



产品手册

Product Manual

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无刷电动机 产品手册

DC Motor Product Manual

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1 概 述 (Overview)

本产品手册中的电动机本体为永磁无刷电动机,依据电流驱动模式可分为无刷直流电动机(方波驱动电机)和永磁同步电动机(正弦波驱动电机)。电机主要由定子、转子、位置传感器组成。电动机利用驱动器中的电子换向方式实现换流,具有环境适应性强,可靠性高的特点,在舵机领域中广泛应用。

This product manual features a permanent magnet brushless motor, which, based on the current drive mode, can be divided into brushless DC motor (square wave drive) and permanent magnet synchronous motor (sinusoidal wave drive). The motor consists mainly of the stator, rotor, and position sensor. The motor utilizes electronic commutation in the drive to achieve commutation, exhibiting strong environmental adaptability and high controllability. It finds wide applications in the field of servo motors.

无刷直流电动机采用霍尔集成电路作为位置传感器,电机采用方波电流驱动模式,工作方式三相六状态,在 360° (电气角) 的一个电气周期时间内,三相绕组导通状态为 6 个状态。

The brushless DC motor employs Hall integrated circuits as position sensors and operates in a square wave current drive mode. The working mode is three-phase six-state, with six states during one electrical cycle of 360° (electrical angle). For each electrical cycle, the three-phase winding conduction states amount to six.

永磁同步电动机的位置传感器采用高可靠的旋转变压器,三相绕组相电流为驱动器强制生产的正弦波电流。

The permanent magnet synchronous motor uses a highly reliable rotary transformer as a position sensor, and the phase current of the three-phase winding is a sinusoidal wave generated by the driver.

本手册中的部分产品依据使用需求在电机本体尾端加装有摩擦式制动器(简称制动器)或锁销式制动器(简称锁制器)。

Some products in this manual are equipped with friction brake (referred to as brake) or locking pin brake (referred to as brake) at the end of the motor body based on usage requirements.

2 工作原理 (Operating Principle)

◆ 电机本体工作原理(The operational principle of the motor body is as follows)

无刷直流电动机工作原理为: 转子采用稀土磁钢,定子上有三相电枢绕组,借助反映主转子位置的位置传感器的输出信号,通过电子换向电路去驱动与电枢绕组连接的相应的功率开关元件,使电枢绕组依次馈电,从而在定子上产生跳跃式的旋转磁场,拖动永磁转子旋转,产生旋转转矩,并使电动机以一定转速带动负载旋转。随着转子的转动,位置传感器不断送出信号,以改变电枢绕组的通电状态,使得在某一磁极下导体中的电流方向始终保持不变,从而实现无刷电动机的无接触换流过程。

The working principle of a brushless DC motor is as follows: The rotor utilizes rare earth magnetic steel, and the stator is equipped with a three-phase armature winding. By utilizing the output signal of a position sensor that reflects the main rotor's position, the electronic commutation circuit drives the corresponding power switching elements connected to the armature winding. This process sequentially energizes the armature winding, generating a stepping rotation magnetic field on the stator. This field drags the permanent magnet rotor into rotation, producing a rotating torque that drives the motor to rotate at a specific speed, thereby moving the load. As the rotor rotates, the position sensor continuously sends out signals, altering the energization state of the armature winding. This ensures that the current direction in the conductor under a certain magnetic pole remains constant, enabling the brushless motor to achieve contactless commutation.

永磁同步电动机工作原理为：位置传感器是采用高可靠的旋转变压器，借助位置传感器的位置信号反馈电动机定转子的相对位置关系以及电机的转速，实际转速与设定转速的转速差通过速度环、电流环，电动机根据控制策略通过电流矢量控制控制电动机的运行状态，从而在定子上产生恒定的旋转磁场，驱动永磁转子旋转，随着转子的转动，位置传感器不断地送出信号，以改变电枢绕组的通电状态，使得在某一磁极下导体中的电流方向始终保持不变，使电动机产生稳定持续的电磁转矩。

The working principle of the permanent magnet synchronous motor is as follows: the position sensor employs a highly reliable rotary transformer. By utilizing the position signal feedback from the position sensor, the motor determines the relative position relationship between the stator and rotor as well as the motor's speed. The speed difference between the actual speed and the set speed is controlled through the speed and current loops. Based on the control strategy, the motor's operating state is controlled by the current vector control, generating a constant rotating magnetic field on the stator. This field drives the permanent magnet rotor to rotate. As the rotor turns, the position sensor continuously sends signals to alter the energized state of the armature windings, ensuring that the current direction in the conductor under a certain pole remains constant. This results in the motor generating a stable and continuous electromagnetic torque.

◆ 摩擦式制动器工作原理（The working principle of a friction brake）

摩擦式制动器主要有磁轭、衔铁、制动盘、盖板、导柱、螺钉、弹簧组成。在不通电情况下，簧提供的正压力使衔铁、制动盘、压板之间产生压力，从而在摩擦片表面产生相应的摩擦转矩。通电后磁轭线圈产生磁场吸合衔铁压缩弹簧，摩擦副之间正压力减小为零，实现解锁功能。

The friction brake mainly consists of a magnetic yoke, armature, brake disc, cover plate, guide pin, screws, and springs. In the unpowered state, the spring provides positive pressure, creating pressure between the armature, brake disc, and pressure plate. This, in turn, generates corresponding friction torque on the surface of the friction pad. When powered, the magnetic yoke

coil produces a magnetic field, attracting the armature and compressing the spring. The positive pressure between the friction pairs decreases to zero, achieving the unlocking function.

◆ 锁销式制动器工作原理 (The working principle of a locking-pin brake)

制动器主要由磁轭、衔铁、制动盘、盖板、导柱、螺钉、弹簧组成。在不通电情况下，衔铁在弹簧的压力下紧靠盖板，通过衔铁上凸台和轴套上凸台实现圆周限位，实现锁制功能。通电后磁轭线圈产生磁场吸合衔铁，使衔铁向磁轭端运动，从而限位失效，实现解锁功能。

The brake is mainly composed of a magnetic yoke, armature, brake disc, cover plate, guide pin, screws, and springs. In the unpowered state, the armature, under the pressure of the spring, closely adheres to the cover plate. The locking function is achieved through the interaction of the protrusions on the armature and the shaft sleeve, providing circumferential positioning. When powered, the magnetic yoke coil generates a magnetic field, attracting the armature towards the magnetic yoke end. This movement of the armature causes the positional constraint to be released, achieving the unlocking function.

3 环境适应性 (Environmental adaptability)

本产品手册中的产品主要应用于短时工作的电动舵机系统，其环境适应性要求如下：

The products described in this manual are primarily used in short-duration operation of electric servo systems, with the following environmental adaptability requirements:

a) 温度：-45℃~+85℃；

Temperature: -45℃~+85℃；

b) 低气压：GJB 1863A 中 3.32 条；

Low air pressure: GJB 1863A Section 3.32;

c) 力学环境：GJB 1863A 中 3.33~3.35 条。

Mechanical environment: GJB 1863A Section 3.33~3.35.

4 无刷直流电动机旋转方向与真值表 (Brushless DC motor rotation direction and truth table)

本产品手册中规定无刷直流电动机的旋转方向是按表1中的真值表进行。

In this product manual, the rotation direction of the electric motor is determined according to the truth table provided in Table 1.

表 1 电动机旋转方向真值表

Table 1: Truth Table for Electric Motor Rotation Direction

序号 (Serial Number)	霍尔信号 (Hall signal)	转向 (Direction)	三相绕组电流方向 (Direction of three-phase winding current)
1	001	顺 (Clockwise)	C→B

2	011		C→A
3	010		B→A
4	110		B→C
5	100		A→C
6	101		A→B
7	001		B→C
8	101	逆 (Counter clockwise)	B→A
9	100		C→A
10	110		C→B
11	010		A→B
12	011		A→C

5 产品技术指标信息以及专业术语定义 (Product Technical Specifications and Definitions of Professional Terms)

本产品手册产品指标信息包括电机体积、额定电压、空载转速、空载电流、额定转矩、额定转速、额定电流、相间电阻、相间电感、机电时间常数、转子转动惯量、最高绕组温度、绝缘等级、轴向间隙、径向间隙、电机质量、极对数、外形图。

The product specifications in this manual include motor volume, rated voltage, no-load speed, no-load current, rated torque, rated speed, rated current, inter-phase resistance, inter-phase inductance, electromechanical time constant, rotor moment of inertia, maximum winding temperature, insulation class, axial gap, radial gap, motor mass, pole pairs, and outline diagram.

◆ 体积 (Volume)

产品截面尺寸×长度尺寸，当壳体截面为圆形时，外形表示为壳体外径×产品长度，当壳体截面为方形时，外形尺寸表示为方形边长×产品长度；需要说明的是电机壳体外径不包含安装法兰外径，产品长度不包含定位止口及轴伸尺寸。

Product cross-sectional dimensions multiplied by length dimensions. When the shell cross-section is circular, the outline is expressed as the shell outer diameter multiplied by product length. When the shell cross-section is square, the outline dimensions are expressed as the square side length multiplied by product length. It should be noted that the motor shell outer diameter does not include the mounting flange outer diameter, and the product length does not include the locating stop and shaft extension dimensions.

◆ 额定电压 (Rated Voltage)

无刷直流电动机的额定电压是在方波换向时加在两相绕组间的电压。三相绕组间的电压时序图见表1。所有额定数据（空载转速、空载电流、额定力矩、额定转速、额定电流）均为该电压下的参数。如果没有超过规定的极限值，允许高于或低于此电压值。

It is the voltage applied between the two-phase windings during square wave commutation. The voltage waveform between the three-phase windings is illustrated in Table 1. All rated data (no-load speed, no-load current, rated torque, rated speed, rated current) are parameters at this voltage. Deviations above or below this voltage are allowed as long as they do not exceed the specified limits.

◆ 空载转速 (No-Load Speed)

是电机在额定电压下的无负载转速。空载转速大致上与施加的电压成正比。

It is the unloaded speed of the motor at rated voltage. The no-load speed is generally proportional to the applied voltage.

◆ 空载电流 (No-Load Current)

额定电压下空载电机的电流。它由轴承摩擦和铁损，并且随电机转速上升而增加。空载摩擦与温度有很大关系。在低温条件下受轴向间隙的影响、轴承影响，空载电流会变大。

The no-load current is the current of the motor under rated voltage when operating without a load. It is influenced by bearing friction and iron losses, increasing with the rise in motor speed. No-load friction is significantly affected by temperature. Under low-temperature conditions and influenced by axial clearances and bearings, the no-load current may increase.

◆ 额定转速 (Rated Speed)

是在电机常温条件下，额定电压和额定转矩下的转速。

It is the speed of the motor at rated voltage and rated torque under standard temperature conditions.

◆ 额定转矩 (Rated Torque)

额定转矩是产品使用需求提出的典型转矩数值，需要说明的是该转矩下电机不一定能够长时工作。

Rated torque is the typical torque value specified based on the product's usage requirements. It should be noted that the motor may not necessarily operate continuously under this torque for an extended period.

◆ 额定电流 (Rated Current)

电机在额定转矩、额定转速时输出的电流数值。

The current output of the motor at rated torque and rated speed.

◆ 相间电阻 (Interphase Resistance)

定子两相引出线之间的电阻，该数值受温度的直接影响，手册中的数值为20℃下的典型数值。

The resistance between the two phase leads of the stator. This value is directly influenced by temperature, and the values in the manual are typical values at 20℃.

◆ **相间电感 (Interphase Inductance)**

定子两相引出线之间的电感，测试条件为1kHz。

The inductance between the two phase leads of the stator, tested under conditions of 1 kHz.

◆ **机电时间常数 (Electromechanical Time Constant)**

是电机通电开始到电机转子加速到63%空载转速所需要的时间。

It is the time required for the motor rotor to accelerate to 63% of the no-load speed after the motor is energized.

◆ **转动惯量 (Rotor moment of inertia)**

是电机转子相对于旋转轴心线的转动惯量。

It is the rotor's moment of inertia relative to the axis of rotation.

◆ **最大绕组温度 (Maximum winding temperature)**

最高允许绕组温度。

The highest allowable winding temperature.

◆ **绝缘等级 (Insulation Class)**

绕组绝缘漆的绝缘等级。

The insulation class of the winding insulation varnish.

◆ **轴向间隙 (Axial Clearance)**

电机转子的轴向窜动量。

The axial displacement of the motor rotor.

◆ **径向间隙 (Radial Clearance)**

电机转子的径向窜动量。

The radial displacement of the motor rotor.

◆ **电机质量 (Motor Mass)**

电机整机质量。

The total mass of the motor assembly.

◆ **极对数 (Number of Poles)**

转子磁钢极对数。

The number of pole pairs in the rotor magnetic steel.

◆ **产品组成 (Product Composition)**

依据产品的组成，产品组成可分为电机本体、电机本体+摩擦式制动器、电机本体+锁销式制动器。

Based on the product composition, the product can be categorized as motor body, motor body with friction brake, and motor with locking-pin brake.

◆ **机械特性曲线 (Mechanical characteristic curve)**

本手册中产品机械特性曲线包含：输出功率-输出转速曲线；输出力矩-输出转速曲线；

In this manual, the mechanical characteristic curve of the product includes: output power vs. output speed curve; output torque vs. output speed curve;

◆ **产品外形图 (Product outline diagram)**

产品主要的外形尺寸，包括机械接口尺寸。

The main external dimensions of the product, including mechanical and electrical interface dimensions.

6 使用注意事项 (Precautions for Use)

本产品手册作为的选型的基本依据，需要对以下事项进行说明：

As a fundamental reference for selection, this product manual requires clarification on the following matters:

- a) 本产品手册只对产品选型与使用起指导性作用，本产品手册的内容与产品规范不一致时，以产品规范为准；

This product manual serves as the basic reference for selection. It provides guidance on product selection and use. In case of any inconsistency between the content of this product manual and the product specifications, the latter shall prevail.

- b) 使用者正确使用无刷直流电动机与永磁同步交流电动机，以保证其良好和可靠地工作；

Users should use the brushless DC motor correctly to ensure its proper and reliable operation.

- c) 本产品手册中的空载转速、空载电流、额定转速、额定电流均在额定电压下的参数，定子电阻、定子电感、空载转速、额定转速、额定电流为 20℃ 条件下的典型值，实际数值偏差以产品规范要求为准；

The no-load speed, no-load current, rated speed, and rated current provided in this product manual are parameters at the rated voltage. The stator resistance, stator inductance, no-load speed, rated speed, and rated current are typical values at 20℃. Actual numerical deviations should adhere to the product specifications.

- d) 本产品手册中的电动机主要应用于电动伺服系统，电动机具有过载能力强，功率密度大的特点，其额定工作时间较短，产品额定负载下的工作制为短时工作制，在进行选用时应与承制单位核对电动机使用工况及工作制，确保电动机在使用过程中不会发生损坏；

The brushless DC motor in this product manual is applied in the electric servo system of an ammunition loading machine. The motor features strong overload capacity and high

power density, with a short-rated working time. The product is designed for short-duration operation under the rated load. During selection, the user should verify the motor's operating conditions and duty cycle with the supporting unit to ensure the motor will not be damaged during use.

- e) 本产品手册中的无刷直流电动机中霍尔集成电路属于 1 类静电敏感器件,耐静电电压等级为 2000V,在整机装配使用时应采取可靠的防静电措施,设备应可靠接地,操作(试验)人员要具有较高的防静电意识,应戴防静电手环后再操作,且设备接地和人员接地要求应满足相关标准,电动机的所有使用过程应有防静电措施或防止接触其它高压源的措施;

The Hall integrated circuit in the brushless DC motor of this product manual belongs to Class 1 electrostatic-sensitive devices, with a withstand voltage level of 2000V. Reliable anti-static measures should be taken during the assembly and use of the entire machine. The equipment should be reliably grounded, and operators (test personnel) should have a high awareness of anti-static measures. Operators should wear anti-static wristbands before operating, and the equipment grounding and personnel grounding requirements should meet relevant standards. Anti-static measures or measures to prevent contact with other high-voltage sources should be implemented throughout the entire use of the motor.

- f) 本产品手册中的电动机应贮存在温度-10℃~+35℃,相对湿度不大于 85%,清洁通风良好的库房内,空气中不得含有腐蚀性气体,质量保证期为从电动机出厂之日算起为十五年。

The brushless DC motor in this product manual should be stored in an environment with a temperature of -10℃ to +35℃, relative humidity not exceeding 85%, in a clean and well-ventilated warehouse. The air should not contain corrosive gases. The quality guarantee period is fifteen years from the date of motor delivery.

7 产品信息汇总表 (Detailed Product Information)

无刷电动机产品信息汇总表
Brushless Motor Product Information Summary Table

序号 Serial Number	产品 代号 Product Code	体积 Volume (mm)	极对 数 Pole Paires	重量 Weight (g)	定子电阻 Stator Resistance (Ω)	定子电感 Stator Inductance (mH)	转子转动 惯量 Rotational Inertia (kg·m ²)	额定 电压 Rated Voltage (V)	空载 转速 No-Load Speed (r/min)	空载 电流 No-Load Current (A)	额定 转矩 Rated Torque (Nm)	额定 转速 C (r/min)	额定 电流 Rated Current (A)	页码 Page Number	产品组成 Product Composition
1	J25ZWX02	Φ25×65.3	2	152	3.81	0.66	1.45×10 ⁻⁷	31	13400~13800	≤0.2	0.04	11300~11600	1.9~2	11/12	无刷电机
2	J28ZWX01JZA	Φ28×51.5	2	292	14	0.32	4.54×10 ⁻⁷	27	6300~6700	≤0.09	0.03	5400~5800	0.9~1.05	13/14	无刷电机
3	J28ZWX19	Φ28×50	2	174	3.82	1.35	6.00×10 ⁻⁷	90	23900~24100	≤0.3	0.1	19200~19400	2.9~3.2	15/16	无刷电机
4	J28ZWX23	Φ28×60	2	210	2.42	0.79	8.40×10 ⁻⁷	95	23500~24500	≤0.4	0.05	22000~23000	2.15~2.3	17/18	无刷电机
5	J28ZWX031A	Φ28×57.5	3	204	0.33	0.09	5.62×10 ⁻⁷	27	21800~22600	≤0.7	0.053	19000~19700	4.8~5.3	19/20	无刷电机
6	J30ZWX01	Φ30×63.6	2	265	0.09	0.11	6.30×10 ⁻⁷	27	21100~21400	≤0.6	0.1	18400~18800	8.5~10	21/22	无刷电机
7	J30ZWX02	Φ30×64	2	255	0.51	0.27	1.10×10 ⁻⁶	48	20500~21500	≤0.3	0.12	18000~18700	5.4~5.9	23/24	无刷电机
8	J30ZWX04	Φ30×71	2	280	1.07	0.58	1.06×10 ⁻⁶	90	24500~25100	≤0.5	0.1	21900~23000	3.2~3.4	25/26	无刷电机
9	J30ZWX09	Φ30×51.5	3	230	9	2.56	7.50×10 ⁻⁷	39	5200~5400	≤0.15	0.045	4150~4250	0.63~0.68	27/28	无刷电机
10	J30ZWX24	Φ30×68	3	256	0.7	0.32	1.01×10 ⁻⁶	28	9200~9800	≤0.5	0.12	7500~7700	4.2~4.5	29/30	无刷电机
11	J32ZWX04	Φ32×80.5	2	293	0.17	0.12	5.12×10 ⁻⁶	28	19000~19400	≤1.5	0.05	16000~17500	3.8~4.4	31/32	无刷电机
12	J33ZWX01	Φ33×67	2	310	1.08	0.75	7.53×10 ⁻⁷	90	22500~23500	≤0.4	0.12	20050~20500	3.2~3.5	33/34	无刷电机
13	J36ZWX02-SA	Φ36×85	2	365	1.35	0.65	1.50×10 ⁻⁶	90	19000~20600	≤0.45	0.113	17000~18200	2.8~3.5	35/36	无刷电机+锁制器
14	J36ZWX02A	Φ36×72	2	320	1.35	0.65	1.50×10 ⁻⁶	90	19000~20600	≤0.45	0.113	17000~18200	2.8~3.5	37/38	无刷电机
15	J36ZWX02-S	Φ36×85	2	365	1.35	0.65	1.50×10 ⁻⁶	78	16700~18000	≤0.35	0.113	15100~15700	2.5~3.5	39/40	无刷电机+锁制器
16	J36ZWX09-S	Φ36×91	2	433	0.39	0.27	1.68×10 ⁻⁶	54	16000~16400	≤0.7	0.15	14000~14500	4.8~5.5	41/42	无刷电机+锁制器
17	J36ZWX10	Φ36×52.5	3	342	0.94	0.72	1.69×10 ⁻⁶	56	11400~11800	≤0.15	0.3	8400~8700	6.2~6.5	43/44	无刷电机
18	J36ZWX20-S	Φ36×110	3	500	1.3	0.87	2.09×10 ⁻⁶	110	16500~17800	≤0.35	0.1	15700~16500	1.7~2.2	45/46	无刷电机+锁制器
19	J40ZWX09	Φ40×74	2	600	0.64	0.35	2.65×10 ⁻⁶	28.5	6500~6900	≤0.2	0.353	4800~4900	7.0~9.1	47/48	无刷电机
20	J40ZWX17	Φ40×94.5	2	480	0.07	0.05	3.22×10 ⁻⁶	36	25900~27300	≤1.5	0.125	24200~25100	11~12	49/50	无刷电机

无刷电动机产品手册
Brushless DC Motor Product Manual

序号 Serial Number	产品 代号 Product Code	体积 Volume (mm)	极对 数 Pole Paires	重量 Weight (g)	定子电阻 Stator Resistance (Ω)	定子电感 Stator Inductance (mH)	转子转动 惯量 Rotational Inertia (kg·m ²)	额定 电压 Rated Voltage (V)	空载 转速 No-Load Speed (r/min)	空载 电流 No-Load Current (A)	额定 转矩 Rated Torque (Nm)	额定 转速 C (r/min)	额定 电流 Rated Current (A)	页码 Page Number	产品组成 Product Composition
21	J40ZWX27A	Φ40×80	3	550	1	0.37	2.86×10 ⁻⁶	110	16000~17000	≤0.4	0.1	15400~16000	1.7~2.3	51/52	无刷电机
22	J40ZWX30	Φ40×53.9	4	400	1.26	1.12	1.14×10 ⁻⁶	25	4950~5200	≤0.3	0.125	3500~3600	2.4~2.6	53/54	无刷电机
23	J40ZWX50	Φ40×90	3	600	0.36	0.25	4.10×10 ⁻⁶	70	16000~17500	≤0.9	0.2	14600~15200	5.1~5.4	55/56	无刷电机
24	J42ZWX02A	Φ42×95	4	600	0.61	0.16	6.51×10 ⁻⁶	70	16500~17000	≤1	0.2	14700~15200	5~6	57/58	无刷电机
25	J45ZWX01C	Φ45×85	3	570	0.09	0.06	9.90×10 ⁻⁶	27	12000~12600	≤1.3	0.35	10100~10150	16.8~17.5	59/60	无刷电机
26	J45ZWX16	Φ45×90	3	630	0.43	0.4	5.10×10 ⁻⁶	90	16100~16500	≤0.8	0.35	14000~14500	6.2~7.5	61/62	无刷电机
27	J45ZWX20	Φ45×88	2	615	0.23	0.24	3.50×10 ⁻⁶	56	19500~19900	≤0.6	0.5	14500~15200	16.2~17	63/64	无刷电机
28	J48ZWX01A	Φ48×91	3	790	0.05	0.04	1.27×10 ⁻⁵	56	24300~24700	≤2	0.8	20600~20800	34.8~35.4	65/66	无刷电机
29	J48ZWX-DZ03	Φ48×114	3	1000	0.05	0.04	1.38×10 ⁻⁵	56	24300~24700	≤2	1.0	20000~20400	43~46	67/68	无刷电机+制动器
30	J50ZWX12	Φ50×87	3	709	0.14	0.07	1.58×10 ⁻⁵	50	13700~14000	≤0.8	0.4	12000~12600	12.0~12.2	69/70	无刷电机
31	J50ZWX16	Φ50×105	3	912	0.14	0.24	6.16×10 ⁻⁶	90	20800~21300	≤0.8	1.3	14800~15500	27.6~28.7	71/72	无刷电机
32	J50ZWX19	Φ50×69	4	550	3.89	3.88	1.11×10 ⁻⁵	270	11000~12000	≤1	0.28	10300~10800	1.3~1.4	73/74	无刷电机
33	J50ZWX22	Φ48×90	2	823	0.09	0.10	1.01×10 ⁻⁵	56	20800~21200	≤1.5	0.4	18800~19100	16.7~17.2	75/76	无刷电机
34	J50ZWX25	Φ50×75	3	650	0.32	0.16	1.43×10 ⁻⁵	85	15000~15200	≤0.6	0.5	13700~13900	9.4~9.9	77/78	无刷电机
35	J55ZWX03	Φ55×105	2	1240	0.39	0.29	2.37×10 ⁻⁵	95	11000~11500	≤0.6	1	9900~10300	10~12	79/80	无刷电机
36	J56ZWX01	Φ56×102	3	1510	0.15	0.35	3.89×10 ⁻⁵	85	11500~12000	≤0.8	1.6	8900~9200	20~21	81/82	无刷电机
37	J56ZWX02	□56×115	3	1360	0.15	0.24	4.26×10 ⁻⁵	57	8000~8500	≤1.5	1.5	6500~6800	20.2~21.6	83/84	无刷电机
38	J60ZWX10A	Φ60×120.6	3	1260	0.09	0.08	1.79×10 ⁻⁵	28.5	6000~6400	≤4	0.77	4700~5100	15.5~18	85/86	无刷电机
39	J60ZWX20	Φ60×90	3	1430	0.30	0.29	3.17×10 ⁻⁵	150	16800~17000	≤1.2	1.1	15000~15300	12.5~13.5	87/88	无刷电机
40	J60ZWX25	Φ60×130	3	1520	0.09	0.15	2.60×10 ⁻⁵	90	17800~18100	≤1.5	1.55	14700~15000	29.0~33.2	89/90	无刷电机+制动器
41	J60ZWX27	Φ60×130	3	1490	0.32	0.6	2.60×10 ⁻⁵	160	15800~16100	≤1	1.5	13100~13500	14.5~15.8	91/92	无刷电机+制动器
42	J64ZWX01B	Φ70×124	3	1500	0.35	0.8	2.50×10 ⁻⁵	160	16300~16900	≤2	0.8	14700~15400	8.5~9.8	93/94	无刷电机
43	J64ZWX08A	Φ64×125	3	1690	0.13	0.41	2.50×10 ⁻⁵	160	21500~21800	≤1.6	1.6	17800~18200	20.6~22.5	95/96	无刷电机
44	J65ZWX12	Φ64×110	3	1560	0.38	0.57	4.45×10 ⁻⁵	160	11800~12000	≤0.8	1.8	10300~10500	13.2~14	97/98	无刷电机

无刷电动机产品手册
Brushless DC Motor Product Manual

序号 Serial Number	产品 代号 Product Code	体积 Volume (mm)	极对 数 Pole Paires	重量 Weight (g)	定子电阻 Stator Resistance (Ω)	定子电感 Stator Inductance (mH)	转子转动 惯量 Rotational Inertia (kg·m ²)	额定 电压 Rated Voltage (V)	空载 转速 No-Load Speed (r/min)	空载 电流 No-Load Current (A)	额定 转矩 Rated Torque (Nm)	额定 转速 C (r/min)	额定 电流 Rated Current (A)	页码 Page Number	产品组成 Product Composition
45	J65ZWX13	Φ63×112	3	1360	0.08	0.12	4.17×10 ⁻⁵	100	16000~16400	≤1.4	1.5	13600~14100	26~28	99/100	无刷电机
46	J75ZWX04A	Φ74×156	3	2835	0.06	0.15	5.56×10 ⁻⁵	160	20900~21300	≤1.8	2.5	18500~18800	33~35	101/102	无刷电机
47	J82ZWX07	□82×110	5	3050	0.37	1.94	2.15×10 ⁻⁴	150	4400~4700	≤1.2	8	3250~3550	21~23	103/104	无刷电机

永磁同步电动机产品信息汇总表

Permanent Magnet Synchronous Motor Product Information Summary Table

序号 Serial Number	产品 代号 Product Code	体积 Volume (mm)	极对 数 Pole Paires	重量 Weight (g)	定子电阻 Stator Resistance (Ω)	定子电感 Stator Inductance (mH)	转子转动 惯量 Rotational Inertia (kg·m ²)	额定 电压 Rated Voltage (V)	空载 转速 No-Load Speed (r/min)	空载 电流 No-Load Current (A)	额定 转矩 Rated Torque (Nm)	额定 转速 C (r/min)	额定 电流 Rated Current (A)	页码 Page Number	产品组成 Product Composition
48	J46ST-XDZ01	Φ48×133	2	1160	2.23	2.26	1.37×10 ⁻⁵	220	12800~13000	≤0.5	1.5	10600~10800	8~8.4	105/106	同步电机+制动器
49	J55ST-XDZ02	Φ55×151.1	2	1740	1.02	1.93	1.88×10 ⁻⁵	220	13350~15600	≤0.5	1.5	12000~12300	8.14~8.56	107/108	同步电机+制动器
50	J60ST-XDZ01	Φ60×183	2	2390	0.72	0.91	3.44×10 ⁻⁵	220	14500~15000	≤1.1	4.5	12100~12800	27~29	109/110	同步电机+制动器
51	J65ST-XDZ01	Φ65×165	2	2380	0.62	1.79	3.98×10 ⁻⁵	270	15000~15300	≤0.6	4.5	11900~12100	24.3~25	111/112	同步电机+制动器
52	J70ST-X01	Φ70×168	2	2593	0.29	0.38	4.70×10 ⁻⁵	160	15400~16100	≤1.9	3.3	14000~14500	34~36	113/114	同步电机
53	J80ST-XDZ02	Φ80×215.5	2	4240	0.10	0.53	4.44×10 ⁻⁵	220	17700~18200	≤2	4.5	15600~16100	40~44	115/116	同步电机+制动器
54	J85ST-XDZ02	Φ80×200	2	4490	0.64	1.90	3.94×10 ⁻⁵	220	9000~9030	≤0.5	5	7700~7820	20~23	117/118	同步电机+制动器

J25ZWX02

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	31
2 空载转速 (No-Load Speed)	r/min	13400~13800
3 空载电流 (No-Load Current)	A	≤0.2
4 额定转速 (Rated Speed)	r/min	11300~11600
5 额定转矩 (Rated Torque)	Nm	0.04
6 额定电流 (Rated Current)	A	1.9~2
7 相间电阻 (Interphase Resistance)	Ω	3.81
8 相间电感 (Interphase Inductance)	mH	0.66
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.45×10 ⁻⁷

热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H

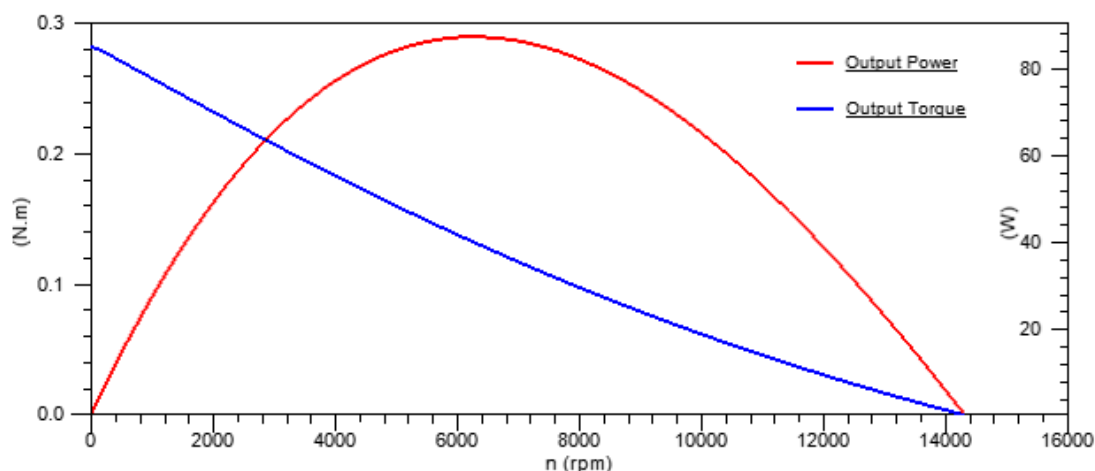
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05

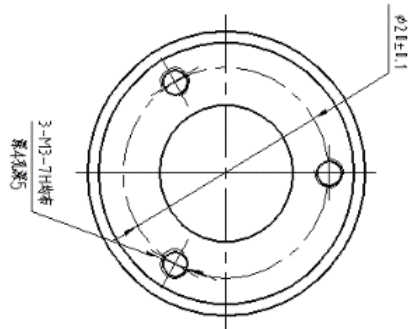
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	152
16 极对数 (Number of Poles)		2

产品组成 (Product Composition)

无刷直流电动机 (Brushless DC Motor)

机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)





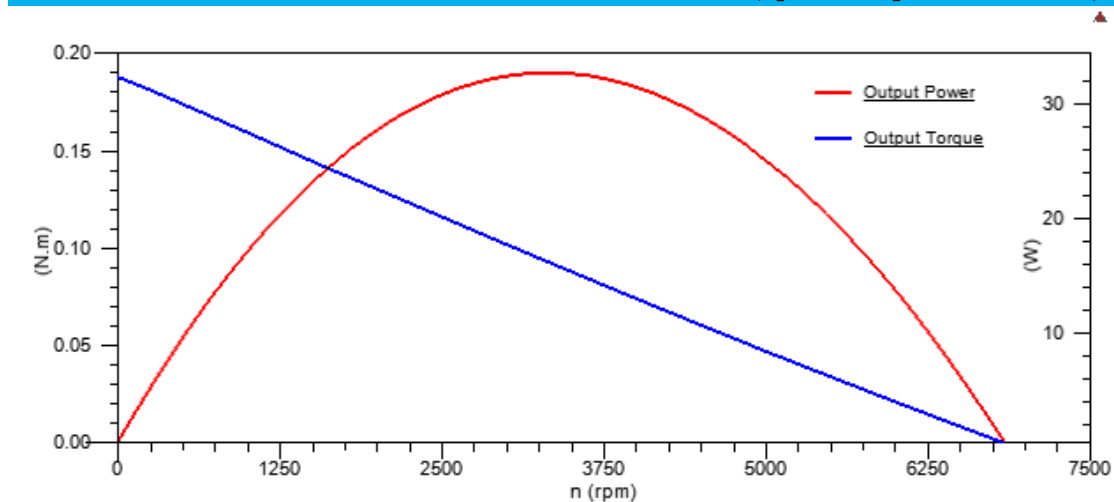
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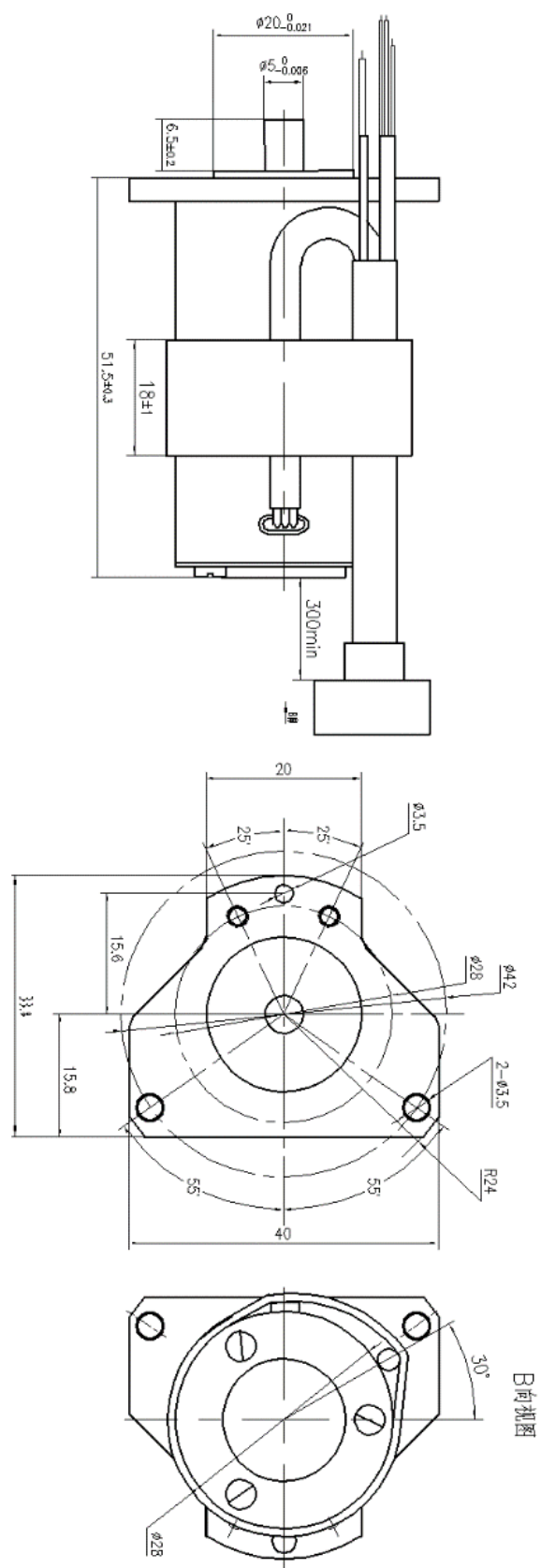
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	27
2 空载转速 (No-Load Speed)	r/min	6300~6700
3 空载电流 (No-Load Current)	A	≤0.09
4 额定转速 (Rated Speed)	r/min	5450~5790
5 额定转矩 (Rated Torque)	Nm	0.030
6 额定电流 (Rated Current)	A	0.9~1.05
7 相间电阻 (Interphase Resistance)	Ω	14
8 相间电感 (Interphase Inductance)	mH	0.0024
9 机电时间常数 (Electromechanical Time Constant)	ms	0.2~1
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	4.54×10 ⁻⁷
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.15
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	292
16 极对数 (Number of Poles)		2

产品组成 (Product Composition)

无刷直流电动机 (Brushless DC Motor)

