



海 盛

HB混合式步进电机 | BYJ减速永磁步进电机 | TKYJ永磁减速同步电机



常州市海盛电器有限公司
HAISHENG ELECTRIC

Company introduction

Changzhou Haisheng Electric Appliance Co., Ltd. is a professional production of HB hybrid stepping motor, BYJ speed permanent magnet stepper motor, permanent magnet synchronous motor TKYJ slowdown manufacturer. The company was founded in 1999, is located in Qishuyan City Economic Development Zone of Changzhou, near the Shanghai Nanjing Expressway and Shanghai Nanjing railway, the traffic is convenient. Haisheng has 10 years of R & D and manufacturing experience of micro motor. The company spirit of "customer first" for the purpose, people-oriented, quality win, now has a number of highly qualified technical personnel, skilled and an excellent staff, has a strong R & D capacity and a certain production scale.

At present the main product categories: HB hybrid stepping motor, BYJ permanent magnet decelerating stepper motor; permanent magnet synchronous motor TKYJ slowdown in the 3 major series, more than 100 varieties, with an annual output of 10 000 000 sets of motors, mainly used for: automatic control system of 3D printer, security monitoring, digital generator, valve control, air conditioning, car, medical equipment, stage lighting, dynamic advertising, office equipment, textile machinery, engraving machine, household electrical appliances such as drive device.

Companies continue to use of technology, management and quality advantages, and with high performance to price ratio products access to domestic and foreign customers the consistent high praise, technical indicators have reached the advanced level of similar products at home and abroad. The company is not only a long-term and stable cooperation relationship with famous domestic large and medium-sized enterprises to establish, products are also exported to Germany, Sweden, the UK, USA, Singapore, Austria, India, Italy, South Korea, Israel and other countries and Taiwan area.

The company will refine on, with high quality, reasonable prices, quality service, wholeheartedly for the general new old customers to provide satisfactory products.



关于我们

About Us



常州市海盛电器有限公司是一家专业生产HB 混合式步进电机、BYJ减速永磁步进电机、TKYJ 永磁减速同步电机的制造厂家。公司成立于1999年，位于常州市戚墅堰经济开发区，地处沪宁高速公路及沪宁铁路沿线，交通方便。公司于2003年取得ISO9001 认证，并为此设定企业质量标准来确保我们制造的每件产品达到最高质量水平。公司本着“客户至上”为宗旨，以人为本、以质取胜，现拥有一批高素质、高技能的技术人员和一支优秀的员工队伍，有着较强的科技研发能力和一定生产规模。

目前主要产品大类有：HB 混合式步进电机、BYJ永磁减速步进电机；TKYJ 永磁减速同步电机等3大系列，100多个品种，年产电机1000万台。主要用于：3D 打印机、医疗设备、安防监控、数码发电机、阀门控制、空调、汽车、舞台灯光、动态广告、办公设备、纺织机械、雕刻机、家用电器等自动控制系统中作为驱动器件。

公司不断利用技术、管理和质量上的优势，并以较高性价比的产品获得国内外客商的一致好评，产品技术指标达到国内外同类产品的先进水平。公司不仅与国内著名大中型企业建立了长期稳定的合作关系，产品还远销美国、德国、瑞典、英国、新加坡、奥地利、印度、意大利、韩国、以色列等国家及台湾地区。

本公司将精益求精，以高质量，合理的价格，优质的服务，竭诚为广大新老客户提供满意的产品。



产品应用案例

▶ 监控设备/Security & monitor equipment

高速球监控设备：用HB混合式步进电机控制摄像头水平、垂直运动。

中速球监控设备：用BYJ永磁减速步进电机控制摄像头水平、垂直运动。



▶ 数码发电机/Digital inverter generators

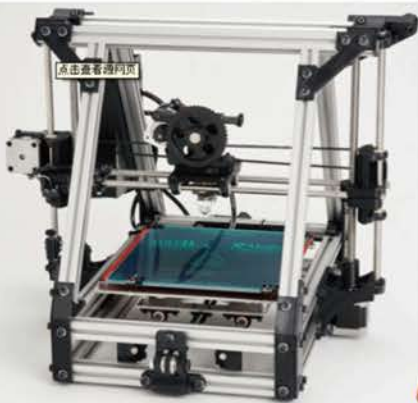
用24BYJ永磁减速步进电机控制化油器油量



产品应用案例

▶ 3D打印机/3D printer

丝杆轴混合式步进电机用于控制打印头X、Y、Z方向运动，行星减速混合式步进电机用于输送耗材。





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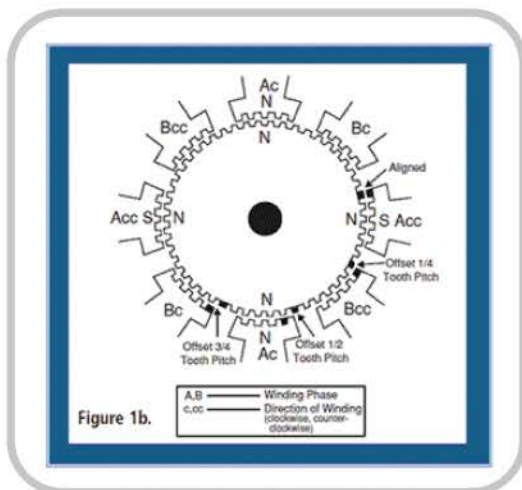
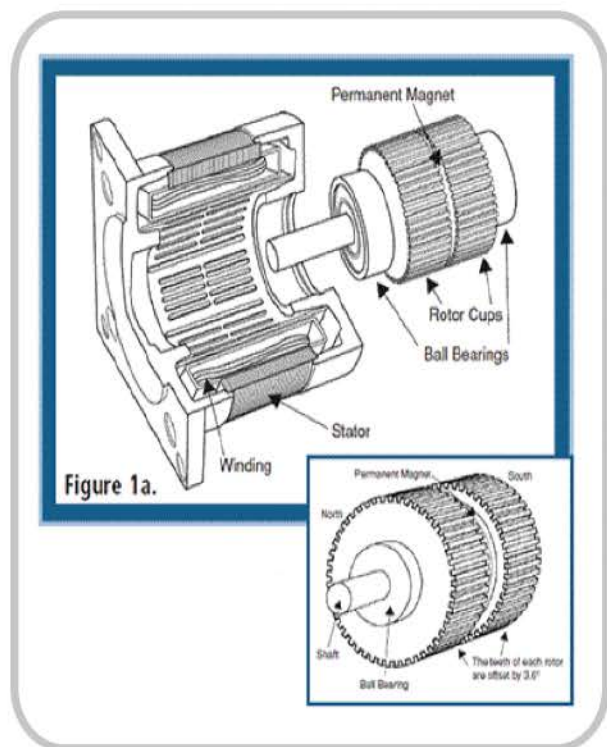
Product about 产品简介

一、Product structure and working principle 产品结构及工作原理

Figure 1a depicts a 1.8° hybrid step motor. The rotor contains a permanent magnet similar to those found in permanent magnet step motors. Hybrid rotors are axially magnetized, one end polarized north and the other polarized south. Both the rotor and the stator assemblies of hybrid motors have tooth-like projections. These “teeth” align in various configurations during rotation.

To understand the rotor’s interaction with the stator, examine the construction of a 1.8° (the most common resolution) hybrid step motor. First, the rotor is composed of two 50-tooth rotor cups enclosing a permanent magnet. The two cups are oriented so that the teeth of the top cup are offset to the teeth of the bottom cup by 3.6°. Second, the stator has a two-phase construction. The winding coils, 90° apart from one another, make up each phase. Each phase is wound so that the poles 180° apart are the same polarity, while the poles 90° apart are the opposite polarity. When the current in a phase is reversed, so is the polarity, meaning that any winding coil can be either a north pole or a south pole.

As shown in fig. 1b below, when phase A is energized, the windings at 12 o’clock and 6 o’clock are north poles and the windings at 3 o’clock and 9 o’clock are south poles. The windings at 12 and 6 would attract the teeth of the magnetically south end of the rotor, and windings at 3 and 9 would attract the teeth of the magnetically north end of the rotor. The desired direction of travel determines the next set of poles to be energized.

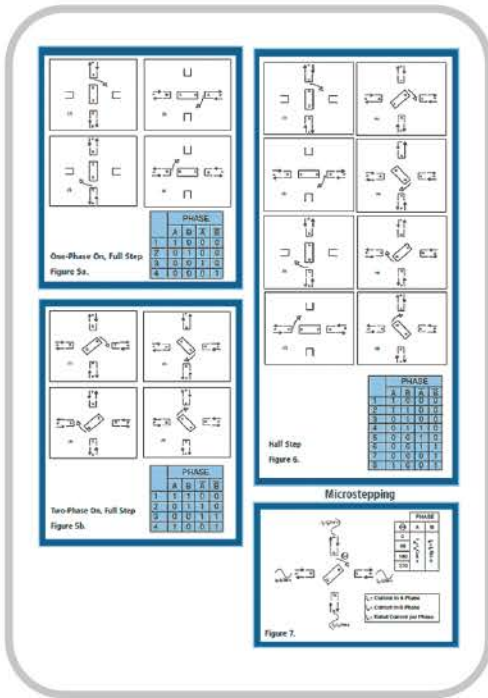


The driver controls this phase sequencing. Because there are 50 teeth on the rotor, the pitch between teeth is 7.2°. As the motor moves, some rotor teeth are in alignment with the stator teeth. The other rotor teeth are out of alignment with the stator teeth by 3/4, 1/2 or 1/4 of a tooth pitch. When the motor takes a step, it will move to the next closest position where the rotor and stator teeth are aligned. The rotor will move 1/4 of 7.2°. The motor will move 1.8° with each step. The motor will move 1.8° with each step.

微步, 整步、半步 Microstepping, Full Step & Half Step

There are three commonly used excitation modes for step motors; these are full step, half step and microstepping.

In full step operation, the motor moves through its basic step angle, i.e., a 1.8° step motor takes 200 steps per motor revolution. There are two types of full step excitation modes. In single phase mode, also known as “one-phase on, full step” excitation, the motor is operated with only one phase (group of windings) energized at a time. This mode requires the least amount of power from the driver of any of the excitation modes. See Fig. 5a.



In dual phase mode, also known as “two-phase on, full step” excitation, the motor is operated with both phases energized at the same time. This mode provides improved torque and speed performance. Dual phase excitation provides about 30% to 40% more torque than single phase excitation, but does require twice as much power from the driver. See Fig. 5b.

Half step excitation is alternating single and dual phase operation resulting in steps that are half the basic step angle. Due to the smaller step angle, this mode provides twice the resolution and smoother operation. Half stepping produces roughly 15% less torque than dual phase full stepping. Modified half stepping eliminates this torque decrease by increasing the current applied to the motor when a single phase is energized. See Fig. 6.

Microstepping is a technique that increases motor resolution by controlling both the direction and amplitude of current flow in each winding. Current is proportioned in the windings according to sine and cosine functions.

Microstepping can divide a motor’s basic step up to 256 times. Microstepping improves low speed smoothness and minimizes low speed resonance effects. Microstepping produces roughly 30% less torque than dual phase full stepping. See Fig. 7.

More on Microstepping

What is the goal of microstepping? Essentially, the goal of this process is to create a motor that runs as smoothly as possible. Due to the nature of step motors, their rotation is not entirely smooth, as the motor is moving “step by step”. Of course, these steps are designed to be moved through rather quickly, so there is usually no particularly detrimental effect on performance, but for those who require smoother resolution, the full step stepper motor may not be quite what is needed.

This is where the microstepper controller comes in. The microstepper controller is a driver that sends pulses to the motor in an ideal waveform for fluid rotation. The idea is for the driver to send current in the form of sinewaves. Two sinewaves that are 90 degrees out of phase is the perfect driver for a smooth motor. If two step coils can be made to follow these sinewaves, it results in a perfectly quiet, smooth motor with no detectable “stepping”.

This is because, in such a case, the two waves work together to keep the motor in smooth transition from one pole to the other. When the current increases in one coil, it decreases in the other, resulting in smooth step advancing and continuous torque output at each position. A normal bipolar stepper driver does not have these smooth wave forms. As a result, the motor transitions are not as smooth. In most applications requiring stepper motors, assuming an ideal driver situation. In reality, the wave forms can deviate significantly, resulting in what is called “resonance”, which is a phenomenon that creates problems for mechanical systems. Microstepping reduces resonance issues by controlling the waves so that this type of deviation does not occur.

A microstepper controller subdivides the motor step angle into multiple divisions to improve control over the motor. This allows for more refined motor work that requires greater motor resolution. Keep in mind that while a microstepper controller may make this refined motion possible, there may be physical limitations in your machinery that affect the motion of the motor in your particular application. That being said, if you are doing precise work for which the threat of resonance is an issue, you definitely want to be looking into the use of a microstepping controller for your motors.



Product about 产品简介

二、振动和共振Vibration and Resonance

When a step motor makes a move from one step to the next, the rotor doesn't immediately stop.

The rotor actually passes up its final position (overshoots), then goes past it in the opposite direction (undershoots), then moves back and forth until it finally comes to rest.

We call this "ringing," and it occurs every time the motor takes a step. In most cases, the motor is commanded to move to the next step before it comes to a rest.

Unloaded, the motor exhibits a fair amount of ringing. This ringing translates into motor vibration. The motor will often stall if it is unloaded or under-loaded, because the vibration is high enough to cause the motor to lose synchronism. Loading the motor properly will dampen these vibrations. The load should require somewhere between 30% to 70% of the torque that the motor can produce, and the ratio of load inertia to rotor inertia should be between 1:1 and 3:1. A step motor will exhibit much stronger vibrations when the input pulse frequency matches the natural frequency of the motor. This phenomenon is called resonance. In resonance, the overshooting and undershooting become much greater, and the chance of missing steps is much higher. The resonance range may change slightly due to the damping effect of the load's inertia.

