



### RV Reducer & Harmonic Gearbox



### 90 Degree Right Angle Gearbox

### Planetary Gearbox



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For servo motor / precision gearbox linear driving

# SERVO.STEPPER.BRUSHLESS MOTOR

Taiwan technology/precision transmission solutions expert



# Company Profile

Shanghai Trans Intelligent Technology Co., Ltd.(Hereinafter referred to as TRANS) is a professional manufacturer in the field of motion control products, which integrates R & D, manufacturing and sales as a whole. The TRANS company's R&D team and factory colleagues have more than 20 years of gear design and manufacturing experience and have the core technology of this field and advanced processing equipment. In the early stage, the factory mainly produced worm gear reducers, UDL step-less speed changer, helical gear reducers, hypoid gear reducers, K, R, F, S series hard gear reducers, and PC helical gear reducers. The company is far-sighted and has laid out the company's future development direction in advance. In the mid-term, TRANS cooperated with the German reducer technical team to establish a precision gearbox division to cooperate in the development of high-level high-precision gear reducers, including planetary reducers and harmonic reducers (American genius inventor C W.Musser created and invented the principle of wave gear device), 90-degree right-angle servo gearbox (suitable for different installation and output requirements of automation), cycloidal pinwheel RV reducer (suitable for multi-joint robot industry). Also, the company produces related products in the motion control field such as precision rack and pinion, coupling, linear motor, servo motor, etc. Meanwhile, TRANS company also provide non-standard customized reducer services. The precision planetary reducer produced by the TRANS company has three characteristics of low backlash (3 ~ 8 arcmin), low noise (60dAB), and high efficiency (>=95%). The size and accuracy are fully matched with Japanese and German reducers, and can directly replace German and Japanese brand reducers. The products are suitable for servo motors and stepper motors produced by domestic and foreign servo factories, such as Panasonic, Yaskawa, Omron, Mitsubishi, Schneider, Delta, Siemens, MOOG, Beckoff, Festo, Leadshine, etc. Our company's precision reducers are widely used in laser cutting machines, woodworking engraving machines, gantry machine tools, industrial robots, 3C automation, plastic machinery, three-dimensional parking lots, photovoltaic equipment, automobile manufacturing, lithium batteries, milling machines, full servo tissue machinery, precision embossing Printing machines, servo pipe benders, precision coating machines, CNC spring machines, and other highly automated equipment.

The TRANS factory matches a large inventory of standard gearboxes and flanges suitable for different motor input sizes, which can achieve the fastest delivery time of 7~10 working days, saving customers costs in terms of time.

TRANS company's products have passed the ISO9001: 2015 quality management system, the European CE certification, and the US UL certification. The products have been sold to more than 100 countries at home and abroad, and have been widely recognized and repurchased by European and American customers who have high-quality requirements.

TRANS company is committed to the field of motion control, working with servo motor manufacturers and system integrators to serve the global automation industry and robotics, providing customers with high-quality products, timely and fast services, and striving to be a leader in the transmission field. Your satisfaction is our eternal pursuit.

# PRODUCTION WORKSHOP



**FAST DELIVERY TIME**  
**CUSTOMIZED SERVICE IS AVAILABLE**  
**COMPETITIVE PRICE WITH TOP QUALITY**



**ALTERNATIVES TO BRAND SPEED REDUCERS**  
**ALL-ROUND PROFESSIONAL TECHNICAL SUPPORT**  
**BROAD RANGE OF SPEED REDUCERS FOR SELECTION**



# Product Contents

## AC permanent magnet servo motor



01-12

## Servo motor driver



13-15

## Spindle servo motor series



17-20

## Spindle Servo motor Driver



16

## Hybrid stepping motor



21-29

## Stepper motor driver



30-31

## Coupling series



32-34

## Description of Product Type Selection

### Permanent magnet AC servo motor



110 SF - M 040 30 L F B Z S  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Flange size:60mm、80mm、90mm、110mm、130mm、180mm
- ② AC synchronization servo motor
- ③ Feedback element:M: Optical-electricity encoder X:Rotary encoder
- ④ Rated torque:(x 0.1NM )
- ⑤ Rated speed: ( x 100RPM)
- ⑥ Driver matched voltage: L:AC220V H:AC380V
- ⑦ Encoder type:  
F:Combined incremental encoder(2500PPR)  
F1:Saving line incremental encoder(2500PPR)  
F2:Combined incremental encoder(5000PPR)  
E:TAMAGAWA single circle (17bit) bus encoder  
En:NIKON single circle(22bit) bus encoder  
M:TAMAGAWA multi-circle(17/33bit) bus encoder  
M1: TAMAGAWA multi-circle(23/39bit) bus encoder  
Mn: NIKON multi-circle(22/38bit) bus encoder  
Mn1:NIKON multi-circle(24/40bit) bus encoder
- ⑧ Motor basic type
- ⑨ Z: Brake
- ⑩ Inner winding type: No:Distributed winding S:Centralization winding

### Servo driver specification



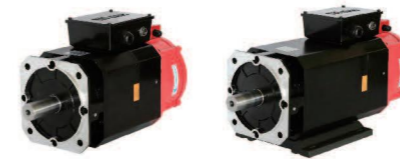
SG - A S 30 A F  
① ② ③ ④ ⑤ ⑥

SG - 30A	
No.	Output power(KW)
15A	0.2-1.0
20A	0.4-1.5
30A	0.8-2.4
50A	2.0-3.5

Product line

- ① AC servo drive products range
- ② Input voltage: A:AC220V B:AC380V
- ③ Driver axis: S:Single axis D: Double axis
- ④ Power module current: 10:10A 15:15A 30:30A 50:50A 75:75A
- ⑤ Input signal type: A:Pulse B:Analog C:Canopen bus M2:m2 BUS M3:M3 bus
- ⑥ Matched encoder type: F: Incremental optical-electricity encoder  
M:Absolute optical-electricity encoder

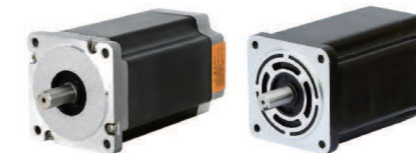
### Spindle servo motor



204 ZJY 4 3P7 G 15 - M 35 Z  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① Flange size:204mm、250mm
- ② AC asynchronous spindle servo motor
- ③ Matched voltage: 2:AC220V 4:AC380V
- ④ Rated power: 2P2: 2.2KW 3P7: 3.7KW 5P5: 5.5KW  
7P5: 7.5KW 9P5: 9.5KW 11P: 11KW 15P: 15KW
- ⑤ Encoder type: B:No encoder  
G:1024 PPR optical-electricity encoder  
G1:2500 PPR optical-electricity encoder
- ⑥ Basic speed: 07:750RPM 10:1000RPM 15:1500RPM
- ⑦ Max.Speed: L:3000RPM M:6000RPM H:8000RPM
- ⑧ Installation method: 3:Horizontal installation  
5:Flange installation 35: Horizontal/Flange installation
- ⑨ Z: Brake

### Hybrid stepper motor



86 BYG H 3 50 C - X Z  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Flange size:86mm、110mm、130mm、150mm
- ② Hybrid stepper motor
- ③ Matched voltage: L:Low voltage type H: High voltage type
- ④ Motor phase: 2: two-phase stepping 3: three-phase stepping
- ⑤ Number of rotor gear : 50: The number of rotor teeth is 50
- ⑥ Same flange no. Different torque: A,B,C,D,E
- ⑦ Motor structure: No:General type motor  
X:Aluminum case motor S: S1;
- ⑧ Z: Brake

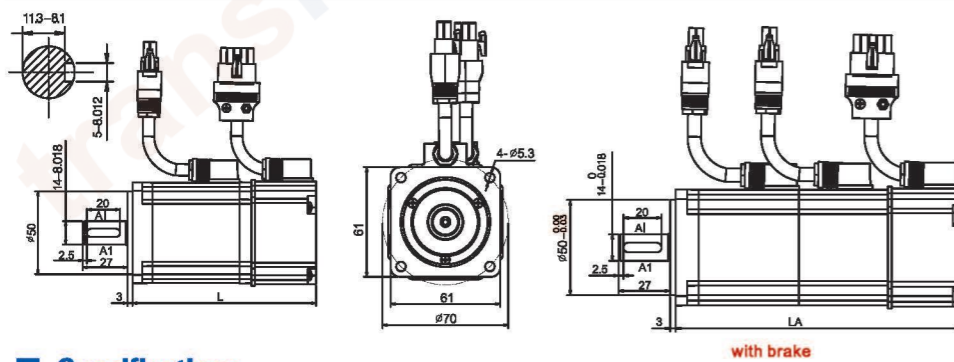


# 60 SF-S1 Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	5
Incremental encoder line	2500PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 /Minute
Insulation resistance	DC500V, 10Ω以上/ above
Vibration	2.5G 以下/ Under
Altitude	(1000m) 以下/ Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension unit:mm



Model	L(mm) Incremental encoder	LA(mm) with brake
60SF-M00630S1	97.5	137.5
60SF-M01330S1	113.5	153.5
60SF-M01930S1	127.5	167.5

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
\* Not hit the shaft ,or the encoder in the other end would be damaged.

## Specifications

Motor Model	60SF-M00630S1	60SF-M01330S1	60SF-M01930S1
Rated Power(w)	200	400	600
Rated Current(A)	1.3	2.7	3.7
Rated Torque(N.m)	0.637	1.27	1.91
Max Torque(N.m)	1.91	3.81	5.4
Rated Speed(rpm)	3000	3000	3000
Max Speed(rpm)	5000	5000	5000
Rotor Inertia(Kg.m) <sup>2</sup>	0.245X10 <sup>-4</sup>	0.418X10 <sup>-4</sup>	0.65X10 <sup>-4</sup>
Input Voltage(V)		(AC 220)	
Motor Weight (Kg)	1.00	1.50	1.90

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
(Aerial plug)Socket Number	2	3	4	1	Socket number	1	2
(Lead type)Socket Number	1	2	3	4	Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

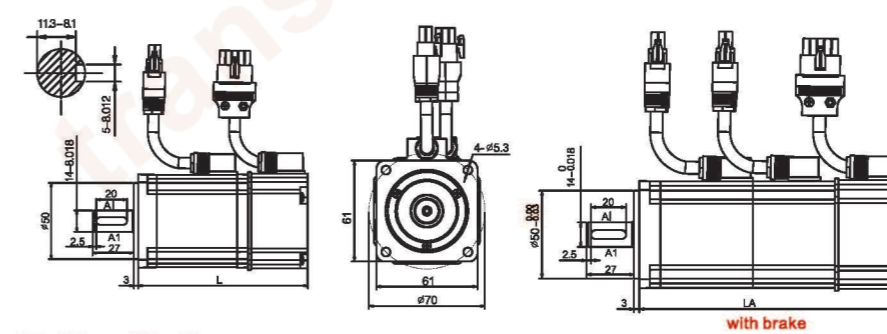
Signal Definitions	5V	0V	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
(Aerial plug)Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
(Lead type)Socket Number	2	3	9	4	7	13	14	5	6	10	11	8	12	15	1
Absolute signal definitions	PE	GND	VB	SD-	GND 0V	SD	Vcc 5V								
Socket Number	1	2	3	4	5	6	7								

# 60 SF Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	2500/5000PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Structure	Plastic packaging,Self-cooling
Vibration	2.5G 以下/ Under
Altitude	(1000m) 以下/ Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension unit:mm



Model	L(mm) Incremental encoder	LA(mm) with brake	L(mm) Absolute encoder
60SF-M00630	110	148	115
60SF-M01330	133	171	138
60SF-M01930	154	192	159

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
\* Not hit the shaft ,or the encoder in the other end would be damaged.

## Specifications

Motor Model	60SF-M00630S	60SF-M01330S	60SF-M01930S
Rated Power(w)	200	400	600
Rated Current(A)	1.3	2.7	3.7
Rated Torque(N.m)	0.637	1.27	1.91
Max Torque(N.m)	1.91	3.81	5.4
Rated Speed(rpm)	3000	3000	3000
Max Speed(rpm)	3600	3600	3600
Rotor Inertia(Kg.m) <sup>2</sup>	0.264X10 <sup>-4</sup>	0.407X10 <sup>-4</sup>	0.526X10 <sup>-4</sup>
Input Voltage(V)		(AC 220)	
Motor Weight (Kg)	1.18	1.70	2.10

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
(Aerial plug)Socket Number	2	3	4	1	Socket number	1	2
(Lead type)Socket Number	1	2	3	4	Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

Signal Definitions	5V	0V	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
(Aerial plug)Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
(Lead type)Socket Number	2	3	9	4	7	13	14	5	6	10	11	8	12	15	1
Absolute signal definitions	PE	GND	VB	SD-	GND 0V	SD	Vcc 5V								
Socket Number	1	2	3	4	5	6	7								

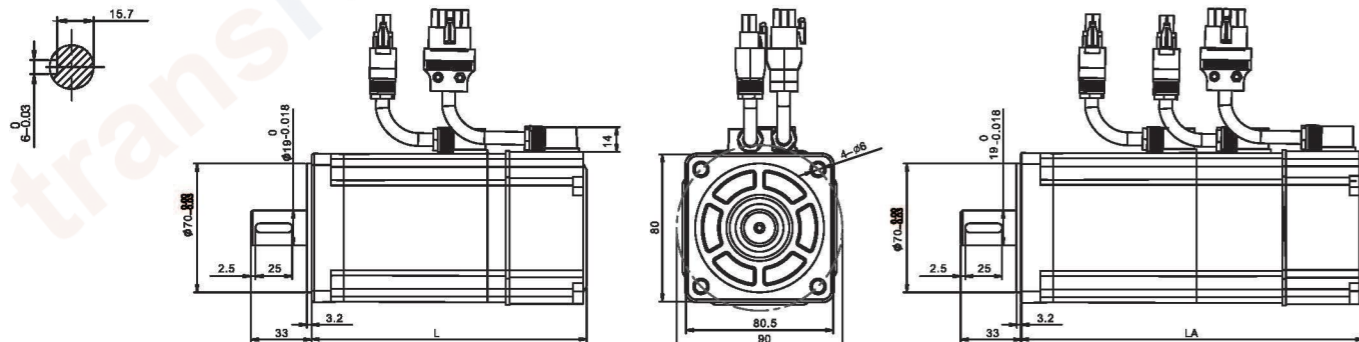


# 80 SF-S1 Series AC servo motor (Plastic plug)



Temperature	0°C -55°C
Number of pole pairs	5
Incremental encoder line	2500PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω以上/ above
Vibration	2.5G Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension unit:mm



Model	L(mm) Incremental encoder	LA(mm) with brake
80SF-M01630S1	121	165
80SF-M02430S1	134	178
80SF-M04025S1	154	198

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
\* Not hit the shaft, or the encoder in the other end would be damaged.

## Specifications

Motor Model	80SF-M01630S1	80SF-M02430S1	80SF-M04025S1
Rated Power(w)	500	750	1000
Rated voltage(V)	220	220	220
Rated Current(A)	2.7	4.8	4.2
Rated Speed(rpm)	3000	3000	2500
Max Speed(rpm)	5000	5000	5000
Rated Torque(N.m)	1.59	2.39	3.82
Max Torque(N.m)	4.77	7.17	11.46
Max current(A) <sup>2</sup>	8.1	14.4	12.6
Rotor Inertia(Kg.m) <sup>2</sup>	0.8*10 <sup>-4</sup>	1.5*10 <sup>-4</sup>	2.2*10 <sup>-4</sup>
Motor Weight (Kg)	1.9	2.55	3.4

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
(Aerial plug)Socket Number	2	3	4	1	Socket number	1	2
(Lead type)Socket Number	1	2	3	4	Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

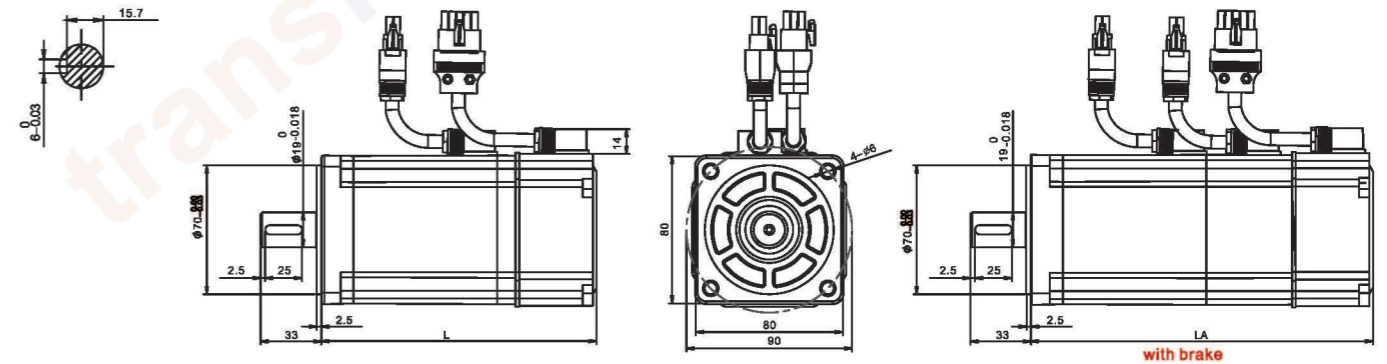
Signal Definitions	5V	OV	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
(Aerial plug)Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
(Lead type)Socket Number	2	3	9	4	7	13	14	5	6	10	11	8	12	15	1
Absolute signal definitions	PE		GND		VB		SD-		GND 0V		SD		Vcc 5V		
Socket Number	1		2		3		4		5		6		7		

# 80 SF Series AC servo motor (Plastic plug)



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	2500/5000PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Structure	Plastic packaging, Self-cooling
Vibration	2.5G 以下/ Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension unit:mm



Model	L(mm) Incremental encoder	LA(mm) with brake
80SF-M01630S	132	168
80SF-M02430S	150	186
80SF-M04025S	178	214

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
\* Not hit the shaft, or the encoder in the other end would be damaged.

