



富兴机电

BLDC MOTOR SERVO MOTOR

无刷电机 伺服电机



常州富兴机电有限公司
Changzhou Fulling Motor Co.,Ltd

2024版

愿 景 Vision

成为世界级的控制电机制造商及系统集成方案提供者

Become a world-class manufacturer of control motors and a provider of system integration solutions.

使 命 Mission

为客户创造价值, 提供最优的行业解决方案

Create value for customers and provide the best industry solution.

价值观 Values

责任, 诚信, 共赢

Responsibility, Integrity and Win-win.



Company Profile - 公司简介

常州富兴机电有限公司是一家中、德、瑞合资企业，成立于2001年，位于中国常州。我们专业生产各类混合式步进电机，直流无刷电机，伺服电机及相关的驱动器，年生产各类电机550万台以上，另外我司有数家合资工厂，专业生产各类永磁步进电机，有刷直流电机，二相、三相交流电机，减速电机，年销售各类电机总量超650万台。产品广泛应用于自动化，AGV，机器人，纺织，印刷，包装，医疗器械，物流，通信，家电，汽车等行业，远销美国，德国，瑞士，意大利，法国等30多个国家和地区。

公司技术力量雄厚，生产工艺成熟，检验设备齐全。拥有优良的品质保证体系及服务体系，我们已获得德国TUV认证的ISO9001质量管理体系证书、IATF16949质量管理体系证书以及ISO14001环境管理体系证书，所有产品获得CE认证，并符合欧盟RoHS要求，部分获得UL认证。

公司秉承以质量至上，创新和社会责任为公司发展理念，持续为全球客户提供专业化的控制电机制造和研发服务。



Changzhou Fulling Motor Co., Ltd was established in year 2001 as a joint venture of Germany - Swiss - China. We are a professional motor manufacturer in Changzhou city, China. Our Company offers four major series of products: Hybrid stepper motors, DC brushless motors, Servo motors and the motor drivers. Production capacity exceeds more than 5.5 million motors per year. Changzhou Fulling Motor Co., Ltd also has several joint venture companies who specialized in the production of PM stepper motors, and DC gear motors.

We sell nearly 6.5 million different motors to customers worldwide every year. Our products are widely used on industrial automation, AGV, robots, textile, printing, medical equipments, logistics, communication, household appliances and automobile etc. We export our motors to more than 30 countries such as Italy, Germany and United States.

At the core of our development is a professional engineering team that comprises industry experts in the fields of design and application engineering. We provide these talented individuals with access to advanced technology and cutting-edge equipment, ensuring the yield of high-quality products. Our company has successfully passed the quality management system certification for the ISO9001, IATF16949 and ISO14001, which were authorized by the German TUV group. All products are RoHS compliant and CE certified; some are UL approved. Fulling declares no 3TG remain in our products. No 3TG intentionally added or used in the products or in the production process.

Fulling insists the quality first, innovation and social responsibility as company's concept of development and continues to provide global customers with specialized control motor manufacturing and R&D services.



APPLICATIONS - 产品应用



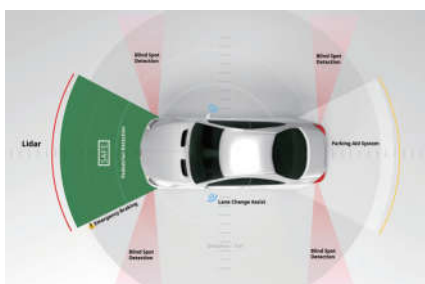
AGV



家电
Home Appliance



闸机、自动门
Barrier / Auto Door



激光雷达
LIDAR



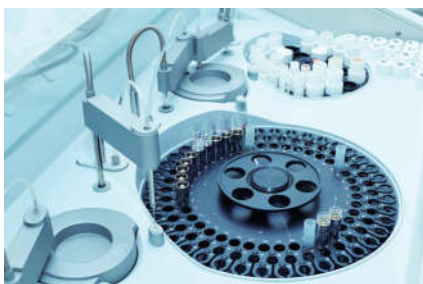
机器人
Robotics



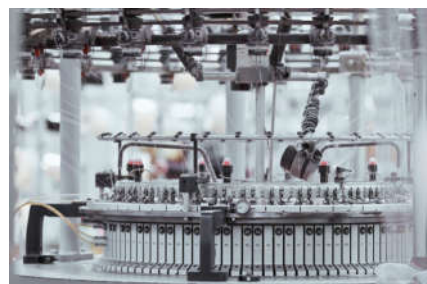
物流
Logistics



新能源
Green Energy



医疗行业
Medical



纺织
Textile



办公自动化
Office Automation



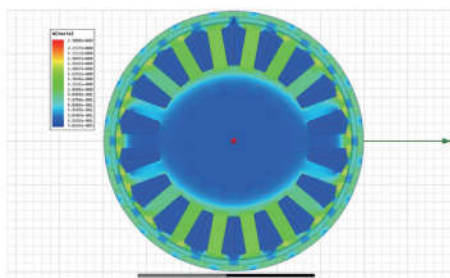
金融设备
Financial Equipment



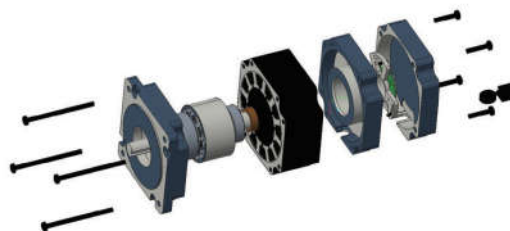
农业
Agriculture

Software system and Management system

电机研发及设计软件 Research and Development Software for motor



ANSYS 电机性能模拟设计软件
ANSYS Simulation software



Creo 仿真机械设计软件
3D drawing designed by Creo

管理体系证书 Certificates of Management



★ ISO 9001 ★



★ ISO 14001 ★



★ IATF 16949 ★

产品认证以及管理系统 Motor certification & Management System



* 注:部分产品符合UL认证

Note: Part of products are UL certified



A 标准直流无刷电机 Standard BLDC Motor

A-1 常规无刷电机

Regular BLDC Motor

22RBL	001
28BL	002
33BL	003
36RBL	004
40BL	005
40BL-Enhanced	006
42BLA	007
42BLB	008
42BLS	009
42RBL	010
57BL(S)	011
57BLA	012
57BLB	013
70BLS	014
80BLS	015
86BLC	016
86BLS	017
125BL	018

A-2 高性能防水无刷电机

High Performance and Water Proof

38BLG	019
60BLG	020
80BLG	021
100BLG	022
110BLG	023
130BLG	024

A-3 外转子无刷电机

Outer Rotor BLDC Motor

20BLW	025
32BLW	026
32BLWA	027
45BLW	028
45BLWH	029
60BLW	030
90BLW	031
60BLW42-EN	032
90BLW42-EN	033

A-4 无齿无槽电机

Slotless BLDC Motor

14SBL	034
16SBL	035
19SBL	036
22SBL	037
24SBL	038
28SBL	039
32SBL	040
40SBL	041

A-5 经济型无刷电机

Economical BLDC Motor

24CBL	042
28CBLA	043
36CBL	044
38CBL	045
42CBL	046
48CBL	047
80BLE	048

B 一体化无刷电机 BLDC Motor with Integrated Driver

24BLW25-IE	049
24CBL-IE	050
28CBLA-IE	051
36CBL-IE	052
38CBL-IE	053
42BLS-IE	054
42CBL-IE	055
42RBL-IE	056
48CBL-IE	057
57BL(S)-IE	058
57BL-IE	059



C 无刷减速电机 BLDC Motor with Gearbox

C-1 正齿轮箱

Spur Gearbox

32BLW25-G-IE	060
57BLS-60JB	061
86BLS-90JB	062

C-2 行星减速箱

Planetary Gearbox

22RBL-22JN10K	063
28BL-28JN30K	064
33BL-32JXE30K	065
36RBL-36JXE30K	066
42RBL-42JMG50K	067
42BLS60-42JM100K	068
57BL-56JM300K	069
20BLW14-22JM15K	070
32BLW18-32JM30K	071
45BLW-42JM150K	072
60BLW42-56JM300K	073
90BLW-56JM450K	074
24CBL30-24JN10K	075
28CBLA-28JN30K	076
36CBL-36JXF50K	077
38CBL-36JXF50K	079
42CBL-42JXF100K	080

D 伺服电机 Servo Motor

38SV	081
60SV	083
80SV	085
100SV	087
110SV	089
130SV	091

E 闭环步进电机 Closed-Loop Stepper Motor

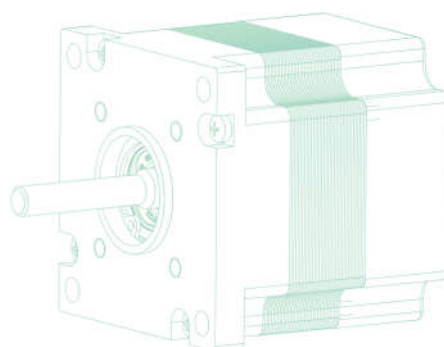
42SC	093
57SC	095
60SC	097
86SC	099

F 闭环无刷电机 Closed-Loop BLDC Motor

42SVA	101
57SVA	103
80SVA	105
86SVA	107

G 无框电机 Frameless Motor

50BL	109
70BL	110
85BL	111
115BL	112



★直流无刷电机简介

(Brief Introduction of DC Brushless Motor)

无刷电机使用电子换向，其特点是具有良好的转矩特性、高功率、极宽的调速范围，以及其无与伦比的使用寿命。

The electronically commutated motor are the characterized especially by their favorable torque characteristics、high power、extremely broad speed range and of cause by their unsurpassed service life.

★无刷电机原理 (Principles of operation)

直流无刷电机与直流有刷电机的机械换向的区别在于

The differences between a DC motor having a mechanical commutation system and a BLDC motor are mainly found in:

- 产品概念 The product concept
- 相电流换向 The commutation of phase currents.

从使用者角度来看，直流无刷电机与直流有刷电机机械特性基本相同：转矩与电流成正比，转速取决于电压和负载转矩。

From the user's point of view, DC brushless motors follow the same equations as those with brushes: torque is proportional to current, speed depends on the voltage and the load torque.

★无刷电机的换向 (The commutation of brushless motors)

传统直流有刷电机都是通过换向器与电刷之间进行机械换向。在无刷电机中是通过电子手段实现换向。在电子换向过程中必须知道瞬时转子的位置，以确定要通电的相位。

In the conventional DC motor commutation takes place mechanically through the commutator-and-brush system. In a BLDC motor, commutation is done by electronic means. In that case the instantaneous rotor position must be known in order to determine the phases to be energized.

转子的角度位置可以通过如下方式获得：

The angular rotor position can be known by:

- 使用位置传感器(霍尔元件、光学编码器、旋转变压器) Using a position sensor (Hall sensor, optical encoder, resolver)
- 无位置传感换向，使用电子分析计算绕组反电势过0点位置。 Electronically analyzing the back-EMF of a non-energized winding. This is called sensorless commutation.

★霍尔元件的使用 (Use of Hall sensors)

一般无刷电机有三相绕组，一次通电两相绕组，最简单常用的方式就是使用霍尔元件确定转子的位置。与有刷电机中的碳刷和换向器一样，无刷电机是通过简单的逻辑计算知道转子的位置并通知相绕组换向。

In general, BLDC motor have three phase windings. The easiest way is to power two of them at a time, using Hall sensors to know the rotor position. A simple logic allows for optimal energizing of the phases as a function of rotor position, just like the commutator and brushes are doing in the conventional DC motor.

★编码器或旋转变压器的使用

(Use of an encoder or resolver)

转子位置也可以通过编码器或旋转变压器来知道。换向可以非常简单地完成，类似于霍尔传感器的程序，或者通过在三相中调节正弦电流来完成更复杂的程序。这被称为矢量控制，其优点是提供理论零转矩脉动，以及精确定位的高分辨率。

The rotor position may also be known by use of an encoder or resolver. Commutation may be done very simply, similar to the procedure with Hall sensors, or it may be more complex by

modulating sinusoidal currents in the three phases. This is called vector control, and its advantage is to provide a torque ripple of theoretically zero, as well as a high resolution for precise positioning.

★反电势分析使用 (Use of Back-EMF analysis)

第三种方式不需要位置传感器，但是需要特殊电子电路设计支持。电机仅仅只有三根相线引出线，三相可以是三角形或星形连接方式。这种情况下，必须参考电压过0点来确认换向时刻。这类解决方案因为不需要传感器或电子元件，因此可以使用在极其恶劣的环境，对于手持式电动工具类应用，因为电缆需要不断移动，仅仅只有三根线也是很有优势的。

A third option requiring no position sensor is the use of a particular electronic circuit. The motor has only three hook-up wires, the three phase windings are connected in either triangle or star. In the latter case, resistors must be used to generate a zero reference voltage. With this solution the motor includes no sensors or electronic components and it is therefore highly insensitive to hostile environments. For applications such as hand-held tools, where the cable is constantly moved, the fact of just three wires is another advantage.

★直流无刷电机的损耗计算

(Loss calculation of BLDC motors)

无刷电机与一般直流电机一样使用相同的计算公式，但是在效率至关重要的场合，必须充分考虑到铁损和驱动电路损耗等参数。

It follows the same equations as the DC motor using mechanical commutation except that parameters like iron losses and losses in the drive circuit are no longer negligible in applications where efficiency is of prime importance.

★铁损耗 (Iron losses)

铁损耗与转速和转子的极数有关，转矩公式中可以作为粘性摩擦引入。电机有效转矩计算公式如下：

They depend on speed and motor poles, in the torque formula, may be introduced as viscous friction. The equation for useful motor torque becomes:

$$M_m = k \cdot I_m - k_v \cdot \omega - M_f$$

M_m = 电机有效转矩 Motor useful torque

k = 转矩常数 Torque constant

I_m = 电机电流 Motor current

k_v = 铁损粘性系数 Viscous coefficient for iron losses

ω = 角速度 Angular velocity

M_f = 轴承摩擦 Bearing friction

$$P_{tr} = P_h + P_{ec} + P_e$$

P_{tr} : 铁损 (Iron losses)

P_h : 磁滞损耗 (Hysteresis losses)

P_{ec} : 涡流损耗 (Eddy current losses)

P_e : 附加损耗 (Additional losses)

铁损跟磁场强度的平方成正比，跟频率的1.3—1.5次方成正比，频率=转速*极对数/60

The iron loss is proportional to the square of the magnetic field intensity, and the iron loss is proportional to the 1.3-1.5 power of the frequency. Frequency = Speed * Poles' pair/60

★电子损耗 (Losses in the electronics)

电机所需的电流、电压以及驱动电路所需要的在既定的转速和扭矩下运行都取决于驱动电路。例如，双极技术中的驱动桥将使电机终端的可用电压降低约1.7V，总电流必须包括电路的消耗。



The current and voltage required by the motor and the drive circuit to be operated at the desired speed and torque depend also on the drive circuit. As an example, a driver bridge in bipolar technique will reduce the voltage available at the motor terminals by about 1.7V, and the total current must include the consumption of the circuitry.

★建议 (Remember)

-带载启动运行场合, 必须使用位置传感器换向。For commutation, position sensors are necessary when operating in incremental mode

-无位置传感建议在连续稳速或恒定负载的场合, 譬如风扇类应用。Sensorless commutation is recommended only for applications running at constant speed and load such as fan applications.

★电机参数说明 (Indications Of Motor Data)

1: 额定电压 (Nominal Voltage) 单位 (Unit): 伏 (V)

额定电压是在电机绕组上电过程中, 施加在各相之间的电压值。所有的额定参数均参考电压值。在一定限值之内, 低一点、高一点电压都是可以工作的。

Nominal voltage is the applied voltage between powered phases in block commutation. All nominal data refer to this voltage. Lower and higher voltage are permissible, provided that limits are not exceeded.

2: 额定转矩 (Nominal Torque) 单位 (Unit): 牛·米 (N.m)

额定转矩是在电机25度条件下, 在额定电压和额定电流情况下输出的扭矩, 它受连续运行范围限制, 超出额定转矩越大, 电机发热越厉害。

Nominal Torque is the torque generated for operation at nominal voltage and nominal current at a motor temperature of 25°C. It is at the limit of the motor's continue operation range. Higher torques heat up the winding too much.

3: 额定转速 (Nominal Speed) 单位 (Unit): 转/分 (rpm)

额定转速是在电机25度条件下, 在额定电压和额定转矩情况下运行设定的转速。

Nominal speed is the speed set for operation at nominal voltage and nominal torque at a motor temperature of 25°C.

4: 转矩常数 (Torque constant) 单位 (Unit): 牛·米/安培 (N.m/A)

转矩常数是单位电流产生的单位力矩, 可以理解为转矩值与电流的比值。

This may also be referred to as specific torque and represents the quotient from generated torque and applicable current.

★命名规则 (Motor Numbering Information)

FL 28 CBL A 38 -24V- 50 10 A - IE

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①: 外型尺寸 (Frame Size): 28mm

②: CBL: 经济型无刷电机 (Economical BLDC Motor)

RBL/BL: 圆形无刷电机 (Round BLDC Motor)

BLS: 方形无刷电机 (BLS: Square BLDC Motor)

BLW: 外转子无刷电机 (Outer Rotor BLDC Motor)

SBL: 无齿无槽无刷电机 (Slotless BLDC Motor)

BLA/BLB/BLC/BLD: 派生电机 (Derivative Version)

③: 系列号 Series

④: 整机长度 (Motor Length): 38mm

⑤: 额定电压 (Rated Voltage): 24V

⑥: 额定转速 (Rated Speed): 5000rpm

⑦: 额定功率 (Rated Power): 10W

⑧: 单端出轴 Single Shaft (A)、双端出轴 Double Shaft (B)

⑨: 带一体化控制器 (Integrated driver)

★直流无刷电机 (DC Brushless motors)

尺寸系列齐全, 尺寸范围: 22mm - 125mm; 功率范围: 1W - 1500W。

We have complete size series from 22mm to 125mm and power range of 1W to 1500W

★外转子无刷电机系列

(Out-rotor DC Brushless motors)

由于转子在外侧, 同体积下, 外转子电机的输出转矩将比内转子大。该类电机体积小, 重量轻, 但是输出转矩大。尺寸范围: 20mm - 90mm, 功率范围: 1W - 190W。

Because the rotor is on the outside, the output torque of the motor will be larger than the inner rotor in the same volume. This kind of motor is small in size and light in weight, but its output torque is large. Size range: 20mm - 90mm Power range: 1W - 190W.

★无齿无槽无刷电机系列

(Slotless DC Brushless motors)

铁芯无齿槽, 转矩波动小, 运行平稳, 同时铁损小, 运行效率高, 发热低, 适合高速运行场合。尺寸范围: 16mm - 49mm, 功率范围: 1W - 500W。

Iron core without slot, small torque fluctuation, smooth operation, low iron loss, high operation efficiency, low heating, suitable for high-speed operation applications.

Size range: 16mm - 49mm Power range: 1W - 500W.

★经济型无刷电机系列

(Economical BLDC motor)

参考有刷电机结构件设计, 采用无刷电机电磁设计, 制造出低成本无刷电机, 在具有无刷电机优良特性的基础上, 有效优化电机成本。尺寸范围: 24mm - 48mm, 功率范围: 1W - 60W。

Referring to the structure design of brushless motor, brushless motor electromagnetic design is adopted to produce low cost brushless motor. Based on the excellent characteristics of brushless motor, the cost of motor is effectively optimized. Size range: 24mm - 48mm Power range: 1W - 60W.

★一体化无刷电机系列

(BLDC motor with integrated driver)

集成驱动器, 体积小, 重量轻, 驱动端口输出, 易于控制。

The motor can be easily controlled with integrated driver but small volume, light weight and driver port output.

★齿轮箱无刷电机系列

(BLDC motor with gearbox)

精密型、传动型齿轮箱可选; 行星齿轮箱、正齿轮箱可选; 不同承载能力、不同减速比可选; 直齿、斜齿可选; 可按照客户要求优化定制。

Precision and transmission gearboxes are optional; planetary gearboxes and spur gearboxes are optional; different carrying capacity and deceleration ratio are optional; straight and helical teeth are optional. Also can be designed and manufactured with customized request



标准伺服电机

Servo Motor

特性:

◆功率范围:50W~1500W;

Power range:30W~1500W

◆绕组可支持电压:24VDC 到 240VAC;

The winding supports the voltage:24VDC to 240VAC;

◆功率密度高,体积小;

High power density, small volume

◆低齿槽效应,低噪音和振动;

Low cogging torque, low noise and vibration

◆效率高,温升小;

High efficiency, low temperature rise

◆高精度控制;

High precision control

◆可配置多种类型编码器;

Multiple types of encoders can be configured

◆高防护等级,可达IP65;

High protection grade, up to IP65;

◆可定制/选配。

出轴、绕组、连接至、制动器、编码器、轴端密封、温度传感器。

Customizable/optional

Shaft, winding, connection to, brake, encoder, shaft end

seal, temperature sensor.

命名规则Numbering Information

FL 60 SV 40—48V—30 A E B—JX 20—01

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①外型尺寸Frame Size:60mm

②系列号Series:SV为标准伺服电机, SV: Servo motor

③电机功率系列 Motor power series

④工作电压Operating voltage:48V

⑤电机额定转速Nominal Speed:30×100=3000rpm

⑥编码器类型:E为Encoder, R为Resolver

Encoder type: E: ptical encode, R: Resolver

⑦制动器:B为带制动器,空白为不带制动器

Brake: B: with brake, blank: without brake

⑧减速器厂家产品简称Reducer manufacturers products

⑨减速比ratio:20:1

⑩派生型号derived type

闭环步进电机

Closed-Loop Stepper Motor

特性 Feature:

◆闭环步进,精度高,响应快;

Closed-loop stepper motor, high precision, fast response

◆大扭矩,高效率,低发热;

High torque, high efficiency, low heating

◆低振动和噪音,平稳性高;

Low vibration and noise, high stability

◆长寿命,高可靠。

Long life, high reliability

命名规则Numbering Information

FL 42 SC 03—01

① ② ③ ④

①外型尺寸Frame Size:28mm

②系列号Series: SC为闭环步进电机, SC: Closed-loop Stepper Motor.

③电机保持转矩motor holding torque:除以10即为电机保持转矩,03表示转矩为0.3N.m.Divided by 10, 03 means the holding torque is 0.3 N.m

④派生型号derived type

一体化步进伺服电机Integrated stepper motor

一体化伺服电机是将电机、伺服驱动器集成为一体,减少了驱动器所占空间,免除了电机与驱动器之间的连接电缆,降低了电线之间的电磁干扰,增加了系统的易用性和可靠性。

The integrated servo motor integrates the motor and servo driver, reduces the space occupied by the driver, eliminates the connection cable between the motor and the driver, reduces the electromagnetic interference between the wires, and increases the ease of use and reliability of the system.





闭环无刷电机

Closed-Loop BLDC Motor

特性Feature:

◆功率范围:30W~750W;

Power range:30W~750W

◆绕组可支持电压:24VDC 到 240VAC;

The winding supports the voltage:24VDC to 240VAC;

◆速度控制范围广, 转矩波动小, 可满足低速大扭矩需求;

Wide speed control range, small torque fluctuation, it can

meet the requirements of low speed and high torque.

◆过载能力强;

Strong overload capacity;

◆低噪音和振动;

Low noise and vibration

◆效率高, 温升小;

High efficiency, low temperature rise;

◆可配置多种类型编码器;

Multiple types of encoders can be configured

◆高防护等级, 可达IP65;

High protection grade, up to IP65;

◆可定制/选配。

出轴、绕组、连接至、制动器、编码器、轴端密封、温度传感器。

Customizable/optional

Shaft, winding, connection to, brake, encoder, shaft end

seal, temperature sensor.

命名规则Numbering Information:

FL 42 SVA 01—48V—30 A E B—JX 20—01

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①外型尺寸Frame Size:28mm

②系列号Series:SVA为分体闭环无刷电机, SVA:

Closed-loop brushless DC motor

③电机功率系列Motor power series

④工作电压Operating voltage:48V

⑤电机额定转速Nominal Speed:30×100=3000rpm

⑥编码器类型:E为光编, M为磁编, R为旋转变压器

Encoder type: E: optical encoder, M: Magnetic encoder, R:

Resolver

⑦制动器:B为带制动器, 空白为不带制动器

Brake: B: with brake, blank: without brake

⑧减速器厂家产品简称Reducer manufacturers products

⑨减速比Ratio:20:1

⑩派生型号Derived type

一体化无刷伺服电机Integrated brushless DC motor

一体化伺服电机是将电机、伺服驱动器集成于一体, 减少了

驱动器所占空间, 免除了电机与驱动器之间的连接电缆, 降低了电线之间的电磁干扰, 增加了系统的易用性和可靠性。

The integrated servo motor integrates the motor and servo driver, reduces the space occupied by the driver, eliminates the connection cable between the motor and the driver, reduces the electromagnetic interference between the wires, and increases the ease of use and reliability of the system.

无框电机

Frameless Motor

我司无框电机具有高效、运行平稳、寿命长和安装简单方便的特点。如需定制化服务请与我们联系, 以便准确了解您的需求, 设计新式定制电机以满足您应用系统的独特需求。

Our frameless motor has the characteristics of high efficiency, stable operation, long life and simple and convenient installation. If you need customized services, please contact us to accurately understand your needs and design a new customized motor to meet the unique needs of your application system.

无框电机一般由定子总成和转子总成两部分组成。

定子总成包含定子铁芯、嵌入定子铁芯的铜绕组和 PCB 电路板, PCB 电路板作为绕组过线和 hall 传感器固定使用。hall 传感器可以感应转子位置, 为控制系统提供位置信号。hall 传感器信号端口可由接插端子引出。为提高定子总成的可靠性和使用寿命, 定子总成采用灌封胶进行了真空灌封。

转子总成通常由导磁环和永磁体组成。永磁体由根据具体工况采用对应的方

式固定在导磁环上。永磁体材料的选择将取决于应用要求, 可包括钕铁硼或钕铁硼。

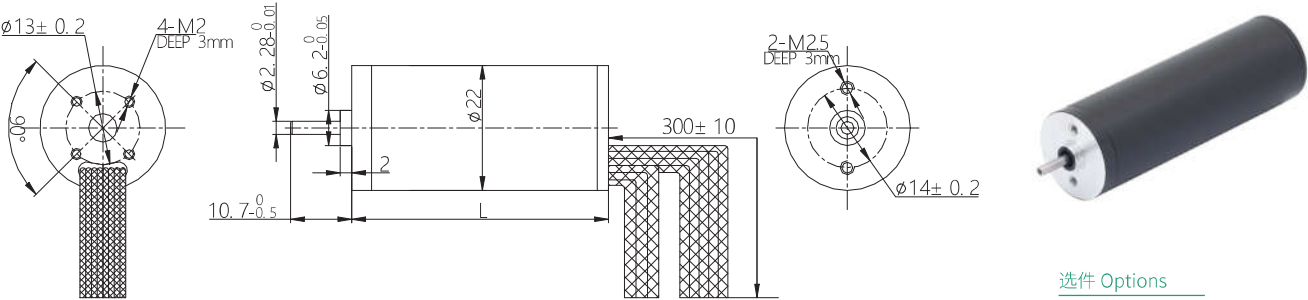
Frameless motors generally consist of two parts: a stator assembly and a rotor assembly.

The stator assembly includes a stator core, a copper winding embedded in the stator core, and a PCB circuit board. The PCB circuit board is used as a winding wire and a hall sensor. The hall sensor can sense the rotor position and provide position signals for the control system. The hall sensor signal port can be led out by plug-in terminals. In order to improve the reliability and service life of the stator assembly, the stator assembly is vacuum potted with potting glue.

The rotor assembly is usually composed of a magnetic ring and permanent magnets. The permanent magnet is fixed on the permeable ring in a corresponding manner according to specific working conditions. The choice of permanent magnet material will depend on the application requirements and can include samarium cobalt or neodymium iron boron.

● 机械尺寸

(Dimensions)



选件 Options

 Connector
接插件

 Gearbox
齿轮箱

● 特性概要

(General Specifications)

● 接线说明

(Electric Connection)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	5N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	360VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1007 AWG28	蓝色 (Blue)	霍尔电源正 (Vcc)
	黄色 (Yellow)	霍尔 U (Hu)
	棕色 (Brown)	霍尔 V (Hv)
	红色 (Red)	霍尔 W (Hw)
	绿色 (Green)	霍尔电源负 (GND)
UL1007 AWG26	红色 (Red)	U相 (Phase U)
	棕色 (Brown)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

● 电性能

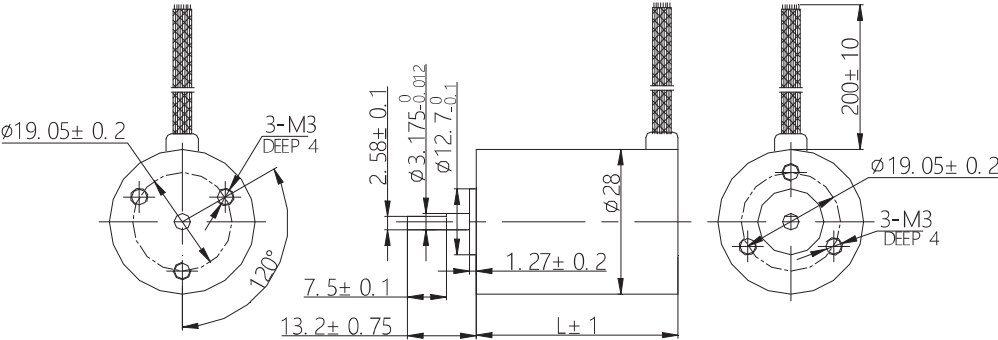
(Electrical Specifications)

	单位 (Unit)	FL22RBL45-24V-4604A	FL22RBL70-24V-3515A
极数 (Number of poles)		8	
相数 (Number of phases)		3	
额定电压 (Rated voltage)	VDC	24	
额定转矩 (Rated torque)	mN.m	8	20
连续运行转矩 (Continuous stall torque)	mN.m	9.6	24
额定速度 (Rated speed)	RPM	4600	3800
额定功率 (Rated power)	W	3.8	8
峰值转矩 (Peak torque)	mN.m	24	60
峰值电流 (Peak current)	A	1.1	2.0
线电阻 (Line to line resistance)	ohms@20°C	23	11.6
线电感 (Line to line inductance)	mH	6.2	4.3
转矩常数 (Torque constant)	mN.m/A	29.7	35.8
反电势 (Back EMF)	Vrms/KRPM	2.2	2.65
转动惯量 (Rotor inertia)	g.cm ²	0.66	1.32
机身长度 (Motor length) L	mm	45	68
重量 (Weight)	Kg	0.07	0.12

FL28BL Series

常规无刷电机
Regular BLDC Motor

● 机械尺寸
(Dimensions)



选件 Options



● 特性概要
(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	10N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明
(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1007 AWG26	黄色 (Yellow)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	橙色 (Orange)	霍尔 V (Hv)
	棕色 (Brown)	霍尔 W (Hw)
	白色 (White)	霍尔电源负 (GND)
UL1007 AWG26	绿色 (Green)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

● 电性能
(Electrical Specifications)

	单位 (Unit)	FL28BL28-15V-8006AF	FL28BL38	FL28BL77-24V-3116AF
极数 (Number of poles)		4		
相数 (Number of phases)		3		
额定电压 (Rated voltage)	VDC	15	24	
额定转矩 (Rated torque)	mN.m	5	14	50
连续运行转矩 (Continuous stall torque)	mN.m	6	17	60
额定速度 (Rated speed)	RPM	8000	10000	4000
额定功率 (Rated power)	W	4	15	21
峰值转矩 (Peak torque)	mN.m	15	42	150
峰值电流 (Peak current)	A	1.1	2.5	4.1
线电阻 (Line to line resistance)	ohms@20°C	8.2	4.2	4.2
线电感 (Line to line inductance)	mH	2.3	1.69	2.3
转矩常数 (Torque constant)	mN.m/A	14.3	16.9	37.4
反电势 (Back EMF)	Vrms/KRPM	1.06	1.25	2.77
转动惯量 (Rotor inertia)	g.cm ²	2.35	3.69	10.98
机身长度 (Motor length) L	mm	28	38	77
重量 (Weight)	Kg	0.06	0.082	0.28

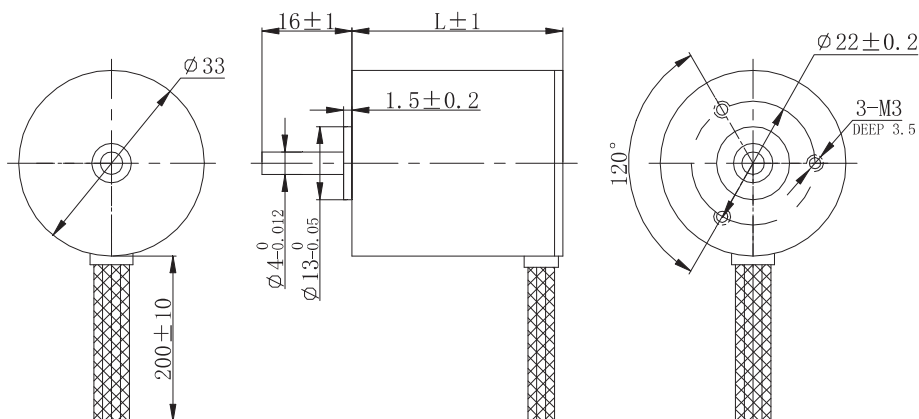
FL33BL Series

常规无刷电机
Regular BLDC Motor



机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	10N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100M Ω , 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1007 AWG26	黄色 (Yellow)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	橙色 (Orange)	霍尔 V (Hv)
	棕色 (Brown)	霍尔 W (Hw)
	白色 (White)	霍尔电源负 (GND)
UL1007 AWG26	绿色 (Green)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

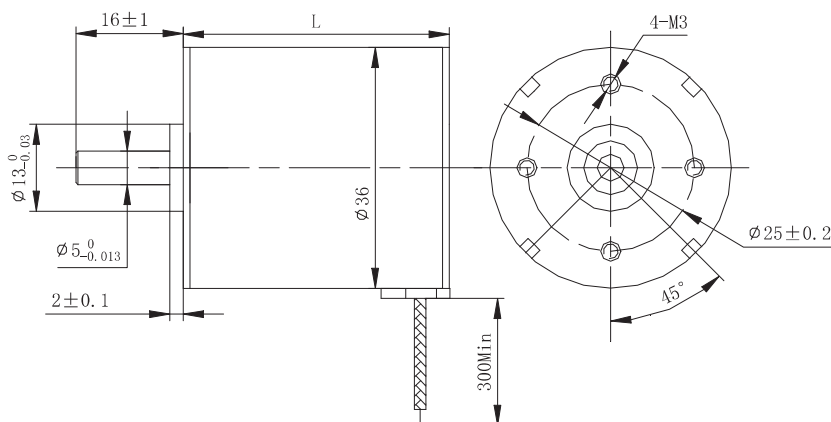
电性能

(Electrical Specifications)

	单位 (Unit)	FL33BL38-24V-3007A	FL33BL80-24V-7840A-S	FL33BL80-48V-10040AS
极数 (Number of poles)		4		
相数 (Number of phases)		3		
额定电压 (Rated voltage)	VDC	24	24	48
额定转矩 (Rated torque)	mN.m	22	50	40
连续运行转矩 (Continuous stall torque)	mN.m	26	60	48
额定速度 (Rated speed)	RPM	3000	7800	10000
额定功率 (Rated power)	W	7	40	40
峰值转矩 (Peak torque)	mN.m	66	150	120
峰值电流 (Peak current)	A	1.5	5.6	2.9
线电阻 (Line to line resistance)	ohms@20°C	14.2	0.86	2.3
线电感 (Line to line inductance)	mH	7	0.55	1.45
转矩常数 (Torque constant)	mN.m/A	46.3	27	41.8
反电势 (Back EMF)	Vrms/KRPM	3.43	2.0	3.1
转动惯量 (Rotor inertia)	g.cm ²	7.95	23.55	23.55
机身长度 (Motor length) L	mm	38	80	80
重量 (Weight)	Kg	0.085	0.2	0.2

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100M Ω , 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1061 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1061 AWG24	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

● 电性能

(Electrical Specifications)

	单位 (Unit)	FL36RBL540-24V-4818A	FL36RBL557-24V-4524A
极数 (Number of poles)		8	
相数 (Number of phases)		3	
额定电压 (Rated voltage)	VDC	24	
额定转矩 (Rated torque)	mN.m	36	50
连续运行转矩 (Continuous stall torque)	mN.m	43	60
额定速度 (Rated speed)	RPM	4800	4500
额定功率 (Rated power)	W	18	24
峰值转矩 (Peak torque)	mN.m	108	150
峰值电流 (Peak current)	A	3.4	3.8
线电阻 (Line to line resistance)	ohms@20°C	2.4	2
线电感 (Line to line inductance)	mH	2.1	2.0
转矩常数 (Torque constant)	mN.m/A	32.4	39.8
反电势 (Back EMF)	Vrms/KRPM	2.4	2.95
转动惯量 (Rotor inertia)	g.cm ²	14	24
机身长度 (Motor length) L	mm	40	55
重量 (Weight)	Kg	0.16	0.25

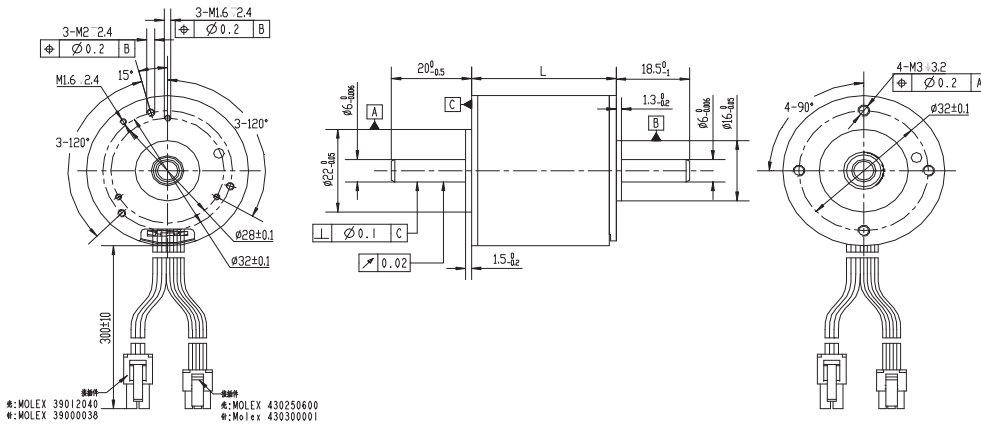
FL40BL Series

常规无刷电机
Regular BLDC Motor



机械尺寸

(Dimensions)



选件 Options



特性概要

(General Specifications)

绕组连接方式 (Winding Type)	三角形 (Delta connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	preloaded
轴向间隙 (Axial Play)	0.15mm@9N
最大径向负载 (Max radial force)	15N 距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	5N
介电强度 (Dielectric Strength)	500VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class F

接线说明

(Electric Connection)

Pin No	引出线型号 Type	引出线颜色 Color	功能 Functions
5	UL1332 AWG26 MOLEX 430250600	绿色 (Green)	霍尔电源正 (Vcc)
1		黄色 (Yellow)	霍尔 U (Hu)
2		棕色 (Brown)	霍尔 V (Hv)
3		灰色 (Gray)	霍尔 W (Hw)
4	UL1332 AWG20 MOLEX 39012040	蓝色 (Blue)	霍尔电源负 (GND)
1		红色 (Red)	U相 (Phase U)
2		黑色 (Black)	V相 (Phase V)
3		白色 (White)	W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL40BL26-12V-9644B	FL40BL26-24V-10357B	FL40BL36-18V-8260B	FL40BL36-36V-8776B
极数 (Number of poles)		14			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	12	24	18	36
额定转矩 (Rated torque)	mN.m	43.3	52.8	68.7	83.4
连续运行转矩 (Continuous stall torque)	mN.m	52	63	82	100
额定速度 (Rated speed)	RPM	9660	10300	8230	8740
额定功率 (Rated power)	W	44	57	60	76
峰值转矩 (Peak torque)	mN.m	120	158	206	250
峰值电流 (Peak current)	A	13.4	9.35	12.3	7.5
线电阻 (Line to line resistance)	ohms@20°C	0.227	0.501	0.34	0.84
线电感 (Line to line inductance)	mH	0.109	0.39	0.18	0.64
转矩常数 (Torque constant)	mN.m/A	8.95	16.9	16.7	33.5
反电势 (Back EMF)	Vrms/KRPM	0.66	1.25	1.23	2.48
转动惯量 (Rotor inertia)	g.cm ²	10.5	10.5	24.2	24.2
机身长度 (Motor length) L	mm	26	26	36	36
重量 (Weight)	Kg	0.17	0.17	0.24	0.24

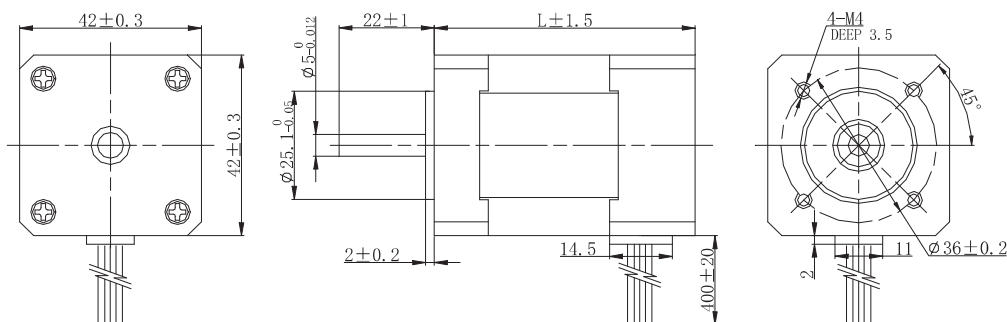
FL42BLA Series

常规无刷电机
Regular BLDC Motor



机械尺寸

(Dimensions)



