

QINGYAO
SYSTEMS

**PRECISION.
TRUST.
DIFFERENT PERSPECTIVE.**

Moving Forward Together.



S/SF/SL系列 高效率无刷减速电动机

HIGH EFFICIENCY BRUSHLESS MOTOR

QINGYAO
SYSTEMS

| Precision. Trust. Different Perspective.

以精准、信任与不同视角持续前行

▶ 欢迎来到上海卿耀实业有限公司。

自 2017 年在上海成立以来，QINGYAO 持续成长为工业自动化、运动控制、机器人相关电机、可再生能源部件及传感解决方案领域值得信赖的合作伙伴。

▶ 我们不仅仅是提供产品。

我们倾听客户需求，理解实际应用环境，并与可靠的制造合作伙伴紧密协作，为客户提供实用、稳定并可定制的方案。

▶ 在当今快速变化的工业市场中，

客户需要的不只是标准化供货，更需要灵活的沟通、专业的技术理解、可靠的品质以及长期稳定的支持。QINGYAO 将以真诚、速度与责任感回应客户需求。

▶ 展望未来，

我们将持续强化产品能力，提升服务质量，并以信任、品质和客户满意为基础，建立长期合作伙伴关系。

“ 始终以不同的视角
观察、思考并回应。 ”



微型无刷直流齿轮减速电机概况 OVERVIEW OF MICRO BRUSHLESS DC GEAR MOTOR

无刷电动机的转子使用永磁体，因此实现了薄型和大功率；比如，与安装尺寸90的三相感应电动机相比总长缩短>75mm，输出功率达到1.3倍。若采用无刷电动机，有助于实现装置的小型化。

Brushless DC motors have a slim body and provide high power due to permanent magnets being used in the rotor. For example, the overall length is 75mm shorter and the output power is 1.3 times higher than that of three-phase induction motors with a frame size of 90mm. Using brushless DC motors can contribute to downsizing and space saving.

主要特征 Main features

● 强大的性能与功能 Powerful performance and functionality

- 1、速度控制范围80~4000r/min
The speed control range is 80~4000r/min
- 2、速度变动率±0.2%
Rate of speed change ±0.2%
- 3、可限制转矩
Controllable torque
- 4、多段变速运行，最大16速
Multi-speed section, maximum 16
- 5、停止时提供保持力矩（最大为额定转矩的50%）
Provides holding torque at stop (Up to 50% of rated torque)
- 6、防尘、防水（保护等级IP54）
Dustproof and waterproof (Protection class IP54)
- 7、采用了喷塑壳体工艺，保证较强的耐腐蚀性能
Powder coating shell technology is adopted to ensure strong corrosion resistance

● 使用简单，价格便宜 Easy to use and cheap to buy

- 8、备有可用于测试及避免出现故障的监控、测试功能
Equipped with monitoring and testing functions that can be used to test and avoid failure
- 9、通过驱动器主体执行数字设定、操作
Perform digital settings and operations through drive
- 10、小型、薄型驱动器，可实现紧密安装
Small, thin drives for tight mounting
- 11、可利用电脑及外部信号设定速度
Can use computer and external signals to set speed
- 12、直接连接时，电动机、驱动器之间最长10m
When directly connected, the maximum distance between motor and driver is 10m
- 13、产品种类30W~1100W
Product category 30W~1100W

可选的三种减速电机 Three optional speed reducers

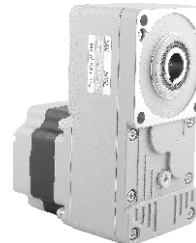
● S系列 Series



● SF系列 Series



● SL系列 Series



电动机 Motor	输出功率 Output power	机座号 Size	减速器减速比（联体型） Ratio	保护等级 Protection level	适配驱动器 Drive
S系列 Series	30W	60	5、10、15、20、30、50、100、200	IP54	C30
	60W	70	5、10、15、20、30、50、100、200、360		
	60W、120W	80	5、10、15、20、30、50、100、200		
	120W、200W	90			
	200W	100	5、10、15、20、30、50		
	400W	100			
	750W	120			
SF系列 Series	30W	SF2-12	7.5、10、15、20、30、50	IP54	C30
	120W	SF2-15			
	200W	SF2-20			
	400W	SF2-25			
SL系列 Series	100W	60	5、7.5、10、15、20、25、30、40、50	IP54	C30
	200W	80			
	400W	90			
	750W	100			
	1100W	120	5、10、15、20、25、30、40、50、100		

电动机的构造升级，以更小的机身实现了高输出功率和高效率。

The structure of the motor is upgraded to realize high output power and high efficiency with a smaller body.

无感无刷电机的基本特点

BASIC CHARACTERISTICS OF INDUCTION BRUSHLESS MOTORS

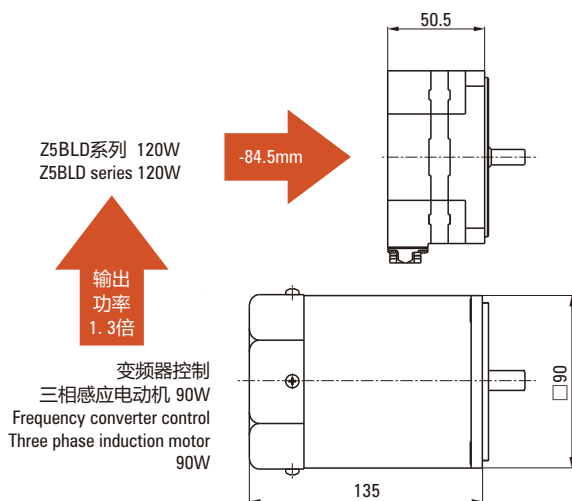
无刷电机上，无需使用通常被认为是DC电动机缺点的刷子和整流子等机械触点，DC电动机使用刷子和整流子进行旋转，因此需要定期进行维护；而无刷电动机使用霍尔IC检测到的信号，利用驱动电路的晶体管的ON/OFF进行旋转，因此无需维护。

On brushless motor, it is unnecessary using brush, commutator and any other mechanical contact. Brush motor need brush and commutator to running, so it need to regular maintain. However, brushless motor used Hall IC to detect the signal and used driving circuit of crystal catheter's ON/OFF. So it dispense with maintain.

■ 薄型、轻量、大功率 Thin, lightweight, high power

无刷电动机的转子使用永磁体，因此，实现了薄型、轻量和大功率。可满足装置的小型化需求。

Brushless motor rotor using permanent magnet steel, so that a thin, light and high-power. The utility model can meet the miniaturization requirement of the device.



■ 广泛的速度调节范围 Wide speed range

产品群 Product group	速度控制范围* Speed control range*	速度比 Velocity ratio
无刷电动机BMU系列 Brushless motor BMU series	80~3000r/min	1:37.5
变频器控制三相感应电动机 Three-phase induction motor controlled by frequency converter	200~2400r/min	1:12
AC调速电动机 AC motor	50HZ: 90~1400r/min 60HZ: 90~1600r/min	1:15

*不同的产品各有不同的速度控制范围。

*Different products have different speed control range.

■ 可进行稳定的速度控制 Stable speed control

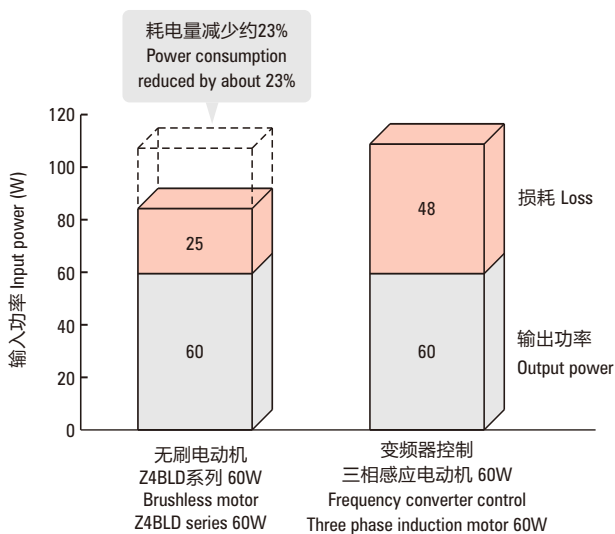
无刷电动机持续对设定速度和来自电动机的速度反馈信号进行对比，来调节施加到电动机上的电压；因此，即使负载状况发生变化，仍可以从低速瞬间调整到设定速度，并以此稳定的速度运行。使用变频器控制的三相感应电动机不进行反馈控制，因此负载变大时，速度会大幅下降；对于速度稳定性要求较高的用途，建议使用无刷电动机。

Brushless DC motors compare the setting speed with the speed feedback signals from the motor at all times and adjust the motor's applied voltage. For this reason, even if the load changes, stable rotation is performed from low speed to high speed. Common inverter-controller three-phase induction motors do not have this type of feedback control and when the load changes, the speed can be affected. Brushless DC motors are recommended for applications that require the speed to be maintained regardless of the load fluctuation.

■ 以输出60W进行的比较（参考值）

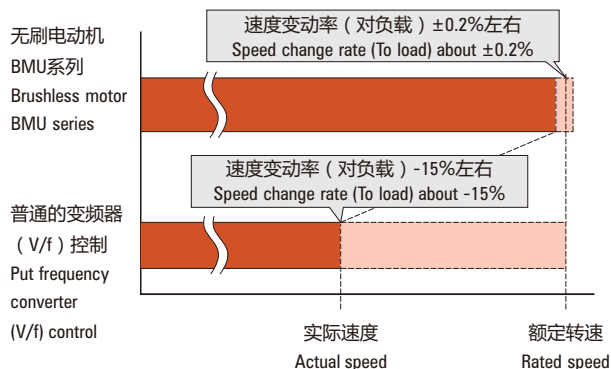
Comparison with output of 60W (Reference value)

额定输出50Hz时（代表值） Rated output 50Hz (Representative value)



■ 负载率80%时速度变化对比（参考值）

Comparison of speed change at 80% loading rate (Reference value)



■ 采用新型连接器 Using a new connector

内置O型圈密封圈、密封垫、很好的提升防护性能。且插头采用扳扣形式，无需螺丝固定，操作简单。

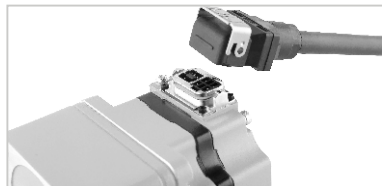
Built-in type O ring seal ring, sealing gasket, a good promotion of protective performance. And the plug is in the form of pulling, no screw is needed to fix, and the operation is simple.

■ 有助于节能 Helps save energy

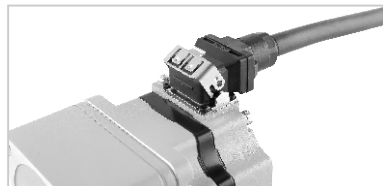
无刷电动机的转子部使用永磁体，减少了转子的二次损耗，大幅度减少耗电。有助于装置的节能。

The permanent magnet steel is used in the rotor part of the brushless motor, which reduces the secondary loss of the rotor and greatly reduces the power consumption. To help save the energy of the device.

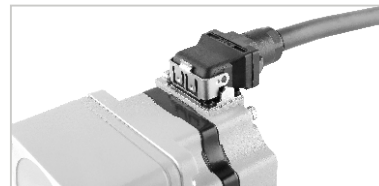
■ 安装方式（可选） The installation is complete (Optional)



插入连接器 Insertion connector

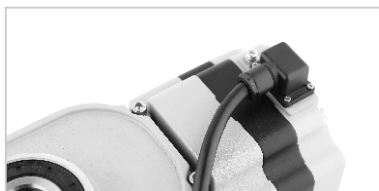


扳倒锁杆 Down the lock lever



连接完成 The connection to complete

■ 安装方式（常规款） The installation is complete (Standard)



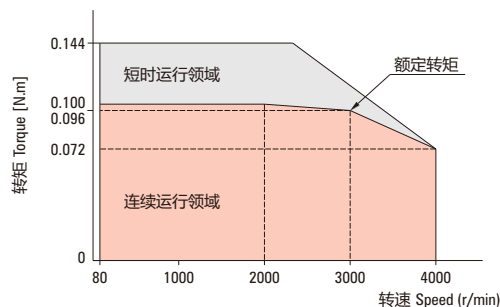
线缆出线方式 Cable outlet direction

转速—转矩特性 SPEED -- TORQUE CHARACTERISTICS

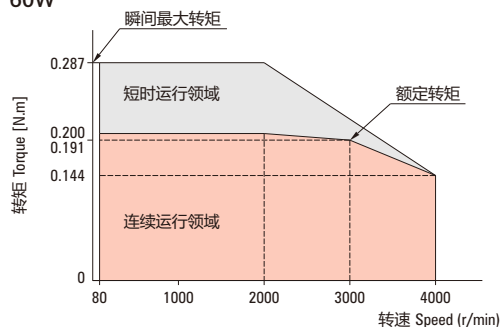
连续运行领域：可做连续运行的领域。Continuous operation field: The field in which continuous operation can be done.

短时运行领域：主要为加速时使用的领域。Short-term operation area: Mainly for use during acceleration.