## Specifications

Motor Model	80SF-M01630S	80SF-M02430S	80SF-M04025S
Rated Power(w)	500	750	1000
Rated voltage(V)	220	220	220
Rated Current(A)	2.7	3.8	4.2
Rated Speed(rpm)	3000	3000	2500
Rated Torque(N.m)	1.59	2.39	3.82
Max Torque(N.m)	4.77	7.17	11.46
Max current(A) <sup>2</sup>	8.1	11.4	12.6
Rotor Inertia(Kg.m) <sup>2</sup>	0.61*10 <sup>-4</sup>	0.86*10 <sup>-4</sup>	1.26*10 <sup>-4</sup>
Motor Weight (Kg)	2.2	3	4

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
(Aerial plug)Socket Number	2	3	4	1	Socket number	1	2
(Lead type)Socket Number	1	2	3	4	Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

Signal Definitions	5V	OV	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
(Aerial plug)Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
(Lead type)Socket Number	2	3	9	4	7	13	14	5	6	10	11	8	12	15	1
Absolute signal definitions	PE		GND		VB		SD-		GND 0V		SD		Vcc 5V		
Socket Number	1		2		3		4		5		6		7		

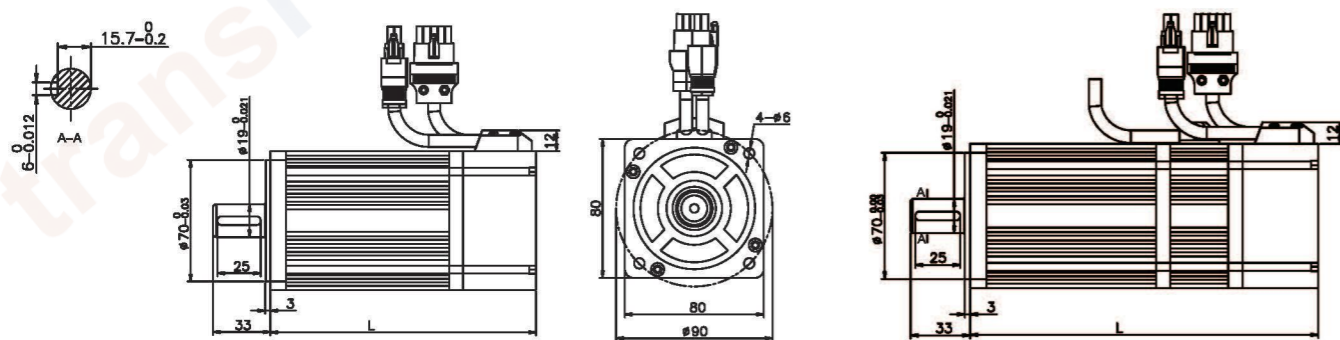


# 80 SF Series AC servo motor (Aerial plug)



Temperature	0°C -55°C
Number of pole pairs	5
Incremental encoder line	2500PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G 以下/ Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension unit:mm



Model	L(mm) incremental encoder	LA(mm) with brake
80SF-M01330	123	163
80SF-M02430	158	198
80SF-M04025	197	237

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
\* Not hit the shaft, or the encoder in the other end would be damaged.

## Specifications

Motor Model	80SF-M01330	80SF-M02430	80SF-M04025
Rated Power(w)	400	750	1000
Rated Torque(N.m)	1.3	2.4	4
Max Torque(N.m)	4.8	7.2	10
Rated Current(A)	2.2	3.5	4.2
Rated voltage(V)	220	220	220
Rated Speed(rpm)	3000	3000	2500
Max Speed(rpm)	3600	3600	3000
Rotor Inertia(Kg.m) <sup>2</sup>	1.22x10 <sup>-4</sup>	1.96x10 <sup>-4</sup>	2.8x10 <sup>-4</sup>
Motor Weight (Kg)	2	2.85	3.8

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
(Aerial plug)Socket Number	2	3	4	1	Socket number	1	2
(Lead type)Socket Number	1	2	3	4	Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

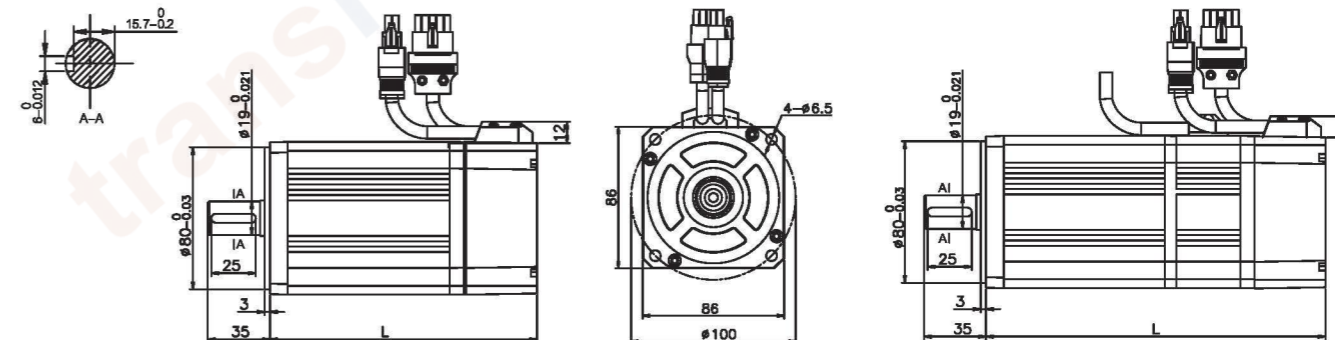
Signal Definitions	5V	OV	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
(Aerial plug)Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
(Lead type)Socket Number	2	3	9	4	7	13	14	5	6	10	11	8	12	15	1
Absolute signal definitions	PE		GND		VB		SD-		GND 0V		SD		Vcc 5V		
Socket Number	1		2		3		4		5		6		7		

# 90 SF Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	2500PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω以上/ above
Vibration	2.5G 以下/ Under
Altitude	(1000m) 以下/ Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension unit:mm



Model	L(mm) incremental encoder	LA(mm) with brake
90SF-M02430	149	190
90SF-M03520	171	212
90SF-M04025	181	222

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
\* Not hit the shaft, or the encoder in the other end would be damaged.

## Specifications

Motor Model	90SF-M02430	90SF-M04025
Rated Power(w)	750	1000
Rated Torque(N.m)	2.4	4
Max Torque(N.m)	7.1	12
Rated Current(A)	3	4
Rated voltage(V)	220	220
Rated Speed(rpm)	3000	2500
Max Speed(rpm)	3600	3000
Rotor Inertia(Kg.m) <sup>2</sup>	2.45x10 <sup>-4</sup>	3.7x10 <sup>-4</sup>
Motor Weight (Kg)	3.1	4.13

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
(Aerial plug)Socket Number	2	3	4	1	Socket number	1	2
(Lead type)Socket Number	1	2	3	4	Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

Signal Definitions	5V	OV	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
(Aerial plug)Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
(Lead type)Socket Number	2	3	9	4	7	13	14	5	6	10	11	8	12	15	1
Absolute signal definitions	PE		GND		VB		SD-		GND 0V		SD		Vcc 5V		
Socket Number	1		2		3		4		5		6		7		

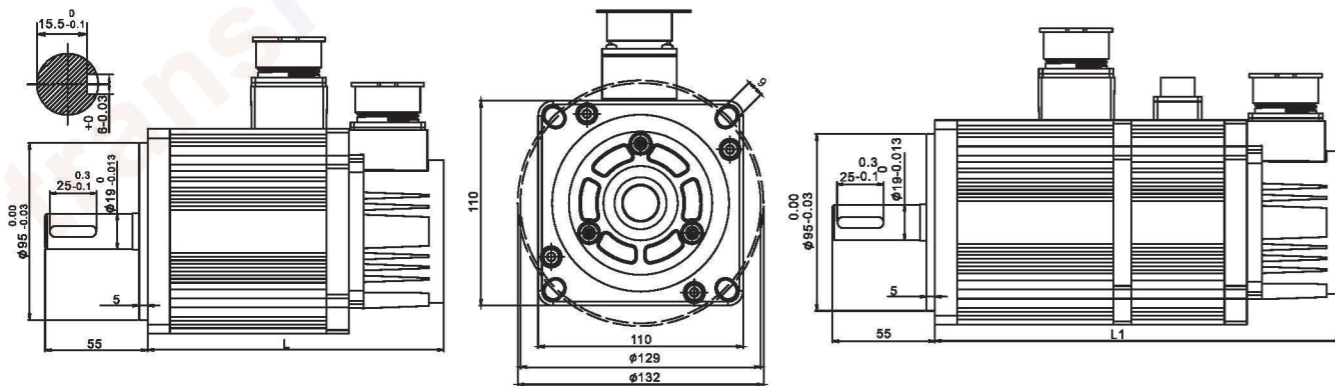


# 110 SF Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	2500/5000PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension Unit:mm



Specs	2N.m	4N.m	5N.m	6N.m
L	160	190	205	220
L1	220	250	265	280

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
 \* Not hit the shaft, or the encoder in the other end would be damaged.

## Specifications

Motor Model	110SF-M02030	110SF-M04020	110SF-M04030	110SF-M05020	110SF-M05030	110SF-M06020	110SF-M06030	110SF-M08025
Rated Power(w)	0.6	0.8	1.2	1.0	1.5	1.2	1.8	2.0
Rated Current(A)	4	3.2	5	4	5	4.5	6.0	7.0
Rated Torque(N.m)	2	4	4	5	5	6	6	8
Max Torque(N.m)	6	12	12	15	15	18	18	24
Rated Speed(rpm)	3000	2000	3000	2000	3000	2000	3000	2500
Max Speed(rpm)	3300	2500	3300	2500	3300	2500	3300	3000
Rotor Inertia(Kg.m) <sup>2</sup>	0.33X10 <sup>-3</sup>	0.65X10 <sup>-3</sup>	0.65X10 <sup>-3</sup>	0.82X10 <sup>-3</sup>	0.82X10 <sup>-3</sup>	1.0X10 <sup>-3</sup>	1.0X10 <sup>-3</sup>	1.28X10 <sup>-3</sup>
Motor Weight (Kg)	5	6.2	6.2	6.9	6.9	7.8	7.8	9.5

## power line

110SF-M series motor's winding by the 4-core connector, for the corresponding please check the following form

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
Socket Number	2	3	4	1	Socket number	1	2
					Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

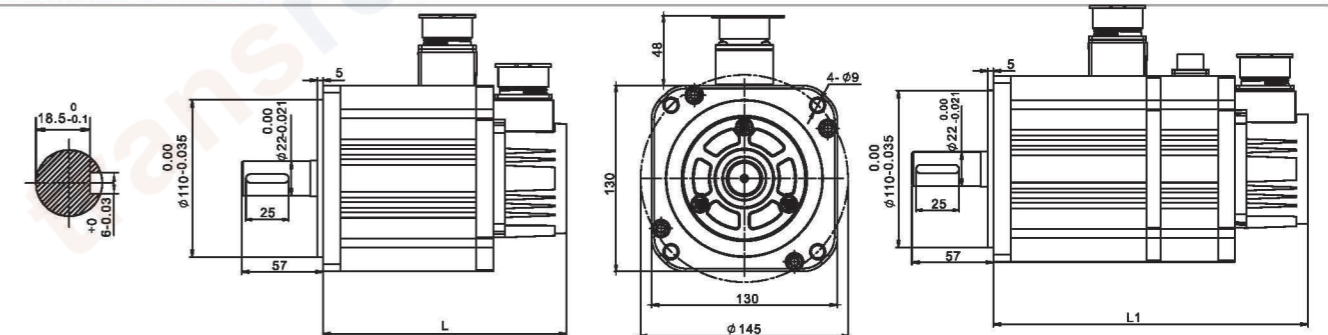
Signal Definitions	5V	OV	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Absolute signal definitions	PE	GND	VB	SD-	GND 0V	SD	Vcc 5V								
Socket Number	1	2	3	4	5	6	7								

# 130 SF Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	2500/5000PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension Unit:mm



Specs	4N.m	5N.m	6N.m	7.7N.m	10N.m	15N.m	20N.m
L	169	175	182	195	212	234	269
L1	219	225	232	245	262	299	334

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
 \* Not hit the shaft, or the encoder in the other end would be damaged.

## Specifications

Motor Model	130SF-M 04025	130SF-M 05025	130SF-M 06025	130SF-M 07720	130SF-M 07725	130SF-M 10010	130SF-M 10015	130SF-M 10025	130SF-M 15015	130SF-M 15025	130SF-M 20015
Rated Power(w)	1.0	1.3	1.5	1.6	2.0	1.0	1.5	2.6	2.3	3.8	3
Rated Current(A)	4.0	5.0	6.0	5.5	7.5	4.5	6	10	9.5	17	15
Rated Torque(N.m)	4	5	6	7.7	7.7	10	10	10	15	15	20
Max Torque(N.m)	12	15	18	22	22	25	25	25	30	30	40
Rated Speed(rpm)	2500	2500	2500	2000	2500	1000	1500	2500	1500	2500	1500
Max Speed(rpm)	2800	2800	2800	2500	2800	1500	1800	2800	1800	2800	1800
Rotor Inertia(Kg.m) <sup>2</sup>	0.82x10 <sup>-3</sup>	1.20x10 <sup>-3</sup>	1.26x10 <sup>-3</sup>	1.53x10 <sup>-3</sup>	1.53x10 <sup>-3</sup>	1.94x10 <sup>-3</sup>	1.94x10 <sup>-3</sup>	1.94x10 <sup>-3</sup>	2.77x10 <sup>-3</sup>	2.77x10 <sup>-3</sup>	3.67x10 <sup>-3</sup>
Motor Weight (Kg)	6.5	7.0	7.5	8.5	8.5	10	10	10	12	12	15

## power line

130SF-M series motor's winding by the 4-core connector, for the corresponding please check the following form

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
Socket Number	2	3	4	1	Socket number	1	2
					Brake voltage	DC24V	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

Signal Definitions	5V	OV	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Absolute signal definitions	PE	GND	VB	SD-	GND 0V	SD	Vcc 5V								
Socket Number	1	2	3	4	5	6	7								

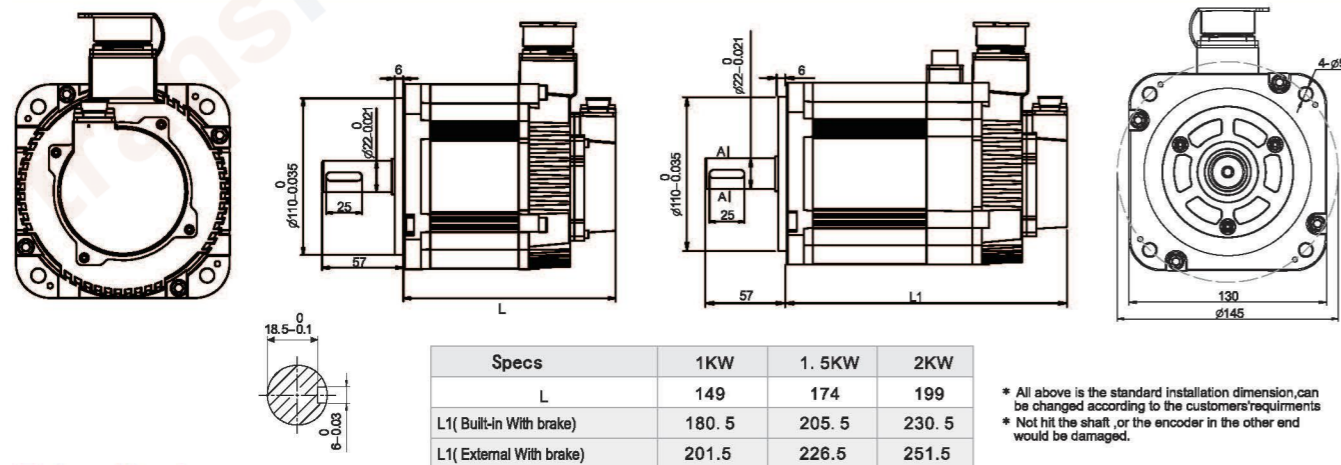


# 130 SF-S Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	2500PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension Unit:mm