选件 Options



特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	28N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1430 AWG20	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL42BLA01	FL42BLA02	FL42BLA03	FL42BLA04
极数 (Number of poles)		10			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	24			
额定转矩 (Rated torque)	mN.m	70	160	260	360
连续运行转矩 (Continuous stall torque)	mN.m	81	190	300	410
额定速度 (Rated speed)	RPM	3000	3000	3000	3000
额定功率 (Rated power)	W	22	50	81	113
峰值转矩 (Peak torque)	mN.m	210	480	780	1080
峰值电流 (Peak current)	A	3.9	8	13	17.5
线电阻 (Line to line resistance)	ohms@20°C	2.6	1.1	0.7	0.5
线电感 (Line to line inductance)	mH	1.83	0.96	0.58	0.44
转矩常数 (Torque constant)	mN.m/A	0.054	0.06	0.06	0.062
反电势 (Back EMF)	Vrms/KRPM	4.06	4.5	4.5	4.6
转动惯量 (Rotor inertia)	g.cm ²	48	101	154	207
机身长度 (Motor length) L	mm	40.3	60.3	80.3	100.3
重量 (Weight)	Kg	0.26	0.46	0.65	0.85

FL42BLB Series

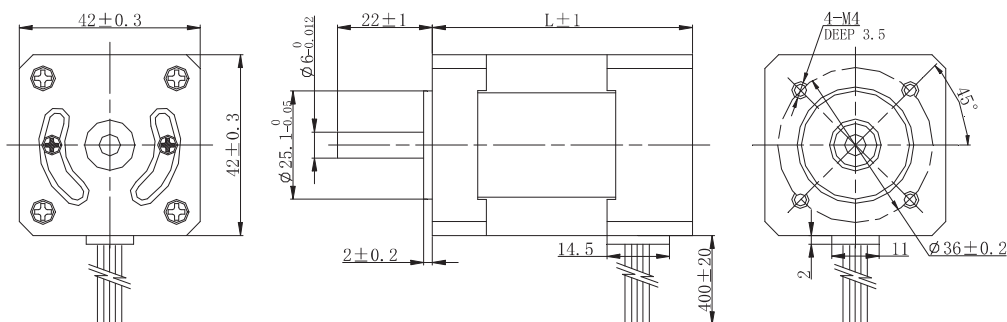
常规无刷电机 (烧结磁钢)
Regular BLDC Motor (Sintered Magnet)



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	28N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1430 AWG20	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

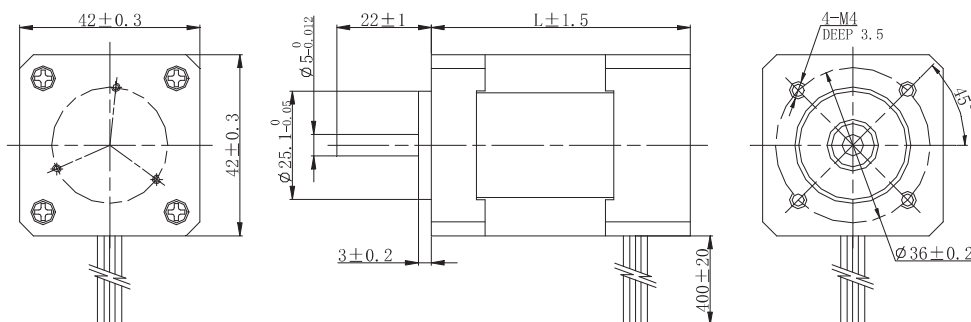
电性能

(Electrical Specifications)

	单位 (Unit)	FL42BLB01	FL42BLB02	FL42BLB03	FL42BLB04
极数 (Number of poles)		6			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	24			
额定转矩 (Rated torque)	mN.m	64	170	300	440
连续运行转矩 (Continuous stall torque)	mN.m	74	200	350	490
额定速度 (Rated speed)	RPM	3000	3000	3000	3000
额定功率 (Rated power)	W	20	53.5	94	138
峰值转矩 (Peak torque)	mN.m	192	510	900	1320
峰值电流 (Peak current)	A	3.5	8.5	14.5	21
线电阻 (Line to line resistance)	ohms@20°C	4	1.05	0.54	0.4
线电感 (Line to line inductance)	mH	2.1	0.75	0.46	0.3
转矩常数 (Torque constant)	mN.m/A	0.057	0.06	0.062	0.0624
反电势 (Back EMF)	Vrms/KRPM	4.2	4.5	4.57	4.6
转动惯量 (Rotor inertia)	g.cm ²	80	100	120	140
机身长度 (Motor length) L	mm	40.3	60.3	80.3	100.3
重量 (Weight)	Kg	0.4	0.6	0.8	1

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	三角形 (Delta connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	28N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1430 AWG20	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

● 电性能

(Electrical Specifications)

	单位 (Unit)	FL42BLS01	FL42BLS02	FL42BLS03	FL42BLS04
极数 (Number of poles)		8			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	24			
额定转矩 (Rated torque)	mN.m	62.5	125	185	250
连续运行转矩 (Continuous stall torque)	mN.m	75	150	220	300
额定速度 (Rated speed)	RPM	4000	4000	4000	4000
额定功率 (Rated power)	W	26	52.5	77.5	105
峰值扭矩 (Peak torque)	mN.m	190	380	560	750
峰值电流 (Peak current)	A	5.75	10.4	15.1	21.2
线电阻 (Line to line resistance)	ohms@20°C	1.5	0.8	0.43	0.3
线电感 (Line to line inductance)	mH	2.1	1.2	0.71	0.5
转矩常数 (Torque constant)	mN.m/A	0.033	0.0366	0.037	0.0354
反电势 (Back EMF)	Vrms/KRPM	2.45	2.71	2.74	2.62
转动惯量 (Rotor inertia)	g.cm ²	24	48	72	96
机身长度 (Motor length) L	mm	40.3	60.3	80.3	100.3
重量 (Weight)	Kg	0.30	0.45	0.65	0.80

FL42RBL Series

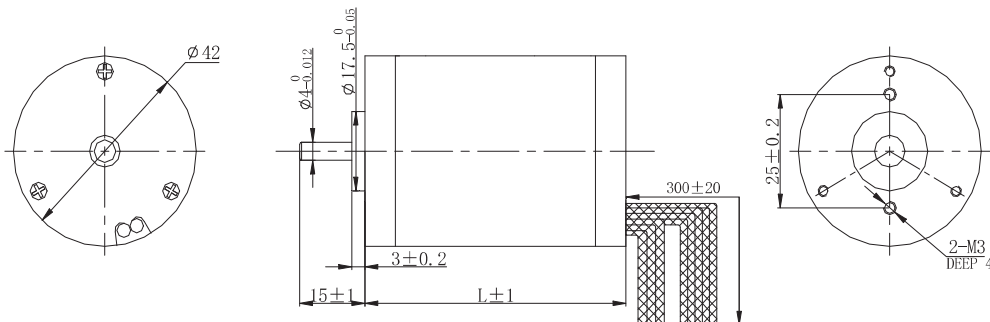
常规无刷电机
Regular BLDC Motor



FULLING MOTOR

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	10N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1007 AWG26	蓝色 (Blue)	霍尔电源正 (Vcc)
	黄色 (Yellow)	霍尔 U (Hu)
	棕色 (Brown)	霍尔 V (Hv)
	红色 (Red)	霍尔 W (Hw)
	绿色 (Green)	霍尔电源负 (GND)
UL1007 AWG22	红色 (Red)	U相 (Phase U)
	棕色 (Brown)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

● 电性能

(Electrical Specifications)

	单位 (Unit)	FL42RBL30-24V-4009A-P	FL42RBL60-24V-4030A-P	FL42RBL85-24V-4060A-P	FL42RBL93-24V-6375A-P
极数 (Number of poles)		8			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	24			
额定转矩 (Rated torque)	mN.m	20	56	150	115
连续运行转矩 (Continuous stall torque)	mN.m	24	68	180	138
额定速度 (Rated speed)	RPM	4000	4200	4000	6300
额定功率 (Rated power)	W	8.4	25	62	76
峰值转矩 (Peak torque)	mN.m	60	170	450	350
峰值电流 (Peak current)	A	1.5	4.2	11.2	11.5
线电阻 (Line to line resistance)	ohms@20°C	5.9	1.6	0.71	0.325
线电感 (Line to line inductance)	mH	5.1	1.94	0.86	0.36
转矩常数 (Torque constant)	mN.m/A	39.8	41.04	40.5	30.6
反电势 (Back EMF)	Vrms/KRPM	2.95	3.04	3.0	2.27
转动惯量 (Rotor inertia)	g.cm ²	15.6	33	84	94
机身长度 (Motor length) L	mm	30	60	85	93
重量 (Weight)	Kg	0.25	0.4	0.7	0.8

FL57BLA Series

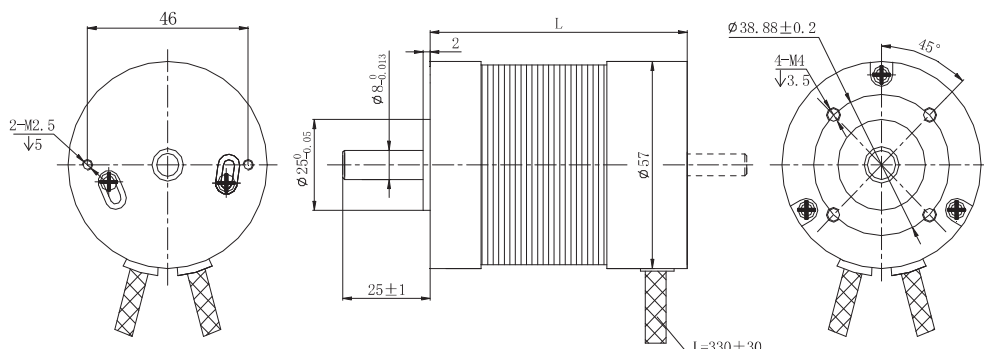
常规无刷电机 (烧结磁钢)
Regular BLDC Motor(Sintered Magnet)



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器



刹车

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	115N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1332 AWG18	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL57BLA(S)01	FL57BLA(S)02	FL57BLA(S)03	FL57BLA(S)04
极数 (Number of poles)		6			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	36			
额定转矩 (Rated torque)	N.m	0.2	0.4	0.6	0.8
连续运行转矩 (Continuous stall torque)	N.m	0.24	0.48	0.72	0.96
额定速度 (Rated speed)	RPM	4000	4000	4000	4000
额定功率 (Rated power)	W	83	166	249	332
峰值转矩 (Peak torque)	N.m	0.6	1.2	1.8	2.4
峰值电流 (Peak current)	A	9.1	17.9	28.2	34.3
线电阻 (Line to line resistance)	ohms@20°C	0.87	0.38	0.25	0.21
线电感 (Line to line inductance)	mH	1	0.55	0.3	0.25
转矩常数 (Torque constant)	N.m/A	0.066	0.067	0.064	0.07
反电势 (Back EMF)	Vrms/KRPM	4.9	5	4.7	5.2
转动惯量 (Rotor inertia)	g.cm ²	275	375	510	693
机身长度 (Motor length) L	mm	53.6	73.6	93.6	113.6
重量 (Weight)	Kg	0.76	1	1.25	1.52

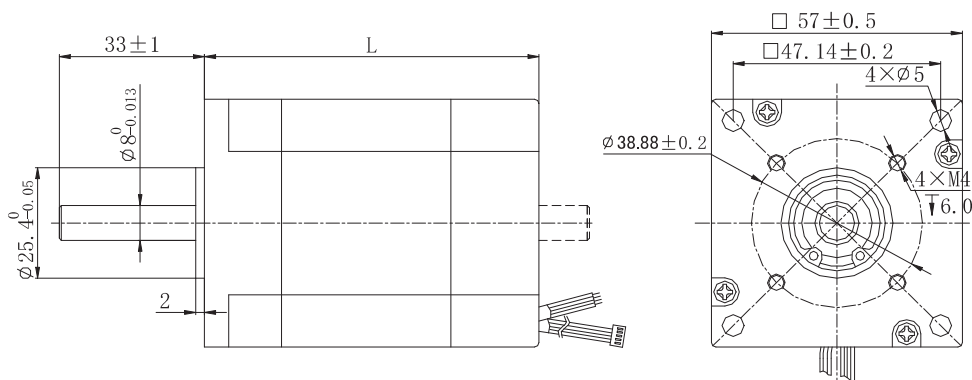
FL57BLB Series

常规无刷电机
Regular BLDC Motor

FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	115N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1061 AWG28	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1430 AWG18	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL57BLB40	FL57BLB60	FL57BLB80
极数 (Number of poles)			8	
相数 (Number of phases)			3	
额定电压 (Rated voltage)	VDC		36	
额定转矩 (Rated torque)	N.m	0.3	0.45	0.6
连续运行转矩 (Continuous stall torque)	N.m	0.36	0.54	0.72
额定速度 (Rated speed)	RPM	3000	3000	3000
额定功率 (Rated power)	W	94	141	188
峰值转矩 (Peak torque)	N.m	0.9	1.35	1.8
峰值电流 (Peak current)	A	12.3	18.2	23.8
线电阻 (Line to line resistance)	ohms@20°C	1.2	0.8	0.5
线电感 (Line to line inductance)	mH	1.2	0.8	0.6
转矩常数 (Torque constant)	N.m/A	0.076	0.076	0.077
反电势 (Back EMF)	Vrms/KRPM	5.6	5.6	5.7
转动惯量 (Rotor inertia)	g.cm ²	210	320	430
机身长度 (Motor length) L	mm	76	96	116
重量 (Weight)	Kg	0.8	1.0	1.2

FL70BLS Series

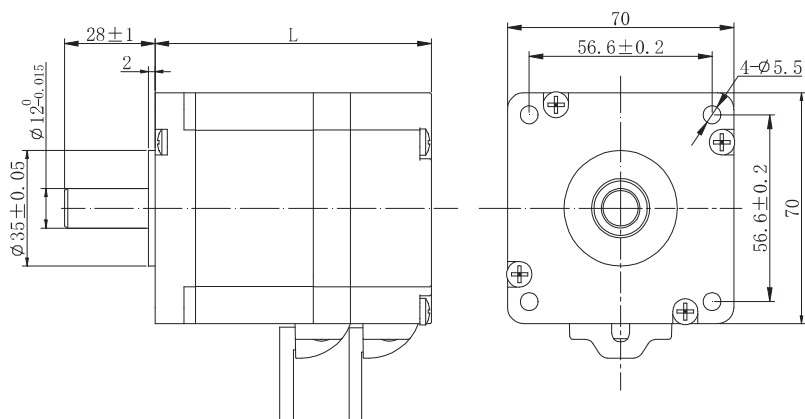
常规无刷电机
Regular BLDC Motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器



刹车

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	115N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL2464 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL2464 AWG16	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

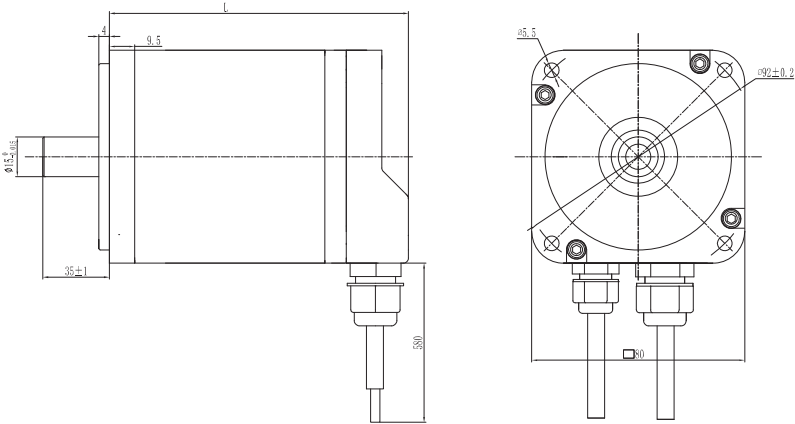
	单位 (Unit)	FL70BLS01	FL70BLS02	FL70BLS03
极数 (Number of poles)			8	
相数 (Number of phases)			3	
额定电压 (Rated voltage)	VDC		48	
额定转矩 (Rated torque)	N.m	0.5	1.0	1.5
连续运行转矩 (Continuous stall torque)	N.m	0.6	1.2	1.8
额定速度 (Rated speed)	RPM	3000	3000	3000
额定功率 (Rated power)	W	157	314	471
峰值转矩 (Peak torque)	N.m	1.5	3.0	4.5
峰值电流 (Peak current)	A	13.0	26	38
线电阻 (Line to line resistance)	ohms@20°C	0.6	0.3	0.22
线电感 (Line to line inductance)	mH	1.4	0.7	0.55
转矩常数 (Torque constant)	N.m/A	0.12	0.12	0.12
反电势 (Back EMF)	Vrms/KRPM	9.0	9.0	9.0
转动惯量 (Rotor inertia)	g.cm ²	200	400	600
机身长度 (Motor length) L	mm	86	116	136
重量 (Weight)	Kg	1.3	2.1	2.9

FL80BLS Series

常规无刷电机
Regular BLDC Motor



机械尺寸 (Dimensions)



选件 Options

Connector
接插件

Gearbox
齿轮箱

Encoder
编码器

Brake
刹车

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	三角形 (Delta)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	115N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL2464 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL2517 AWG16 或UL10393 AWG12	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能 (Electrical Specifications)

	单位 (Unit)	FL80BLS84	FL80BLS105	FL80BLS120	FL80BLS140
极数 (Number of poles)		8			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	48			
额定转矩 (Rated torque)	N.m	0.9	1.7	2.2	3
连续运行转矩 (Continuous stall torque)	N.m	1.08	2.04	2.64	3.96
额定速度 (Rated speed)	RPM	3000	3000	3000	3000
额定功率 (Rated power)	W	280	530	700	950
峰值转矩 (Peak torque)	N.m	2.7	5.1	6.6	9.9
峰值电流 (Peak current)	A	23	45	61	89
线电阻 (Line to line resistance)	ohms@20°C	0.25	0.10	0.07	0.057
线电感 (Line to line inductance)	mH	1.3	0.6	0.4	0.3
转矩常数 (Torque constant)	N.m/A	0.118	0.113	0.109	0.111
反电势 (Back EMF)	Vrms/KRPM	8.7	8.4	8.1	8.2
转动惯量 (Rotor inertia)	g.cm ²	544	1020	1360	1900
机身长度 (Motor length) L	mm	84	105	120	140
重量 (Weight)	Kg	1.6	2	2.5	2.9

FL86BLC Series

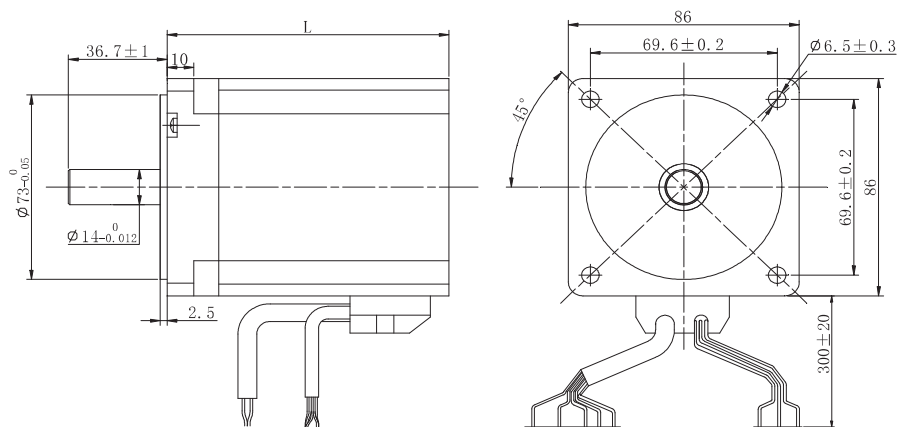
常规无刷电机
Regular BLDC Motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器



刹车

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	220N距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG24	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1332 AWG16	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL86BLC64	FL86BLC77	FL86BLC105	FL86BLC125
极数 (Number of poles)		8			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	48			
额定转矩 (Rated torque)	N.m	0.4	0.8	1.6	2.22
连续运行转矩 (Continuous stall torque)	N.m	0.48	0.96	1.92	2.66
额定速度 (Rated speed)	RPM	3000	3000	3000	3000
额定功率 (Rated power)	W	130	250	500	700
峰值转矩 (Peak torque)	N.m	1.2	2.4	4.8	6.66
峰值电流 (Peak current)	A	10	17	36	51
线电阻 (Line to line resistance)	ohms@20°C	1	0.34	0.14	0.1
线电感 (Line to line inductance)	mH	1.4	0.6	0.36	0.24
转矩常数 (Torque constant)	N.m/A	0.122	0.149	0.135	0.131
反电势 (Back EMF)	Vrms/KRPM	9	11	10	9.7
转动惯量 (Rotor inertia)	g.cm ²	400	800	1600	2400
机身长度 (Motor length) L	mm	64	77	105	125
重量 (Weight)	Kg	1.5	1.85	2.7	4

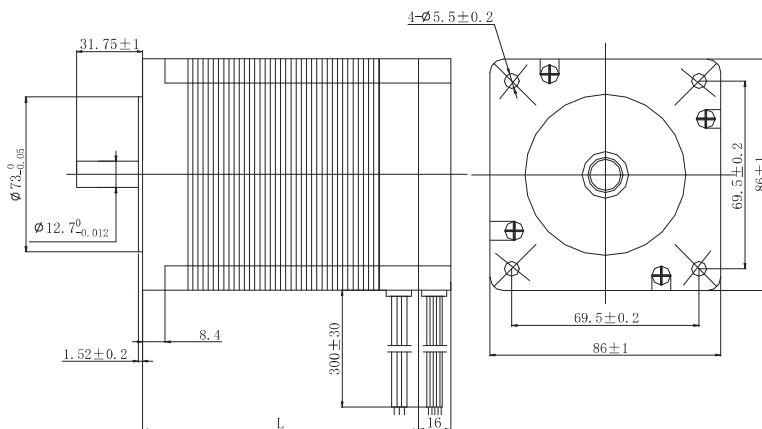
FL86BLS Series

常规无刷电机
Regular BLDC Motor



机械尺寸

(Dimensions)



选件 Options



特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	220N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	60N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1332 AWG22	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1332 AWG18	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL86BLS58	FL86BLS71	FL86BLS84	FL86BLS98	FL86BLS125
极数 (Number of poles)		8				
相数 (Number of phases)		3				
额定电压 (Rated voltage)	VDC	48				
额定转矩 (Rated torque)	N.m	0.35	0.7	1.05	1.4	2.1
连续运行转矩 (Continuous stall torque)	N.m	0.42	0.84	1.26	1.68	2.52
额定速度 (Rated speed)	RPM	3000	3000	3000	3000	3000
额定功率 (Rated power)	W	110	220	330	440	660
峰值转矩 (Peak torque)	N.m	1.05	2.1	3.15	4.2	6.3
峰值电流 (Peak current)	A	9.5	17.5	25	33.5	50
线电阻 (Line to line resistance)	ohms@20°C	0.9	0.34	0.2	0.16	0.1
线电感 (Line to line inductance)	mH	2.6	1	0.66	0.5	0.31
转矩常数 (Torque constant)	N.m/A	0.116	0.122	0.127	0.127	0.128
反电势 (Back EMF)	Vrms/KRPM	8.6	9	9.4	9.4	9.5
转动惯量 (Rotor inertia)	g.cm ²	400	800	1200	1600	2400
机身长度 (Motor length) L	mm	56	70	84	96	123
重量 (Weight)	Kg	1.6	2.12	2.64	3.15	4.2

FL125BL Series

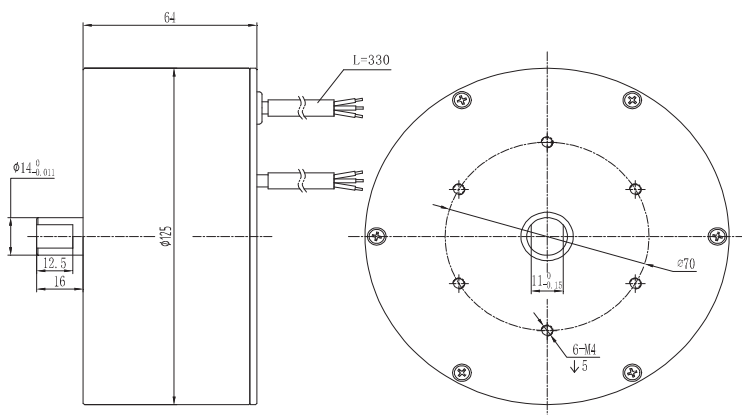
直驱无刷电机
Direct Drive BLDC Motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



编码器



刹车

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.025mm@460g
轴向间隙 (Axial Play)	0.08mm@4000g
最大径向负载 (Max radial force)	220N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	60N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1332 AWG22	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL3135 AWG14	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL125BL60
极数 (Number of poles)		28
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	60
额定转矩 (Rated torque)	N.m	6.8
连续运行转矩 (Continuous stall torque)	N.m	8.16
额定速度 (Rated speed)	RPM	480
额定功率 (Rated power)	W	340
峰值转矩 (Peak torque)	N.m	40
峰值电流 (Peak current)	A	46
线电阻 (Line to line resistance)	ohms@20°C	1.1
线电感 (Line to line inductance)	mH	2.4
转矩常数 (Torque constant)	N.m/A	0.88
反电势 (Back EMF)	Vrms/KRPM	65
转动惯量 (Rotor inertia)	g.cm ²	2100
机身长度 (Motor length) L	mm	64
重量 (Weight)	Kg	2.9

FL38BLG Series

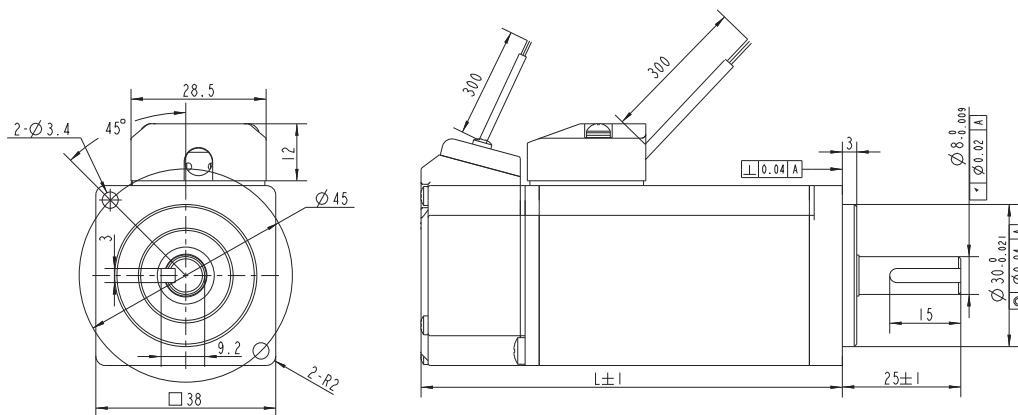
高性能防水无刷电机
High Performance and Water Proof BLDC motor



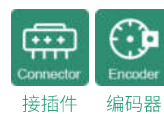
FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件 编码器

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
径向负载 (Max radial force)	69N @ 14mm from the flange
轴向负载 (Max axial force)	59N
绝缘等级 (Insulation Class)	Class F
防护等级 (Protection level)	IP65
使用环境温度 (Temperature)	-20°C ~ +50°C
使用环境湿度 (Relative humidity)	≤90%RH (无凝露) (No dewing)
存储环境 (Storage Condition)	-20°C ~ +85°C, ≤85%RH (无凝露) (No dewing)
安装环境 (Installation environment)	远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m Far away active gas, Combustible gas, oil drop, ash

接线说明

(Electric Connection)

Pin No	引出线型号 Type	引出线颜色 Color	功能 Functions
5	AWG26	绿色 (Green)	霍尔电源正 (Vcc)
1		黄色 (Yellow)	霍尔 U (Hu)
2		棕色 (Brown)	霍尔 V (Hv)
3		灰色 (Gray)	霍尔 W (Hw)
4		蓝色 (Blue)	霍尔电源负 (GND)
1	AWG19(20)	黄色 (Yellow)	U相 (Phase U)
2		红色 (Red)	V相 (Phase V)
3		黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

类型 (Model)	单位 (Unit)	FL38BLG05		FL38BLG10	
额定功率 (Rated power)	Pn	W	50	100	
额定电压 (Rated voltage)	Un	VAC/VDC	220	48	220 48
额定转速 (Rated speed)	nn	RPM	3000	3000	3000 3000
额定转矩 (Rated torque)	Tn	N·m	0.16	0.16	0.32 0.32
额定电流 (Rated current)	In	Arms	0.2	1.3	0.4 22.5
峰值转矩 (Peak torque)	Tm	N·m	0.48	0.48	0.96 0.96
峰值电流 (Peak current)	Im	Arms	0.6	3.9	1.2 7.5
电阻 (Line to line resistance)	RL	ohm	248	5.8	118 2.8
电感 (Line to line inductance)	LL	mH	160	3.8	88 2.1
反电势系数 (BackEMF)	Ke	V/Krpm	54.5	8.5	54.5 8.5
转矩系数 (Torque constant)	Kt	N.m/A	0.80	0.123	0.80 0.128
转动惯量 (Rotor inertia)	Jm0	Kg.cm ²	0.024	0.024	0.04 0.04
转动惯量带制动器 (Rotor inertia with brake)	Jm1	Kg.cm ²	0.034	0.034	0.05 0.05
极数 (Number of poles)			10	10	10 10
机身长度 (Motor length)	L1	mm	72		88
机身长度带制动器 (Motor length with brake)	L2	mm	106		122
重量 (Weight)		Kg	0.4		0.5
重量带制动器 (Weight with brake)		Kg	0.65		0.75

FL60BLG Series

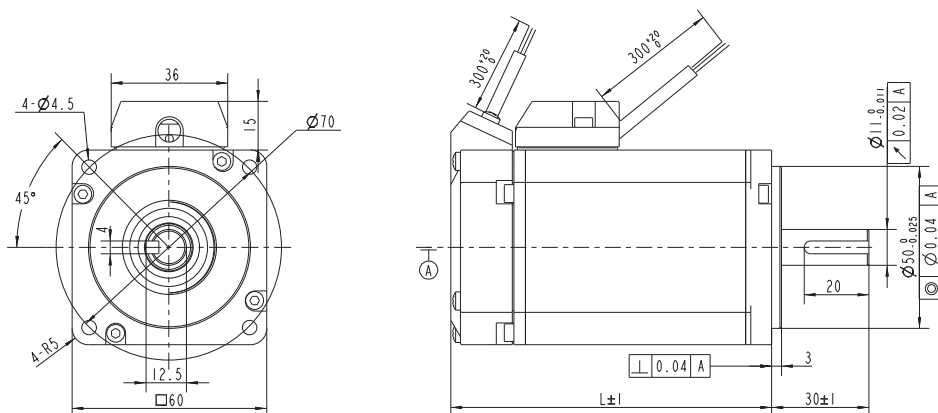
高性能防水无刷电机
High Performance and Water Proof BLDC motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器



刹车

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
径向负载 (Max radial force)	245N @ 20mm from the flange
轴向负载 (Max axial force)	98N
绝缘等级 (Insulation Class)	Class F
防护等级 (Protection level)	IP65
使用环境温度 (Temperature)	-20°C~+50°C
使用环境湿度 (Relative humidity)	≤90%RH (无凝露) (No dewing)
存储环境 (Storage Condition)	-20°C~+85°C, ≤85%RH (无凝露) (No dewing)
安装环境 (Installation environment)	远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m Far away active gas, Combustible gas, oil drop, ash

接线说明

(Electric Connection)

Pin No	引出线型号 Type	引出线颜色 Color	功能 Functions
5	AWG26	绿色 (Green)	霍尔电源正 (Vcc)
1		黄色 (Yellow)	霍尔 U (Hu)
2		棕色 (Brown)	霍尔 V (Hv)
3		灰色 (Gray)	霍尔 W (Hw)
4		蓝色 (Blue)	霍尔电源负 (GND)
1	AWG20(16)	黄色 (Yellow)	U相 (Phase U)
2		红色 (Red)	V相 (Phase V)
3		黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

类型 (Model)	单位 (Unit)	FL60 BLG20		FL60 BLG40	
额定功率 (Rated power)	Pn	W	200	400	
额定电压 (Rated voltage)	Un	VAC/VDC	48	220	48 220
额定转速 (Rated speed)	nn	RPM	3000	3000	3000 3000
额定转矩 (Rated torque)	Tn	N·m	0.64	0.64	1.27 1.27
额定电流 (Rated current)	In	A	6	1.2	12 2.4
峰值扭矩 (Peak torque)	Tm	N·m	1.92	1.92	3.81 3.81
峰值电流 (Peak current)	Im	A	18	3.6	36 7.2
电阻 (Line to line resistance)	RL	Ω	0.38	9.35	0.23 3.46
电感 (Line to line inductance)	LL	mH	0.68	17	0.3 7.14
反电势系数 (BackEMF)	Ke	V/Krpm	6.5	32	6.5 32
转矩系数 (Torque constant)	Kt	Nm/A	0.107	0.53	0.107 0.53
转动惯量 (Rotor inertia)	Jm0	Kg.cm ²	0.15	0.15	0.25 0.25
转动惯量带制动器 (Rotor inertia with brake)	Jm1	Kg.cm ²	0.15	0.15	0.25 0.25
极数 (Number of poles)			10	10	10 10
机身长度 (Motor length)	L1	mm	86.5	79.5	106 99
机身长度带制动器 (Motor length with brake)	L2	mm	123	116	142.5 135.5
重量 (Weight)		Kg	0.95	0.9	1.35 1.3
重量带制动器 (Weight with brake)		Kg	1.35	1.3	1.85 1.8

FL100BLG Series

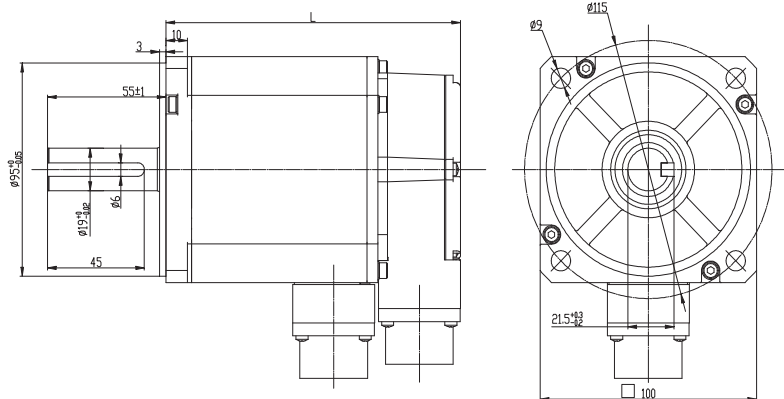
高性能防水无刷电机
High Performance and Water Proof BLDC motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器



刹车

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
径向负载 (Max radial force)	490N @ 20mm from the flange
轴向负载 (Max axial force)	196N
绝缘等级 (Insulation Class)	Class F
防护等级 (Protection level)	IP65
使用环境温度 (Temperature)	-20°C~+50°C
使用环境湿度 (Relative humidity)	≤90%RH (无凝露) (No dewing)
存储环境 (Storage Condition)	-20°C~+85°C, ≤85%RH (无凝露) (No dewing)
安装环境 (Installation environment)	远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m Far away active gas, Combustible gas, oil drop, ash

接线说明

(Electric Connection)

Pin No	引出线型号 Type	引出线颜色 Color	功能 Functions
5	AWG26	绿色 (Green)	霍尔电源正 (Vcc)
1		黄色 (Yellow)	霍尔 U (Hu)
2		棕色 (Brown)	霍尔 V (Hv)
3		灰色 (Gray)	霍尔 W (Hw)
4		蓝色 (Blue)	霍尔电源负 (GND)
1	具体规格见	黄色 (Yellow)	U相 (Phase U)
2	图纸定义	红色 (Red)	V相 (Phase V)
3		黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

	单 位 (Unit)	FL100BLG100		FL100BLG150	
极数 (Number of poles)		10			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	310	48	310	48
额定转矩 (Rated torque)	N.m	3.18	3.18	4.77	4.77
连续运行转矩 (Continuous stall torque)	N.m	3.81	3.81	5.72	5.72
额定速度 (Rated speed)	RPM	3000	3000	3000	3000
额定功率 (Rated power)	W	1000	1000	1500	1500
峰值转矩 (Peak torque)	N.m	7	7	10.5	10.5
峰值电流 (Peak current)	A	13.7	84.3	20.6	121
线电阻 (Line to line resistance)	ohms@20°C	0.82	0.022	0.54	0.015
线电感 (Line to line inductance)	mH	7.4	0.2	5.2	0.15
转矩常数 (Torque constant)	Nm/A	0.51	0.083	0.51	0.087
反电势 (Back EMF)	Vrms/KRPM	38	6.18	38	6.48
转动惯量 (Rotor inertia)	kg.cm2	1.3	1.3	1.84	1.84
机身长度 (Motor length) L	mm	137	142	159	164
重量 (Weight)	kg	3.73	3.8	4.7	4.8

FL110BLG Series

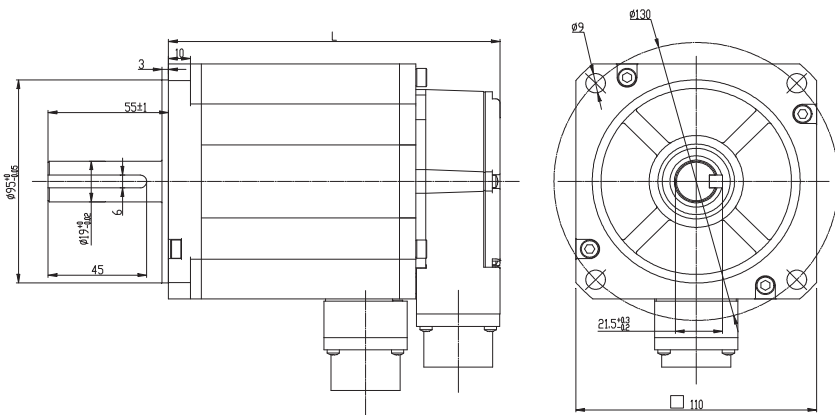
高性能防水无刷电机
High Performance and Water Proof BLDC motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器



刹车

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
径向负载 (Max radial force)	630N @ 20mm from the flange
轴向负载 (Max axial force)	315N
绝缘等级 (Insulation Class)	Class F
防护等级 (Protection level)	IP65
使用环境温度 (Temperature)	-20°C~+50°C
使用环境湿度 (Relative humidity)	≤90%RH (无凝露) (No dewing)
存储环境 (Storage Condition)	-20°C~+85°C, ≤85%RH (无凝露) (No dewing)
安装环境 (Installation environment)	远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m Far away active gas, Combustible gas, oil drop, ash

接线说明

(Electric Connection)

Pin No	引出线型号 Type	引出线颜色 Color	功能 Functions
5	AWG26	绿色 (Green)	霍尔电源正 (Vcc)
1		黄色 (Yellow)	霍尔 U (Hu)
2		棕色 (Brown)	霍尔 V (Hv)
3		灰色 (Gray)	霍尔 W (Hw)
4		蓝色 (Blue)	霍尔电源负 (GND)
1	具体规格见	黄色 (Yellow)	U相 (Phase U)
2	图纸定义	红色 (Red)	V相 (Phase V)
3		黑色 (Black)	W相 (Phase W)

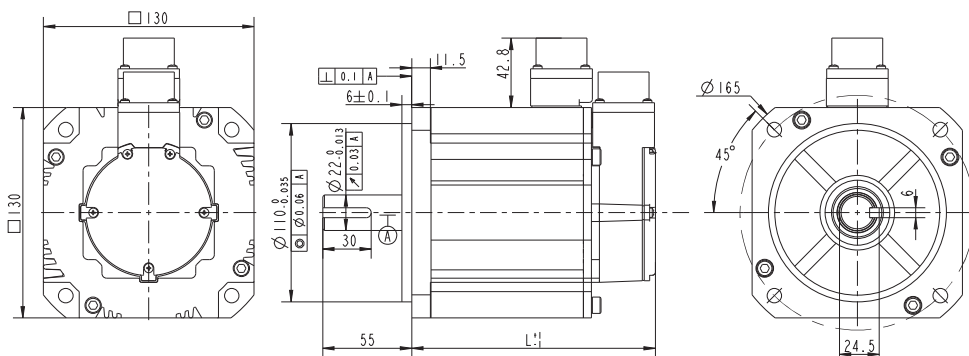
电性能

(Electrical Specifications)

	单 位 (Unit)	FL110BLG150		FL110BLG200	
极数 (Number of poles)		10			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	310	48	310	48
额定转矩 (Rated torque)	N.m	4.77	4.77	6.37	6.37
连续运行转矩 (Continuous stall torque)	N.m	5.72	5.72	7.64	7.64
额定速度 (Rated speed)	RPM	3000	3000	3000	3000
额定功率 (Rated power)	W	1500	1500	2000	2000
峰值转矩 (Peak torque)	N.m	14.3	14.3	19.1	19.1
峰值电流 (Peak current)	A	28	166	37.5	214
线电阻 (Line to line resistance)	ohms@20°C	0.36	0.01	0.29	0.009
线电感 (Line to line inductance)	mH	5.6	0.16	4.8	0.145
转矩常数 (Torque constant)	Nm/A	0.51	0.086	0.51	0.089
反电势 (Back EMF)	Vrms/KRPM	38.1	6.35	38.1	6.63
转动惯量 (Rotor inertia)	kg.cm2	3.1	3.1	4.1	4.1
机身长度 (Motor length) L	mm	151.5	156.5	168.5	173.5
重量 (Weight)	kg	5	5.2	6.7	6.9

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器



刹车

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
径向负载 (Max radial force)	490N @ 20mm from the flange
轴向负载 (Max axial force)	196N
绝缘等级 (Insulation Class)	Class F
防护等级 (Protection level)	IP65
使用环境温度 (Temperature)	-20°C ~ +50°C
使用环境湿度 (Relative humidity)	≤90%RH (无凝露) (No dewing)
存储环境 (Storage Condition)	-20°C ~ +60°C, ≤85%RH (无凝露) (No dewing)
安装环境 (Installation environment)	远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔 ≤1000m Far away active gas, Combustible gas, oil drop, ash

