

BELLAS MOTOR, established in 2022, is a high-tech enterprise specializing in the research, development, production, sales, and service of industrial high-efficiency motors and drives. The company is operated by a team of highly educated experts in motors and electrical control. The research and development team has more than 15 years of experience in designing high-efficiency motors and drives, using cutting-edge scientific and technological expertise to design innovative products tailored to meet users' needs.

The company's products are known for their differentiation and high cost-effectiveness, and they are widely used in various mechanical equipment fields, including CNC machinery, intelligent logistics, textiles, fans, pumps, new energy, packaging, agriculture, and animal husbandry.

The main product categories of the company include micro DC gear reduction motors, micro AC gear reduction motors, brushless gear reduction motors, and medium to small-sized AC permanent magnet gear reduction motors, along with their associated controllers. They also offer standard products like high-efficiency synchronous reluctance motors, iron core-assisted synchronous reluctance motors, rare earth permanent magnet synchronous motors, and brushless DC motors, along with matching drivers. Additionally, the company can accommodate customized or non-standard requirements from customers, developing custom gear reduction motors and other high-efficiency motors.

Customer service is the top priority of the company. Their core philosophy revolves around placing the customer at the center and providing them with the most suitable innovative products. Collaboration is emphasized over competition, and they aim for cooperation and win-win partnerships. Stability, continuity, and reliability in delivering products and creating value for customers, contributing to national economic development, remain their ultimate goal.



Top 10 advantages

1,The permanent magnet synchronous motor has high efficiency, a high power factor, and good force density.

After embedding permanent magnetic materials on the rotor, the rotor runs in synchronization with the stator magnetic field during normal operation, eliminating rotor resistance and hysteresis losses, which improves the motor's efficiency. Because it uses permanent magnet excitation, the stator current is used entirely for output, and the power factor approaches 1.

2,The speed control system of the permanent magnet synchronous motor uses a sinusoidal control method, providing high control precision.

The stator winding back EMF and supply current waveform are both sinusoidal, which significantly reduces torque ripple.

3,The speed control system of the permanent magnet synchronous motor starts smoothly without impact, has a high starting torque, low rotational fluctuation, and fast dynamic response, resulting in smooth and stable operation.

4,The speed control system of the permanent magnet synchronous motor operates with low temperature rise.

There are no rotor losses, and almost no reactive current in the stator winding, resulting in a low motor temperature rise and a long lifespan.

5,In a direct-drive permanent magnet synchronous motor speed control system, the need for a gearbox transmission is eliminated, making the structure more rational and achieving extremely high transmission efficiency.

Compared to traditional gear reduction, it offers higher efficiency, lower noise, energy conservation, and environmental protection, with energy savings of over 30%, significantly reducing maintenance costs.

6,The speed control system of the permanent magnet synchronous motor is compact, lightweight, and uses fewer materials.

For the same capacity, the volume, weight, and material usage can be reduced by about 30%.

7,It offers a high level of intelligence.

It can automatically adjust internal parameters based on changes in the end customer's usage scenario, meeting end-user requirements without user intervention (unmanned operation), reducing errors, and maximizing user satisfaction.

8,The speed control system of the permanent magnet synchronous motor is compact, simple, and easy to use.

It starts upon powering up without requiring customer adjustments. Coupled with self-

developed apps and external remote control platforms like WeChat Mini Programs, it allows remote monitoring of device usage and remote control of various actions without leaving home (remote control).

9,It has high reliability.

The motor and controller are jointly designed and developed, with highly matched hardware circuit boards and software control algorithms. High-performance MCU+high-reliability IGBT+DSP-level software drive platforms ensure the high matching of the motor and controller and the high reliability of the product.

10,The integrated permanent magnet synchronous motor debugging system integrates the controller inside the motor, achieving electromechanical integration.

Shared components significantly reduce the volume of the integrated system, saving more installation space for customers. Eliminating redundant interference from the wiring makes control performance more precise and stable.

A diverse range of gear motors and ratios

According to the utility, the most suitable product is selected from each output shaft of the parallel axis and the direct cross shaft to meet customers' demands.

Classification		
Name	Photo	Characteristic
Parallel shaft gear motor		Space-saving, reliable, and durable with over 95% gearbox efficiency. Low noise, high energy efficiency, high-quality alloy steel, rigid aluminum alloy housing, and heat-treated gear surfaces.
Right-angle shaft gear motor		High efficiency with non-coaxial input and output shafts, using helical bevel gears, saving installation space
L-shaped gear motor		Optimal design, minimal space, high transmission efficiency, user-friendly
Planetary gear motor		Low backlash, high efficiency, large speed ratio, long lifespan, low vibration, low noise, low temperature rise, attractive appearance, compact structure, easy installation

Model No. Coding

SPR **5** **PMSM** **120** - **220** **G** **L** - **3000** - **M**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Series	SPR			
②		Model dimensions			
	Number	2	4	5	6
	Motor mounting flange	60	80	90	104
	Casing dimensions	60*60	80*80	90*90	104*104
③	Motor type	PMSM			
④	Motor Rated output power	Example.120 represents 120W			
⑤	Power supply voltage	220V			
⑥	Motor optical axis A and Motor with gearbox G				
⑦	Motor optical axis	Motor output shaft is a round		A	
		Motor output shaft is keyway		A1	
	Motor with gearbox	Parallel-shaft gears		K	
		L-shaped gears		L	
		Miter right angle gears		R	
⑧	Motor rated speed	Example;3000 represents that the motor rated speed is 3000rpm			
⑨	Motor accessories	M	B	I	
		With electromagnetic brake	With encoder	Integrated controller	

Description of motor model

SPR 5 G 50 RC

① ② ③ ④ ⑤

①	Series	SPR			
②		Model dimension			
	Installation size code	2	4	5	6
③	Gearbox code	G			
④	Gear ratio	Example; 50 represents the gear ratio is 50			
⑤	Parallel shaft gears	K			
	L-shaped gears	L			
		Hollow shaft output is LG		Solid shaft output is LT	
	Miter right angle gears	R			
Hollow shaft output is LC		Solid shaft output is RT			