## Specifications

Motor Model	130SF-M05020-S	130SF-M07220-S	130SF-M10020-S
Rated Power(w)	1.0	1.5	2
Rated voltage(V)	220	220	220
Rated Current(A)	5	7.5	10
Peak current(A)	15.0	22.5	30.0
Rated Torque(N.m)	4.77	7.16	9.55
Max Torque(N.m)	14.31	21.48	28.65
Rated Speed(rpm)	2000	2000	2000
Max Speed(rpm)	4500	4500	4500
Rotor Inertia(Kg.m) <sup>2</sup>	1.08x10 <sup>-3</sup>	1.54x10 <sup>-3</sup>	1.98x10 <sup>-3</sup>
Motor Weight (Kg)	7.8	8.9	10.2

## power line

130SF-M series motor's winding by the 4-core connector, for the corresponding please check the following form

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake	Brake Voltage
Socket Number	2	3	4	1	External brake socket number	1	2	DC24V
					The built-in brake socket number	5	6	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

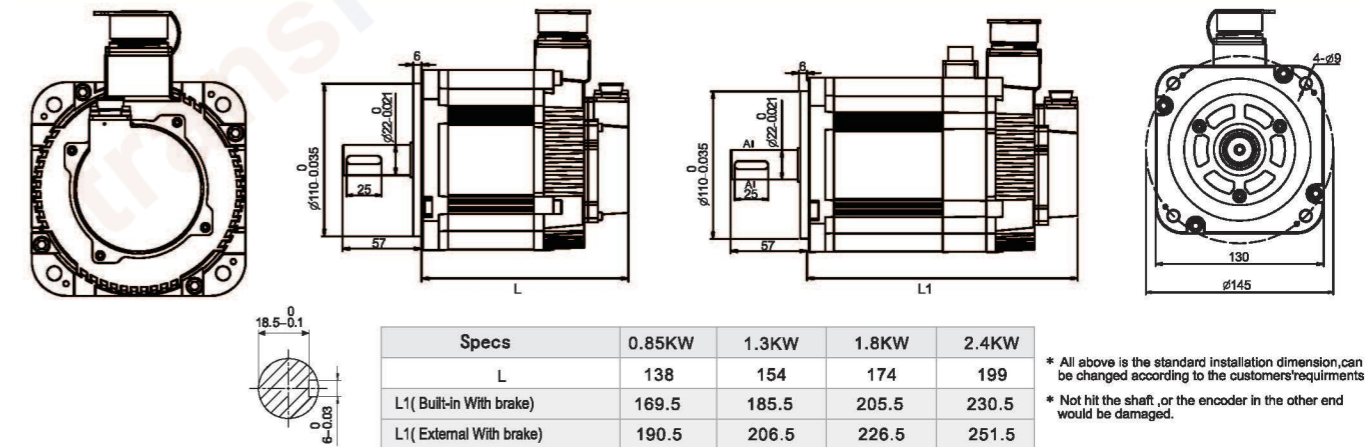
Signal Definitions	5V	0V	A+	B+	Z+	A-	B-	Z-	PE
Socket Number	2	3	4	5	6	7	8	9	1
Absolute signal definitions	PE	GND	VB	SD-	GND 0V	SD	Vcc 5V		
Socket Number	1	2	3	4	5	6	7		

# 130 SF-S1 Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	5
Incremental encoder line	2500/5000PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Installation Dimension Unit:mm



## Specifications

Motor Model	130SF-M05415S1	130SF-M08415S1	130SF-M11515S1	130SF-M15215S1	130SF-M11510S1	130SF-M15210S1
Rated Power(w)	0.85	1.3	1.8	2.4	1.2	1.6
Rated Torque(N.m)	5.4	8.4	11.5	15.2	11.5	15.2
Max Torque(N.m)	13.8	23.3	28.7	38.2	28.7	37.7
Rated Speed(rpm)	1500	1500	1500	1500	1000	1000
Max Speed(rpm)	3000	3000	3000	3000	2300	1800
Rated voltage(V)	220	380	220	380	220	380
Rated Current(A)	6.4	3.75	9.5	5.5	13	7.5
Peak current(A)	16	9.5	24.9	14.2	33.8	18
Rotor Inertia(Kg.m) <sup>2</sup>	1.92x10 <sup>-3</sup>	2.68x10 <sup>-3</sup>	3.53x10 <sup>-3</sup>	4.46x10 <sup>-3</sup>	3.35x10 <sup>-3</sup>	4.46x10 <sup>-3</sup>
Motor Weight (Kg)	5.86	7.32	9.02	11.06	9.02	11.06

## power line

130SY-M series motor's winding by the 4-core connector, for the corresponding please check the following form

## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake	Brake Voltage
Socket Number	2	3	4	1	External brake socket number	1	2	DC24V
					The built-in brake socket number	5	6	

Note: Brake voltage is DC 24V (Non polar requirement)

## The encoder connection table

Signal Definitions	5V	0V	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Absolute signal definitions	PE	GND	VB	SD-	GND 0V	SD	Vcc 5V								
Socket Number	1	2	3	4	5	6	7								



# 180 SF Series AC servo motor



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	2500/5000PPR
Absolute encoder	17/33bit, 22/38bit, 23/39bit
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Specifications

Motor Model	180SF-M17015	180SF-M17015-H	180SF-M19015	180SF-M19015-H	180SF-M27015	180SF-M27015-H	180SF-M35015	180SF-M35015-H
Rated Power(w)	2.7	2.7	3.0	3.0	4.3	4.3	5.5	5.5
Rated Current(A)	10.5	6.5	12	7.5	16	10	19	12
Rated voltage(V)	220	380	220	380	220	380	220	380
Rated Torque(N.m)	17	17	19	19	27	27	35	35
Max Torque(N.m)	34	34	47	47	54	54	70	70
Rated Speed(rpm)	1500	1500	1500	1500	1500	1500	1500	1500
Max Speed(rpm)	1800	1800	1800	1800	1800	1800	1800	1800
Rotor Inertia(Kg.m) <sup>2</sup>	3.4x10 <sup>-3</sup>	3.4x10 <sup>-3</sup>	3.8x10 <sup>-3</sup>	3.8x10 <sup>-3</sup>	6.1x10 <sup>-3</sup>	6.1x10 <sup>-3</sup>	8.6x10 <sup>-3</sup>	8.6x10 <sup>-3</sup>
Motor Weight (Kg)	19.5	19.5	20.5	20.5	25.5	25.5	30.5	30.5

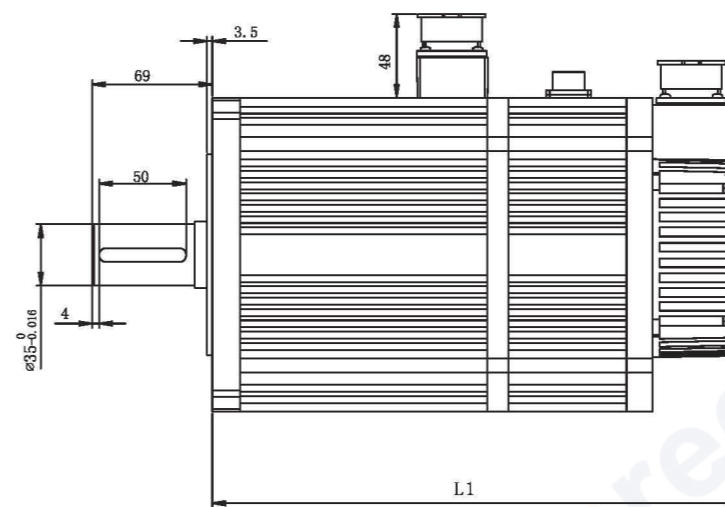
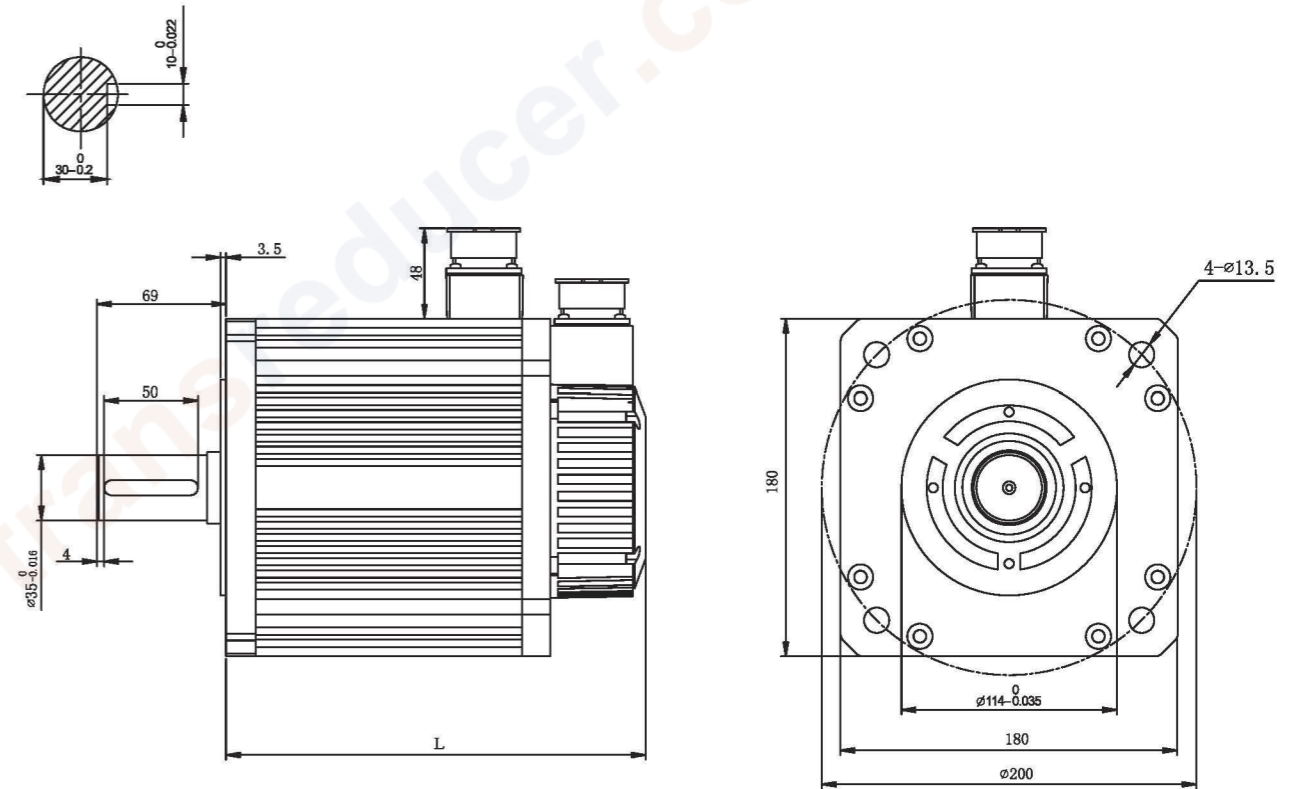
## Winding connection table

Winding wire	U	V	W	PE	Brake Wiring	Brake	Brake
Socket Number	2	3	4	1	Socket number	1	2
Note: Brake voltage is DC 24V (Non polar requirement)					Brake voltage	DC24V	

## The encoder connection table

Signal Definitions	5V	OV	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-	PE
Socket Number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Absolute signal definitions	PE	GND	VB	SD-	GND 0V	SD	Vcc 5V								
Socket Number	1	2	3	4	5	6	7								

## Installation size chart Unit:mm



Specs	17N.m	19N.m	27N.m	35N.m
L	226	232	262	292
L1	306	312	342	372

\* All above is the standard installation dimension, can be changed according to the customers' requirements  
 \* Not hit the shaft, or the encoder in the other end would be damaged.



# SG-AS Series Servo motor driver



SG-AS15\*\*



SG-AS20\*\*



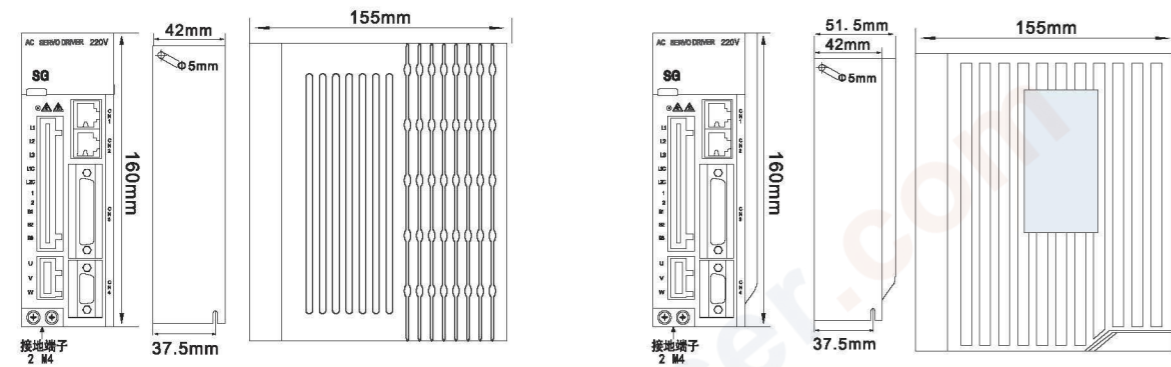
SG-AS30\*\*



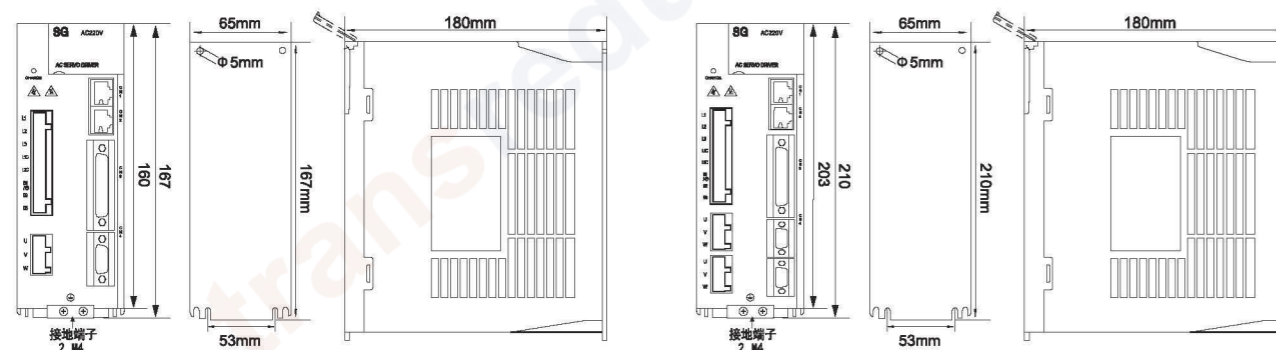
SG-AS50\*\*/SG-AS75\*\*

## Dimension drawing (pedestal type)

Three-phase AC 220V SG-AS15\*\* output power: 200W-400W    Three-phase AC 220V SG-AS15\*\* output power: 400W-1000W



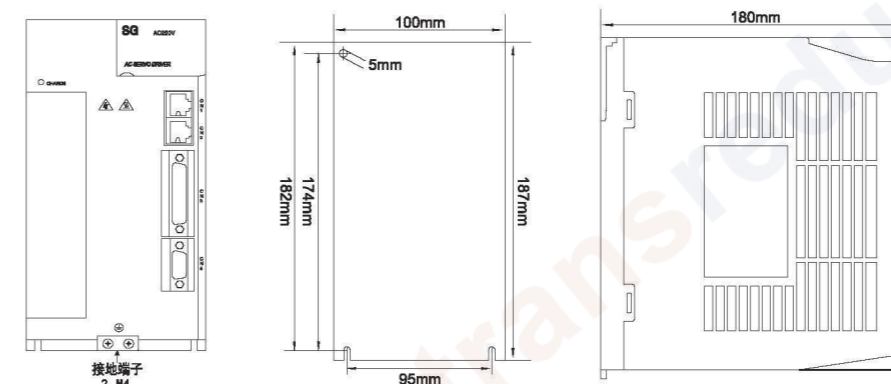
Three-phase AC 220V SG-AS30\*\* output power: 1KW-2.6KW    Three-phase AC 380V SG-BS30\*\* output power 1KW-2.6KW