排除振动和共振Troubleshooting Vibration and Resonance

A two-phase step motor can only miss steps in multiples of four full steps (equivalent to one tooth pitch or pole pitch). If the number of missing steps is a multiple of four, vibration or overloading may be causing a loss of synchronism. If the number of missing steps is not a multiple of four, an electronics problem is most likely the issue. There are a number of ways to get around resonance. The easiest way is to avoid the resonant speed range altogether. The resonant frequency for a two-phase motor is around 200pps; motors can be started at speeds above the resonant range. Accelerating quickly through the range is recommended if the motor must be started at a speed below the resonance range.

Half stepping and microstepping are also effective means of reducing vibration. Both methods reduce the size of each motor step. When the motor step angle is made smaller, the motor will vibrate less. The motor does not have to travel as far for each step, and less energy will be wasted in overshooting and undershooting. Step motors react differently to different loads. Make sure that the motor is sized properly to the load. 10:1. For shorter, quicker moves, the ratio should be closer to 1:1 to 3:1.

三、步进电机驱动和线圈接线Step Motor Driver and Winding Configurations 驱动Drivers

The basic function of a motor driver is to provide the rated current to the motor windings in the shortest possible time. Driver voltage plays a large part in a step motor's performance. Higher voltage forces current into the motor windings faster, helping to maintain high speed torque.

Two of the most commonly used drivers for step motors types of step motor driver are the following:

Constant current drivers are also known as PWM (pulse width modulated) or chopper drives. In this type of driver, the motor current is regulated by switching voltage to the motor on and off to achieve an average level of current. These drivers operate using a high voltage supply, generating a high driver voltage to motor voltage ratio, giving the motor improved high speed performance.

Constant voltage drivers are also known as, L/R or resistance limited (RL) drivers. In this type of driver, the amount of current a step motor receives is limited only by the resistance/impedance of its windings. For this reason, it is important to match the motor's rated voltage to the voltage of the driver. Constant voltage drivers work best in low speed and low current applications. They become inefficient at high speeds and high current levels. In certain situations, resistors may be placed in series with the motor's windings to allow the motor to be operated using a driver voltage larger than the motor's rated voltage to increase performance at higher speeds.

Driver & Winding Configurations

Step motor drivers can be divided into two types, unipolar and bipolar. All 6 and 8 lead wire motors manufactured by HAISHENG can be configured to be driven by either a bipolar or a unipolar driver, however, 4 lead wire motors can only be run by bipolar drivers.

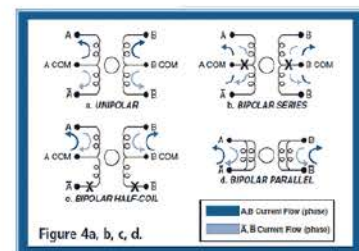
When trying to decide between a bipolar motor driver and a unipolar motor driver, it's important to have a basic sense of the distinction between each type of motor. In a bipolar stepper motor, there are usually four leads, two pairs of two, with a coil powered by each pair. In a unipolar stepper motor, you normally have two sets of three leads, with each set of three powering a coil with a center tap. In some cases you will find five leads, where the two common center taps are combined. Bipolar stepper motors tend to be less expensive, but unipolar motors perform better at high speeds. Therefore, which type of motor driver and motor you should use will depend largely on the job you need performed. In fact, some of the applications in your project may be better suited to unipolar configurations while others will work best with bipolar considerations. For maximum efficiency, you will want to know all the major distinctions between bipolar and unipolar configurations before choosing a motor and motor driver. Here are some more of the most important differences you will want to consider when selecting your driver and motor.

单极性驱动 Unipolar drivers can send current through a motor's windings in only one direction. Unipolar drivers tend to achieve better high-speed performance.

双极性驱动 Bipolar drivers can send current through a motor's windings in both directions. Step motors can be connected to these drives in several different ways to get different motor performance, making a bipolar drive much more flexible than a unipolar drive.

In a unipolar winding configuration, only half the coils of each winding are used at a time. Energizing half of the coils is beneficial because it reduces the winding's inductance. Inductance is an electrical property that fights changes in current flow, particularly at higher speeds. The unipolar winding configuration tends to give better high-speed performance. The disadvantage of this type of configuration is that at lower speeds it tends to give less torque than configurations that use the entire winding. See Fig. 4a.

In a bipolar series winding configuration, both halves of the phase are connected in series. Since the full coil is used, the same motor will produce 40% more torque in the low to mid speed range. Unfortunately, this configuration has four times the inductance of the same motor operated in the unipolar configuration. Although the motor has good low speed torque, the torque will drop off rapidly at high speeds. See Fig. 4b.



A bipolar half coil winding configuration can be used to achieve unipolar performance with a bipolar drive. In this configuration, the motor's inductance and low speed torque are less than those in the bipolar series configuration. As in the unipolar configuration, the half coil configuration tends to give better performance at higher speeds. Both 6 and 8 lead wire motors can be connected in the bipolar half coil configuration. See Fig. 4c.

A bipolar parallel winding configuration can only be achieved using an 8 lead wire motor or by internal wiring. In a parallel configuration, one half of the winding phase is placed in parallel with the other half. This allows the full winding to be used while keeping the inductance low. This combination allows the bipolar parallel configuration to produce 40% more torque than the unipolar winding configuration while still performing well across a wide range of speeds. However, due to the parallel configuration, the winding resistance is halved and the motor will require 40% more current than the same motor run in a unipolar configuration to produce this increased torque. See Fig. 4d.

Product about 产品简介

四、步进电机速度与力矩关系 Stepper Motor Speed and Torque Relationship

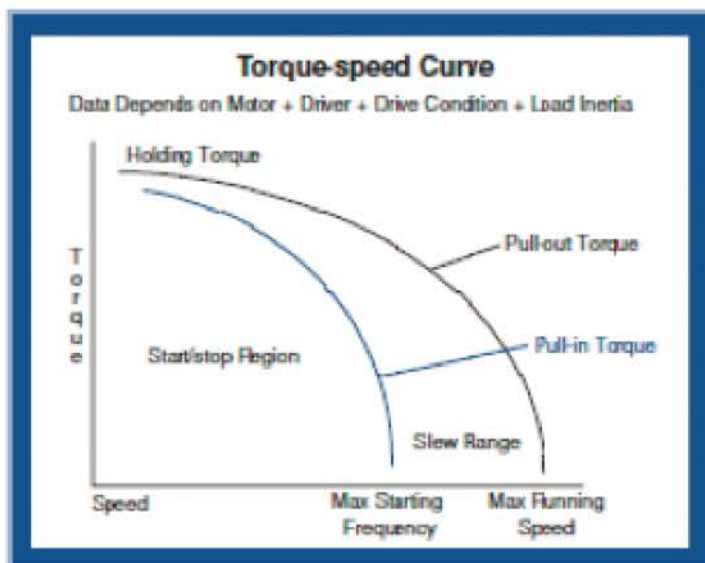
What is Torque for a Stepper Motor?

When you're looking for a stepper motor, you'll often see statistics related to torque. Torque information isn't the only thing you'll be looking at when it comes to selecting your motor, but it is important. Generally, you'll be looking at information regarding how much torque the stepper produces under certain conditions. Before you start examining the different types of torque and the relationship of torque to stepper motor speed, it's important to understand exactly what torque is.

Simply put, torque is rotational force; that is, it's the force used to turn things. This force is measured in pound-feet in the English system, but the international standard is Newton-Meters (or in the case of a small stepper motor, milliNewton Meters (mNm)), meaning the amount of force applied in Newtons times the distance to the center of the rotating object in meters.

矩频特性曲线 Torque / Speed Curves

It is very important to know how to read a torque/speed curve because it describes what a stepper motor can and cannot do. It is also important to keep in mind that a torque/speed curve is for a given motor and a given driver. Torque is dependent on the driver type and voltage. The same motor can have a very different torque/speed curve when used with a different driver. The torque/speed curves in this catalog are given for reference only. The same motor with a similar drive, similar voltage and similar current should give similar performance. Torque/speed charts can also be used to roughly estimate the torque produced using different drivers at varying voltages and currents.



orque/speed curves have torque on the Y-axis, measured in N-m (in this catalog), and speed on the X-axis, measured in PPS (pulses per seconds) or Hz.

保持转矩（静转矩） Holding Torque

amount of torque that the motor produces when it has rated current flowing through the windings but the motor is at rest.

自定位转矩 Detent Torque

amount of torque that the motor produces when it is not energized. No current is flowing through the windings.

牵入转矩曲线（启动转矩曲线） Pull-in Torque Curve

Shows the maximum value of torque at given speeds that the motor can start, stop or reverse in synchronism with the input pulses. The motor cannot start at a speed that is beyond this curve. It also cannot instantly reverse or stop with any accuracy at a point beyond this curve.

停止/启动区域 Stop / Start Region

area on and underneath the pull-in curve. For any load value in this region, the motor can start, stop, or reverse “instantly” (no ramping required) at the corresponding speed value.

牵出转矩曲线（运行转矩曲线） Pull-out Torque Curve

Shows the maximum value of torque at given speeds that the motor can generate while running in synchronism. If the motor is run outside of this curve, it will stall.

相应范围 Slew Range

the area between the pull-in and the pull-out curves, where to maintain synchronism, the motor speed must be ramped (adjusted gradually).

2 Phase Hybrid stepping motor / 2相混合式步进电机

35HS 0.9°



基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80°C (rated current, 2 phase on)
环境温度 Ambient Temperature	-40°C ~ +50°C
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

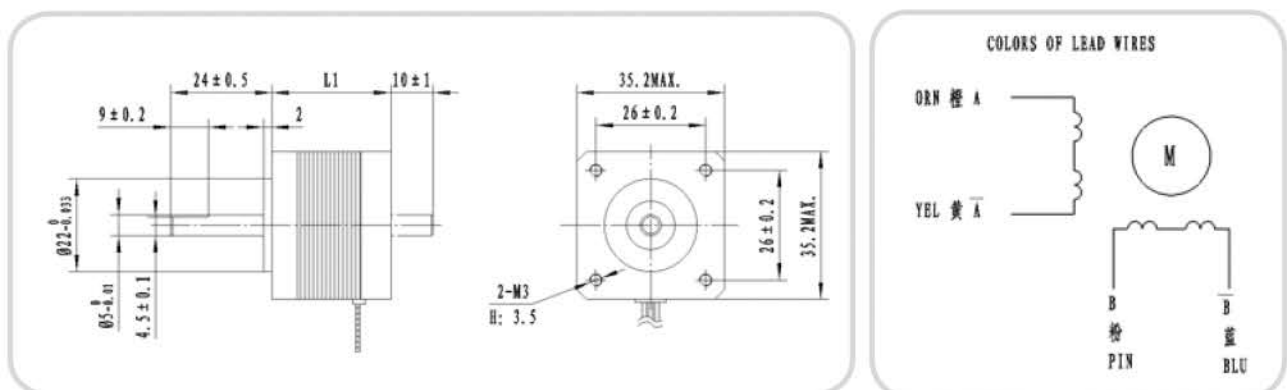
■ 应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.

- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
- 体积小、扭矩大; Small size, big torque;
- 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身長 Length mm
35HS20MF-08A	10	0.8	10	13.8	500	4	8	0.1	20
35HS26MF-08A	3.8	0.8	4.8	6.4	500	4	10	0.12	26
35HS28MF-04A	5	0.4	12.5	23.5	900	4	10	0.14	28
35HS28MF-05A	10	0.5	20	24.5	1000	4	10	0.14	28
35HS34MF-04A	10	0.4	25	19.8	1100	6	14	0.17	34
35HS36MF-105A	2.7	1.0	2.7	7.5	1200	4	14	0.18	36

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身長、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

2 Phase Hybrid stepping motor / 2相混合式步进电机

基本技术参数 Base technique parameter

35HS 1.8°

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃.(rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC, 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)



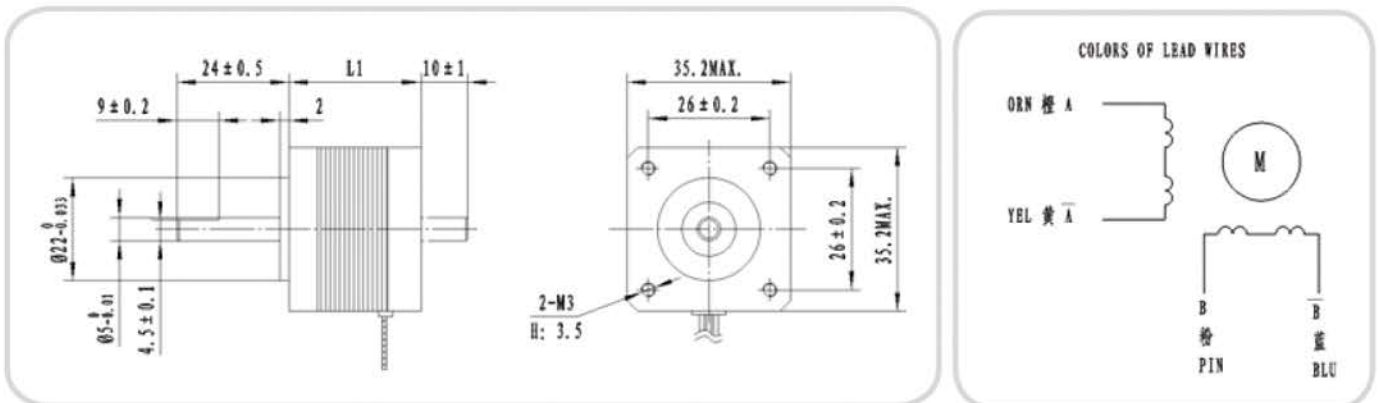
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- 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身长 Length mm
35HS20DF-08A	10	0.4	25	13.8	500	4	8	0.1	20
35HS26DF-08A	3.8	0.8	4.8	4.3	500	4	10	0.12	26
35HS28DF-04A	3.2	0.75	4.3	4.3	800	4	10	0.14	28
35HS28DF-05A	10	0.5	20	18	1000	4	10	0.14	28
35HS34DF-04A	10	0.4	25	16	1200	6	14	0.17	34
35HS36DF-105A	2.7	1.0	2.7	4.3	1400	4	14	0.18	36

