



鑫宝达电机
SINBAD MOTOR



高端空心杯电机专业制造商

诚信·创新·拼搏·共赢

产品手册 SINBAD MOTOR
PRODUCT MANUAL

鑫宝达电机, 智动世界, 共赢未来!
SINBAD MOTOR, INTELLIGENT WORLD, WIN FUTURE TOGETHER!



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ABOUT US

关于我们

鑫宝达电机(股份)有限公司成立于2011年6月,是一家专业从事空心杯电机研发、生产、销售为一体的国家高新技术企业。

准确的市场定位、高效而专业的研发团队,优质的产品和服务使本公司自创建以来一直高速发展。公司拥有完整、科学、严谨的质量管理体系,成功通过了ISO9001:2008, ROHS, CE, SGS等多项认证,并拥有国内先进的生产和检测设备,年产各类型电机超过1000万台,产品远销欧美和东南亚等发达国家和地区。

研制的各类型电机广泛应用于机器人、无人机、医疗器械、汽车、信息通讯、航空模型、电动工具、美容仪器、精密仪器和军工等众多高科技领域!在未来的几年,鑫宝达将继续努力立志成为高端空心杯电机行业领军企业,做中国的冯哈伯、马克森,立金牌品质,创百年辉煌!

Sinbad Motor (Stock) Co., LTD., founded in June 2011, is a national high-tech enterprise specializing in the research, development, production and sales of coreless motor.

Accurate market positioning, efficient and professional R & D team, quality products and services make the company has been rapid development since its establishment. The company has a complete, scientific and rigorous quality management system, successfully passed ISO9001:2008, ROHS, CE, SGS and other certifications, and has domestic advanced production and testing equipment, annual output of various types of motor more than 10 million units, products are exported to Europe, The United States and Southeast Asia and other developed countries and regions.

Various types of motors developed are widely used in many high-tech fields such as robots, unmanned aerial vehicles, medical instruments, automobiles, information and communication, aviation models, power tools, beauty instruments, precision instruments and military industry. In the next few years, Sinbad will continue to strive to become a leading enterprise in the high-end hollow cup motor industry, and become the Faulhaber and Maxon of China, with a gold medal quality and a hundred-year glory.



办公大楼 Office Building



公司前台 Company Reception Desk



综合办公室 Company Office



生产车间 Production Workshop



公司管理层合照 Group photo of company management



一楼展厅 Exhibition hall on the first floor



六楼会议室 Conference room on the sixth floor



台球娱乐室 Billiards Entertainment Room



乒乓球娱乐室 Table Tennis Room



独立抽烟区 Separate Smoking Area



公司团建活动 Team Building Activities

企业发展历程

Development path

2011

2011年06月 公司创立, 专业设计、研发高端空心杯电机

In June 2011, the company was founded, it mainly engaged in the design , research and development of high-end coreless motors.

2013

2013年04月 鑫宝达电机有限公司正式注册成立, 专业研发、生产、销售高端空心杯电机

In April 2013, Shenzhen Sinbad Motor Co., Ltd. was formally registered and established, specializing in R&D, production and sales of high-end hcoreless motors.

2015

2015年06月 鑫宝达通过了ISO9001质量管理体系认证

In June 2015, Sinbad passed the ISO9001 quality management system certification.



2015

2015年11月 产品通过环保SGS认证/Rosh认证

In November 2015, the products passed environmental protection SGS certification/Rosh certification.



2015

2015年12月 企业申请通过8项实用新型专利

In December 2015, the company applied for 8 utility model patents.

2016

2016年05月 鑫宝达获得实用新型专利6项

In May 2016, Sinbad got 6 items of utility model patents.

2016

2016年08月 鑫宝达新四版挂牌成功

In August 2016, Sinbad has been listed National Equities Exchange.

2017

2017年10月 鑫宝达荣获国家高新技术企业称号

In October 2017, Sinbad won the national of National High-tech Enterprise, the certificate was officially issued.

2018

2018年02月 鑫宝达公司正式入驻华南城五号广场国际大厦A座500平方米甲级写字楼

In February 2018, Sinbad Company formally entered into Grade A Office Building which located in Rm 1818, Tower A, No.5 Square, Southern China City.

2019

2019年8月 鑫宝达东莞分公司成立

In August 2019, Sinbad Dongguan Branch was established.

企业资质

Qualification



质量管理体系认证证书
Quality management system certification



SGS认证
SGS certification



新四板挂牌
Listed on new forth board



国家高新技术企业证书
National High-tech Enterprise Certificate



CAC中煤协认证
Coal Association Certification in CAC



阿里巴巴外贸平台入驻
Settled in Alibaba's foreign trade platform



国家知识产权战略

鑫宝达获得实用新型专利6项

SINBAD HAS ACQUIRED THE 6 CERTIFICATES OF UTILITY MODEL PATENTS



主要生产设备

Main Production Equipments

鑫宝达拥有国内先进的生产和检测设备,有伺服压机、油压整型机、自动点胶机、自动切削式平衡机、全自动绕线机、老化测试架、电机寿命测试台、二次元光学测量仪、盐雾测试机、可编程恒温恒湿试验箱、噪音测试房等。

Sinbad has domestic advanced production and testing equipments, including servo press, hydraulic shaping machine, automatic dispensing machine, automatic cutting balancing machine, automatic winding machine, aging test stand, motor life test bench, two Dimensional optical measuring instrument, salt spray test machine, programmable constant temperature and humidity test chamber, noise test room, etc.



半自动绕线机
Semi-automatic winding machine



全自动绕线机
Automatic winding machine



激光打标机
Laser marking machine



电烤箱
Electric oven



可程式恒温恒湿试验箱
Programmable constant temperature
and humidity test chamber



自动点胶机
Automatic dispenser



双轴整圆机
Double shaft round machine



大功率碰焊机
High-power butt welding machine



二次元光学测量仪
Two-dimensional optical measuring instrument



激光点焊机
Laser Spot Welder



高精度车床
High precision lathe



盐雾测试机
Salt spray test machine



噪音测试房
Noise test room



老化测试架
Aging test frame

应用领域

Application field

公司产品广泛应用于机器人、无人机、医疗器械、汽车、信息通讯、航空模型、电动工具、美容仪器、精密仪器和军工等众多高科技领域！

Our products are widely used in many high-tech fields such as robots, drones, medical equipment, automobiles, information and communications, aviation models, power tools, beauty equipment, precision instruments and military industry!

机器人

Robot



假肢/工业机器人/服务机器人

Artificial limbs/Industrial robot / Service robot

航空模型设备

Aviation model equipment



宇航探测器/高空照相机/农用无人机

Aerospace probe/High altitude camera/Agricultural drone

军工用品

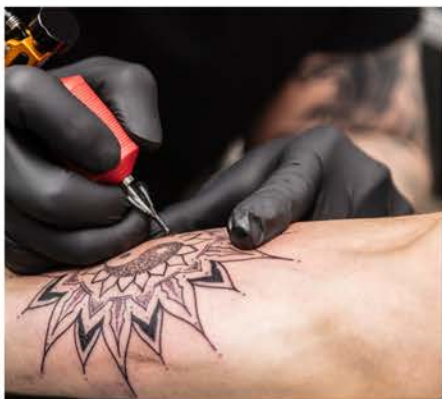
Military supplies



坦克/军用飞机/火箭
Tank/Military Aircraft/Rocket

美容、医疗

Beauty, medical equipment



纹身笔/牙科设备/磁性共振仪
Tattoo pen/Dental equipment/Magnetic resonance instrument

工业机械和设备

Industrial machinery and equipment



绕线机/工业锯床/机械臂/自动称重系统
Winding machine/Industrial sawing machine/Mechanical arm/Automatic weighing system

办公、安全和通讯

Office, security and communication



读卡机/数据处理设备/复印机和打印机/监控摄像头/基站天线

Card reader/Data processing equipment/Copiers and printers/Surveillance camera/Base station antenna

仪器

Instrument

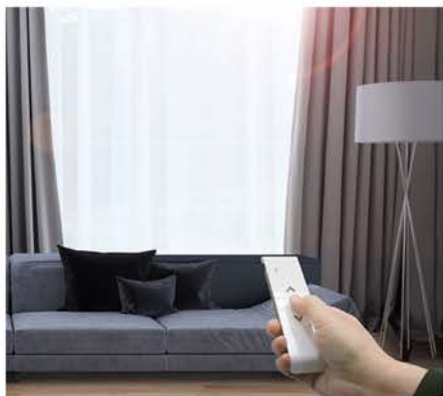


显微镜/3D扫描仪/全站仪/测量设备/精密天平

Microscope/3D scanner/Total Station/Measuring equipment/Precision balance

智能家居

Home automation

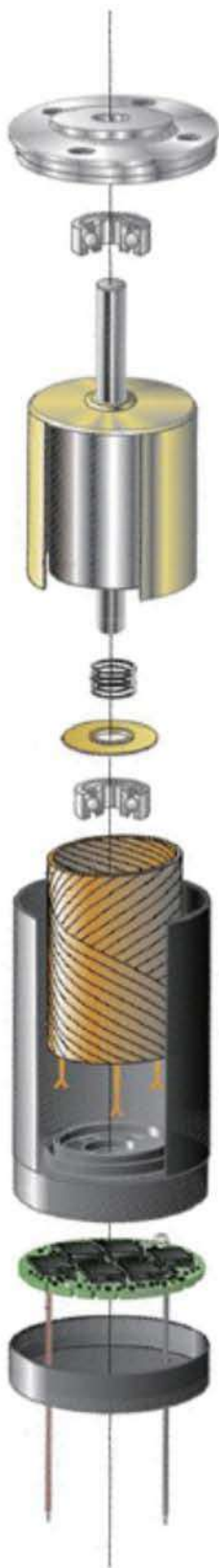


扫地机/智能窗帘/智能门锁/智能电动沙发

Sweeper/Intelligent curtain/Intelligent door lock/Intelligent electric sofa

电机原理简介

The Principle Of Motor



电机的能量转换

Motor Energy Conversion

电机的功能就是将电能转化成为机械能, 为机械的运转产生推动力。

The function of the motor is to convert electrical energy into mechanical energy, which creates a driving force for the operation of the machine.

电机的耗损

Motor Wastage

电机在能量转换过程中会产生能量损耗。

例如: 摩擦损耗、绕组发热损耗、铁磁损耗。

*空心杯电机不产生铁磁损耗

There will be power losses during the power conversion process.
For example: friction losses, power losses of winding, iron losses.

*Iron losses do not occur in the coreless motor

电机的机电常数

Mechanical And Electrical Constant Of The Motor

电机的磁路和绕组一旦确定下来, 其相应的机电常数也就确定了。

转速常数 K_n : 指电机转速 n 与线圈感应电势 E 之间的关系, $K_n = n/E$.

转矩常数 K_t : 指电机机械转矩 T 与电流 I 之间的关系, $K_t = T/I$.

K_n 与 K_t 的关系: $K_n = 1000 \times 60 / (2\pi \times K_t)$, 转矩单位: mNm.

Electromechanical motor constant is defined by the geometric arrangement of the magnetic circuit and winding.

Speed constant K_n : represents the relationship between motor speed n and voltage induced in the winding E , $K_n = n/E$.

Torque constant K_t : represents the relationship between mechanical torque T and current I , $K_t = T/I$.

Relationship between K_n and K_t : $K_n = 1000 \times 60 / (2\pi \times K_t)$ Unit of torque: mNm.

电机的特性曲线

Characteristic Curve Of Motor

电机曲线由以下4个关键参数构成：

空载转速(N_0): 指电机在额定电压下不连接任何负载时, 在输出轴端测得的转速, 单位为RPM (转每分钟)。

空载电流(I_0): 指电机在额定电压下不连接任何负载时, 在电机两端子上测得的输入电流, 单位A(安培)。

堵转转矩(T_s): 指电机在额定电压下, 因加载引致电机停止旋转时, 测得的最大转矩, 单位mNm(毫牛米)。

堵转电流(I_s): 指电机在额定电压下, 因加载引致电机停止旋转时, 测得的电流, 单位A(安培)。

*建议您不要对电机进行堵转操作, 因为此操作有可能导致电机“退磁”甚至造成烧损

The characteristic curve is composed of the following 4 key parameters:

No-load speed (N_0): It refers to the speed measured at the output shaft end when the motor is not connected to any load under the rated voltage, and the unit is RPM (revolutions per minute).

No-load current (I_0): It refers to the input current measured at the two terminals of the motor when the motor is not connected to any load at the rated voltage, and the unit is A (ampere).

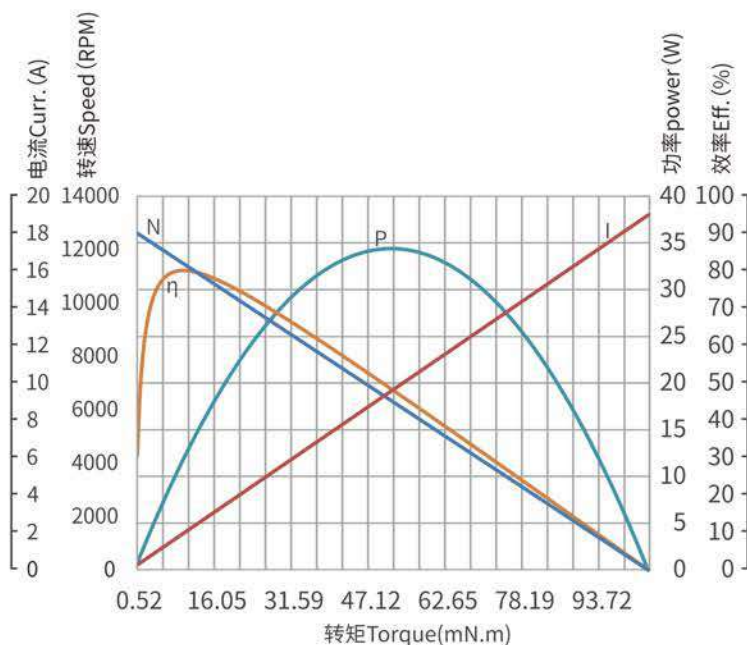
Stall torque(T_s): The maximum torque measured by the motor at rated voltage due to the load causing the motor to stop rotating, in g.cm(g.cm).

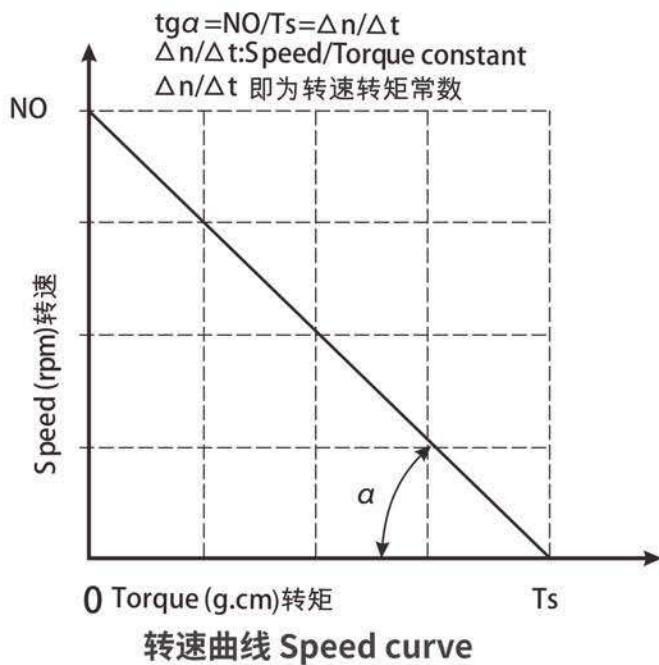
Stalled current (I_s): This refers to the current measured in A (ampere) when the motor is stopped at the rated voltage due to the load.

*It is recommended that you do not perform a stall operation on the motor, as this operation may cause the motor to "demagnetize" or even cause damage.

一般情况, 电机的性能曲线以输出转矩为横坐标, 转速、电流、效率、输出功率为纵坐标, 描绘出来的曲线相应称为: 转速曲线N、电流曲线I、效率曲线 η 、输出功率曲线P。

In general, the performance curve of the motor takes the output torque as the abscissa, and the speed, current, efficiency, and output power as the ordinate. correspondingly called: speed curve N, current curve I, efficiency curve η , output power curve P.



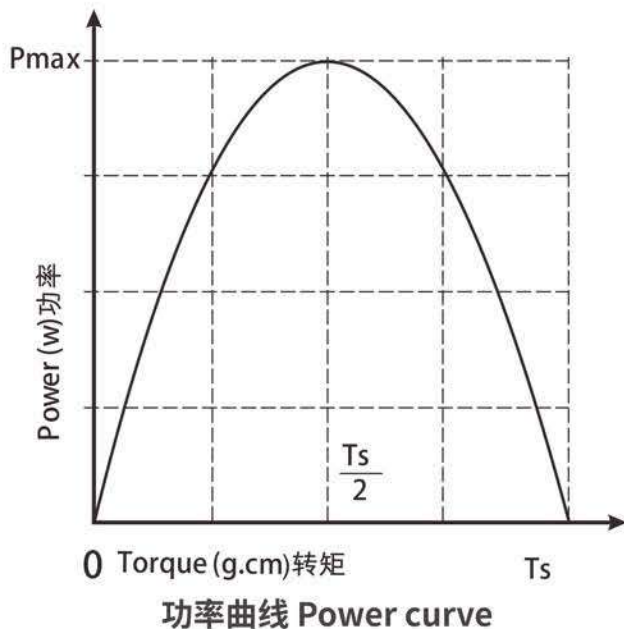
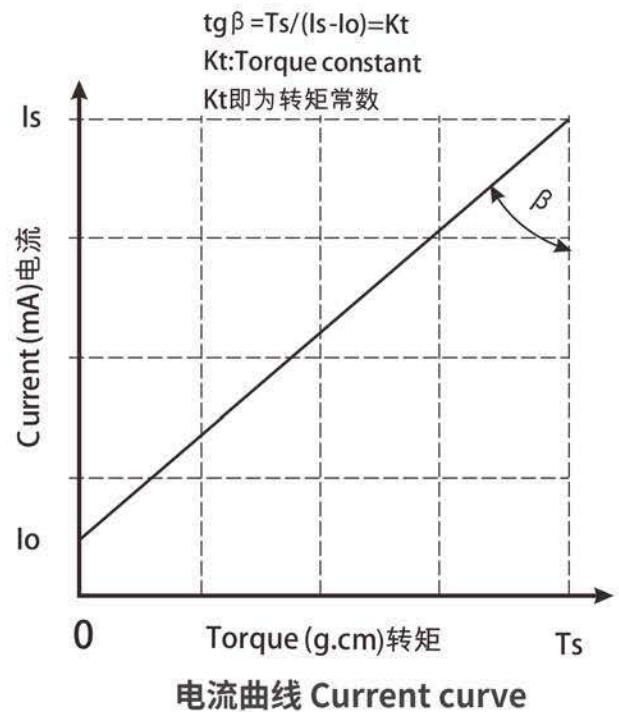


1. 转速曲线:是连接空载转速 N_0 点及堵转转矩 T_s 点的曲线,其标示出电机在不同负载情况下的速度,由图可知其随负载的增加呈线性关系下降。

Speed curve: It is the curve connecting the no-load speed N_0 point and the locked-rotor torque T_s point. It marks the speed of the motor under different load conditions. It can be seen from the graph that it decreases in a linear relationship with the increase of load.

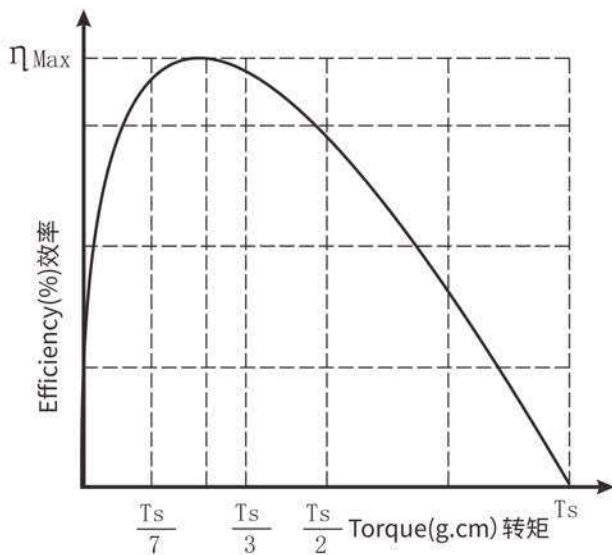
2. 电流曲线:是连接空载电流 I_0 点及堵转电流 I_s 点的曲线,其标示出电机在不同负载情况下的电流量,由图可知其随负载的增加呈线性关系上升。

Current curve: It is the curve connecting the no-load current I_0 point and the locked-rotor current I_s point. It marks the current of the motor under different load conditions. It can be seen from the figure that it rises in a linear relationship with the increase of the load.



3. 输出功率曲线:用以表示电机的输出功率,并可用以下公式计算: $P = (\text{速度} \times \text{转矩}) \times 1.026 \times 10$ (速度单位rpm, 转矩单位g.cm, 输出功率单位W), 由图可知, 功率曲线为关于 $(T_s/2)$ 的抛物线。

Output power curve: used to express the output power of the motor, and can be calculated with the following formula: $P = (\text{speed} \times \text{torque}) \times 1.026 \times 10$ (speed unit rpm, torque unit g.cm, output power unit W), by The figure shows that the power curve is a parabola about $(T_s/2)$.



效率曲线 Efficiency curve

4.效率曲线:用以表示电机的效率,可用以下公式计算:
 $\text{Eff}(\%) = (\text{输出功率} / (\text{电压} \times \text{电流})) \times 100\%$, 一般情况下最大效率点位于 $(T_s/7)$ 到 $(T_s/3)$ 的区域, 设计合理的电机的最大效率点是不可能与最大功率点重合的。

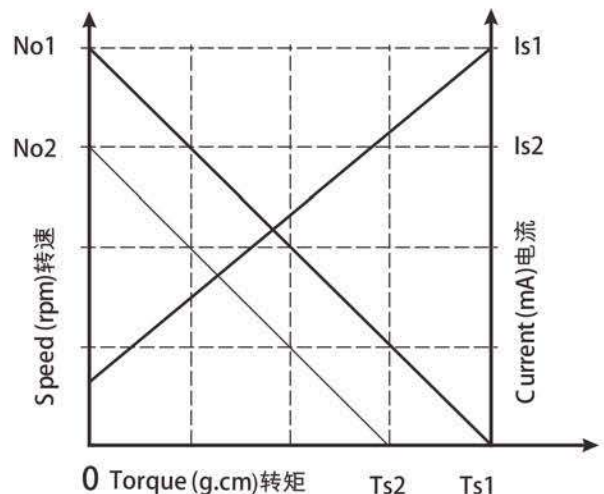
Efficiency curve: used to express the efficiency of the motor, it can be calculated with the following formula:
 $\text{Eff}(\%) = (\text{output power} / (\text{voltage} \times \text{current})) \times 100\%$, under normal circumstances, the maximum efficiency point is between $(T_s/7)$ to $(T_s/3)$ In the area of $/3)$, the maximum efficiency point of a reasonably designed motor cannot coincide with the maximum power point.

影响电机性能的主要因素

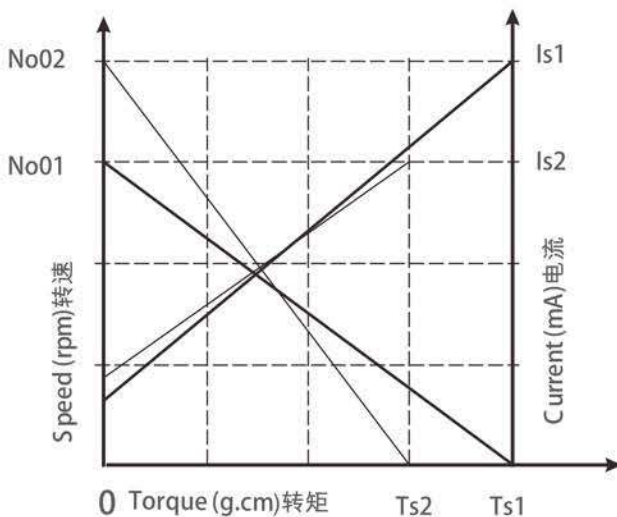
The Main Factors Affecting Performance Of The Motor

1.输入电压:输入电压降低会令 N_0 、 I_s 、 T_s 降低。电压的调节请不要超出给定的规格范围。

Input Voltage: when the input voltage decreases, N_0 , I_s , and T_s will decrease. Please do not adjust the voltage beyond the given specification.



电压降低 Voltage Reduce



温度升高 Temperature Rise

2. 温度: 环境温度或电机温度的上升将令 N_0 增大, I_s 及 T_s 降低。

*电机温度过高可能会对电机产生退磁作用甚至造成烧毁。

Temperature: The rise of ambient temperature or motor temperature will increase N_0 and decrease I_s and T_s .

*If the temperature of the motor is too high, it may demagnetize the motor and even burn it.

工作寿命

Working Life

由于多种因素的影响,很难确定一个通用状态来衡量电机的寿命,不能忽视的如下因素有:

1. **电气负载:**大电流会加快电气损耗。因此,我们建议您在选择电机时要留有一定的余地。
2. **转速:**转速过高会加大机械磨损。
3. **工作状态:**频繁起停、正反转会缩短寿命。
4. **环境因素:**温度、湿度、振动及安装方式等。

A general statement about service life cannot be made due to many influencing factors.

We must consider the following factors:

1. **Electrical loading:** high current will speed up the electrical wear of the motor. Therefore, it is recommended to select a motor with a broader Margin. We would be happy to give you advice.
2. **Speed:** the higher the speed, the greater the mechanical wear.
3. **Type of operation:** extreme start/stop, repeatedly clockwise and anti-clockwise rotation will reduce service life
4. **Environmental factors:** temperature, humidity, vibration and type of installation etc.

产品选型所需考虑的条件

Requirements For Selection Of Products

在选择适配于您产品的电机之前,需要考虑以下条件:

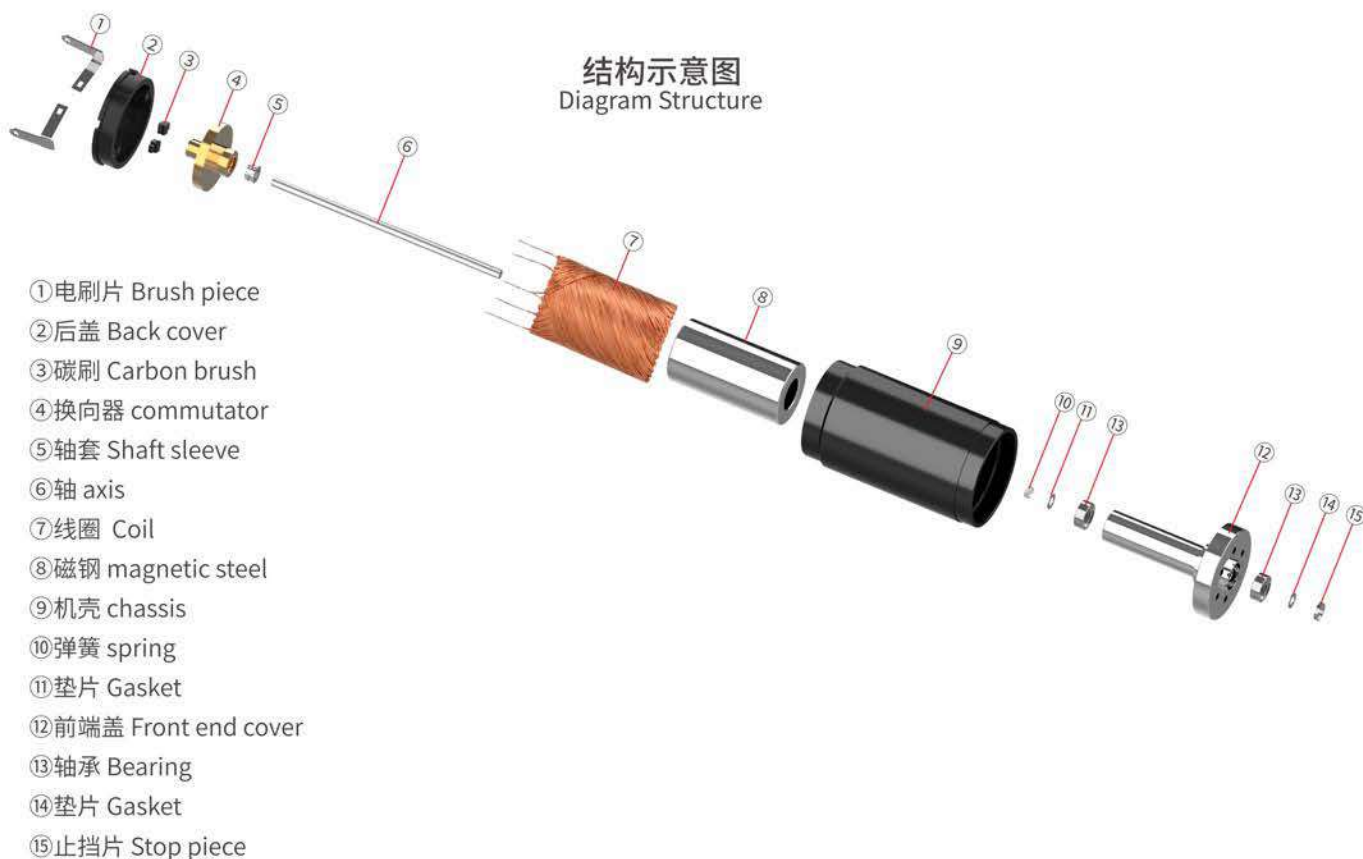
1. **规格尺寸:**制成电机的可允许空间尺寸。
2. **额定参数:**负荷的大小,额定负荷下的转速、电流、转向等。
3. **输出要求:**恒定或变动负荷、恒定或变动速度、轴/驱动系统(装备齿轮、风叶等),起动和停转条件、顺时针或逆时针旋转等。
4. **电源:**电池(瓶)供电、整流电源、PWM电源等。
5. **工作环境:**运转温度、湿度、雨水/灰尘/沙/盐环境、震动(如安装于移动交通工具上)、可听噪音、电磁干扰、安全及其他保护要求。
6. **工作条件:**连续或间歇工作、应用产品的预期寿命。

In motor selection, please follow the following criteria for evaluation:

1. **Size/Space:** Available space for the motor.
2. **Rated parameters:** Rated load, rated speed, rated current, direction of rotation etc.
3. **Output requirement:** Stable or varying loading, stable or varying speed, shaft and driving system (gearbox, propeller etc.), start and stop condition, clockwise or anti-clockwise rotation.
4. **Power source:** Battery, AC Supply, PWM etc.
5. **Working environment:** Operating temperature, humidity, rain/dust/sand/degree of saltiness, vibration(if installed in moving vehicle), audible noise, Electromagnetic interference, safety and other protection requirement.
6. **Working condition:** Continuous or cycle, expected product life.

永磁直流空心杯电机产品介绍

Permanent Magnet Coreless DC Motor Introduction



电机特性和优点

Motor Characteristics And Benefits

- *杯形绕组/Cylindrical winding
- *无齿槽效应/No magnet cogging
- *转动惯量小/Low mass inertia
- *响应速度快/Rapid reaction
- *低启动电压/Low starting voltage
- *平滑的调速性能/Speed can be adjusted smoothly
- *良好的伺服特性/Good servo feature
- *低电感/Low inductance
- *低电磁干扰/Low electromagnetic interference
- *无铁损、高效率、高寿命/No iron loss, high efficiency, long motor life
- *可短时过载/Able to bear high overload in short period of time
- *体积小、结构紧凑、重量轻/Small dimension, compact and light in weight

空心杯直流有刷电机

Coreless Brushed DC Motors

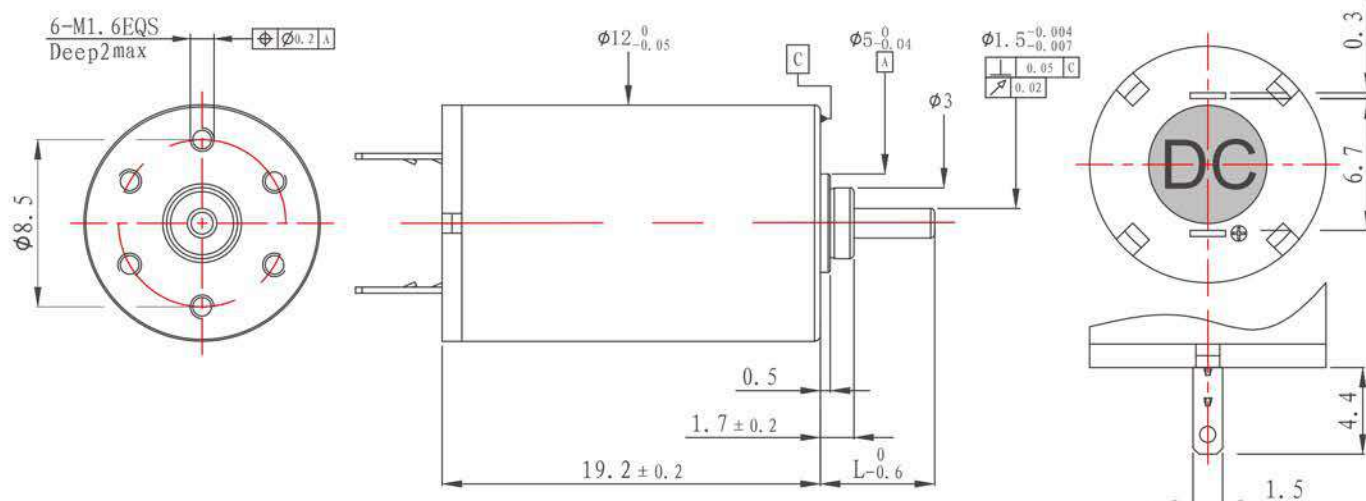


深圳市鑫宝达电机有限公司

SHENZHEN SINBAD MOTOR CO., LTD

Φ12*L19mm, 稀有金属刷直流电机, 1-1.8W

Φ12*L19mm, Precious Metal Brushed DC Motor, 1-1.8W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定值 At Nominal

1	额定电压	Nominal voltage	V/DC	4.5	12	15	24
2	额定转速	Nominal speed	rpm	10800	9120	10800	12000
3	额定电流	Nominal current	A	0.4	0.2	0.2	0.2
4	额定转矩	Nominal torque	mNm	1.4	1.5	1.8	2.7

空载点 Free Load

5	空载转速	No-load speed	rpm	15000	17000	17000	16000
6	空载电流	No-load current	mA	45.0	30.0	20.0	12.0

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	70.1	72.7	70.4	74.0
8	转速	Speed	rpm	12900	14790	14620	14080
9	电流	Current	A	0.3	0.2	0.1	0.1
10	转矩	Torque	mNm	0.6	0.5	0.5	0.4

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	1.8	1.7	1.7	1.5
12	转速	Speed	rpm	7500	8500	8500	8000
13	电流	Current	A	0.9	0.6	0.3	0.2
14	转矩	Torque	mNm	2.3	1.9	1.9	1.8

堵转点 At Stall

15	堵转电流	Stall current	A	1.70	1.15	0.58	0.41
16	堵转转矩	Stall torque	mNm	4.6	3.7	3.7	3.5

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	2.65	5.22	20.69	36.59
18	电机感抗	Terminal inductance	mH	0.110	0.250	0.480	0.600
19	转矩常数	Torque constant	mNm/A	2.79	3.30	6.57	8.78
20	转速常数	Speed constant	rpm/V	3333.3	2833.3	1416.7	1066.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	3249.8	4583.2	4582.2	4534.3
22	机械时间常数	Mechanical time constant	ms	4.9	8.0	8.0	7.1
23	转子惯量	Rotor inertia	gcm ²	0.14	0.17	0.17	0.15
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	11.5			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+ Vcc
- GND

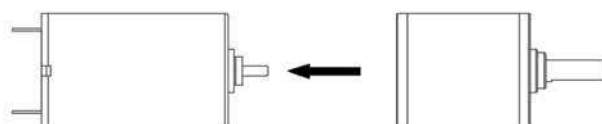
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.6N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 5N
· 最大允许安装力 (静态) Max press fit force (static): 15N
滑动轴承径向间隙 Radial play: ≤0.012mm
环境温度范围 Ambient temperature range: -20~+65°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 120°C
表中数据均为标称值 Values listed in the table are nominal

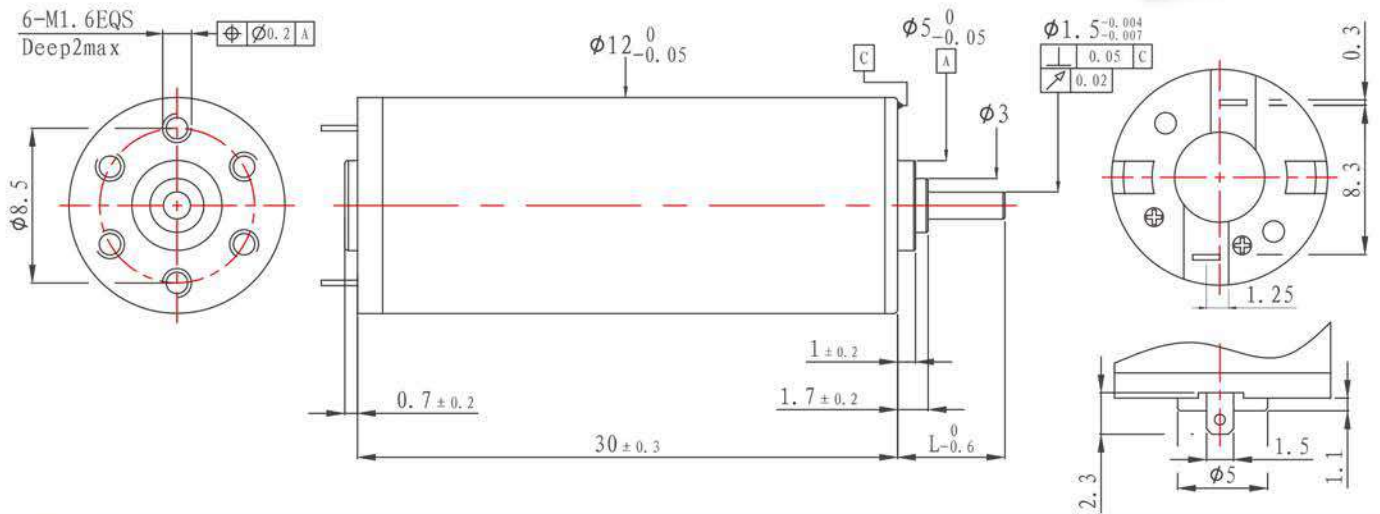
组合体系 System

适配部件 Optional Parts

· 行星轮减速箱 Planetary gearbox



Φ12*L30mm, 稀有金属刷直流电机, 1-3W Φ12*L30mm, Precious Metal Brushed DC Motor, 1-3W



电机参数 Motor Data				1230	1230	1230	1230
电机型号 Motor Model				1230	1230	1230	1230
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	6	12	15	24
2	额定转速	Nominal speed	rpm	10800	9120	10800	12000
3	额定电流	Nominal current	A	0.4	0.2	0.2	0.2
4	额定转矩	Nominal torque	mNm	1.4	1.5	1.8	2.7
空载点 Free Load							
5	空载转速	No-load speed	rpm	13500	11400	13500	15000
6	空载电流	No-load current	mA	22.0	16.0	15.0	8.0
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	78.5	77.7	79.9	80.0
8	转速	Speed	rpm	12150	10203	12218	13575
9	电流	Current	A	0.189	0.092	0.089	0.090
10	转矩	Torque	mNm	0.7	0.8	0.9	1.3
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	2.5	2.3	3.3	5.3
12	转速	Speed	rpm	6750	5700	6750	7500
13	电流	Current	A	0.9	0.4	0.5	0.5
14	转矩	Torque	mNm	3.5	3.8	4.6	6.7
堵转点 At Stall							
15	堵转电流	Stall current	A	1.69	0.78	0.89	0.90
16	堵转转矩	Stall torque	mNm	7.0	7.6	9.2	13.4
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	3.55	15.38	16.85	26.67
18	电机感抗	Terminal inductance	mH	0.25	0.59	0.65	0.98
19	转矩常数	Torque constant	mNm/A	4.19	9.91	10.49	15.11
20	转速常数	Speed constant	rpm/V	2250.0	950.0	900.0	625.0
21	转速/转矩常数	Speed/torque constant	rpm/mNm	1932.1	1495.9	1462.3	1115.5
22	机械时间常数	Mechanical time constant	ms	5.7	4.3	4.5	3.2
23	转子惯量	Rotor inertia	gcm ²	0.28	0.27	0.29	0.27
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	17			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

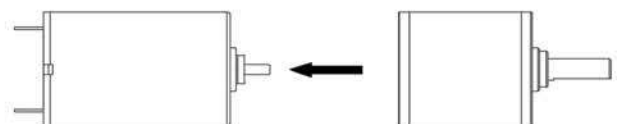
+ Vcc
- GND

技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向(动态) Max axial load (dynamic): 0.8N
· 径向(法兰外5mm) Max radial load (5mm from flange): 0.5N
· 最大允许安装力(静态) Max press fit force (static): 35N
滑动轴承径向间隙 Radial play: ≤0.012mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 85°C
表中数据均为标称值 Values listed in the table are nominal

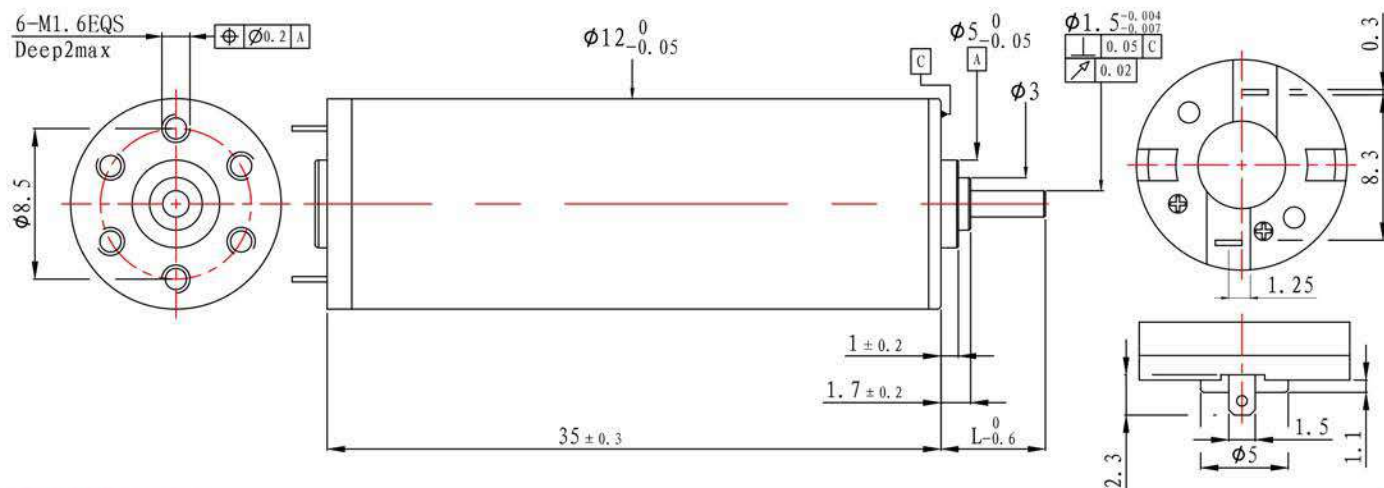
组合体系 System

适配部件 Optional Parts
· 行星轮减速箱 Planetary gearbox



Φ12*L35mm, 稀有金属刷直流电机, 1-3W

Φ12*L35mm, Precious Metal Brushed DC Motor, 1-3W



电机参数 Motor Data				1235	1235	1235	1235
电机型号 Motor Model				1235	1235	1235	1235
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	3.7	6	12	24
2	额定转速	Nominal speed	rpm	8500	9350	10350	10000
3	额定电流	Nominal current	A	0.56	0.4	0.15	0.08
4	额定转矩	Nominal torque	mNm	1.8	1.91	1.26	1.28
空载点 Free Load							
5	空载转速	No-load speed	rpm	10000	11000	11500	10000
6	空载电流	No-load current	mA	40	30	20	20
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	79.8	79.3	76.7	66.8
8	转速	Speed	rpm	8750	9625	10350	9000
9	电流	Current	A	0.473	0.339	0.148	0.078
10	转矩	Torque	mNm	1.5	1.6	1.3	1.3
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	3.2	3.7	3.8	3.4
12	转速	Speed	rpm	5000	5500	5750	5000
13	电流	Current	A	1.8	1.3	0.7	0.3
14	转矩	Torque	mNm	6.0	6.4	6.3	6.4
堵转点 At Stall							
15	堵转电流	Stall current	A	3.5	2.5	1.3	0.60
16	堵转转矩	Stall torque	mNm	12.1	12.7	12.6	12.8
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	1.06	2.4	9.23	40
18	电机感抗	Terminal inductance	mH	0.025	0.006	0.312	1.250
19	转矩常数	Torque constant	mNm/A	3.45	5.08	9.66	21.42
20	转速常数	Speed constant	rpm/V	2702.7	1883.3	958.3	416.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	827.5	865.4	915.7	778.2
22	机械时间常数	Mechanical time constant	ms	10.5	9.44	7.62	7.38
23	转子惯量	Rotor inertia	gcm ²	0.594	0.53	0.545	0.454
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	17			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

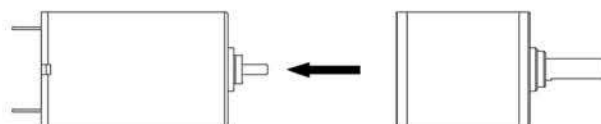
+ Vcc
- GND

技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 0.5N
 · 最大允许安装力 (静态) Max press fit force (static): 35N
 滑动轴承径向间隙 Radial play: ≤0.012mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

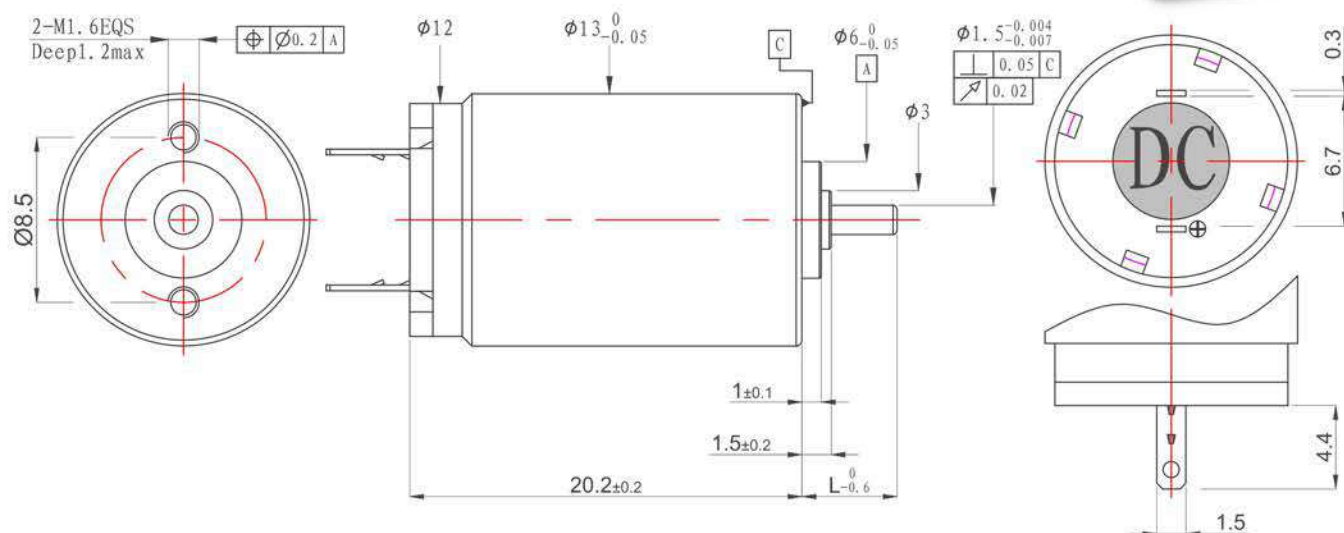
组合体系 System

适配部件 Optional Parts
 · 行星轮减速箱 Planetary gearbox



$\phi 13 \times L20\text{mm}$, 稀有金属刷直流电机, 1-2W

$\phi 13 \times L20\text{mm}$, Precious Metal Brushed DC Motor, 1-2W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				1320	1320	1320	1320
1	额定电压	Nominal voltage	V/DC	3.7	6	12	24
2	额定转速	Nominal speed	rpm	7600	9600	10400	9600
3	额定电流	Nominal current	A	0.288	0.358	0.133	0.074
4	额定转矩	Nominal torque	mNm	0.9	1.5	1.0	1.19

空载点 Free Load

5	空载转速	No-load speed	rpm	9500	12000	13000	12000
6	空载电流	No-load current	mA	35.0	30	16	10.00

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	69.9	71.1	70.0	68.21
8	转速	Speed	rpm	8170	10320	11180	10200
9	电流	Current	A	0.212	0.263	0.098	0.058
10	转矩	Torque	mNm	0.64	1.04	0.70	0.89

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	1.1	2.3	1.7	1.86
12	转速	Speed	rpm	4750	6000	6500	6000
13	电流	Current	A	0.7	0.8	0.31	0.17
14	转矩	Torque	mNm	2.3	3.7	2.5	2.96

堵转点 At Stall

15	堵转电流	Stall current	A	1.30	1.63	0.60	0.33
16	堵转转矩	Stall torque	mNm	4.58	7.41	5.01	5.93

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	2.85	3.68	20	72.73
18	电机感抗	Terminal inductance	mH	0.09	0.12	0.50	1.30
19	转矩常数	Torque constant	mNm/A	3.62	4.66	8.58	18.52
20	转速常数	Speed constant	rpm/V	2567.6	2000.0	1083.3	500.00
21	转数/转矩常数	Speed/torque constant	rpm/mNm	2075.1	1620.4	2594.5	2024.85
22	机械时间常数	Mechanical time constant	ms	5.3	4.2	5.6	4.63
23	转子惯量	Rotor inertia	gcm ²	0.25	0.25	0.20	0.22
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	13			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

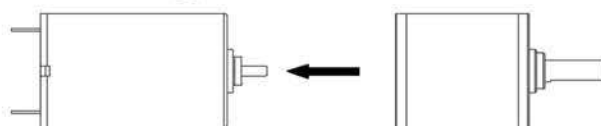
+ Vcc
- GND

技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.2N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 1.2N
 · 最大允许安装力 (静态) Max press fit force (static): 20N
 滑动轴承径向间隙 Radial play: ≤0.012mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

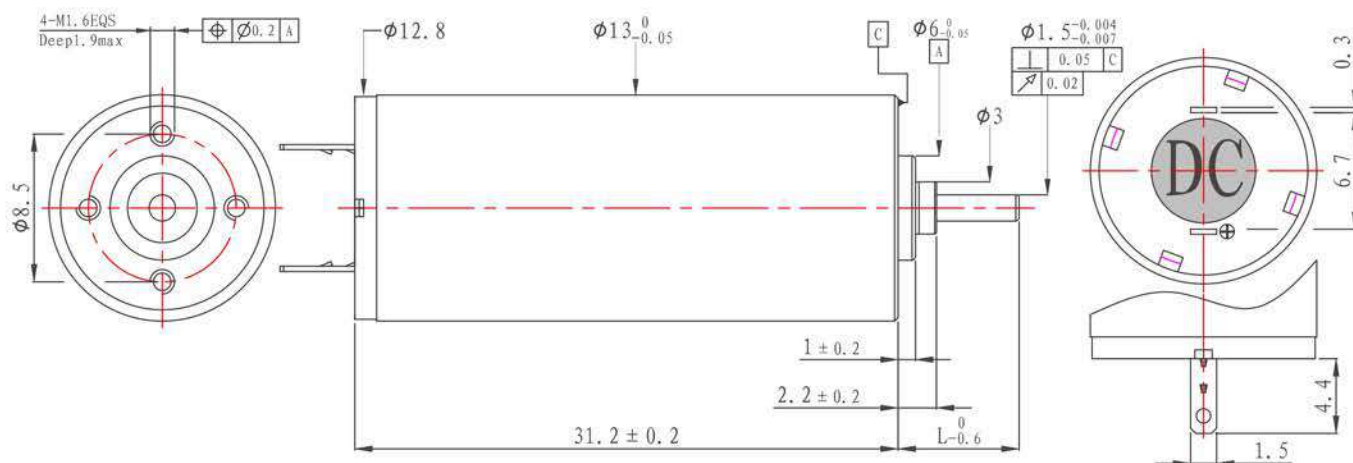
组合体系 System

适配部件 Optional Parts
 · 行星轮减速箱 Planetary gearbox



Φ13*L31mm, 稀有金属刷直流电机, 2.5-4.5W

Φ13*L31mm, Precious Metal Brushed DC Motor, 2.5-4.5W



电机参数 Motor Data

电机型号 Motor Model				1331	1331	1331	1331
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	3	6	12	24
2	额定转速	Nominal speed	rpm	9600	8800	9280	12960
3	额定电流	Nominal current	A	0.9	0.5	0.2	0.4
4	额定转矩	Nominal torque	mNm	2.1	2.4	2.0	4.1
空载点 Free Load							
5	空载转速	No-load speed	rpm	12000	11000	11600	16200
6	空载电流	No-load current	mA	45.0	30.0	18.0	12.0
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	80.8	75.8	69.4	70.5
8	转速	Speed	rpm	10920	9735	9918	13932
9	电流	Current	A	0.4	0.3	0.2	0.3
10	转矩	Torque	mNm	0.9	1.4	1.5	3.7
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	3.2	3.5	3.1	11.1
12	转速	Speed	rpm	6000	5500	5800	8100
13	电流	Current	A	2.22	1.22	0.56	0.77
14	转矩	Torque	mNm	5.1	6.0	5.0	10.5
堵转点 At Stall							
15	堵转电流	Stall current	A	4.40	2.40	1.08	1.57
16	堵转转矩	Stall torque	mNm	10.3	12.1	10.1	21.0
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.68	2.50	11.11	12.31
18	电机感抗	Terminal inductance	mH	0.05	0.12	0.27	0.75
19	转矩常数	Torque constant	mNm/A	2.36	5.12	9.60	13.78
20	转速常数	Speed constant	rpm/V	4000.0	1833.3	966.7	675.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	1166.1	910.0	1150.3	618.5
22	机械时间常数	Mechanical time constant	ms	8.0	6.2	7.9	4.2
23	转子惯量	Rotor inertia	gcm ²	0.65	0.65	0.65	0.65
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	20			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

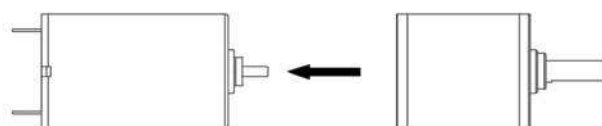
+ Vcc
- GND

技术说明 Technical specifications

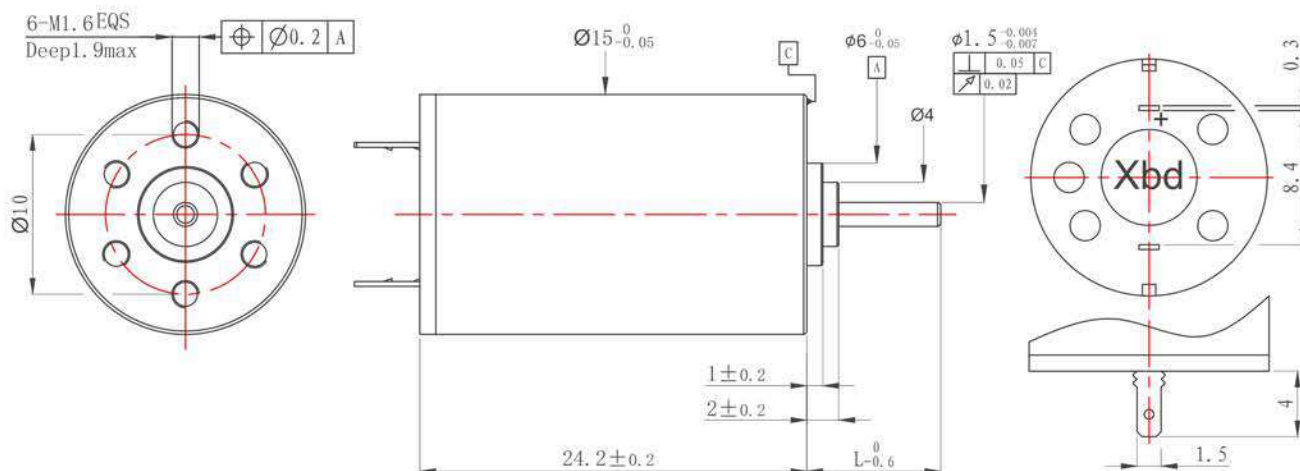
轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向(动态) Max axial load (dynamic): 0.3N
 · 径向(法兰外5mm) Max radial load (5mm from flange): 1.2N
 · 最大允许安装力(静态) Max press fit force (static): 20N
 滑动轴承径向间隙 Radial play: ≤0.012mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts
 · 行星轮减速箱 Planetary gearbox



Φ15*L24mm, 稀有金属刷直流电机, 2-4W Φ15*L24mm, Precious Metal Brushed DC Motor, 2-4W



电机参数 Motor Data

电机型号 Motor Model				1524	1524	1524	1524
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	3	6	12	24
2	额定转速	Nominal speed	rpm	8560	9840	9440	7600
3	额定电流	Nominal current	A	0.6	0.4	0.2	0.1
4	额定转矩	Nominal torque	mNm	1.6	1.8	1.7	1.4
空载点 Free Load							
5	空载转速	No-load speed	rpm	10700	12300	11800	9500
6	空载电流	No-load current	mA	40	20	11	4
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	78.2	81.0	79.3	78.2
8	转速	Speed	rpm	9577	11193	10561	8503
9	电流	Current	A	0.3	0.2	0.1	0.0
10	转矩	Torque	mNm	0.8	0.8	0.9	0.7
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	2.2	2.9	2.7	1.8
12	转速	Speed	rpm	5350	6150	5900	4750
13	电流	Current	A	1.5	1.0	0.5	0.2
14	转矩	Torque	mNm	3.9	4.6	4.4	3.5
堵转点 At Stall							
15	堵转电流	Stall current	A	3.0	2.0	0.9	0.3
16	堵转转矩	Stall torque	mNm	7.8	9.1	8.7	7.0
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	1.00	3.00	13.04	80.00
18	电机感抗	Terminal inductance	mH	0.02	0.05	0.23	1.05
19	转矩常数	Torque constant	mNm/A	2.64	4.61	9.60	23.80
20	转速常数	Speed constant	rpm/V	3566.7	2050.0	983.3	395.8
21	转数/转矩常数	Speed/torque constant	rpm/mNm	1368.4	1347.1	1352.9	1348.3
22	机械时间常数	Mechanical time constant	ms	11.0	10.1	11.9	11.9
23	转子惯量	Rotor inertia	gcm ²	0.77	0.72	0.84	0.84
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	22			
27	噪音	Typical noise level	dB	≤40			

电机端子定义 Motor terminal definition

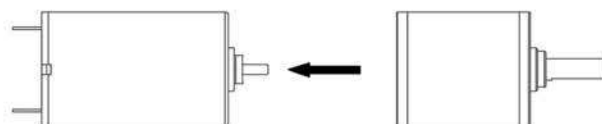
+ Vcc
- GND

技术说明 Technical specifications

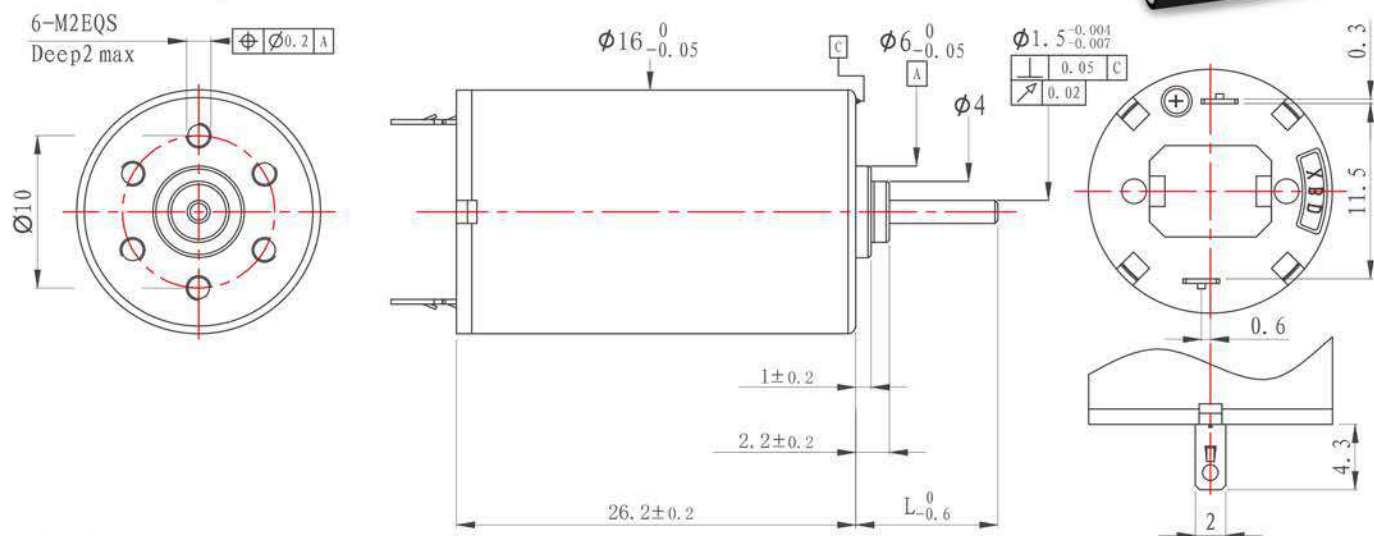
轴间间隙 Axial play: 0.05-0.15mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.3N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 1.2N
· 最大允许安装力 (静态) Max press fit force (static): 20N
滑动轴承径向间隙 Radial play: ≤0.012mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 85°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts
· 行星轮减速箱 Planetary gearbox



Φ16*L25mm, 稀有金属刷直流电机, 4-8W Φ16*L25mm, Precious Metal Brushed DC Motor, 4-8W



电机参数 Motor Data							
电机型号 Motor Model				1625	1625	1625	1625
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	3.7	6	12	24
2	额定转速	Nominal speed	rpm	6800	7840	8640	8800
3	额定电流	Nominal current	A	0.67	0.50	0.27	0.15
4	额定转矩	Nominal torque	mNm	2.5	2.8	2.7	3.0
空载点 Free Load							
5	空载转速	No-load speed	rpm	8500	9800	10800	11000
6	空载电流	No-load current	mA	50	20	15	6
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	76.4	82.7	79.7	82.8
8	转速	Speed	rpm	7565	8967	9774	10065
9	电流	Current	A	0.39	0.22	0.14	0.07
10	转矩	Torque	mNm	1.39	1.19	1.28	1.29
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	2.82	3.59	3.81	4.37
12	转速	Speed	rpm	4250	4900	5400	5500
13	电流	Current	A	1.60	1.23	0.66	0.37
14	转矩	Torque	mNm	6.34	6.99	6.74	7.58
堵转点 At Stall							
15	堵转电流	Stall current	A	3.15	2.43	1.30	0.74
16	堵转转矩	Stall torque	mNm	12.7	14.0	13.5	15.2
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	1.17	2.47	9.23	32.43
18	电机感抗	Terminal inductance	mH	0.105	0.210	0.510	1.320
19	转矩常数	Torque constant	mNm/A	4.09	5.80	10.49	20.67
20	转速常数	Speed constant	rpm/V	2297.3	1633.3	900.0	458.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	670.3	701.3	801.4	725.2
22	机械时间常数	Mechanical time constant	ms	6.3	6.6	7.5	6.8
23	转子惯量	Rotor inertia	gcm ²	0.90	0.90	0.90	0.90
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	24			
27	噪音	Typical noise level	dB	≤40			

电机端子定义 Motor terminal definition

+ Vcc
- GND

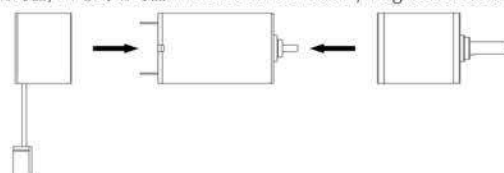
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.5N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 1.5N
 滑动轴承径向间隙 Radial play: ≤0.012mm
 环境温度范围 Ambient temperature range: -20~+80℃
 相对湿度范围 Relative humidity range: <90% (25℃)
 最高转子温度 Highest rotor temperature: 85℃
 表中数据均为标称值 Values listed in the table are nominal

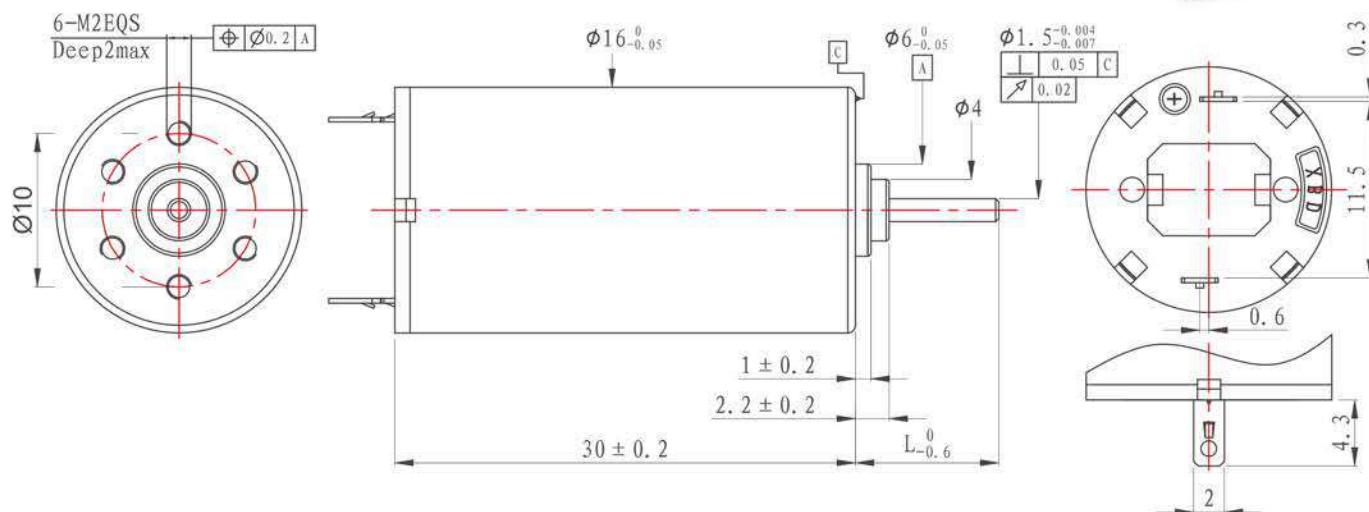
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ16*L30mm, 稀有金属刷直流电机, 3-7W Φ16*L30mm, Precious Metal Brushed DC Motor, 3-7W