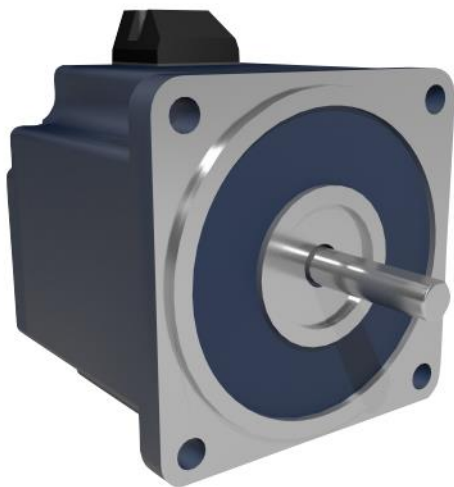
SPR 6 - 400 3000

① ② ③ ④

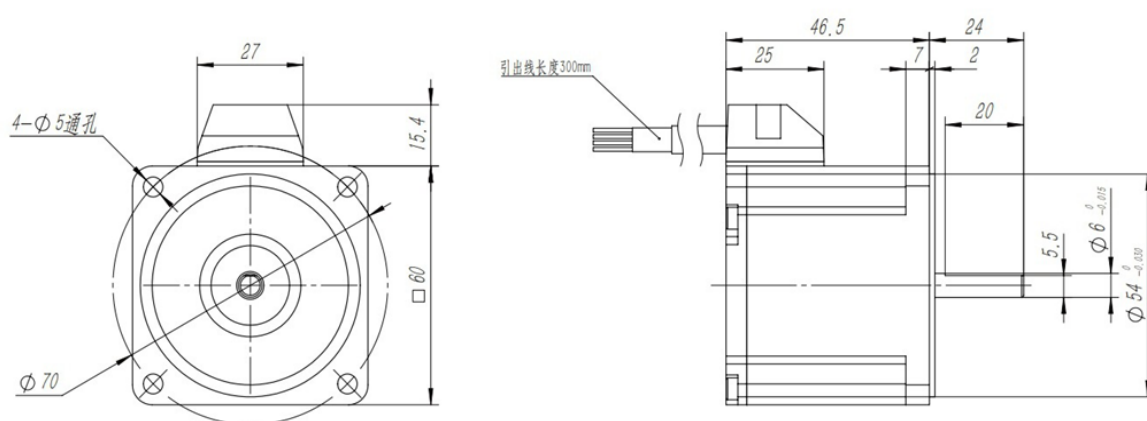
①	Series	SPR			
②		Model dimension			
	Installation size code	2	4	5	6
③	Motor rated power	Example,400 represents 400w			
④	Motor rated speed	Example; 3000 represents the rated speed is 3000rpm			

60 Series Permanent Magnet Synchronous Gear Motor

SPR2PMSM Circular Shaft Motor



Dimensional diagram

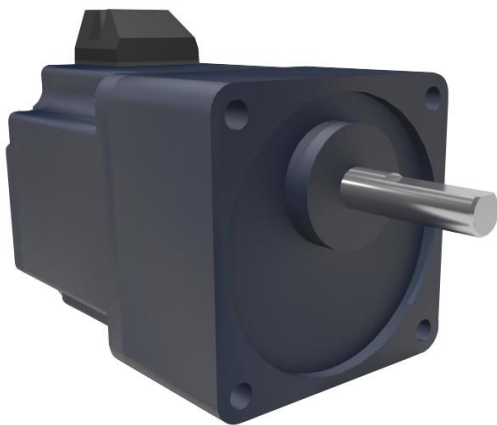


Specification table

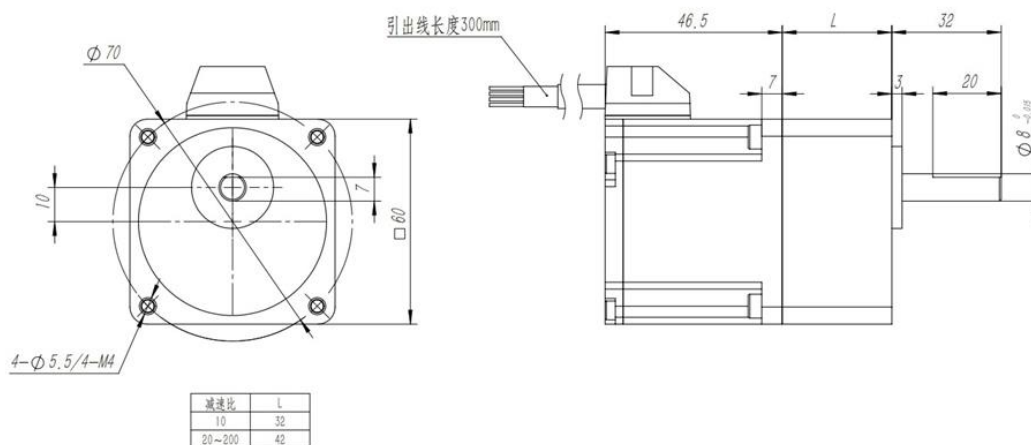
Motor model	Rated power (W)	Rated voltage (V)	Rated speed (PRM)	Rated torque (N.M)	Efficiency	Frequency (HZ)	Ingress protection
SPR2PMSM25-220A1-3000	25	220	3000	0.08	82%	250	IP54
SPR2PMSM15-220A1-3000	15	220	3000	0.05	83%	250	IP54
SPR2PMSM25-220A1-1500	25	220	1500	0.16	80%	125	IP54
SPR2PMSM15-220A1-1500	15	220	1500	0.10	81%	125	IP54

60 Series Permanent Magnet Synchronous Gear Motor

SPR2G K series Parallel Shaft Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

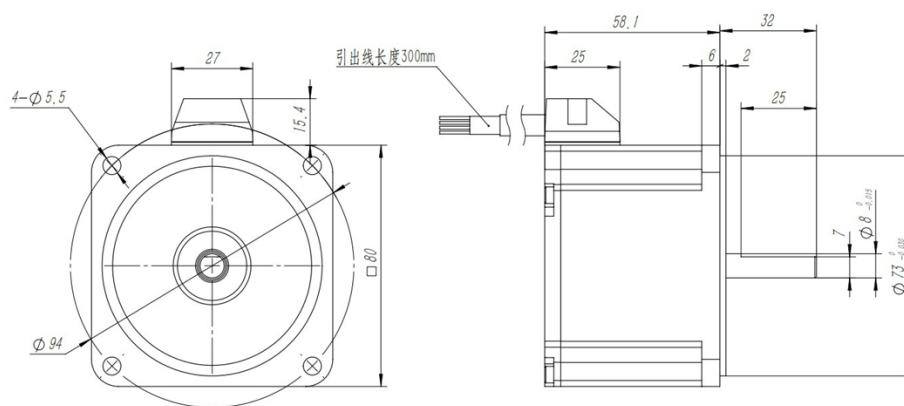
Motor model	Gear ratio	10	20	30	50	100	200
	Speed/power						
SPR2G K	3000/25	0.8	1.6	2.4	3.0	3.0	3.0
	3000/15	0.5	1.0	1.5	2.5	3.0	3.0
	1500/25	1.6	3.0	3.0	3.0	3.0	3.0
	1500/15	1.0	2.0	3.0	3.0	3.0	3.0

80 Series Permanent Magnet Synchronous Gear Motor

SPR4PMSM Circular Shaft Motor



Dimensional diagram



Specification table

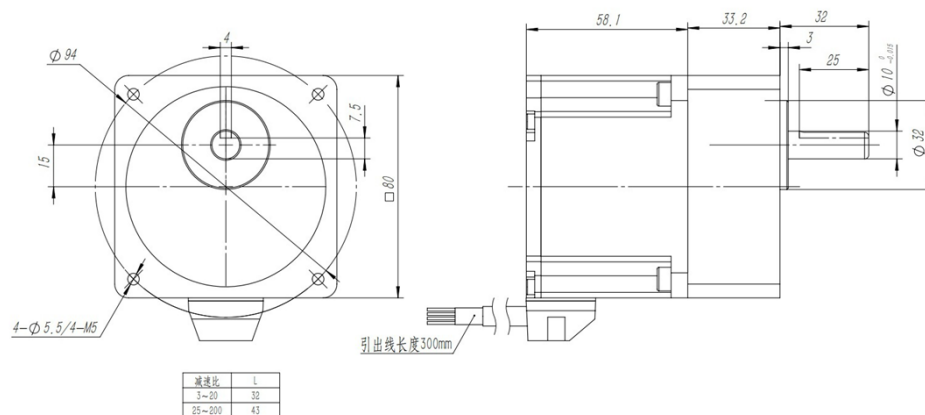
Motor model	Rated power (W)	Rated voltage (V)	Rated speed (PRM)	Rated torque (N.M)	Efficiency	Frequency (HZ)	Ingress protection
SPR4PMSM60-220A1-3000	60	220	3000	0.19	85%	250	IP54
SPR4PMSM40-220A1-3000	40	220	3000	0.13	86%	250	IP54
SPR4PMSM60-220A1-1500	60	220	1500	0.38	82%	125	IP54
SPR4PMSM40-220A1-1500	40	220	1500	0.25	83%	125	IP54