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;



2 Phase Hybrid stepping motor / 2相混合式步进电机

36HY 0.9°



基本技术参数 Base technique parameter

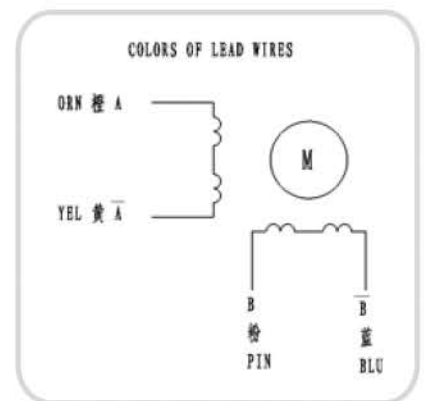
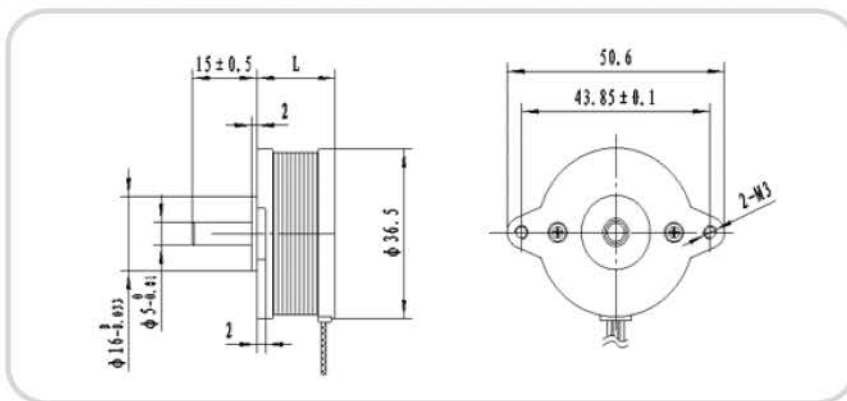
项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃.(rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min., 500VDC
介电强度 Dielectric Resistance	600VAC, Is, ImA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

- 应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.
- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
 - 体积小、扭矩大; Small size, big torque;
 - 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身長 Length mm
36HY12MF-03A	6.2	0.3	16.8	8.0	320	4	8	0.06	12.5
36HY17MF-04A	6.2	0.4	16.2	8.0	650	4	10	0.1	18.3
36HY20MF-05A	6.0	0.5	16.2	9.0	1100	4	12	0.13	22

尺寸图 Dimension Drawing



※ Remark 备注

1. Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
2. Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身長、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

2 Phase Hybrid stepping motor / 2相混合式步进电机

36HY 1.8°

基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80°C (rated current, 2 phase on)
环境温度 Ambient Temperature	-40°C ~ +50°C
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC, 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)



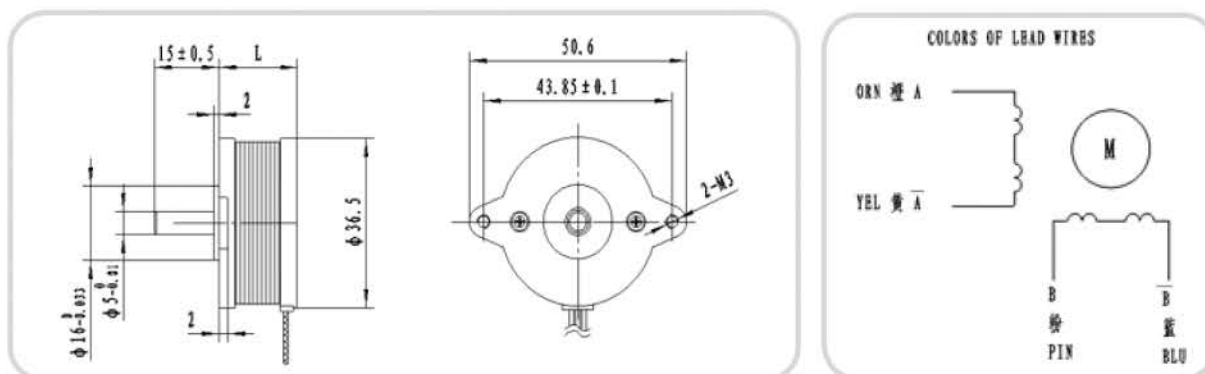
应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.

- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
- 体积小、扭矩大; Small size, big torque;
- 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身長 Length mm
36HY12DF-03A	6.2	0.3	16.8	8.0	450	4	8	0.06	12.5
36HY17DF-04A	6.2	0.4	16.2	8.0	900	4	10	0.1	18.3
36HY20DF-05A	6.0	0.5	16.2	9.0	1500	4	12	0.13	22

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身長、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

2 Phase Hybrid stepping motor / 2相混合式步进电机

39HS 0.9°



基本技术参数 Base technique parameter

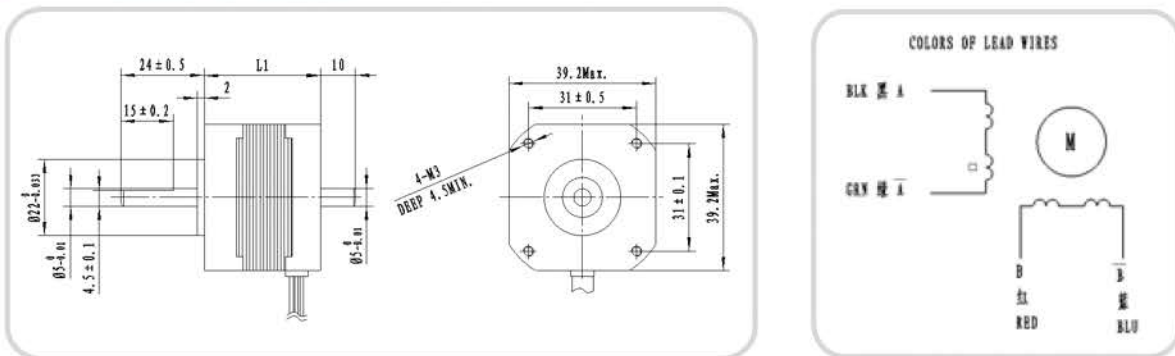
项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

- 应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.
- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
 - 体积小, 扭矩大; Small size, big torque;
 - 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身長 Length mm
39HS20MF-05A	4	0.5	8.0	9.5	900	4	10	0.1	20
39HS25MF-05A	5	0.5	10	15.5	1200	4	11	0.12	25
39HS25MF-06A	6	0.6	10	15.5	1600	4	11	0.12	25
39HS34MF-04A	12	0.4	30	43	1800	4	20	0.18	34
39HS38MF-05A	12	0.5	24	60	2600	4	28	0.2	38
39HS38MF-08A	6	0.8	7.5	7.5	1700	6	28	0.2	38
39HS44MF-03A	12	0.3	40	110	2500	4	36	0.25	44

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身長、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

2 Phase Hybrid stepping motor / 2相混合式步进电机

42HS 0.9°

基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80°C (rated current, 2 phase on)
环境温度 Ambient Temperature	-40°C ~ +50°C
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , Is , ImA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)



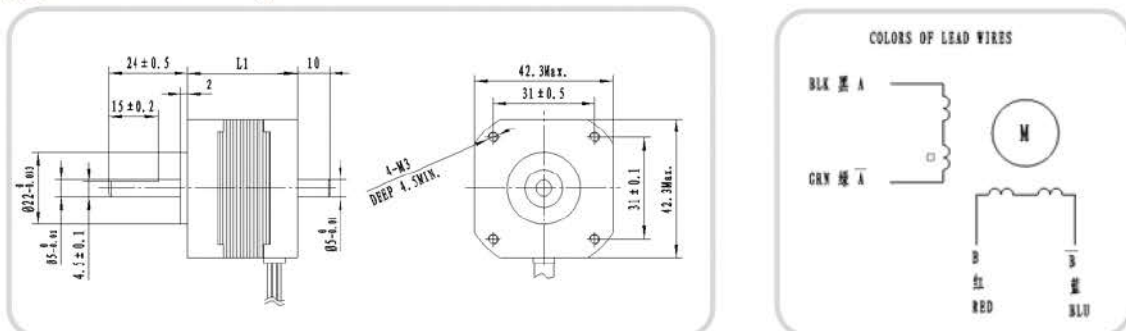
应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.

- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
- 体积小, 扭矩大; Small size, big torque;
- 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身长 Length mm
42HS28MF-06A	4	0.4	10	18	1580	4	25	0.25	28
42HS34MF-04A	4	0.4	10	9.5	1580	6	35	0.22	34
42HS34MF-031A	12	0.31	38.5	33	1580	6	35	0.22	34
42HS34MF-031A	2.8	1.33	2.1	4.2	2200	4	35	0.22	34
42HS40MF-12A	4	1.2	3.3	4.0	2590	6	54	0.28	40
42HS40MF-08A	6	0.8	7.5	7.5	2590	6	54	0.28	40
42HS40MF-04A	12	0.4	30	30	2590	6	54	0.28	40
42HS40MF-168A	2.8	1.68	1.65	3.2	3600	4	54	0.28	40
42HS47MF-12A	4	1.2	3.3	4.0	3170	6	68	0.38	47
42HS47MF-08A	6	0.8	7.5	6.3	3170	6	68	0.35	47
42HS47MF-04A	12	0.4	30	38	3170	6	68	0.35	47
42HS47MF-168A	2.8	1.68	1.65	4.1	4400	4	68	0.35	47

尺寸图 Dimension Drawing



2 Phase Hybrid stepping motor / 2相混合式步进电机

42HS 1.8°



基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃ .(rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

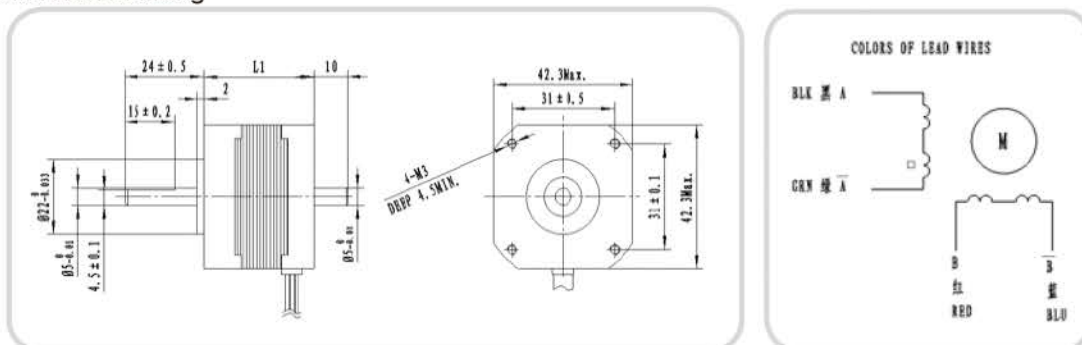
应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.

- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
- 体积小, 扭矩大; Small size, big torque;
- 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身長 Length mm
42HS34DF-095A	4	0.6	4.2	2.5	1580	6	35	0.22	34
42HS34DF-04A	9.6	0.4	24	15	1580	6	35	0.22	34
42HS34DF-031A	12	0.31	38.5	21	1580	6	35	0.22	34
42HS34DF-133A	2.8	1.33	2.1	2.5	2200	4	35	0.22	34
42HS40DF-12A	4	1.2	3.3	3.2	2590	6	54	0.28	40
42HS40DF-08A	6	0.8	7.5	6.7	2590	6	54	0.28	40
42HS40DF-04A	12	0.4	30	30	2590	6	54	0.28	40
42HS40DF-168A	2.8	1.68	1.65	3.2	3600	4	54	0.28	40
42HS47DF-12A	4	1.2	3.3	2.8	3170	6	68	0.38	47
42HS47DF-08A	6	0.8	7.5	6.3	3170	6	68	0.35	47
42HS47DF-04A	12	0.4	30	25	3170	6	68	0.35	47
42HS47DF-168A	2.8	1.68	1.65	2.8	4400	4	68	0.35	47

尺寸图 Dimension Drawing



※ Remark 备注

- 1、 Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、 Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

2 Phase Hybrid stepping motor / 2相混合式步进电机

57HS 0.9°

基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃ .(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , Is , ImA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

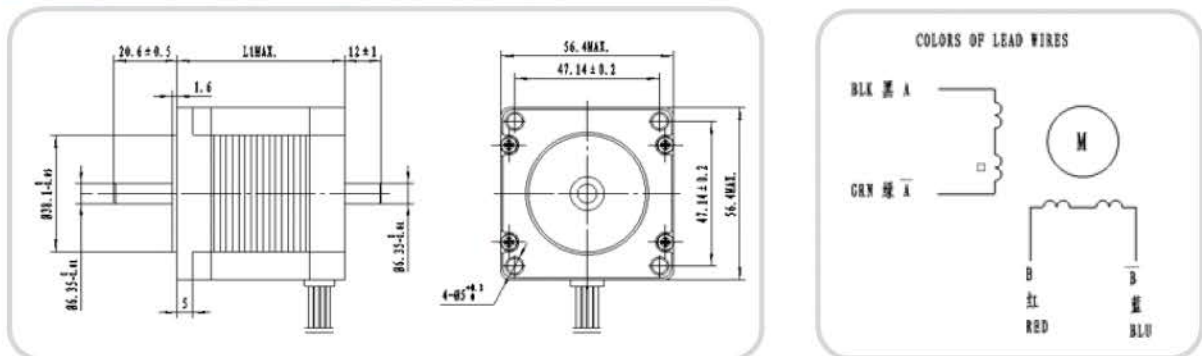


- 应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.
- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
- 体积小, 扭矩大; Small size, big torque;
- 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm2	重量 Weight Kg	机身長 Length mm
57HS41MF-10A	5.7	1.0	5.7	8.0	3.9	6	120	0.47	41
57HS41MF-20A	2.8	2.0	4.4	2.2	3.9	6	120	0.47	41
57HS41MF-28A	2.0	2.8	0.7	2.2	5.5	4	120	0.47	41
57HS56MF-10A	7.4	1.0	7.4	17.5	9	6	300	0.7	56
57HS56MF-20A	3.6	2.0	1.8	4.5	9	6	300	0.7	56
57HS56MF-28A	2.5	2.8	0.9	4.5	12.6	4	300	0.7	56
57HS76MF-10A	8.6	1.0	8.6	23	13.5	6	480	1	76
57HS76MF-20A	4.5	2.0	2.25	5.6	13.5	6	480	1	76
57HS76MF-28A	3.2	2.8	1.13	5.6	18.9	4	480	1	76