电机参数 Motor Data				1630	1630	1630	1630
电机型号 Motor Model				1630	1630	1630	1630
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	3	6	12	24
2	额定转速	Nominal speed	rpm	9600	7760	6240	6240
3	额定电流	Nominal current	A	1.9	0.8	0.3	0.1
4	额定转矩	Nominal torque	mNm	4.2	4.4	4.2	3.6
空载点 Free Load							
5	空载转速	No-load speed	rpm	12000	9700	7800	7800
6	空载电流	No-load current	mA	95	50	15	10
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	80.5	78.5	80.7	76.6
8	转速	Speed	rpm	10920	8730	7098	6942
9	电流	Current	A	0.9	0.4	0.1	0.1
10	转矩	Torque	mNm	1.9	2.2	1.9	2.0
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	6.6	5.6	4.3	3.7
12	转速	Speed	rpm	6000	4850	3900	3900
13	电流	Current	A	4.5	2.0	0.7	0.3
14	转矩	Torque	mNm	10.5	11.1	10.4	9.1
堵转点 At Stall							
15	堵转电流	Stall current	A	9.0	3.9	1.5	0.6
16	堵转转矩	Stall torque	mNm	21.0	22.2	20.9	18.2
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.33	1.56	8.28	37.50
18	电机感抗	Terminal inductance	mH	0.02	0.08	0.39	1.05
19	转矩常数	Torque constant	mNm/A	2.36	5.83	14.54	28.92
20	转速常数	Speed constant	rpm/V	4000.0	1616.7	650.0	325.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	570.5	437.8	373.9	428.1
22	机械时间常数	Mechanical time constant	ms	8.1	6.2	4.7	5.4
23	转子惯量	Rotor inertia	gcm ²	1.36	1.36	0.90	0.90
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	30			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+ Vcc
- GND

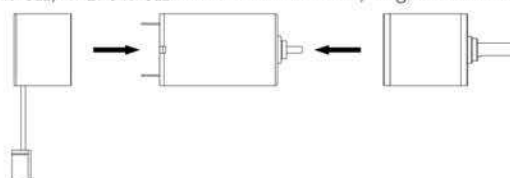
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 5N
· 最大允许安装力 (静态) Max press fit force (static): 15N
滑动轴承径向间隙 Radial play: ≤0.012mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

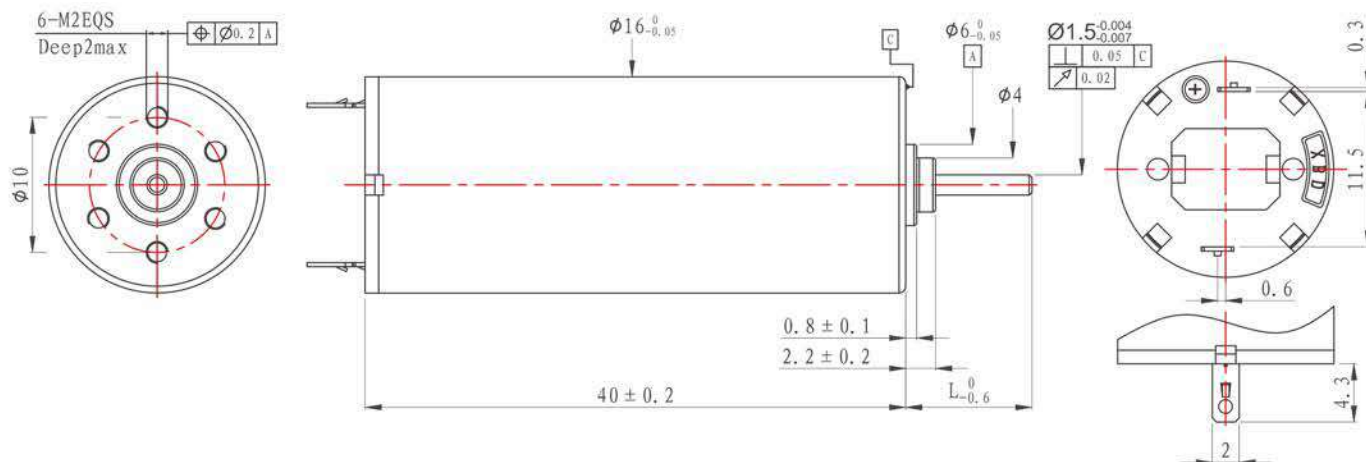
适配部件 Optional Parts

· 行星轮减速箱 Planetary gearbox
· 光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ16*L40mm, 稀有金属刷直流电机, 3-7W

Φ16*L40mm, Precious Metal Brushed DC Motor, 3-7W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

空载点 At Nominal

1	额定电压	Nominal voltage	V/DC	6	9	12	24
2	额定转速	Nominal speed	rpm	9847	11635	6372	6489
3	额定电流	Nominal current	A	0.47	0.54	0.14	0.07
4	额定转矩	Nominal torque	mNm	2.20	3.19	1.92	1.87

空载点 Free Load

5	空载转速	No-load speed	rpm	11002	13000	7120	7250
6	空载电流	No-load current	mA	40	50	15	13

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	81.2	80.3	78.6	72.5
8	转速	Speed	rpm	9902	11700	6408	6525
9	电流	Current	A	0.446	0.516	0.131	0.071
10	转矩	Torque	mNm	2.1	3.0	1.8	1.8

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	6.0	10.3	3.4	3.4
12	转速	Speed	rpm	5501	6500	3560	3625
13	电流	Current	A	2.1	2.4	0.6	0.3
14	转矩	Torque	mNm	10.5	15.2	9.2	8.9

堵转点 At Stall

15	堵转电流	Stall current	A	4.10	4.70	1.17	0.59
16	堵转转矩	Stall torque	mNm	20.9	30.4	18.4	17.8

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	1.46	1.91	10.26	40.68
18	电机感抗	Terminal inductance	mH	0.073	0.071	0.452	1.75
19	转矩常数	Torque constant	mNm/A	5.11	6.47	15.68	30.23
20	转速常数	Speed constant	rpm/V	1833.7	1444.4	593.3	302.1
21	转数/转矩常数	Speed/torque constant	rpm/mNm	525.5	427.6	388.0	406.1
22	机械时间常数	Mechanical time constant	ms	7.22	6.15	5.28	5.32
23	转子惯量	Rotor inertia	gcm ²	1.31	1.32	1.3	1.23
24	极对数	Number of pole pairs	1				
25	相数	Number of phase	5				
26	重量	Weight of motor	g	30			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+	Vcc
-	GND

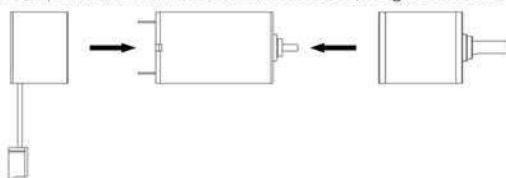
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.5N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 5N
 · 最大允许安装力 (静态) Max press fit force (static): 15N
 滑动轴承径向间隙 Radial play: ≤0.012mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

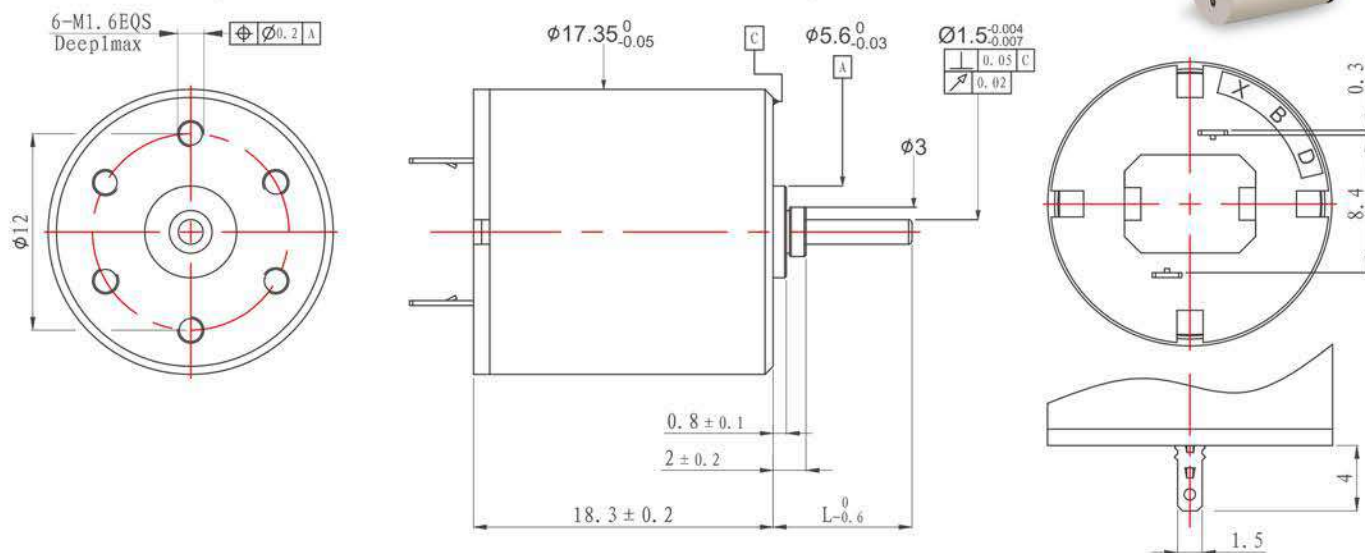
适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ17*L18mm, 稀有金属刷直流电机, 2.5-6W

Φ17*L18mm, Precious Metal Brushed DC Motor, 2.5-6W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				1718	1718	1718	1718
1	额定电压	Nominal voltage	V/DC	4.2	6	9	12
2	额定转速	Nominal speed	rpm	16240	16800	13600	17600
3	额定电流	Nominal current	A	1.36	0.86	0.74	0.53
4	额定转矩	Nominal torque	mNm	2.5	2.1	3.4	4.0

空载点 Free Load

5	空载转速	No-load speed	rpm	20300	21000	17000	22000
6	空载电流	No-load current	mA	80	88	60	40

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	79.0	72.4	75.4	75.3
8	转速	Speed	rpm	18270	18270	15045	19360
9	电流	Current	A	0.72	0.59	0.45	0.31
10	转矩	Torque	mNm	1.25	1.34	1.94	1.49

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	6.7	5.7	7.5	7.2
12	转速	Speed	rpm	10150	10500	8500	11000
13	电流	Current	A	3.29	2.02	1.76	1.21
14	转矩	Torque	mNm	6.26	5.16	8.42	6.50

堵转点 At Stall

15	堵转电流	Stall current	A	6.50	3.96	3.45	2.42
16	堵转转矩	Stall torque	mNm	12.5	10.3	16.8	12.5

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.65	1.52	2.61	3.00
18	电机感抗	Terminal inductance	mH	0.09	0.16	0.32	0.65
19	转矩常数	Torque constant	mNm/A	1.95	2.67	4.97	5.12
20	转速常数	Speed constant	rpm/V	4833.3	3500.0	1888.9	1833.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	1620.4	2033.0	1009.5	1760.0
22	机械时间常数	Mechanical time constant	ms	18.0	25.2	14.0	15.1
23	转子惯量	Rotor inertia	gcm ²	1.06	1.18	0.90	1.32
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	21			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+ Vcc
- GND

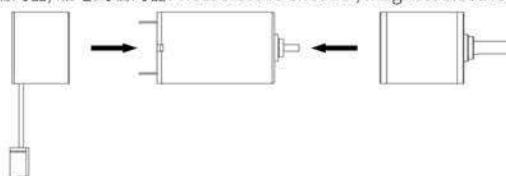
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向(动态) Max axial load (dynamic): 0.2N
 · 径向(法兰外5mm) Max radial load (5mm from flange): 1.2N
 · 最大允许安装力(静态) Max press fit force (static): 15N
 滑动轴承径向间隙 Radial play: ≤0.012mm
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

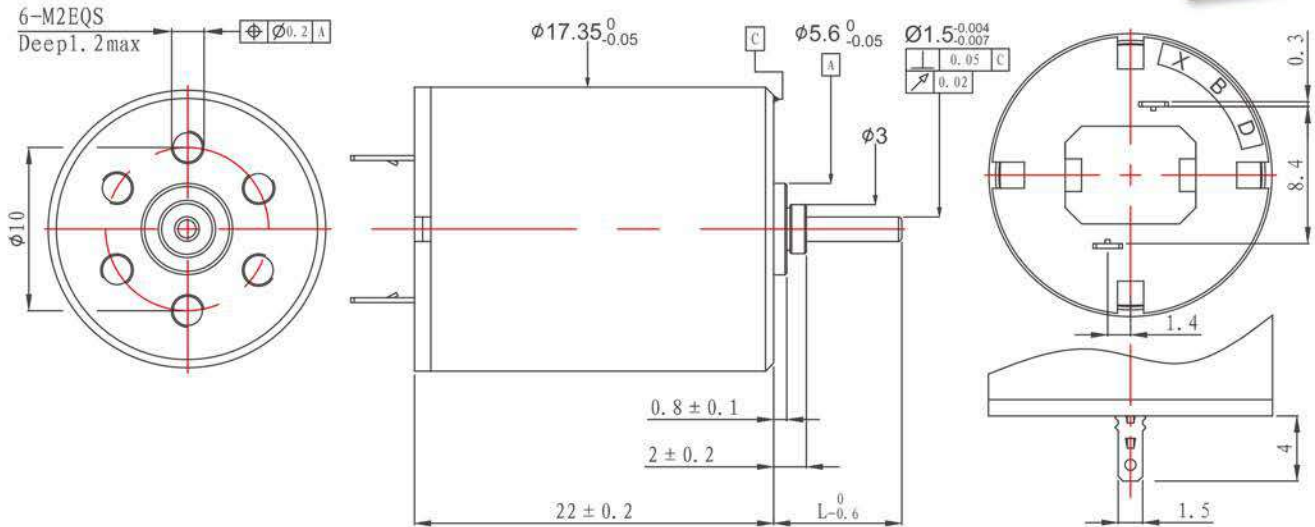
组合体系 System

适配部件 Optional Parts

· 行星轮减速箱 Planetary gearbox
 · 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ17*L22mm, 稀有金属刷直流电机, 2.5-6W Φ17*L22mm, Precious Metal Brushed DC Motor, 2.5-6W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				1722	1722	1722	1722
1	额定电压	Nominal voltage	V/DC	3	6	9	12
2	额定转速	Nominal speed	rpm	8800	10400	10400	10400
3	额定电流	Nominal current	A	0.89	0.58	0.37	0.18
4	额定转矩	Nominal torque	mNm	2.12	2.42	2.95	2.96

空载点 Free Load

5	空载转速	No-load speed	rpm	11000	13000	13000	13000
6	空载电流	No-load current	mA	65	30	30	10

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	76.7	80.4	75.4	79.6
8	转速	Speed	rpm	0	11765	11505	19360
9	电流	Current	A	0.00	0.29	0.23	0.09
10	转矩	Torque	mNm	0.00	1.15	1.69	1.41

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	3.05	4.11	5.01	5.04
12	转速	Speed	rpm	5500	6500	6500	6500
13	电流	Current	A	2.13	1.42	0.88	0.44
14	转矩	Torque	mNm	5.30	6.04	7.36	7.41

堵转点 At Stall

15	堵转电流	Stall current	A	4.20	2.80	1.73	0.86
16	堵转转矩	Stall torque	mNm	10.60	12.08	14.73	14.81

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.71	2.14	6.94	27.91
18	电机感抗	Terminal inductance	mH	0.02	0.07	0.23	0.73
19	转矩常数	Torque constant	mNm/A	2.56	4.36	8.66	17.42
20	转速常数	Speed constant	rpm/V	3666.7	2166.7	1083.3	541.7
21	转速/转矩常数	Speed/torque constant	rpm/mNm	1037.5	1076.4	882.8	877.7
22	机械时间常数	Mechanical time constant	ms	8.5	9.7	8.3	7.9
23	转子惯量	Rotor inertia	gcm ²	0.78	0.86	0.90	0.86
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	24			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+ Vcc
- GND

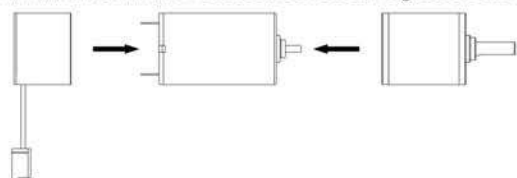
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 1.2N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

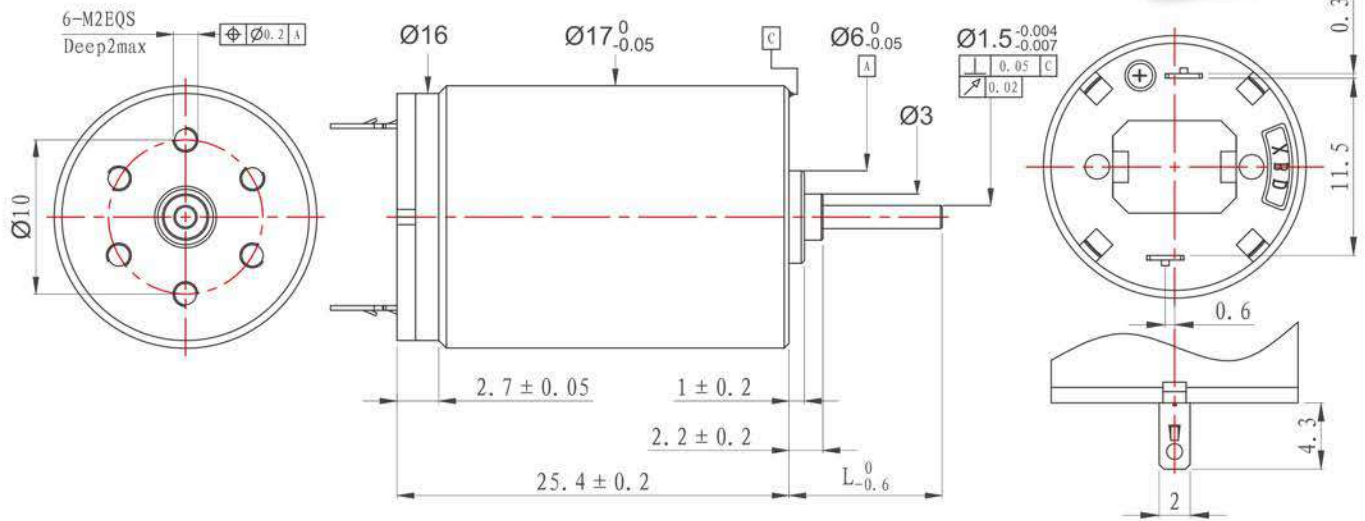
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ17*L25mm, 稀有金属刷直流电机, 4-8W Φ17*L25mm, Precious Metal Brushed DC Motor, 4-8W



电机参数 Motor Data				
电机型号 Motor Model		1725	1725	1725
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1 额定电压 Nominal voltage	V/DC	6	9	12
2 额定转速 Nominal speed	rpm	8000	8000	8000
3 额定电流 Nominal current	A	0.41	0.28	0.24
4 额定转矩 Nominal torque	mNm	2.19	2.06	2.68
空载点 Free Load				
5 空载转速 No-load speed	rpm	10000	10000	10000
6 空载电流 No-load current	mA	23	30	20
最大效率点 At Max. Efficiency				
7 最大效率 Max. efficiency	%	79.5	71.5	77.5
8 转速 Speed	rpm	9000	8650	9100
9 电流 Current	A	0.22	0.20	0.12
10 转矩 Torque	mNm	1.10	1.39	1.21
最大输出功率点 At Max. Output power				
11 最大功率 Max. output power	W	2.87	2.70	3.50
12 转速 Speed	rpm	5000	5000	5000
13 电流 Current	A	0.99	0.65	0.60
14 转矩 Torque	mNm	5.48	5.16	6.75
堵转点 At Stall				
15 堵转电流 Stall current	A	1.96	1.26	1.21
16 堵转转矩 Stall torque	mNm	11.0	10.3	13.4
电机常数 Motor Constants				
17 电机阻抗 Terminal resistance	Ω	3.06	7.14	5.71
18 电机感抗 Terminal inductance	mH	0.10	0.20	0.28
19 转矩常数 Torque constant	mNm/A	5.66	8.39	11.30
20 转速常数 Speed constant	rpm/V	1666.7	1111.1	833.3
21 转数/转矩常数 Speed/torque constant	rpm/mNm	911.7	969.1	746.0
22 机械时间常数 Mechanical time constant	ms	7.4	7.9	4.2
23 转子惯量 Rotor inertia	gcm ²	0.78	0.78	7.80
24 极对数 Number of pole pairs		1		
25 相数 Number of phase		5		
26 重量 Weight of motor	g	28		
27 噪音 Typical noise level	dB	≤38		

电机端子定义 Motor terminal definition

+ Vcc
- GND

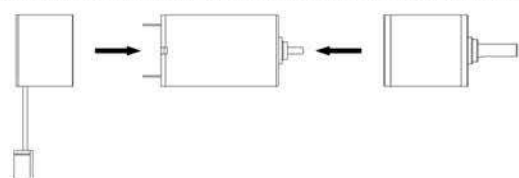
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 1.2N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电编码器/磁电编码器 Photoelectric encoder/magnetolectric encoder

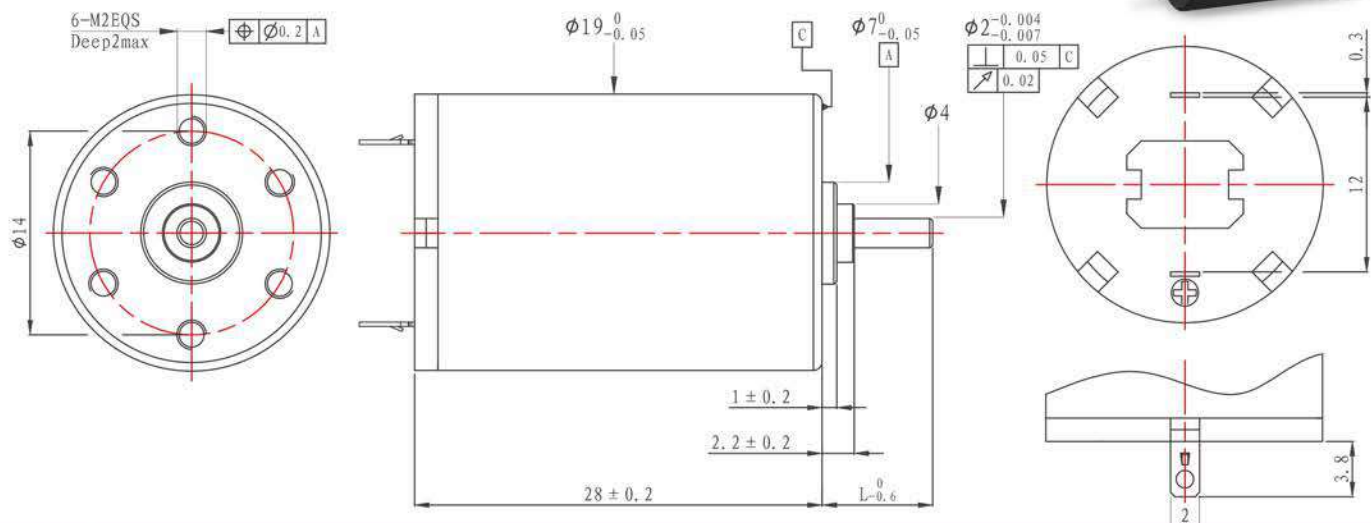


Φ17*L35mm, Precious Metal Brushed DC Motor, 4-15W



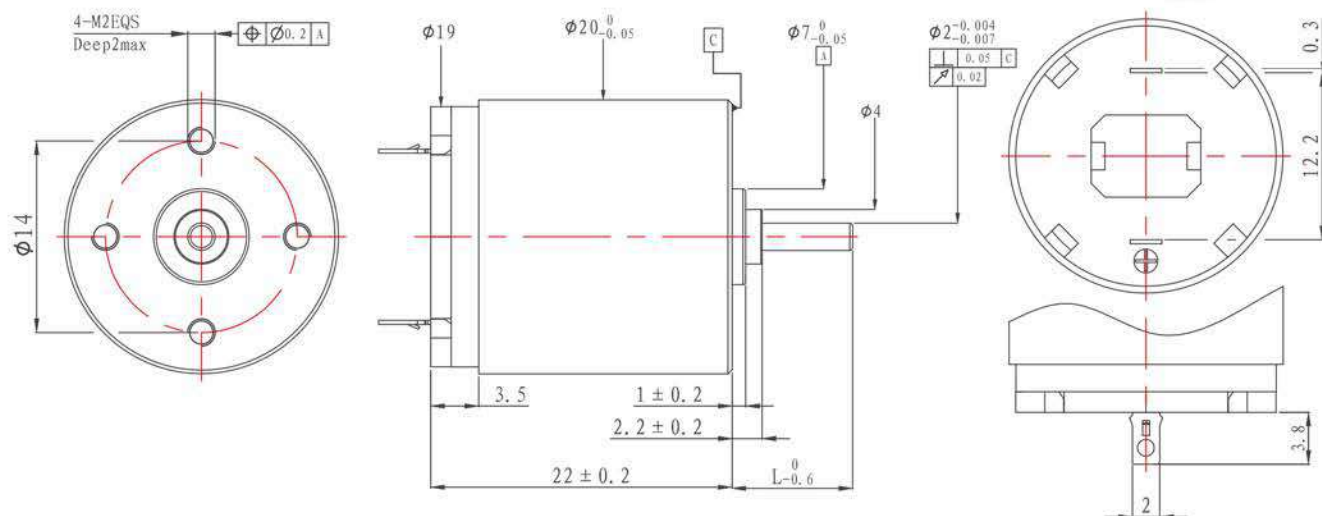
+	Vcc
-	GND

Φ19*L28mm, Precious Metal Brushed DC Motor, 2.5-6W



+	Vcc
-	GND

Φ20*L22mm, 稀有金属刷直流电机, 2.5-6W Φ20*L22mm, Precious Metal Brushed DC Motor, 2.5-6W



电机参数 Motor Data					2022	2022	2022	2022
电机型号 Motor Model								
额定电压参数值 Value at Rated voltage								
额定点 At Nominal								
1	额定电压	Nominal voltage	V/DC	6	9	12	24	
2	额定转速	Nominal speed	rpm	8892	8550	9000	9900	
3	额定电流	Nominal current	A	0.7	0.33	0.20	0.11	
4	额定转矩	Nominal torque	mNm	3.3	2.66	1.88	1.79	
空载点 Free Load								
5	空载转速	No-load speed	rpm	10400	9500	10000	11025	
6	空载电流	No-load current	mA	55	30	35	22	
最大效率点 At Max. Efficiency								
7	最大效率	Max. efficiency	%	78.4	81.0	75.2	72.4	
8	转速	Speed	rpm	9308	8883	9350	10285	
9	电流	Current	A	0.5	0.223	0.139	0.077	
10	转矩	Torque	mNm	2.4	1.7	1.2	1.2	
最大输出功率点 At Max. Output power								
11	最大功率	Max. output power	W	6.1	6.6	4.9	5.2	
12	转速	Speed	rpm	5200	4750	5000	5500	
13	电流	Current	A	2.1	1.5	0.9	0.5	
14	转矩	Torque	mNm	11.3	13.3	9.4	9.0	
堵转点 At Stall								
15	堵转电流	Stall current	A	4.20	3.00	1.70	0.90	
16	堵转转矩	Stall torque	mNm	22.5	26.6	18.8	17.9	
电机常数 Motor Constants								
17	电机阻抗	Terminal resistance	Ω	1.43	3.00	7.06	26.67	
18	电机感抗	Terminal inductance	mH	0.06	0.149	0.282	1.022	
19	转矩常数	Torque constant	mNm/A	5.44	8.87	11.06	19.92	
20	转速常数	Speed constant	rpm/V	1733.3	1055.6	8333.3	458.3	
21	转数/转矩常数	Speed/torque constant	rpm/mNm	461.5	357.1	531.9	613.6	
22	机械时间常数	Mechanical time constant	ms	9.9	10.2	10.5	12.5	
23	转子惯量	Rotor inertia	gcm ²	2.05	2.20	2.50	2.56	
24	极对数	Number of pole pairs		1				
25	相数	Number of phase		5				
26	重量	Weight of motor	g	40				
27	噪音	Typical noise level	dB	≤38				

电机端子定义 Motor terminal definition

+ Vcc
- GND

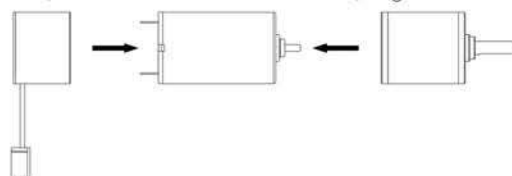
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滚动轴承径向间隙 Radial play: ≤0.02mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

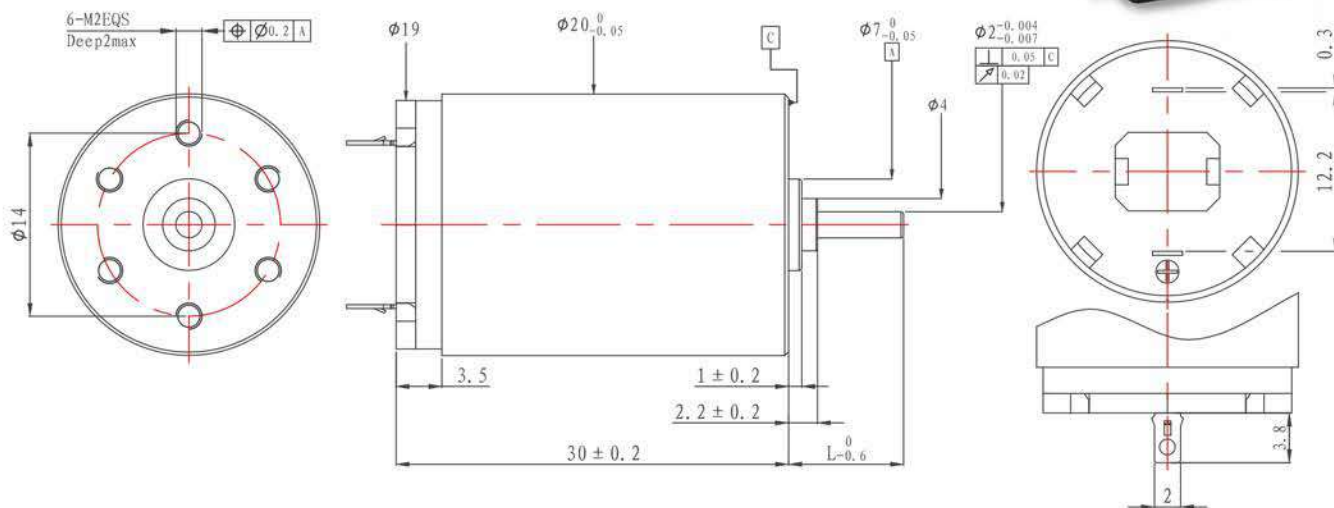
组合体系 System

适配部件 Optional Parts

· 行星轮减速箱 Planetary gearbox
· 光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ20*L30mm, 稀有金属刷直流电机, 6-13W Φ20*L30mm, Precious Metal Brushed DC Motor, 6-13W



电机参数 Motor Data

电机型号 Motor Model				2030	2030	2030	2030	2030
额定电压参数值 Value at Rated voltage								
额定点 At Nominal								
1	额定电压	Nominal voltage	V/DC	6	9	12	24	24
2	额定转速	Nominal speed	rpm	8100	7650	10260	8550	7781
3	额定电流	Nominal current	A	0.73	0.48	0.64	0.29	0.16
4	额定转矩	Nominal torque	mNm	4.41	4.48	5.71	3.76	3.78
空载点 Free Load								
5	空载转速	No-load speed	rpm	9000	8500	12000	10000	9100
6	空载电流	No-load current	mA	35	35	40	20	8
最大效率点 At Max. Efficiency								
7	最大效率	Max. efficiency	%	86.4	83.1	81.4	80.3	83.3
8	转速	Speed	rpm	8100	7650	10920	9050	8372
9	电流	Current	A	0.732	0.482	0.414	0.194	0.091
10	转矩	Torque	mNm	10.4	4.5	3.54	2.46	2.08
最大输出功率点 At Max. Output power								
11	最大功率	Max. output power	W	7.00	10	12.36	6.79	6.20
12	转速	Speed	rpm	4500	4250	6000	5000	4550
13	电流	Current	A	0.86	2.3	2.12	0.94	0.53
14	转矩	Torque	mNm	22.1	22.4	19.67	12.96	13.02
堵转点 At Stall								
15	堵转电流	Stall current	A	7.00	4.50	4.20	1.85	1.05
16	堵转转矩	Stall torque	mNm	44.1	44.8	39.3	25.9	26.0
电机常数 Motor Constants								
17	电机阻抗	Terminal resistance	Ω	0.86	2.00	2.86	8.11	22.9
18	电机感抗	Terminal inductance	mH	0.168	0.38	0.51	0.86	1.9
19	转矩常数	Torque constant	mNm/A	6.30	9.95	9.46	14.17	25.0
20	转速常数	Speed constant	rpm/V	1500.0	9444.4	1000.0	666.7	379.2
21	转速/转矩常数	Speed/torque constant	rpm/mNm	204.0	189.8	305.0	385.7	349.4
22	机械时间常数	Mechanical time constant	ms	6.2	6.45	7.63	9.65	8.74
23	转子惯量	Rotor inertia	gcm ²	2.8	3.2	2.39	2.39	2.42
24	极对数	Number of pole pairs		1				
25	相数	Number of phase		5				
26	重量	Weight of motor	g	48				
27	噪音	Typical noise level	dB	≤38				

电机端子定义 Motor terminal definition

+ Vcc
- GND

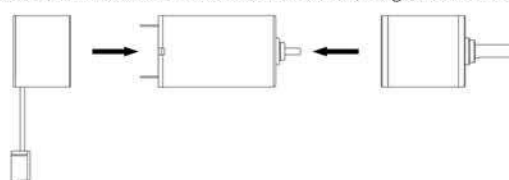
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滚动轴承径向间隙 Radial play: ≤0.012mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

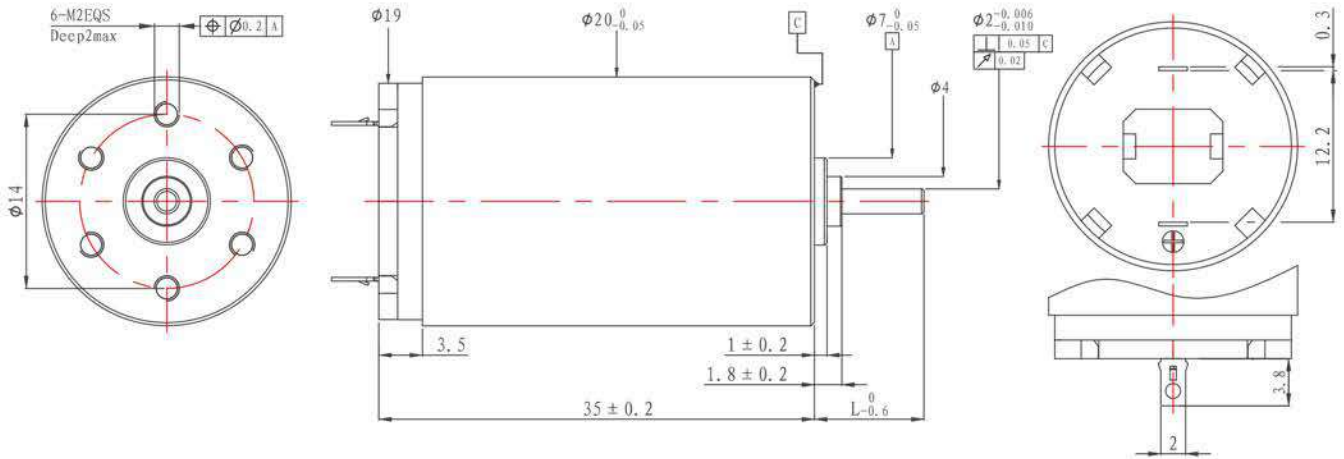
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ20*L35mm, 稀有金属刷直流电机, 6-12W Φ20*L35mm, Precious Metal Brushed DC Motor, 6-12W



电机参数 Motor Data				2035	2035	2035	2035	2035
电机型号 Motor Model				2035	2035	2035	2035	2035
额定电压参数值 Value at Rated voltage								
额定点 At Nominal								
1	额定电压	Nominal voltage	V/DC	6	9	12	24	24
2	额定转速	Nominal speed	rpm	8379	8550	10260	8550	7781
3	额定电流	Nominal current	A	1.05	0.77	0.64	0.29	0.16
4	额定转矩	Nominal torque	mNm	5.75	6.29	5.71	3.76	3.78
空载点 Free Load								
5	空载转速	No-load speed	rpm	9800	10000	12000	10000	9100
6	空载电流	No-load current	mA	60	38	40	20	8
最大效率点 At Max. Efficiency								
7	最大效率	Max. efficiency	%	82.2	83.5	81.4	80.3	83.3
8	转速	Speed	rpm	8967	9200	10920	9050	8372
9	电流	Current	A	0.607	0.445	0.414	0.194	0.091
10	转矩	Torque	mNm	3.17	3.47	3.54	2.46	2.08
最大输出功率点 At Max. Output power								
11	最大功率	Max. output power	W	10.17	11.35	12.36	6.79	6.20
12	转速	Speed	rpm	4900	5000	6000	5000	4550
13	电流	Current	A	3.48	2.58	2.12	0.94	0.53
14	转矩	Torque	mNm	19.82	21.68	19.67	12.96	13.02
堵转点 At Stall								
15	堵转电流	Stall current	A	6.90	5.12	4.20	1.85	1.05
16	堵转转矩	Stall torque	mNm	39.6	43.4	39.3	25.9	26.0
电机常数 Motor Constants								
17	电机阻抗	Terminal resistance	Ω	0.87	1.76	2.86	8.11	22.9
18	电机感抗	Terminal inductance	mH	0.14	0.29	0.51	0.86	1.9
19	转矩常数	Torque constant	mNm/A	5.80	8.53	9.46	14.17	25.0
20	转速常数	Speed constant	rpm/V	1633.3	1111.1	1000.0	666.7	379.2
21	转速/转矩常数	Speed/torque constant	rpm/mNm	247.2	230.7	305.0	385.7	349.4
22	机械时间常数	Mechanical time constant	ms	6.51	6.08	7.63	9.65	8.74
23	转子惯量	Rotor inertia	gcm ²	2.52	2.52	2.39	2.39	2.42
24	极对数	Number of pole pairs		1				
25	相数	Weight of motor	g	48				
26	重量	Typical noise level	dB	≤38				
27	噪音							

电机端子定义 Motor terminal definition

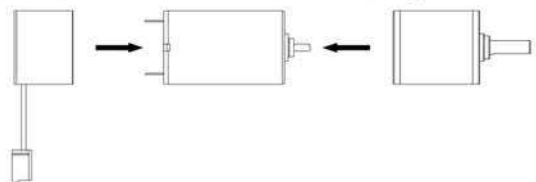
+ Vcc
- GND

技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向(动态) Max axial load (dynamic): 5N
· 径向(法兰外5mm) Max radial load (5mm from flange): 20N
滚动轴承径向间隙 Radial play: ≤0.02mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

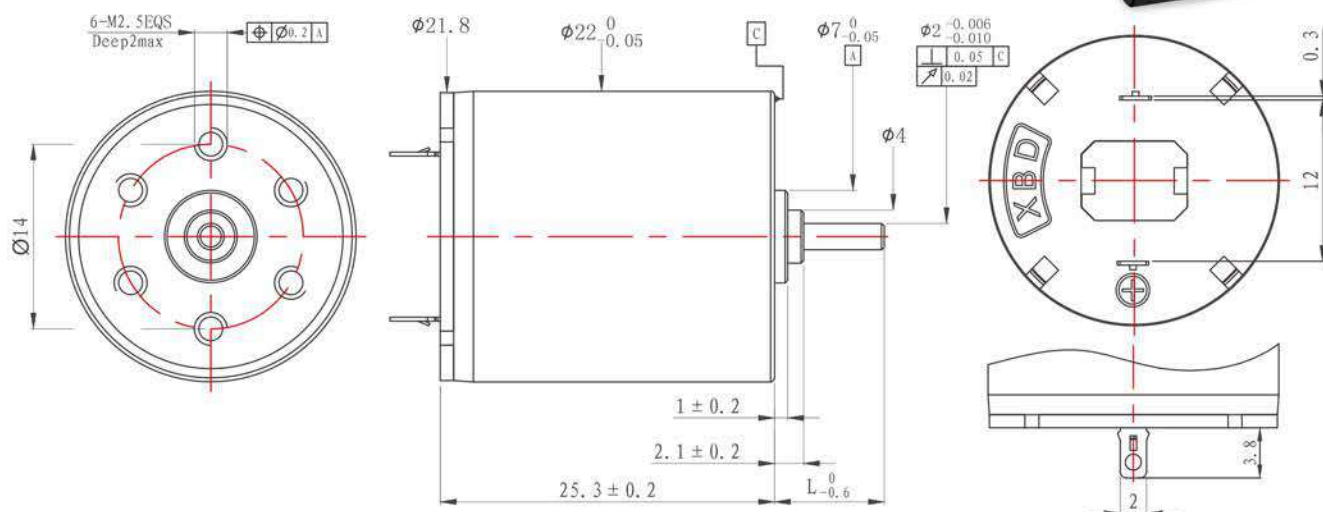
组合体系 System

适配部件 Optional Parts
· 行星轮减速箱 Planetary gearbox
· 光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ22*L25mm, 稀有金属刷直流电机, 4-12W

Φ22*L25mm, Precious Metal Brushed DC Motor, 4-12W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

1	额定电压	Nominal voltage	V/DC	3	6	12	24
2	额定转速	Nominal speed	rpm	6764	6806	9000	6474
3	额定电流	Nominal current	A	0.70	0.50	0.42	0.12
4	额定转矩	Nominal torque	mNm	2.35	3.28	4.26	3.44

空载点 Free Load

5	空载转速	No-load speed	rpm	7600	8200	10000	7800
6	空载电流	No-load current	mA	70	30	40	6

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	79.2	80.4	80.5	82.3
8	转速	Speed	rpm	6840	7421	9100	7137
9	电流	Current	A	0.643	0.295	0.378	0.065
10	转矩	Torque	mNm	2.13	1.83	3.8	1.72

最大输出功率点 At Max. Output power

最大输出功率 Max. output power							
11	最大功率	Max. output power	W	4.25	4.14	11.2	4.13
12	转速	Speed	rpm	3800	4100	5000	3900
13	电流	Current	A	2.94	1.43	1.9	0.35
14	转矩	Torque	mNm	10.67	9.64	21.3	10.11

堵转点 At Stall

15	堵转电流	Stall current	A	5.80	2.82	3.80	0.70
16	堵转转矩	Stall torque	mNm	21.3	19.3	42.6	20.2

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.52	2.13	3.158	34.29
18	电机感抗	Terminal inductance	mH	0.013	0.045	0.330	0.800
19	转矩常数	Torque constant	mNm/A	3.72	6.91	11.34	29.13
20	转速常数	Speed constant	rpm/V	2533.3	1366.7	833.3	325.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	356.2	425.2	11.9	385.8
22	机械时间常数	Mechanical time constant	ms	9.93	12.30	10.45	11.84
23	转子惯量	Rotor inertia	gcm ²	2.66	2.76	3.10	2.93
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	48			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+	Vcc
-	GND

技术说明Technical specifications

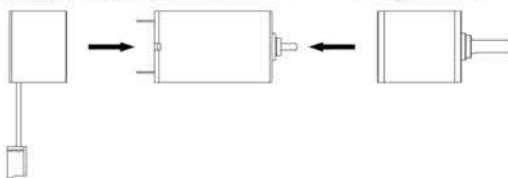
轴间间隙 Axial play: 0-0.1mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 滑动轴承径向间隙 Radial play: $\leq 0.03\text{mm}$
 滚动轴承径向间隙 Radial play: $\leq 0.015\text{mm}$
 环境温度范围 Ambient temperature range: -20°C ~ $+80^{\circ}\text{C}$
 相对湿度范围 Relative humidity range: $< 90\%$ (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系System

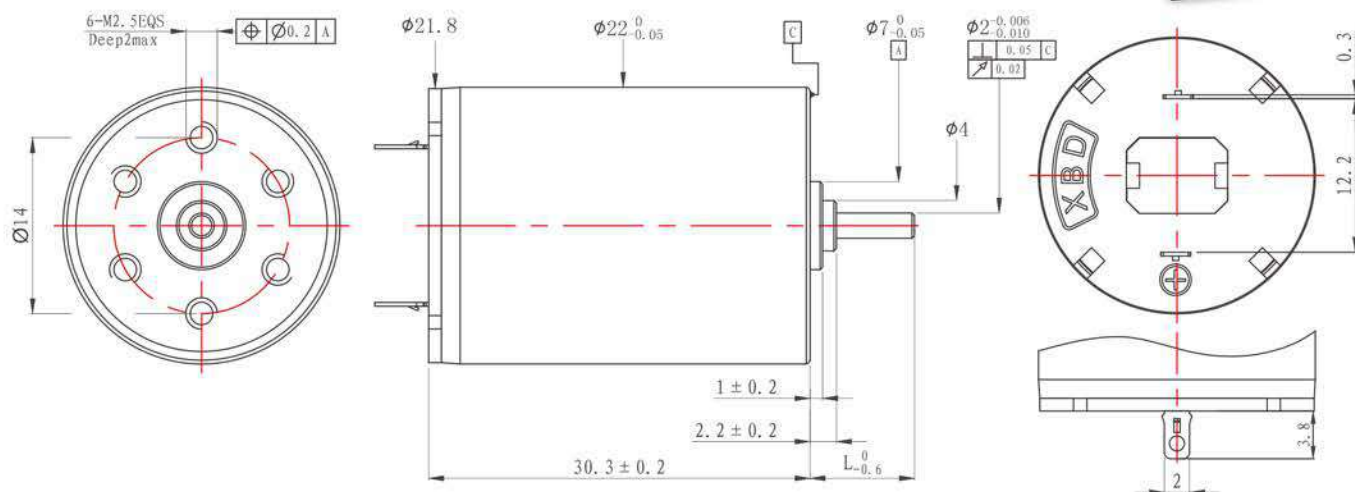
适配部件Optional Parts

·行星轮减速箱Planetary gearbox

·光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ22*L30mm, 稀有金属刷直流电机, 2.5-6W Φ22*L30mm, Precious Metal Brushed DC Motor, 2.5-6W



电机参数 Motor Data				
电机型号 Motor Model		2230	2230	2230
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	6
2	额定转速	Nominal speed	rpm	7387
3	额定电流	Nominal current	A	0.46
4	额定转矩	Nominal torque	mNm	2.81
空载点 Free Load				
5	空载转速	No-load speed	rpm	8300
6	空载电流	No-load current	mA	8300
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	78.8
8	转速	Speed	rpm	7470
9	电流	Current	A	0.423
10	转矩	Torque	mNm	2.6
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	5.6
12	转速	Speed	rpm	41
13	电流	Current	A	1.92
14	转矩	Torque	mNm	12.8
堵转点 At Stall				
15	堵转电流	Stall current	A	3.80
16	堵转转矩	Stall torque	mNm	25.6
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	1.58
18	电机感抗	Terminal inductance	mH	0.095
19	转矩常数	Torque constant	mNm/A	6.82
20	转速常数	Speed constant	rpm/V	1383.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	324.6
22	机械时间常数	Mechanical time constant	ms	8.94
23	转子惯量	Rotor inertia	gcm ²	2.63
24	极对数	Number of pole pairs		1
25	相数	Number of phase		5
26	重量	Weight of motor	g	54
27	噪音	Typical noise level	dB	≤38

电机端子定义 Motor terminal definition

+ Vcc
- GND

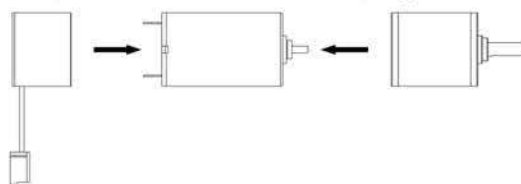
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.8N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

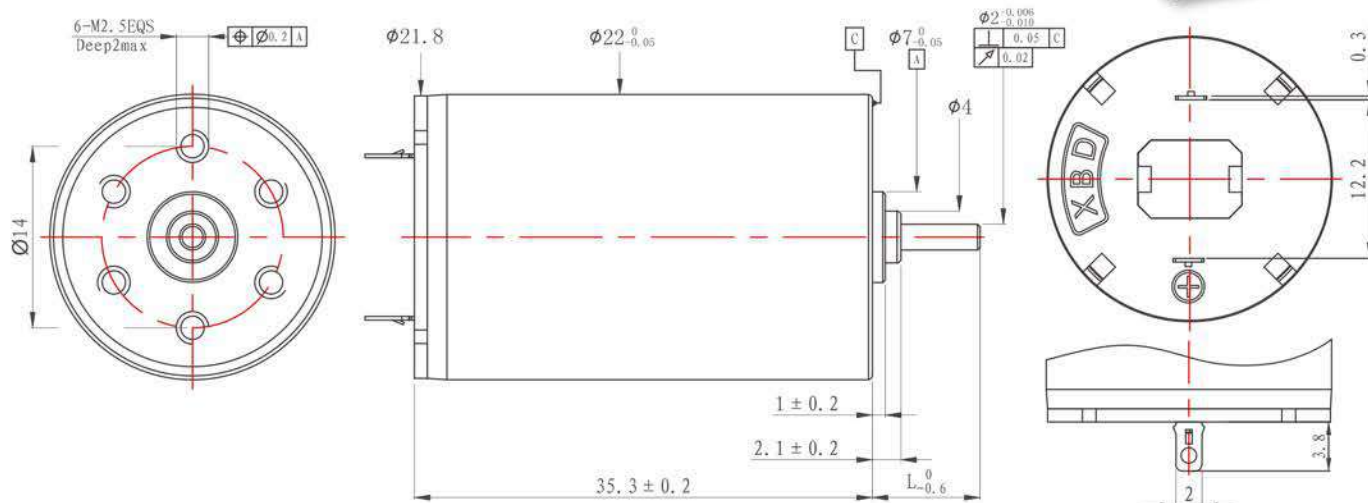
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ22*L35mm, 稀有金属刷直流电机, 4-20W Φ22*L35mm, Precious Metal Brushed DC Motor, 4-20W



电机参数 Motor Data				2235	2235	2235	2235	2235
电机型号 Motor Model				2235	2235	2235	2235	2235
额定电压参数值 Value at Rated voltage								
额定点 At Nominal								
1	额定电压	Nominal voltage	V/DC	6	9	12	24	36
2	额定转速	Nominal speed	rpm	10324	7743	7120	7298	9078
3	额定电流	Nominal current	A	0.98	1.08	0.39	0.43	0.21
4	额定转矩	Nominal torque	mNm	4.50	10.37	5.31	11.61	6.61
空载点 Free Load								
5	空载转速	No-load speed	rpm	11600	8700	8000	8200	10200
6	空载电流	No-load current	mA	60	28	14	12	8
最大效率点 At Max. Efficiency								
7	最大效率	Max. efficiency	%	83.8	89.5	87.6	89.1	87.1
8	转速	Speed	rpm	10672	8265	7520	7749	9537
9	电流	Current	A	0.727	0.507	0.217	0.220	0.124
10	转矩	Torque	mNm	3.27	4.71	2.90	5.80	3.91
最大输出功率点 At Max. Output power								
11	最大功率	Max. output power	W	12.42	21.47	10.12	22.66	16.06
12	转速	Speed	rpm	5800	4350	4000	4100	5100
13	电流	Current	A	4.23	4.81	1.71	1.91	0.90
14	转矩	Torque	mNm	20.45	47.14	24.15	52.77	30.06
堵转点 At Stall								
15	堵转电流	Stall current	A	8.40	9.60	3.40	3.80	1.80
16	堵转转矩	Stall torque	mNm	40.90	94.28	48.30	105.54	60.13
电机常数 Motor Constants								
17	电机阻抗	Terminal resistance	Ω	0.71	0.94	3.53	6.32	20.0
18	电机感抗	Terminal inductance	mH	0.022	0.070	0.130	0.420	0.9
19	转矩常数	Torque constant	mNm/A	4.90	9.85	14.26	27.86	33.6
20	转速常数	Speed constant	rpm/V	1933.3	966.7	666.7	341.7	283.3
21	转速/转矩常数	Speed/torque constant	rpm/mNm	283.6	92.3	165.6	77.7	169.6
22	机械时间常数	Mechanical time constant	ms	11.02	4.95	9.10	3.96	9.32
23	转子惯量	Rotor inertia	gcm ²	3.71	5.13	5.25	4.87	5.25
24	极对数	Number of pole pairs		1				
25	相数	Number of phase		5				
26	重量	Weight of motor	g	68				
27	噪音	Typical noise level	dB	≤38				

电机端子定义 Motor terminal definition

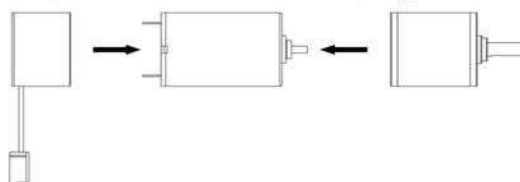
+ Vcc
- GND

技术说明 Technical specifications

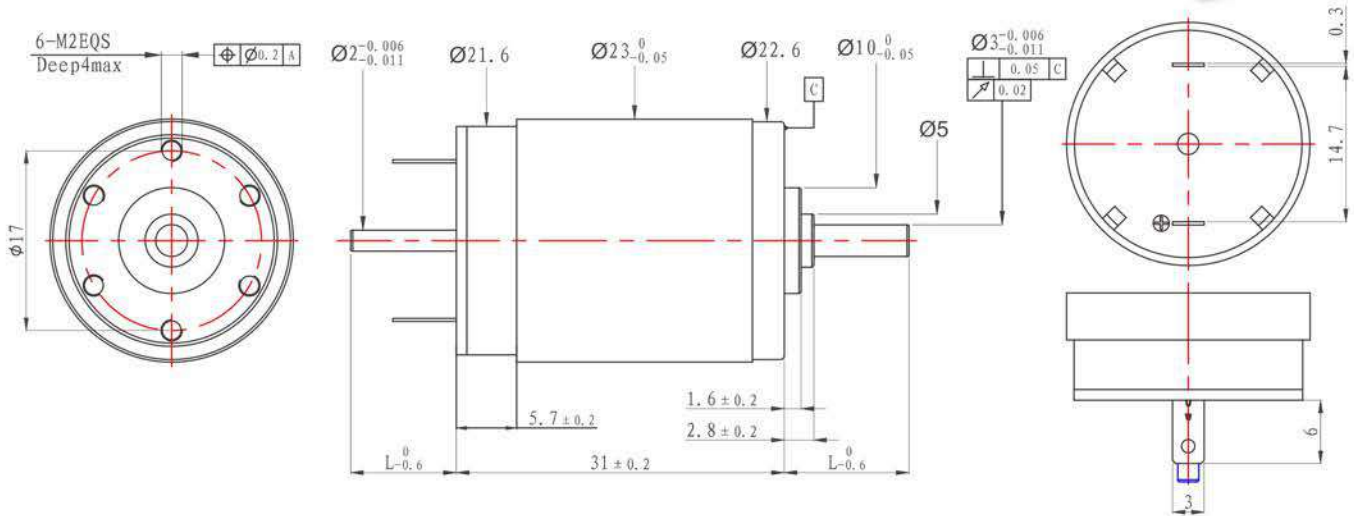
轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 15N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

适配部件 Optional Parts

· 行星轮减速箱 Planetary gearbox
· 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ23*L30mm, 稀有金属刷直流电机, 4-15W Φ23*L30mm, Precious Metal Brushed DC Motor, 4-15W



电机参数 Motor Data				
电机型号 Motor Model		2330	2330	2330
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	6
2	额定转速	Nominal speed	rpm	7298
3	额定电流	Nominal current	A	0.82
4	额定转矩	Nominal torque	mNm	5.10
空载点 Free Load				
5	空载转速	No-load speed	rpm	8200
6	空载电流	No-load current	mA	80
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	79.5
8	转速	Speed	rpm	7380
9	电流	Current	A	0.752
10	转矩	Torque	mNm	4.6
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	10.0
12	转速	Speed	rpm	4100
13	电流	Current	A	3.4
14	转矩	Torque	mNm	23.2
堵转点 At Stall				
15	堵转电流	Stall current	A	6.80
16	堵转转矩	Stall torque	mNm	46.4
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.88
18	电机感抗	Terminal inductance	mH	0.140
19	转矩常数	Torque constant	mNm/A	6.91
20	转速常数	Speed constant	rpm/V	1366.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	176.7
22	机械时间常数	Mechanical time constant	ms	9.65
23	转子惯量	Rotor inertia	gcm ²	5.22
24	极对数	Number of pole pairs		1
25	相数	Number of phase		5
26	重量	Weight of motor	g	86
27	噪音	Typical noise level	dB	≤38

电机端子定义 Motor terminal definition

+ Vcc
- GND

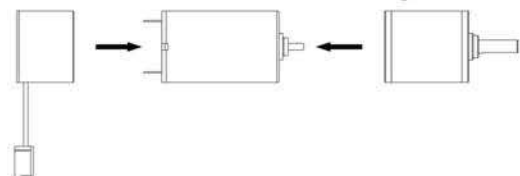
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

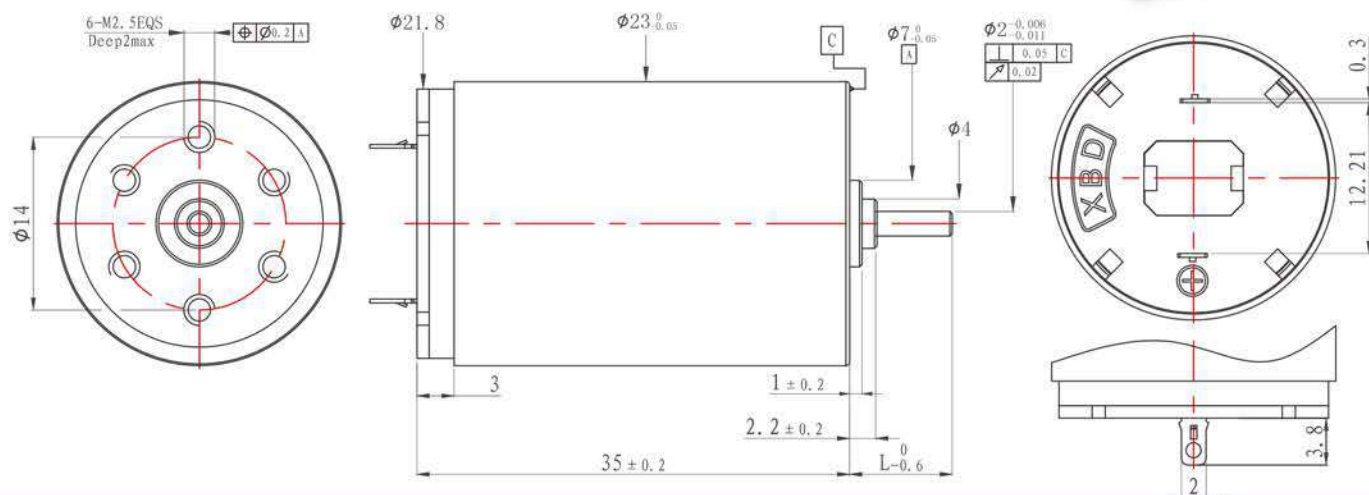
组合体系 System

适配部件 Optional Parts

· 行星轮减速箱 Planetary gearbox
· 光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ23*L35mm, 稀有金属刷直流电机, 4-17W Φ23*L35mm, Precious Metal Brushed DC Motor, 4-17W



电机参数 Motor Data				2335	2335	2335	2335
电机型号 Motor Model				2335	2335	2335	2335
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	6	12	18	24
2	额定转速	Nominal speed	rpm	7200	7650	7790	9900
3	额定电流	Nominal current	A	0.74	0.48	0.31	0.33
4	额定转矩	Nominal torque	mNm	4.96	5.99	5.66	6.10
空载点 Free Load							
5	空载转速	No-load speed	rpm	8000	8500	8655	11000
6	空载电流	No-load current	mA	40	30	25	37
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	85.5	84.3	82.3	79.0
8	转速	Speed	rpm	7200	7650	7790	9900
9	电流	Current	A	0.736	0.477	0.313	0.333
10	转矩	Torque	mNm	5.0	6.0	5.7	6.1
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	10.4	13.3	12.8	17.6
12	转速	Speed	rpm	4000	4250	4327.5	5500
13	电流	Current	A	3.5	2.3	1.5	1.5
14	转矩	Torque	mNm	24.8	29.9	28.3	30.5
堵转点 At Stall							
15	堵转电流	Stall current	A	7.00	4.50	2.90	3.00
16	堵转转矩	Stall torque	mNm	49.6	59.9	56.6	61.0
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.86	2.67	6.21	8.00
18	电机感抗	Terminal inductance	mH	0.140	0.620	0.140	0.152
19	转矩常数	Torque constant	mNm/A	7.08	13.30	19.52	20.32
20	转速常数	Speed constant	rpm/V	1333.3	708.3	480.8	458.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	161.4	142.0	152.9	180.4
22	机械时间常数	Mechanical time constant	ms	5.07	5.88	5.95	6.01
23	转子惯量	Rotor inertia	gcm ²	5.01	5.05	5.11	5.14
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	86			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+ Vcc
- GND

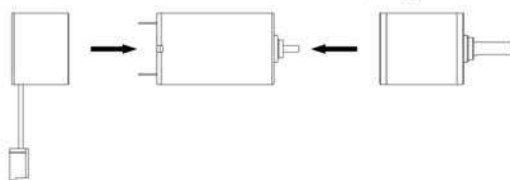
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

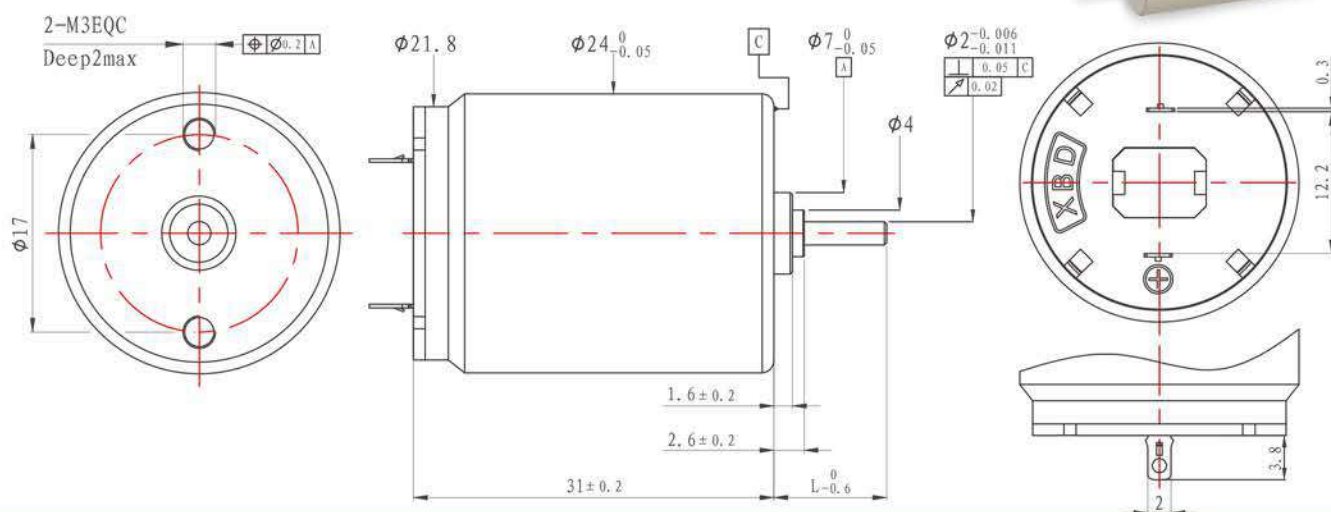
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ24*L31mm, 稀有金属刷直流电机, 1.7-8W Φ24*L31mm, Precious Metal Brushed DC Motor, 1.7-8W



电机参数 Motor Data				2431	2431	2431	2431
电机型号 Motor Model				2431	2431	2431	2431
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	6	9	12	24
2	额定转速	Nominal speed	rpm	7298	9078	8900	8811
3	额定电流	Nominal current	A	0.50	0.24	0.46	0.16
4	额定转矩	Nominal torque	mNm	3.09	1.81	4.82	3.39
空载点 Free Load							
5	空载转速	No-load speed	rpm	8200	10200	10000	9900
6	空载电流	No-load current	mA	50	25	40	14
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	79.2	78.9	80.8	80.7
8	转速	Speed	rpm	7380	9180	9100	9009
9	电流	Current	A	0.457	0.223	0.387	0.135
10	转矩	Torque	mNm	2.8	1.6	3.9	2.8
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	6.0	4.4	11.5	8.0
12	转速	Speed	rpm	4100	5100	5000	4950
13	电流	Current	A	2.1	1.0	2.0	0.7
14	转矩	Torque	mNm	14.0	8.2	21.9	15.4
堵转点 At Stall							
15	堵转电流	Stall current	A	4.12	2.00	3.90	1.36
16	堵转转矩	Stall torque	mNm	28.1	16.4	43.8	30.8
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	1.46	4.50	3.08	17.65
18	电机感抗	Terminal inductance	mH	0.160	0.530	0.450	1.700
19	转矩常数	Torque constant	mNm/A	6.90	8.32	11.34	22.91
20	转速常数	Speed constant	rpm/V	1366.7	1133.3	833.3	412.5
21	转速/转矩常数	Speed/torque constant	rpm/mNm	291.9	620.7	228.4	321.0
22	机械时间常数	Mechanical time constant	ms	14.22	30.23	12.27	16.01
23	转子惯量	Rotor inertia	gcm ²	4.65	4.65	5.13	4.76
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	68			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+ Vcc
- GND