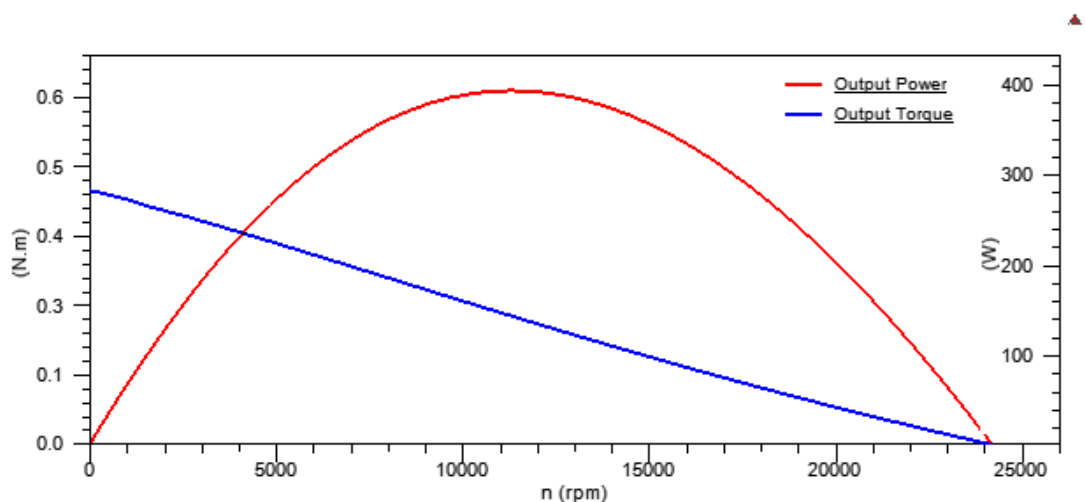
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)

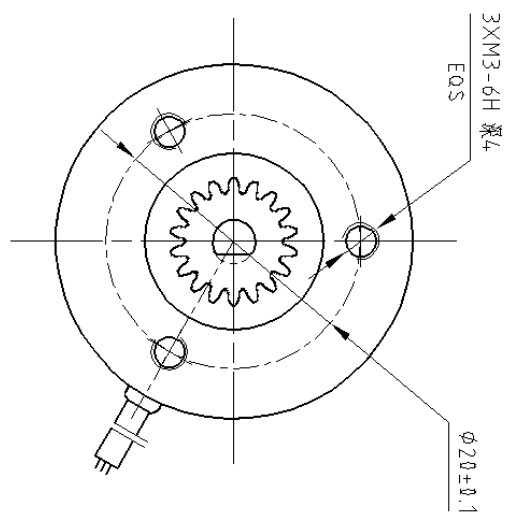




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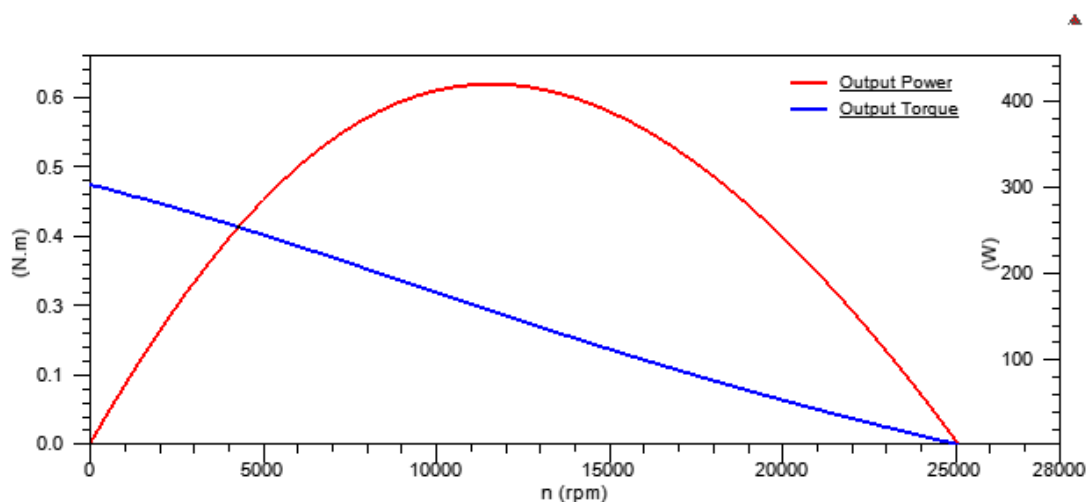
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	23900~24100
3 空载电流 (No-Load Current)	A	≤0.5
4 额定转速 (Rated Speed)	r/min	19200~19400
5 额定转矩 (Rated Torque)	Nm	0.1
6 额定电流 (Rated Current)	A	2.9~3.2
7 相间电阻 (Interphase Resistance)	Ω	3.81~3.828
8 相间电感 (Interphase Inductance)	mH	0.87~1.40
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	6.00×10 ⁻⁷
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	174
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

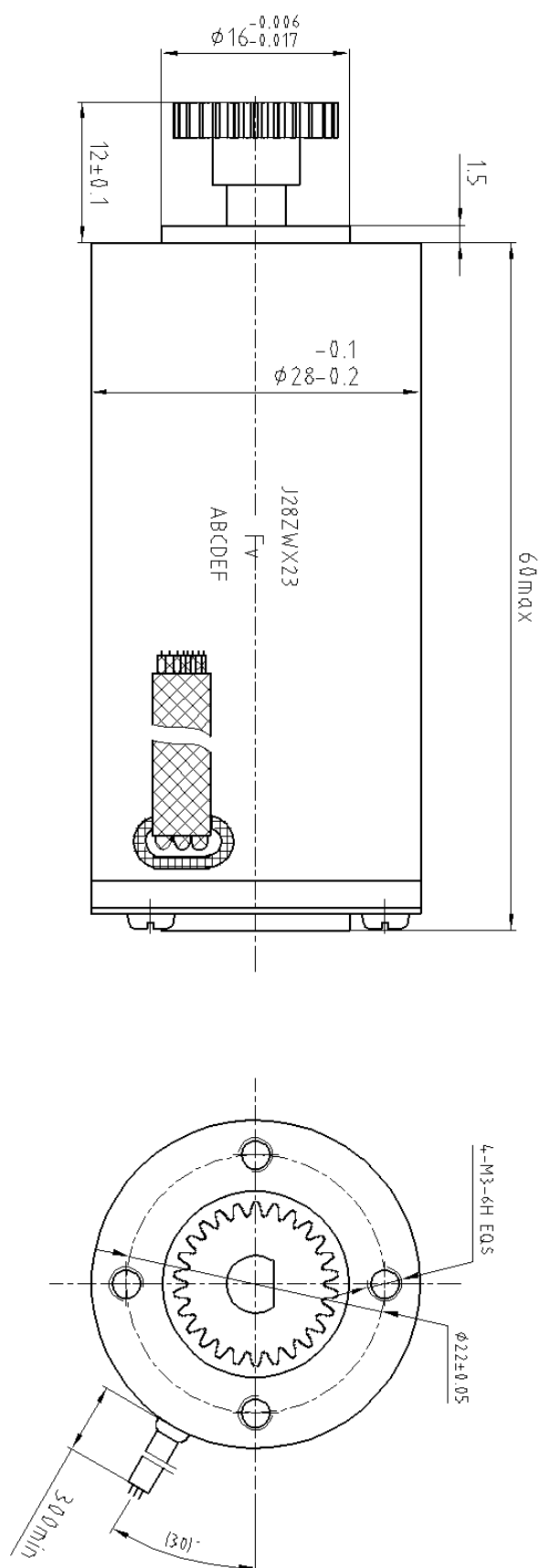




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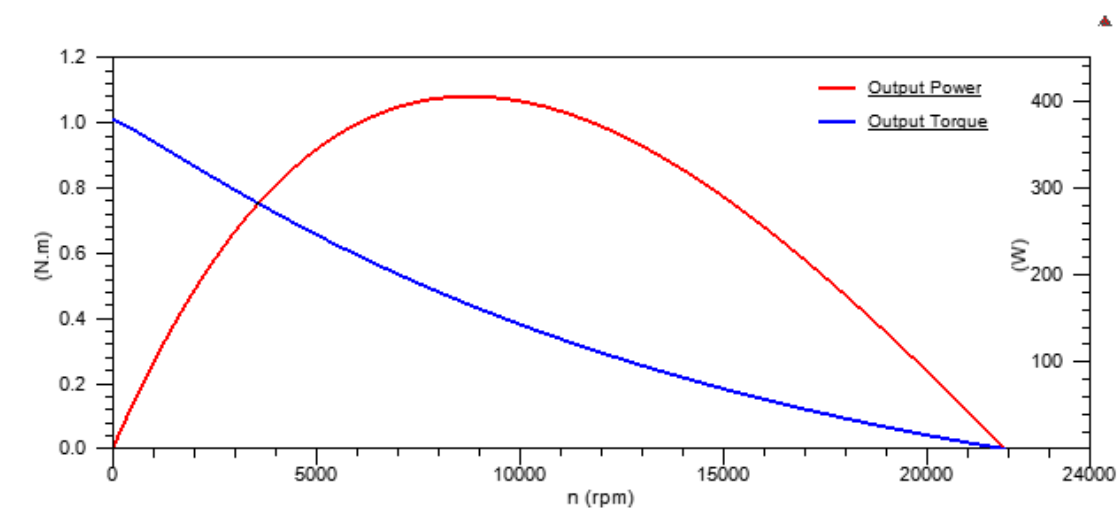
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	95
2 空载转速 (No-Load Speed)	r/min	23500~24500
3 空载电流 (No-Load Current)	A	≤0.4
4 额定转速 (Rated Speed)	r/min	22000~23000
5 额定转矩 (Rated Torque)	Nm	0.05
6 额定电流 (Rated Current)	A	2.15~2.3
7 相间电阻 (Interphase Resistance)	Ω	2.41~2.43
8 相间电感 (Interphase Inductance)	mH	0.72~0.86
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	8.40×10 ⁻⁷
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	210
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

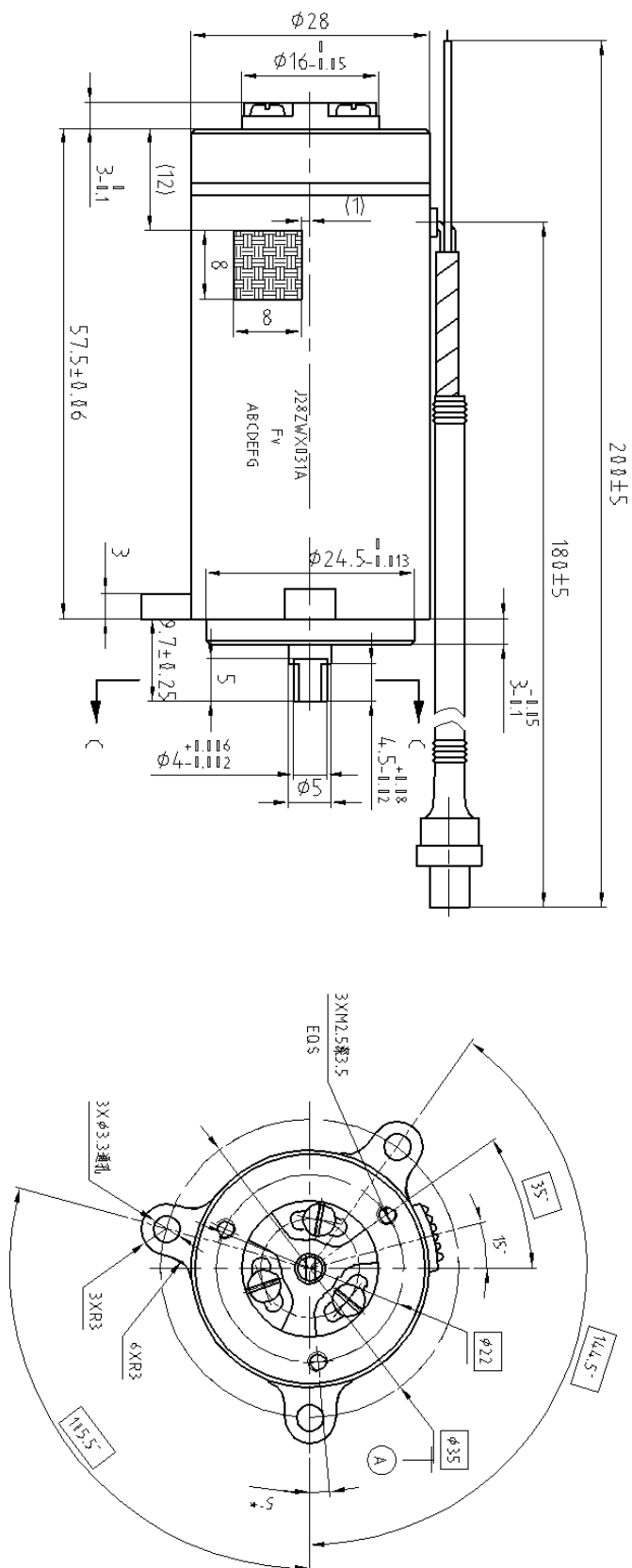




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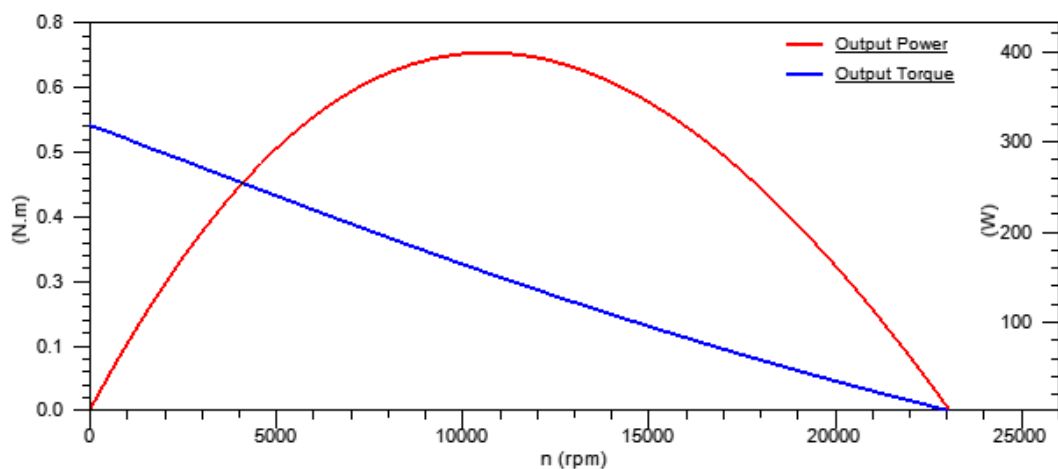
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	27
2 空载转速 (No-Load Speed)	r/min	21800~22600
3 空载电流 (No-Load Current)	A	≤0.7
4 额定转速 (Rated Speed)	r/min	19000~19700
5 额定转矩 (Rated Torque)	Nm	0.053
s6 额定电流 (Rated Current)	A	4.8~5.3
7 相间电阻 (Interphase Resistance)	Ω	0.33
8 相间电感 (Interphase Inductance)	mH	0.09
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	5.62×10 ⁻⁷
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.15
14 径向间隙 (Radial Clearance)	mm	≤0.10
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	204
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

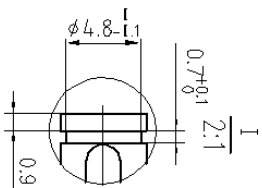




J30ZWX01

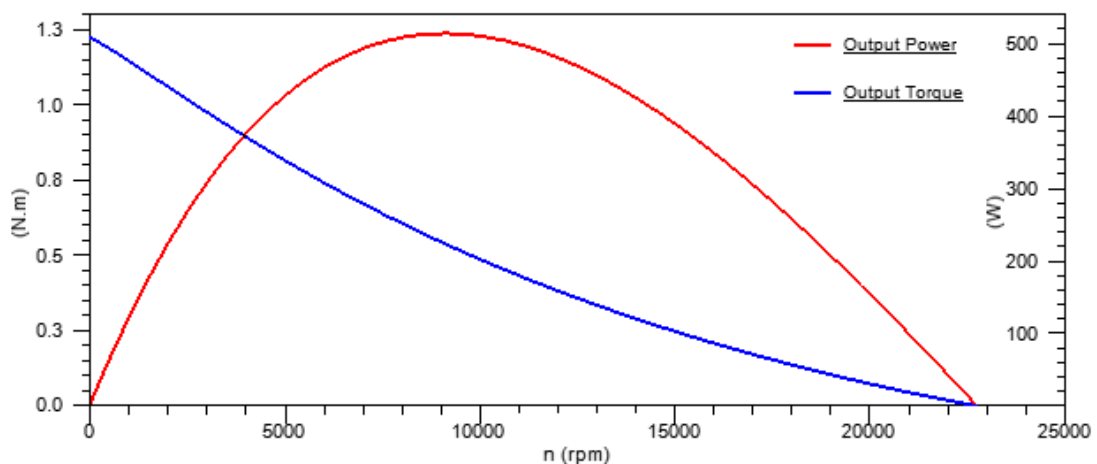
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	27
2 空载转速 (No-Load Speed)	r/min	21100~21400
3 空载电流 (No-Load Current)	A	≤0.6
4 额定转速 (Rated Speed)	r/min	18400~18800
5 额定转矩 (Rated Torque)	Nm	0.1
6 额定电流 (Rated Current)	A	8.5~10
7 相间电阻 (Interphase Resistance)	Ω	0.09
8 相间电感 (Interphase Inductance)	mH	0.103
9 机电时间常数 (Electromechanical Time Constant)	ms	≤3
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	6.30×10 ⁻⁷
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	265
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

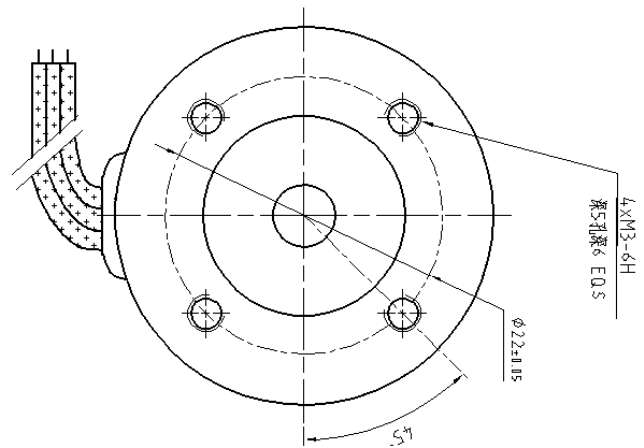




J30ZWX02

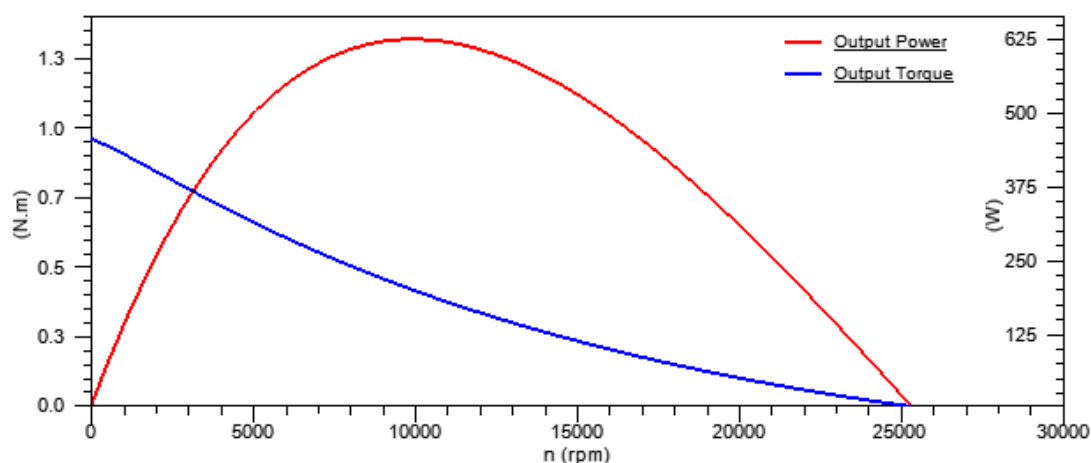
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	48
2 空载转速 (No-Load Speed)	r/min	20500~21500
3 空载电流 (No-Load Current)	A	≤0.3
4 额定转速 (Rated Speed)	r/min	18000~18700
5 额定转矩 (Rated Torque)	Nm	0.12
6 额定电流 (Rated Current)	A	5.4~5.9
7 相间电阻 (Interphase Resistance)	Ω	0.51
8 相间电感 (Interphase Inductance)	mH	0.27
9 机电时间常数 (Electromechanical Time Constant)	ms	≤3
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.1×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	255
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

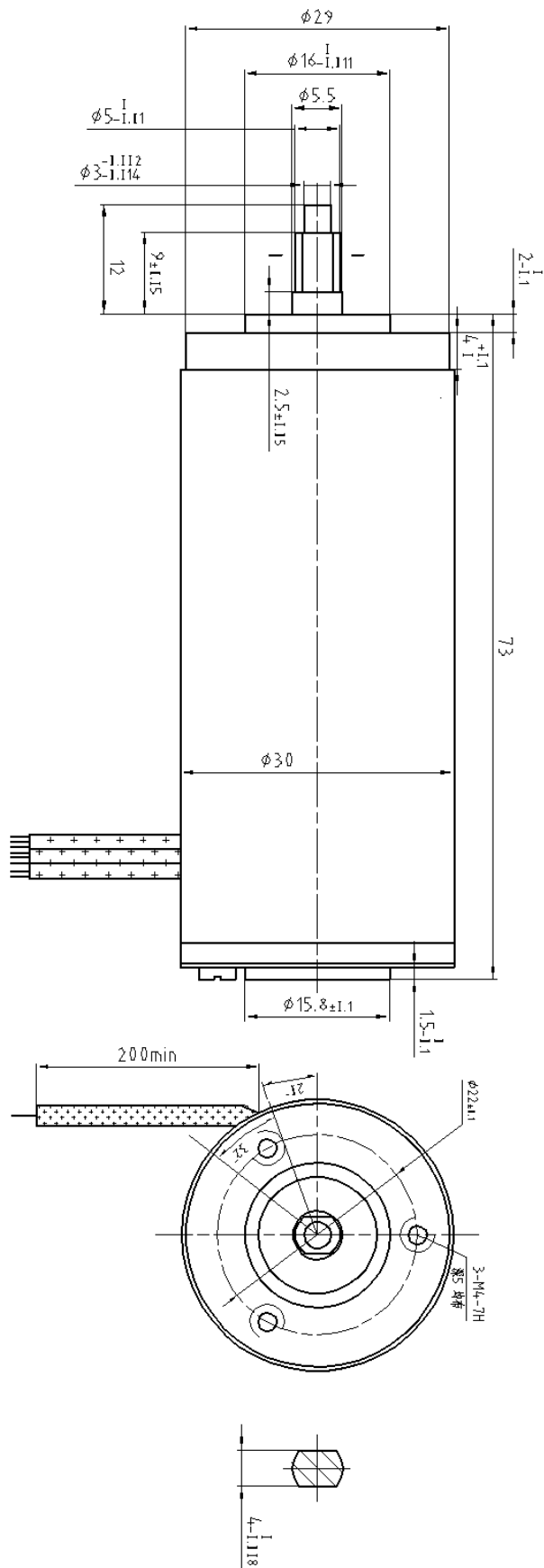




J30ZWX04

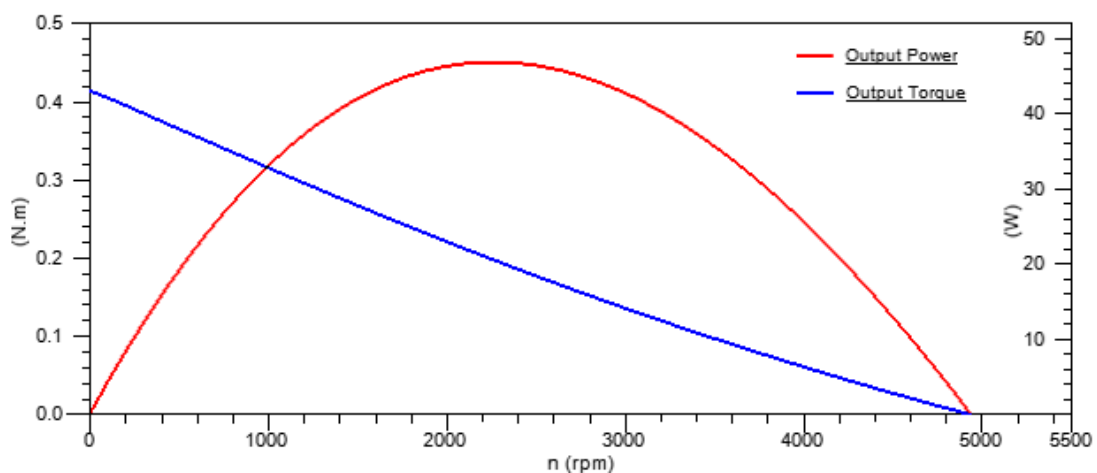
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	24100~25100
3 空载电流 (No-Load Current)	A	≤0.5
4 额定转速 (Rated Speed)	r/min	21900~23000
5 额定转矩 (Rated Torque)	Nm	0.1
6 额定电流 (Rated Current)	A	3.2~3.4
7 相间电阻 (Interphase Resistance)	Ω	1.07
8 相间电感 (Interphase Inductance)	mH	0.58
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.063×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	280
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

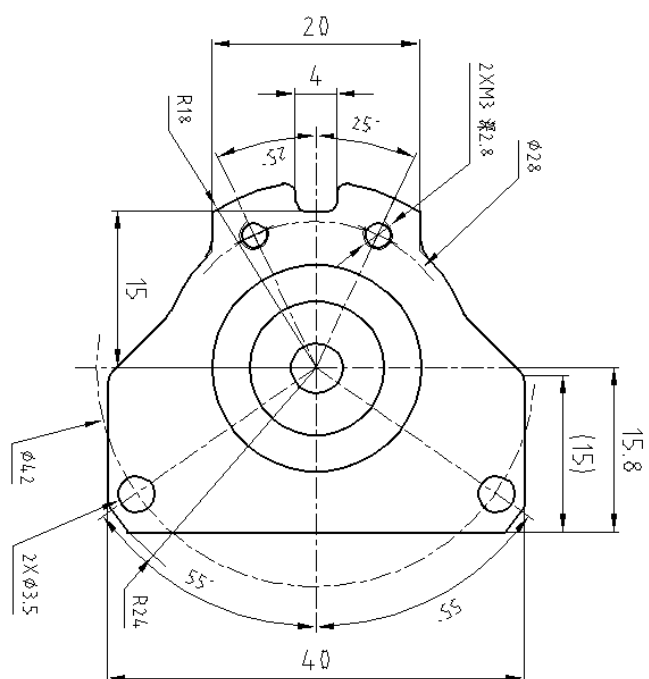
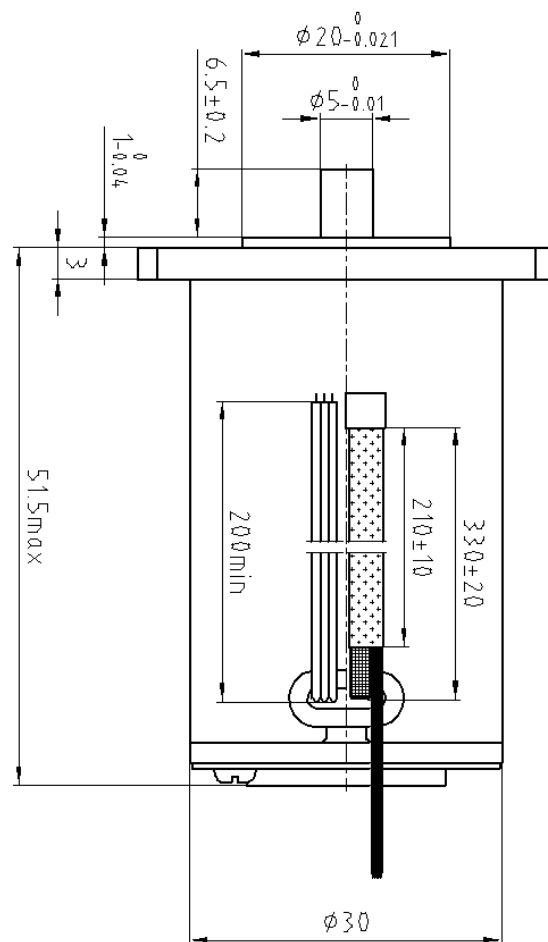




J30ZWX09

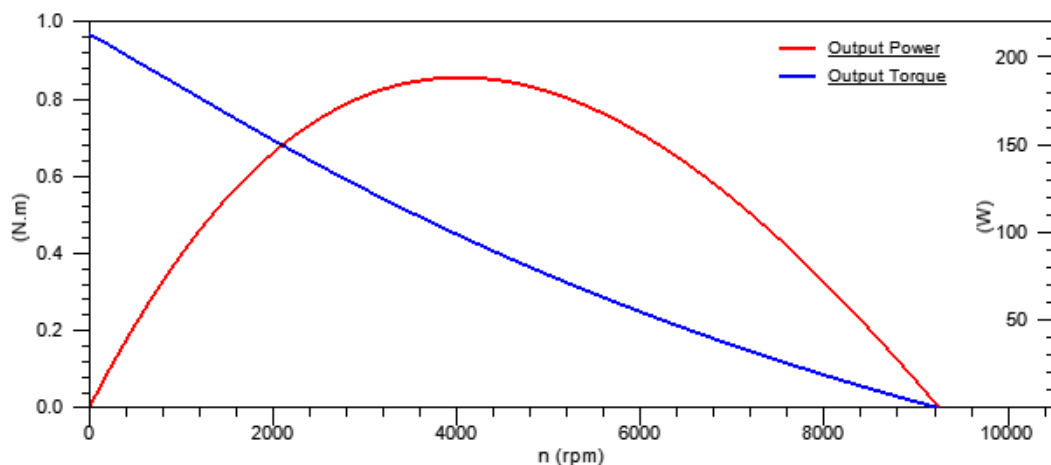
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	39
2 空载转速 (No-Load Speed)	r/min	5200~5400
3 空载电流 (No-Load Current)	A	≤0.15
4 额定转速 (Rated Speed)	r/min	4150~4250
5 额定转矩 (Rated Torque)	Nm	0.045
6 额定电流 (Rated Current)	A	0.63~0.68
7 相间电阻 (Interphase Resistance)	Ω	9
8 相间电感 (Interphase Inductance)	mH	2.56
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	7.50×10 ⁻⁷
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	230
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

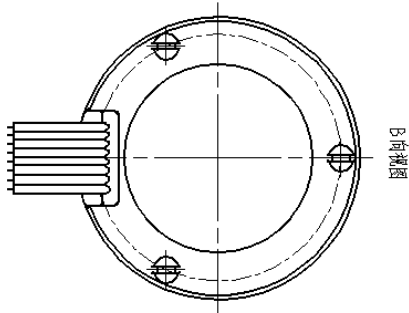




J30ZWX24

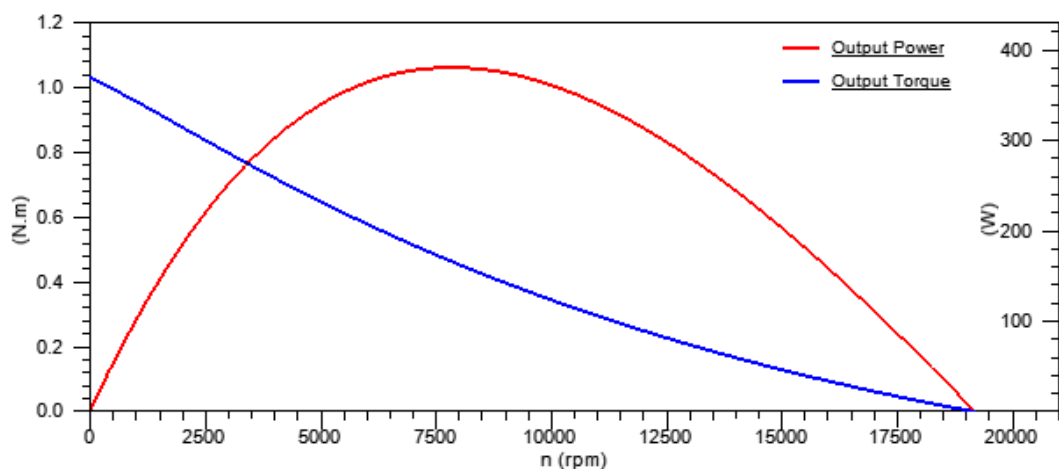
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	28
2 空载转速 (No-Load Speed)	r/min	9200~9800
3 空载电流 (No-Load Current)	A	≤0.5
4 额定转速 (Rated Speed)	r/min	7500~7700
5 额定转矩 (Rated Torque)	Nm	0.12
6 额定电流 (Rated Current)	A	4.2~4.5
7 相间电阻 (Interphase Resistance)	Ω	0.7
8 相间电感 (Interphase Inductance)	mH	0.322
9 机电时间常数 (Electromechanical Time Constant)	ms	1.9
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.01×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.20
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	256
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

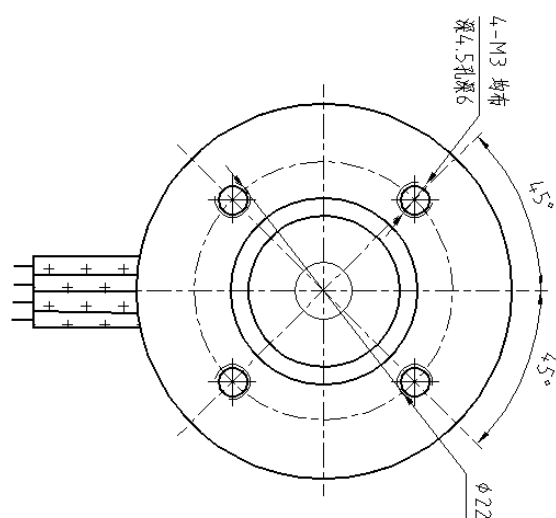
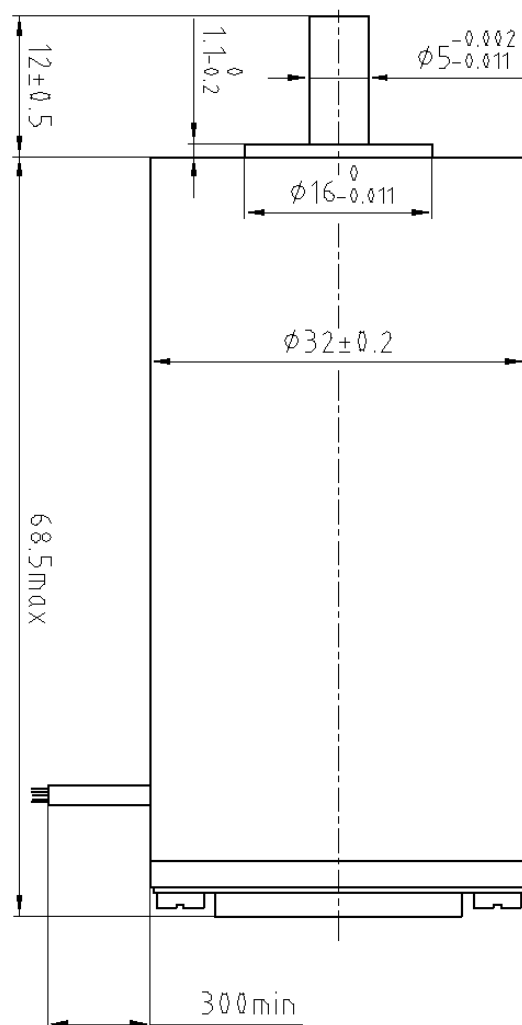




J32ZWX04

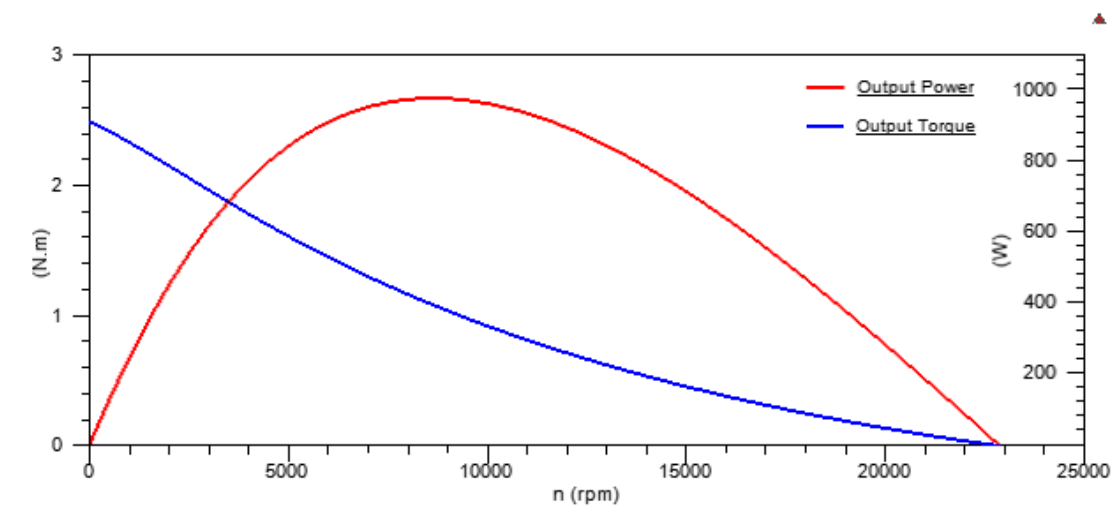
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	28
2 空载转速 (No-Load Speed)	r/min	19000~19400
3 空载电流 (No-Load Current)	A	≤1.5
4 额定转速 (Rated Speed)	r/min	16000~17500
5 额定转矩 (Rated Torque)	Nm	0.05
6 额定电流 (Rated Current)	A	3.8~4.4
7 相间电阻 (Interphase Resistance)	Ω	0.17
8 相间电感 (Interphase Inductance)	mH	0.117
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	5.12×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	293
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