Model	SG-AS15**(400W)	SG-AS15**(750W)	SG-AS30**	SG-AS50**	SG-AS75**
Output Power	200-400W	400-1000W	1.0-2.6KW	2.0-5KW	2.0-5.5KW
Control Model	Position Analog control, JOG operation, speed contacts, etc.				
Encoder feedback	Ordinary incremental encoder: 2500 lines incremental standard type 2500 line incremental province-wire serial encoder: 17/23 bit absolute encoder				
Conditions of Use	Ambient temperature / storage temperature: Ambient temperature: 0 ~ + 50 °C, Storage temperature: -20 ~ + 85 °C				
	Humidity / storage humidity: 90% RH or less (no freezing or condensation)				
	Resistance to vibration / impact resistance: 4. 9m/s <sup>2</sup> /19. 6m/s <sup>2</sup>				
Performance	Structure: Base mount				
	Speed control range: 1:10000(Lower limit of the speed control range is the smooth operation at rated load without crawling)				
	Speed response: 1KHz				
	Rate volatility (load variation): 0 to 100% load; 0% (rated speed)				
Analog speed command input	Rate volatility (voltage variation): Rated voltage ± 10%: 0% (rated speed)				
	Rate volatility (temperature variation): 25 ± 25 °C: ± 0.1% or less (rated speed)				
	Command voltage: DC±10V				
Analog torque command in input	Input impedance: Approximately 20KΩ				
	Circuit time parameter: 47μs				
	Command voltage: DC±10V				
Sequence input signal	Input impedance: Approximately 20KΩ				
	Circuit time parameter: 47μs				
	Count: 8 Point				
Sequence output signal	Function (distribution): Servo ON (/ S-ON), P action (/ P-CON), prohibits Story side driving (P-OT), prohibiting reverse side driving (N-OT), alarm reset (/ ALM-RST), positive Zhuance torque limit (/ P-CL), reverse the measured torque limit (/ N-CL), the position deviation is cleared (/ CLR), the internal set speed switching can be allocated and the signal of the positive / negative logic change.				
	Count: 6 Point				
Encoder Dividing pulse output	Function (distribution): Servo alarm (/ ALM) positioning completion (/ COIN) consistent speed detection (/ V-COMP) servo motor rotation detection (/ TGO) Servo ready (/ S-RDY), torque limit detection (/ CLT) Brakes (/ BK) encoder zero output (PGC) can be assigned as well as the positive / negative logic of the signal change				
	Count: 6 Point				
RS-485 Communications	Encoder Dividing pulse output: A phase, B phase, C: linear drive output; divider pulses: can be arbitrarily set				
	Protocol: MODBUS				
CAN Communications	1: N Communication: Can be up to N = 127 station				
	Axis address setting: By parameter setting				
Yaskawa M2 Communication	CAN Communications: CAN Open (DS301 + DS402 profile)				
	1: N Communication: Can be up to N = 127 station				
Yaskawa M3 Communication	Axis address setting: By parameter setting				
	Communication protocol: MECHATROLINK- II				
Display Function	1: N Communication: MAX TO Sation N=30				
	Station number agreement: SET by parameter				
Regeneration treatment	Communication protocol: MECHATROLINK-III				
	1: N Communication: MAX TO Sation N=82				
Overtravel (OT) prevention function	Station number agreement: SET by parameter				
	CHARGE LED, 7-segment 5				
Protection	Built-in regenerative resistor or external regenerative resistor (optional)				
	P-OT, N-OT Enter the action of dynamic brake (DB) stop, deceleration stop or free-run stop				
Monitoring functions	Overcurrent, overvoltage, undervoltage, overload, speeding, regeneration fault, encoder feedback error, etc.				
	Speed, current position, command pulse accumulation, position deviation, motor current, operating status, input and output signals				
Accessibility Features	Gain adjustment, alarm recording, JOG operation, origin search, inertia testing				
	Built-in automatic gain tuning function				
Smart features	Use load inert: Less than 5 times of motor inertia				
	Feedforward compensation: 0~100%(Setting unit 1%)				
Position control	Input pulse types: Sign + pulse train, CW + CCW pulse train, 90 ° phase difference between the two-phase pulse (A phase + B phase)				
	Input pulse form: Supports linear drive, open collector				
Use load inert	Maximum input pulse frequency: Linear drive				
	Sign + pulse train, CW + CCW pulse sequence: 500K pps				
Feedforward compensation	90 ° phase difference between the two-phase pulse (A phase + B-phase): 500K pps				
	Open Collector				
Input pulse types	Sign + pulse train, CW + CCW pulse sequence: 200K pps				
	90 ° phase difference between the two-phase pulse (A phase + B-phase): 200K pps				

## Dimension drawing (pedestal type)

Three-phase AC 220V SG-AS50\*\*/AS75\*\* output power: 2.0KW-5.5KW  
Three-phase AC 380V SG-BS50\*\*/BS75\*\* output power: 2.0KW-5.5KW





# SG Series Servo Motor Driver

Operating temperature:-10℃ -55℃  
 Humidity:<90%(no condensation)  
 Vibration:<0.5g(4.8m/s<sup>2</sup>)  
 Working system:continuous work



## Product brief

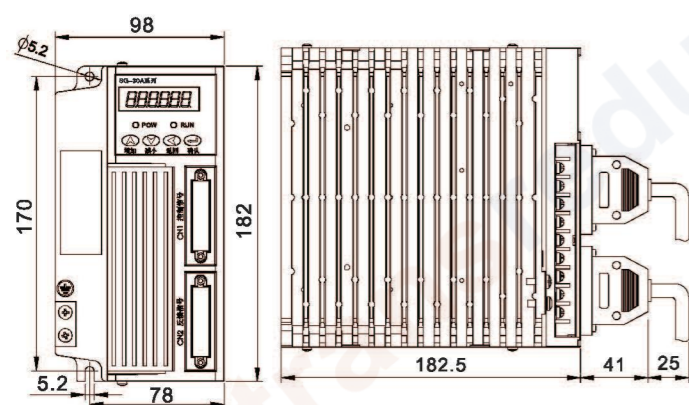
Ac servo technology has developed from the early 80s, application technology become more mature and the property improved every year.It is widely used in the cnc turning machine,packaging machine, printer,textile machine,and other auto-mated equipment.SG series ac servo drive , a new generation product,use the latest 32-bit DSP unit As the center core work unit,which we research and develop independently.Adopt the complex programmable device EPLD and Mitsubishi intelligent power module.This ac servo drive has the advantages of high integration, small volume, fast response speed, perfect protection, high reliability etc.

## Specifications

Model	SG15A	SG20A	SG30A
Output power(Kw)	0.2-1.0	0.4-1.5	0.8-2.6
Motor rated torque(N.m)	0.6-4.0	2.4-6.0	4.0-15.0
Input power supply	3-phase AC220 -15%~+10% 50/60Hz		
Control way	SG series position control、 speed control		
Speed frequency response	≥250Hz		
Control Rate volatility	< ±0.03 (load 0~100%) ; < ±0.02 (power-15%~+10%) value corresponding to the rated speed.		
feature Speed ratio	1 : 5000		
Pulse frequency	≤500kHz		
Input control	1.servo enable 2. alarm clearance Input control 3.ccw drive prohibition 4.cw drive prohibition 5.deviation/counter reset/ speed selection 6.command pulse prohibition/speed selection2		
Output control	1.servo ready to output 2.servo alarm output 3. positioning to complete the output/ Speed reach to the output 4. mechanical		
Position control	Input way:1.pulse+ symbols 2.cw pulse/cw pulse 3.2 phase A/B orthogonal pulse The electronic gear: 1~32767/ 1~32767 Feedback pulse :2500 ppr		
Mouitring functions	rotate speed,current position,command pulse accumulation,position deviation ,motor torque, motor current,Linear speed,The absolute rotor position,command pulse frequency,Running state,input/output terminal signal, etc.		
Acceleration deceleration function	parameters set 1~1000ms/1000r/min		
Protection function	overspeed,The main power over-voltage and under-voltage,over current,overload,abnormal braking,the encoder abnormal, control power abnormal position error,ect..		

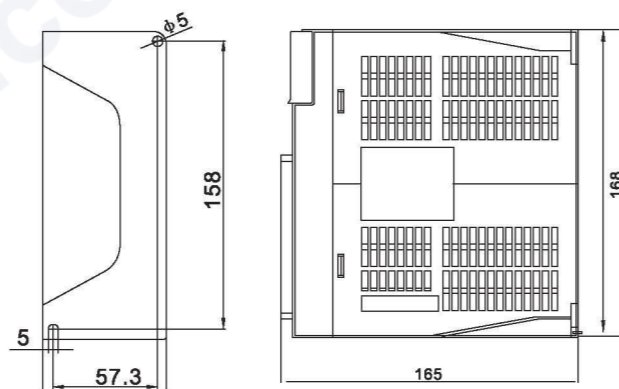
## Installation size chart

unit: mm



## Installation size chart

unit: mm



# SD-A Series Spindle Servo Motor Driver

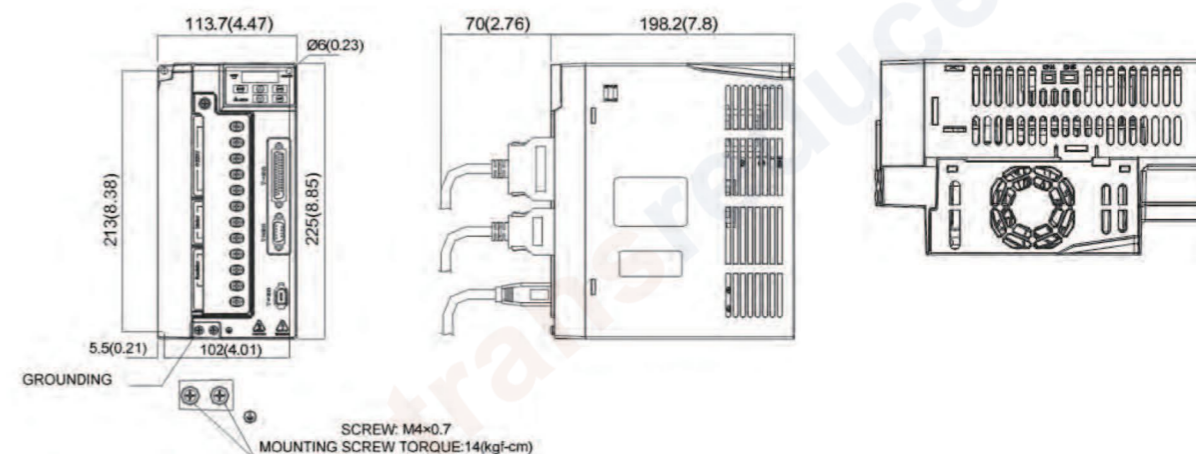
## Specifications

Item	Specification		
Control method	Open-loop vector	V/Fcontrol	Closed loop vector
Starting torque	0.5Hz 15%	0.5Hz 100%	0.0Hz 180%
Speed range	1: 200	1: 100	1: 1000
Steady speed accuracy	± 0.2%		± 0.02%
Torque response	10ms	5ms	
Positioning accuracy	-		+1 line pulse
Motor type	AC asynchronous motor, AC permanent magnet synchronous motor		
Pulse form	Direction pulse		
Spindle stop	Built-in 8 divisions and 4 zero positions		
Speed / position control	Support external terminal switching		
Electronic gear	Built-in 4 groups of electronic gears for terminal switching		
Encoder form	Collector differential encoder, resolver, etc.		
Digital input and output	8-way optocoupler isolation input, NPN, PNP optional 2-way optocoupler isolation output		
Analog input	3 inputs 10V~+10V, 0~10V/0~20mA		
Maximum frequency	630Hz		
Frequency resolution	Digital setting:0.01Hz Simulation settings:Maximum frequency x0.025%		
Carrier frequency	0.5K~16KHz,Carrier frequency can be adjusted automatically according to the operating temperature		
Frequency setting method	Operation panel, AI2, AI2, AI3, terminal UP / DN control, communication control, PLS pulse frequency		
DC braking capacity	DC braking frequency:0.0~300Hz DC braking current:0.0%~100%		
Specified energy consumption unit	4T15G and below standard built-in braking unit 4T18, 5G ~ 75G braking unit is optional internal, 4T93G and above need to be external		
PLC multistage speed	Up to 16 sections of speed operation can be realized through built-in PLC or control terminal		
Common DC bus	Multiple drivers share the DC bus, and the energy is automatically balanced		
Automatic voltage regulation(AVR)	When the grid voltage changes, it can automatically keep the output voltage stable		
Overload capacity	150% rated current 60S; 180% rated current 3S		
Over-voltage and over-current stall control	Automatically limit current and voltage during operation to prevent frequent over-current and over-voltage		
Fast current limit function	Minimize over-current faults, ensure that the module is not damaged as much as possible, and protect the normal operation of the driver.		
Torque limitation and control	The "excavator" feature automatically limits the torque during operation to prevent frequent overcurrent and overvoltage trips; the closed-loop vector control mode enables torque control.		



Item	Specification
Friendly interface	Power-on display friendly dialogue "HELLO"
Multifunctional JOG key	Original multi-function keys can be set for frequently used operations: forward, reverse, forward and reverse switching, command switching
Timing control function	Set the single timing time and the accumulated running time of the whole machine.
Two sets of motor parameters	It can realize the switching control of two groups of motors, and the control mode is optional.
Terminal function	The control terminal adopts plug-in installation to facilitate user wiring and maintenance.
Command source	The operation panel, control terminal, and serial communication are given, and can be switched between each other.
Frequency source	Digital setting, analog voltage, analog current, pulse setting, serial communication, addition or subtraction of auxiliary frequency sources, mutual switching can be realized.
Protective function	Power on motor short circuit detection, input and output phase loss protection, overcurrent protection, overvoltage hoop, undervoltage protection, overheat protection, overload protection.
Use place	Indoor, free from direct sunlight, no dust, no corrosive gas, no flammable gas, oil mist, no water vapor, no drip or salt
Altitude	Below 1000m
Ambient temperature	Derating between -10 °C ~ +40 °C and 40 °C ~ 50 °C. For each 1 °C increase, the rated output current is reduced by 1%.
Humidity	Less than 95% RH, no condensation
Storage	-40~+70°C

## Flange installation Dimension Unit:mm





# 204ZJY Series Ac Asynchronous Spindle Servo Motor



Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	1024/2500PPR
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G 以下/ Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange installation

## Performance introduction

204ZJY series AC asynchronous spindle servo motor is a new AC induction servo motor, it is independent research and development, design, and produced by Shanghai Trans Intelligent Technology Co., Ltd. The product has the advantages of compact structure, beautiful appearance. It adopts optimum electromagnetic design, high speed photoelectric encoder, high precision bearings and F level insulation. It is in stable operation, high control precision, low electromagnetic noise, high efficiency, long service life and high performance price ratio. It is particularly suitable for the spindle control of CNC machine tool and the speed control of high performance automation.

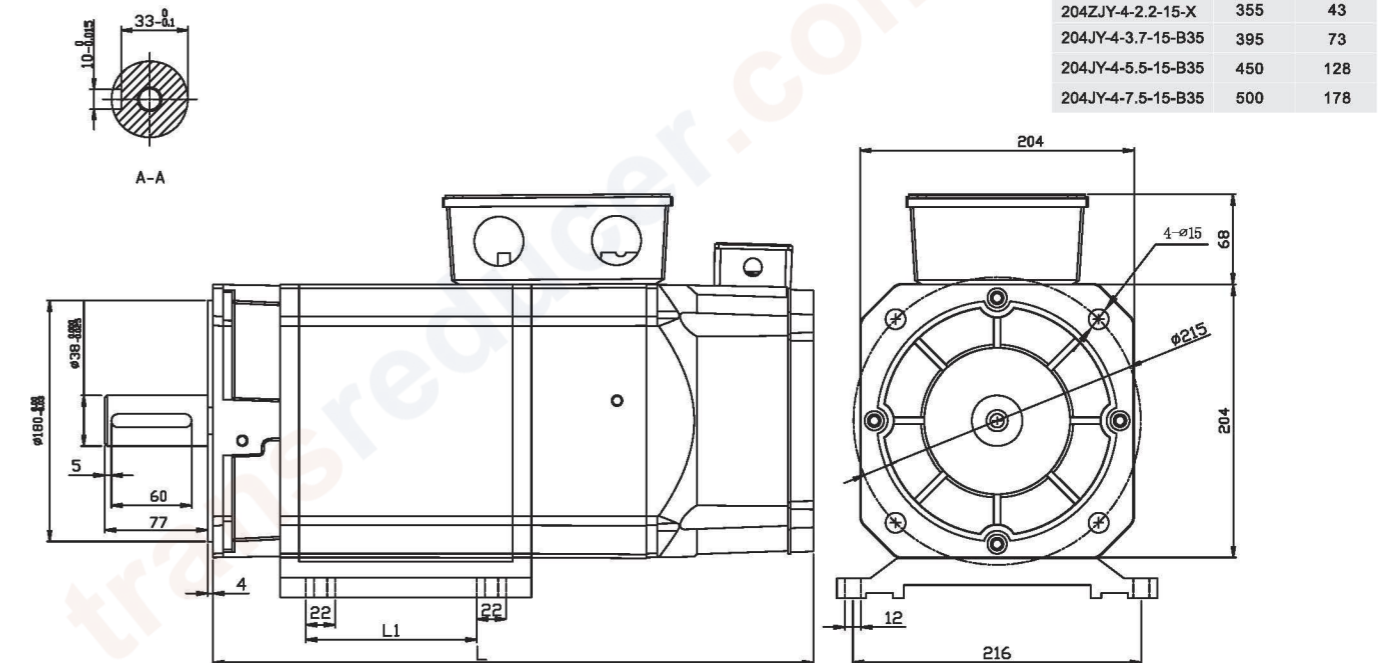
## Notice

1. Motor U, V, W wiring must keep corresponding relation with the drive U, V,
2. Prohibit to hit the end of axis or let the motor axial force, To avoid damaging the encoder and motor bearing.
3. Ensure the terminal in the motor's junction box grounded effectively.
4. Ensure that the cooling fan is in the normal work when the motor adjust speed.
5. The motor's surface temperature is higher during operation, avoid touching by hand to prevent burns.
6. Fan wind direction must be consistent with the signage when wiring.