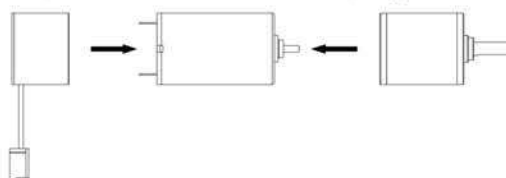
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 15N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

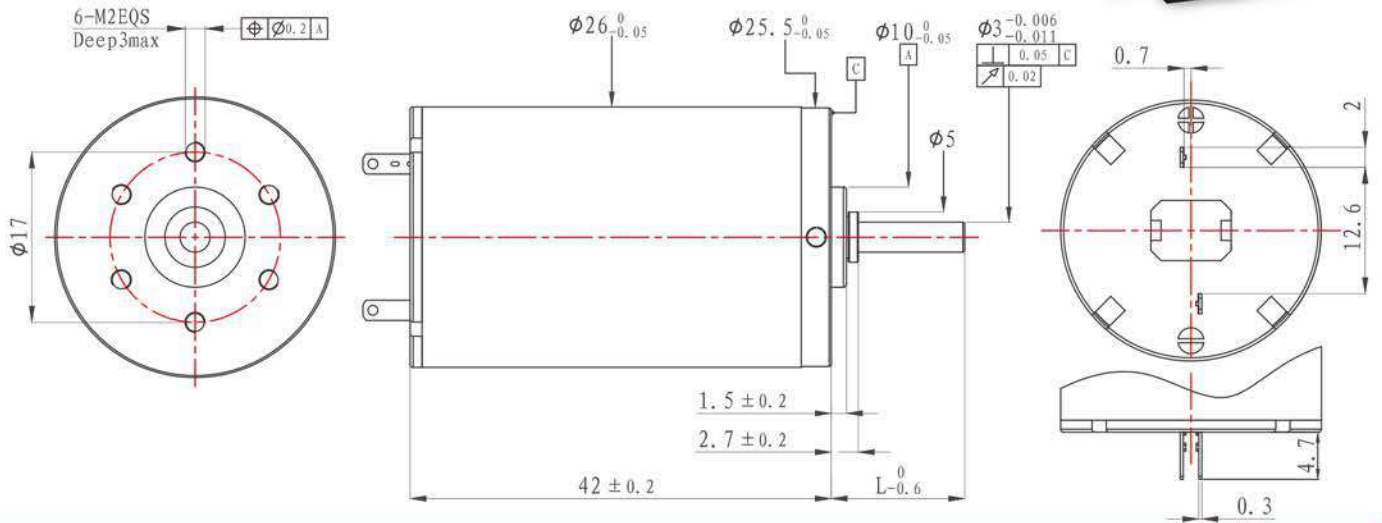
适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ26*L42mm, 稀有金属刷直流电机, 2-17W

Φ26*L42mm, Precious Metal Brushed DC Motor, 2-17W



电机参数 Motor Data				2642	2642	2642	2642
电机型号 Motor Model				2642	2642	2642	2642
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	6	9	12	24
2	额定转速	Nominal speed	rpm	4895	7476	7452	7700
3	额定电流	Nominal current	A	0.44	0.64	0.43	0.39
4	额定转矩	Nominal torque	mNm	4.01	5.97	5.44	9.25
空载点 Free Load							
5	空载转速	No-load speed	rpm	5500	8400	8100	8800
6	空载电流	No-load current	mA	50	50	45	30
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	77.8	81.7	81.7	80.7
8	转速	Speed	rpm	5033	7686	7412	8008
9	电流	Current	A	0.352	0.505	0.458	0.288
10	转矩	Torque	mNm	3.1	4.6	5.8	6.7
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	5.3	11.9	14.4	17.0
12	转速	Speed	rpm	2750	4200	4050	4400
13	电流	Current	A	1.8	2.7	2.5	1.5
14	转矩	Torque	mNm	18.2	27.1	34.0	37.0
堵转点 At Stall							
15	堵转电流	Stall current	A	3.60	5.40	4.90	2.90
16	堵转转矩	Stall torque	mNm	36.5	54.2	68.1	74.0
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	1.67	1.67	2.45	8.28
18	电机感抗	Terminal inductance	mH	0.062	0.070	0.160	0.290
19	转矩常数	Torque constant	mNm/A	10.27	10.14	14.02	25.77
20	转速常数	Speed constant	rpm/V	916.7	933.3	675.0	366.7
21	转速/转矩常数	Speed/torque constant	rpm/mNm	150.8	154.9	119.0	119.0
22	机械时间常数	Mechanical time constant	ms	9.11	7.68	5.90	5.79
23	转子惯量	Rotor inertia	gcm ²	5.77	4.73	4.73	4.65
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		7			
26	重量	Weight of motor	g	105			
27	噪音	Typical noise level	dB	≤40			

电机端子定义 Motor terminal definition

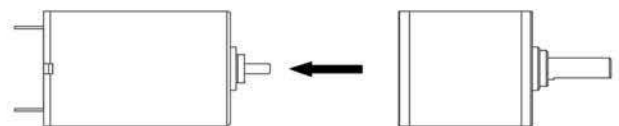
+ Vcc
- GND

技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

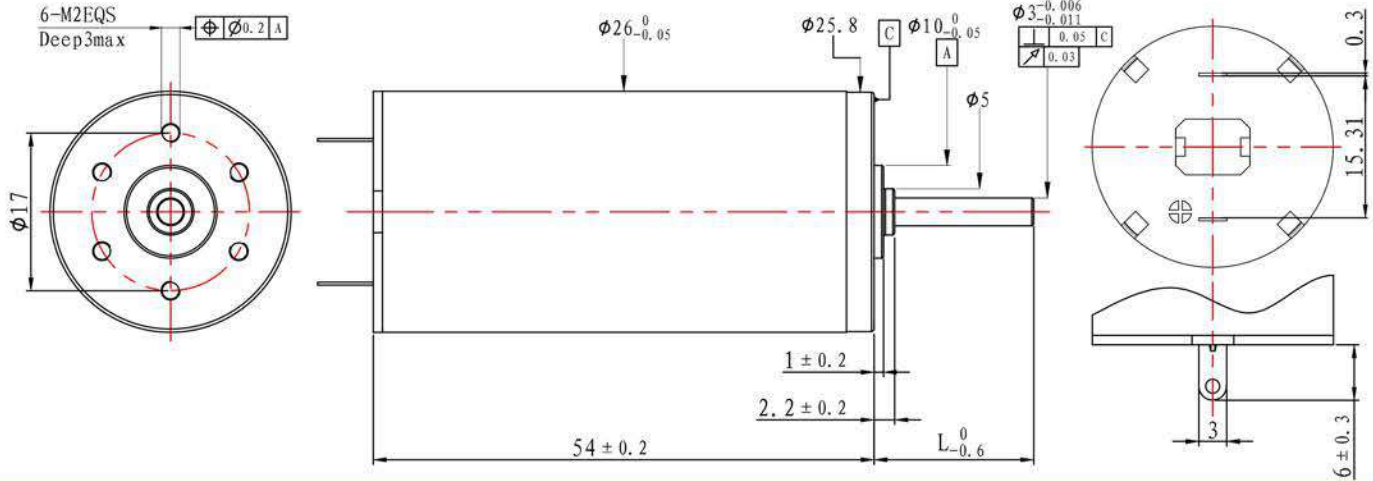
组合体系 System

适配部件 Optional Parts
· 行星轮减速箱 Planetary gearbox



Φ26*L54mm, 稀有金属刷直流电机, 15-35W

Φ26*L54mm, Precious Metal Brushed DC Motor, 15-35W



电机参数 Motor Data			
电机型号 Motor Model			
		2654	2654
额定电压参数值 Value at Rated voltage			
额定点 At Nominal			
1	额定电压	Nominal voltage	V/DC
2	额定转速	Nominal speed	rpm
3	额定电流	Nominal current	A
4	额定转矩	Nominal torque	mNm
空载点 Free Load			
5	空载转速	No-load speed	rpm
6	空载电流	No-load current	mA
最大效率点 At Max. Efficiency			
7	最大效率	Max. efficiency	%
8	转速	Speed	rpm
9	电流	Current	A
10	转矩	Torque	mNm
最大输出功率点 At Max. Output power			
11	最大功率	Max. output power	W
12	转速	Speed	rpm
13	电流	Current	A
14	转矩	Torque	mNm
堵转点 At Stall			
15	堵转电流	Stall current	A
16	堵转转矩	Stall torque	mNm
电机常数 Motor Constants			
17	电机阻抗	Terminal resistance	Ω
18	电机感抗	Terminal inductance	mH
19	转矩常数	Torque constant	mNm/A
20	转速常数	Speed constant	rpm/V
21	转速/转矩常数	Speed/torque constant	rpm/mNm
22	机械时间常数	Mechanical time constant	ms
23	转子惯量	Rotor inertia	gcm ²
24	极对数	Number of pole pairs	1
25	相数	Number of phase	7
26	重量	Weight of motor	g
27	噪音	Typical noise level	dB

电机端子定义 Motor terminal definition

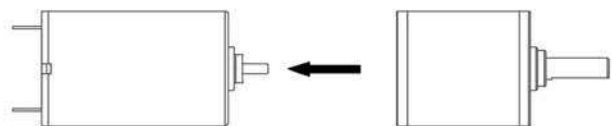
+ Vcc
- GND

技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 2N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
 滑动轴承径向间隙 Radial play: ≤0.03mm
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

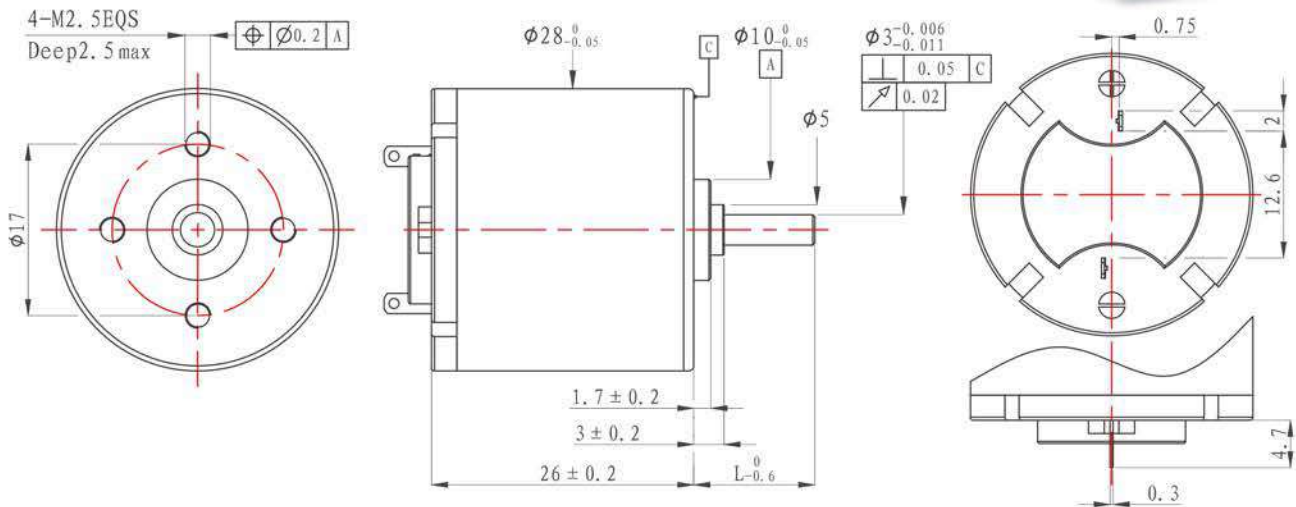
组合体系 System

适配部件 Optional Parts
 · 行星轮减速箱 Planetary gearbox



Φ28*L26mm, 稀有金属刷直流电机, 0.3-4W

Φ28*L26mm, Precious Metal Brushed DC Motor, 0.3-4W



电机参数 Motor Data				2826	2826	2826
电机型号 Motor Model				2826	2826	2826
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	6	12	24
2	额定转速	Nominal speed	rpm	3827	5429	5251
3	额定电流	Nominal current	A	0.08	0.18	0.09
4	额定转矩	Nominal torque	mNm	0.91	3.04	3.26
空载点 Free Load						
5	空载转速	No-load speed	rpm	4300	6100	5900
6	空载电流	No-load current	mA	10	14	8
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	76.6	81.6	80.8
8	转速	Speed	rpm	3827	5551	5369
9	电流	Current	A	0.079	0.148	0.077
10	转矩	Torque	mNm	0.9	2.5	2.7
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	0.9	4.4	4.6
12	转速	Speed	rpm	2150	3050	2950
13	电流	Current	A	0.3	0.8	0.4
14	转矩	Torque	mNm	4.1	13.8	14.8
堵转点 At Stall						
15	堵转电流	Stall current	A	0.64	1.50	0.78
16	堵转转矩	Stall torque	mNm	8.3	27.7	29.7
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	9.38	8.00	30.77
18	电机感抗	Terminal inductance	mH	0.150	0.430	1.600
19	转矩常数	Torque constant	mNm/A	13.12	18.61	38.45
20	转速常数	Speed constant	rpm/V	716.7	508.3	245.8
21	转速/转矩常数	Speed/torque constant	rpm/mNm	520.4	220.6	198.8
22	机械时间常数	Mechanical time constant	ms	22.29	19.22	16.39
23	转子惯量	Rotor inertia	gcm ²	4.09	8.32	7.88
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		7		
26	重量	Weight of motor	g	78		
27	噪音	Typical noise level	dB	≤38		

电机端子定义 Motor terminal definition

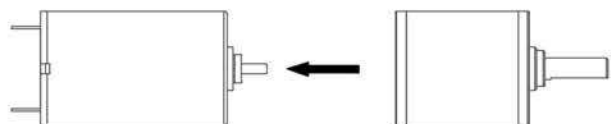
+ Vcc
- GND

技术说明 Technical specifications

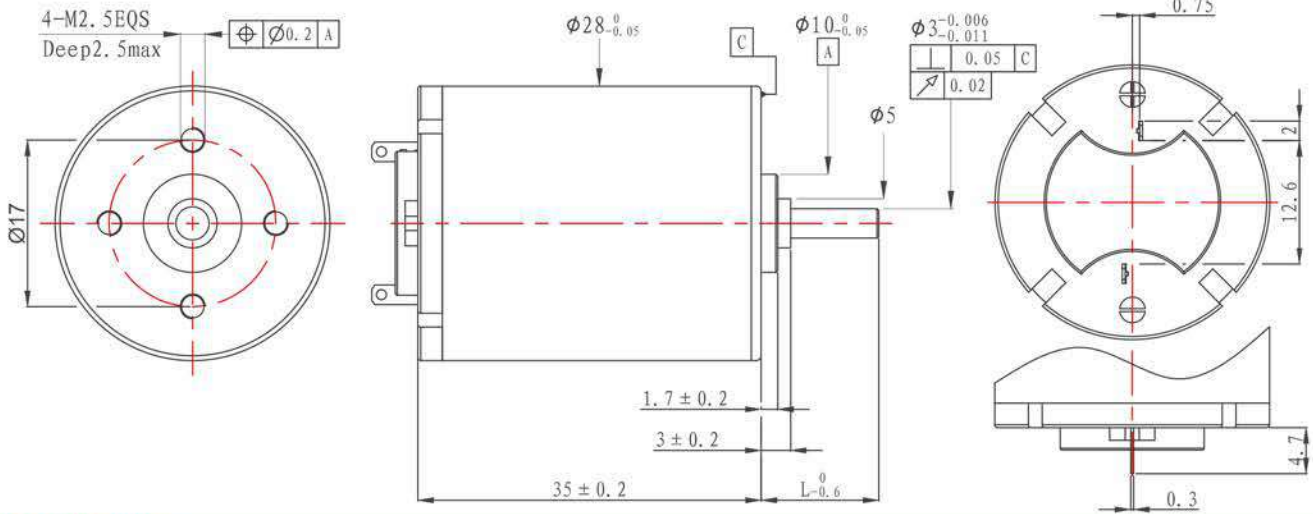
轴间间隙 Axial play: 0-0.1mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 2N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
 滑动轴承径向间隙 Radial play: ≤0.03mm
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80℃
 相对湿度范围 Relative humidity range: <90% (25℃)
 最高转子温度 Highest rotor temperature: 125℃
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts
 · 行星轮减速箱 Planetary gearbox



Φ28*L35mm, 稀有金属刷直流电机, 4-20W Φ28*L35mm, Precious Metal Brushed DC Motor, 4-20W



电机参数 Motor Data

电机型号 Motor Model				2835	2835	2835	2835
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	6	12	24	36
2	额定转速	Nominal speed	rpm	7218	8123	5421	6350
3	额定电流	Nominal current	A	0.78	0.52	0.20	0.14
4	额定转矩	Nominal torque	mNm	5.31	6.29	6.70	6.19
空载点 Free Load							
5	空载转速	No-load speed	rpm	8020	9025	6023	7056
6	空载电流	No-load current	mA	32	25	20	15
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	87.4	86.4	80.0	79.7
8	转速	Speed	rpm	7218	8123	5421	6350
9	电流	Current	A	0.779	0.523	0.198	0.144
10	转矩	Torque	mNm	5.3	6.3	6.7	6.2
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	11.2	14.9	10.6	11.4
12	转速	Speed	rpm	4010	4512.5	3011.5	3528
13	电流	Current	A	3.8	2.5	0.9	0.7
14	转矩	Torque	mNm	26.6	31.4	33.5	30.9
堵转点 At Stall							
15	堵转电流	Stall current	A	7.50	5.00	1.80	1.30
16	堵转转矩	Stall torque	mNm	53.1	62.9	67.0	61.9
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.80	2.40	13.33	27.69
18	电机感抗	Terminal inductance	mH	0.023	0.075	0.441	0.845
19	转矩常数	Torque constant	mNm/A	7.08	12.57	37.21	47.60
20	转速常数	Speed constant	rpm/V	1336	752.1	251.0	196.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	151.0	143.6	89.9	114.0
22	机械时间常数	Mechanical time constant	ms	8.89	9.30	6.89	9.07
23	转子惯量	Rotor inertia	gcm ²	5.63	6.19	7.31	7.59
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		7			
26	重量	Weight of motor	g	145			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

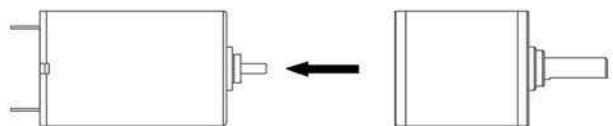
+ Vcc
- GND

技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

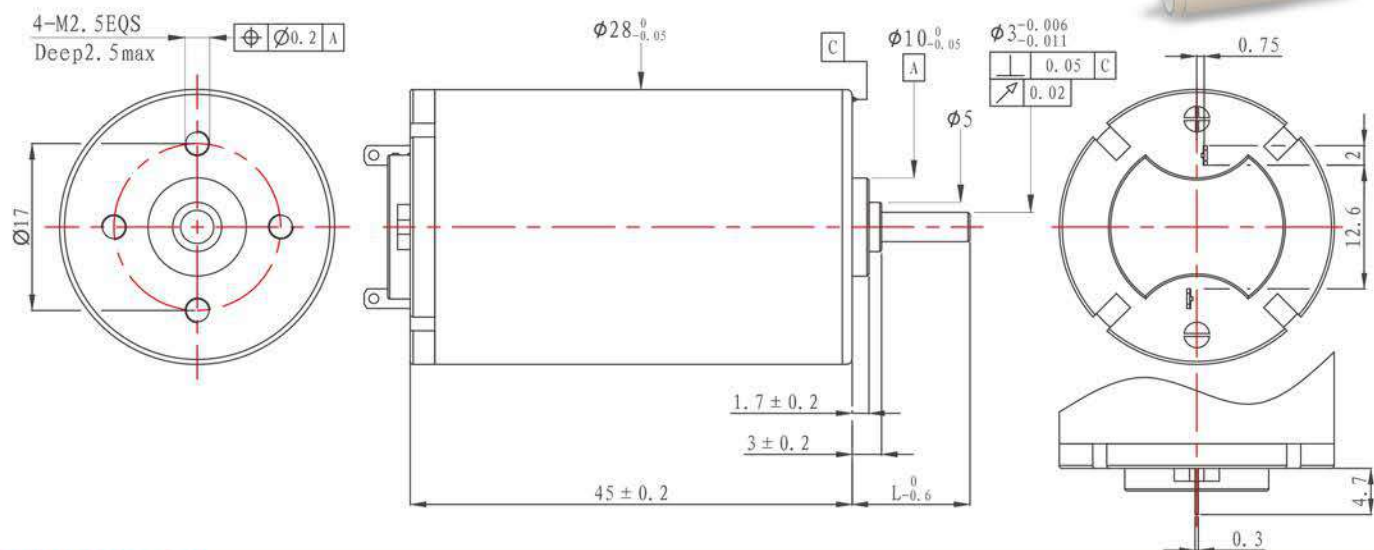
组合体系 System

适配部件 Optional Parts
· 行星轮减速箱 Planetary gearbox



Φ28*L45mm, 稀有金属刷直流电机, 4-20W

Φ28*L45mm, Precious Metal Brushes DC Motor, 4-20W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	6
2	额定转速	Nominal speed	rpm	5336
3	额定电流	Nominal current	A	0.67
4	额定转矩	Nominal torque	mNm	6.09
空载点 Free Load				
5	空载转速	No-load speed	rpm	5800
6	空载电流	No-load current	mA	45
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	85.4
8	转速	Speed	rpm	5394
9	电流	Current	A	0.588
10	转矩	Torque	mNm	5.3
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	11.6
12	转速	Speed	rpm	2900
13	电流	Current	A	3.9
14	转矩	Torque	mNm	38.1
堵转点 At Stall				
15	堵转电流	Stall current	A	7.80
16	堵转转矩	Stall torque	mNm	76.2
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.77
18	电机感抗	Terminal inductance	mH	0.053
19	转矩常数	Torque constant	mNm/A	9.82
20	转速常数	Speed constant	rpm/V	966.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	76.1
22	机械时间常数	Mechanical time constant	ms	6.66
23	转子惯量	Rotor inertia	gcm ²	8.35
24	极对数	Number of pole pairs		1
25	相数	Number of phase		7
26	重量	Weight of motor	g	145
27	噪音	Typical noise level	dB	≤38

电机端子定义 Motor terminal definition

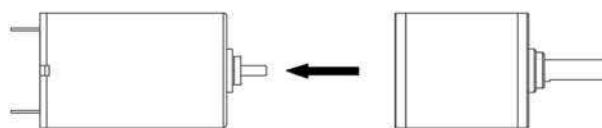
+ Vcc
- GND

技术说明 Technical specifications

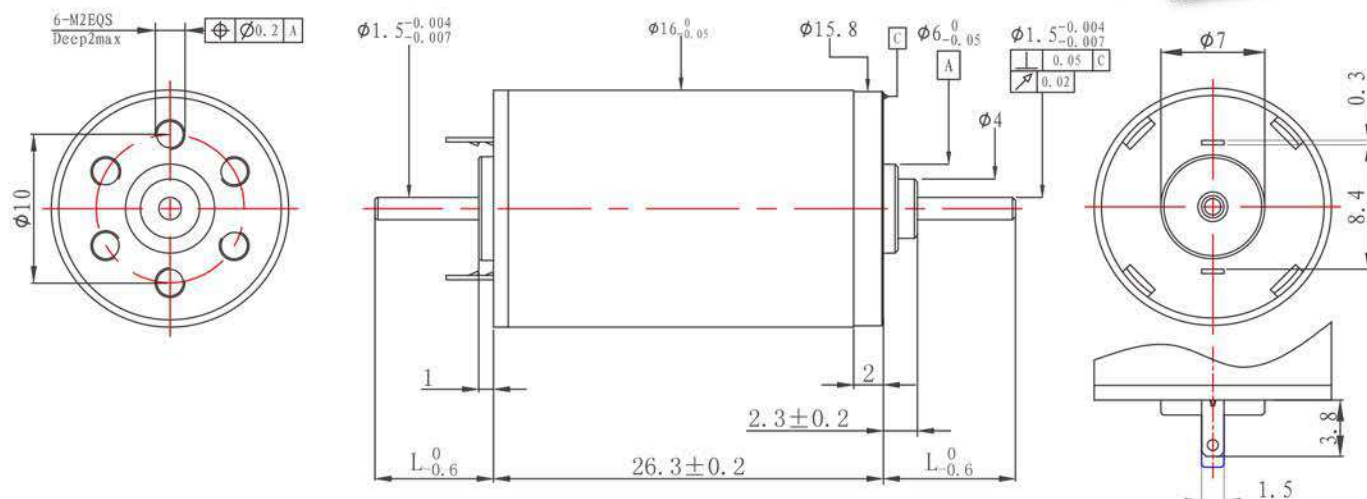
轴间间隙 Axial play: 0-0.1mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 2N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
 滑动轴承径向间隙 Radial play: ≤0.03mm
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts
 · 行星轮减速箱 Planetary gearbox



Φ16*L25mm, 碳刷直流电机, 1.5-4W Φ16*L25mm, Graphite Brushed DC Motor, 1.5-4W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	6
2	额定转速	Nominal speed	rpm	8108
3	额定电流	Nominal current	A	0.65
4	额定转矩	Nominal torque	mNm	2.71
空载点 Free Load				
5	空载转速	No-load speed	rpm	11500
6	空载电流	No-load current	mA	80
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	64.0
8	转速	Speed	rpm	9603
9	电流	Current	A	0.40
10	转矩	Torque	mNm	1.52
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	2.8
12	转速	Speed	rpm	5750
13	电流	Current	A	1.04
14	转矩	Torque	mNm	4.59
堵转点 At Stall				
15	堵转电流	Stall current	A	2.00
16	堵转转矩	Stall torque	mNm	9.2
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	3.00
18	电机感抗	Terminal inductance	mH	0.10
19	转矩常数	Torque constant	mNm/A	4.78
20	转速常数	Speed constant	rpm/V	1916.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	1252.3
22	机械时间常数	Mechanical time constant	ms	12.6
23	转子惯量	Rotor inertia	gcm ²	0.96
24	极对数	Number of pole pairs		1
25	相数	Number of phase		5
26	重量	Weight of motor	g	24
27	噪音	Typical noise level	dB	≤45

电机端子定义 Motor terminal definition

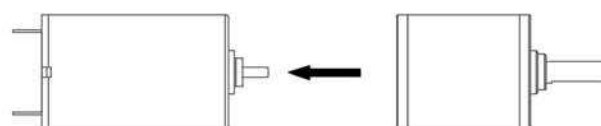
+ Vcc
- GND

技术说明 Technical specifications

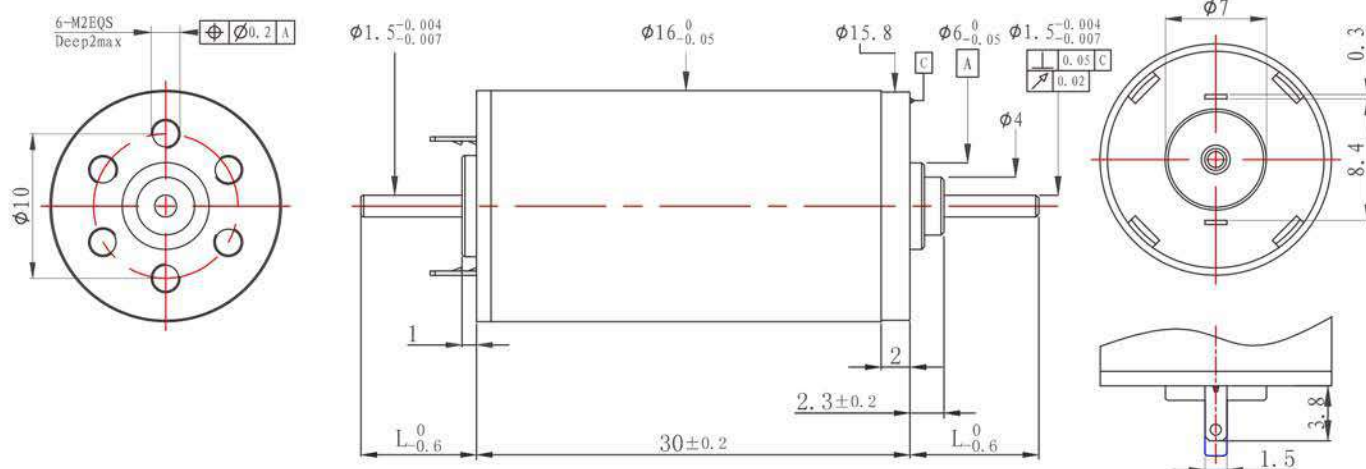
轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 15N
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts:
· 行星轮减速箱 Planetary gearbox



Φ16*L30mm, Graphite Brushed DC Motor, 2-4.5W

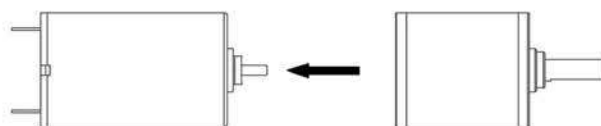


电机端子定义 Motor terminal definition

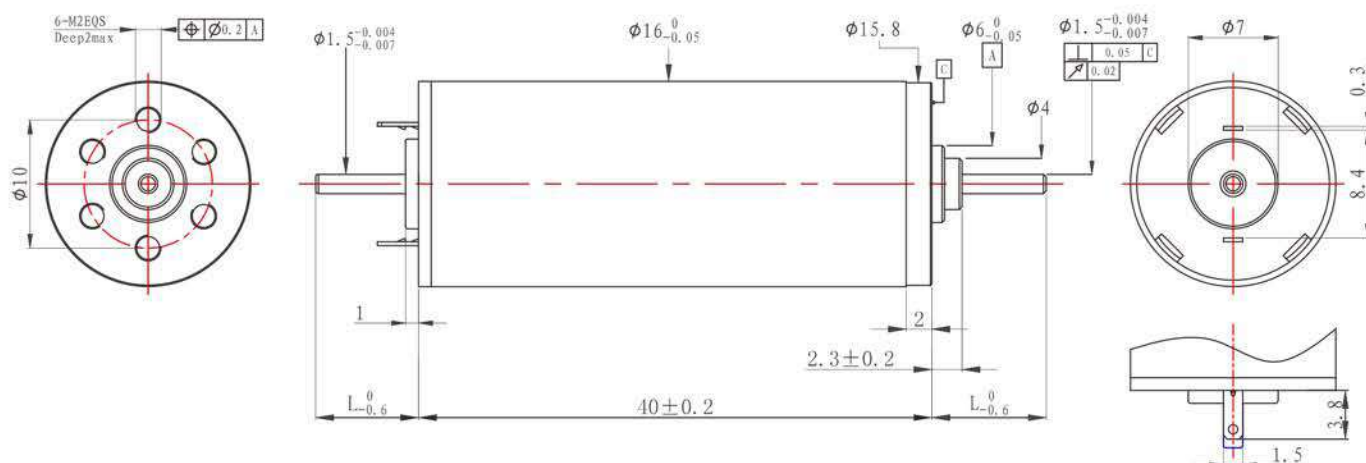
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.5N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 5N
 滑动轴承径向间隙 Radial play: $\leq 0.03\text{mm}$
 滚动轴承径向间隙 Radial play: $\leq 0.015\text{mm}$
 环境温度范围 Ambient temperature range: $-20\sim+80^{\circ}\text{C}$
 相对湿度范围 Relative humidity range: $<90\%$ (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

·行星轮减速箱Planetary gearbox



Φ16*L40mm, 碳刷直流电机, 3-9W Φ16*L40mm, Graphite Brushed DC Motor, 3-9W



电机参数 Motor Data

电机型号 Motor Model				1640	1640	1640
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	6	12	24
2	额定转速	Nominal speed	rpm	9516	8112	7550
3	额定电流	Nominal current	A	1.04	0.65	0.41
4	额定转矩	Nominal torque	mNm	4.5	6.6	8.7
空载点 Free Load						
5	空载转速	No-load speed	rpm	12200	10400	10000
6	空载电流	No-load current	mA	70	45	30
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	76.6	76.2	74.5
8	转速	Speed	rpm	10797	9204	8800
9	电流	Current	A	0.58	0.36	0.22
10	转矩	Torque	mNm	2.4	3.4	4.2
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	6.54	8.13	9.24
12	转速	Speed	rpm	6100	5200	5000
13	电流	Current	A	2.29	1.42	0.82
14	转矩	Torque	mNm	10.2	14.9	17.7
堵转点 At Stall						
15	堵转电流	Stall current	A	4.50	2.80	1.60
16	堵转转矩	Stall torque	mNm	20.5	29.9	35.3
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	1.33	4.29	15.00
18	电机感抗	Terminal inductance	mH	0.029	0.141	0.506
19	转矩常数	Torque constant	mNm/A	4.62	10.84	22.49
20	转速常数	Speed constant	rpm/V	2033.3	866.7	416.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	595.7	348.2	283.2
22	机械时间常数	Mechanical time constant	ms	10.4	6.1	5.0
23	转子惯量	Rotor inertia	gcm ²	1.67	1.67	1.69
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		5		
26	重量	Weight of motor	g	42		
27	噪音	Typical noise level	dB	≤45		

电机端子定义 Motor terminal definition

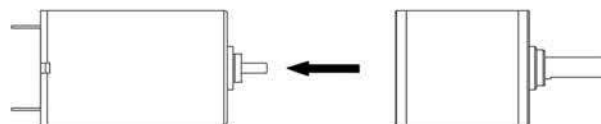
+ Vcc
- GND

技术说明 Technical specifications

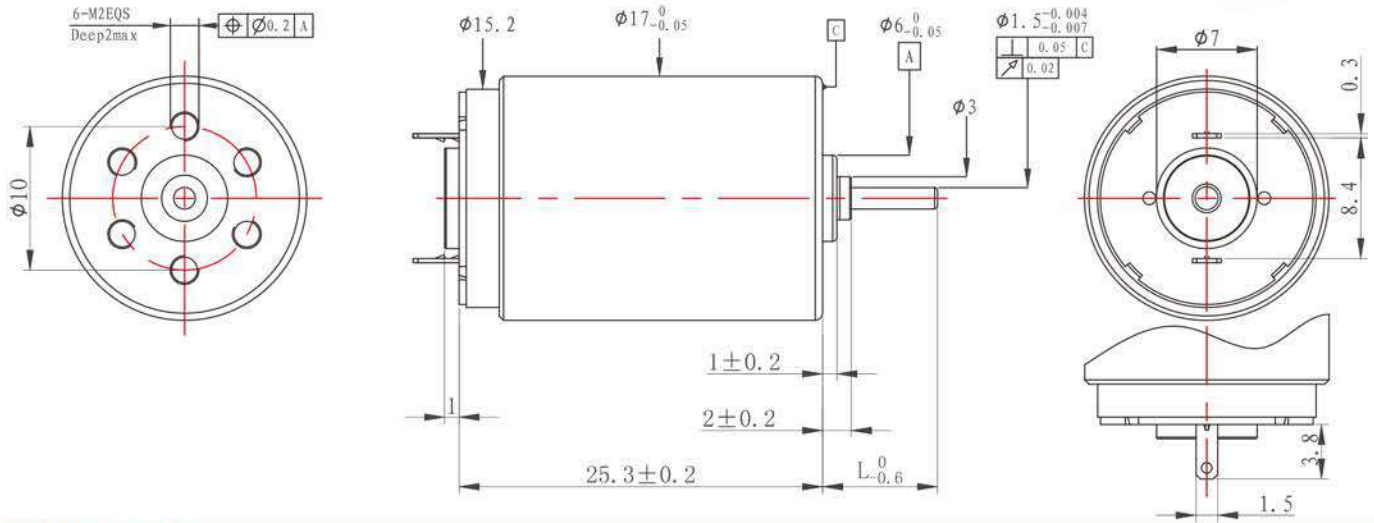
轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 5N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts:
· 行星轮减速箱 Planetary gearbox



Φ17*L25mm, 碳刷直流电机, 1.5-3W Φ17*L25mm, Graphite Brushed DC Motor, 1.5-3W



电机参数 Motor Data			
电机型号 Motor Model		1725	1725
额定电压参数值 Value at Rated voltage		1725	1725
额定点 At Nominal		1725	1725
1	额定电压 Nominal voltage	V/DC	6
2	额定转速 Nominal speed	rpm	8140
3	额定电流 Nominal current	A	0.79
4	额定转矩 Nominal torque	mNm	3.55
空载点 Free Load		1725	1725
5	空载转速 No-load speed	rpm	11000
6	空载电流 No-load current	mA	90
最大效率点 At Max. Efficiency		1725	1725
7	最大效率 Max. efficiency	%	67.4
8	转速 Speed	rpm	9350
9	电流 Current	A	0.50
10	转矩 Torque	mNm	2.05
最大输出功率点 At Max. Output power		1725	1725
11	最大功率 Max. output power	W	3.93
12	转速 Speed	rpm	5500
13	电流 Current	A	1.45
14	转矩 Torque	mNm	6.83
堵转点 At Stall		1725	1725
15	堵转电流 Stall current	A	2.80
16	堵转转矩 Stall torque	mNm	13.66
电机常数 Motor Constants		1725	1725
17	电机阻抗 Terminal resistance	Ω	2.14
18	电机感抗 Terminal inductance	mH	0.08
19	转矩常数 Torque constant	mNm/A	5.04
20	转速常数 Speed constant	rpm/V	1833.3
21	转数/转矩常数 Speed/torque constant	rpm/mNm	805.2
22	机械时间常数 Mechanical time constant	ms	7.6
23	转子惯量 Rotor inertia	gcm ²	0.90
24	极对数 Number of pole pairs		1
25	相数 Number of phase		5
26	重量 Weight of motor	g	28
27	噪音 Typical noise level	dB	≤40

电机端子定义 Motor terminal definition

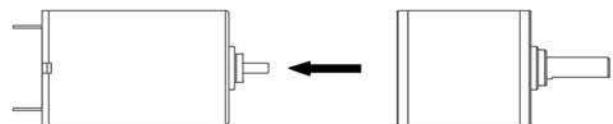
+ Vcc
- GND

技术说明 Technical specifications

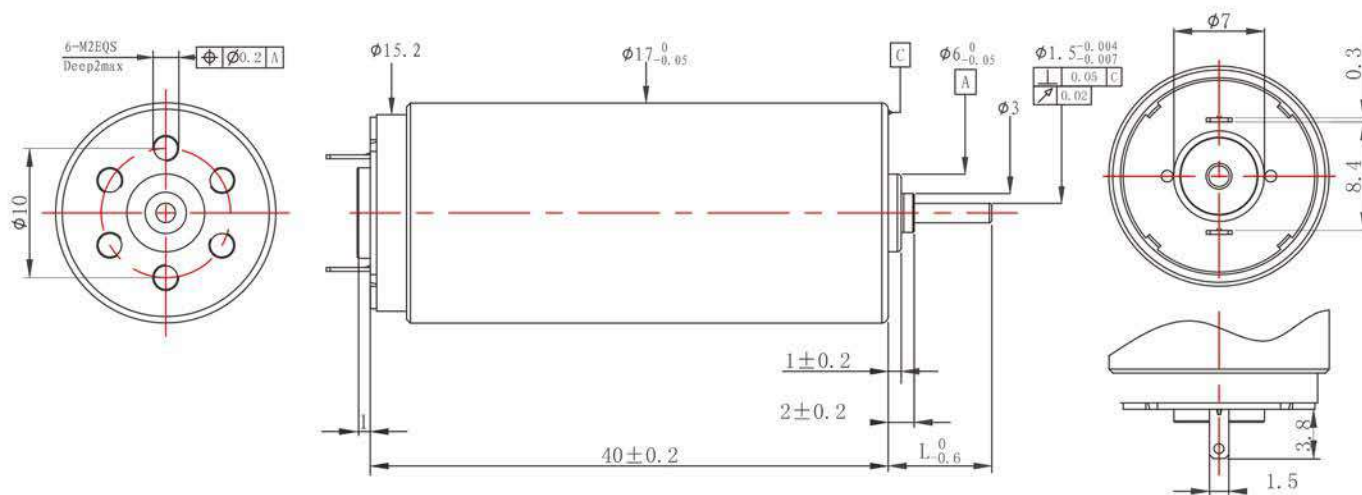
轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.5N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 5N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90%(25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts:
· 行星轮减速箱 Planetary gearbox



Φ17*L40mm, 碳刷直流电机, 10-30W Φ17*L40mm, Graphite Brushed DC Motor, 10-30W



电机参数 Motor Data				
电机型号 Motor Model		1740	1740	1740
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	6
2	额定转速	Nominal speed	rpm	11408
3	额定电流	Nominal current	A	1.54
4	额定转矩	Nominal torque	mNm	6.0
5	空载转速	No-load speed	rpm	13500
6	空载电流	No-load current	mA	120
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	78.6
8	转速	Speed	rpm	12218
9	电流	Current	A	0.99
10	转矩	Torque	mNm	3.7
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	13.59
12	转速	Speed	rpm	6750
13	电流	Current	A	4.71
14	转矩	Torque	mNm	19.2
堵转点 At Stall				
15	堵转电流	Stall current	A	9.30
16	堵转转矩	Stall torque	mNm	38.5
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.65
18	电机感抗	Terminal inductance	mH	0.028
19	转矩常数	Torque constant	mNm/A	4.19
20	转速常数	Speed constant	rpm/V	2250.0
21	转速/转矩常数	Speed/torque constant	rpm/mNm	351.0
22	机械时间常数	Mechanical time constant	ms	6.2
23	转子惯量	Rotor inertia	gcm ²	1.69
24	极对数	Number of pole pairs		1
25	相数	Number of phase		5
26	重量	Weight of motor	g	48
27	噪音	Typical noise level	dB	≤42

电机端子定义 Motor terminal definition

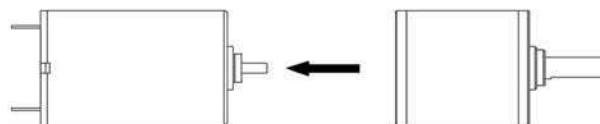
+ Vcc
- GND

技术说明 Technical specifications

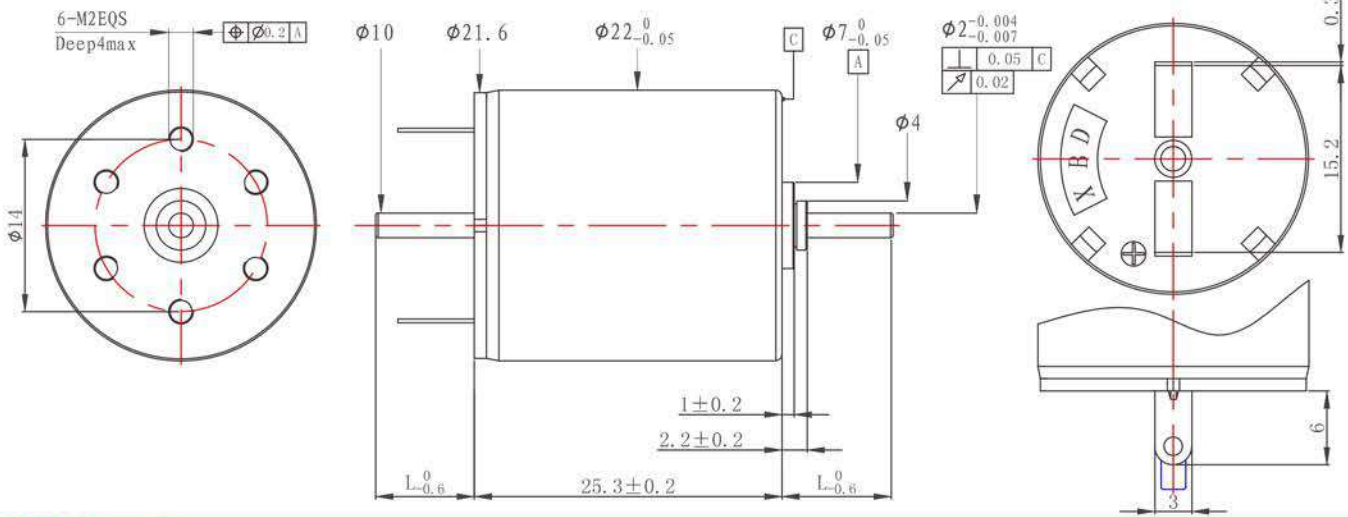
轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.8N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts:
· 行星轮减速箱 Planetary gearbox



Φ22*L25mm, 碳刷直流电机, 4-10W Φ22*L25mm, Graphite Brushed DC Motor, 4-10W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				2225	2225	2225	2225
1	额定电压	Nominal voltage	V/DC	6	12	18	24
2	额定转速	Nominal speed	rpm	11340	13272	9676	9960
3	额定电流	Nominal current	A	0.98	0.81	0.50	0.34
4	额定转矩	Nominal torque	mNm	3.67	5.13	6.24	5.56

空载点 Free Load

5	空载转速	No-load speed	rpm	13500	15800	11800	12000
6	空载电流	No-load current	mA	100	90	60	45

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	75.1	74.0	71.4	70.9
8	转速	Speed	rpm	11880	13825	10207	10380
9	电流	Current	A	0.760	0.654	0.389	0.282
10	转矩	Torque	mNm	2.8	4.0	4.7	4.4

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	8.1	13.3	10.7	10.3
12	转速	Speed	rpm	6750	7900	5900	6000
13	电流	Current	A	2.9	2.3	1.3	0.9
14	转矩	Torque	mNm	11.5	16.0	17.3	16.3

堵转点 At Stall

15	堵转电流	Stall current	A	5.60	4.60	2.50	1.80
16	堵转转矩	Stall torque	mNm	22.9	32.1	34.7	32.7

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	1.07	2.61	7.20	13.33
18	电机感抗	Terminal inductance	mH	0.025	0.090	0.265	0.550
19	转矩常数	Torque constant	mNm/A	4.17	7.11	14.22	18.62
20	转速常数	Speed constant	rpm/V	2250.0	1316.7	655.6	500.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	588.9	492.7	340.2	367.2
22	机械时间常数	Mechanical time constant	ms	18.07	15.12	10.44	11.27
23	转子惯量	Rotor inertia	gcm ²	2.93	2.93	2.97	2.93
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	48			
27	噪音	Typical noise level	dB	≤42			

电机端子定义 Motor terminal definition

+ Vcc
- GND

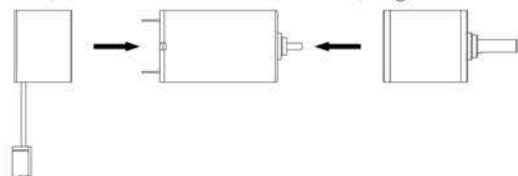
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 15N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

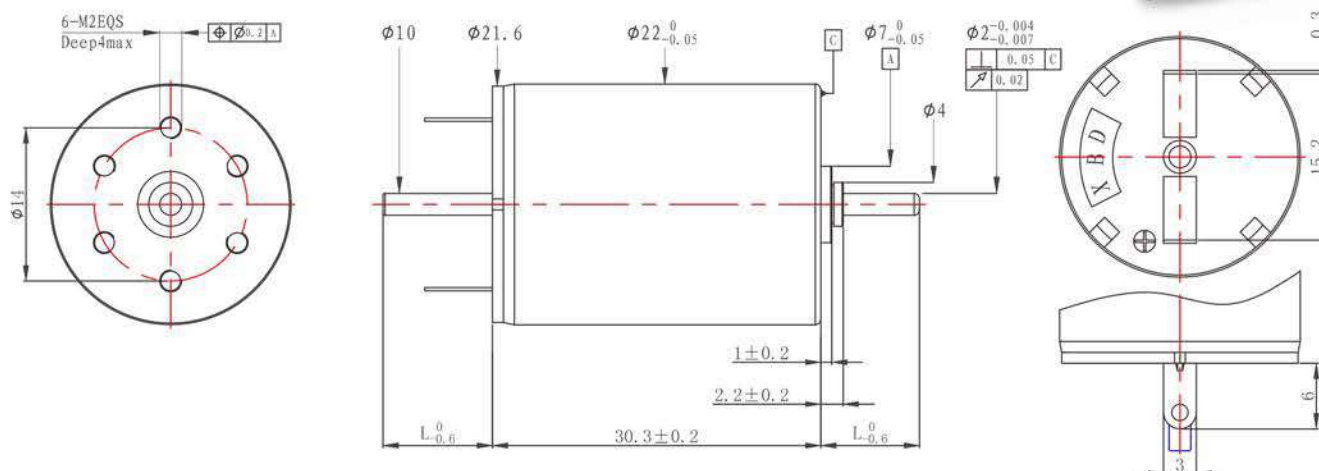
组合体系 System

适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetoelectric encoder



Φ22*L30mm, 碳刷直流电机, 3-10W Φ22*L30mm, Graphite Brushed DC Motor, 3-10W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				2230	2230	2230	2230
1	额定电压	Nominal voltage	V/DC	6	12	18	24
2	额定转速	Nominal speed	rpm	9492	10248	9234	9405
3	额定电流	Nominal current	A	0.88	0.63	0.42	0.29
4	额定转矩	Nominal torque	mNm	3.91	5.22	5.79	5.26

空载点 Free Load

5	空载转速	No-load speed	rpm	11300	12200	10800	11000
6	空载电流	No-load current	mA	90	65	45	30

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	74.97	74.93	75.42	75.85
8	转速	Speed	rpm	9944	10736	9558	9735
9	电流	Current	A	0.679	0.489	0.339	0.234
10	转矩	Torque	mNm	2.93	3.91	4.60	4.17

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	7.23	10.41	11.30	10.44
12	转速	Speed	rpm	5650	6100	5400	5500
13	电流	Current	A	2.55	1.83	1.32	0.92
14	转矩	Torque	mNm	12.22	16.30	19.98	18.13

堵转点 At Stall

15	堵转电流	Stall current	A	5.00	3.60	2.60	1.80
16	堵转转矩	Stall torque	mNm	24.45	32.60	39.96	36.26

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	1.20	3.33	6.92	13.33
18	电机感抗	Terminal inductance	mH	0.190	0.403	0.850	1.600
19	转矩常数	Torque constant	mNm/A	4.98	9.22	15.64	20.49
20	转速常数	Speed constant	rpm/V	1883.3	1016.7	600.0	458.3
21	转速/转矩常数	Speed/torque constant	rpm/mNm	462.2	374.2	270.3	303.3
22	机械时间常数	Mechanical time constant	ms	13.05	11.08	7.90	9.09
23	转子惯量	Rotor inertia	gcm ²	2.70	2.83	2.79	2.54
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	54			
27	噪音	Typical noise level	dB	≤42			

电机端子定义 Motor terminal definition

+ Vcc
- GND

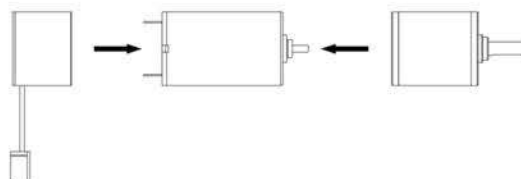
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 0.8N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
滑动轴承径向间隙 Radial play: ≤0.03mm
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

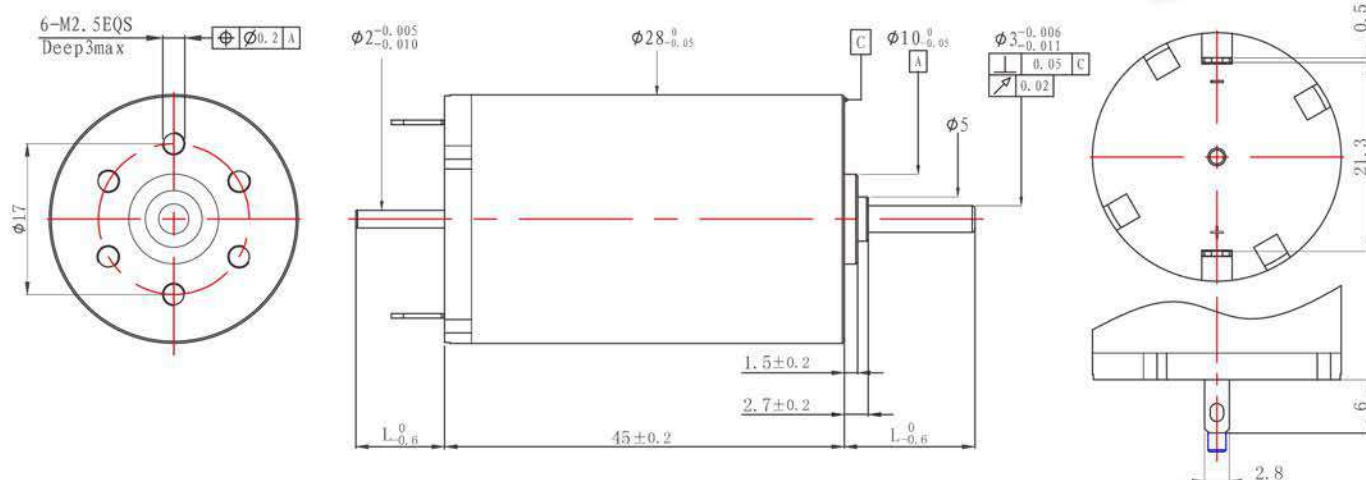
组合体系 System

适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器/磁电式编码器 Photoelectric encoder/magnetolectric encoder



Φ28*L45mm, 碳刷直流电机, 9-35W Φ28*L45mm, Graphite Brushed DC Motor, 9-35W



电机参数 Motor Data							
电机型号 Motor Model				2845	2845	2845	2845
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	6	12	24	48
2	额定转速	Nominal speed	rpm	6942	7476	7565	7298
3	额定电流	Nominal current	A	1.89	1.29	0.74	0.37
4	额定转矩	Nominal torque	mNm	12.69	15.85	17.65	17.90
空载点 Free Load							
5	空载转速	No-load speed	rpm	7800	8400	8500	8200
6	空载电流	No-load current	mA	150	120	75	45
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	81.6	80.0	79.1	77.0
8	转速	Speed	rpm	7098	7602	7650	7298
9	电流	Current	A	1.577	1.135	0.678	0.370
10	转矩	Torque	mNm	10.38	13.69	16.05	17.90
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	23.55	31.68	35.71	34.93
12	转速	Speed	rpm	3900	4200	4250	4100
13	电流	Current	A	8.075	5.460	3.088	1.523
14	转矩	Torque	mNm	57.668	72.038	80.227	81.351
堵转点 At Stall							
15	堵转电流	Stall current	A	16.00	10.80	6.10	3.00
16	堵转转矩	Stall torque	mNm	115.3	144.1	160.5	162.7
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.38	1.11	3.93	16.00
18	电机感抗	Terminal inductance	mH	0.030	0.120	0.420	1.800
19	转矩常数	Torque constant	mNm/A	7.28	13.49	26.63	55.06
20	转速常数	Speed constant	rpm/V	1300.0	700.0	354.2	170.8
21	转数/转矩常数	Speed/torque constant	rpm/mNm	67.6	58.3	53.0	50.4
22	机械时间常数	Mechanical time constant	ms	7.53	7.00	6.49	6.73
23	转子惯量	Rotor inertia	gcm ²	10.63	11.47	11.69	12.75
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	145			
27	噪音	Typical noise level	dB	≤40			

电机端子定义 Motor terminal definition

+ Vcc
- GND

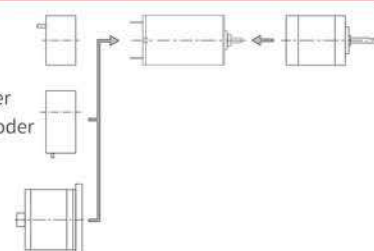
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

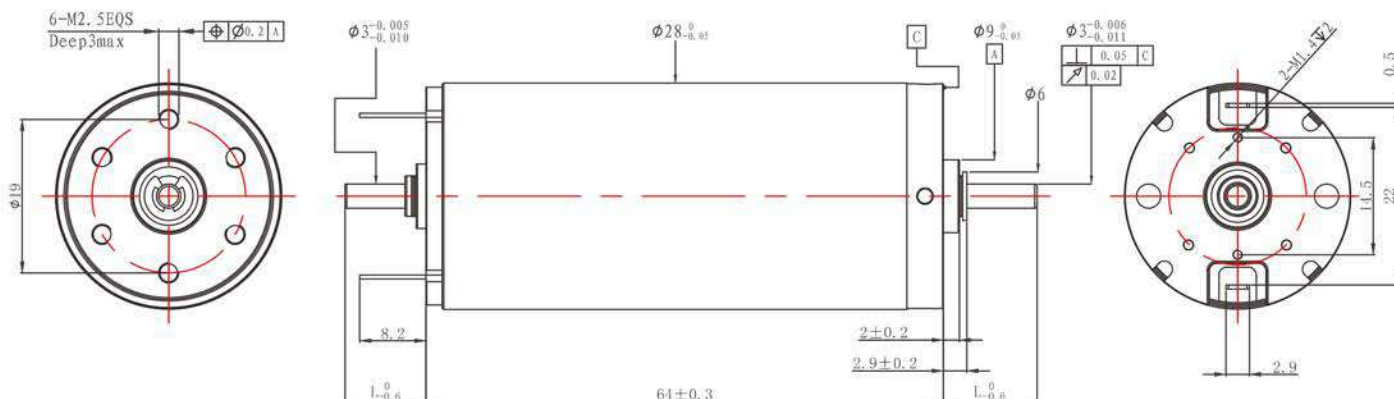
适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetoelectric encoder
- 刹车 Brake



Φ28*L64mm, 碳刷直流电机, 13-55W

Φ28*L64mm, Graphite Brushed DC Motor, 13-55W



电机参数 Motor Data

电机型号 Motor Model				2864	2864	2864
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	6	12	24
2	额定转速	Nominal speed	rpm	6675	6497	6497
3	额定电流	Nominal current	A	2.92	1.95	1.11
4	额定转矩	Nominal torque	mNm	19.63	26.46	32.71
空载点 Free Load						
5	空载转速	No-load speed	rpm	7500	7300	7300
6	空载电流	No-load current	mA	320	240	64
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	78.2	76.9	84.3
8	转速	Speed	rpm	6713	6497	6753
9	电流	Current	A	2.806	1.952	0.779
10	转矩	Torque	mNm	18.74	26.46	22.30
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	35.05	45.97	56.83
12	转速	Speed	rpm	3750	3650	3650
13	电流	Current	A	12.16	8.02	4.83
14	转矩	Torque	mNm	89.2	120.3	148.7
堵转点 At Stall						
15	堵转电流	Stall current	A	24.00	15.80	9.60
16	堵转转矩	Stall torque	mNm	178.5	240.5	297.4
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	0.25	0.76	2.50
18	电机感抗	Terminal inductance	mH	0.030	0.090	0.280
19	转矩常数	Torque constant	mNm/A	7.54	15.46	31.19
20	转速常数	Speed constant	rpm/V	1250.0	608.3	304.2
21	转数/转矩常数	Speed/torque constant	rpm/mNm	42.0	30.3	24.5
22	机械时间常数	Mechanical time constant	ms	7.02	6.56	4.97
23	转子惯量	Rotor inertia	gcm ²	15.94	20.63	19.32
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		7		
26	重量	Weight of motor	g	200		
27	噪音	Typical noise level	dB	≤45		

电机端子定义 Motor terminal definition

+ Vcc
- GND

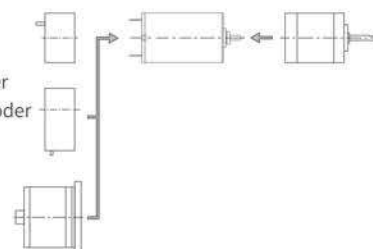
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 2N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 20N
滚动轴承径向间隙 Radial play: ≤0.015mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

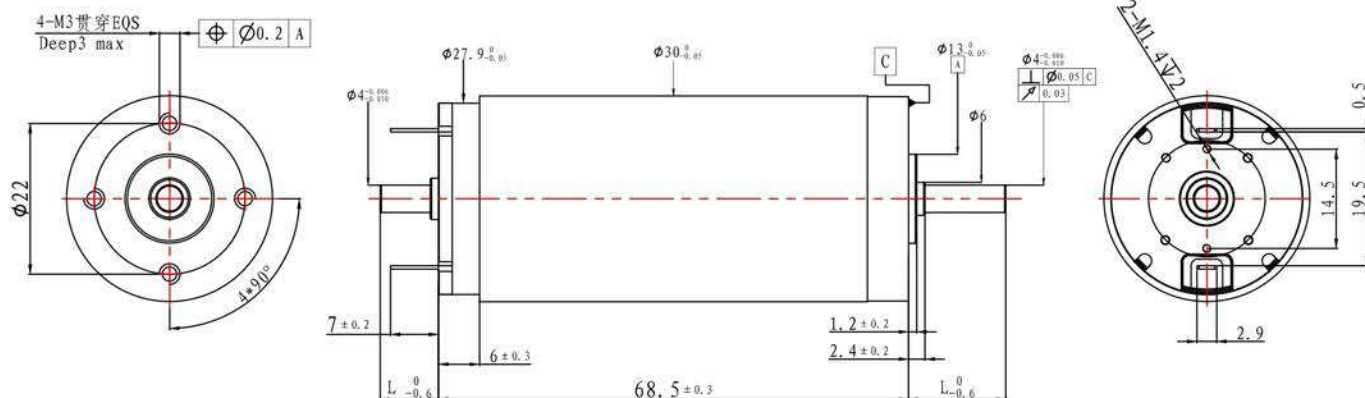
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetoelectric encoder
- 刹车 Brake



Φ30*L68mm, 碳刷直流电机, 80-210W Φ30*L68mm, Graphite Brushed DC Motor, 80-210W



电机参数 Motor Data

电机型号 Motor Model				3068	3068	3068	3068
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	12	18	24	48
2	额定转速	Nominal speed	rpm	7667	7820	7560	7920
3	额定电流	Nominal current	A	4.10	3.90	3.54	1.87
4	额定转矩	Nominal torque	mNm	52.04	73.64	92.60	92.93
空载点 Free Load							
5	空载转速	No-load speed	rpm	8200	8500	8400	8800
6	空载电流	No-load current	mA	353	240	130	80
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	85.0	86.1	88.0	87.1
8	转速	Speed	rpm	7626	7948	7896	8228
9	电流	Current	A	4.388	3.214	2.174	1.245
10	转矩	Torque	mNm	56.0	59.8	55.6	60.4
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	171.9	204.8	203.6	214.1
12	转速	Speed	rpm	4100	4250	4200	4400
13	电流	Current	A	29.2	23.1	17.2	9.0
14	转矩	Torque	mNm	400.3	460.3	463.0	464.6
堵转点 At Stall							
15	堵转电流	Stall current	A	58.00	46.00	34.20	18.00
16	堵转转矩	Stall torque	mNm	800.7	920.5	926.0	929.3
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.21	0.39	0.70	2.67
18	电机感抗	Terminal inductance	mH	0.036	0.071	0.126	0.506
19	转矩常数	Torque constant	mNm/A	13.89	20.12	27.18	51.86
20	转速常数	Speed constant	rpm/V	683.3	472.2	350.0	183.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	10.2	9.2	9.1	9.5
22	机械时间常数	Mechanical time constant	ms	3.75	3.38	3.32	3.47
23	转子惯量	Rotor inertia	gcm ²	35.00	35.00	35.00	35.00
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		13			
26	重量	Weight of motor	g	265			
27	噪音	Typical noise level	dB	≤55			

电机端子定义 Motor terminal definition

+ Vcc
- GND

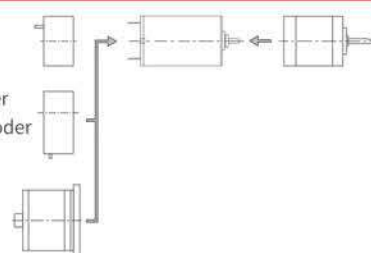
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 7N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 65N
· 最大允许安装力 (静态) Max press fit force (static): 10N
滚动轴承径向间隙 Radial play: ≤0.02mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

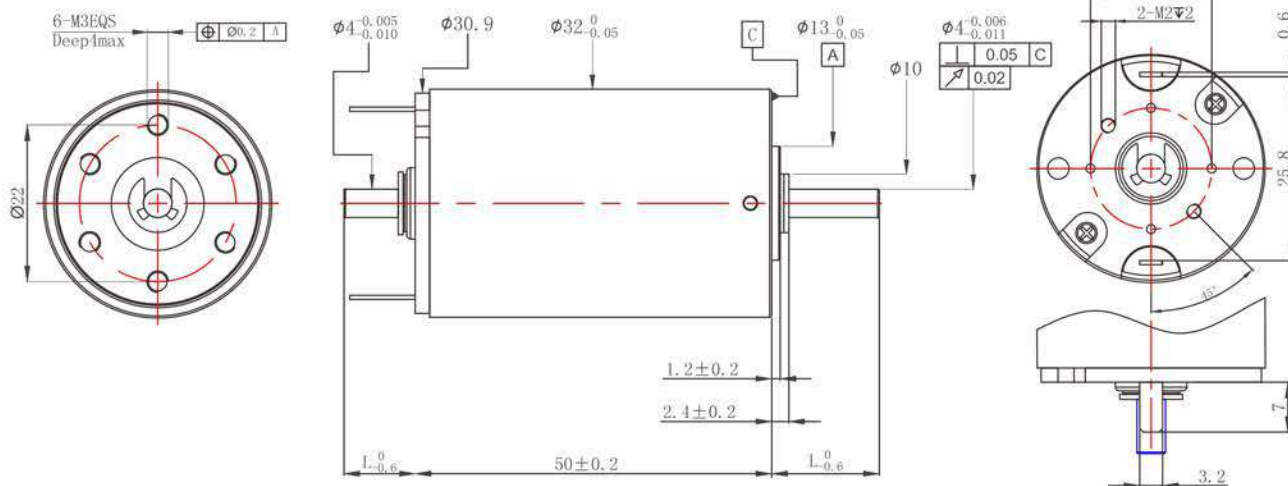
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ32*L50mm, 碳刷直流电机, 10-25W Φ32*L50mm, Graphite Brushed DC Motor, 10-25W