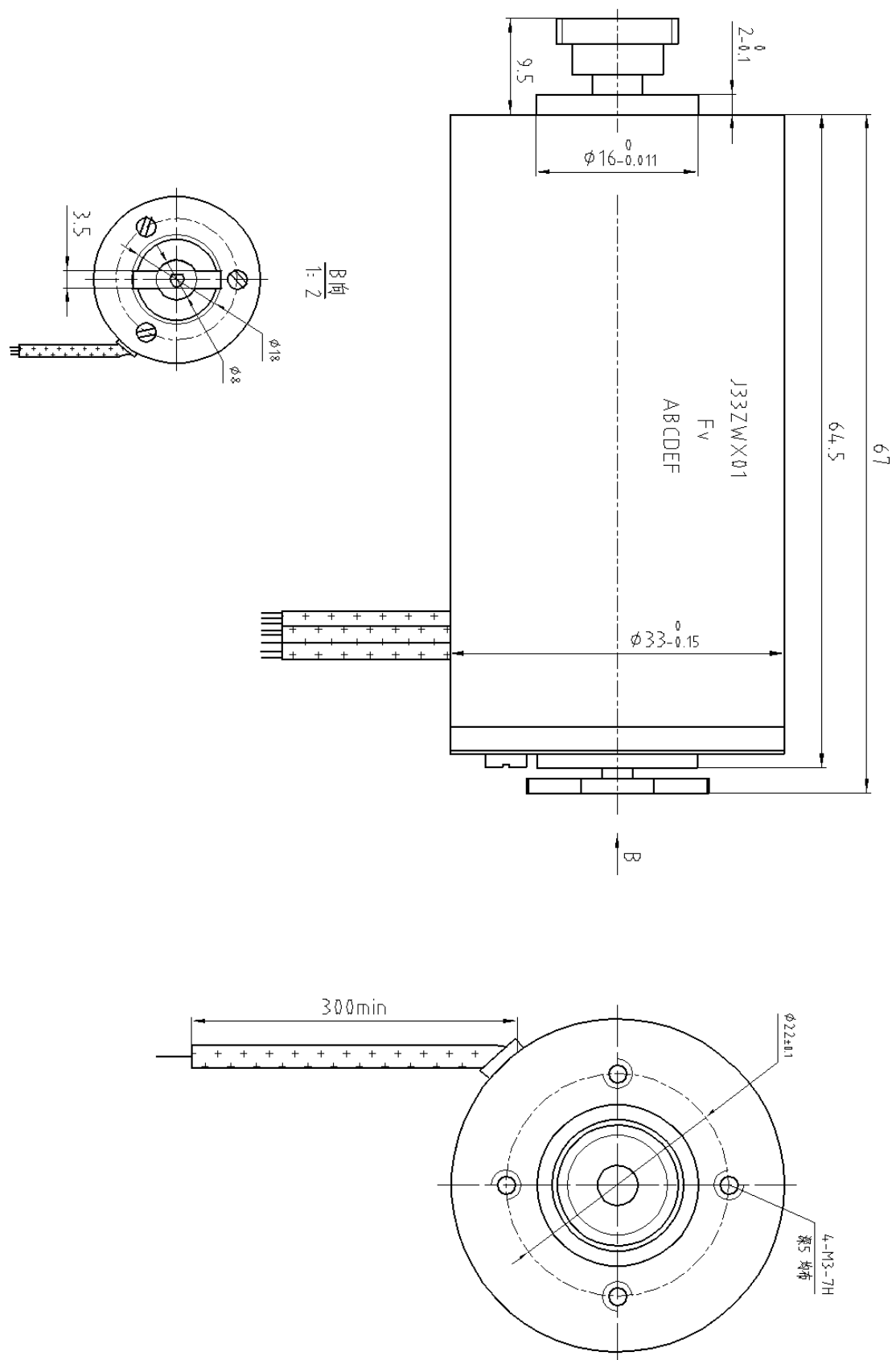




J33ZWX01

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	22500~23500
3 空载电流 (No-Load Current)	A	≤0.4
4 额定转速 (Rated Speed)	r/min	20050~20500
5 额定转矩 (Rated Torque)	Nm	0.12
6 额定电流 (Rated Current)	A	3.2~3.5
7 相间电阻 (Interphase Resistance)	Ω	1.08
8 相间电感 (Interphase Inductance)	mH	0.75
9 机电时间常数 (Electromechanical Time Constant)	ms	≤3
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	7.53×10 ⁻⁷
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	0.03~0.08
14 径向间隙 (Radial Clearance)	mm	≤0.5
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	310
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		





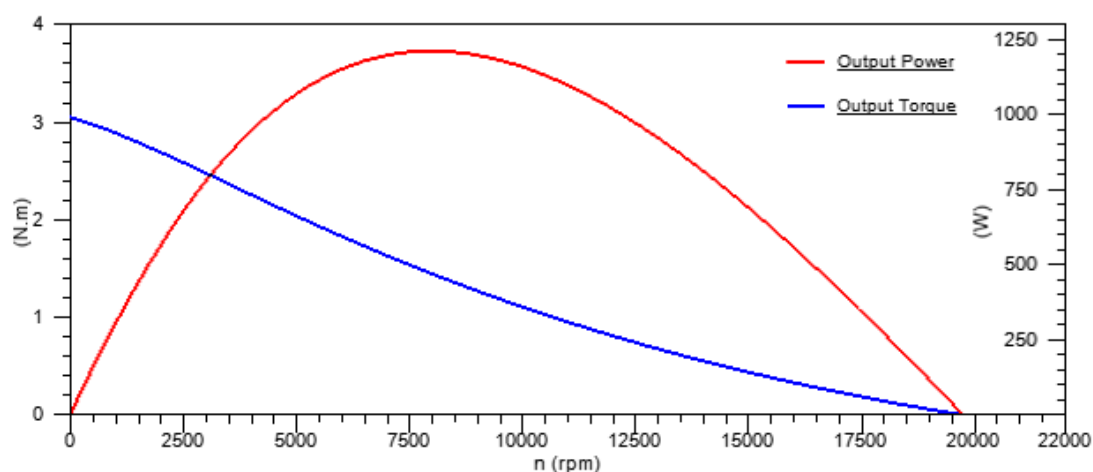
J36ZWX02-SA

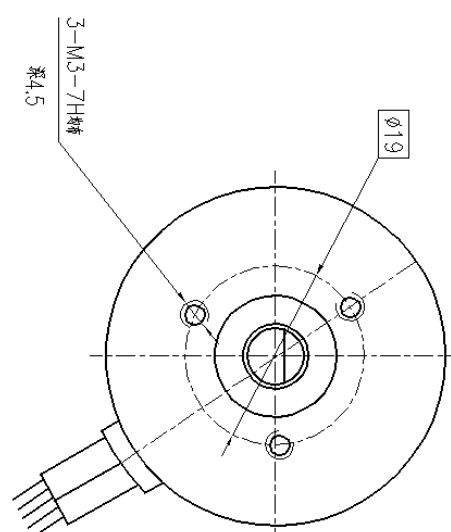
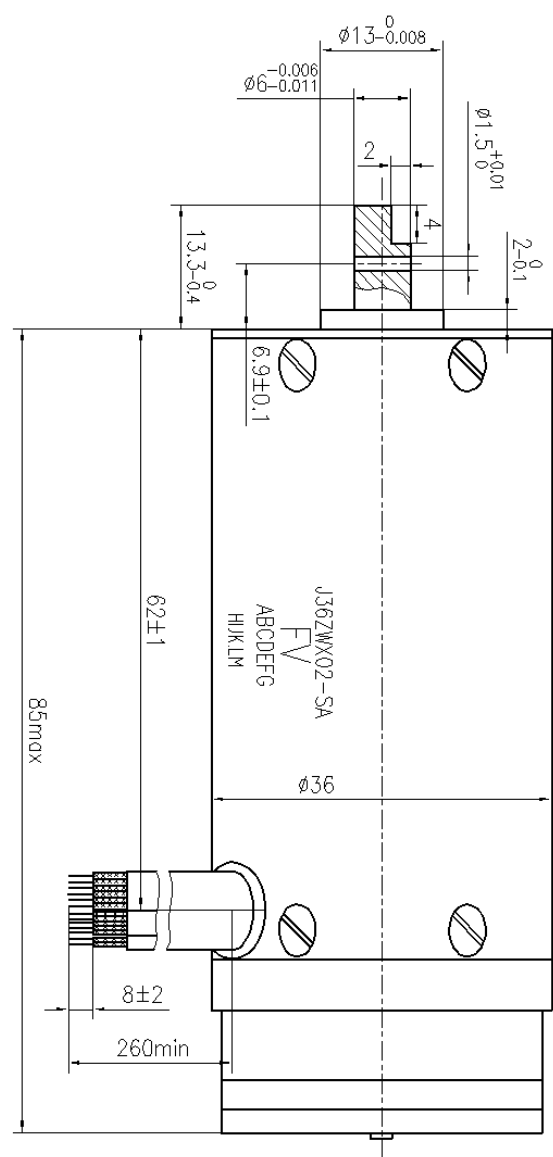
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	19000~20600
3 空载电流 (No-Load Current)	A	≤0.45
4 额定转速 (Rated Speed)	r/min	17000~18200
5 额定转矩 (Rated Torque)	Nm	0.113
6 额定电流 (Rated Current)	A	2.8~3.5
7 相间电阻 (Interphase Resistance)	Ω	1.35
8 相间电感 (Interphase Inductance)	mH	0.65
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.50×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	365
16 极对数 (Number of Poles)		2

产品组成 (Product Composition)

无刷直流电动机+锁制器 (Brushless DC Motor and Locking Mechanism)

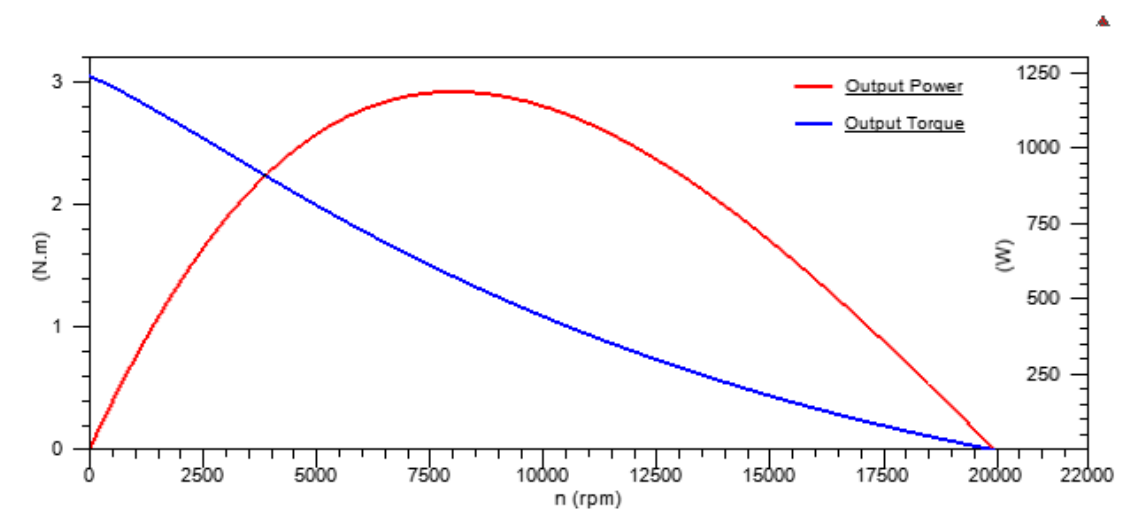
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)

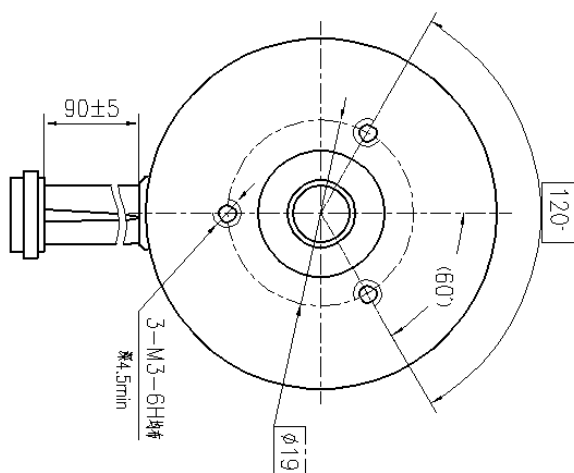
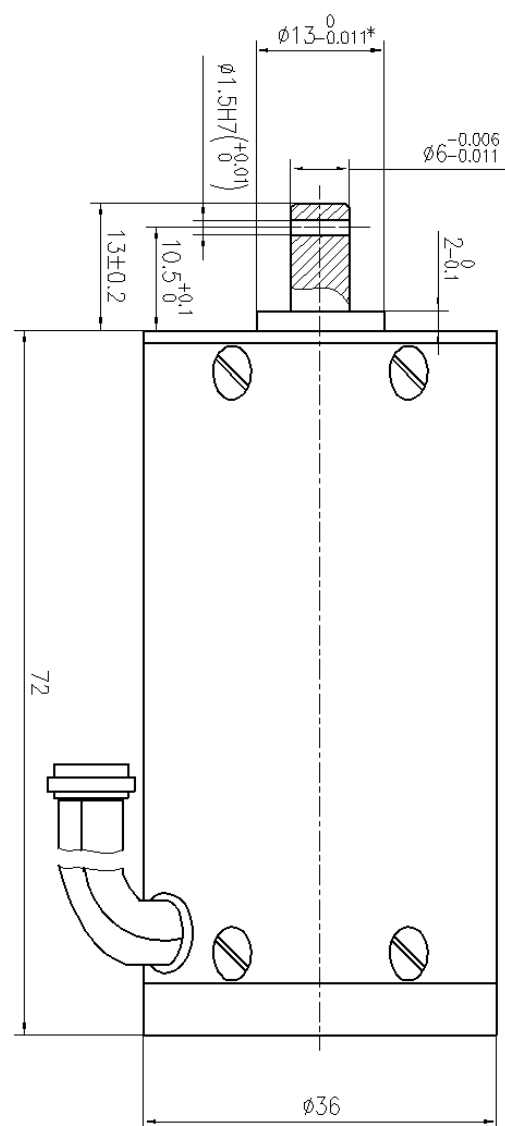




J36ZWX02A

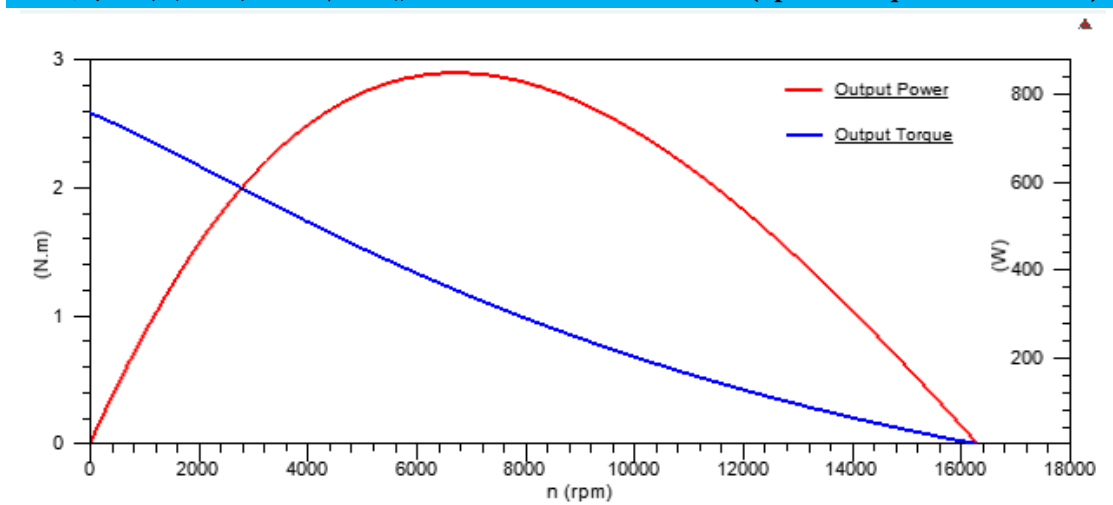
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	19000~20600
3 空载电流 (No-Load Current)	A	≤0.45
4 额定转速 (Rated Speed)	r/min	17000~18200
5 额定转矩 (Rated Torque)	Nm	0.113
6 额定电流 (Rated Current)	A	2.8~3.5
7 相间电阻 (Interphase Resistance)	Ω	1.35
8 相间电感 (Interphase Inductance)	mH	0.65
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.50×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	180
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	320
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

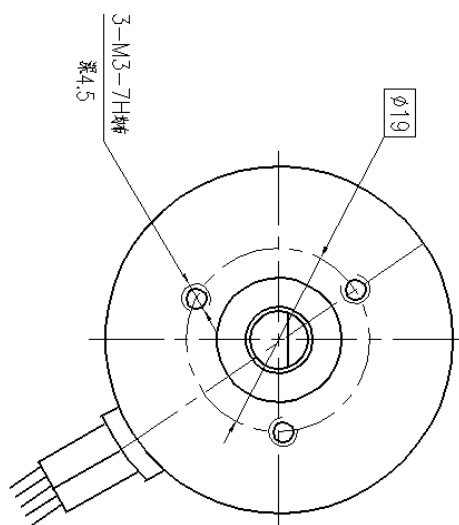




J36ZWX02-S

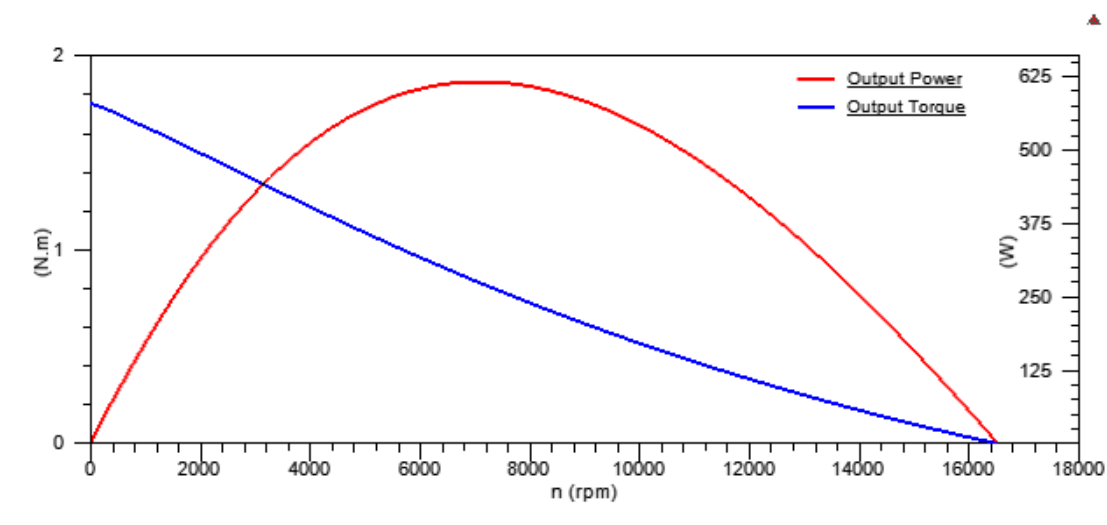
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	78
2 空载转速 (No-Load Speed)	r/min	16700~18000
3 空载电流 (No-Load Current)	A	≤0.35
4 额定转速 (Rated Speed)	r/min	15100~15700
5 额定转矩 (Rated Torque)	Nm	0.113
6 额定电流 (Rated Current)	A	2.8-3.5
7 相间电阻 (Interphase Resistance)	Ω	1.35
8 相间电感 (Interphase Inductance)	mH	0.65
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.50×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	365
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机+锁制器 (Brushless DC Motor and Locking Mechanism)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

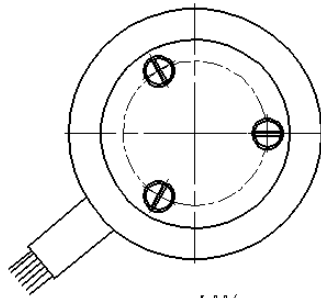




J36ZWX09-S

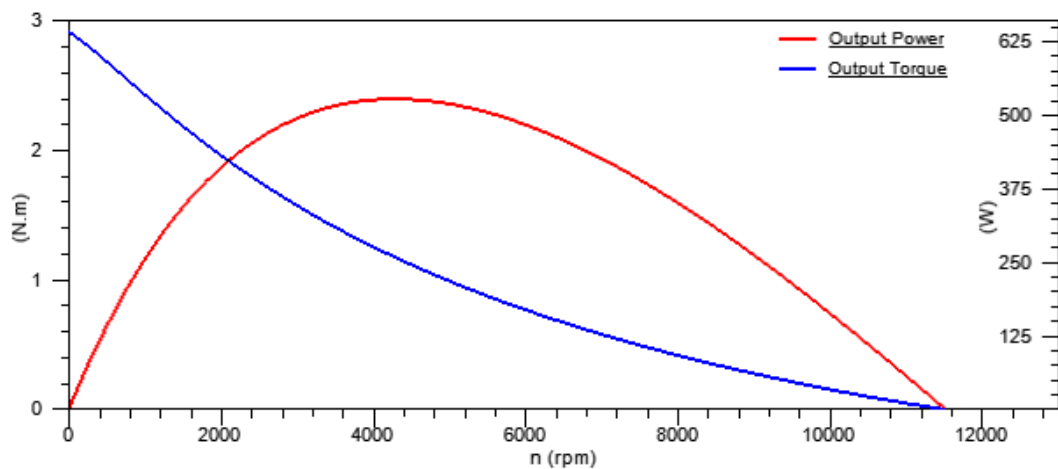
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	54
2 空载转速 (No-Load Speed)	r/min	16000~16400
3 空载电流 (No-Load Current)	A	0.25~0.5
4 额定转速 (Rated Speed)	r/min	14000~14500
5 额定转矩 (Rated Toeque)	Nm	0.15
6 额定电流 (Rated Current)	A	4.8~5.5
7 相间电阻 (Interphase Resistance)	Ω	0.39
8 相间电感 (Interphase Inductancee)	mH	0.27
9 机电时间常数 (Electromechanical Time Constant)	ms	≤ 4
10 转子转动惯量 (Rotor Moment of Inertia)	$\text{kg}\cdot\text{m}^2$	1.68×10^{-6}
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	$^{\circ}\text{C}$	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤ 0.10
14 径向间隙 (Radial Clearance)	mm	≤ 0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	433
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机+锁制器 (Brushless DC Motor and Locking Mechanism)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Toeque/Power Curve)		

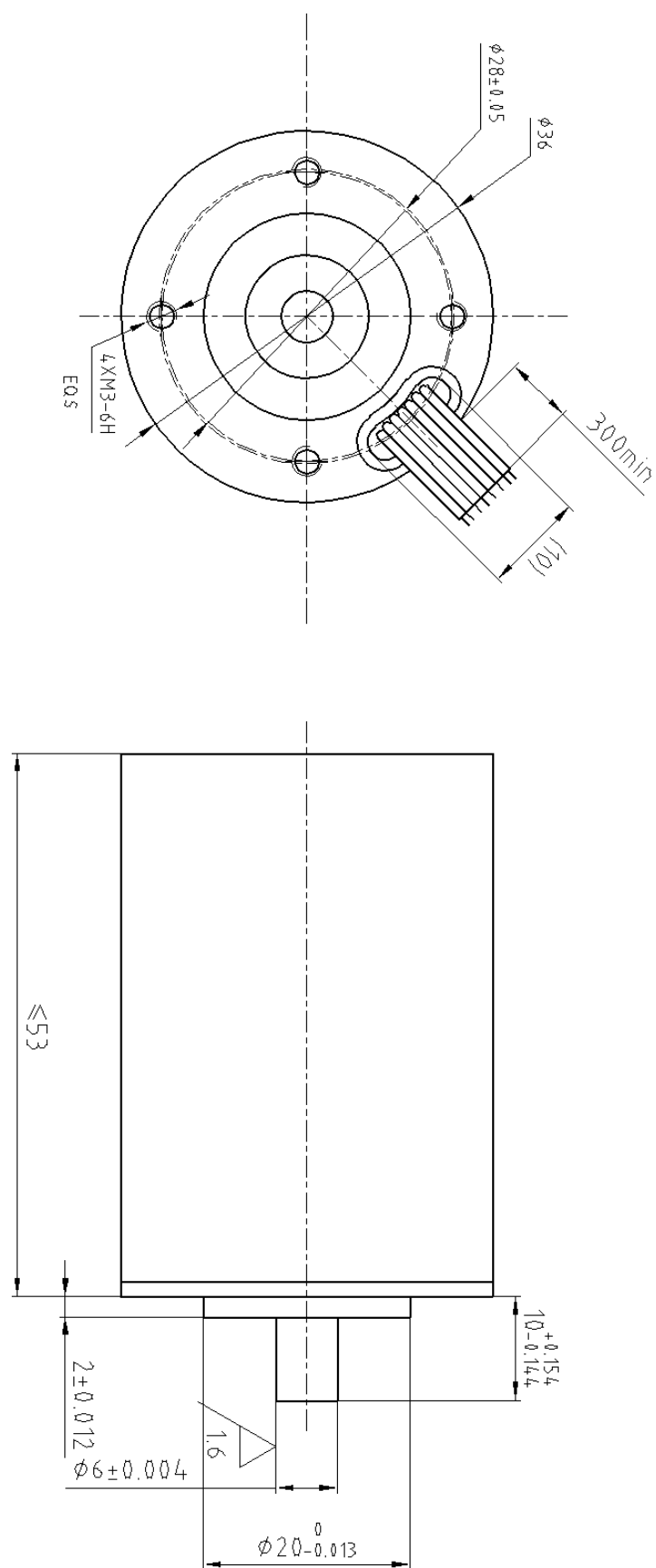




J36ZWX10

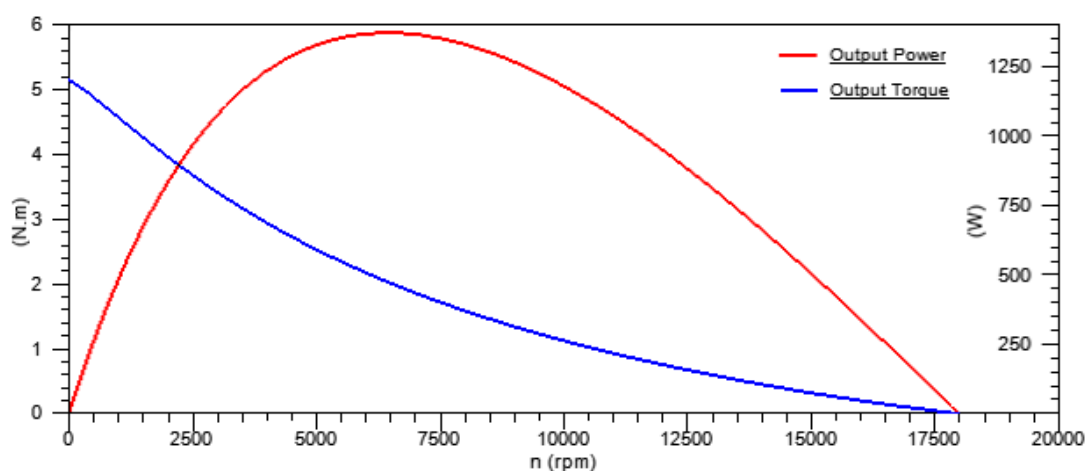
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	56
2 空载转速 (No-Load Speed)	r/min	11400~11800
3 空载电流 (No-Load Current)	A	≤0.15
4 额定转速 (Rated Speed)	r/min	8400~8700
5 额定转矩 (Rated Torque)	Nm	0.3
6 额定电流 (Rated Current)	A	6.2~6.5
7 相间电阻 (Interphase Resistance)	Ω	0.94
8 相间电感 (Interphase Inductance)	mH	0.72
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.69×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	342
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

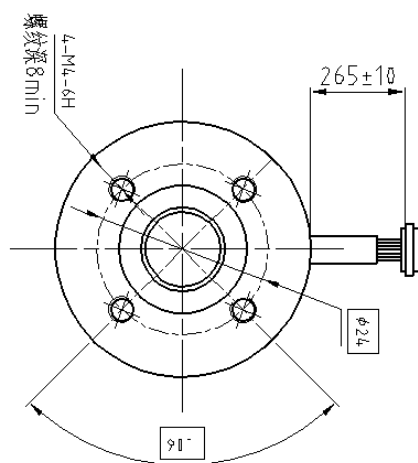
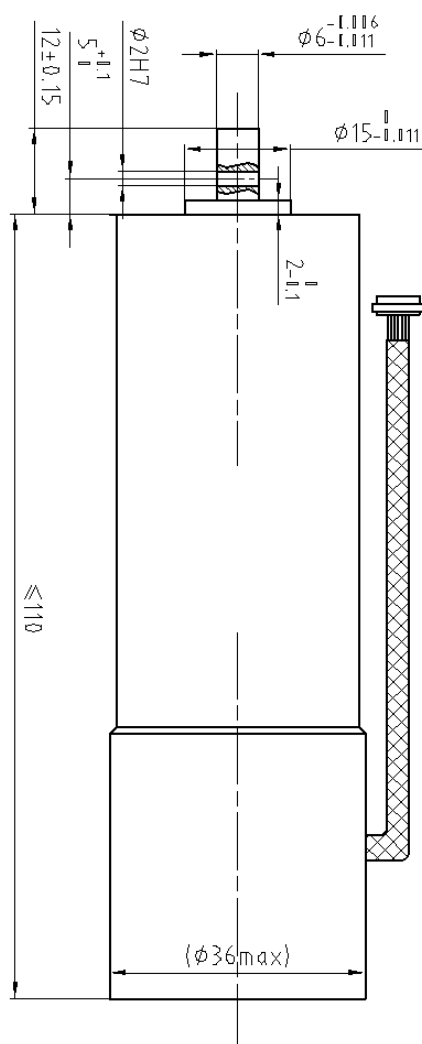




J36ZWX20-S

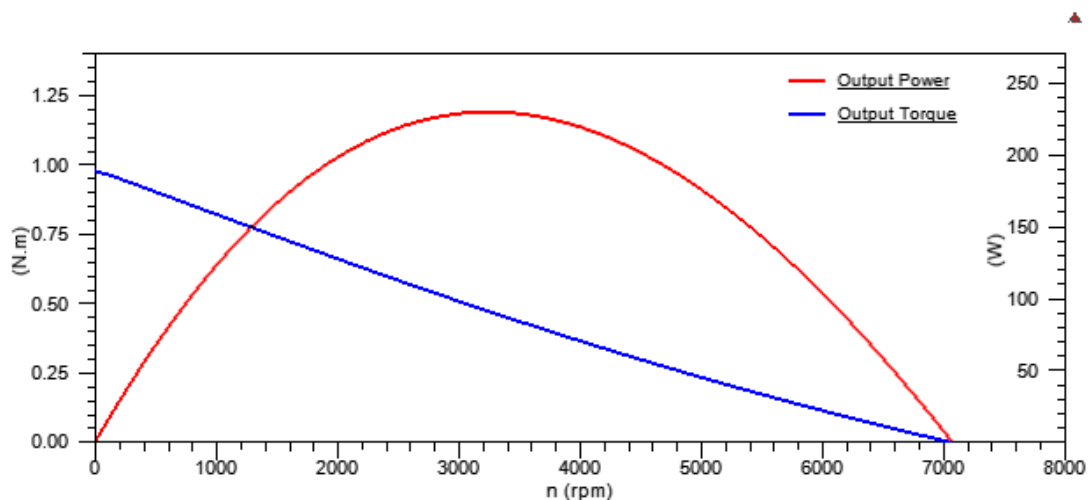
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	110
2 空载转速 (No-Load Speed)	r/min	16500~17800
3 空载电流 (No-Load Current)	A	≤0.35
4 额定转速 (Rated Speed)	r/min	15700~16500
5 额定转矩 (Rated Torque)	Nm	0.1
6 额定电流 (Rated Current)	A	1.7~2.2
7 相间电阻 (Interphase Resistance)	Ω	1.3
8 相间电感 (Interphase Inductance)	mH	0.87
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.09×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	500
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机+锁制器 (Brushless DC Motor and Locking Mechanism)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

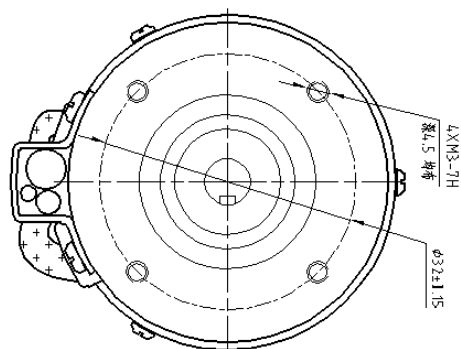
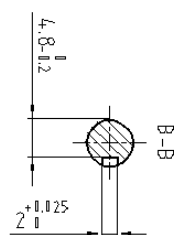
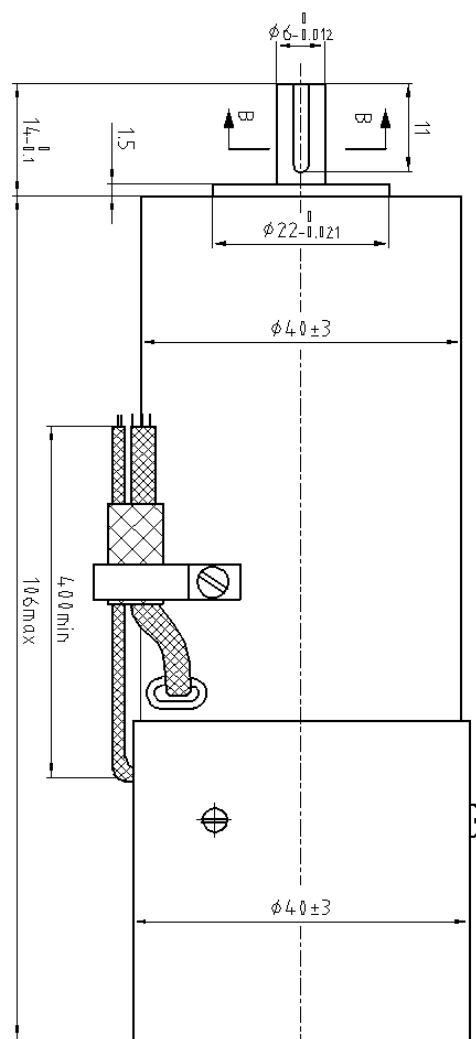




J40ZWX09

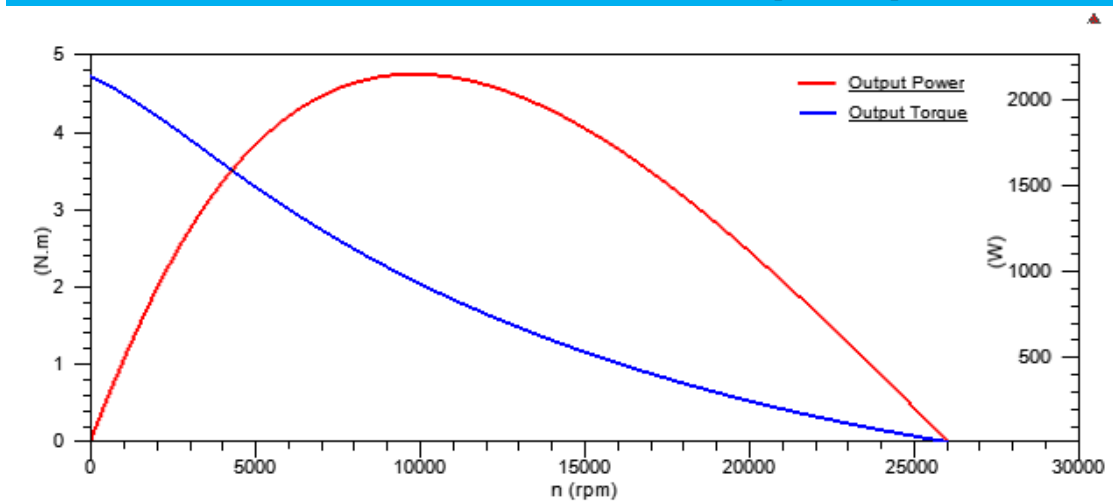
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	28.5
2 空载转速 (No-Load Speed)	r/min	6800~6900
3 空载电流 (No-Load Current)	A	≤0.2
4 额定转速 (Rated Speed)	r/min	4500~4900
5 额定转矩 (Rated Torque)	Nm	0.353
6 额定电流 (Rated Current)	A	7.0~9.1
7 相间电阻 (Interphase Resistance)	Ω	0.64
8 相间电感 (Interphase Inductance)	mH	0.345
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.65×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.15
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	600
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

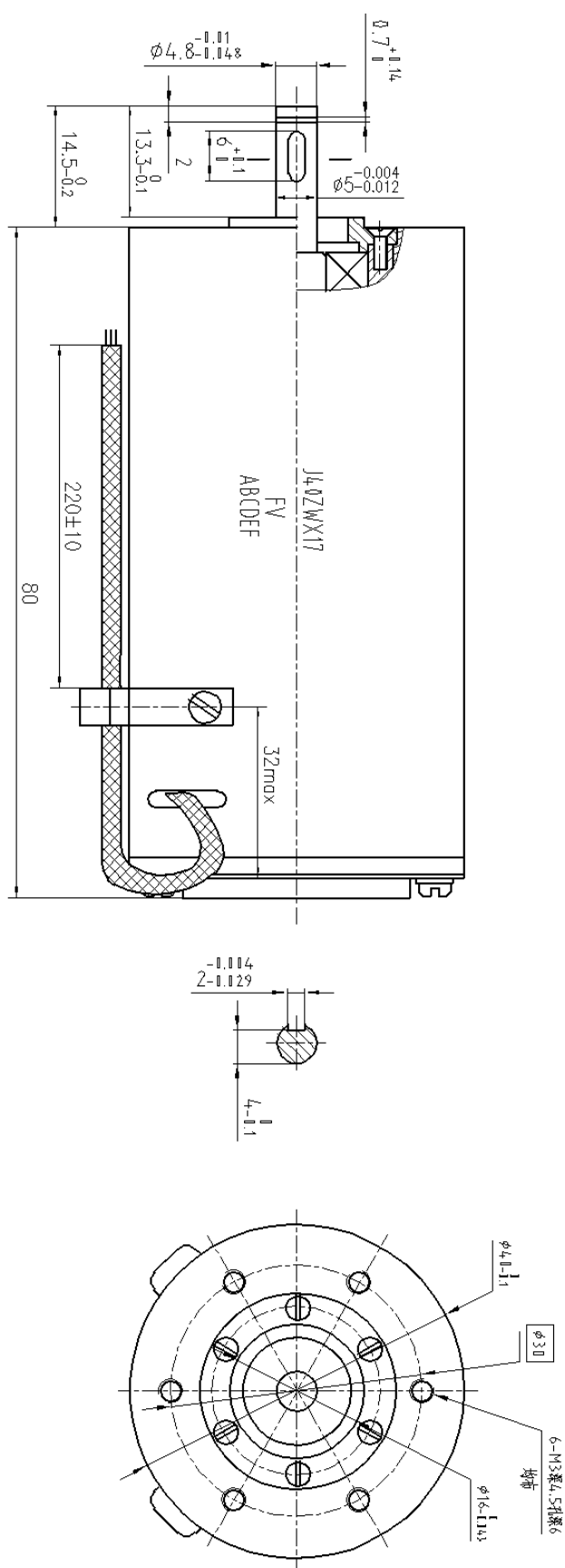




J40ZWX17

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	36
2 空载转速 (No-Load Speed)	r/min	25900~27300
3 空载电流 (No-Load Current)	A	≤1.5
4 额定转速 (Rated Speed)	r/min	24200~25100
5 额定转矩 (Rated Torque)	Nm	0.125
6 额定电流 (Rated Current)	A	11~12
7 相间电阻 (Interphase Resistance)	Ω	0.07
8 相间电感 (Interphase Inductance)	mH	0.05
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	3.22×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	480
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		