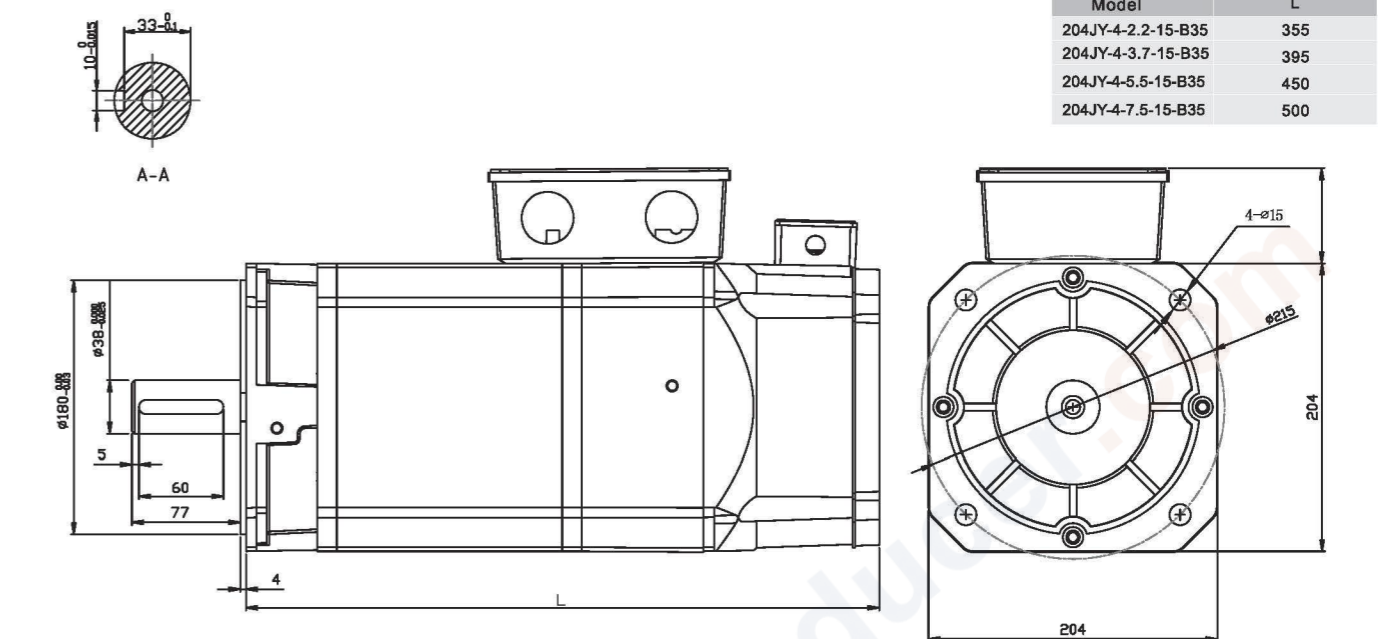
## Specifications

Motor Model	204ZJY-4-2.2-15-X	204ZJY-4-3.7-15-X	204ZJY-4-5.5-15-X	204ZJY-4-7.5-15-X
Rated Power(w)	2.2	3.7	5.5	7.5
Rated voltage(V)	380	380	380	380
Rated Current(A)	5.1	8	11.5	16
Rated Torque(N.m)	14	24	35	50
Rated frequency(Hz)	50	50	50	50
Rated Speed(rpm)	1450	1460	1460	1460
Max Speed(rpm)	6000	6000	6000	6000
Rotor Inertia(Kg.m) <sup>2</sup>	0.01	0.014	0.018	0.025
Fan power(w)	75	75	75	75
Fan voltage(V)	380	380	380	380
Vertical weight (Kg)	33	43	57	66.5
Horizontal weight (Kg)	35.6	46	61	71.5

## Installation size chart Unit:mm



## Flange installation Dimension Unit:mm



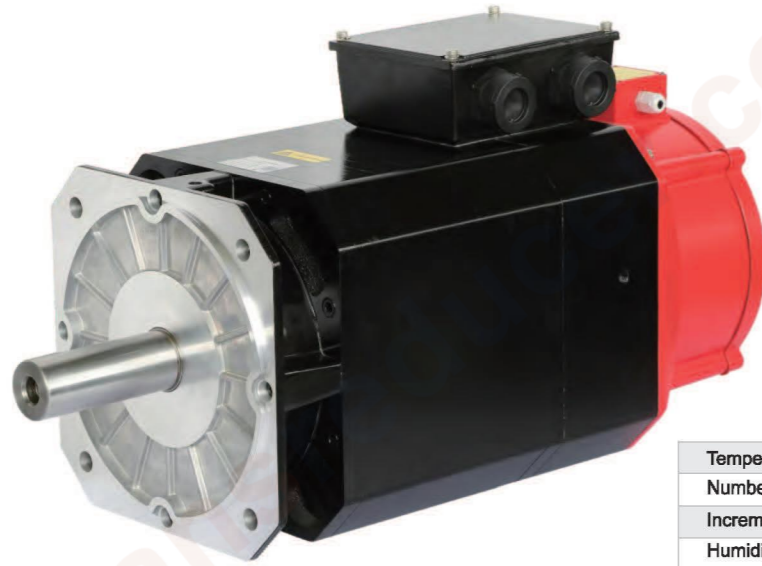
## The encoder connection table

Serial Number	1	2	3	4	5	6	7	8	9	10
Signal	Shield	Z+	B+	A+	+5V		Z-	B-	A-	0

Note: T is motor heat protection switch



# 250ZJY Series Ac Asynchronous Spindle Servo Motor

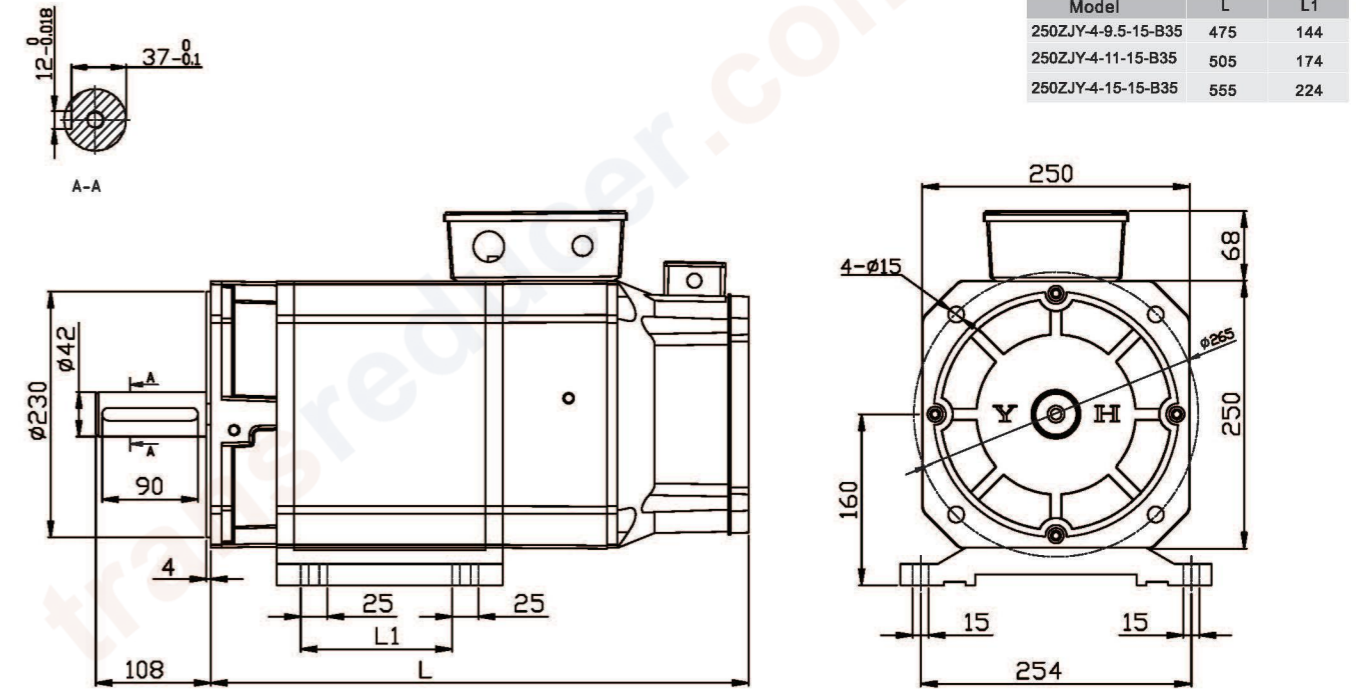


Temperature	0°C -55°C
Number of pole pairs	4
Incremental encoder line	1024/2500PPR
Humidity is less than	90%
Insulation class	B
Safety Class	IP65
Insulation and voltage resistance	AC 1500V, 1 Minute
Insulation resistance	DC500V, 10Ω above
Vibration	2.5G Under
Altitude	(1000m) Under
Work system	Continuous
Installation Method	Flange Installation

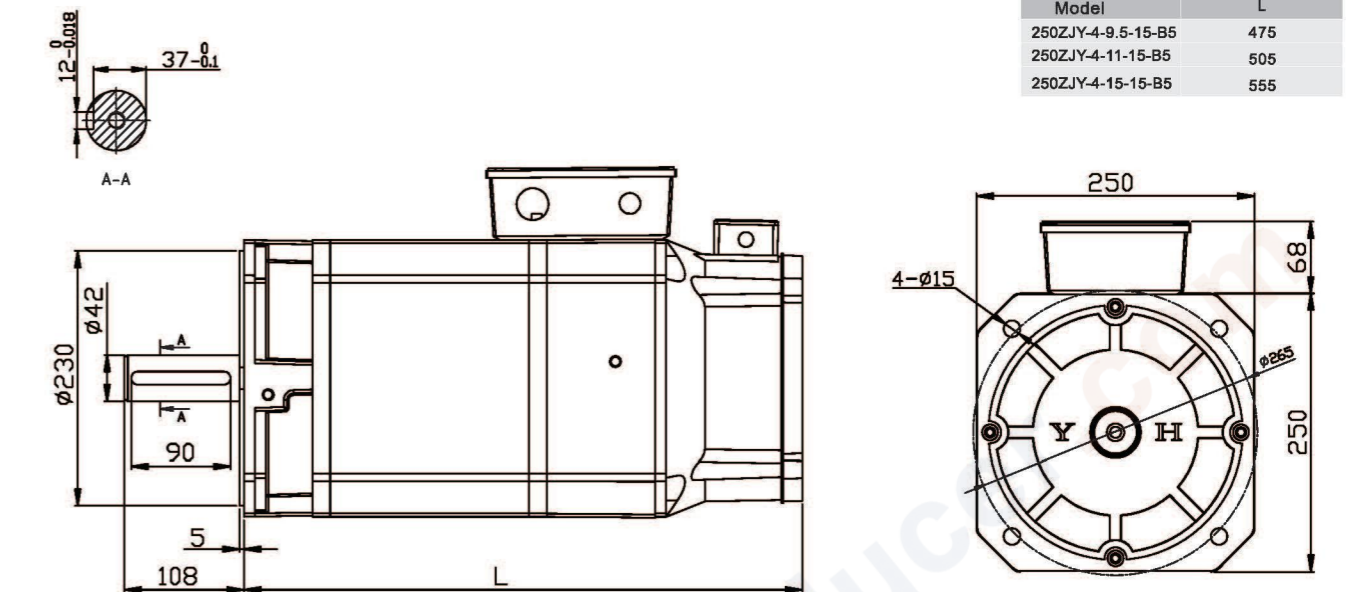
## Specifications

Motor Model	250ZJY-4-9.5-15	250ZJY-4-11-15	250ZJY-4-15-15
Rated Power(w)	9.5	11	15
Rated voltage(V)	380	380	380
Rated Current(A)	19	22	30
Rated Torque(N.m)	60	70	95
Rated frequency(Hz)	50	50	50
Rated Speed(rpm)	1500	1500	1500
Max Speed(rpm)	6000	6000	6000
Rotor Inertia(Kg.m) <sup>2</sup>	0.01	0.014	0.018
Fan power(w)	75	75	75
Fan voltage(V)	380	380	380
Vertical weight (Kg)	80	89	119
Horizontal weight (Kg)	92	101	131

## Installation size chart Unit:mm



## Flange installation Dimension Unit:mm



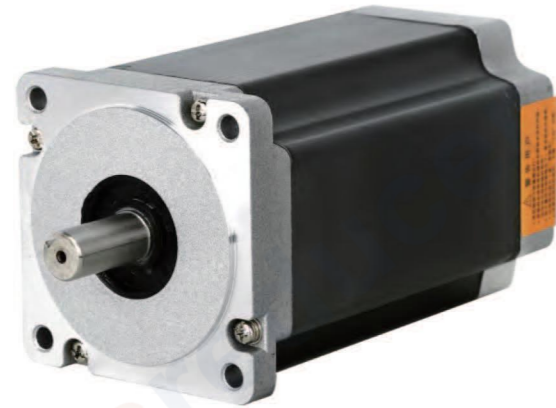
## The encoder connection table

Serial Number	1	2	3	4	5	6	7	8	9	10
Signal	Shield	Z+	B+	A+	+5V		Z-	B-	A-	0

Note: T is motor heat protection switch



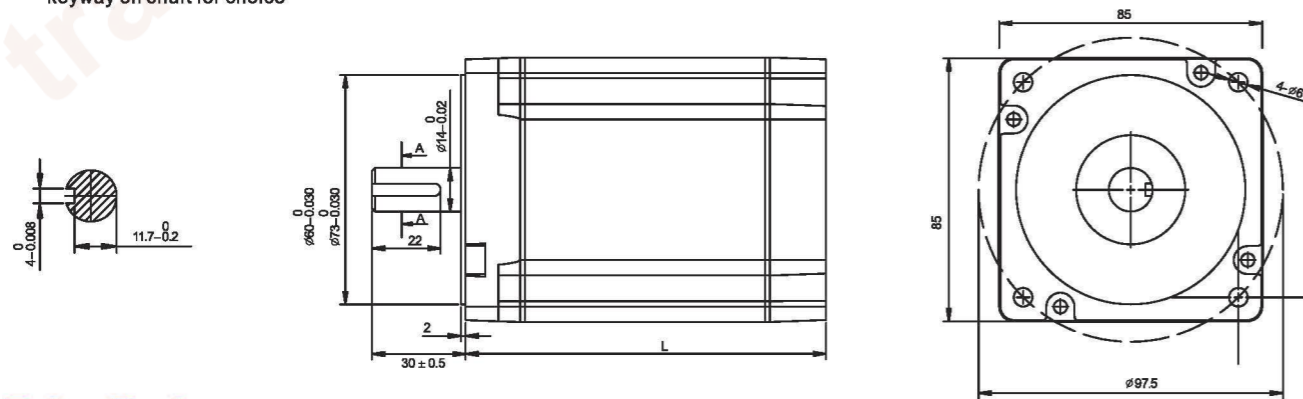
# 86BYG Series Two Phase Stepper Motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

## Installation Dimension Unit:mm

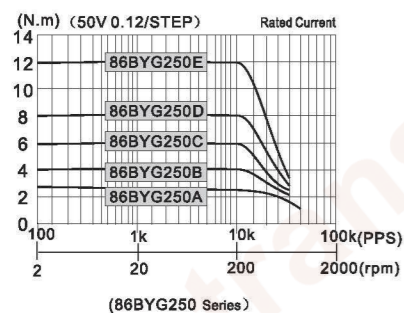
Note: φ12 and φ14 of shaft diameter for choice, 1mm flat-square and 4mm/5mm keyway on shaft for choice



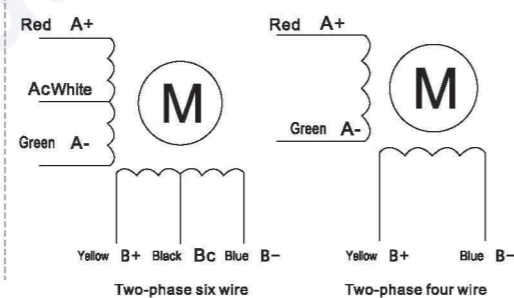
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
86BYG250A	1.8	2.4	60	4.3	3.1	0.5	1.92	2.2	78
86BYG250B	1.8	4	60	4.5	7.0	1.0	2.55	2.95	99
86BYG250C	1.8	6	60	5	7.1	0.8	3.57	3.7	115
86BYG250D	1.8	8	60	6	7.3	0.95	3.96	4.3	145
86BYG250E	1.8	12	60	7.5	7.8	1.0	4.57	5.2	155

## The torque-speed characteristic curve

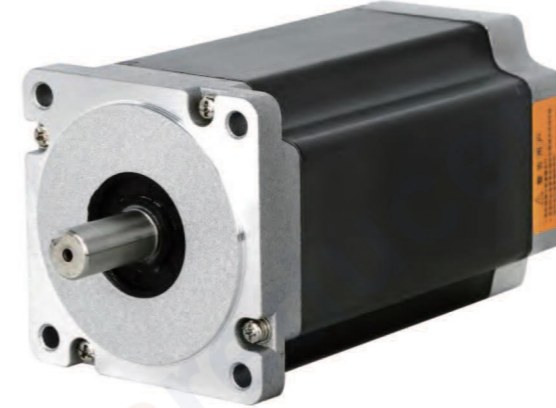


## Wiring Diagram



Note: The motor wiring method can be changed according to the customers' requirements.