电机参数 Motor Data				
电机型号 Motor Model		3250	3250	3250
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	4984
3	额定电流	Nominal current	A	1.10
4	额定转矩	Nominal torque	mNm	19.72
空载点 Free Load				
5	空载转速	No-load speed	rpm	5600
6	空载电流	No-load current	mA	120
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	78.2
8	转速	Speed	rpm	5012
9	电流	Current	A	1.052
10	转矩	Torque	mNm	18.8
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	26.3
12	转速	Speed	rpm	2800
13	电流	Current	A	4.6
14	转矩	Torque	mNm	89.6
堵转点 At Stall				
15	堵转电流	Stall current	A	9.00
16	堵转转矩	Stall torque	mNm	179.3
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	1.33
18	电机感抗	Terminal inductance	mH	0.120
19	转矩常数	Torque constant	mNm/A	20.19
20	转速常数	Speed constant	rpm/V	466.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	31.2
22	机械时间常数	Mechanical time constant	ms	9.05
23	转子惯量	Rotor inertia	gcm ²	27.68
24	极对数	Number of pole pairs		1
25	相数	Number of phase		7
26	重量	Weight of motor	g	225
27	噪音	Typical noise level	dB	≤40

电机端子定义 Motor terminal definition

+ Vcc
- GND

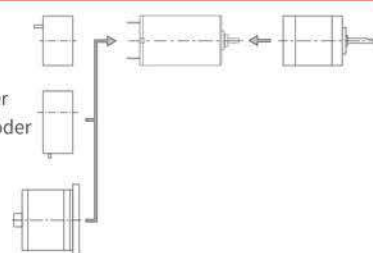
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向(动态) Max axial load (dynamic): 8N
· 径向(法兰外5mm) Max radial load (5mm from flange): 16N
· 最大允许安装力(静态) Max press fit force (static): 98N
滚动轴承径向间隙 Radial play: ≤0.14mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90%(25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

组合体系 System

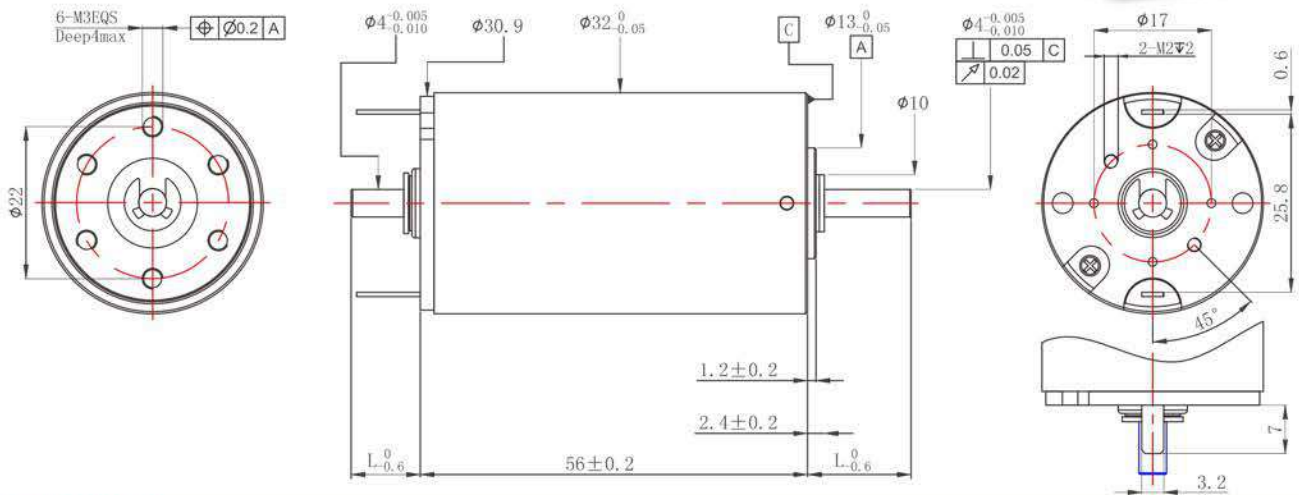
适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ32*L56mm, 碳刷直流电机, 30-90W

Φ32*L56mm, Graphite Brushed DC Motor, 30-90W



电机参数 Motor Data						
电机型号 Motor Model				3256	3256	3256
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	12	24	48
2	额定转速	Nominal speed	rpm	5696	5429	6052
3	额定电流	Nominal current	A	3.07	1.51	0.90
4	额定转矩	Nominal torque	mNm	50.27	53.03	57.10
空载点 Free Load						
5	空载转速	No-load speed	rpm	6400	6100	6800
6	空载电流	No-load current	mA	240	85	50
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	81.7	84.5	84.6
8	转速	Speed	rpm	5824	5460	6086
9	电流	Current	A	2.558	1.441	0.864
10	转矩	Torque	mNm	41.1	50.6	54.5
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	76.6	77.0	92.4
12	转速	Speed	rpm	3200	3050	3400
13	电流	Current	A	13.1	6.5	3.9
14	转矩	Torque	mNm	228.5	241.0	259.5
堵转点 At Stall						
15	堵转电流	Stall current	A	26.00	13.00	7.80
16	堵转转矩	Stall torque	mNm	457.0	482.1	519.1
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	0.46	1.85	6.15
18	电机感抗	Terminal inductance	mH	0.075	0.265	0.960
19	转矩常数	Torque constant	mNm/A	17.74	37.33	66.97
20	转速常数	Speed constant	rpm/V	533.3	254.2	141.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	14.0	12.7	13.1
22	机械时间常数	Mechanical time constant	ms	4.06	3.67	3.80
23	转子惯量	Rotor inertia	gcm ²	27.68	27.68	27.68
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		7		
26	重量	Weight of motor	g	225		
27	噪音	Typical noise level	dB	≤45		

电机端子定义 Motor terminal definition

+ Vcc
- GND

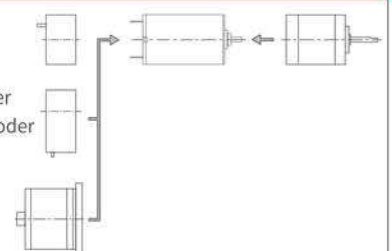
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 16N
 · 最大允许安装力 (静态) Max press fit force (static): 98N
 滚动轴承径向间隙 Radial play: ≤0.14mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

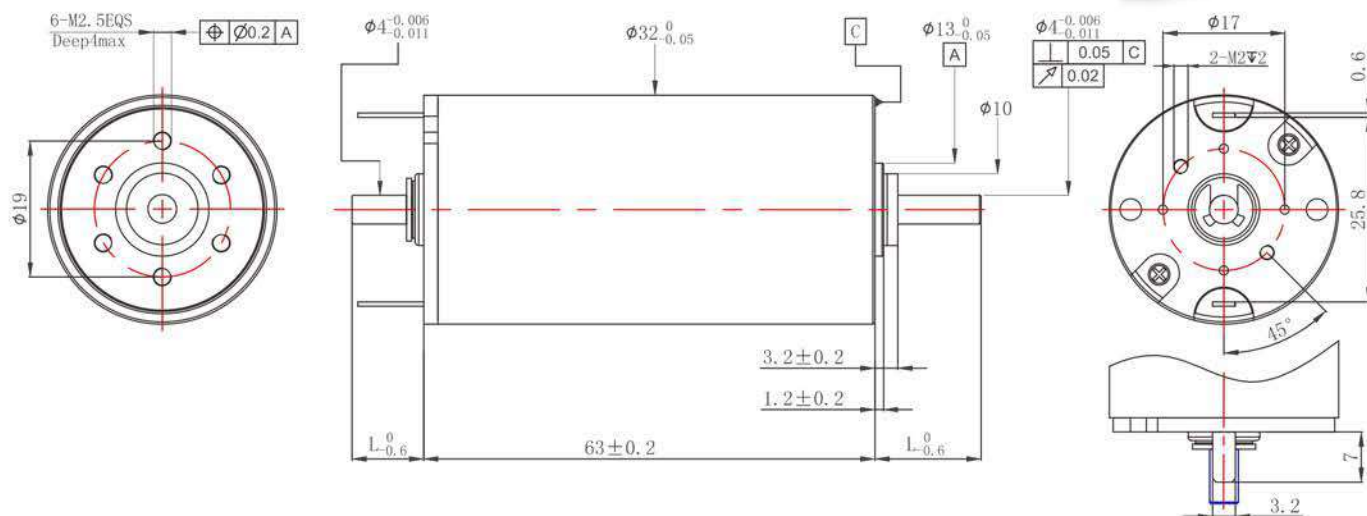
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetoelectric encoder
- 刹车 Brake



Φ32*L63mm, 碳刷直流电机, 37-105W Φ32*L63mm, Graphite Brushed DC Motor, 37-105W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定值 At Nominal

1	额定电压	Nominal voltage	V/DC	12	24	48
2	额定转速	Nominal speed rpm	rpm	6942	6764	5696
3	额定电流	Nominal current	A	3.79	2.09	0.92
4	额定转矩	Nominal torque	mNm	50.70	58.91	62.24

空载点 Free Load

5	空载转速	No-load speed	rpm	7800	7600	6400
6	空载电流	No-load current	mA	300	120	50

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	81.6	84.3	84.8
8	转速	Speed	rpm	7098	7030	5920
9	电流	Current	A	3.150	1.461	0.646
10	转矩	Torque	mNm	41.5	40.2	42.4

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	94.2	106.6	94.8
12	转速	Speed	rpm	3900	3800	3200
13	电流	Current	A	16.2	9.1	4.0
14	转矩	Torque	mNm	230.7	267.8	282.9

堵转点 At Stall

15	堵转电流	Stall current	A	32.00	18.00	8.00
16	堵转转矩	Stall torque	mNm	461.3	535.6	565.8

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.38	1.33	6.00
18	电机感抗	Terminal inductance	mH	0.192	0.750	2.580
19	转矩常数	Torque constant	mNm/A	14.55	29.95	71.17
20	转速常数	Speed constant	rpm/V	650.0	316.7	11.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	16.9	14.2	584.2
22	机械时间常数	Mechanical time constant	ms	5.24	4.40	3.51
23	转子惯量	Rotor inertia	gcm ²	30.10	29.80	29.60
24	极对数	Number of pole pairs	1			
25	相数	Number of phase	7			
26	重量	Weight of motor	g	280		
27	噪音	Typical noise level	dB	≤43		

电机端子定义 Motor terminal definition

+ VCC
- GND

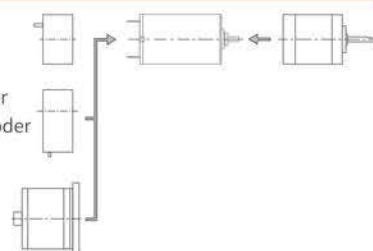
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 8N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 16N
· 最大允许安装力 (静态) Max press fit force (static): 98N
滚动轴承径向间隙 Radial play: ≤0.14mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

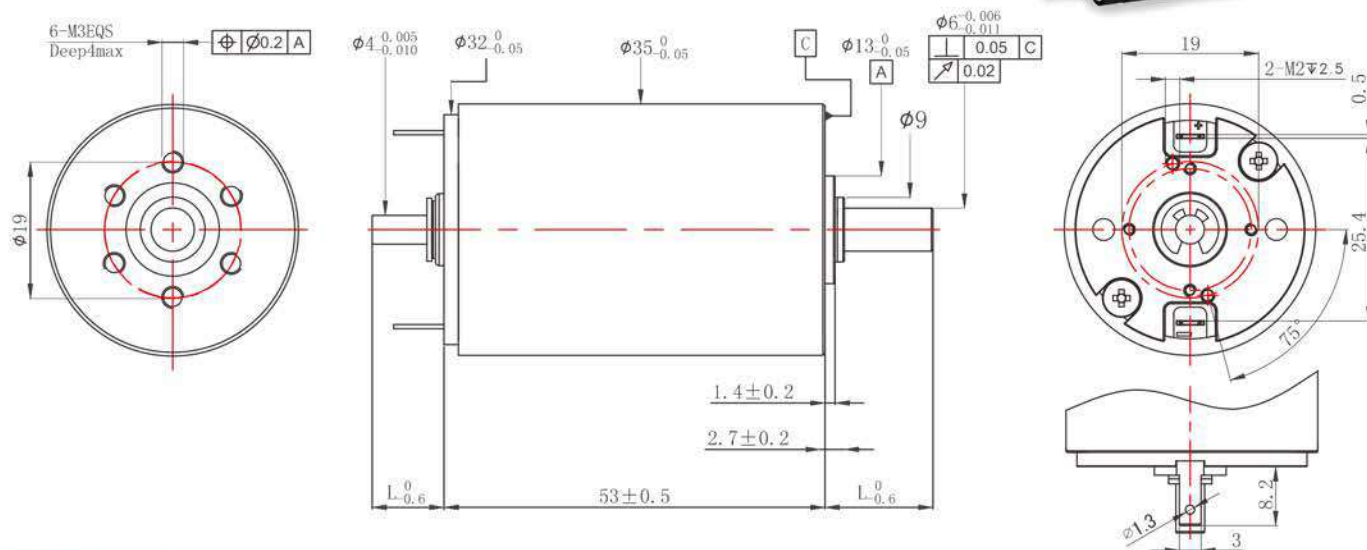
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ35*L53mm, 碳刷直流电机, 30-70W Φ35*L53mm, Graphite Brushed DC Motor, 30-70W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	10736
3	额定电流	Nominal current	A	3.55
4	额定转矩	Nominal torque	mNm	29.65
空载点 Free Load				
5	空载转速	No-load speed	rpm	12200
6	空载电流	No-load current	mA	350
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	78.5
8	转速	Speed	rpm	10980
9	电流	Current	A	3.015
10	转矩	Torque	mNm	24.7
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	78.9
12	转速	Speed	rpm	6100
13	电流	Current	A	13.7
14	转矩	Torque	mNm	123.5
堵转点 At Stall				
15	堵转电流	Stall current	A	27.00
16	堵转转矩	Stall torque	mNm	247.1
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.44
18	电机感抗	Terminal inductance	mH	0.084
19	转矩常数	Torque constant	mNm/A	9.27
20	转速常数	Speed constant	rpm/V	1016.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	49.4
22	机械时间常数	Mechanical time constant	ms	16.57
23	转子惯量	Rotor inertia	gcm ²	32.04
24	极对数	Number of pole pairs		1
25	相数	Number of phase		13
26	重量	Weight of motor	g	252
27	噪音	Typical noise level	dB	≤48

电机端子定义 Motor terminal definition

+ Vcc
- GND

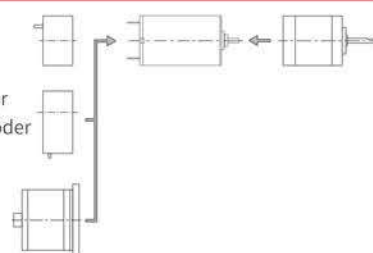
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 23N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 75N
· 最大允许安装力 (静态) Max press fit force (static): 106N
滚动轴承径向间隙 Radial play: ≤0.14mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

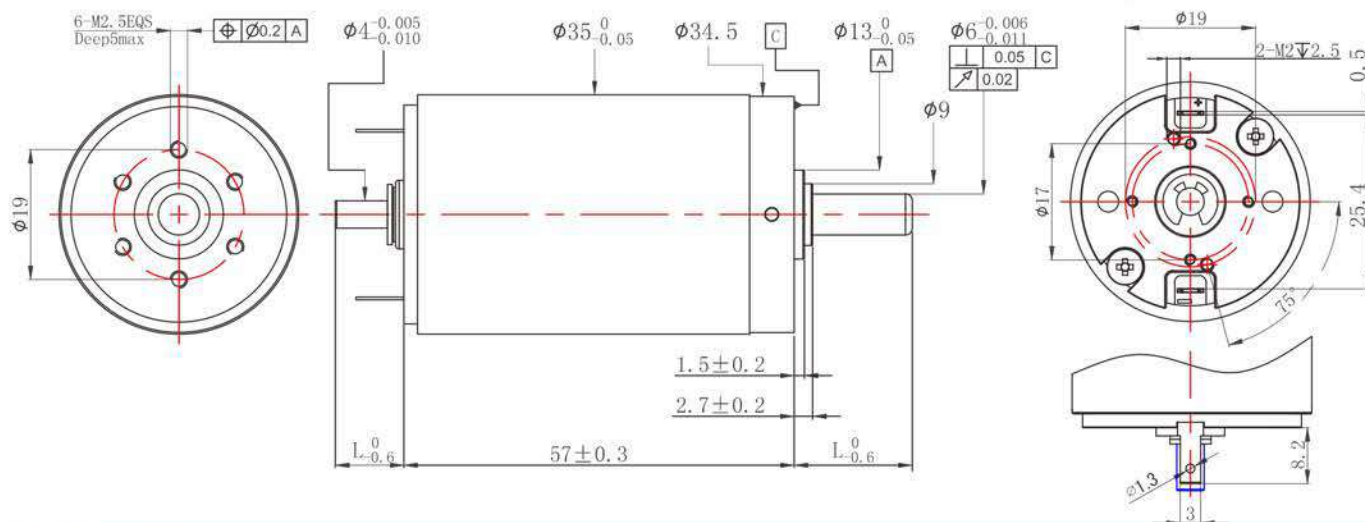
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ35*L57mm, 碳刷直流电机, 10-105W Φ35*L57mm, Graphite Brushed DC Motor, 10-105W



电机参数 Motor Data						
电机型号 Motor Model			3557	3557	3557	
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	12	24	48
2	额定转速	Nominal speed	rpm	5558	7290	5134
3	额定电流	Nominal current	A	1.52	1.90	0.67
4	额定转矩	Nominal torque	mNm	23.78	49.63	41.30
空载点 Free Load						
5	空载转速	No-load speed	rpm	6500	8100	6800
6	空载电流	No-load current	mA	150	130	50
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	76.6	83.6	74.2
8	转速	Speed	rpm	5785	7452	5984
9	电流	Current	A	1.190	1.544	0.356
10	转矩	Torque	mNm	18.0	39.7	20.2
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	27.9	105.2	30.0
12	转速	Speed	rpm	3250	4050	3400
13	电流	Current	A	4.9	9.0	1.3
14	转矩	Torque	mNm	82.0	248.2	84.3
堵转点 At Stall						
15	堵转电流	Stall current	A	9.60	17.80	2.60
16	堵转转矩	Stall torque	mNm	164.0	496.3	168.6
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	1.25	1.35	18.46
18	电机感抗	Terminal inductance	mH	0.170	0.173	2.600
19	转矩常数	Torque constant	mNm/A	17.35	28.09	66.11
20	转速常数	Speed constant	rpm/V	541.7	337.5	141.7
21	转速/转矩常数	Speed/torque constant	rpm/mNm	39.6	16.3	40.3
22	机械时间常数	Mechanical time constant	ms	16.16	5.32	17.54
23	转子惯量	Rotor inertia	gcm ²	38.93	31.15	41.52
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		7		
26	重量	Weight of motor	g	278		
27	噪音	Typical noise level	dB	≤43		

电机端子定义 Motor terminal definition

+ Vcc
- GND

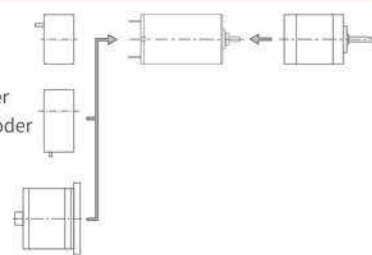
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 23N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 75N
· 最大允许安装力 (静态) Max press fit force (static): 106N
滚动轴承径向间隙 Radial play: ≤0.14mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

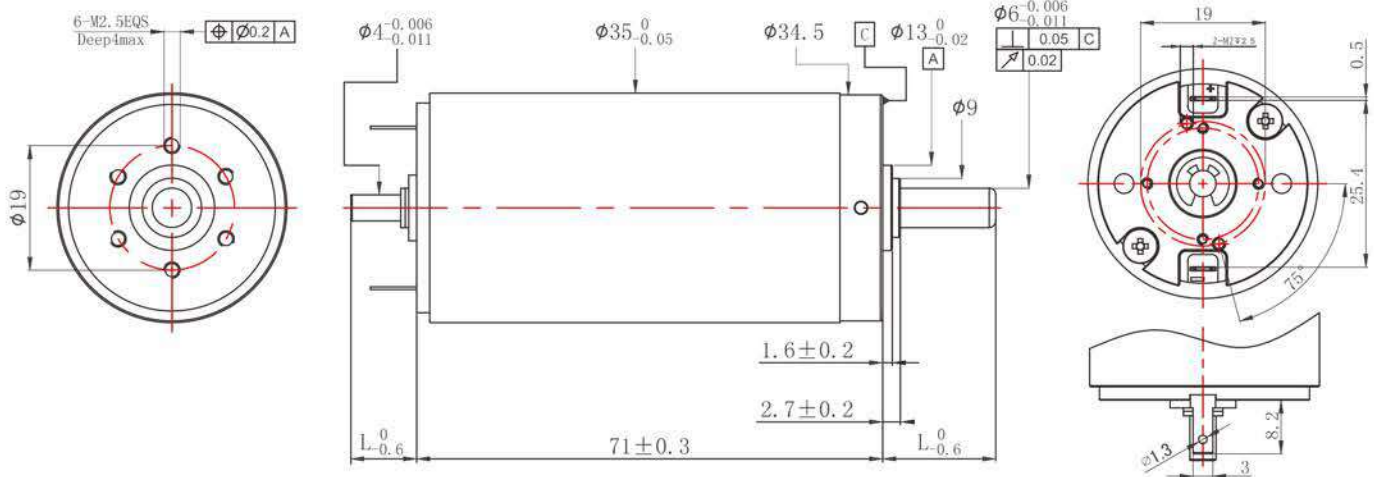
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ35*L71mm, 碳刷直流电机, 52-280W Φ35*L71mm, Graphite Brushed DC Motor, 52-280W



电机参数 Motor Data				
电机型号 Motor Model		3571	3571	3571
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	6697
3	额定电流	Nominal current	A	7.47
4	额定转矩	Nominal torque	mNm	110.98
空载点 Free Load				
5	空载转速	No-load speed	rpm	7400
6	空载电流	No-load current	mA	280
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	88.2
8	转速	Speed	rpm	6993
9	电流	Current	A	4.445
10	转矩	Torque	mNm	64.3
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	226.3
12	转速	Speed	rpm	3700
13	电流	Current	A	38.1
14	转矩	Torque	mNm	584.1
堵转点 At Stall				
15	堵转电流	Stall current	A	76.00
16	堵转转矩	Stall torque	mNm	1168.2
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.16
18	电机感抗	Terminal inductance	mH	0.050
19	转矩常数	Torque constant	mNm/A	15.43
20	转速常数	Speed constant	rpm/V	616.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	6.3
22	机械时间常数	Mechanical time constant	ms	5.31
23	转子惯量	Rotor inertia	gcm ²	79.98
24	极对数	Number of pole pairs		1
25	相数	Number of phase		13
26	重量	Weight of motor	g	360
27	噪音	Typical noise level	dB	≤45

电机端子定义 Motor terminal definition

+ Vcc
- GND

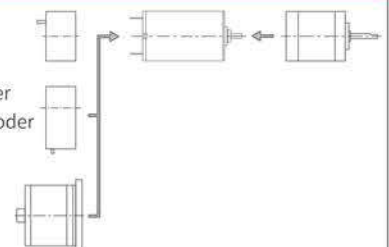
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 23N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 75N
· 最大允许安装力 (静态) Max press fit force (static): 106N
滚动轴承径向间隙 Radial play: ≤0.14mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

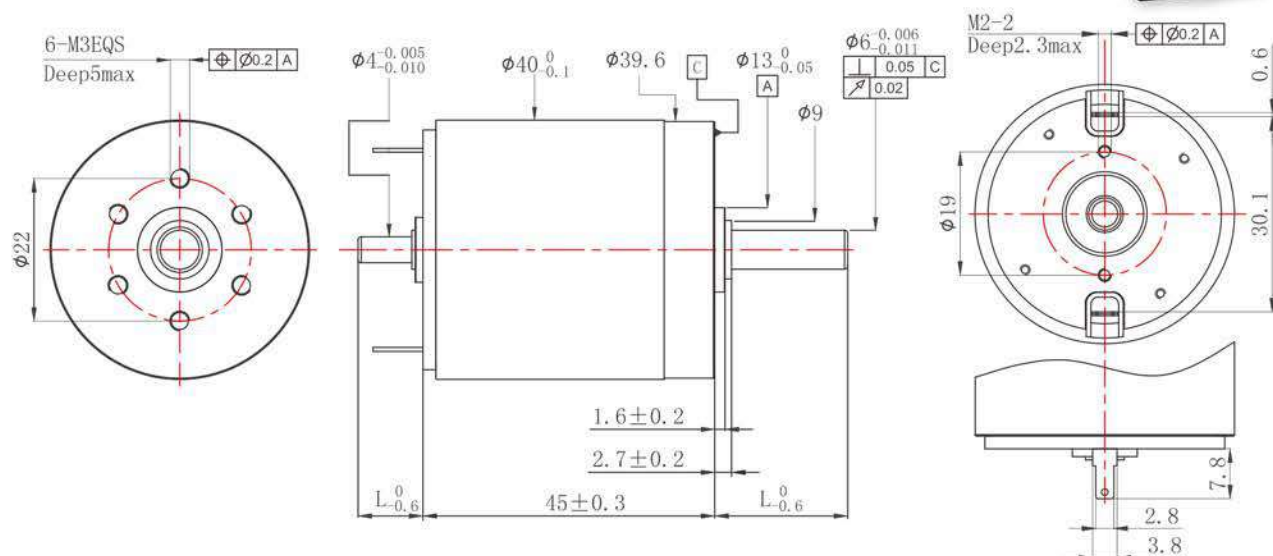
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ40*L45mm, 碳刷直流电机, 4-20W Φ40*L45mm, Graphite Brushed DC Motor, 4-20W



电机参数 Motor Data				4045	4045	4045	4045
电机型号 Motor Model				4045	4045	4045	4045
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	6	12	24	36
2	额定转速	Nominal speed	rpm	3400	5525	5270	4980
3	额定电流	Nominal current	A	0.83	1.23	0.58	0.49
4	额定转矩	Nominal torque	mNm	10.64	19.57	19.41	25.62
空载点 Free Load							
5	空载转速	No-load speed	rpm	4000	6500	6200	6000
6	空载电流	No-load current	mA	75	100	50	35
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	77.2	78.4	77.8	78.5
8	转速	Speed	rpm	3560	5818	5549	5400
9	电流	Current	A	0.628	0.888	0.423	0.302
10	转矩	Torque	mNm	7.8	13.7	13.6	15.1
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	7.4	22.2	21.0	23.7
12	转速	Speed	rpm	2000	3250	3100	3000
13	电流	Current	A	2.6	3.9	1.8	1.4
14	转矩	Torque	mNm	35.5	65.2	64.7	75.4
堵转点 At Stall							
15	堵转电流	Stall current	A	5.10	7.60	3.60	2.70
16	堵转转矩	Stall torque	mNm	70.9	130.5	129.4	150.7
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	1.18	1.58	6.67	13.33
18	电机感抗	Terminal inductance	mH	0.048	0.120	0.500	0.960
19	转矩常数	Torque constant	mNm/A	14.11	17.40	36.45	56.55
20	转速常数	Speed constant	rpm/V	666.7	541.7	258.3	166.7
21	转速/转矩常数	Speed/torque constant	rpm/mNm	56.4	49.8	47.9	39.8
22	机械时间常数	Mechanical time constant	ms	13.92	9.50	10.21	8.04
23	转子惯量	Rotor inertia	gcm ²	23.57	18.21	20.35	19.28
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		5			
26	重量	Weight of motor	g	250			
27	噪音	Typical noise level	dB	≤38			

电机端子定义 Motor terminal definition

+ Vcc
- GND

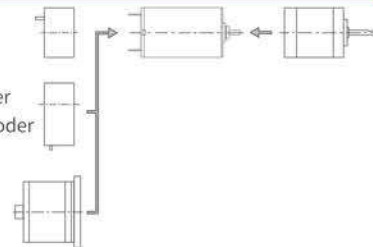
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
·轴向(动态) Max axial load (dynamic): 5.6N
·径向(法兰外5mm) Max radial load (5mm from flange): 28N
·最大允许安装力(静态) Max press fit force (static): 98N
滚动轴承径向间隙 Radial play: ≤0.14mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

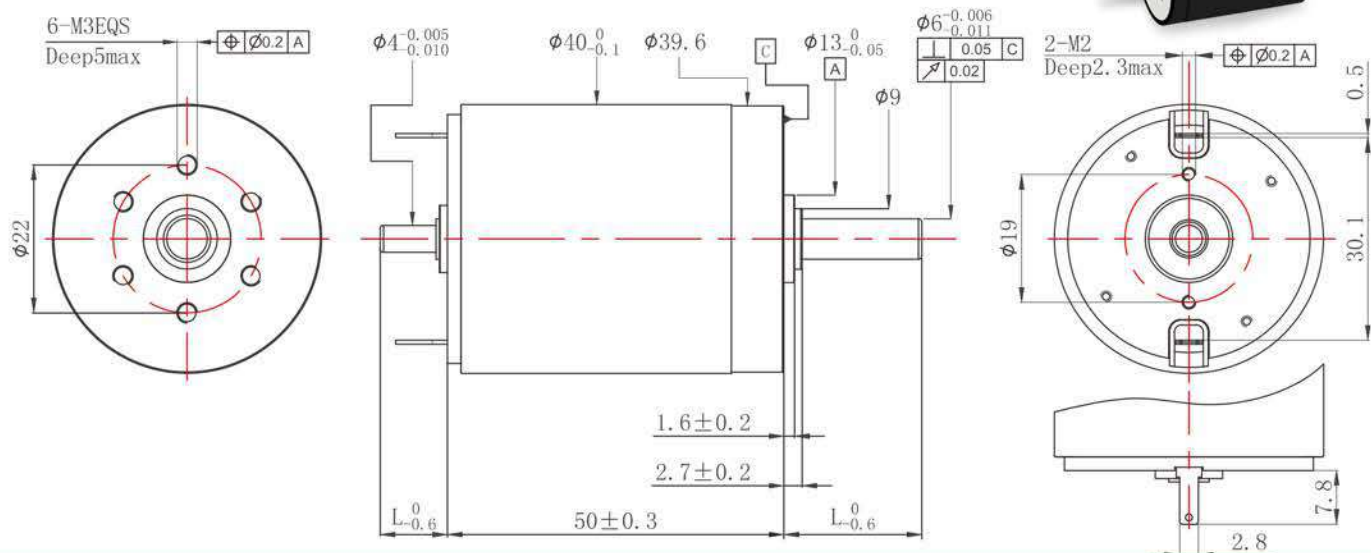
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetoelectric encoder
- 刹车 Brake



Φ40*L50mm, 碳刷直流电机, 40-100W Φ40*L50mm, Graphite Brushed DC Motor, 40-100W



电机参数 Motor Data					4050	4050	4050	4050	4050
电机型号 Motor Model					4050	4050	4050	4050	4050
额定电压参数值 Value at Rated voltage									
额定点 At Nominal									
1	额定电压	Nominal voltage	V/DC		12	15	24	36	48
2	额定转速	Nominal speed	rpm		6612	6612	6712	6640	8075
3	额定电流	Nominal current	A		4.13	3.29	2.81	1.75	1.61
4	额定转矩	Nominal torque	mNm		57.79	57.83	77.05	72.18	75.41
空载点 Free Load									
5	空载转速	No-load speed	rpm		7400	7600	7600	7850	8000
6	空载电流	No-load current	mA		250	260	200	150	60
最大效率点 At Max. Efficiency									
7	最大效率	Max. efficiency	%		82.2	82.6	82.8	85.1	88.0
8	转速	Speed	rpm		6954	6954	7183	7440	8455
9	电流	Current	A		2.788	2.223	1.710	0.756	1.191
10	转矩	Torque	mNm		37.8	37.8	45.2	29.7	55.3
最大输出功率点 At Max. Output power									
11	最大功率	Max. output power	W		88.4	88.5	109.2	88.9	125
12	转速	Speed	rpm		3800	3800	3925	4000	4750
13	电流	Current	A		15.1	12.1	9.3	5.0	5.0
14	转矩	Torque	mNm		222.3	222.4	265.7	212.3	251.4
堵转点 At Stall									
15	堵转电流	Stall current	A		30.00	24.00	18.50	10.00	10.50
16	堵转转矩	Stall torque	mNm		444.5	444.8	531.4	424.6	502.8
电机常数 Motor Constants									
17	电机阻抗	Terminal resistance	Ω		0.40	0.63	1.30	3.60	4.6
18	电机感抗	Terminal inductance	mH		0.043	0.087	0.180	0.320	0.510
19	转矩常数	Torque constant	mNm/A		14.95	18.69	28.96	42.71	48.1
20	转速常数	Speed constant	rpm/V		633.3	506.7	327.1	222.2	197.9
21	转数/转矩常数	Speed/torque constant	rpm/mNm		17.1	17.1	14.8	18.8	18.9
22	机械时间常数	Mechanical time constant	ms		6.00	6.56	5.75	6.92	6.94
23	转子惯量	Rotor inertia	gcm ²		33.54	36.66	37.14	35.08	35.08
24	极对数	Number of pole pairs			1				
25	相数	Number of phase			5				
26	重量	Weight of motor	g		290				
27	噪音	Typical noise level	dB		≤45				

电机端子定义 Motor terminal definition

+ Vcc
- GND

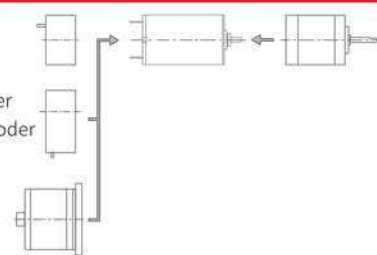
技术说明 Technical specifications

轴间间隙 Axial play: 0-0.1mm
滑动轴承最大载荷 sintered metal bearing load max:
· 轴向 (动态) Max axial load (dynamic): 23N
· 径向 (法兰外5mm) Max radial load (5mm from flange): 75N
· 最大允许安装力 (静态) Max press fit force (static): 106N
滚动轴承径向间隙 Radial play: ≤0.14mm
环境温度范围 Ambient temperature range: -20~+80°C
相对湿度范围 Relative humidity range: <90% (25°C)
最高转子温度 Highest rotor temperature: 125°C
表中数据均为标称值 Values listed in the table are nominal

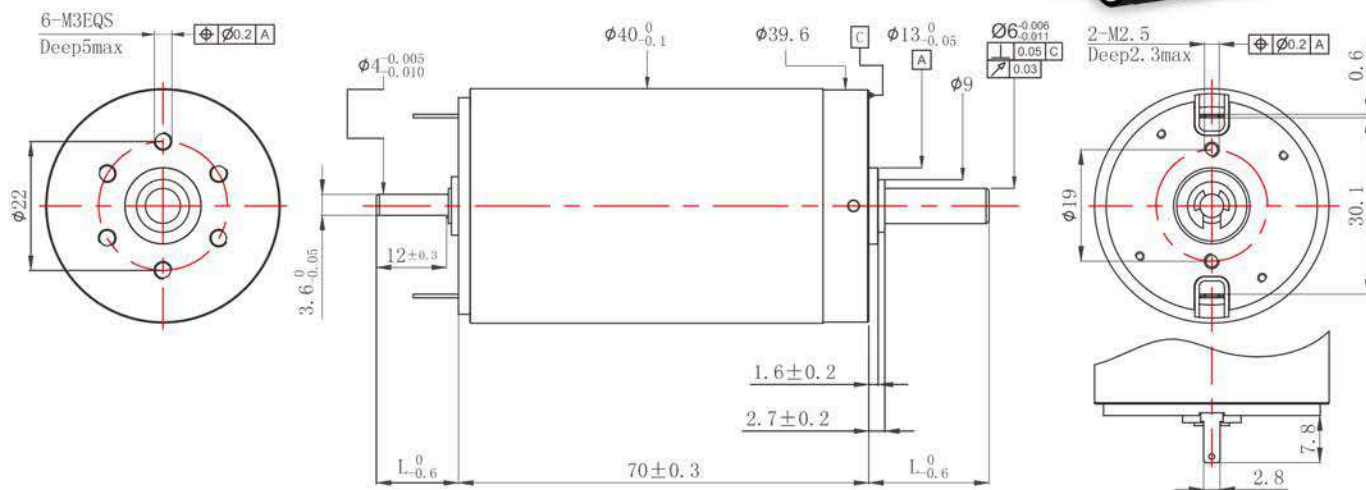
组合体系 System

适配部件 Optional Parts

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetoelectric encoder
- 刹车 Brake



Φ40*L70mm, Graphite Brushed DC Motor, 130-480W



电机参数 Motor Data				4070	4070	4070	4070	4070
电机型号 Motor Model				4070	4070	4070	4070	4070
额定电压参数值 Value at Rated voltage								
额定点 At Nominal								
1	额定电压	Nominal voltage	V/DC	12	24	36	48	48
2	额定转速	Nominal speed	rpm	7585	7030	6900	6992	1606
3	额定电流	Nominal current	A	12.09	6.20	4.33	3.37	0.85
4	额定转矩	Nominal torque	mNm	161.41	181.25	189.36	196.86	172.37
空载点 Free Load								
5	空载转速		rpm	8200	7600	7500	7600	2200
6	空载电流		mA	500	180	180	100	18
最大效率点 At Max. Efficiency								
7	最大效率	Max. efficiency	%	89.0	90.8	88.6	90.4	85.3
8	转速	Speed	rpm	7749	7258	7163	7258	2046
9	电流	Current	A	8.998	3.794	2.512	1.941	0.234
10	转矩	Torque	mNm	118.4	108.8	106.5	110.7	44.7
最大输出功率点 At Max. Output power								
11	最大功率	Max. output power	W	462.0	480.8	464.8	489.6	37
12	转速	Speed	rpm	4100	3800	3750	3800	1100
13	电流	Current	A	77.8	40.3	26.1	20.6	2.0
14	转矩	Torque	mNm	1076.1	1208.3	1183.5	1230.4	319.2
堵转点 At Stall								
15	堵转电流	Stall current	A	155.00	80.50	52.00	41.00	3.10
16	堵转转矩	Stall torque	mNm	2152.1	2416.7	2367.0	2460.7	638.4
电机常数 Motor Constants								
17	电机阻抗	Terminal resistance	Ω	0.08	0.30	0.69	1.17	15.5
18	电机感抗	Terminal inductance	mH	0.016	0.083	0.180	0.340	4.080
19	转矩常数	Torque constant	mNm/A	13.93	30.09	45.68	60.16	207.1
20	转速常数	Speed constant	rpm/V	683.3	316.7	208.3	158.3	45.8
21	转数/转矩常数	Speed/torque constant	rpm/mNm	3.8	3.1	3.2	3.1	3.4
22	机械时间常数	Mechanical time constant	ms	5.60	4.42	4.30	4.05	4.31
23	转子惯量	Rotor inertia	gcm ²	140.23	134.10	137.14	125.21	119.52
24	极对数	Number of pole pairs		1				
25	相数	Number of phase		13				
26	重量	Weight of motor	g	485				
27	噪音	Typical noise level	dB	≤45				

电机端子定义 Motor terminal definition

+	Vcc
-	GND

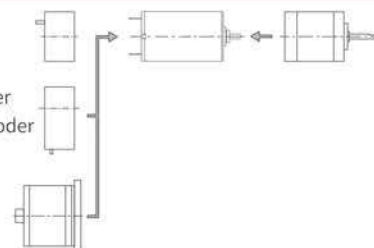
技术说明Technical specifications

轴间间隙 Axial play: 0-0.1mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 23N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 75N
 · 最大允许安装力 (静态) Max press fit force (static): 106N
 滚动轴承径向间隙 Radial play: $\leq 0.14\text{mm}$
 环境温度范围 Ambient temperature range: $-20\text{~}+80^{\circ}\text{C}$
 相对湿度范围 Relative humidity range: $<90\%$ (25°C)
 最高转子温度 Highest rotor temperature: 125°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系System

适配部件Optional Parts

- 行星轮减速箱Planetary gearbox
- 光电式编码器Photoelectric encoder
- 磁电式编码器Magnetolectric encoder
- 刹车Brake



空心杯直流无刷电机

Coreless Brushless DC Motors

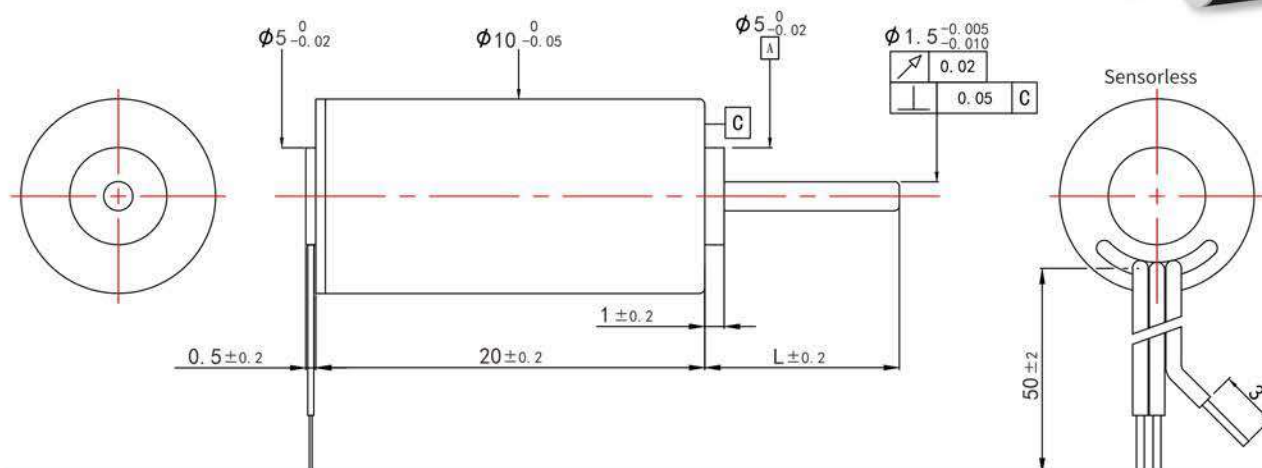


深圳市鑫宝达电机有限公司

SHENZHEN SINBAD MOTOR CO., LTD

Φ10*L20mm, 无刷直流电机, 3-20W

Φ10*L20mm, Brushless DC Motor, 3-20W



电机参数 Motor Data				1020	1020	1020
电机型号 Motor Model				1020	1020	1020
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	7	9	12
2	额定转速	Nominal speed	rpm	79640	40725	39150
3	额定电流	Nominal current	A	1.64	0.44	0.36
4	额定转矩	Nominal torque	mNm	0.92	0.42	0.51
空载点 Free Load						
5	空载转速	No-load speed	rpm	88000	45000	45000
6	空载电流	No-load current	mA	400	200	140
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	68.5	53.0	52.0
8	转速	Speed	rpm	75240	35325	35100
9	电流	Current	A	2.300	0.738	0.505
10	转矩	Torque	mNm	1.4	1.0	0.86
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	22.2	5.2	4.6
12	转速	Speed	rpm	44000	22500	22500
13	电流	Current	A	7.0	1.5	1.0
14	转矩	Torque	mNm	4.8	2.2	1.95
堵转点 At Stall						
15	堵转电流	Stall current	A	13.50	2.70	1.80
16	堵转转矩	Stall torque	mNm	9.7	4.4	3.90
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	0.52	3.33	6.67
18	电机感抗	Terminal inductance	mH	0.150	0.950	1.650
19	转矩常数	Torque constant	mNm/A	0.74	1.77	2.35
20	转速常数	Speed constant	rpm/V	12571	5000	3750
21	转速/转矩常数	Speed/torque constant	rpm/mNm	9114	10179	11543
22	机械时间常数	Mechanical time constant	ms	6.08	6.80	7.71
23	转子惯量	Rotor inertia	gcm ²	0.064	0.064	0.064
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	8.5		
27	噪音	Typical noise level	dB	≤50		

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

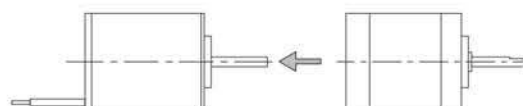
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

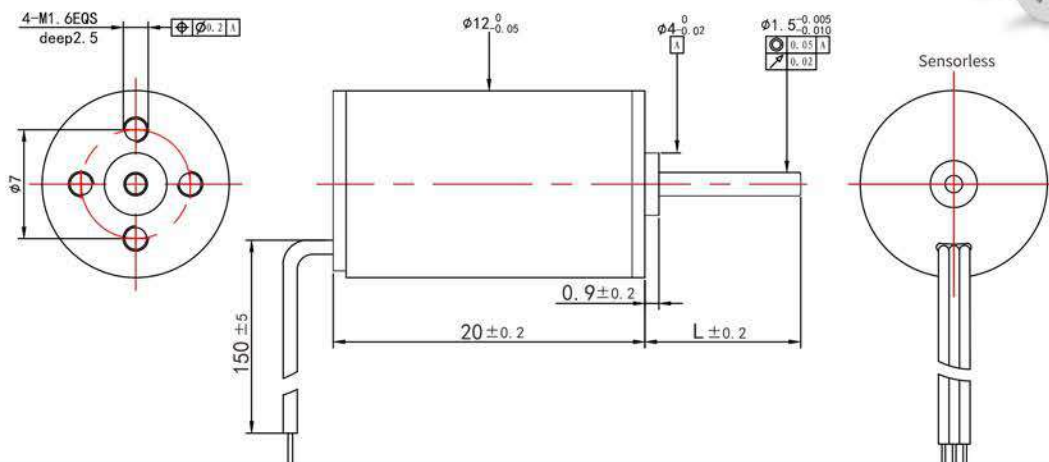
适配部件 Optional Parts:

·行星轮减速箱 Planetary gearbox



Φ12*L20mm, 无刷直流电机, 1-1.5W

Φ12*L20mm, Brushless DC Motor, 1-1.5W



电机参数 Motor Data

电机型号 Motor Model				1220	1220	1220
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	5	7.4	12
2	额定转速	Nominal speed	rpm	21250	21080	21420
3	额定电流	Nominal current	A	0.28	0.17	0.11
4	额定转矩	Nominal torque	mNm	0.32	0.33	0.34
空载点 Free Load						
5	空载转速	No-load speed	rpm	25000	24800	25200
6	空载电流	No-load current	mA	100	50	30
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	52.2	57.8	59.1
8	转速	Speed	rpm	17875	17732	20412
9	电流	Current	A	0.442	0.284	0.131
10	转矩	Torque	mNm	0.6	0.6	0.43
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	1.4	1.4	1.5
12	转速	Speed	rpm	12500	12400	12600
13	电流	Current	A	0.7	0.5	0.3
14	转矩	Torque	mNm	1.1	1.1	1.14
堵转点 At Stall						
15	堵转电流	Stall current	A	1.30	0.87	0.56
16	堵转转矩	Stall torque	mNm	2.1	2.2	2.28
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	3.85	8.51	21.43
18	电机感抗	Terminal inductance	mH	0.188	0.258	0.566
19	转矩常数	Torque constant	mNm/A	1.76	2.69	4.30
20	转速常数	Speed constant	rpm/V	5000	3351	2100
21	转速/转矩常数	Speed/torque constant	rpm/mNm	11817	11261	11048
22	机械时间常数	Mechanical time constant	ms	12.67	10.26	10.07
23	转子惯量	Rotor inertia	gcm ²	0.10	0.09	0.09
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	9.5		
27	噪音	Typical noise level	dB	≤50		

电机线序(Motor wire sequence):

·无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

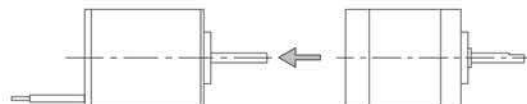
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

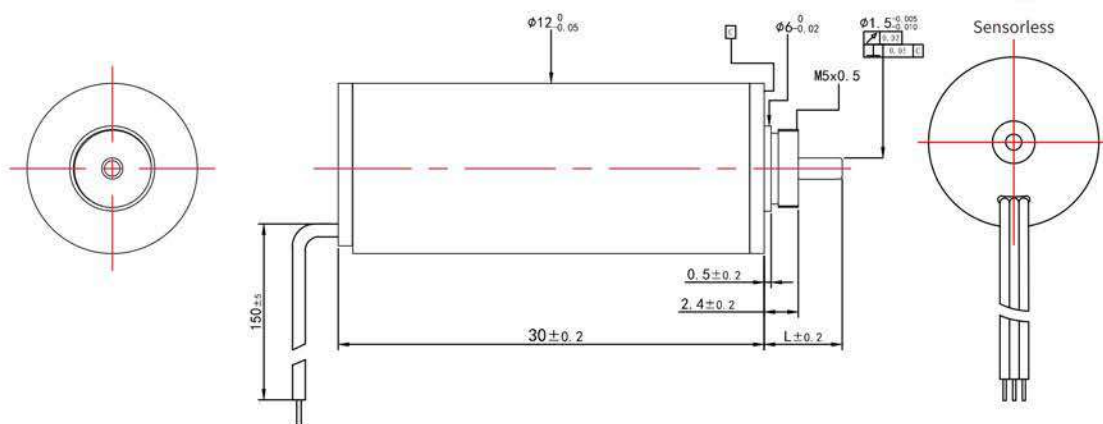
适配部件 Optional Parts:

·行星轮减速箱 Planetary gearbox



Φ12*L30mm, 无刷直流电机, 3-6W

Φ12*L30mm, Brushless DC Motor, 3-6W



电机参数 Motor Data

电机型号 Motor Model				1230	1230	1230
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	12	18	24
2	额定转速	Nominal speed	rpm	13685	14025	13600
3	额定电流	Nominal current	A	0.45	0.32	0.24
4	额定转矩	Nominal torque	mNm	2.40	2.38	2.43
空载点 Free Load						
5	空载转速	No-load speed	rpm	16100	16500	16000
6	空载电流	No-load current	mA	100	80	60
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	63.6	61.1	61.0
8	转速	Speed	rpm	13363	13530	13120
9	电流	Current	A	0.498	0.368	0.274
10	转矩	Torque	mNm	2.7	2.86	2.92
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	6.7	6.9	6.8
12	转速	Speed	rpm	8050	8250	8000
13	电流	Current	A	1.3	0.9	0.7
14	转矩	Torque	mNm	8.0	7.94	8.11
堵转点 At Stall						
15	堵转电流	Stall current	A	2.44	1.68	1.25
16	堵转转矩	Stall torque	mNm	16.0	15.87	16.23
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	4.92	10.71	19.20
18	电机感抗	Terminal inductance	mH	0.155	0.350	0.620
19	转矩常数	Torque constant	mNm/A	6.83	9.92	13.64
20	转速常数	Speed constant	rpm/V	1342	917	667
21	转速/转矩常数	Speed/torque constant	rpm/mNm	1008	1039	986
22	机械时间常数	Mechanical time constant	ms	3.60	3.71	3.52
23	转子惯量	Rotor inertia	gcm ²	0.34	0.34	0.34
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	14		
27	噪音	Typical noise level	dB	≤45		

电机线序(Motor wire sequence):

·无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

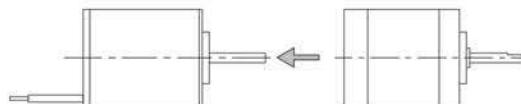
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

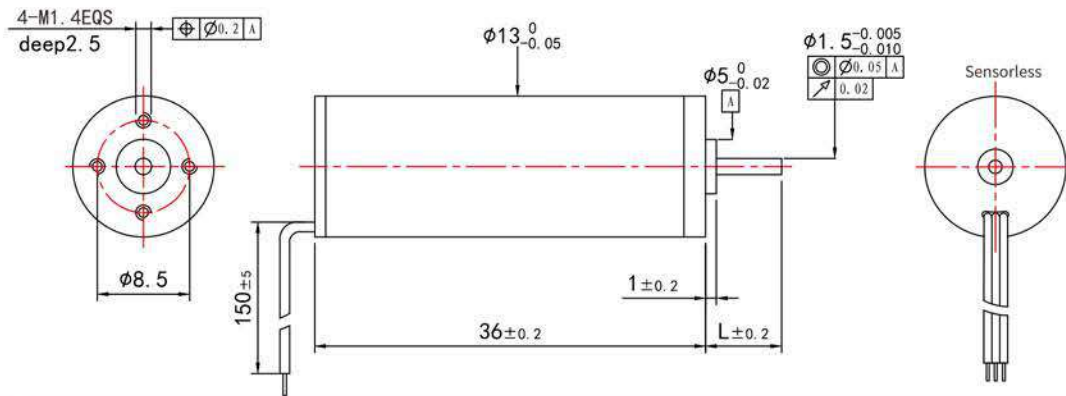
适配部件 Optional Parts:

·行星轮减速箱 Planetary gearbox



Φ13*L36mm, 无刷直流电机, 6-14W

Φ13*L36mm, Brushless DC Motor, 6-14W



电机参数 Motor Data				
电机型号 Motor Model		1336	1336	1336
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压 Nominal voltage	V/DC	9	12
2	额定转速 Nominal speed	rpm	40920	40656
3	额定电流 Nominal current	A	1.05	0.79
4	额定转矩 Nominal torque	mNm	1.42	1.42
5	空载转速 No-load speed	rpm	46500	46200
6	空载电流 No-load current	mA	250	196
最大效率点 At Max. Efficiency				
7	最大效率 Max. efficiency	%	65.6	64.8
8	转速 Speed	rpm	39060	38577
9	电流 Current	A	1.314	1.013
10	转矩 Torque	mNm	1.9	1.95
最大输出功率点 At Max. Output power				
11	最大功率 Max. output power	W	14.4	14.3
12	转速 Speed	rpm	23250	23100
13	电流 Current	A	3.6	2.7
14	转矩 Torque	mNm	5.9	5.91
堵转点 At Stall				
15	堵转电流 Stall current	A	6.90	5.15
16	堵转转矩 Stall torque	mNm	11.8	11.82
电机常数 Motor Constants				
17	电机阻抗 Terminal resistance	Ω	1.30	2.33
18	电机感抗 Terminal inductance	mH	0.028	0.050
19	转矩常数 Torque constant	mNm/A	1.78	2.39
20	转速常数 Speed constant	rpm/V	5167	3850
21	转数/转矩常数 Speed/torque constant	rpm/mNm	3926	3909
22	机械时间常数 Mechanical time constant	ms	4.33	4.31
23	转子惯量 Rotor inertia	gcm ²	0.11	0.11
24	极对数 Number of pole pairs		1	
25	相数 Number of phase		3	
26	重量 Weight of motor	g	21	
27	噪音 Typical noise level	dB	≤55	

电机线序(Motor wire sequence):

·无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

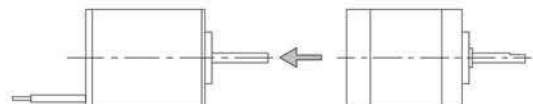
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

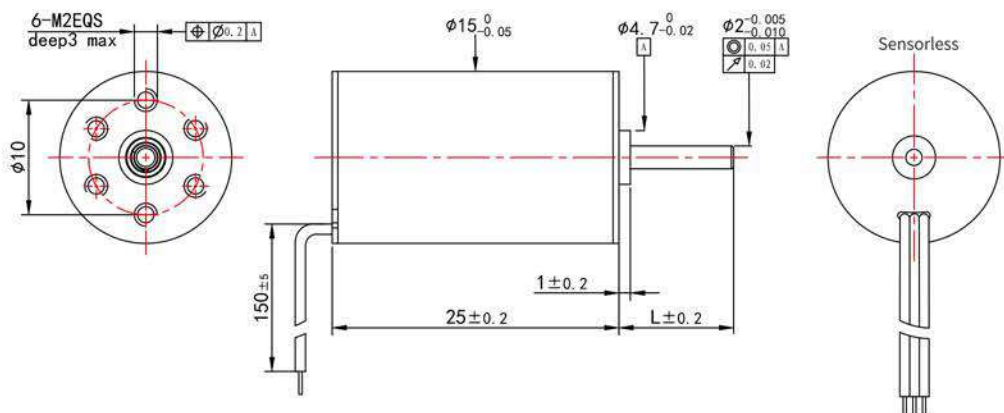
适配部件 Optional Parts:

·行星轮减速箱 Planetary gearbox



Φ15*L25mm, 无刷直流电机, 25-65W

Φ15*L25mm, Brushless DC Motor, 25-65W



电机参数 Motor Data

电机参数 Motor Data				1525	1525	1525	1525
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	9	12	18	24
2	额定转速	Nominal speed	rpm	48870	60450	57468	54300
3	额定电流	Nominal current	A	2.71	1.86	1.68	1.15
4	额定转矩	Nominal torque	mNm	3.49	2.72	3.71	3.47
空载点 Free Load							
5	空载转速	No-load speed	rpm	54000	65000	63500	60000
6	空载电流	No-load current	mA	480	300	280	220
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	73.7	78.3	74.5	72.5
8	转速	Speed	rpm	47250	58175	55880	52200
9	电流	Current	A	3.420	2.642	2.046	1.491
10	转矩	Torque	mNm	4.6	4.07	4.69	4.75
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	51.9	66.0	65.0	57.4
12	转速	Speed	rpm	27000	32500	31750	30000
13	电流	Current	A	12.2	11.5	7.6	5.1
14	转矩	Torque	mNm	18.3	19.40	19.55	18.27
堵转点 At Stall							
15	堵转电流	Stall current	A	24.00	22.60	15.00	10.00
16	堵转转矩	Stall torque	mNm	36.7	38.79	39.10	36.54
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.38	0.53	1.20	2.40
18	电机感抗	Terminal inductance	mH	0.011	0.017	0.038	0.074
19	转矩常数	Torque constant	mNm/A	1.56	1.74	2.66	3.74
20	转速常数	Speed constant	rpm/V	6000	5417	3528	2500
21	转数/转矩常数	Speed/torque constant	rpm/mNm	1472.0	1675.6	1624.0	1642.3
22	机械时间常数	Mechanical time constant	ms	3.15	3.59	3.48	3.52
23	转子惯量	Rotor inertia	gcm ²	0.20	0.20	0.20	0.20
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	27			
27	噪音	Typical noise level	dB	≤55			

电机线序(Motor wire sequence):

·无传感器(Without sensor):1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

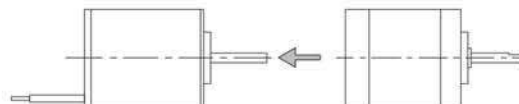
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

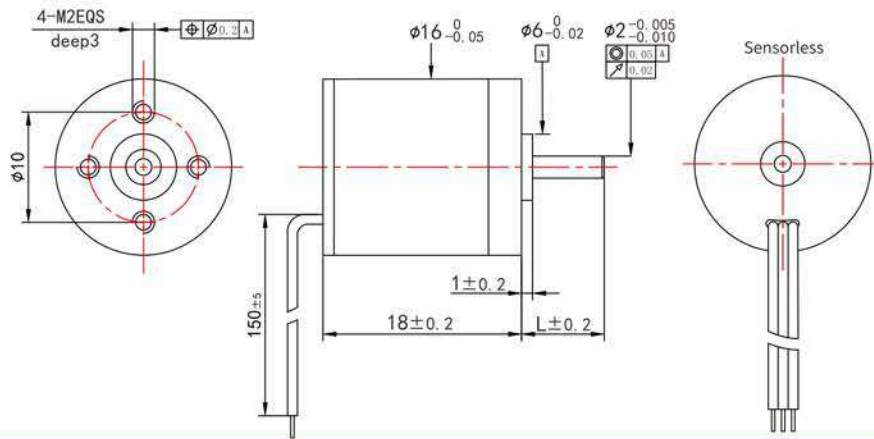
适配部件 Optional Parts:

·行星轮减速箱 Planetary gearbox



Φ16*L18mm, 无刷直流电机, 1-2W

Φ16*L18mm, Brushless DC Motor, 1-2W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage		1618	1618	1618
额定点 At Nominal				
1 额定电压 Nominal voltage	V/DC	9	12	18
2 额定转速 Nominal speed	rpm	11550	8624	11935
3 额定电流 Nominal current	A	0.28	0.12	0.14
4 额定转矩 Nominal torque	mNm	1.11	0.90	1.13
空载点 Free Load				
5 空载转速 No-load speed	rpm	15000	11200	15500
6 空载电流 No-load current	mA	70	30	25
最大效率点 At Max. Efficiency				
7 最大效率 Max. efficiency	%	53.7	54.6	57.0
8 转速 Speed	rpm	11850	8904	12478
9 电流 Current	A	0.261	0.114	0.122
10 转矩 Torque	mNm	1.0	0.80	0.96
最大输出功率点 At Max. Output power				
11 最大功率 Max. output power	W	1.9	1.1	2.0
12 转速 Speed	rpm	7500	5600	7750
13 电流 Current	A	0.5	0.2	0.3
14 转矩 Torque	mNm	2.4	1.95	2.45
堵转点 At Stall				
15 堵转电流 Stall current	A	0.98	0.44	0.50
16 堵转转矩 Stall torque	mNm	4.8	3.91	4.90
电机常数 Motor Constants				
17 电机阻抗 Terminal resistance	Ω	9.18	27.27	36.00
18 电机感抗 Terminal inductance	mH	0.019	0.045	0.076
19 转矩常数 Torque constant	mNm/A	5.32	9.53	10.42
20 转速常数 Speed constant	rpm/V	1666.7	933.3	861.1
21 转数/转矩常数 Speed/torque constant	rpm/mNm	3098	2865	3164
22 机械时间常数 Mechanical time constant	ms	3.67	3.40	3.75
23 转子惯量 Rotor inertia	gcm ²	0.11	0.11	0.11
24 极对数 Number of pole pairs		1		
25 相数 Number of phase		3		
26 重量 Weight of motor	g	18		
27 噪音 Typical noise level	dB	≤50		

电机线序(Motor wire sequence):

·无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

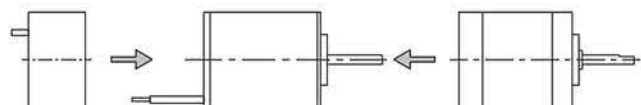
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

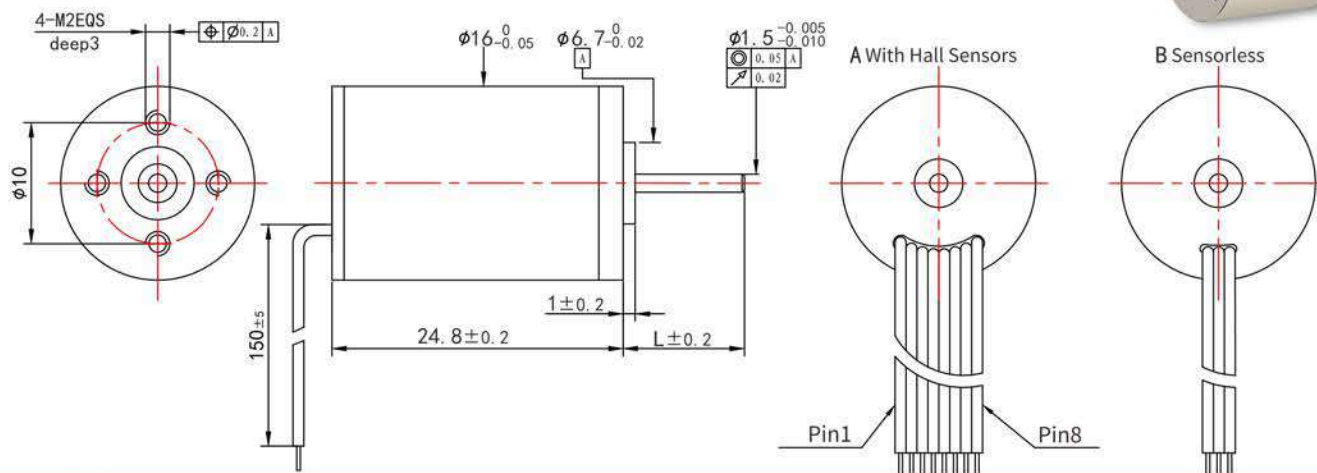
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ16*L24mm, 无刷直流电机, 1-3W

Φ16*L24mm, Brushless DC Motor, 1-3W



电机参数 Motor Data

电机型号 Motor Model				1624	1624	1624
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	12	18	24
2	额定转速	Nominal speed	rpm	11440	7900	9875
3	额定电流	Nominal current	A	0.26	0.14	0.13
4	额定转矩	Nominal torque	mNm	1.54	1.78	1.69
空载点 Free Load						
5	空载转速	No-load speed	rpm	14300	10000	12500
6	空载电流	No-load current	mA	60	34	32
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	58.4	56.8	55.8
8	转速	Speed	rpm	11583	8000	10000
9	电流	Current	A	0.254	0.139	0.126
10	转矩	Torque	mNm	1.5	1.70	1.61
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	2.9	2.2	2.6
12	转速	Speed	rpm	7150	5000	6250
13	电流	Current	A	0.6	0.3	0.3
14	转矩	Torque	mNm	3.9	4.25	4.02
堵转点 At Stall						
15	堵转电流	Stall current	A	1.08	0.56	0.50
16	堵转转矩	Stall torque	mNm	7.7	8.49	8.03
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	11.11	32.14	48.00
18	电机感抗	Terminal inductance	mH	0.587	1.758	2.510
19	转矩常数	Torque constant	mNm/A	7.57	16.15	17.16
20	转速常数	Speed constant	rpm/V	1192	556	521
21	转矩/转速常数	Speed/torque constant	rpm/mNm	1852.4	1177.5	1556.4
22	机械时间常数	Mechanical time constant	ms	7.03	4.47	5.91
23	转子惯量	Rotor inertia	gcm ²	0.36	0.36	0.36
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	25		
27	噪音	Typical noise level	dB	≤45		

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

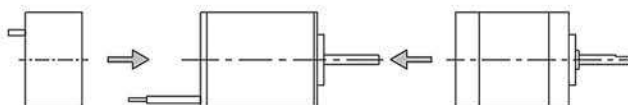
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