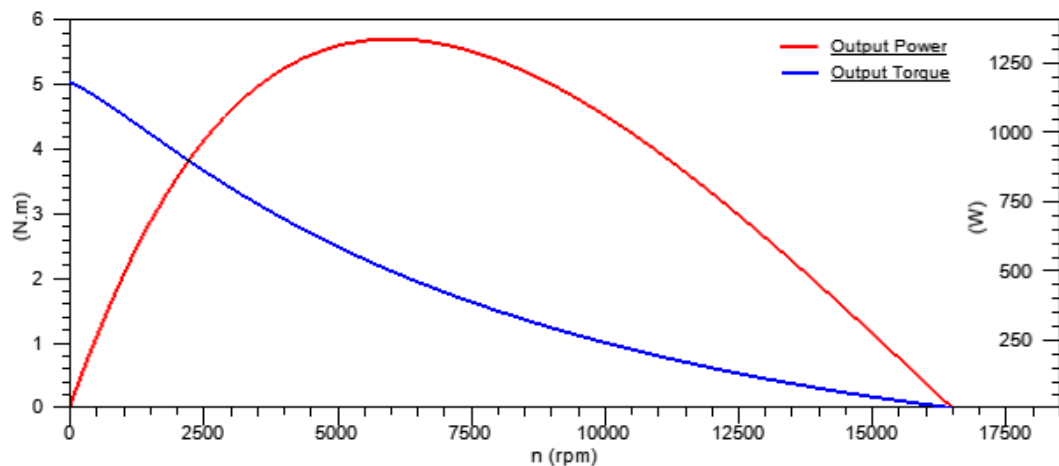
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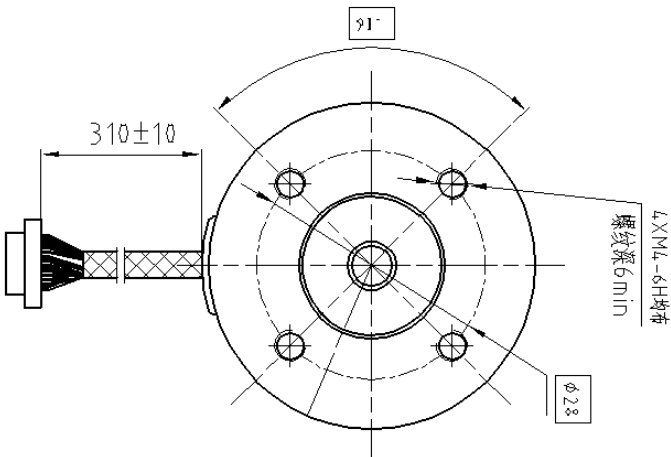
J40ZWX27A		
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	110
2 空载转速 (No-Load Speed)	r/min	16200~16800
3 空载电流 (No-Load Current)	A	≤0.4
4 额定转速 (Rated Speed)	r/min	15400~16000
5 额定转矩 (Rated Torque)	Nm	0.1
6 额定电流 (Rated Current)	A	1.7~2
7 相间电阻 (Interphase Resistance)	Ω	1
8 相间电感 (Interphase Inductance)	mH	0.37
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.86×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		B
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	542
16 极对数 (Number of Poles)		3

产品组成 (Product Composition)

无刷直流电动机 (Brushless DC Motor)

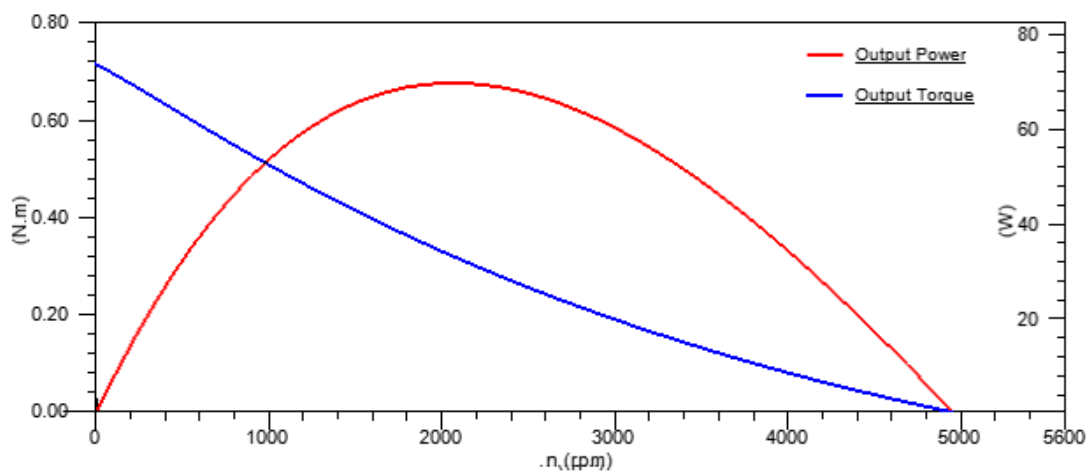
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)

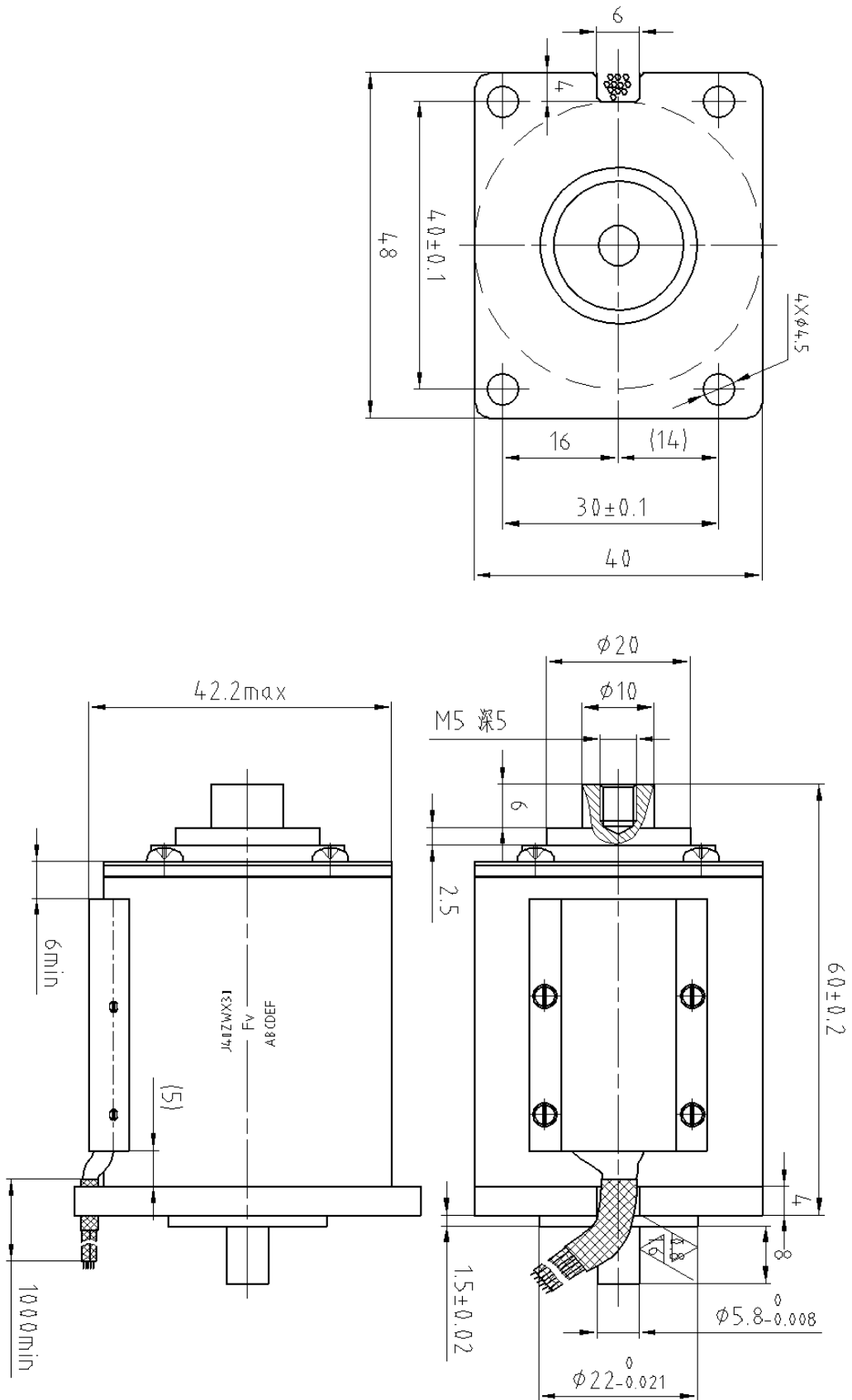




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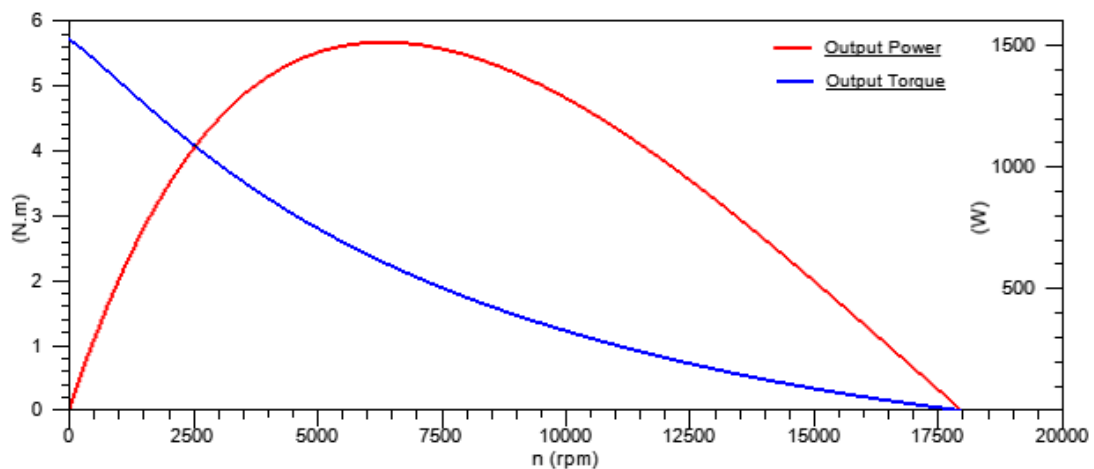
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	25
2 空载转速 (No-Load Speed)	r/min	4900~5200
3 空载电流 (No-Load Current)	A	≤0.3
4 额定转速 (Rated Speed)	r/min	3500~3600
5 额定转矩 (Rated Torque)	Nm	0.125
6 额定电流 (Rated Current)	A	≤2.7
7 相间电阻 (Interphase Resistance)	Ω	1.26
8 相间电感 (Interphase Inductance)	mH	1.12
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.14×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	400
16 极对数 (Number of Poles)		4
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

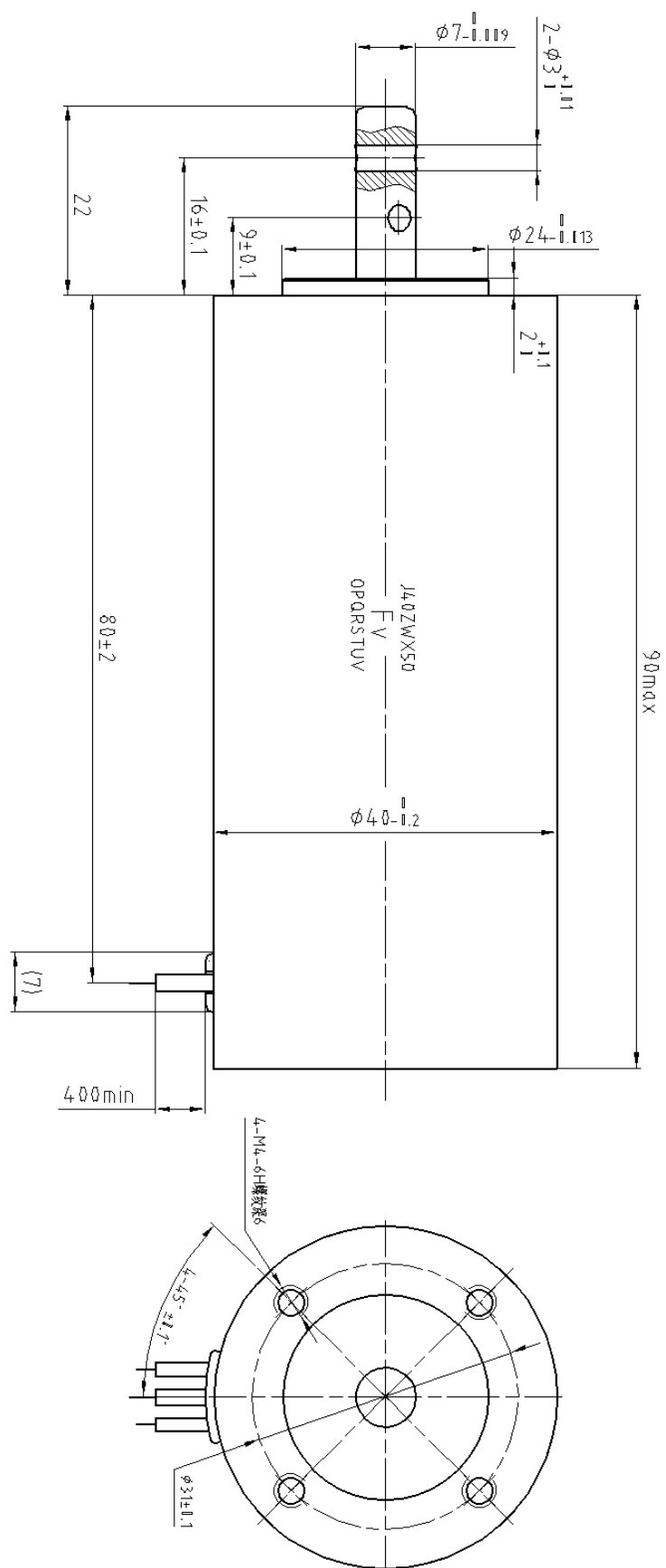




J40ZWX50

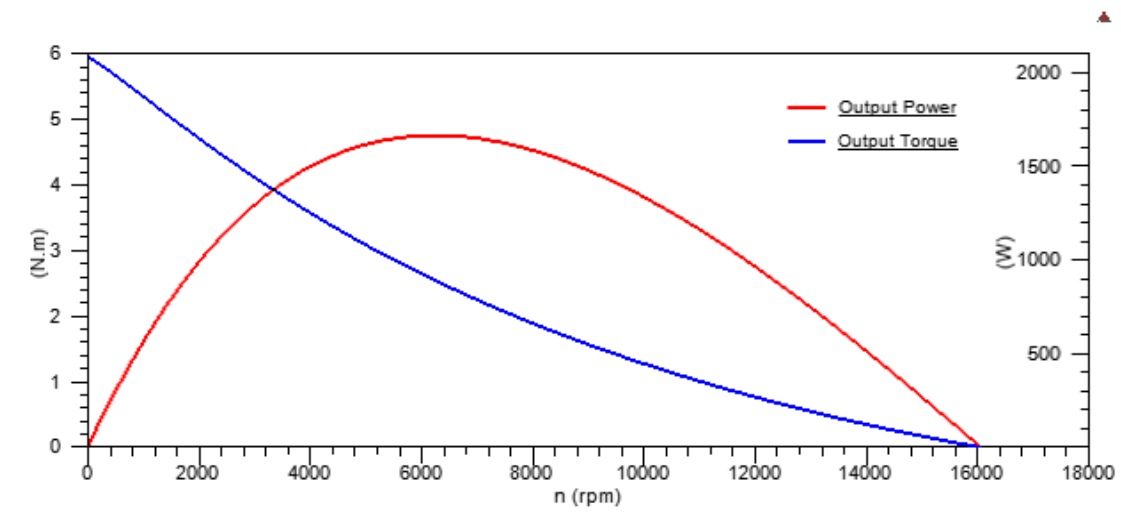
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	70
2 空载转速 (No-Load Speed)	r/min	16000~17500
3 空载电流 (No-Load Current)	A	≤0.9
4 额定转速 (Rated Speed)	r/min	14600~15200
5 额定转矩 (Rated Torque)	Nm	0.2
6 额定电流 (Rated Current)	A	5.1~5.4
7 相间电阻 (Interphase Resistance)	Ω	0.36
8 相间电感 (Interphase Inductance)	mH	0.25
9 机电时间常数 (Electromechanical Time Constant)	ms	≤8
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	4.10×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	600
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

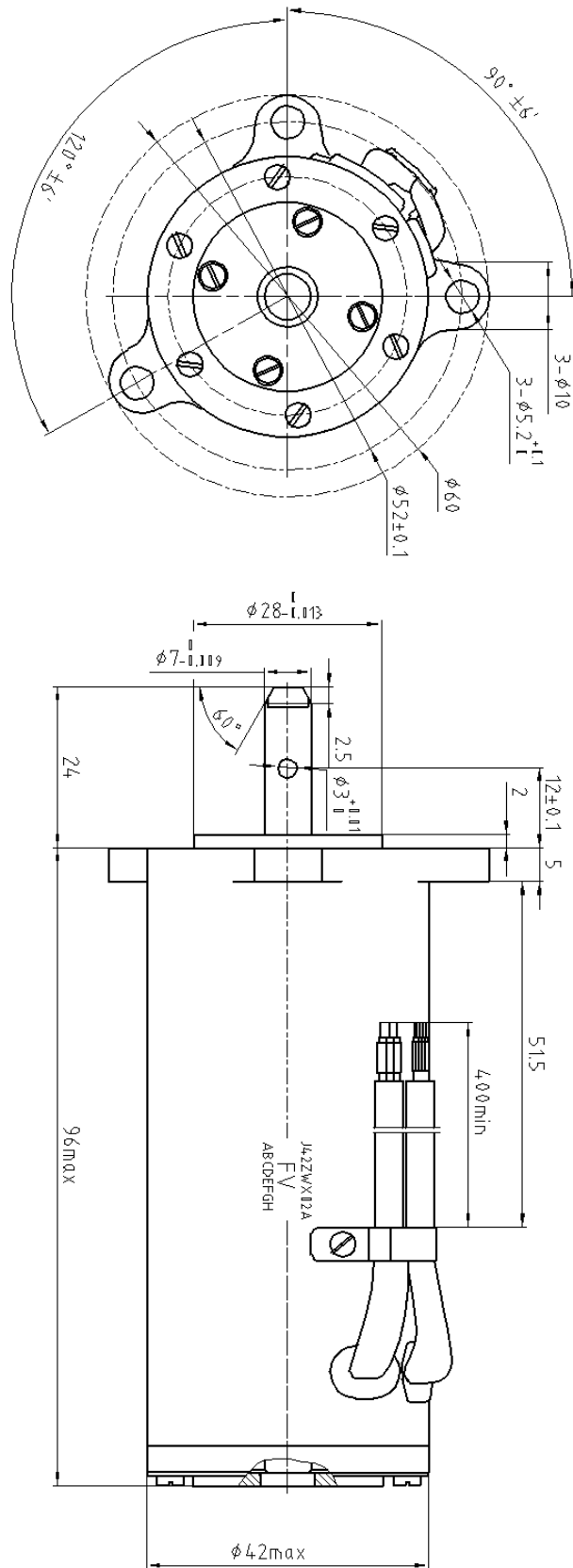




J42ZWX02A

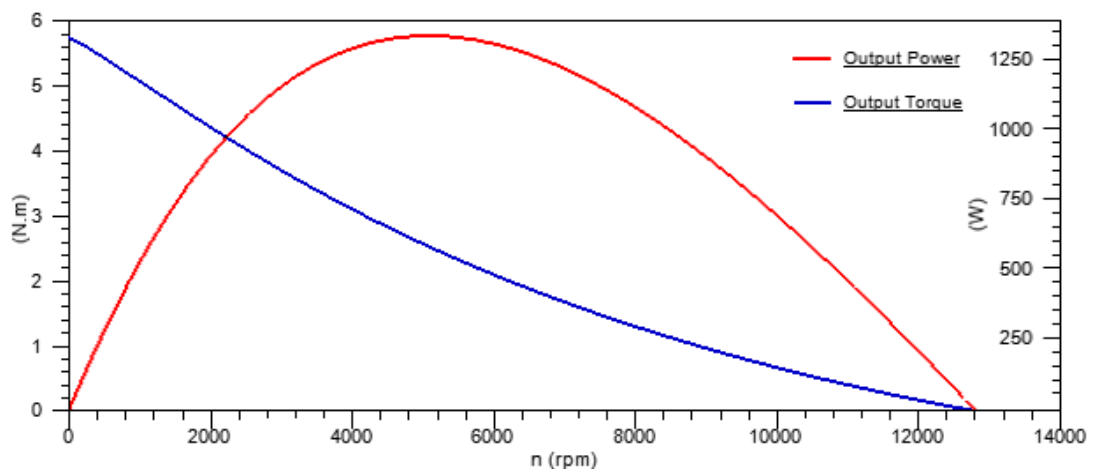
J42ZWX02A		
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	70
2 空载转速 (No-Load Speed)	r/min	16500~17000
3 空载电流 (No-Load Current)	A	≤1
4 额定转速 (Rated Speed)	r/min	14700~15200
5 额定转矩 (Rated Torque)	Nm	0.2
6 额定电流 (Rated Current)	A	5~6
7 相间电阻 (Interphase Resistance)	Ω	0.61
8 相间电感 (Interphase Inductance)	mH	0.16
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	6.51×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	600
16 极对数 (Number of Poles)		4
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

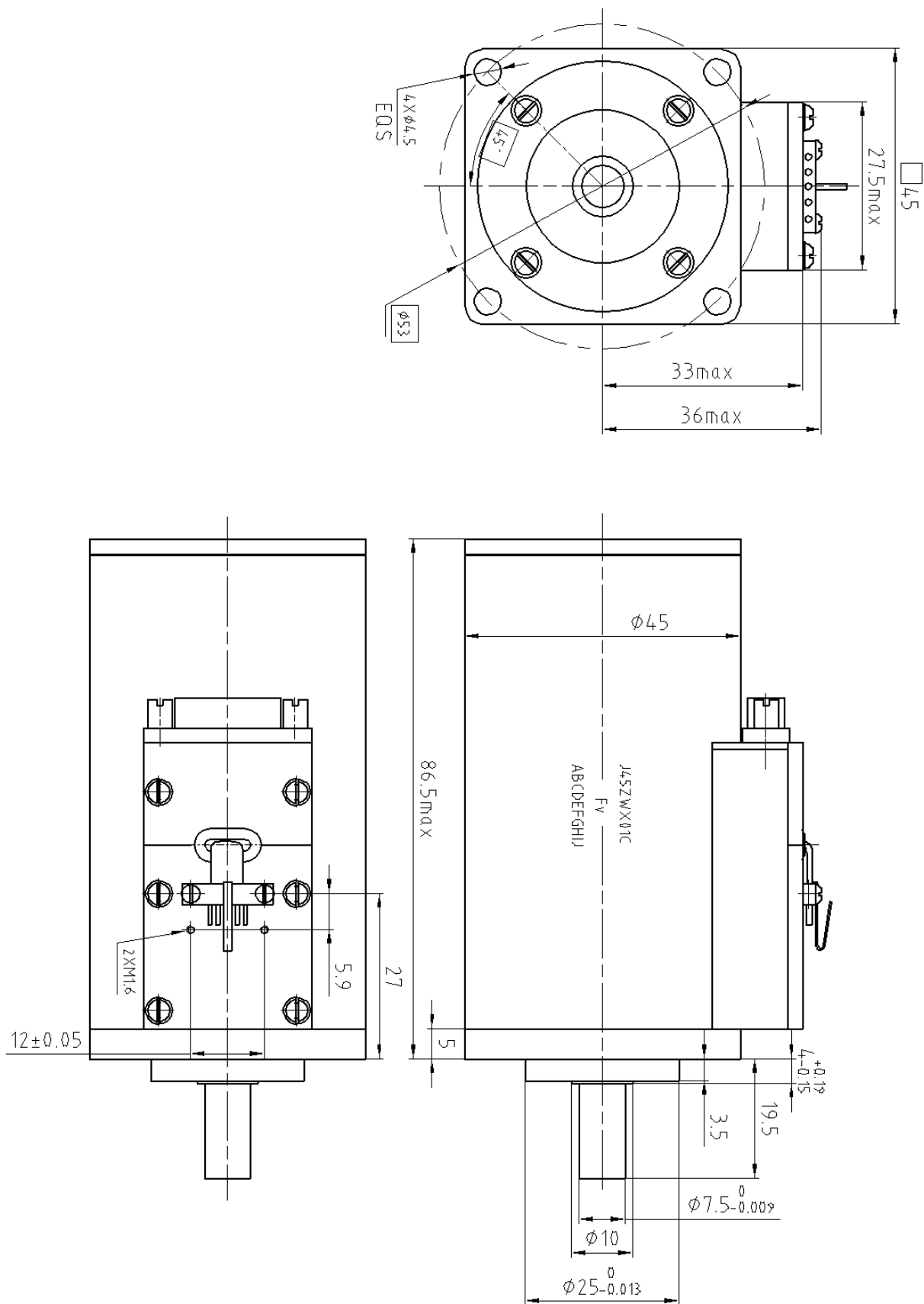




J45ZWX01C

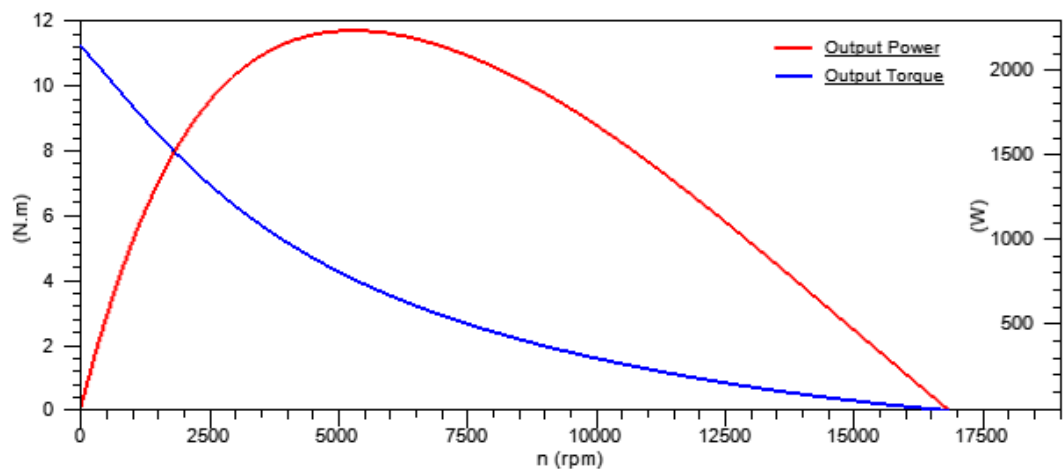
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	27
2 空载转速 (No-Load Speed)	r/min	12000~12600
3 空载电流 (No-Load Current)	A	≤1.3
4 额定转速 (Rated Speed)	r/min	10100~10150
5 额定转矩 (Rated Torque)	Nm	0.35
6 额定电流 (Rated Current)	A	16.8~17.5
7 相间电阻 (Interphase Resistance)	Ω	0.09
8 相间电感 (Interphase Inductance)	mH	0.055
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6.5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	9.9×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	570
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

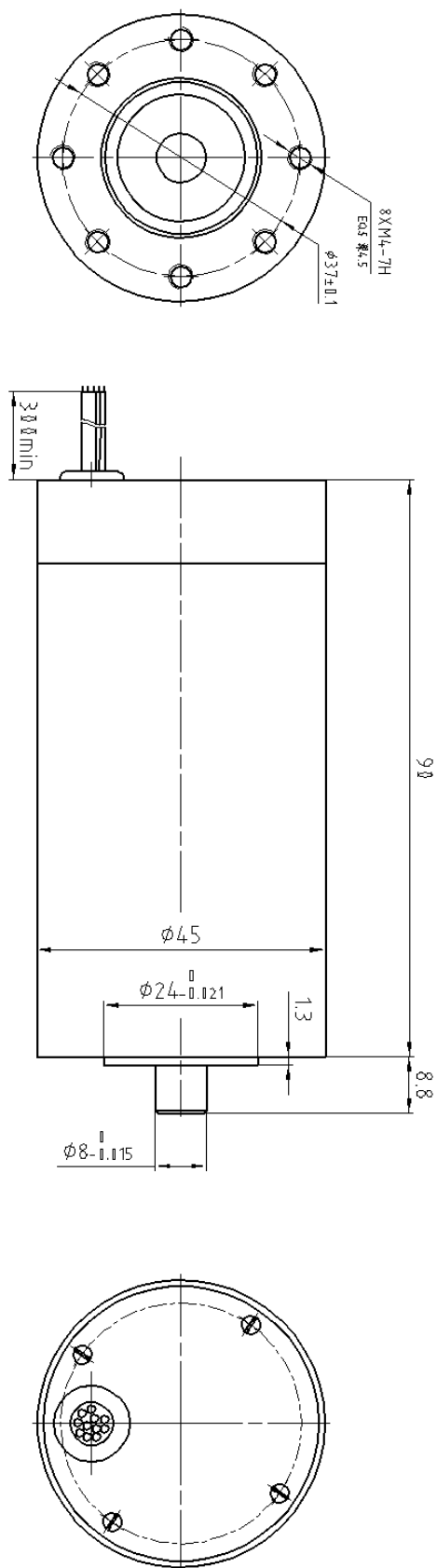




J45ZWX16

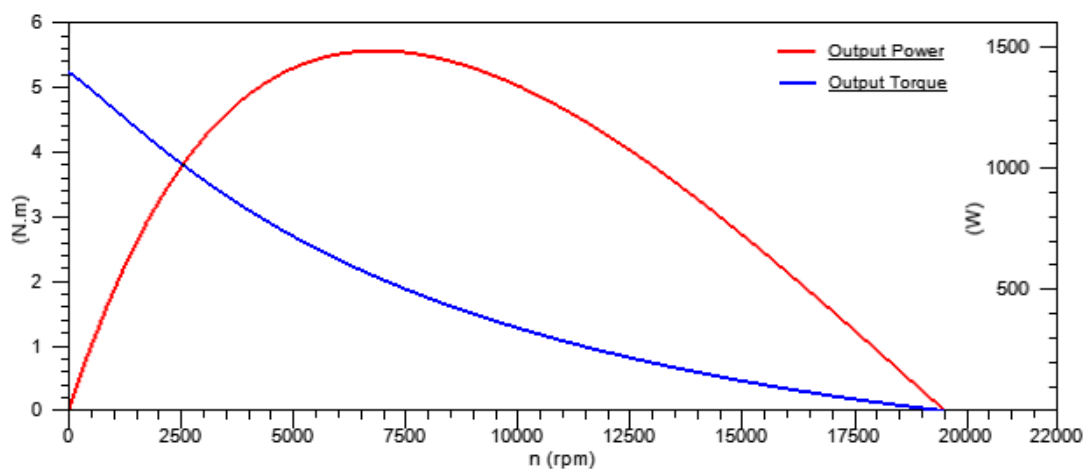
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	16100~16500
3 空载电流 (No-Load Current)	A	≤0.8
4 额定转速 (Rated Speed)	r/min	14000~14500
5 额定转矩 (Rated Torque)	Nm	0.35
6 额定电流 (Rated Current)	A	6.2~7.5
7 相间电阻 (Interphase Resistance)	Ω	0.43
8 相间电感 (Interphase Inductance)	mH	0.4
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	5.10×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	630
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

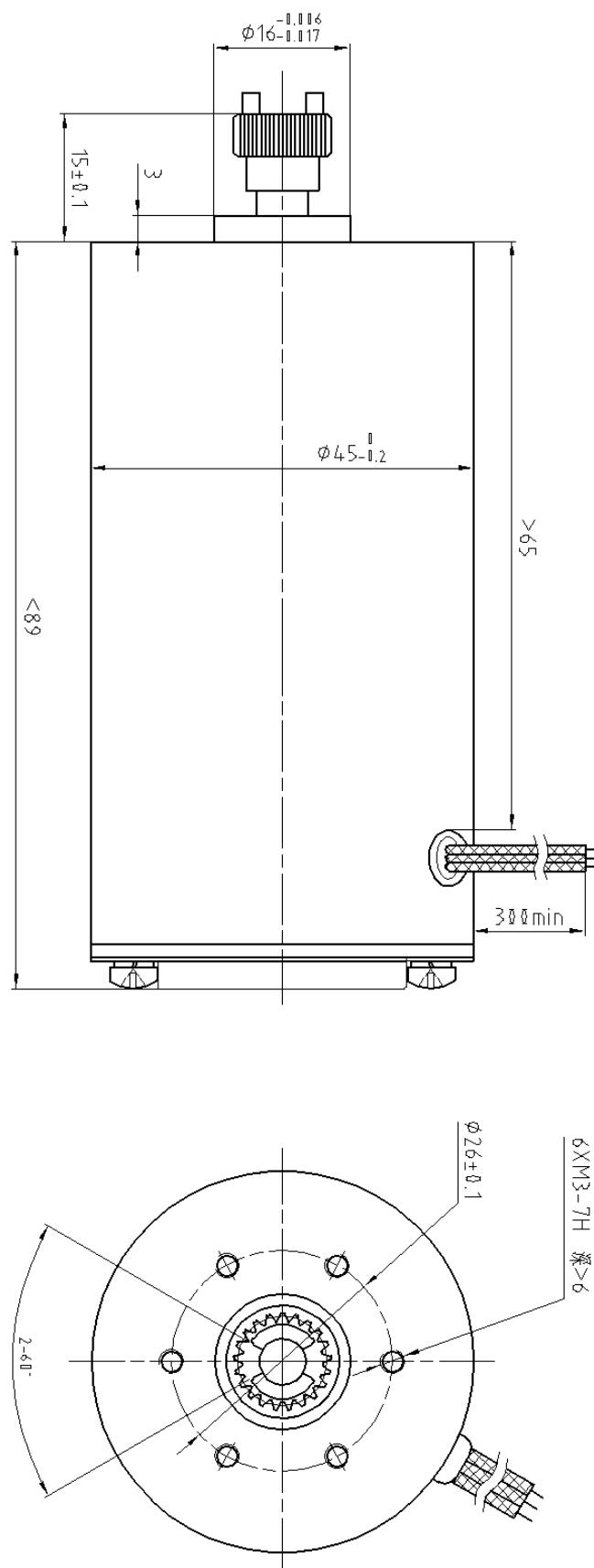




J45ZWX20

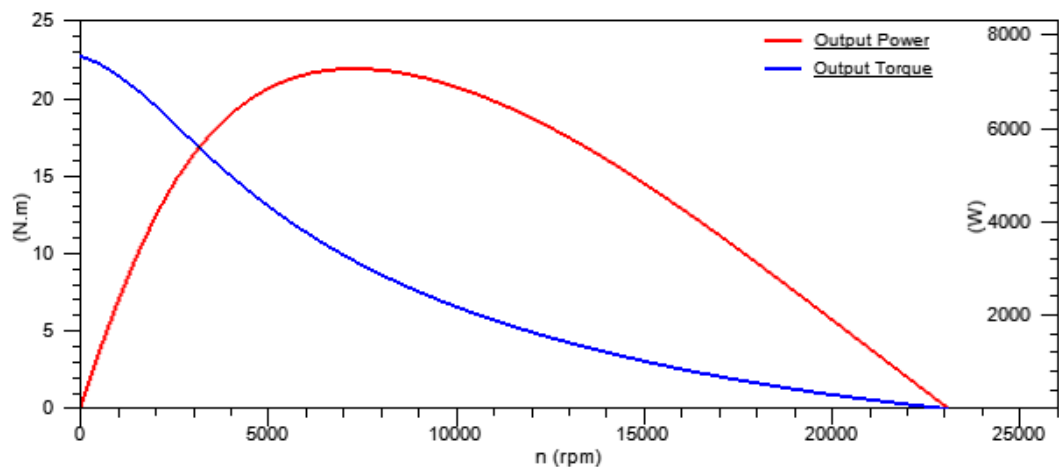
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	56
2 空载转速 (No-Load Speed)	r/min	19500~19900
3 空载电流 (No-Load Current)	A	≤0.6
4 额定转速 (Rated Speed)	r/min	14500~15200
5 额定转矩 (Rated Torque)	Nm	0.5
6 额定电流 (Rated Current)	A	16.2~17
7 相间电阻 (Interphase Resistance)	Ω	0.23
8 相间电感 (Interphase Inductance)	mH	0.24
9 机电时间常数 (Electromechanical Time Constant)	ms	≤4
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	3.50×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.15
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	615
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