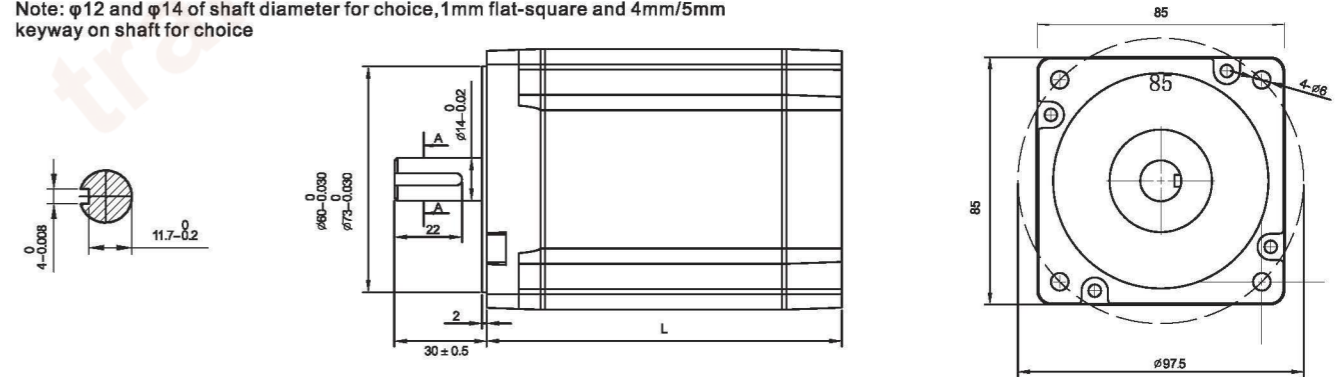
# 86BYG Series Three Phase Stepper Motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

## Installation Dimension Unit:mm

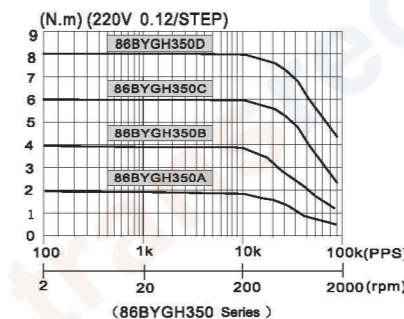
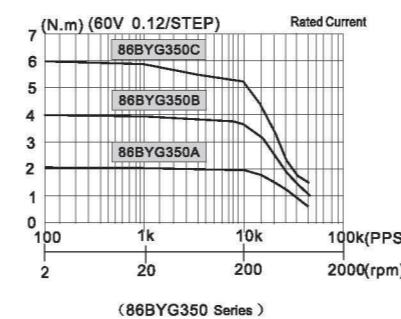
Note: φ12 and φ14 of shaft diameter for choice, 1mm flat-square and 4mm/5mm keyway on shaft for choice



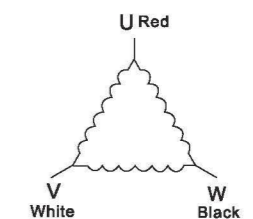
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
86BYG350A	1.2	2	60	5.2	2.4	0.5	1.49	1.84	78
86BYG350B	1.2	4	60	5.6	4.5	0.7	2.55	2.95	99
86BYG350C	1.2	6	60	5.8	6.5	0.95	3.99	3.9	125
86BYGH350A	1.2	2	220	1.75	4.0	1.1	1.49	1.98	78
86BYGH350B	1.2	4	220	2.1	7.4	1.4	2.55	3.0	99
86BYGH350C	1.2	6	220	3.2	12.8	1.87	3.96	4.4	135
86BYGH350D	1.2	8	220	4.0	16.2	2.0	4.95	5.9	145
86BYGH350E	1.2	12	220	4.5	18.4	2.2	5.3	6.5	158

## The torque-speed characteristic curve



## Wiring Diagram



Note: The motor wiring method can be changed according to the customers' requirements.



# 86BYG-S1 Series Three Phase Stepper Motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

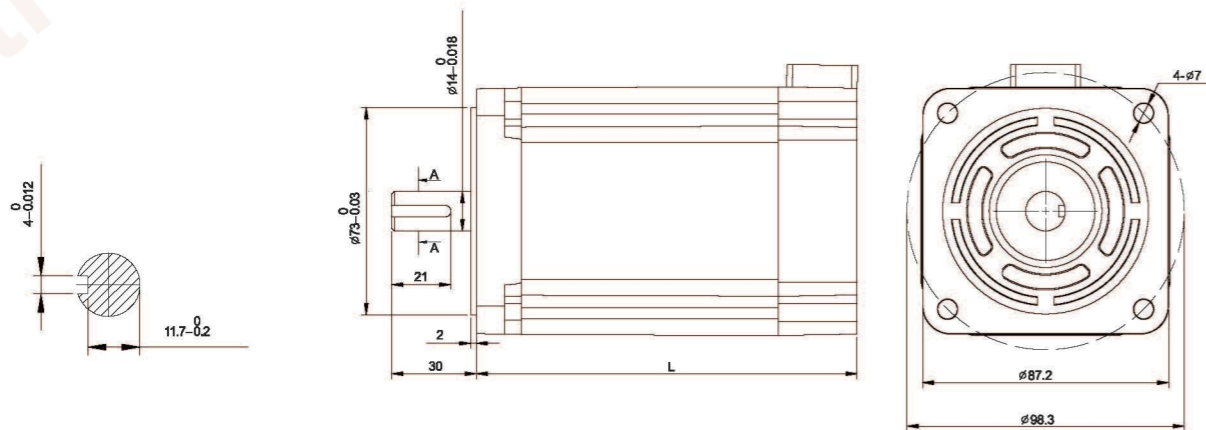
# 110BYG Series Two Phase Stepper Motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

## Installation Dimension Unit:mm

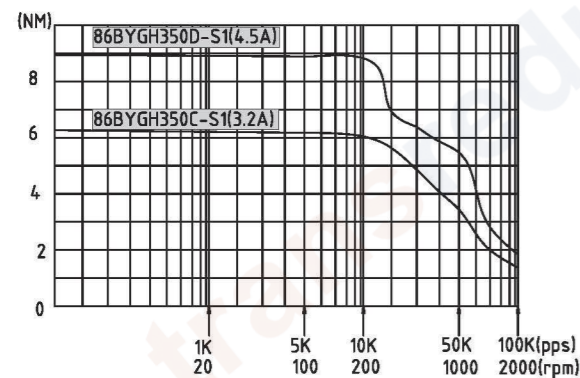
Note: φ12 and φ14 of shaft diameter for choice, 1mm flat-square and 4mm/5mm keyway on shaft for choice



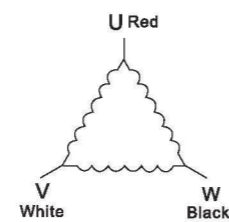
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
86BYG350C-S1	1.2	6	220	3.2	12.5	1.8	3.96		135
86BYG350D-S1	1.2	9	220	4.5	16	2.1	5.3		162

## The torque-speed characteristic curve

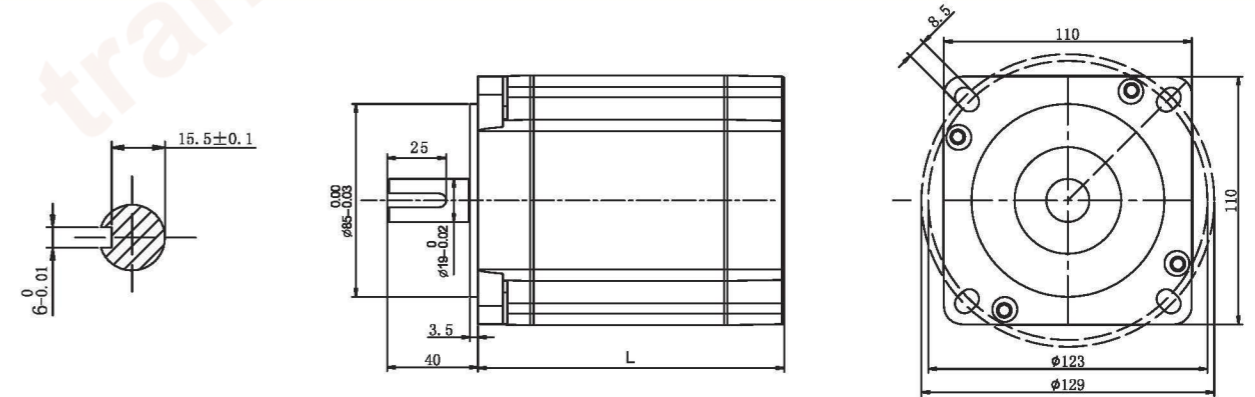


## Wiring Diagram



Note: The motor wiring method can be changed according to the customers' requirements.

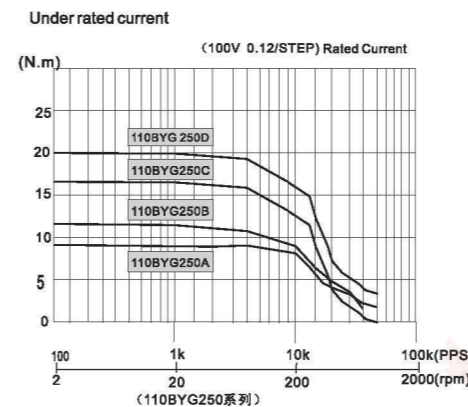
## Installation Dimension Unit:mm



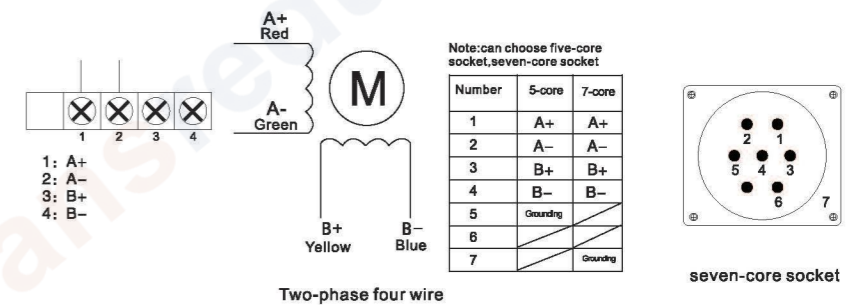
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
110BYG 250A	1.8°	8	110	5	17.3	1.3		4.8	109
110BYG 250B	1.8°	12	110	6	12.7	0.78	10	6.4	134
110BYG 250C	1.8°	18	110	6.5	15.5	0.87	12.35	8.1	159
110BYG 250D	1.8°	20	110	6.8	17.5	0.97	13.8	9.2	193

## The torque-speed characteristic curve



## Wiring Diagram



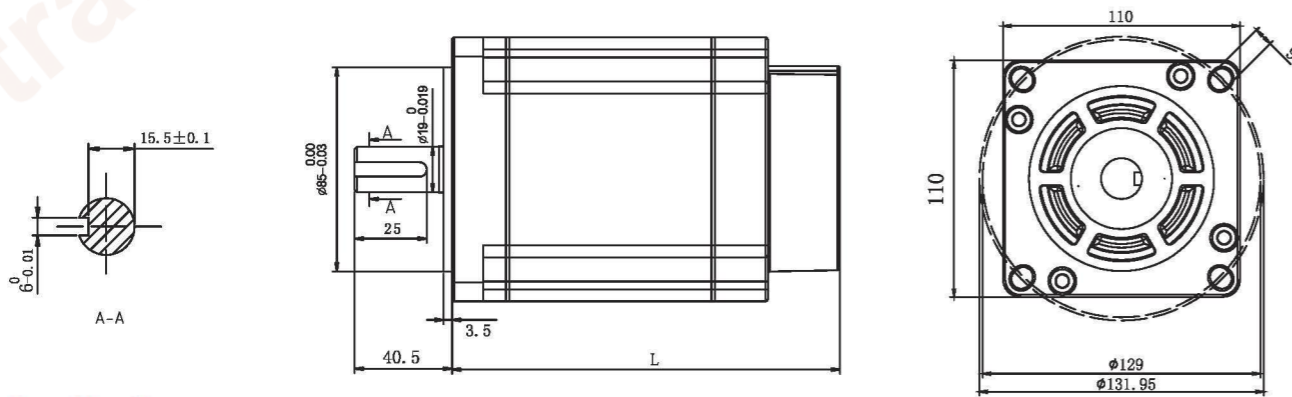


# 110BYG Series Three Phase Stepper Motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

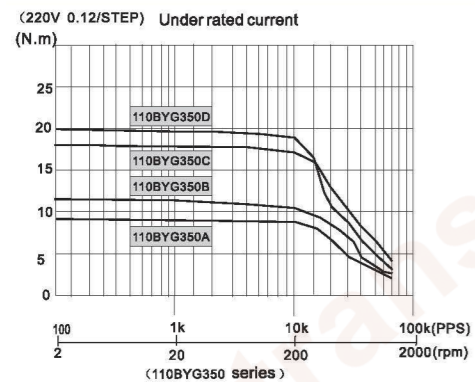
## Installation Dimension unit:mm



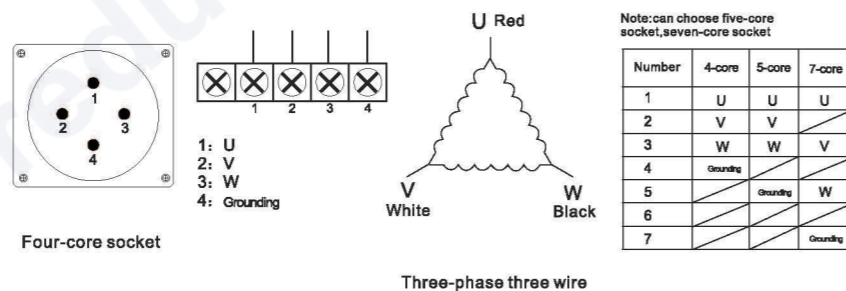
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
110BYG 350A	1.2°	8	220	3.7	11.9	1	8.6	5.5	139
110BYG 350B	1.2°	12	220	4.5	11.5	0.76	11.9	7.1	162
110BYG 350C	1.2°	16	220	6.0	19	1.28	14.8	8.8	187
110BYG 350D	1.2°	20	220	6.8	22	1.24	19.8	11	221

## The torque-speed characteristic curve



## Wiring Diagram

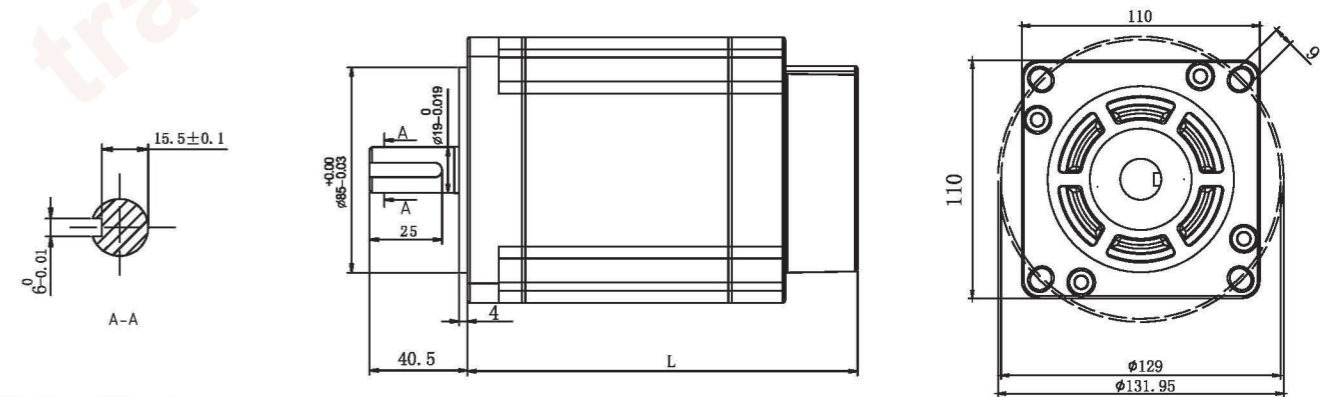


# 110BYG Series Three-phase high-speed hybrid stepping motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

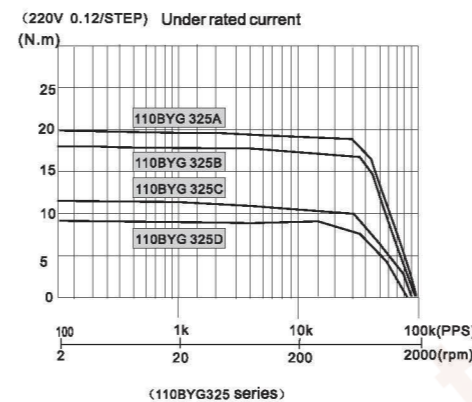
## Installation Dimension unit:mm



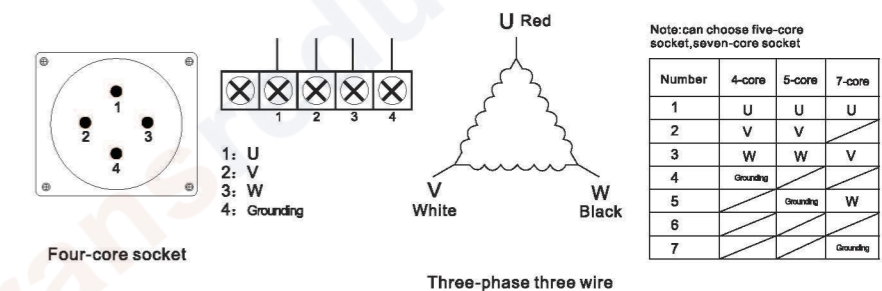
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
110BYG 325A	2.4°	8	220	7.0	8.6	5.5	139
110BYG 325B	2.4°	12	220	8.5	11.9	7.1	162
110BYG 325C	2.4°	16	220	9.5	14.8	8.8	187
110BYG 325D	2.4°	20	220	10	19.8	11	221