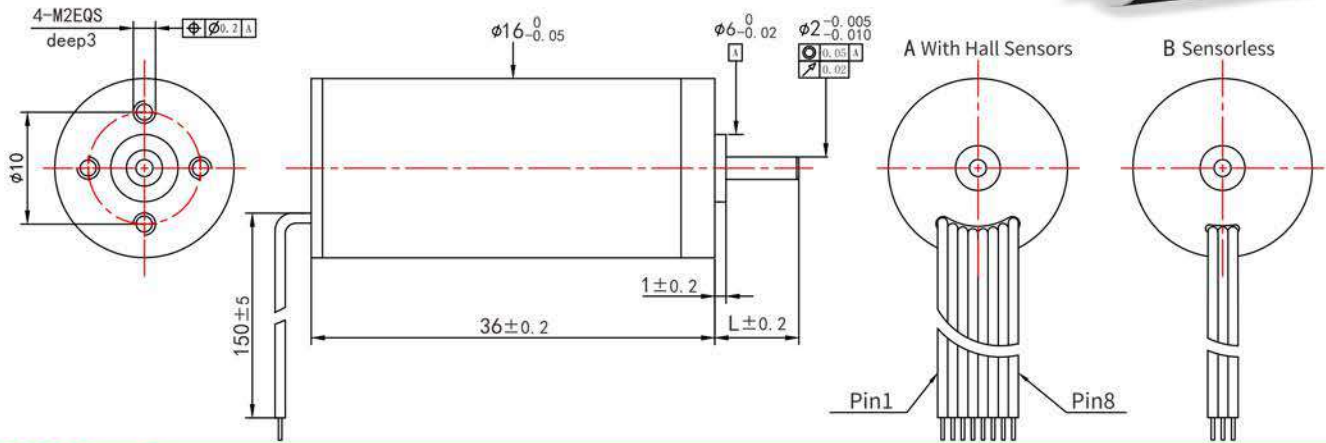
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ16*L36mm, 无刷直流电机, 7-18W

Φ16*L36mm, Brushless DC Motor, 7-18W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	9
2	额定转速	Nominal speed	rpm	15355
3	额定电流	Nominal current	A	1.51
4	额定转矩	Nominal torque	mNm	6.39
空载点 Free Load				
5	空载转速	No-load speed	rpm	18500
6	空载电流	No-load current	mA	180
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	72.2
8	转速	Speed	rpm	16095
9	电流	Current	A	1.197
10	转矩	Torque	mNm	4.6
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	17.2
12	转速	Speed	rpm	9250
13	电流	Current	A	4.1
14	转矩	Torque	mNm	17.8
堵转点 At Stall				
15	堵转电流	Stall current	A	8.00
16	堵转转矩	Stall torque	mNm	35.5
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	1.13
18	电机感抗	Terminal inductance	mH	0.07
19	转矩常数	Torque constant	mNm/A	4.54
20	转速常数	Speed constant	rpm/V	2056
21	转数/转矩常数	Speed/torque constant	rpm/mNm	521.0
22	机械时间常数	Mechanical time constant	ms	2.73
23	转子惯量	Rotor inertia	gcm ²	0.50
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	29
27	噪音	Typical noise level	dB	≤50

电机线序(Motor wire sequence):

·无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

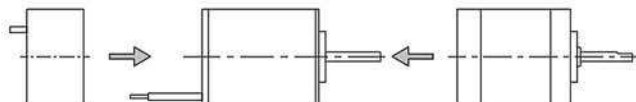
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

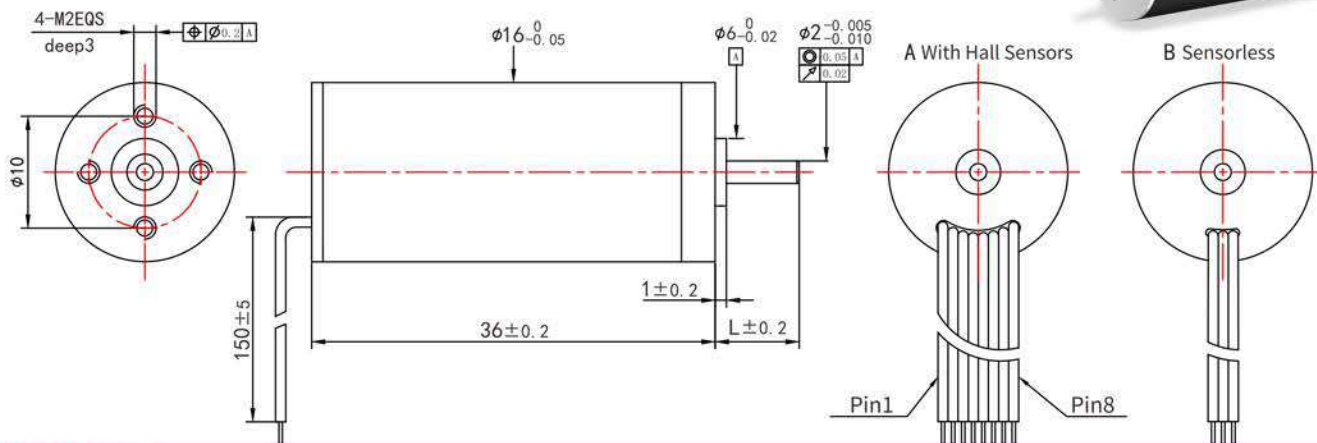
组合体系 System

适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ16*L36mm, 无刷直流电机, 25-55W, 高速 Φ16*L36mm, Brushless DC Motor, 25-55W, High speed



电机参数 Motor Data				
电机型号 Motor Model		1636	1636	1636
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	56550
3	额定电流	Nominal current	A	2.67
4	额定转矩	Nominal torque	mNm	4.19
空载点 Free Load				
5	空载转速	No-load speed	rpm	65000
6	空载电流	No-load current	mA	260
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	77.9
8	转速	Speed	rpm	58175
9	电流	Current	A	2.207
10	转矩	Torque	mNm	3.4
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	54.9
12	转速	Speed	rpm	32500
13	电流	Current	A	9.5
14	转矩	Torque	mNm	16.1
堵转点 At Stall				
15	堵转电流	Stall current	A	18.80
16	堵转转矩	Stall torque	mNm	32.2
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.64
18	电机感抗	Terminal inductance	mH	0.020
19	转矩常数	Torque constant	mNm/A	1.74
20	转速常数	Speed constant	rpm/V	5416.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	2017
22	机械时间常数	Mechanical time constant	ms	7.66
23	转子惯量	Rotor inertia	gcm ²	0.36
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	23
27	噪音	Typical noise level	dB	≤55

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

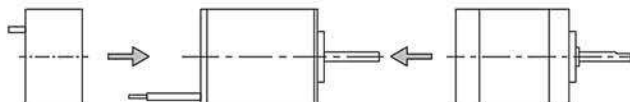
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

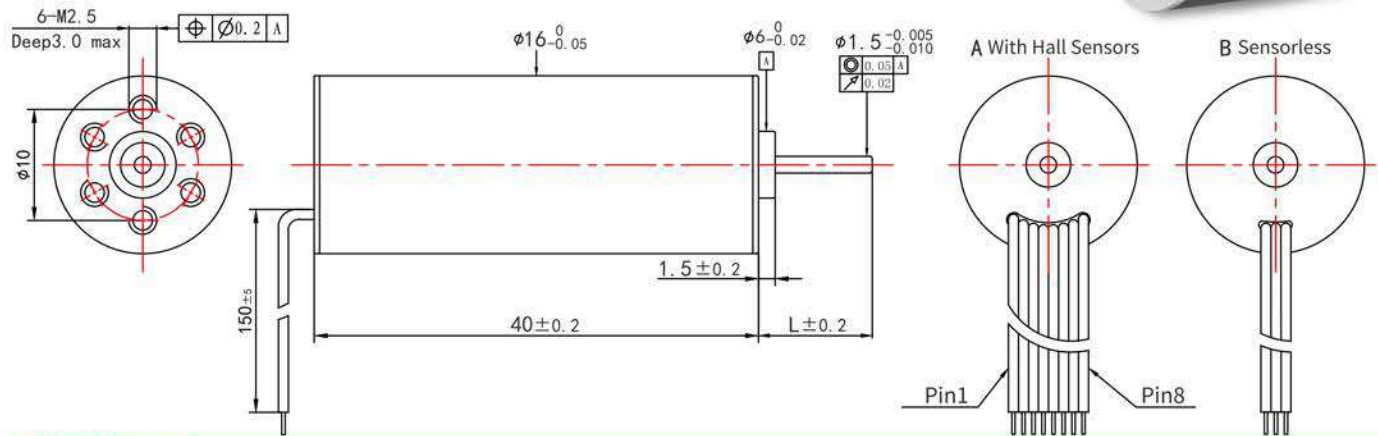
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ16*L40mm, 无刷直流电机, 3-6W

Φ16*L40mm, Brushless DC Motor, 3-6W



电机参数 Motor Data				
电机型号 Motor Model		1640	1640	1640
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	5395
3	额定电流	Nominal current	A	0.36
4	额定转矩	Nominal torque	mNm	5.19
空载点 Free Load				
5	空载转速	No-load speed	rpm	6500
6	空载电流	No-load current	mA	60
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	67.2
8	转速	Speed	rpm	5493
9	电流	Current	A	0.337
10	转矩	Torque	mNm	4.70
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	5.2
12	转速	Speed	rpm	3250
13	电流	Current	A	1.0
14	转矩	Torque	mNm	15.3
堵转点 At Stall				
15	堵转电流	Stall current	A	1.85
16	堵转转矩	Stall torque	mNm	30.5
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	6.49
18	电机感抗	Terminal inductance	mH	0.795
19	转矩常数	Torque constant	mNm/A	17.06
20	转速常数	Speed constant	rpm/V	541.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	212.9
22	机械时间常数	Mechanical time constant	ms	2.13
23	转子惯量	Rotor inertia	gcm ²	0.96
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	35
27	噪音	Typical noise level	dB	≤45

电机线序(Motor wire sequence):

·无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

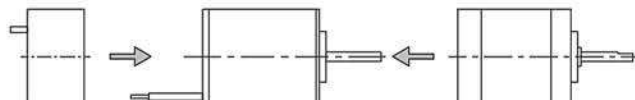
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

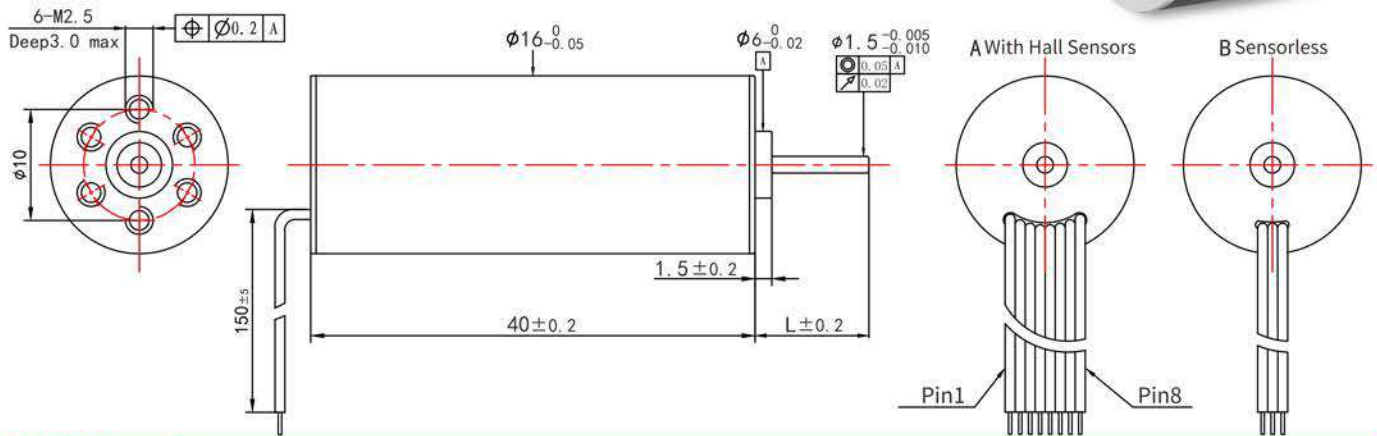
组合体系 System

适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ16*L40mm, 无刷直流电机, 20-65W, 高速 Φ16*L40mm, Brushless DC Motor, 20-65W, High speed



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage		1640	1640	1640
额定点 At Nominal				
1 额定电压 Nominal voltage	V/DC	12	18	24
2 额定转速 Nominal speed	rpm	40800	45240	42323
3 额定电流 Nominal current	A	2.45	1.75	1.62
4 额定转矩 Nominal torque	mNm	5.20	4.97	6.45
空载点 Free Load				
5 空载转速 No-load speed	rpm	48000	52000	49500
6 空载电流 No-load current	mA	240	220	200
最大效率点 At Max. Efficiency				
7 最大效率 Max. efficiency	%	76.3	74.8	73.7
8 转速 Speed	rpm	42480	45760	43313
9 电流 Current	A	1.937	1.634	1.425
10 转矩 Torque	mNm	4.0	4.59	5.56
最大输出功率点 At Max. Output power				
11 最大功率 Max. output power	W	43.6	52.0	57.6
12 转速 Speed	rpm	24000	26000	24750
13 电流 Current	A	7.6	6.1	5.1
14 转矩 Torque	mNm	17.3	19.11	22.23
堵转点 At Stall				
15 堵转电流 Stall current	A	15.00	12.00	10.00
16 堵转转矩 Stall torque	mNm	34.7	38.23	44.47
电机常数 Motor Constants				
17 电机阻抗 Terminal resistance	Ω	0.80	1.50	2.40
18 电机感抗 Terminal inductance	mH	0.048	0.095	0.175
19 转矩常数 Torque constant	mNm/A	2.35	3.24	4.54
20 转速常数 Speed constant	rpm/V	4000	2889	2063
21 转数/转矩常数 Speed/torque constant	rpm/mNm	1384	1360	1113
22 机械时间常数 Mechanical time constant	ms	7.87	7.74	6.33
23 转子惯量 Rotor inertia	gcm ²	0.54	0.54	0.54
24 极对数 Number of pole pairs		1		
25 相数 Number of phase		3		
26 重量 Weight of motor	g	28.5		
27 噪音 Typical noise level	dB	≤55		

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

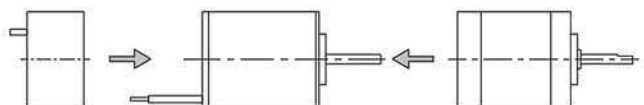
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

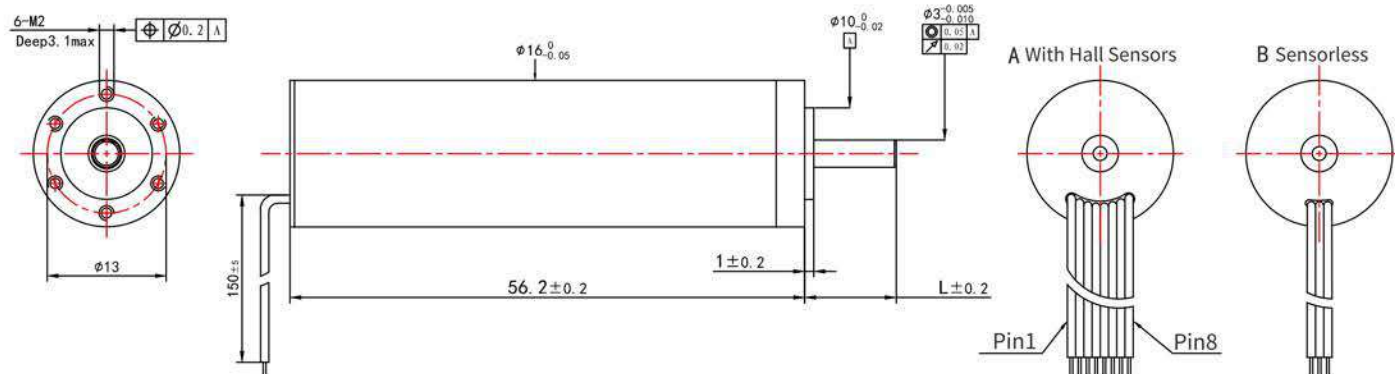
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ16*L56mm, 无刷直流电机, 6-18W

Φ16*L56mm, Brushless DC Motor, 6-18W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

1	额定电压	Nominal voltage	V/DC	12	18	24	36
2	额定转速	Nominal speed	rpm	8232	9010	10230	10073
3	额定电流	Nominal current	A	0.82	0.59	0.49	0.33
4	额定转矩	Nominal torque	mNm	7.98	8.13	8.03	8.36

空载点 Free Load

5	空载转速	No-load speed	rpm	9800	10600	12035	11850
6	空载电流	No-load current	mA	120	80	60	40

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	70.0	72.0	73.4	73.7
8	转速	Speed	rpm	8428	9275	10531	10369
9	电流	Current	A	0.733	0.508	0.419	0.285
10	转矩	Torque	mNm	7.0	6.77	6.69	6.97

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	12.8	15.0	16.9	17.3
12	转速	Speed	rpm	4900	5300	6018	5925
13	电流	Current	A	2.3	1.8	1.5	1.0
14	转矩	Torque	mNm	24.9	27.10	26.77	27.86

堵转点 At Stall

15	堵转电流	Stall current	A	4.50	3.50	2.93	2.00
16	堵转转矩	Stall torque	mNm	49.8	54.19	53.53	55.72

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	2.67	5.14	8.19	18.00
18	电机感抗	Terminal inductance	mH	0.285	0.578	0.945	2.120
19	转矩常数	Torque constant	mNm/A	11.38	15.85	18.65	28.43
20	转速常数	Speed constant	rpm/V	816.7	588.9	501.5	329.2
21	转速/转矩常数	Speed/torque constant	rpm/mNm	196.6	195.6	224.8	212.7
22	机械时间常数	Mechanical time constant	ms	1.94	1.93	2.22	2.10
23	转子惯量	Rotor inertia	gcm ²	0.94	0.94	0.94	0.94
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	41			
27	噪音	Typical noise level	dB	≤50			

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{DD} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

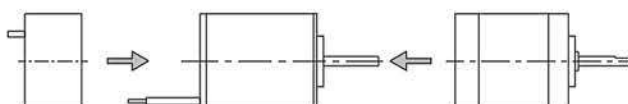
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

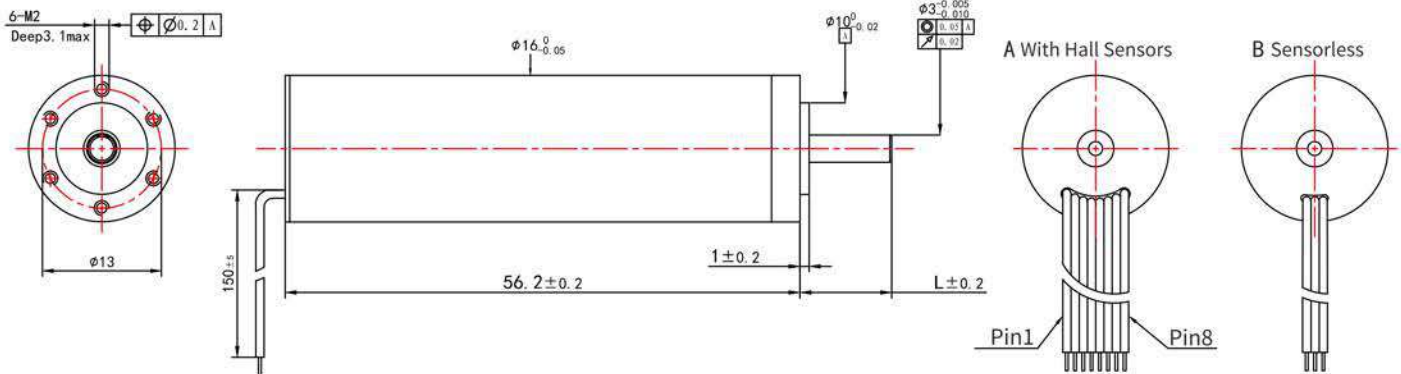
组合体系 System

适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ16*L56mm, 无刷直流电机, 70-200W, 高速 Φ16*L56mm, Brushless DC Motor, 70-200W, High speed



电机参数 Motor Data					1656	1656	1656	1656	1656
电机型号 Motor Model					1656	1656	1656	1656	1656
额定电压参数值 Value at Rated voltage									
额定点 At Nominal									
1	额定电压	Nominal voltage	V/DC		12	18	24	36	48
2	额定转速	Nominal speed	rpm		37613	41153	40800	36935	38275
3	额定电流	Nominal current	A		6.01	5.17	5.04	3.74	2.96
4	额定转矩	Nominal torque	mNm		14.54	17.53	22.51	27.03	27.38
空载点 Free Load									
5	空载转速	No-load speed	rpm		42500	46500	48000	44500	46114
6	空载电流	No-load current	mA		550	380	285	210	175
最大效率点 At Max. Efficiency									
7	最大效率	Max. efficiency	%		79.7	81.9	82.0	81.0	80.5
8	转速	Speed	rpm		38888	42548	43440	40273	41733
9	电流	Current	A		4.583	3.918	3.298	2.185	1.731
10	转矩	Torque	mNm		10.8	12.96	14.26	15.11	15.30
最大输出功率点 At Max. Output power									
11	最大功率	Max. output power	W		140.7	185.6	188.6	185.2	194
12	转速	Speed	rpm		21250	23250	24000	22250	23057
13	电流	Current	A		24.3	21.2	16.1	10.6	8
14	转矩	Torque	mNm		63.2	76.23	75.04	79.50	80.52
堵转点 At Stall									
15	堵转电流	Stall current	A		48.00	42.00	32.00	21.00	16.55
16	堵转转矩	Stall torque	mNm		126.5	152.46	150.08	159.00	161.04
电机常数 Motor Constants									
17	电机阻抗	Terminal resistance	Ω		0.25	0.43	0.75	1.71	2.9
18	电机感抗	Terminal inductance	mH		0.012	0.023	0.041	0.081	0.180
19	转矩常数	Torque constant	mNm/A		2.67	3.66	4.73	7.65	9.8
20	转速常数	Speed constant	rpm/V		3542	2583	2000	1236	961
21	转速/转矩常数	Speed/torque constant	rpm/mNm		336.0	305.0	319.8	279.9	286.3
22	机械时间常数	Mechanical time constant	ms		3.80	3.45	3.62	3.17	3.24
23	转子惯量	Rotor inertia	gcm ²		1.08	1.08	1.08	1.08	1.08
24	极对数	Number of pole pairs			1				
25	相数	Number of phase			3				
26	重量	Weight of motor	g		34				
27	噪音	Typical noise level	dB		≤45				

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

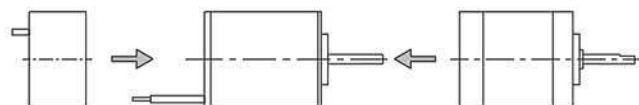
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

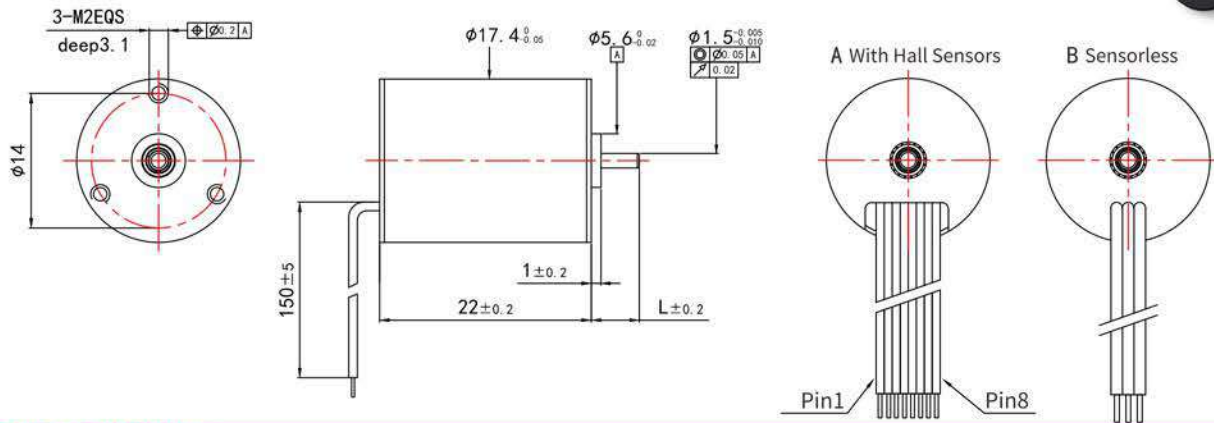
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



$\phi 17 \times L22\text{mm}$, 无刷直流电机, 6-15W

$\phi 17 \times L22\text{mm}$, Brushless DC Motor, 6-15W



电机参数 Motor Data				
电机型号 Motor Model		1722	1722	1722
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	22011
3	额定电流	Nominal current	A	0.78
4	额定转矩	Nominal torque	mNm	2.62
空载点 Free Load				
5	空载转速	No-load speed	rpm	25300
6	空载电流	No-load current	mA	180
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	65.0
8	转速	Speed	rpm	21379
9	电流	Current	A	0.896
10	转矩	Torque	mNm	3.1
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	13.3
12	转速	Speed	rpm	12650
13	电流	Current	A	2.5
14	转矩	Torque	mNm	10.1
堵转点 At Stall				
15	堵转电流	Stall current	A	4.80
16	堵转转矩	Stall torque	mNm	20.1
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	2.50
18	电机感抗	Terminal inductance	mH	0.103
19	转矩常数	Torque constant	mNm/A	4.36
20	转速常数	Speed constant	rpm/V	2108
21	转速/转矩常数	Speed/torque constant	rpm/mNm	1256.2
22	机械时间常数	Mechanical time constant	ms	5.53
23	转子惯量	Rotor inertia	gcm^2	0.42
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	25
27	噪音	Typical noise level	dB	≤ 50

电机线序(Motor wire sequence):

· 无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4- V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

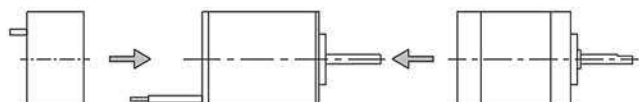
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: $\leq 0.015\text{mm}$
 环境温度范围 Ambient temperature range: $-20 \sim +80^\circ\text{C}$
 相对湿度范围 Relative humidity range: $< 90\% (25^\circ\text{C})$
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

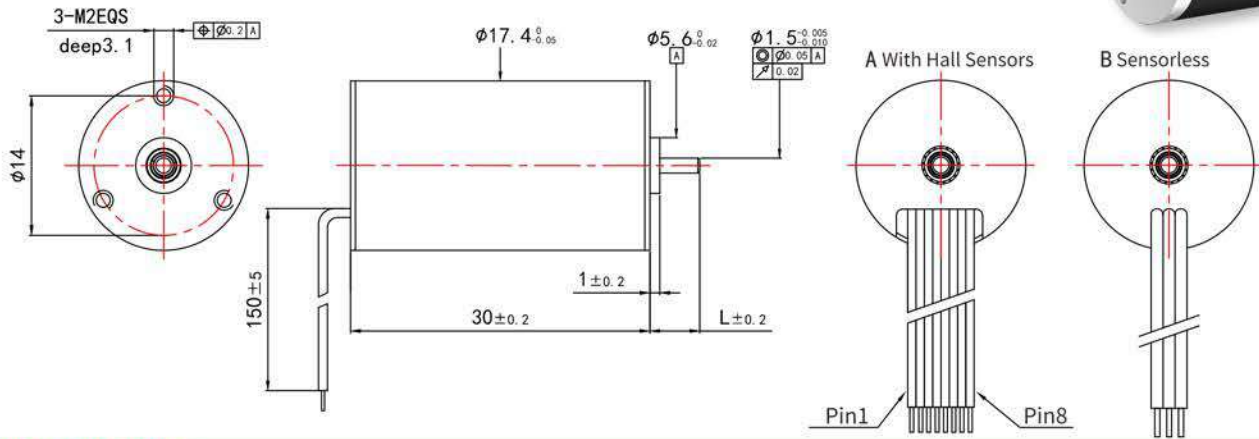
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ17*L30mm, 无刷直流电机, 7-18W

Φ17*L30mm, Brushless DC Motor, 7-18W



电机参数 Motor Data

电机型号 Motor Model

1730 1730 1730

额定电压参数值 Value at Rated voltage

额定值 At Nominal

1	额定电压	Nominal voltage	V/DC	12	18	24
2	额定转速	Nominal speed	rpm	17835	16095	18270
3	额定电流	Nominal current	A	0.82	0.59	0.50
4	额定转矩	Nominal torque	mNm	3.45	4.24	4.19

空载点 Free Load

5	空载转速	No-load speed	rpm	20500	18500	21000
6	空载电流	No-load current	mA	180	120	100

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	66.0	67.4	67.5
8	转速	Speed	rpm	17220	15725	17850
9	电流	Current	A	0.967	0.665	0.558
10	转矩	Torque	mNm	4.2	4.90	4.83

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	14.2	15.8	17.7
12	转速	Speed	rpm	10250	9250	10500
13	电流	Current	A	2.6	1.9	1.6
14	转矩	Torque	mNm	13.3	16.32	16.11

堵转点 At Stall

15	堵转电流	Stall current	A	5.10	3.75	3.15
16	堵转转矩	Stall torque	mNm	26.5	32.65	32.23

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	2.35	4.80	7.62
18	电机感抗	Terminal inductance	mH	0.135	0.311	0.480
19	转矩常数	Torque constant	mNm/A	5.39	8.99	10.57
20	转速常数	Speed constant	rpm/V	1708	1028	875
21	转速/转矩常数	Speed/torque constant	rpm/mNm	772.7	566.7	651.6
22	机械时间常数	Mechanical time constant	ms	3.87	2.84	3.26
23	转子惯量	Rotor inertia	gcm ²	0.48	0.48	0.48
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	36		
27	噪音	Typical noise level	dB	≤50		

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

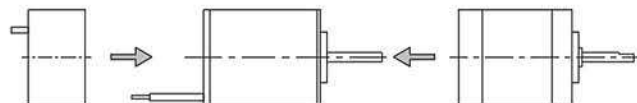
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

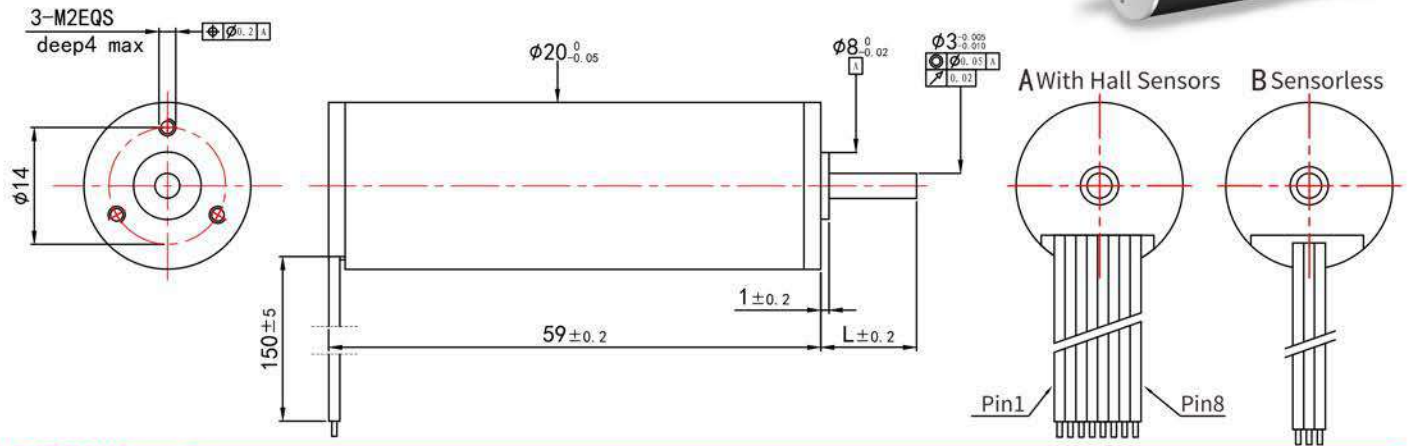
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 磁电式编码器 Magnetolectric encoder



Φ20*L59mm, 无刷直流电机, 30-78W

Φ20*L59mm, Brushless DC Motor, 30-78W



电机参数 Motor Data				
电机型号 Motor Model		2059	2059	2059
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	38720
3	额定电流	Nominal current	A	3.11
4	额定转矩	Nominal torque	mNm	6.94
空载点 Free Load				
5	空载转速	No-load speed	rpm	44000
6	空载电流	No-load current	mA	400
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	75.4
8	转速	Speed	rpm	37840
9	电流	Current	A	3.564
10	转矩	Torque	mNm	8.1
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	66.6
12	转速	Speed	rpm	22000
13	电流	Current	A	11.7
14	转矩	Torque	mNm	28.9
堵转点 At Stall				
15	堵转电流	Stall current	A	23.00
16	堵转转矩	Stall torque	mNm	57.8
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.52
18	电机感抗	Terminal inductance	mH	0.024
19	转矩常数	Torque constant	mNm/A	2.56
20	转速常数	Speed constant	rpm/V	3667
21	转数/转矩常数	Speed/torque constant	rpm/mNm	760.8
22	机械时间常数	Mechanical time constant	ms	8.80
23	转子惯量	Rotor inertia	gcm ²	1.10
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	82
27	噪音	Typical noise level	dB	≤50

电机线序(Motor wire sequence):

· 无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

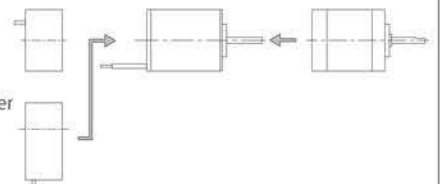
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向(动态) Max axial load (dynamic): 0.8N
 · 径向(法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

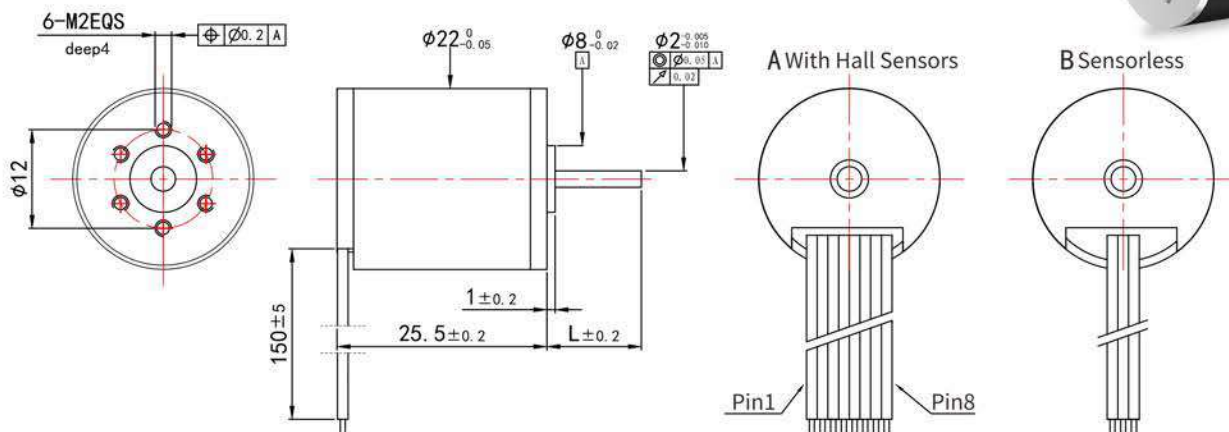
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder



Φ22*L25mm, 无刷直流电机, 2-4W

Φ22*L25mm, Brushless DC Motor, 2-4W



电机参数 Motor Data

电机型号 Motor Model				2225	2225	2225	2225
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	9	12	18	24
2	额定转速	Nominal speed	rpm	6759	7056	6888	6880
3	额定电流	Nominal current	A	0.37	0.31	0.19	0.17
4	额定转矩	Nominal torque	mNm	2.44	2.78	2.69	3.60
空载点 Free Load							
5	空载转速	No-load speed	rpm	8046	8400	8200	8600
6	空载电流	No-load current	mA	120	90	50	33
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	53.5	56.4	58.4	62.2
8	转速	Speed	rpm	6356	6720	6642	7095
9	电流	Current	A	0.443	0.362	0.212	0.157
10	转矩	Torque	mNm	3.2	3.48	3.20	3.15
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	3.2	3.8	3.6	4.1
12	转速	Speed	rpm	4023	4200	4100	4300
13	电流	Current	A	0.9	0.8	0.5	0.4
14	转矩	Torque	mNm	7.6	8.70	8.41	9.00
堵转点 At Stall							
15	堵转电流	Stall current	A	1.66	1.45	0.90	0.74
16	堵转转矩	Stall torque	mNm	15.3	17.40	16.83	18.00
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	5.42	8.28	20.00	32.43
18	电机感抗	Terminal inductance	mH	0.522	0.922	2.040	3.180
19	转矩常数	Torque constant	mNm/A	9.91	12.80	19.80	25.46
20	转速常数	Speed constant	rpm/V	894.0	700.0	455.6	358.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	527.2	482.7	487.3	477.8
22	机械时间常数	Mechanical time constant	ms	10.41	9.53	9.62	9.43
23	转子惯量	Rotor inertia	gcm ²	1.89	1.89	1.89	1.89
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	40.8			
27	噪音	Typical noise level	dB	≤45			

电机线序(Motor wire sequence):

·无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

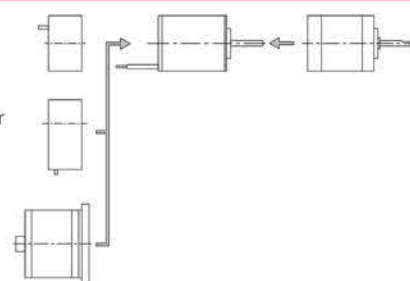
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

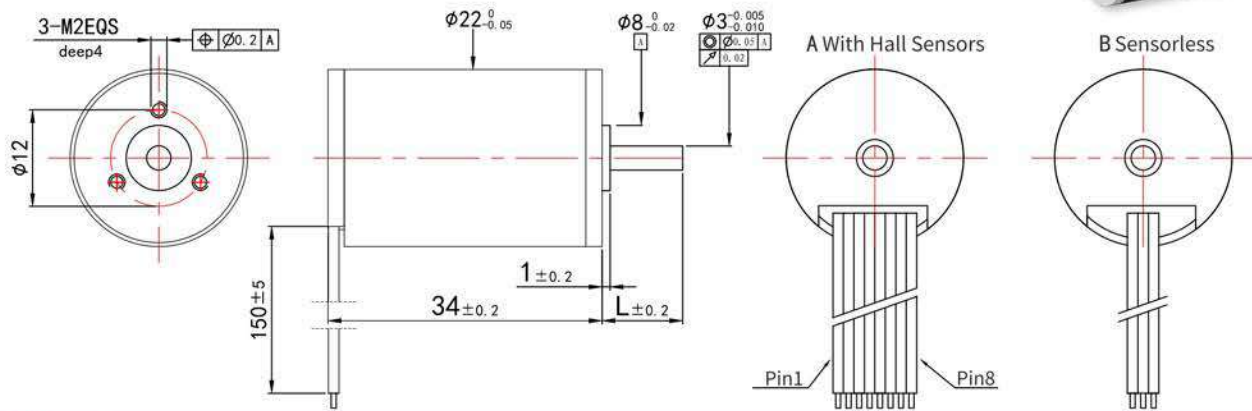
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ22*L34mm, 无刷直流电机, 45-110W

Φ22*L34mm, Brushless DC Motor, 45-110W



电机参数 Motor Data				
电机型号 Motor Model		2234	2234	2234
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	45675
3	额定电流	Nominal current	A	4.42
4	额定转矩	Nominal torque	mNm	8.91
空载点 Free Load				
5	空载转速	No-load speed	rpm	52500
6	空载电流	No-load current	mA	300
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	81.6
8	转速	Speed	rpm	48300
9	电流	Current	A	2.836
10	转矩	Torque	mNm	5.5
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	94.2
12	转速	Speed	rpm	26250
13	电流	Current	A	16.2
14	转矩	Torque	mNm	34.3
堵转点 At Stall				
15	堵转电流	Stall current	A	32.00
16	堵转转矩	Stall torque	mNm	68.5
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.38
18	电机感抗	Terminal inductance	mH	0.035
19	转矩常数	Torque constant	mNm/A	2.16
20	转速常数	Speed constant	rpm/V	4375
21	转数/转矩常数	Speed/torque constant	rpm/mNm	765.9
22	机械时间常数	Mechanical time constant	ms	8.70
23	转子惯量	Rotor inertia	gcm ²	1.08
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	55.2
27	噪音	Typical noise level	dB	≤55

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

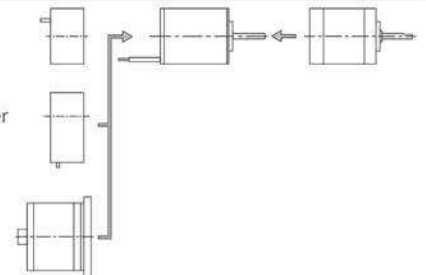
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

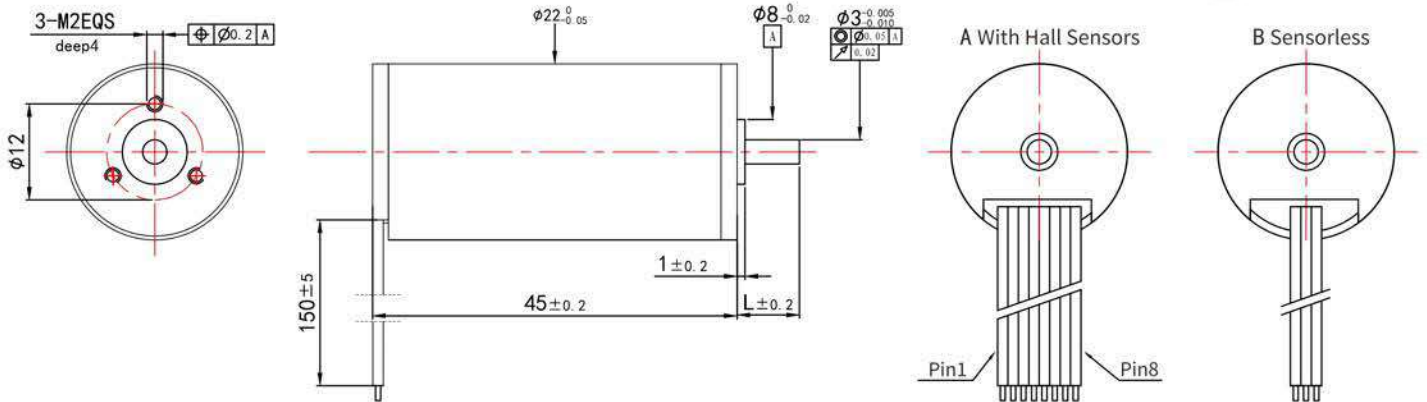
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ22*L45mm, 无刷直流电机, 10-35W

Φ22*L45mm, Brushless DC Motor, 10-35W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				2245	2245	2245	2245
1	额定电压	Nominal voltage	V/DC	12	15	18	24
2	额定转速	Nominal speed	rpm	11050	10625	8925	10370
3	额定电流	Nominal current	A	1.82	1.36	0.87	0.81
4	额定转矩	Nominal torque	mNm	13.84	13.58	12.23	12.97

空载点 Free Load

5	空载转速	No-load speed	rpm	13000	12500	10500	12200
6	空载电流	No-load current	mA	220	150	110	110

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	73.6	74.8	73.0	73.2
8	转速	Speed	rpm	11375	11000	9188	10675
9	电流	Current	A	1.555	1.116	0.746	0.688
10	转矩	Torque	mNm	11.5	10.87	10.20	10.81

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	31.4	29.6	22.4	27.6
12	转速	Speed	rpm	6500	6250	5250	6100
13	电流	Current	A	5.6	4.2	2.7	2.5
14	转矩	Torque	mNm	46.1	45.28	40.78	43.23

堵转点 At Stall

15	堵转电流	Stall current	A	10.90	8.20	5.20	4.80
16	堵转转矩	Stall torque	mNm	92.2	90.56	81.56	86.45

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	1.10	1.83	3.46	5.00
18	电机感抗	Terminal inductance	mH	0.180	0.293	0.504	0.760
19	转矩常数	Torque constant	mNm/A	8.64	11.25	16.02	18.39
20	转速常数	Speed constant	rpm/V	1083	833	583	508
21	转数/转矩常数	Speed/torque constant	rpm/mNm	140.9	138.0	128.7	141.1
22	机械时间常数	Mechanical time constant	ms	3.22	3.15	2.94	3.22
23	转子惯量	Rotor inertia	gcm ²	2.18	2.18	2.18	2.18
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	84.8			
27	噪音	Typical noise level	dB	≤45			

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (ables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

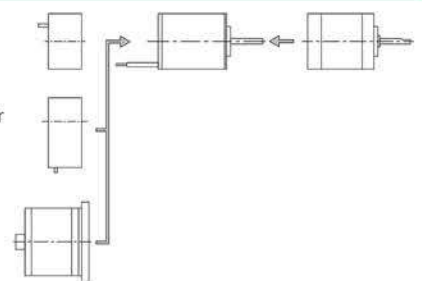
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

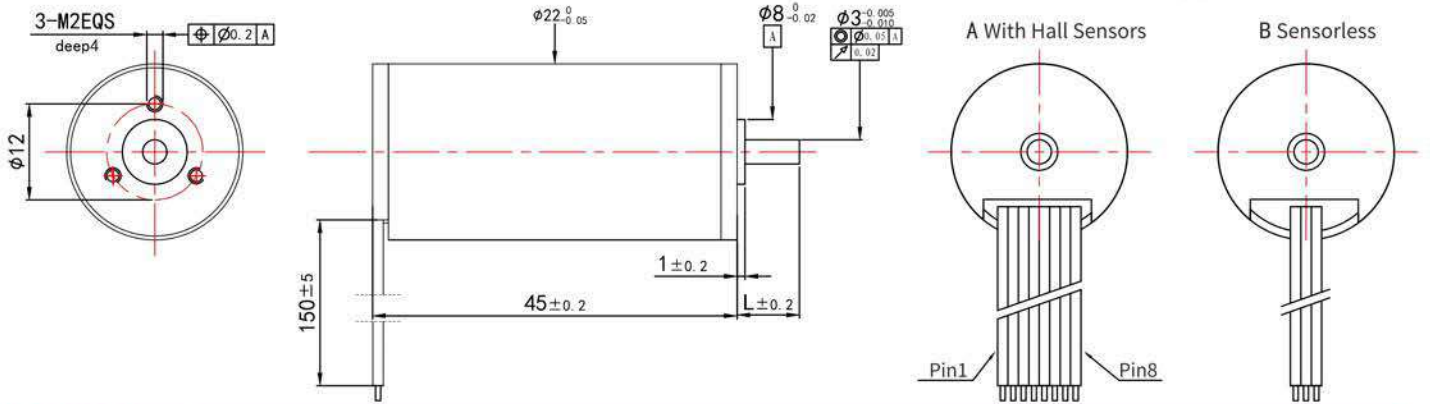
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ22*L45mm, 无刷直流电机, 25-50W, 高速

Φ22*L45mm, Brushless DC Motor, 25-50W, High speed



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				2245	2245	2245	2245
1	额定电压	Nominal voltage	V/DC	12	18	24	36
2	额定转速	Nominal speed	rpm	11484	11310	11745	12006
3	额定电流	Nominal current	A	2.32	1.54	1.18	0.83
4	额定转矩	Nominal torque	mNm	17.16	17.37	16.96	18.20

空载点 Free Load

5	空载转速	No-load speed	rpm	13200	13000	13500	13800
6	空载电流	No-load current	mA	300	200	160	90

最大效率点 At Max.Efficiency

7	最大效率	Max. efficiency	%	74.3	74.3	73.7	76.6
8	转速	Speed	rpm	11616	11440	11813	12144
9	电流	Current	A	2.160	1.436	1.140	0.775
10	转矩	Torque	mNm	16.5	16.70	16.30	17.50

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	45.6	45.5	46.1	50.6
12	转速	Speed	rpm	6600	6500	6750	6900
13	电流	Current	A	8.1	5.4	4.1	2.9
14	转矩	Torque	mNm	66.0	66.80	65.22	70.02

堵转点 At Stall

15	堵转电流	Stall current	A	15.80	10.50	8.00	5.80
16	堵转转矩	Stall torque	mNm	132.0	133.59	130.43	140.04

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.76	1.71	3.00	6.21
18	电机感抗	Terminal inductance	mH	0.073	0.158	0.282	0.625
19	转矩常数	Torque constant	mNm/A	8.52	12.97	16.64	24.52
20	转速常数	Speed constant	rpm/V	1100.0	722.2	562.5	383.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	100.0	97.3	103.5	98.5
22	机械时间常数	Mechanical time constant	ms	3.57	3.47	3.69	3.52
23	转子惯量	Rotor inertia	gcm ²	3.41	3.41	3.41	3.41
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	72			
27	噪音	Typical noise level	dB	≤50			

电机线序(Motor wire sequence):

·无传感器 (Without Sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

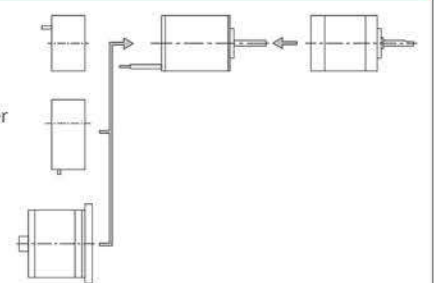
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

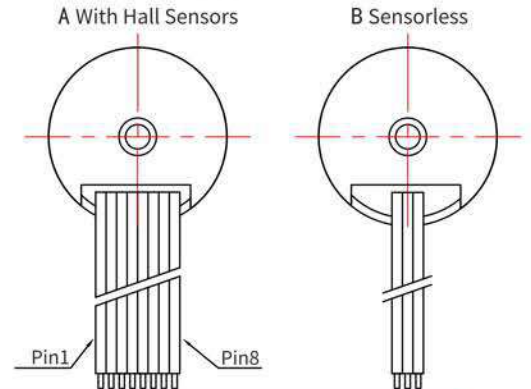
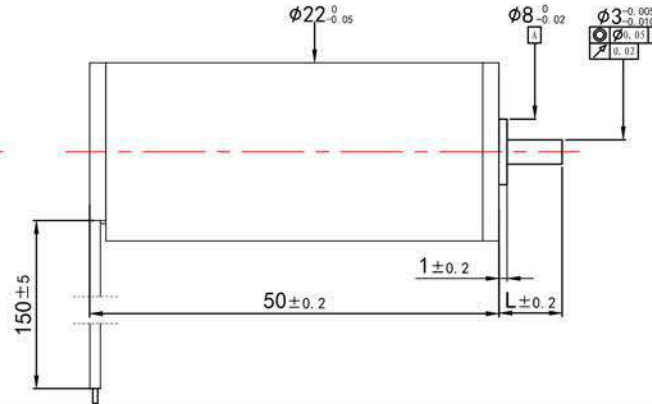
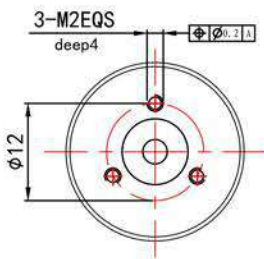
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ22*L50mm, 无刷直流电机, 13-60W

Φ22*L50mm, Brushless DC Motor, 13-60W



电机参数 Motor Data					2250	2250	2250	2250	2250
电机型号 Motor Model					2250	2250	2250	2250	2250
额定电压参数值 Value at Rated voltage									
额定点 At Nominal									
1	额定电压	Nominal voltage	V/DC		12	12	18	24	36
2	额定转速	Nominal speed	rpm		7091	10266	11136	10440	10614
3	额定电流	Nominal current	A		1.05	2.45	1.85	1.34	0.91
4	额定转矩	Nominal torque	mNm		13.52	21.59	22.52	23.30	23.23
空载点 Free Load									
5	空载转速	No-load speed	rpm		8150	11800	12800	12000	12200
6	空载电流	No-load current	mA		80	200	150	108	80
最大效率点 At Max. Efficiency									
7	最大效率	Max. efficiency	%		81.9	79.8	79.8	79.9	79.0
8	转速	Speed	rpm		7457	10679	11584	10860	11041
9	电流	Current	A		0.830	1.844	1.390	1.010	0.690
10	转矩	Torque	mNm		10.4	15.78	16.46	17.03	16.97
最大输出功率点 At Max. Output power									
11	最大功率	Max. output power	W		26.2	51.3	58.1	56.3	57
12	转速	Speed	rpm		4075	5900	6400	6000	6100
13	电流	Current	A		4.5	8.9	6.7	4.9	3
14	转矩	Torque	mNm		61.4	83.04	86.63	89.62	89.34
堵转点 At Stall									
15	堵转电流	Stall current	A		8.90	17.50	13.20	9.60	6.50
16	堵转转矩	Stall torque	mNm		122.9	166.08	173.25	179.24	178.68
电机常数 Motor Constants									
17	电机阻抗	Terminal resistance	Ω		1.35	0.69	1.36	2.50	5.5
18	电机感抗	Terminal inductance	mH		0.076	0.076	0.132	0.280	0.610
19	转矩常数	Torque constant	mNm/A		13.93	9.60	13.28	18.88	27.8
20	转速常数	Speed constant	rpm/V		679.2	983.3	711.1	500.0	338.9
21	转数/转矩常数	Speed/torque constant	rpm/mNm		66.3	71.0	73.9	66.9	68.3
22	机械时间常数	Mechanical time constant	ms		2.46	2.64	2.74	2.48	2.53
23	转子惯量	Rotor inertia	gcm ²		3.54	3.54	3.54	3.54	3.54
24	极对数	Number of pole pairs			1				
25	相数	Number of phase			3				
26	重量	Weight of motor	g		92				
27	噪音	Typical noise level	dB		≤45				

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

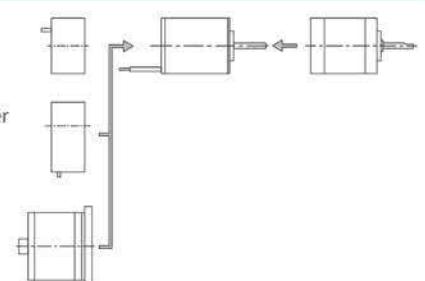
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

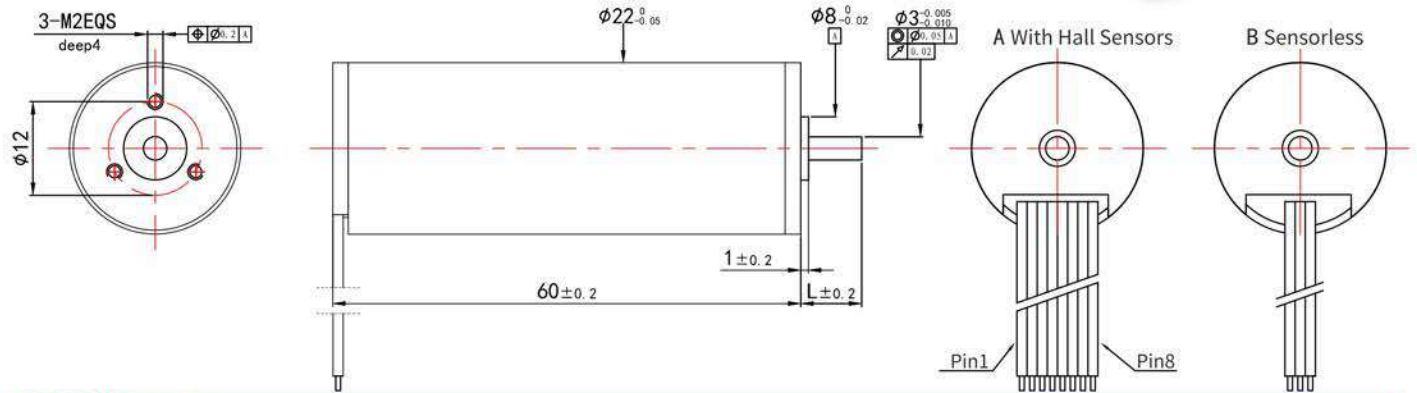
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ22*L60mm, 无刷直流电机, 55-150W

Φ22*L60mm, Brushless DC Motor, 55-150W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage		2260	2260	2260
额定点 At Nominal				
1 额定电压 Nominal voltage	V/DC	12	18	24
2 额定转速 Nominal speed	rpm	14442	16095	15312
3 额定电流 Nominal current	A	5.31	4.58	3.45
4 额定转矩 Nominal torque	mNm	33.35	38.13	39.35
空载点 Free Load				
5 空载转速 No-load speed	rpm	16600	18500	17600
6 空载电流 No-load current	mA	420	420	380
最大效率点 At Max. Efficiency				
7 最大效率 Max. efficiency	%	80.1	78.5	76.4
8 转速 Speed	rpm	14442	16095	15312
9 电流 Current	A	5.305	4.577	3.451
10 转矩 Torque	mNm	33.4	38.13	39.35
最大输出功率点 At Max. Output power				
11 最大功率 Max. output power	W	111.5	142.0	139.5
12 转速 Speed	rpm	8300	9250	8800
13 电流 Current	A	19.2	16.4	12.2
14 转矩 Torque	mNm	128.3	146.64	151.35
堵转点 At Stall				
15 堵转电流 Stall current	A	38.00	32.40	24.00
16 堵转转矩 Stall torque	mNm	256.6	293.28	302.70
电机常数 Motor Constants				
17 电机阻抗 Terminal resistance	Ω	0.32	0.56	1.00
18 电机感抗 Terminal inductance	mH	0.028	0.054	0.102
19 转矩常数 Torque constant	mNm/A	6.83	9.17	12.82
20 转速常数 Speed constant	rpm/V	1383.3	1027.8	733.3
21 转数/转矩常数 Speed/torque constant	rpm/mNm	64.7	63.1	58.1
22 机械时间常数 Mechanical time constant	ms	3.23	3.15	2.90
23 转子惯量 Rotor inertia	gcm ²	4.77	4.77	4.77
24 极对数 Number of pole pairs		1		
25 相数 Number of phase		3		
26 重量 Weight of motor	g	101		
27 噪音 Typical noise level	dB	≤45		

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

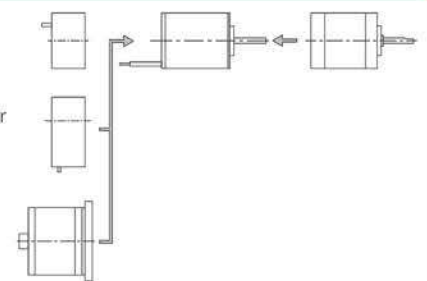
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90%(25°C)
 最高转子温度 Highest rotor temperature: 85°C
 轴承可选配滑动轴承/滚珠轴承 Bearing optional: ball/sleeve
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

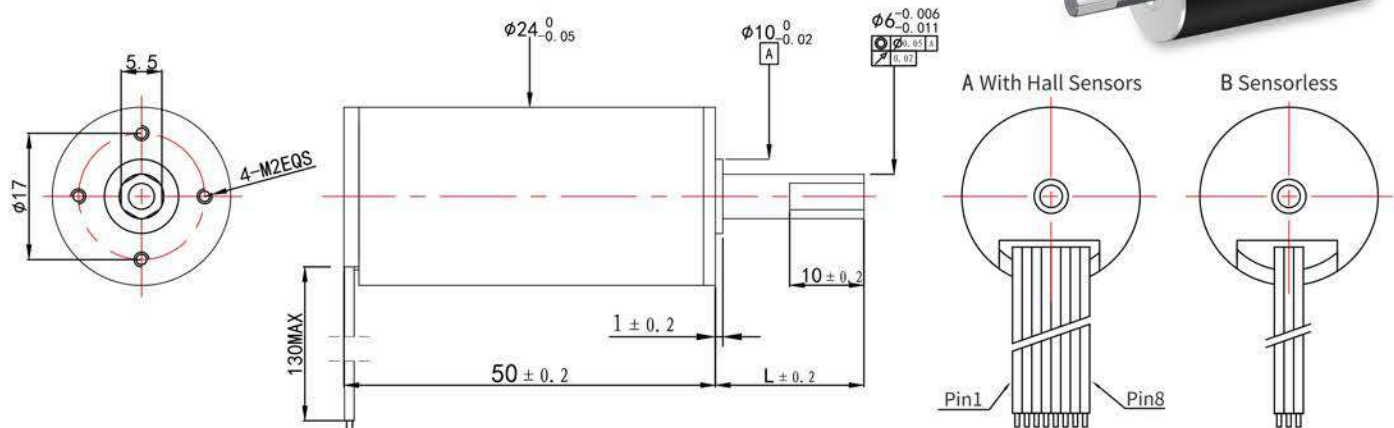
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ24*L50mm, 无刷直流电机, 25-60W

Φ24*L50mm, Brushless DC Motor, 25-60W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage		2450	2450	2450
额定点 At Nominal				
1 额定电压 Nominal voltage	V/DC	12	18	24
2 额定转速 Nominal speed	rpm	13770	14960	14450
3 额定电流 Nominal current	A	2.77	2.26	1.58
4 额定转矩 Nominal torque	mNm	16.77	18.96	18.21
空载点 Free Load				
5 空载转速 No-load speed	rpm	16200	17600	17000
6 空载电流 No-load current	mA	350	280	200
最大效率点 At Max. Efficiency				
7 最大效率 Max. efficiency	%	73.0	73.3	73.0
8 转速 Speed	rpm	14175	15400	14875
9 电流 Current	A	2.369	1.933	1.350
10 转矩 Torque	mNm	14.0	15.80	15.17
最大输出功率点 At Max. Output power				
11 最大功率 Max. output power	W	47.4	58.3	54.0
12 转速 Speed	rpm	8100	8800	8500
13 电流 Current	A	8.4	6.9	4.8
14 转矩 Torque	mNm	55.9	63.22	60.69
堵转点 At Stall				
15 堵转电流 Stall current	A	16.50	13.50	9.40
16 堵转转矩 Stall torque	mNm	111.8	126.43	121.39
电机常数 Motor Constants				
17 电机阻抗 Terminal resistance	Ω	0.73	1.33	2.55
18 电机感抗 Terminal inductance	mH	0.260	0.142	0.260
19 转矩常数 Torque constant	mNm/A	6.92	9.56	13.19
20 转速常数 Speed constant	rpm/V	1350	3250.0	2604.2
21 转数/转矩常数 Speed/torque constant	rpm/mNm	144.9	139.2	140.0
22 机械时间常数 Mechanical time constant	ms	5.67	5.45	5.48
23 转子惯量 Rotor inertia	gcm ²	3.74	3.74	3.74
24 极对数 Number of pole pairs		1		
25 相数 Number of phase		3		
26 重量 Weight of motor	g	115		
27 噪音 Typical noise level	dB	≤ 45		

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

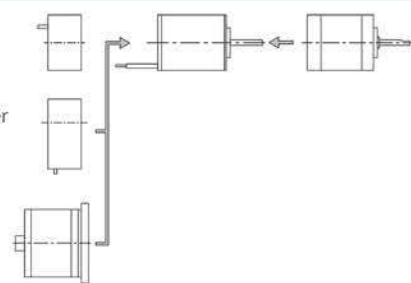
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤ 0.015 mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

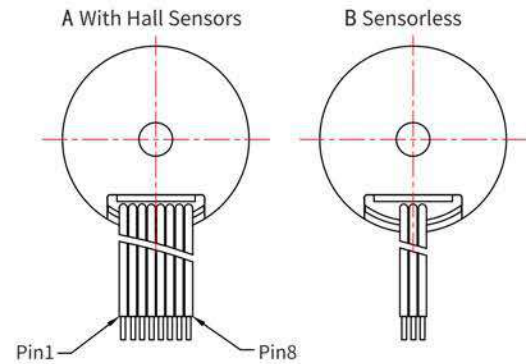
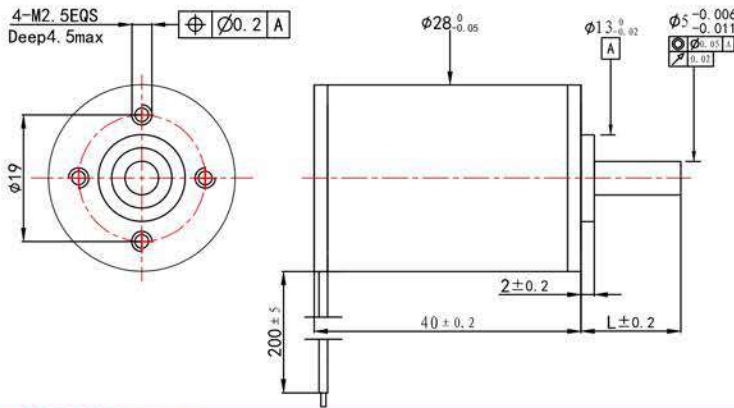
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ28*L40mm, 无刷直流电机, 4-6W

Φ28*L40mm, Brushless DC Motor, 4-6W



电机参数 Motor Data

电机型号 Motor Model

2840 2840 2840

额定电压参数值 Value at Rated voltage

额定点 At Nominal

1	额定电压	Nominal voltage	V/DC	12	18	24
2	额定转速	Nominal speed	rpm	5394	5568	5220
3	额定电流	Nominal current	A	0.61	0.46	0.33
4	额定转矩	Nominal torque	mNm	8.36	9.02	8.81

空载点 Free Load

5	空载转速	No-load speed	rpm	6200	6400	6000
6	空载电流	No-load current	mA	138	110	90

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	65.3	64.3	61.6
8	转速	Speed	rpm	5115	5280	4950
9	电流	Current	A	0.770	0.581	0.416
10	转矩	Torque	mNm	11.3	12.15	11.86

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	10.4	11.6	10.6
12	转速	Speed	rpm	3100	3200	3000
13	电流	Current	A	1.9	1.5	1.0
14	转矩	Torque	mNm	32.2	34.70	33.88

堵转点 At Stall

15	堵转电流	Stall current	A	3.75	2.80	1.95
16	堵转转矩	Stall torque	mNm	64.3	69.41	67.7

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	3.20	6.43	12.31
18	电机感抗	Terminal inductance	mH	0.170	0.372	0.706
19	转矩常数	Torque constant	mNm/A	17.80	25.80	36.43
20	转速常数	Speed constant	rpm/V	516.7	355.6	250.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	96.4	92.2	88.5
22	机械时间常数	Mechanical time constant	ms	6.86	6.56	6.30
23	转子惯量	Rotor inertia	gcm ²	6.79	6.79	6.79
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	119		
27	噪音	Typical noise level	dB	≤45		

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

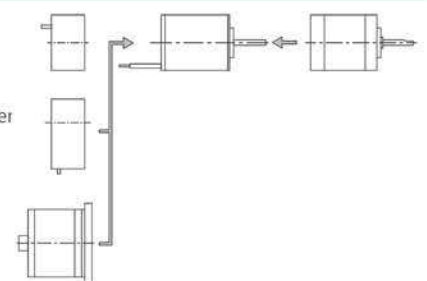
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