尺寸图 Dimension Drawing



※ Remark 备注

1. Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
2. Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

2 Phase Hybrid stepping motor / 2相混合式步进电机

57HS 1.8°



基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃ .(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

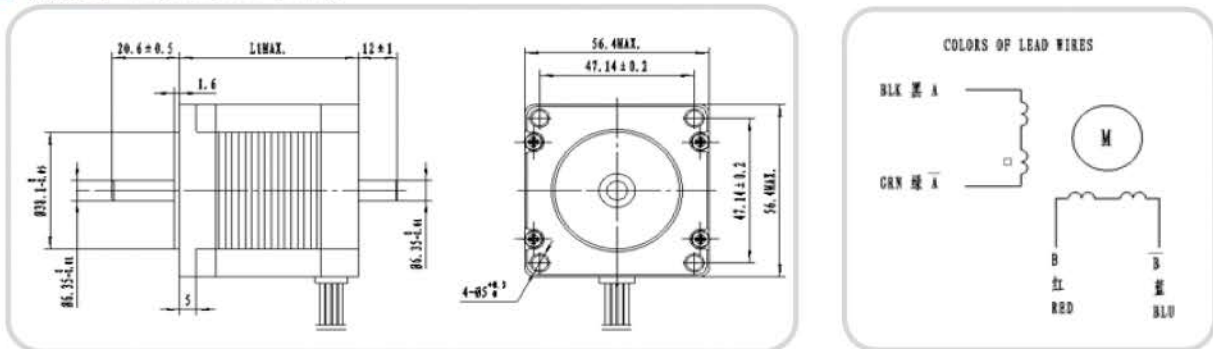
应用、特点 Application and features: 主要应用于监控、医疗设备、自动化精密控制领域。
Mainly used in monitoring, fields of medical equipment, automation and precision control.

- 低噪音、运行平稳、高分辨率; Low noise, smooth running and high resolution;
- 体积小, 扭矩大; Small size, big torque;
- 寿命长 Long service life

技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身长 Length mm
57HS4IDF-10A	5.7	1.0	5.7	5.5	3.9	6	120	0.47	41
57HS4IDF-20A	2.8	2.0	4.4	1.4	3.9	6	120	0.47	41
57HS4IDF-28A	2.0	2.8	0.7	1.4	5.5	4	120	0.47	41
57HS5IDF-10A	6.6	1.0	6.6	8.2	7.2	6	275	0.65	51
57HS5IDF-20A	3.3	2.0	1.65	2.2	7.2	6	275	0.65	51
57HS5IDF-28A	2.3	1.0	0.83	2.2	10.1	4	275	0.65	51
57HS6DF-10A	7.4	1.0	7.4	10	9	6	300	0.7	56
57HS6DF-20A	3.6	2.0	1.8	2.5	9	6	300	0.7	56
57HS6DF-28A	2.5	2.8	0.9	2.5	12.5	4	300	0.7	56
57HS76DF-10A	8.6	1.0	8.6	14	13.5	6	480	1	76
57HS76DF-20A	4.5	2.0	2.25	3.6	13.5	6	480	1	76
57HS76DF-28A	3.2	2.8	1.13	3.6	18.9	4	480	1	76

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

2 Phase epicycle stepping motor / 2相行星减速混合式步进电机 42HSJX-A (精密型 Precision Type)

基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃ .(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , Is , ImA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)



★ 应用、特点 Application and features:

■ 应用 Application: 主要应用于监控、医疗设备、纺织机械、3D打印机、印刷机、包装机等自动化精密控制领域。
Applications: mainly used in monitors, medical equipment, textile machinery, 3D printer, printing machines, packaging machines and automatic precision control.

■ 特点 features:

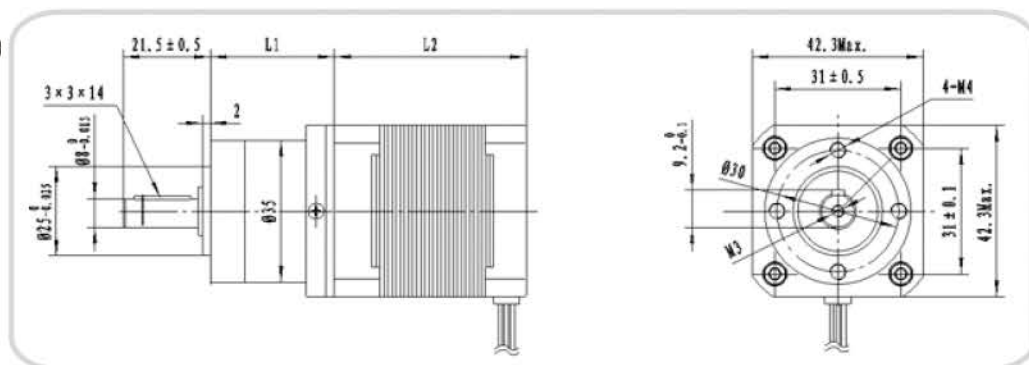
- 1、性价比高，搭配混合式步进电机使用，降低转速、高转矩化、提高电机转子惯性，提高刚性、缩短启动与停止定位时间，电机功率小型化，同时提高惯性负载的安定性与降低振动的优点；
High cost performance, use with hybrid step motor, reduce speed, high torque, the motor rotor inertia, improving rigidity, shorten the time of start and stop position, motor miniaturization, and improve load stability and reduce vibration;
- 2、合成皂基润滑油脂 Synthetic complex soap grease
使用复合皂基润滑油脂，长效润滑不漏油、防锈、低噪音、低磨损； Adopting synthetic complex soap grease to have long-term lubrication, leak-proof, antirust, low noise and low friction manufacturing process.
- 3、稳定的表面处理 Stable surface hardening treatment
齿轮材料选用铬钼钒合金钢经调质处理至基材硬度25HRC,在使用表面硬化处理设备将齿轮表面之硬度调质600HV，以获得最佳的耐磨性和耐冲击韧性。
To gain the best abrasion performance and impact resistance, Chromium, Molybdenum, Vanadium, Alloy steel selected as raw material, Accompany with quenching and tempering heat treatment process, the core hardness is increased to 25 HRC and the surface hardness is increased to 600 HV.
- 4、减速机采用螺旋齿轮设计，其齿轮啮合率比一般直齿轮高35%以上，具有运转平顺、高输出扭矩和低背隙。 Adopting helical gear design, the contact ratio of planetary reducer is 35% higher than vertical one, Smooth running, high output torque and low backlash and distinguished features.

■ 技术规格 Technique Specification

Specification Table性能资料		Stage节数	
Ratio减速比		4, 5, 7, 9, 10	16,20,25,28,35,36,40,45,49,50,63,70,81,90,100
Length长度	mm	42	52
Rated Output torque 额定输出转矩	Nm	3.5	15
最大负载	Nm	6	25
额定输出转速	rpm	3000	3000
最大输出转速	rpm	5000	5000
背隙	arcmin	≤15	≤25
效率	%	95	95
重量	Kg	0.4	0.6
润滑		Synthetic grease全合成润滑油脂	
防护等级	IP	65	65
噪音	dB	≤45	≤45
安装方向		Any direction任意方向	
使用寿命	h	20000	20000

■ 尺寸图

Dimension Drawing





2 Phase epicycle stepping motor / 2相行星减速混合式步进电机

42HSJX-B (经济型 Economic Type)

基本技术参数 Base technique parameter



项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. , 500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

★ 应用、特点 Application and features:

■ 应用 Application: 主要应用于监控、医疗设备、纺织机械、3D打印机、印刷机、包装机等自动化精密控制领域。

Applications: mainly used in monitors, medical equipment, textile machinery, 3D printer, printing machines, packaging machines and automatic precision control.

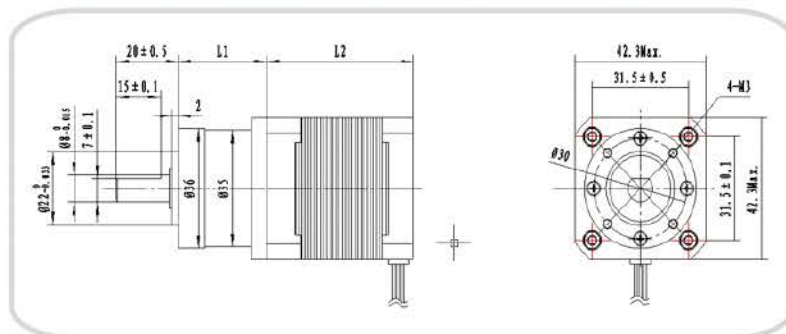
■ 特点 features:

- 1、性价比高，搭配混合式步进电机使用，降低转速、高转矩化、提高电机转子惯性，提高刚性、缩短启动与停止定位时间，电机功率小型化，同时提高惯性负载的安定性与降低振动的有点；
High cost performance, use with hybrid step motor, reduce speed, high torque, the motor rotor inertia, improving rigidity, shorten the time of start and stop position, motor miniaturization, and improve load stability and reduce vibration;
- 2、合成皂基润滑油脂 Synthetic complex soap grease
使用复合皂基润滑油脂，长效润滑不漏油、防锈、低噪音、低磨损； Adopting synthetic complex soap grease to have long-term lubrication, leak-proof, antirust, low noise and low friction manufacturing process.
- 3、稳定的表面处理 Stable surface hardening treatment
齿轮材料选用铬钼钒合金钢经调质处理至基材硬度25HRC,在使用表面硬化处理设备将齿轮表面之硬度调质600HV，以获得最佳的耐磨性和耐冲击韧性。 To gain the best abrasion performance and impact resistance, Chromium, Molybdenum, Vanadium, Alloy steel selected as raw material, Accompany with quenching and tempering heat treatment process, the core hardness is increased to 25 HRC and the surface hardness is increased to 600 HV.
- 4、减速机采用螺旋齿轮设计，其齿轮啮合率比一般直齿轮高35%以上，具有运转平顺、高输出扭矩和低背隙。 Adopting helical gear design, the contact ratio of planetary reducer is 35% higher than vertical one, Smooth running, high output torque and low backlash and distinguished features.

■ 技术规格 Technique Specification

Specification Table性能资料		Stage节数	
Ratio减速比		4, 5, 7, 9, 10	16,20,25,28,35,36,40,45,49,50,63,70,81,90,100
Length长度	mm	42	52
Rated Output torque 额定输出转矩	Nm	3.5	15
最大负载	Nm	6	25
额定输出转速	rpm	3000	3000
最大输出转速	rpm	5000	5000
背隙	arcmin	≤15	≤25
效率	%	95	95
重量	Kg	0.4	0.6
润滑		Synthetic grease全合成润滑油脂	
防护等级	IP	65	65
噪音	dB	≤45	≤45
安装方向		Any direction任意方向	
使用寿命	h	20000	20000

■ 尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制；
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制；

2 Phase hollow shaft stepping motor / 2相空心轴混合式步进电机 42HSK 1.8° (Hollow shaft 空心轴)

基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC, 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴向跳动 Shaft Axial play	0.08mmMax (300g-load)



★ 应用、特点 Application and features:

应用：主要应用于打印机、医疗设备、纺织机械、印刷机、包装机等自动化精密控制领域。

Applications: Mainly used in printers, medical equipment, textile machinery, printing machines, packaging machines and automatic precision control.

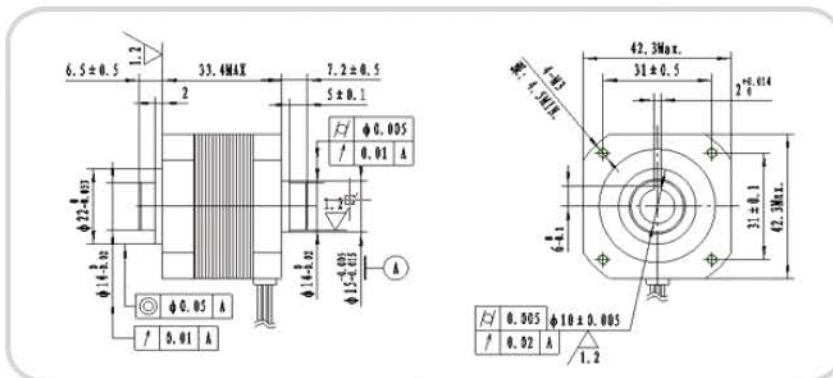
■ 特点 Features:

- 1、高精度 High accuracy: 该电机转子轴采用精密CNC加工，内孔与外圆同心度可以保证在0.01mm以下；
The rotor shaft is precision CNC machining, inner and outer concentricity guarantees in the following 0.01mm;
- 2、无轴向间隙设计 Design of no axial clearance
增加了消除螺母结构，可以达到无轴向间隙效果，以满足特殊高精度定位驱动场合；
Anti-backlash nut structure is increased, no effect of axial clearance can be achieved, to meet specific high precision positioning drive;

■ 技术规格 Technique Specification

型号 Model NO.	额定电压 Rated voltage V DC	电流 Current Phase A	电阻 Resistance Phase Ω	电感 Inductance Phase mH	最大静转矩 Holding Torque g-cm	引线 Leads	转子转动惯量 Rotor Inertia g-cm ²	重量 Weight Kg	机身长 Length mm
42HS34DF-095A	4	0.6	4.2	2.5	1580	6	35	0.22	34
42HS34DF-04A	9.6	0.4	24	15	1580	6	35	0.22	34
42HS34DF-031A	12	0.31	38.5	21	1580	6	35	0.22	34
42HS34DF-133A	2.8	1.33	2.1	2.5	2200	4	35	0.22	34
42HS40DF-12A	4	1.2	3.3	3.2	2590	6	54	0.28	40
42HS40DF-08A	6	0.8	7.5	6.7	2590	6	54	0.28	40
42HS40DF-04A	12	0.4	30	30	2590	6	54	0.28	40
42HS40DF-168A	2.8	1.68	1.65	3.2	3600	4	54	0.28	40
42HS47DF-12A	4	1.2	3.3	2.8	3170	6	68	0.38	47
42HS47DF-08A	6	0.8	7.5	6.3	3170	6	68	0.35	47
42HS47DF-04A	12	0.4	30	25	3170	6	68	0.35	47
42HS47DF-168A	2.8	1.68	1.65	2.8	4400	4	68	0.35	47

■ 尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制；
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制；

2 Phase lead screw shaft stepping motor / 2相丝杆轴混合式步进电机 42HSL 1.8° (Lead screw shaft 丝杆轴)

基本技术参数 Base technique parameter



项目 Item	性能 specification
步距角精度 Step angle Accuracy	±5% (full step, no load)
电阻精度 Resistance Accuracy	±10%
电感精度 Inductance Accuracy	±20%
温升 Temperature Rise	80℃.(rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC, 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.06mmMax (300g-load)
输出轴轴向跳动 Shaft Axial play	0.08mmMax (300g-load)

★应用、特点 Application and features:

■ 应用: 主要应用于3D打印机、医疗设备、正交工作平台等自动化精密控制领域。Mainly used in 3D printers, medical equipment, cross platform automated precision control.