● 接线说明

(Electric Connection)

Pin No	引出线型号 Type	引出线颜色 Color	功能 Functions
5	AWG26	绿色 (Green)	霍尔电源正 (Vcc)
1		黄色 (Yellow)	霍尔 U (Hu)
2		棕色 (Brown)	霍尔 V (Hv)
3		灰色 (Gray)	霍尔 W (Hw)
4		蓝色 (Blue)	霍尔电源负 (GND)
1	具体规格见	黄色 (Yellow)	U相 (Phase U)
2	图纸定义	红色 (Red)	V相 (Phase V)
3		黑色 (Black)	W相 (Phase W)

● 电性能

(Electrical Specifications)

类型 (Model)		单位 (Unit)	FL130BLG200		FL130BLG300	
额定功率 (Rated power)	Pn	W	2000		3000	
额定电压 (Rated voltage)	Un	VAC/VDC	220	48	220	48
额定转速 (Rated speed)	nn	RPM	2000	2000	2000	2000
额定转矩 (Rated torque)	Tn	N·m	9.55	9.55	14.3	14.3
额定电流 (Rated current)	In	Arms	7.8	52.9	11.7	79.3
峰值转矩 (Peak torque)	Tm	N·m	28.65	28.65	42.9	42.9
峰值电流 (Peak current)	Im	Arms	23.4	158.7	35.1	237.9
电阻 (Line to line resistance)	RL	ohm	1.4	0.03	0.84	0.018
电感 (Line to line inductance)	LL	mH	6.8	0.14	4.8	0.1
反电势系数 (BackEMF)	Ke	V/Krpm	81	12	81	12
转矩系数 (Torque constant)	Kt	N.m/A	1.22	0.18	1.22	0.18
转动惯量 (Rotor inertia)	Jm0	Kg.cm ²	14	14	19.9	19.9
转动惯量带制动器 (Rotor inertia with brake)	Jm1	Kg.cm ²	15.2	15.2	20.2	20.2
极数 (Number of poles)			10	10	10	10
机身长度 (Motor length)	L1	mm	150	165	178	193
机身长度带制动器 (Motor length with brake)	L2	mm	178	193	206	221
重量 (Weight)		Kg	7	7.5	11.7	12.7
重量带制动器 (Weight with brake)		Kg	10.5	10	14.2	15.2

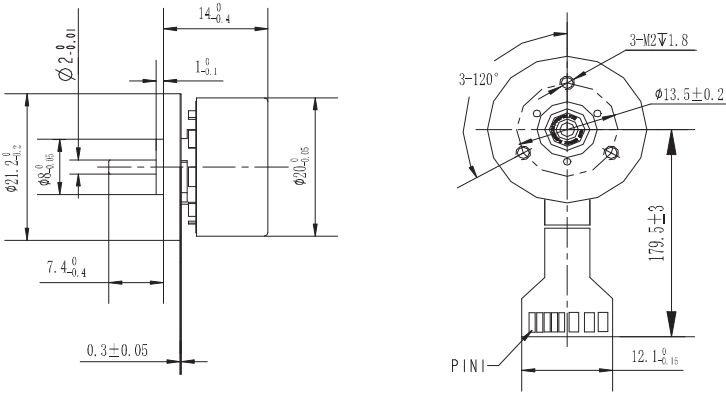
FL20BLW Series

外转子无刷电机
Outer Rotor BLDC Motor

 FULLING MOTOR

● 机械尺寸

(Dimensions)



选件 Options

 Connector
接插件

 Gearbox
齿轮箱

● 特性概要

(General Specifications)

● 接线说明

(Electric Connection)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	5.3N距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	1.8N
介电强度 (Dielectric Strength)	360VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

Pin No	引出线型号 Type	功能 Functions
1	FPC	霍尔电源正 (Vcc)
2		霍尔 W (Hw)
3		霍尔 U (Hu)
4		霍尔 V (Hv)
5		霍尔电源负 (GND)
6		W相 (Phase W)
7		V相 (Phase V)
8		U相 (Phase U)

● 电性能

(Electrical Specifications)

	单位 (Unit)	FL20BLW14-12V-5105A	FL20BLW14-24V-5205A
极数 (Number of poles)		8	
相数 (Number of phases)		3	
额定电压 (Rated voltage)	VDC	12	24
额定转矩 (Rated torque)	mN.m	7.59	7.74
连续运行转矩 (Continuous stall torque)	mN.m	9.1	9.2
额定速度 (Rated speed)	RPM	5170	5220
额定功率 (Rated power)	W	5	5
峰值转矩 (Peak torque)	mN.m	19	20
峰值电流 (Peak current)	A	1.62	0.85
线电阻 (Line to line resistance)	ohms@20°C	7.2	26.1
线电感 (Line to line inductance)	mH	0.62	2.6
转矩常数 (Torque constant)	mN.m/A	12	24
反电势 (Back EMF)	Vrms/KRPM	0.89	1.78
转动惯量 (Rotor inertia)	g.cm ²	5.1	5.1
机身长度 (Motor length)	mm	14	14
重量 (Weight)	g	23	23

FL32BLW Series

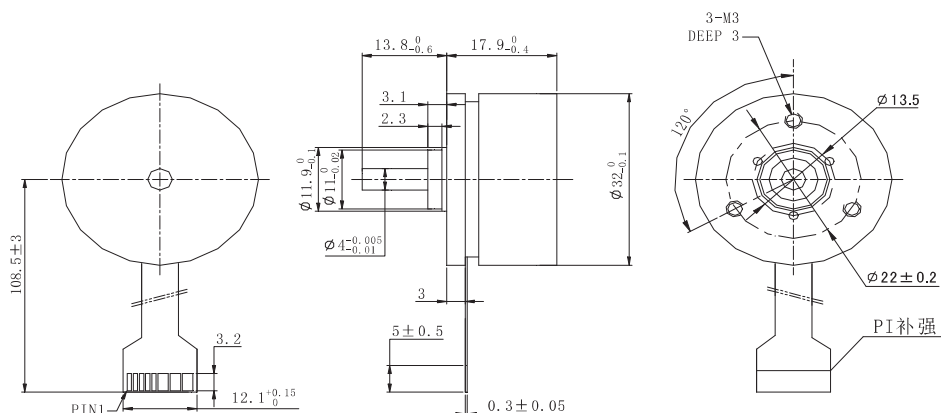
外转子无刷电机 Outer Rotor BLDC Motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件

齿轮箱

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	14N距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	4.8N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

Pin No	引出线型号 Type	功能 Functions
1	FPC	霍尔电源正 (Vcc)
2		霍尔 W (Hw)
3		霍尔 U (Hu)
4		霍尔 V (Hv)
5		霍尔电源负 (GND)
6		W相 (Phase W)
7		V相 (Phase V)
8		U相 (Phase U)

电性能

(Electrical Specifications)

	单位 (Unit)	FL32BLW18 -9V-3706A	FL32BLW18 -12V-4607A	FL32BLW18 -24V-4507A	FL32BLW18 -48V-4808A
极数 (Number of poles)		8			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	9	12	24	48
额定转矩 (Rated torque)	mN.m	29.5	25.1	25.5	24.7
连续运行转矩 (Continuous stall torque)	mN.m	35.4	30.1	30.6	29.6
额定速度 (Rated speed)	RPM	2100	2800	2760	2950
额定功率 (Rated power)	W	6	7	7	8
峰值转矩 (Peak torque)	mN.m	73.8	75.3	76.5	74.1
峰值电流 (Peak current)	A	3.4	3.2	1.7	0.97
线电阻 (Line to line resistance)	ohms@20°C	2.87	3.43	13.7	53
线电感 (Line to line inductance)	mH	1.61	1.87	7.73	27.8
转矩常数 (Torque constant)	mN.m/A	23	24.8	51	96.1
反电势 (Back EMF)	Vrms/KRPM	1.7	1.83	3.77	7.1
转动惯量 (Rotor inertia)	g.cm ²	35	35	35	35
机身长度 (Motor length)	mm	18	18	18	18
重量 (Weight)	g	50	50	50	50

FL32BLWA Series

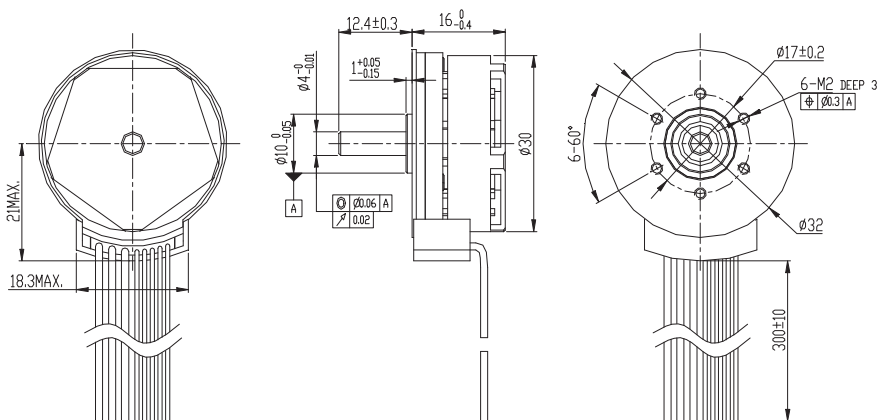
外转子无刷电机
Outer Rotor BLDC Motor



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件 齿轮箱

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	14N距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	4.8N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1061 26AWG	红色 (RED)	霍尔电源正 (Vcc)
	绿色 (GRN)	霍尔 U (Hu)
	蓝色 (BLU)	霍尔 V (Hv)
	灰色 (GRY)	霍尔 W (Hw)
	黑色 (BLK)	霍尔电源负 (GND)
UL1007 20AWG	棕色 (BRN)	W相 (Phase W)
	橙色 (ORG)	V相 (Phase V)
	黄色 (YEL)	U相 (Phase U)

电性能

(Electrical Specifications)

Not available

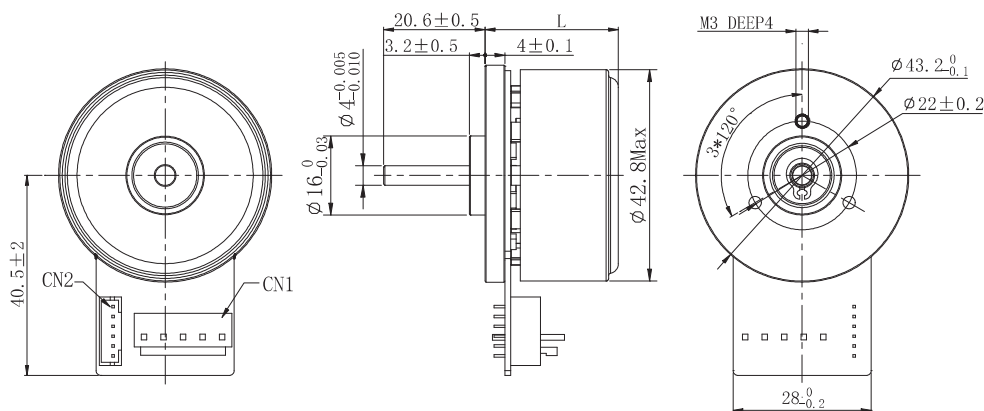
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	单位 (Unit)	FL32BLWA16-9V-3314A	FL32BLWA16-12V-3716A	FL32BLWA16-24V-4118A
极数 (Number of poles)		14		
相数 (Number of phases)		3		
额定电压 (Rated voltage)	VDC	9	12	24
额定转矩 (Rated torque)	mN.m	39.5	40	41
连续运行转矩 (Continuous stall torque)	mN.m	47.4	48	49.2
额定速度 (Rated speed)	RPM	3320	3750	4150
额定功率 (Rated power)	W	14	16	18
峰值转矩 (Peak torque)	mN.m	118.5	120	123
峰值电流 (Peak current)	A	8.61	6.8	3.51
线电阻 (Line to line resistance)	ohms@20°C	0.55	0.88	3.26
线电感 (Line to line inductance)	mH	0.19	0.33	1.29
转矩常数 (Torque constant)	mNm/A	13.8	18.9	35.8
反电势 (Back EMF)	Vrms/KRPM	1.02	1.4	2.65
转动惯量 (Rotor inertia)	g.cm ²	18.3	18.3	18.3
机身长度 (Motor length)	mm	16	16	16
重量 (Weight)	g	58	58	58

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.14mm@450g
最大径向负载 (Max radial force)	20N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100M Ω , 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

接插件型号 Connector Model	Pin位 Pin number	功能 Functions
JST B6B-PH-K-S	Pin 2	霍尔电源正 (Vcc)
	Pin 3	霍尔 U (Hu)
	Pin 4	霍尔 V (Hv)
	Pin 5	霍尔 W (Hw)
	Pin 1/ Pin 6	霍尔电源负 (GND)
JST B5P-VH	Pin 2	U相 (Phase U)
	Pin 3	V相 (Phase V)
	Pin 4	W相 (Phase W)
	Pin 1/ Pin 5	电源负 (GND)

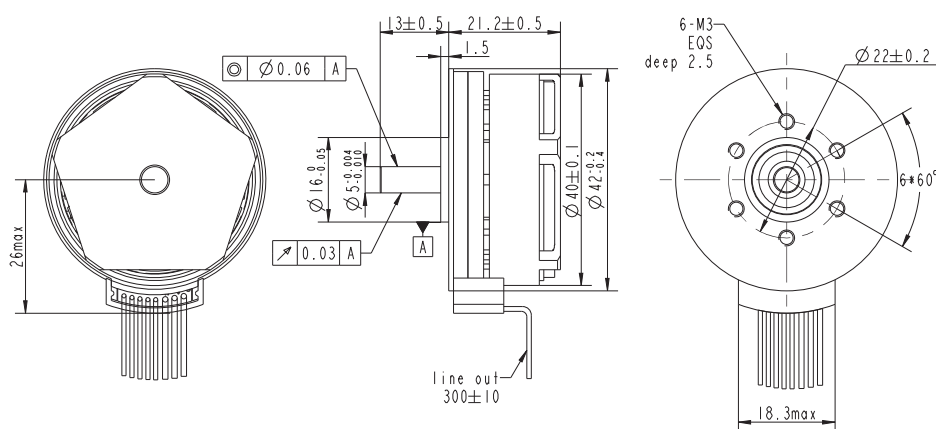
● 电性能

(Electrical Specifications)

	单位 (Unit)	FL45BLW18-24V-7130A	FL45BLW21-24V-6750A	FL45BLW27-24V-6170A
极数 (Number of poles)		16		
相数 (Number of phases)		3		
额定电压 (Rated voltage)	VDC	24		
额定转矩 (Rated torque)	mN.m	50	84	130
连续运行转矩 (Continuous stall torque)	mN.m	60	100	156
额定速度 (Rated speed)	RPM	5000	5260	4840
额定功率 (Rated power)	W	30	50	70
峰值转矩 (Peak torque)	mN.m	150	250	390
峰值电流 (Peak current)	A	4.3	7.4	11
线电阻 (Line to line resistance)	ohms@20°C	1.42	0.72	0.56
线电感 (Line to line inductance)	mH	0.59	0.33	0.27
转矩常数 (Torque constant)	mN.m/A	35.2	34.4	37.1
反电势 (Back EMF)	Vrms/KRPM	2.61	2.55	2.75
转动惯量 (Rotor inertia)	g.cm ²	100	135	180
机身长度 (Motor length) L	mm	18	21.6	27
重量 (Weight)	Kg	0.08	0.12	0.15

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	20N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +55°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1061 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	绿色 (Green)	霍尔 U (Hu)
	蓝色 (Blue)	霍尔 V (Hv)
	灰色 (Grey)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1007 AWG20	棕色 (Brown)	U相 (Phase U)
	橙色 (Orange)	V相 (Phase V)
	黄色 (Yellow)	W相 (Phase W)

● 电性能

(Electrical Specifications)

	单位 (Unit)	FL45BLWH21-24V-4452A-2
极数 (Number of poles)		14
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	24
额定转矩 (Rated torque)	mN.m	112
连续运行转矩 (Continuous stall torque)	mN.m	135
额定速度 (Rated speed)	RPM	4400
额定功率 (Rated power)	W	50
峰值转矩 (Peak torque)	mN.m	336
峰值电流 (Peak current)	A	9
线电阻 (Line to line resistance)	ohms@20°C	0.75
线电感 (Line to line inductance)	mH	0.42
转矩常数 (Torque constant)	mN.m/A	37
反电势 (Back EMF)	Vrms/KRPM	3.1
转动惯量 (Rotor inertia)	g.cm ²	135
机身长度 (Motor length)	mm	21.5
重量 (Weight)	Kg	0.13

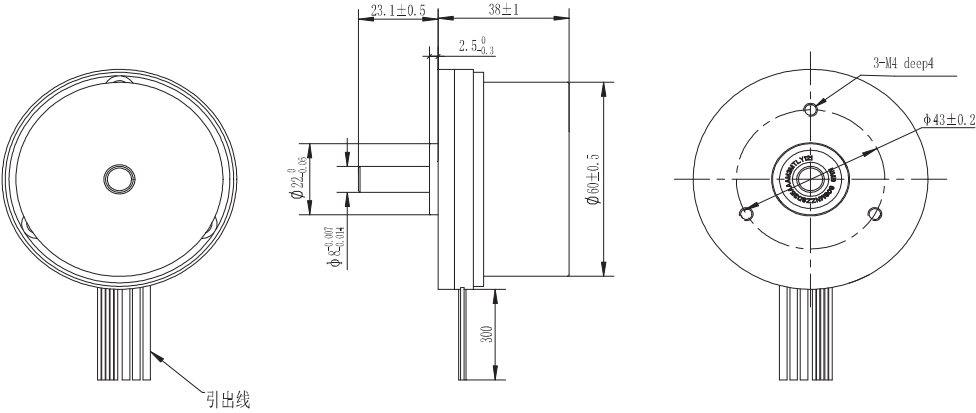
FL60BLW Series

外转子无刷电机
Outer Rotor BLDC Motor

 FULLING MOTOR

● 机械尺寸

(Dimensions)



选件 Options

 Connector
接插件

 Gearbox
齿轮箱

 Encoder
编码器

● 特性概要

(General Specifications)

● 接线说明

(Electric Connection)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.14mm@450g
最大径向负载 (Max radial force)	28N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1332 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1332 AWG18	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

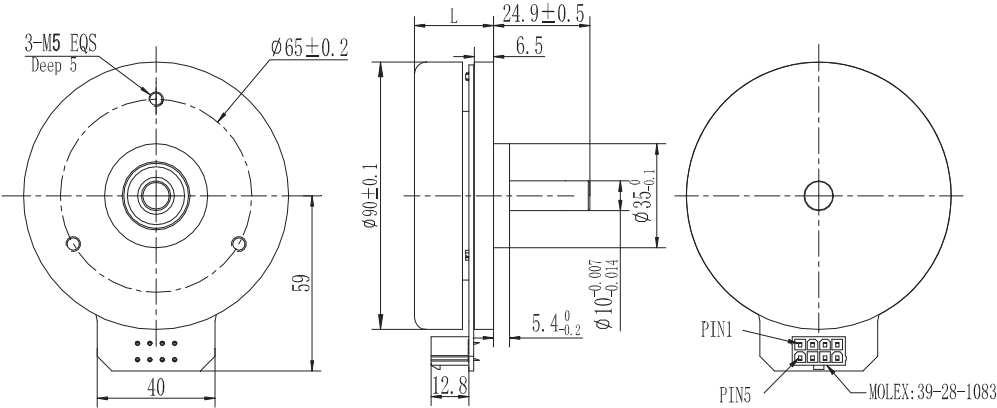
● 电性能

(Electrical Specifications)

	单位 (Unit)	FL60BLW38-24V-37110A-1
极数 (Number of poles)		14
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	24
额定转矩 (Rated torque)	mN.m	290
连续运行转矩 (Continuous stall torque)	mN.m	348
额定速度 (Rated speed)	RPM	3700
额定功率 (Rated power)	W	110
峰值转矩 (Peak torque)	mN.m	870
峰值电流 (Peak current)	A	17.4
线电阻 (Line to line resistance)	ohms@20°C	0.29
线电感 (Line to line inductance)	mH	0.3
转矩常数 (Torque constant)	mN.m/A	50
反电势 (Back EMF)	Vrms/KRPM	3.75
转动惯量 (Rotor inertia)	g.cm ²	1000
机身长度 (Motor length)	mm	38
重量 (Weight)	Kg	0.5

● 机械尺寸

(Dimensions)



选件 Options



● 特性概要

(General Specifications)

● 接线说明

(Electric Connection)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	110N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接插件型号 Connector Model	Pin位 Pin number	功能 Functions
MOLEX: 39-28-1083	PIN3	霍尔电源正 (Vcc)
	PIN1	霍尔 U (Hu)
	PIN2	霍尔 V (Hv)
	PIN5	霍尔 W (Hw)
	PIN6	霍尔电源负 (GND)
	PIN7	U相 (Phase U)
	PIN8	V相 (Phase V)
	PIN4	W相 (Phase W)

● 电性能

(Electrical Specifications)

	单位 (Unit)	FL90BLW27-24V-27130A	FL90BLW40-48V-16170A
极数 (Number of poles)		22	
相数 (Number of phases)		3	
额定电压 (Rated voltage)	VDC	24	48
额定转矩 (Rated torque)	N.m	0.457	0.964
连续运行转矩 (Continuous stall torque)	N.m	0.548	1.157
额定速度 (Rated speed)	RPM	2700	1670
额定功率 (Rated power)	W	130	169
峰值转矩 (Peak torque)	N.m	1.6	3
峰值电流 (Peak current)	A	23	13
线电阻 (Line to line resistance)	ohms@20°C	0.21	0.65
线电感 (Line to line inductance)	mH	0.19	0.9
转矩常数 (Torque constant)	mN.m/A	70.2	241
反电势 (Back EMF)	Vrms/KRPM	5.2	17.9
转动惯量 (Rotor inertia)	g.cm ²	3000	5000
机身长度 (Motor length) L	mm	27	40
重量 (Weight)	Kg	0.6	1

FL60BLW42-EN

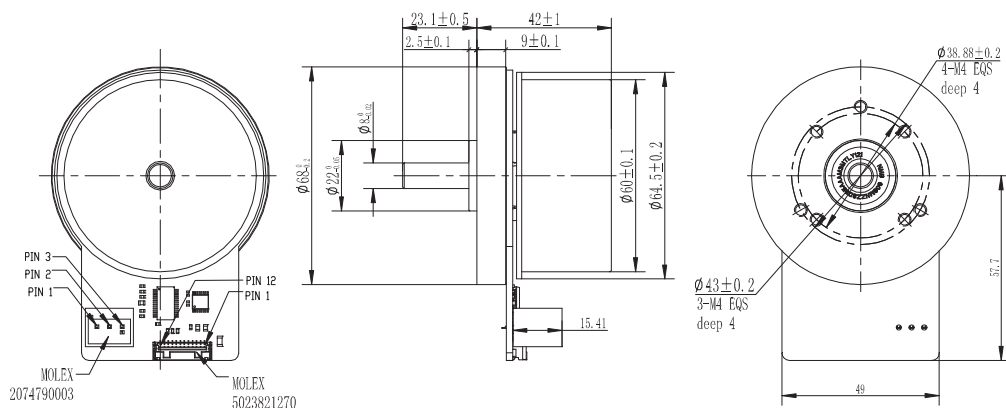
内置编码器外转子无刷电机
Outer Rotor BLDC Motor with Integrated Encoder



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



编码器

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	28N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	15N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

接插件型号 Connector Mode	Pin位 Pin number	功能 Functions
Molex 2074790003	Pin 1	W相 (Phase W)
	Pin 2	V相 (Phase V)
	Pin 3	U相 (Phase U)
Molex 5023821270	Pin 1	霍尔电源正 (Vcc)
	Pin 2	编码器 (A-)
	Pin 3	编码器 (A+)
	Pin 4	编码器 (B-)
	Pin 5	编码器 (B+)
	Pin 6	编码器 (Z-)
	Pin 7	编码器 (Z+)
	Pin 8	霍尔 U (Hu)
	Pin 9	霍尔 V (Hv)
	Pin 10	霍尔 W (Hw)
	Pin 11	编码器屏蔽线(PE)
	Pin 12	霍尔电源负 (GND)

电性能

(Electrical Specifications)

	单位 (Unit)	FL60BLW42-24V-37110A-EN
极数 (Number of poles)		14
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	24
额定转矩 (Rated torque)	mN.m	290
连续运行转矩 (Continuous stall torque)	mN.m	348
额定速度 (Rated speed)	RPM	3500
额定功率 (Rated power)	W	106
峰值扭矩 (Peak torque)	mN.m	870
峰值电流 (Peak current)	A	17
线电阻 (Line to line resistance)	ohms@20°C	0.23
线电感 (Line to line inductance)	mH	0.22
转矩常数 (Torque constant)	mN.m/A	50
反电势 (Back EMF)	Vrms/KRPM	4
转动惯量 (Rotor inertia)	g.cm ²	1000
机身长度 (Motor length)	mm	42
重量 (Weight)	Kg	0.48kg

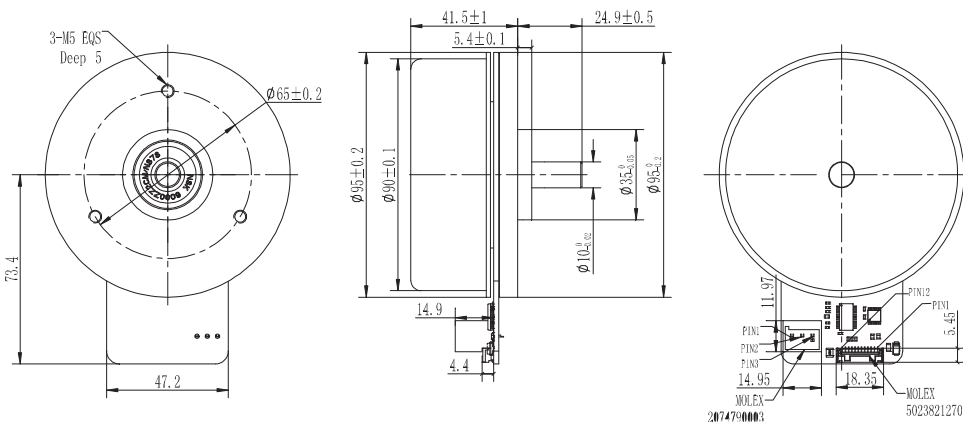
FL90BLW42-EN

内置编码器外转子无刷电机
Outer Rotor BLDC Motor with Integrated Encoder

FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件 齿轮箱

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	110N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

接插件型号 Connector Mode	Pin位 Pin number	功能 Functions
Molex 2074790003	Pin 1	W相 (Phase W)
	Pin 2	V相 (Phase V)
	Pin 3	U相 (Phase U)
Molex 5023821270	Pin 1	霍尔电源正 (Vcc)
	Pin 2	编码器 (A-)
	Pin 3	编码器 (A+)
	Pin 4	编码器 (B-)
	Pin 5	编码器 (B+)
	Pin 6	编码器 (Z-)
	Pin 7	编码器 (Z+)
	Pin 8	霍尔 U (Hu)
	Pin 9	霍尔 V (Hv)
	Pin 10	霍尔 W (Hw)
	Pin 11	编码器屏蔽线(PE)
	Pin 12	霍尔电源负 (GND)

电性能

(Electrical Specifications)

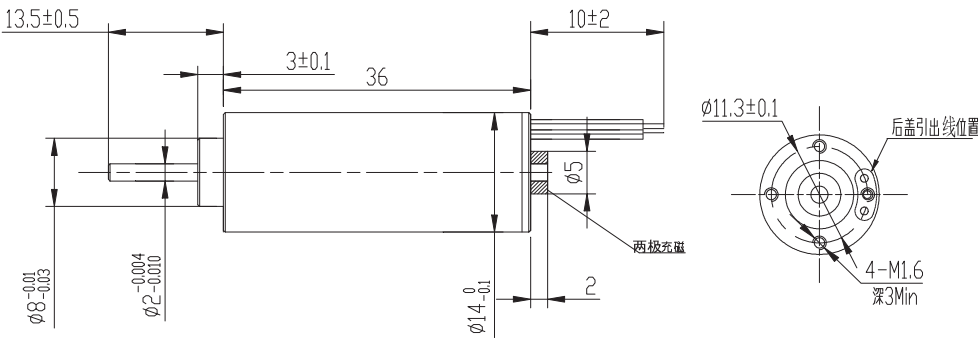
	单位 (Unit)	FL90BLW42-48V-16170A-EN
极数 (Number of poles)		22
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	48
额定转矩 (Rated torque)	mN.m	964
连续运行转矩 (Continuous stall torque)	mN.m	1156
额定速度 (Rated speed)	RPM	1670
额定功率 (Rated power)	W	169
峰值扭矩 (Peak torque)	mN.m	3000
峰值电流 (Peak current)	A	13
线电阻 (Line to line resistance)	ohms@20°C	0.64
线电感 (Line to line inductance)	mH	0.65
转矩常数 (Torque constant)	mN.m/A	230
反电势 (Back EMF)	Vrms/KRPM	17.7
转动惯量 (Rotor inertia)	g.cm ²	5000
机身长度 (Motor length)	mm	41.5
重量 (Weight)	Kg	1.1kg

FL14SBL Series

无齿无槽电机
Slotless BLDC Motor



● 机械尺寸 (Dimensions)



选件 Options

Connector

Gearbox

接插件 齿轮箱

● 特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B
径向间隙 (Radial Play)	0.025mm@4N
轴向间隙 (Axial Play)	0.3mm@4N
最大径向负载 (Max radial force)	15N距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	5N

● 接线说明 (Electric Connection)

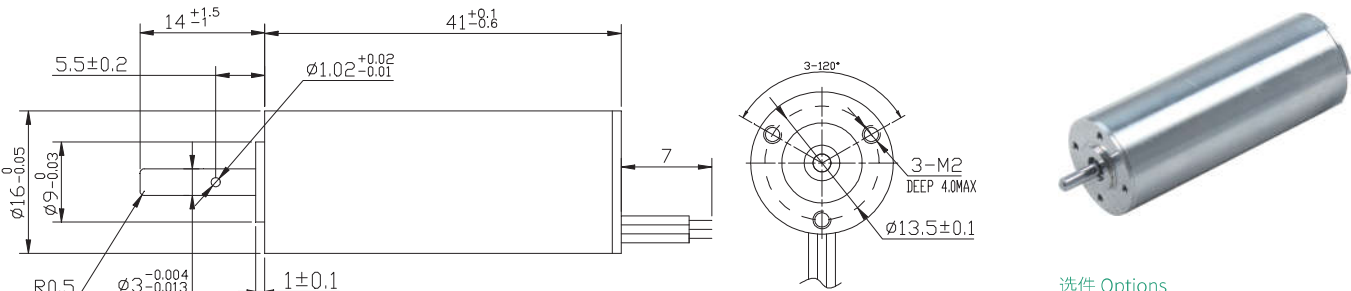
线型号 Type	线颜色 Color	功能 Functions
UL1332 AWG26	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

● 电性能 (Electrical Specifications)

	单位 (Unit)	FL14SBL45-6V-12000
极数 (Number of poles)		2
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	6
空载转速 (No load speed)	RPM	11000
空载电流 (No load current)	A	0.1
额定转矩 (Rated torque)	mN.m	3.6
额定电流 (Rated current)	A	0.8
额定速度 (Rated speed)	RPM	10000
额定功率 (Rated power)	W	3.8
额定效率 (Rated efficiency)	%	70
峰值转矩 (Peak torque)	mN.m	10.8
峰值电流 (Peak current)	A	2.4
线电阻 (Line to line resistance)	ohms@20℃	1.3
线电感 (Line to line inductance)	mH	0.06
转矩常数 (Torque constant)	mNm/A	5.27
反电势 (Back EMF)	Vrms/Krpm	0.39
外壳-环境热阻 (Housing - Ambient thermal resistance)	K/W	7.32
电机热时间常数 (Motor thermal time constant)	S	869
绕组最高允许温度 (Max temperature of winding)	℃	155
电气时间常数 (Electrical time constant)	ms	0.046

● 机械尺寸

(Dimensions)



选件 Options

Connector
接插件

Gearbox
齿轮箱

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B
径向间隙 (Radial Play)	0.02mm@4N
轴向间隙 (Axial Play)	0.3mm@4N
最大径向负载 (Max radial force)	15N距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	5N

● 接线说明

(Electric Connection)

线型号 Type	线颜色 Color	功能 Functions
UL1430 AWG26	黄色(Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色(Black)	W相 (Phase W)

● 电性能

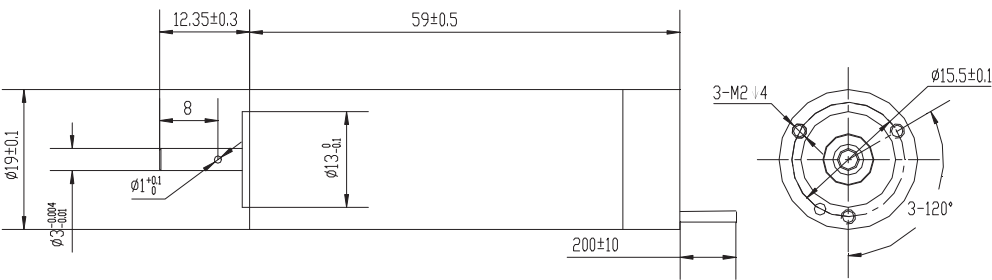
(Electrical Specifications)

	单位 (Unit)	FL16SBL40-32V-400-21A-5	FL16SBL40-6V-12000-X
极数 (Number of poles)		2	2
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	32	6
空载转速 (No load speed)	RPM	40000	12000
空载电流 (No load current)	A	0.2	0.2
额定转矩 (Rated torque)	mN.m	6	2.5
额定电流 (Rated current)	A	1	0.5
额定速度 (Rated speed)	RPM	35000	10000
额定功率 (Rated power)	W	22	2.6
额定效率 (Rated efficiency)	%	80	75
峰值扭矩 (Peak torque)	mN.m	18	7.5
峰值电流 (Peak current)	A	2.4	1.5
线电阻 (Line to line resistance)	ohms@20°C	2.25	1.4
线电感 (Line to line inductance)	mH	0.13	0.07
转矩常数 (Torque constant)	mNm/A	7.43	4.7
反电势 (Back EMF)	Vrms/Krpm	0.55	0.35
外壳-环境热阻 (Housing - Ambient thermal resistance)	K/W	8.4	7.2
电机热时间常数 (Motor thermal time constant)	S	762	930
绕组最高允许温度 (Max temperature of winding)	°C	155	155
电气时间常数 (Electrical time constant)	ms	0.057	0.05

FL19SBL Series

无齿无槽电机
Slotless BLDC Motor

机械尺寸 (Dimensions)



选件 Options

 接插件

 齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
介电强度 (Dielectric Strength)	360VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B
径向间隙 (Radial Play)	0.02mm@4N
轴向间隙 (Axial Play)	0.14mm@4N
最大径向负载 (Max radial force)	8N距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	4N

接线说明 (Electric Connection)

线型号 Type	线颜色 Color	功能 Functions
AFR250-SY AWG26	红色(Red)	霍尔电源正(Vcc)
	蓝色(Blue)	霍尔 W (Hw)
	绿色(Green)	霍尔 V (Hv)
	白色(White)	霍尔 U (Hu)
	黑色(Black)	霍尔电源负(GND)
UL1332 AWG22	黄色(Yellow)	U相 (Phase U)
	红色(Red)	V相 (Phase V)
	黑色(Black)	W相 (Phase W)

电性能 (Electrical Specifications)

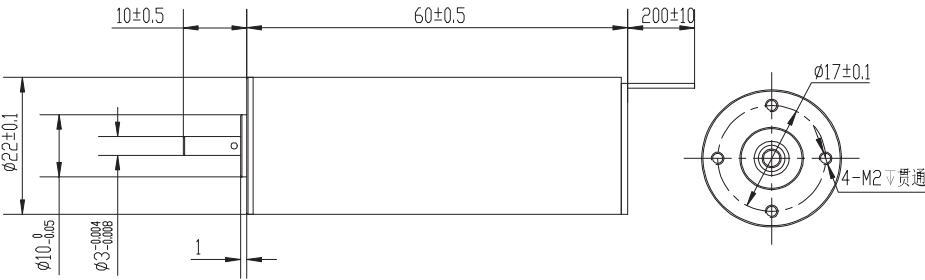
	单位 (Unit)	FL19SBL56-36V-530-130A	FL19SBL44-12V-280-30A
极数 (Number of poles)		2	2
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	36	12
空载转速 (No load speed)	RPM	58000	35000
空载电流 (No load current)	A	0.2	0.2
额定转矩 (Rated torque)	mN.m	23.9	11
额定电流 (Rated current)	A	4.5	3.5
额定速度 (Rated speed)	RPM	53000	28000
额定功率 (Rated power)	W	130	30
额定效率 (Rated efficiency)	%	84.5	83.7
峰值转矩 (Peak torque)	mN.m	72	33
峰值电流 (Peak current)	A	13.5	10.5
线电阻 (Line to line resistance)	ohms@20℃	0.45	0.31
线电感 (Line to line inductance)	mH	0.045	0.027
转矩常数 (Torque constant)	mNm/A	5.6	3.2
反电势 (Back EMF)	Vrms/Krpm	0.42	0.24
外壳-环境热阻 (Housing - Ambient thermal resistance)	K/W	11.6	9
电机热时间常数 (Motor thermal time constant)	S	840	780
绕组最高允许温度 (Max temperature of winding)	℃	155	155
电气时间常数 (Electrical time constant)	ms	0.1	0.087

FL22SBL Series

无齿无槽电机
Slotless BLDC Motor



机械尺寸 (Dimensions)



选件 Options

Connector
接插件

Gearbox
齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
介电强度 (Dielectric Strength)	360VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B
径向间隙 (Radial Play)	0.02mm@4N
轴向间隙 (Axial Play)	0.14mm@4N
最大径向负载 (Max radial force)	8N距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	4N

接线说明 (Electric Connection)

线型号 Type	线颜色 Color	功能 Functions
AFR250-SY AWG26	红色(Red)	霍尔电源正(Vcc)
	蓝色(Blue)	霍尔 W (Hw)
	绿色(Green)	霍尔 V (Hv)
	白色(White)	霍尔 U (Hu)
	黑色(Black)	霍尔电源负(GND)
UL1332 AWG20	黄色(Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色(Black)	W相 (Phase W)

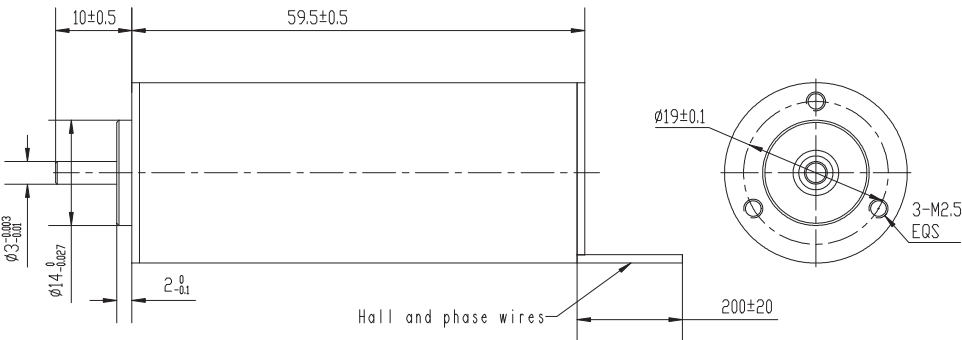
电性能 (Electrical Specifications)

	单位 (Unit)	FL22SBL70-24V-300-130A	FL22SBL58-24V-450-100A
极数 (Number of poles)		2	2
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	24	24
空载转速 (No load speed)	RPM	40000	48000
空载电流 (No load current)	A	0.7	0.56
额定转矩 (Rated torque)	mN.m	41	21
额定电流 (Rated current)	A	8.5	5
额定速度 (Rated speed)	RPM	33000	45000
额定功率 (Rated power)	W	130	100
额定效率 (Rated efficiency)	%	80	83.8
峰值扭矩 (Peak torque)	mN.m	82	63
峰值电流 (Peak current)	A	17	15
线电阻 (Line to line resistance)	ohms@20°C	0.35	0.15
线电感 (Line to line inductance)	mH	0.036	0.012
转矩常数 (Torque constant)	mNm/A	5.67	4.72
反电势 (Back EMF)	Vrms/Krpm	0.42	0.35
外壳-环境热阻 (Housing - Ambient thermal resistance)	K/W	6.2	6.74
电机热时间常数 (Motor thermal time constant)	S	860	900
绕组最高允许温度 (Max temperature of winding)	°C	155	155
电气时间常数 (Electrical time constant)	ms	0.1	0.08

FL24SBL Series

无齿无槽电机
Slotless BLDC Motor

机械尺寸 (Dimensions)



选件 Options



接插件 齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B
径向间隙 (Radial Play)	0.02mm@4N
轴向间隙 (Axial Play)	0.14mm@4N
最大径向负载 (Max radial force)	8N距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	4N

接线说明 (Electric Connection)

线型号 Type	线颜色 Color	功能 Functions
AFR250-SY AWG26	红色(Red)	霍尔电源正(Vcc)
	蓝色(Blue)	霍尔 W (Hw)
	绿色(Green)	霍尔 V (Hv)
	白色(White)	霍尔 U (Hu)
	黑色(Black)	霍尔电源负(GND)
UL1332 AWG20	黄色(Yellow)	U相 (Phase U)
	红色(Red)	V相 (Phase V)
	黑色(Black)	W相 (Phase W)

电性能 (Electrical Specifications)