80 Series Permanent Magnet Synchronous Gear Motor

SPR4G K series Parallel Shaft Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

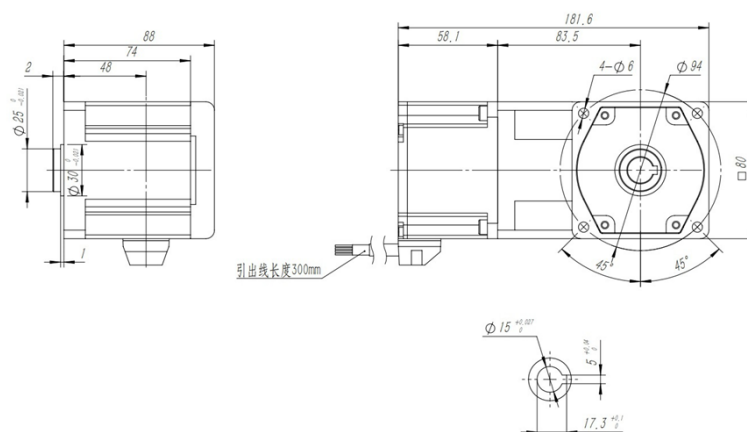
Motor model	Gear ratio		10	20	30	50	100	200
	Speed/power							
SPR4G K	3000/60		1.9	3.8	5.7	8.0	8.0	8.0
	3000/40		1.3	2.6	3.9	6.5	8.0	8.0
	1500/60		3.8	7.6	8.0	8.0	8.0	8.0
	1500/40		2.5	5.0	7.5	8.0	8.0	8.0

80 Series Permanent Magnet Synchronous Gear Motor

SPR4G RC series Right-angle Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

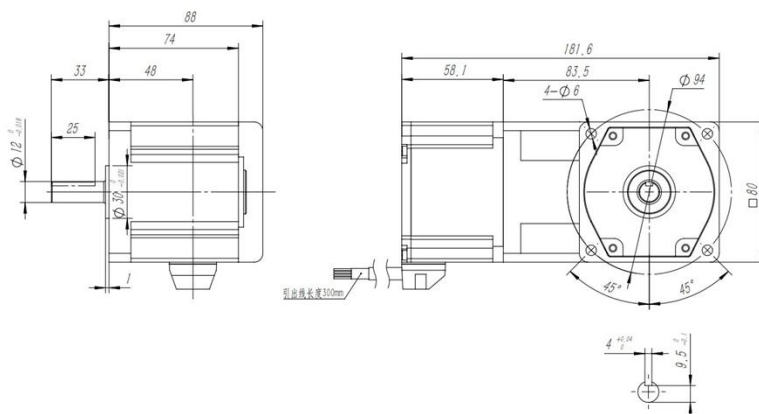
Motor model	Gear ratio Speed/power	10	20	30	50	100	200
SPR4G RC	3000/60	1.9	3.8	5.7	8.0	8.0	8.0
	3000/40	1.3	2.6	3.9	6.5	8.0	8.0
	1500/60	3.8	7.6	8.0	8.0	8.0	8.0
	1500/40	2.5	5.0	7.5	8.0	8.0	8.0

80 Series Permanent Magnet Synchronous Gear Motor

SPR4G RT series Right-angle Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

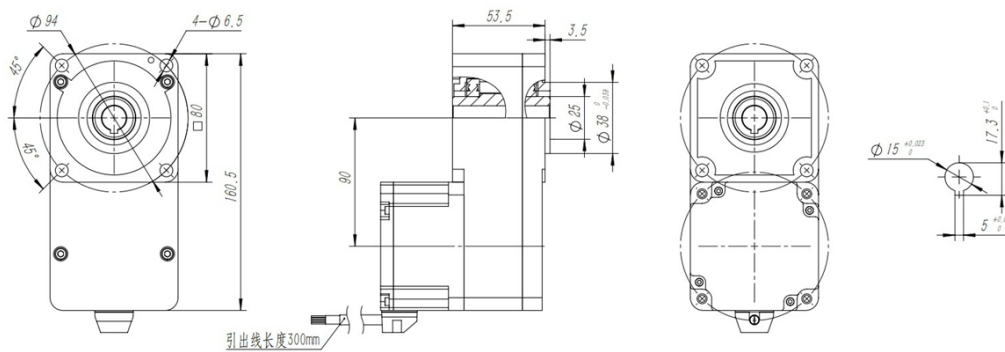
Motor model	Gear ratio	10	20	30	50	100	200
	Speed/power						
SPR4G RT	3000/60	1.9	3.8	5.7	8.0	8.0	8.0
	3000/40	1.3	2.6	3.9	6.5	8.0	8.0
	1500/60	3.8	7.6	8.0	8.0	8.0	8.0
	1500/40	2.5	5.0	7.5	8.0	8.0	8.0

80 Series Permanent Magnet Synchronous Gear Motor

SPR4G LC series L-shaped Gear Motor



Dimensional diagram



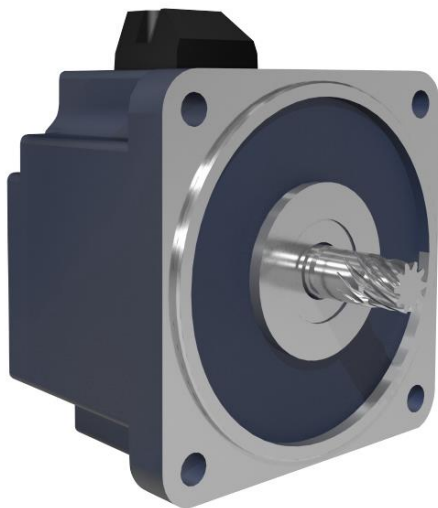
Permissible torque with gear reduction (unit: N.m)

In the table, all gear ratios have a rotation direction opposite to the motor's direction

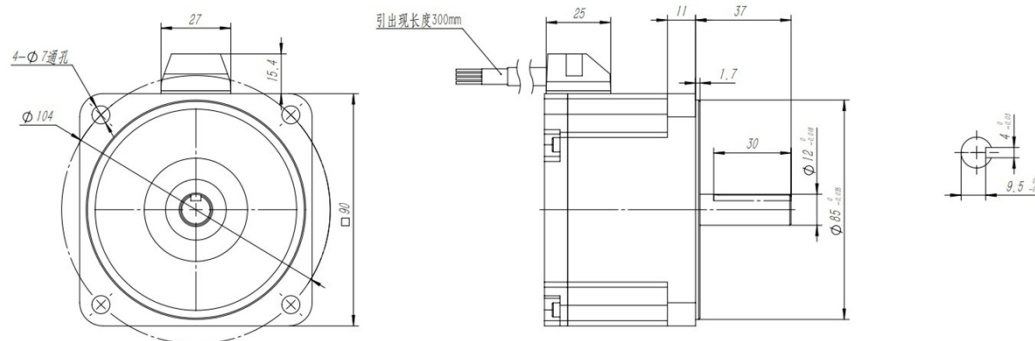
Motor model	Gear ratio		10	20	30	50	100	200
	Speed/power							
SPR4G LC	3000/60		1.9	3.8	5.7	9.5	19.0	38.0
	3000/40		1.3	2.6	3.9	6.5	13.0	26.0
	1500/60		3.8	7.6	11.4	19.0	38.0	40.0
	1500/40		2.5	5.0	7.5	12.5	25.0	40.0