Applications: Mainly used in printers, medical equipment, textile machinery, printing machines, packaging machines and automatic precision control.

■ 特点 features:

● 1、高精度、耐磨、传动平稳、高效 High-precision, wear and transmission smooth and efficient:

丝杆采用不锈钢材质 (SUS303) 精密滚造成型, 螺母以客户精度及寿命要求, 可以选用青铜和耐磨工程塑料材料。Screw made of stainless steel (SUS303) precision caused by rolling-, nut precision and lifetime requirements of customers, you can choose a bronze and wear-resistant plastic material.

● 2、无轴向间隙设计 Design of no axial clearance

增加了消除螺母结构, 可以达到无轴向间隙效果, 以满足特殊高精度定位驱动场合;

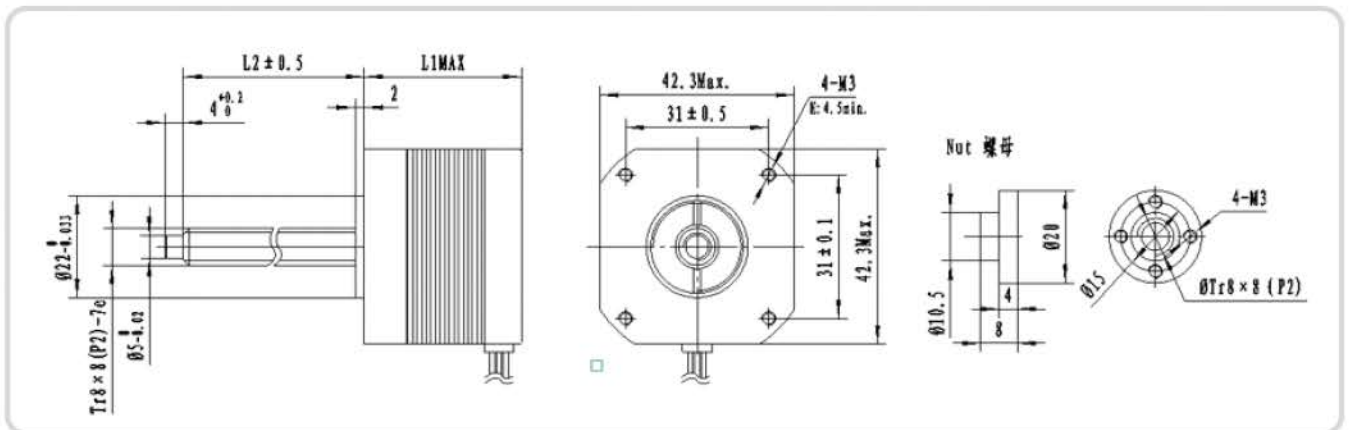
Anti-backlash nut structure is increased, no effect of axial clearance can be achieved, to meet specific high precision positioning drive;

■ 丝杆仕様

Lead Screw Model

Screw specifications 丝杆规格	Pitch螺距 (P) mm	Lead导程 (L) mm	Linear Travel/Step 行程/步 mm
Tr8X2 (P1)	1	2	0.01
Tr8X4 (P1)	1	4	0.02
Tr8X8 (P2)	2	8	0.04
Tr8X4 (P2)	2	4	0.02

■ 尺寸图 Dimension Drawing



※ Remark 备注

1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;

线圈电阻、电感及其它电性能参数可以根据客户要求订制;

2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.

电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机 24BYJ48



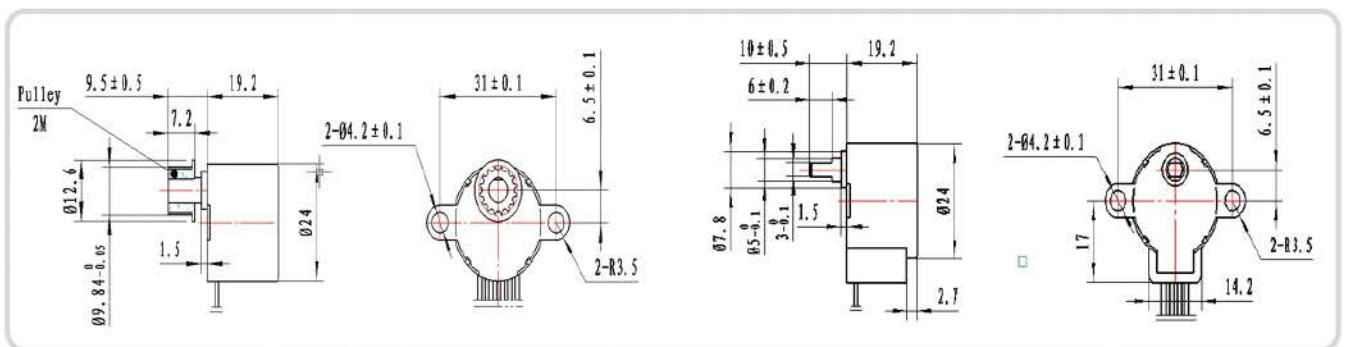
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ .(rated current,2 phase on)
环境温度 Ambient Temperature	-20℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (mN.m)	Detent Torque(mN.m)
24BYJ48-01	12	4	120	5.625/64	1:64	≥ 500	≥ 49	≥ 34.3
24BYJ48-02	12	4	200	5.625/64	1:64	≥ 500	≥ 49	≥ 39.2
24BYJ48-03	12	4	300	5.625/64	1:64	≥ 500	≥ 29.4	≥ 29.4
24BYJ48-03W	12	4	300	5.625/64	1:64	≥ 500	≥ 11.7	≥ 14.7
24BYJ24-N05U01	8	4	50	11.25/16	1:16	≥ 600	≥ 24.5	≥ 14.7

尺寸图 Dimension Drawing



※ Remark 备注

1. Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
2. Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机 28BYJ48



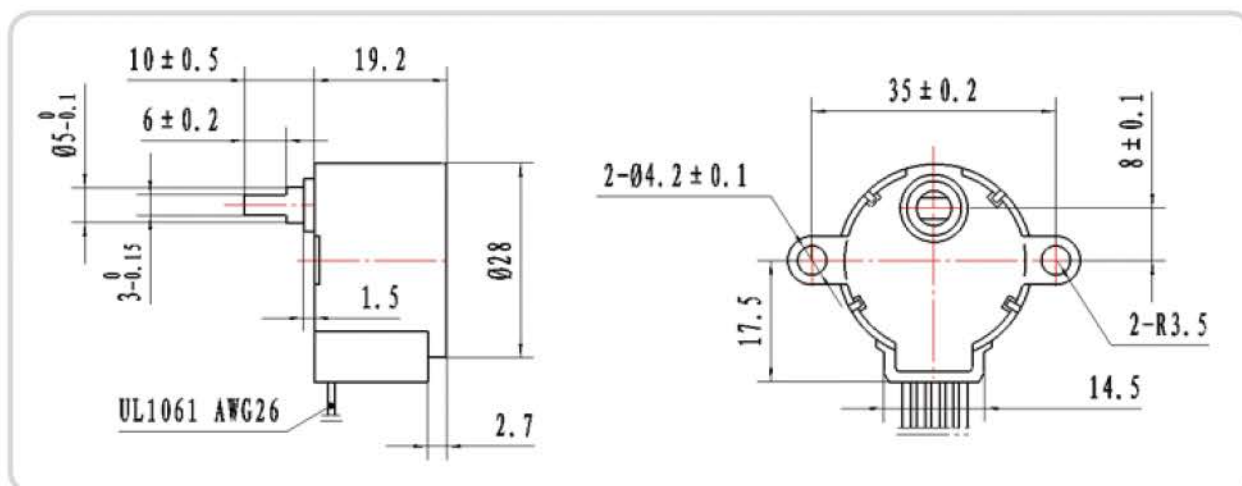
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step, no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current, 2 phase on)
环境温度 Ambient Temperature	-20℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC, 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V.DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (mN.m)	Detent Torque(mN.m)
28BYJ48-01	12	4	120	5.625/64	1:64	≥ 500	≥ 49	≥ 19.6
28BYJ48-02	12	4	200	5.625/64	1:64	≥ 500	≥ 39.2	≥ 19.6
28BYJ48-03	12	4	300	5.625/64	1:64	≥ 500	≥ 29.4	≥ 19.6
28BYJ48-01P	12	4	129	5.625/27	1:27	≥ 500	≥ 9.8	≥ 7.84

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机 30BYJ46



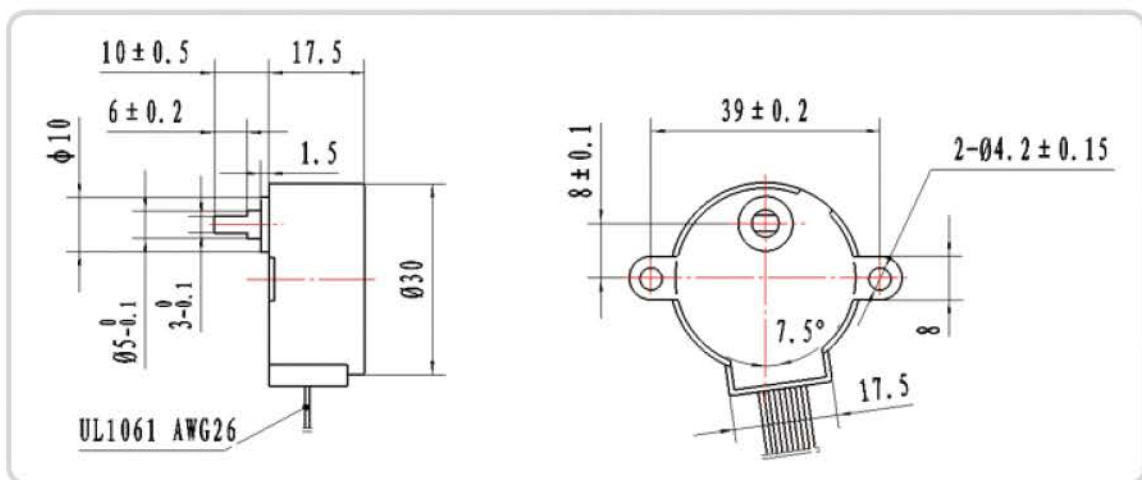
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-20℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min.,500VDC
介电强度 Dielectric Resistance	600VAC, 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (mN.m)	Detent Torque(mN.m)
30BYJ46-01	12	4	130	7.5/85.25	1:85.25	≥600	≥245	≥44.1
30BYJ46-02	12	4	200	7.5/85.25	1:85.25	≥600	≥196	≥44.1

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;



BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

35BYJ46



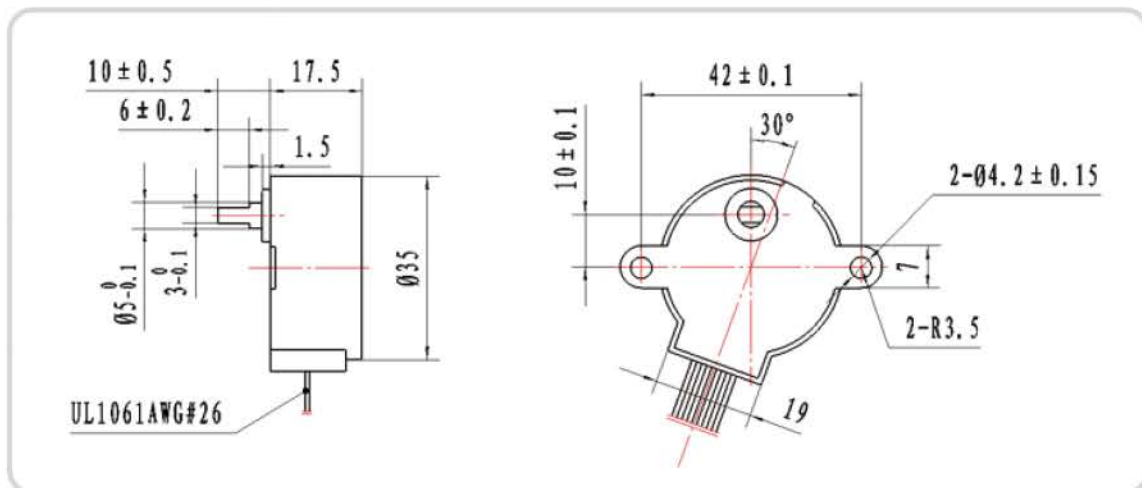
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step, no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-20℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC, 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (mN.m)	Detent Torque(mN.m)
35BYJ46-01U	12	4	100	7.5/16	1:16	≥800	≥19.6	≥19.6
35BYJ46-01W	12	4	100	7.5/25	1:25	≥800	≥24.5	≥24.5
35BYJ46-04Y	12	4	40	7.5/41.6	1:41.6	≥900	≥78.4	≥39.2
35BYJ46-01S	12	4	130	7.5/64	1:64	≥700	≥44.1	≥58.8
35BYJ46-01	12	4	130	7.5/85.25	1:85.25	≥700	≥145	≥78.4
35BYJ46-02R	12	4	200	7.5/247	1:247	≥600	≥294	≥145
35BYJ26-01Y	12	2	100	7.5/41.6	1:41.6	≥900	≥78.4	≥15.4