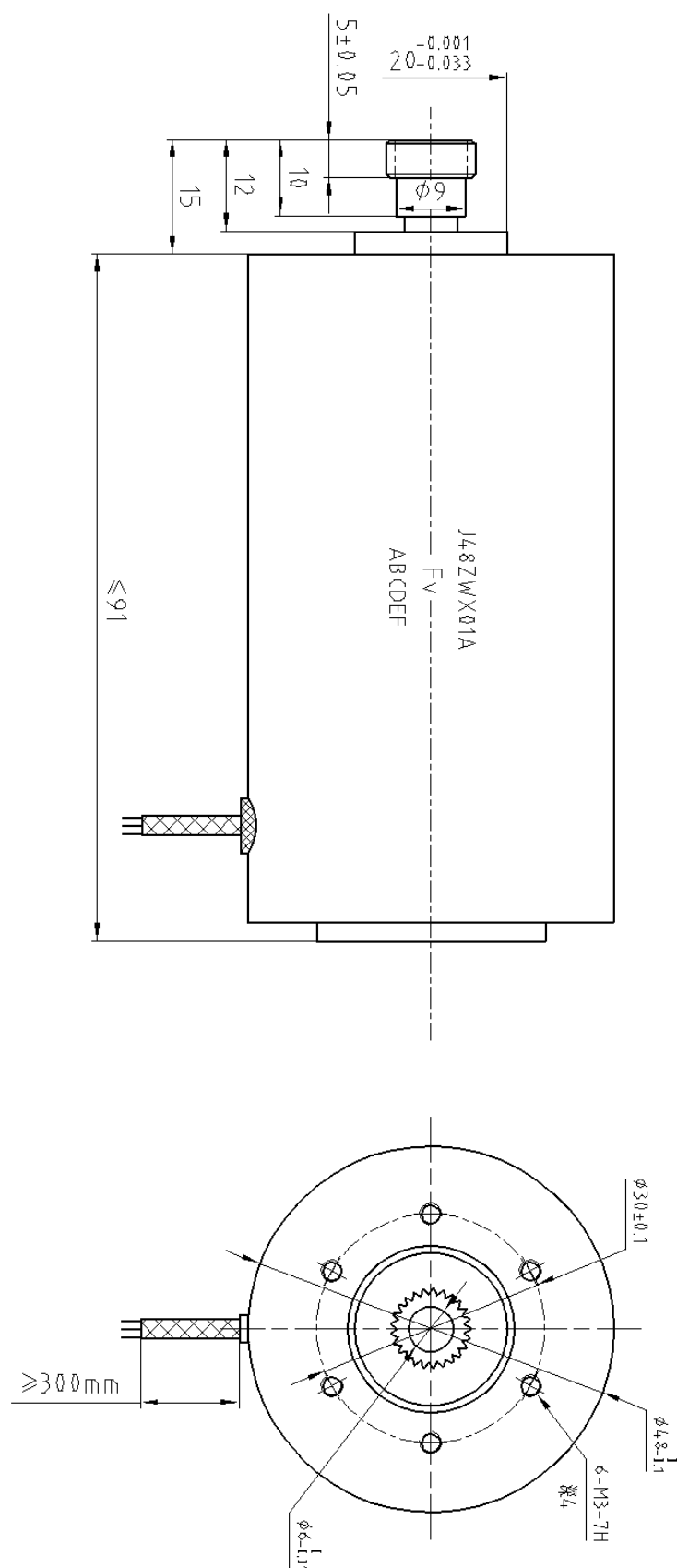




J48ZWX01A

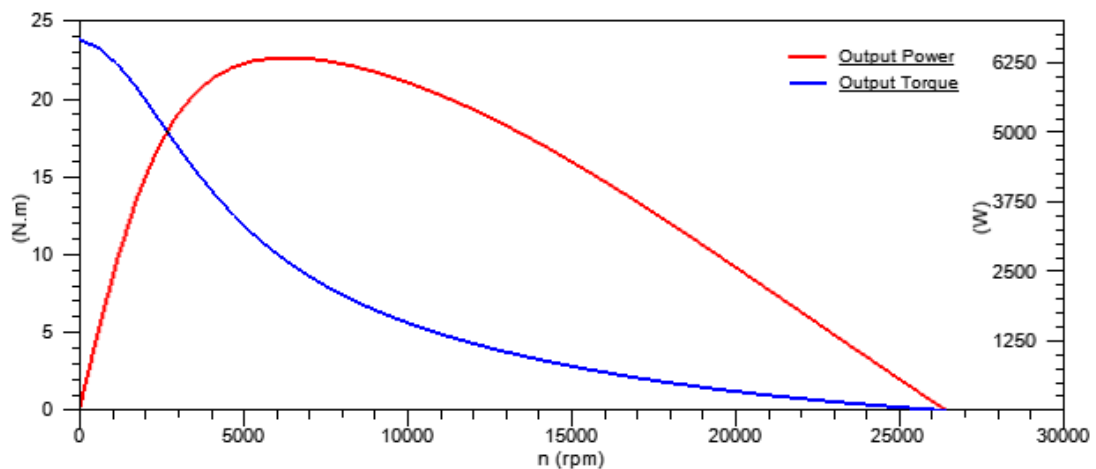
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	56
2 空载转速 (No-Load Speed)	r/min	24300~24700
3 空载电流 (No-Load Current)	A	≤2
4 额定转速 (Rated Speed)	r/min	20600~20800
5 额定转矩 (Rated Torque)	Nm	0.8
6 额定电流 (Rated Current)	A	34.8~35.4
7 相间电阻 (Interphase Resistance)	Ω	0.05
8 相间电感 (Interphase Inductance)	mH	0.04
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.27×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	790
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

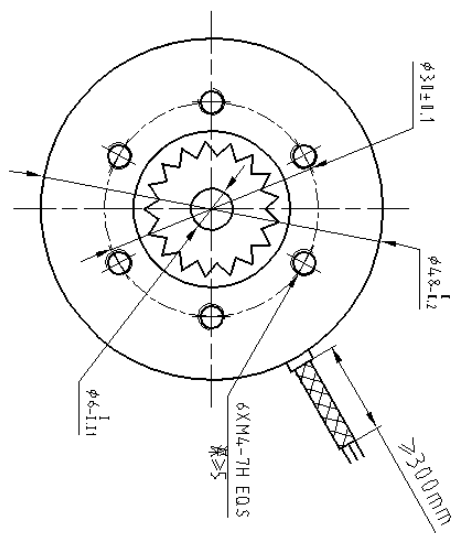
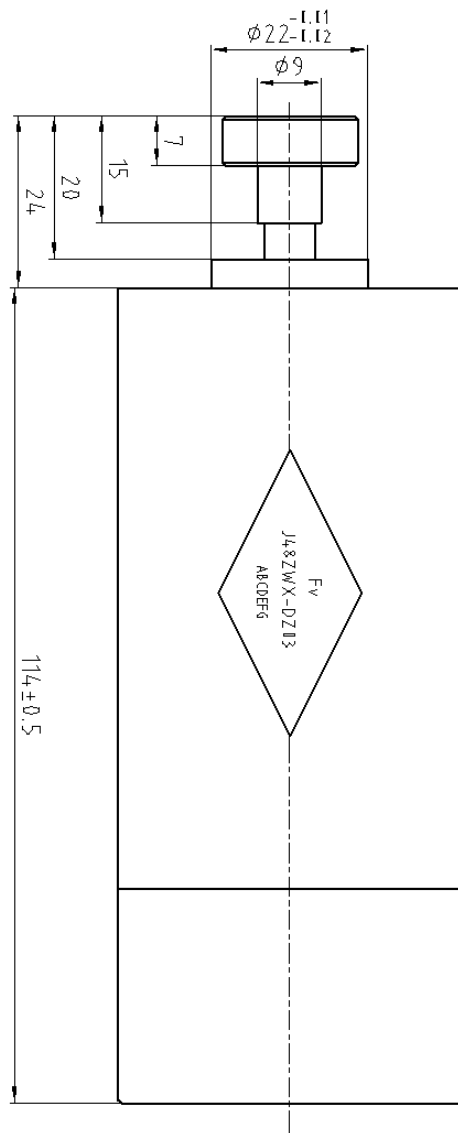




J48ZWX-DZ03

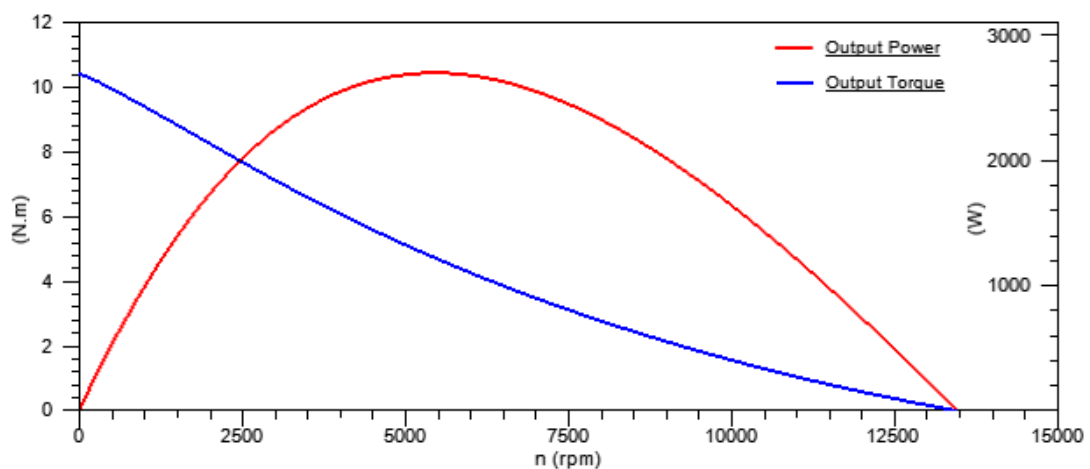
J48ZWX-DZ03		
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	56
2 空载转速 (No-Load Speed)	r/min	24300~24700
3 空载电流 (No-Load Current)	A	≤2
4 额定转速 (Rated Speed)	r/min	20000~20400
5 额定转矩 (Rated Torque)	Nm	1.0
6 额定电流 (Rated Current)	A	43~46
7 相间电阻 (Interphase Resistance)	Ω	0.045
8 相间电感 (Interphase Inductance)	mH	0.036
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.38×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1000
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机+制动器 (Brushless DC Motor and Locking Mechanism)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

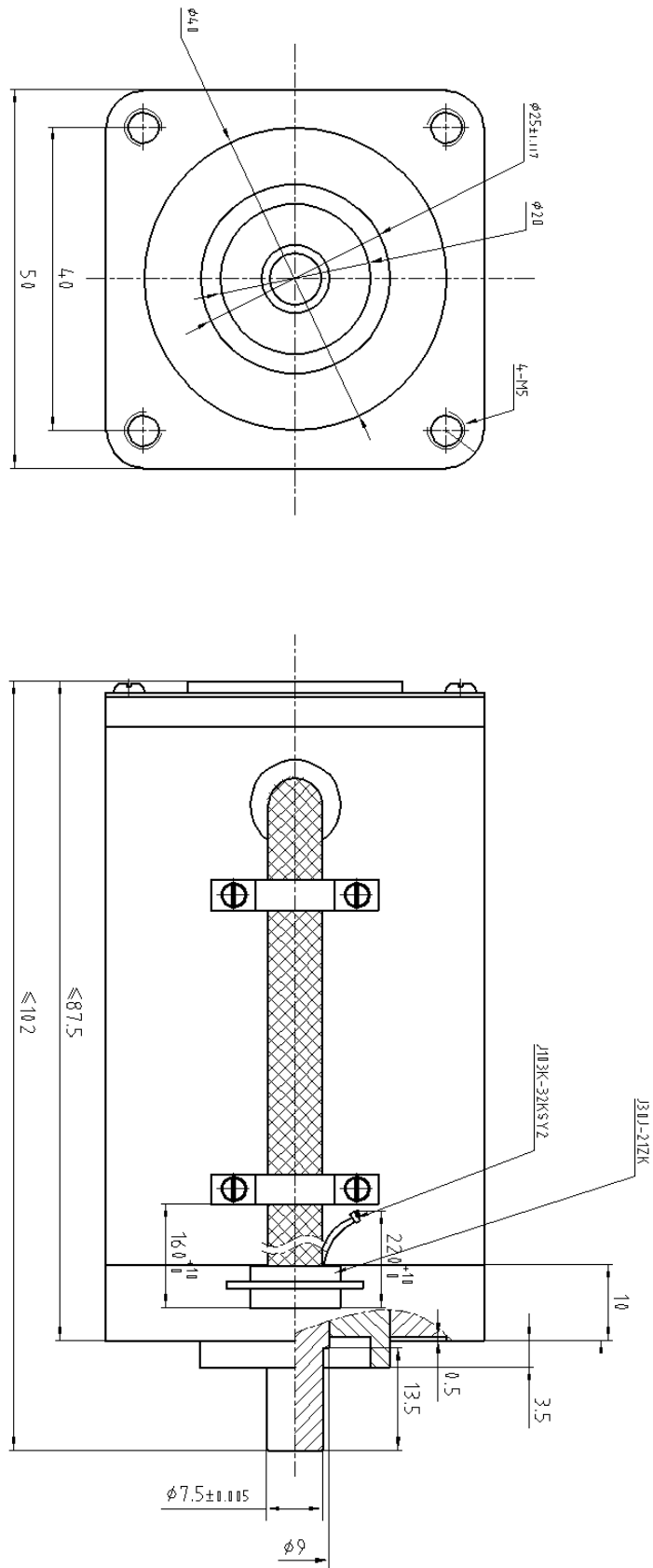




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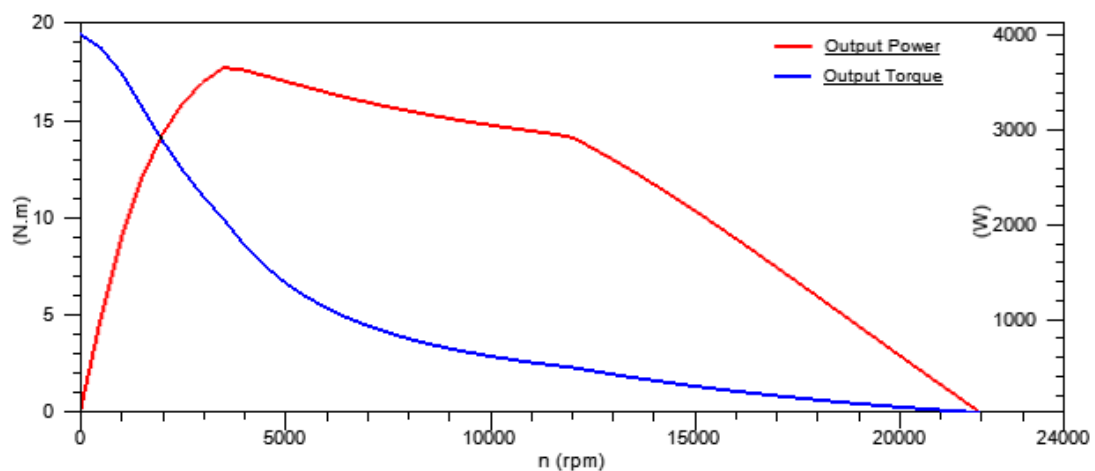
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	50
2 空载转速 (No-Load Speed)	r/min	13700~14000
3 空载电流 (No-Load Current)	A	≤0.8
4 额定转速 (Rated Speed)	r/min	12000~12600
5 额定转矩 (Rated Torque)	Nm	0.4
6 额定电流 (Rated Current)	A	12~12.2
7 相间电阻 (Interphase Resistance)	Ω	0.14
8 相间电感 (Interphase Inductance)	mH	0.074
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.58×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.08
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	709
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

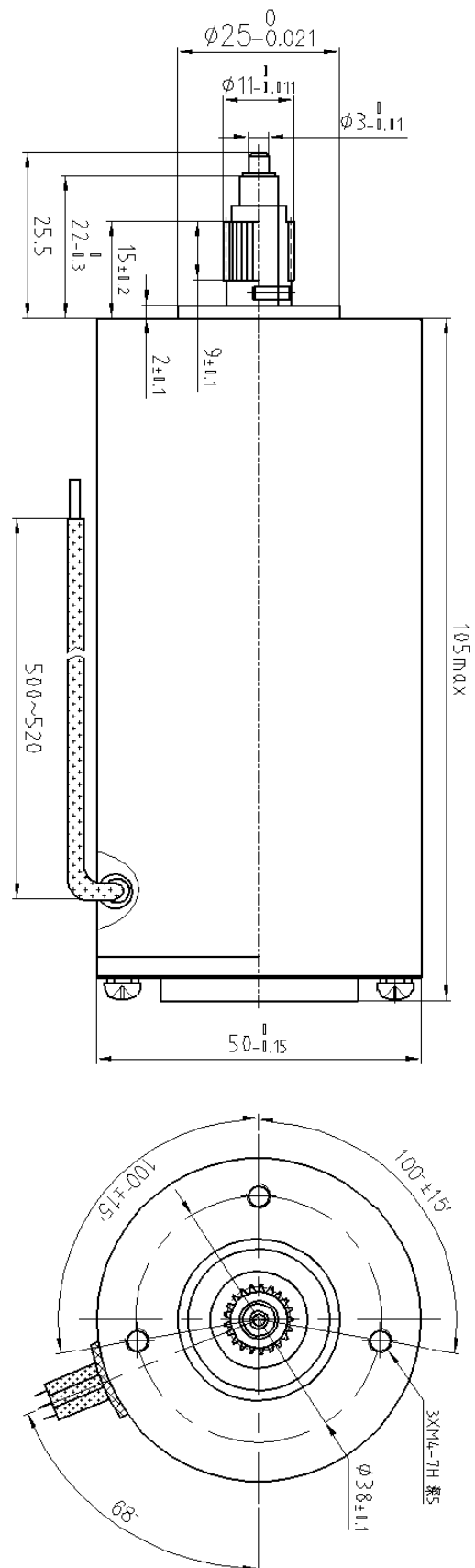




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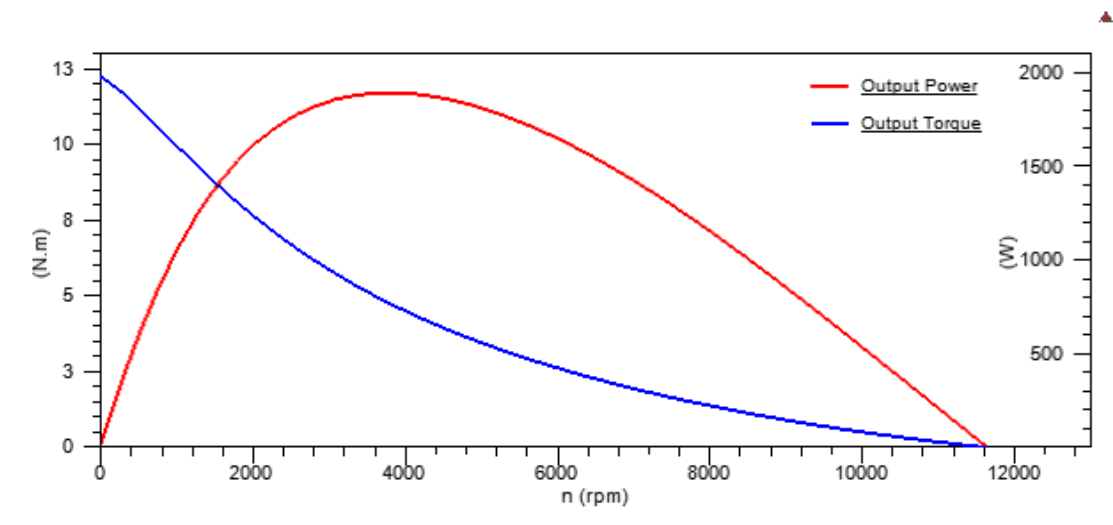
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	20800~21300
3 空载电流 (No-Load Current)	A	≤0.8
4 额定转速 (Rated Speed)	r/min	14800~15500
5 额定转矩 (Rated Torque)	Nm	1.3
6 额定电流 (Rated Current)	A	27.6~28.7
7 相间电阻 (Interphase Resistance)	Ω	0.14
8 相间电感 (Interphase Inductance)	mH	0.242
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	6.16×10 ⁻⁶
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	912
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

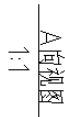




J50ZWX19

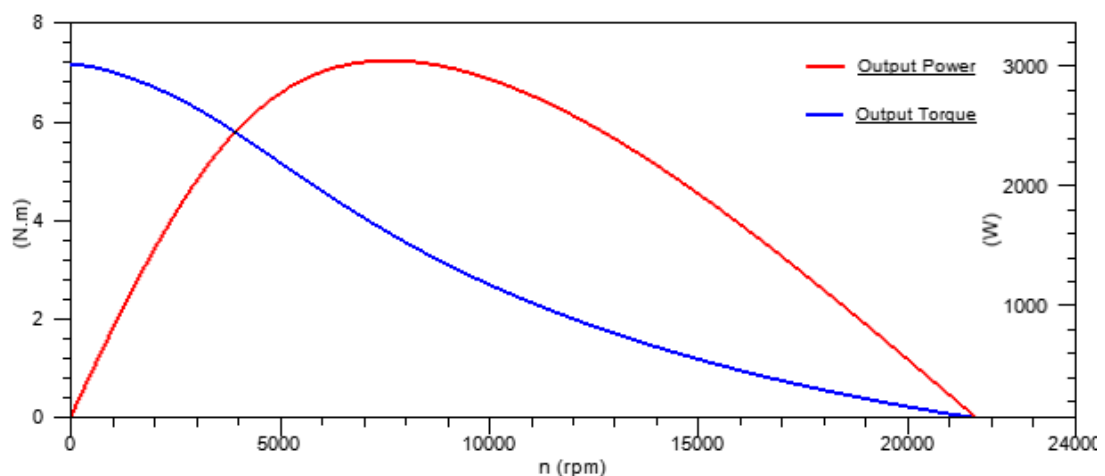
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	270
2 空载转速 (No-Load Speed)	r/min	11000~12000
3 空载电流 (No-Load Current)	A	≤1
4 额定转速 (Rated Speed)	r/min	10300~10800
5 额定转矩 (Rated Torque)	Nm	0.28
6 额定电流 (Rated Current)	A	1.35~1.40
7 相间电阻 (Interphase Resistance)	Ω	3.89
8 相间电感 (Interphase Inductance)	mH	3.88
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.11×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	550
16 极对数 (Number of Poles)		4
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

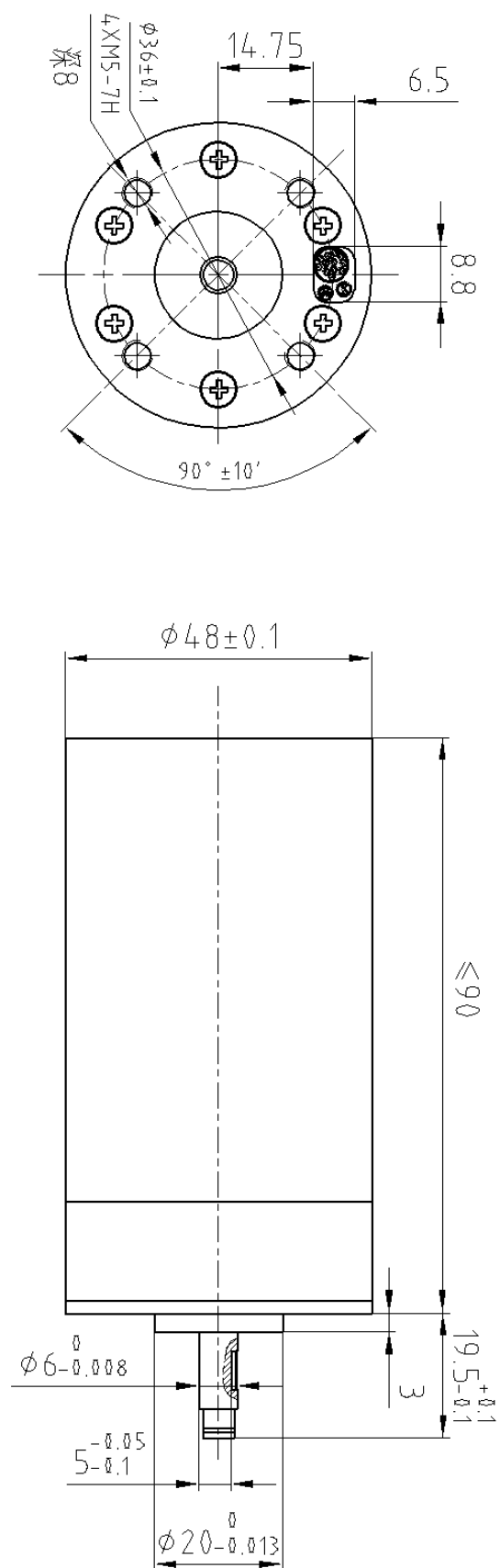




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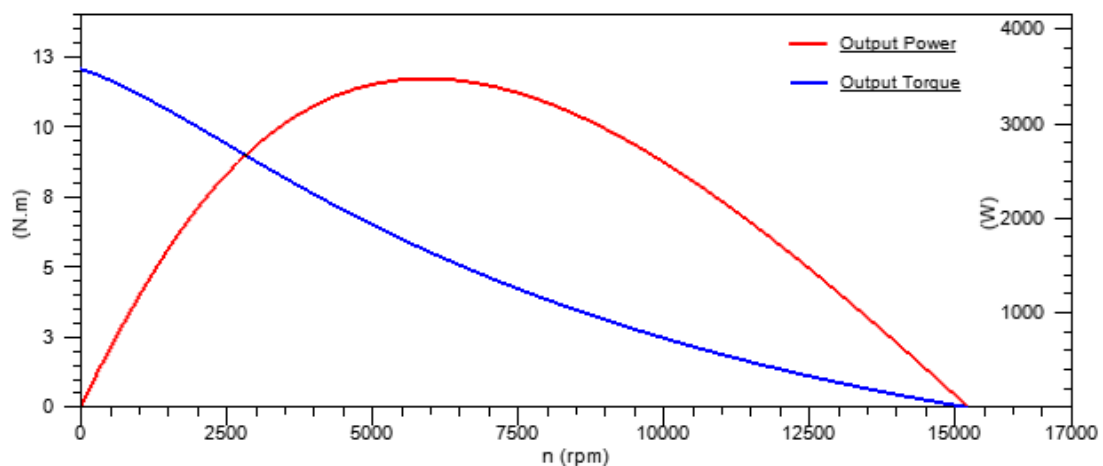
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	56
2 空载转速 (No-Load Speed)	r/min	20800~21200
3 空载电流 (No-Load Current)	A	≤1.5
4 额定转速 (Rated Speed)	r/min	18800~19100
5 额定转矩 (Rated Torque)	Nm	0.4
6 额定电流 (Rated Current)	A	16.7~17.2
7 相间电阻 (Interphase Resistance)	Ω	0.09
8 相间电感 (Interphase Inductance)	mH	0.10
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.01×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	823
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

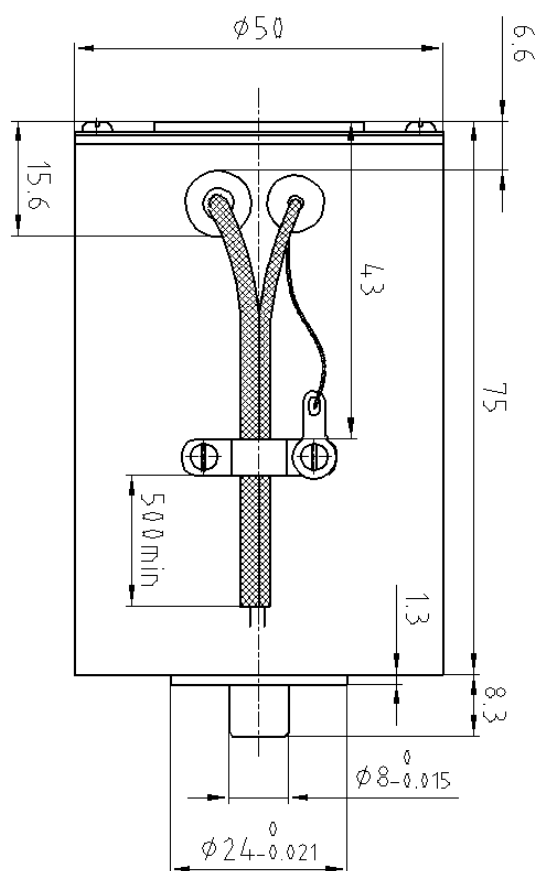
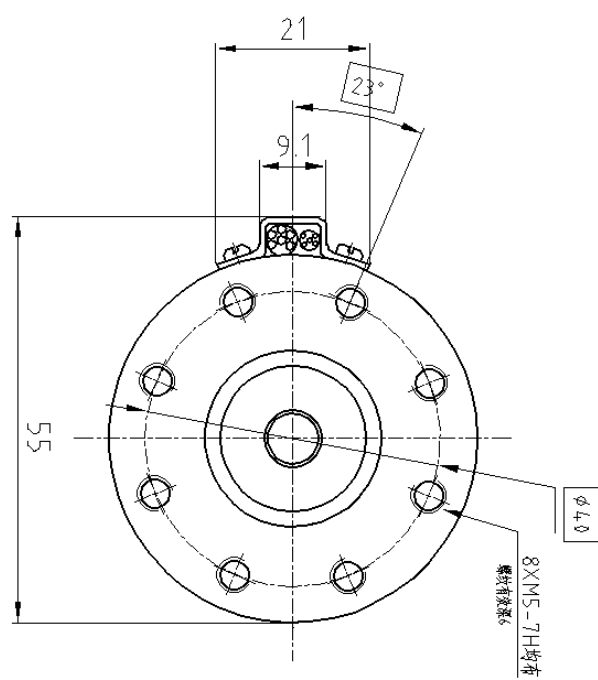




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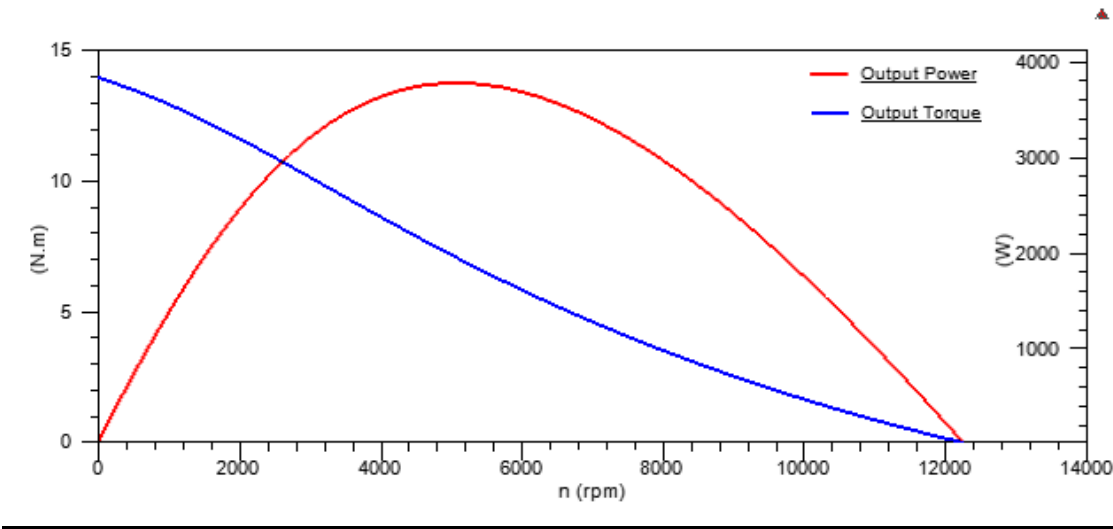
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	85
2 空载转速 (No-Load Speed)	r/min	15000~15200
3 空载电流 (No-Load Current)	A	≤0.5
4 额定转速 (Rated Speed)	r/min	13700~13900
5 额定转矩 (Rated Torque)	Nm	0.5
6 额定电流 (Rated Current)	A	9.4~9.9
7 相间电阻 (Interphase Resistance)	Ω	0.32
8 相间电感 (Interphase Inductance)	mH	0.156
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.43×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	650
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

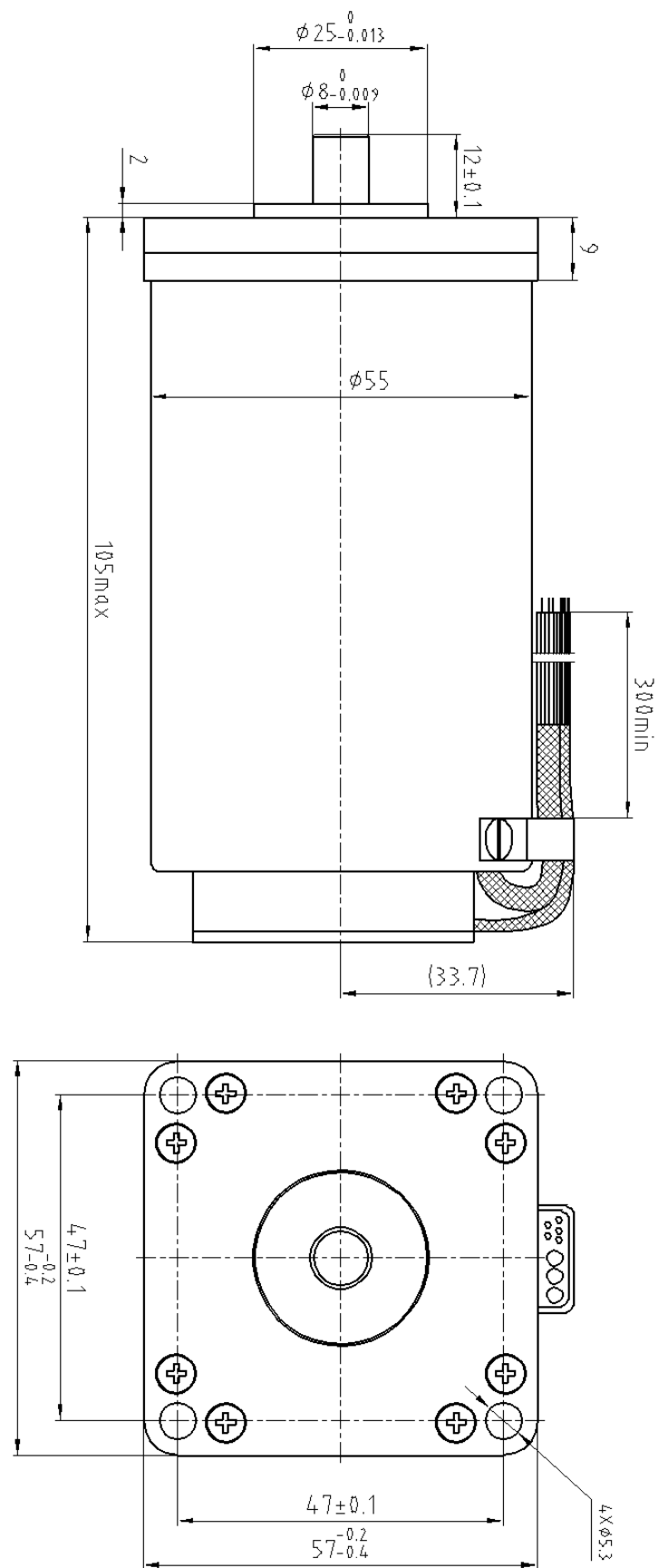




J55ZWX03

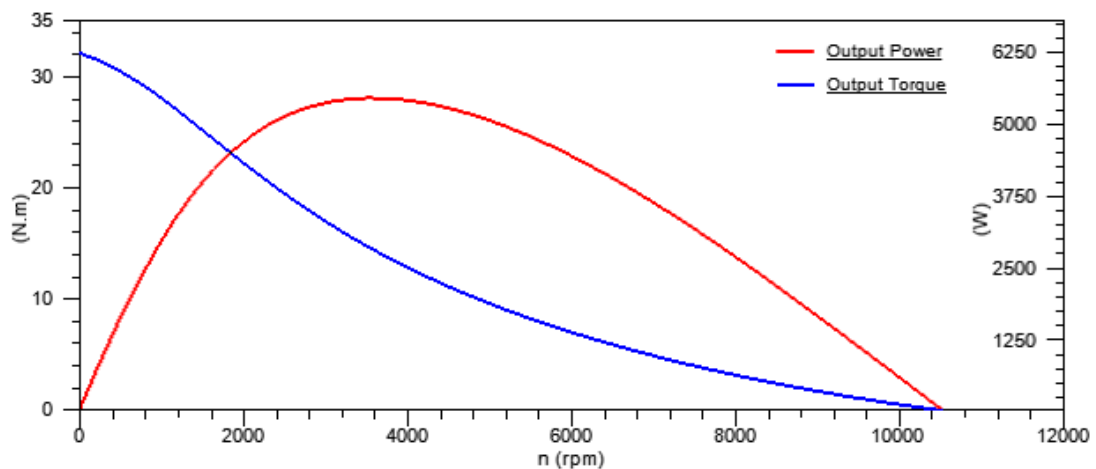
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	95
2 空载转速 (No-Load Speed)	r/min	11000~11500
3 空载电流 (No-Load Current)	A	≤0.6
4 额定转速 (Rated Speed)	r/min	9900~10300
5 额定转矩 (Rated Toeque)	Nm	1
6 额定电流 (Rated Current)	A	10~12
7 相间电阻 (Interphase Resistance)	Ω	0.39
8 相间电感 (Interphase Inductancee)	mH	0.288
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.37×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1240
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