90 Series Permanent Magnet Synchronous Gear Motor

SPR5PMSM Circular Shaft Motor



Dimensional diagram

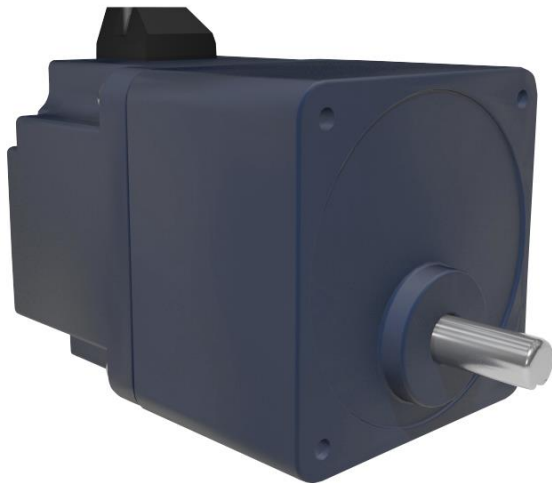


Specification table

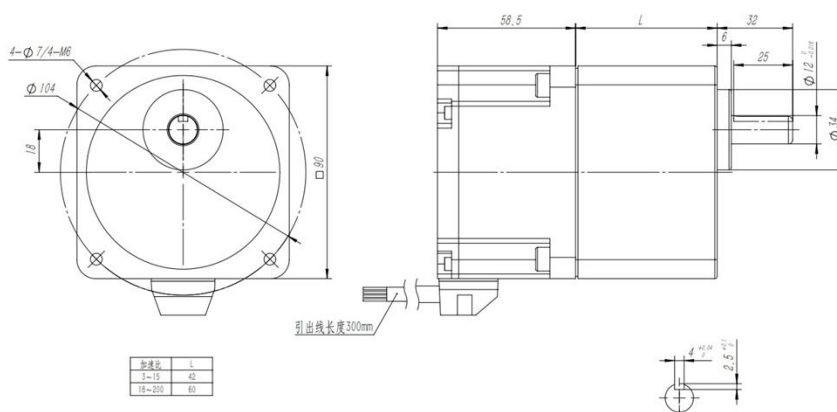
Motor model	Rated power (W)	Rated voltage (V)	Rated speed (PRM)	Rated torque (N.M)	Efficiency	Frequency (HZ)	Ingress protection
SPR5PMSM120-220A1-3000	120	220	3000	0.38	84%	250	IP54
SPR5PMSM90-220A1-3000	90	220	3000	0.29	85%	250	IP54
SPR5PMSM120-220A1-1500	120	220	1500	0.76	82%	125	IP54
SPR5PMSM90-220A1-1500	90	220	1500	0.57	83%	125	IP54

90 Series Permanent Magnet Synchronous Gear Motor

SPR5G K series Parallel Shaft Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

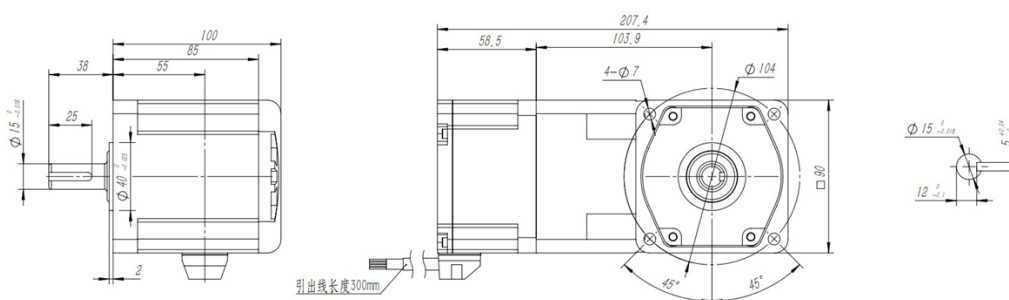
Motor model	Gear ratio	10	20	30	50	100	200
	Speed/power						
SPR5G K	3000/120	3.8	7.6	11.4	19.0	20.0	20.0
	3000/900	2.9	5.8	8.7	14.5	20.0	20.0
	1500/120	7.6	15.2	20.0	20.0	20.0	20.0
	1500/90	5.7	11.4	17.1	20.0	20.0	20.0

90 Series Permanent Magnet Synchronous Gear Motor

SPR5G RT series Right-angle Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

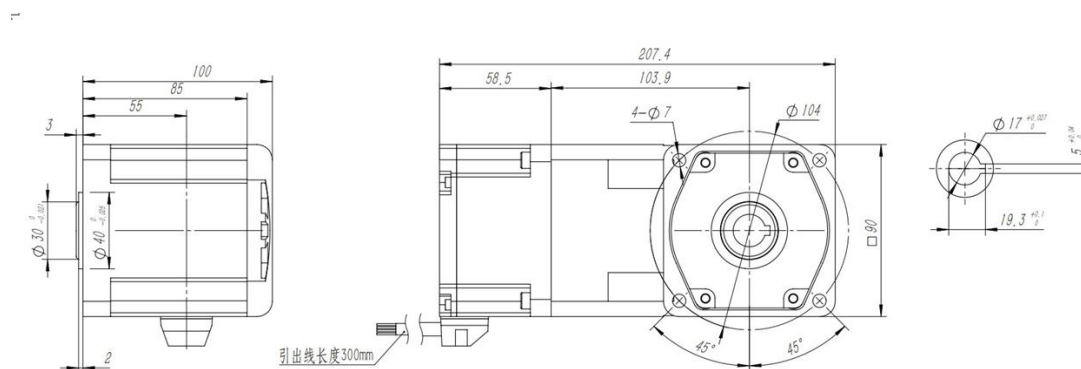
Motor model	Gear ratio		10	20	30	50	100	200
	Speed/power							
SPR5G RT	3000/120		3.8	7.6	11.4	19.0	20.0	20.0
	3000/900		2.9	5.8	8.7	14.5	20.0	20.0
	1500/120		7.6	15.2	20.0	20.0	20.0	20.0
	1500/90		5.7	11.4	17.1	20.0	20.0	20.0

90 Series Permanent Magnet Synchronous Gear Motor

SPR5G RC series Right-angle Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

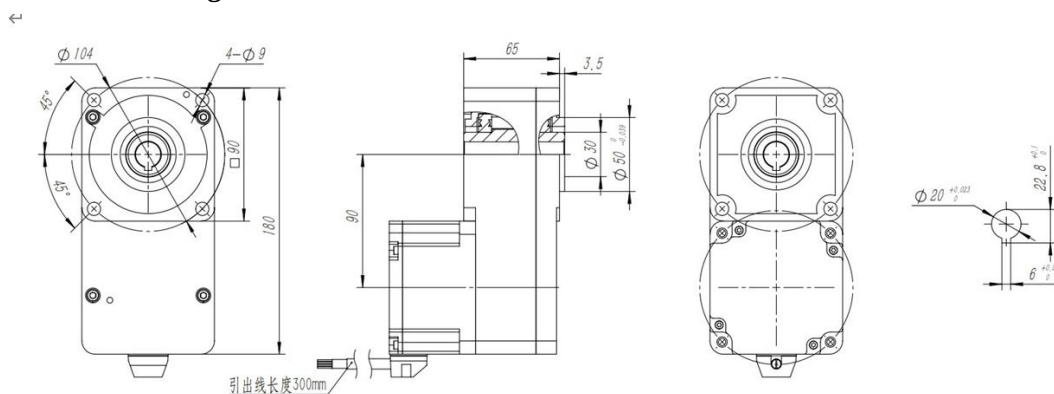
Motor model	Gear ratio	10	20	30	50	100	200
	Speed/power						
SPR5G RT	3000/120	3.8	7.6	11.4	19.0	20.0	20.0
	3000/900	2.9	5.8	8.7	14.5	20.0	20.0
	1500/120	7.6	15.2	22.8	20.0	20.0	20.0
	1500/90	5.7	11.4	17.1	20.0	20.0	20.0