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机 35BYJ412H

基本技术参数 Base technique parameter

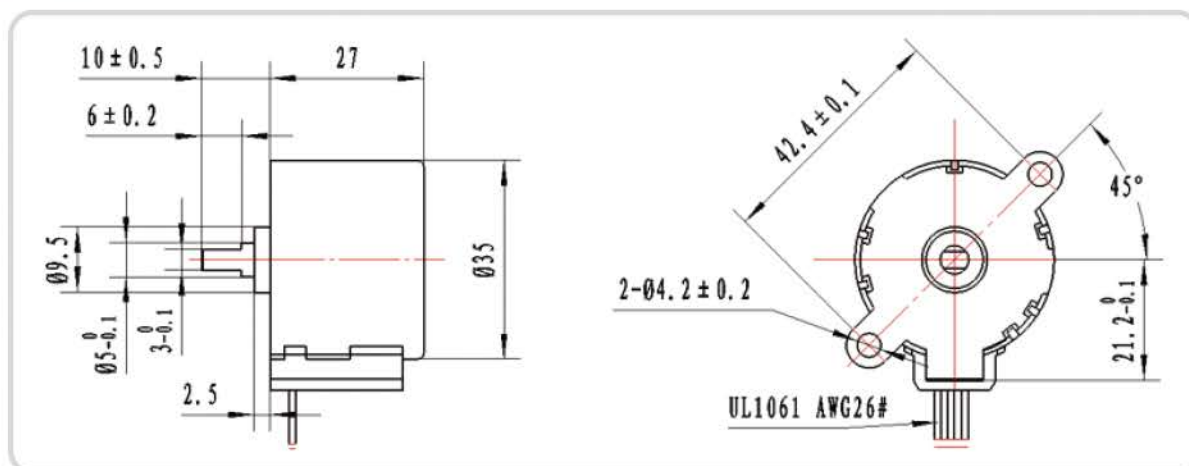
项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min.,500VDC
介电强度 Dielectric Resistance	600VAC , 1s, 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax



技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (mN.m)	Detent Torque(mN.m)
35BYJ412H12-20	12	4	20	3.75/12	1:12	≥ 900	≥ 88.2	≥ 78.4
35BYJ412H42-120	12	4	120	3.75/42.5	1:42.5	≥ 600	≥ 196	≥ 147
35BYJ412H42-60	12	4	60	3.75/42.5	1:42.5	≥ 700	≥ 294	≥ 147
35BYJ412H42-120	12	4	120	3.75/42.5	1:42.5	≥ 600	≥ 196	≥ 147
35BYJ212H42-30	12	2	30	3.75/42.5	1:42.5	≥ 800	≥ 343	≥ 147
35BYJ212H42-60	12	2	60	3.75/42.5	1:42.5	≥ 600	≥ 323.5	≥ 147
35BYJ212H17-40	12	2	40	3.75/17.708	1:41.6	≥ 600	≥ 117.6	≥ 98

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;



BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

35BYJ412P



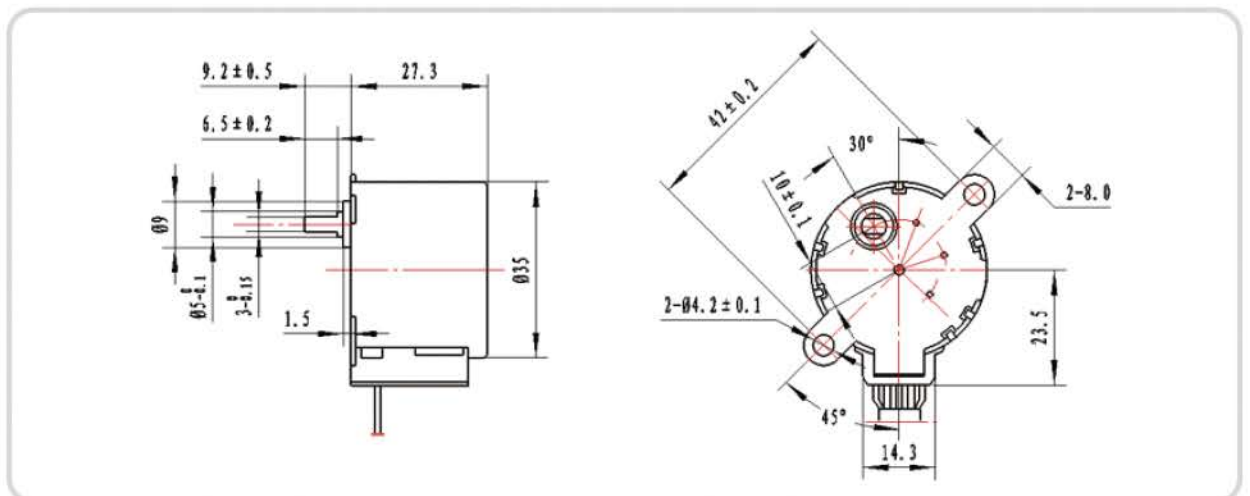
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ .(rated current,2 phase on)
环境温度 Ambient Temperature	-20℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V.DC	No. of Phase	Resistance Phase Ω	Step Angle (DFG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (mN.m)	Detent Torque(mN.m)
35BYJ412P12-20	12	4	20	3.75/12	1:12	≥900	≥88.2	≥49
35BYJ412P12-60	12	4	60	3.75/12	1:12	≥850	≥44.1	≥49
35BYJ412P80-120	12	4	120	3.75/80	1:80	≥600	≥147	≥245
35BYJ412P80-60	12	4	60	3.75/80	1:80	≥800	≥176	≥245
35BYJ212P80-60	12	2	60	3.75/80	1:80	≥850	≥215	≥245

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

50BYJ46



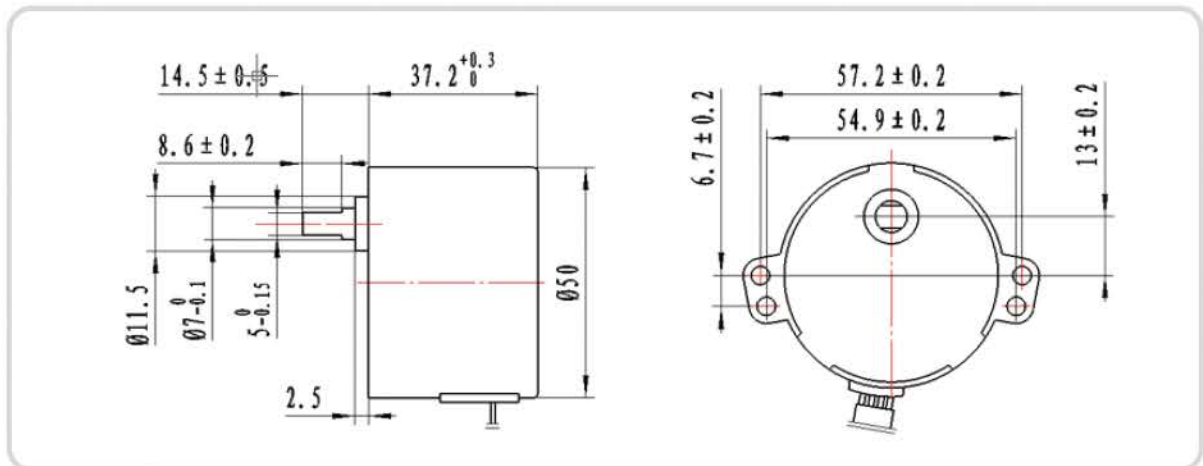
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ .(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC ,1s ,1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	启动频率	启动转矩 Pulling Torque (300P.P.S) (Kg.cm)												
						减速比 Rating Ratio i												
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Starting Frequency (pps)	501	336	247	202	125	100	81	62	50	33	25	15.6	8.3
50BYJ26-30	12	2	30	7.5/i	≥ 450	20	18	15	12	9.5	8	6.5	5	4	2.5	2	1.2	0.6
50BYJ46-30	12	4	30	7.5/i	≥ 350	15	14	12	10	8	6	4.8	3.2	2.6	1.8	1.3	0.8	0.4

尺寸图 Dimension Drawing



※ Remark 备注

- Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;



BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

50BYJ46Z



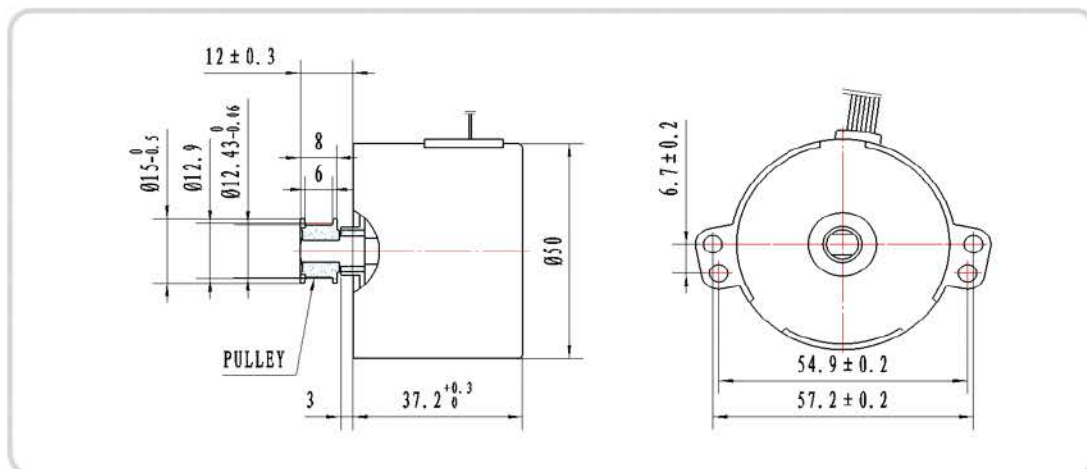
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	启动频率	启动转矩 Pulling Torque (300P.P.S) (Kg.cm)			
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Starting Frequency (pps)	减速比 Rating Ratio i			
						33	25	15.6	8.3
50BYJZ26-30	12	2	30	7.5/i	≥ 450	2.5	2	1.2	0.6
50BYJZ46-30	12	4	30	7.5/i	≥ 350	1.8	1.3	0.8	0.4
50BYJZ12-30	12	2	30	3.75/i	≥ 500	4.5	3.2	2.2	1.2
50BYJZ12-30	12	4	30	3.75/i	≥ 400	3.8	2.5	1.8	1

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

50BYJ412

基本技术参数 Base technique parameter

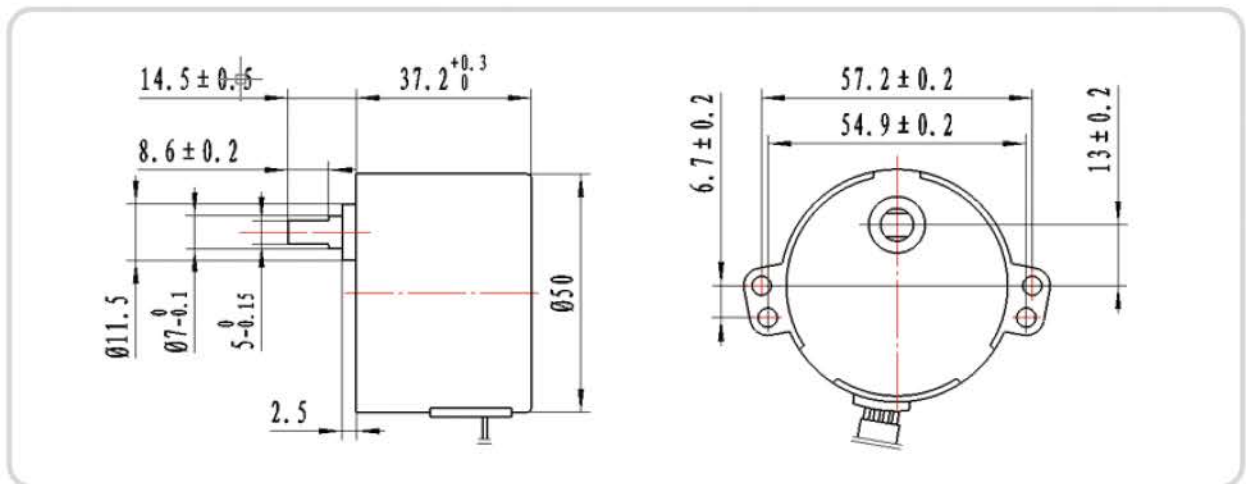
项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC ,1s ,1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax



技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	启动频率	启动转矩Pulling Torque (300P.P.S) (Kg.cm)												
						减速比Rating Ratio i												
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Starting Frequency (pps)	501	336	247	202	125	100	81	62	50	33	25	15.6	8.3
50BYJ26-30	12	2	30	3.75/i	≥500	25	22	19	15	13	10.5	9	6.8	5.6	4.5	3.2	2.2	1.2
50BYJ412-30	12	4	30	3.75/i	≥400	22	19	16	13	11	9	7.5	6	4.8	3.8	2.5	1.8	1

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;



BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

60BYJ48



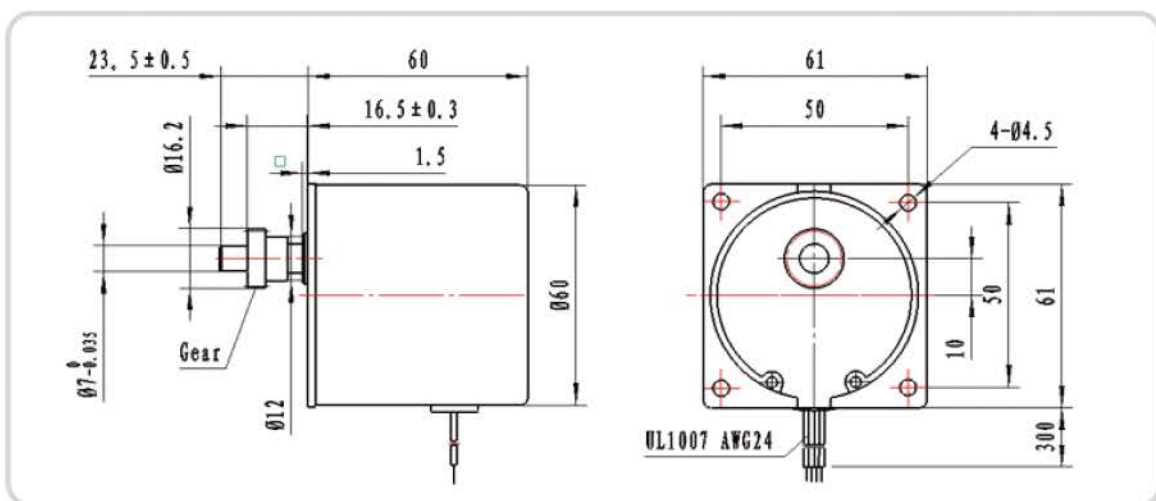
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ .(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.05mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (kg.cm)	Detent Torque(mN.m)
60BYJ4871-15	12	4	15	5.625/71.25	1:71.25	≥ 250	≥ 28	≥ 40
60BYJ4851-15	12	4	15	5.625/51.3	1:51.3	≥ 250	≥ 20	≥ 28

尺寸图 Dimension Drawing



※ Remark 备注

- 1、 Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、 Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

25BY24J

基本技术参数 Base technique parameter

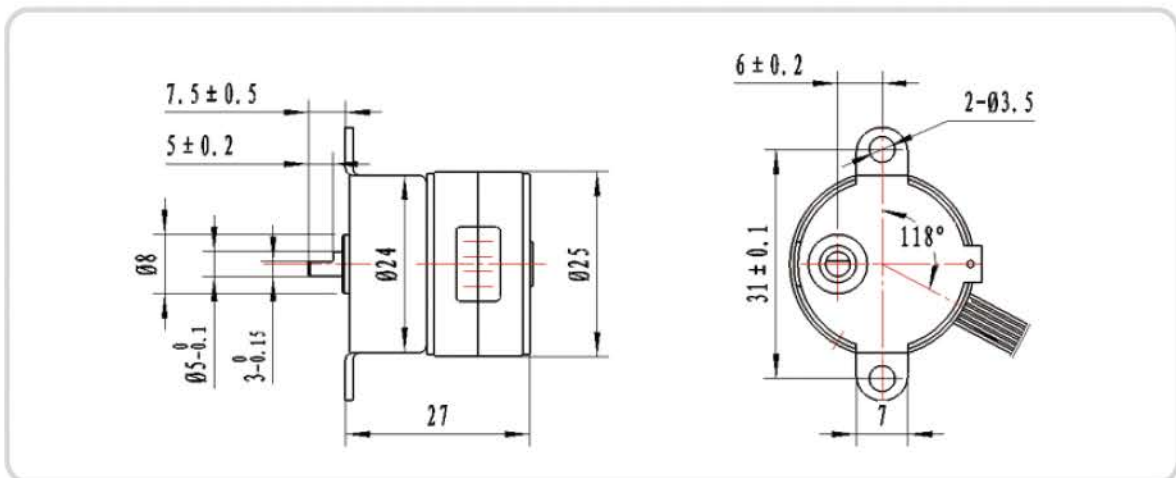
项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step, no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ .(rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.05mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax



技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V.DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (g.cm)	Detent Torque(g.cm)
25BY24J4I222-90	12	4	90	3.75/21.6	1:21.6	≥1000	≥600	≥800
25BY24J4I248-90	12	4	90	3.75/48.8	1:48.8	≥1000	≥1000	≥1500

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

35BY35J



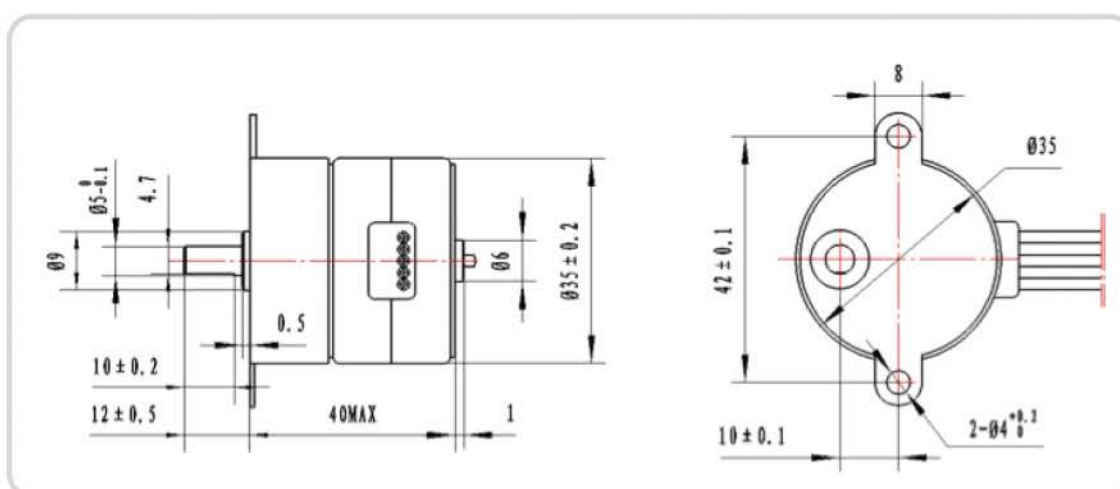
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step, no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.05mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (g.cm)	Detent Torque(g.cm)
35BY35J8.4-30	12	4	30	7.5/8.4	1:8.4	≥ 750	≥ 1000	≥ 400
35BY35J30-30	12	4	30	7.5/30	30	≥ 700	≥ 3000	≥ 1500
35BY35J60-30	12	4	30	7.5/60	1:60	≥ 650	≥ 4000	≥ 3000
35BY35J120-30	12	4	30	7.5/120	1:120	≥ 600	≥ 5000	≥ 6000

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

BYJ permanent magnet gear-box stepping moto / BYJ永磁减速步进电机

35BY49J



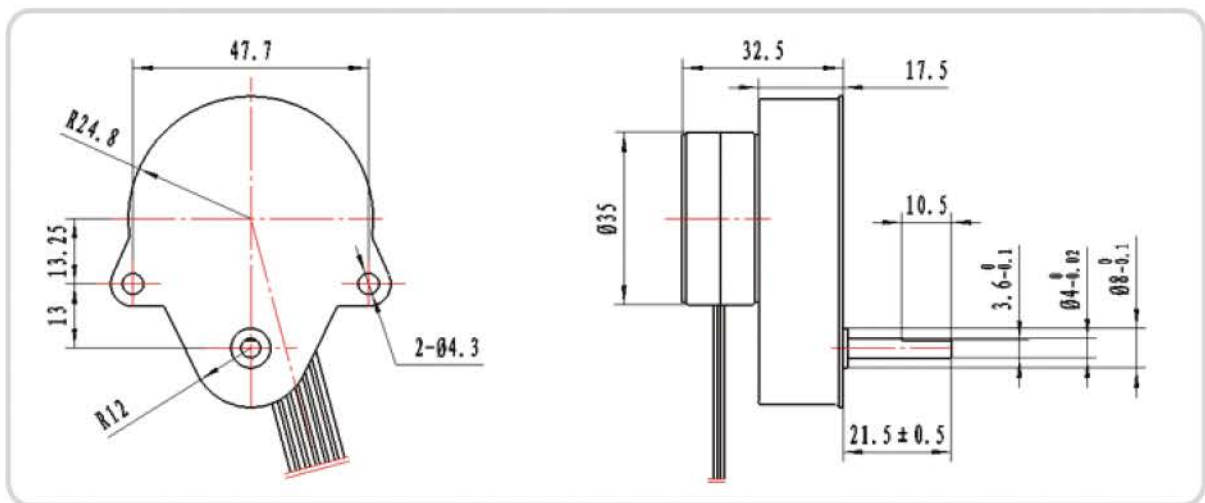
基本技术参数 Base technique parameter

项目 Item	性能 specification
步距角精度 Step angle Accuracy	±10% (full step ,no load)
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃ ~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , Is , ImA
转轴径向跳动 Shaft Radial Play	0.05mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	相数	电阻	步距角	减速比	启动频率	启动转矩	自定位转矩
Model NO.	Rated voltage V DC	No. of Phase	Resistance Phase Ω	Step Angle (DEG)	Rating Ratio	Starting Frequency (pps)	Leads (100P.P.S) (g.cm)	Detent Torque(g.cm)
35BY212S49J-30	12	2	30	7.5/4.16	1:4.167	≥ 420	≥ 400	≥ 600
35BY412S49J-30	12	4	30	7.5/4.16	1:4.167	≥ 350	≥ 300	≥ 150
35BY212L49J-30	12	2	30	7.5/4.16	1:4.167	≥ 300	≥ 300	≥ 300
35BY412L49J-30	12	4	30	7.5/4.16	1:4.167	≥ 260	≥ 260	≥ 600

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

TKYJ永磁减速TKYJ同步电机 / TKYJ permanent magnet gear-box synchronous motor

28TKYJ



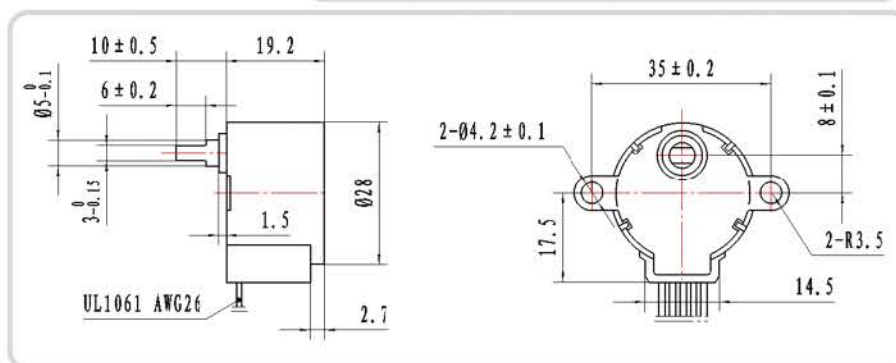
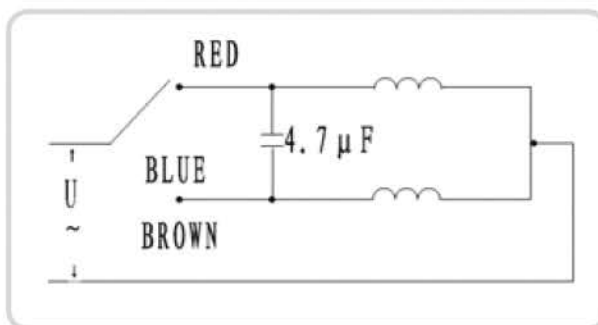
基本技术参数 Base technique parameter

项目 Item	性能 specification
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	频率	功率	减速比	转矩	同步转速	绝缘介电强度
Model NO.	Rated voltage V AC	Frequency pps	Power W	Rating Ratio	Torque (g.cm)	Synchronous speed (rpm)	Dielectric Strength
28TKYJ24-15	24	50	≤3	1:25	≥400	15	AC 600V 1s
28TKYJ24-6	12	50	≤3	1:64	≥600	6	AC 600V 1s

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

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35TKYJ



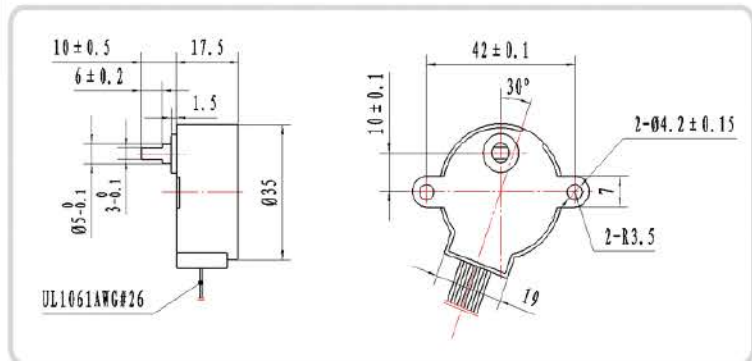
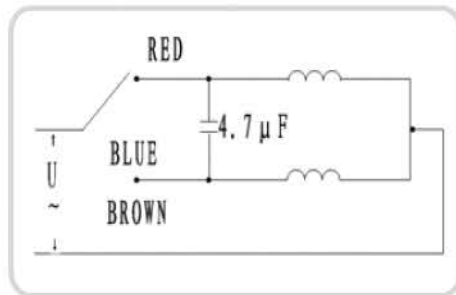
基本技术参数 Base technique parameter

项目 Item	性能 specification
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , Is , ImA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	频率	功率	减速比	转矩	同步转速	绝缘介电强度
Model NO.	Rated voltage V AC	Frequency pps	Power W	Rating Ratio	Torque (g.cm)	Synchronous speed (rpm)	Dielectric Strength
28TKYJ24-15	24	50	≤3	1:16	≥200	31	AC 600V Is
35TKYJ24-20	24	50	≤3	1:25	≥400	20	AC 600V Is
35TKYJ24-12	24	50	≤3	1:41.6	≥500	12	AC 600V Is
35TKYJ24-8	24	50	≤3	1:64	≥600	8	AC 600V Is
35TKYJ24-6	24	50	≤3	1:85.25	≥1000	6	AC 600V Is
35TKYJ24-2	24	50	≤3	1:247	≥1400	2	AC 600V Is

尺寸图 Dimension Drawing



※ Remark 备注

1. Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
2. Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;