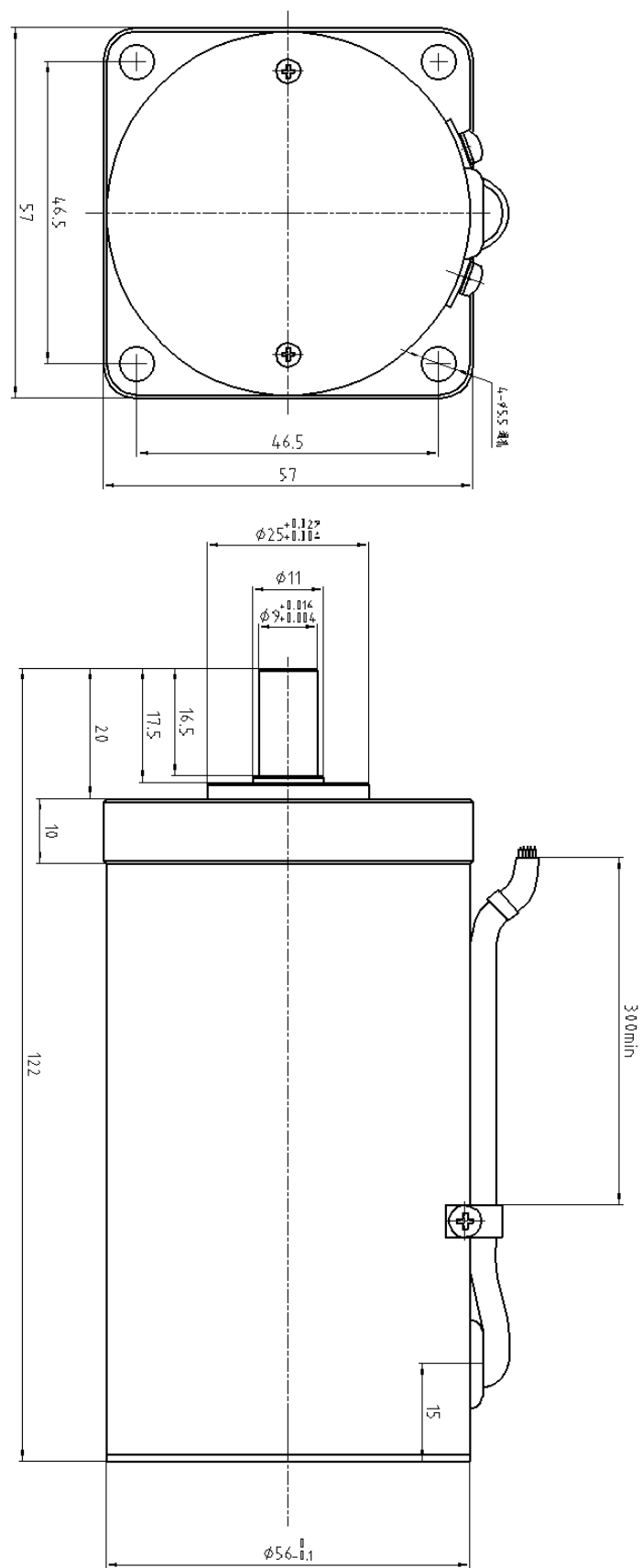




J56ZWX01

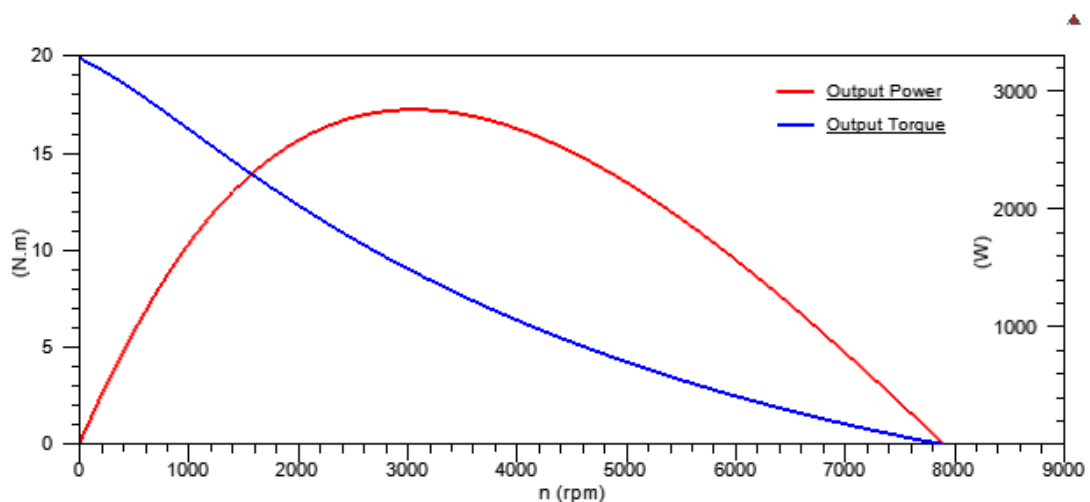
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	85
2 空载转速 (No-Load Speed)	r/min	11500~12000
3 空载电流 (No-Load Current)	A	≤0.8
4 额定转速 (Rated Speed)	r/min	8900~9200
5 额定转矩 (Rated Torque)	Nm	1.6
6 额定电流 (Rated Current)	A	20~21
7 相间电阻 (Interphase Resistance)	Ω	0.15
8 相间电感 (Interphase Inductance)	mH	0.35
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	3.89×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1510
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		





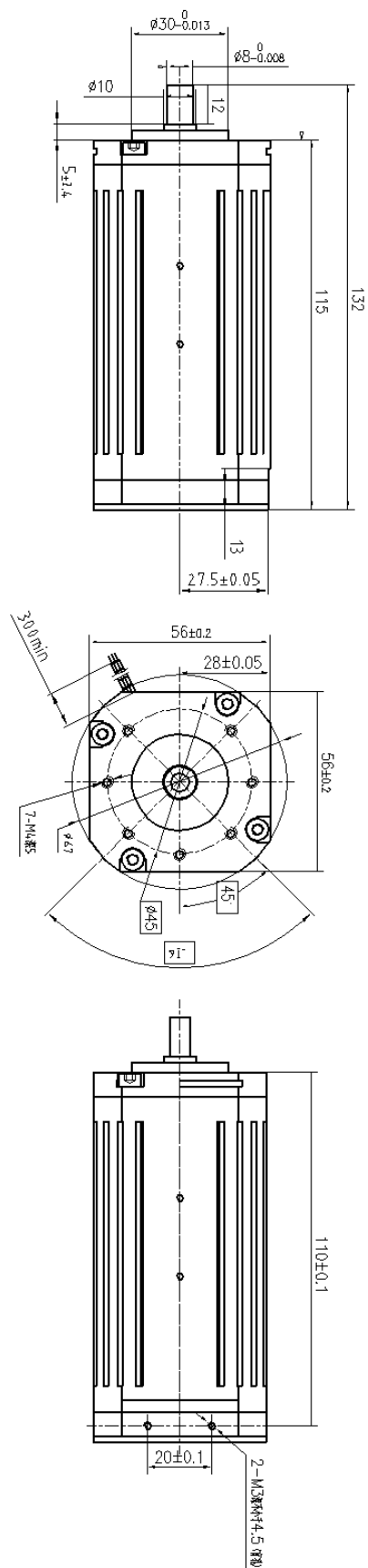
J56ZWX02

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	57
2 空载转速 (No-Load Speed)	r/min	8000~8500
3 空载电流 (No-Load Current)	A	≤1
4 额定转速 (Rated Speed)	r/min	6500~6800
5 额定转矩 (Rated Torque)	Nm	1.5
6 额定电流 (Rated Current)	A	20.2~21.6
7 相间电阻 (Interphase Resistance)	Ω	0.15
8 相间电感 (Interphase Inductance)	mH	0.24
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	4.26×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.15
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1360
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		



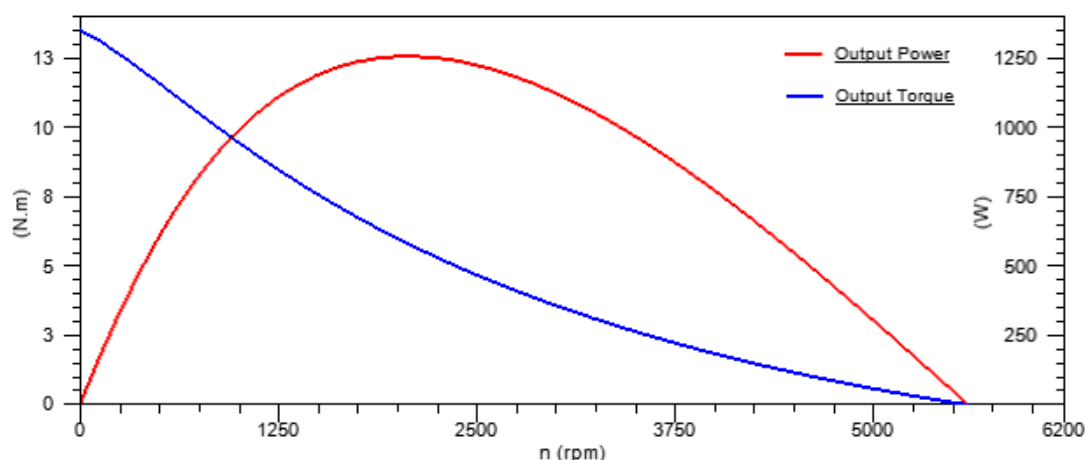
无刷电动机产品手册

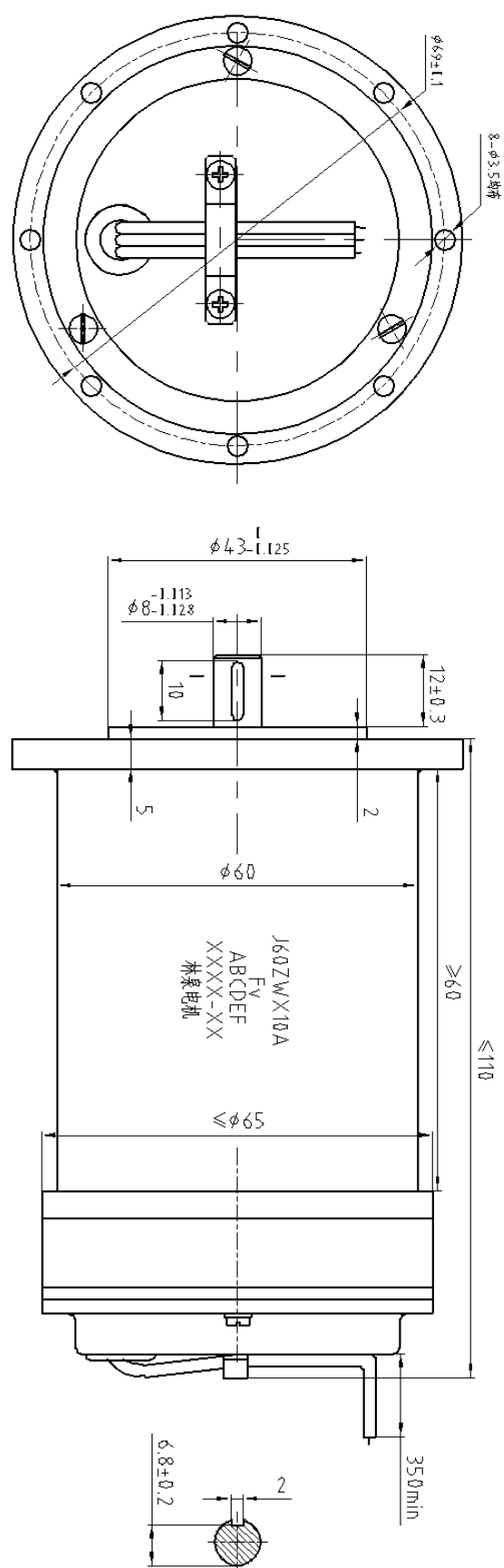
Brushless DC Motor Product Manual



J60ZWX10A

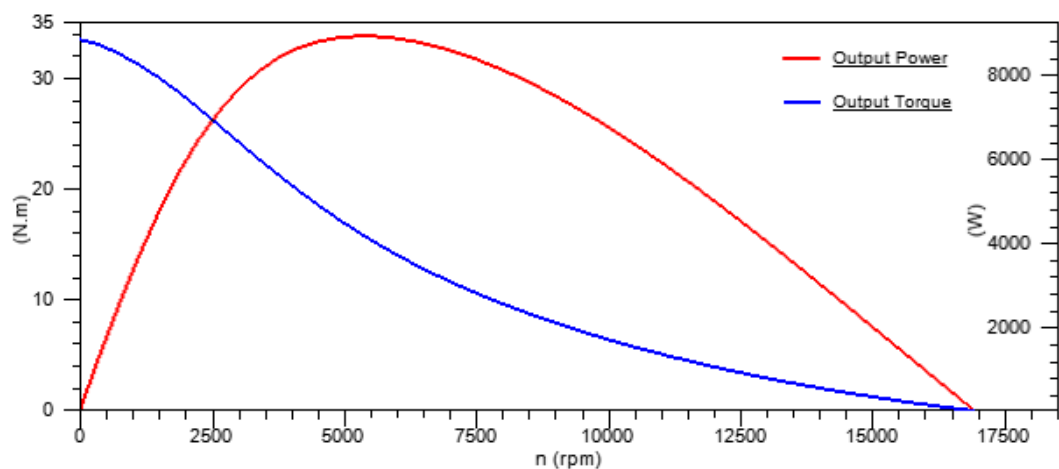
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	28.5
2 空载转速 (No-Load Speed)	r/min	6000~6400
3 空载电流 (No-Load Current)	A	≤4
4 额定转速 (Rated Speed)	r/min	4700~5100
5 额定转矩 (Rated Torque)	Nm	0.77
6 额定电流 (Rated Current)	A	15.5~18
7 相间电阻 (Interphase Resistance)	Ω	0.09
8 相间电感 (Interphase Inductance)	mH	0.0766
9 机电时间常数 (Electromechanical Time Constant)	ms	≤20
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.79×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1260
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

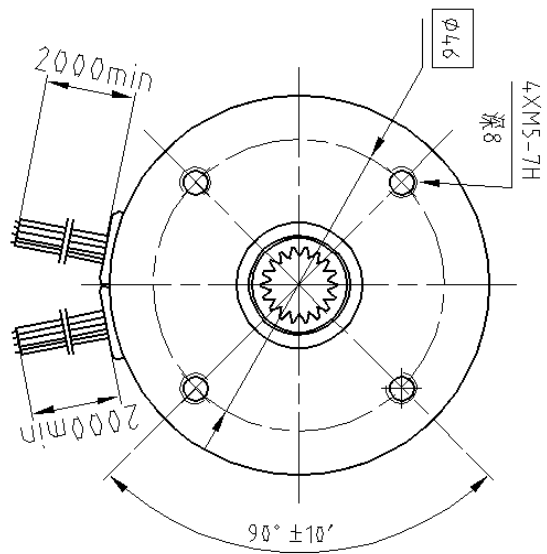
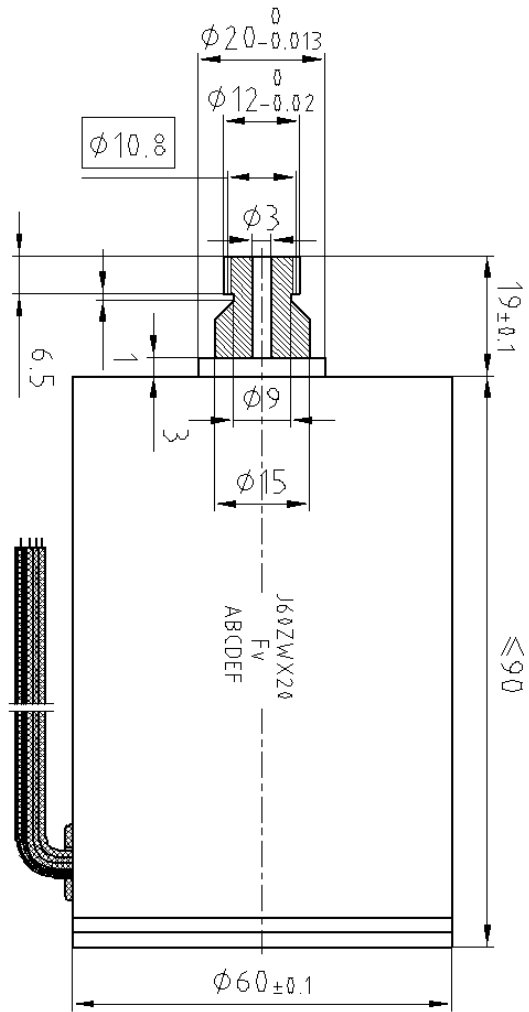




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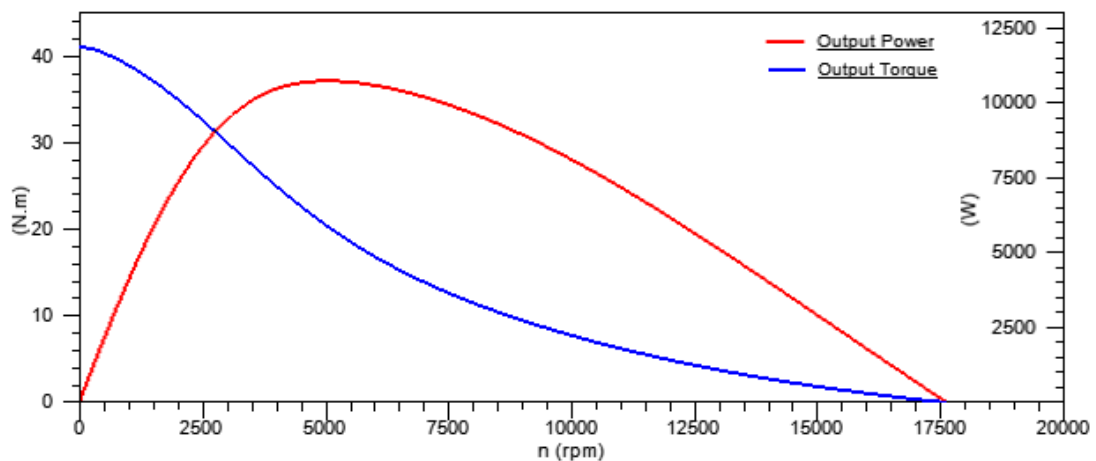
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	150
2 空载转速 (No-Load Speed)	r/min	16800~17000
3 空载电流 (No-Load Current)	A	≤1.2
4 额定转速 (Rated Speed)	r/min	15000~15300
5 额定转矩 (Rated Torque)	Nm	1.1
6 额定电流 (Rated Current)	A	12.5~13.5
7 相间电阻 (Interphase Resistance)	Ω	0.30
8 相间电感 (Interphase Inductance)	mH	0.286
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	3.17×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1430
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

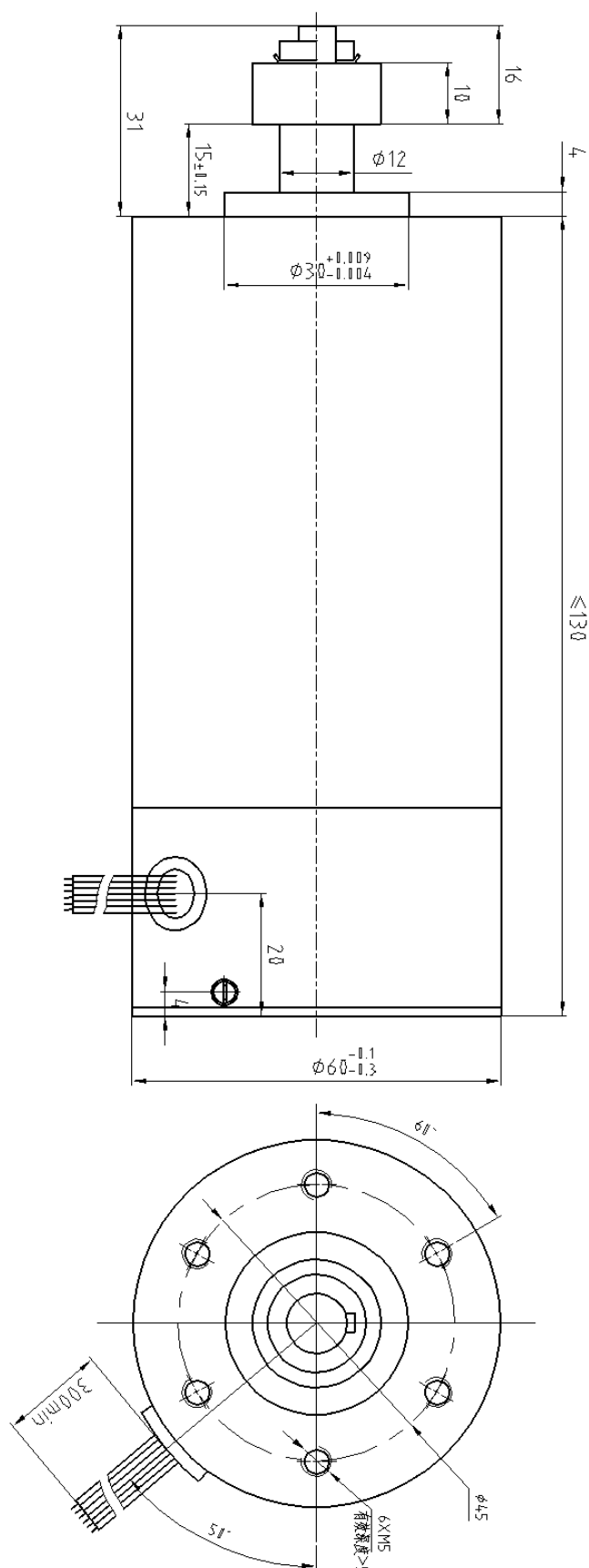




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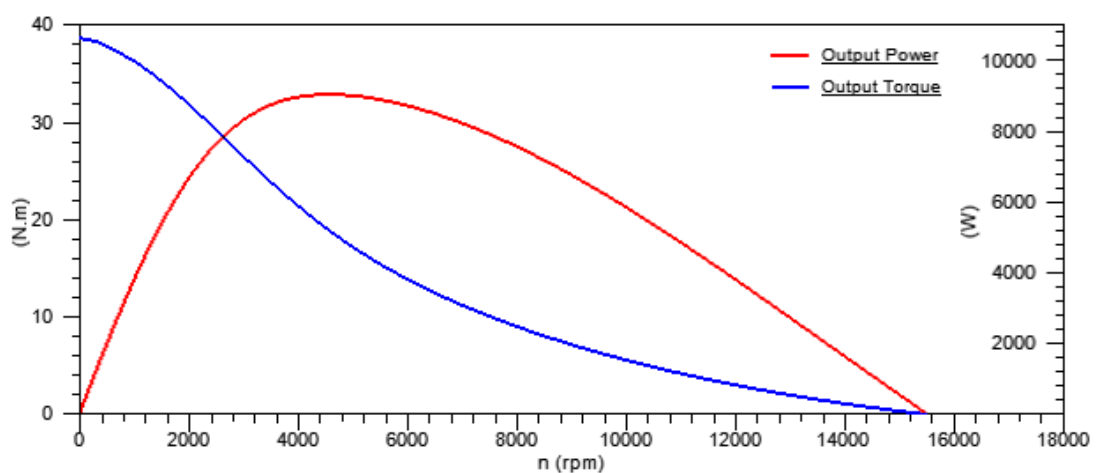
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	90
2 空载转速 (No-Load Speed)	r/min	17800~18100
3 空载电流 (No-Load Current)	A	≤1.5
4 额定转速 (Rated Speed)	r/min	14700~15000
5 额定转矩 (Rated Torque)	Nm	1.55
6 额定电流 (Rated Current)	A	29.0~33.2
7 相间电阻 (Interphase Resistance)	Ω	0.09
8 相间电感 (Interphase Inductance)	mH	0.15
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.6×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1520
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor) + 制动器		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

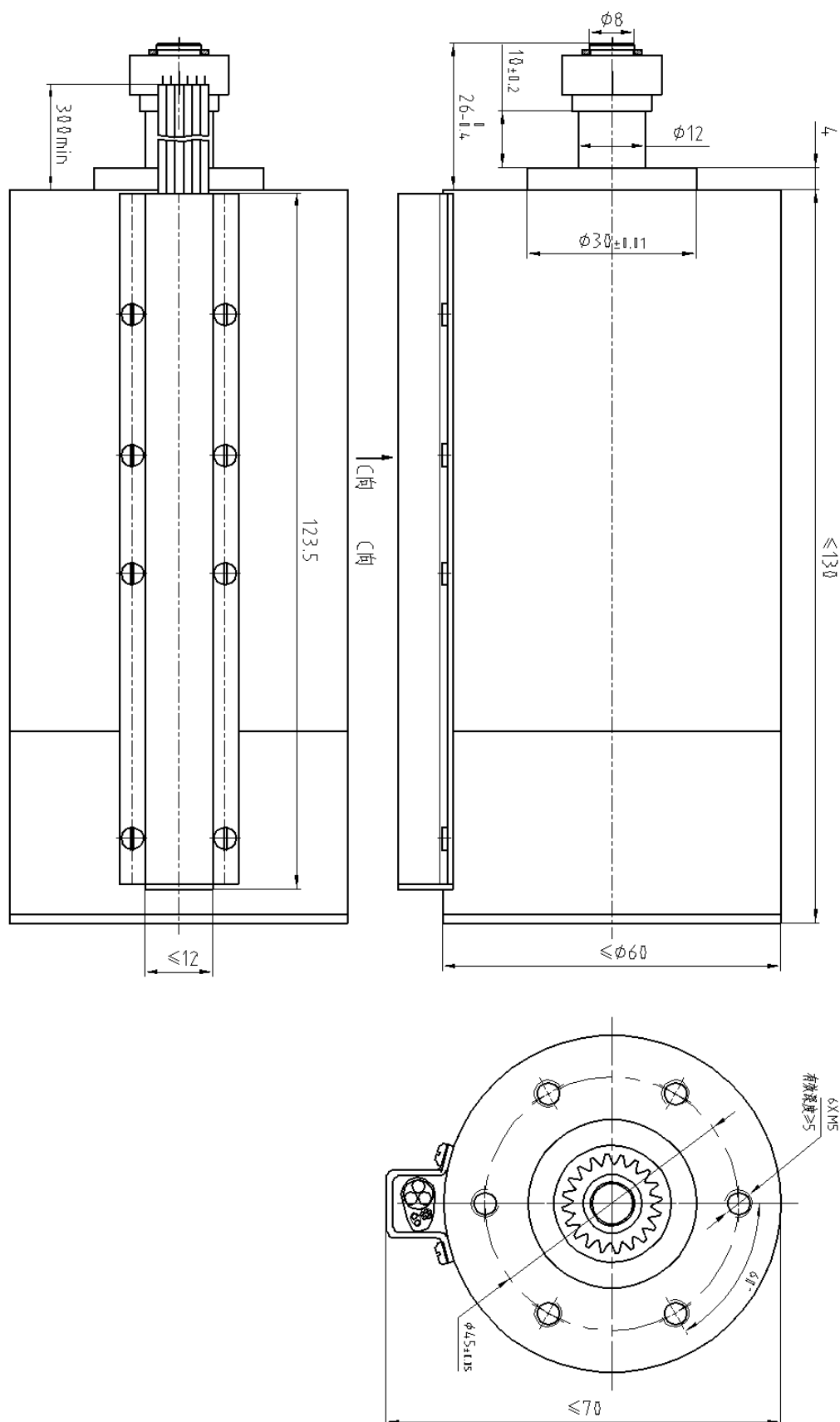




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电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	160
2 空载转速 (No-Load Speed)	r/min	15800~16100
3 空载电流 (No-Load Current)	A	≤1
4 额定转速 (Rated Speed)	r/min	13100~13500
5 额定转矩 (Rated Torque)	Nm	1.5
6 额定电流 (Rated Current)	A	14.5~15.8
7 相间电阻 (Interphase Resistance)	Ω	0.32
8 相间电感 (Interphase Inductance)	mH	0.6
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.6×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1490
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor) + 制动器		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		





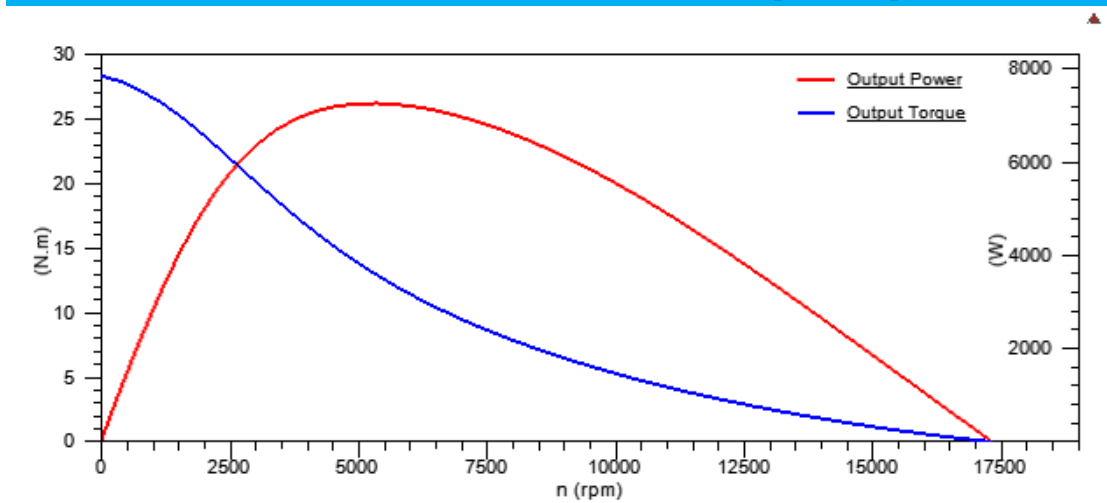
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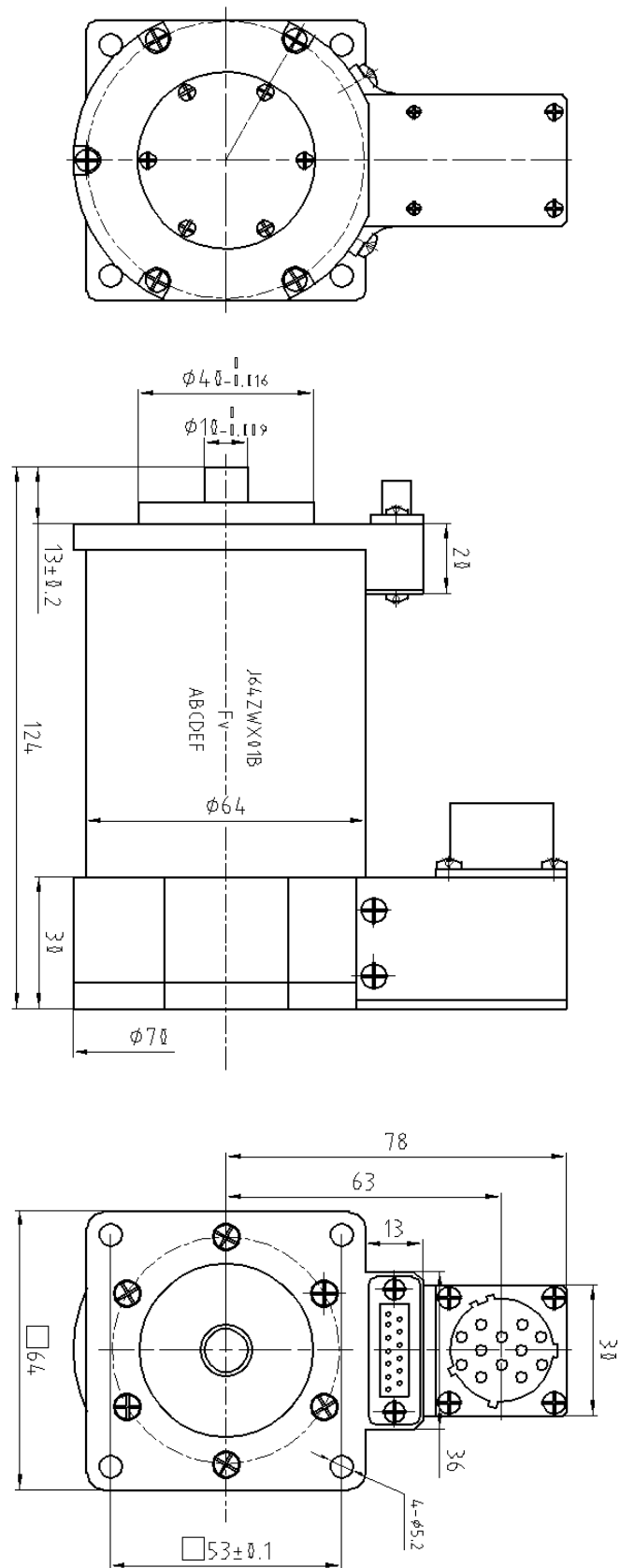
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	160
2 空载转速 (No-Load Speed)	r/min	16300~16900
3 空载电流 (No-Load Current)	A	≤1.3
4 额定转速 (Rated Speed)	r/min	14700~15400
5 额定转矩 (Rated Torque)	Nm	0.8
6 额定电流 (Rated Current)	A	8.5~9.8
7 相间电阻 (Interphase Resistance)	Ω	0.35
8 相间电感 (Interphase Inductance)	mH	0.8
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.5×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	180
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.05
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1500
16 极对数 (Number of Poles)		3

产品组成 (Product Composition)

无刷直流电动机 (Brushless DC Motor)

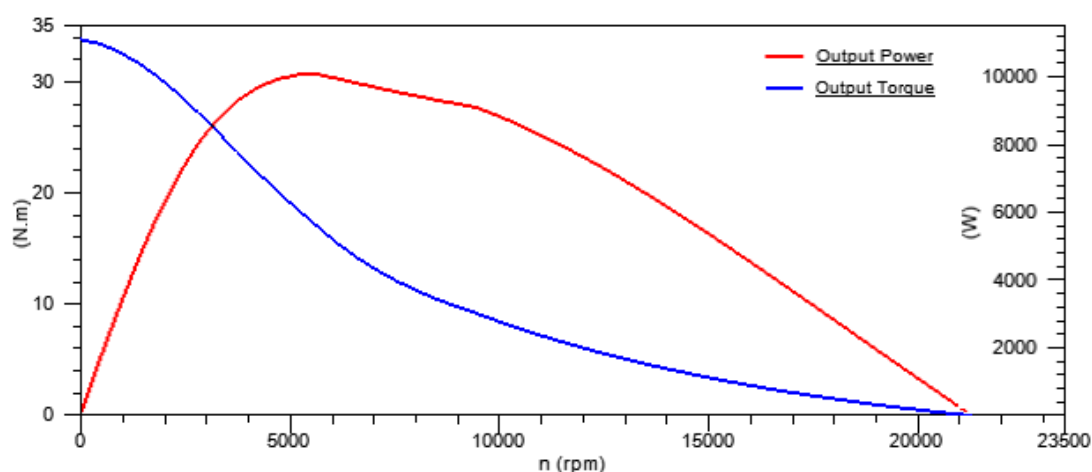
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)

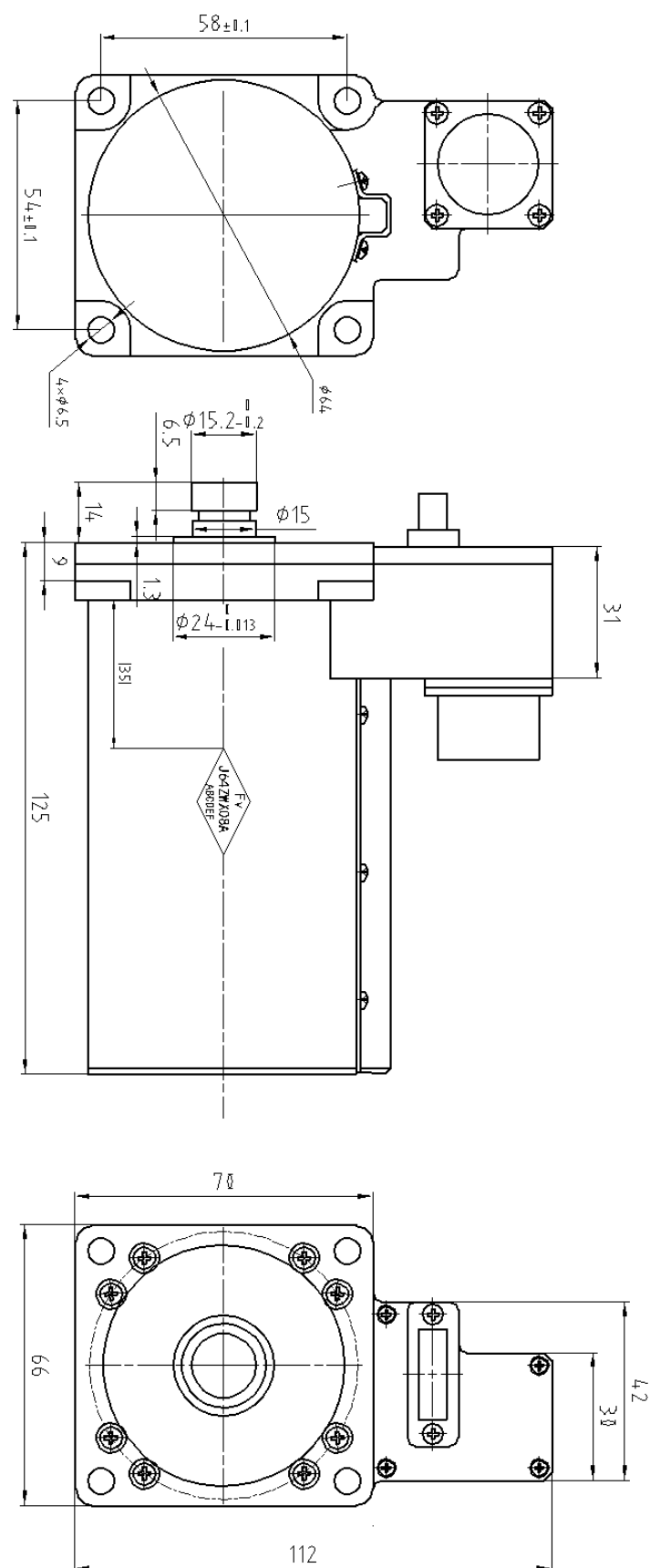




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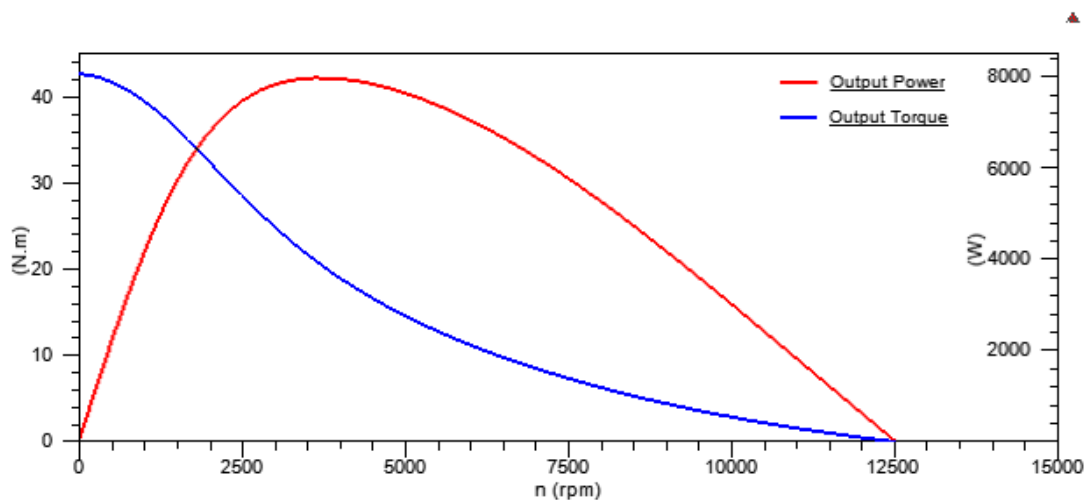
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	160
2 空载转速 (No-Load Speed)	r/min	21500~21800
3 空载电流 (No-Load Current)	A	≤1.6
4 额定转速 (Rated Speed)	r/min	17800~18200
5 额定转矩 (Rated Torque)	Nm	1.6
6 额定电流 (Rated Current)	A	20.6~22.5
7 相间电阻 (Interphase Resistance)	Ω	0.13
8 相间电感 (Interphase Inductance)	mH	0.412
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.5×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.03
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1690
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