## The torque-speed characteristic curve



## Wiring Diagram



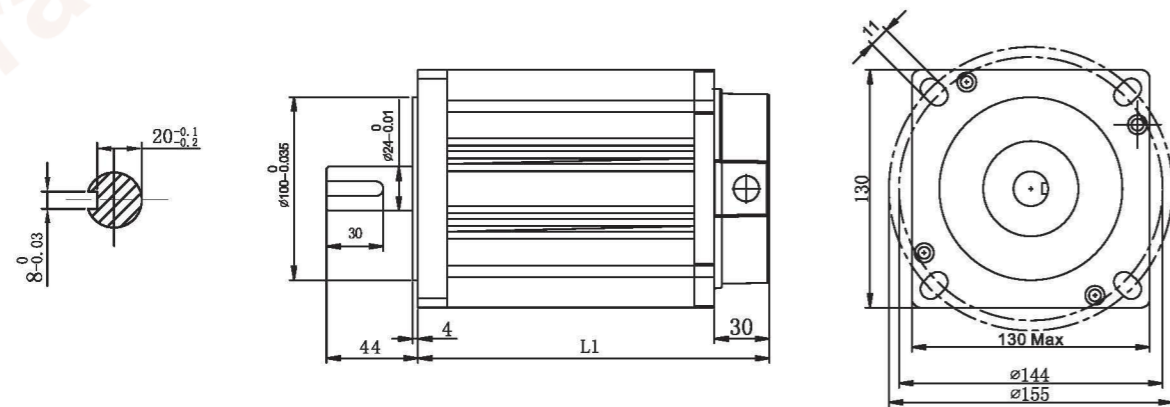


# 130BYG Series Two Phase Stepper Motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

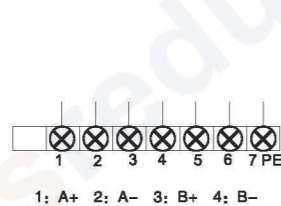
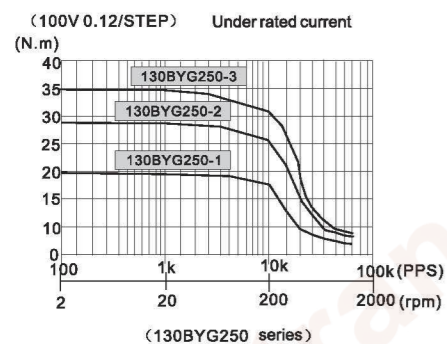
## Installation Dimension unit:mm



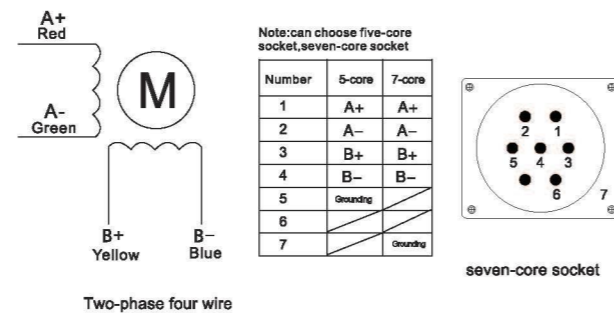
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
130BYG250A-X	1.8	20	110~20	6.8	8.2	0.89	26.8	12.5	189
130BYG250B-X	1.8	28	110~20	7.5	12	1.1	33.5	15.1	236
130BYG250C-X	1.8	35	110~20	8	15	1.3	40	17.2	256

## The torque-speed characteristic curve



## Wiring Diagram

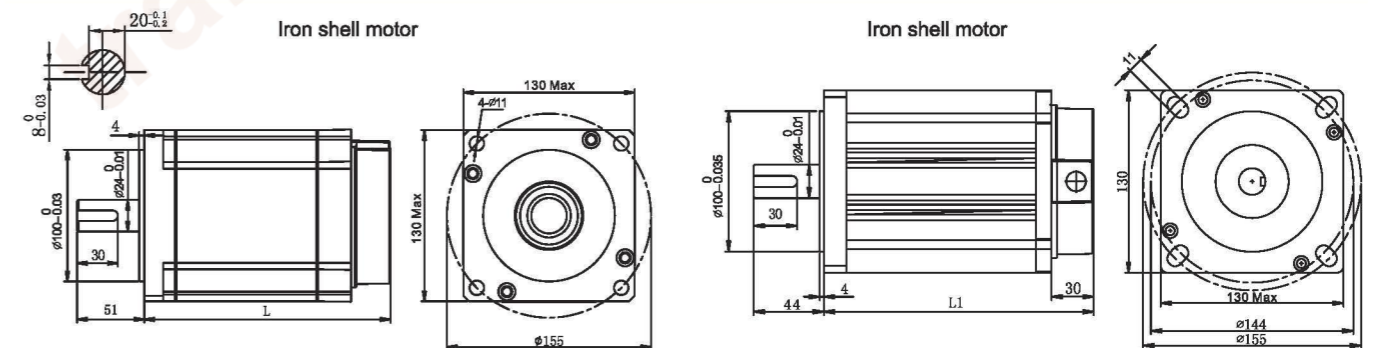


# 130BYG Series Three Phase Stepper Motor



Temperature Rise:80°CMax (Rated current)  
 Step Angle Accuracy:5%  
 Ambient temperature:-20°C +50°C  
 Insulation Resistance:100MΩ 500V DC  
 Dielectric Strength:500V AC 1min  
 Insulation class: B

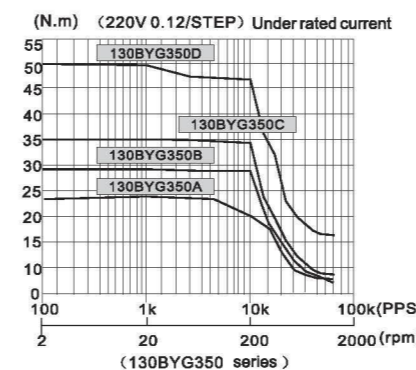
## Installation Dimension unit:mm



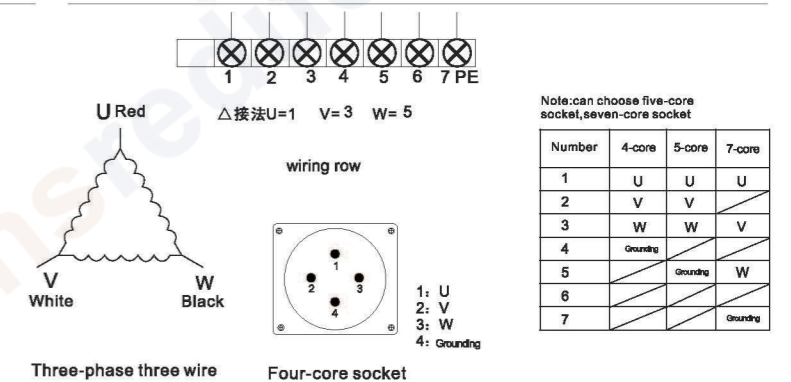
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive)Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
130BYG350A	1.2	24	220	6.8	16.2	0.96	26.87	10	188
130BYG350B	1.2	28	220	6.8	19	1.17	33.97	15	220
130BYG350C	1.2	35	220	6.8	24	1.39	41.4	20	252
130BYG350D	1.2	50	220	6.8	18.3	1.02	47.3	20.5	280
130BYG350A-X	1.2	24	220	6.8	9.9	0.89	26.8	9.7	189
130BYG350B-X	1.2	28	220	6.8	11.3	0.80	34.9	13	236
130BYG350C-X	1.2	35	220	6.8	13.8	0.92	39.2	15	256
130BYG350D-X	1.2	50	220	6.8	18.3	0.99	42.5	16	271
130BYG350E-X	1.2	60	220	6.8	20.0	1.2	45.0	17	296

## The torque-speed characteristic curve



## Wiring Diagram



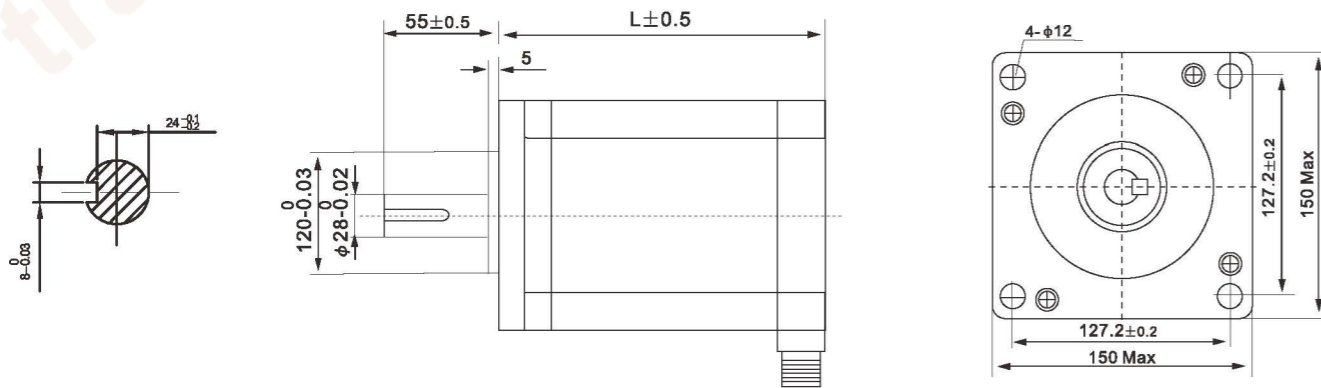


# 150BYG Series Three Phase Stepper Motor



Temperature Rise: 80°C Max (Rated current)  
 Step Angle Accuracy: 5%  
 Ambient temperature: -20°C +50°C  
 Insulation Resistance: 100MΩ 500V DC  
 Dielectric Strength: 500V AC 1min  
 Insulation class: B

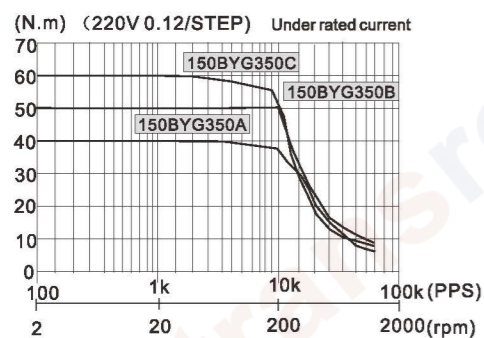
## Installation Dimension unit:mm



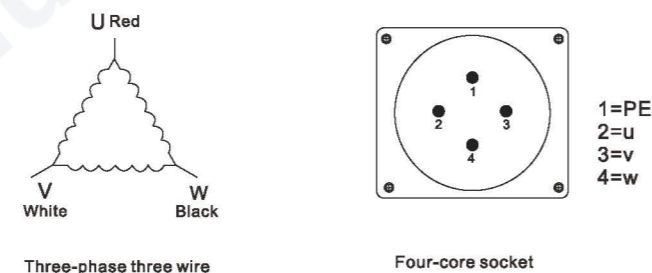
## Specifications

Model	Step Angle (°)	Holding torque (N.m)	(Drive) Operating Voltage (V)	Rated Current (A)	Phase Inductance (mH)	Phase Resistance (Ω)	Rotor inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	Motor Length (mm)
150BYG350A	1.2	40	220	8.5	12	0.5	65	22.5	191
150BYG350B	1.2	50	220	8.5	19.2	0.79	83	25.7	230
150BYG350C	1.2	60	220	8.5	22.8	0.86	100	29.6	255

## The torque-speed characteristic curve



## Wiring Diagram



# FH Series Three-Phase Stepper Driver



FH-3722

SD305C

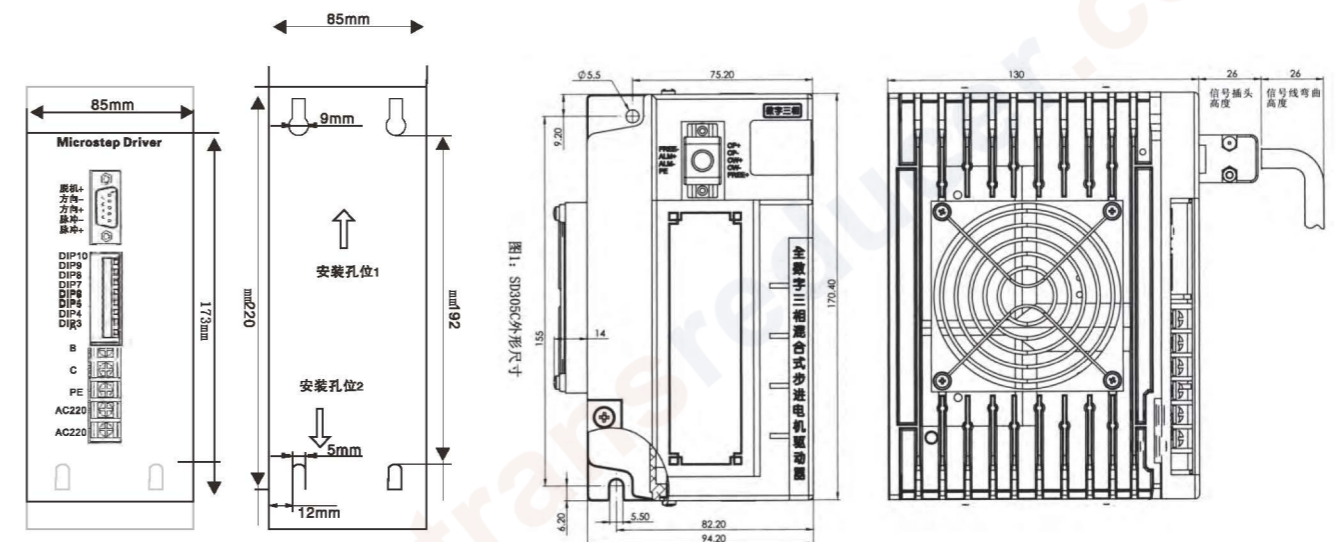
## Properties

- Added full digital loop control in the mode by AC servo control principle, three-phase sine wave current driver' output can make three-phase hybrid motor low speed, no creep, no vibration area and minimal noise.
- When voltage amplifier stage reaches DC325V, stepper motor of high speed still can output a high torque.
- With perfect protection function of short circuit voltage and under voltage over heating, high reliability.
- With subdivision and semi flow function, variety of subdivision choices' minimum step angle can be set to 0.036°

## Specifications

Input power	Single-phase AC220V-15 ~+ 10% 50/60Hz
Output phase current	1.5A-7.0A (Up to 8A for customization)
Adaptation of motor	Three phase hybrid stepping motor
Operate environment	0°C ~ 55°C 1585%RH No frost, non corrosive, inflammability, explosive, conductive gas, liquid and dust
environment Storage	-25°C ~ 70°C 1585%RH No frost
Driving mode	pwm
Step angle	400/480/500/600/800/1000/2000/3000/ 4000/4800/5000/6000/8000/10000/12000
Step angle setting	DIP switch setting
Input signal	CP+/CP-, CW+/CW-, FREE+/FREE-,
Input level	5V, 5 ~ 10mA; Connet 510Ω ~ 1K resistance when input 12v voltage; Connet 1.2K ~ 2K resistance when input 12v voltage
Out signal	ALM+/ALM-
Position pulse input mode	ingle pulse mode: CP(pulse)+CW(direction), pulse width ≥ 1us, pulse frequency ≤ 300khz (1000P/r); Double pulse mode: CW(positive pulse)+CCW(reverse pulse)
Status indication	Green LED power indication; driving power, normal state indication Green LED pulse indication; pulse status indication Green LED fault indication; drive fault indication
Size and shape	170.4x94.2x127mm
Weight	1.3kg

## FH-3722/SD305C Installation Dimension unit:mm





# FH-2M982 Series Two phase stepping motor driver



## Key Features

2DM860 is a uniform angle and constant torque subdivide type stepper driver, voltage of driver is DC24 -110V, available for 2 phase hybrid stepper motor of current is under 6A, flange size 57mm and 86mm series. This driver adopts the advanced technology of servo driver, this circuit is available to make motor run at low speed stably with even no noisy and shake. Motor has good acceleration and small heating, stepper pulse stop for over 100ms, driver current automatically in half. Positioning accuracy is up to more than 12800step/revolution (The high speed performance will be influenced when matching 86BYG series high torque motor)

## 点 Main features

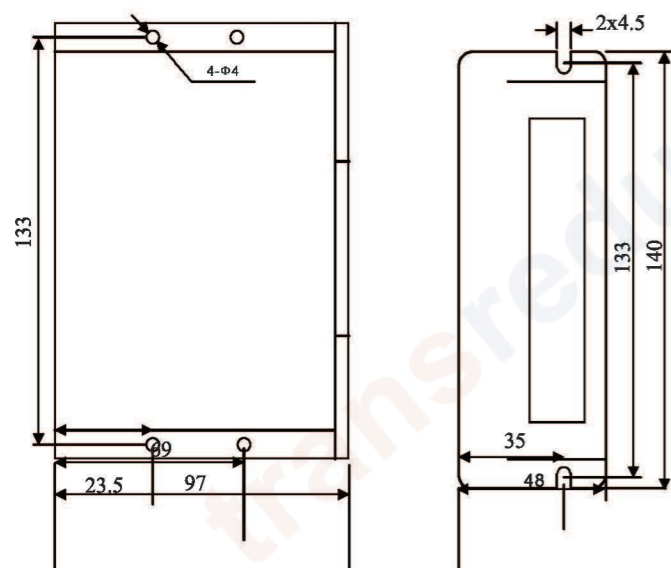
24-80V DC power supply, adapted to the worst grid environment H-bridge bipolar constant phase flow subdivision drive original speed adaptive circuit, the automatic optimization subdivision current setting is convenient for 1-64 subdivision of 16 operation modes of over-current, over-voltage, under-voltage, short-circuit protection offline (ENA) protection functions.