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50TKYJ



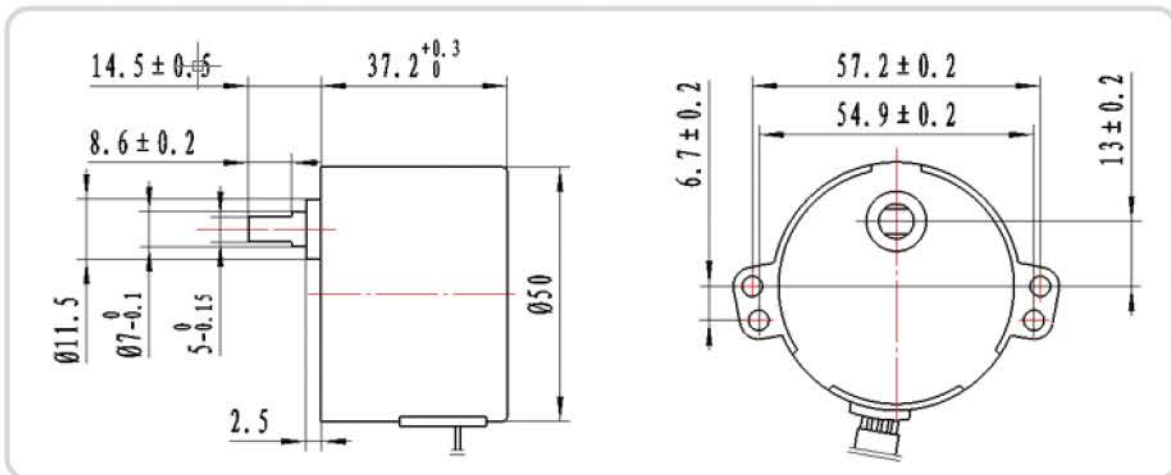
基本技术参数 Base technique parameter

项目 Item	性能 specification
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	频率	功率	电容	启动转矩 Pulling Torque A/E (Kg.cm)											
					同步转速 Synchronous speed (rpm)											
Model NO.	Rated voltage V AC	requency pps	Power W	Capacitance (uF)	1	1.5	2	2.5	4	5	8	10	15	20	32	60
50TKYJ12	12	50	≤3.5	33	25/37	20/30	16/24	13/20	9.5/14	8/12	5.5/8.5	4/7	3.5/5	4	2.5	1
50TKYJ24	24	50	≤4	8.2												
50TKYJ110	110	50	≤5.5	0.47												
50TKYJ220	220	50	≤6.76	0.15												

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
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- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
电机机身长度、电机轴尺寸、输出同步带轮或输出齿轮、引线长度、插头规格可以根据客户要求订制;

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60TKYJ

基本技术参数 Base technique parameter

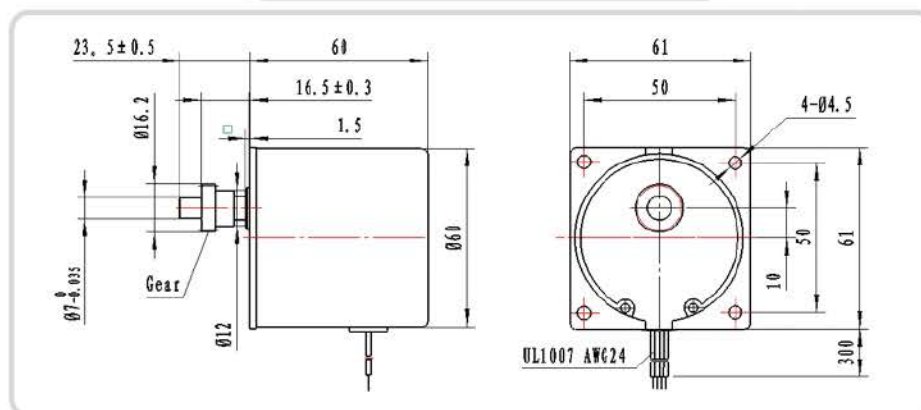
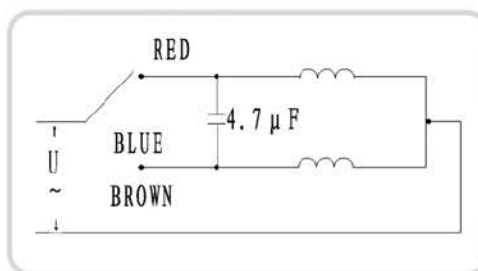
项目 Item	性能 specification
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax



技术规格 Technique Specification

型号	额定电压	频率	功率	转矩	同步转速	绝缘介电强度
Model NO.	Rated voltage V AC	Frequency pps	Power W	Torque (g.cm)	Synchronous speed (rpm)	Dielectric Strength
60TKYJ24-2.5	24	50	≤17	≥55	2.5	AC 600V 1s
60TKYJ24-5	24	50	≤17	≥26	5	AC 600V 1s
60TKYJ24-7.5	24	50	≤17	≥15	7.5	AC 600V 1s

尺寸图 Dimension Drawing



※ Remark 备注

- 1、Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
线圈电阻、电感及其它电性能参数可以根据客户要求订制;
- 2、Motor body length, the motor shaft size, output synchronous belt pulley or the output gear, lead length, plug specifications can be customized according to customer requirements.
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63TKYJ



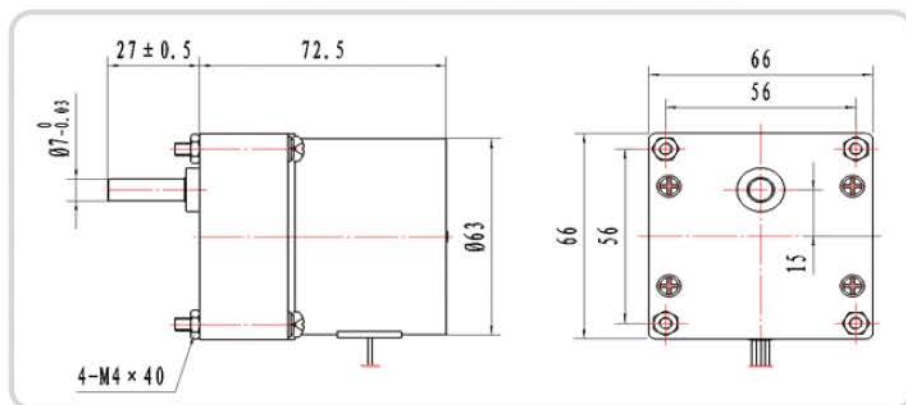
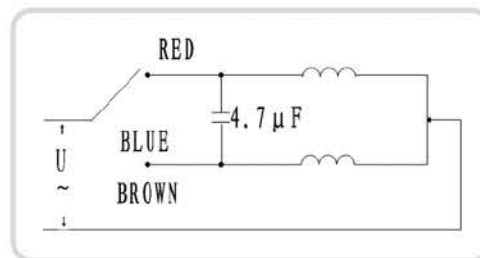
基本技术参数 Base technique parameter

项目 Item	性能 specification
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , Is , ImA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	频率	功率	转矩	同步转速	绝缘介电强度
Model NO.	Rated voltage V AC.	Frequency pps	Power W	Torque (g.cm)	Synchronous speed (rpm)	Dielectric Strength
63TKYJ24-6	24	50	≤17	≥40	6	AC 600V Is
63TKYJ24-15	24	50	≤17	≥20	15	AC 600V Is
63TKYJ24-37	24	50	≤17	≥5	37	AC 600V Is

尺寸图 Dimension Drawing



※ Remark 备注

1. Coil resistance, inductance and other electrical parameters can be customized according to customer requirements;
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64TKYJ

■ **基本技术参数 Base technique parameter**

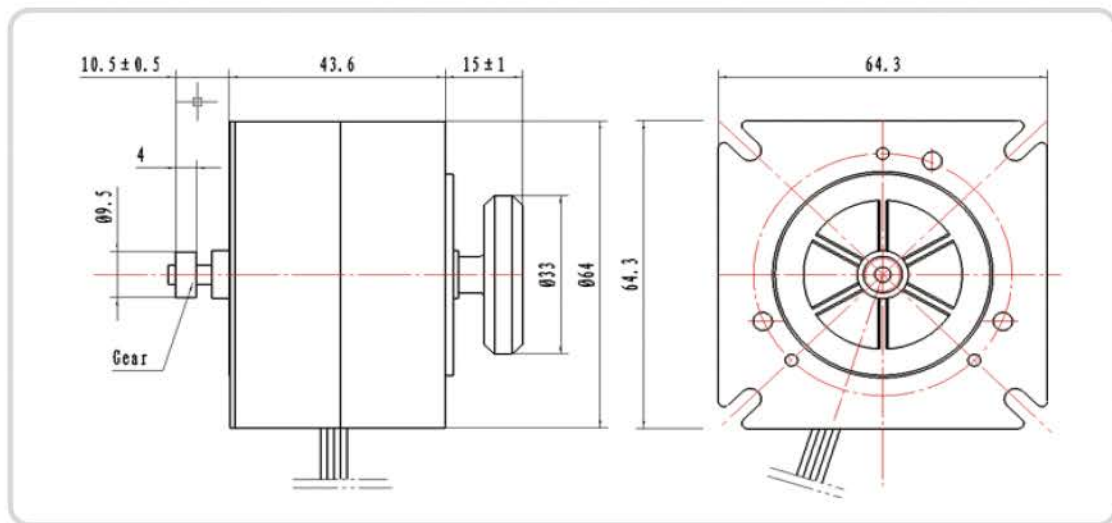
项目 Item	性能 specification
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃.(rated current,2 phase on)
环境温度 Ambient Temperature	-40℃~+50℃
绝缘电阻 Insulation Resistance	100MΩ Min. ,500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax



■ **技术规格 Technique Specification**

型号	额定电压	频率	功率	转矩	同步转速	绝缘介电强度
Model NO.	Rated voltage V AC	Frequency pps	Power W	Torque (g.cm)	Synchronous speed (rpm)	Dielectric Strength
64TKYJ220-375	220	50	≤33	≥1.6	375	AC 600V 1s

■ **尺寸图 Dimension Drawing**



※ **Remark 备注**

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70TKYJ



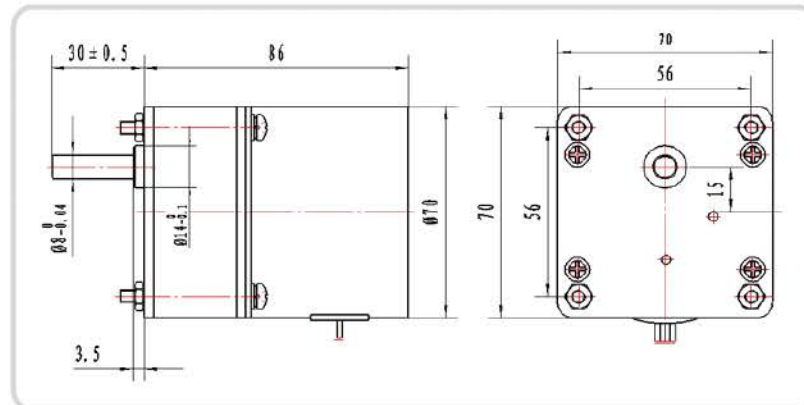
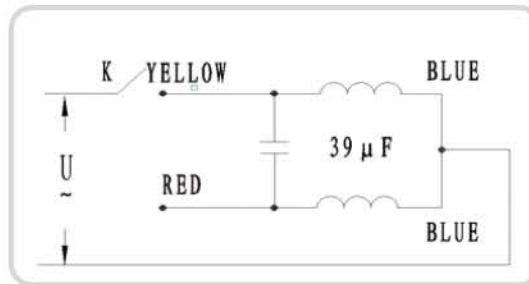
基本技术参数 Base technique parameter

项目 Item	性能 specification
电阻精度 Resistance Accuracy	±10%
温升 Temperature Rise	60℃ (rated current, 2 phase on)
环境温度 Ambient Temperature	-40℃ ~ +50℃
绝缘电阻 Insulation Resistance	100MΩ Min. , 500VDC
介电强度 Dielectric Resistance	600VAC , 1s , 1mA
转轴径向跳动 Shaft Radial Play	0.1mmMax
输出轴轴向跳动 Shaft Axial play	0.55mmMax

技术规格 Technique Specification

型号	额定电压	频率	功率	转矩	同步转速	绝缘介电强度
Model NO.	Rated voltage V AC	Frequency pps	Power W	Torque (g.cm)	Synchronous speed (rpm)	Dielectric Strength
70TKYJ24-8	24	50	≤17	≥50	8	AC 600V 1s

尺寸图 Dimension Drawing



※ Remark 备注

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- ▶ 海盛致力与满足客户个性化制品，
提供产品设计、
生产制造、
设计维护全过程一站式服务；
- ▶ 步进电机专业工厂；
- ▶ 自动化控制、安防、3D打印机、
医疗设备行业 紧密伴侣 &
提供精密传动解决方案。



质量管理体系认证证书

注册号: 01721Q11444R6M

兹证明

常州市海盛电器有限公司

91320405714097545F

注册/办公/生产地址: 江苏省常州市武进区遥观镇华庄段 36 号, 213011

~ 建立的质量管理体系符合
GB/T19001-2016/ISO9001:2015 标准

认证/注册范围

BYJ 减速永磁步进电动机、BYG 混合式步进电动机系列产品的生产

初评获证日期: 2004-04-14 发证日期: 2021-10-08 证书有效期: 2021-10-11 ~ 2024-10-10



证书在国家规定的各行政、资质许可有效期内使用有效；
证书的有效性需经 XGQC 年度监督审核予以确认，并以证书二维码扫描结果为准；
本证书信息可在国家认证认可监督管理委员会官方网站 www.cnca.gov.cn
上查询，也可在公司网站 www.xgqc.com 上查询。



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签发



北京兴国环球认证有限公司

中国·北京·西城区广义街5号8层3-803 邮编100053



HAISHENG ELECTRIC
Changzhou Haisheng Electric Appliance CO.,Ltd



常州海盛电器有限公司

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