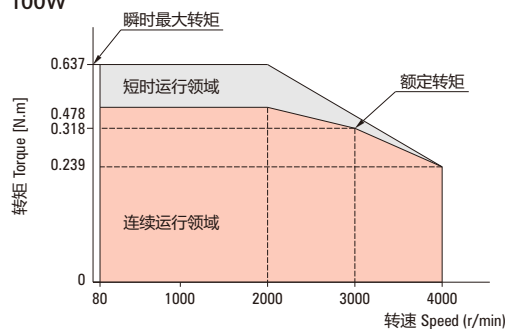
30W



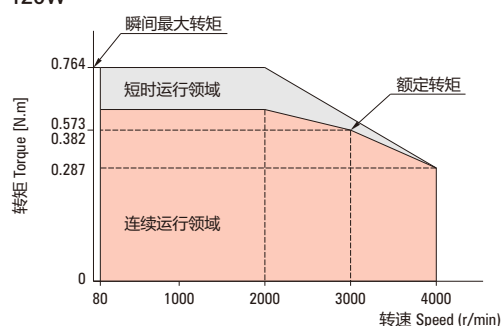
60W



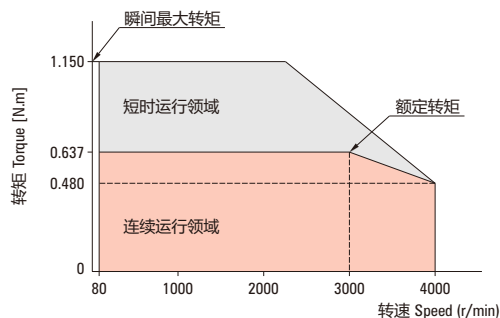
100W



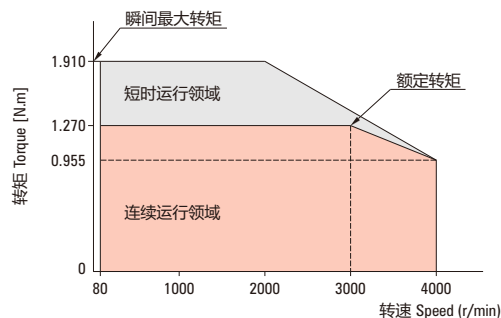
120W



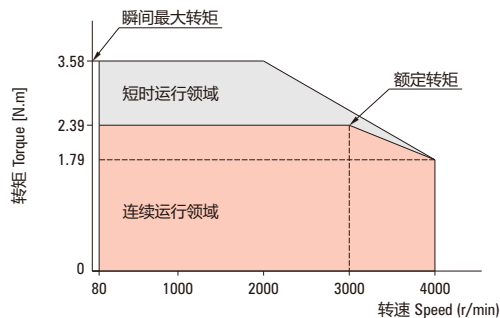
200W



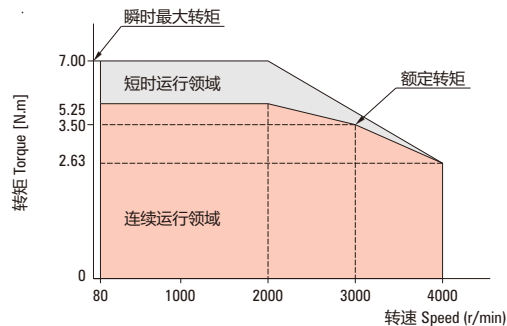
400W



750W



1100W



瞬间最大转矩 Max instant torque

短时运行领域 Short time area

连续运行领域 Continuous area

额定转矩 Rated torque

电动机的一般规格 GENERAL SPECIFICATION

项目 Projects		电动机 Electric motor	驱动器 Driver
绝缘电阻 Insulation resistance		于常温常湿环境下作连续运行后，以DC500V高阻表测量电动机线圈与外壳之间的测量值为100MΩ以上。 After continuous operation in normal temperature and humidity, the measuring value between the coil and the casing of the motor is more than 100MΩ with DC500V high resistance meter.	于常温常湿下连续运行后，电源端子与保护接地端子间、电源端子与输入/输出信号端子间的电阻值以DC500V高阻表测量达100MΩ以上。 After continuous operation at room temperature and humidity, the resistance between power supply terminal and protective grounding terminal, power supply terminal and input / output signal terminal is measured by DC500V high resistance meter over 100MΩ.
绝缘耐压 Insulation withstand voltage		于常温常湿下连续运行后，线圈、外壳间以50Hz、AC1.5kV施加1分钟无异常。 After continuous operation under normal temperature and humidity, 50Hz and AC1.5kV are applied between the coil and shell for 1 minute without any abnormality.	于常温常湿下连续运行后，电源端子与保护接地端子间以50Hz、AC1.5kV，电源端子与输入/输出端子间以50Hz、AC1.5kV施加1分钟无异常。 After continuous operation under normal temperature and humidity, 50Hz, AC 1.5 kV are applied between power terminal and protective grounding terminal, 50Hz, AC 1.5 kV are applied between power terminal and input /output terminal for 1 minute without any abnormality.
温度上升 Temperature rise		于常温常湿下额定连续运行后，以热电偶法测量的线圈温度上升值在50℃以下（400W为60℃以下），外壳表面的温度上升测定值为40℃以下（400W为50℃以下）*1。 After rated continuous operation at normal temperature and humidity, the temperature rise of the coil measured by thermocouple method is below 50℃ (400W is below 60℃), and the temperature rise of the shell surface is below 40℃ (400W is below 50℃) *1.	于常温常湿下额定连续运行后，以热电偶法测量的散热板温度上升值在50℃以下。 After rated continuous operation at normal temperature and humidity, the temperature rise of heat dissipation plate measured by thermocouple method is below 50℃.
使用环境 Service environment	环境温度 Ambient temperature	0 ~ +40℃（无结冰） 0 ~ +40℃ (No icing)	0 ~ +40℃（无结冰） [仅限将400W型的驱动器前侧朝上安装时，0 ~ +35℃（无结冰）。] 0 ~ +40℃ (No icing) [0 ~ +35℃ (No icing) only when the driver of type 400W is installed front side up.]
	环境湿度 Ambient humidity	85%以下（无结露） Less than 85% (No dew)	
	标高 Elevation	海拔1,000m以下 Below 1,000m	
	介质环境 Media environment	无腐蚀性气体、尘埃。不可在含有放射性物质、磁场以及真空等特殊环境中使用。	
	振动 Vibration	不施加连续振动或过度冲击。依据JIS C 60068-2-6正弦波振动测试方法。 频率范围：10-55Hz、单振幅：0.15mm、摇摆方向：3方向（X、Y、Z）、摇摆次数：20次。 Do not apply continuous vibration or excessive shock. According to JIS C 60068-2-6 sine wave vibration test method frequency range: 10-55Hz, single amplitude: 0.15mm, swing direction: 3 directions (X, Y, Z), swing times: 20 times.	
保存环境*2 Storage environment *2	环境温度 Ambient temperature	-20 ~ +70℃（无结冰） -20 ~ +70℃ (No icing)	-25 ~ +70℃（无结冰） -25 ~ +70℃ (No icing)
	环境湿度 Ambient humidity	85%以下（无结露） Less than 85% (No dew)	
	标高 Elevation	海拔3,000m以下 Below 3,000m	
耐热等级 Heat resistance grade		UL / CSA规格：105（A）、EN规格：120（E） UL / CSA specification: 105 (A), EN specification: 120 (E)	—
保护等级*3 Protection level *3		连接电缆线时：IP66（圆轴型的安装面除外） Connecting cable: IP66 (Except for round shaft mounting surface)	IP20

一般规格 GENERAL SPECIFICATION

*1 为了使电动机外壳表面温度能保持在90℃以下，请将圆轴型电动机安装在以下尺寸的散热板（材质：铝）上。

30W型：115×115mm 厚度5mm。 **60W型**：135×135mm 厚度5mm。
100W型：115×115mm 厚度5mm。 **120W型**：165×165mm 厚度5mm。
200W型：200×200mm 厚度5mm。 **400W型**：250×250mm 厚度6mm。
750W型：300×300mm 厚度6mm。 **1100W型**：250×250mm 厚度6mm。

*2 保存环境也包括运送途中的短期值。

*3 表示防尘、防水性能的IP值依据IEC 60529及IEC 60034-5规定。

注意 · 请勿于电动机与驱动器连接的状态下进行绝缘电阻测量、耐压测试。

· 电动机的材质、表面处理。

[**材质**：外壳-铝，输出轴-40Cr，螺丝-不锈钢（仅外部露出部分，不包括保护接地端子）]

[**表面处理**：外壳：涂装（安装面除外）]

*1 In order to keep the surface temperature of the motor housing below 90℃, the round shaft motor shall be mounted on a heat sink plate (Material: Aluminum) of the following size.

30W type: 115×115mm thickness 5mm. 60W type: 135×135mm thickness 5mm.
 100W type: 115×115mm thickness 5mm. 120W type: 165×165mm thickness 5mm.
 200W type: 200×200mm thickness 5mm. 400W type: 250×250mm thickness 6mm.
 750W type: 300×300mm thickness 6mm. 1100W type: 250×250mm thickness 6mm.

*2 Storage environment also includes short-term value in transit.

*3 Ip value indicating dustproof and waterproof performance is in accordance with IEC 60529 and IEC 60034-5 regulations.

Take notice of · Please do not conduct insulation resistance measurement and voltage withstand test when the motor is connected to the driver.

· Material and surface treatment of motor.

[**Material**: Housing-aluminum, output shaft-40Cr, screw-stainless steel (Exposed part only, excluding protective ground terminal)]

[**Surface treatment**: Housing: Coating (Excluding mounting surface)]

■ S系列的输出轴转速 Output speed of S series

单位 Unit: r/min

减速比 Ratio motor 电动机轴转速 Motor speed	5	10	15	20	30	50	100	200	360
80r/min	16	8	5.3	4	2.7	1.6	0.8	0.4	0.22
2000r/min	400	200	133	100	66.7	40	20	10	5.55
3000r/min	600	300	200	150	100	60	30	15	8.33
4000r/min	800	400	267	200	133	80	40	20	11.11

■ SI系列的输出轴转速 Output speed of SL series

单位 Unit: r/min

减速比 Ratio motor 电动机轴转速 Motor speed	5	7.5	10	15	20	25	30	40	50	100
80r/min	16	10.7	8	5.3	4	3.2	2.7	2	1.6	0.8
2000r/min	400	266.7	200	133	100	80	66.7	50	40	20
3000r/min	600	400	300	200	150	120	100	75	60	30
4000r/min	800	533.3	400	267	200	160	133	100	80	40

容许径向负载 · 容许轴向负载 Permissible radial load permissible axial load

● 平行轴减速机 Parallel shaft reducer

单位 Unit: r/min

输出功率 Output power	减速比 Deceleration ratio		容许径向负载 Permissible radial load		容许轴向负载 (N) Allowable axial load (N)
			距输出轴前端10mm (N) 10mm (N) from the front end of the output shaft	距输出轴前端20mm (N) 20mm (N) from the front end of the output shaft	
30W	5	80-3000r/min时	100	150	40
		4000r/min时	90	110	
	10、15、20	80-3000r/min时	150	200	
		4000r/min时	130	170	
	30、50、100、200	80-3000r/min时	200	300	
		4000r/min时	180	230	
60W	5	80-3000r/min时	200	250	100
		4000r/min时	180	220	
	10、15、20	80-3000r/min时	300	350	
		4000r/min时	270	330	
	30、50、100、200	80-3000r/min时	450	550	
		4000r/min时	420	500	
120W	5	80-3000r/min时	300	400	100
		4000r/min时	230	300	
	10、15、20	80-3000r/min时	400	500	
		4000r/min时	370	430	
	30、50、100、200	80-3000r/min时	500	650	
		4000r/min时	450	550	
200W 400W	5、10、15、20	80-3000r/min时	550	800	200
		4000r/min时	500	700	
	30、50	80-3000r/min时	1000	1250	300
		4000r/min时	900	1100	
	100、200	80-3000r/min时	1400	1700	400
		4000r/min时	1200	1400	

S系列的容许转动惯量J The admissible moment of inertia J of S series

● 平行轴减速机 Parallel shaft reducer

单位 Unit: r/min

输出功率 Output power \ 减速比 Ratio		5	10	15	20	30	50	100	200
30W		12	50	110	200	370	920	2500	5000
	瞬时停止或瞬时正反向运行时 *Transient stop or transient forward and backward run	1.55	6.2	14	24.8	55.8	155	155	155
60W		22	95	220	350	800	2200	6200	12000
	瞬时停止或瞬时正反向运行时 *Transient stop or transient forward and backward run	5.5	22	49.5	88	198	550	550	550
120W		45	190	420	700	1600	4500	12000	25000
	瞬时停止或瞬时正反向运行时 *Transient stop or transient forward and backward run	25	100	225	400	900	2500	2500	2500
200W		100	460	1000	1700	3900	9300	18000	37000
	瞬时停止或瞬时正反向运行时 *Transient stop or transient forward and backward run	50	200	450	800	1800	5000	5000	5000
400W		100	460	1000	1700	3900	9300	-	-
	瞬时停止或瞬时正反向运行时 *Transient stop or transient forward and backward run	50	200	450	800	1800	5000	-	-

* 也适用于数字设定将减速时间设定成小于0.1秒的情况。

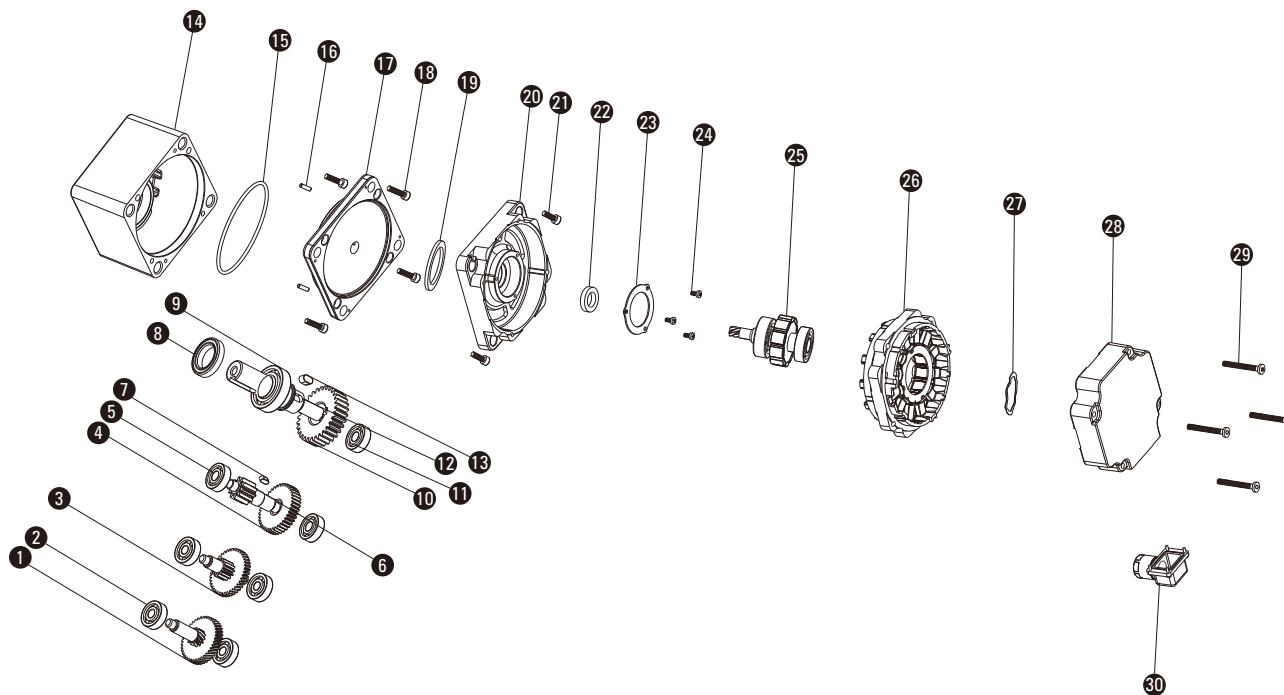
* Also applies when the digital setting sets the deceleration time to less than 0.1 seconds.