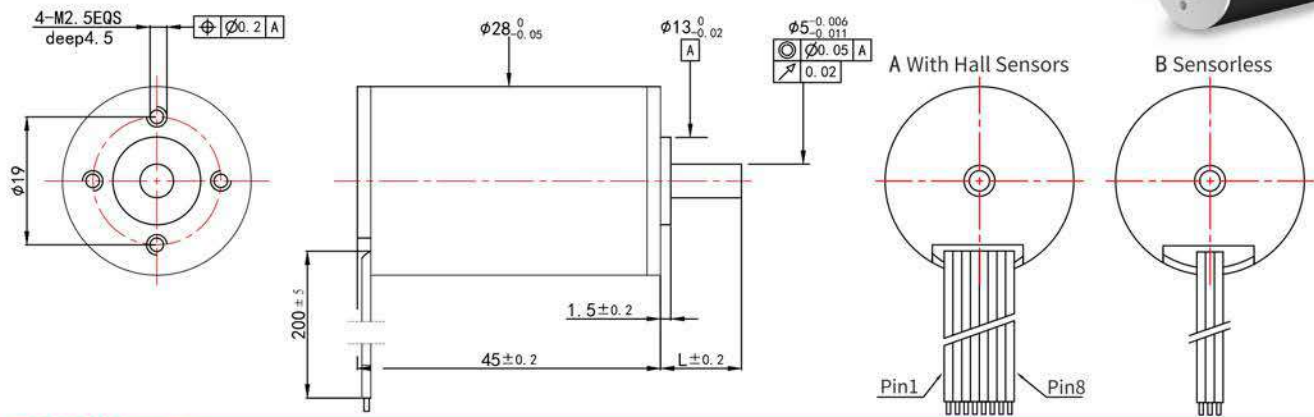
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ28*L45mm, 无刷直流电机, 60-170W

Φ28*L45mm, Brushless DC Motor, 60-170W



电机参数 Motor Data				2845	2845	2845	2845
电机型号 Motor Model				2845	2845	2845	2845
额定电压参数值 Value at Rated voltage				12	18	24	36
额定点 At Nominal				14240	16013	16999	16275
1	额定电压	Nominal voltage	V/DC	12	18	24	36
2	额定转速	Nominal speed	rpm	14240	16013	16999	16275
3	额定电流	Nominal current	A	4.96	5.07	3.44	2.68
4	额定转矩	Nominal torque	mNm	32.49	43.77	37.23	43.77
空载点 Free Load				16000	18300	19100	18600
5	空载转速	No-load speed	rpm	16000	18300	19100	18600
6	空载电流	No-load current	mA	380	360	300	280
最大效率点 At Max. Efficiency				81.9	81.5	80.6	77.5
7	最大效率	Max. efficiency	%	81.9	81.5	80.6	77.5
8	转速	Speed	rpm	14480	16653	17286	16647
9	电流	Current	A	4.334	3.748	3.008	2.298
10	转矩	Torque	mNm	28.1	31.52	32.15	36.76
最大输出功率点 At Max. Output power				123.7	167.8	169.2	170.5
11	最大功率	Max. output power	W	123.7	167.8	169.2	170.5
12	转速	Speed	rpm	8000	9150	9550	9300
13	电流	Current	A	21.2	19.2	14.6	9.9
14	转矩	Torque	mNm	147.7	175.10	169.21	175.07
堵转点 At Stall				42.00	38.00	28.80	19.50
15	堵转电流	Stall current	A	42.00	38.00	28.80	19.50
16	堵转转矩	Stall torque	mNm	295.4	350.19	338.41	350.13
电机常数 Motor Constants				0.29	0.47	0.83	1.85
17	电机阻抗	Terminal resistance	Ω	0.29	0.47	0.83	1.85
18	电机感抗	Terminal inductance	mH	0.023	0.042	0.072	0.180
19	转矩常数	Torque constant	mNm/A	7.10	9.30	11.87	18.22
20	转速常数	Speed constant	rpm/V	1333	1017	796	517
21	转数/转矩常数	Speed/torque constant	rpm/mNm	54.2	52.3	56.4	53.1
22	机械时间常数	Mechanical time constant	ms	4.40	4.25	4.59	4.32
23	转子惯量	Rotor inertia	gcm ²	7.76	7.76	7.76	7.76
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	129			
27	噪音	Typical noise level	dB	≤50			

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

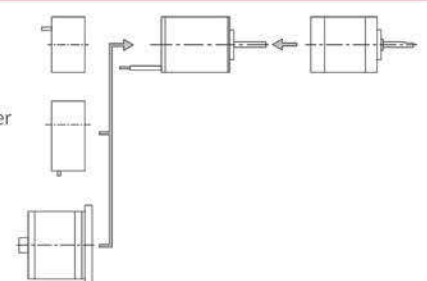
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

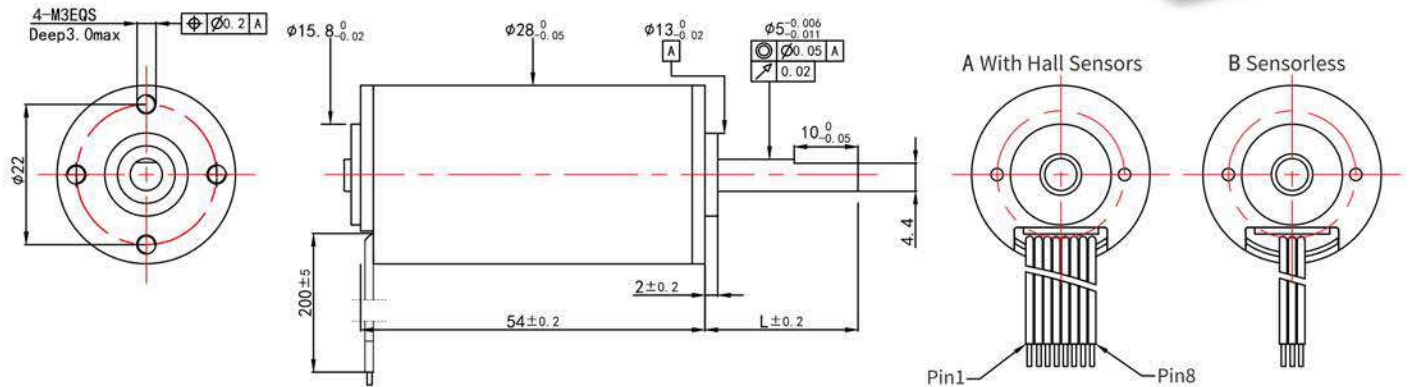
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ28*L54mm, 无刷直流电机, 65-130W

Φ28*L54mm, Brushless DC Motor, 65-130W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				2854	2854	2854	2854
1	额定电压	Nominal voltage	V/DC	12	18	24	36
2	额定转速	Nominal speed	rpm	14760	14040	13920	13680
3	额定电流	Nominal current	A	4.73	3.00	2.95	1.47
4	额定转矩	Nominal torque	mNm	31.09	31.03	39.63	29.95

空载点 Free Load

5	空载转速	No-load speed	rpm	16400	15600	16000	15200
6	空载电流	No-load current	mA	250	170	160	130

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	85.6	85.1	83.5	81.3
8	转速	Speed	rpm	15252	14508	14720	13832
9	电流	Current	A	3.383	2.153	1.875	1.333
10	转矩	Torque	mNm	21.8	21.72	24.39	26.95

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	133.5	126.7	127.7	119.2
12	转速	Speed	rpm	8200	7800	8000	7600
13	电流	Current	A	22.6	14.3	10.9	6.8
14	转矩	Torque	mNm	155.5	155.14	152.42	149.74

堵转点 At Stall

15	堵转电流	Stall current	A	45.00	28.50	21.60	13.50
16	堵转转矩	Stall torque	mNm	310.9	310.29	304.83	299.47

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.27	0.63	1.11	2.67
18	电机感抗	Terminal inductance	mH	0.041	0.102	0.168	0.398
19	转矩常数	Torque constant	mNm/A	6.95	10.95	14.22	22.40
20	转速常数	Speed constant	rpm/V	1366.7	866.7	666.7	422.2
21	转数/转矩常数	Speed/torque constant	rpm/mNm	52.7	50.3	52.5	50.8
22	机械时间常数	Mechanical time constant	ms	4.82	4.60	4.80	4.64
23	转子惯量	Rotor inertia	gcm ²	8.73	8.73	8.73	8.73
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	151			
27	噪音	Typical noise level	dB	≤50			

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

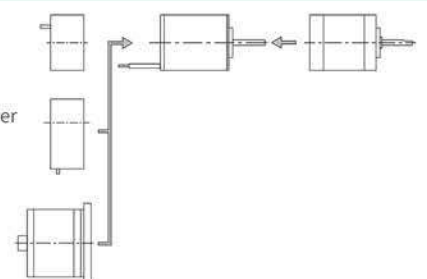
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

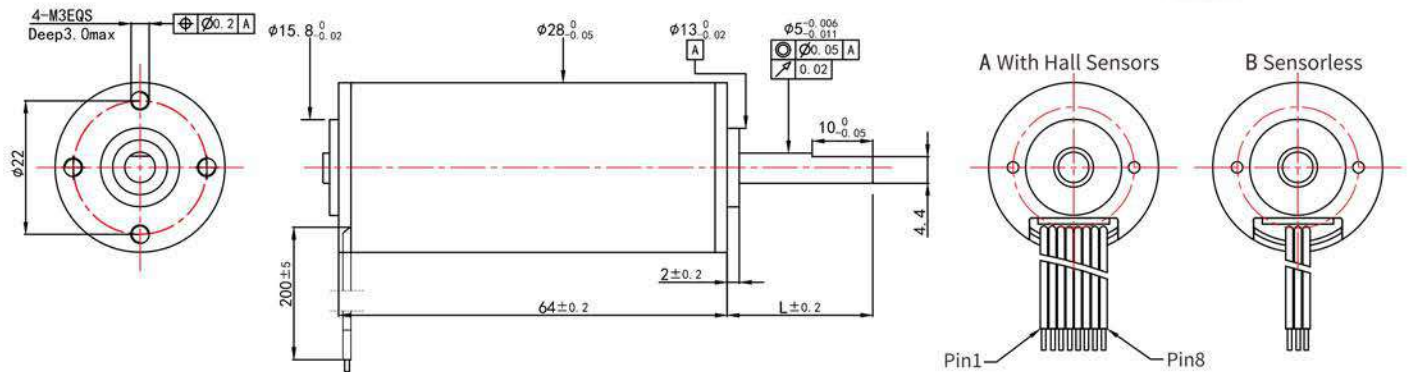
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ28*L64mm, 无刷直流电机, 110-280W

Φ28*L64mm, Brushless DC Motor, 110-280W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				2864	2864	2864	2864
1	额定电压	Nominal voltage	V/DC	12	24	36	48
2	额定转速	Nominal speed	rpm	17550	18450	18720	17820
3	额定电流	Nominal current	A	8.16	4.85	3.50	2.36
4	额定转矩	Nominal torque	mNm	45.37	50.80	51.80	50.10

空载点 Free Load

5	空载转速	No-load speed	rpm	19500	20500	20800	19800
6	空载电流	No-load current	mA	400	280	330	180

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	86.2	85.0	80.7	82.7
8	转速	Speed	rpm	18233	19065	18928	18117
9	电流	Current	A	5.444	3.480	3.180	2.035
10	转矩	Torque	mNm	29.5	35.6	46.62	42.58

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	231.6	272.7	282.1	259.7
12	转速	Speed	rpm	9750	10250	10400	9900
13	电流	Current	A	39.2	23.1	16.2	11.1
14	转矩	Torque	mNm	226.8	254.0	259.02	250.5

堵转点 At Stall

15	堵转电流	Stall current	A	78.00	46.00	32.00	22.00
16	堵转转矩	Stall torque	mNm	453.7	508.0	518.03	501.00

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.15	0.52	1.13	2.18
18	电机感抗	Terminal inductance	mH	0.031	0.118	0.250	0.475
19	转矩常数	Torque constant	mNm/A	5.85	11.11	16.36	22.96
20	转速常数	Speed constant	rpm/V	1625.0	854.2	577.8	412.5
21	转数/转矩常数	Speed/torque constant	rpm/mNm	43.0	40.4	40.2	39.5
22	机械时间常数	Mechanical time constant	ms	4.58	4.30	4.28	4.22
23	转子惯量	Rotor inertia	gcm ²	10.19	10.19	10.19	10.19
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	200			
27	噪音	Typical noise level	dB	≤50			

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

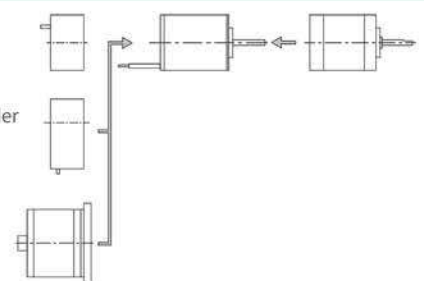
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

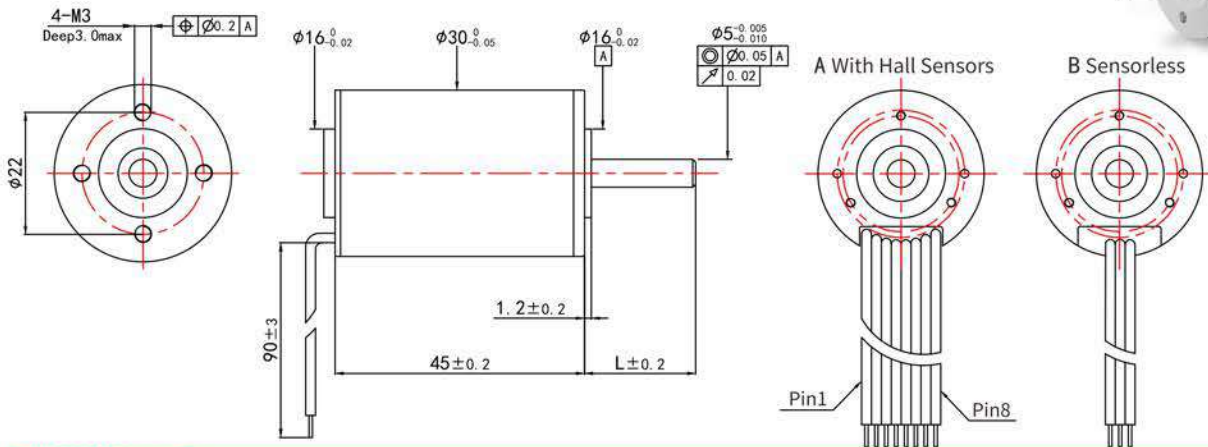
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ30*L45mm, 无刷直流电机, 80-170W

Φ30*L45mm, Brushless DC Motor, 80-170W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				3045	3045	3045	3045
1	额定电压	Nominal voltage	V/DC	12	18	24	36
2	额定转速	Nominal speed	rpm	16544	17835	16965	15540
3	额定电流	Nominal current	A	7.20	5.33	4.01	3.25
4	额定转矩	Nominal torque	mNm	40.16	40.45	41.51	52.94

空载点 Free Load

5	空载转速	No-load speed	rpm	18800	20500	19500	18500
6	空载电流	No-load current	mA	550	450	420	350

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	81.2	79.4	77.0	74.4
8	转速	Speed	rpm	17108	18450	17355	16280
9	电流	Current	A	5.541	4.205	3.454	2.528
10	转矩	Torque	mNm	30.1	31.11	35.12	39.71

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	164.7	167.0	163.0	160.3
12	转速	Speed	rpm	9400	10250	9750	9250
13	电流	Current	A	28.3	19.2	14.2	9.4
14	转矩	Torque	mNm	167.3	155.56	159.64	165.45

堵转点 At Stall

15	堵转电流	Stall current	A	56.00	38.00	28.00	18.50
16	堵转转矩	Stall torque	mNm	334.7	311.12	319.29	330.89

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.21	0.47	0.86	1.95
18	电机感抗	Terminal inductance	mH	0.025	0.052	0.097	0.230
19	转矩常数	Torque constant	mNm/A	6.04	8.29	11.58	18.23
20	转速常数	Speed constant	rpm/V	1566.7	1138.9	812.5	513.9
21	转数/转矩常数	Speed/torque constant	rpm/mNm	56.2	65.9	61.1	55.9
22	机械时间常数	Mechanical time constant	ms	6.94	8.14	7.55	6.91
23	转子惯量	Rotor inertia	gcm ²	11.80	11.80	11.80	11.80
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	145			
27	噪音	Typical noise level	dB	≤50			

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

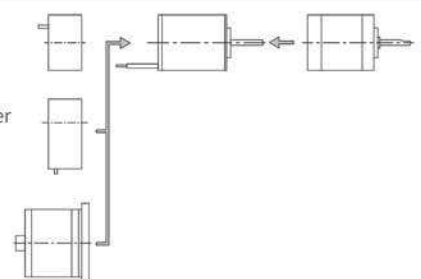
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

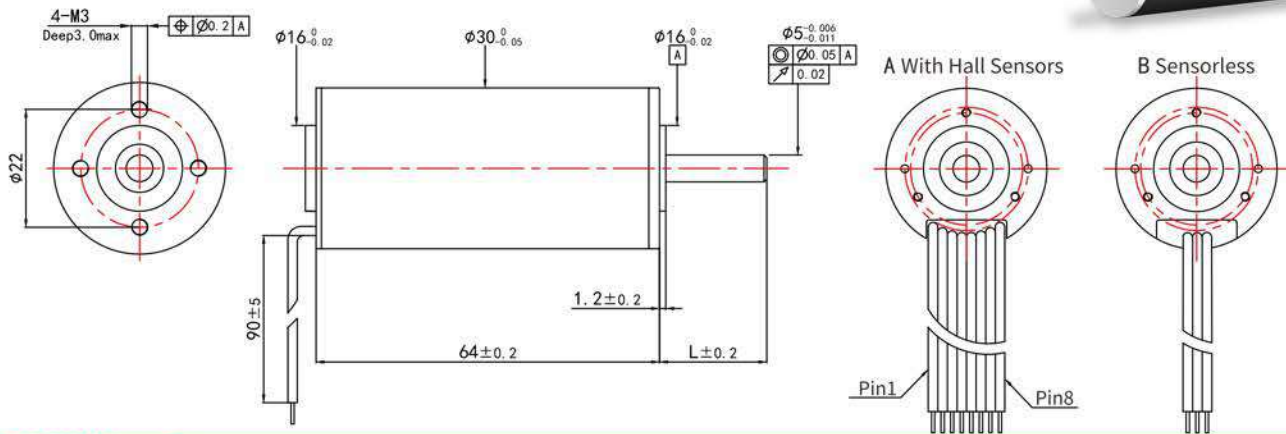
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ30*L64mm, 无刷直流电机, 140-310W

Φ30*L64mm, Brushless DC Motor, 140-310W



电机参数 Motor Data				
电机型号 Motor Model		3064	3064	3064
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	14028
3	额定电流	Nominal current	A	9.48
4	额定转矩	Nominal torque	mNm	65.60
空载点 Free Load				
5	空载转速	No-load speed	rpm	15500
6	空载电流	No-load current	mA	550
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	85.3
8	转速	Speed	rpm	14415
9	电流	Current	A	7.127
10	转矩	Torque	mNm	48.3
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	280.2
12	转速	Speed	rpm	7750
13	电流	Current	A	47.5
14	转矩	Torque	mNm	345.3
堵转点 At Stall				
15	堵转电流	Stall current	A	94.50
16	堵转转矩	Stall torque	mNm	690.5
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.13
18	电机感抗	Terminal inductance	mH	0.024
19	转矩常数	Torque constant	mNm/A	7.35
20	转速常数	Speed constant	rpm/V	1291.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	22.4
22	机械时间常数	Mechanical time constant	ms	4.54
23	转子惯量	Rotor inertia	gcm ²	19.32
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	220.2
27	噪音	Typical noise level	dB	≤45

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

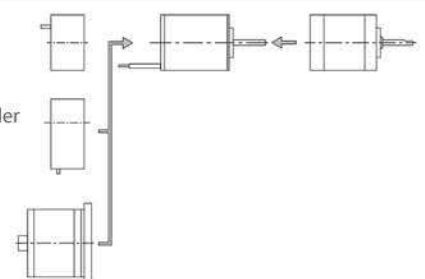
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake

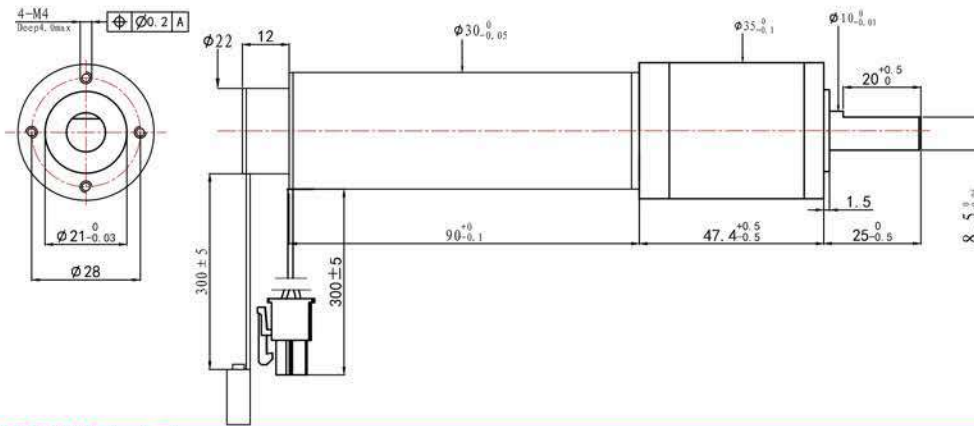
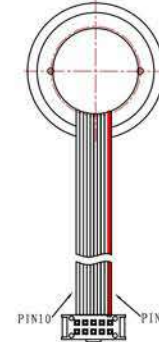


Φ30*L90mm, 无刷直流电机, 250-710W

Φ30*L90mm, Brushless DC Motor, 250-710W



With Hall Sensors



电机参数 Motor Data

电机型号 Motor Model				3090	3090	3090	3090
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	12	24	36	48
2	额定转速	Nominal speed	rpm	17480	18655	19110	19140
3	额定电流	Nominal current	A	13.80	10.52	7.26	8.13
4	额定转矩	Nominal torque	mNm	78.99	111.73	110.62	160.46
空载点 Free Load							
5	空载转速	No-load speed	rpm	19000	20500	21000	22000
6	空载电流	No-load current	mA	650	480	460	380
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	87.8	87.3	85.0	84.7
8	转速	Speed	rpm	17860	19168	19530	20350
9	电流	Current	A	10.511	7.729	5.748	4.852
10	转矩	Torque	mNm	59.2	80.69	86.04	92.57
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	491.1	666.3	675.7	710.9
12	转速	Speed	rpm	9500	10250	10500	11000
13	电流	Current	A	82.8	56.2	38.2	30.2
14	转矩	Torque	mNm	493.7	620.71	614.56	617.15
堵转点 At Stall							
15	堵转电流	Stall current	A	165	112	76	60
16	堵转转矩	Stall torque	mNm	987.3	1241.41	1229.12	1234.31
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.07	0.21	0.47	0.80
18	电机感抗	Terminal inductance	mH	0.015	0.056	0.122	0.210
19	转矩常数	Torque constant	mNm/A	6.01	11.13	16.27	20.70
20	转速常数	Speed constant	rpm/V	1583.3	854.2	583.3	458.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	19.2	16.5	17.1	17.8
22	机械时间常数	Mechanical time constant	ms	5.66	4.86	5.03	5.24
23	转子惯量	Rotor inertia	gcm ²	28.10	28.10	28.10	28.10
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	292			
27	噪音	Typical noise level	dB	≤45			

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

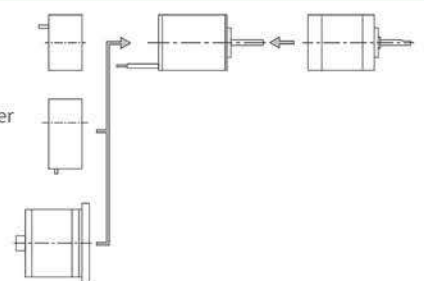
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

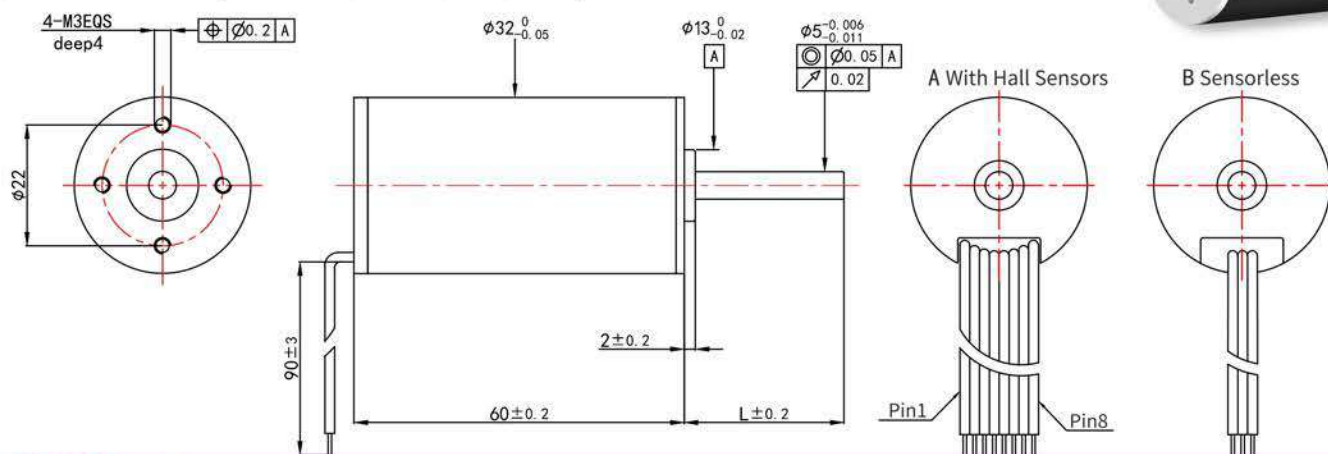
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



$\phi 32 \times L60\text{mm}$, 无刷直流电机, 30-70W

$\phi 32 \times L60\text{mm}$, Brushless DC Motor, 30-70W



电机参数 Motor Data				
电机型号 Motor Model		3260	3260	3260
额定电压参数值 Value at Rated voltage				
额定点 At Nominal				
1	额定电压	Nominal voltage	V/DC	12
2	额定转速	Nominal speed	rpm	5964
3	额定电流	Nominal current	A	3.52
4	额定转矩	Nominal torque	mNm	49.70
空载点 Free Load				
5	空载转速	No-load speed	rpm	7100
6	空载电流	No-load current	mA	380
最大效率点 At Max. Efficiency				
7	最大效率	Max. efficiency	%	74.3
8	转速	Speed	rpm	6284
9	电流	Current	A	2.636
10	转矩	Torque	mNm	35.7
最大输出功率点 At Max. Output power				
11	最大功率	Max. output power	W	57.7
12	转速	Speed	rpm	3550
13	电流	Current	A	10.2
14	转矩	Torque	mNm	155.3
堵转点 At Stall				
15	堵转电流	Stall current	A	20.00
16	堵转转矩	Stall torque	mNm	310.6
电机常数 Motor Constants				
17	电机阻抗	Terminal resistance	Ω	0.60
18	电机感抗	Terminal inductance	mH	0.124
19	转矩常数	Torque constant	mNm/A	15.83
20	转速常数	Speed constant	rpm/V	591.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	22.9
22	机械时间常数	Mechanical time constant	ms	4.80
23	转子惯量	Rotor inertia	gcm^2	20.07
24	极对数	Number of pole pairs		1
25	相数	Number of phase		3
26	重量	Weight of motor	g	270
27	噪音	Typical noise level	dB	≤ 50

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4- V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

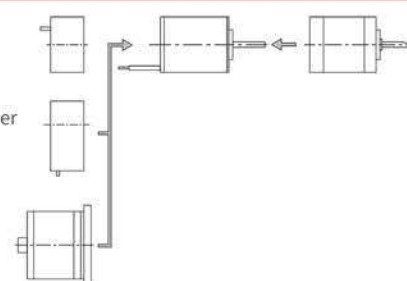
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: $\leq 0.015\text{mm}$
 环境温度范围 Ambient temperature range: $-20 \sim +80^\circ\text{C}$
 相对湿度范围 Relative humidity range: $< 90\%$ (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

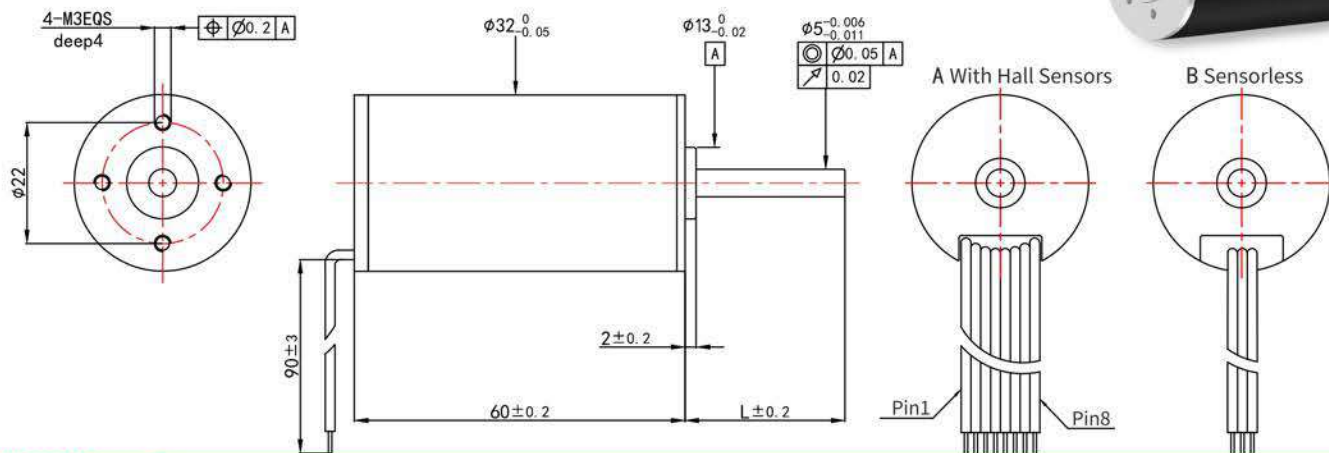
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ32*L60mm, 无刷直流电机, 65-200W, 高速

Φ32*L60mm, Brushless DC Motor, 65-200W, High speed



电机参数 Motor Data				3260	3260	3260	3260	3260
电机型号 Motor Model				3260	3260	3260	3260	3260
额定电压参数值 Value at Rated voltage								
额定点 At Nominal								
1	额定电压	Nominal voltage	V/DC	12	18	24	36	48
2	额定转速	Nominal speed	rpm	13795	15842	15931	14685	16465
3	额定电流	Nominal current	A	5.73	4.85	4.07	2.60	2.14
4	额定转矩	Nominal torque	mNm	36.20	41.43	43.34	45.21	44.71
空载点 Free Load								
5	空载转速	No-load speed	rpm	15500	17800	17900	16500	18500
6	空载电流	No-load current	mA	750	500	620	390	300
最大效率点 At Max. Efficiency								
7	最大效率	Max. efficiency	%	76.1	78.9	74.1	74.3	75.2
8	转速	Speed	rpm	13950	16020	15752	14520	16373
9	电流	Current	A	5.275	4.450	4.386	2.803	2.221
10	转矩	Torque	mNm	32.9	37.67	47.28	49.32	46.74
最大输出功率点 At Max. Output power								
11	最大功率	Max. output power	W	133.5	175.5	184.6	177.5	197
12	转速	Speed	rpm	7750	8900	8950	8250	9250
13	电流	Current	A	23.4	20.3	16.3	10.4	9
14	转矩	Torque	mNm	164.5	188.33	197.00	205.51	203.23
堵转点 At Stall								
15	堵转电流	Stall current	A	46.00	40.00	32.00	20.50	17.0
16	堵转转矩	Stall torque	mNm	329.1	376.67	393.99	411.02	406.47
电机常数 Motor Constants								
17	电机阻抗	Terminal resistance	Ω	0.26	0.45	0.75	1.76	2.8
18	电机感抗	Terminal inductance	mH	0.033	0.079	0.119	0.295	0.463
19	转矩常数	Torque constant	mNm/A	7.27	9.54	12.56	20.44	24.3
20	转速常数	Speed constant	rpm/V	1291.7	988.9	745.8	458.3	385.4
21	转数/转矩常数	Speed/torque constant	rpm/mNm	47.1	47.3	45.4	40.1	45.5
22	机械时间常数	Mechanical time constant	ms	9.68	9.71	9.34	8.25	9.36
23	转子惯量	Rotor inertia	gcm ²	19.63	19.63	19.63	19.63	19.63
24	极对数	Number of pole pairs		1				
25	相数	Number of phase		3				
26	重量	Weight of motor	g	248				
27	噪音	Typical noise level	dB	≤50				

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

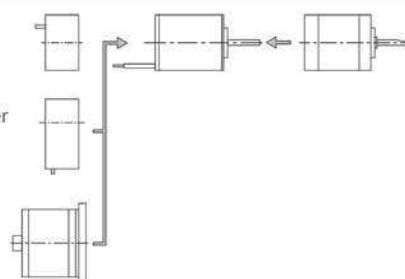
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

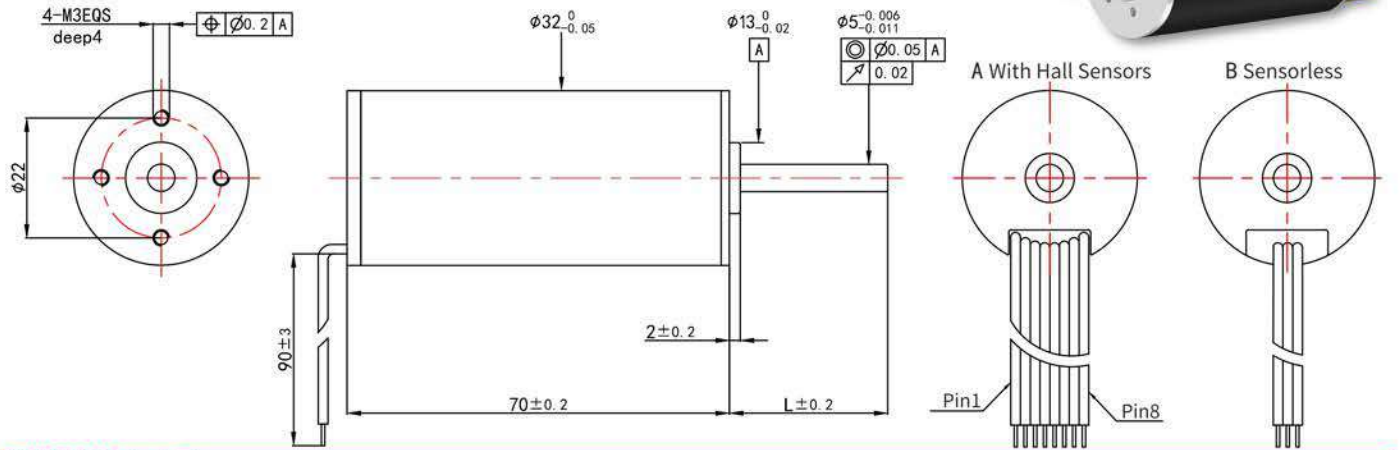
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ32*L70mm, 无刷直流电机, 150-520W

Φ32*L70mm, Brushless DC Motor, 150-520W



电机参数 Motor Data				3270	3270	3270	3270	3270
电机型号 Motor Model				3270	3270	3270	3270	3270
额定电压参数值 Value at Rated voltage								
额定点 At Nominal								
1	额定电压	Nominal voltage	V/DC	12	18	24	36	48
2	额定转速	Nominal speed	rpm	11313	13394	11520	14480	12000
3	额定电流	Nominal current	A	9.61	9.83	15.36	5.85	8.66
4	额定转矩	Nominal torque	mNm	81.61	106.85	235.88	116.84	254.62
空载点 Free Load								
5	空载转速	No-load speed	rpm	12500	14800	14400	16000	15000
6	空载电流	No-load current	mA	650	580	450	380	270
最大效率点 At Max. Efficiency								
7	最大效率	Max. efficiency	%	84.1	85.2	85.1	84.5	84.6
8	转速	Speed	rpm	11563	13764	13320	14800	13875
9	电流	Current	A	7.726	7.399	6.041	4.702	3.415
10	转矩	Torque	mNm	64.4	78.73	88.45	92.24	95.48
最大输出功率点 At Max. Output power								
11	最大功率	Max. output power	W	281.1	435.8	444.6	515.2	500
12	转速	Speed	rpm	6250	7400	7200	8000	7500
13	电流	Current	A	47.8	49.3	37.7	29.2	21
14	转矩	Torque	mNm	429.5	562.37	589.69	614.95	636.54
堵转点 At Stall								
15	堵转电流	Stall current	A	95.00	98.00	75.00	58.00	42.20
16	堵转转矩	Stall torque	mNm	859.0	1124.74	1179.38	1229.91	1273.09
电机常数 Motor Constants								
17	电机阻抗	Terminal resistance	Ω	0.13	0.18	0.32	0.62	1.1
18	电机感抗	Terminal inductance	mH	0.019	0.034	0.065	0.127	0.241
19	转矩常数	Torque constant	mNm/A	9.10	11.55	15.82	21.35	30.4
20	转速常数	Speed constant	rpm/V	1041.7	822.2	600.0	444.4	312.5
21	转数/转矩常数	Speed/torque constant	rpm/mNm	14.6	13.2	12.2	13.0	11.8
22	机械时间常数	Mechanical time constant	ms	3.86	3.49	3.24	3.45	3.12
23	转子惯量	Rotor inertia	gcm ²	25.30	25.30	25.30	25.30	25.30
24	极对数	Number of pole pairs		1				
25	相数	Number of phase		3				
26	重量	Weight of motor	g	276.8				
27	噪音	Typical noise level	dB	≤45				

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

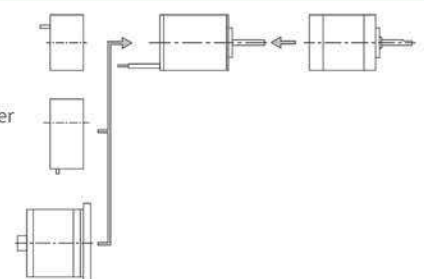
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

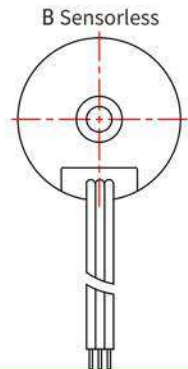
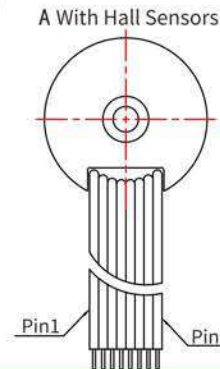
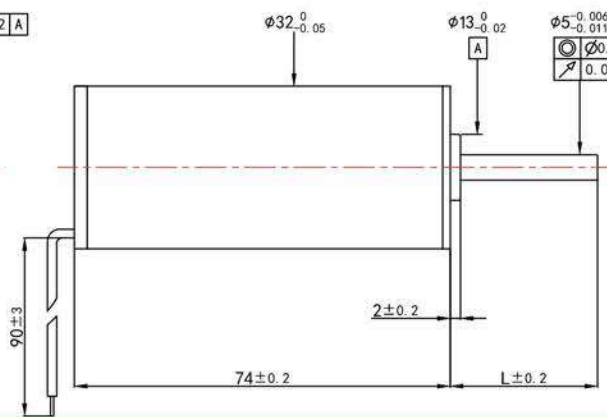
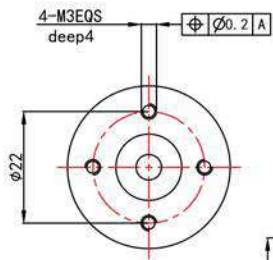
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ32*L74mm, 无刷直流电机, 190-450W

Φ32*L74mm, Brushless DC Motor, 190-450W



电机参数 Motor Data				
电机型号 Motor Model				
额定电压参数值 Value at Rated voltage		3274	3274	3274
额定点 At Nominal				
1 额定电压 Nominal voltage	V/DC	12	24	36
2 额定转速 Nominal speed	rpm	10920	11375	11648
3 额定电流 Nominal current	A	11.99	6.45	4.59
4 额定转矩 Nominal torque	mNm	109.12	111.02	114.58
空载点 Free Load				
5 空载转速 No-load speed	rpm	12000	12500	12800
6 空载电流 No-load current	mA	520	360	300
最大效率点 At Max. Efficiency				
7 最大效率 Max. efficiency	%	87.7	86.0	84.8
8 转速 Speed	rpm	11280	11625	11904
9 电流 Current	A	8.169	5.095	3.639
10 转矩 Torque	mNm	72.7	86.4	89.12
最大输出功率点 At Max. Output power				
11 最大功率 Max. output power	W	380.9	403.7	426.6
12 转速 Speed	rpm	6000	6250	6400
13 电流 Current	A	64.3	34.2	24.2
14 转矩 Torque	mNm	606.2	616.8	636.55
堵转点 At Stall				
15 堵转电流 Stall current	A	128.00	68.00	48.00
16 堵转转矩 Stall torque	mNm	1212.4	1233.6	1273.09
电机常数 Motor Constants				
17 电机阻抗 Terminal resistance	Ω	0.09	0.35	0.75
18 电机感抗 Terminal inductance	mH	0.030	0.115	0.248
19 转矩常数 Torque constant	mNm/A	9.51	18.24	26.69
20 转速常数 Speed constant	rpm/V	1000.0	520.8	355.6
21 转数/转矩常数 Speed/torque constant	rpm/mNm	9.9	10.1	10.1
22 机械时间常数 Mechanical time constant	ms	2.71	2.78	2.76
23 转子惯量 Rotor inertia	gcm ²	26.18	26.18	26.18
24 极对数 Number of pole pairs		1		
25 相数 Number of phase		3		
26 重量 Weight of motor	g	286		
27 噪音 Typical noise level	dB	≤45		

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

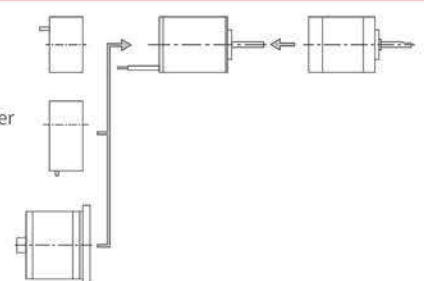
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

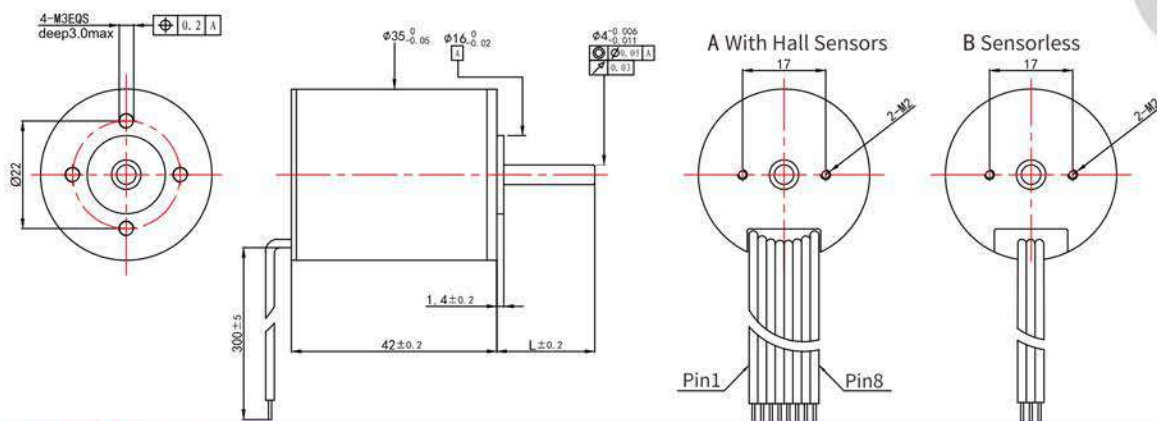
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ35*L42mm, 无刷直流电机, 20-45W

Φ35*L42mm, Brushless DC Motor, 20-45W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定值 At Nominal

				3542	3542	3542	3542
1	额定电压	Nominal voltage	V/DC	12	18	24	36
2	额定转速	Nominal speed	rpm	4868	5610	5412	5115
3	额定电流	Nominal current	A	3.11	2.02	1.55	1.01
4	额定转矩	Nominal torque	mNm	51.83	41.36	42.62	42.78

空载点 Free Load

5	空载转速	No-load speed	rpm	5900	6800	6560	6200
6	空载电流	No-load current	mA	380	330	280	200

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	71.6	67.0	65.1	63.3
8	转速	Speed	rpm	4986	5746	5510	5146
9	电流	Current	A	2.801	1.829	1.438	0.982
10	转矩	Torque	mNm	45.9	36.64	38.96	39.11

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	45.7	42.1	41.8	39.7
12	转速	Speed	rpm	2950	3400	3280	3100
13	电流	Current	A	8.2	5.2	3.9	2.5
14	转矩	Torque	mNm	148.1	118.18	121.76	122.22

堵转点 At Stall

15	堵转电流	Stall current	A	16.00	10.00	7.52	4.80
16	堵转转矩	Stall torque	mNm	296.2	236.37	243.52	244.43

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.75	1.80	3.19	7.50
18	电机感抗	Terminal inductance	mH	0.190	0.385	0.680	1.575
19	转矩常数	Torque constant	mNm/A	18.96	24.44	33.64	53.14
20	转速常数	Speed constant	rpm/V	491.7	377.8	273.3	172.2
21	转数/转矩常数	Speed/torque constant	rpm/mNm	19.9	28.8	26.9	25.4
22	机械时间常数	Mechanical time constant	ms	3.19	4.61	4.32	4.06
23	转子惯量	Rotor inertia	gcm ²	15.30	15.30	15.30	15.30
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	188.6			
27	噪音	Typical noise level	dB	≤45			

电机线序(Motor wire sequence):

·无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

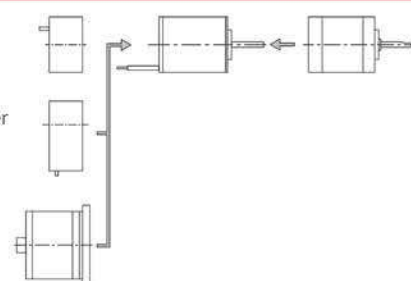
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

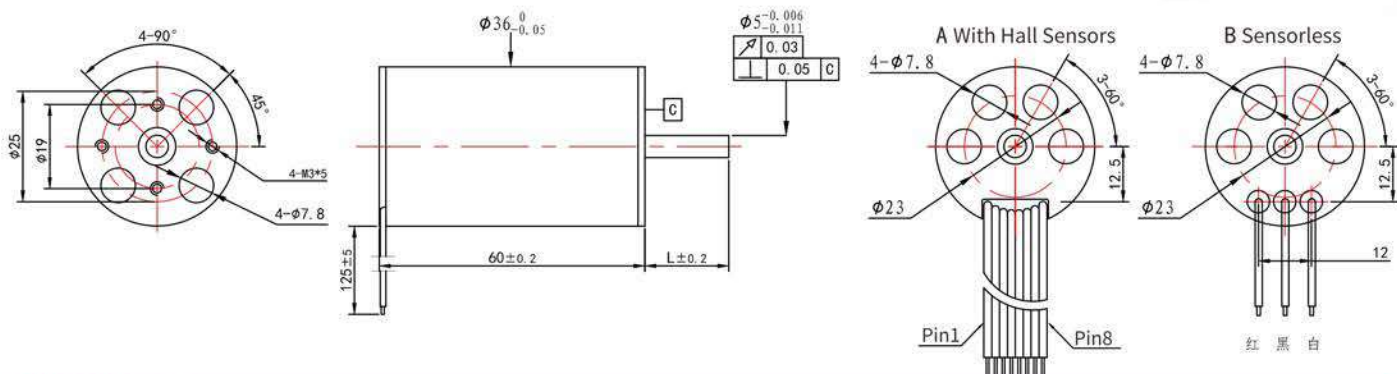
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ36*L60mm, 无刷直流电机, 30-70W

Φ36*L60mm, Brushless DC Motor, 30-70W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

1	额定电压	Nominal voltage	V/DC	12	24	36
2	额定转速	Nominal speed	rpm	4463	4930	5100
3	额定电流	Nominal current	A	3.24	1.93	1.30
4	额定转矩	Nominal torque	mNm	64.12	69.36	66.71

空载点 Free Load

5	空载转速	No-load speed	rpm	5250	5800	6000
6	空载电流	No-load current	mA	260	150	120

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	78.5	78.9	77.0
8	转速	Speed	rpm	4725	5220	5340
9	电流	Current	A	2.244	1.335	0.987
10	转矩	Torque	mNm	42.7	46.24	48.92

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	58.8	70.2	69.9
12	转速	Speed	rpm	2625	2900	3000
13	电流	Current	A	10.2	6.1	4.1
14	转矩	Torque	mNm	213.7	231.20	222.36

堵转点 At Stall

15	堵转电流	Stall current	A	20.10	12.00	8.00
16	堵转转矩	Stall torque	mNm	427.4	462.39	444.72

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.60	2.00	4.50
18	电机感抗	Terminal inductance	mH	0.260	0.945	2.055
19	转矩常数	Torque constant	mNm/A	21.54	39.02	56.44
20	转速常数	Speed constant	rpm/V	437.5	241.7	166.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	12.3	12.5	13.5
22	机械时间常数	Mechanical time constant	ms	4.44	4.54	4.88
23	转子惯量	Rotor inertia	gcm ²	34.53	34.53	34.53
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	269		
27	噪音	Typical noise level	dB	≤45		

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

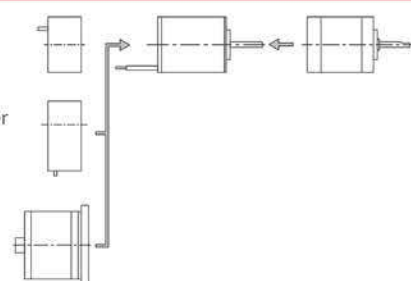
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

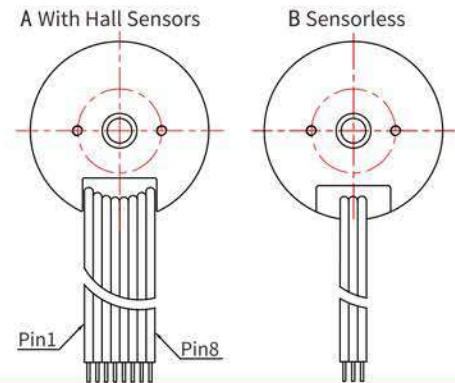
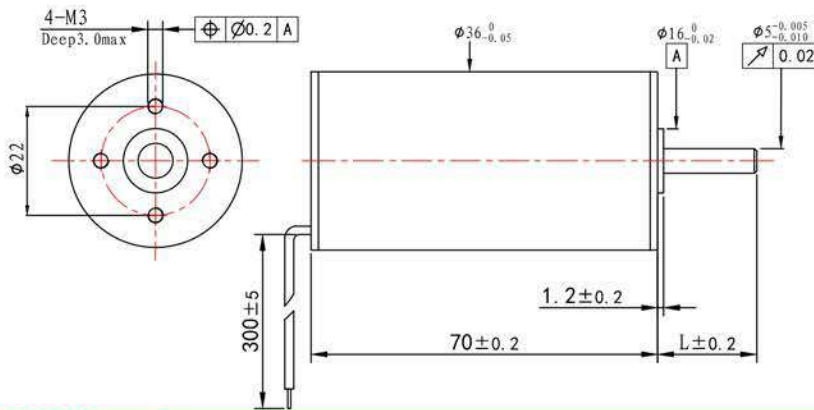
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ36*L70mm, 无刷直流电机, 140-310W

Φ36*L70mm, Brushless DC Motor, 140-310W



电机参数 Motor Data						
电机型号 Motor Model			3670	3670	3670	
额定电压参数值 Value at Rated voltage						
额定点 At Nominal						
1	额定电压	Nominal voltage	V/DC	12	24	36
2	额定转速	Nominal speed	rpm	13350	11214	8544
3	额定电流	Nominal current	A	11.43	5.68	4.03
4	额定转矩	Nominal torque	mNm	80.09	94.25	136.30
空载点 Free Load						
5	空载转速	No-load speed	rpm	15000	12600	9600
6	空载电流	No-load current	mA	850	450	200
最大效率点 At Max. Efficiency						
7	最大效率	Max. efficiency	%	82.2	81.6	85.5
8	转速	Speed	rpm	13725	11466	8928
9	电流	Current	A	9.023	4.730	2.636
10	转矩	Torque	mNm	61.9	77.11	86.73
最大输出功率点 At Max. Output power						
11	最大功率	Max. output power	W	285.9	282.6	311.4
12	转速	Speed	rpm	7500	6300	4800
13	电流	Current	A	48.9	24.2	17.6
14	转矩	Torque	mNm	364.0	428.39	619.53
堵转点 At Stall						
15	堵转电流	Stall current	A	97.0	48.0	35.0
16	堵转转矩	Stall torque	mNm	728.1	856.79	1239.06
电机常数 Motor Constants						
17	电机阻抗	Terminal resistance	Ω	0.12	0.50	1.03
18	电机感抗	Terminal inductance	mH	0.029	0.145	0.385
19	转矩常数	Torque constant	mNm/A	7.57	18.02	35.61
20	转速常数	Speed constant	rpm/V	1250.0	525.0	266.7
21	转数/转矩常数	Speed/torque constant	rpm/mNm	20.6	14.7	7.7
22	机械时间常数	Mechanical time constant	ms	9.41	6.71	3.54
23	转子惯量	Rotor inertia	gcm ²	43.60	43.60	43.60
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	326.8		
27	噪音	Typical noise level	dB	≤50		

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

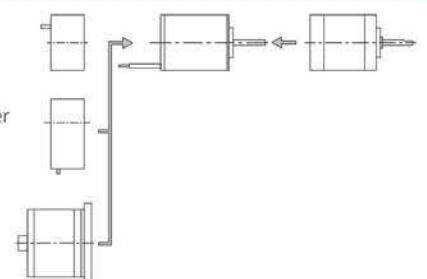
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

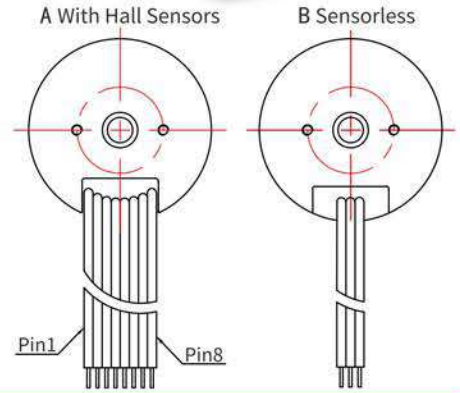
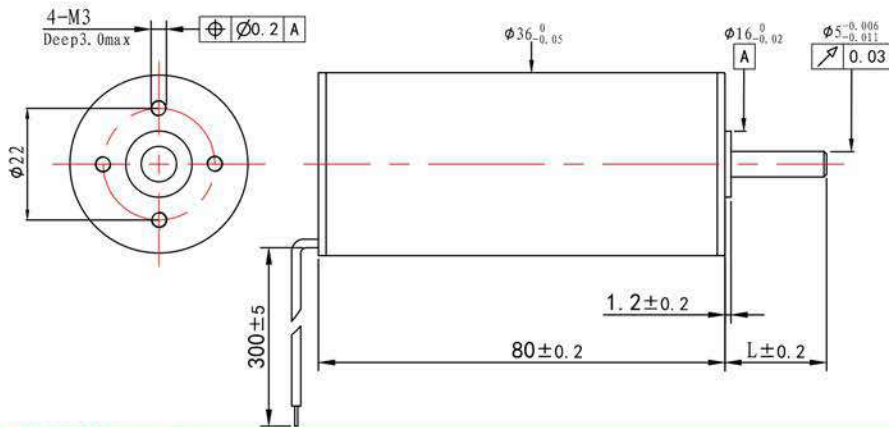
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ36*L80mm, 无刷直流电机, 100-260W

Φ36*L80mm, Brushless DC Motor, 100-260W



电机参数 Motor Data				3680	3680	3680	3680
电机型号 Motor Model				3680	3680	3680	3680
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	12	24	36	48
2	额定转速	Nominal speed	rpm	6802	6913	7339	7352
3	额定电流	Nominal current	A	7.59	5.63	3.08	3.03
4	额定转矩	Nominal torque	mNm	106.08	151.12	119.13	152.33
空载点 Free Load							
5	空载转速	No-load speed	rpm	7600	7946	8200	8450
6	空载电流	No-load current	mA	500	350	220	200
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	83.6	82.4	82.9	81.8
8	转速	Speed	rpm	7030	7271	7544	7732
9	电流	Current	A	5.563	3.805	2.402	2.053
10	转矩	Torque	mNm	80.8	98.81	90.76	99.60
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	201.0	241.8	243.6	259.2
12	转速	Speed	rpm	3800	3973	4100	4225
13	电流	Current	A	34.3	20.7	13.9	11.1
14	转矩	Torque	mNm	505.1	581.22	567.27	585.89
堵转点 At Stall							
15	堵转电流	Stall current	A	68.00	41.00	27.50	22.00
16	堵转转矩	Stall torque	mNm	1010.3	1162.44	1134.53	1171.78
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.18	0.59	1.31	2.18
18	电机感抗	Terminal inductance	mH	0.047	0.180	0.412	0.704
19	转矩常数	Torque constant	mNm/A	14.97	28.60	41.59	53.75
20	转速常数	Speed constant	rpm/V	633.3	331.1	227.8	176.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	7.5	6.8	7.2	7.2
22	机械时间常数	Mechanical time constant	ms	3.84	3.49	3.69	3.68
23	转子惯量	Rotor inertia	gcm ²	48.75	48.75	48.75	48.75
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	397			
27	噪音	Typical noise level	dB	≤45			

电机线序(Motor wire sequence):

· 无传感器 (Without sensor) : 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor) : 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

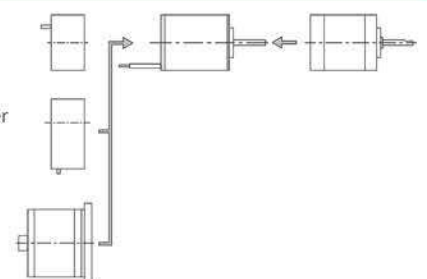
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

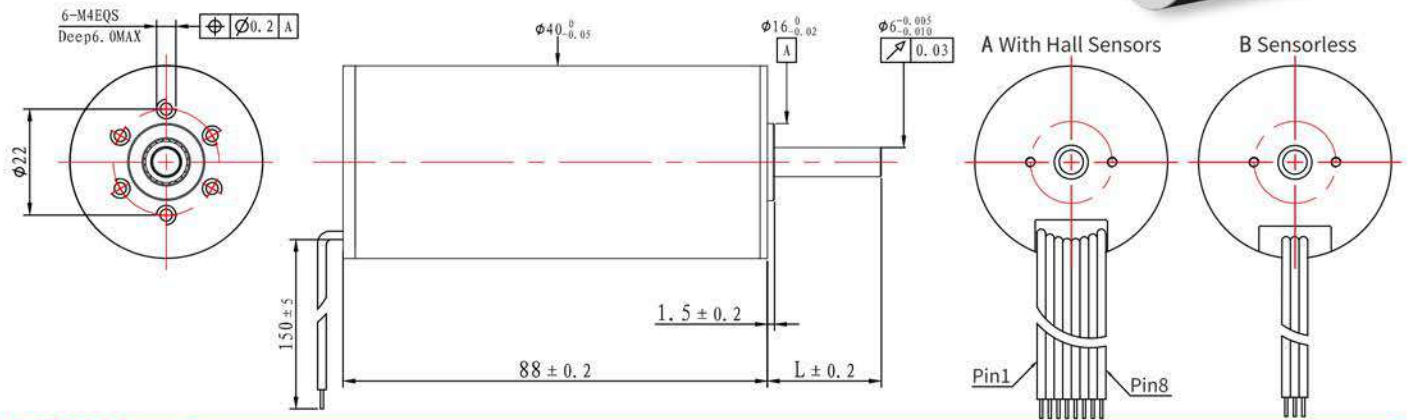
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ40*L88mm, 无刷直流电机, 500-1400W

Φ40*L88mm, Brushless DC Motor, 500-1400W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				4088	4088	4088
1	额定电压	Nominal voltage	V/DC	24	36	48
2	额定转速	Nominal speed	rpm	12308	11250	15015
3	额定电流	Nominal current	A	17.82	11.56	11.35
4	额定转矩	Nominal torque	mNm	285.61	299.12	297.03

空载点 Free Load

5	空载转速	No-load speed	rpm	13600	12500	16500
6	空载电流	No-load current	mA	800	620	600

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	87.1	85.5	86.4
8	转速	Speed	rpm	12716	11625	15428
9	电流	Current	A	12.448	8.277	8.361
10	转矩	Torque	mNm	195.4	209.38	214.52

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	1070.4	978.9	1425.6
12	转速	Speed	rpm	6800	6250	8250
13	电流	Current	A	90.4	55.3	60.3
14	转矩	Torque	mNm	1503.2	1495.61	1650.16

堵转点 At Stall

15	堵转电流	Stall current	A	180.0	110.0	120.0
16	堵转转矩	Stall torque	mNm	3006.4	2991.21	3300.32

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.13	0.33	0.40
18	电机感抗	Terminal inductance	mH	0.045	0.108	0.147
19	转矩常数	Torque constant	mNm/A	16.78	27.35	27.64
20	转速常数	Speed constant	rpm/V	566.7	347.2	343.8
21	转数/转矩常数	Speed/torque constant	rpm/mNm	4.5	4.2	5.0
22	机械时间常数	Mechanical time constant	ms	4.65	4.29	5.14
23	转子惯量	Rotor inertia	gcm ²	98.10	98.10	98.10
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	554.8		
27	噪音	Typical noise level	dB	≤45		

电机线序(Motor wire sequence):

·无传感器(Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

·有传感器(With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准(Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

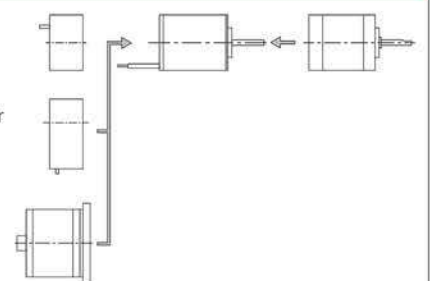
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 ·轴向(动态) Max axial load (dynamic): 0.8N
 ·径向(法兰外5mm) Max radial load (5mm from flange): 8N
 ·最大允许安装力(静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

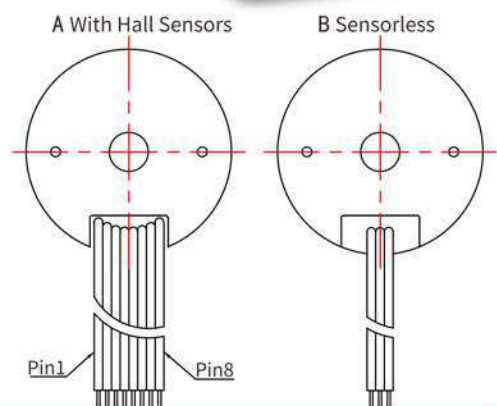
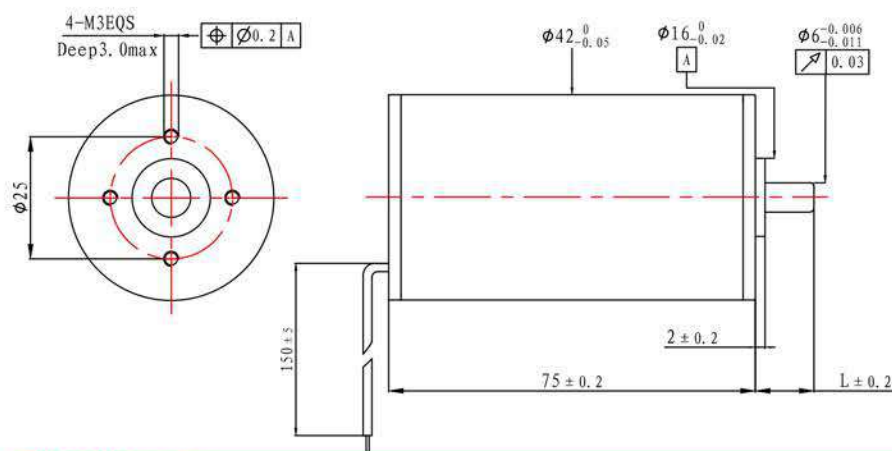
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ42*L75mm, 无刷直流电机, 110-300W

Φ42*L75mm, Brushless DC Motor, 110-300W



电机参数 Motor Data				4275	4275	4275	4275
电机型号 Motor Model				4275	4275	4275	4275
额定电压参数值 Value at Rated voltage							
额定点 At Nominal							
1	额定电压	Nominal voltage	V/DC	12	24	36	48
2	额定转速	Nominal speed	rpm	7560	6438	6688	6090
3	额定电流	Nominal current	A	10.61	6.02	3.82	2.65
4	额定转矩	Nominal torque	mNm	137.92	174.35	160.14	160.39
空载点 Free Load							
5	空载转速	No-load speed	rpm	8400	7400	7600	7000
6	空载电流	No-load current	mA	450	350	250	180
最大效率点 At Max. Efficiency							
7	最大效率	Max. efficiency	%	87.1	83.0	82.6	81.6
8	转速	Speed	rpm	7896	6808	6954	6755
9	电流	Current	A	6.543	3.842	2.779	0.846
10	转矩	Torque	mNm	82.8	107.29	113.43	43.18
最大输出功率点 At Max. Output power							
11	最大功率	Max. output power	W	303.3	259.8	265.5	226.1
12	转速	Speed	rpm	4200	3700	3800	3500
13	电流	Current	A	51.2	22.2	15.1	9.7
14	转矩	Torque	mNm	689.6	670.56	667.24	616.89
堵转点 At Stall							
15	堵转电流	Stall current	A	102.00	44.00	30.00	19.20
16	堵转转矩	Stall torque	mNm	1379.2	1341.12	1334.48	1233.77
电机常数 Motor Constants							
17	电机阻抗	Terminal resistance	Ω	0.12	0.55	1.20	2.50
18	电机感抗	Terminal inductance	mH	0.021	0.086	0.189	0.360
19	转矩常数	Torque constant	mNm/A	13.58	30.72	44.86	64.87
20	转速常数	Speed constant	rpm/V	700.0	308.3	211.1	145.8
21	转数/转矩常数	Speed/torque constant	rpm/mNm	6.1	5.5	5.7	5.7
22	机械时间常数	Mechanical time constant	ms	4.59	4.16	4.29	4.28
23	转子惯量	Rotor inertia	gcm ²	72.00	72.00	72.00	72.00
24	极对数	Number of pole pairs		1			
25	相数	Number of phase		3			
26	重量	Weight of motor	g	493.8			
27	噪音	Typical noise level	dB	≤45			