## Performance indicators unit=mm

Instructions	Min values	Typical values	Max values
Supply voltage(VDC)	24	48V	80V
Normal work output current(A)	1.3	-	7.8
Logic input current(mA)		10	
Step pulse correspond frequency(KHZ)	-	-	200
Pulse low level time(US)	2.5	-	-

Cooling mode	Natural cooling or forced coolin	
Using environment	Occasion	Avoid oil mist, dust, Corrosive gas
	Storage temperature	-10°C~80°C
	Max environment temperature	<65°C
	Environment humidity	<80%RH, 非冷凝无结霜
Vibration	5.9m/s²Max	
Weight	0.6kg	

## Shape Dimension unit=mm



### Notice

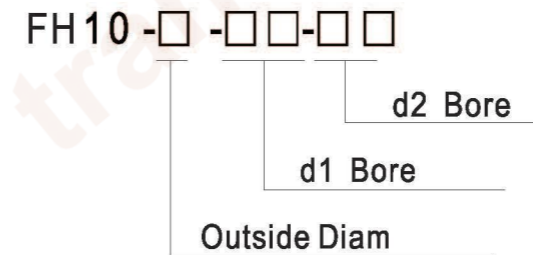
Ensure well ventilated when install the drive, regularly check the cooling fan in normal operation. Ensure that the distance between is not less than 5cm; when multiple drivers are parallel used in the cabinet, ground terminals must be connected well between driver and equipment, in order to ensure the safety of usage.

# FH10 Series Plum Flexible Spring Coupling



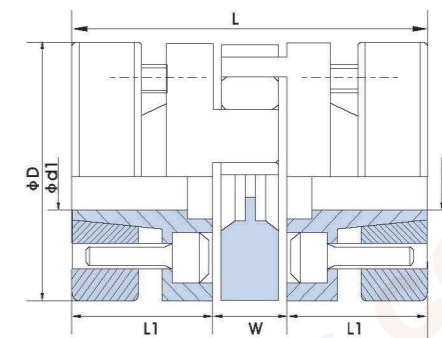
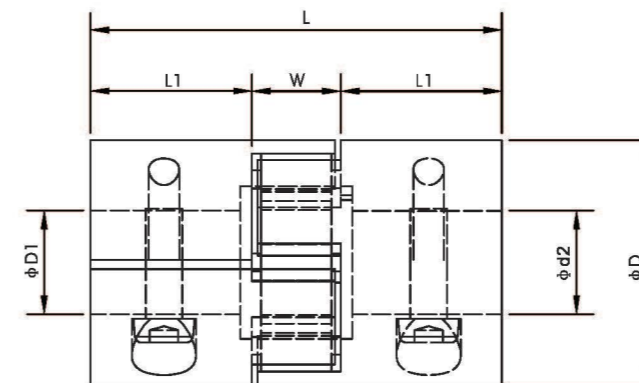
Body: Aluminum Alloy

YH 10 series plum flexible spring coupling, which adopts the expansion sleeve connection, is of zero backlash and high sensitivity. It can transfer big torque. Furthermore, the characteristics are quite the same when it runs in a clockwise or anti-clockwise rotation, so it can absorb the vibration and compensate for radial, angle and axial deviation; it is usually used in the connection of servo motor, stepper motor, etc.



### For example: YH10-55x19x24x78

FH10: series No. Aluminum material  
 55: Outside Diam:  $\phi D=55\text{mm}$   
 19: d1 Bore:  $\phi d1=19\text{mm}$   
 24: d2 Bore:  $\phi d2=24\text{mm}$   
 Length: 78mm



## Specifications

Model	Rated Torque (N.m)	Max Torque (N.m)	Max Speed (rpm)	Inertia torque (Kg.cm²)	Static torque (N.m)	Radial deviation (mm)	Angular deviation (°)	Axial deviation (mm)	Weight (G)
FH10-20□□□□	7.4	14.8	20000	8.7X10 <sup>-4</sup>	510	0.02	1	±0.06	50
FH10-30□□□□	7.4	14.8	20000	8.7X10 <sup>-4</sup>	510	0.02	1	±0.06	50
FH10-40□□□□	9.5	19.0	15000	1.12X10 <sup>-3</sup>	550	0.02	1	±0.08	120
FH10-46□□□□	20	40	14000	3.2X10 <sup>-3</sup>	1510	0.02	1	±0.08	280
FH10-55□□□□	34	68	13000	4.5X10 <sup>-3</sup>	1510	0.02	1	±0.08	280
FH10-65□□□□	95	190	10500	9.1X10 <sup>-3</sup>	2800	0.02	1	±0.08	450
FH10-80□□□□	135	270	8600	1.9X10 <sup>-2</sup>	3600	0.02	1	±0.08	960
FH10-95□□□□	230	460	7500	2.2X10 <sup>-2</sup>	4700	0.02	1	±1.00	2310
FH10-95□□□□	380	760	6000	3.3X10 <sup>-2</sup>	5800	0.02	1	±1.00	3080

Note: The calculation of Inertia torque and weight is based on the max bore

## Size of coupling

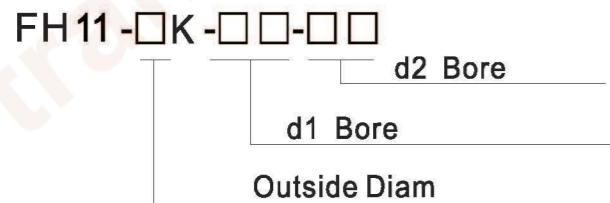
Model	$\phi d1$ Bore	$\phi d2$ Bore	$\phi D$	L	L1	W	M	Tighten torque (N.m)
FH10-20□□□□	4 5 8	6 9 10	20	30	10	10	M3	1.1
FH10-30□□□□	8 9 12	10 12 14	30	50	18.5	13	M4	1.3
FH10-40□□□□	11 12 14	16 19 20	40	66	25	16	M5	2.7
FH10-46□□□□	16 18 20	22 24 25	46	70	28	17	M6	4.5
FH10-55□□□□	14 16 19	24 25 28	55	78	30	18	M8	6.0
FH10-65□□□□	19 20 24	28 30 35 38	65	90	35	20	M8	6.0
FH10-80□□□□	24 28 30 35	38 40 45	80	114	45	24	M8	10.0
FH10-95□□□□	30 35 38	40 45 50	95	126	60	28	M8	35
FH10-105□□□□	35 40 45	50 55 60	105	140	66	28	M8	35



# FH11 Series Keyway Connect Diaphragm Coupling

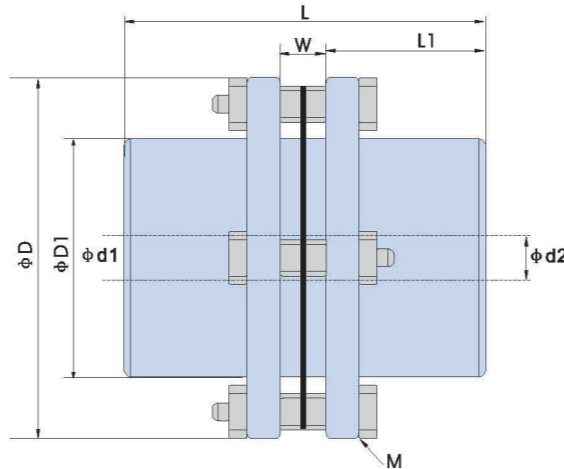


Diaphragm coupling, which adopts the expansion sleeve connection of zero backlash and high sensitivity. It can transfer big torque. Furthermore, the characteristics are quite the same when it runs in a clockwise and anti-clockwise rotation. So it can absorb the vibration and compensate for radial, angle, and axial deviation. It is usually used in the connection of servo motor, stepper motor, etc.



For example: FH11-56Kx14x10x45

FH11: series No. Aluminum material  
56K: Outside Diam:  $\phi D=56\text{mm}$   
d1 Bore:  $\phi d1=14\text{mm}$   
d2 Bore:  $\phi d2=10\text{mm}$   
Length: 45mm



## Specifications

Model	Rated Torque (N.m)	Max Torque (N.m)	Max Speed (rpm)	Inertia torque (Kg.m <sup>2</sup> )	Static torque capacity (N.m/rad)	Radial deviation (mm)	Angular deviation (°)	Axial deviation (mm)	Weight (G)
FH11-46K-□□□□	25	50	20000	0.1X10 <sup>-6</sup>	15X10 <sup>4</sup>	0.02	1	±0.5	300
FH11-56K-□□□□	25	50	20000	0.1X10 <sup>-6</sup>	15X10 <sup>4</sup>	0.02	1	±0.5	300
FH11-68K-□□□□	55	110	15000	0.28X10 <sup>-6</sup>	28X10 <sup>4</sup>	0.02	1	±0.8	500
FH11-82K-□□□□	80	160	14000	0.85X10 <sup>-6</sup>	81X10 <sup>4</sup>	0.02	1	±1.0	1000
FH11-94K-□□□□	170	340	11000	1.5X10 <sup>-6</sup>	165X10 <sup>4</sup>	0.02	1	±1.0	1400
FH11-104K-□□□□	240	480	9800	2.4X10 <sup>-6</sup>	240X10 <sup>4</sup>	0.02	1	±1.0	2100
FH11-126K-□□□□	420	840	8000	6.3X10 <sup>-6</sup>	410X10 <sup>4</sup>	0.02	1	±1.0	3410
FH11-144K-□□□□	700	1400	6800	9.2X10 <sup>-6</sup>	760X10 <sup>4</sup>	0.02	1	±1.0	4900

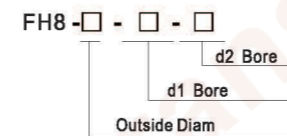
Note: The calculation of inertia torque and weight is based on the max bore.

## Size of coupling

Model	$\phi d1$ Bore	$\phi d2$ Bore	$\phi D$	$\phi D_1$	L	L1	W	M
FH11-46K-□□□□	10 11 12 14	16 19 20	46	32	45	20	5	M5
FH11-56K-□□□□	8 10 11 12 14	16 18 19 20	56	32	45	20	5	M5
FH11-68K-□□□□	11 14 16 18 19	20 22 24 25	68	40	56	25	6	M6
FH11-82K-□□□□	14 16 18 19 20	24 25 28 30 35	82	54	66	30	6	M6
FH11-94K-□□□□	19 20 24	28 30 35 38	94	58	68	30	8	M8
FH11-104K-□□□□	24 26 30 35	38 40 46	104	68	80	35	10	M8
FH11-126K-□□□□	30 35 38	40 45 50	126	78	91	40	11	M10
FH11-144K-□□□□	35 40 45	50 55 60	144	88	102	45	12	M12

# FH8 Series Clamping rigid coupling

重量轻, 超低惯性和灵敏度, 铝合金和不锈钢材料, 夹紧螺丝固定。



For example: FH8x25x8x10

FH8: series No. Aluminum material  
25: Outside Diam:  $\phi D=25\text{mm}$   
d1 Bore:  $\phi d1=8\text{mm}$   
d2 Bore:  $\phi d2=10\text{mm}$

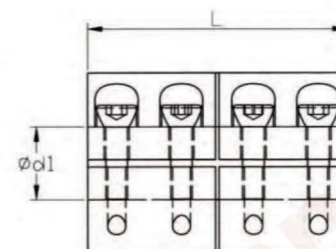
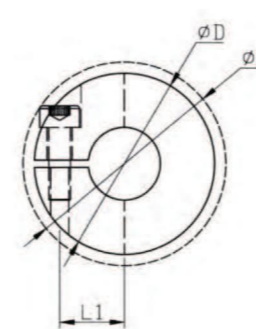
## Specifications

Model	Rated Torque (N.m)	Rated Torque (r/min)	Angular deviation (°)	Weight (G)
FH8-16□□□	1	9300	2.9x10 <sup>-7</sup>	8.2
FH8-20□□□	1	7400	8.6x10 <sup>-7</sup>	14.5
FH8-25□□□	1.5	6000	2.6x10 <sup>-6</sup>	28
FH8-32□□□	2.5	4600	7.0x10 <sup>-6</sup>	50

Note: The calculation of inertia torque and weight is based on the max bore.

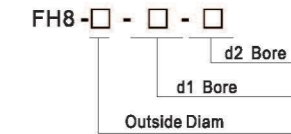
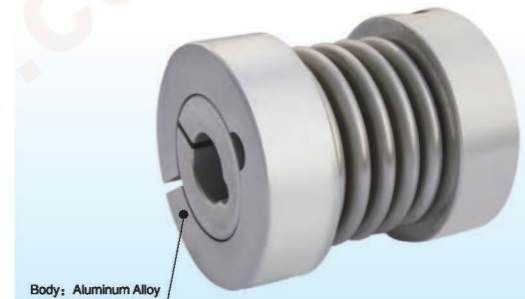
## Size of coupling

Model	$\phi d1$ Bore	$\phi d2$ Bore	$\phi D$	L	L1	M	Rated Torque (N.m)	Max Torque (N.m)
FH8-16□□□	3 4 5 6	6 8	16	24	6	M2.5	0.3	0.6
FH8-20□□□	5 6 8 10	10 12	20	30	7	M2.5	0.5	1
FH8-25□□□	8 10 11 12	12 14 15	25	36	9	M4	1	2
FH8-32□□□	12 14 15 16	18 19 20 22	32	41	10	M4	2	4



# FH9 Series Clamped bellows coupling

高扭矩刚性和灵敏度, 零回转间隙。波纹管结构补偿径向。度向和轴向偏差, 顺时针与逆时针弹性完全相同。夹紧式螺丝固定。



For example: FH9x32x12x14

FH9: series No. Aluminum material  
32: Outside Diam:  $\phi D=32\text{mm}$   
d1 Bore:  $\phi d1=12\text{mm}$   
d2 Bore:  $\phi d2=14\text{mm}$

## Specifications

Model	Rated Torque (N.m)	Rated Torque (r/min)	Max Speed (r/min)	Inertia torque (Kg.m <sup>2</sup> )	Static torque capacity (N.m/rad)	Radial deviation (mm)	Angular deviation (°)	Axial deviation (mm)	Weight (G)
FH9-16□□□	0.8	1.6	18000	3.4x10 <sup>-7</sup>	100	0.1	1.5	±0.5	8
FH9-20□□□	1.5	3	13000	8.9x10 <sup>-7</sup>	160	0.1	1.5	±0.5	14
FH9-25□□□	2	4	11000	2.8x10 <sup>-7</sup>	220	0.15	2	±0.5	32
FH9-32□□□	2.5	5	10000	8.8x10 <sup>-7</sup>	310	0.2	2	±0.5	52
FH9-32L□□□	2.5	5	10000	8.9x10 <sup>-7</sup>	310	0.2	2	±0.5	58
FH9-40□□□	10	20	8000	1.5x10 <sup>-7</sup>	520	0.2	2	±0.5	98
FH9-55□□□	25	50	6000	2.3x10 <sup>-7</sup>	850	0.2	2	±0.5	200
FH9-65□□□	60	120	4500	2.8x10 <sup>-7</sup>	960	0.2	2	±0.5	350
FH9-82□□□	80	160	4500	6.0x10 <sup>-7</sup>	1290	0.2	2	±0.5	710

Note: The calculation of inertia torque and weight is based on the max bore.

## Size of coupling

Model	$\phi d1$ Bore	$\phi d2$ Bore	$\phi D$	L	L1	M	Tighten torque (N.m)
FH9-16□□□	3 4 5 6	6 8	16	30	10.5	M3	0.7
FH9-20□□□	3 4 5 6	8 10 12	20	33	10.5	M3	0.7
FH9-25□□□	5 6 8 9	10 12	25	38	12.5	M4	1.7
FH9-32□□□	8 9 625 10	10 12 14	32	43	14	M4	1.7
FH9-32L□□□	8 10 12 14	10 12 14	32	54	14	M4	1.7
FH9-40□□□	10 11 12	14 16	40	62	21.5	M5	4
FH9-55□□□	14 16	12 14 15	55	72	23	M6	8
FH9-65□□□	18 19	19 20 22	65	81	25.5	M8	15
FH9-82□□□	24 25 38	22 24 25	82	103	34.5	M10	28

