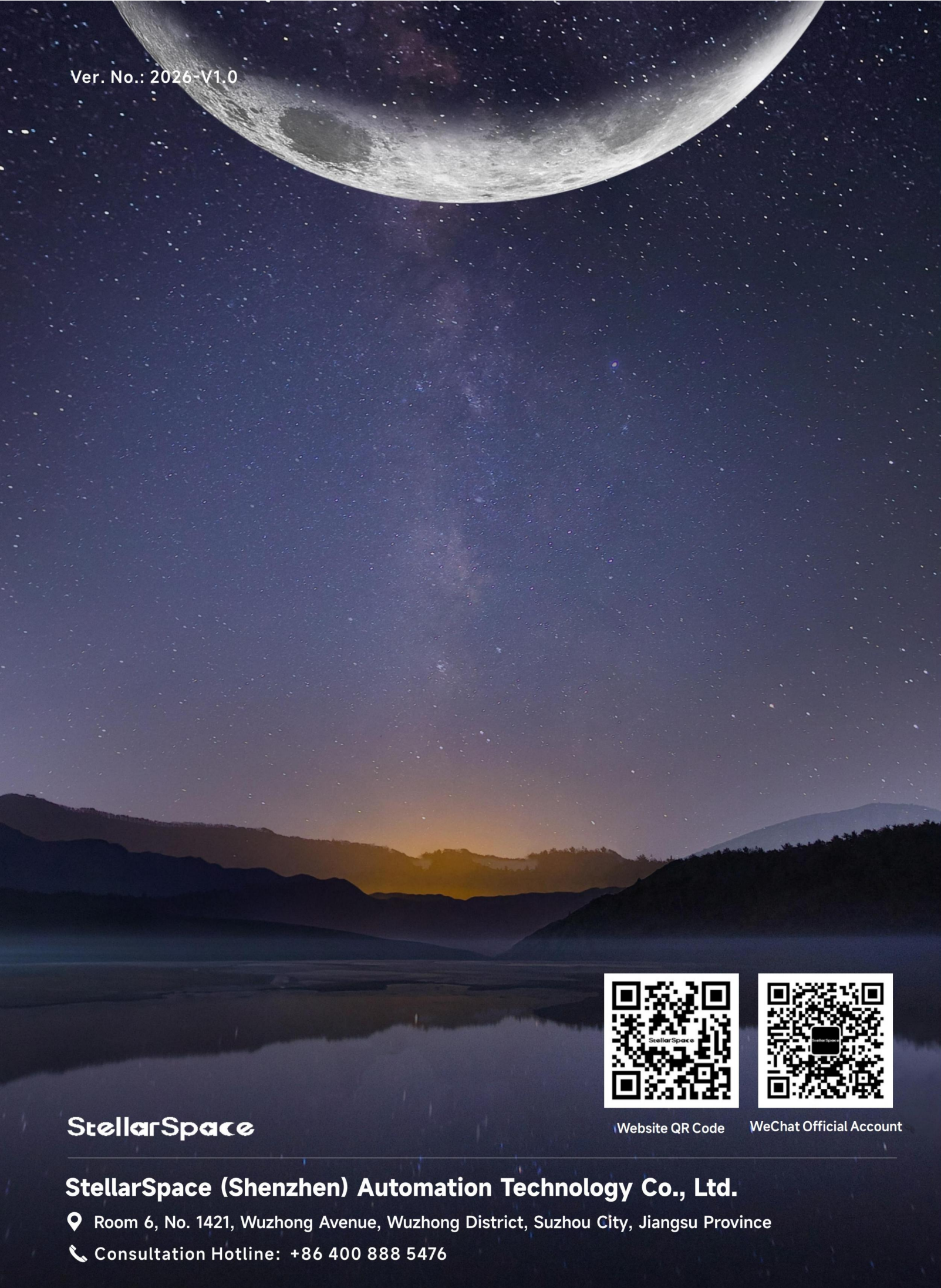

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