型号阅读方法 PRODUCT CODE

■ S系列电动机 S-series

<u>Z5</u>	<u>BLD</u>	<u>120</u>	-	<u>220</u>	<u>GV</u>	-	<u>30S</u>	/	<u>5GU</u>	<u>200V</u>
①	②	③		④	⑤		⑥		⑦	⑧
①	机座号：60×60(Z2-60×60/Z3-70×70/Z4-80×80/Z5-90×90/ Z6-100×100/Z7-120×120)				Size: 60×60 (Z2-60×60/Z3-70×70/Z4-80×80/Z5-90×90/ Z6-100×100/Z7-120×120)					
②	电机类型：无刷				Motor type: Brushless					
③	功率：120W				Power: 120W					
④	电压：220VAC				Voltage: 220VAC					
⑤	减速器类型：S系列减速器				Type of reducer: S-Series reducer					
⑥	转速：3,000RPM				Speed: 3,000RPM					
⑦	减速器机座：60 (2GU-60×60/3GU-70×70/4GU-80×80/5GU-90×90/ 6GU-100×100/7GU-120×120)				Reducer size: 60 (2GU-60×60/3GU-70×70/4GU-80×80/5GU-90×90/ 6GU-100×100/7GU-120×120)					
⑧	速比：200				Speed ratio: 200					

■ 产品爆炸图 Product explosion diagram



■ 明细表 Parts list

1: 一级传动轴 1st follower	7: 键 Keys	14: 箱体 Gearbox housing	21: 内六角圆柱头螺钉 Hexagon socket head screws	26: 嵌线定子 Stator core
2: 轴承 Bearing	8: 油封 Axle sleeve	15: O型圈 O-ring	22: 油封 Oil seal	27: 波形弹性垫圈 Spring wave washer
3: 二级传动轴 2nd follower	9: 轴承 Bearing	16: 定位销 Locating pin	23: 盖板 Cover plate	28: 后端盖 Back cover
4: 三级从齿 3rd follower	10: 四级从齿 4th follower	17: 箱盖 Gearbox cover	24: 十字槽盘头螺钉 Crossrecessed PAN head screws	29: 内六角不锈钢螺钉 Hexagon socket stainless steel screws
5: 轴承 Bearing	11: 轴承 Bearing	18: 内六角圆柱头螺钉 Hexagon socket head screws	25: 转子 Rotor	30: 出线固定架 Outgoing retainer
6: 四级主齿 Hird gear	12: 输出光轴 Output shaft	19: 密封垫圈 Sealing washer		
	13: 键 Keys	20: 前端盖 Front end cover		

S系列直流无刷减速电机 (30W)

S SERIES GEAR MOTOR (30W)

命名 Name

● 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z2BLD30-220GV-30S/2GU□V	Z2BLD30-220GV-30S	2GU□V	5 ~ 20	34
			30 ~ 100	38
			200	43

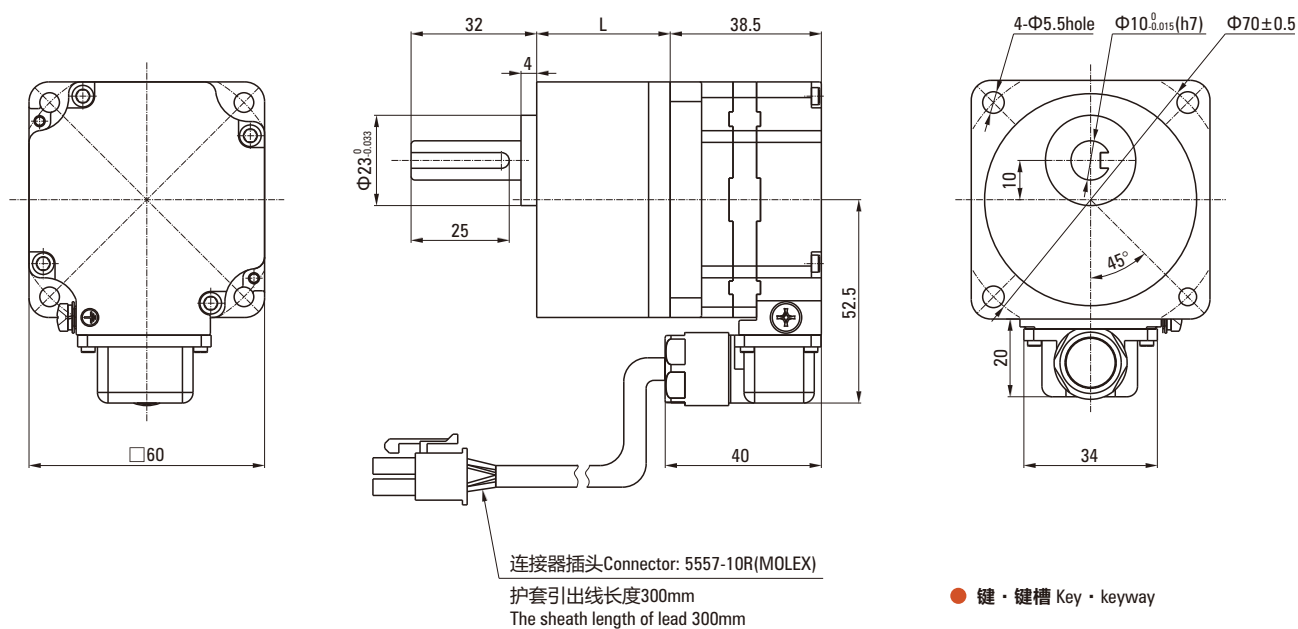
容许力矩 Allowable torque

单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	5	10	15	20	30	50	100	200
30W	80 ~ 2000RPM		0.45	0.90	1.4	1.8	2.6	4.3	6.0	6.0
	3000RPM		0.43	0.86	1.3	1.7	2.6	4.1	6.0	6.0
	4000RPM		0.32	0.65	0.97	1.3	1.9	3.1	5.4	5.4

注Note：表格中 (灰底部分) 表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



S系列直流无刷减速电机 (60W)

S SERIES GEAR MOTOR (60W)

命名 Name

- 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z3BLD60-220GV-30S/3GU□V	Z3BLD60-220GV-30S	3GU□V	5 ~ 20	38
			30 ~ 100	43
			200 ~ 360	48

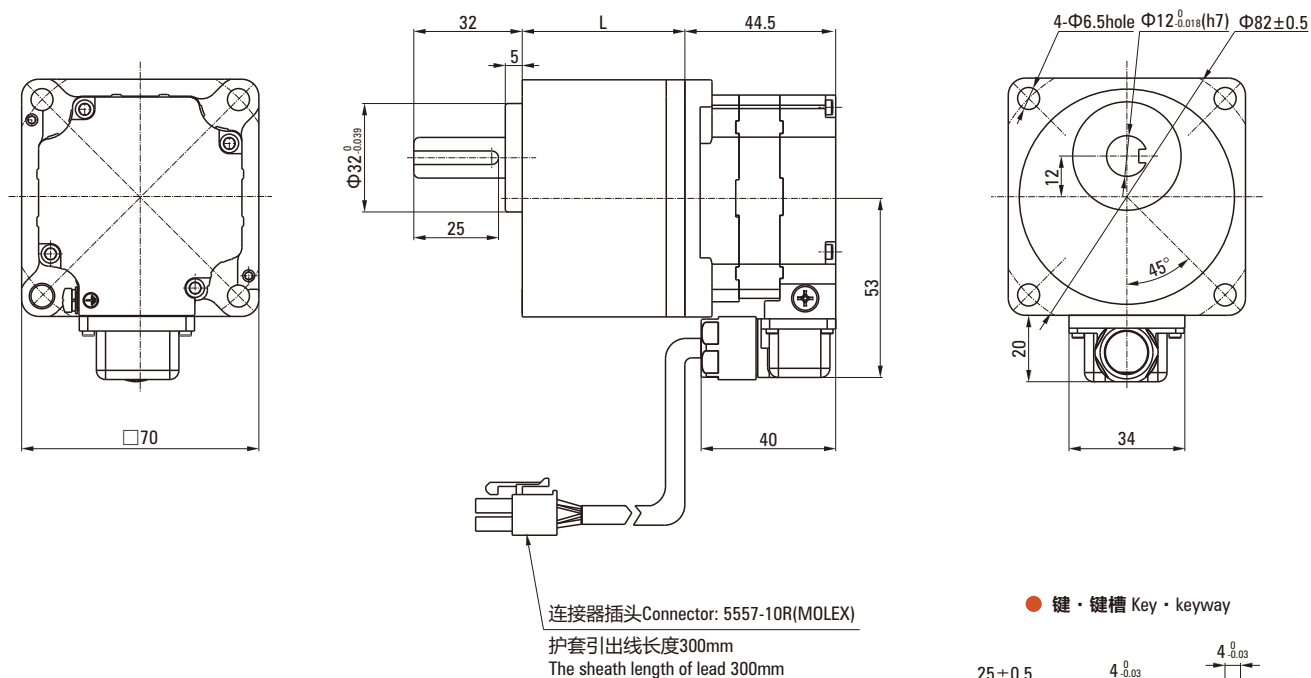
容许力矩 Allowable torque

单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio								
		5	10	15	20	30	50	100	200	360
60W	80 ~ 2000RPM	0.80	1.6	2.4	3.2	4.7	7.7	10.0	10.0	10.0
	3000RPM	0.77	1.5	2.3	3.0	4.4	7.4	10.0	10.0	10.0
	4000RPM	0.58	1.2	1.7	2.3	3.3	5.6	10.0	10.0	10.0

注Note：表格中 (灰底部分) 表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



S系列直流无刷减速电机 (60W/120W)

S SERIES GEAR MOTOR (60W/120W)

命名 Name

● 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L	L1
Z4BLD60-220GV-30S/4GU□V	Z4BLD60-220GV-30S	4GU□V	5 ~ 20	41	50.5
			30 ~ 100	46	
			200	51	
Z4BLD120-220GV-30S/4GU□V	Z4BLD120-220GV-30S	4GU□V	5 ~ 20	41	54.0
			30 ~ 100	46	
			200	51	

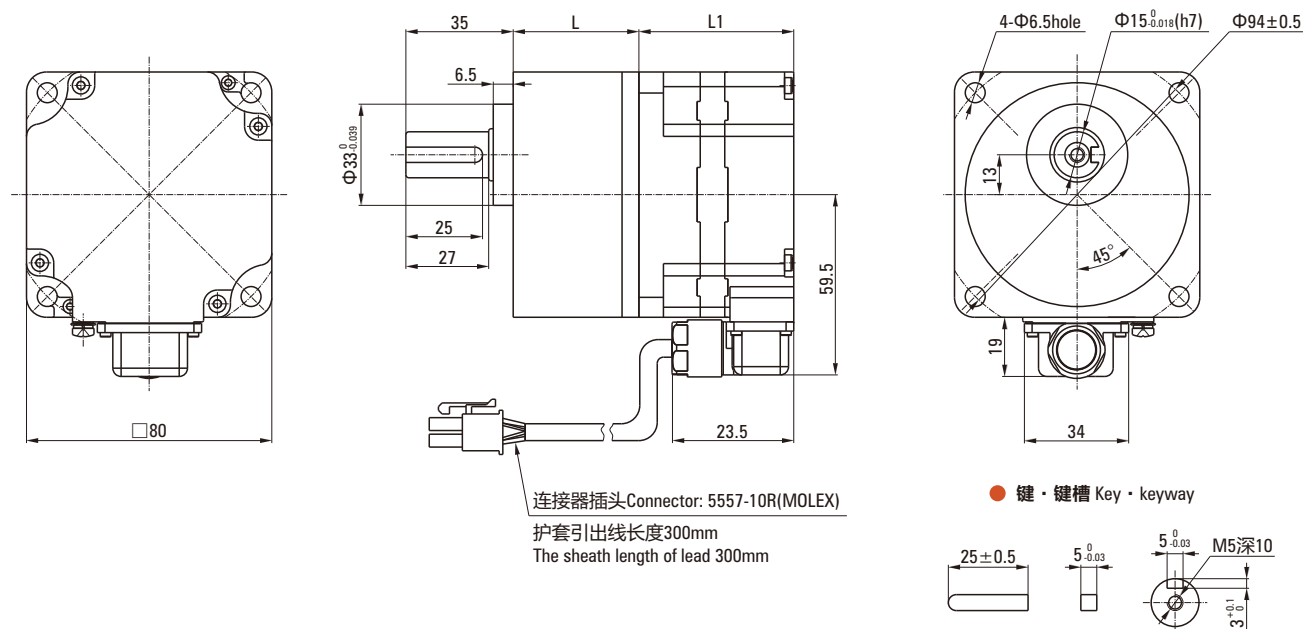
容许力矩 Allowable torque

单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	5	10	15	20	30	50	100	200
60W	80 ~ 2000RPM		0.90	1.8	2.7	3.6	5.2	8.6	16.0	16.0
	3000RPM		0.86	1.7	2.6	3.4	4.9	8.2	16.0	16.0
	4000RPM		0.65	1.3	1.9	2.6	3.7	6.2	12.4	14.0
120W	80 ~ 2000RPM		2.0	4.1	6.1	8.1	11.6	-	-	-
	3000RPM		1.7	3.4	5.2	6.9	9.9	-	-	-
	4000RPM		1.3	2.6	3.9	5.2	7.4	12.3	-	-

注Note : 表格中 (灰底部分) 表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing





S系列直流无刷减速电机 (200W/400W)

S SERIES GEAR MOTOR (200W/400W)

命名 Name

● 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L	L1
Z6BLD200-220GV-30S/6GU□V	Z6BLD200-220GV-30S	6GU□V	5 ~ 20	60	61.5
			30 ~ 50	72	
			100 ~ 200	86	
Z6BLD400-220GV-30S/6GU□V	Z6BLD400-220GV-30S	6GU□V	5 ~ 20	60	73.5
			30 ~ 50	72	

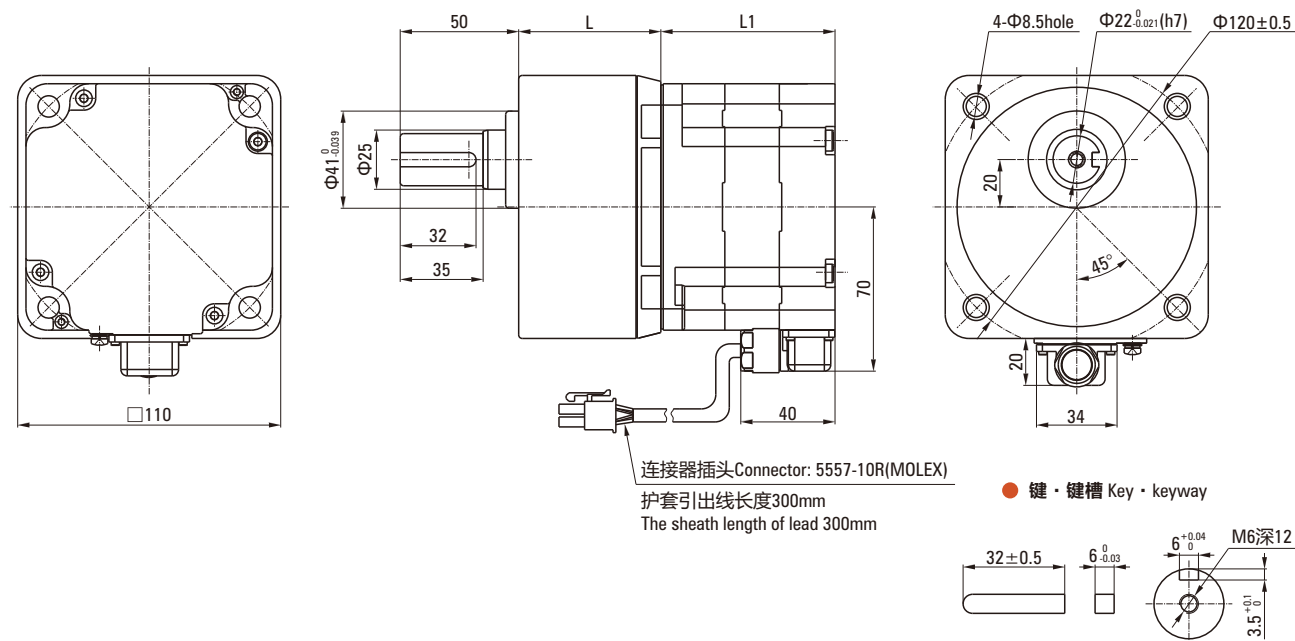
容许力矩 Allowable torque

单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	5	10	15	20	30	50	100	200
200W	80 ~ 2000RPM		2.9	5.7	8.6	11.5	16.4	27.4	51.6	70.0
	4000RPM		2.2	4.3	6.5	8.60	12.4	20.5	38.9	63.0
400W	80 ~ 3000RPM		5.7	11.4	17.1	22.9	32.8	54.6	-	-
	4000RPM		4.3	8.60	12.9	17.2	24.6	41.1	-	-

注Note：表格中 (灰底部分) 表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



S系列直流无刷减速电机 (750W)

S SERIES GEAR MOTOR (750W)

命名 Name

- 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z7BLD750-220GV-30S/7GU□V	Z7BLD750-220GV-30S	7GU□V	5 ~ 10	84
			15 ~ 50	