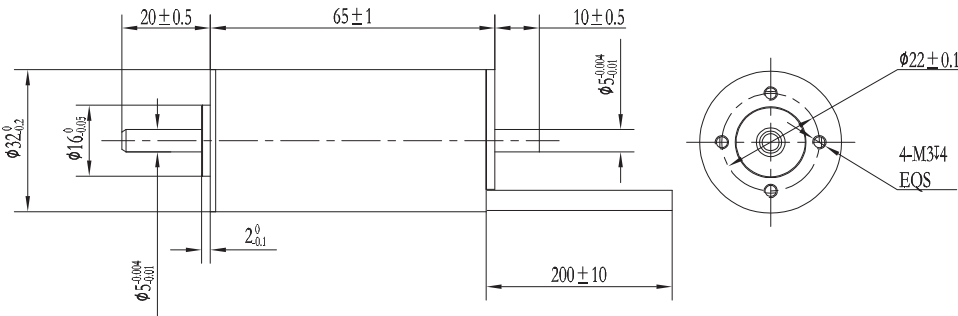
	单位 (Unit)	FL24SBL59-24V-18069A	FL24SBL44-24V-12030A
极数 (Number of poles)		2	2
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	24	24
空载转速 (No load speed)	RPM	20000	12000
空载电流 (No load current)	A	0.4	0.12
额定转矩 (Rated torque)	mN.m	40	30
额定电流 (Rated current)	A	3.9	1.73
额定速度 (Rated speed)	RPM	18500	9500
额定功率 (Rated power)	W	96.8	30
额定效率 (Rated efficiency)	%	82	77
峰值转矩 (Peak torque)	mN.m	120	90
峰值电流 (Peak current)	A	11.7	5.19
线电阻 (Line to line resistance)	ohms@20℃	0.52	3
线电感 (Line to line inductance)	mH	0.054	0.24
转矩常数 (Torque constant)	mNm/A	11.5	18.84
反电势 (Back EMF)	Vrms/Krpm	0.85	1.4
外壳-环境热阻 (Housing - Ambient thermal resistance)	K/W	7.08	8.21
电机热时间常数 (Motor thermal time constant)	S	803	735
绕组最高允许温度 (Max temperature of winding)	℃	155	155
电气时间常数 (Electrical time constant)	ms	0.104	0.08

FL32SBL Series

无齿无槽电机
Slotless BLDC Motor



机械尺寸 (Dimensions)



选件 Options

Connector

Gearbox

Encoder

接插件 齿轮箱 编码器

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B
径向间隙 (Radial Play)	0.02mm@4N
轴向间隙 (Axial Play)	0.14mm@4N
最大径向负载 (Max radial force)	10N距法兰5mm (5mm From the flange)
最大轴向负载 (Max axial force)	4N

接线说明 (Electric Connection)

线型号 Type	线颜色 Color	功能 Functions
AFR250-SY AWG26	红色(Red)	霍尔电源正(Vcc)
	蓝色(Blue)	霍尔 W (Hw)
	绿色(Green)	霍尔 V (Hv)
	白色(White)	霍尔 U (Hu)
	黑色(Black)	霍尔电源负(GND)
UL1332 AWG18	黄色(Yellow)	U相 (Phase U)
	红色(Red)	V相 (Phase V)
	黑色(Black)	W相 (Phase W)

电性能 (Electrical Specifications)

	单位 (Unit)	FL32SBL65-24V-157130A	FL32SBL50-24V-13075A
极数 (Number of poles)		4	4
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	24	24
空载转速 (No load speed)	RPM	17000	13000
空载电流 (No load current)	A	0.75	0.3
额定转矩 (Rated torque)	mN.m	80	60
额定电流 (Rated current)	A	6.74	3.95
额定速度 (Rated speed)	RPM	16100	12000
额定功率 (Rated power)	W	134.8	75
额定效率 (Rated efficiency)	%	83.1	78.3%
峰值转矩 (Peak torque)	mN.m	240	180
峰值电流 (Peak current)	A	20.5	11.85
线电阻 (Line to line resistance)	ohms@20℃	0.12	0.35
线电感 (Line to line inductance)	mH	0.015	0.033
转矩常数 (Torque constant)	mNm/A	13.7	17.56
反电势 (Back EMF)	Vrms/KRPM	1.02	1.3
外壳-环境热阻 (Housing - Ambient thermal resistance)	K/W	3.24	3.02
电机热时间常数 (Motor thermal time constant)	S	630	613
绕组最高允许温度 (Max temperature of winding)	℃	155	155
电气时间常数 (Electrical time constant)	ms	0.125	0.095

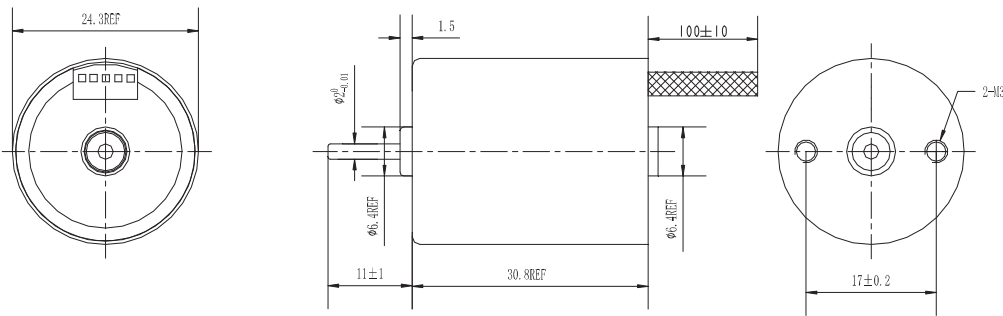
FL24CBL Series

经济型无刷电机
Economical BLDC Motor



机械尺寸

(Dimensions)



选件 Options



特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0..025
轴向间隙 (Axial Play)	0.2-0.5
最大径向负载 (Max radial force)	5N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	300VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG28	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1430 AWG26	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能

(Electrical Specifications)

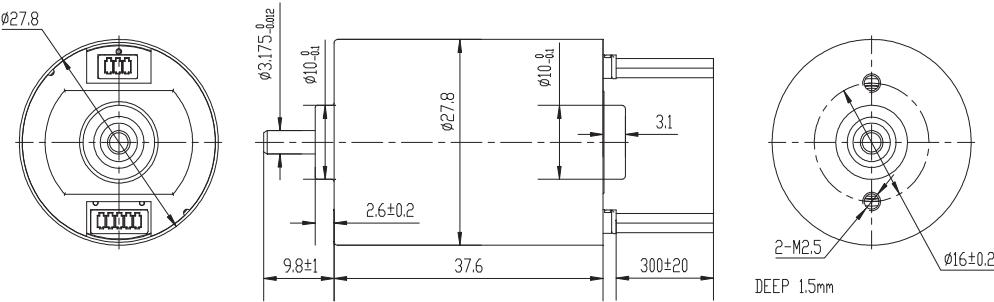
	单位 (Unit)	FL24CBL30-12V-4002A
极数 (Number of poles)		12
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	12
额定转矩 (Rated torque)	mN.m	5.7
连续运行转矩 (Continuous stall torque)	mN.m	6.8
额定速度 (Rated speed)	RPM	4000
额定功率 (Rated power)	W	2.4
峰值扭矩 (Peak torque)	mN.m	17.1
峰值电流 (Peak current)	A	0.9
线电阻 (Line to line resistance)	ohms@20°C	7.3
线电感 (Line to line inductance)	mH	1.7
转矩常数 (Torque constant)	mN.m/A	20
反电势 (Back EMF)	Vrms/KRPM	1.48
转动惯量 (Rotor inertia)	g.cm ²	2.3
机身长度 (Motor length)	mm	30.8
重量 (Weight)	Kg	0.04

FL28CBLA Series

经济型无刷电机
Economical BLDC Motor



机械尺寸 (Dimensions)



选件 Options


接插件


齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	5N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100M Ω , 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

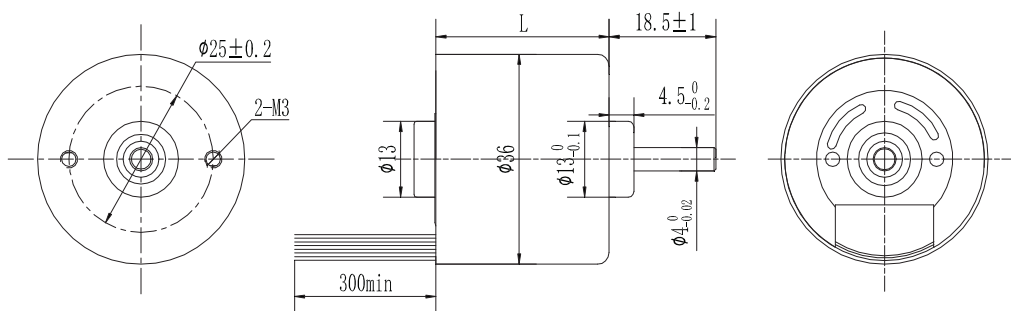
引出线型号 Type	引出线颜色 Color	功能 Functions
UL1061 AWG28	黄色 (Yellow)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	橙色 (Orange)	霍尔 V (Hv)
	棕色 (Brown)	霍尔 W (Hw)
	白色 (White)	霍尔电源负 (GND)
UL1061 AWG26	绿色 (Green)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能 (Electrical Specifications)

	单位 (Unit)	FL28CBLA38-24V-4012A	FL28CBLA48-24V-4524A
极数 (Number of poles)		8	
相数 (Number of phases)		3	
额定电压 (Rated voltage)	VDC	24	
额定转矩 (Rated torque)	mN.m	28	50
连续运行转矩 (Continuous stall torque)	mN.m	33.6	60
额定速度 (Rated speed)	RPM	4000	4500
额定功率 (Rated power)	W	12	24
峰值转矩 (Peak torque)	mN.m	84	150
峰值电流 (Peak current)	A	2.0	4.5
线电阻 (Line to line resistance)	ohms@20°C	5.7	2.5
线电感 (Line to line inductance)	mH	2.48	1.2
转矩常数 (Torque constant)	mN.m/A	42.8	36
反电势 (Back EMF)	Vrms/KRPM	3.165	2.68
转动惯量 (Rotor inertia)	g.cm ²	5.8	7.3
机身长度 (Motor length) L	mm	38	48
重量 (Weight)	Kg	0.095	0.12

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100M Ω , 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1430 AWG24	黄色 (Yellow)	U相 (Phase U)
	棕色 (Brown)	V相 (Phase V)
	橙色 (Orange)	W相 (Phase W)

● 电性能

(Electrical Specifications)

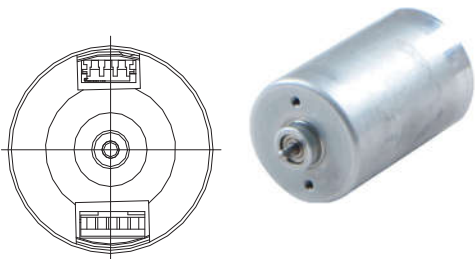
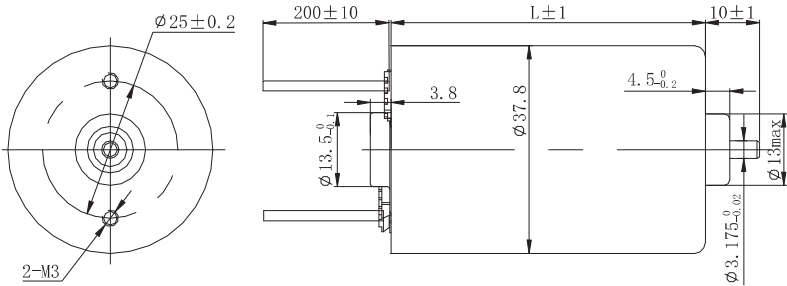
	单位 (Unit)	FL36CBL30-24V-488A-02	FL36CBL40-24V-4818A-01	FL36CBL50-24V-4828A	FL36CBL57-24V-4533A	FL36CBL60-24V-4840A	FL36CBL65-24V-4845A
极数 (Number of poles)		8					
相数 (Number of phases)		3					
额定电压 (Rated voltage)	VDC	24					
额定转矩 (Rated torque)	mN.m	15	35	55	70	80	90
连续运行转矩 (Continuous stall torque)	mN.m	18	42	66	84	96	108
额定速度 (Rated speed)	RPM	4800	4800	4800	4500	4800	4800
额定功率 (Rated power)	W	8	18	28	33	40	45
峰值转矩 (Peak torque)	mN.m	45	105	165	210	240	270
峰值电流 (Peak current)	A	1.3	2.7	4.3	5.3	6	6.8
线电阻 (Line to line resistance)	ohms@20°C	5.2	2	1.2	1.05	0.95	0.88
线电感 (Line to line inductance)	mH	3.3	1.75	1.2	1	0.85	0.8
转矩常数 (Torque constant)	mN.m/A	36	40	39	40	40	40
反电势 (Back EMF)	Vrms/KRPM	2.7	3	2.9	3	3	3
转动惯量 (Rotor inertia)	g.cm ²	6	12	22	27	30	32
机身长度 (Motor length) L	mm	30	40	50	57	60	65
重量 (Weight)	Kg	0.12	0.16	0.23	0.25	0.27	0.28

FL38CBL Series

经济型无刷电机
Economical BLDC Motor



机械尺寸 (Dimensions)



选件 Options

Connector
接插件

Gearbox
齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

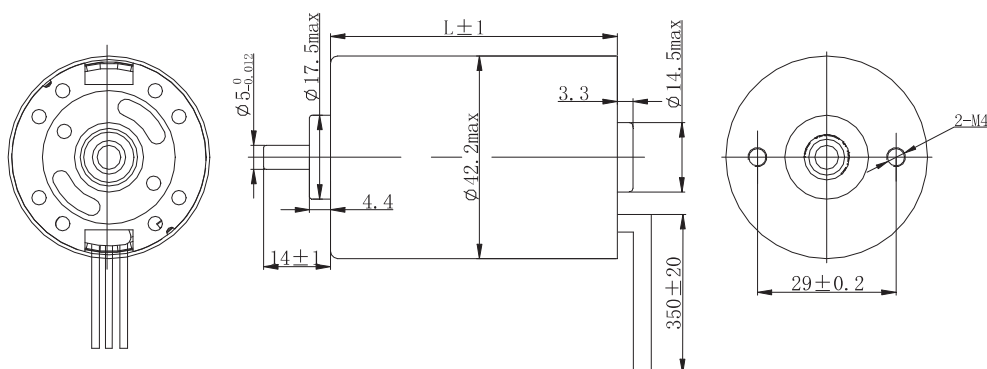
引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1430 AWG22	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

电性能 (Electrical Specifications)

	单位 (Unit)	FL38CBL58-24V-4030A
极数 (Number of poles)		4
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	24
额定转矩 (Rated torque)	mN.m	70
连续运行转矩 (Continuous stall torque)	mN.m	84
额定速度 (Rated speed)	RPM	4000
额定功率 (Rated power)	W	30
峰值转矩 (Peak torque)	mN.m	210
峰值电流 (Peak current)	A	4.8
线电阻 (Line to line resistance)	ohms@20℃	2.0
线电感 (Line to line inductance)	mH	1.5
转矩常数 (Torque constant)	mN.m/A	44.55
反电势 (Back EMF)	Vrms/KRPM	3.3
转动惯量 (Rotor inertia)	g.cm ²	36
机身长度 (Motor length) L	mm	58
重量 (Weight)	Kg	0.24

● 机械尺寸

(Dimensions)



选件 Options



接插件

齿轮箱

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	红色 (Red)	霍尔电源正 (Vcc)
	蓝色 (Blue)	霍尔 U (Hu)
	绿色 (Green)	霍尔 V (Hv)
	白色 (White)	霍尔 W (Hw)
	黑色 (Black)	霍尔电源负 (GND)
UL1332 AWG22	黄色 (Yellow)	U相 (Phase U)
	红色 (Red)	V相 (Phase V)
	黑色 (Black)	W相 (Phase W)

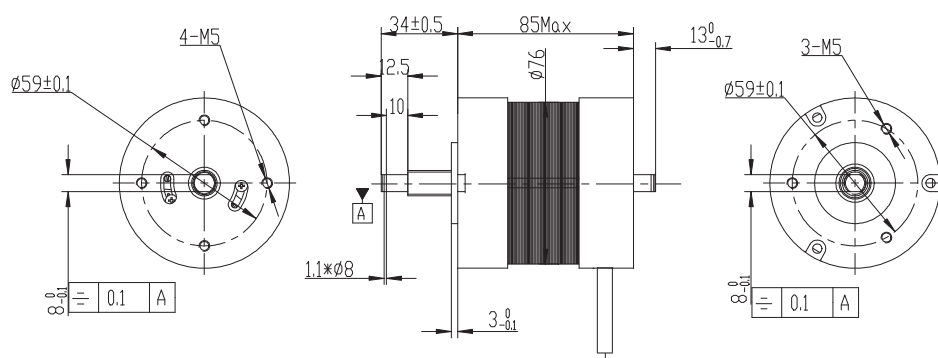
● 电性能

(Electrical Specifications)

	单位 (Unit)	FL42CBL60-24V-3240A	FL42CBL60-24V-5943	FL42CBL66-24V-4063A
极数 (Number of poles)		8		
相数 (Number of phases)		3		
额定电压 (Rated voltage)	VDC	24		
额定转矩 (Rated torque)	mN.m	120	68	150
连续运行转矩 (Continuous stall torque)	mN.m	144	81.6	180
额定速度 (Rated speed)	RPM	3200	5900	4000
额定功率 (Rated power)	W	40	43	63
峰值转矩 (Peak torque)	mN.m	360	204	450
峰值电流 (Peak current)	A	6.7	6.3	11.2
线电阻 (Line to line resistance)	ohms@20°C	1.2	0.6	0.75
线电感 (Line to line inductance)	mH	1.6	0.63	0.8
转矩常数 (Torque constant)	mN.m/A	54	32.4	40.5
反电势 (Back EMF)	Vrms/KRPM	4.0	2.4	3
转动惯量 (Rotor inertia)	g.cm ²	44	44	55
机身长度 (Motor length) L	mm	60	60	66
重量 (Weight)	Kg	0.35	0.35	0.44

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm
轴向间隙 (Axial Play)	0.14mm
最大径向负载 (Max radial force)	115N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

序号	引出线颜色 Color	引出线型号 Type	功能 Functions	说明 Description
1	红色 (Red)	UL1332 AWG26	霍尔电源正 (Vcc)	Power positive +5 ~ +24V
2	蓝色 (Blue)		霍尔 U (Hu)	
3	绿色 (Green)		霍尔 V (Hv)	
4	白色 (White)		霍尔 W (Hw)	
5	黑色 (Black)		霍尔电源负 (GND)	Power negative
6	黄色 (Yellow)	UL1332 AWG16	U相 (Phase U)	
7	红色 (Red)		V相 (Phase V)	
8	黑色 (Black)		W相 (Phase W)	

● 电性能

(Electrical Specifications)

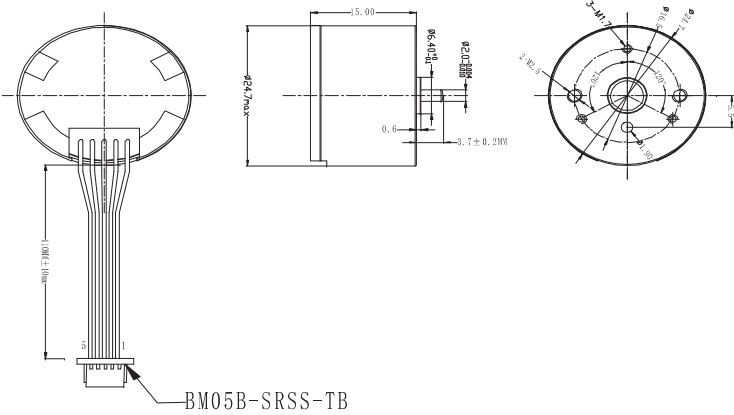
	单位 (Unit)	FL80BLE10-48V-5010B	FL80BLE40-48V-5047B
极数 (Number of poles)		4	4
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	48	48
额定转矩 (Rated torque)	N.m	0.2	0.9
连续运行转矩 (Continuous stall torque)	N.m	0.24	1.08
额定速度 (Rated speed)	RPM	5000	5000
额定功率 (Rated power)	W	100	470
峰值转矩 (Peak torque)	N.m	0.6	2.7
峰值电流 (Peak current)	A	10.5	36
线电阻 (Line to line resistance)	ohms@20°C	1.3	0.26
线电感 (Line to line inductance)	mH	1.9	0.5
转矩常数 (Torque constant)	mNm/A	72	72
反电势 (Back EMF)	Vrms/KRPM	5.4	5.4
转动惯量 (Rotor inertia)	g.cm ²	146	385
机身长度 (Motor length)	mm	55	85
重量 (Weight)	Kg	0.8	1.5

FL24BLW25-IE

一体化无刷电机
BLDC Motor with Integrated Driver



机械尺寸 (Dimensions)



选件 Options



特性概要 (General Specifications)

极数 (Number of Poles)	12
相数 (Number of Phases)	3
轴向间隙 (Axial Play)	0.2mm
轴伸径向圆跳动 (Rounded runout of shaft and Extension)	0.05mm Max
噪音 (Noise)	≤50dB
环境温度 (Ambient Temperature)	-10°C ~ +60°C
绝缘电阻 (Insulation resistance)	100VDC/10MΩ Min
旋转方向 (Direction of rotation)	CW/CCW
储存环境 (Storage condition)	-15°C ~ +65°C

接线说明 (Electric Connection)

Pin No	引出线型号 Type	功能 Functions
1	UL-1571 30AWG	VCC(Red)
2		GND(Black)
3		PWM(Yellow)
4		FG(White)
5		F/R(Blue)

电性能 (Electrical Specifications)

	单位 (Unit)	FL24BLW25-IE
额定电压 (Rated voltage)	VDC	5
额定转矩 (Rated torque)	mN.m	3.5
额定速度 (Rated speed)	RPM	5800
额定功率 (Rated power)	W	2
堵转转矩 (Stall torque)	mN.m	150
额定电流 (Rated current)	A	0.7
空载电流 (No load current)	A	0.3 MAX
空载转速 (No load speed)	RPM	7500
堵转电流 (Stall current)	A	1.3
机身长度 (Motor length)	mm	15
重量 (Weight)	g	28.7

FL24CBL-IE Series

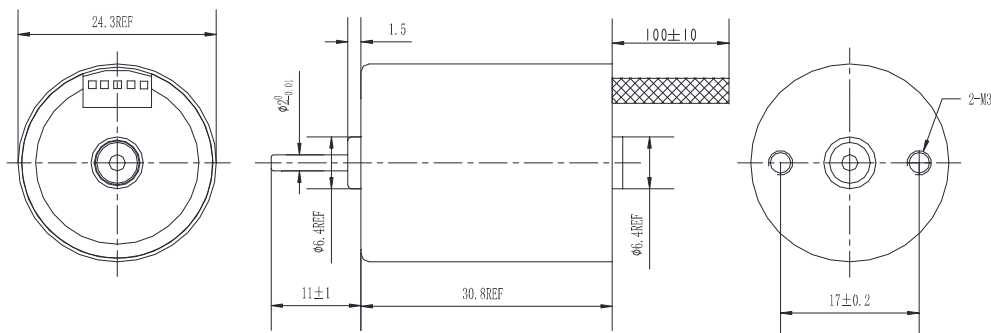
一体化无刷电机
BLDC Motor with Integrated Driver



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件 齿轮箱

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.025
轴向间隙 (Axial Play)	0.2-0.5
最大径向负载 (Max radial force)	5N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	300VAC/1min
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-25°C ~ +55°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG26	黄色 (Yellow)	电源正 (Vcc)
	黑色 (Black)	电源负 (GND)
	白色 (White)	转向控制 (Rotating Direction) CW/CCW
	绿色 (Green)	PWM调速 (Speed Control)
	蓝色 (Blue)	转速信号反馈 (Tacho out)

电性能

(Electrical Specifications)

	单位 (Unit)	FL24CBL30-12V-4002A-IE
极数 (Number of poles)		12
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	12
额定转矩 (Rated torque)	mN.m	5.7
连续运行转矩 (Continuous stall torque)	mN.m	6.8
额定速度 (Rated speed)	RPM	4000
额定功率 (Rated power)	W	2.4
峰值转矩 (Peak torque)	mN.m	17.1
峰值电流 (Peak current)	A	0.9
线电阻 (Line to line resistance)	ohms@20°C	7.3
线电感 (Line to line inductance)	mH	1.7
转矩常数 (Torque constant)	mN.m/A	20
反电势 (Back EMF)	Vrms/KRPM	1.48
转动惯量 (Rotor inertia)	g.cm ²	2.3
机身长度 (Motor length) L	mm	30.8
重量 (Weight)	Kg	0.04

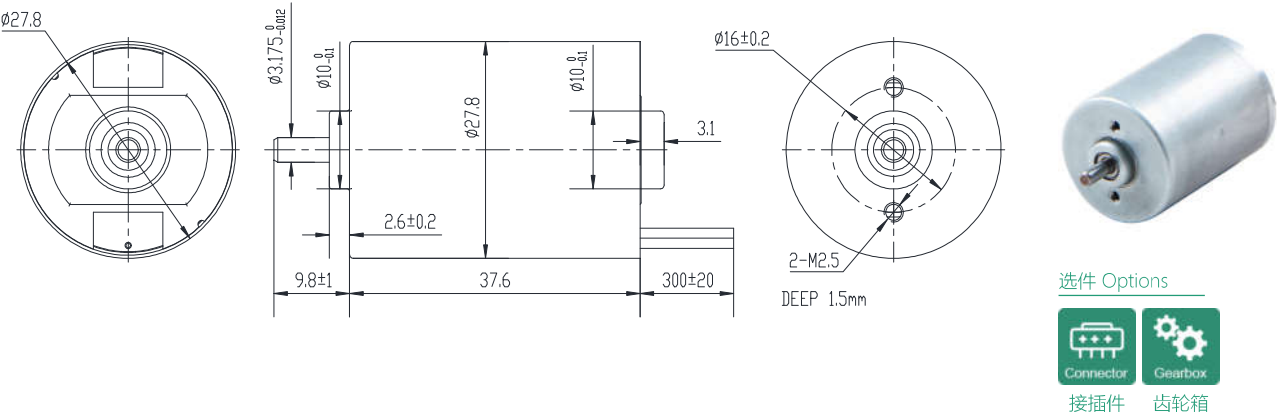
FL28CBLA-IE Series

一体化无刷电机
BLDC Motor with Integrated Driver

FULLING MOTOR

机械尺寸

(Dimensions)



特性概要

(General Specifications)

接线说明

(Electric Connection)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	5N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	2N
介电强度 (Dielectric Strength)	360VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG28	红色 (Red)	电源正 (Vcc)
	黑色 (Black)	电源负 (GND)
	绿色 (Green)	转向控制 (Rotating Direction) CW/CCW
	蓝色 (Blue)	PWM调速 (Speed Control)
	白色 (White)	转速信号反馈 (Tacho out) PG

电性能

(Electrical Specifications)

	单位 (Unit)	FL28CBLA38-24V-4012A-IE	FL28CBLA48-24V-4524A-IE
极数 (Number of poles)		8	
相数 (Number of phases)		3	
额定电压 (Rated voltage)	VDC	24	24
额定转矩 (Rated torque)	mN.m	28	50
连续运行转矩 (Continuous stall torque)	mN.m	33.6	60
额定速度 (Rated speed)	RPM	4000	4500
额定功率 (Rated power)	W	12	24
峰值扭矩 (Peak torque)	mN.m	37.5	100
峰值电流 (Peak current)	A	1.0	2.0
线电阻 (Line to line resistance)	ohms@20°C	5.7	3.2
线电感 (Line to line inductance)	mH	2.48	1.2
转矩常数 (Torque constant)	mNm/A	42.8	36.2
反电势 (Back EMF)	Vrms/KRPM	3.165	2.68
转动惯量 (Rotor inertia)	g.cm ²	5.8	6
机身长度 (Motor length) L	mm	38	48
重量 (Weight)	Kg	0.095	0.12

FL36CBL-IE Series

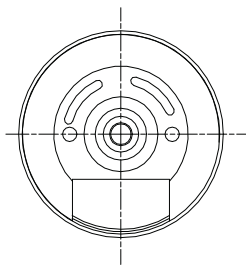
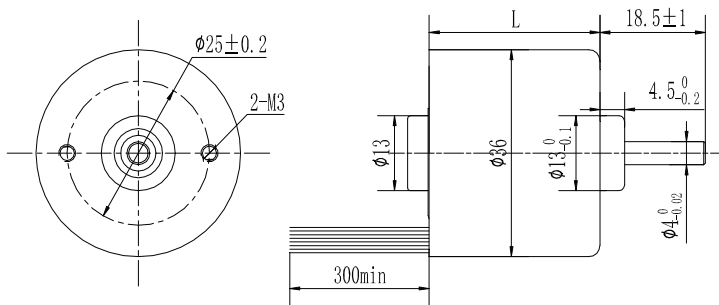
一体化无刷电机
BLDC Motor with Integrated Driver



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件

齿轮箱

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
红色 Red \ 黑色 Black, UL1430 AWG24; others UL1430 AWG26	红色 (Red)	电源正 (Vcc)
	黑色 (Black)	电源负 (GND)
	蓝色 (Blue)	转向控制 (Rotating Direction) CW/CCW
	绿色 (Green)	PWM调速 (Speed Control)
	黄色 (Yellow)	转速信号反馈 (Tacho out)
	白色 (White)	刹车 (Break)

电性能

(Electrical Specifications)

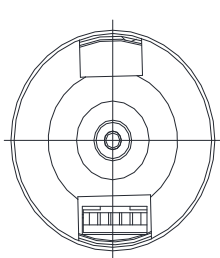
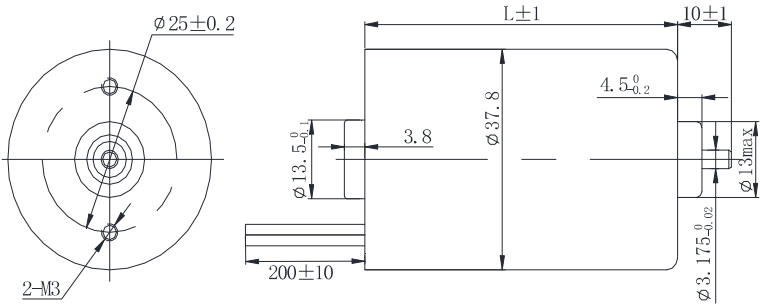
	单位 (Unit)	FL36CBL30- 24V-488A-IE-02	FL36CBL40- 24V-4818A-IE-02	FL36CBL50- 24V-4828A-IE	FL36CBL57- 24V-4533A-IE	FL36CBL60- 24V-4840A-IE-01	FL36CBL65- 24V-4845A-IE
极数 (Number of poles)		8					
相数 (Number of phases)		3					
额定电压 (Rated voltage)	VDC	24					
额定转矩 (Rated torque)	mN.m	15	35	55	70	80	90
连续运行转矩 (Continuous stall torque)	mN.m	18	42	66	84	96	108
额定速度 (Rated speed)	RPM	4800	4800	4800	4500	4800	4800
额定功率 (Rated power)	W	8	18	28	33	40	45
峰值扭矩 (Peak torque)	mN.m	45	105	110	110	110	110
峰值电流 (Peak current)	A	1.3	3	3	3	3	3
线电阻 (Line to line resistance)	ohms@20°C	5.2	2	1.2	1.05	0.95	0.88
线电感 (Line to line inductance)	mH	3.3	1.9	1.2	1	0.85	0.8
转矩常数 (Torque constant)	mN.m/A	36	40	39	40	40	40
反电势 (Back EMF)	Vrms/KRPM	2.7	3	2.9	3	3	3
转动惯量 (Rotor inertia)	g.cm ²	6	12	22	27	30	32
机身长度 (Motor length) L	mm	30	40	50	57	60	65
重量 (Weight)	Kg	0.12	0.16	0.23	0.25	0.27	0.28

FL38CBL-IE Series

一体化无刷电机
BLDC Motor with Integrated Driver



机械尺寸 (Dimensions)



选件 Options

Connector

接插件

Gearbox

齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430	红色 (Red)	电源正 (Vcc)
AWG22	黑色 (Black)	电源负 (GND)
UL1430 AWG26	绿色 (Green)	转向控制 (Rotating Direction) CW/CCW
	白色 (White)	PWM调速 (Speed Control)
	蓝色 (Blue)	刹车 (Brake)
	黄色 (Yellow)	PG转速信号反馈 (Tacho out)

电性能 (Electrical Specifications)

	单位 (Unit)	FL38CBL58-24V-4030A-IE
极数 (Number of poles)		4
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	24
额定转矩 (Rated torque)	mN.m	70
连续运行转矩 (Continuous stall torque)	mN.m	84
额定速度 (Rated speed)	RPM	4000
额定功率 (Rated power)	W	30
峰值扭矩 (Peak torque)	mN.m	126
峰值电流 (Peak current)	A	3
线电阻 (Line to line resistance)	ohms@20℃	2.0
线电感 (Line to line inductance)	mH	1.5
转矩常数 (Torque constant)	mN.m/A	44.55
反电势 (Back EMF)	Vrms/KRPM	3.3
转动惯量 (Rotor inertia)	g.cm ²	36
机身长度 (Motor length) L	mm	58
重量 (Weight)	Kg	0.24

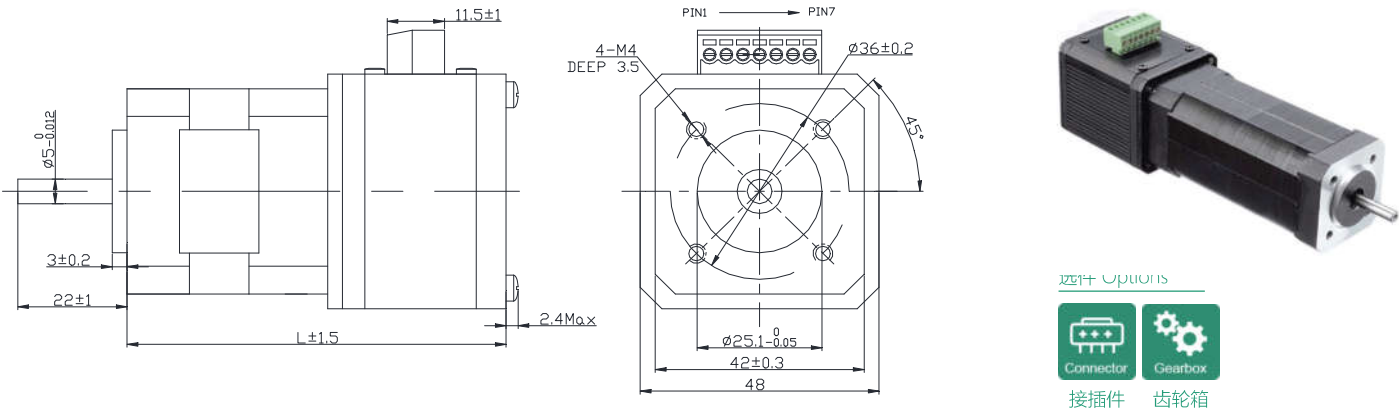
FL42BLS-IE Series

一体化无刷电机
BLDC Motor with Integrated Driver

FULLING MOTOR

机械尺寸

(Dimensions)



特性概要

(General Specifications)

接线说明

(Electric Connection)

绕组连接方式 (Winding Type)	三角形 (Delta connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.025mm@460g
轴向间隙 (Axial Play)	0.08mm@4000g
最大径向负载 (Max radial force)	10N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

Pin No		功能 Functions
1	+5V	电压输出(VOLTAGE OUTPUT)
2	F/R	转向控制(ROTATING DIRECTION)
3	SV	调速电压0—5VDC (SPEED VOLTAGE 0—5VDC)
4	PG	速度脉冲输出(TTL) (SPEED PULSE OUTPUT(TTL)
5	GND	接地(GND)
6	GND	接地(GND)
7	+Vp	+24VDC(DC POWER INPUT +24VDC)

电性能

(Electrical Specifications)

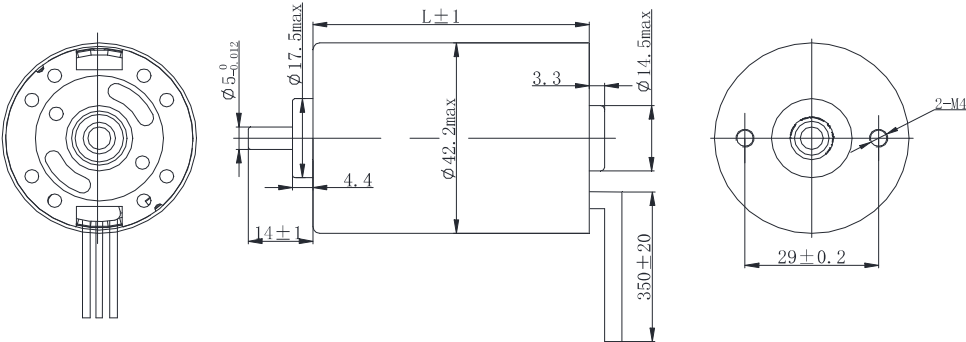
	单位 (Unit)	FL42BLS01-IE	FL42BLS02-IE	FL42BLS03-IE	FL42BLS04-IE
极数 (Number of poles)		8			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	24			
额定转矩 (Rated torque)	N.m	0.0625	0.125	0.185	0.25
连续运行转矩 (Continuous stall torque)	N.m	0.075	0.15	0.22	0.3
额定速度 (Rated speed)	RPM	4000	4000	4000	4000
额定功率 (Rated power)	W	26	52	78	104
峰值转矩 (Peak torque)	N.m	0.11	0.18	0.28	0.28
峰值电流 (Peak current)	A	3.5	5.0	7.5	7.5
线电阻 (Line to line resistance)	ohms@20°C	1.5	0.8	0.43	0.3
线电感 (Line to line inductance)	mH	2.1	1.2	0.71	0.5
转矩常数 (Torque constant)	N.m/A	0.033	0.036	0.037	0.035
反电势 (Back EMF)	Vrms/KRPM	2.45	2.71	2.74	2.62
转动惯量 (Rotor inertia)	g.cm ²	24	48	72	96
机身长度 (Motor length) L	mm	77	97	137	157
重量 (Weight)	Kg	0.45	0.6	0.8	0.95

FL42CBL-IE Series

一体化无刷电机
BLDC Motor with Integrated Driver



机械尺寸 (Dimensions)



选件 Options

Connector
接插件

Gearbox
齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1332 AWG22	红色 (Red)	电源正 (Vcc)
	黑色 (Black)	电源负 (GND)
UL1430 AWG26	绿色 (Green)	转向控制 (Rotating Direction) CW/CCW
	白色 (White)	PWM调速 (Speed Control)
	蓝色 (Blue)	刹车 (Brake)
	黄色 (Yellow)	PG转速信号反馈 (Tacho out)

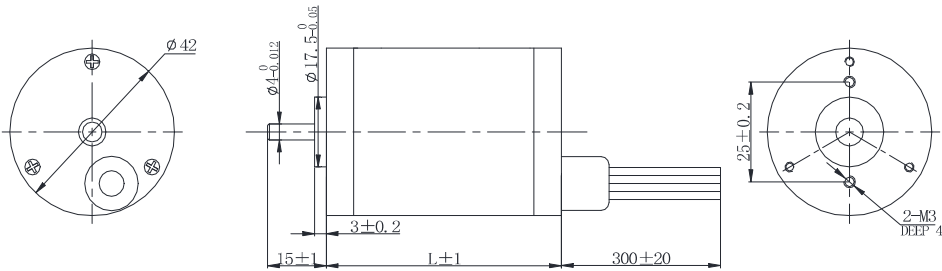
电性能 (Electrical Specifications)

	单位 (Unit)	FL42CBL60-24V-5943-IE	FL42CBL66-24V-3031A-IE
极数 (Number of poles)		4	
相数 (Number of phases)		3	
额定电压 (Rated voltage)	VDC	24	
额定转矩 (Rated torque)	mN.m	68	100
连续运行转矩 (Continuous stall torque)	mN.m	81.6	120
额定速度 (Rated speed)	RPM	5900	3000
额定功率 (Rated power)	W	43	31
峰值转矩 (Peak torque)	mN.m	92	200
峰值电流 (Peak current)	A	3	3
线电阻 (Line to line resistance)	ohms@20℃	0.82	2.5
线电感 (Line to line inductance)	mH	1.2	3.3
转矩常数 (Torque constant)	mN.m/A	33.75	65
反电势 (Back EMF)	Vrms/KRPM	2.5	4.82
转动惯量 (Rotor inertia)	g.cm ²	44	55
机身长度 (Motor length) L	mm	60	66
重量 (Weight)	Kg	0.35	0.44

FL42RBL-IE Series

一体化无刷电机
BLDC Motor with Integrated Driver

机械尺寸 (Dimensions)



选件 Options




接插件 齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1007 AWG22	红色 (Red)	电源正 (Vcc)
	黑色 (Black)	电源负 (GND)
UL1007 AWG22	白色 (White)	转向控制 (Rotating Direction) CW/CCW
	蓝色 (Blue)	模拟量调速(Speed Control with analog ref) SV
	黄色 (Yellow)	转速信号反馈 (Tacho out) PG

电性能 (Electrical Specifications)