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

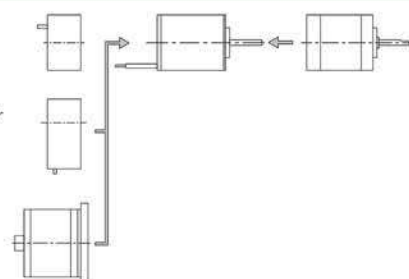
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

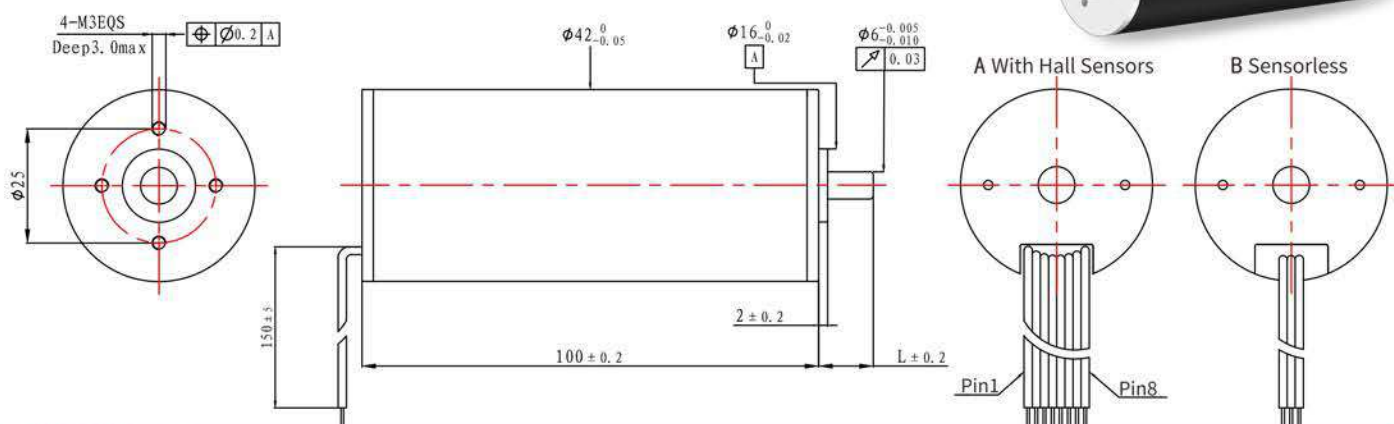
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ42*L100mm, 无刷直流电机, 150-300W

Φ42*L100mm, Brushless DC Motor, 150-300W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				42100	42100	42100
1	额定电压	Nominal voltage	V/DC	24	36	48
2	额定转速	Nominal speed	rpm	6600	6248	6371
3	额定电流	Nominal current	A	6.40	4.15	3.26
4	额定转矩	Nominal torque	mNm	180.06	181.88	185.40

空载点 Free Load

5	空载转速	No-load speed	rpm	7500	7100	7240
6	空载电流	No-load current	mA	450	350	300

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	81.9	80.2	79.3
8	转速	Speed	rpm	6788	6426	6516
9	电流	Current	A	5.157	3.357	2.770
10	转矩	Torque	mNm	142.5	143.99	154.50

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	294.6	281.7	292.8
12	转速	Speed	rpm	3750	3550	3620
13	电流	Current	A	25.2	16.2	12.7
14	转矩	Torque	mNm	750.3	757.85	772.50

堵转点 At Stall

15	堵转电流	Stall current	A	50.0	32.0	25.0
16	堵转转矩	Stall torque	mNm	1500.5	1515.70	1545.00

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.48	1.13	1.92
18	电机感抗	Terminal inductance	mH	0.056	0.132	0.230
19	转矩常数	Torque constant	mNm/A	30.28	47.89	62.55
20	转速常数	Speed constant	rpm/V	312.5	197.2	150.8
21	转数/转矩常数	Speed/torque constant	rpm/mNm	5.0	4.7	4.7
22	机械时间常数	Mechanical time constant	ms	5.28	4.95	4.95
23	转子惯量	Rotor inertia	gcm ²	100.83	100.83	100.83
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	632		
27	噪音	Typical noise level	dB	≤45		

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

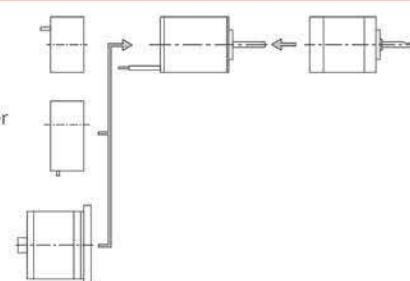
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

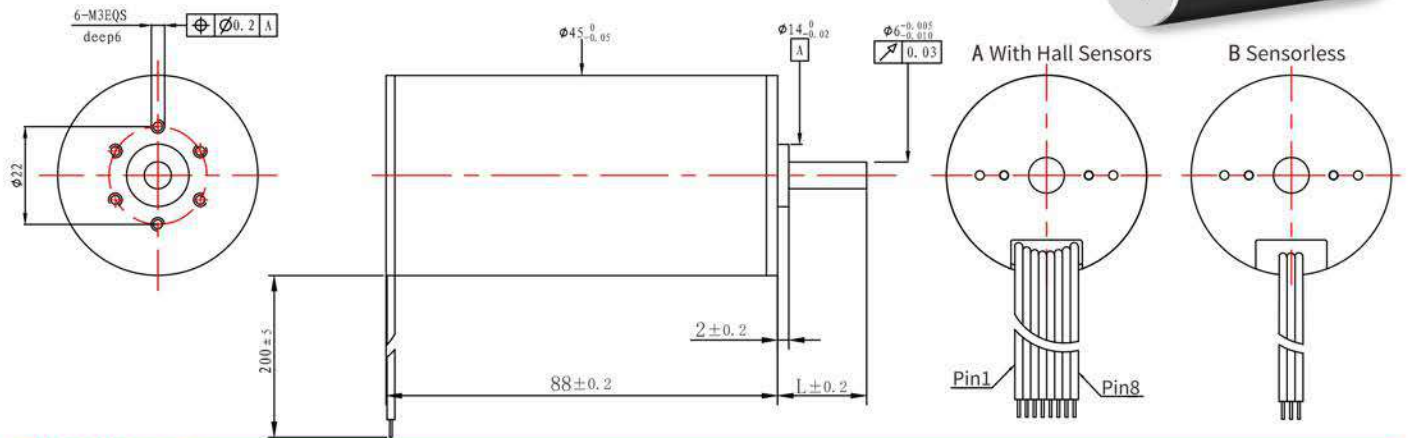
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ45*L88mm, 无刷直流电机, 300-780W

Φ45*L88mm, Brushless DC Motor, 300-780W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定值 At Nominal

				4588	4588	4588	4588	4588
1	额定电压	Nominal voltage	V/DC	12	18	24	36	48
2	额定转速	Nominal speed	rpm	8722	9428	9450	9720	9612
3	额定电流	Nominal current	A	18.93	32.65	10.74	17.01	6.78
4	额定转矩	Nominal torque	mNm	209.97	466.35	220.02	467.08	266.59

空载点 Free Load

5	空载转速	No-load speed	rpm	9800	11640	10500	12000	10800
6	空载电流	No-load current	mA	880	896	600	596	450

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	85.9	85.9	85.2	84.1	83.2
8	转速	Speed	rpm	9016	10825	9765	11160	9936
9	电流	Current	A	14.010	12.593	7.698	6.644	5.054
10	转矩	Torque	mNm	152.7	171.81	154.02	172.08	193.88

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	489.7	748.0	604.8	772.3	685
12	转速	Speed	rpm	4900	5820	5250	6000	5400
13	电流	Current	A	82.9	84.4	51.3	43.8	29
14	转矩	Torque	mNm	954.4	1227.23	1100.12	1229.17	1211.77

堵转点 At Stall

15	堵转电流	Stall current	A	165.00	168.00	102.00	87.00	58.00
16	堵转转矩	Stall torque	mNm	1908.8	2454.46	2200.24	2458.34	2423.55

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.07	0.11	0.24	0.41	0.8
18	电机感抗	Terminal inductance	mH	0.028	0.055	0.106	0.209	0.430
19	转矩常数	Torque constant	mNm/A	11.63	14.69	21.70	28.45	42.1
20	转速常数	Speed constant	rpm/V	816.7	646.7	437.5	333.3	225.0
21	转数/转矩常数	Speed/torque constant	rpm/mNm	5.1	4.7	4.8	4.9	4.5
22	机械时间常数	Mechanical time constant	ms	7.66	7.07	7.12	7.28	6.65
23	转子惯量	Rotor inertia	gcm ²	142.40	142.40	142.40	142.40	142.40
24	极对数	Number of pole pairs		1				
25	相数	Number of phase		3				
26	重量	Weight of motor	g	663				
27	噪音	Typical noise level	dB	≤55				

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

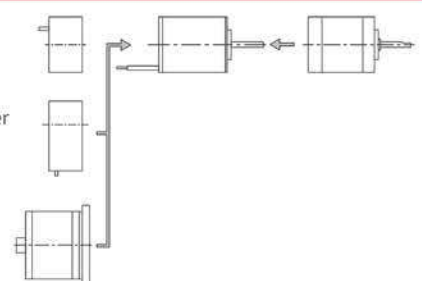
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

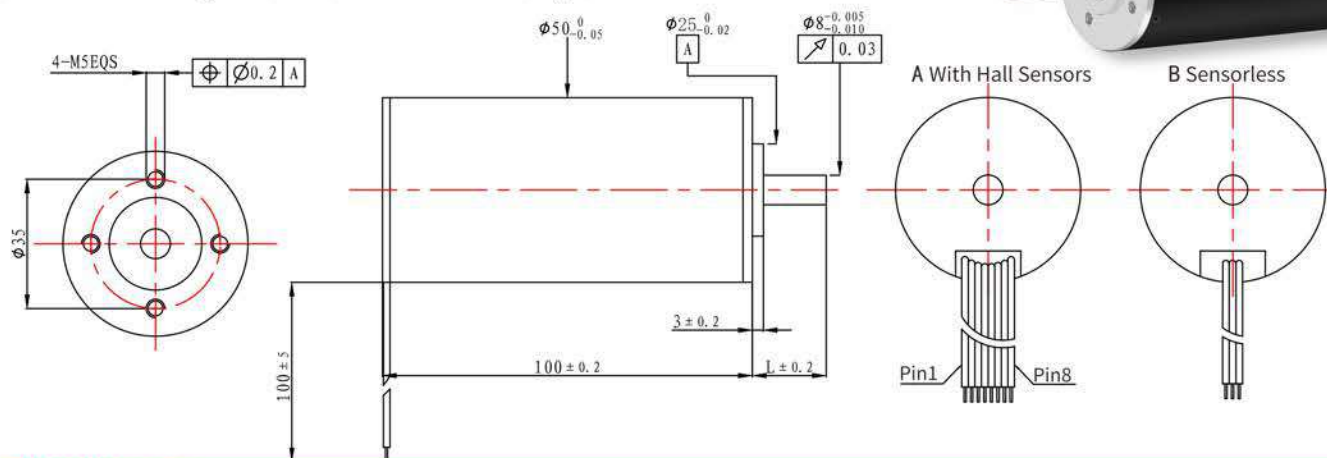
适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



Φ50*L100mm, 无刷直流电机, 360-760W

Φ50*L100mm, Brushless DC Motor, 360-760W



电机参数 Motor Data

电机型号 Motor Model

额定电压参数值 Value at Rated voltage

额定点 At Nominal

				50100	50100	50100
1	额定电压	Nominal voltage	V/DC	24	36	48
2	额定转速	Nominal speed	rpm	5984	5525	5355
3	额定电流	Nominal current	A	15.44	13.05	9.40
4	额定转矩	Nominal torque	mNm	501.51	668.79	659.41

空载点 Free Load

5	空载转速	No-load speed	rpm	6800	6500	6300
6	空载电流	No-load current	mA	500	350	290

最大效率点 At Max. Efficiency

7	最大效率	Max. efficiency	%	87.8	87.6	86.7
8	转速	Speed	rpm	6392	6078	5891
9	电流	Current	A	7.970	5.852	4.236
10	转矩	Torque	mNm	250.8	289.81	285.74

最大输出功率点 At Max. Output power

11	最大功率	Max. output power	W	744.0	758.7	725.1
12	转速	Speed	rpm	3400	3250	3150
13	电流	Current	A	62.8	42.7	30.6
14	转矩	Torque	mNm	2089.6	2229.29	2198.03

堵转点 At Stall

15	堵转电流	Stall current	A	125.0	85.0	61.0
16	堵转转矩	Stall torque	mNm	4179.3	4458.57	4396.05

电机常数 Motor Constants

17	电机阻抗	Terminal resistance	Ω	0.19	0.42	0.79
18	电机感抗	Terminal inductance	mH	0.155	0.348	0.638
19	转矩常数	Torque constant	mNm/A	33.57	52.67	72.41
20	转速常数	Speed constant	rpm/V	283.3	180.6	131.3
21	转数/转矩常数	Speed/torque constant	rpm/mNm	1.6	1.5	1.4
22	机械时间常数	Mechanical time constant	ms	4.10	3.67	3.61
23	转子惯量	Rotor inertia	gcm ²	240.50	240.50	240.50
24	极对数	Number of pole pairs		1		
25	相数	Number of phase		3		
26	重量	Weight of motor	g	837		
27	噪音	Typical noise level	dB	≤50		

电机线序 (Motor wire sequence):

· 无传感器 (Without sensor): 1-Motor Phase A 2-Motor Phase B 3-Motor Phase C

· 有传感器 (With sensor): 1-Hall sensor a 2-Hall sensor b 3-Hall sensor c 4-V_{Hall} 3.5...25VDC 5-GND 6-Motor Phase A 7-Motor Phase B 8-Motor Phase C

电缆、连接器、线序可定制, 此处仅作参考, 最终输出端以实物为准 (Cables, connectors, and wire sequence can be customized, here is only for reference, the final output terminal is subject to the actual product.)

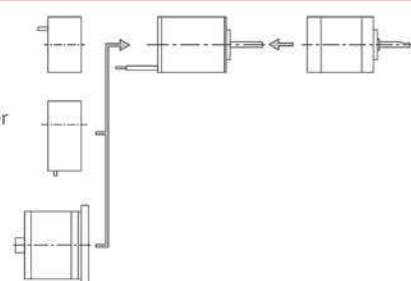
技术说明 Technical specifications

轴间间隙 Axial play: 0.05-0.15mm
 滑动轴承最大载荷 sintered metal bearing load max:
 · 轴向 (动态) Max axial load (dynamic): 0.8N
 · 径向 (法兰外5mm) Max radial load (5mm from flange): 8N
 · 最大允许安装力 (静态) Max press fit force (static): 10N
 滚动轴承径向间隙 Radial play: ≤0.015mm
 环境温度范围 Ambient temperature range: -20~+80°C
 相对湿度范围 Relative humidity range: <90% (25°C)
 最高转子温度 Highest rotor temperature: 85°C
 表中数据均为标称值 Values listed in the table are nominal

组合体系 System

适配部件 Optional Parts:

- 行星轮减速箱 Planetary gearbox
- 光电式编码器 Photoelectric encoder
- 磁电式编码器 Magnetolectric encoder
- 刹车 Brake



行星减速箱

Planetary Gearbox

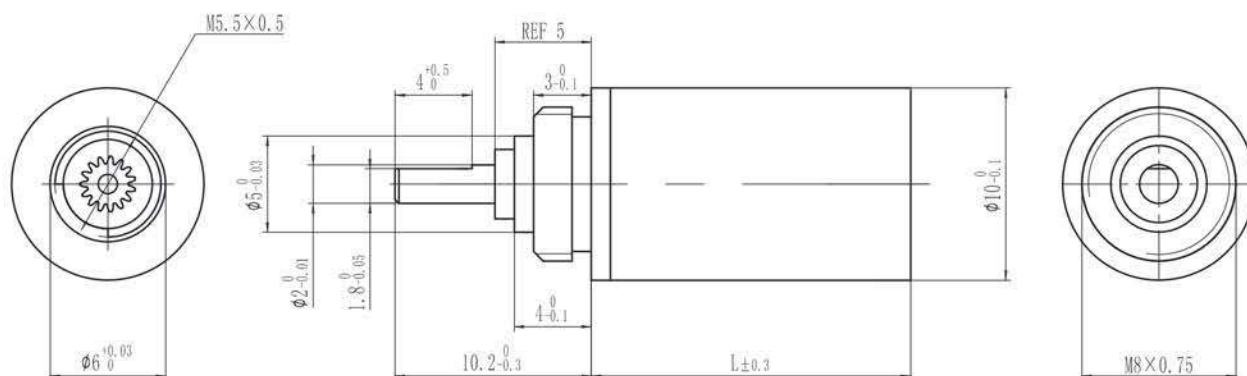


深圳市鑫宝达电机有限公司
SHENZHEN SINBAD MOTOR CO., LTD

P10H 行星减速器 0.02-0.05N.m

P10H Planetary Reducer 0.02-0.05N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
1	11	适配功率小于2W的电机 Suitable for motors with power less than 2W	90	$\leq 3^\circ$	5
2	13.8		83	$\leq 3^\circ$	6.25
3	16.6		69	$\leq 3^\circ$	7.5
4	19.4		64	$\leq 3^\circ$	8.75
5	22.2		50	$\leq 3^\circ$	10.5



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	全钢、硬齿面 All steel, hard tooth surface
输出轴材料 Output shaft material	合金钢 Alloy steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滑动轴承 Sliding bearing
允许电机转速 Allowable motor speed	15,000rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 8N$
最大允许轴向载荷 Maximum allowable axial load	$\leq 50N$
最大允许安装力 Maximum allowable installation force	$\leq 20N$
径向间隙 Radial clearance	$\leq 0.1mm$
轴向间隙 Axial clearance	$\leq 0.2mm$
推荐温度范围 Recommended temperature range	$-40^\circ C \sim +125^\circ C$

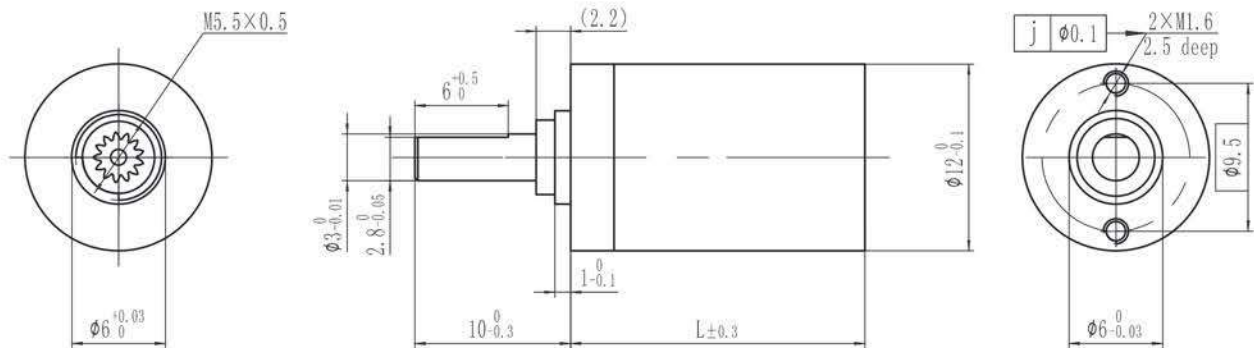
P10H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	0.01	0.02	0.1	0.15	0.2
	瞬时 Instant	0.02	0.05	0.15	0.2	0.25
速比 Ratio		4	16	64	256	1024

P12H 行星减速器 0.2-0.35N.m

P12H Planetary Reducer 0.2-0.35N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
1	13.3	适配功率小于2.5W的电机 Suitable for motors with power less than 2.5W	90	$\leq 3^\circ$	7
2	16.1		81	$\leq 3^\circ$	10
3	18.9		73	$\leq 3^\circ$	13
4	21.7		65	$\leq 3^\circ$	16.5
5	24.5		59	$\leq 3^\circ$	20



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	全钢、硬齿面 All steel, hard tooth surface
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滑动轴承 Sliding bearing
允许电机转速 Allowable motor speed	9,000rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 5N$
最大允许轴向载荷 Maximum allowable axial load	$\leq 5N$
最大允许安装力 Maximum allowable installation force	$\leq 20N$
径向间隙 Radial clearance	$\leq 0.1mm$
轴向间隙 Axial clearance	$\leq 0.2mm$
推荐温度范围 Recommended temperature range	$-40^\circ C \sim +125^\circ C$

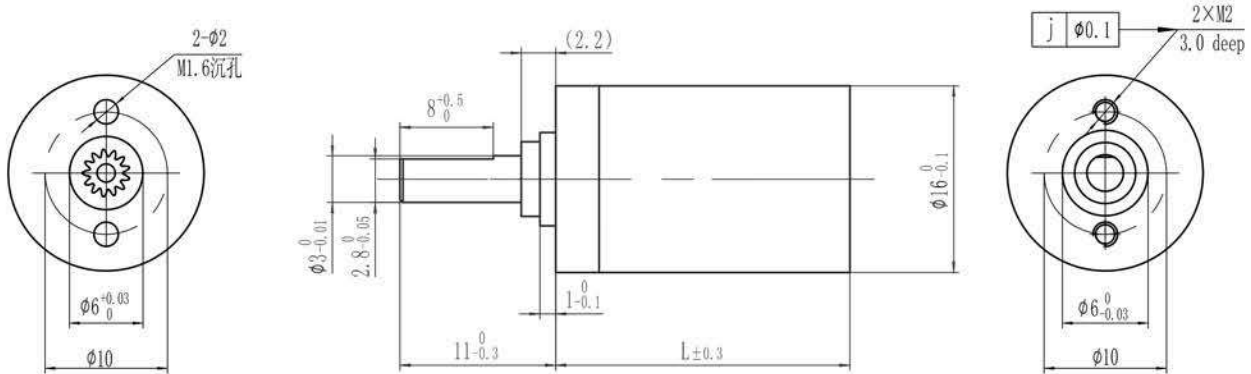
P12H 速比表(Ratio List)

级数 Stage	1	2	3	4	5
输出扭矩(N.m) Output torque	0.1	0.2	0.2	0.2	0.2
	0.15	0.25	0.25	0.25	0.25
速比 Ratio	3.47, 3.94, 4.62	12.07, 13.68, 16.03, 15.50, 18.17	41.92, 47.51, 55.69, 53.86, 63.13, 61.05, 71.56, 83.88, 121.42	145.60, 165.04, 193.45, 187.08, 219.29, 212.06	248.56, 281.75, 291.36, 330.26, 505.8

P16H 行星减速器 0.15-0.4N.m

P16H Planetary Reducer 0.15-0.4N.m

级数 Stage	长度(mm) Length	适配电机(W) Adapted Motor	效率(%) Efficiency	空载回差 No-Load Backlash	重量(g) Weight
1	14.8	适配功率小于4.5W的电机 Suitable for motors with power less than 4.5W	90	$\leq 2.5^\circ$	15
2	18.4		81	$\leq 2.5^\circ$	20
3	22.0		73	$\leq 3^\circ$	25
4	25.6		65	$\leq 3^\circ$	30
5	29.2		59	$\leq 3^\circ$	35



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	全钢 All steel
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	轴承 Bearing
允许电机转速 Allowable motor speed	6,000rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 8N$
最大允许轴向载荷 Maximum allowable axial load	$\leq 8N$
最大允许安装力 Maximum allowable installation force	$\leq 100N$
径向间隙 Radial clearance	$\leq 0.1mm$
轴向间隙 Axial clearance	$\leq 0.2mm$
推荐温度范围 Recommended temperature range	-20°C~+125°C

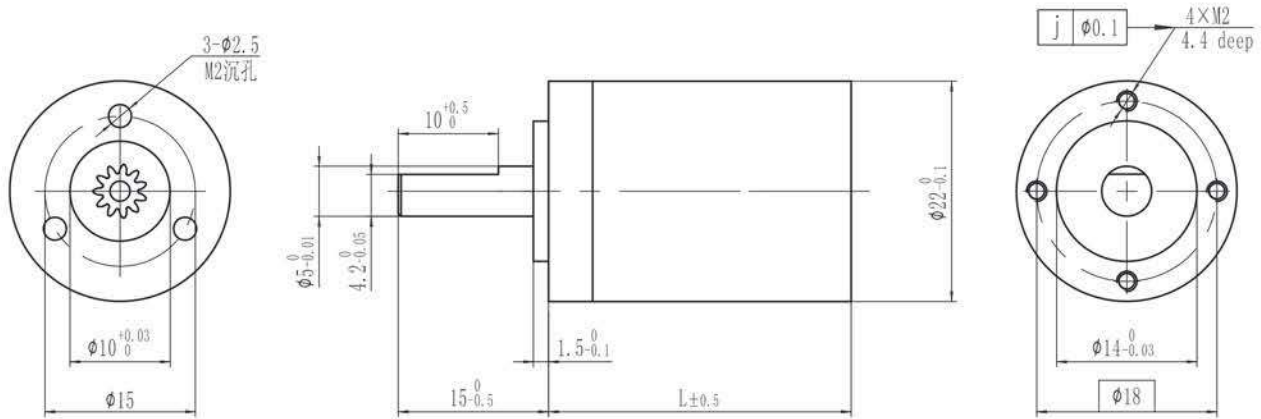
P16H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	0.06	0.12	0.2	0.2	0.2
	瞬时 Instant	0.08	0.15	0.3	0.3	0.25
速比 Ratio		3.79, 4.31, 5.08	14.36, 16.34, 18.6, 19.24, 21.89, 25.78	54.42, 61.93, 70.48, 72.91, 80.2, 82.97, 94.42, 97.67, 111.16, 130.86	206.21, 234.67, 267.06, 276.27, 303.92, 314.4, 345.87, 357.8, 370.13, 407.18, 421.22, 479.36, 495.88, 564.33, 664.36	781.44, 889.29, 1012.03, 1046.93, 1151.72, 1191.42, 1310.68, 1355.87, 1402.61, 1491.58, 1543, 1596.2, 1755.97, 1816.51, 1879.14, 2067.23, 2138.5, 2433.66, 2517.57, 2865.04, 3372.9

P22H 行星减速器 0.05-0.5N.m

P22H Planetary Reducer 0.05-0.5N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
1	22.1	适配功率小于10W的电机 Suitable for motors with power less than 10W	90	$\leq 1.2^\circ$	30
2	25.9		81	$\leq 1.5^\circ$	35
3	29.7		73	$\leq 1.8^\circ$	46
4	33.5		65	$\leq 1.8^\circ$	55
5	37.3		59	$\leq 1.8^\circ$	65



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	全钢 All steel
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	6,000rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 20\text{N}$
最大允许轴向载荷 Maximum allowable axial load	$\leq 20\text{N}$
最大允许安装力 Maximum allowable installation force	$\leq 100\text{N}$
径向间隙 Radial clearance	$\leq 0.04\text{mm}$
轴向间隙 Axial clearance	$\leq 0.04\text{mm}$
推荐温度范围 Recommended temperature range	-20°C~+125°C

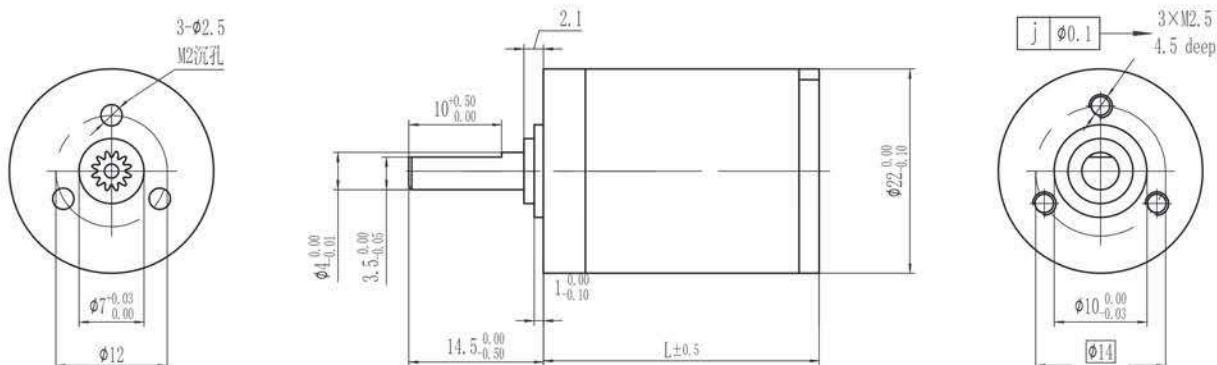
P22H 速比表(Ratio List)

级数 Stage	1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	0.2	0.3	0.5	0.5
	瞬时 Instant	0.3	0.5	0.8	0.8
速比 Ratio	3.57, 4.6	12.76, 16.43, 21.16	45.55, 58.67, 75.57, 97.34	162.69, 209.55, 269.9, 347.63, 447.75	581.05, 748.39, 963.92, 1241.53, 1599.09, 2059.63

P22J 行星减速器 0.5-4N.m

P22J Planetary Reducer 0.5-4N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
1	20.3		90	$\leq 0.8^\circ$	--
2	24.4		81	$\leq 1.2^\circ$	--
3	30.2		73	$\leq 1.5^\circ$	--
4	34.3		65	$\leq 1.8^\circ$	--
5	38.4		59	$\leq 1.8^\circ$	--



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	全钢、硬齿面 All steel, hard tooth surface
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	6,000rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 10\text{N}$
最大允许轴向载荷 Maximum allowable axial load	$\leq 10\text{N}$
最大允许安装力 Maximum allowable installation force	$\leq 100\text{N}$
径向间隙 Radial clearance	$\leq 0.01\text{mm}$
轴向间隙 Axial clearance	$\leq 0.01\text{mm}$
推荐温度范围 Recommended temperature range	-50°C~+185°C

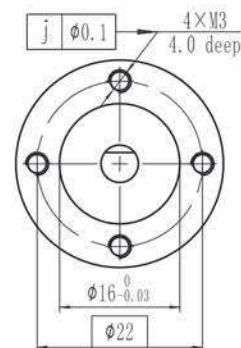
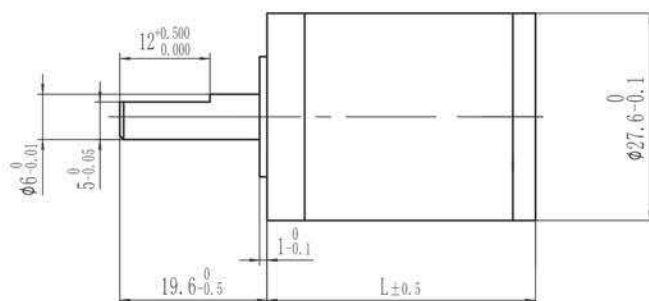
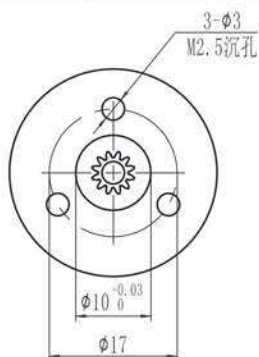
P22J 速比表(Ratio List)

级数 Stage	1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	0.5	1	2	2
	瞬时 Instant	1	2	4	4
速比 Ratio	3.30, 3.71, 4.29	10.89, 12.23, 13.73, 14.14, 15.88, 18.37, 19.20, 22.21, 26.85	35.94, 40.36, 45.32, 46.67, 50.89, 52.41, 58.86, 60.61, 68.07, 71.17, 78.72	118.59, 133.18, 149.56, 154.02, 167.95, 172.96, 188.61, 194.23, 200.02, 218.12, 224.62, 252.25, 259.77, 291.72, 337.36	391.35, 439.49, 508.25, 493.54, 660.07, 554.25, 622.42, 640.97, 698.97, 719.80, 741.25, 808.33, 832.42, 857.23, 719.80, 934.81, 962.67, 1113.29, 1250.21

P28H 行星减速器 0.5-4N.m

P28H Planetary Reducer 0.5-4N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
1	26.7	适配功率小于20W的电机 Suitable for motors with power less than 20W	90	$\leq 1.2^\circ$	50
2	31.2		81	$\leq 1.8^\circ$	65
3	35.7		73	$\leq 2^\circ$	85
4	40.2		65	$\leq 2^\circ$	95
5	44.7		60	$\leq 2^\circ$	110



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	全钢 All steel
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	6,000rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 20\text{N}$
最大允许轴向载荷 Maximum allowable axial load	$\leq 20\text{N}$
最大允许安装力 Maximum allowable installation force	$\leq 100\text{N}$
径向间隙 Radial clearance	$\leq 0.04\text{mm}$
轴向间隙 Axial clearance	$\leq 0.04\text{mm}$
推荐温度范围 Recommended temperature range	-25°C~+125°C

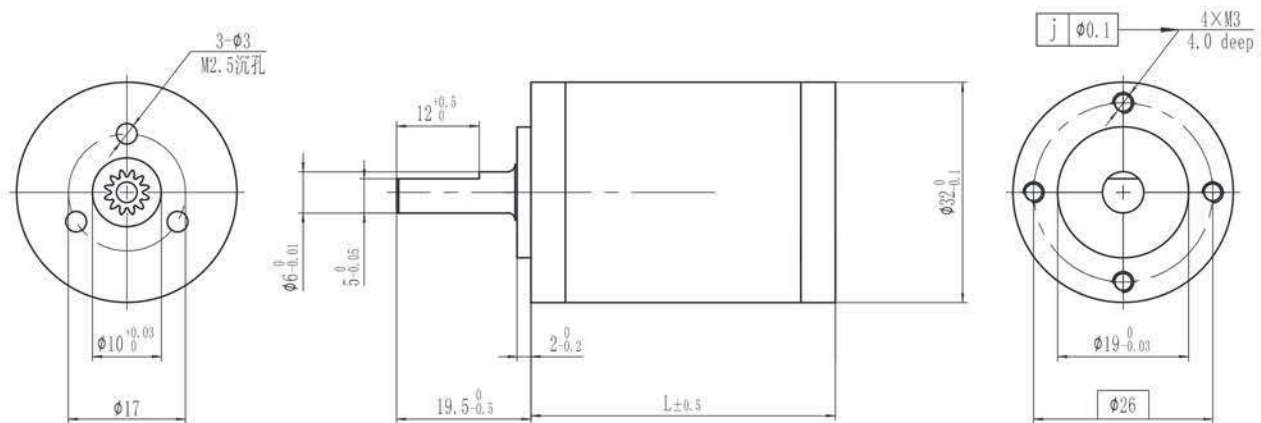
P28H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	0.5	2	3	3	3
	瞬时 Instant	0.6	2.5	4	4	4
速比 Ratio		3.57, 4.0, 4.60	12.76, 14.29, 16.00, 18.40, 21.16	45.55, 51.02, 57.14, 58.67, 65.71, 75.57, 84.64, 97.34	162.69, 182.22, 204.08, 209.55, 228.57, 234.69, 256.00, 262.86, 294.40, 302.29, 338.56, 347.63, 389.34, 447.75,	581.05, 650.77, 728.86, 748.39, 816.33, 838.19, 914.29, 938.78, 963.92, 1024.00, 1051.43, 1079.59, 1177.60, 1209.14, 1241.53, 1354.24, 1390.51, 1557.38, 1599.09, 1790.98, 2059.63

P32H 行星减速器 1-6N.m

P32H Planetary Reducer 1-6N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
1	31.6	适配功率小于40W的电机 Suitable for motors with power less than 40W	90	$\leq 1^\circ$	125
2	37.9		81	$\leq 1.2^\circ$	147
3	44.2		73	$\leq 1.5^\circ$	169
4	50.5		65	$\leq 1.5^\circ$	191
5	56.8		59	$\leq 1.5^\circ$	213



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	前级塑料行星齿轮钢齿轮可选, 其余全钢、硬齿面 Pre-stage plastic planetary gear steel gear is optional, the rest are all steel, hard tooth surface
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	6,000rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 50N$
最大允许轴向载荷 Maximum allowable axial load	$\leq 50N$
最大允许安装力 Maximum allowable installation force	$\leq 100N$
径向间隙 Radial clearance	$\leq 0.03mm$
轴向间隙 Axial clearance	$\leq 0.03mm$
推荐温度范围 Recommended temperature range	-40°C~+125°C (塑料齿轮 Plastic gear -10°C~+85°C)

P32H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	1	3	6	6	6
	瞬时 Instant	1.25	3.75	7.5	7.5	7.5
速比 Ratio		3.11, 3.71, 4.8, 5.75	9.68, 11.56, 13.8, 14.93, 17.83, 17.89, 21.36, 23.04, 27.6, 33.06	30.11, 35.95, 42.92, 46.46, 51.24, 55.47, 55.65, 66.22, 66.44, 71.68, 79.33, 85.58, 85.87, 102.51, 102.86, 110.59, 122.8, 132.48, 158.7, 190.11	93.68, 111.85, 133.53, 144.54, 159.42, 172.56, 173.15, 190.33, 206.02, 206.72, 223, 245.96, 246.79, 266.24, 267.14, 294.64, 317.86, 318.93, 320.01, 344.06, 410.77, 412.16, 456.13, 492.07, 493.73, 530.84, 589.46, 591.45, 635.9, 706.12, 761.76, 912.53, 1093.13	291.46, 347.97, 415.43, 449.68, 495.97, 536.86, 538.68, 592.13, 640.95, 643.12, 693.79, 706.93, 765.21, 767.8, 828.3, 831.1, 913.57, 916.66, 988.89, 992.24, 995.59, 1070.42, 1094.38, 1180.62, 1184.61, 1188.62, 1277.95, 1282.28, 1414.28, 1419.06, 1525.72, 1530.88, 1536.06, 1651.51, 1694.19, 1827.68, 1833.87, 1840.07, 1971.7, 1978.37, 2189.41, 2196.82, 2361.93, 2369.92, 2548.04, 2622.73, 2829.39, 2838.97, 3052.34, 3389.38, 3400.85, 3656.45, 4060.19, 4380.12, 5247.02, 6285.49

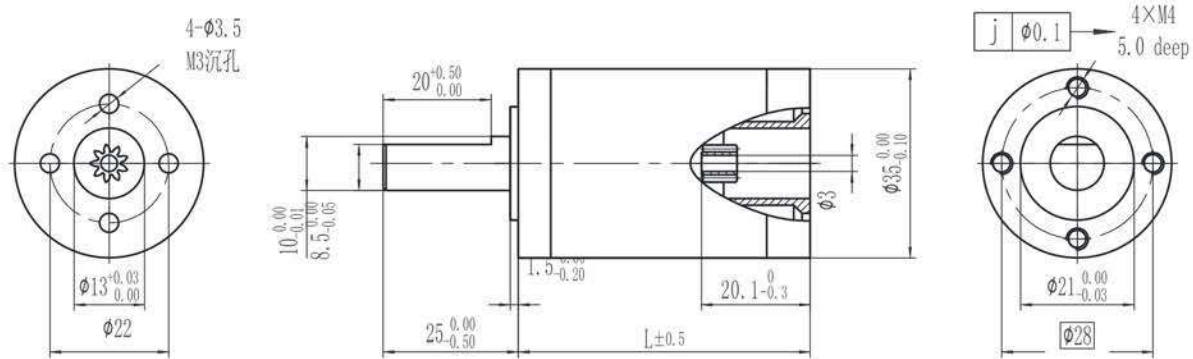
P35H 行星减速器 3-20N.m

P35H Planetary Reducer 3-20N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
	全钢齿轮 All steel gear				
1	40.6	适配功率小于100W的电机 Suitable for motors with power less than 100W	90	$\leq 1^\circ$	210
2	47.4		83	$\leq 1.2^\circ$	245
3	54.0		77	$\leq 1.5^\circ$	280
4	60.6		62	$\leq 1.5^\circ$	315
5	67.2		67	$\leq 1.5^\circ$	350

*此数据是电机轴直径4mm以下的, 电机轴直径大于4mm时, 电机轴长度另行计算。

*This data is for the diameter of the motor shaft below 4mm. When the diameter of the motor shaft is greater than 4mm, the length of the motor shaft will be calculated separately.



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	输入级行星轮可选高强度尼龙, 其余全钢 High-strength nylon is optional for input stage planetary gears, the rest are all steel
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	5,500rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 500\text{N}$
最大允许轴向载荷 Maximum allowable axial load	$\leq 100\text{N}$
最大允许安装力 Maximum allowable installation force	$\leq 220\text{N}$
径向间隙 Radial clearance	$\leq 0.02\text{mm}$
轴向间隙 Axial clearance	$\leq 0.02\text{mm}$
推荐温度范围 Recommended temperature range	-40°C~+125°C (塑料齿轮 Plastic gear -10°C~+85°C)
输入连接方式 Input connection method	可选: 直连、扁口连接、刚性联轴器、柔性联轴器 Optional: direct connection, flat connection, rigid coupling, flexible coupling

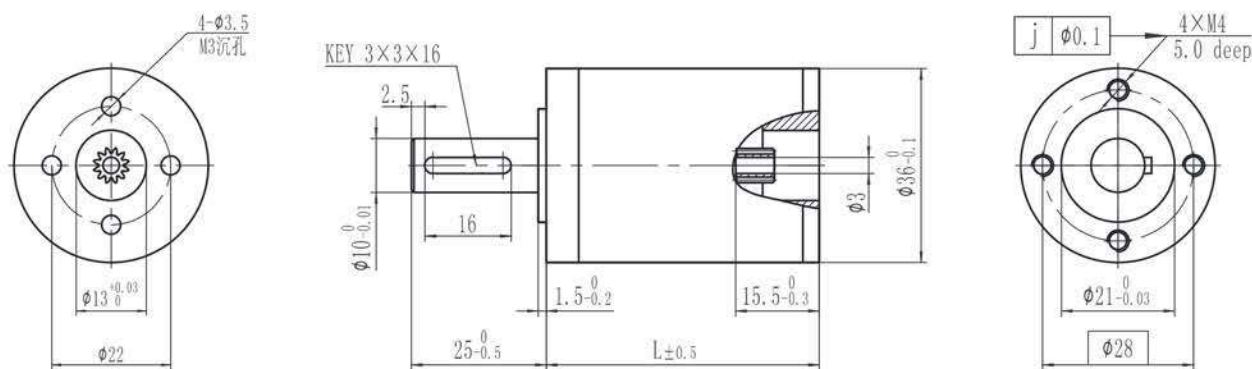
P35H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	3	8	16	16	20
	瞬时 Instant	5	12	25	25	30
速比 Ratio		3.5, 4.0, 4.75, 6.0	12.25, 14.16, 16.63, 19.21, 22.56, 24, 28.5	42.88, 49.56, 58.19, 64, 66.5, 73.5, 76, 78.97, 84, 90.25, 96, 99.75, 107.17, 114, 126, 135.38, 144, 171, 216	150.06, 171.5, 196, 203.66, 224, 232.75, 256, 257.25, 266, 276.39, 294, 304, 315.88, 336, 349.13, 361, 375.1, 384, 399, 428.69, 441, 456, 473.81, 504, 509.07, 541.5, 576, 598.5, 643.03, 684, 756, 812.25, 864, 1026, 1296	525.22, 600.25, 686, 712.8, 784, 814.63, 896, 900.38, 931, 967.37, 1024, 1029, 1064, 1105.56, 1176, 1216, 1221.94, 1263.5, 1312.86, 1344, 1396.5, 1444, 1500.41, 1536, 1543.5, 1596, 1658.34, 1714.75, 1764, 1781.73, 1824, 1895.25, 2016, 2036.27, 2094.75, 2166, 2250.61, 2304, 2394

P36H 行星减速器 0.8-15N.m

P36H Planetary Reducer 0.8-15N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
	全钢齿轮 All steel gear				
1	36	适配功率100W以下的电机, 电机轴 不能满足减速器安装要求时, 机身 长度会有变化, 具体长度另行商定 Suitable for motors with power below 100W. When the motor shaft cannot meet the installation requirements of the reducer, the length of the body will change, and the specific length will be negotiated separately.	90	$\leq 1.5^\circ$	=
2	43.3		80		=
3	50.6		73		=
4	57.9		66		=
5	65.2		59		=



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	全钢 All steel
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	不锈钢 Stainless steel
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	5,500rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 200\text{N}$
最大允许轴向载荷 Maximum allowable axial load	$\leq 100\text{N}$
最大允许安装力 Maximum allowable installation force	$\leq 220\text{N}$
径向间隙 Radial clearance	$\leq 0.01\text{mm}$
轴向间隙 Axial clearance	$\leq 0.01\text{mm}$
推荐温度范围 Recommended temperature range	-40°C~+125°C (塑料齿轮 Plastic gear -10°C~+85°C)
输入连接方式 Input connection method	可选: 直连、扁口连接、刚性联轴器、柔性联轴器 Optional: direct connection, flat connection, rigid coupling, flexible coupling

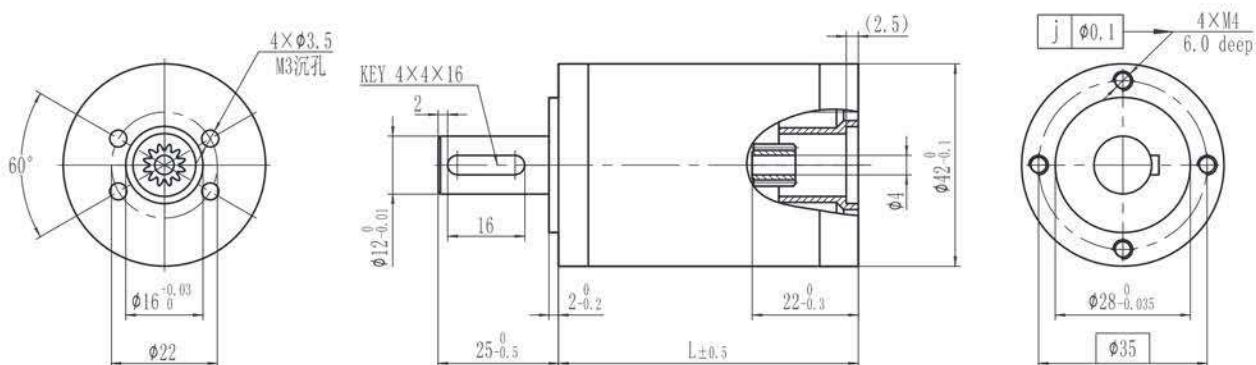
P36H 速比表(Ratio List)

级数 Stage		1	2	3	4
输出扭矩(N.m) Output torque	连续 Continuity	0.8	3	10	10
	瞬时 Instant	2.4	6	15	15
速比 Ratio		3.75, 4.67, 6.5	14.06, 17.5, 21.78, 30.33	52.73, 65.63, 81.67, 101.63, 113.75, 141.56, 197.17	246.09, 306.25, 381.11, 426.56, 474.27, 530.83, 660.59, 739.38, 920.11, 1281.58

P42H 行星减速器 1.2-15N.m

P42 Planetary Reducer 1.2-15N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	重量 (g) Weight
1	41.2	适配功率小于150W的直流电机 电机轴直径Φ6以下, 电机轴长度25mm 长度小于25mm, 可以按小于的部分缩短机身长度 Suitable for DC motors with power less than 150W. The diameter of the motor shaft is less than Φ6, and the length of the motor shaft is 25mm. The length is less than 25mm, and the length of the fuselage can be shortened by the smaller part.	90	=
2	53.2		83	=
3	62.2		70	=
4	77.2		60	=
5	86.2		50	=



壳体材料 Shell material	碳钢 Carbon steel
齿轮材料 Gear material	碳钢 Carbon steel
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	6,000rpm
最大允许径向载荷 Maximum allowable radial load	≤500N
最大允许轴向载荷 Maximum allowable axial load	≤120N
最大允许安装力 Maximum allowable installation force	≤220N
径向间隙 Radial clearance	≤0.1mm
轴向间隙 Axial clearance	≤0.2mm
推荐温度范围 Recommended temperature range	-20°C~+125°C

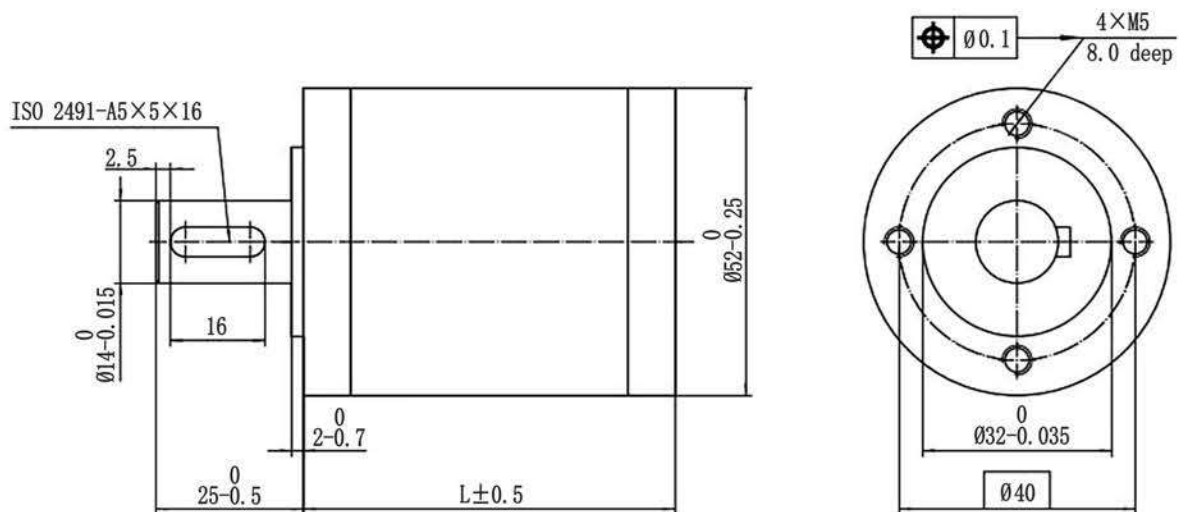
P42H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	1	10	15	15	15
	瞬时 Instant	2	20	30	30	30
速比 Ratio		3.11, 3.38, 3.71, 4.00, 4.80, 5.75, 7.33	10.50, 11.39, 11.56, 12.54, 12.96, 13.80, 14.06, 15.48, 16.20, 17.36, 17.83, 19.20, 19.41, 23.04, 27.60	32.67, 35.44, 38.44, 39.00, 42.31, 45.56, 46.56, 51.24, 50.14, 55.18, 60.17, 64.80, 66.22, 77.76, 92.16, 110.25, 115	119.60, 121.33, 129.75, 131.63, 142.79, 157.14, 169.23, 172.94, 184.53, 186.24, 190.33, 204.97, 203.08, 218.70, 223.49, 245.96, 259.20, 262.44, 264.88, 285.26, 317.86, 373.25, 410.77, 442.37	372.09, 403.66, 437.89, 481.91, 518.99, 530.36, 571.16, 583.68, 628.58, 642.35, 691.77, 706.96, 754.29, 761.31, 821.04, 830.12, 885.74, 913.57, 962.74, 983.85, 1059.53, 1271.43, 1259.71, 1386.35, 1525.72, 1643.08, 1769.47, 1791.59, 1971.70, 2123.37

P52H 行星减速器 4-45N.m

P52 Planetary Reducer 4-45N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
	全钢齿轮 All steel gear				
1	=	适配功率100-250W的无刷电机、伺服电机 用于中、高精度传动 Suitable for brushless motors and servo motors with power of 100-250W. Used for medium and high precision transmission.	90	≤0.8°	=
2	=		80	≤1°	=
3	=		73	≤1.2°	=
4	=		66	≤1.5°	=
5	=		59	≤1.5°	=



壳体材料 Shell material	碳钢 Carbon steel
齿轮材料 Gear material	全钢、硬齿面 All steel, hard tooth surface
输出轴材料 Output shaft material	碳钢 Carbon steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	5,000rpm
最大允许径向载荷 Maximum allowable radial load	≤1000N
最大允许轴向载荷 Maximum allowable axial load	≤500N
最大允许安装力 Maximum allowable installation force	≤1200N
径向间隙 Radial clearance	≤0.02mm
轴向间隙 Axial clearance	≤0.01mm
推荐温度范围 Recommended temperature range	-25°C~+125°C

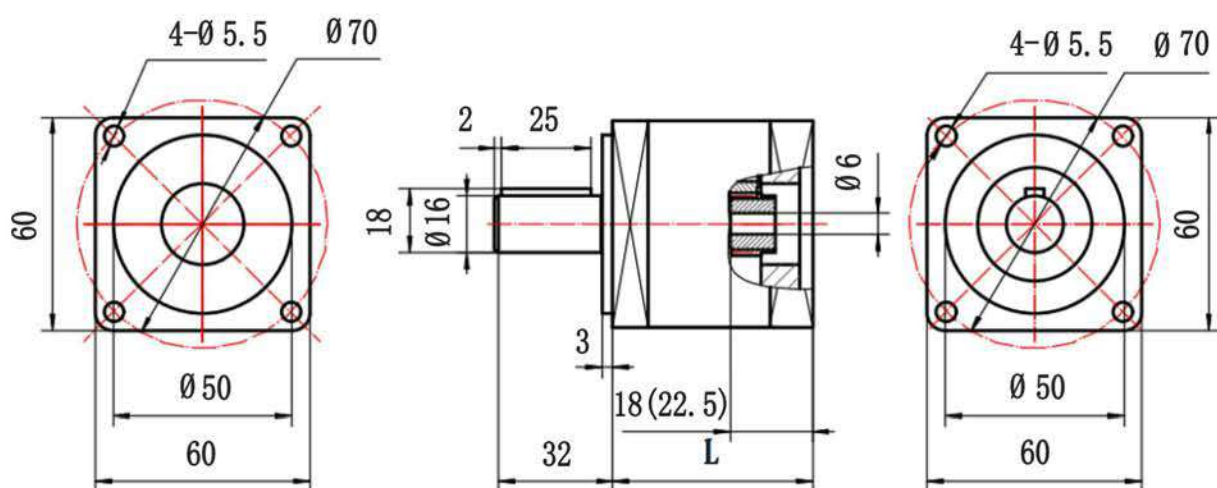
P52H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	3	9	30	30	30
	瞬时 Instant	5	15	45	45	45
速比 Ratio		3.56, 4.00, 4.29	12.64, 14.22, 15.24, 16.00, 17.14, 18.37	44.95, 50.57, 54.18, 56.89, 60.95, 64.00, 65.31, 68.57, 70.80, 73.47, 78.72, 85.33, 111.5	159.82, 179.80, 192.64, 202.27, 216.72, 227.56, 243.81, 251.72, 256.00, 283.18, 293.88, 314.87, 337.36, 384.00, 411.43, 440.82	568.25, 639.28, 684.94, 719.19, 770.56, 809.09, 866.88, 894.99, 975.24, 1006.86, 1044.90, 1119.53, 1132.72, 1199.50, 1259.48, 1349.44, 1365.33, 1445.83, 1462.86, 1567.35, 1645.71, 1699.08, 1763.27, 1889.21

P60H 行星减速器 4-50N.m

P60 Planetary Reducer 4-50N.m

级数 Stage	长度 (mm) Length		适配电机 (W) Adapted Motor	效率 (%) Efficiency	空载回差 No-Load Backlash	重量 (g) Weight
	全钢齿轮 All steel gear	输入级塑料齿轮 Input stage plastic gear				
1	44	43.4	适配功率100-200W的无刷电机、伺服电机 用于中、高精度传动 Suitable for brushless motors and servo motors with power of 100-200W. Used for medium and high precision transmission.	90	$\leq 0.3^\circ$	=
2	52.5	55.9		80	$\leq 0.6^\circ$	=
3	61	68.4		73	$\leq 0.9^\circ$	=
4	69.5	76.9		66	$\leq 1.2^\circ$	=
5	78	85.4		59	$\leq 1.2^\circ$	=



壳体材料 Shell material	不锈钢 Stainless steel
齿轮材料 Gear material	前级塑料行星齿轮钢齿轮可选, 其余全钢、硬齿面 Pre-stage plastic planetary gear steel gear is optional, the rest are all steel, hard tooth surface
输出轴材料 Output shaft material	不锈钢 Stainless steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	3,500rpm
最大允许径向载荷 Maximum allowable radial load	$\leq 1000\text{N}$
最大允许轴向载荷 Maximum allowable axial load	$\leq 500\text{N}$
最大允许安装力 Maximum allowable installation force	$\leq 1200\text{N}$
径向间隙 Radial clearance	$\leq 0.02\text{mm}$
轴向间隙 Axial clearance	$\leq 0.01\text{mm}$
推荐温度范围 Recommended temperature range	$-40^\circ\text{C} \sim +125^\circ\text{C}$

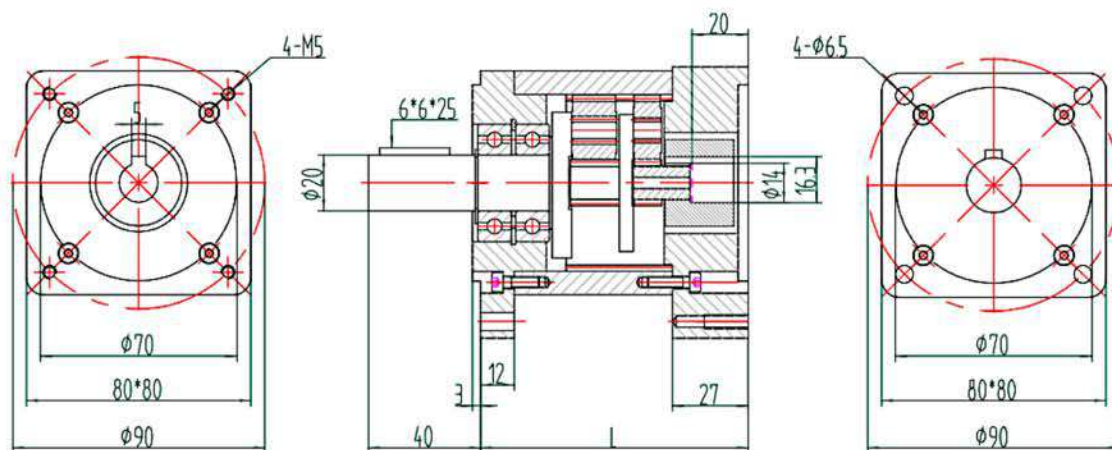
P60H 速比表(Ratio List)

级数 Stage		1	2	3	4	5
输出扭矩(N.m) Output torque	连续 Continuity	4	15	35	50	50
	瞬时 Instant	6	22.5	45	60	60
速比 Ratio		3.56, 4, 5.6, 6.75	12.64, 14.22, 16.19, 91, 22.4, 24, 27, 31.36	44.95, 50.57, 56.89, 64, 70.8, 85.33, 89.6, 96, 108, 111.5, 125.44, 134.4, 151.2, 162, 175.62, 182.25, 211.68, 255.15	227.56, 251.72, 256, 283.18, 303.41, 318.58, 341.33, 358.4, 384, 396.45, 432, 446.01, 477.87, 501.76, 537.6, 576, 604.8, 624.41 648, 702.46, 729, 752.64, 846.72, 907.2, 983.45, 1020.6, 1093.5, 1185.41, 1230.19, 1428.84, 1722.26	568.25, 639.28, 719.19, 809.09, 894.99, 910.22, 1006.86, 1024, 1078.78, 1132.72, 1213.63, 1274.31, 1365.33, 1409.61, 1433.6, 1536, 1585.81, 1699.08, 1728, 1784.04, 1911.47, 2007.04, 2048, 2150.4, 2220.13, 2304, 2419.2, 2497.65, 2592, 2676.05, 2809.86, 2916, 3010.56, 3225.6, 3386.88, 3496.71, 3628.8, 3888, 3933.8, 4082.4, 4214.78, 4374, 4741.63, 4920.75, 5080.32, 5507.32, 5715.36, 6123.6, 6638.28, 6889.05, 7381.13, 8001.5, 8303.77, 9644.67

P80HA 行星减速器 10-200N.m

P80 Planetary Reducer 10-200N.m

级数 Stage	长度 (mm) Length	适配电机 (W) Adapted Motor	效率 (%) Efficiency	重量 (g) Weight
1	80.5	适配功率300-400W左右的直流电机 Suitable for DC motors with power around 300-400W	93	=
2	95.5		87	=
3	110.5		83	=
4	125.5		79	=



壳体材料 Shell material	碳钢 Carbon steel
齿轮材料 Gear material	全钢 All steel
输出轴材料 Output shaft material	碳钢 Carbon steel
输出法兰材料 Output flange material	铝 Aluminum
输出端轴承 Bearing of shaft	滚动轴承 Rolling bearing
允许电机转速 Allowable motor speed	4,500rpm
最大允许径向载荷 Maximum allowable radial load	≤1000N
最大允许轴向载荷 Maximum allowable axial load	≤500N
最大允许安装力 Maximum allowable installation force	≤1200N
径向间隙 Radial clearance	≤0.03mm
轴向间隙 Axial clearance	≤0.03mm
推荐温度范围 Recommended temperature range	-30°C~+85°C

P80H 速比表(Ratio List)

级数 Stage	1	2	3	4
输出扭矩 (N.m) Output torque	10	30	80	150
连续 Continuity	10	30	80	150
瞬时 Instant	15	45	120	200
	3.00, 3.50, 4.00, 5.00	9.00, 10.50, 12.00, 16.0, 14.00, 16.00, 15.00, 17.50, 20.00, 24.00, 25.00, 30.00	27.00, 31.50, 36.00, 48.00, 42.00, 56.00, 48.00, 64.00, 45.00, 56.00, 64.00, 52.50, 60.00, 70.00, 80.00, 84.00, 96.00, 100.00, 120.00, 125.00, 150.00	81.00, 94.50, 108.00, 144.00, 126.00, 168.00, 192.00, 135.00, 256.00, 157.50, 256.00, 224.00, 256.00, 320.00, 280.00, 320.00, 384.00, 336.00, 350.00, 400.00, 420.00, 480.00, 437.50, 500.00, 525.00, 600.00, 625.00, 720.00

编码器模组系列-适用于各种伺服电机、步进电机

Encoder module series-suitable for all kinds of servo motors, stepping motors

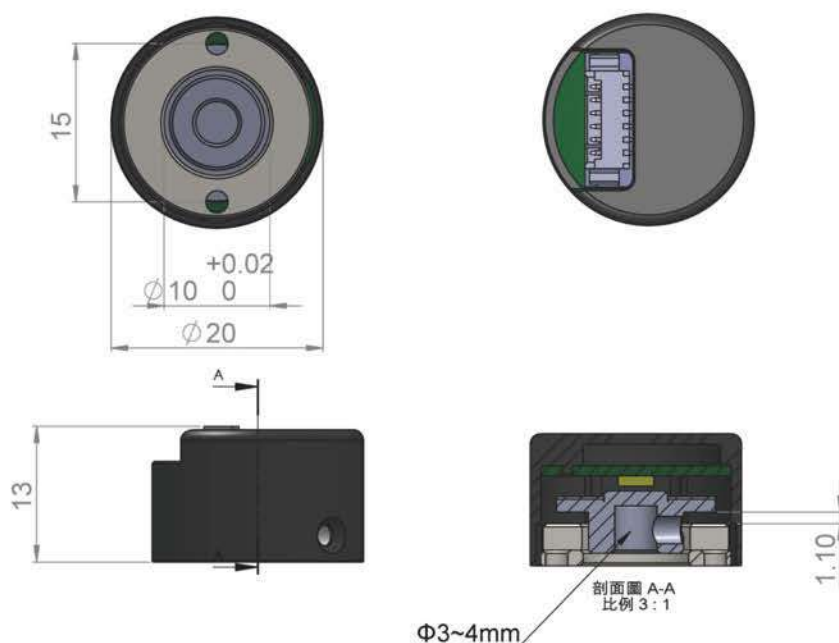
- 体积小 Small Size
- 低成本 Low cost
- 易安装 Easy mounting



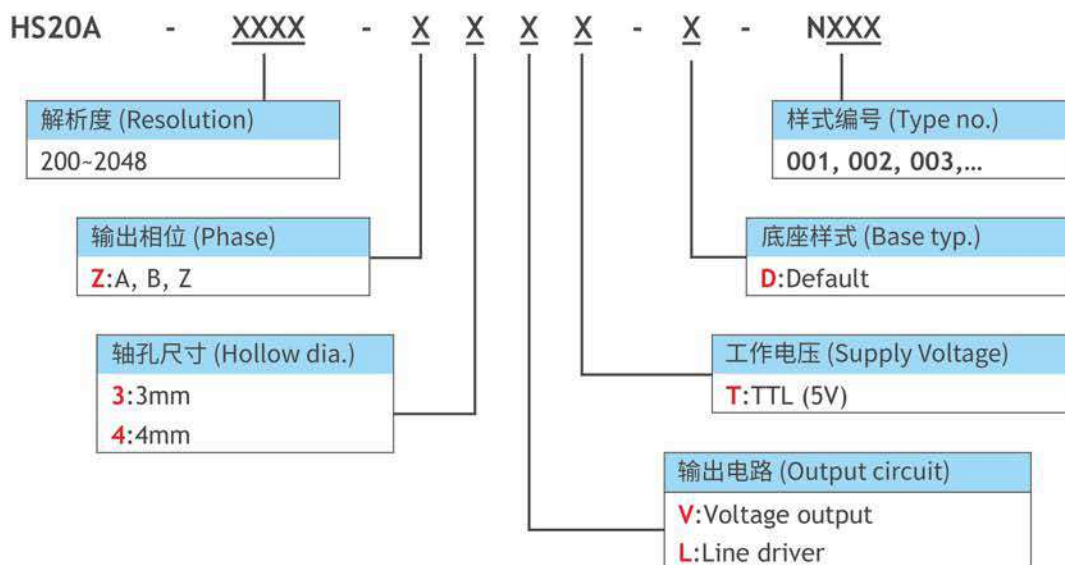
HS20A-光学编码器模块

HS20A-Optical Encoder Module

外型尺寸 Mechanical Drawing



订购资讯 Ordering information



机械规格 Mechanical specifications

Hollow Diameter 孔径	Ø 3, 4 mm
Starting Torque 启动转速	<0.8Ncm
Housing Material 壳材料	ABS+PC
Max. R.P.M. 最大转速	15000 rpm
Net Weight 净重	30g
*R.P.M = Frequency * 60 / Resolution	

环境条件 Environmental conditions

Operating Temp. 操作温度	-20 ~ +85 °C
Storage Temp. 保存温度	-20 ~ +85 °C
Operating Humidity 操作湿度	RH 85% max. non-collecting
Shock 冲击	490 m/s ² , 3Dx2 times
Vibration 震动	1.2mm, 10~55KHz, 3Dx30mins.
Protection 防护等级	IP 40

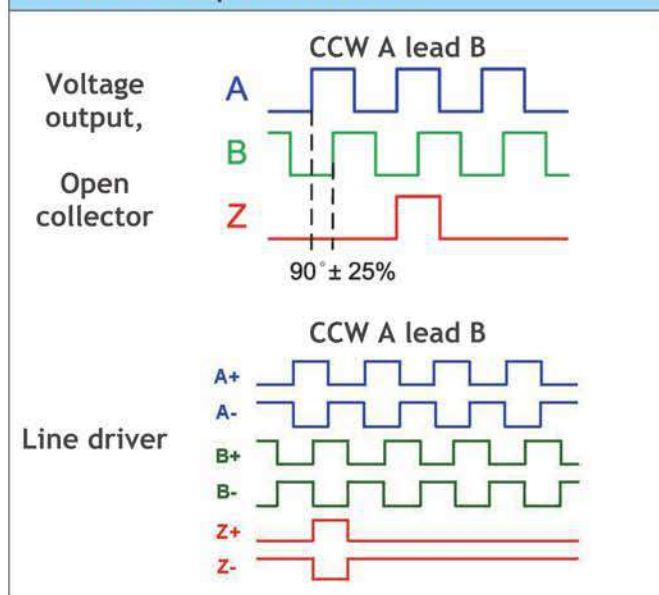
电气规格 Electrical specifications

Output circuit	V	L
Supply voltage	4.5 ~ 5.5V	
Supply current (Max.)	60mA	80mA
Signal	A, B, Z	A+, A-, B+, B-, Z+, Z-
Rise/fall time (Max.)	100 ns	
Frequency	220 KHz	300 KHz
Output voltage	'H'	2.4V min.
	'L'	0.4V Max.
Max. output current	5mA	

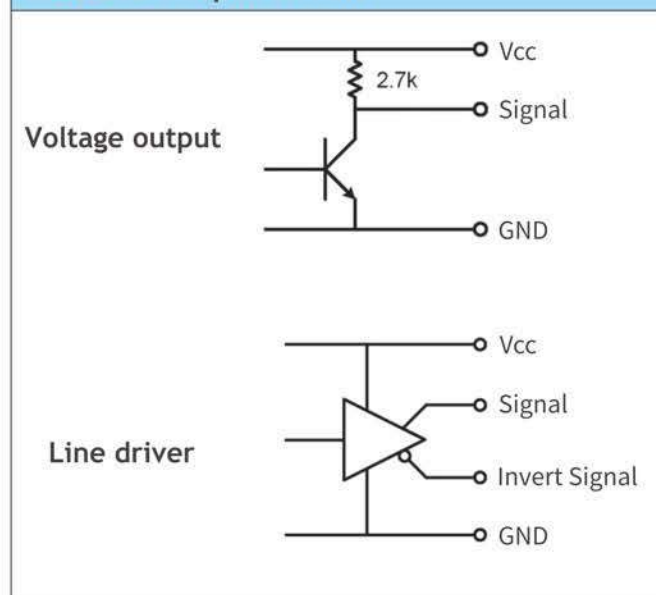
接线方式 Connection

Output circuit	V	L
Red 红	Vcc	Vcc
Black 黑	Gnd	Gnd
White 白	A	A+
Green 绿	B	B+
Yellow 黄	Z	Z+
WH / BK 白/黑	-	A-
GN / BK 绿/黑	-	B-
YL / BK 黄/黑	-	Z-
Shield 屏蔽	☒	☒

输出波形 Output waveform



输出电路 Output circuit

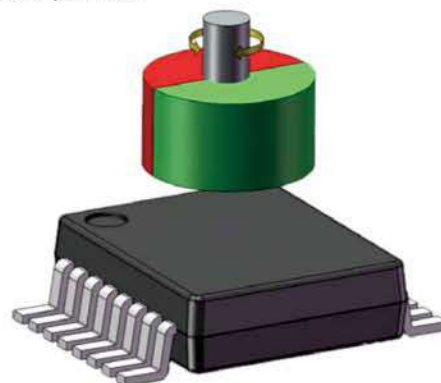


12 bit高精度磁旋转编码器

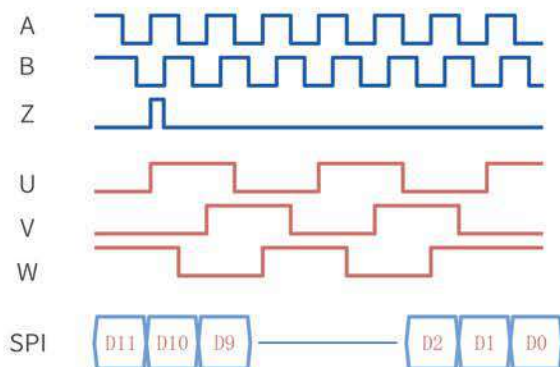
12 bit high precision magnetic rotary encoder

产品特性 Product Features

- 非接触式 12 bit 分辨率旋转编码器 (Non-contact 12-bit resolution rotary encoder)
- 可编程分辨率、极对数和零位 (Programmable resolution, number of pole pairs and zero position)
- 12 位绝对式输出 (12-bit absolute output)
 - SPI 接口 (-SPI interface)
 - PWM 接口 (-PWM interface)
- 12 位增量式输出 (12-bit incremental output)
 - A/B/Z 接口 (最高 1024 线) -A/B/Z interface (up to 1024 lines)
 - U/V/W 接口 (最多 16 对极) -U/V/W interface (up to 16 pairs of poles)
 - A+/B+/Z+ 和 A-/B-/Z- 差分式输出 -A+/B+/Z+ and A-/B-/Z- differential output
- 度线性误差 $< \pm 0.35^\circ$ (Linearity error $< \pm 0.35^\circ$)
- 最大转速: 20K rpm (Maximum speed: 20K rpm)
- 工作温度范围: -40°C to 125°C (Working temperature range: -40°C to 125°C)
- SSOP-16 封装形式 (SSOP-16 package)



应用领域 Application field



- 非接触式旋转位置检测
Non-contact rotation position detection
- 无刷电机位置传感器
Brushless motor position sensor
- 机器人
Robot
- 角度编码器
Angle encoder
- 旋转速度检测
Rotation speed detection

功能简介 Function Introduction

SC60224 是一款非接触式高精度磁编码器芯片, 芯片中心内置了霍尔感应点矩阵, 通过感应上方的一对极磁铁产生正弦和余弦位置信号。芯片内部的模数转换电路对放大后的正弦和余弦信号进行采样, DSP 电路进行角度运算, 最后输出各种位置信号。SC60224 的分辨率达到 12 个比特, 每个圆周可以产生 4096 个角度增量信号, 零位信号的位置可通过 SPI 接口编程, 最高支持 20krpm。

SC60224 is a non-contact high-precision magnetic encoder chip. The center of the chip has a built-in Hall sensor dot matrix, which generates sine and cosine position signals by sensing a pair of pole magnets above it. The analog-to-digital conversion circuit inside the chip samples the amplified sine and cosine signals, and the DSP circuit performs angle calculations, and finally outputs various position signals. The resolution of SC60224 reaches 12 bits, and each circle can generate 4096 angle incremental signals. The position of the zero signal can be programmed through the SPI interface, and the maximum support is 20krpm.