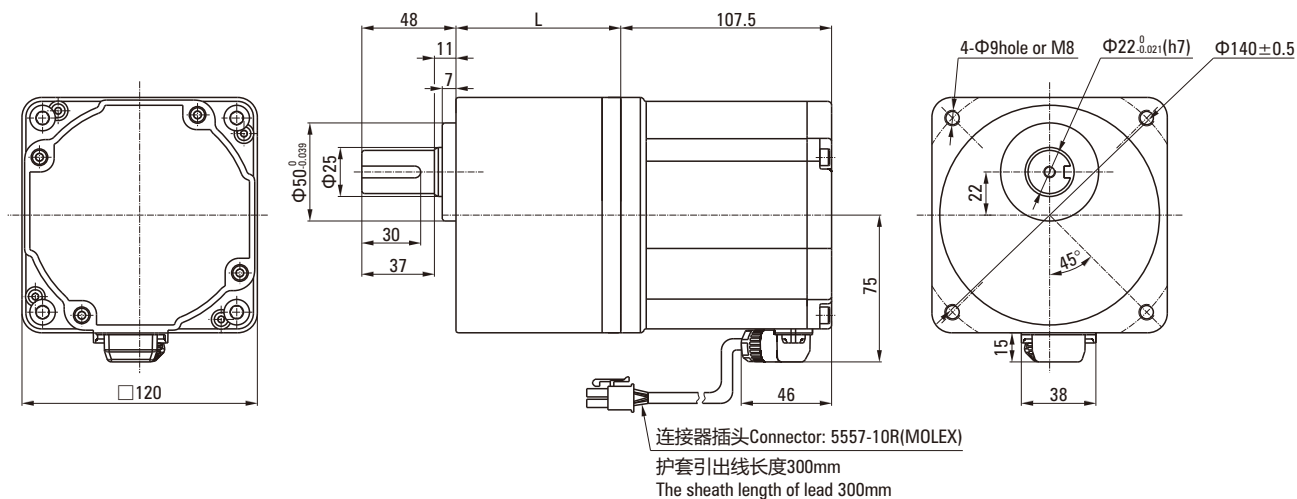
容许力矩 Allowable torque

单位 Unit: N·m

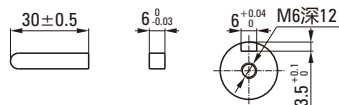
输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio					
		5	10	15	20	30	50
750W	200 ~ 1500RPM	19.34	38.68	52.29	69.72	100.00	100.00
	2000RPM	14.50	29.01	39.21	52.29	78.43	100.00
	2500RPM	11.60	23.21	31.37	41.83	62.74	100.00
	4000RPM	9.67	19.34	26.14	34.86	52.29	87.14

注Note：表格中 （灰底部分）表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
（不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard）

外形图 Dimensional drawing



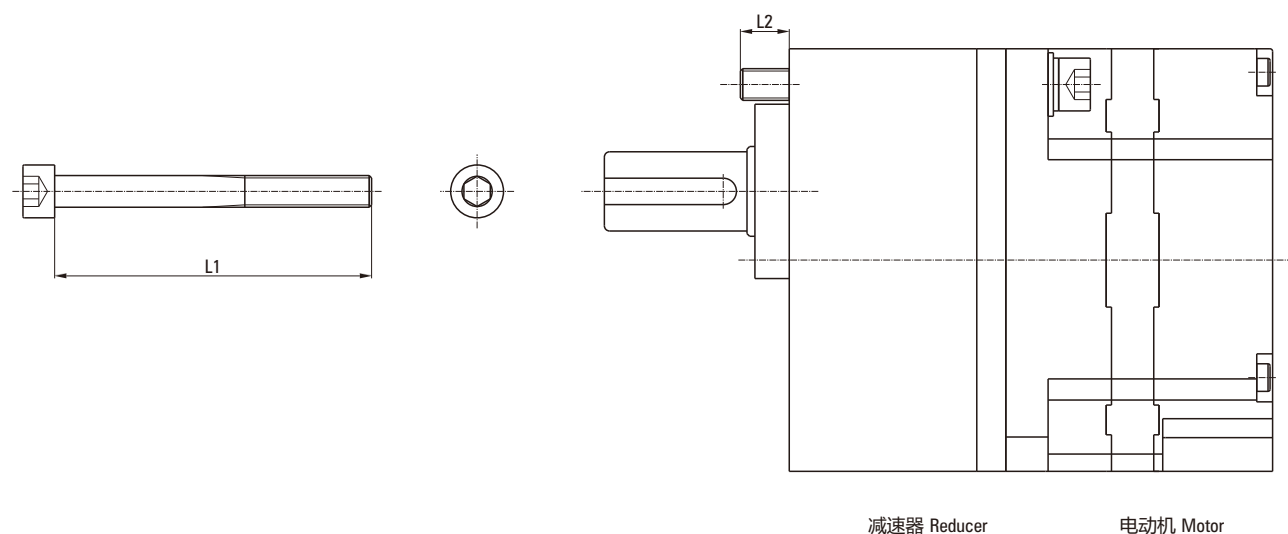
- 键 · 键槽 Key · keyway



安装用螺丝尺寸 SCREW DIMENSIONS FOR MOUNTING

L2是将平垫圈、弹簧垫圈安装在螺丝头侧时的尺寸。
L2 is the size of the flat washer and spring washer installed on the screw head side.

■ S型减速机 S type reducer



型号 Model	减速比 Reduction ratio	安装用螺钉 Screw for mounting		L2 (mm)
		螺钉规格 Screw specification	L1 (mm)	
2GU□V	5~20	M4	50	6
	3~100	M4	55	7
	200	M4	60	7
3GU□V	5~20	M6	55	7
	30~100	M6	60	7
	200~360	M6	65	7
4GU□V	5~20	M6	60	9
	30~100	M6	65	9
	200	M6	70	9
5GU□V	5~20	M8	70	13
	30~100	M8	85	15
	200	M8	90	14
6GU□V	5~20	M8	85	13
	30~50	M8	100	16
	100~200	M8	110	12
7GU□V	5~10	M8	110	12
	15~50	M8	110	12

注Note：型号的□中为表示减速比的数值。□ Indicates the value of deceleration ratio.

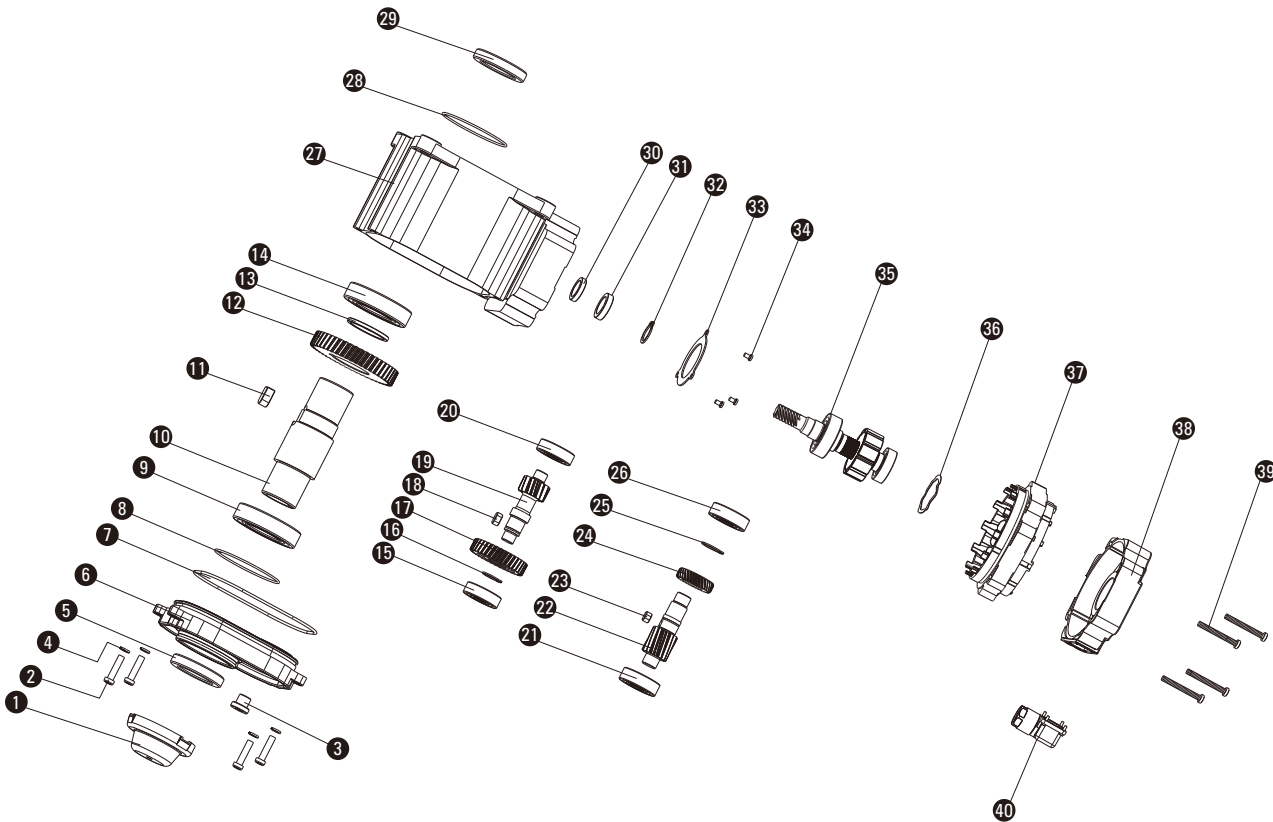
- 安装用螺钉：附带平垫圈、弹簧垫圈各附带4个。Installation screws: With flat washers, spring washers with 4 each.
安装用螺钉表面镀镍处理，性能等级≥8.8级，随整机附件。
The surface of the screw for installation is nickel-plated, the performance grade is ≥ 8.8, and it comes with the accessories of the whole machine.

型号阅读方法 PRODUCT CODE

■ SF系列电动机 SF-series motor

<u>Z5</u>	<u>BLD</u>	<u>200</u>	-	<u>220</u>	<u>GS</u>	-	<u>30S</u>	/	<u>20H</u>	<u>30SF</u>
①	②	③		④	⑤		⑥		⑦	⑧
①	机座号：60×60 (Z2-60×60/Z4-80×80/Z5-90×90/Z6-100×100)				Size: 60×60 (Z2-60×60/Z4-80×80/Z5-90×90/Z6-100×100)					
②	电机类型：无刷				Motor type: Brushless					
③	功率：200W				Power: 200W					
④	电压：220VAC				Voltage: 220VAC					
⑤	减速器类型：SF系列减速器				Type of reducer: SF-Series reducer					
⑥	转速：3,000RPM				Speed: 3,000RPM					
⑦	输出轴孔径：Φ20 (12H-12/15H-15/20H-20/25H-25)				Output shaft aperture: Φ20 (12H-12/15H-15/20H-20/25H-25)					
⑧	速比：30				Ratio: 30					

■ 产品爆炸图 Product explosion diagram



■ 明细表 Parts list

1: 轴头套 Axle sleeve	10: 输出轴 Output shaft	19: 三级主齿 3rd tooth	28: O型圈 O-ring	36: 波形弹性垫圈 Spring wave washer
2: 内六角圆柱头螺钉 Hexagon socket head screws	11: 键 Keys	20: 轴承 Bearing	29: 油封 Oil seal	
3: 注油螺钉 Oil-filling screw	12: 三级从齿 3rd slave	21: 轴承 Bearing	30: 油封 Oil seal	37: 嵌线定子 Rotor core
4: 弹簧垫圈 Spring washer	13: 调整垫圈 Adjusting washer	22: 二级主齿 2nd tooth	31: 油封 Oil seal	
5: 油封 Axle sleeve	14: 轴承 Bearing	23: 键 Keys	32: 轴用挡圈 Axle collar	38: 后端盖 Back cover
6: 箱盖 Gearbox cover	15: 轴承 Bearing	24: 一级从齿 1st slave	33: 盖板 Cover plate	
7: O型圈 O-ring	16: 轴用挡圈 Axle collar	25: 轴用挡圈 Axle collar	34: 十字槽盘头螺钉 Cross recessed PAN head screws	39: 内六角不锈钢螺钉 Hexagon socket stainless steel screws
8: O型圈 O-ring	17: 二级从齿 2nd slave	26: 轴承 Bearing		
9: 轴承 Bearing	18: 键 Keys	27: 箱体 Gearbox housing	35: 转子 Rotor	40: 出线固定架 Outgoing retainer

SF系列直流无刷减速电机 (60W)

SF SERIES GEAR MOTOR (60W)

命名 Name

● 直角减速机 Right angle gearbox

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio
Z2BLD60-220GS-30S/12H□SF	Z2BLD60-220GS-30S	12H□SF	7.5 ~ 50

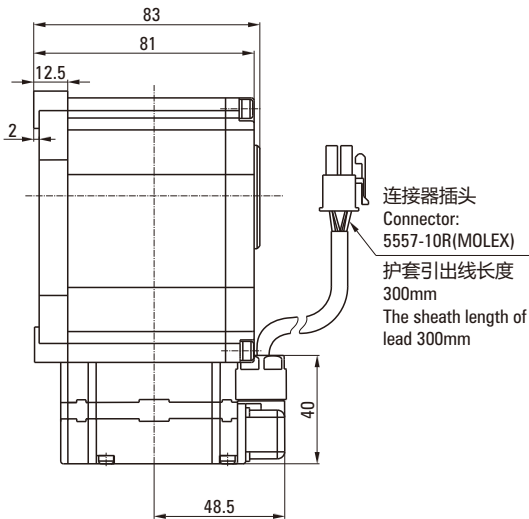
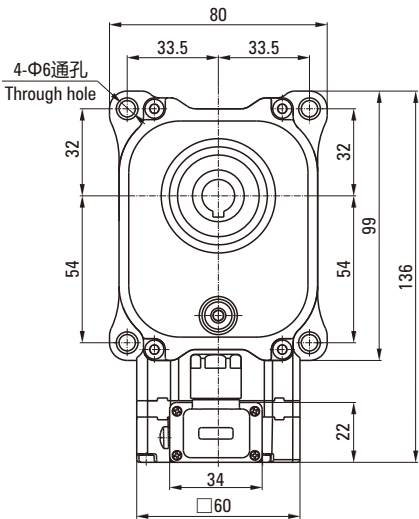
容许力矩 Allowable torque

单位 Unit: N·m

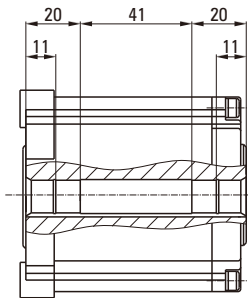
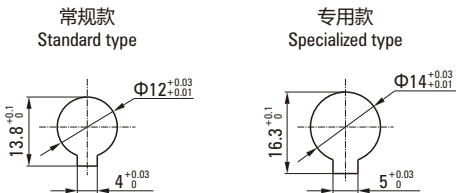
输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	7.5	10	20	30	50
60W	80 ~ 2000RPM		0.90	1.8	3.6	5.2	8.6
	3000RPM		0.86	1.7	3.4	4.9	8.2
	4000RPM		0.65	1.3	2.6	3.7	6.2

注Note：表格中 （灰底部分）表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
 （不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard）

外形图 Dimensional drawing



● 输出轴内孔结构 The output shaft hole structure



SF系列直流无刷减速电机 (120W)

SF SERIES GEAR MOTOR (120W)