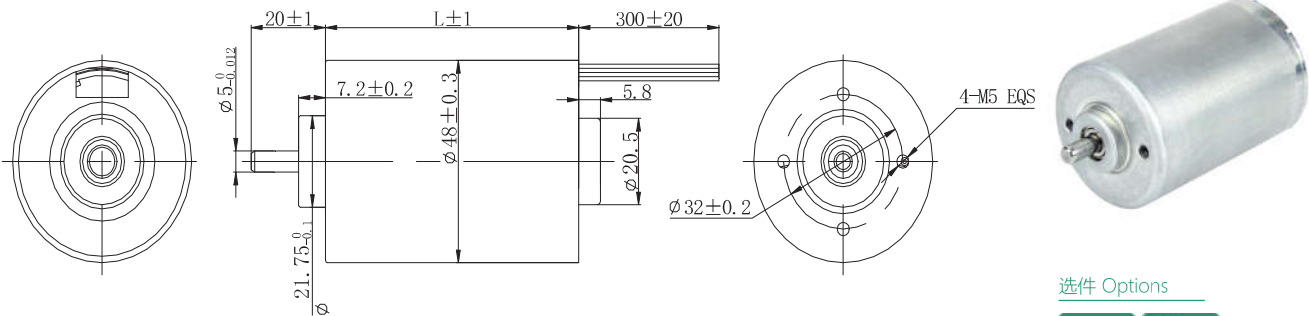
	单位 (Unit)	FL42RBL60-24V-4030A-IE
极数 (Number of poles)		8
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	24
额定转矩 (Rated torque)	mN.m	56
连续运行转矩 (Continuous stall torque)	mN.m	68
额定速度 (Rated speed)	RPM	4200
额定功率 (Rated power)	W	25
峰值转矩 (Peak torque)	mN.m	105
峰值电流 (Peak current)	A	3
线电阻 (Line to line resistance)	ohms@20℃	1.6
线电感 (Line to line inductance)	mH	1.94
转矩常数 (Torque constant)	mN.m/A	41.31
反电势 (Back EMF)	Vrms/KRPM	3.04
转动惯量 (Rotor inertia)	g.cm ²	33
机身长度 (Motor length) L	mm	64
重量 (Weight)	Kg	0.4

FL48CBL-IE Series

一体化无刷电机
BLDC Motor with Integrated Driver



机械尺寸 (Dimensions)



选件 Options

Connector
接插件

Gearbox
齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	15N 距法兰10mm (10mm From the flange)
最大轴向负载 (Max axial force)	10N
介电强度 (Dielectric Strength)	600VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20℃ ~ +50℃
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG20	红色 (Red)	电源正 (Vcc)
	黑色 (Black)	电源负 (GND)
UL1430 AWG26	绿色 (Green)	转向控制 (Rotating Direction) CW/CCW
	白色 (White)	PWM调速 (Speed Control)
	蓝色 (Blue)	刹车 (Brake)
	黄色 (Yellow)	转速信号反馈 (Tacho out) PG

电性能 (Electrical Specifications)

	单位 (Unit)	FL48CBL68-24V-3060A-IE
极数 (Number of poles)		10
相数 (Number of phases)		3
额定电压 (Rated voltage)	VDC	24
额定转矩 (Rated torque)	mN.m	180
连续运行转矩 (Continuous stall torque)	mN.m	216
额定速度 (Rated speed)	RPM	3000
额定功率 (Rated power)	W	60
峰值扭矩 (Peak torque)	mN.m	257
峰值电流 (Peak current)	A	5
线电阻 (Line to line resistance)	ohms@20℃	0.7
线电感 (Line to line inductance)	mH	0.7
转矩常数 (Torque constant)	mN.m/A	58
反电势 (Back EMF)	Vrms/KRPM	4.3
转动惯量 (Rotor inertia)	g.cm ²	80
机身长度 (Motor length) L	mm	68
重量 (Weight)	Kg	0.5

FL57BL(S)-IE Series

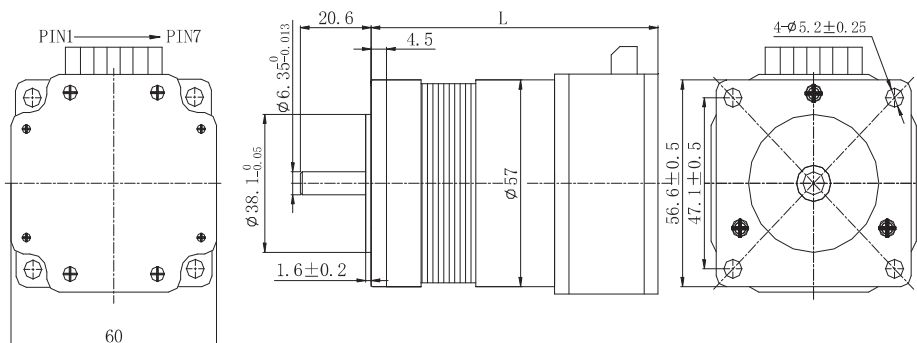
一体化无刷电机
BLDC Motor with Integrated Driver



FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



接插件

齿轮箱

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	三角形 (Delta connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	115N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	650VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

+Vp	GND	GND	PG	SV	F/R	+5V
1	2	3	4	5	6	7

1 +Vp---输入电压 +36VDC(DC POWER INPUT +36VDC)
 2 GND---系统的公共接地(COMMON GROUND OF SYSTEM)
 3 GND---系统的公共接地(COMMON GROUND OF SYSTEM)
 4 PG---速度脉冲输出(TTL), 6个/转(SPEED PULSE OUTPUT(TTL), 6 PULSE/REV)
 5 SV---调速电压0—5VDC (SPEED VOLTAGE 0—5VDC)
 6 F/R---转向控制(ROTATING DIRECTION)
 7 +5V---+5V 电压输出(VOLTAGE OUTPUT)

电性能

(Electrical Specifications)

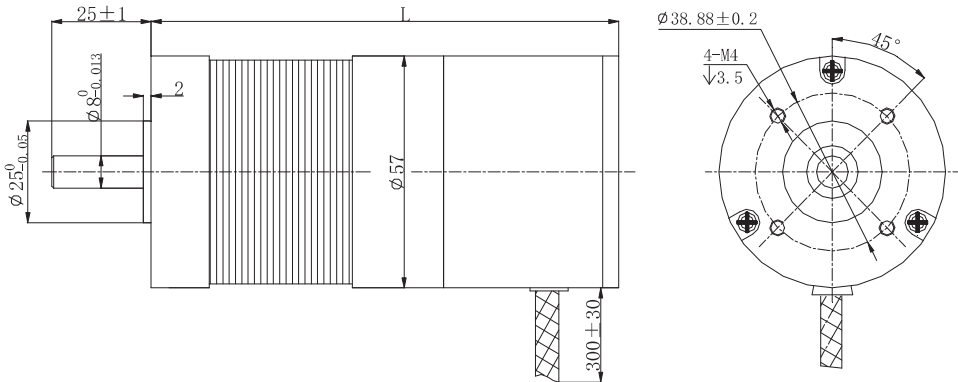
	单位 (Unit)	FL57BL(S)005-IE	FL57BL(S)01-IE	FL57BL(S)02-IE	FL57BL(S)03-IE
极数 (Number of poles)		4			
相数 (Number of phases)		3			
额定电压 (Rated voltage)	VDC	36			
额定转矩 (Rated torque)	N.m	0.055	0.11	0.22	0.33
连续运行转矩 (Continuous stall torque)	N.m	0.066	0.132	0.264	0.396
额定速度 (Rated speed)	RPM	4000	4000	4000	4000
额定功率 (Rated power)	W	25	46	99	138
峰值扭矩 (Peak torque)	N.m	0.15	0.3	0.45	0.48
峰值电流 (Peak current)	A	3.0	5.0	7.5	7.5
线电阻 (Line to line resistance)	ohms@20°C	4.3	1.63	0.64	0.45
线电感 (Line to line inductance)	mH	10	4.4	2.0	1.5
转矩常数 (Torque constant)	N.m/A	0.052	0.061	0.060	0.065
反电势 (Back EMF)	Vrms/KRPM	3.8	4.5	4.45	4.8
转动惯量 (Rotor inertia)	g.cm ²	30	75	119	173
机身长度 (Motor length) L	mm	90	100	139	159
重量 (Weight)	Kg	0.56	0.67	0.9	1.2

FL57BL-IEX Series

一体化无刷电机
BLDC Motor with Integrated Driver



机械尺寸 (Dimensions)



选件 Options

Connector

接插件

Gearbox

齿轮箱

特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
径向间隙 (Radial Play)	0.02mm@450g
轴向间隙 (Axial Play)	0.08mm@450g
最大径向负载 (Max radial force)	115N 距法兰20mm (20mm From the flange)
最大轴向负载 (Max axial force)	45N
介电强度 (Dielectric Strength)	650VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
环境温度 (Ambient Temperature)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

引出线型号 Type	引出线颜色 Color	功能 Functions
UL1430 AWG18	红色 (Red)	电源正 (Vcc)
	黑色 (Black)	电源负 (GND)
UL1430 AWG26	蓝色 (Blue)	转向控制 (Rotating Direction) CW/CCW
	黄色 (Yellow)	0 ~ +5V speed regulation voltage
	白色 (White)	Speed pulse output(TTL)

电性能 (Electrical Specifications)

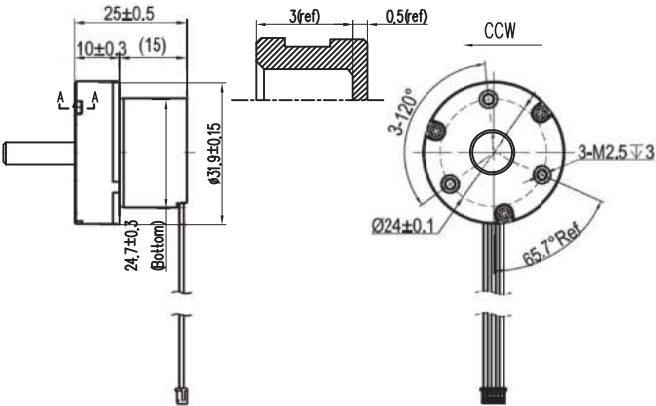
	单位 (Unit)	FL57BL005-IEX	FL57BL01-IEX	FL57BL02-IEX
极数 (Number of poles)		4		
相数 (Number of phases)		3		
额定电压 (Rated voltage)	VDC	24		
额定转矩 (Rated torque)	N.m	0.055	0.11	0.22
连续运行转矩 (Continuous stall torque)	N.m	0.066	0.132	0.264
额定速度 (Rated speed)	RPM	4000	4000	4000
额定功率 (Rated power)	W	25	46	99
峰值扭矩 (Peak torque)	N.m	0.15	0.22	0.22
峰值电流 (Peak current)	A	4.0	6.0	6.0
线电阻 (Line to line resistance)	ohms@20°C	2.1	0.82	0.35
线电感 (Line to line inductance)	mH	4.1	2.3	1.0
转矩常数 (Torque constant)	N.m/A	0.04	0.04	0.04
反电势 (Back EMF)	Vrms/KRPM	3.0	3.0	3.0
转动惯量 (Rotor inertia)	g.cm ²	30	75	119
机身长度 (Motor length) L	mm	80	90	120
重量 (Weight)	Kg	0.5	0.6	0.8

FL32BLW25-G-IE

正齿轮箱无刷电机
BLDC Motor with Spur Gearbox



机械尺寸 (Dimensions)



选件 Options



接插件

特性概要 (General Specifications)

轴向间隙 (Axial Play)	0.02~0.5mm
轴伸径向圆跳动 (Rounded runout of shaft and Extension)	0.05mm
噪音 (Noise)	≤65dB
减速比 (Ratio)	34.4:1
寿命 (Lifetime)	850个小时 (最大)
环境温度 (Ambient Temperature)	-10℃ ~ +60℃
绝缘电阻 (Insulation resistance)	100VDC/10MΩ Min
介电强度 (Dielectric strength)	100VAC/0.5mA/1S
储存环境 (Storage condition)	-15℃ ~ +70℃

接线说明 (Electric Connection)

Pin No	引出线型号 Type	功能 Functions
1	UL-1751 30AWG	VCC(Red)
2		GND(Black)
3		PWM(Yellow)
4		FG(White)
5		F/R(Blue)

电性能 (Electrical Specifications)

	单位 (Unit)	FL32BLW25-G-IE
额定电压 (Rated voltage)	VDC	5
额定转矩 (Rated torque)	mN.m	58.8
额定速度 (Rated speed)	RPM	180
额定功率 (Rated power)	W	1
堵转转矩 (Stall torque)	mN.m	147
额定电流 (Rated current)	A	≤1.08
空载电流 (No load current)	A	≤0.6
空载转速 (No load speed)	RPM	215
堵转电流 (Stall current)	A	1.4A
机身长度 (Motor length)	mm	15
重量 (Weight)	g	500

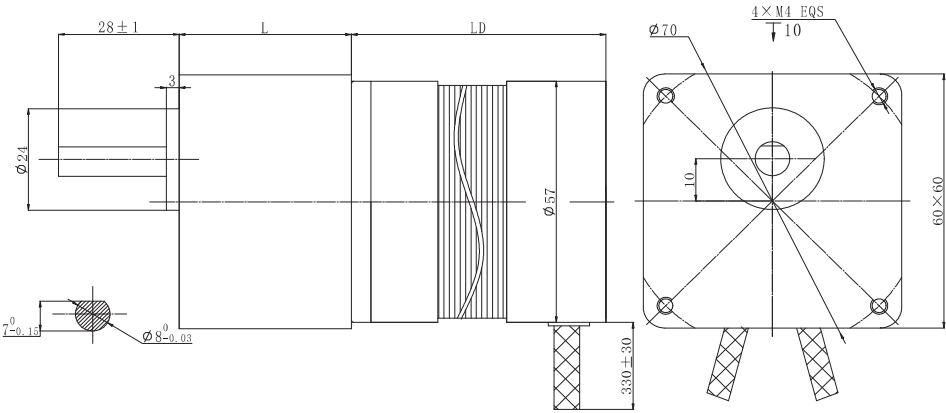
FL57BLS-60JB

正齿轮箱无刷电机
BLDC Motor with Spur Gearbox



外形图

(DIMENSIONS)



选件 Options



接插件

减速比(Ratio)	L2(mm)				L1(mm)
	FL57BLS01-60JB	FL57BLS02-60JB	FL57BLS03-60JB	FL57BLS04-60JB	
3---15	59	79	99	119	32
25---150					40

齿轮箱参数

(Spur Gearbox Specifications)

减速比(Ratio)	3	5	7.5	10	12.5	15	25	30	50	75	90	100	120	150
减速级数 (Number Of gear trains)	2						3			4				
额定转矩(Nominal torque)	5N.m													
极限转矩(Ultimate torque)	10N.m													
效率(Efficiency)	81%						73%			66%				

正齿轮箱无刷直流电机参数

(Spur Geared BLDC Motor Specifications)

减速比(Ratio)		3	5	7.5	10	12.5	15	25	30	50	75	90	100	120
FL57BLS01-60JB	额定转矩(Rated torque) (N.m)	0.26	0.44	0.66	0.89	1.11	1.33	2	2.4	4	5.4	6.5	7.26	8.7
	额定转速(Rated speed) (RPM)	1333	800	533	400	320	266	160	133	80	53	44	40	33
	极限转矩(Ultimate torque) (N.m)	0.78	1.32	1.98	2.67	3.33	3.99	6	7.2	10				
FL57BLS02-60JB	额定转矩(Rated torque) (N.m)	0.54	0.89	1.33	1.78	2.22	2.67	4	4.8	8	-	-	-	-
	额定转速(Rated speed) (RPM)	1333	800	533	400	320	266	160	133	80	-	-	-	-
	极限转矩(Ultimate torque) (N.m)	1.62	2.67	3.99	5.34	6.66	8	10		-	-	-	-	-
FL57BLS03-60JB	额定转矩(Rated torque) (N.m)	0.8	1.33	2	2.67	3.34	4	6	7.22	-	-	-	-	-
	额定转速(Rated speed) (RPM)	1333	800	533	400	320	266	160	133	-	-	-	-	-
	极限转矩(Ultimate torque) (N.m)	2.4	3.99	6	8	10				-	-	-	-	-
FL57BLS04-60JB	额定转矩(Rated torque) (N.m)	1.06	1.85	2.67	3.56	4.45	5.34	8	9.6	-	-	-	-	-
	额定转速(Rated speed) (RPM)	1333	800	533	400	320	266	160	133	-	-	-	-	-
	极限转矩(Ultimate torque) (N.m)	3.18	5.55	8	10				-	-	-	-	-	-

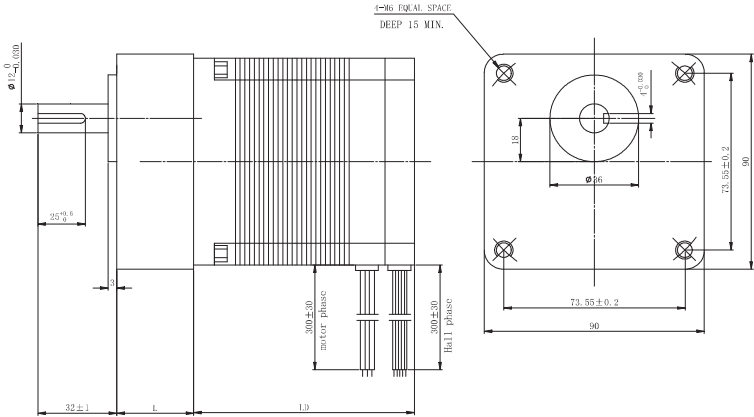
FL86BLS-90JB

正齿轮箱无刷电机
BLDC Motor with Spur Gearbox



外形图

(DIMENSIONS)



选件 Options



接插件



编码器

减速比(Ratio)	L2(mm)				L1(mm)
	FL86BLS58-90JB	FL86BLS71-90JB	FL86BLS98-90JB	FL86BLS125-90JB	
3--15	72	86	112	139	42
18--120					60

齿轮箱参数

(Spur Gearbox Specifications)

减速比 (Ratio)	3	5	6	7.5	9	10	13	15	18	20	25	30	36	40	50	60	75	90	100	120	
重量 (Weight)	1.3kg							1.5kg													
减速级数 (Number Of gear trains)	2							3					4								
额定转矩 (Nominal torque)	30N.m																				
极限转矩(Ultimate torque)	45N.m																				
效率 (Efficiency)	81%							73%					66%								
回差 (Backlash)	4 deg							3.5deg					2.5deg								

正齿轮箱无刷直流电机参数

(Spur Geared BLDC Motor Specifications)

减速比(Ratio)		3	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
FL86BLS58-90JB	额定转矩(Rated torque) (N.m)	0.85	1.42	1.70	2.13	2.55	2.84	3.54	4.25	4.60	5.11	6.38	7.67	9.20	9.24	11.6	13.8	17.3	20.8	23.1	27.7
	额定转速(Rated speed) (RPM)	1000	600	500	400	333	300	240	200	167	150	120	100	83.3	75	60	50	40	33.3	30	25
	极限转矩(Ultimate torque) (N.m)	2.55	4.25	5.10	6.38	7.65	8.52	10.6	12.7	13.8	15.3	19.1	23	27.6	27.7	34.8	41.4	45			
FL86BLS71-90JB	额定转矩(Rated torque) (N.m)	1.70	2.84	3.4	4.25	5.10	5.67	7.08	8.50	9.20	10.2	12.8	15.3	18.4	18.5	23.1	27.7	-	-	-	-
	额定转速(Rated speed) (RPM)	1000	600	500	400	333	300	240	200	167	150	120	100	83.3	75	60	50	-	-	-	-
	极限转矩(Ultimate torque) (N.m)	5.1	8.52	10.2	12.7	15.3	17.0	21.2	25.5	27.6	30.6	38.4	45					-	-	-	-
FL86BLS98-90JB	额定转矩(Rated torque) (N.m)	3.4	5.67	6.80	8.50	10.2	11.3	14.2	17	18.4	20.4	25.5	30.6	-	-	-	-	-	-	-	-
	额定转速(Rated speed) (RPM)	1000	600	500	400	333	300	240	200	167	150	120	100	-	-	-	-	-	-	-	-
	极限转矩(Ultimate torque) (N.m)	10.2	17.0	20.4	25.5	30.6	33.9	42.6	45					-	-	-	-	-	-	-	-
FL86BLS125-90JB	额定转矩(Rated torque) (N.m)	5.1	8.5	10.2	12.7	15.3	17.0	21.2	25.5	27.5	30.6	-	-	-	-	-	-	-	-	-	-
	额定转速(Rated speed) (RPM)	1000	600	500	400	333	300	240	200	167	150	-	-	-	-	-	-	-	-	-	-
	极限转矩(Ultimate torque) (N.m)	15.3	25.5	30.6	38.1	45						-	-	-	-	-	-	-	-	-	-

FL22RBL-22JN10K

行星减速无刷电机
BLDC Motor with Planetary Gearbox



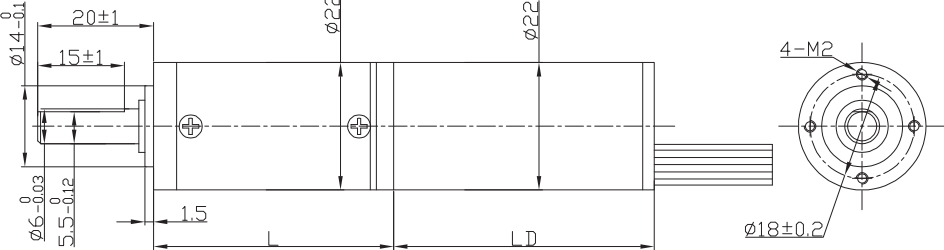
内齿圈材质:金属	Φ22行星减速器, 允许转矩范围:0.05N.m~0.5N.m	22mm OD Planetary Gearbox, Permissible Load Range: 0.05N.m~0.5N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
红	棕	黑	蓝	黄	棕	红	绿
Red	Brown	Black	Blue	Yellow	Brown	Red	Green
UL1007 AWG26			UL1007 AWG28				



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Peak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL22RBL45-2470	8	3	24	7000	4600	8	4	24	0.8	23	6.2
FL22RBL68-2460	8	3	24	6000	3800	20	8	60	1.7	11.6	4.3

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL22RBL45-2470无刷直流电机 FL22RBL45-2470 DC Brushless Motor

减 速 比 Reduction ratio		3.7	5.2	14	19	27	51	71	100	139	189	264	369
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	4	4	4
减速器长度(L) Length(L)	mm	24.4	24.4	31.0	31.0	31.0	37.4	37.4	37.4	37.4	43.8	43.8	43.8
空载转速 No-load speed	r/min	1887	1351	500	368	259	137	99	70	50	37	27	19
额定转速 Rated speed	r/min	1240	888	329	242	170	90	65	46	33	24	17	12
额定转矩 Rated torque	N.m	0.027	0.037	0.091	0.12	0.17	0.30	0.41	0.58	0.80	1	1	1
最大瞬间允许负载 Max. permissible load in a short time	N.m	0.3	0.3	1.2	1.2	1.2	2.5	2.5	2.5	2.5	3	3	3

配置FL22RBL68-2460无刷直流电机 FL22RBL68-2460 DC Brushless Motor

减 速 比 Reduction ratio		3.7	5.2	14	19	27	51	71	100	139
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3
减速器长度(L) Length(L)	mm	24.4	24.4	33.0	33.0	33.0	41.5	41.5	41.5	41.5
空载转速 No-load speed	r/min	1617	1158	429	316	222	118	85	60	43
额定转速 Rated speed	r/min	1027	730	271	200	140	74	53	38	27
额定转矩 Rated torque	N.m	0.067	0.093	0.23	0.31	0.44	0.74	1	1	1
最大瞬间允许负载 Max. permissible load in a short time	N.m	0.3	0.3	1.2	1.2	1.2	3	3	3	3

FL28BL-28JN30K

行星减速无刷电机
BLDC Motor with Planetary Gearbox



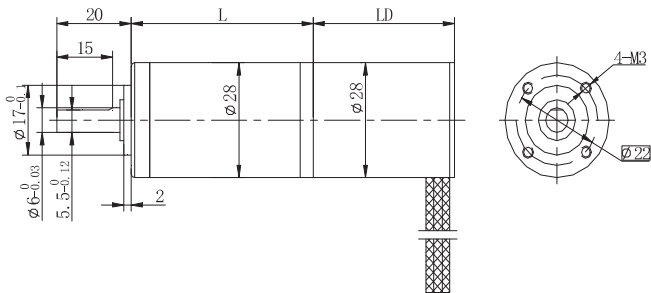
内齿圈材质:金属	Φ28行星减速器, 允许转矩范围:0.3N.m~3.0N.m	28mm OD Planetary Gearbox, Permissible Load Range: 0.3N.m~3.0N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
绿 Green	红 Red	黑 Black	黄 Yellow	蓝 Blue	橙 Orange	棕 Brown	白 White
UL1007 26AWG							



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值转矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL28BL38-2460	4	3	24	6000	4350	10	4.5	30	1	19	7.8
FL28BL77-2460	4	3	24	6000	4000	50	20	150	3	4.2	2.2

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL28BL38-2460无刷直流电机(LD=38mm) FL28BL38-2460 DC Brushless Motor(LD=38mm)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	51	71	100	139	189	264	369	516	720
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	4	4	4	4	4
减速器长度(L) Length(L)	mm	29.0	29.0	36.1	36.1	36.1	36.1	43.0	43.0	43.0	43.0	49.9	49.9	49.9	49.9	49.9
额定转速 Rated speed	r/min	1173	840	311	229	161	124	85	61	44	31	23	17	12	8.4	6.0
额定转矩 Rated torque	N.m	0.033	0.047	0.11	0.15	0.22	0.28	0.37	0.52	0.73	1.0	1.2	1.7	2.4	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.0	1.0	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5	9.0	9.0	9.0	9.0	9.0

配置FL28BL77-2460无刷直流电机 (LD=77mm) FL28BL77-2460 DC Brushless Motor(LD=77mm)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	51	71	100	139
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3
减速器长度(L) Length(L)	mm	29.0	29.0	36.1	36.1	36.1	36.1	43.0	43.0	43.0	43.0
空载转速 No-load speed	r/min	1617	1158	429	316	222	171	118	85	60	43
额定转速 Rated speed	r/min	1080	769	285	210	148	114	78	56	40	2.9
额定转矩 Rated torque	N.m	0.17	0.23	0.57	0.77	1.1	1.4	1.9	2.6	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.0	1.0	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5

FL33BL-32JXE30K

行星减速无刷电机
BLDC Motor with Planetary Gearbox



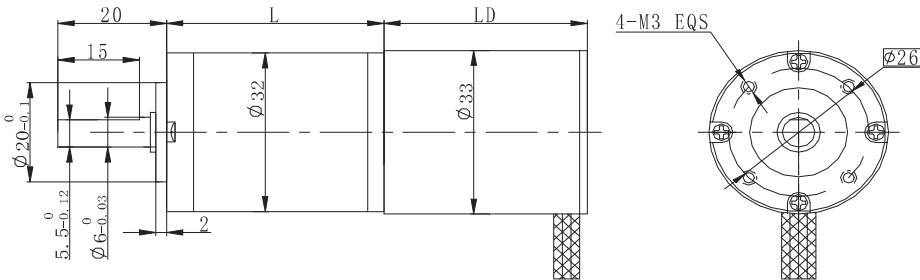
内齿圈材质:金属	Φ32行星减速器, 允许转矩范围:0.3N.m~3.0N.m	32mm OD Planetary Gearbox, Permissible Load Range: 0.3N.m~3.0N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
绿	红	黑	黄	蓝	橙	棕	白
Green	Red	Black	Yellow	Blue	Orange	Brown	White
UL1007 26AWG							



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL33BL38-2445	4	3	24	4500	3000	22	7	66	0.64	12.8	7
FL33BL80-2490	4	3	24	9000	7800	50	40	350	11	0.86	0.55

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL33BL38-2445无刷直流电机 (LD=38mm) FL33BL38-2445 DC Brushless Motor(LD=38mm)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	51	71	100	139	189	264	369
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	4	4	4
减速器长度(L) Length(L)	mm	25.7	25.7	32.8	32.8	32.8	32.8	39.7	39.7	39.7	39.7	46.6	46.6	46.6
空载转速 No-load speed	r/min	1213	869	321	237	167	129	88	63	45	32	24	17	12
额定转速 Rated speed	r/min	809	579	214	158	111	86	59	42	30	22	16	11	8.1
额定转矩 Rated torque	N.m	0.073	0.10	0.25	0.34	0.48	0.62	0.82	1.1	1.6	2.2	2.7	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.0	1.0	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5	9.0	9.0	9.0

配置FL33BL80-2490无刷直流电机(LD=80mm) (FL33BL80-2490 DC Brushless Motor) (LD=80mm)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	51	71	100	139
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3
减速器长度(L) Length(L)	mm	25.7	25.7	32.8	32.8	32.8	32.8	39.7	39.7	39.7	39.7
空载转速 No-load speed	r/min	2425	1737	643	474	333	257	176	127	90	65
额定转速 Rated speed	r/min	2102	1506	557	411	289	223	153	110	78	56
额定转矩 Rated torque	N.m	0.17	0.23	0.57	0.77	1.1	1.4	1.9	2.5	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.0	1.0	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5

FL36RBL-36JXE30K

行星减速无刷电机
BLDC Motor with Planetary Gearbox



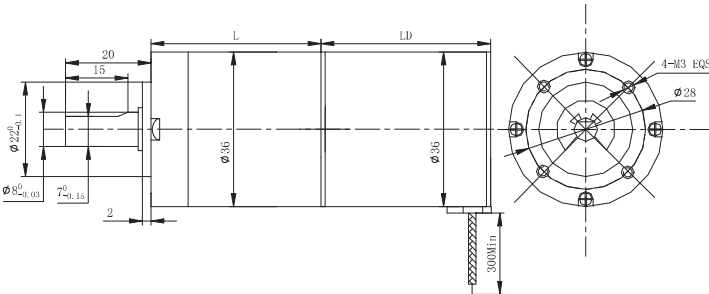
内齿圈材质:金属	Φ36行星减速器, 允许转矩范围:0.3N.m~3.0N.m	36mm OD Planetary Gearbox, Permissible Load Range: 0.3N.m~3.0N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
黄	红	黑	红	蓝	绿	白	黑
Yellow	Red	Black	Red	Blue	Green	White	Black
UL1061 AWG 20/24			UL1061 AWG 26				



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL36RBL540-24V-4818A	4	3	24	7000	4800	36	18	108	3.7	2.4	2.1
FL36RBL557-24V-4524A	4	3	24	5800	4500	50	24	150	4.1	2	2

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL36RBL540-24V-4818A无刷直流电机 (长度LD=40) FL36RBL540-24V-4818A DC Brushless Motor (LD=40)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	51	71	96	115	139	181	219
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	3	4	4
减速器长度(L) Length(L)	mm	31.0	31.0	40.1	40.1	40.1	40.1	49.0	49.0	49.0	49.0	49.0	57.9	57.9
空载转速 No-load speed	r/min	1887	1351	500	368	259	200	137	99	73	61	50	39	32
额定转速 Rated speed	r/min	1294	927	343	253	178	137	94	68	50	42	35	27	22
额定转矩 Rated torque	N.m	0.12	0.17	0.41	0.55	0.79	1.0	1.3	1.9	2.5	3	3	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.0	1.0	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5	7.5	9.0	9.0

配置FL36RBL557-24V-4524A无刷直流电机 (长度LD=57) FL36RBL557-24V-4524A DC Brushless Motor (LD=57)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	51	71	96	115	139	181	219
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	3	4	4
减速器长度(L) Length(L)	mm	31.0	31.0	40.1	40.1	40.1	40.1	49.0	49.0	49.0	49.0	49.0	57.9	57.9
空载转速 No-load speed	r/min	1563	1120	414	305	215	166	114	82	60	50	42	32	27
额定转速 Rated speed	r/min	1213	869	321	237	167	129	88	63	47	39	32	25	21
额定转矩 Rated torque	N.m	0.17	0.23	0.57	0.77	1.1	1.4	1.9	2.6	3	3	3	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.0	1.0	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5	7.5	9.0	9.0

FL42BLS60-42JM100K

行星减速无刷电机
BLDC Motor with Planetary Gearbox

FULLING MOTOR

内齿圈材质:金属	Φ42行星减速器, 允许转矩范围:1N.m~10N.m	42mm OD Planetary Gearbox, Permissible Load Range: 1N.m~10N.m
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● 接线方式

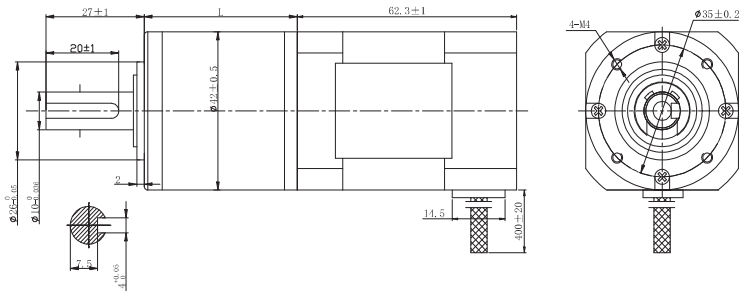
(Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
黄	红	黑	红	蓝	绿	白	黑
Yellow	Red	Black	Red	Blue	Green	White	Black
UL1430 AWG20			UL1430 AWG26				



● 外形和安装尺寸

(DIMENSIONS)



选件 Options

Connector
接插件

Encoder
编码器

● 无刷电动机主要技术参数

(Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL42BLS60-2460	8	3	24	6000	4000	125	52.5	380	10.6	0.8	1.2
FL42BLA60-2440	10	3	24	4000	3000	160	50	480	8	1.1	0.96

● 无刷行星齿轮减速电机主要技术参数

(Brushless Gear Motor Technical Data)

配置FL42BLS60-2460无刷直流电机 FL42BLS60-2460 DC Brushless Motor

减 速 比 Reduction ratio		3.71	5.18	14	19	27	49	59	67	82	95	115
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	3	3
减速器长度(L) Length(L)	mm	31.5	31.5	42.1	42.1	42.1	52.5	52.5	52.5	52.5	52.5	52.5
额定转速 Rated speed	r/min	1078	772	286	211	148	82	68	59	49	42	35
额定转矩 Rated torque	N.m	0.42	0.58	1.4	1.9	2.7	4.4	5.3	6.2	7.4	8.7	10
最大瞬间允许负载 Max. permissible load in a short time	N.m	3	3	12	12	12	25	25	25	25	25	25

配置FL42BLA60-2440无刷直流电机 FL42BLA60-2440 DC Brushless Motor

减 速 比 Reduction ratio		3.71	5.18	14	19	27	49	59	67	82	95	115
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	3	3
减速器长度(L) Length(L)	mm	31.5	31.5	42.1	42.1	42.1	52.5	52.5	52.5	52.5	52.5	52.5
额定转速 Rated speed	r/min	809	579	214	158	111	61	51	44	37	32	26
额定转矩 Rated torque	N.m	0.53	0.74	1.8	2.4	3.5	5.7	6.8	7.9	9.5	10	10
最大瞬间允许负载 Max. permissible load in a short time	N.m	3	3	12	12	12	25	25	25	25	25	25

FL57BL/56JM300K

行星减速无刷电机
BLDC Motor with Planetary Gearbox



FULLING MOTOR

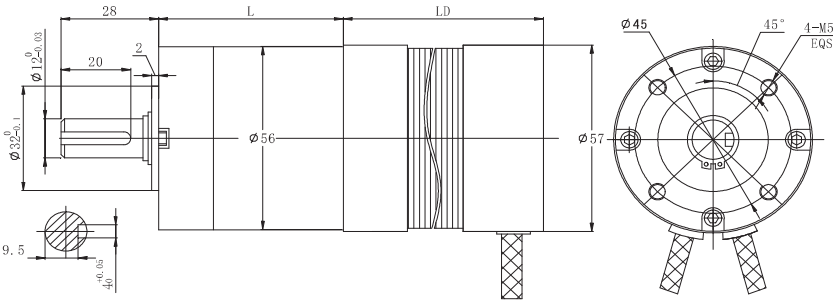
内齿圈材质:金属	Φ42行星减速器, 允许转矩范围:0.5N.m~5.0N.m	42mm OD Planetary Gearbox, Permissible Load Range: 0.5N.m~5.0N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
黄	红	黑	红	蓝	绿	白	黑
Yellow	Red	Black	Red	Blue	Green	White	Black
UL1430 AWG20			UL1430 AWG20				



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件



编码器

● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值转矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	N.m	W	N.m	A	ohms	mH
FL57BL54-3650	4	3	36	5000	4000	0.11	46	0.39	6.8	1.63	4.4
FL57BL74-3650	4	3	36	5000	4000	0.22	99	0.7	12	0.64	2

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL57BLS54-3650无刷直流电机 (LD=53.6mm) FL57BLS54-3650 DC Brushless Motor(LD=53.6mm)

减 速 比 Reduction ratio		3.60	4.25	5.33	13	15	18	23	28	43	52	61	72	96	121	154	187	220
减速级数 Number of gear trains		1	1	1	2	2	2	2	2	3	3	3	3	3	3	4	4	4
减速器长度(L) Length(L)	mm	37.8	37.8	37.8	49.5	49.5	49.5	49.5	49.5	60.8	60.8	60.8	60.8	60.8	60.8	71.9	71.9	71.9
额定转速 Rated speed	r/min	111	941	750	308	267	222	174	143	93	77	66	56	42	33	26	21	18
额定转矩 Rated torque	N.m	0.36	0.42	0.53	1.2	1.3	1.6	2.0	2.5	3.5	4.2	4.9	5.8	7.7	9.7	11	13	16
最大瞬间允许负载 Max. permissible load in a short time	N.m	9	9	9	36	36	36	36	36	72	72	72	72	72	72	90	90	90

配置FL57BLS74-3650无刷直流电机 (LD=73.6mm) FL57BLS74-3650 DC Brushless Motor(LD=73.6mm)

减 速 比 Reduction ratio		3.60	4.25	5.33	13	15	18	23	28	43	52	61	72	96	1121	154	187	220
减速级数 Number of gear trains		1	1	1	2	2	2	2	2	3	3	3	3	3	3	4	4	4
减速器长度(L) Length(L)	mm	37.8	37.8	37.8	49.5	49.5	49.5	49.5	49.5	60.8	60.8	60.8	60.8	60.8	60.8	71.9	71.9	71.9
额定转速 Rated speed	r/min	111	941	750	308	267	222	174	143	93	77	66	56	42	33	26	21	18
额定转矩 Rated torque	N.m	0.71	0.84	1.1	2.3	2.7	3.2	4.1	5.0	6.9	8.4	9.8	12	15	19	22	27	30
最大瞬间允许负载 Max. permissible load in a short time	N.m	9	9	9	36	36	36	36	36	72	72	72	72	72	72	90	90	90

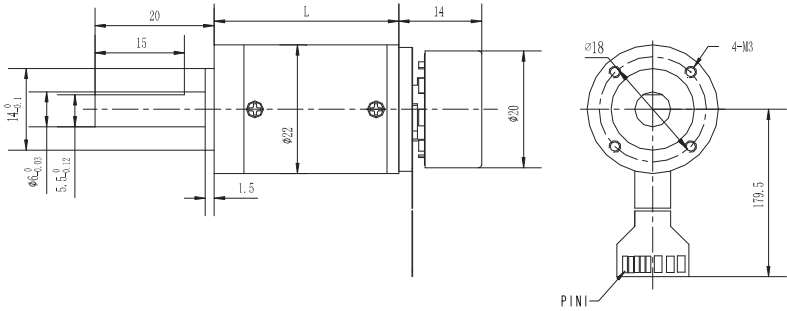
FL20BLW14-22JM15K

内齿圈材质:金属	Φ22减速器, 允许转矩范围:0.15N.m~1.5N.m	22mm OD Planetary Gearbox, Permissible Load Range: 0.15N.m~1.5N.m
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● 接线方式 (Wire Diagram)

接插件 Connecto	插针号 Pin	功能 Functions	说明 Description
FPC	1	V cc	Hall电源输入+5VDC ~ +24VDC
	2	Hall W	
	3	Hall U	
	4	Hall V	
	5	GND	Hall 接地
	6	Phase W	
	7	Phase V	
	8	Phase U	

● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件



● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL20BLW14-12V-5105A	8	3	12	9530	5170	7.59	5	19	1.62	7.2	0.62
FL20BLW14-24V-5105A	8	3	24	9530	5220	4.74	5	20	0.85	26.1	0.2.6

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL20BLW14-12V-5105A无刷直流电机 FL20BLW14-12V-5105A BLDC Motor

减 速 比 Reduction ratio		3.71	5.18	14	19	27	51	71	100	139	189	264	369
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	4	4	4
减速器长度(L) Length(L)	mm	25.4	25.4	34	34	34	42.4	42.4	42.4	42.4	50.8	50.8	50.8
空载转速 No-load speed	r/min	2534	1815	671	495	348	184	132	94	68	50	36	25
额定转速 Rated speed	r/min	1394	998	369	272	191	101	73	52	37	27	20	14
额定转矩 Rated torque	N.m	0.025	0.035	0.086	0.12	0.17	0.28	0.39	0.55	0.77	0.93	1.3	1.5
最大瞬间允许负载 Max. permissible load in a short time	N.m	0.4	0.4	1.5	1.5	1.5	3	3	3	3	4	4	4

配置FL20BLW14-24V-5105A无刷直流电机 FL20BLW14-24V-5105A BLDC Motor

减 速 比 Reduction ratio		3.71	5.18	14	19	27	51	71	100	139	189	264	369
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	4	4	4
减速器长度(L) Length(L)	mm	25.4	25.4	34	34	34	42.4	42.4	42.4	42.4	50.8	50.8	50.8
空载转速 No-load speed	r/min	2534	1815	671	495	348	184	132	94	68	50	36	25
额定转速 Rated speed	r/min	1407	1008	373	275	193	102	74	52	38	28	20	14
额定转矩 Rated torque	N.m	0.026	0.036	0.088	0.12	0.17	0.29	0.4	0.57	0.79	0.95	1.3	1.5
最大瞬间允许负载 Max. permissible load in a short time	N.m	0.4	0.4	1.5	1.5	1.5	3	3	3	3	4	4	4

FL32BLW18-32JM30K

行星减速外转子电机
Outer Rotor Motor with Planetary Gearbox



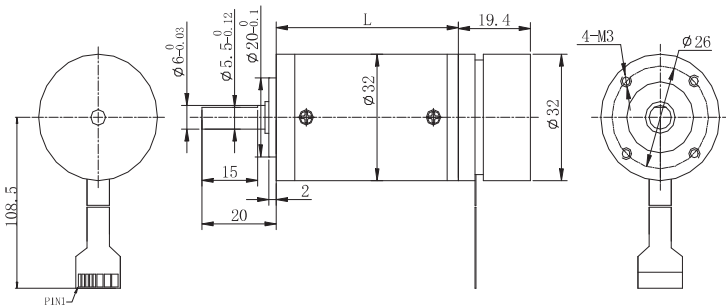
FULLING MOTOR

内齿圈材质:金属	Φ32减速器, 允许转矩范围:0.5N.m~5.0N.m	32mm OD Planetary Gearbox, Permissible Load Range: 0.5N.m~5.0N.m
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● 接线方式 (Wire Diagram)