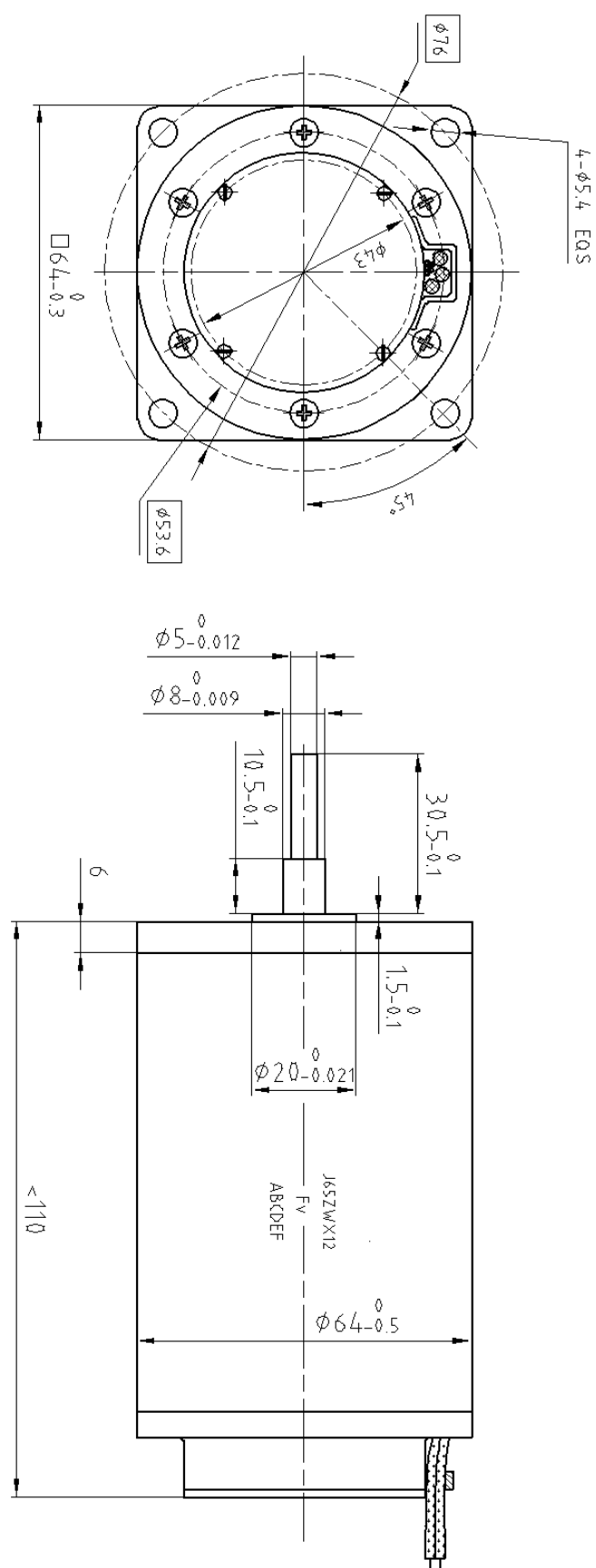




J65ZWX12

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	160
2 空载转速 (No-Load Speed)	r/min	11800~12000
3 空载电流 (No-Load Current)	A	≤0.8
4 额定转速 (Rated Speed)	r/min	10300~10500
5 额定转矩 (Rated Torque)	Nm	1.8
6 额定电流 (Rated Current)	A	13.2~14
7 相间电阻 (Interphase Resistance)	Ω	0.38
8 相间电感 (Interphase Inductance)	mH	0.568
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	4.45×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.15
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1560
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		





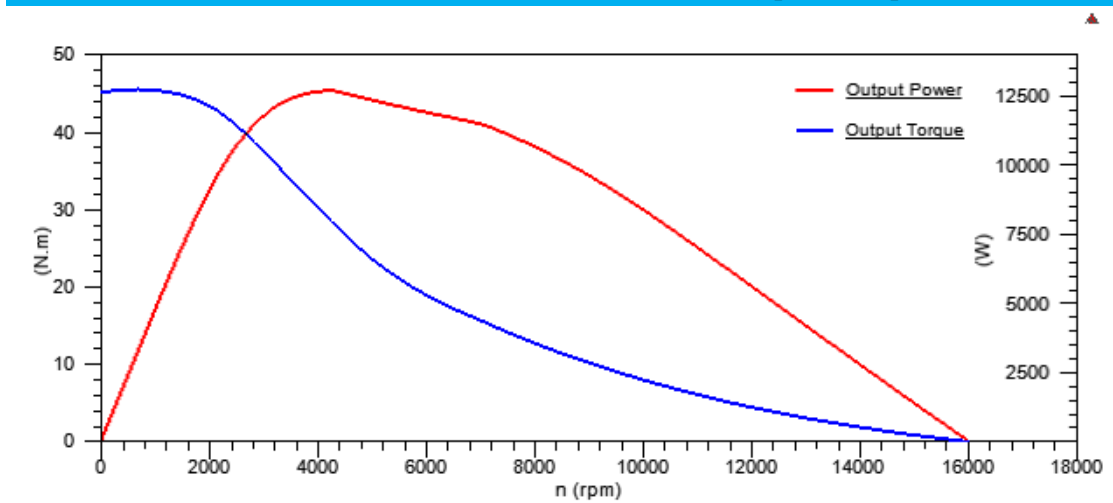
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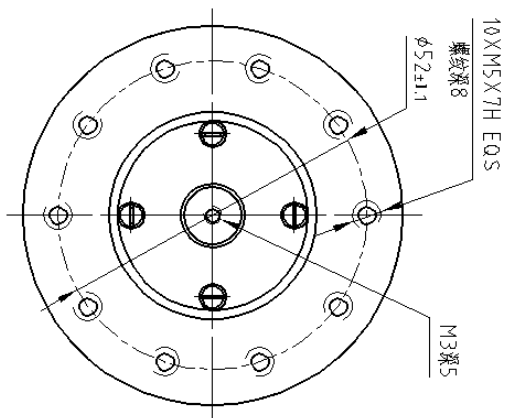
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	100
2 空载转速 (No-Load Speed)	r/min	16000~16400
3 空载电流 (No-Load Current)	A	≤1.4
4 额定转速 (Rated Speed)	r/min	13600 ~ 14100
5 额定转矩 (Rated Torque)	Nm	1.5
6 额定电流 (Rated Current)	A	26~28
7 相间电阻 (Interphase Resistance)	Ω	0.08
8 相间电感 (Interphase Inductance)	mH	0.12
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	4.17×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.15
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1360
16 极对数 (Number of Poles)		3

产品组成 (Product Composition)

无刷直流电动机 (Brushless DC Motor)

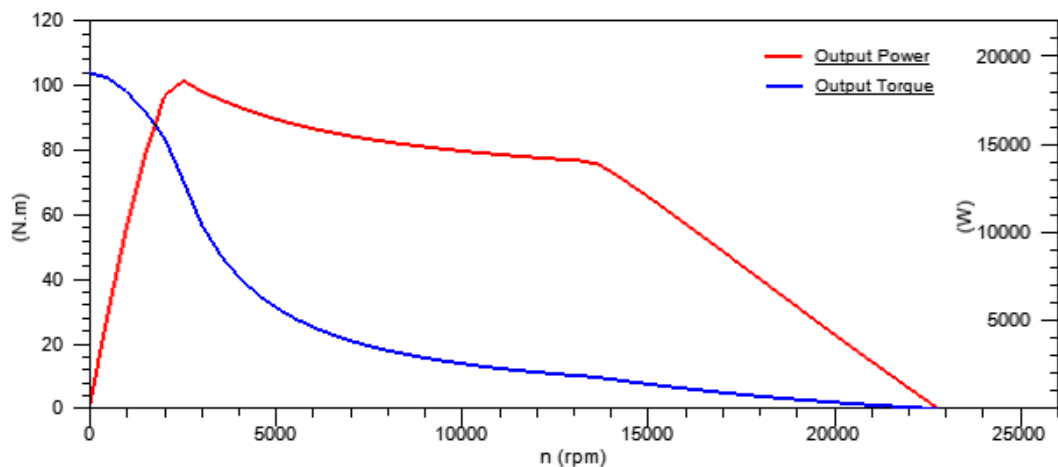
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)

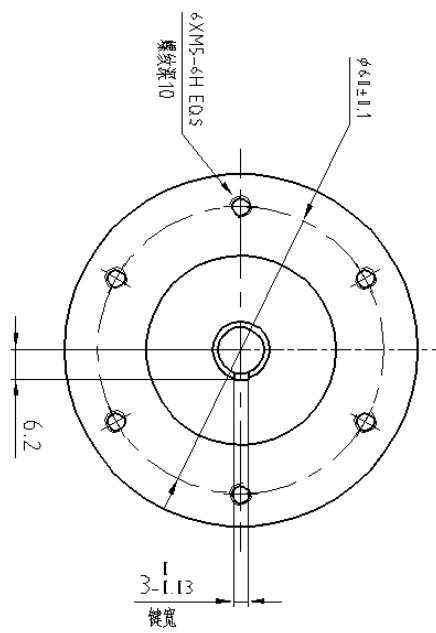
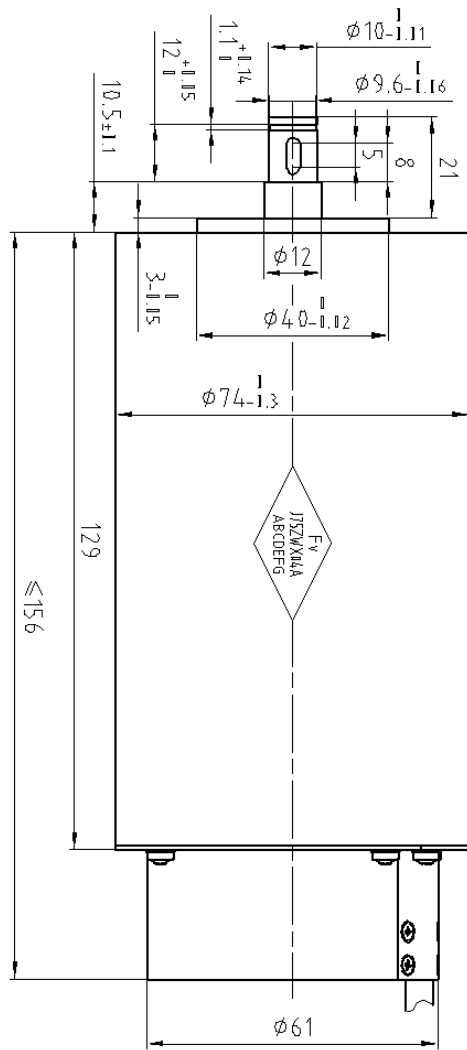




J75ZWX04A

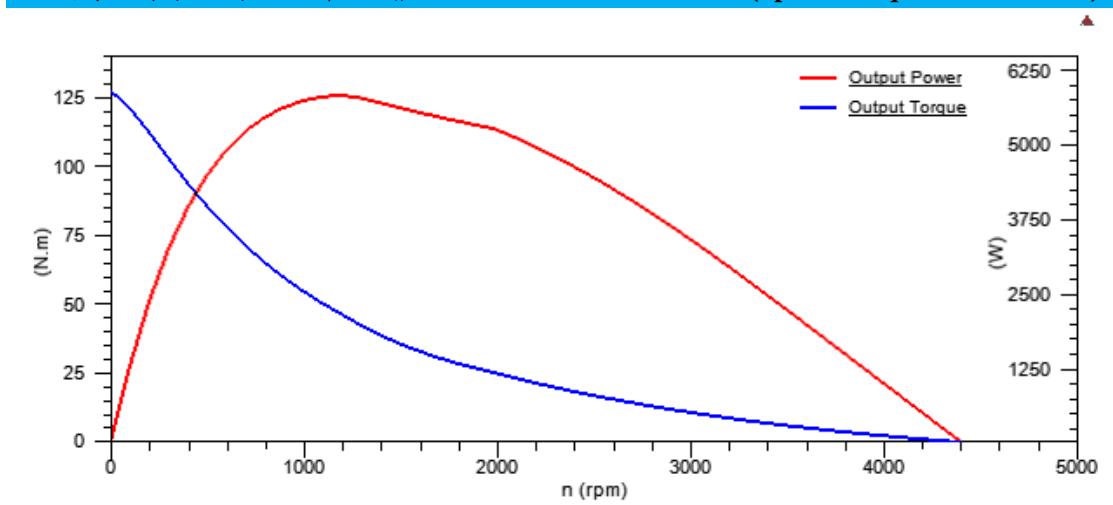
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	160
2 空载转速 (No-Load Speed)	r/min	20900~21300
3 空载电流 (No-Load Current)	A	≤1.8
4 额定转速 (Rated Speed)	r/min	18500~18800
5 额定转矩 (Rated Torque)	Nm	2.5
6 额定电流 (Rated Current)	A	33~35
7 相间电阻 (Interphase Resistance)	Ω	0.06
8 相间电感 (Interphase Inductance)	mH	0.15
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	5.56×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	2835
16 极对数 (Number of Poles)		3
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

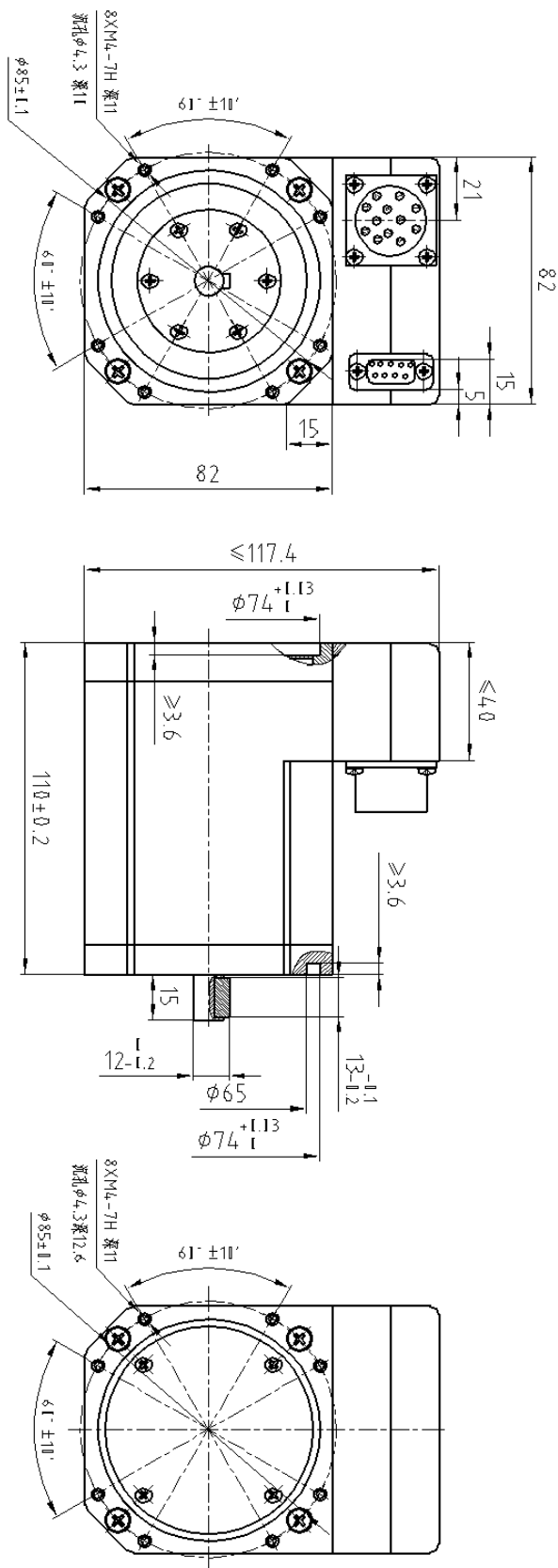




J82ZWX07

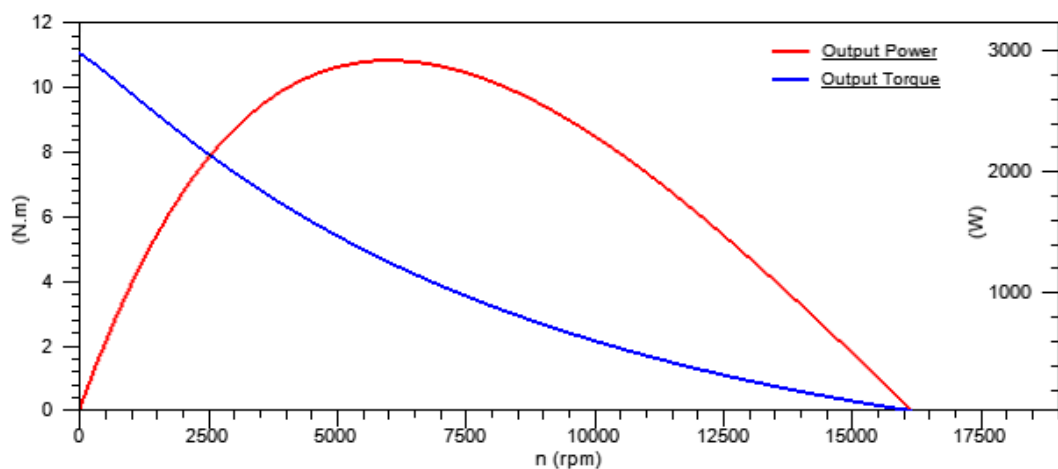
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	150
2 空载转速 (No-Load Speed)	r/min	4400~4700
3 空载电流 (No-Load Current)	A	≤1.2
4 额定转速 (Rated Speed)	r/min	3250~3550
5 额定转矩 (Rated Torque)	Nm	8
6 额定电流 (Rated Current)	A	21~23
7 相间电阻 (Interphase Resistance)	Ω	0.37
8 相间电感 (Interphase Inductance)	mH	1.94
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	2.15×10 ⁻⁴
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		H
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.10
14 径向间隙 (Radial Clearance)	mm	≤0.05
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	3050
16 极对数 (Number of Poles)		5
产品组成 (Product Composition)		
无刷直流电动机 (Brushless DC Motor)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

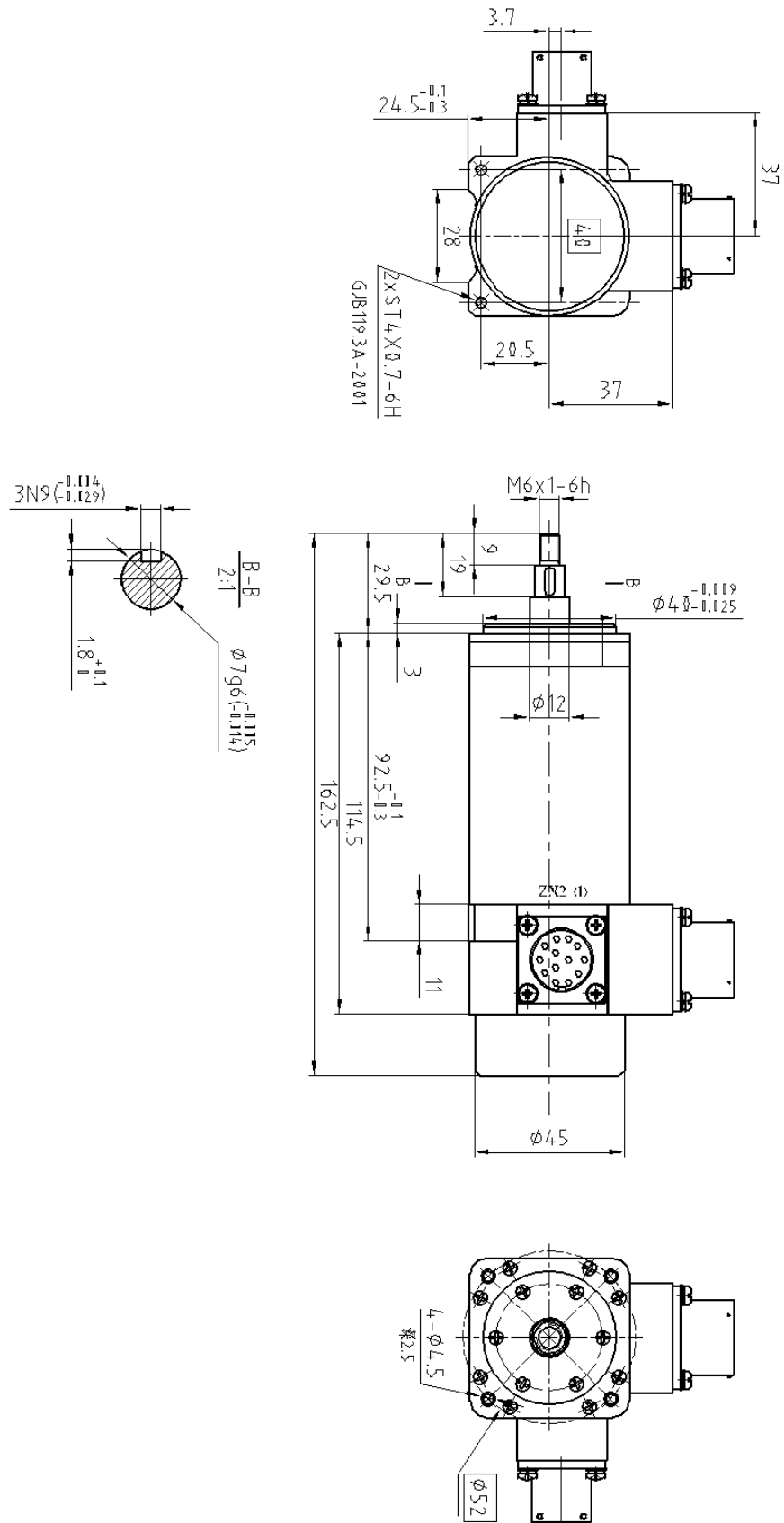




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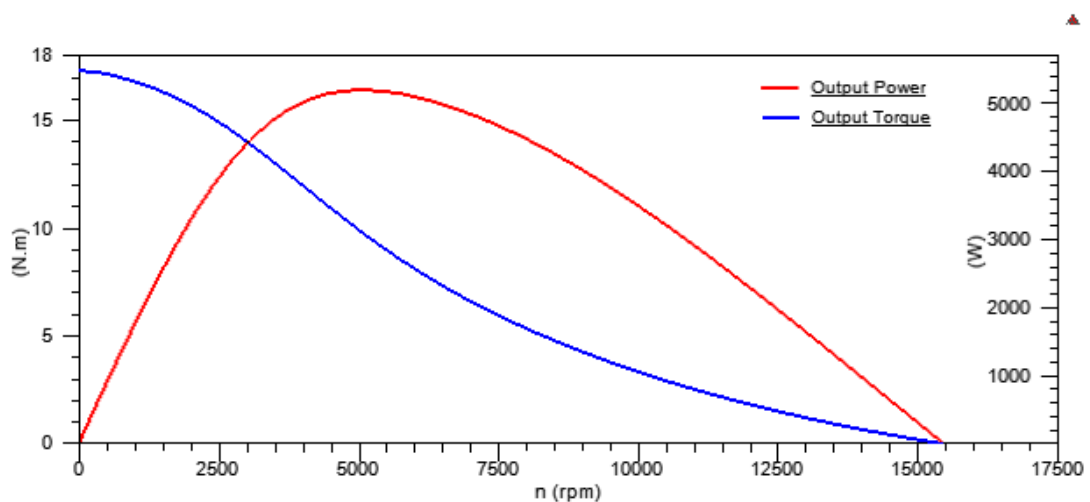
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	220
2 空载转速 (No-Load Speed)	r/min	12800~13000
3 空载电流 (No-Load Current)	A	≤0.5
4 额定转速 (Rated Speed)	r/min	10600~10800
5 额定转矩 (Rated Torque)	Nm	1.5
6 额定电流 (Rated Current)	A	8~8.4
7 相间电阻 (Interphase Resistance)	Ω	2.23
8 相间电感 (Interphase Inductance)	mH	2.26
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.37×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.03
14 径向间隙 (Radial Clearance)	mm	≤0.03
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1160
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
永磁同步电动机+制动器(Permanent Magnet Synchronous Motor Product and Brake System)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

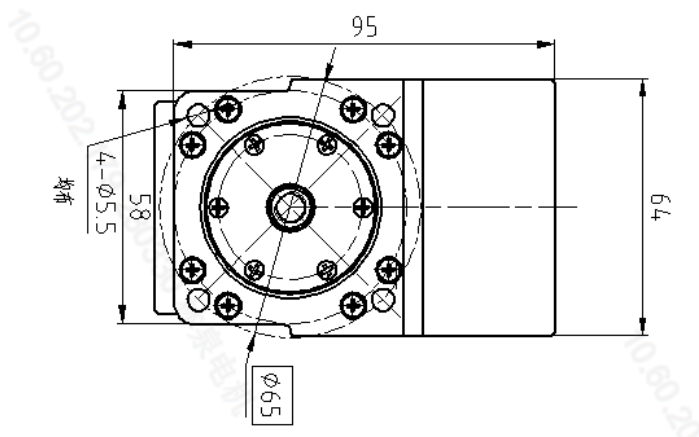
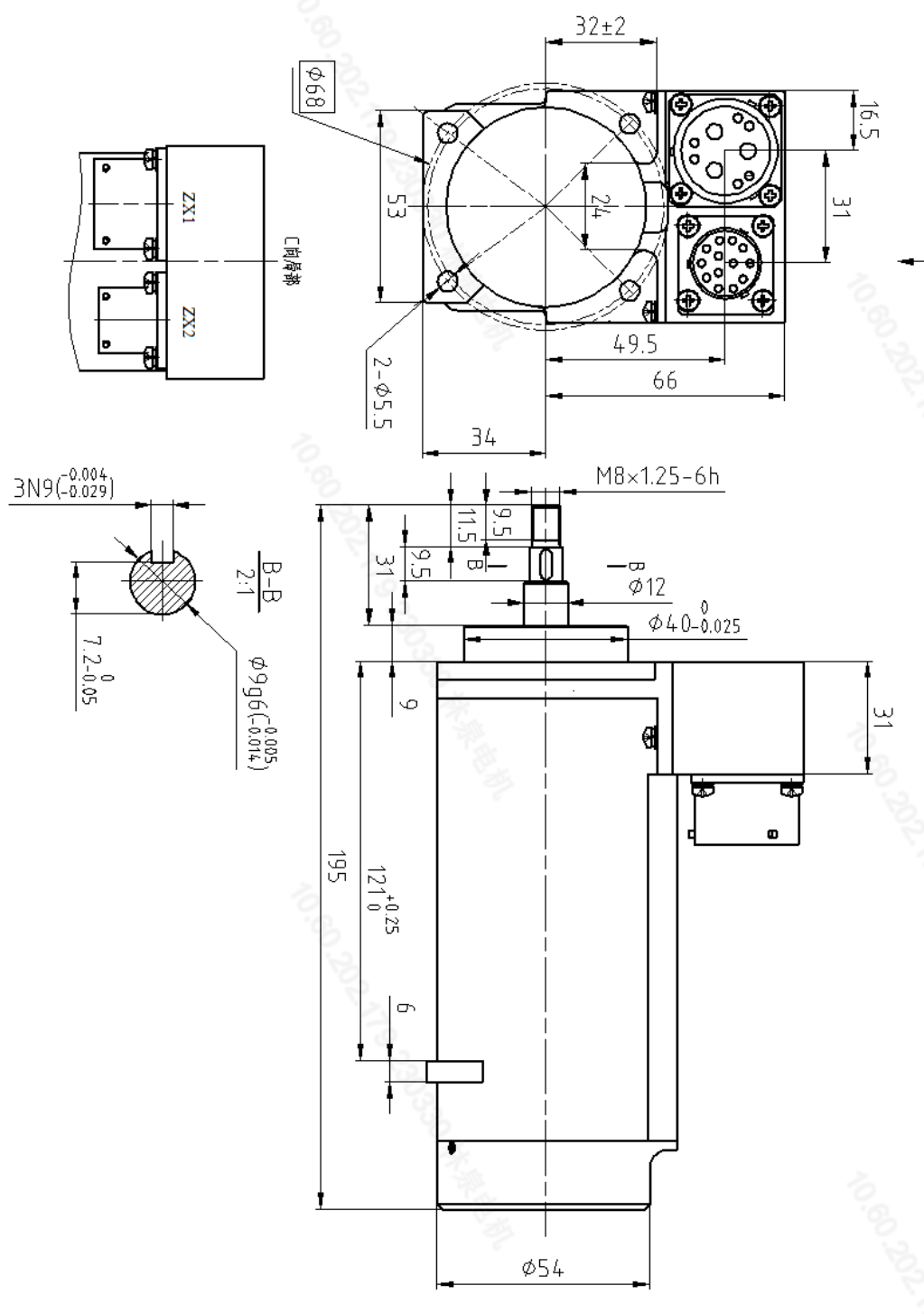




J55ST-XDZ02

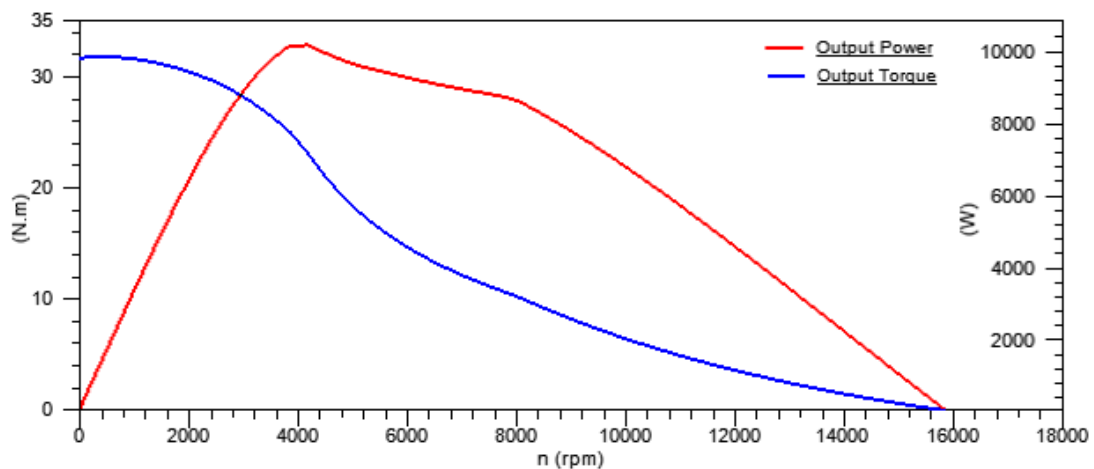
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	220
2 空载转速 (No-Load Speed)	r/min	13350~15600
3 空载电流 (No-Load Current)	A	≤0.45
4 额定转速 (Rated Speed)	r/min	12000~12300
5 额定转矩 (Rated Torque)	Nm	1.5
6 额定电流 (Rated Current)	A	8.14~8.56
7 相间电阻 (Interphase Resistance)	Ω	1.02
8 相间电感 (Interphase Inductance)	mH	1.932
9 机电时间常数 (Electromechanical Time Constant)	ms	≤5
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	1.88×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.05
14 径向间隙 (Radial Clearance)	mm	≤0.03
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	1740
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
永磁同步电动机+制动器(Permanent Magnet Synchronous Motor Product and Brake System)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		





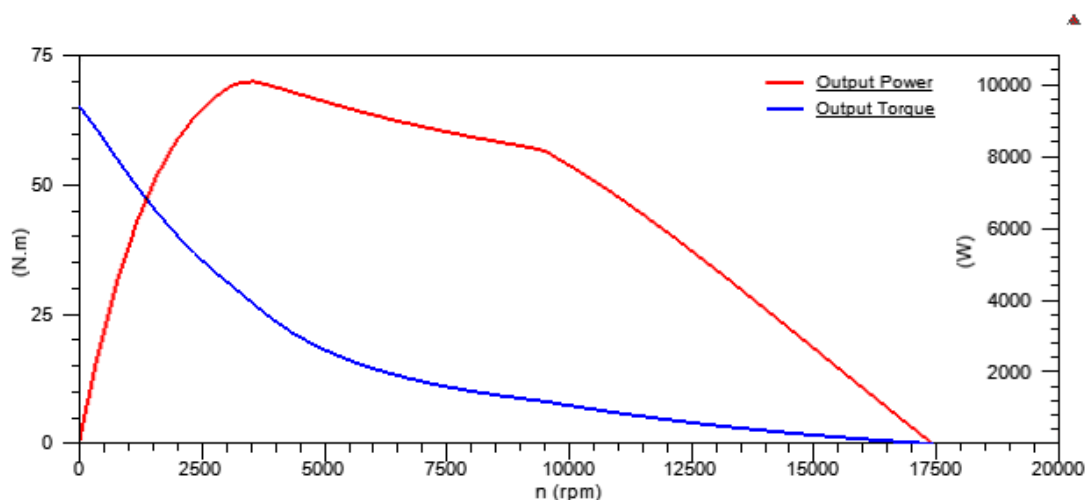
J60ST-XDZ01

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	220
2 空载转速 (No-Load Speed)	r/min	14500~15000
3 空载电流 (No-Load Current)	A	≤1.1
4 额定转速 (Rated Speed)	r/min	12100~12800
5 额定转矩 (Rated Torque)	Nm	4.5
6 额定电流 (Rated Current)	A	27~29
7 相间电阻 (Interphase Resistance)	Ω	0.72
8 相间电感 (Interphase Inductance)	mH	0.91
9 机电时间常数 (Electromechanical Time Constant)	ms	≤6
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	3.44×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.03
14 径向间隙 (Radial Clearance)	mm	≤0.03
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	2390
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
永磁同步电动机+制动器 (Permanent Magnet Synchronous Motor Product and Brake System)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics (Speed-Torque/Power Curve)		



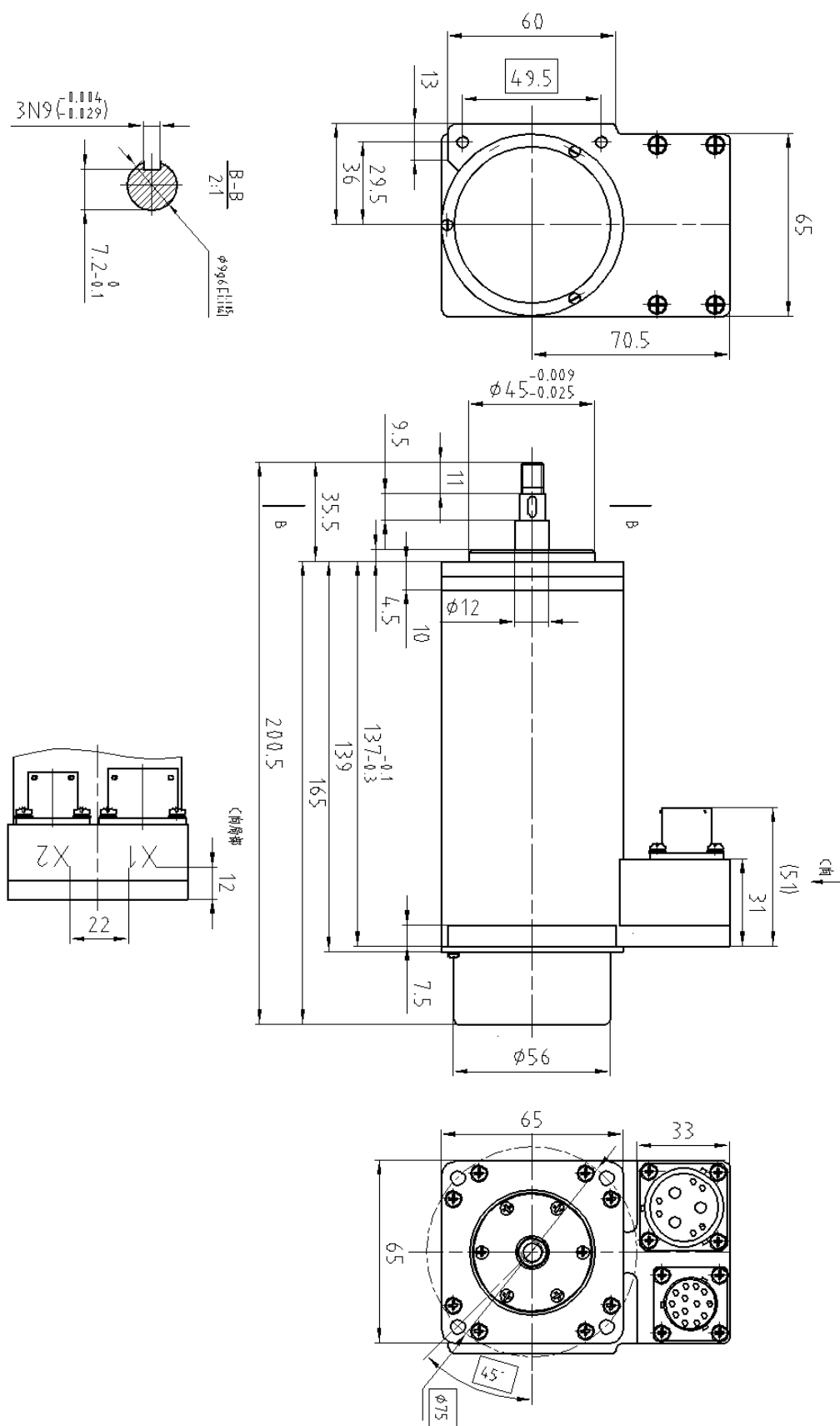
J65ST-XDZ01

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	270
2 空载转速 (No-Load Speed)	r/min	15000~15300
3 空载电流 (No-Load Current)	A	≤0.58
4 额定转速 (Rated Speed)	r/min	11900~12100
5 额定转矩 (Rated Torque)	Nm	4.5
6 额定电流 (Rated Current)	A	24.3~25
7 相间电阻 (Interphase Resistance)	Ω	0.614
8 相间电感 (Interphase Inductance)	mH	1.79
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	3.98×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.05
14 径向间隙 (Radial Clearance)	mm	≤0.03
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	2380
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
永磁同步电动机+制动器(Permanent Magnet Synchronous Motor Product and Brake System)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		