命名 Name

- 直角减速机 Right angle gearbox

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio
Z4BLD120-220GS-30S/15H□SF	Z4BLD120-220GS-30S	15H□SF	7.5 ~ 50

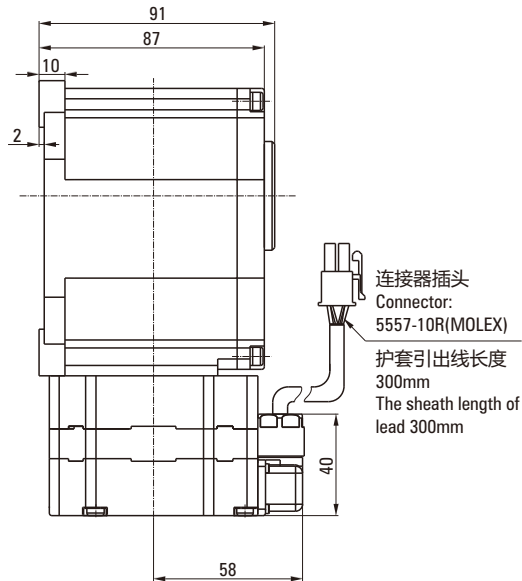
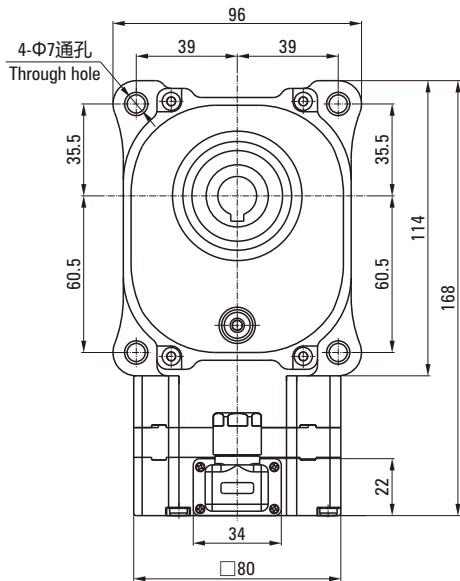
容许力矩 Allowable torque

单位 Unit: N·m

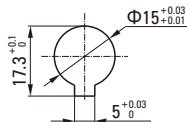
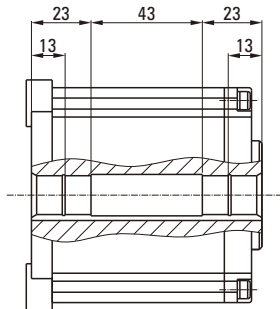
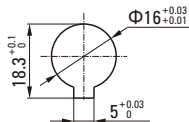
输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio				
		7.5	10	20	30	50
120W	80 ~ 2000RPM	2.7	3.6	7.2	10.3	17.2
	3000RPM	2.3	3.0	6.1	8.80	14.5
	4000RPM	1.7	2.3	4.6	6.60	10.9

注Note：表格中 □ (灰底部分) 表示旋转方向与电机转向一致。The □ (gray) in the table indicates that the rotation direction is consistent with the motor.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



输出轴内孔结构 The output shaft hole structure

常规款
Standard type专用款
Specialized type

SF系列直流无刷减速电机 (200W)

SF SERIES GEAR MOTOR (200W)

命名 Name

● 直角减速机 Right angle gearbox

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio
Z5BLD200-220GS-30S/20H□SF	Z5BLD200-220GS-30S	20H□SF	7.5 ~ 50

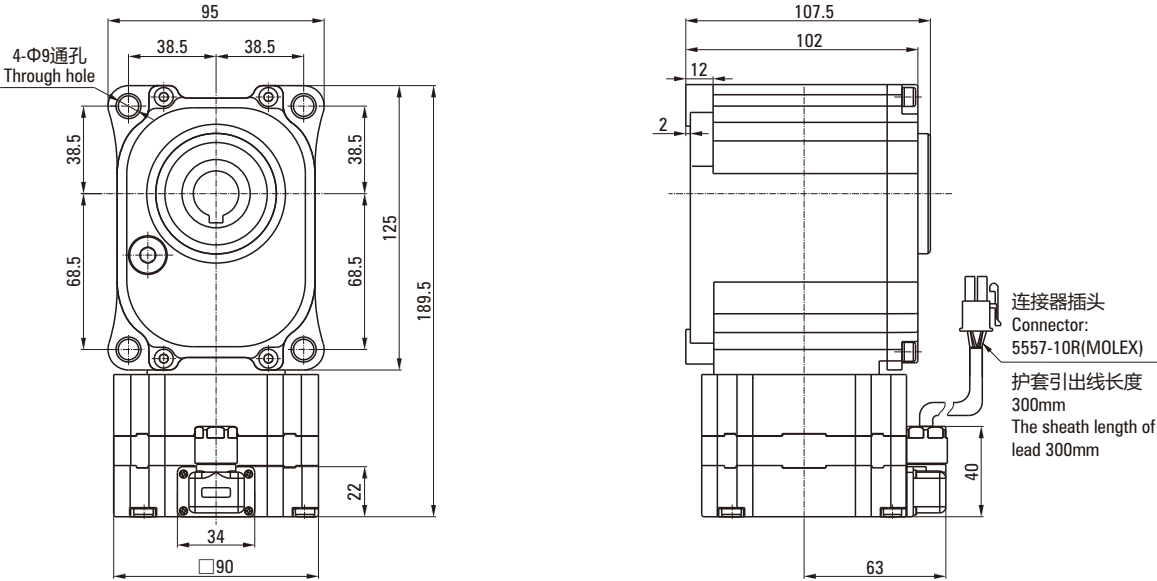
容许力矩 Allowable torque

单位 Unit: N·m

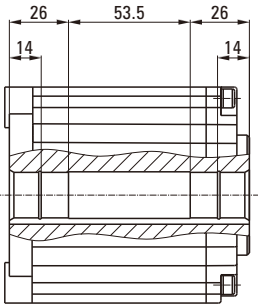
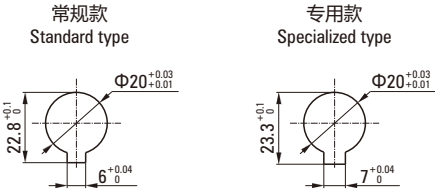
输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	7.5	10	20	30	50
200W	80 ~ 2000RPM		3.8	5.0	10.2	14.5	24.3
	3000RPM		2.9	3.8	7.60	11.0	18.3

注Note：表格中 （灰底部分）表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
 （不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard ）

外形图 Dimensional drawing



● 输出轴内孔结构 The output shaft hole structure



SF系列直流无刷减速电机 (400W)

SF SERIES GEAR MOTOR (400W)

命名 Name

- 直角减速机 Right angle gearbox

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio
Z6BLD400-220GS-30S/25H□SF	Z6BLD400-220GS-30S	25H□SF	7.5 ~ 50

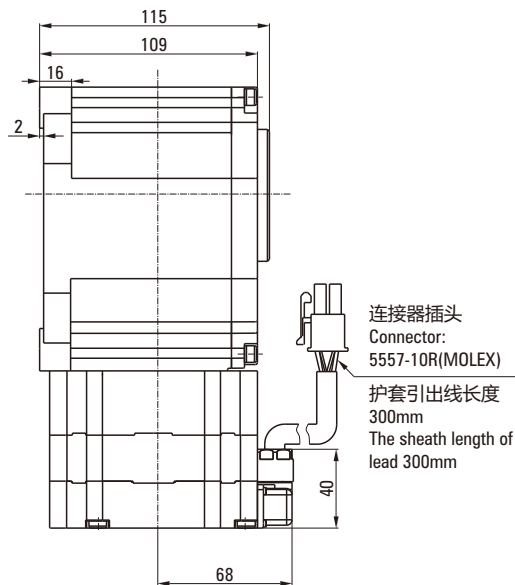
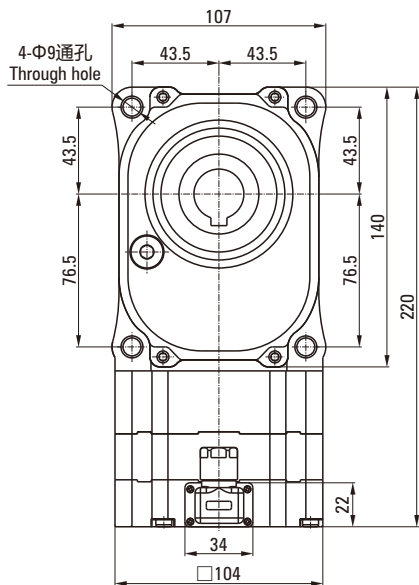
容许力矩 Allowable torque

单位 Unit: N·m

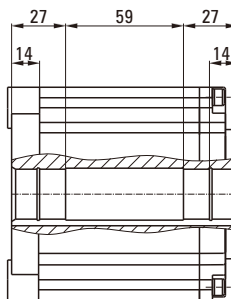
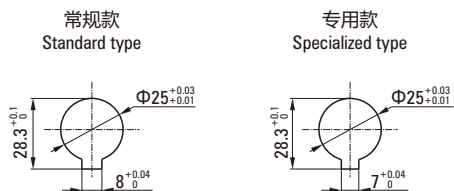
输出功率 Output power	电机转速 Motor speed	减速比 Ratio	7.5	10	20	30	50
400W	80 ~ 2000RPM		7.6	10.1	20.3	29.1	48.5
	3000RPM		5.7	7.60	15.2	21.8	36.5

注Note: 表格中 (灰底部分) 表示旋转方向与电机转向一致。The (gray) in the table indicates that the rotation direction is consistent with the motor.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



输出轴内孔结构 The output shaft hole structure

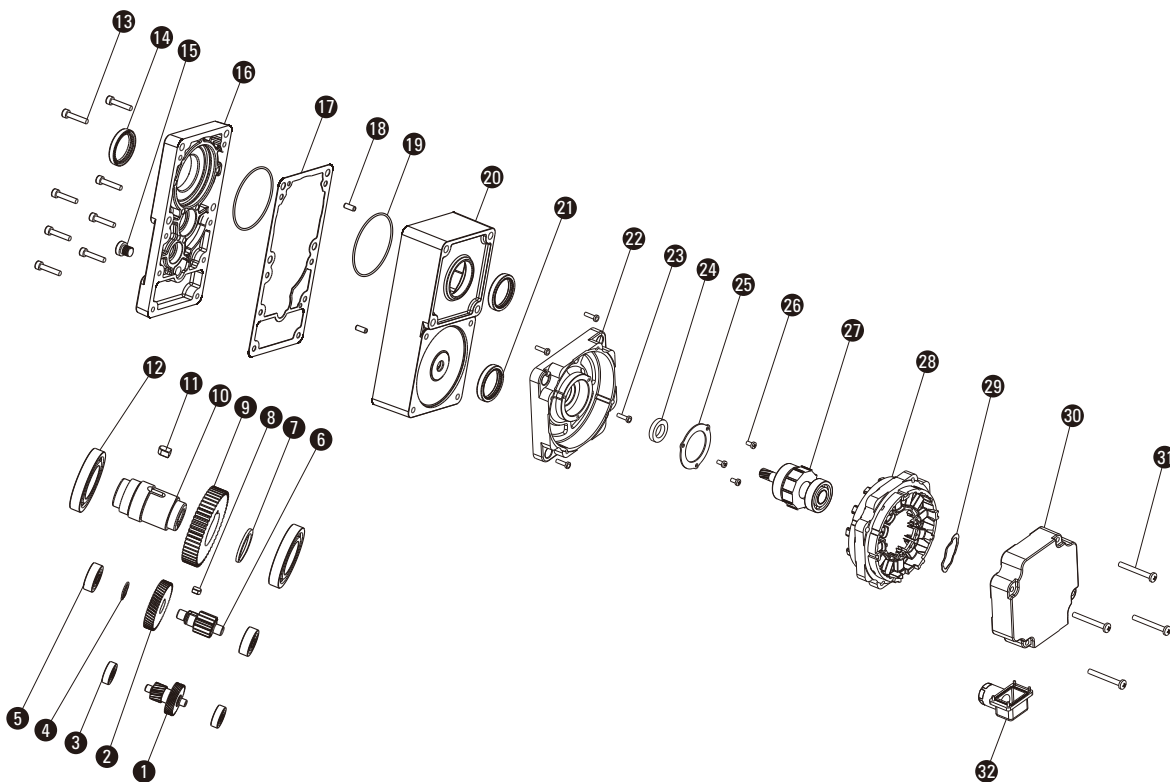


型号阅读方法 PRODUCT CODE

SL系列电动机 SL-series motor

Z4	BLD	200	-	220	GSL	30S	/	4GU	50SL
①	②	③	④	⑤	⑥	⑦	⑧		
①	机座号：80×80 (Z2-60×60/Z4-80×80/Z5-90×90/ Z6-100×100/Z7-120×120)				Size: 80×80 (Z2-60×60/Z4-80×80/Z5-90×90/ Z6-104×104/Z7-120×120)				
②	电机类型：无刷				Motor type: Brushless				
③	功率：200W				Power: 200W				
④	电压：220VAC				Voltage: 220VAC				
⑤	减速器类型：SL (SL系列减速器)				Type of reducer: SL (SL-Series reducer)				
⑥	转速：3,000RPM				Speed: 3,000RPM				
⑦	减速器机座：80 (2GU-60×60/4GU-80×80/5GU-90×90/ 6GU-104×104/Z7-120×120)				Reducer base: 80 (2GU-60×60/4GU-80×80/5GU-90×90/ 6GU-104×104/Z7-120×120)				
⑧	速比：50				Ratio: 50				

产品爆炸图 Product explosion diagram



明细表 Parts list

1: 一级传动轴 1st follower	8: 键 Keys	15: 注油螺钉 Oil-filling screw	23: 内六角圆柱头螺钉 Hexagon socket head screws	28: 嵌线定子 Stator core
2: 二级从齿 2nd slave	9: 三级从齿 3rd slave	16: 箱盖 Gearbox cover	24: 油封 Oil seal	29: 波形弹性垫圈 Spring wave washer
3: 轴承 Bearing	10: 输出轴 Output shaft	17: 密封垫片 Sealing washer	25: 盖板 Cover plate	30: 后端盖 Back cover
4: C-挡圈 Snap ring	11: 键 Keys	18: 定位销 Locating pin	26: 十字槽盘头螺钉 Crossrecessed PAN head screws	31: 内六角不锈钢螺钉 Hexagon socket stainless steel screws
5: 轴承 Bearing	12: 轴承 Bearing	19: O型圈 O-ring		32: 出线固定架 Outgoing retainer
6: 三级主齿 3rd gear	13: 内六角圆柱头螺钉 Hexagon socket head screws	20: 箱体 Gearbox housing	27: 转子 Rotor	
7: 调整垫圈 Adjusting washer	14: 油封 Oil seal	21: 密封垫圈 Sealing washer		
		22: 前端盖 Front end cover		

SL系列直流无刷减速电机 (100W)

SL SERIES GEAR MOTOR (100W)

命名 Name

- 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z2BLD100-220GSL-30S/2GU□SL	Z2BLD100-220GSL-30S	2GU□SL	5 ~ 50	51