接插件 Connecto	插针号 Pin	功能 Functions	说明 Description
FPC	1	V cc	Hall电源输入: +5VDC~+24VDC
	2	Hall W	
	3	Hall U	
	4	Hall V	
	5	GND	Hall 接地
	6	Phase W	
	7	Phase V	
	8	Phase U	

● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件



● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值转矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	N.m	W	N.m	A	ohms	mH
FL32BLW18-9V-3706A	8	3	9	3700	2100	29.5	6	73.8	3.4	2.87	1.61
FL32BLW18-12V-4607A	8	3	12	4600	2800	25.1	7	75.3	3.2	3.43	1.87
FL32BLW18-24V-4507A	8	3	24	4500	2760	25.5	7	76.5	1.7	13.7	7.73
FL32BLW18-48V-4808A	8	3	48	4800	2950	24.7	8	74.1	0.97	53	27.8

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL32BLW18无刷直流电机 FL32BLW18 BLDC Motor

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	49	59	68	82	95	115	181	218	253
9V	额定转速 Rated speed r/min	566	405	150	111	78	60	43	36	31	26	22	18	12	9.6	8.3
	额定转矩 Rated torque N.m	0.099	0.14	0.33	0.45	0.65	0.84	1.1	1.3	1.5	1.8	2.0	2.5	3.5	4.2	4.9
12V	额定转速 Rated speed r/min	755	541	200	147	104	80	57	47	41	34	29	24	15	13	11
	额定转矩 Rated torque N.m	0.084	0.12	0.28	0.39	0.55	0.71	0.90	1.1	1.2	1.5	1.7	2.1	3.0	3.6	4.1
24V	额定转速 Rated speed r/min	744	533	197	145	102	79	56	47	41	34	29	24	15	13	11
	额定转矩 Rated torque N.m	0.085	0.12	0.29	0.39	0.56	0.72	0.91	1.1	1.3	1.5	1.8	2.1	3.0	3.6	4.2
48V	额定转速 Rated speed r/min	795	569	211	155	109	84	60	50	43	36	31	26	16	14	12
	额定转矩 Rated torque N.m	0.082	0.12	0.28	0.38	0.54	0.70	0.88	1.1	1.2	1.5	1.7	2.1	2.9	3.5	4.1
减速级数 Number of gear trains		1		2			3				4					
减速器长度(L) Length(L) mm		25.7		32.8			39.7				46.6					
最大瞬间允许负载 Max. permissible load in a short time N.m		1.5		6			10				12					

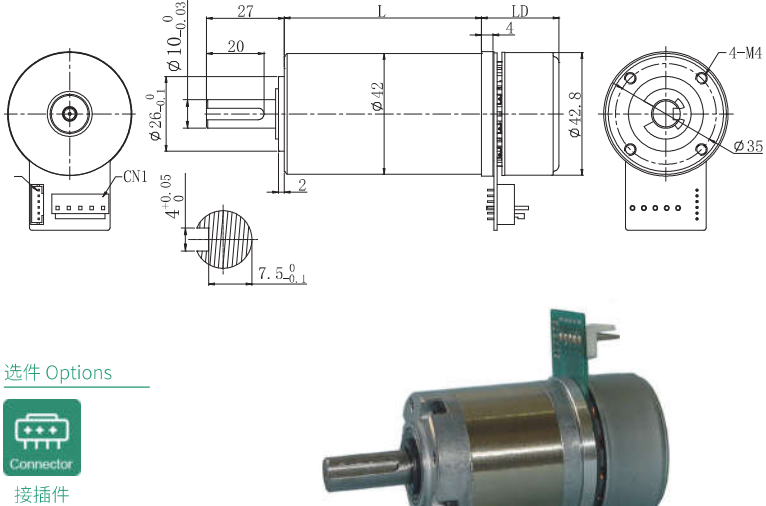
FL45BLW-42JM150K

内齿圈材质:金属	Φ42减速器, 允许转矩范围:1.5N.m~15N.m	42mm OD Planetary Gearbox, Permissible Load Range: 1.5N.m~15N.m
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● 接线方式 (Wire Diagram)

接插件 Connecto	插针号 Pin	功能 Functions	说明 Description
CN1 JST B5P-VH	PIN1	GND	
	PIN2	Phase U	
	PIN3	Phase V	
	PIN4	Phase W	
	PIN5	GND	
CN2 JST B5B-PH-K-S	PIN1	GND	
	PIN2	+5V	DC(+4.5V ~ 18VDC)
	PIN3	Hall U	
	PIN4	Hall V	
	PIN5	Hall W	
	PIN6	GND	

● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件

● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL45BLW18-24V-7130A	16	3	24	6500	5000	50	30	150	4.8	1.42	0.59
FL45BLW21-24V-6750A			24	6700	5260	84	50	250	7.1	0.72	0.33

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL45BLW18-24V-7130A无刷直流电机(LD=18mm) FL45BLW18-24V-7130A BLDC Motor (LD=18mm)

减 速 比 Reduction ratio		3.71	5.18	14	19	27	49	59	68	82	95	115	181	218	253	305	354	426
减速级数 Number of gear trains		1	1	2	2	3	3	3	3	3	3	3	4	4	4	4	4	4
减速器长度(L) Length(L)	mm	31.5	31.5	42.1	42.1	52.5	52.5	52.5	52.5	52.5	52.5	52.5	62.9	62.9	62.9	62.9	62.9	62.9
空载转速 No-load speed	r/min	1752	1255	464	342	241	133	110	96	79	68	57	36	30	26	21	18	15
额定转速 Rated speed	r/min	1348	965	357	263	185	102	85	74	61	53	43	28	23	20	16	14	12
额定转矩 Rated torque	N.m	0.17	0.23	0.57	0.77	1.1	1.8	2.2	2.5	3.0	3.5	4.2	5.9	7.1	8.2	9.9	12	14
最大瞬间允许负载 Max. permissible load in a short time	N.m	4.5	4.5	18	18	30	30	30	30	30	30	30	38	38	38	38	38	38

配置FL45BLW21-24V-6750A无刷直流电机(LD=21mm) FL45BLW21-24V-6750A BLDC Motor (LD=21mm)

减 速 比 Reduction ratio		3.71	5.18	14	19	27	449	59	68	82	95	115	181	218	253	305	354
减速级数 Number of gear trains		1	1	2	2	3	3	3	3	3	3	3	4	4	4	4	4
减速器长度(L) Length(L)	mm	31.5	31.5	42.1	42.1	52.5	52.5	52.5	52.5	52.5	52.5	52.5	62.9	62.9	62.9	62.9	62.9
空载转速 No-load speed	r/min	1806	1293	479	353	248	137	114	99	82	71	58	37	31	26	22	19
额定转速 Rated speed	r/min	1418	1015	376	277	195	107	89	77	64	55	46	29	24	21	17	15
额定转矩 Rated torque	N.m	0.28	0.39	0.95	1.3	1.8	3.0	3.6	4.2	5.0	5.8	7.1	9.9	12	14	15	15
最大瞬间允许负载 Max. permissible load in a short time	N.m	4.5	4.5	18	18	30	30	30	30	30	30	30	38	38	38	38	38

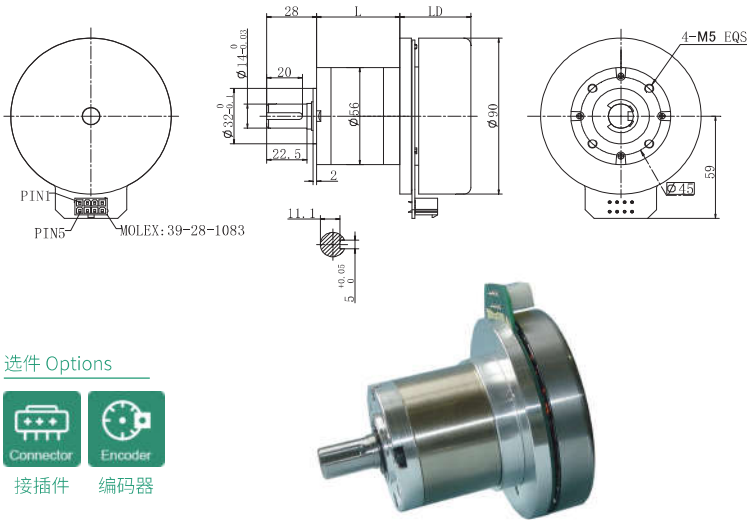
FL90BLW-56JM450K

内齿圈材质:金属	Φ56减速器, 允许转矩范围:4.0N.m~45N.m	56mm OD Planetary Gearbox, Permissible Load Range: 4.0N.m~45N.m
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● 接线方式 (Wire Diagram)

Nº	Pin	接插件型号 Type	功能 Functions	说明 Description
1	PIN3	MOLEX 39-28-1083	霍尔电源正 (Vcc)	
2	PIN1		霍尔U (Hu)	
3	PIN2		霍尔V (Hv)	
4	PIN5		霍尔W (Hw)	
5	PIN6		霍尔电源负 (GND)	
6	PIN7		相U (Phase U)	
7	PIN8		相V (Phase V)	
8	PIN4		相W (Phase W)	

● 外形和安装尺寸 (DIMENSIONS)



选件 Options



插接件 编码器

● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值转矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL90BLW27-24V-37130A	22	3	24	3400	2700	0.457	130	1.6	23	0.21	0.19
FL90BLW40-48V-16170A	22	3	48	1950	1670	0.964	169	3	13	0.65	0.9

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL90BLW27-24V-37130A无刷直流电机(LD=27mm) FL90BLW27-24V-37130A BLDC Motor(LD=27mm)

减 速 比 Reduction ratio		3.60	4.25	5.33	13	15	18	23	28	43	52	61	72	96	121	154	187
减速级数 Number of gear trains		1	1	1	2	2	2	2	2	3	3	3	3	3	3	4	4
减速器长度(L) Length(L)	mm	40.3	40.3	40.3	53.8	53.8	53.8	53.8	53.8	67.2	67.2	67.2	67.2	67.2	67.2	80.6	80.6
额定转速 Rated speed	r/min	750	635	507	208	180	150	117	96	63	52	44	38	28	22	18	14
额定转矩 Rated torque	N.m	1.5	1.8	2.0	4.8	5.6	6.7	8.5	10	14	17	20	24	32	36	45	45
最大瞬间允许负载 Max. permissible load in a short time	N.m	12	12	12	36	36	36	36	36	72	72	72	72	72	72	90	90

配置FL90BLW40-48V-16170A无刷直流电机(LD=40mm) FL90BLW40-48V-16170A BLDC Motor(LD=40mm)

减 速 比 Reduction ratio		3.60	4.25	5.33	13	15	18	23	28	43	52	61	72	96
减速级数 Number of gear trains		1	1	1	2	2	2	2	2	3	3	3	3	3
减速器长度(L) Length(L)	mm	40.3	40.3	40.3	53.8	53.8	53.8	53.8	53.8	67.2	67.2	67.2	67.2	67.2
额定转速 Rated speed	r/min	464	393	313	128	111	93	73	60	39	32	27	23	17
额定转矩 Rated torque	N.m	3.1	3.7	4.2	10	12	14	18	22	30	37	43	45	45
最大瞬间允许负载 Max. permissible load in a short time	N.m	12	12	12	36	36	36	36	36	72	72	72	72	72

FL24CBL30-24JN10K

经济型无刷减速电机
Economical BLDC Motor with Planetary Gearbox



FULLING MOTOR

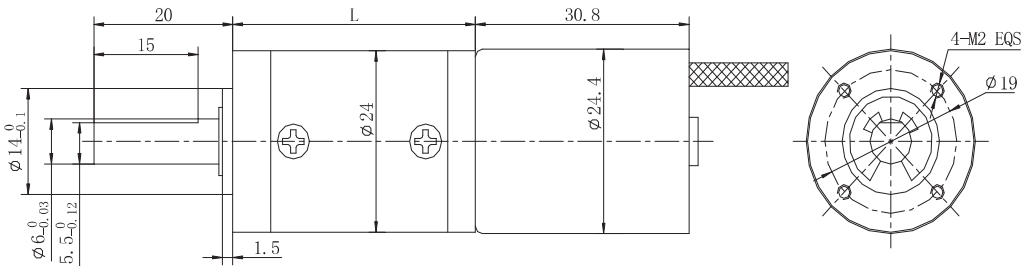
内齿圈材质:金属	Φ24行星减速器, 允许转矩范围:0.1N.m~1.0N.m	24mm OD Planetary Gearbox, Permissible Load Range: 0.1N.m~1.0N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
黄	红	黑	红	蓝	绿	白	黑
Yellow	Red	Black	Red	Blue	Green	White	Black
UL1430 AWG26			UL1430 AWG28				



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件

● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数 Number of poles	相 数 Number of phase	额定电压 Rated voltage	空载转速 No-load speed	额定转速 Rated speed	额定转矩 Rated torque	额定功率 Rated power	峰值转矩 Peak torque	峰值电流 Peak current	电 阻 Line to line resistance	电 感 Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL24CBL30-1250	12	3	12	5000	4000	5.1	2.4	17.1	0.9	7.3	1.7

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL24CBL30-1250无刷电机 FL24CBL30-1250 BLDC Motor

减 速 比 Reduction ratio		3.7	5.2	14	19	27	51	71	100	139	189	264	369	516	720
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	4	4	4	4	4
减速器长度(L) Length(L)	mm	25.0	25.0	31.6	31.6	31.6	38.0	38.0	38.0	38.0	44.4	44.4	44.4	44.4	44.4
空载转速 No-load speed	r/min	1348	965	357	263	185	98	70	50	36	26	19	14	10	7
额定转速 Rated speed	r/min	1078	772	286	211	148	78	56	40	29	21	15	11	7.8	5.6
额定转矩 Rated torque	N.m	0.019	0.027	0.065	0.088	0.12	0.21	0.30	0.42	0.58	0.70	1	1	1	1
最大瞬间允许负载 Max. permissible load in a short time	N.m	0.3	0.3	1.2	1.2	1.2	2.4	2.4	2.4	2.4	3	3	3	3	3

FL28CBLA-28JN30K

经济型无刷减速电机
Economical BLDC Motor with Planetary Gearbox



FULLING MOTOR

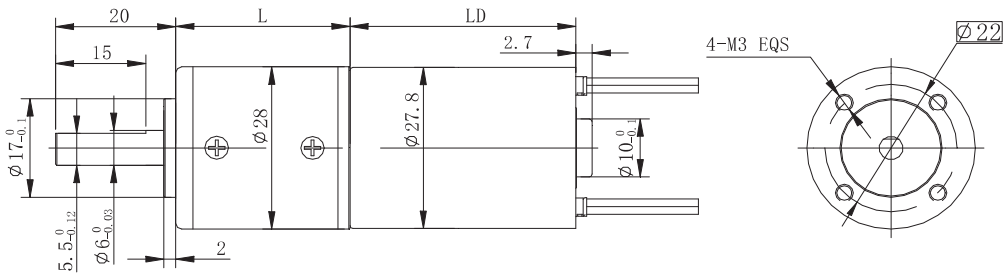
内齿圈材质:金属	Φ28行星减速器, 允许转矩范围:0.3N.m~3.0N.m	28mm OD Planetary Gearbox, Permissible Load Range: 0.3N.m~3.0N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
绿	红	黑	黄	蓝	橙	棕	白
Green	Red	Black	Yellow	Blue	Orange	Brown	White
UL1061 AWG26			UL1061 AWG28				



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件

● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数 Number of poles	相 数 Number of phase	额定电压 Rated voltage	空载转速 No-load speed	额定转速 Rated speed	额定转矩 Rated torque	额定功率 Rated power	峰值转矩 Peak torque	峰值电流 Peak current	电 阻 Line to line resistance	电 感 Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL28CBLA38-2454	8	3	24	5400	4000	28	12	84	2	5.7	2.48
FL28CBLA48-2456	8	3	24	6300	4500	50	24	150	4.5	2.5	1.2

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL28CBLA38-2454无刷电机 (LD=38mm) FL28CBLA38-2454 BLDC Motor(LD=38mm)

减 速 比 Reduction ratio		3.7	5.2	114	19	27	35	51	71	100	139	181	218	254
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	4	4	4
减速器长度(L) Length(L)	mm	29.0	29.0	36.1	36.1	36.1	36.1	43.0	43.0	43.0	43.0	49.9	49.9	49.9
空载转速 No-load speed	r/min	1456	1042	386	284	200	154	106	76	54	39	30	25	21
额定转速 Rated speed	r/min	1078	772	286	211	148	114	78	56	40	29	22	18	16
额定转矩 Rated torque	N.m	0.093	0.13	0.32	0.43	0.61	0.79	1.0	1.5	2.0	2.8	3	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1	1	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5	9	9	9

配置FL28CBLA48-2456无刷电机(LD=48mm) FL28CBLA48-2456 BLDC Motor(LD=48mm)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	35	51	71	100	139	181
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	4
减速器长度(L) Length(L)	mm	29.0	29.0	36.1	36.1	36.1	36.1	43.0	43.0	43.0	43.0	49.9
空载转速 No-load speed	r/min	1700	1216	450	332	233	154	124	89	63	45	35
额定转速 Rated speed	r/min	1213	869	321	237	167	114	88	63	45	32	25
额定转矩 Rated torque	N.m	0.17	0.23	0.57	0.77	1.1	0.79	1.9	2.6	3	3	3
最大瞬间允许负载 Max. permissible load in a short time	N.m	1	1	3.5	3.5	3.5	3.5	7.5	7.5	7.5	7.5	9

FL36CBL-36JXF50K

经济型无刷减速电机
Economical BLDC Motor with Planetary Gearbox



FULLING MOTOR

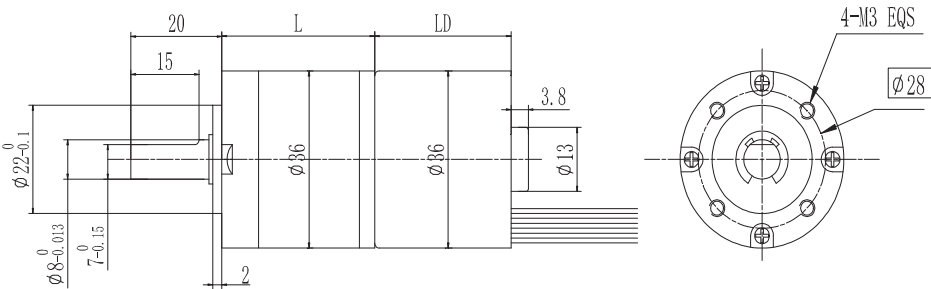
内齿圈材质:金属	Φ36行星减速器, 允许转矩范围:0.5N.m~5.0N.m	36mm OD Planetary Gearbox, Permissible Load Range: 0.5N.m~5.0N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
黄 Yellow	棕 Brown	橙 Orange	红 Red	蓝 Blue	绿 Green	白 White	黑 Black
UL1430 AWG24			UL1430 AWG26				



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件

● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL36C BL50-2460	8	3	24	6000	4800	55	28	165	4.5	1.2	1.2
FL36C BL57-2455	8	3	24	5500	4500	70	33	210	5.4	1.05	1
FL36C BL60-2458	8	3	24	5800	4800	80	40	240	7	0.95	0.85
FL36C BL65-2458	8	3	24	5800	4800	90	45	270	7.5	0.88	0.8

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL36CBL50-2460无刷电机(LD=50mm) FL36CBL50-2460 BLDC Motor(LD=50mm)

减 速 比 Reduction ratio		3.71	5.18	14	19	27	35	49	59	68	82	95	115
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	3	3
减速器长度(L) Length(L)	mm	29.0	29.0	38.4	38.4	38.4	38.4	45.7	45.7	45.7	45.7	45.7	45.7
空载转速 No-load speed	r/min	1617	1158	429	316	222	171	122	102	88	73	63	52
额定转速 Rated speed	r/min	1294	927	343	253	178	137	98	81	71	59	51	42
额定转矩 Rated torque	N.m	0.18	0.26	0.62	0.85	1.2	1.6	2.0	2.4	2.7	3.3	3.8	4.6
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.5	1.5	6	6	6	6	10	10	10	10	12	12



● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

配置FL36CBL57-2455无刷电机(LD=57mm) FL36CBL57-2455 BLDC Motor(LD=57mm)

减速比 Reduction ratio		3.71	5.18	14	19	27	35	49	59	68	82	95	115
减速级数 Number of gear trains		1	1	2	2	2	2	3	3	3	3	3	3
减速器长度(L) Length(L)	mm	29.0	29.0	38.4	38.4	38.4	38.4	45.7	45.7	45.7	45.7	45.7	45.7
空载转速 No-load speed	r/min	1482	1062	393	289	204	157	112	93	81	67	58	48
额定转速 Rated speed	r/min	1213	869	321	237	167	129	92	76	66	55	47	39
额定转矩 Rated torque	N.m	0.23	0.33	0.79	1.1	1.5	2.0	2.5	3.0	3.5	4.2	4.9	5
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.5	1.5	6	6	6	6	10	10	10	10	12	12

配置FL36CBL60-2458无刷电机(LD=60mm) FL36CBL60-2458BLDC Motor(LD=60mm)

减速比 Reduction ratio		3.71	5.18	14	19	27	49	59	68	82	95	115
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	3	3
减速器长度(L) Length(L)	mm	29.0	29.0	38.4	38.4	38.4	45.7	45.7	45.7	45.7	45.7	45.7
空载转速 No-load speed	r/min	1563	1120	414	305	215	118	98	85	71	61	50
额定转速 Rated speed	r/min	1294	927	343	253	178	98	81	71	59	51	42
额定转矩 Rated torque	N.m	0.27	0.37	0.91	1.2	1.8	2.9	3.5	4.0	4.8	5	5
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.5	1.5	6	6	6	10	10	10	10	12	12

配置FL36CBL65-2458无刷电机(LD=65mm) FL36CBL65-2458 BLDC Motor(LD=65mm)

减速比 Reduction ratio		3.71	5.18	14	19	27	49	59	68	82	95	115
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	3	3
减速器长度(L) Length(L)	mm	29.0	29.0	38.4	38.4	38.4	45.7	45.7	45.7	45.7	45.7	45.7
空载转速 No-load speed	r/min	1563	1120	414	305	215	118	98	85	71	61	50
额定转速 Rated speed	r/min	1294	927	343	253	178	98	81	71	59	51	42
额定转矩 Rated torque	N.m	0.30	0.42	1.0	1.4	2.0	3.2	3.9	4.5	5	5	5
最大瞬间允许负载 Max. permissible load in a short time	N.m	1.5	1.5	6	6	6	10	10	10	10	12	12

FL42CBL-42JXF100K

经济型无刷减速电机
Economical BLDC Motor with Planetary Gearbox



FULLING MOTOR

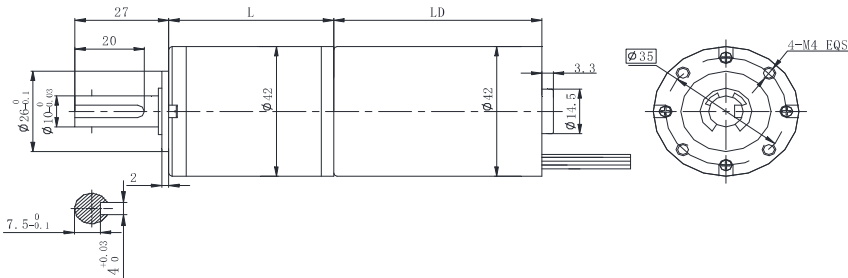
内齿圈材质:金属	Φ42行星减速器, 允许转矩范围:1N.m~10N.m	42mm OD Planetary Gearbox, Permissible Load Range: 1N.m~10N.m
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● 接线方式 (Wire Diagram)

U	V	W	Vcc	Ha	Hb	Hc	GND
黄	红	黑	红	蓝	绿	白	黑
Yellow	Red	Black	Red	Blue	Green	White	Black
UL1430 AWG20			UL1430 AWG26				



● 外形和安装尺寸 (DIMENSIONS)



选件 Options



接插件

● 无刷电动机主要技术参数 (Spur Gearbox Specifications)

电机型号 TYPE	极 数	相 数	额定电压	空载转速	额定转速	额定转矩	额定功率	峰值扭矩	峰值电流	电 阻	电 感
	Number of poles	Number of phase	Rated voltage	No-load speed	Rated speed	Rated torque	Rated power	Reak torque	Peak current	Line to line resistance	Line to line inductance
			VDC	r/min	r/min	mN.m	W	mN.m	A	ohms	mH
FL42CBL60-2442	8	3	24	4200	3200	120	40	360	6.3	1.2	1.6
FL42CBL66-2459	8	3	24	5900	4000	150	63	450	7	0.75	0.8

● 无刷行星齿轮减速电机主要技术参数 (Brushless Gear Motor Technical Data)

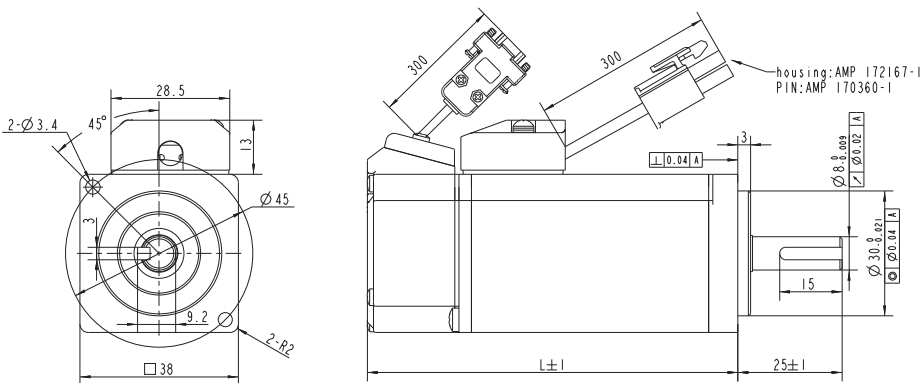
配置FL42CBL60-2442无刷电机(LD=60mm) FL42CBL60-2442 BLDC Motor(LD=60mm)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	49	59	68	82	95	115	181
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	3	3	4
减速器长度(L) Length(L)	mm	31.5	31.5	42.1	42.1	42.1	52.5	52.5	52.5	52.5	52.5	52.5	62.9
空载转速 No-load speed	r/min	1132	811	300	221	156	86	71	62	51	44	37	23
额定转速 Rated speed	r/min	863	618	229	168	119	65	54	47	39	34	28	18
额定转矩 Rated torque	N.m	0.40	0.56	1.4	1.9	2.6	4.3	5.2	6.0	7.2	8.3	10	10
最大瞬间允许负载 Max. permissible load in a short time	N.m	3	3	12	12	12	25	25	25	25	25	25	30

配置FL42CBL66-2459无刷电机(LD=66mm) FL42CBL66-2459 BLDC Motor(LD=66mm)

减 速 比 Reduction ratio		3.7	5.2	14	19	27	49	59	68	82	95	115	
减速级数 Number of gear trains		1	1	2	2	2	3	3	3	3	3	3	
减速器长度(L) Length(L)	mm	31.5	31.5	42.1	42.1	42.1	52.5	52.5	52.5	52.5	52.5	52.5	
空载转速 No-load speed	r/min	1590	1139	421	311	219	120	100	87	72	62	51	
额定转速 Rated speed	r/min	1081	769	286	211	148	82	68	59	49	42	35	
额定转矩 Rated torque	N.m	0.50	0.70	1.7	2.3	3.3	5.4	6.5	7.5	9.0	10	10	
最大瞬间允许负载 Max. permissible load in a short time	N.m	3	3	12	12	12	25	25	25	25	25	25	

机械尺寸 (Dimensions)



选件 Options



接插件



齿轮箱



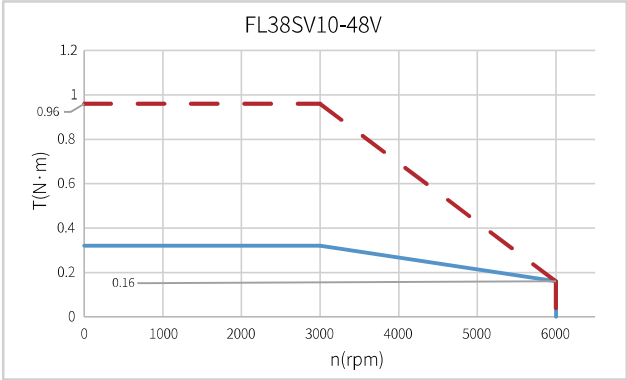
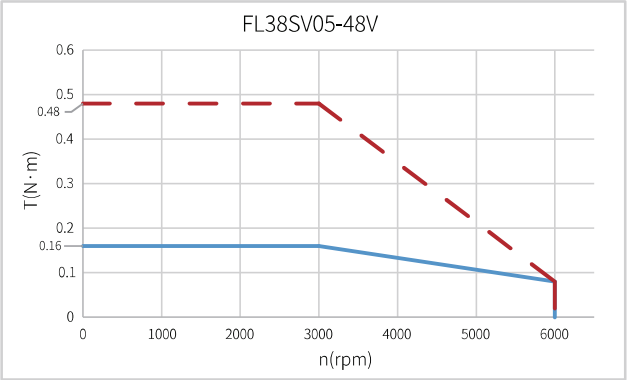
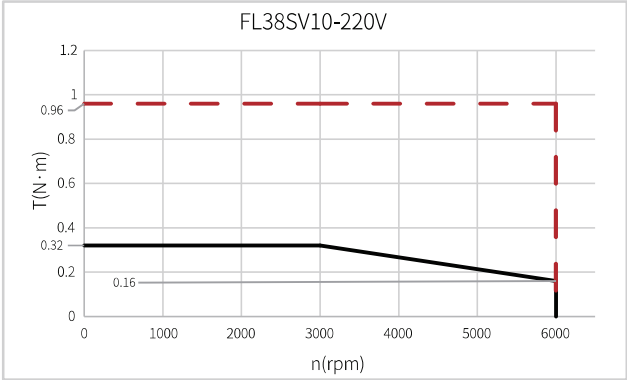
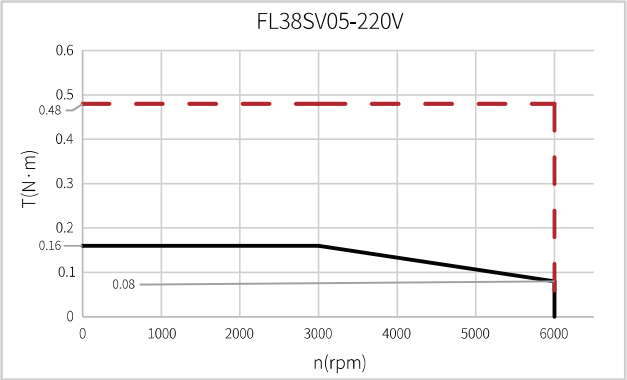
刹车

接线说明 (Electric Connection)

序号	引出线颜色	引出线型号	功能	说明
No.	Lead Color	Lead Gauge	Function	Description
1	黄色(Yellow)	AWG19(20)	U相(Phase U)	
2	红色(Red)		V相(Phase V)	
3	黑色(Black)		W相(Phase W)	

编码器接线颜色定义见图纸。
Electric connection of encoder cable is shown in the official drawing.

性能曲线 (Performance Curve)





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	69N @ 14mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +50°C; Temperature: -20°C~ +50°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +85°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +85°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	59N		
绝缘等级 (Insulation Class)	Class F		
防护等级 (Protection level)	IP65		

● 电性能 (Electrical Specifications)

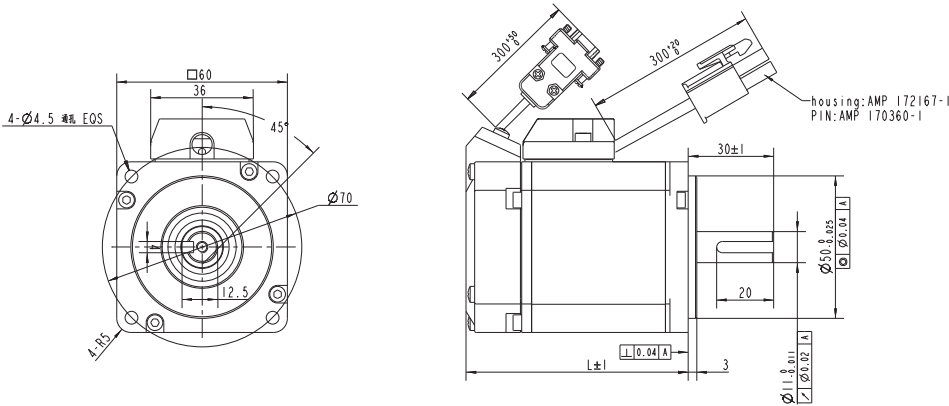
类型(Model)	单位 (Unit)	FL38SV05		FL38SV10	
额定功率(Rated power)	Pn	W	50	100	
额定电压(Rated voltage)	U	VDC	220	48	220 48
额定转速(Rated speed)	nn	RPM	3000	3000	3000 3000
额定转矩(Rated torque)	Tn	N·m	0.16	0.16	0.32 0.32
额定电流(Rated current)	In	A	0.5	2.1	1 4.3
最大转速(Maximum speed)	nmax	RPM	6000	6000	6000 6000
最大转矩(Maximum torque)	Tm	N·m	0.48	0.48	0.96 0.96
最大电流(Maximum current)	Im	A	1.5	6.3	3 12.9
电阻(Line to line resistance)	RL	Ω	33	2.2	17.5 0.88
电感(Line to line inductance)	LL	mH	24	1.8	12.4 0.78
反电势系数(BackEMF)	Ke	V/Krpm	21	5	21 5
转矩系数(Torque constant)	Kt	Nm/A	0.32	0.076	0.32 0.074
电气时间常数(Electrical time constant)	τe	ms	0.7	0.8	0.7 0.9
机械时间常数(Mechanical time constant)	τm	ms	1.23	1.45	1.09 0.99
转动惯量(Rotor inertia)	Jm0	Kg.cm ²	0.024	0.024	0.04 0.04
转动惯量带制动器(Rotor inertia with brake)	Jm1	Kg.cm ²	0.034	0.035	0.05 0.05
极数(Number of poles)			10	10	10 10
编码器(Encoder)			2500ppr光电编码器(增量式) 2500p/rev incremental encoder		
机身长度(Motor length)	L1	mm	72	88	
机身长度带制动器(Motor length with brake)	L2	mm	106	122	
重量 (Weight)		Kg	0.4	0.5	
重量带制动器(Weight with brake)		Kg	0.65	0.75	

FL60SV Series

伺服电机
Servo Motor



机械尺寸 (Dimensions)



选件 Options



接插件



齿轮箱



刹车

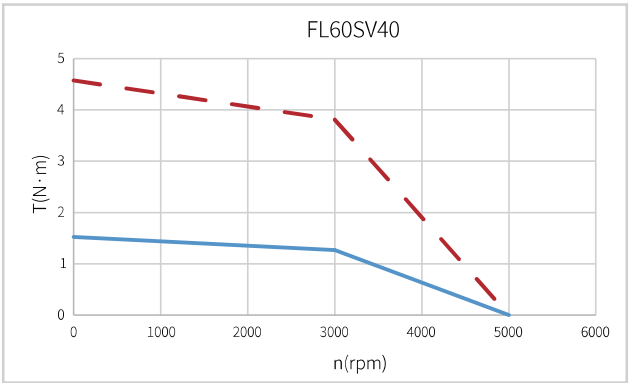
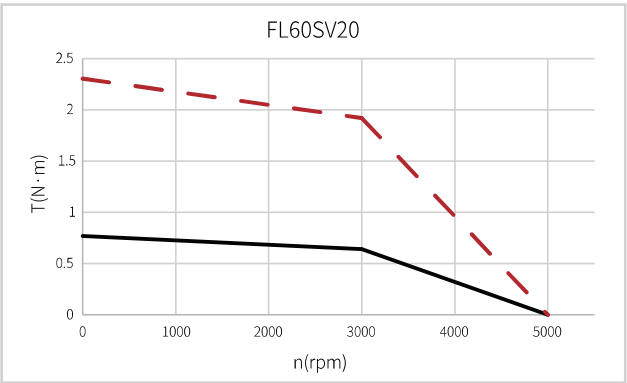
接线说明 (Electric Connection)

序号	引出线颜色	引出线型号	功能	说明
No.	Lead Color	Lead Gauge	Function	Description
1	黄色(Yellow)	AWG19(20)	U相(Phase U)	
2	红色(Red)		V相(Phase V)	
3	黑色(Black)		W相(Phase W)	

编码器接线颜色定义见图纸。

Electric connection of encoder cable is shown in the official drawing.

性能曲线 (Performance Curve)





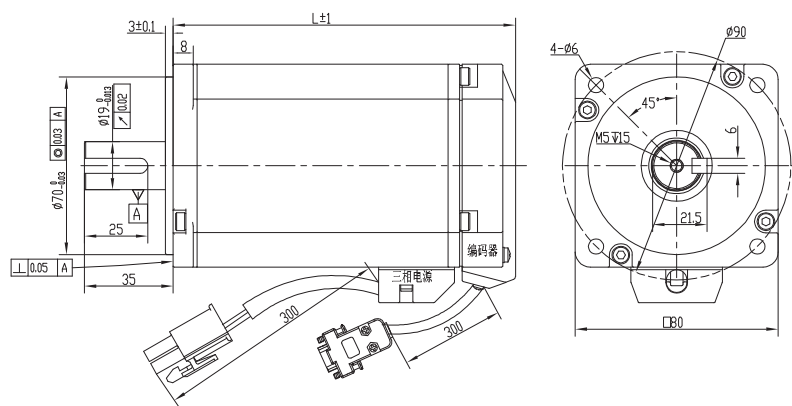
● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	245N @ 20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~+50°C; Temperature: -20°C~+50°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~+85°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~+85°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	98N		
绝缘等级 (Insulation Class)	Class F		
防护等级 (Protection level)	IP65		

● 电性能 (Electrical Specifications)

类型(Model)	单位 (Unit)	FL60SV20		FL60SV40	
额定功率(Rated power)	Pn	W	200	400	
额定电压(Rated voltage)	U	VDC	48	220	48
额定转速(Rated speed)	nn	RPM	3000	3000	3000
额定转矩(Rated torque)	Tn	N·m	0.64	0.64	1.27
额定电流(Rated current)	In	A	6	1.2	12
最大转速(Maximum speed)	nmax	RPM	5000	6000	5000
最大转矩(Maximum torque)	Tm	N·m	1.92	1.92	3.81
最大电流(Maximum current)	Im	A	18	3.6	36
电阻(Line to line resistance)	RL	Ω	0.38	9.35	0.23
电感(Line to line inductance)	LL	mH	0.68	17	0.3
反电势系数(BackEMF)	Ke	V/Krpm	6.5	32	6.5
转矩系数(Torque constant)	Kt	Nm/A	0.107	0.53	0.107
电气时间常数(Electrical time constant)	τe	ms	1.79	1.81	1.3
机械时间常数(Mechanical time constant)	τm	ms	0.85	21.01	0.52
转动惯量(Rotor inertia)	Jm0	Kg.cm ²	0.15	0.15	0.25
转动惯量带制动器(Rotor inertia with brake)	Jm1	Kg.cm ²	0.15	0.15	0.25
极数(Number of poles)			10	10	10
编码器(Encoder)			2500ppr光电编码器(增量式) 2500p/rev incremental encoder		
机身长度(Motor length)	L1	mm	86.5	79.5	106
机身长度带制动器(Motor length with brake)	L2	mm	123	116	142.5
重量 (Weight)		Kg	0.95	0.9	1.35
重量带制动器(Weight with brake)		Kg	1.35	1.3	1.85

● 机械尺寸 (Dimensions)



选件 Options



接插件



齿轮箱



刹车

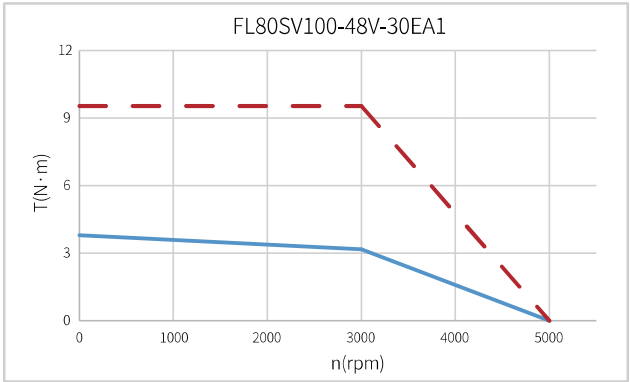
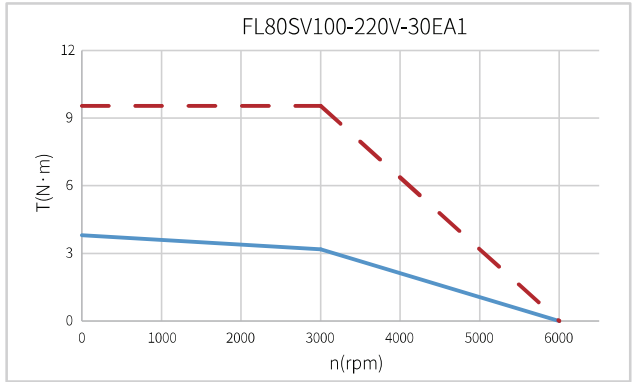
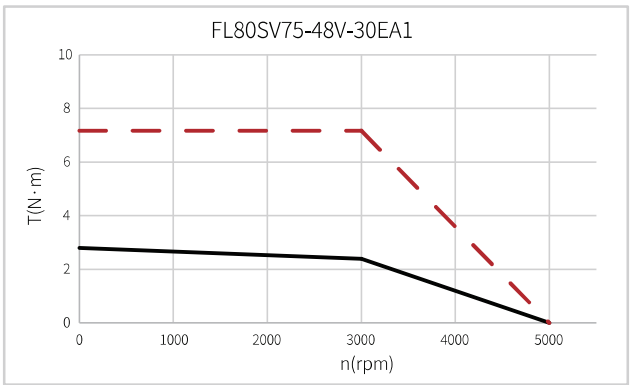
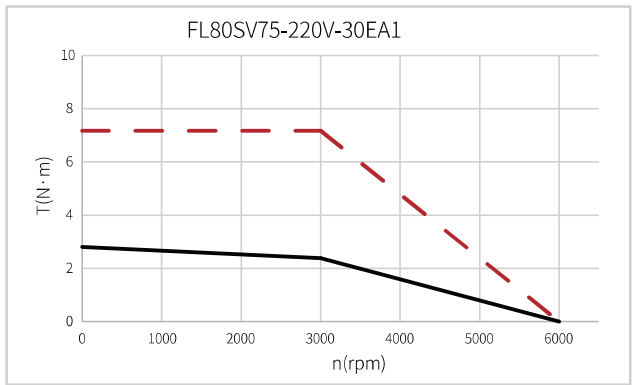
● 接线说明 (Electric Connection)

序号	引出线颜色	引出线型号	功能	说明
No.	Lead Color	Lead Gauge	Function	Description
1	黄色(Yellow)	AWG16(13)	U相(Phase U)	
2	红色(Red)		V相(Phase V)	
3	黑色(Black)		W相(Phase W)	

编码器接线颜色定义见图纸。

Electric connection of encoder cable is shown in the official drawing.