增量式输出接口通过 A、B、Z 引脚输出, 最大可以输出 1024 线, 根据实际使用需求, 可以编程为整数线和二进制线数。

The incremental output interface is output through the A, B, and Z pins, and can output up to 1024 lines. According to actual needs, it can be programmed as integer lines and binary lines.

SC60224 的“-U”版本支持输出电机换向位置信号 U、V、W, 通过编程可以用于 1—16 对极的无刷电机, 同时芯片提供 12 比特的 PWM 输出信号, 只需要一根数据线传输绝对位置信号, 方便客户使用。

The "-U" version of SC60224 supports the output of motor commutation position signals U, V, W, which can be used for brushless motors with 1-16 poles through programming. At the same time, the chip provides a 12-bit PWM output signal, and only one piece of data is needed. Line transmission of absolute position signal is convenient for customers to use.

SC60224 的“-D”版本支持增量式正交差分输出, A+、B+、Z+ 通过 A、B、Z 引脚输出, 而 A-、B-、和 Z- 则通过 U、V、W 引脚输出。

The "-D" version of SC60224 supports incremental quadrature differential output, A+, B+, Z+ are output through the A, B, and Z pins, while A-, B-, and Z- are output through the U, V, and W pins Output.

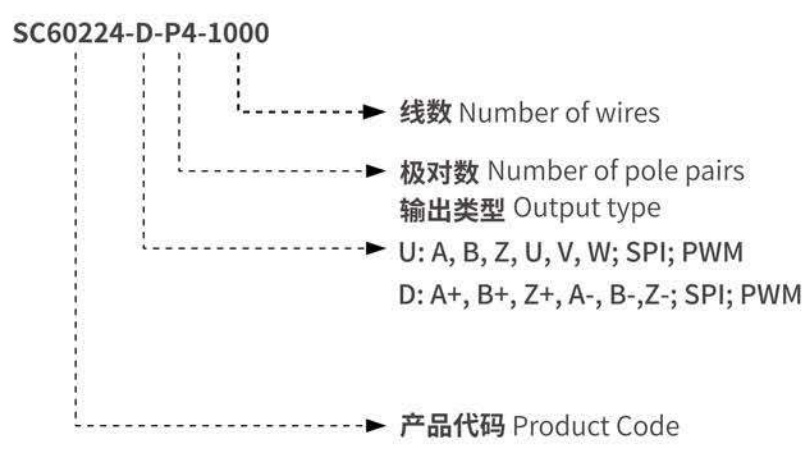
SC60224 采用 16 脚的 SSOP 封装, 亚光镀锡, 采用无卤绿料, 满足环保要求。

Sc60224 adopts 16-pin SSOP package, matte tin plated, and halogen-free green material to meet environmental protection requirements.

编码器参数 Encoder parameter

型号 Part Number	包装 Packing	封装 Mounting	输出类型 Output Type	代号 Marking
SC60224-U	80 pcs Tube	16-pin SSOP	A, B, Z, U, V, W; SPI; PWM	60224
SC60224-D	80 pcs Tube	16-pin SSOP	A+, B+, Z+, A-, B-, Z-; SPI; PWM	60224

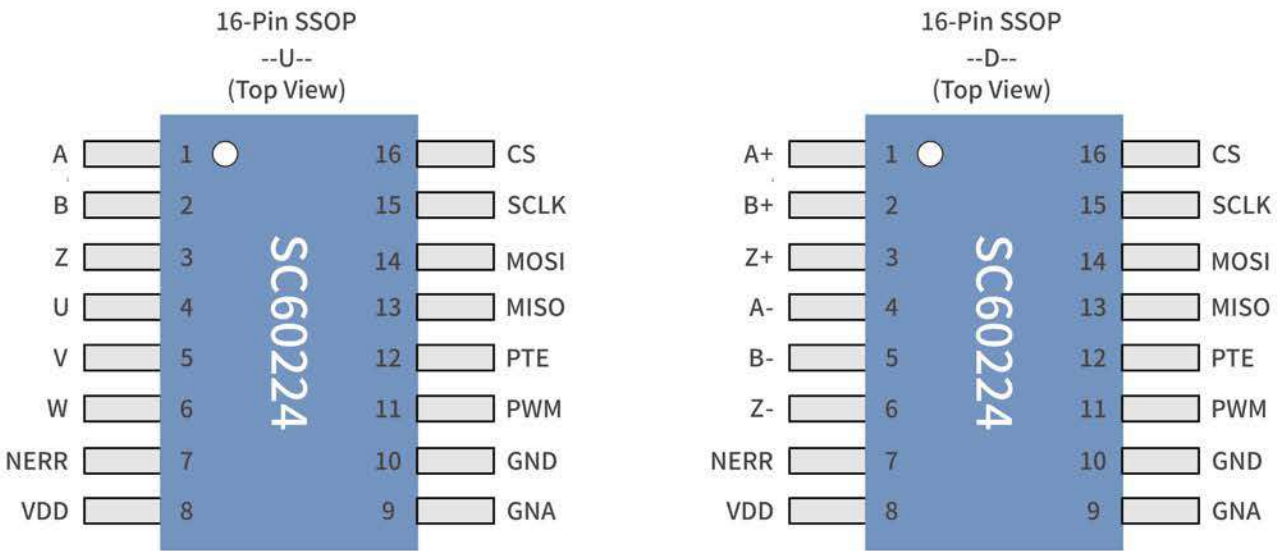
产品订购信息 Product order information



举例: SC60224-U-P4-1024:
1024 线, 4 对极, 带 A, B, Z, U, V, W 和 SPI, PWM 输出方式

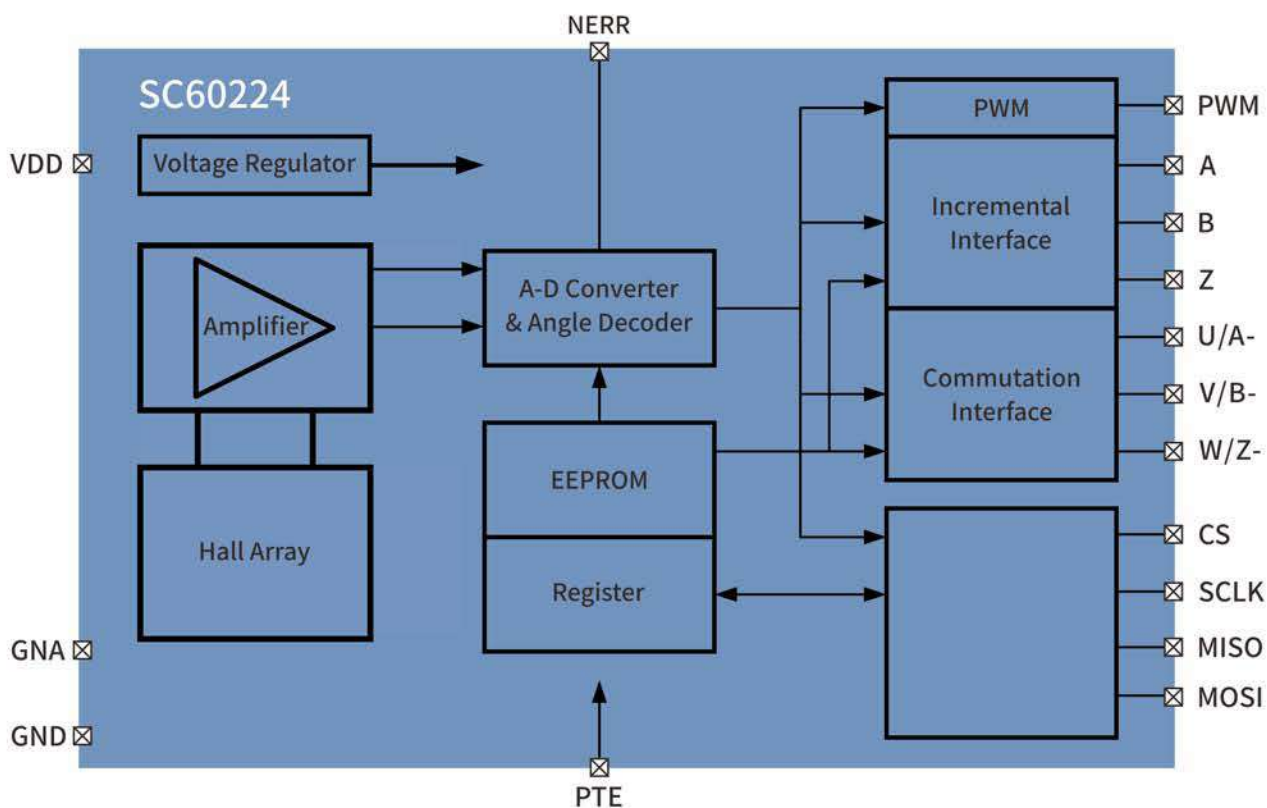
Example: SC60224-U-P4-1024:
1024 wires, 4 pairs of poles, with A, B, Z, U, V, W and SPI, PWM output mode

芯片引脚定义和功能描述 Function Introduction



No.	Pin Name		I/O	Type	Description
	SC60224-U	SC60224-D			
1	A	A+	输出	数字	A 脉冲信号
2	B	B+	输出	数字	B 脉冲信号
3	Z	Z+	输出	数字	Z 脉冲信号
4	U	A-	输出	数字	U或A- 脉冲信号
5	V	B-	输出	数字	V或B- 脉冲信号
6	W	Z-	输出	数字	W或Z- 脉冲信号
7	NERR	NERR	输出	数字	错误指示输出 (错误发生输出为低)
8	VDD	VDD	-	电源	电源
9	GNA	GNA	-	地	模拟地
10	GND	GND	-	地	数字地
11	PWM	PWM	输出	数字	PWM 输出脚
12	PTE	PTE	输入	数字	编程测试脚
13	MISO	MISO	输出	数字	SPI数据输出信号
14	MOSI	MOSI	输入	数字	SPI数据输入信号
15	SCLK	SCLK	输入	数字	SPI时钟信号
16	CS	CS	输入	数字	SPI片选信号

功能模块框图 Functional block diagram



极限参数表 Functional block diagram

Charcteristic	Symbol	Notes	Min.	Max.	Unit
A, B, Z, U, V, W, MOSI, MISO, SCLK, CS, NERR 的电压	$V_{(i)}$		-0.3	6	V
VDD电源电流	$I_{(i)}$		-10	25	mA
A, B, Z, U, V, W, MISO 的电流	$I_{(i)}$		-100	100	mA
SCLK, CS, MOSI, PTE, NERR的电流	$I_{(i)}$		-10	10	mA
EEPROM 擦写次数				100	cycle
ESD	HBM			4000	V
工作温度	T_A		-40	125	°C
存储温度	T_{STG}		-65	165	°C
最大结温	$T_{J(max)}$			165	°C

注意: 高于此处列出的压力可能会导致设备永久损坏。长时间暴露在绝对最大额定值条件下可能会影响设备的可靠性。
Note: Stresses above those listed here may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ESD防护 ESD protection

人体模型 (HBM) 测试依据: 标准EIA / JESD22-A114-B HBM
Human Body Model (HBM) tests according to: standard EIA/JESD22-A114-B HBM

Parameter	Symbol	Limit Values		Units
		Min.	Max.	
ESD-Protection	V_{ESD}	-4	4	KV

电学参数表 Electrical parameter table

在整个工作温度范围内有效, $V_{DD} = 5V$, $C_{BYPASS} = 100nF$; 除非另有规定

Valid through the full operating temperature range, $V_{DD} = 5V$, $C_{BYPASS} = 100nF$; unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Electrical Characteristics						
电源电压	V_{DD}		3.0	5.0	5.5	V
电源电流	I_{DD}	No load, mag=0	10	16	22	mA
Voltage Reference						
基准电压	V_{bg}		1.18	1.25	1.32	V
参考电压	V_{ref}		45	50	55	% V_{DD}
开启电压阈值	$V_{th(on)}$	Increasing voltage	2.6	2.75	2.9	V
关闭电压阈值	$V_{th(off)}$	Decreasing voltage	2.4	2.6	2.8	V
迟滞	$V_{th(Hys)}$		0.15			V
参考电压偏差	$V_{R(offset)}$		470	500	530	mV
Clock Generation						
系统时钟	$f(sys)$	Bias current adjusted	0.8	1.0	1.2	MHz
AD转换器频率	$f(sdc)$	Bias current adjusted	13	16	19	MHz
Sine/Digital Converter						
分辨率	$RES(sdc)$			12		bit
非线性误差	INL_{opt}	$V_{DD} = 5V, Temp = 25^{\circ}C, D_{in} = 1.0mm$	-0.35		0.35	Deg
非线性误差	INL_{temp}	Maximum error with respect to the best line fit, $T_{amb} = -40$ to $125^{\circ}C$	-0.5		0.5	Deg
A/B正空比	$AA(rel)$	With reference to an output period at A, B	-20	0	+20	%
角度输出延时	T_D	at ABZ hysteresis = "1LSB"		10.0	25.0	μS
Signal Level Control						
内部正弦余弦幅度	V_{pp}		3.2	4.0	4.8	V
调整时间	$t(on)$	to $\pm 10\%$ of final amplitude			300	μS
最小幅度报警	$V_{t(lo)}$		1.0		2.8	V
最大幅度报警	$V_{t(hi)}$		4.8		5.8	V
PWM Output						
PWM频率(默认)	$f(pwm)$	$V_{DD} = 5V, Temp = 25^{\circ}C$	927	976	1024	Hz
PWM频率(可选)	$f(pwm)$	$V_{DD} = 5V, Temp = 25^{\circ}C$	232	244	256	Hz

12 bit高精度磁旋转编码器 12 bit high precision magnetic rotary encoder

在整个工作温度范围内有效, VDD = 5V, CBYPASS = 100nF; 除非另有规定

Valid through the full operating temperature range, V_{DD}=5V, C_{BYPASS}=100nF; unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Magnetic Input Specification						
磁铁直径	d _{mag}	φ6mm x 2.5mm for cylindrical Magnets	4.0	6.0	10.0	mm
磁铁厚度	t _{mag}			2.5		mm
安装距离	Din	Recommended magnets		1.0	2.0	mm
磁场强度范围	Hext	At chip surface	25		125	mT
转速频率	f(mag)				333	Hz
转速	rpm				20	krpm
霍尔阵列与磁铁中心偏差	xdis				0.2	mm
霍尔阵列与封装中心偏差	xpac		-0.15		0.15	mm
芯片在封装体内偏移角度	φpac		-3		3	Deg
芯片与封装表距离	hpac			0.4		mm
Serial Interface, Digital INPUTS:CS,SCLK,MOSI						
高电平阈值	Vt()hi				2	V
低电平阈值	Vt()lo		0.8			V
下拉电流MOSI	Ipd()	V() = 1 V...VPD	6	38	60	uA
上拉电流CS,SCLK	Ipu()	V() = 0...VPD — 1 V	-80	-140	-200	uA
Digital INPUTS:PTE						
下拉电流PTE	Ipd()	V() = 1 V...VPD	1	4	10	uA
开启阈值	PTEon			1.7		V
关闭阈值	PTEoff			1.3		V
Digital OUTPUTS:A,B,Z,U,V,W,PWM,MISO,NERR						
饱和电压高电平	Vs()hi	I()hi = -4 mA, with reference to VDD			200	mV
饱和电压低电平	Vs()lo	I()lo = 4 mA, with reference to GND			200	mV
输出高电平短路到地	Ishort()hi	V() = GND;	10		20	mA
输出低电平短路到地	Ishort()lo	V() = VDD;	5		15	mA
上升沿时间	tRise	RL = 100 Ω to GND;	5		30	nS
下降沿时间	tFall	RL = 100 Ω to VDD;	5		30	nS

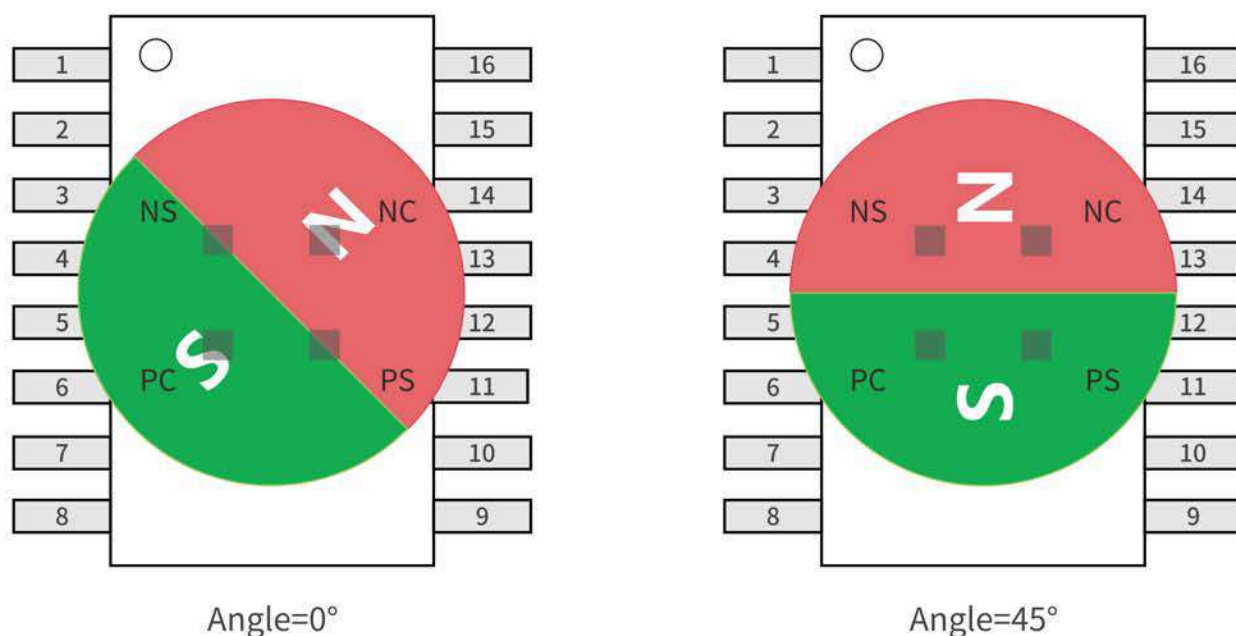
工作原理及角度定义 Working principle and angle definition

芯片集成的霍尔感应点矩阵为正方形, 位于整个封装体的正中心, 相邻两个感应点的间距为 2.0mm。四个感应点分别产生 PCOS, NCOS 和 PSIN, NSIN 四个信号。

The Hall sensor point matrix integrated by the chip is square, located in the exact center of the entire package, and the distance between two adjacent sensor points is 2.0mm. Four induction points respectively generate PCOS, NCOS and PSIN, NSIN four signals

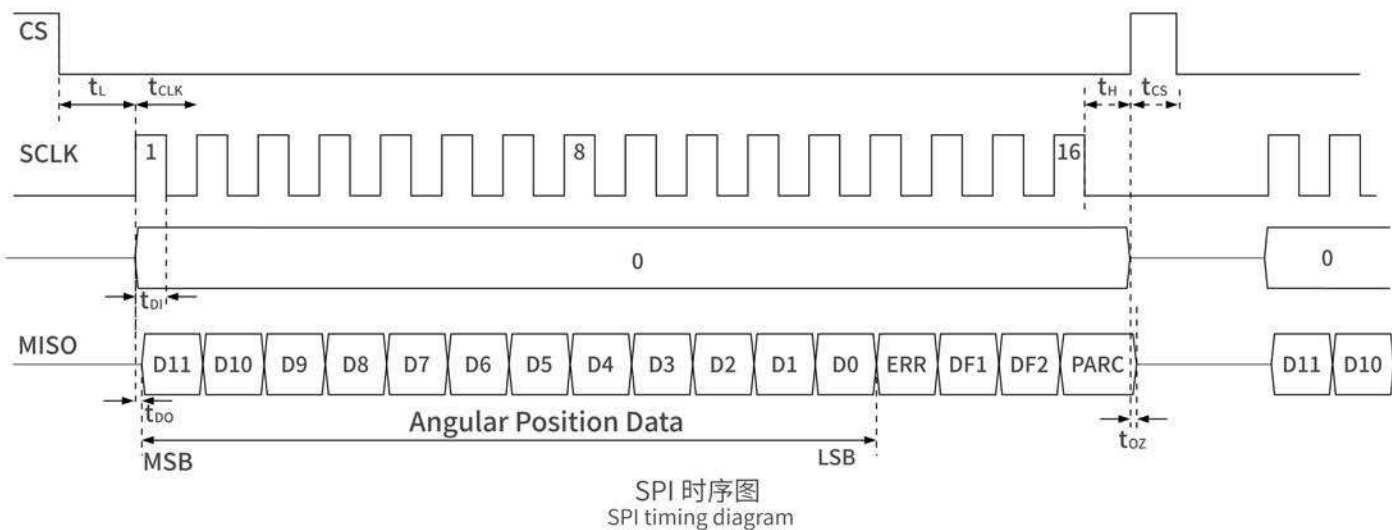
如下图所示, 角度零点定义为磁铁旋转时, $V_{PCOS} - V_{NCOS}$ 达到最大值, 此时感应点 PC 位于磁铁南极, 而感应点 NC 位于磁铁北极, 而 NS 和 PS 两个点位于磁极的交接点。当磁极逆时针旋转时, 信号角度增加, 相反, 当磁极顺时针旋转时, 信号角度减小。

As shown in the figure below, the angle zero point is defined as the maximum value of $V_{PCOS} - V_{NCOS}$ when the magnet rotates. At this time, the induction point PC is located at the south pole of the magnet, while the induction point NC is located at the north pole of the magnet, and the two points NS and PS are located at the intersection of the magnetic poles. When the magnetic pole rotates counterclockwise, the signal angle increases, on the contrary, when the magnetic pole rotates clockwise, the signal angle decreases.



SPI 接口定义 SPI interface definition

带有绝对角度位置数据的串行外围接口时序图
Serial Peripheral Interface Timing Diagram with Absolute Angular Position Data



Parameter	Decription	Min	Max	Units
t_L	CS下降沿和时钟SCLK上升沿之间的时间	250		ns
t_{CLK}	SCLK 的周期	100		ns
t_H	最后一个时钟SCLK的下降沿和CS上升沿之间的时间	$t_{CLK}/2$		ns
t_{CS}	两帧数据之间CS保持高电平的时间 (除对EEPROM编程)	250		ns
t_{DO}	SCLK的上升沿到MISO数据有效之间的时间		50	ns
t_{DI}	MOSI输入数据到SCLK下降沿采样的建立时间	20		ns
t_{OZ}	从CS上升沿到MISO数据位变为3态输出之间的时间		10	ns

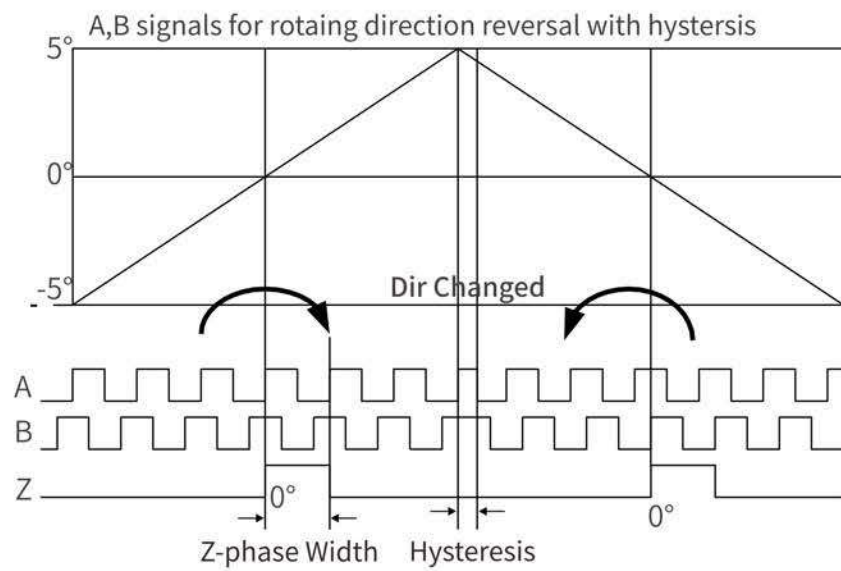
SPI 16位数据帧描述
SPI 16-bit data frame description

Bit	Name	Description
15	PARC	奇校验位, 保持前15位数据和这1位数据共16位数据维持奇数特性
14	DF2	内部固定为高电平
13	DF1	内部固定为高电平
12	ERR	当外部磁铁距离过远或脱离时, 输出从“0”变为“1”, 正常数据为“0”
11:0	DATA	绝对角度输出 (第一位数据送出为角度的最高位D11)

增量式正交输出接口 Incremental quadrature output interface

The SC60224 通过 A、B、Z 引脚输出增量正交信号。默认设置下，当磁铁逆时针旋转时，B 信号脉冲位于 A 信号脉冲之前。

The SC60224 outputs incremental quadrature signals through the A, B, and Z pins. By default, when the magnet rotates counterclockwise, the B signal pulse is before the A signal pulse.



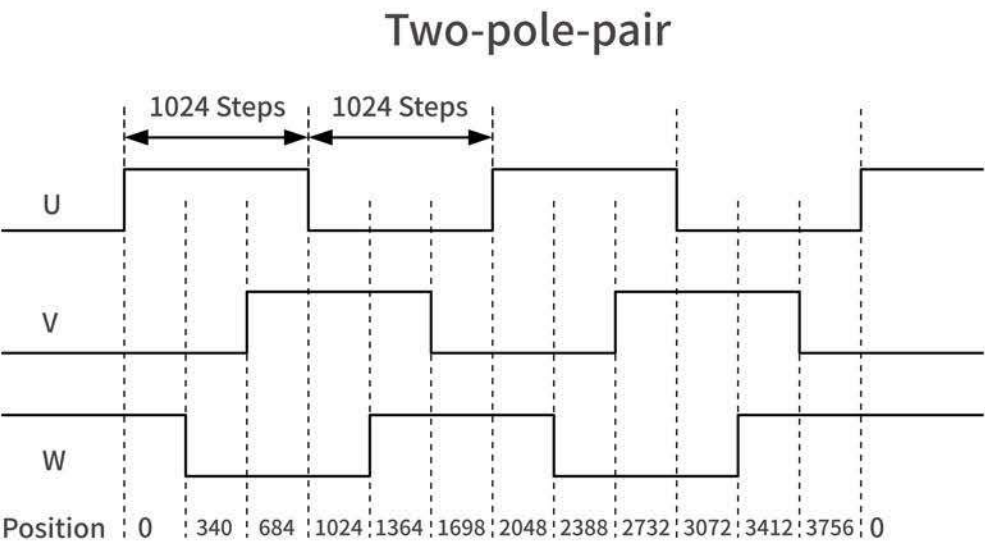
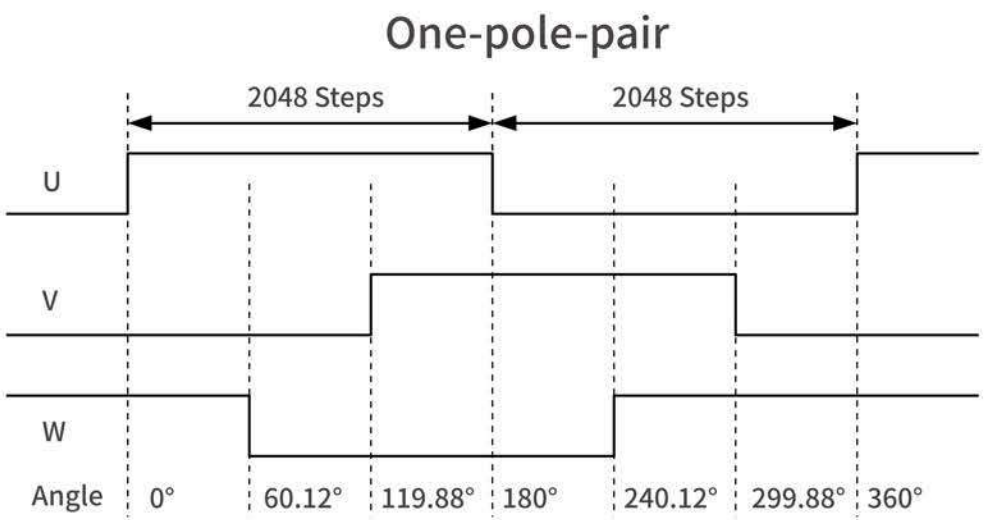
- Z 信号宽度可以编程设置为 1 LSB, 2 LSB, 4 LSB 和 180 度, 其中默认为 4 个 LSB
The Z signal width can be programmed to be 1 LSB, 2 LSB, 4 LSB and 180 degrees, among which the default is 4 LSB
- Z 信号位置可编程
Z signal position is programmable
- 迟滞的宽度也可以编程设置为 0 LSB, 2 LSB, 4 LSB 和 8 LSB, 其中默认为 4 LSB
The width of the hysteresis can also be programmed to 0 LSB, 2 LSB, 4 LSB and 8 LSB, of which the default is 4 LSB

A B Z 线数和分辨率设置 A B Z line number and resolution setting			
No.	输出类型 Output type	线数 Number of wires	分辨率 Resolution
1	二进制 Binary	1024	4096
2		512	2048
3		256	1024
4		128	512
5		64	256
6	十进制 Decimal	1000	4000
7		800	3200
8		600	2400
9		500	2000
10		400	1600
11		360	1440
12		300	1200
13		200	800
14		100	400
15		50	200

UVW 电机换向信号 (SC60224-U) UVW motor commutation signal (SC60224-U)

SC60224 提供 U、V、W 电机换向信号输出,其相位差为 120°。通过编程,可以产生1—16个周期的U、V、W 信号,满足 1 对极—16 对极的电机换向需求。

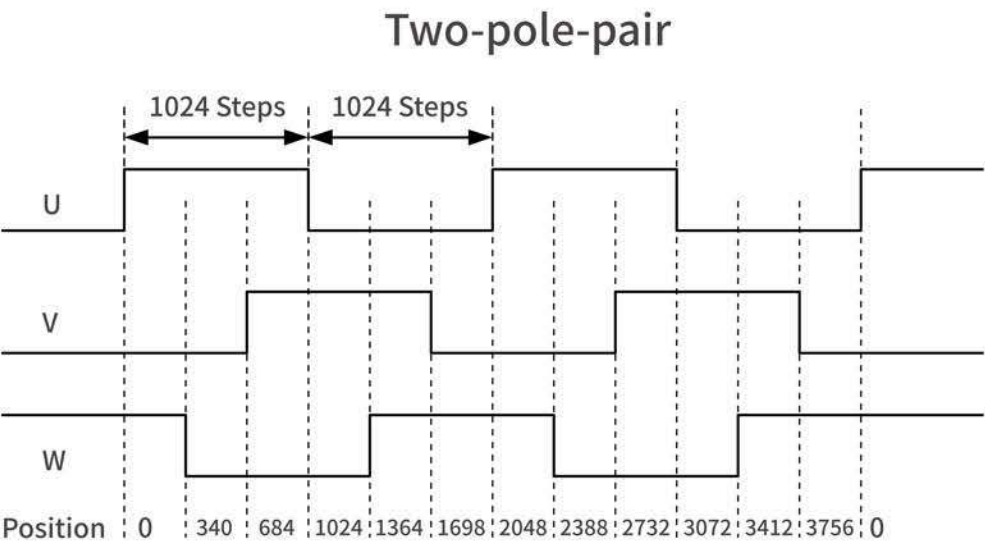
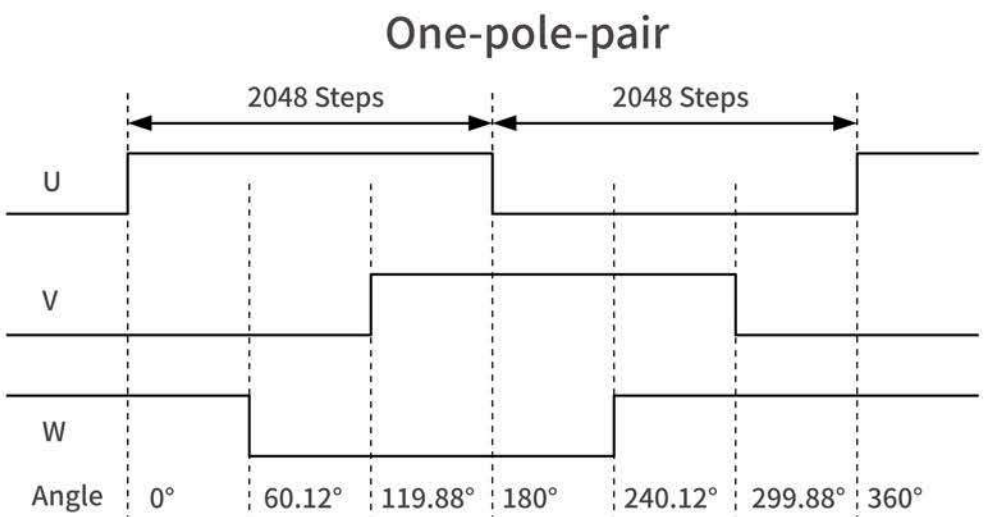
SC60224 provides U, V, W motor commutation signal output with a phase difference of 120°. Through programming, 1-16 cycles of U, V, W signals can be generated to meet the motor commutation requirements of 1 to 16 pairs of poles.



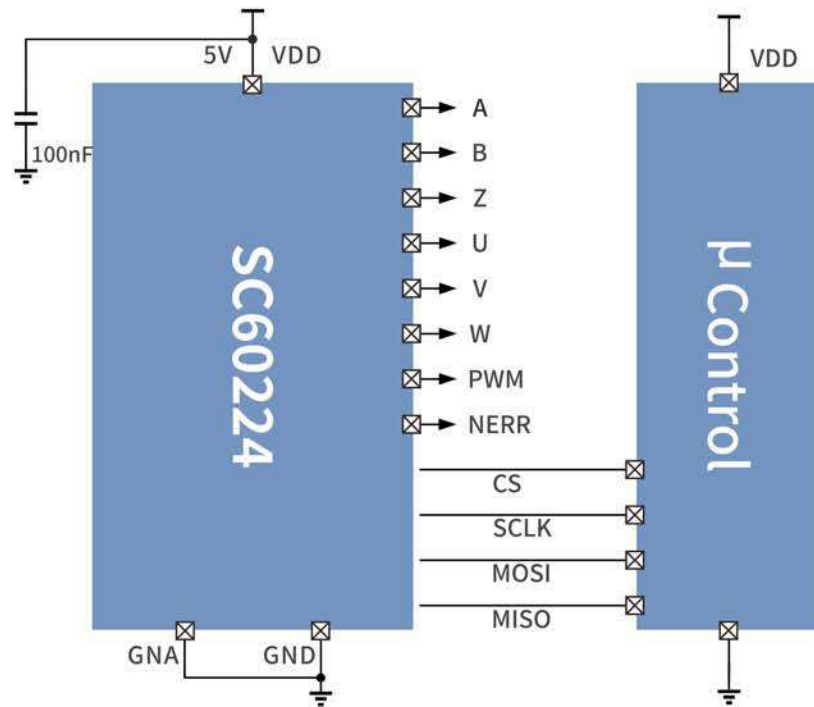
UVW 电机换向信号 (SC60224-U) UVW motor commutation signal (SC60224-U)

SC60224 提供 U、V、W 电机换向信号输出,其相位差为 120°。通过编程,可以产生1—16个周期的U、V、W 信号,满足 1 对极—16 对极的电机换向需求。

SC60224 provides U, V, W motor commutation signal output with a phase difference of 120°. Through programming, 1-16 cycles of U, V, W signals can be generated to meet the motor commutation requirements of 1 to 16 pairs of poles.

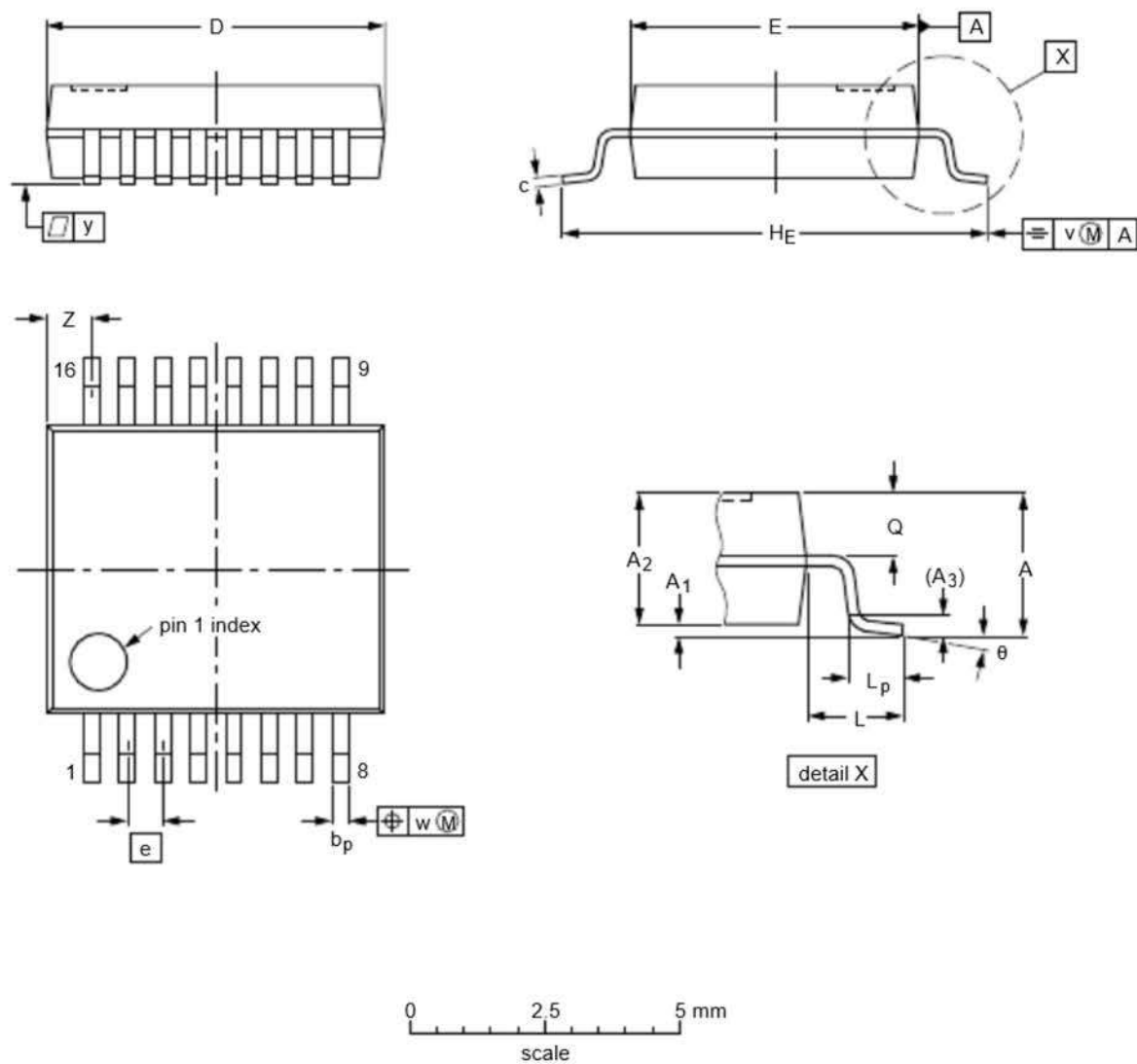


典型应用电路 Typical application circuit



建议在VDD引脚中使用一个100nF的缓冲电容器。
A buffer capacitor of 100nF is recommended in VDD pin.

封装定义 Package definition



尺寸(mm为原始尺寸)

DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁	A ₂	A ₃	b _p	c	D ⁽¹⁾	E ⁽¹⁾	e	H _E	L	L _p	Q	v	w	y	Z ⁽¹⁾	θ
mm	2	0.21	1.80	0.25	0.38	0.20	6.4	5.4	0.65	7.9	1.25	1.03	0.9	0.2	0.13	0.1	1.00	8
		0.05	1.65		0.25	0.09	6.0	5.2		7.6		0.63	0.7				0.55	0

注意: 1. 不包括每侧最大0.25mm的塑料或金属突起。
Note: 1. Plastic or metal protrusions of 0.25mm maximum per side are not included.

选型要点 Selection points

	使用条件 Conditions of use	系数 (Coefficient) K
轻负载 Light load	小惯体低频使用 Low frequency use of small inertia	1.5
	相对较小惯量体高频使用 High frequency use of relatively small inertia body	2-2.2
	普通惯量体一般使用 Ordinary inertia body is generally used	
	高频使用 High frequency use	2.2-2.4
普通负载 Normal load	小惯量体低频使用 Low-frequency use of small inertia body	2-2.4
	一般使用 General use	2.4-2.6
	伴随冲击的工作 (负载变动大) Work with shock (large load fluctuation)	3.5-4.5

载荷计算: Load calculation

动态载荷通常按下式计算 The dynamic load is usually calculated as follows

$$M_{\text{req}} = M_a \cdot K \leq M_K \quad M_a = \frac{J_{\text{load}} \cdot \Delta n_0}{9.55 \cdot (t_3 - \frac{t_{12}}{2})} \quad M_{\text{req}} = \frac{J_{\text{load}} \cdot \Delta n_0}{9.55 \cdot (t_3 - \frac{t_{12}}{2})} \cdot K$$

在实际应用中, 大部分载荷既有动载荷也有静载荷 In practical applications, most loads have both dynamic and static loads

$$M_{\text{req}} = (M_a \pm M_{\text{load}}) \cdot K \leq M_K \quad M_{\text{req}} = \left(\frac{J_{\text{load}} \cdot \Delta n_0}{9.55 \cdot (t_3 - \frac{t_{12}}{2})} \pm M_{\text{load}} \right) \cdot K \leq M_K$$

+M_{load} 用千制动力矩与静态力矩方向相同时 (When using a thousand braking torque in the same direction as the static torque)

-M_{load} 用千制动力矩与静态力矩方向相反时 (When the thousand braking torque is opposite to the static torque)

在已知制动电机功率的情况下, 也可以按下式估算制动力矩:

When the power of the brake motor is known, the braking torque can also be estimated as follows:

$$M_{\text{req}} = 9550 \frac{P}{\Delta n_0} \cdot K \leq M_K$$

摩擦功计算: Friction work calculation

如果制动功率很高且单次制动摩擦功耗也很大, 就需要考虑热负荷, 摩擦功耗计算公式如下:

If the braking power is high and the friction power consumption of a single braking is also large, the thermal load needs to be considered. The friction power consumption calculation formula is as follows:

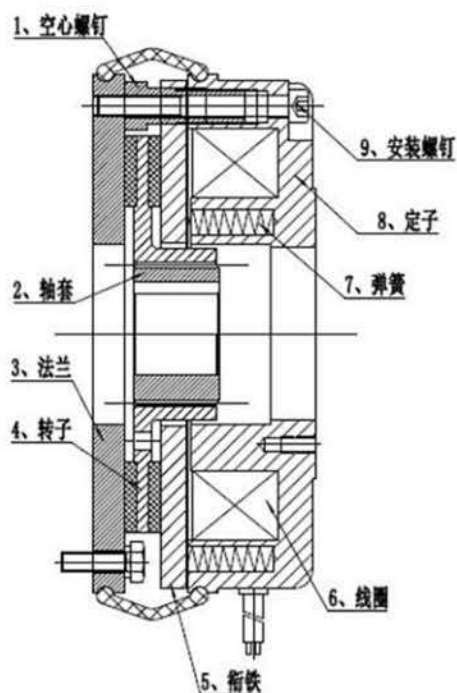
$$Q = \frac{J_{\text{load}} \cdot \Delta n_0^2}{182.5} \cdot \frac{M_K}{M_K \pm M_{\text{load}}}$$

注意: 在提升领域下降过程计算摩擦功时, 除考虑系统惯量外, 还要考虑制动延迟过程中负载重力势能所转化的动能, 具体数值为: Note: When calculating the friction work in the descending process of the lifting field, in addition to the system inertia, the kinetic energy transformed by the load gravitational potential energy during the braking delay process should also be considered. The specific value is:

$$Q_G = \frac{1}{2} m g^2 t_{11}^2$$

带有重力负载的实际摩擦功为: The actual friction work with gravity load is:

$$Q = \frac{J_{\text{load}} \cdot \Delta n_0^2}{182.5} + \frac{1}{2} m g^2 t_{11}^2$$



当制动时

When Braking

经花键安装在轴套2上的转子4通过衔铁5被弹簧7压向法兰3, 从而产生制动力矩。在衔铁与定子8之间产生气隙。

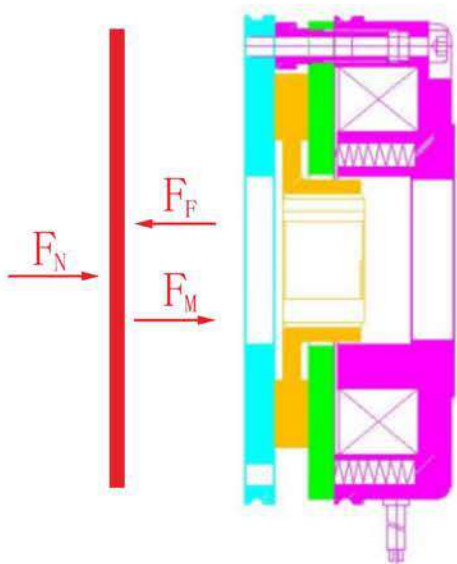
The rotor 4 installed on the sleeve 2 through the spline is pressed against the flange 3 by the spring 7 through the armature 5, thereby generating a braking torque, and an air gap is generated between the armature and the stator 8.

当放松制动时

When The Brake Is Loose

定子线圈6通直流电, 产生磁场使衔铁5压缩弹簧7并被定子8吸附, 此时转子4被松开, 制动解除。

The stator coil 6 is energized by direct current, and a magnetic field is generated to make the armature 5 compress the spring 7 and be attracted by the stator 8. At this time, the rotor 4 is released and the brake is released.



- 固定的部件 Fixed parts
- 轴向移动的部件 Axial moving parts
- 转动的部件 Rotating parts
- 安装表面 Mounting surface

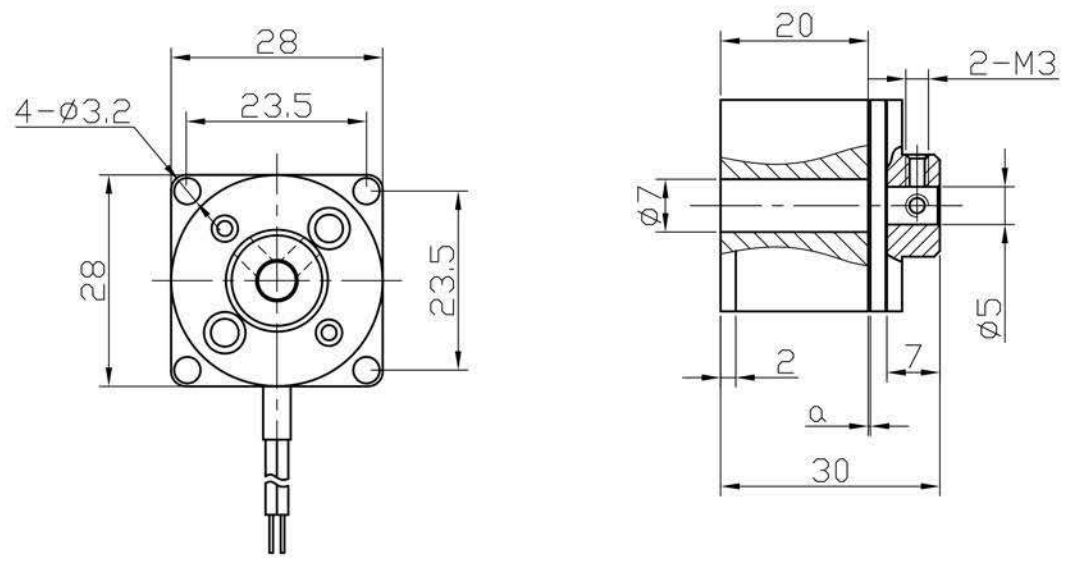
$$F_N = F_F - F_M$$

$$M = 2\mu r_m F_N$$

$$F_M = f(I, S)$$

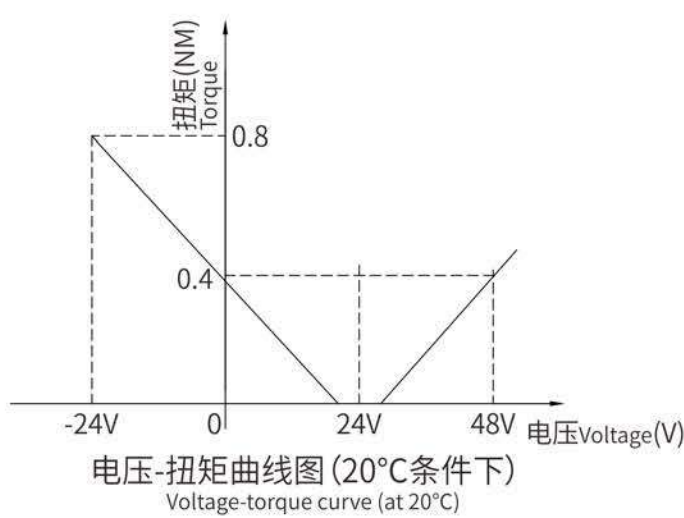
28-35空心杯电机专用制动器

Special brake for 28-35 coreless motor



技术参数
Technical Parameters

电压 Voltage	DC24V
制动转矩 Braking torque	0.4N.m
功率 Power	4W
通断时间 On-off time	15ms
绝缘等级 Insulation class	B

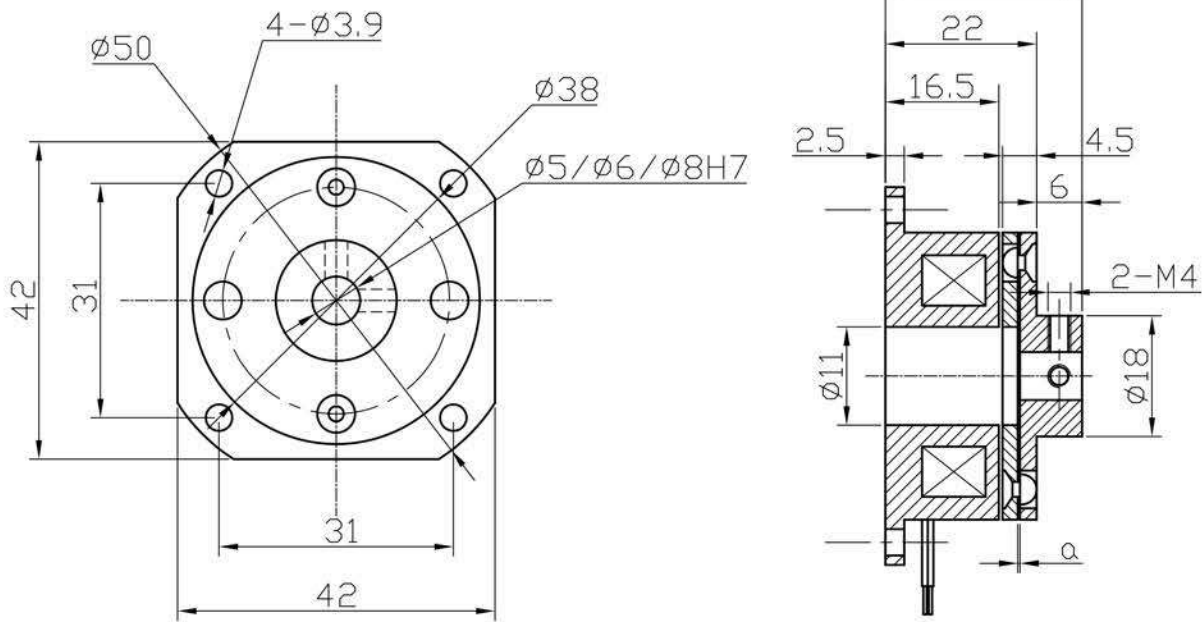


技术要求
Technology requirement

1.安装气隙a应保持在0.10mm-0. 2mm之间 The installation air gap a should be kept between 0.10mm and 0.2mm
2.制动面平行度不大于0.05 The parallelism of the braking surface is not more than 0.05
3.表面镀环保蓝锌 The surface is plated with environmentally friendly blue zinc

36-45空心杯电机专用制动器

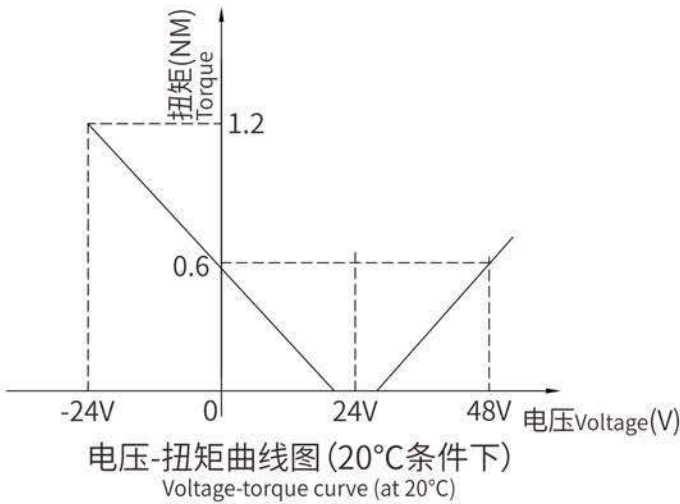
Special brake for 36-45 coreless motor



附注：中孔有5、6和8三个尺寸可选 Note: The middle hole is available in three sizes of 5, 6 and 8

技术参数
Technical Parameters

电压 Voltage	DC24V
制动转矩 Braking torque	0.6N.m
功率 Power	5W
最高转速 Maximum speed	5KRPM
通断时间 On-off time	50ms
绝缘等级 Insulation class	B

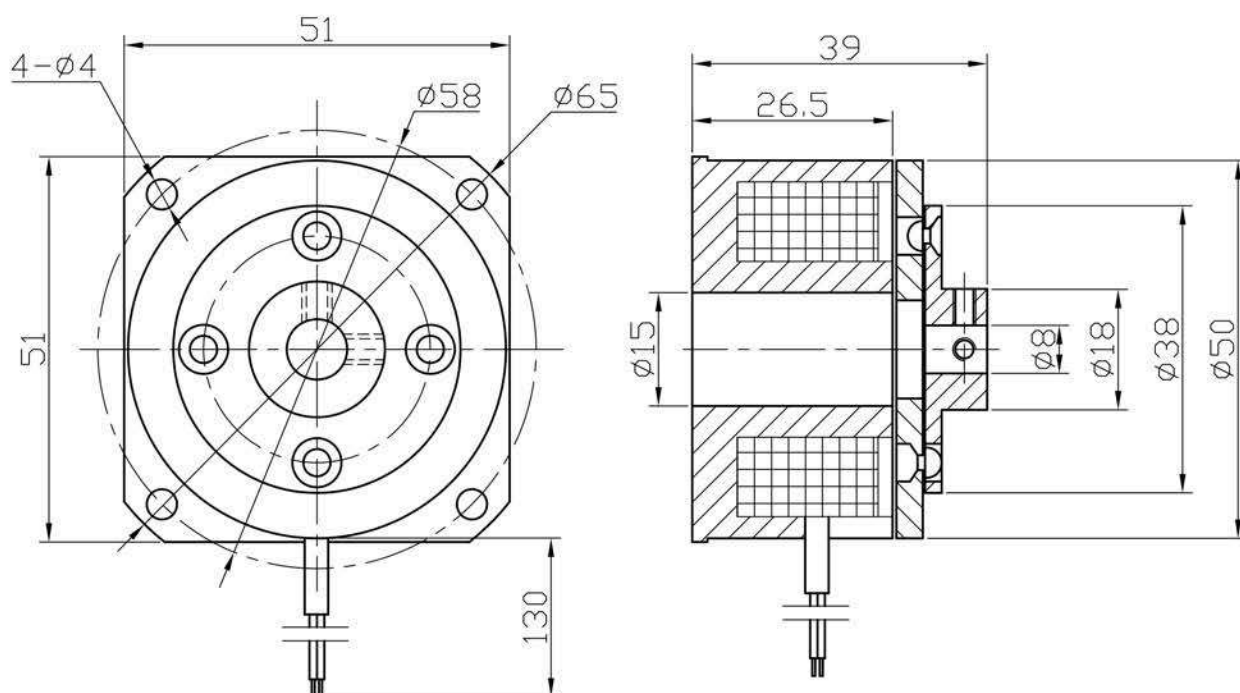


技术要求
Technology requirement

1.安装气隙a应保持在0.15mm-0. 25mm之间 The installation air gap a should be kept between 0.15mm and 0.25mm
2.制动面平行度不大于0.05 The parallelism of the braking surface is not more than 0.05
3.表面镀环保蓝锌 The surface is plated with environmentally friendly blue zinc
4.未注公差±0.1 No tolerance ±0.1

50-60空心杯电机专用制动器

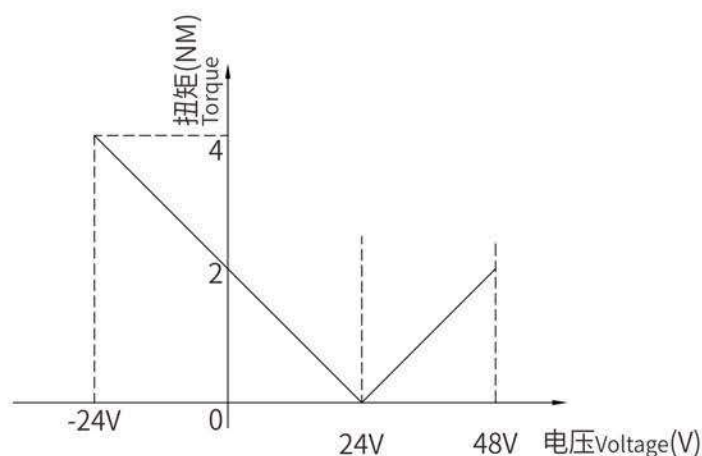
Special brake for 50-60 coreless motor



技术参数

Technical Parameters

电压 Voltage	DC24V
制动转矩 Braking torque	>2N.m
功率 Power	<6W
通断时间 On-off time	50ms
绝缘等级 Insulation class	B
重量 Weight	0.4KG



电压-扭矩曲线图 (20°C条件下)

Voltage-torque curve (at 20°C)