注Note：□——速比数值 Velocity ratio value

容许力矩 Allowable torque

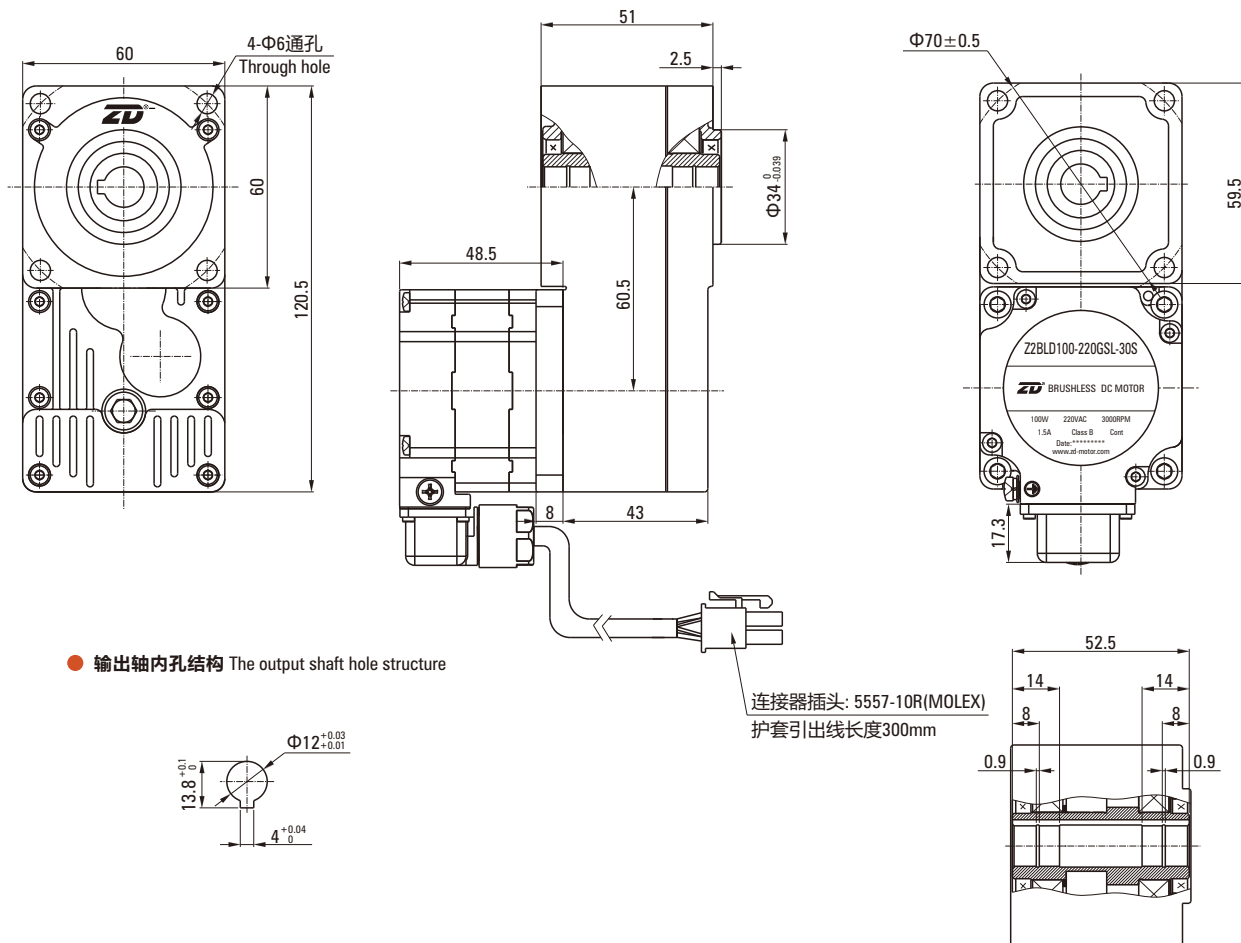
单位 Unit: N·m

输出功率 Output power	电机转速 Motor speed	减速比 Ratio	5	7.5	10	15	20	25	30	40	50
100W	80 ~ 2000r/min时		1.74	2.61	3.49	5.23	6.97	8.71	10.46	11.62	11.62
	3000r/min时		1.16	1.74	2.32	3.49	4.65	5.81	6.97	9.30	11.62
	4000r/min时		0.87	1.31	1.74	2.61	3.49	4.36	5.23	6.97	8.71

注Note：表格中所有旋转方向与电机转向相反。All rotation directions in the table are opposite to motor steering.

(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



- 输出轴内孔结构 The output shaft hole structure

SL系列直流无刷减速电机 (200W)

SL SERIES GEAR MOTOR (200W)

命名 Name

- 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z4BLD200-220GSL-30S/4GU□SL	Z4BLD200-220GSL-30S	4GU□SL	5 ~ 50	56.5

注Note：□——速比数值 Velocity ratio value

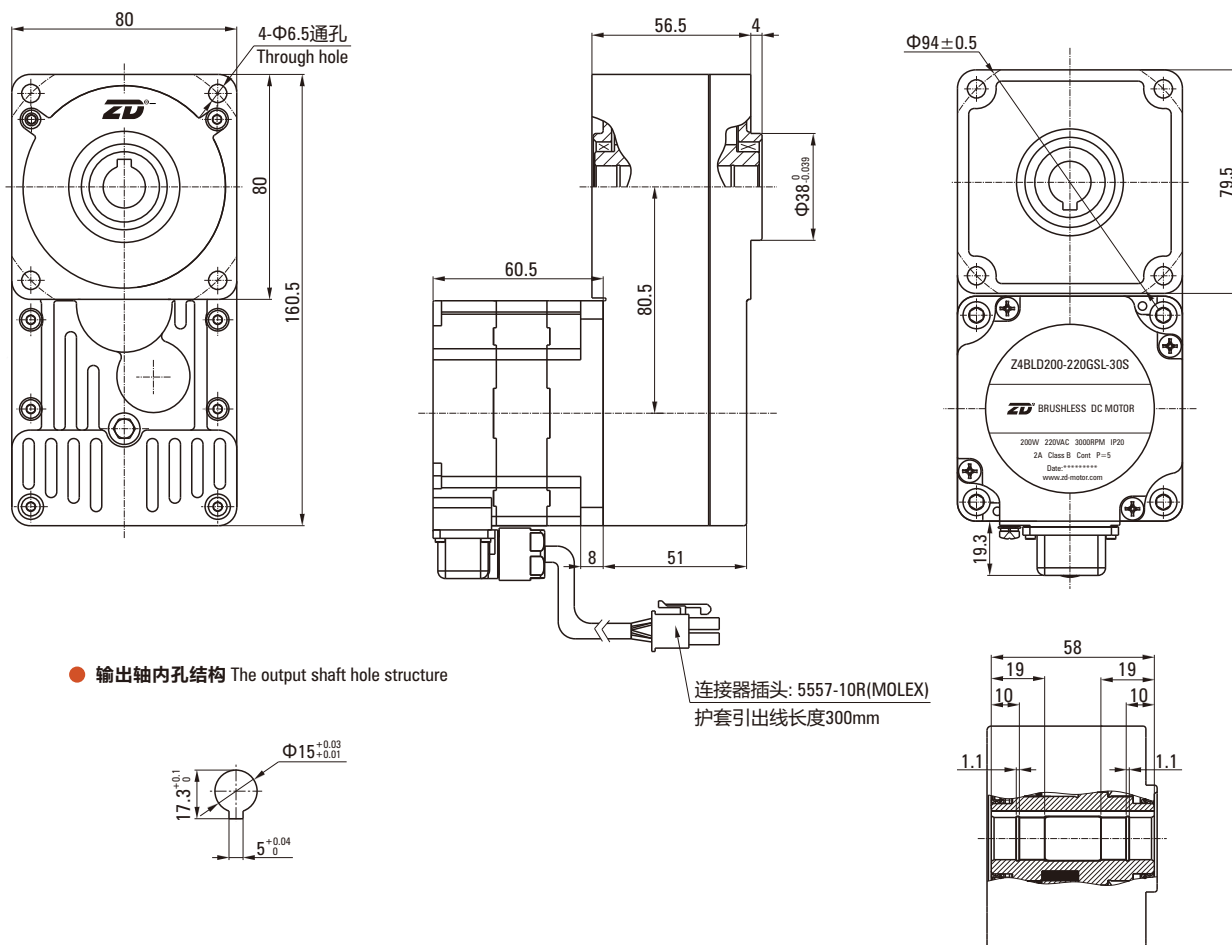
容许力矩 Allowable torque

单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	5	7.5	10	15	20	25	30	40	50
200W	80 ~ 2000r/min时		3.49	5.23	6.97	10.46	13.94	17.43	20.91	23.24	23.24
	3000r/min时		2.32	3.49	4.65	6.97	9.30	11.62	13.94	18.59	23.24
	4000r/min时		1.74	2.61	3.49	5.23	6.97	8.71	10.46	13.94	17.43

注Note：表格中所有旋转方向与电机转向相反。All rotation directions in the table are opposite to motor steering.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



SL系列直流无刷减速电机 (400W)

SL SERIES GEAR MOTOR (400W)

命名 Name

- 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z5BLD400-220GSL-30S/5GU□SL	Z5BLD400-220GSL-30S	5GU□SL	5 ~ 50	67.5

注Note：□——速比数值 Velocity ratio value

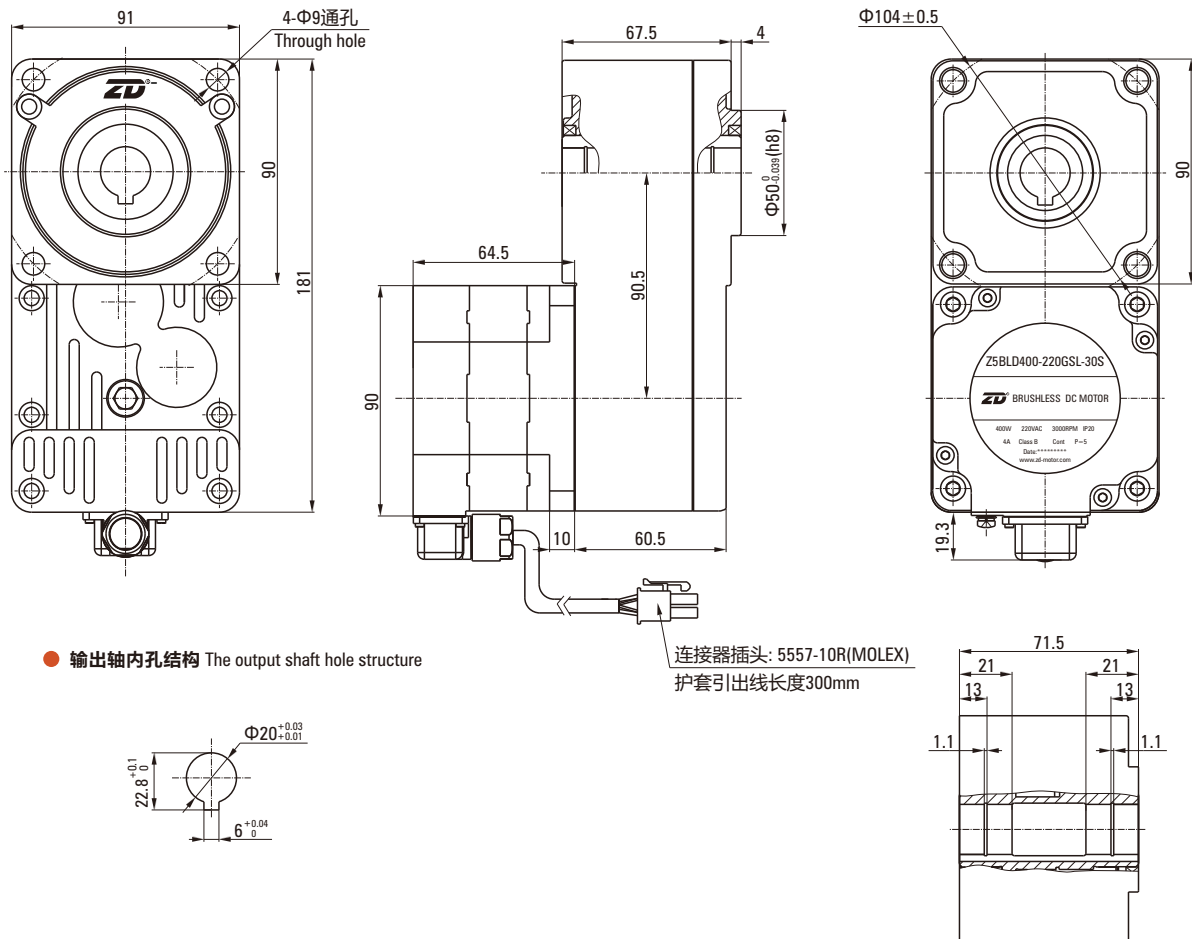
容许力矩 Allowable torque

单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	5	7.5	10	15	20	25	30	40	50
400W	80 ~ 2000r/min时		6.97	10.46	13.94	20.91	27.89	34.86	41.83	46.48	46.48
	3000r/min时		4.65	6.97	9.30	13.94	18.59	23.24	27.89	37.18	46.48
	4000r/min时		3.49	5.23	6.97	10.46	13.94	17.43	20.91	27.89	34.86

注Note：表格中所有旋转方向与电机转向相反。All rotation directions in the table are opposite to motor steering.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



SL系列直流无刷减速电机 (750W)

SL SERIES GEAR MOTOR (750W)

命名 Name

● 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z6BLD750-220GSL-30S/6GU□SL	Z6BLD750-220GSL-30S	6GU□SL	5 ~ 50	85.8

注Note：□——速比数值 Velocity ratio value

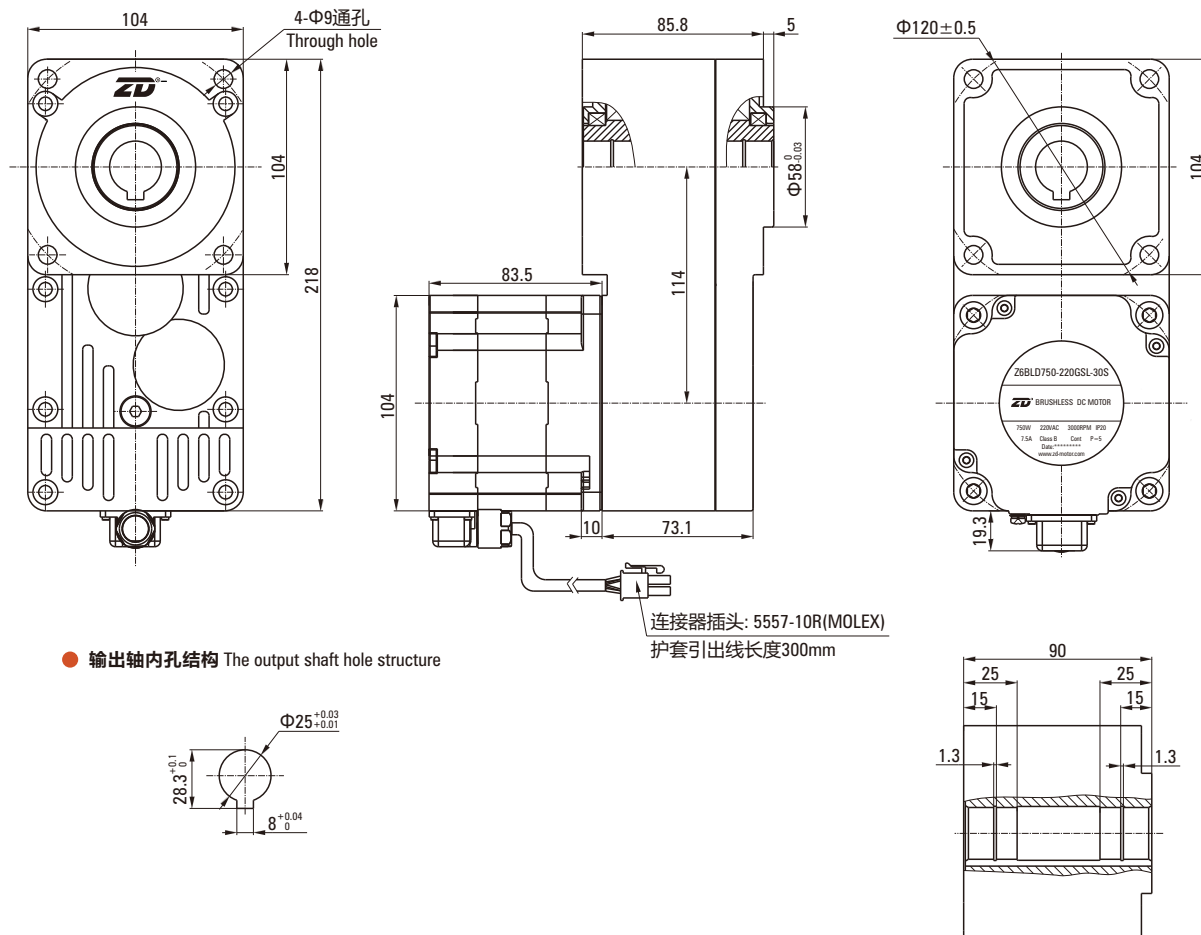
容许力矩 Allowable torque

单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	5	7.5	10	15	20	25	30	40	50
750W	80 ~ 2000r/min时		13.07	19.61	26.14	39.21	52.29	65.36	78.43	87.14	87.14
	3000r/min时		8.71	13.07	17.43	26.14	34.86	43.57	52.29	69.72	87.14
	4000r/min时		6.54	9.80	13.07	19.61	26.14	32.68	39.21	52.29	65.36