● 性能曲线 (Performance Curve)





● 一般技术特性 (General Technical Information)

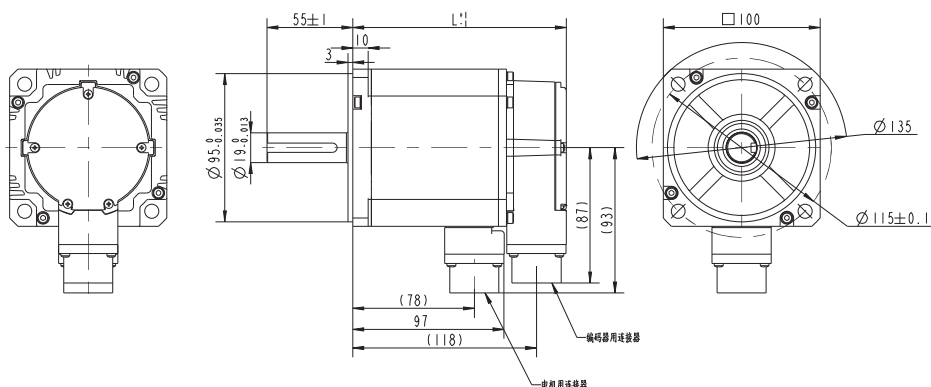
编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	392N @ 20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +50°C; Temperature: -20°C~ +50°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +85°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +85°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	147N		
绝缘等级 (Insulation Class)	Class F		
防护等级 (Protection level)	IP65		

● 电机技术性能 (Motor Technical Specification)

类型(Model)	单位 (Unit)	FL80SV75		FL80SV100	
额定功率(Rated power)	Pn	W	750	1000	
额定电压(Rated voltage)	U	VDC	220	48	220 48
额定转速(Rated speed)	nn	RPM	3000	3000	3000 3000
额定转矩(Rated torque)	Tn	N·m	2.39	2.39	3.18 3.18
额定电流(Rated current)	In	A	4.4	22.2	5.9 30
最大转速(Maximum speed)	nmax	RPM	6000	5000	6000 5000
最大转矩(Maximum torque)	Tm	N·m	7.14	7.14	9.6 9.6
最大电流(Maximum current)	Im	A	13.2	73.5	17.7 90
电阻(Line to line resistance)	RL	Ω	1.77	0.064	0.885 0.034
电感(Line to line inductance)	LL	mH	5.6	0.2	3.67 0.16
反电势系数(BackEMF)	Ke	V/Krpm	36	6.5	36 6.5
转矩系数(Torque constant)	Kt	Nm/A	0.54	0.098	0.54 0.107
电气时间常数(Electrical time constant)	τe	ms	3.2	3.1	4.1 4.7
机械时间常数(Mechanical time constant)	τm	ms	1.48	1.65	1.06 0.86
转动惯量(Rotor inertia)	Jm0	Kg.cm ²	1.56	1.56	2.22 2.22
转动惯量带制动器(Rotor inertia with brake)	Jm1	Kg.cm ²	1.685	1.685	2.34 2.34
极数(Number of poles)			10	10	10 10
编码器(Encoder)			2500ppr光电编码器(增量式) 2500p/rev incremental encoder		
机身长度(Motor length)	L1	mm	112	118	129 135
机身长度带制动器(Motor length with brake)	L2	mm	149	155	165 171
重量 (Weight)		Kg	2.5	2.6	3.2 3.3
重量带制动器(Weight with brake)		Kg	3.1	3.2	3.8 3.9

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



刹车

● 接线说明

(Electric Connection)

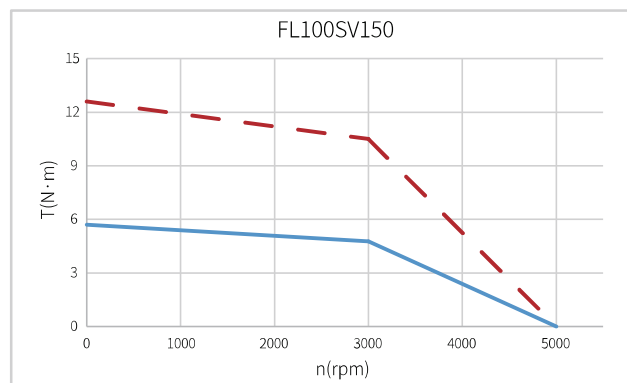
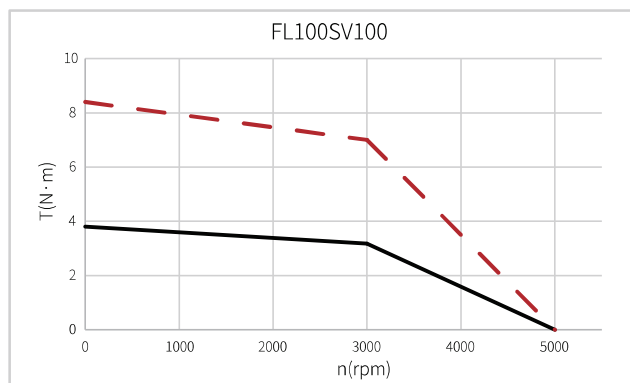
动力线的连接器接线定义见图纸。

编码器的连接器接线定义见图纸。

Electric connection of power and encoder cable is shown in the official drawing.

● 性能曲线

(Performance Curve)





● 一般技术特性 (General Technical Information)

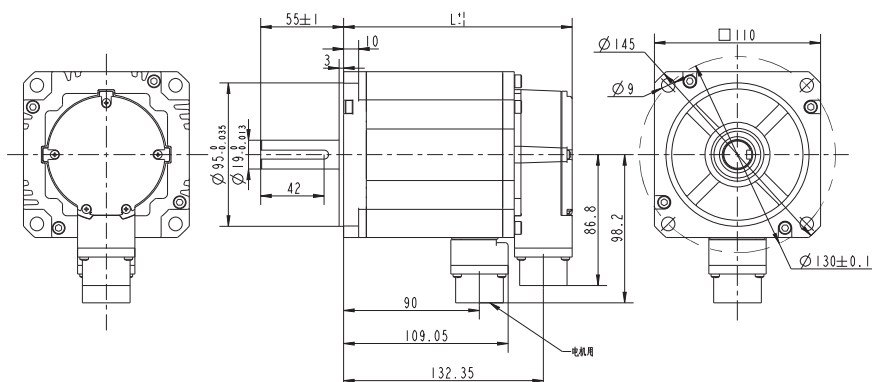
编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	490N @ 20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +50°C; Temperature: -20°C~ +50°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +85°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +85°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	196N		
绝缘等级 (Insulation Class)	Class F		
防护等级 (Protection level)	IP65		

● 电机技术性能 (Motor Technical Specification)

类型(Model)	单位 (Unit)	FL100SV100		FL100SV150	
额定功率(Rated power)	Pn	W	1000	1500	
额定电压(Rated voltage)	U	VDC	220VAC	48VDC	220VAC
额定转速(Rated speed)	nn	RPM	3000	3000	3000
额定转矩(Rated torque)	Tn	N·m	3.18	3.18	4.77
额定电流(Rated current)	In	A	5.0	31.8	7.5
最大转速(Maximum speed)	nmax	RPM	5000	5000	5000
最大转矩(Maximum torque)	Tm	N·m	7	7	10.5
最大电流(Maximum current)	Im	A	11	70	16.7
电阻(Line to line resistance)	RL	Ω	0.82	0.022	0.54
电感(Line to line inductance)	LL	mH	7.4	0.2	5.2
反电势系数(BackEMF)	Ke	V/Krpm	38	6.18	38
转矩系数(Torque constant)	Kt	Nm/A	0.63	0.1	0.63
电气时间常数(Electrical time constant)	τe	ms	9	9	9.6
机械时间常数(Mechanical time constant)	τm	ms	0.46	0.47	0.43
转动惯量(Rotor inertia)	Jm0	Kg.cm ²	1.3	1.3	1.84
转动惯量带制动器(Rotor inertia with brake)	Jm1	Kg.cm ²	1.67	1.67	2.21
极数(Number of poles)			10	10	10
编码器(Encoder)			2500ppr光电编码器(增量式) 2500p/rev incremental encoder		
机身长度(Motor length)	L1	mm	137	142	159
机身长度带制动器(Motor length with brake)	L2	mm	172	177	194
重量 (Weight)		Kg	3.73	3.8	4.7
重量带制动器(Weight with brake)		Kg	4.73	4.8	5.7

机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



刹车

接线说明

(Electric Connection)

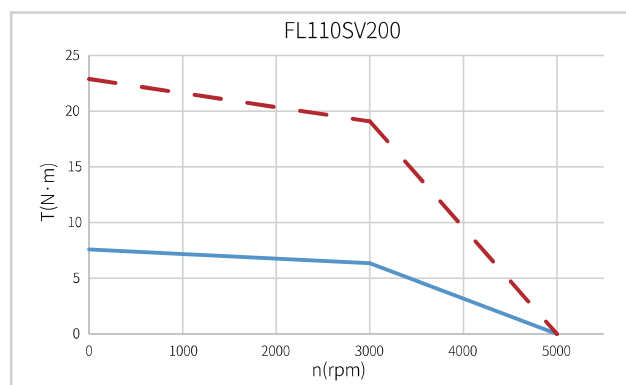
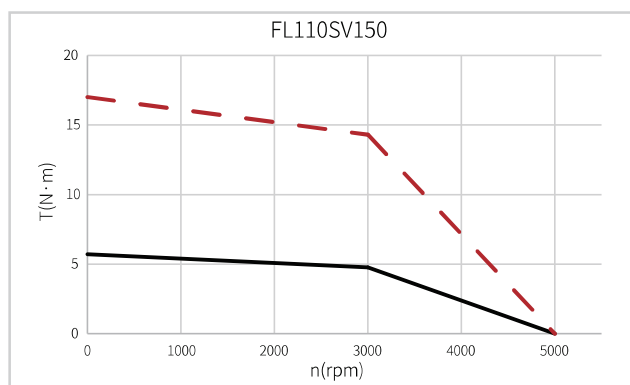
动力线的连接器接线定义见图纸。

编码器的连接器接线定义见图纸。

Electric connection of power and encoder cable is shown in the official drawing.

性能曲线

(Performance Curve)





● 一般技术特性 (General Technical Information)

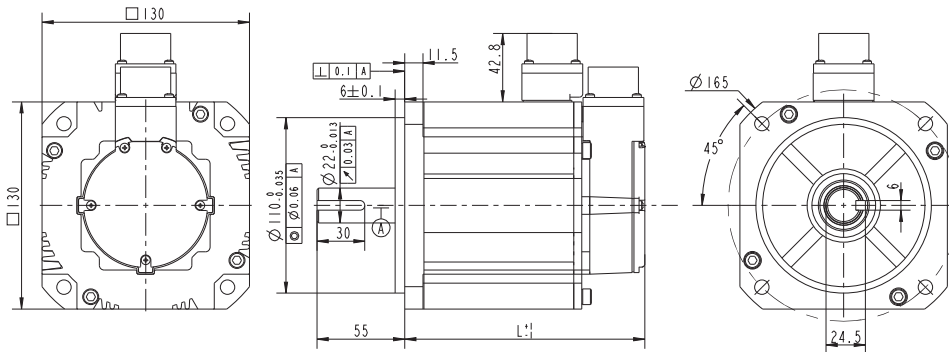
编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	490N @ 20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +50°C; Temperature: -20°C~ +50°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +85°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +85°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	196N		
绝缘等级 (Insulation Class)	Class F		
防护等级 (Protection level)	IP65		

● 电机技术性能 (Motor Technical Specification)

类型(Model)		单 位 (Unit)	FL110SV150		FL110SV200	
额定功率(Rated power)	Pn	W	1500		2000	
额定电压(Rated voltage)	U	VDC	220VAC	48VDC	220VAC	48VDC
额定转速(Rated speed)	nn	RPM	3000	3000	3000	3000
额定转矩(Rated torque)	Tn	N·m	4.77	4.77	6.37	6.37
额定电流(Rated current)	In	A	7.6	43.4	10.1	58
最大转速(Maximum speed)	nmax	RPM	5000	5000	5000	5000
最大转矩(Maximum torque)	Tm	N·m	14.3	14.3	19.1	19.1
最大电流(Maximum current)	Im	A	22.8	130	30.3	174
电阻(Line to line resistance)	RL	Ω	0.36	0.01	0.29	0.009
电感(Line to line inductance)	LL	mH	5.6	0.16	4.8	0.145
反电势系数(BackEMF)	Ke	V/Krpm	38.1	6.35	38.1	6.63
转矩系数(Torque constant)	Kt	Nm/A	0.63	0.11	0.63	0.11
电气时间常数(Electrical time constant)	τe	ms	15	16	16.5	16.1
机械时间常数 (Mechanical time constant)	τm	ms	0.48	0.48	0.51	0.53
转动惯量(Rotor inertia)	Jm0	Kg.cm²	3.1	3.1	4.1	4.1
转动惯量带制动器(Rotor inertia with brake)	Jm1	Kg.cm²	3.47	3.47	4.47	4.47
极数(Number of poles)			10	10	10	10
编码器(Encoder)			2500ppr光电编码器 (增量式) 2500p/rev incremental encoder			
机身长度(Motor length)	L1	mm	151.5	156.5	168.5	173.5
机身长度带制动器(Motor length with brake)	L2	mm	187	192	204	209
重量 (Weight)		Kg	5	5.2	6.7	6.9
重量带制动器(Weight with brake)		Kg	6	6.2	7.7	7.9

● 机械尺寸

(Dimensions)



选件 Options



接插件



齿轮箱



刹车

● 接线说明

(Electric Connection)

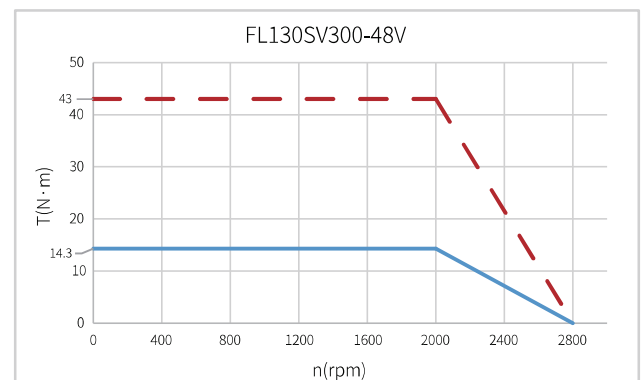
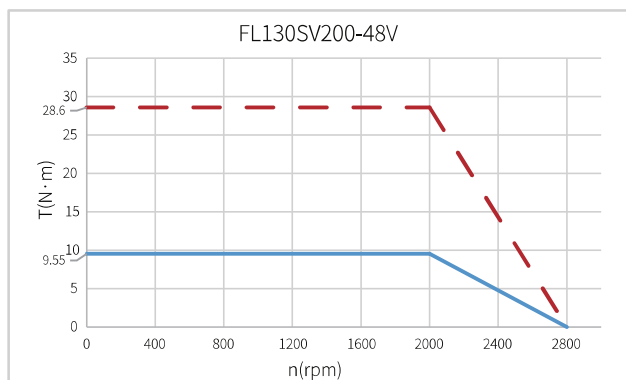
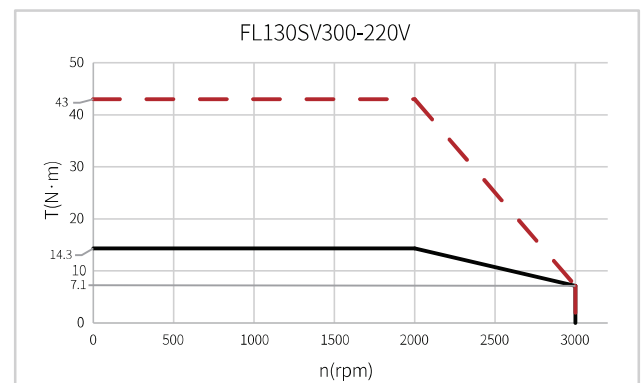
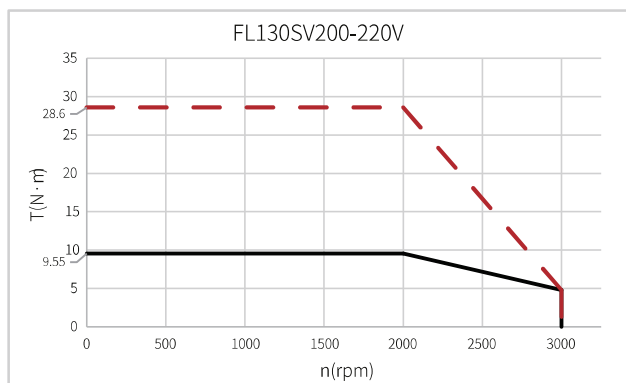
动力线的连接器接线定义见图纸。

编码器的连接器接线定义见图纸。

Electric connection of power and encoder cable is shown in the official drawing.

● 性能曲线

(Performance Curve)





● 一般技术特性 (General Technical Information)

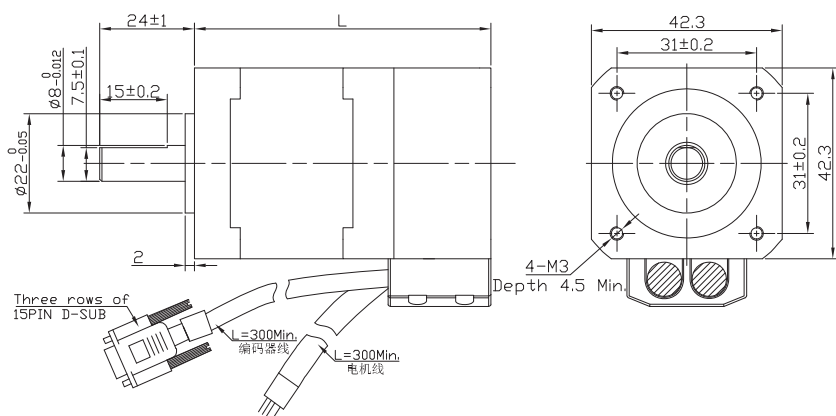
编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	490N @ 20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~+40°C; Temperature: -20°C~+40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~+60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~+60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	196N		
绝缘等级 (Insulation Class)	Class F		
防护等级 (Protection level)	IP65		

● 电机技术性能 (Motor Technical Specification)

类型(Model)	单位 (Unit)	FL130SV200		FL130SV300	
额定功率(Rated power)	Pn	W	2000	3000	
额定电压(Rated voltage)	U	VDC	220	48	220 48
额定转速(Rated speed)	nn	RPM	2000	2000	2000 2000
额定转矩(Rated torque)	Tn	N·m	9.55	9.55	14.3 14.3
额定电流(Rated current)	In	A	9.3	52.9	14 79.3
最大转速(Maximum speed)	nmax	RPM	3000	3000	3000 300
最大转矩(Maximum torque)	Tm	N·m	28.65	28.65	42.9 42.9
最大电流(Maximum current)	Im	A	27.9	158.7	42 237.9
电阻(Line to line resistance)	RL	Ω	0.8	0.025	0.5 0.016
电感(Line to line inductance)	LL	mH	4.2	0.14	3 0.1
反电势系数(BackEMF)	Ke	V/Krpm	68	12	68 12
转矩系数(Torque constant)	Kt	Nm/A	1.03	0.18	1.02 0.18
电气时间常数(Electrical time constant)	τe	ms	5.3	5.6	6 6.3
机械时间常数(Mechanical time constant)	τm	ms	1.68	1.69	1.5 1.54
转动惯量(Rotor inertia)	Jm0	Kg.cm ²	14	14	19.9 19.9
转动惯量带制动器(Rotor inertia with brake)	Jm1	Kg.cm ²	15.2	15.2	20.2 20.2
极数(Number of poles)			10	10	10 10
编码器(Encoder)			2500ppr光电编码器(增量式) 2500p/rev incremental encoder		
机身长度(Motor length)	L1	mm	150	165	178 193
机身长度带制动器(Motor length with brake)	L2	mm	178	193	206 221
重量 (Weight)		Kg	7	7.5	11.7 12.7
重量带制动器(Weight with brake)		Kg	9.5	10	14.2 15.2

● 机械尺寸

(Dimensions)



选件 Options



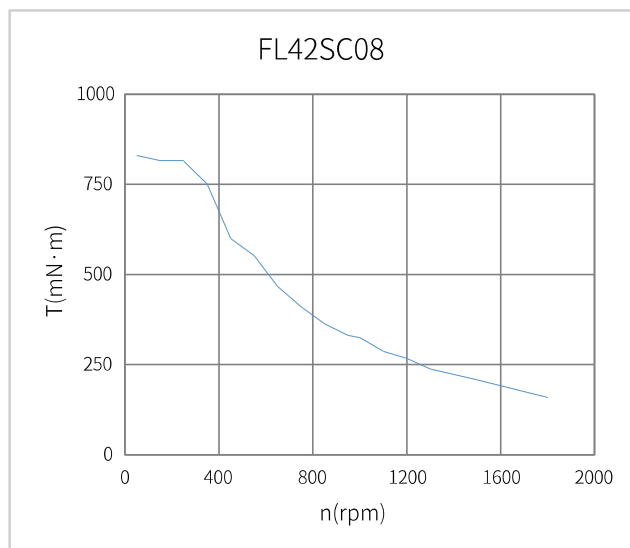
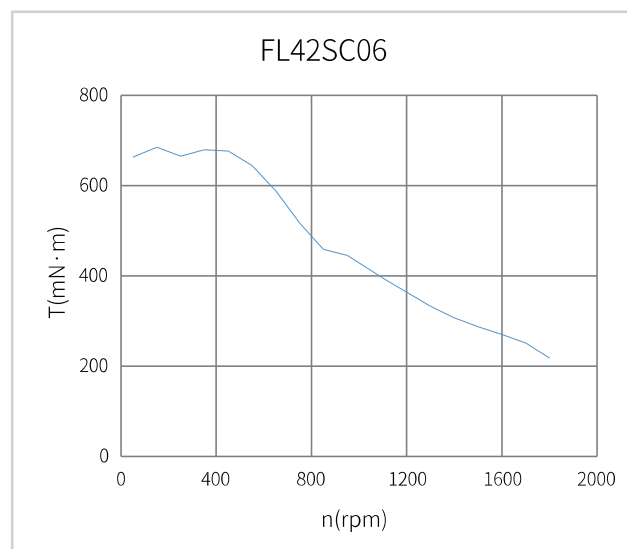
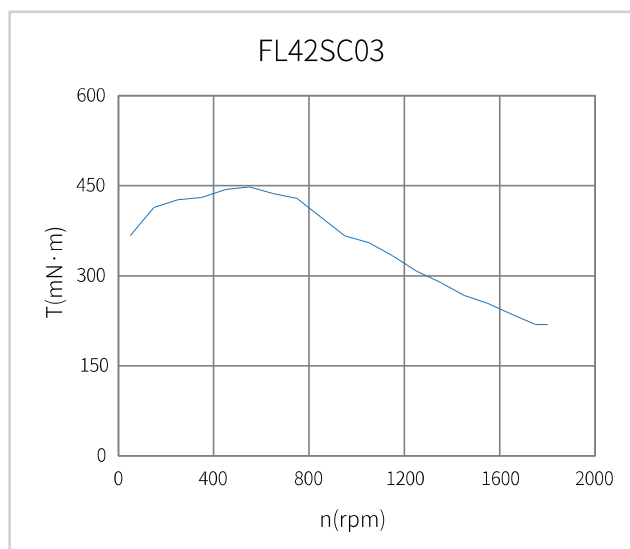
接插件



齿轮箱

● 矩频曲线

(Pull out torque curve)





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	28N@20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~+40°C; Temperature: -20°C~+40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~+60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~+60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	10N		
绝缘等级 (Insulation Class)	B		
防护等级 (Protection level)	IP30		

● 电机技术性能 (Motor Technical Specification)

	单位 (Unit)	FL42SC03	FL42SC06	FL42SC08
相电流 (Phase current)	A	2.3	2.3	2.3
保持转矩 (Holding torque)	N·m	0.3	0.6	0.8
最高转速 (Speed)	rpm	1800	1800	1800
编码器 (Encoder)		1000cpr 光电增量式编码器 1000cpr incremental optical encoder		
转动惯量 (Rotor inertia)	g.cm ²	54	92	102
机身长度 (Motor Length) L	mm	59.5	74.5	80
重量 (Weight)	Kg	0.3	0.5	0.55

● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
3	红白色 (Red/White)	Cable Three rows of 15PIN D-SUB	GND	Signal Power negative
2	红色 (Red)		VCC:+5VDC	Signal Power positive
13	蓝色 (Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
1	蓝黑色 (Blue/Black)		EA+	
12	黑色 (Black)		EB-	
11	黑白色 (Black/White)		EB+	
1	黑色 (Black)	Cable UL2464 AWG20	A相 (Phase A)	
2	绿色 (Green)		C相 (Phase C)	
3	红色 (Red)		B相 (Phase B)	
4	蓝色 (Blue)		D相 (Phase D)	

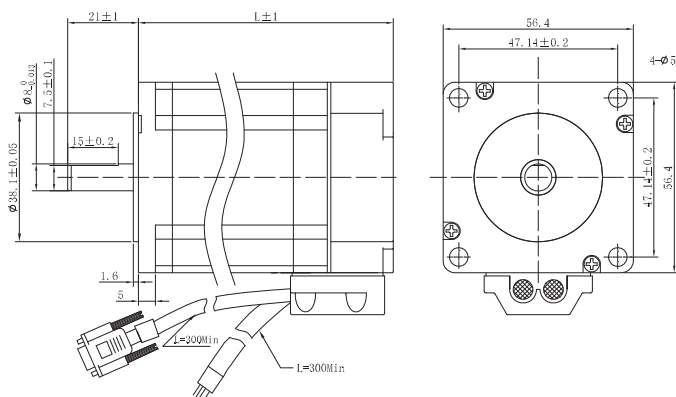
FL57SC Series

闭环步进电机
Closed-Loop Stepper Motor



机械尺寸

(Dimensions)



选件 Options



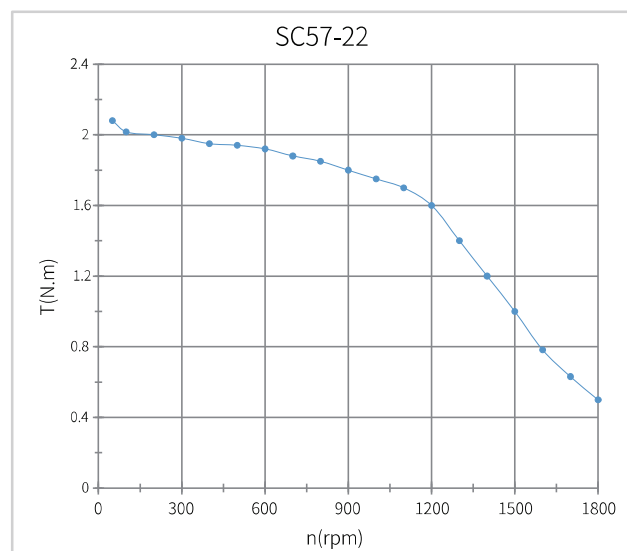
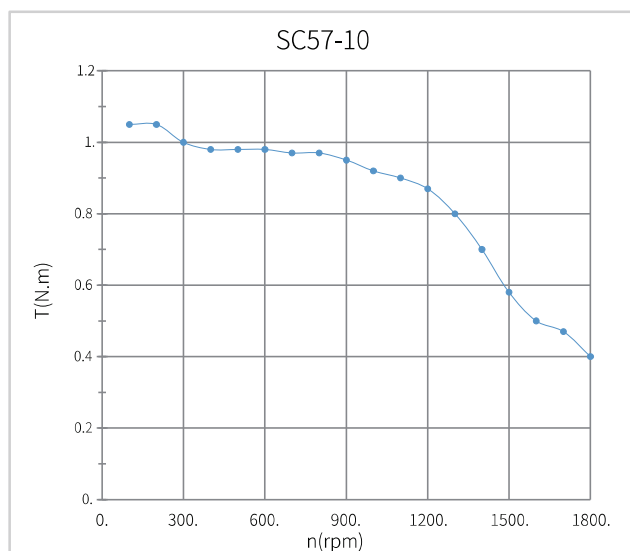
接插件



齿轮箱

矩频曲线

(Pull out torque curve)



● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	75N@20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~+40°C; Temperature: -20°C~+40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~+60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~+60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	15N		
绝缘等级 (Insulation Class)	B		
防护等级 (Protection level)	IP30		

● 电机技术性能 (Motor Technical Specification)

	单位 (Unit)	FL57SC10	FL57SC22
相电流 (Phase current)	A	6.0	5.6
保持转矩 (Holding torque)	N·m	1.2	2.2
最高转速 (Speed)	rpm	1800	1800
编码器 (Encoder)		1000cpr光电增量式编码器 1000cpr incremental optical encoder	
转动惯量 (Rotor inertia)	g.cm ²	300	480
机身长度 (Motor Length) L	mm	74	95
重量 (Weight)	Kg	1	1.5

● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
3	红白色 (Red/White)	Cable Three rows of 15PIN D-SUB	GND	Signal Power negative
2	红色 (Red)		VCC:+5VDC	Signal Power positive
13	蓝色 (Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
1	蓝黑色 (Blue/Black)		EA+	
12	黑色 (Black)		EB-	
11	黑白色 (Black/White)		EB+	
1	黑色 (Black)	Cable UL2464 AWG20	A相 (Phase A)	
2	绿色 (Green)		C相 (Phase C)	
3	红色 (Red)		B相 (Phase B)	
4	蓝色 (Blue)		D相 (Phase D)	

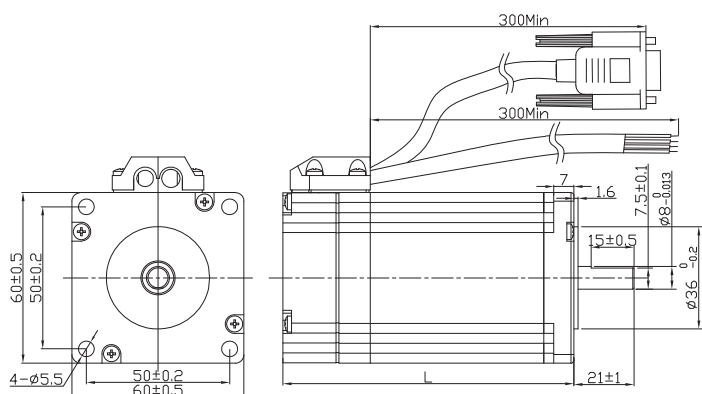
FL60SC Series

闭环步进电机
Closed-Loop Stepper Motor



● 机械尺寸

(Dimensions)



选件 Options



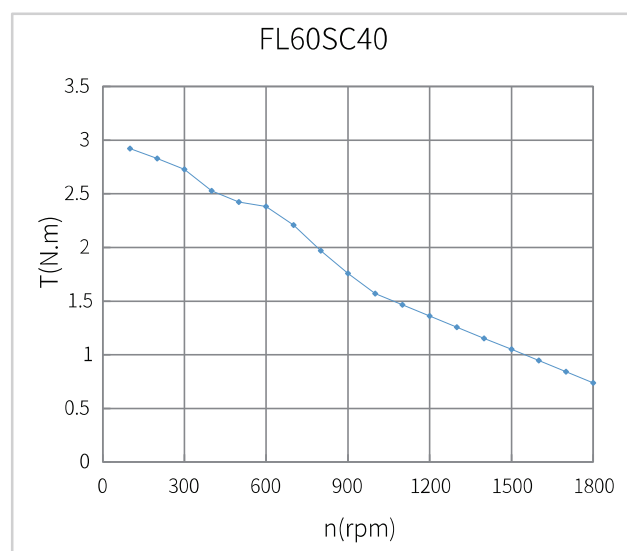
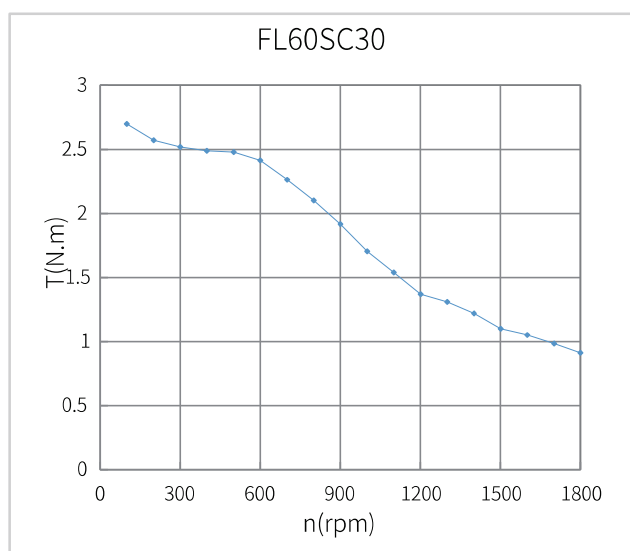
接插件



齿轮箱

● 矩频曲线

(Pull out torque curve)





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	75N@20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~+40°C; Temperature: -20°C~+40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~+60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~+60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	15N		
绝缘等级 (Insulation Class)	B		
防护等级 (Protection level)	IP30		

● 电机技术性能 (Motor Technical Specification)

	单位 (Unit)	FL60SC30	FL60SC40
相电流 (Phase current)	A	6.0	5.6
保持转矩 (Holding torque)	N·m	3.0	3.6
最高转速 (Speed)	rpm	1800	1800
编码器 (Encoder)		1000cpr光电增量式编码器 1000cpr incremental optical encoder	
转动惯量 (Rotor inertia)	g.cm ²	800	860
机身长度 (Motor Length) L	mm	103	109
重量 (Weight)	Kg	1.4	1.6

● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
3	红白色 (Red/White)	Cable Three rows of 15PIN D-SUB	GND	Signal Power negative
2	红色 (Red)		VCC:+5VDC	Signal Power positive
13	蓝色 (Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
1	蓝黑色 (Blue/Black)		EA+	
12	黑色 (Black)		EB-	
11	黑白色 (Black/White)		EB+	
1	黑色 (Black)	Cable UL2464 AWG20	A相 (Phase A)	
2	绿色 (Green)		C相 (Phase C)	
3	红色 (Red)		B相 (Phase B)	
4	蓝色 (Blue)		D相 (Phase D)	

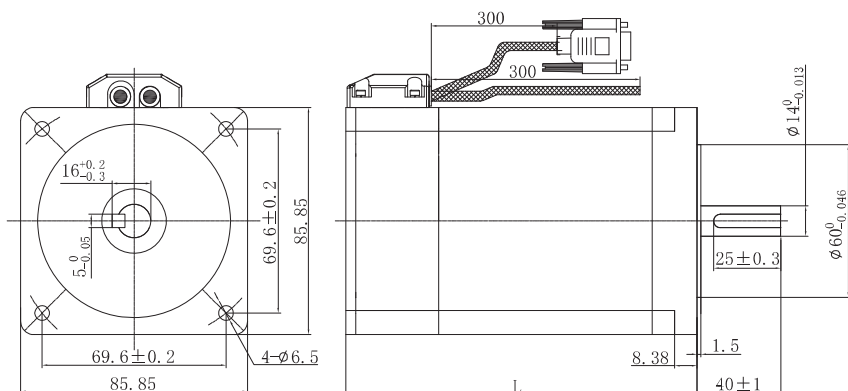
FL86SC Series

闭环步进电机
Closed-Loop Stepper Motor



机械尺寸

(Dimensions)



选件 Options



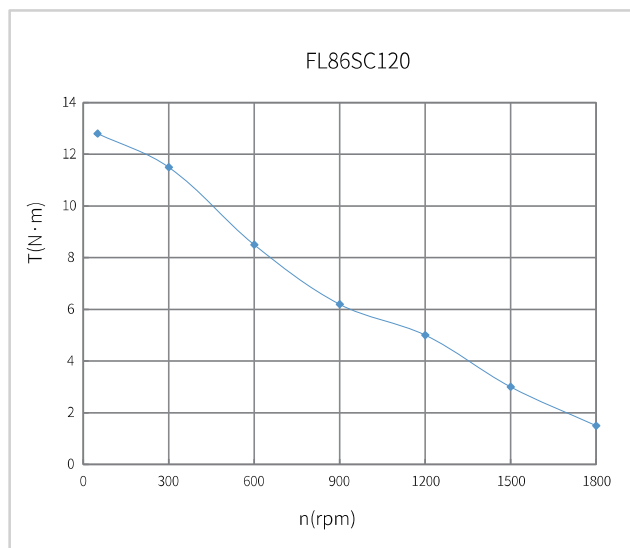
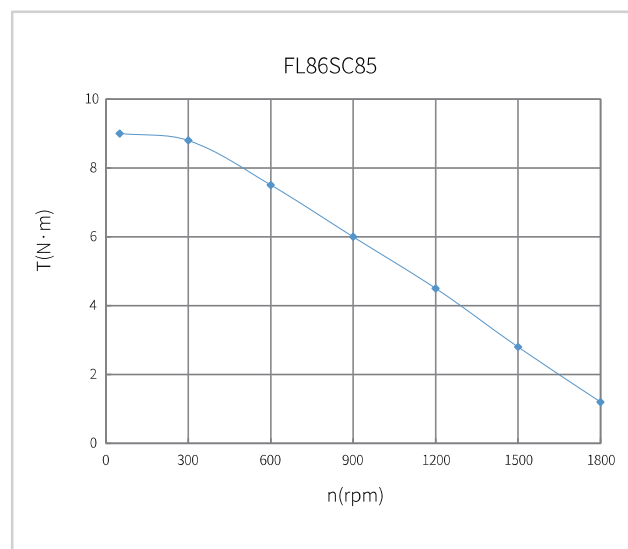
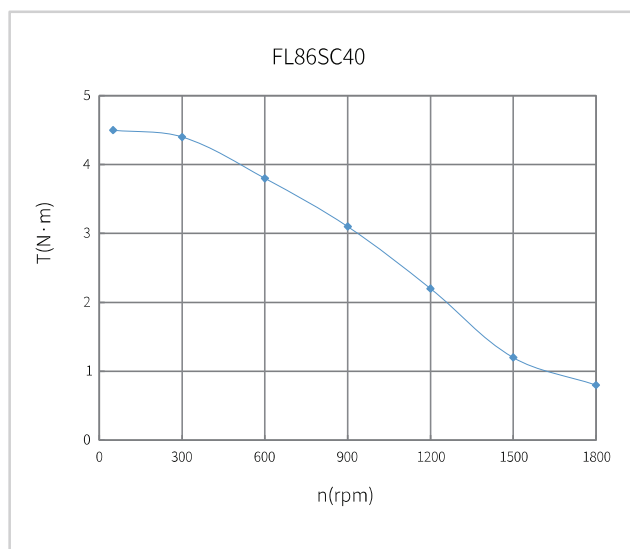
接插件



齿轮箱

矩频曲线

(Pull out torque curve)





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	130N@20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~+40°C; Temperature: -20°C~+40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~+60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~+60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	36N		
绝缘等级 (Insulation Class)	B		
防护等级 (Protection level)	IP30		

● 电机技术性能 (Motor Technical Specification)

	单位 (Unit)	FL86SC40	FL86SC85	FL86SC120
相电流 (Phase current)	A	6	6	6
保持转矩 (Holding torque)	N·m	4	8.5	12
最高转速 (Speed)	rpm	1800	1800	1800
编码器 (Encoder)		1000cpr光电增量式编码器 1000cpr incremental optical encoder		
转动惯量 (Rotor inertia)	g.cm ²	1400	2700	4000
机身长度 (Motor Length) L	mm	96	133	171
重量 (Weight)	Kg	2.5	3.8	5.5

● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
3	红白色 (Red/White)	Three rows of 15PIN D-SUB	GND	Signal Power negative
2	红色 (Red)		VCC:+5VDC	Signal Power positive
13	蓝色 (Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
1	蓝黑色 (Blue/Black)		EA+	
12	黑色 (Black)		EB-	
11	黑白色 (Black/White)		EB+	
1	黄色 (Yellow)	YGZF -S 4*0.75 Cable	A相 (Phase A)	
2	绿色 (Green)		C相 (Phase C)	
3	红色 (Red)		B相 (Phase B)	
4	黑色 (Black)		D相 (Phase D)	