90 Series Permanent Magnet Synchronous Gear Motor

SPR5G LC series L-shaped Gear Motor



Dimensional diagram



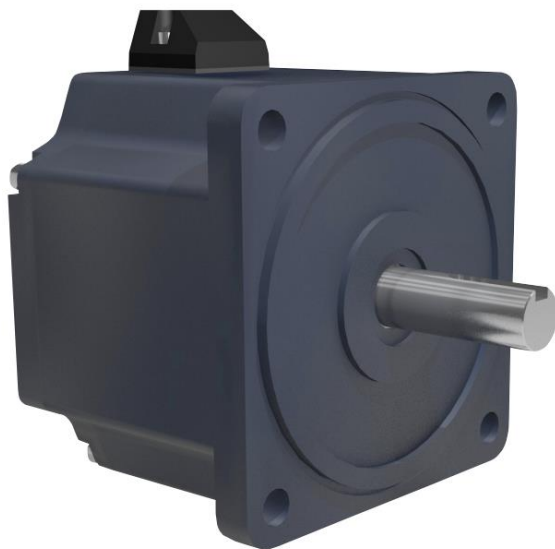
Permissible torque with gear reduction (unit: N.m)

In the table, all gear ratios have a rotation direction opposite to the motor's direction

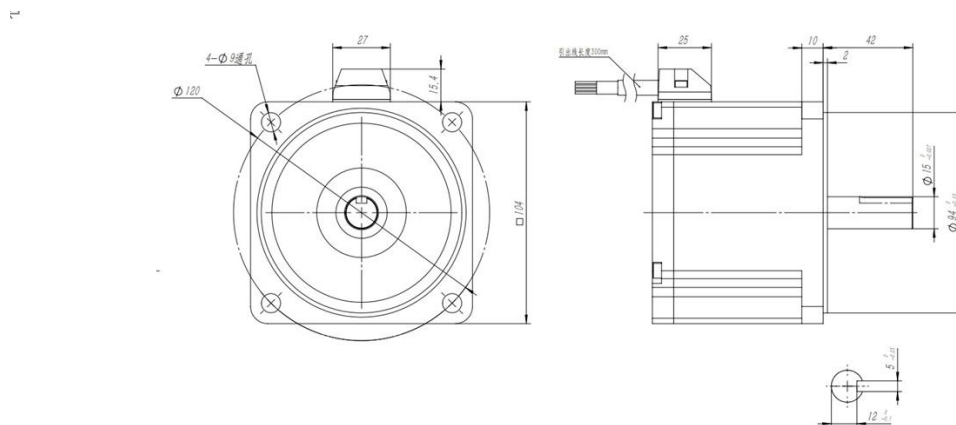
Motor model	Gear ratio		10	20	30	50	100	200
	Speed/power							
SPR5G LC	3000/120		3.8	7.6	11.4	19.0	38.0	76.0
	3000/90		2.9	5.8	8.7	14.5	29.0	58.0
	1500/120		7.6	15.2	22.8	38.0	76.0	80.0
	1500/90		5.7	11.4	17.1	28.5	57.0	80.0

104 Series Permanent Magnet Synchronous Gear Motor

SPR6PMSM Circular Shaft Motor



Dimensional diagram

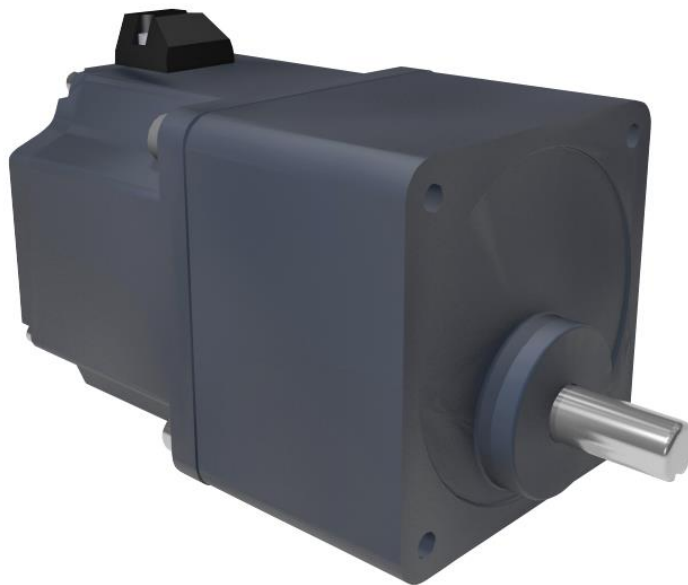


Specification table

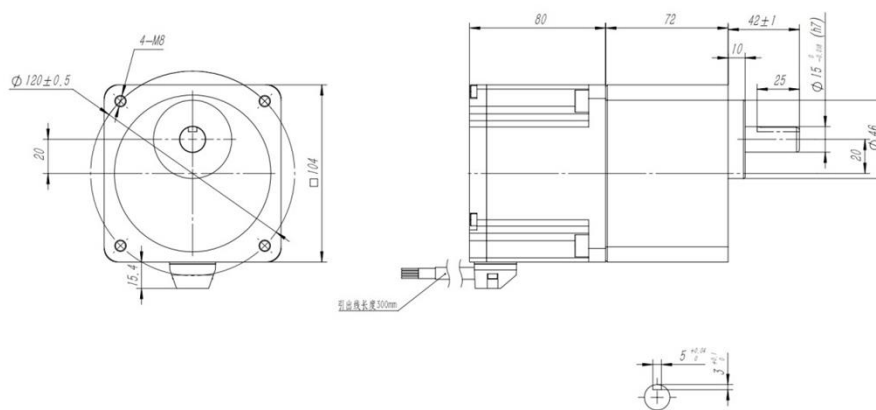
Motor model	Rated power (W)	Rated voltage (V)	Rated speed (PRM)	Rated torque (N.M)	Efficiency	Frequency (HZ)	Ingress protection
SPR6PMSM400-220A1-3000	400	220	3000	1.27	88%	250	IP54
SPR6PMSM200-220A1-3000	200	220	3000	0.64	89%	250	IP54
SPR6PMSM400-220A1-1500	400	220	1500	2.55	86%	125	IP54
SPR6PMSM200-220A1-1500	200	220	1500	1.27	84%	125	IP54
SPR6PMSM370-220A1-1800	370	220	1800	1.96	83%	150	IP54
SPR6PMSM500-220A1-3000	500	220	3000	1.59	86%	250	IP54
SPR6PMSM500-220A1-1500	500	220	1500	3.18	84%	125	IP54
SPR6PMSM500-220A1-6000	500	220	6000	0.80	88%	500	IP54

104 Series Permanent Magnet Synchronous Gear Motor

SPR6G K series Parallel Shaft Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