注Note：表格中所有旋转方向与电机转向相反。All rotation directions in the table are opposite to motor steering.
(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

外形图 Dimensional drawing



SL系列直流无刷减速电机 (1100W)

SL SERIES GEAR MOTOR (1100W)

命名 Name

- 平行轴减速机 Parallel shaft reducer

型号 Model number	电机型号 Motor type	减速器型号 Type of reducer	减速比 Ratio	L
Z7BLD1100-220GSL-30S/7GU□SL	Z7BLD1100-220GSL-30S	7GU□SL	5 ~ 100	92.5

注Note：□——速比数值 Velocity ratio value

容许力矩 Allowable torque

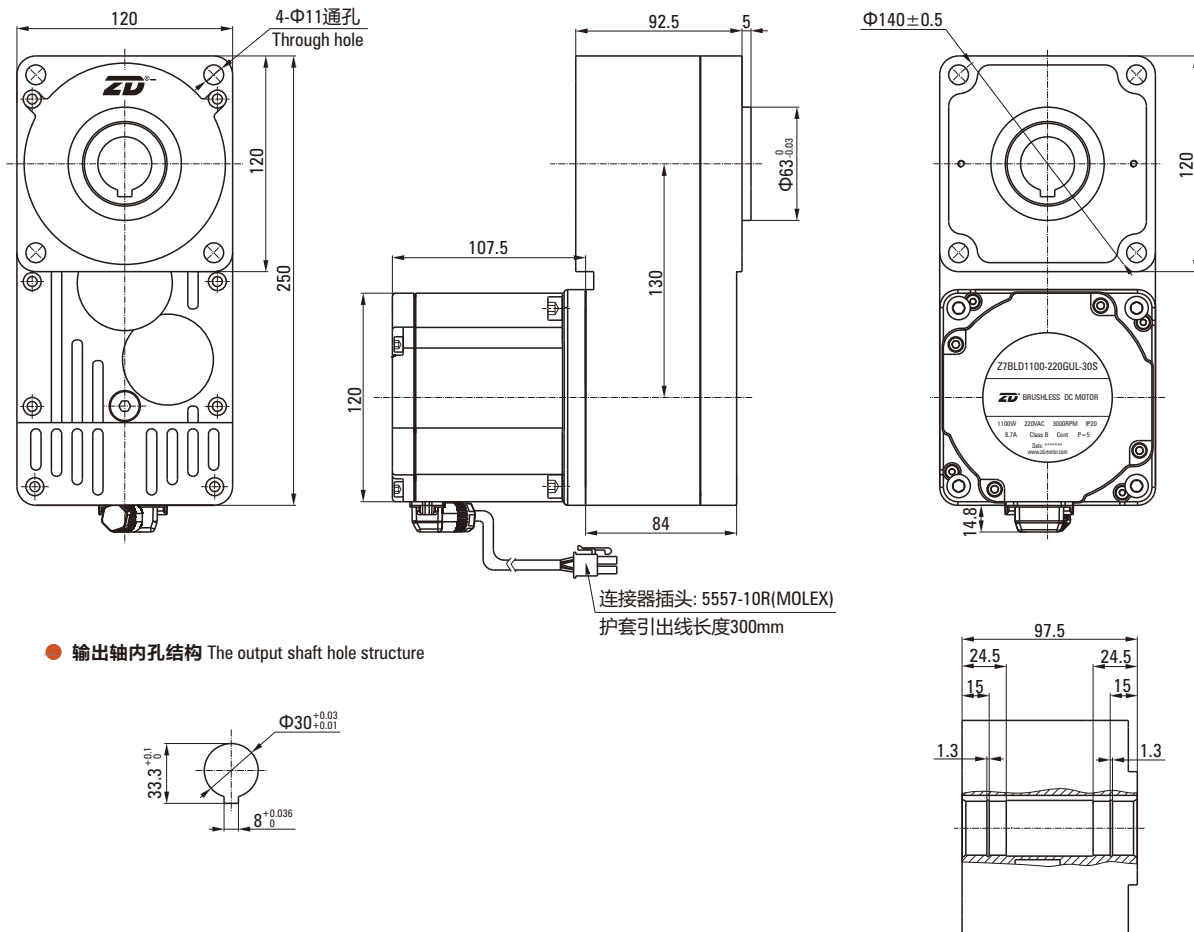
单位 Unit: N·m

输出功率 Output power	电机轴转速 Motor speed	减速比 Ratio	5	10	15	20	25	30	40	50	100
1100W	80 ~ 2000r/min时		19.17	38.34	57.51	76.69	95.86	115.03	153.37	191.72	200.00
	3000r/min时		12.78	25.56	38.34	51.12	63.91	76.69	102.25	127.81	200.00
	4000r/min时		9.59	19.17	28.76	38.34	47.93	57.51	76.69	95.86	191.72

注Note：表格中所有旋转方向与电机转向相反。All rotation directions in the table are opposite to motor steering.

(不同转速及速比下的力矩为ZD标准驱动器下测试所得。The torque under different speed and speed ratio is obtained under the ZD standard)

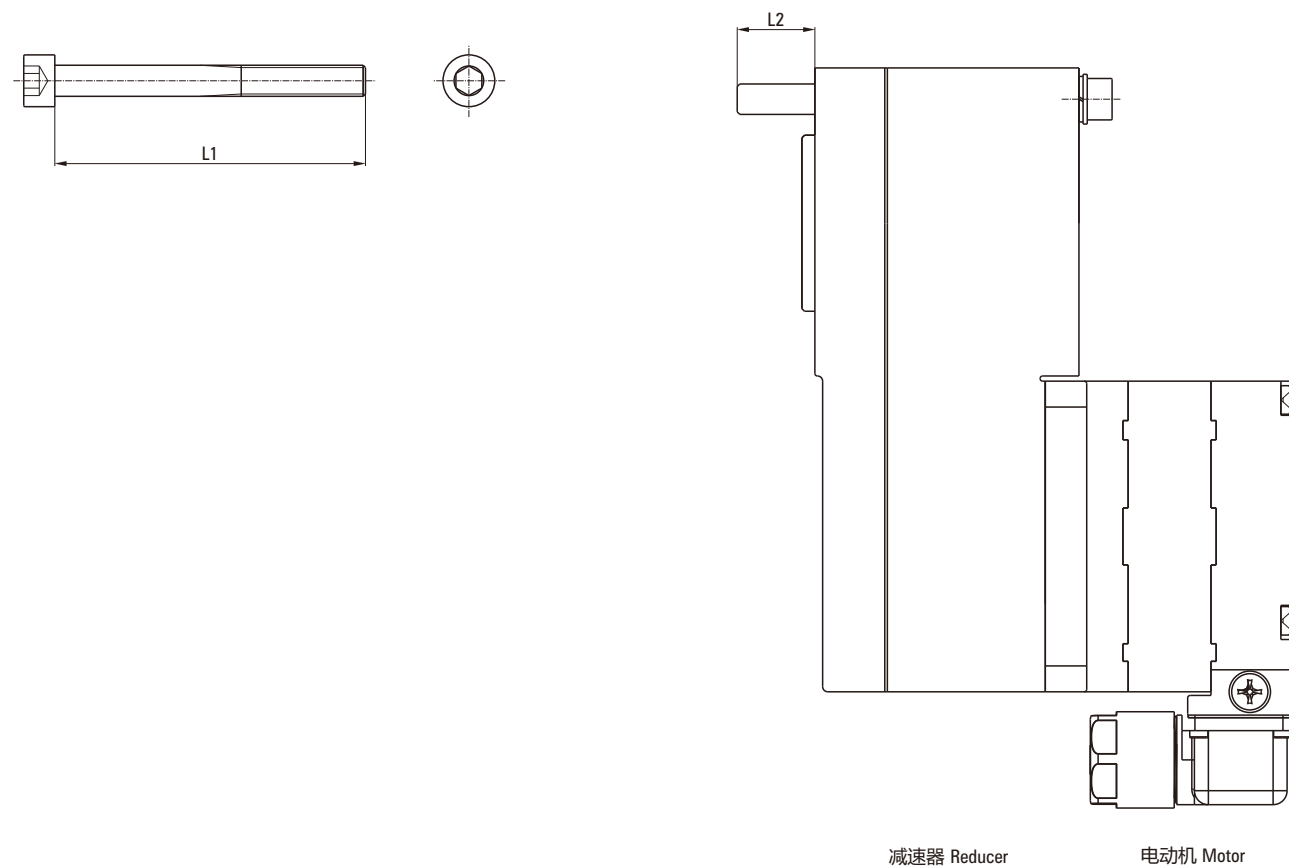
外形图 Dimensional drawing



安装用螺丝尺寸 SCREW DIMENSIONS FOR MOUNTING

L2是将平垫圈、弹簧垫圈安装在螺丝头侧时的尺寸。
L2 is the size of the flat washer and spring washer installed on the screw head side.

■ SL型减速机 SL type reducer



型号 Model	减速比 Reduction ratio	安装用螺钉 Screw for mounting		L2 (mm)
		螺钉规格 Screw specification	L1 (mm)	
2GU□SL	5~50	M5	70	16
4GU□SL	5~50	M6	80	20
5GU□SL	5~50	M8	100	28
6GU□SL	5~50	M8	110	20
7GU□SL	5~100	M10	120	23

注Note：型号的□中为表示减速比的数值。□ Indicates the value of deceleration ratio.

- 安装用螺钉：附带平垫圈、弹簧垫圈各附带4个。Installation screws: With flat washers, spring washers with 4 each.
安装用螺钉材质为合金钢表面镀镍处理。The installation screw material is alloy steel with nickel plating treatment on the surface.

C30系列面板式高压无刷驱动器

C30 SERIES PANEL HIGH VOLTAGE DC BRUSHLESS MOTOR DRIVER

主要特征 Main features

- 1、面板式数字操作，编码器旋钮调节；

2、电机启停、调速便捷设定；

3、速度控制范围80~3000r/min；

4、支持开环、闭环、矢量控制；

5、多功能输入输出接口，支持外部模拟量输入；

6、支持 Modbus RTU 协议485通讯控制；

7、搭载过载、堵转等保护功能，显示器输出报警代码；

8、保护等级IP20；

9、直接连接时，驱动器、电动机之间最长5m；

10、产品种类120W/400W。
1. Panel type digital dispaly,encoder knob adjustment;

2. Convenient setting of motor start and stop & speed regulation;

3. Speed control range: 80~3000r/min;

4. Open loop, close loop, vector control support;

5. Multi-function input & output connector, support external analog input;

6. Support modbus RTU protocol, RS485 communication control;

7. Equipped with overload, locked-rotor and other protection function, display output alarm code;

8. Protection class: IP20;

9. Maximum length between motor and driver is 5m, connect directly;

10. Power level: 120W/400W.

型号阅读方法 Product model

Z	DRV	•	C30	-	120	S2	-	DR
①	②		③		④	⑤		⑥

①	生产厂商——中大力德	Manufacturer——ZD Leader
②	产品类型——驱动器及相关产品	Product type——Driver and related product
③	产品系列——C30系列无刷驱动器	Product series——C30 series bldc driver
④	功率等级——120W	Power level——120W
⑤	电源类型——单相AC200V~240V	Power supply——AC200V~240V single phase
⑥	特征码——D: 带显示；R: 带485通讯	Feature code——D: With display; R: With RS485 communication