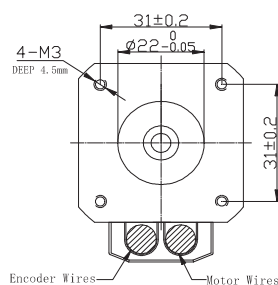
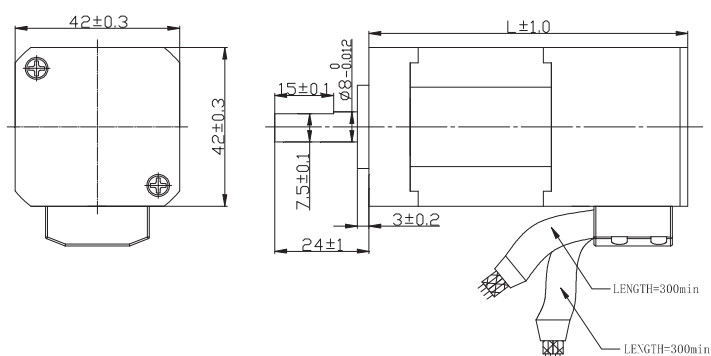
FL42SVA Series

闭环无刷电机
Closed-Loop BLDC Motor



● 机械尺寸

(Dimensions)



选件 Options



接插件

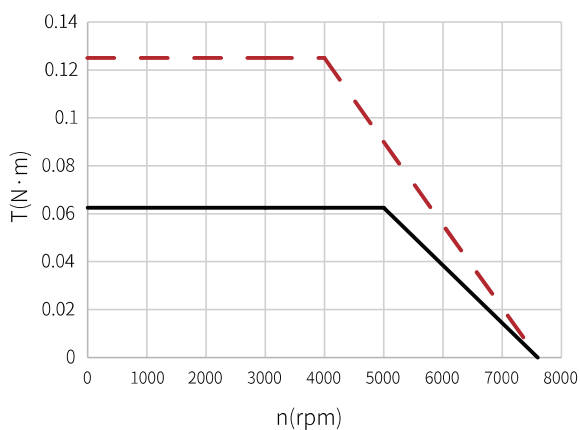


齿轮箱

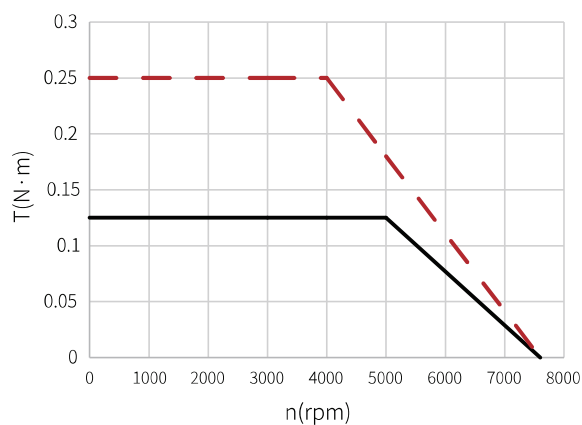
● 性能曲线

(Performance Curve)

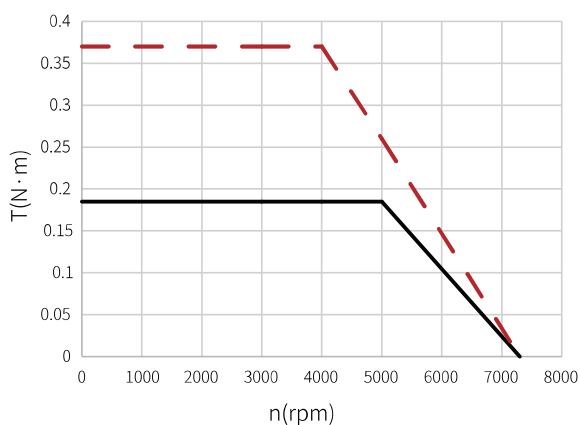
FL42SVA01



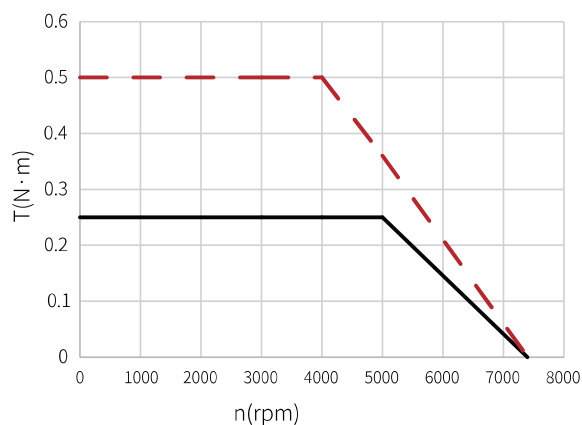
FL42SVA02



FL42SVA03



FL42SVA04





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	28N @ 20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +40°C; Temperature: -20°C~ +40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	10N		
绝缘等级 (Insulation Class)	Class B		
防护等级 (Protection level)	IP40		

● 电机技术性能 (Motor Technical Specification)

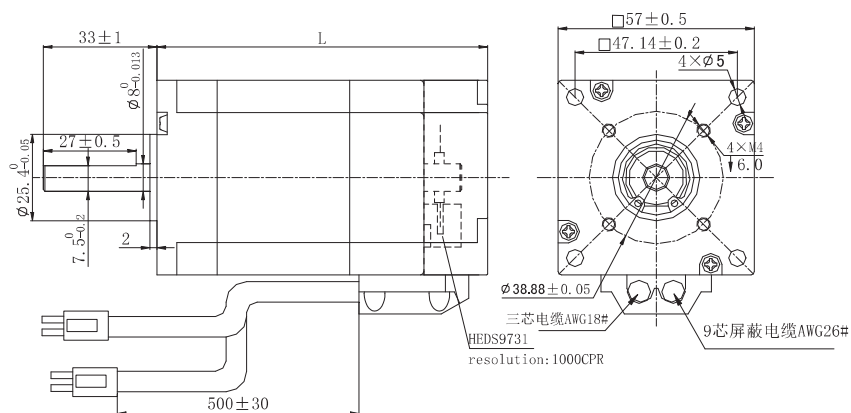
	单位 (Unit)	FL42SVA01	FL42SVA02	FL42SVA03	FL42SVA04
额定电压(Rated voltage)	VDC	24	24	24	24
额定转速(Rated speed)	RPM	5000	5000	5000	5000
额定转矩(Rated torque)	N·m	0.0625	0.125	0.185	0.25
额定电流(Rated current)	A	2.1	4	6	8
空载转速(no load speed)	RPM	7600	7400	7300	7400
峰值扭矩(Peak torque)	N·m	0.19	0.38	0.56	0.75
峰值电流(Peak current)	A	6.25	12	18	24
电阻(Line to line resistance)	Ω	1.15	0.5	0.28	0.25
电感(Line to line inductance)	mH	1.75	0.9	0.51	0.38
反电势系数(Back EMF)	V/Krpm	2.23	2.3	2.32	2.28
转矩系数(Torque constant)	Nm/A	0.03	0.031	0.031	0.031
极数(Number of poles)		8	8	8	8
编码器(Encoder)	CPR	1000	1000	1000	1000
转动惯量(Rotor inertia)	g·cm ²	24	48	72	96
机身长度(Motor length) L	mm	61.3	81.3	101.3	121.3
重量(Weight)	Kg	0.3	0.45	0.65	0.8

● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
1	红白色(Red/White)	Cable AWG26	GND	Signal Power negative
2	红色(Red)		VCC:+5VDC	Signal Power positive
3	蓝色(Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
4	蓝黑色(Blue/Black)		EA+	
5	黑色(Black)		EB-	
6	黑白色(Black/White)		EB+	
7	棕色(Brown)		霍尔HALL A	
8	橙色(Orange)		霍尔HALL B	
9	黄色(Yellow)		霍尔HALL C	
1	黄色(Yellow)	Cable AWG18	U相(Phase U)	
2	红色(Red)		V相(Phase V)	
3	黑色(Black)		W相(Phase W)	

● 机械尺寸

(Dimensions)



选件 Options



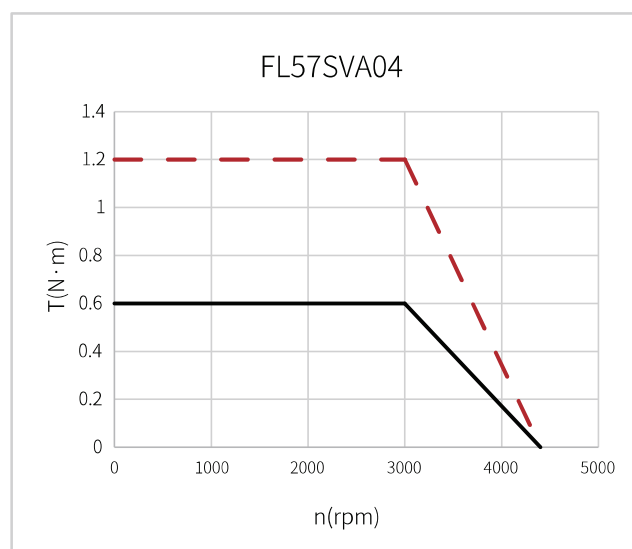
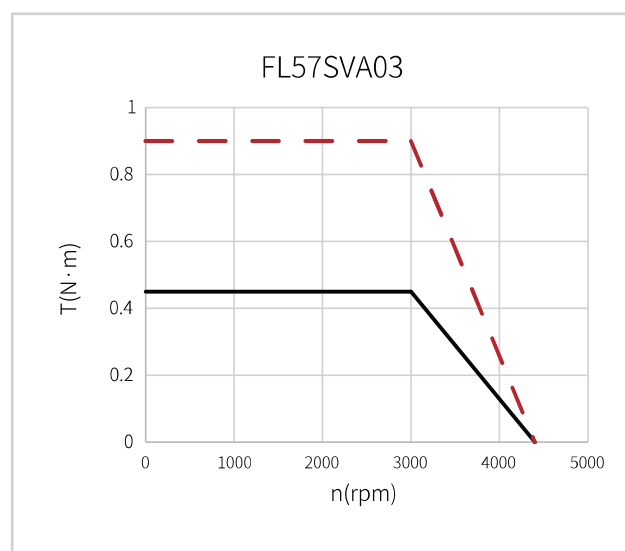
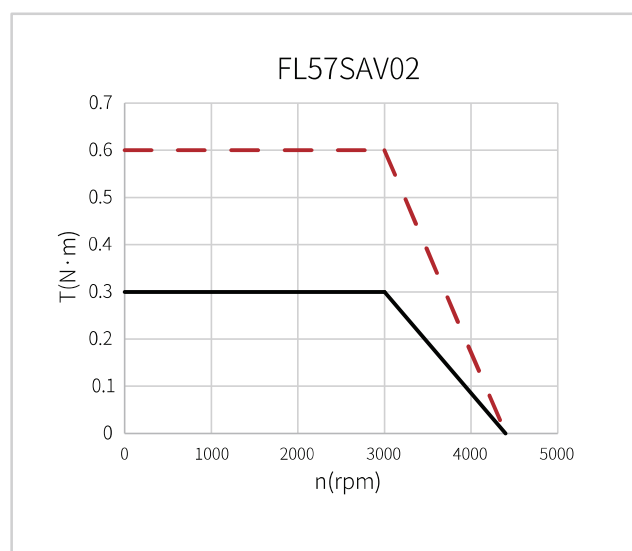
接插件



齿轮箱

● 性能曲线

(Performance Curve)





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	115N@20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +40°C; Temperature: -20°C~ +40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	45N		
绝缘等级 (Insulation Class)	B		
防护等级 (Protection level)	IP30		

● 电机技术性能 (Motor Technical Specification)

	单位 (Unit)	FL57SVA02	FL57SVA03	FL57SVA04
额定电压(Rated voltage)	VDC	36	36	36
额定转速(Rated speed)	RPM	3000	3000	3000
额定转矩(Rated torque)	N·m	0.3	0.45	0.6
额定电流(Rated current)	A	4.0	6.0	8.0
空载转速(no load speed)	RPM	4400	4400	4400
峰值转矩(Peak torque)	N·m	0.9	1.35	1.8
峰值电流(Peak current)	A	12.6	16.2	22.5
电阻(Line to line resistance)	Ω	1.2	0.8	0.5
电感(Line to line inductance)	mH	1.2	0.8	0.6
反电势系数(Back EMF)	V/Krpm	5.6	5.6	5.7
转矩系数(Torque constant)	Nm/A	0.075	0.075	0.075
极数(Number of poles)		8		
编码器(Encoder)	CPR	1000		
转动惯量(Rotor inertia)	g·cm ²	210	320	430
机身长度(Motor length) L	mm	76	96	116
重量(Weight)	Kg	0.8	1.0	1.2

● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
1	红白色(Red/White)	Cable AWG26	GND	Signal Power negative
2	红色(Red)		VCC:+5VDC	Signal Power positive
3	蓝色(Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
4	蓝黑色(Blue/Black)		EA+	
5	黑色(Black)		EB-	
6	黑白色(Black/White)		EB+	
7	棕色(Brown)		霍尔 HALL A	
8	橙色(Orange)		霍尔 HALL B	
9	黄色(Yellow)		霍尔 HALL C	
1	黄色(Yellow)	Cable AWG18	U相(Phase U)	
2	红色(Red)		V相(Phase V)	
3	黑色(Black)		W相(Phase W)	

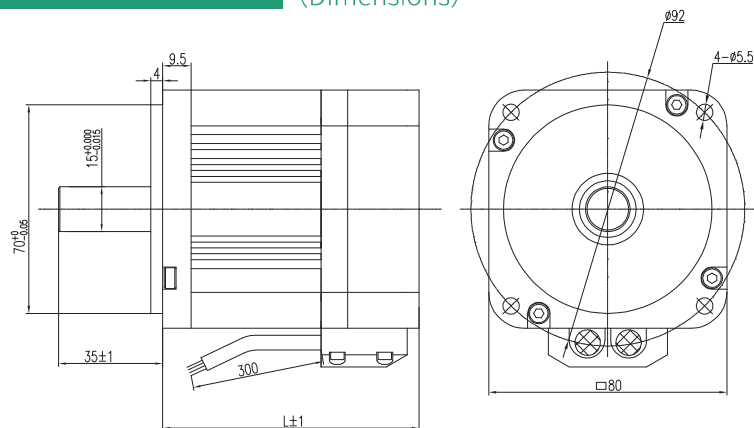
FL80SVA Series

闭环无刷电机
Closed-Loop BLDC Motor

FULLING MOTOR

机械尺寸

(Dimensions)



选件 Options



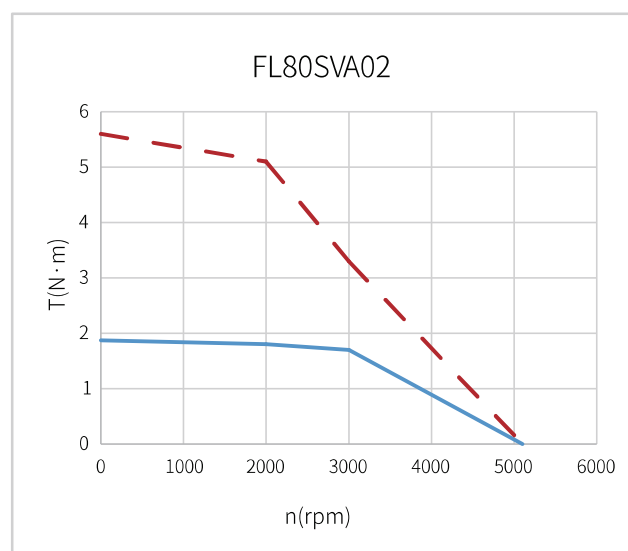
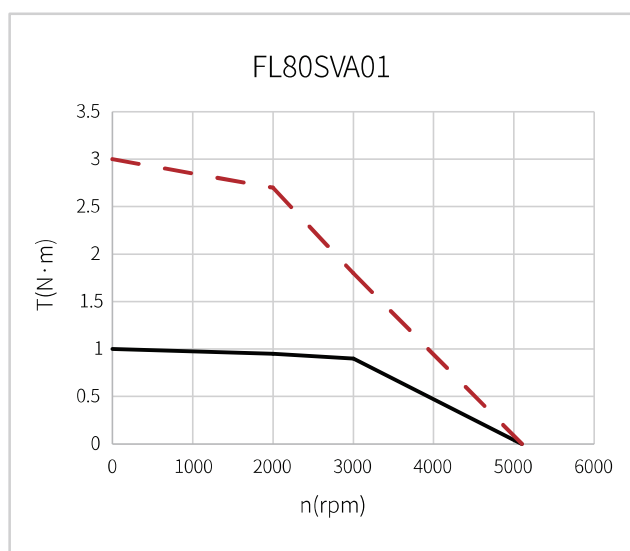
接插件



齿轮箱

性能曲线

(Performance Curve)





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	115N @ 20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +40°C; Temperature: -20°C~ +40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	45N		
绝缘等级 (Insulation Class)	Class B		
防护等级 (Protection level)	IP65		

● 电机技术性能 (Motor Technical Specification)

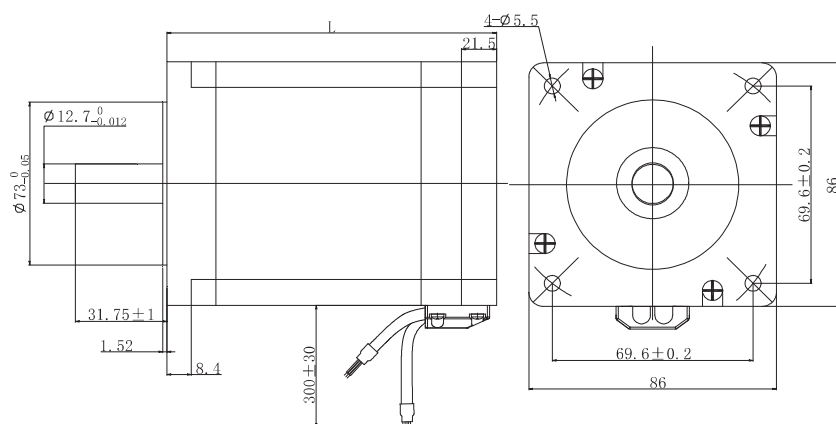
	单位 (Unit)	FL80SVA01	FL80SVA02
额定电压(Rated voltage)	VDC	48	48
额定转速(Rated speed)	RPM	3000	3000
额定转矩(Rated torque)	N·m	0.9	1.7
额定电流(Rated current)	A	3000	3000
空载转速(no load speed)	RPM	4000	4000
峰值转矩(Peak torque)	N·m	2.7	5.1
峰值电流(Peak current)	A	23	45
电阻(Line to line resistance)	Ω	0.29	0.11
电感(Line to line inductance)	mH	1.3	0.6
反电势系数(Back EMF)	V/Krpm	8.7	8.4
转矩系数(Torque constant)	Nm/A	0.118	0.113
极数(Number of poles)		8	8
编码器(Encoder)	CPR	1000	1000
转动惯量(Rotor inertia)	g·cm ²	544	1020
机身长度(Motor length) L	mm	86	107
重量(Weight)	Kg	1.7	2.1

● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
1	红白色(Red/White)	Cable AWG26	GND	Signal Power negative
2	红色(Red)		VCC:+5VDC	Signal Power positive
3	蓝色(Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
4	蓝黑色(Blue/Black)		EA+	
5	黑色(Black)		EB-	
6	黑白色(Black/White)		EB+	
7	棕色(Brown)		霍尔 HALL A	
8	橙色(Orange)		霍尔 HALL B	
9	黄色(Yellow)		霍尔 HALL C	
1	黄色(Yellow)	Cable AWG16	U相(Phase U)	
2	红色(Red)		V相(Phase V)	
3	黑色(Black)		W相(Phase W)	

● 机械尺寸

(Dimensions)



选件 Options



Connector



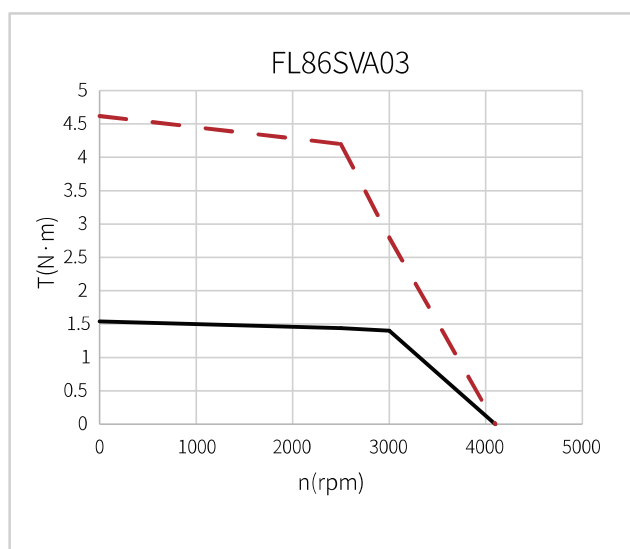
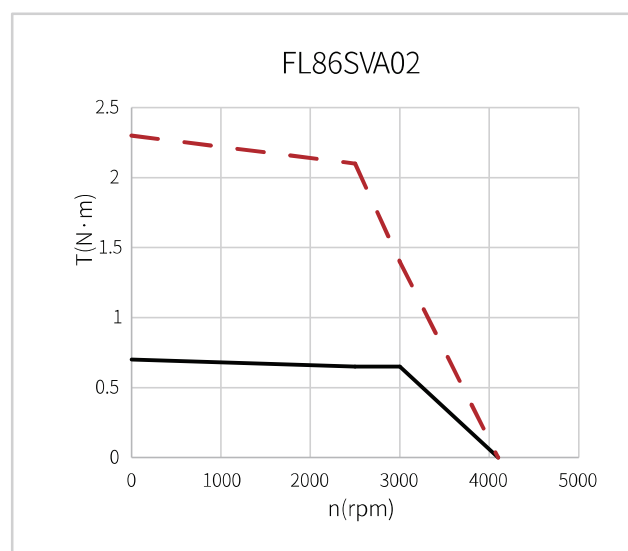
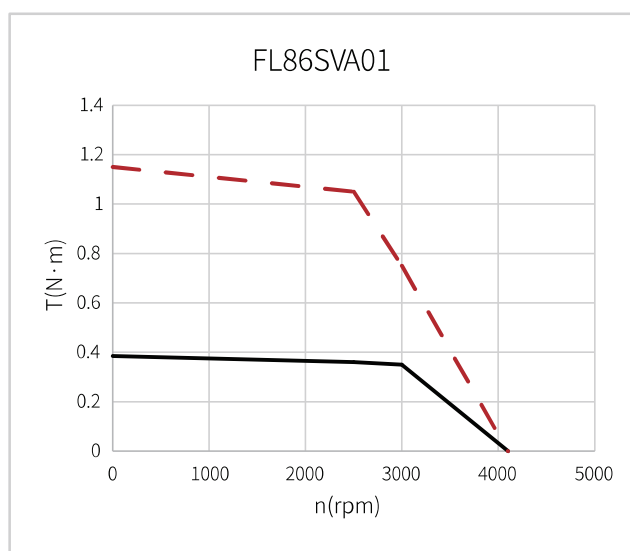
Gearbox

接插件

齿轮箱

● 性能曲线

(Performance Curve)





● 一般技术特性 (General Technical Information)

编码器类型 (Encoder type)	1、光电编码器 Optical encoder 2、磁编码器 Magnetic encoder 3、旋转变压器 Resolver 备注: 多种分辨率可选, 增量式、绝对值式可选。 Note: Multiple resolutions are available; Incremental and absolute values are available.		
径向负载 (Max radial force)	200N@20mm from the flange	环境条件 Environmental conditions	使用环境温度: -20°C~ +40°C; Temperature: -20°C~ +40°C 使用环境湿度: ≤90%RH (无凝露); Relative humidity: ≤90%RH (No dewing) 安装环境: 远离腐蚀、可燃性气体, 油滴, 灰尘, 海拔≤1000m(1000~4000m, 降额使用); Installation environment: Far away active gas, Combustible gas, oil drop, ash. altitude≤1000m(1000~4000m, Derating use); 存储环境: -20°C~ +60°C, ≤85%RH (无凝露)。 Storage Condition: -20°C~ +60°C, ≤85%RH (No dewing).
轴向负载 (Max axial force)	65N		
绝缘等级 (Insulation Class)	Class B		
防护等级 (Protection level)	IP30		

● 电机技术性能 (Motor Technical Specification)

	单位 (Unit)	FL86SVA01	FL86SVA02	FL86SVA03
额定电压(Rated voltage)	VDC	48		
额定转速(Rated speed)	RPM	3000		
额定转矩(Rated torque)	N·m	0.35	0.7	1.4
额定电流(Rated current)	A	3	5.6	11
空载转速(no load speed)	RPM	3600		
峰值转矩(Peak torque)	N·m	1.05	2.1	4.2
峰值电流(Peak current)	A	9.5	17.5	33.5
电阻(Line to line resistance)	Ω	0.09	0.34	0.16
电感(Line to line inductance)	mH	2.6	1	0.5
反电势系数(Back EMF)	V/Krpm	8.6	9	9.4
转矩系数(Torque constant)	Nm/A	0.116	0.124	0.127
极数(Number of poles)		8		
编码器(Encoder)	CPR	1000		
转动惯量(Rotor inertia)	g·cm ²	400	800	1600
机身长度(Motor length) L	mm	86	99	126
重量(Weight)	Kg	1.9	2.4	3.5

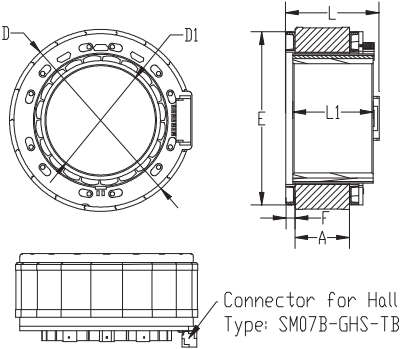
● 接线说明 (Electric Connection)

序号 No.	引出线颜色 Lead Color	引出线型号 Lead Gauge	功能 Function	说明 Description
1	红白色(Red/White)	Cable AWG26	GND	Signal Power negative
2	红色(Red)		VCC:+5VDC	Signal Power positive
3	蓝色(Blue)		EA-	Two-channel differential signal (Three-channel differential signal can be provided).
4	蓝黑色(Blue/Black)		EA+	
5	黑色(Black)		EB-	
6	黑白色(Black/White)		EB+	
7	棕色(Brown)		霍尔 HALL A	
8	橙色(Orange)		霍尔 HALL B	
9	黄色(Yellow)		霍尔 HALL C	
1	黄色(Yellow)	Cable AWG18	U相(Phase U)	
2	红色(Red)		V相(Phase V)	
3	黑色(Black)		W相(Phase W)	

FL50BL Series

无框电机
Frameless Motor

机械尺寸 (Dimensions)



项目 (Items)	FL50BL15	FL50BL08	公差 (Tolerance)
定子外径D	50mm	50mm	±0.031(js9)
定子长度L	26mm	20mm	±1
转子内径D1	30mm	30mm	(+0.033/0)H8
转子长度L1	22mm	16mm	±0.2
灌胶面外圆E	47.6mm	47.6mm	±0.2
灌胶面高度F	2.5mm	2.5mm	±0.3
定子铁芯高度A	15mm	8.6mm	/



选件 Options



特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
介电强度 (Dielectric Strength)	1000VAC/1S
绝缘电阻 (Insulation Resistance)	100MQ, 500VDC
使用环境 (Operation Ambient)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

引出线颜色	引出线型号	功能
Color	Type	Functions
PIN1	Connector for Hall is optional Type: SM07B-GHS-TB	热敏 (NTC2)
PIN2		热敏 (NTC1)
PIN3		霍尔电源负 (GND)
PIN4		霍尔 A (Ha)
PIN5		霍尔 B (Hb)
PIN6		霍尔 C (Hc)
PIN7		霍尔电源正 (Vcc)
黄色 (Yellow)	UL1332 AWG22 UL1332 AWG20	U相 (Phase U)
红色 (Red)		V相 (Phase V)
黑色 (Black)		W相 (Phase W)

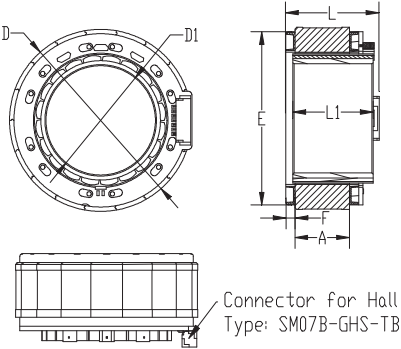
电性能 (Electrical Specifications)

	单位 (Unit)	FL50BL15-48V-35183A	FL50BL08-48V-50170A
极数 (Number of poles)		20	20
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	48	48
额定转矩 (Rated torque)	N.m	0.5	0.3
额定电流 (Rated current)	A	4.8	3.6
额定速度 (Rated speed)	RPM	3500	5000
额定功率 (Rated power)	W	183	157
最大转速 (Maximum speed)	RPM	4800	6200
峰值扭矩 (Peak torque)	N.m	1.5	0.96
峰值电流 (Peak current)	A	14.5	11.6
线电阻 (Line to line resistance)	ohms@20°C	0.77	0.93
线电感 (Line to line inductance)	mH	0.38	0.45
转矩常数 (Torque constant)	Nm/A	0.117	0.089
反电势 (Back EMF)	Vrms/KRPM	7.1	5.4
机身长度 (Motor length)	mm	26	20
重量 (Weight)	g	147	96
电气时间常数 (Electrical time constant)	ms	0.49	0.48

FL50BL Series

无框电机
Frameless Motor

机械尺寸 (Dimensions)



项目 (Items)	FL50BL15	FL50BL08	公差 (Tolerance)
定子外径D	50mm	50mm	±0.031(js9)
定子长度L	26mm	20mm	±1
转子内径D1	30mm	30mm	(+0.033/0)H8
转子长度L1	22mm	16mm	±0.2
灌胶面外圆E	47.6mm	47.6mm	±0.2
灌胶面高度F	2.5mm	2.5mm	±0.3
定子铁芯高度A	15mm	8.6mm	/



选件 Options



特性概要 (General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
介电强度 (Dielectric Strength)	1000VAC/1S
绝缘电阻 (Insulation Resistance)	100MQ, 500VDC
使用环境 (Operation Ambient)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明 (Electric Connection)

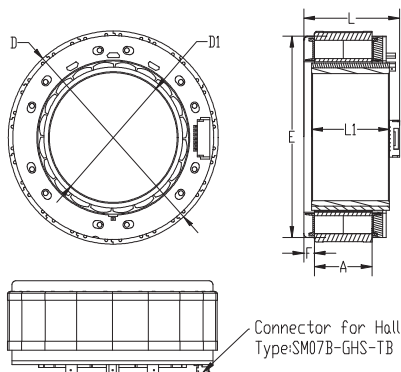
引出线颜色	引出线型号	功能
Color	Type	Functions
PIN1	Connector for Hall is optional Type: SM07B-GHS-TB	热敏 (NTC2)
PIN2		热敏 (NTC1)
PIN3		霍尔电源负 (GND)
PIN4		霍尔 A (Ha)
PIN5		霍尔 B (Hb)
PIN6		霍尔 C (Hc)
PIN7		霍尔电源正 (Vcc)
黄色 (Yellow)	UL1332 AWG22 UL1332 AWG20	U相 (Phase U)
红色 (Red)		V相 (Phase V)
黑色 (Black)		W相 (Phase W)

电性能 (Electrical Specifications)

	单位 (Unit)	FL50BL15-48V-35183A	FL50BL08-48V-50170A
极数 (Number of poles)		20	20
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	48	48
额定转矩 (Rated torque)	N.m	0.5	0.3
额定电流 (Rated current)	A	4.8	3.6
额定速度 (Rated speed)	RPM	3500	5000
额定功率 (Rated power)	W	183	157
最大转速 (Maximum speed)	RPM	4800	6200
峰值转矩 (Peak torque)	N.m	1.5	0.96
峰值电流 (Peak current)	A	14.5	11.6
线电阻 (Line to line resistance)	ohms@20°C	0.77	0.93
线电感 (Line to line inductance)	mH	0.38	0.45
转矩常数 (Torque constant)	Nm/A	0.117	0.089
反电势 (Back EMF)	Vrms/KRPM	7.1	5.4
机身长度 (Motor length)	mm	26	20
重量 (Weight)	g	147	96
电气时间常数 (Electrical time constant)	ms	0.49	0.48

● 机械尺寸

(Dimensions)



项目 (Items)	FL70BL19	FL70BL10	公差 (Tolerance)
定子外径 D	69mm	69mm	± 0.037 (js9)
定子长度 L	32mm	23.5mm	± 1
转子内径 D1	42mm	42mm	$+0.039/0$ (H8)
转子长度 L1	27.5mm	18mm	± 0.2
灌胶面外圆 E	66mm	66mm	± 0.2
灌胶面高度 F	3.5mm	3.5mm	± 0.3
定子铁芯高度 A	18.9mm	10.5mm	/



选件 Options



接插件

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
介电强度 (Dielectric Strength)	1000VAC/1S
绝缘电阻 (Insulation Resistance)	100M Ω , 500VDC
使用环境 (Operation Ambient)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线颜色 (Color)	引出线型号 (Type)	功能 (Functions)
PIN1	Connector for Hall is optional Type: SM07B-GHS-TB	热敏 (NTC2)
PIN2		热敏 (NTC1)
PIN3		霍尔电源负 (GND)
PIN4		霍尔 A (Ha)
PIN5		霍尔 B (Hb)
PIN6		霍尔 C (Hc)
PIN7		霍尔电源正 (Vcc)
黄色 (Yellow)	UL1332 AWG20 UL1332 AWG18	U相 (Phase U)
红色 (Red)		V相 (Phase V)
黑色 (Black)		W相 (Phase W)

● 电性能

(Electrical Specifications)

	单位 (Unit)	FL70BL19-48V-35366A	FL70BL10-48V-36250A
极数 (Number of poles)		20	20
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	48	48
额定转矩 (Rated torque)	N.m	1.0	0.55
额定电流 (Rated current)	A	9.2	5.1
额定速度 (Rated speed)	RPM	3500	3650
额定功率 (Rated power)	W	366	210
最大转速 (Maximum speed)	RPM	4500	4750
峰值转矩 (Peak torque)	N.m	3.0	1.65
峰值电流 (Peak current)	A	28	15.5
线电阻 (Line to line resistance)	ohms@20°C	0.19	0.38
线电感 (Line to line inductance)	mH	0.18	0.33
转矩常数 (Torque constant)	Nm/A	0.12	0.118
反电势 (Back EMF)	Vrms/KRPM	7.4	7.14
机身长度 (Motor length)	mm	32	23.5
重量 (Weight)	g	315	210
电气时间常数 (Electrical time constant)	ms	0.95	0.87

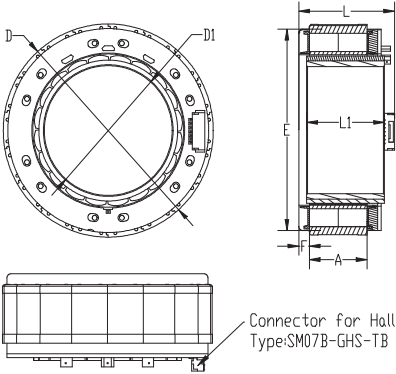
FL85BL Series

无框电机
Frameless Motor



● 机械尺寸

(Dimensions)



项目 (Items)	FL85BL23	FL85BL13	公差 (Tolerance)
定子外径D	85mm	85mm	±0.043(js9)
定子长度L	36mm	27.5mm	±1
转子内径D1	52mm	52mm	+0.046/0(H8)
转子长度L1	34mm	22.5mm	±0.2
灌胶面外圆E	81mm	81mm	±0.2
灌胶面高度F	4.2mm	4.2mm	±0.3
定子铁芯高度A	23mm	13mm	/



选件 Options



接插件

● 特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
介电强度 (Dielectric Strength)	1000VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
使用环境 (Operation Ambient)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

● 接线说明

(Electric Connection)

引出线颜色	引出线型号	功能
Color	Type	Functions
PIN1	Connector for Hall is optional Type: SM07B-GHS-TB	热敏 (NTC2)
PIN2		热敏 (NTC1)
PIN3		霍尔电源负 (GND)
PIN4		霍尔 A (Ha)
PIN5		霍尔 B (Hb)
PIN6		霍尔 C (Hc)
PIN7		霍尔电源正 (Vcc)
黄色 (Yellow)	UL1332 AWG18 UL1332 AWG16	U相 (Phase U)
红色 (Red)		V相 (Phase V)
黑色 (Black)		W相 (Phase W)

● 电性能

(Electrical Specifications)

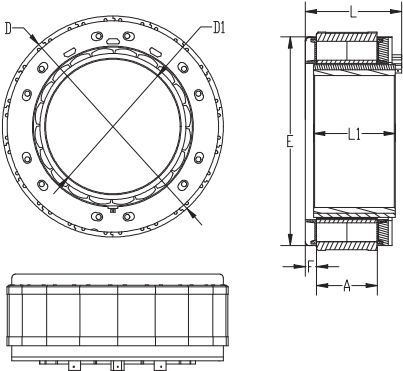
	单位 (Unit)	FL85BL23-48V-3500730A	FL85BL13-48V-29400A
极数 (Number of poles)		20	20
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	48	48
额定转矩 (Rated torque)	N.m	2.0	1.2
额定电流 (Rated current)	A	15	8.6
额定速度 (Rated speed)	RPM	3500	2950
额定功率 (Rated power)	W	732	370
最大转速 (Maximum speed)	RPM	4000	3700
峰值转矩 (Peak torque)	N.m	6.0	3.6
峰值电流 (Peak current)	A	45	25.8
线电阻 (Line to line resistance)	ohms@20°C	0.09	0.23
线电感 (Line to line inductance)	mH	0.13	0.3
转矩常数 (Torque constant)	Nm/A	0.14	0.15
反电势 (Back EMF)	Vrms/KRPM	8.3	9
机身长度 (Motor length)	mm	35	27.5
重量 (Weight)	g	597	386
电气时间常数 (Electrical time constant)	ms	1.44	1.3

FL115BL Series

无框电机
Frameless Motor

机械尺寸

(Dimensions)



项目(Items)	FL115BL25	FL115BL50	公差(Tolerance)
定子外径D	115mm	115mm	js9
定子长度L	39mm	68mm	±1
转子内径D1	74mm	74mm	H8
转子长度L1	32.7mm	57.7mm	±0.25
灌胶面外圆E	112mm	112mm	±0.2
灌胶面高度F	5.5mm	5.5mm	±0.3
定子铁芯高度A	25mm	50mm	/



选件 Options



接插件

特性概要

(General Specifications)

绕组连接方式 (Winding Type)	星形 (Star connection)
霍尔分布角度 (Hall Effect Angle)	120度电角度 (Electrical Angle of 120 degree)
介电强度 (Dielectric Strength)	1000VAC/1S
绝缘电阻 (Insulation Resistance)	100MΩ, 500VDC
使用环境 (Operation Ambient)	-20°C ~ +50°C
绝缘等级 (Insulation Class)	Class B

接线说明

(Electric Connection)

引出线颜色 Color	引出线型号 Type	功能 Functions
红色 (Red)	UL2464 AWG26 Hall is optional	霍尔电源正 (Vcc)
蓝色 (Blue)		霍尔 W (Hw)
绿色 (Green)		霍尔 V (Hv)
白色 (White)		霍尔 U (Hu)
黑色 (Black)		霍尔电源负 (GND)
黄色 (Yellow)	UL1332 AWG18	U相 (Phase U)
红色 (Red)		V相 (Phase V)
黑色 (Black)		W相 (Phase W)

电性能

(Electrical Specifications)

	单位 (Unit)	FL115BL25-48V-14570	FL115BL50-48V-06620
极数 (Number of poles)		30	30
相数 (Number of phases)		3	3
额定电压 (Rated voltage)	VDC	48	48
额定转矩 (Rated torque)	N.m	3.9	9.51
额定电流 (Rated current)	A	14.1	15.1
额定速度 (Rated speed)	RPM	1400	620
额定功率 (Rated power)	W	570	620
最大转速 (Maximum speed)	RPM	1900	850
峰值扭矩 (Peak torque)	N.m	12.7	31.4
峰值电流 (Peak current)	A	49	52
线电阻 (Line to line resistance)	ohms@20°C	0.23	0.38
线电感 (Line to line inductance)	mH	0.25	0.48
转矩常数 (Torque constant)	Nm/A	0.293	0.662
反电势 (Back EMF)	Vrms/KRPM	17.7	40
机身长度 (Motor length)	mm	39	68
重量 (Weight)	g	1110	2200
电气时间常数 (Electrical time constant)	ms	1.1	1.8

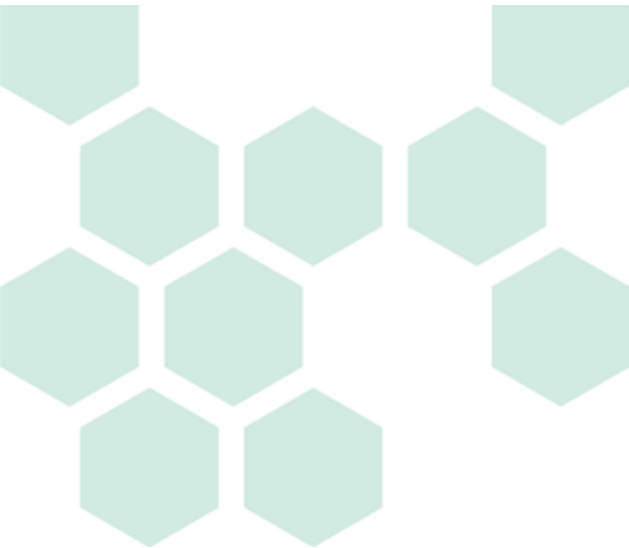
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富兴机电

注意事项: 本样册中所有信息均为参考值。因检测和测量方法不同, 可能存在偏差。请直接联系我们, 以了解详细信息。我们原则上保留技术变更的权利。

Attentions: All figures are approximate values. Variations are possible and may arise for example due to non-standardized inspection and measurement methods. For more detailed information, please contact us directly. Fulling Motor company always reserves the right to make technical modifications.



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