Motor model	Gear ratio	10	20	30	50	100	200
	Speed/power						
SPR6G K	3000/400	12.7	25.4	38.1	40.0	40.0	40.0
	3000/200	6.4	12.8	19.2	32.0	40.0	40.0
	1500/400	25.5	40.0	40.0	40.0	40.0	40.0
	1500/200	12.7	25.4	38.1	40.0	40.0	40.0
	300/500	15.9	31.8	40.0	40.0	40.0	40.0
	1500/500	31.8	40.0	40.0	40.0	40.0	40.0

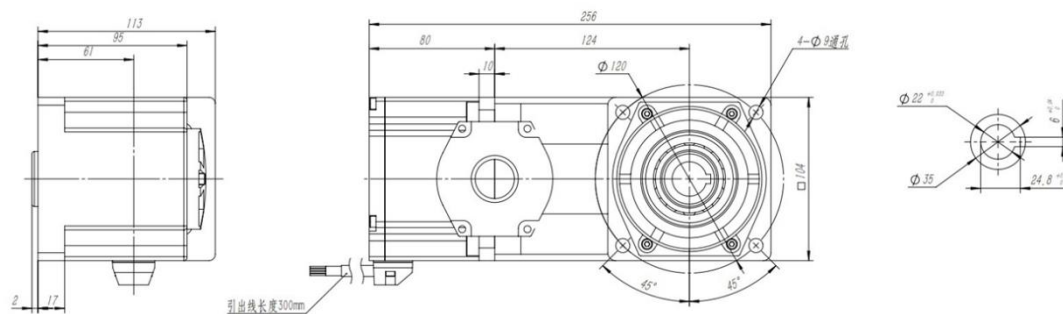
104 Series Permanent Magnet Synchronous Gear Motor

SPR6G RC series Right-angle Gear Motor



Dimensional diagram

1



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

Motor model	Gear ratio Speed/power	10	20	30	50	100	200
SPR6G RC	3000/400	12.7	25.4	38.1	40.0	40.0	40.0
	3000/200	6.4	12.8	19.2	32.0	40.0	40.0
	1500/400	25.5	40.0	40.0	40.0	40.0	40.0
	1500/200	12.7	25.4	38.1	40.0	40.0	40.0
	300/500	15.9	31.8	40.0	40.0	40.0	40.0
	1500/500	31.8	40.0	40.0	40.0	40.0	40.0

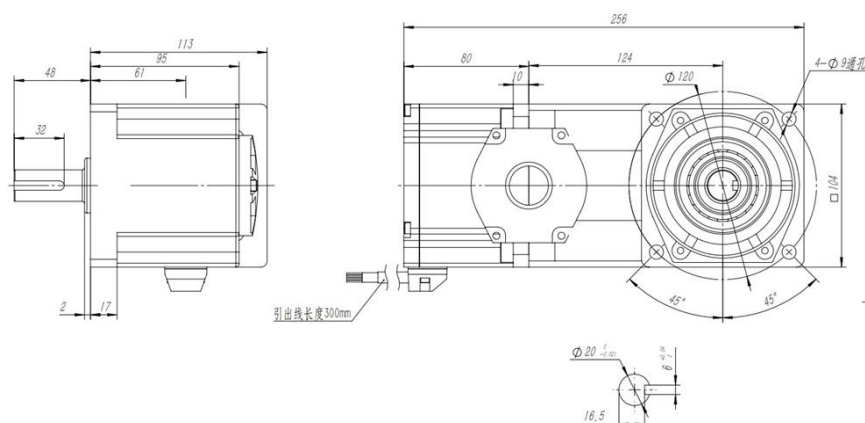


104 Series Permanent Magnet Synchronous Gear Motor

SPR6G RT series Right-angle Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

In the table (gray section), it indicates that the rotation direction is consistent with the motor's direction

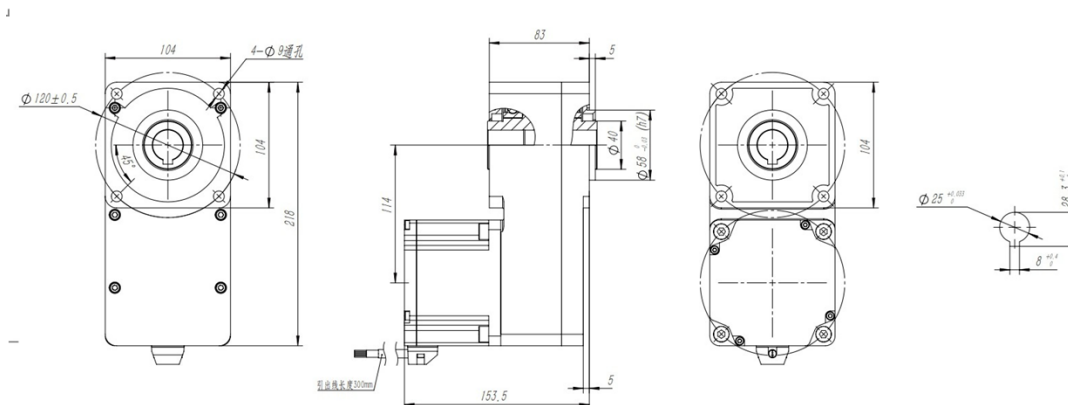
Motor model	Gear ratio Speed/power	10	20	30	50	100	200
SPR6G RT	3000/400	12.7	25.4	38.1	40.0	40.0	40.0
	3000/200	6.4	12.8	19.2	32.0	40.0	40.0
	1500/400	25.5	40.0	40.0	40.0	40.0	40.0
	1500/200	12.7	25.4	38.1	40.0	40.0	40.0
	300/500	15.9	31.8	40.0	40.0	40.0	40.0
	1500/500	31.8	40.0	40.0	40.0	40.0	40.0

104 Series Permanent Magnet Synchronous Gear Motor

SPR6G LC series L-shaped Gear Motor



Dimensional diagram



Permissible torque with gear reduction (unit: N.m)

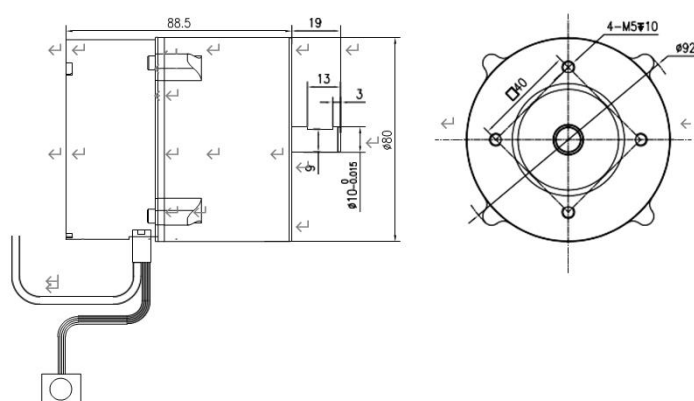
In the table, all gear ratios have a rotation direction opposite to the motor's direction

Motor model	Gear ratio	Speed/power					
		10	20	30	50	100	200
SPR6G LC	3000/400	12.7	25.4	38.1	63.5	120.0	120.0
	3000/200	6.4	12.8	19.2	32.0	64.0	120.0
	1500/400	25.5	51.0	76.5	120.0	120.0	120.0
	1500/200	12.7	25.4	38.1	63.5	120.0	120.0
	300/500	15.9	31.8	47.7	79.5	120.0	120.0
	1500/500	31.8	63.6	95.4	120.0	120.0	120.0

Intelligent Integrated Permanent Magnet Motor System Products



Dimensional diagram



Specification table

Motor model	Rated power (W)	Rated voltage (V)	Rated speed (PRM)	Rated torque (N.M)	Efficiency	Frequency (HZ)	Ingress protection
SPR801-80	80	110	3500	0.22	83%	292	IP54
SPR801-100	100	220	3000	0.32	84%	250	IP54

Permanent Magnet Synchronous Motor Controller



Specification table

Input rated voltage	AC220V	Digital output function	Fault alert, Speed output
Output maximum current	3A	Speed controller	Metal rotary potentiometer
Output maximum power	500W	Communication interface	RS485.Baud rate9600
Motor control method	FOC Vector closed-loop speed control	Protection function	Under-voltage, Over-voltage, Over-current, Over-load, Stall, Phase loss, Overheating
Compatible motor model	SPR PMSM	Ingress protection	IP20
Maximum motor speed	6000rpm		
Digital input function	Stop, Clockwise, Counterclockwise, Emergency stop	Cooling method	Nature cooling
Control panel function	Digital speed display, stepless speed control, button selection, LED indication.		