驱动器 Driver

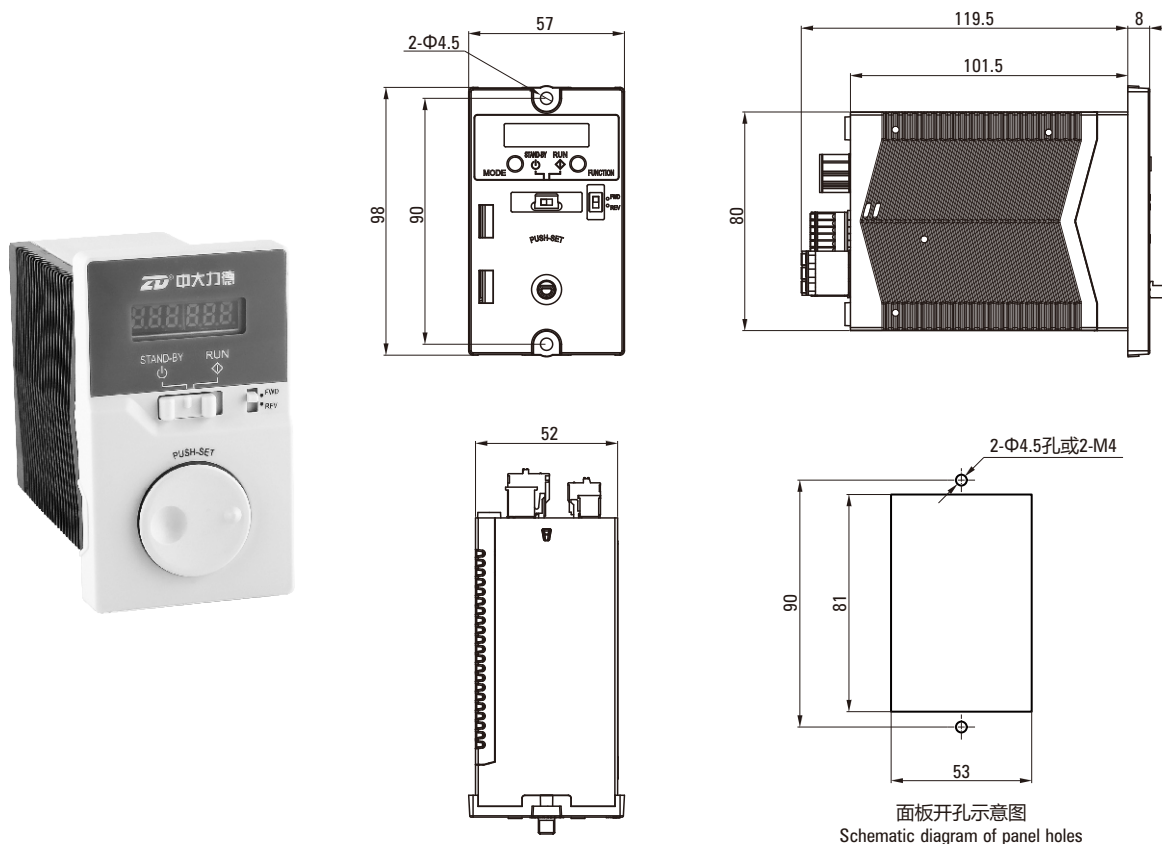
● 120W、400W

单位 Unit: N·m

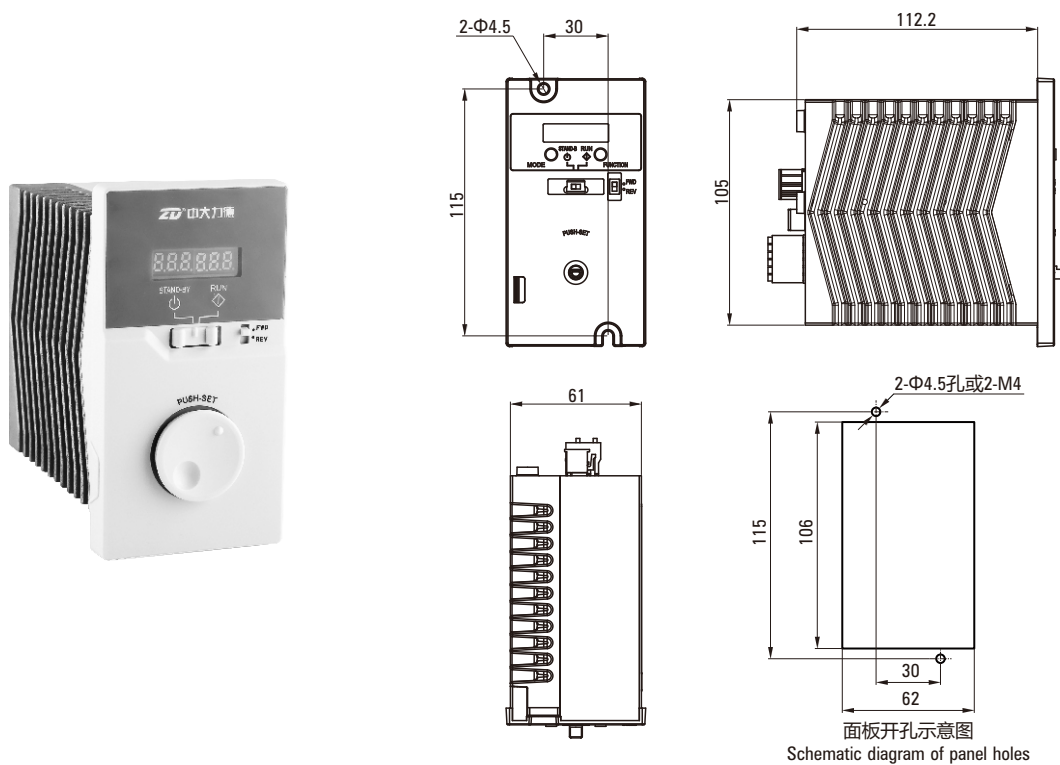
型号 Model	额定电压 Rated voltage	额定电流 Rated current	额定功率 Output power	安装方式 Output power
ZDRV.C30-120S2-DR	AC220V	0.8A	120W	嵌入式安装 Embedded installation
ZDRV.C30-400S2-DR	AC220V	4.5A	400W	嵌入式安装 Embedded installation

C30系列面板式高压无刷驱动器 C30 SERIES PANEL HIGH VOLTAGE DC BRUSHLESS MOTOR DRIVER

■ ZDRV.C30-120S2-DR外观尺寸图 Outline dimension



■ ZDRV.C30-400S2-DR外观尺寸图 Outline dimension



C40系列无感变频驱动器
C40 SERIES NON-INDUCTIVE VARIABLE FREQUENCY DRIVE



①	公司名称缩写 Company name abbreviation	Z: 宁波中大力德智能传动股份有限公司 Ningbo Zhongdalide Intelligent Transmission Co., Ltd
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products
③	产品系列 Product series	C40: 无感驱动器系列 Non-inductive driver series
④	功率等级 Power level	低压 Low pressure: 200:200W 400:400W 800:800W 高压 High pressure: 200:200W 400:400W 750:750W 1100:1100W 1500:1500W 2200:2200W
⑤	电源类型 Power supply type	S2: 单相 Single-phase AC220V/50Hz~60Hz L: DC24V~DC48V
⑥	功能码 Function code	B: 带制动/刹车功能 With braking function C: 带CanOpen通讯功能 With CanOpen communication function R: 带485通讯功能 With 485 communication function



ZDRV.C40-400L-R



ZDRV.C40-400S2-BR-001



ZDRV.C40-400S2-BR
ZDRV.C40-200S2-BR

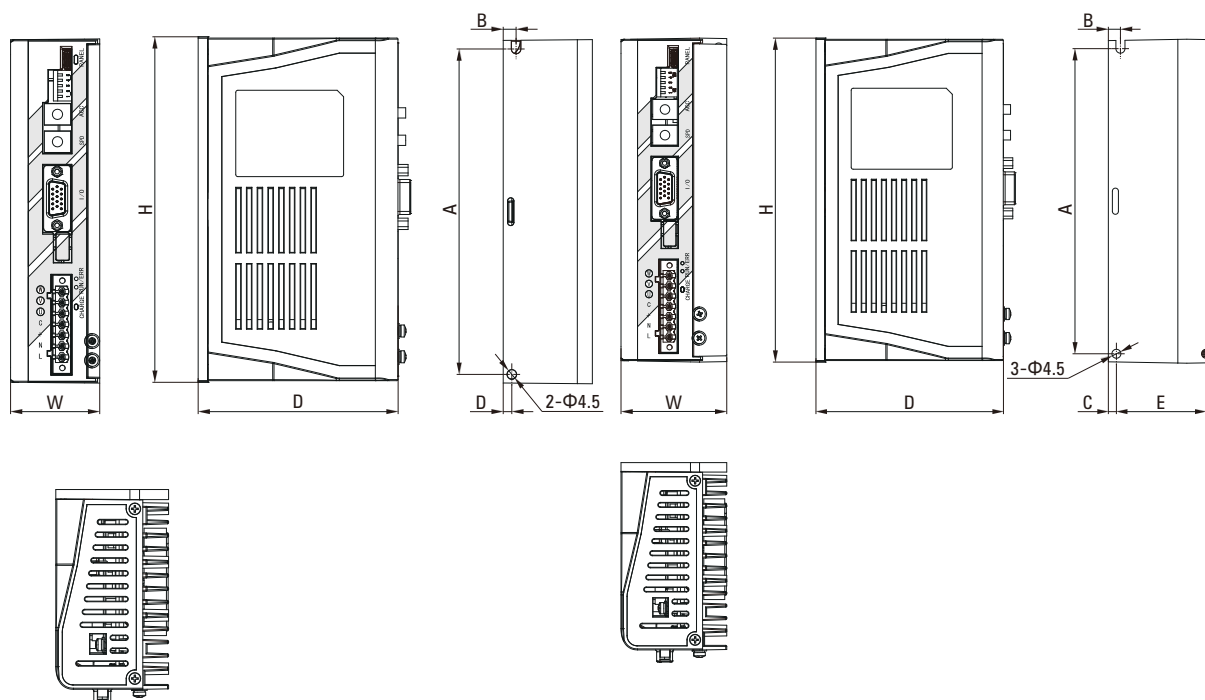


ZDRV.C40-750S2-BR

C40系列无感变频驱动器特点
Features of C40 series non-inductive variable frequency drive

- 只需三根电动力线：从根本上避免电机编码器线或霍尔信号线的连接不可靠、信号被干扰等问题，可有效提升系统的可靠性。
Only three motor power lines are needed: fundamentally avoiding problems such as unreliable connection of motor encoder lines or Hall signal lines and signal interference, which can effectively improve the reliability of the system.
- 无需电机编码器或霍尔传感器：采用高性能无位置传感器方案，实现电机的正弦波FOC矢量控制，节省了编码器或霍尔的线束和端子，有效降低系统的整体成本。
No need for motor encoder or Hall sensor: Adopting a high-performance position sensorless solution, achieving sine wave FOC vector control of the motor, saving the wiring harness and terminals of the encoder or Hall, effectively reducing the overall cost of the system.
- 低速性能好：优秀的速度闭环控制性能，最低转速可达20rpm，调速比可以与带编码器电机驱动器相媲美。
Good low-speed performance: Excellent speed closed-loop control performance, with a minimum speed of up to 20rpm, and a speed ratio comparable to motor drives with encoders.
- 支持大负载带载启动：最大允许150%电机额定负载转矩条件下带载启动；如需更大负载转矩条件下带载启动，可与我司沟通产品定制事宜。
Support heavy load on-load starting: maximum allowable on-load starting at 150% of the rated load torque of the motor; If you need to start with load under higher load torque conditions, you can communicate with our company about product customization matters.
- 支持超长距离电机控制：本产品与电机间三相动力线的最长允许距离为100米如需支持更长距离，可与我司沟通产品定制事宜。
Support for ultra long distance motor control: The maximum allowable distance for the three-phase power line between this product and the motor is 100 meters. If you need to support a longer distance, you can communicate with our company about product customization matters.
- 速度波动小：额定转速条件下速度波动大约为1%优异的稳速性能可以媲美带编码器电机，满足绝大部分应用的需求。
Low speed fluctuation: Under rated speed conditions, the speed fluctuation is about 1%, and the excellent speed stability performance can be comparable to motors with encoders, meeting the needs of the vast majority of applications.
- 可支持超高速电机：支持电机最高转速可达30000rpm，如需支持更高电机转速，可与我司沟通定制。
Can support ultra high speed motors: supports a maximum motor speed of up to 30000 rpm. If you need to support higher motor speeds, you can communicate with our company for customization.
- 适用性强：拥有强大的电机参数自动识别功能。本产品与各个厂商各类无霍尔直流无刷电机、无编码器永磁同步电机均可适配。
Strong applicability: With powerful automatic recognition function for motor parameters, this product can be compatible with various manufacturers of Hall free DC brushless motors and encoder free permanent magnet synchronous motors.
- 具有制动电路，可以快速启停。
Equipped with a braking circuit that can quickly start and stop.

产品尺寸图 Product dimension drawing



型号 Model	外形尺寸(mm) Overall dimensions			安装尺寸 Installation dimensions		
	W	H	D	A	B	C
ZDRV.C40-400S2-BR	41.5	159.5	93	151.5	6	4

型号 Model	外形尺寸(mm) Overall dimensions			安装尺寸 Installation dimensions			
	W	H	D	A	B	D	E
ZDRV.C40-750S2-BR	52.5	159.5	93	151.5	6	4	44.5

输入输出接口 Input/output interface

● ZDRV.C40-400S2-BR

引脚编号 Pin number	引脚名称 Pin name	引脚功能 Pin function
1	AIN+	模拟量输入正 Analog input positive
2	AIN-	模拟量输入负, 和12脚GND短接 Analog input negative, short circuited with 12 pin GND
3	D01	数字量信号输出 Digital signal output
4	DI1	数字量信号输入 Digital signal input
5	DI2	数字量信号输入 Digital signal input
6	485+	485信号正 485 signal positive
7	485-	485信号负 485 signal negative
8	D02	数字量信号输出 Digital signal output
9	COM+	数字量信号输入公共端 Digital signal input common terminal
10	DI3	数字量信号输入 Digital signal input
11	+5V	5V电源输出正 5V power output positive
12	GND	5V电源GND 5V power supply GND
13	COM-	数字量信号输出公共端 Digital signal output common terminal
14	DI4	数字量信号输入 Digital signal input
15	DI5	数字量信号输入 Digital signal input

引脚编号 Pin number	引脚名称 Pin name	引脚功能 Pin function
7	W	电机动力电源输出端 Motor power supply output terminal
6	V	
5	U	
4	B	外接制动电阻输出 External braking resistor output
3	P	
2	N	电源输入 220VAC Power input 220VAC
1	L	

规格 Specifications

型号参数 Model parameters		C40无感变频驱动器 non-inductive variable frequency drive			
		C40-400L-R	C40-200S2-BR-001	C40-400S2-BR-001	C40-750S2-BR
额定输入电压 Rated input voltage		24V/48V	AC220V (±20%)		
输出电流 Output current	额定电流 (rms) Rated current	15A (注1)	1.4A	2.8A	4.3A
	峰值电流 (peak) Peak current	42Ap	4Ap	8Ap	12.2Ap
编码器 Encoder		无 No			
能耗制动 Energy consumption braking		外接制动电阻，制动电压通过软件设置 External braking resistor, braking voltage set through software			
过压报警电压 Overvoltage alarm voltage		DC65V以上 Above	DC390V以上 Above		
欠压报警电压 Under voltage alarm voltage		DC18V以下 Below	DC200V以下 Below		
过载时间 Overload time		2倍过载，最大持续10s 2 times overload, maximum duration of 10 seconds	2倍过载，最大持续10s 2 times overload, maximum duration of 10 seconds		2倍过载， 最大持续15s 2 times overload, maximum duration of 15 seconds
冷却方式 Cooling method		辅助散热、自然冷却 Auxiliary heat dissipation, Free cooling	自然冷却 Free cooling		风冷 Forced air cooling
通用功能 General functions	数字量输入 Digital input	5路DI 5-way DI	4路DI 4-way DI		
	数字量输入功能 Digital input function	120W: 两路DI一路DO，DI1使能，DI2反转，DO故障输出； 120W: Two DI and one DO, DI1 enabled, DI2 reversed, DO fault output; 400W: 正反转、正反转点动、多段速、自有停车、故障复位、电子刹车、外部故障输入、正反转限位； 400W: forward and reverse rotation, forward and reverse jog, multi speed, self parking, fault reset, electronic brake, external fault input, forward and reverse rotation limit;			
	模拟量输入 Analog input	外部模拟电压 (0~10V) External analog voltage	外部模拟电压 (0~10V) External analog voltage		
	模拟量输入功能 Analog input function	模拟量速度控制 Analog speed control	模拟量速度控制 Analog speed control		
	数字量输出 Digital output	2路DO 2-way DO	2路DO 2-way DO		
	保护功能 Protection function	过流、过载、短路、过温、欠压、过压等 Overcurrent, overload, short circuit, overtemperature, undervoltage, overvoltage, etc			
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs			
	蓝牙 Bluetooth	无 No			
总线控制 Bus control	Modbus/RS485	最大支持115.2K波特率， 可使用Modbus RTU协议 与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol	最大支持115.2K波特率，可使用Modbus RTU 协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol		
	CANopen	无 No			
使用环境 Usage environment	工作温度 Working temperature	-25~40℃；40度以上降额使用 Derating usage above 40 degrees Celsius			
	存储温度 Storage temperature	-10℃~70℃			
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation			
	防护等级 Protection level	IP20			
	安装方式 Installation method	垂直或水平安装 Vertical or horizontal installation			
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters			
	气压 Pressure	86kpa~106kpa			

● 注1: 未加辅助散热可到12Arms

Note 1: Without auxiliary heat dissipation, it can reach 12Arms



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