Controller model and parameter description

Model list		Function
1	JY220N0-05-V1.0	Standard version with LED panel display
2	JY220K0-05-V1.0	Snap-on version without LED panel display
3	JY220NR-05-V1.0	Standard version with RS485
4	JY220KR-05-V1.0	Snap-on version with RS485

Controller matching motor model naming rules

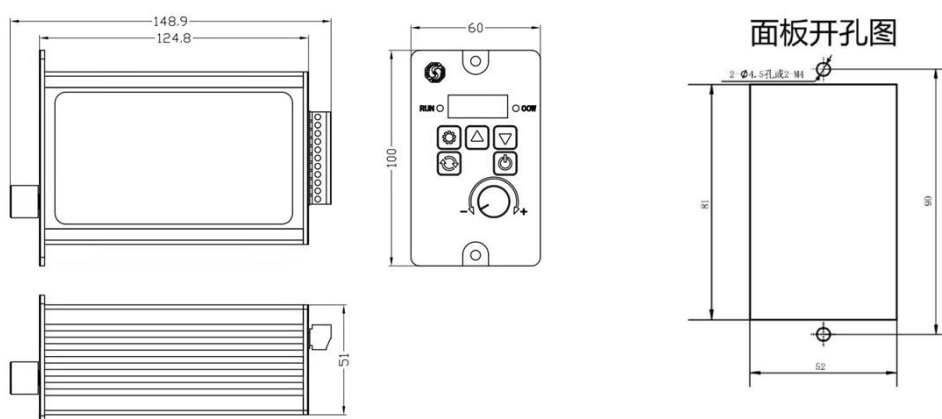
SPR **6** - **400** - **3000**
 ① ② ③ ④

①	Series	SPR			
②		Model Dimensions			
	Installation dimensions code	2	4	5	6
③	Motor rated voltage	For example,400 represents 400w			
④	Motor rated speed	For example,3000 represents motor rated speed is 3000rpm			

Example: Matching Motor Model		
1	SPR5-120-3000	120W3000RPM
2	SPR6-500-3000	500W3000RPM
3	SPR6-370-1800	370W1800RPM

Controller exterior dimensions and installation

Dimensional drawing and panel cutout diagram



Before installing this product, it must be placed in its packaging box. If the machine is not in use temporarily, in order to ensure that the product falls within the warranty scope of the company and for future maintenance, please pay attention to the following:

1. The driver must not be exposed to harsh environments such as dust, sunlight, corrosive and flammable gases, oils, humidity, water droplets, and vibrations.
2. It must be placed in a dust-free and dry location.
3. The environmental temperature and relative humidity of the storage location must be within the required range.
4. Avoid storing in an environment containing corrosive gases or liquids.
5. It is best to be properly packaged and stored on shelves or a flat surface.
6. For long-term operation, it is recommended to be in an environment with a temperature below 40°C and placed in a well-ventilated area to ensure the product's reliable performance.
7. In areas with an altitude exceeding 1000 meters, due to reduced air density leading to decreased insulation strength and poorer heat dissipation, the product should be de-rated for use, and its use is not recommended in high-altitude areas.

Installation Instructions:

1. This product is intended for embedded installation. It is recommended to install it on a metal mounting surface with good heat dissipation and proper grounding to prevent the risk of fire accidents.
2. The recommended installation spacing between drivers: when multiple drivers are installed side by side, maintain a spacing of at least 15mm to ensure good heat dissipation.
3. The connection cables between the driver and the motor should not be pulled tight to prevent them from loosening or coming off.
4. When securing the driver, make sure to tighten all securing screws.

Controller wiring and panel instructions



11-pin plug-and-play terminal, comes with male-female connectors, screw terminal connection method, use a flathead screw driver with a width $\leq 2.5\text{mm}$. Please make sure to secure the connections firmly, tighten the screws, and avoid wires touching each other

F1: Emergency Stop (It needs to be Short-circuited with COM)

COM: Common terminal ground wire

F2: Slow-down switch

Fg: Speed output or Fault output

U: Motor phase U

V: Motor phase V

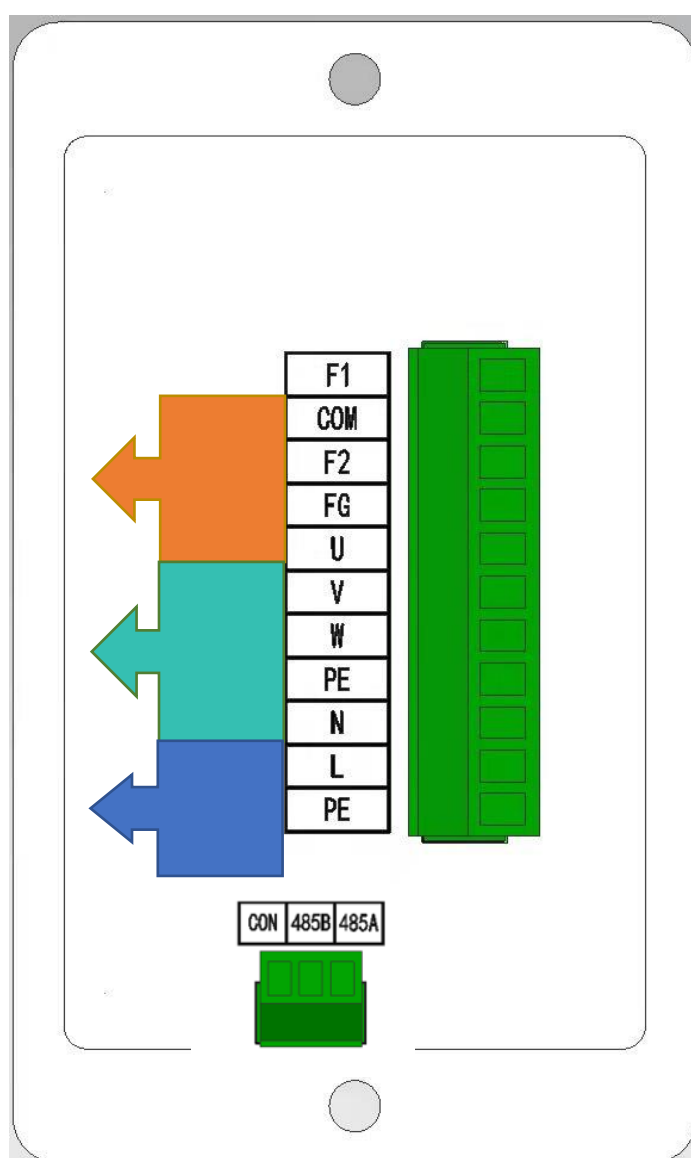
W: Motor phase W

PE: Motor casing ground wire

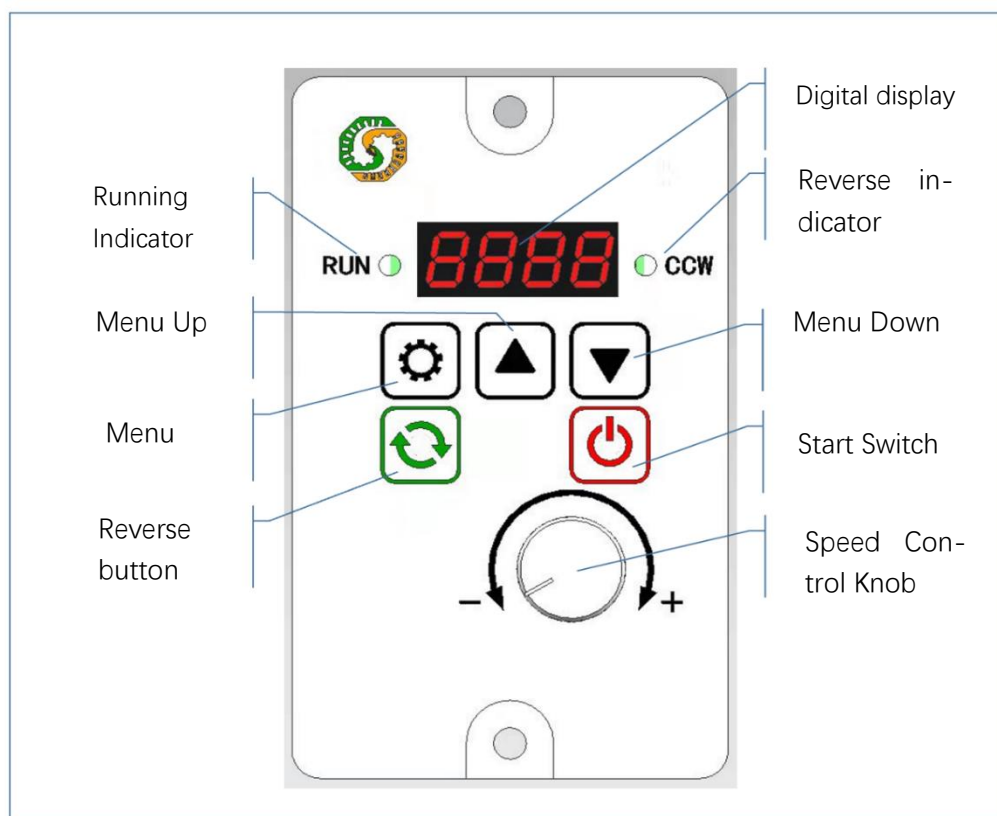
N: AC220V input neutral wire

V: AC220V input live wire

W: AC220V input ground wire



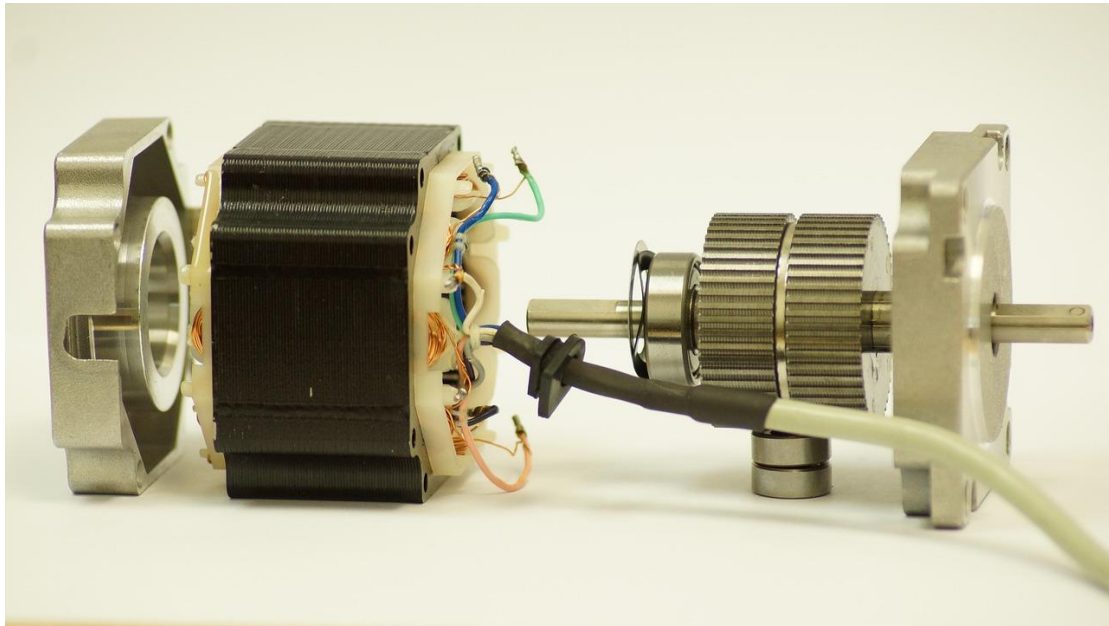
Display Panel instructions



- ✧ **Running Indicator:** After starting the motor, the running indicator light turns on, and it turns off after stopping.
- ✧ **Digital Display:** When the motor is not running, it displays “OFF,” indicating standby status. When started, it displays the actual motor speed.
- ✧ **Reverse Indicator:** When the motor is in reverse, this light is on; it goes off in forward rotation.
- ✧ **Menu Button:** Enters advanced parameter settings (optional).
- ✧ **Menu Up Button:** Enters advanced parameter settings (optional).
- ✧ **Menu Down Button:** Enters advanced parameter settings (optional).
- ✧ **Reverse Button:** Used to change the motor’s rotation direction. Press once for reverse, press again for forward, and repeat.
- ✧ **Start Switch:** Motor start button. Press it once to start the motor and initiate work. Press it again to stop the drive and enter standby mode.
- ✧ **Speed Control Knob:** Rotate clockwise to increase motor speed, counterclockwise to decrease speed. In standby mode, it’s inactive, but you can set the default speed before starting.
- ✧ **Note:** For models with an optional RS485 communication module, if the speed controller has received RS485 commands from the master control after this power-up, the speed control knob becomes inactive. To use the speed control knob, you must disconnect RS485, turn off the power, and power on again. During RS485 refresh, the start switch and reverse button on the panel are also affected.

Fault code

Fault code	Abbreviation	Meaning
E3	Locked Rotor Protection	Motor fails to start or gets stuck
E4	Controller damage	Controller power components damage
E5	Overload protection	Operating in current-limiting mode for an extended period
E6	Self-check protection	Controller self-check parameter error
E7	Overcurrent protection	Excessive current in motor wires
E8	Undervoltage protection	Below the minimum operating voltage
E9	Phase loss protection	Motor phase loss
E10	Phase reversal protection	Motor drive phase error
E11	Overvoltage protection	Above the maximum operating voltage
E12	Overtemperature protection	Above the controller's maximum temperature limit
E13	Communication failure	Communication interruption



Contact info.

Gaby.Ann

Cell:008618317080385

www.bellas-motor.com

Email:gaby.ann@bellas-motor.com