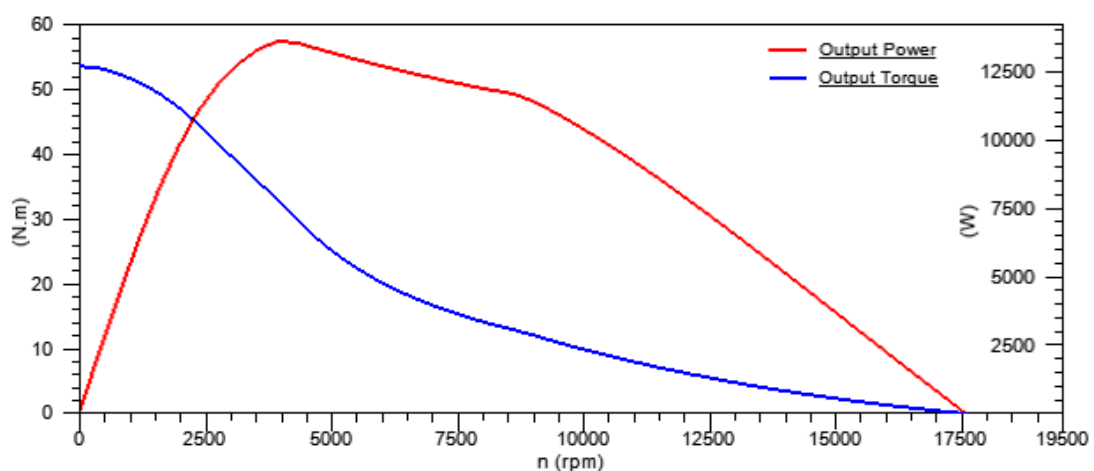
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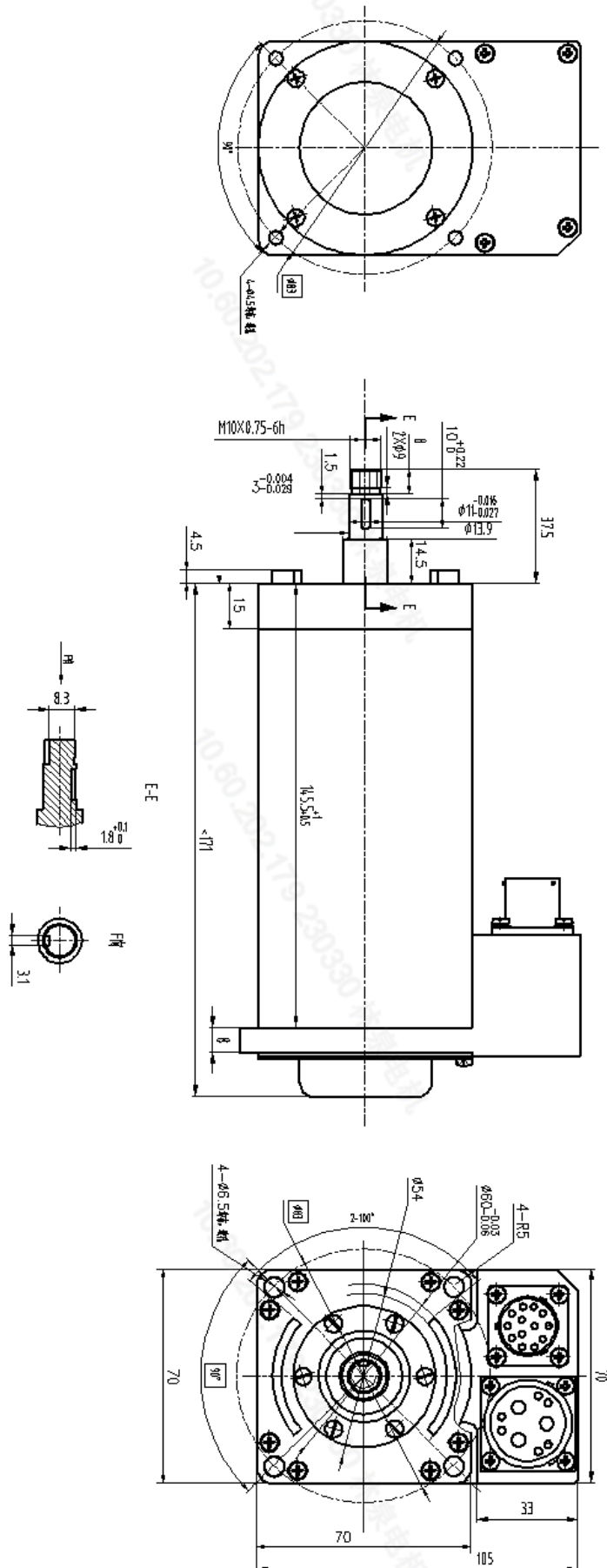
Brushless DC Motor Product Manual



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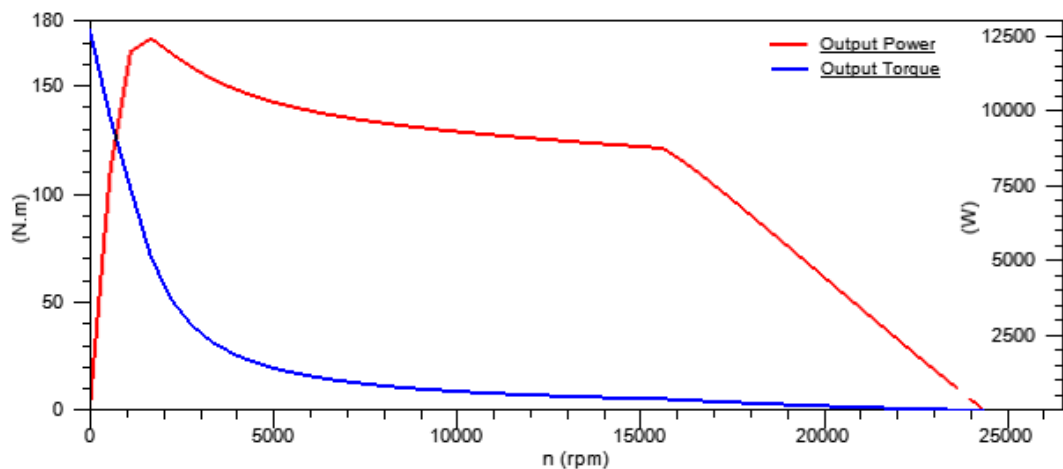
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	160
2 空载转速 (No-Load Speed)	r/min	15400~16100
3 空载电流 (No-Load Current)	A	≤1.84
4 额定转速 (Rated Speed)	r/min	14000~14500
5 额定转矩 (Rated Torque)	Nm	3.3
6 额定电流 (Rated Current)	A	34~36
7 相间电阻 (Interphase Resistance)	Ω	0.296
8 相间电感 (Interphase Inductance)	mH	0.375
9 机电时间常数 (Electromechanical Time Constant)	ms	≤7
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	4.70×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.03
14 径向间隙 (Radial Clearance)	mm	≤0.03
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	2593
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
永磁同步电动机(Permanent Magnet Synchronous Motor Product and Brake System)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		

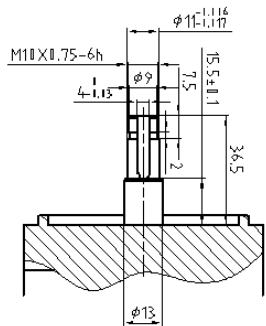




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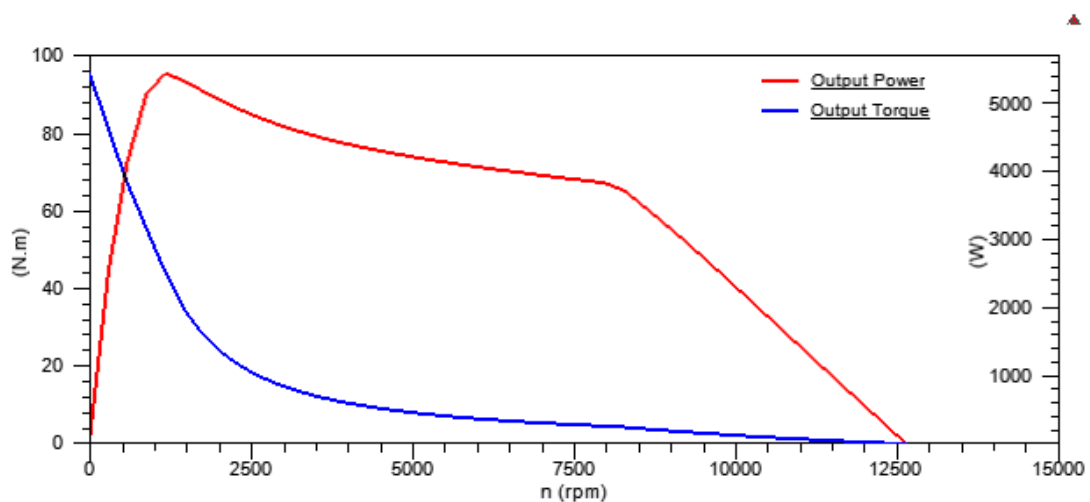
电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	220
2 空载转速 (No-Load Speed)	r/min	17700~18200
3 空载电流 (No-Load Current)	A	≤2
4 额定转速 (Rated Speed)	r/min	15600~16100
5 额定转矩 (Rated Torque)	Nm	4.5
6 额定电流 (Rated Current)	A	40~44
7 相间电阻 (Interphase Resistance)	Ω	0.1
8 相间电感 (Interphase Inductance)	mH	0.525
9 机电时间常数 (Electromechanical Time Constant)	ms	≤7
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	4.44×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.03
14 径向间隙 (Radial Clearance)	mm	≤0.03
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	4240
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
永磁同步电动机+制动器 (Permanent Magnet Synchronous Motor Product and Brake System)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics (Speed-Torque/Power Curve)		

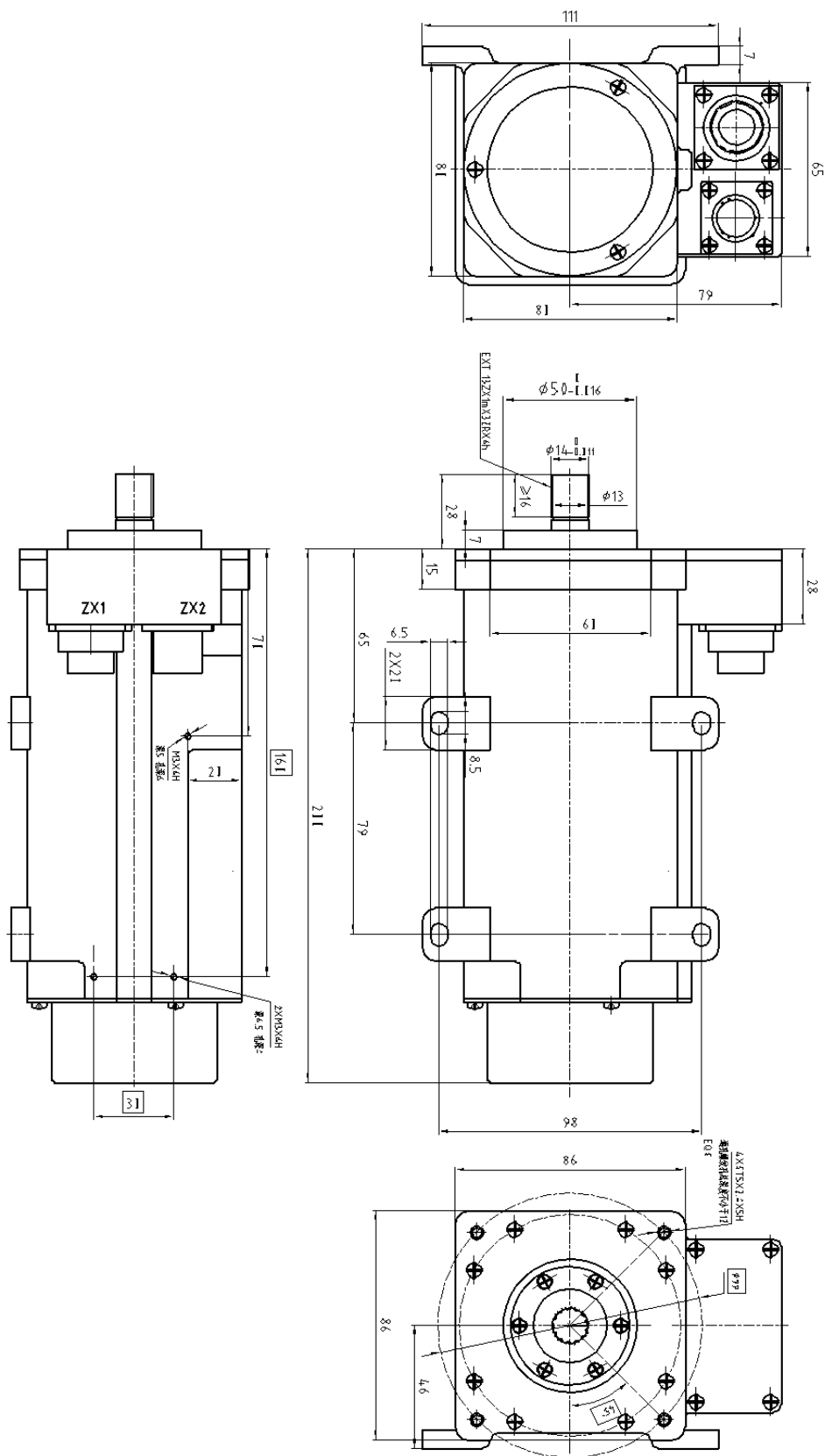


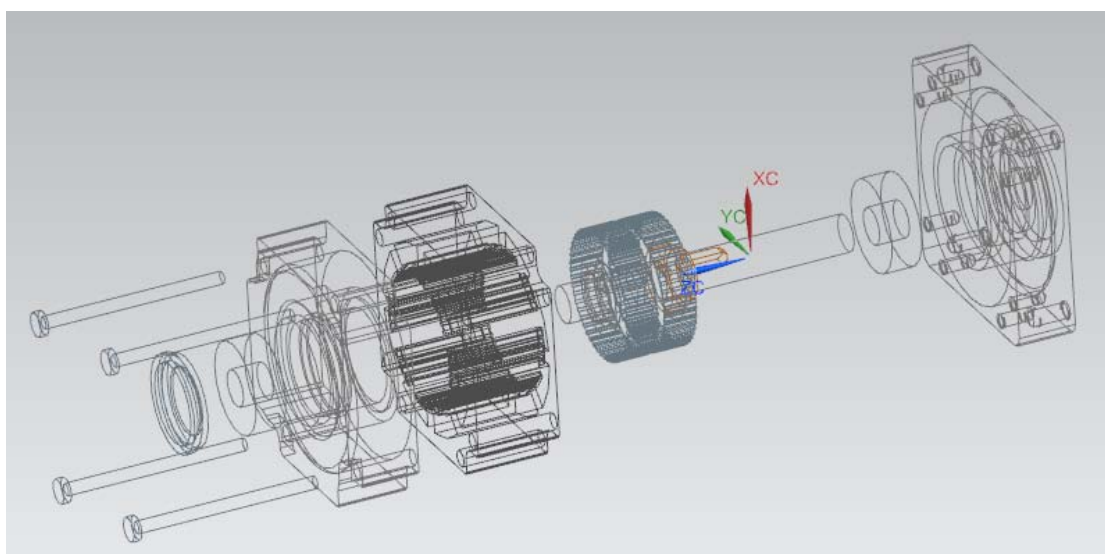


J85ST-XDZ02

电机参数 (Motor Parameters)		指标 (Performance Metrics)
1 额定电压 (Rated Voltage)	VDC	220
2 空载转速 (No-Load Speed)	r/min	9000~9030
3 空载电流 (No-Load Current)	A	≤0.5
4 额定转速 (Rated Speed)	r/min	7700~7820
5 额定转矩 (Rated Torque)	Nm	5
6 额定电流 (Rated Current)	A	20~23
7 相间电阻 (Interphase Resistance)	Ω	0.64
8 相间电感 (Interphase Inductance)	mH	1.897
9 机电时间常数 (Electromechanical Time Constant)	ms	≤10
10 转子转动惯量 (Rotor Moment of Inertia)	kg·m ²	3.94×10 ⁻⁵
热参数 (Thermal Parameters)		
11 最高绕组温度 (Maximum Winding Temperature)	℃	220
12 绝缘等级 (Insulation Class)		C
机械参数 (Mechanical Parameters)		
13 轴向间隙 (Axial Clearance)	mm	≤0.03
14 径向间隙 (Radial Clearance)	mm	≤0.03
其他参数 (Other Parameters)		
15 电机质量 (Motor Mass)	g	4450
16 极对数 (Number of Poles)		2
产品组成 (Product Composition)		
永磁同步电动机+制动器(Permanent Magnet Synchronous Motor Product and Brake System)		
机械特性 (转速-转矩/功率曲线) Mechanical Characteristics(Speed-Torque/Power Curve)		







混合式步进电机 产品手册

HYBRID STEPPER MOTOR MANUAL

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1 概 述 (Overview)

◆ 电机分类(Motor classification)

本产品手册将步进电机分为三类：步进电机（本体）、直线步进电机（含滚珠丝杠）、减速步进电机（含减速器）。通常情况下，步进电机一般可按照定子绕组相数和转子结构形式进行分类。本手册主要介绍的是混合式步进电机。

This product manual divides stepper motors into three categories:stepper motors (main body),linear stepper motors (including ball screws),and deceleration stepper motors (including decelerator). Under normal conditions, stepper motors can generally be classified based on the number of stator winding phases and rotor structure. This manual mainly introduces hybrid stepper motor.

按照步进电机定子绕组相数分类 Be classified based on the number of stator winding phases	按照步进电机转子结构形式分类 Be classified based on the number of rotor structure
➤ 单相步进电机 Single-phase Stepper motor ➤ 两相步进电机 Two-phase Stepper motor ➤ 三相步进电机 Three-phase Stepper motor ➤ 四相步进电机 Four-phase Stepper motor ➤ 五相步进电机 Five-phase Stepper motor	➤ 反应式步进电机（VR） Reactive stepper motor ➤ 永磁式步进电机（PM） Permanent magnet stepper motor ➤ 混合式步进电机（HB） Hybrid stepper motor

◆ 使用场合(Usege scenarios)

步进电机是一种直接将电脉冲转化为角度位置的机械装置，角度的多少取决于脉冲的数量，它和与其配套的驱动器组成一套控制简单的、精度较高的驱动装置。产品主要应用于阀门的驱动与控制、执行机构及卫星装置等系统。

A stepper motor is a mechanical device that directly converts electrocal pulses into angular positions. The angle depends on the number of pulses,and it,along with its accompanying driver,forms a set of driving devices which is high-precision and can be easily controlled. The product is mainly used in systems such as valve drive and control ,actuator,and satellite devices.

◆ 电机特点(Motor charactoristics)

步进电机是受脉冲信号控制的，因此它适合于数字控制系统的伺服元件。它的直线位移量或角位移量与电脉冲数成正比，所以电机的线速度或转速也与脉冲频率成正比，通过改变

脉冲频率的高低就可以在很大的范围内调节电机的转速，并能快速起动、制动和反转。步进电机中有些形式在停止供电状态下还有定位转矩，有些在停机后某些相绕组仍保持通电状态，也具有自锁能力，不需要机械制动装置。步进电机的步距角变化范围较大，在小步距角的情况下，往往可以不经减速器而获得低速运行。它每转一周都有固定的步数，在不丢步的情况下运行，其步距误差不会长期积累。

The stepper motor is controlled by pulse signals,so it is suitable for use as a server component in digital control systems.Its linear displacement or angular displacement is directly proportional to the number of electrical pulses, so the linear speed or speed of the motor is also directly proportional to the pulse frequency. By changing the pulse frequency,the motor speed can be adjusted over a large range. And can quickly start,brake,and reverse.Some forms of stepper motors still have positioning torque when the power supply is stopped,while others have self-locking ability and do not require mechanical braking devices, as some phase windings remain energized even after shutdown .The range of step angle variation of stepper motors is large, and in cases of small step angles, low-speed operation can often be achieved without the use of a reducer .It has a fixed number of steps per revolution and operates without losing steps,so its step distance error will not accumulate for a long time.

2 专业术语(Professional Terminology)

◆ 步距角及步距角误差 Step angle & Step angle error

输入一个脉冲信号，步进电机转子的相应角位移。实际步距角相对理论步距角的偏差称为步距角误差。

Input a pulse signal to measure the corresponding angular displacement of the stepper motor rotor. The deviation between the actual step angle and the theoretical step angle is called the step angle error.

◆ 双极性驱动 Bipolar drive

通过正、反向电流给绕组励磁，使步进电机产生转矩的驱动方式。

A Drive model that excites the winding through forward and reverse currents to generate torque in a stepper motor number of beats.

◆ 拍数 Number of beats

步进电机绕组在一个通电循环内，控制绕组通电状态改变的次数。

The stepper motor winding controls the number of times the winding's energized state changes within one energized cycle.

◆ 保持转矩 Holding torque

按规定励磁方式步进电机可提供的最大静态转矩。

The maximum static torque that a stepper motor can provide according to the prescribed excitation method.

◆ 自定位转矩 Detent torque

步进电机不励磁时，在转轴上可施加转矩，而又不会引起连续转动的静态转矩最大值。

When the stepper motor is not excited, the maximum static torque that can be applied on the shaft without causing continuous rotation.

◆ 最高运行频率 Maximum slew frequency

步进电机保持不失步空载运行的最高脉冲频率。

The highest pulse frequency for a stepper motor to maintain steady and no-load operation.

◆ 牵入频率/启动频率 Put in frequency/Starting frequency

步进电机带规定负载启动且不失步运转的最高脉冲频率。

The maximum pulse frequency at which a stepper motor starts with a specified load and

operates without losing step.

◆ **牵出频率/运行频率 Put out frequency/Running frequency**

步进电机带规定负载运行而不失步的最高脉冲频率。

The maximum pulse frequency at which a stepper motor operates with a specified load without losing step.

◆ **启动（牵入）转矩 Put in torque**

步进电机在某一固定脉冲频率下能启动并不失步运行所能承受的最大负载转矩。

The maximum load torque that a stepper motor can withstand when starting without losing step at a fixed pulse frequency.

◆ **运行（牵出）转矩 Put out torque**

在规定驱动条件下，步进电机按规定脉冲频率励磁并不失步运行所能承受的最大负载转矩。

The maximum load torque that a stepper motor can withstand when excited at a specified pulse frequency without losing step under specified pulse frequency without losing step under specified driving conditions.

◆ **谐振频率 Resonant frequency**

在规定驱动条件下，步进电机按规定脉冲频率励磁并不失步运行所能承受的最大负载转矩。

The maximum load torque that a stepper motor can withstand when excited at a specified pulse frequency without losing step under specified driving conditions

◆ **整步、半步、微步 Full-step、Half-step、Micro-step**

步进电机空载时，按最小运行拍数一步应走过的位移（角位移）称为整步。改变励磁方式，获得每步步距[步距角]为整步[步距角]的一半称为半步。对各相绕组电流大小进行控制，使步进电机的整步[步距角]分细，获得小于半步[步距角]的步距角称为微步。

When the stepper motor is unloaded ,the displacement(angular displacement)that should be taken in one step according to the minimum number of running beats is called the full step. Changing the excitation method to obtain a step angle of half step .Controlling the current magnitude of each phase winding to refine the entire step angle of the stepper motor and obtaining a step angle less than half a step is called microstep.

步进电机产品手册
STEPPER MOTOR Product Manual

3 步进电机产品(Stepper motor products)

序号 Serial Number	产品代号 Product Code	体积 Volume (mm)	引出线形式 LeadOut Linear Driver Type	驱动方式 Drive Model	工作制 Working System	步距角 Step Angle	额定电压 Rated Voltage (V)	保持转矩 Holding Torque (N·m)	自定位转矩 Detent Torque(N· m)	步距角误差 StepAngle Error	相电阻 Phase Resistance (Ω)	相电感 Phase Inductance (mH)	牵出力矩 Put out Torque (N·m)	重量 Weight (kg)
1	J35BH004	□35.2×32.5	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	1.8°	28	≥0.14@ A&B 通 (Electrify)0.6A	≥0.018	±5%	3.5× (1±10%)	3.8×(1±20%)	≥0.1@83Hz	≤0.18
2	J35BH006	□35.2×37.3	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	1.8°	28	≥0.16@ A&B 通 (Electrify)0.6A	≥0.018	±5%	/	/	≥0.1@36r/min	≤0.22
3	J42BH006	□42.3×43	四相 5 线 Four Phase 5-line	单极恒压双四拍驱动 Unipolar constant voltage double four beat drive	真空长 时 Long term vacuum	1.8°	12	≥0.16@ A&B 通 (Electrify)0.18A	≥0.01	±5%	39.4× (1±10%)	25×(1±35%)	≥0.14@100Hz	≤0.35
4	J42BH007	□42.3×34.9	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	1.8°	28	≥0.14@ A&B 通 (Electrify)0.6A	≥0.015	±5%	/	/	≥0.2@36r/min	≤0.3
5	J45BH002	Φ61×36	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空≤2h Vacuum not exceedin g 2 hours	1.8°	15	≥0.2@ A&B 通 (Electrify)0.8A ≥0.18@ A&B 通 (Electrify)0.6A	≥0.017	±5%	5.85× (1±10%)	5.8×(1±15%)	≥0.16@50rpm @A&B 通 (Electrify)0.6A; ≥0.21@50rpm @A&B 通 (Electrify)0.8A ≥0.14@100rpm @A&B 通 (Electrify)0.6A; ≥0.2@100rpm @A&B 通 (Electrify)0.8A ≥0.12@150rpm @A&B 通 (Electrify)0.6A; ≥0.18@150rpm @A&B 通 (Electrify)0.8A	≤0.28

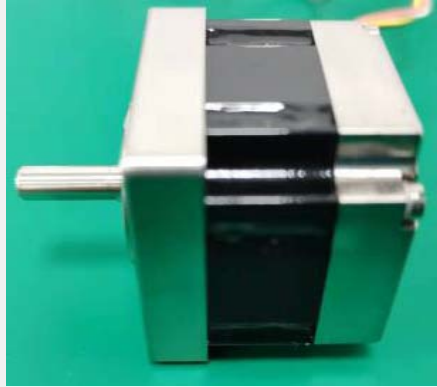
步进电机产品手册
STEPPER MOTOR Product Manual

序号 Serial Number	产品代号 Product Code	体积 Volume (mm)	引出线形式 LeadOut Linear Driver Type	驱动方式 Drive Model	工作制 Working System	步距角 Step Angle	额定电 压 Rated Voltage (V)	保持转矩 Holding Torque (N·m)	自定位转 矩 Detent Torque(N· m)	步距角误差 StepAngle Error	相电阻 Phase Resistance (Ω)	相电感 Phase Inductance (mH)	牵出力矩 Put out Torque (N·m)	重量 Weight (kg)
6	J50BH001	□50×52	两相 6 线 Two Phase 6-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	1.8°	24	≥0.75@ A&B 通 (Electrify)1 A	≥0.05	±5%	4.9× (1±10%)	20× (1±25%)	≥0.2@500Hz	≤0.6
7	J50BH002	□50×52	两相 6 线 Two Phase 6-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	1.8°	24	≥0.75@ A&B 通 (Electrify)1 A	≤0.035	±5%	4.7× (1±10%)	20× (1±25%)	≥0.2@500Hz	≤0.6
8	J55BH001	Φ73.6×62.6	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	1.8°	12	≥0.6@ A&B 通 (Electrify)0.6A	≤0.055	±5%	6.3× (1±10%)	21× (1±20%)	≥0.4@10Hz	≤0.77
9	J57BH250	□56.4×53.7	两相 4 线 Two Phase 4-line	双极恒压双四拍驱动 Bipolar constant voltage double four beat drive	真空长 时 Long term vacuum	1.8°	5	≥0.6@ A&B 通 (Electrify)1.3A	≥0.05	±5%	3.85× (1±10%)	10.5× (1±25%)	≥0.2@100Hz	≤0.7
10	J58BH001	Φ70×30	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	1.8°	15	≥0.5@ A&B 通 (Electrify)0.6A	≥0.02	±5%	6× (1±10%)	12× (1±20%)	≥0.2@333Hz	≤0.4
11	J60BH001	□62×98	四相 5 线 Four Phase 5-line	单极恒压双四拍驱动 Unipolar constant voltage double four beat drive	真空短 时 Short term vacuum	0.9°	24	≥1.6@ A&B 通 (Electrify)1.3A	≤0.04	±5%	18.7× (1±10%)	40× (1±20%)	≥0.8@50Hz	≤1.65
12	J60BH002	Φ78×76	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	常压长 时工作 Long term operation under normal pressure	0.9°	24	≥0.6@ 单通 (Electrifysingle phase)1.2A	≥0.03	±5%	4.5× (1±10%)	10.5× (1±20%)	≥0.35@50Hz~ 200Hz	≤0.8
13	J70BH2100	Φ88×90	两相 4 线 Two Phase 4-line	双极恒流单(双)四 拍驱动 Bipolar constant current single(double) four beat drive	真空长 时 Long term vacuum	0.9°	24	≥1.7@ 单相通 (Electrifysingle phase)2.3A	≥0.04	±5%	3.1× (1±10%)	7.5×(1±20%)	≥1.2@100Hz	≤2.0

步进电机产品手册
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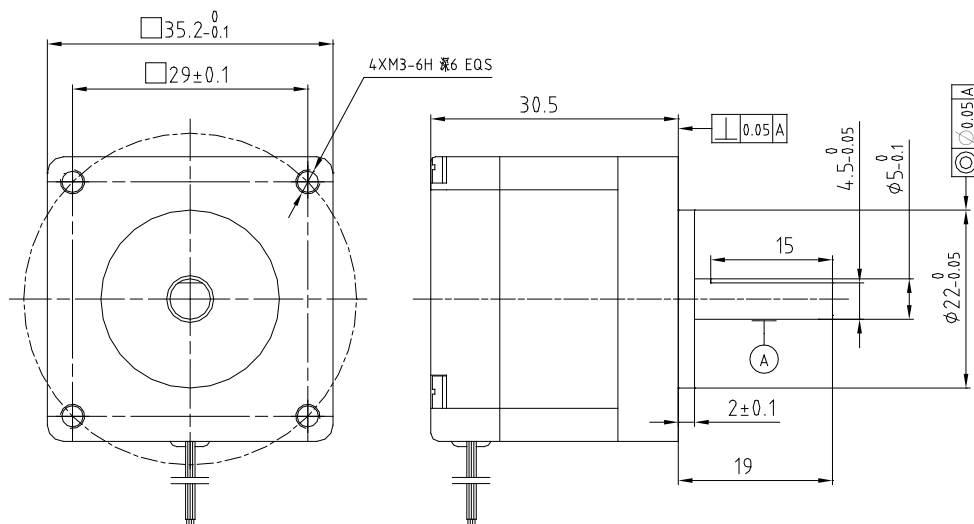
序号 Serial Number	产品代号 Product Code	体积 Volume (mm)	引出线形式 LeadOut Linear Driver Type	驱动方式 Drive Model	工作制 Working System	步距角 Step Angle	额定电 压 Rated Voltage (V)	保持转矩 Holding Torque (N·m)	自定位转 矩 Detent Torque(N· m)	步距角误差 StepAngle Error	相电阻 Phase Resistance (Ω)	相电感 Phase Inductance (mH)	牵出力矩 Put out Torque (N·m)	重量 Weight (kg)
14	J72BH002	Φ95×44.4	两相 4 线 Two Phase 4-line	双极恒流双四拍驱动 Bipolar constant current double four beat drive	真空长 时 Long term vacuum	0.9°	28	≥0.6@ A&B 通 (Electrify)1.2A	≥0.025	±5%	2.5× (1±10%)	4.4×(1±20%)	≥0.3@400Hz	≤0.8
备注：J42BH006、J60BH001、J72BH002 三项电机都为双绕组(J42BH006、J60BH001、J72BH002 three motors are double windings)														

35 系列(Series)-J35BH004 混合式步进电机(Hybrid Stepper Motor)

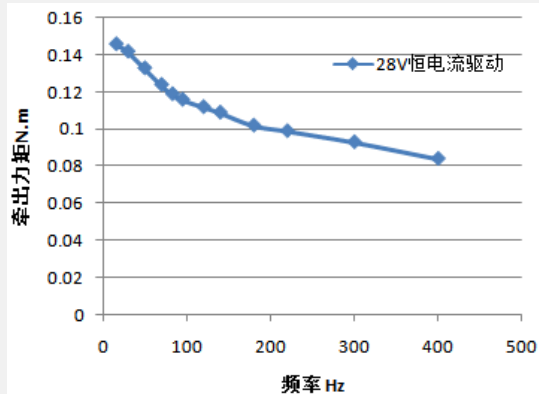


主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	28
保持转矩 Holding torque/ N·m	≥0.14@ A&B 通(Electrify)0.6A
自定位转矩 Detent torque/ N·m	≥0.018
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	3.5× (1±10%)
相电感Phase inductance/mH	3.8× (1±20%)
牵出力矩 Put out torque/ N·m	≥0.1@83Hz
重量 Weight/kg	≤0.18

外形图(Outline Drawing)/mm

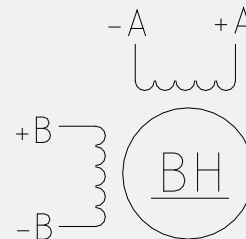


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



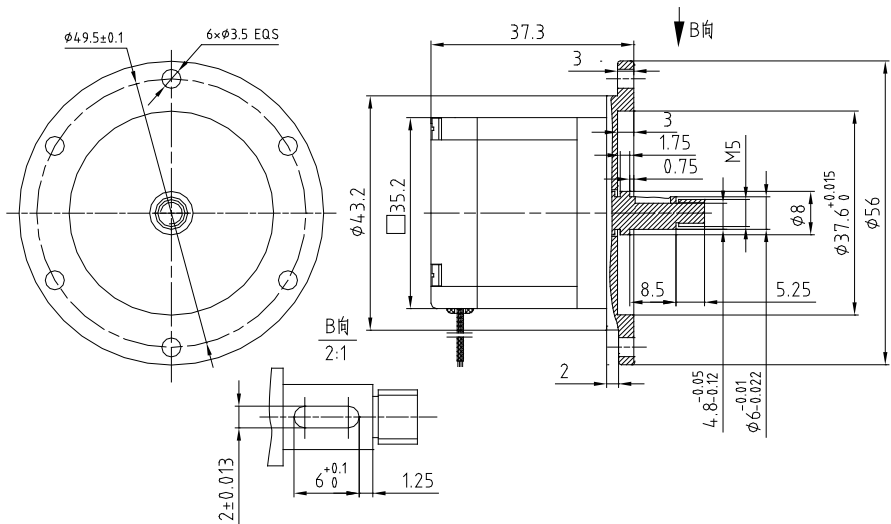
引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
引出线标 Identification of lead wire	A+	A-	B+	B-

35 系列(Series)-J35BH006 混合式步进电机(Hybrid Stepper Motor)

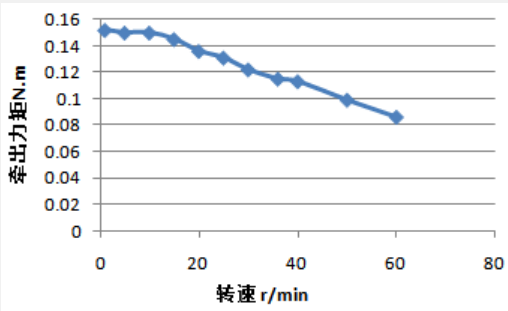


主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line
驱动方式 Drive model	双极恒电流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	28
保持转矩 Holding torque/ N·m	≥0.16@ A&B 通(Electrify)0.6A
自定位转矩 Detent torque/ N·m	≥0.018
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	/
相电感 Phase inductance/mH	/
牵出力矩 Put out torque/ N·m	≥0.1@36r/min
重量 Weight/kg	≤0.22

外形图(Outline Drawing)/mm

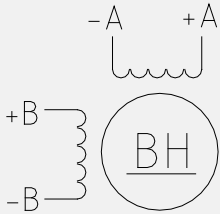


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



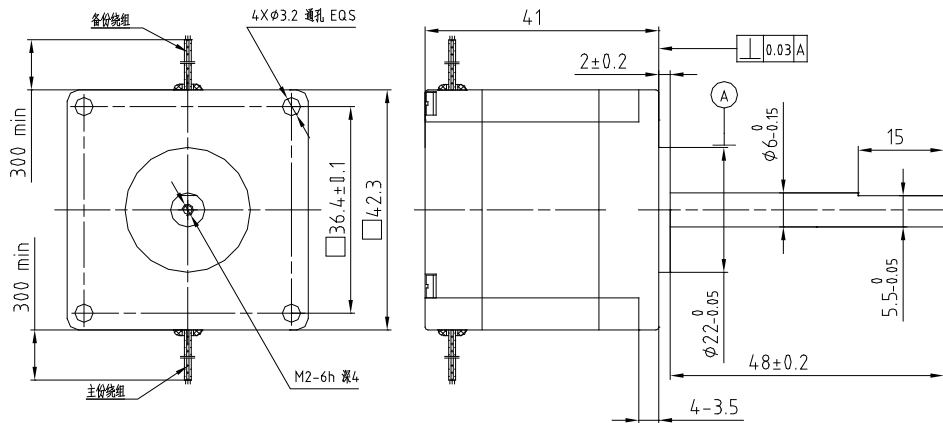
引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
引出线标识 Identification of lead wire	A+	A-	B+	B-

42 系列(Series)-J42BH006 混合式步进电机(Hybrid Stepper Motor)

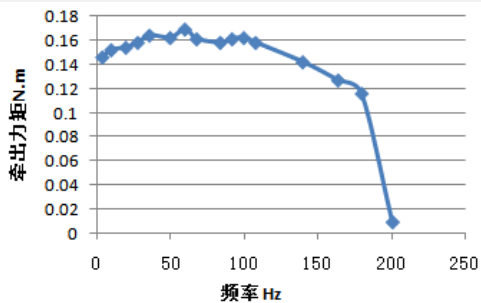


主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	四相 5 线（双备份绕组）Four Phase 5-line(Dual backup winding)
驱动方式 Drive model	单极恒压双四拍驱动 Unipolar constant voltage double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	12
保持转矩 Holding torque/ N·m	≥0.16@ A&B 通(Electrify)0.18A
自定位转矩 Detent torque/ N·m	≥0.01
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	39.4× (1±10%)
相电感 Phase inductance/mH	25× (1±35%)
牵出力矩 Put out torque/ N·m	≥0.14@100Hz
重量 Weight/kg	≤0.35

外形图(Outline Drawing)/mm

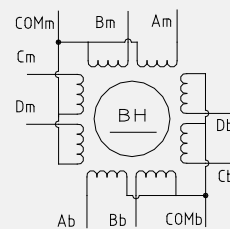


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



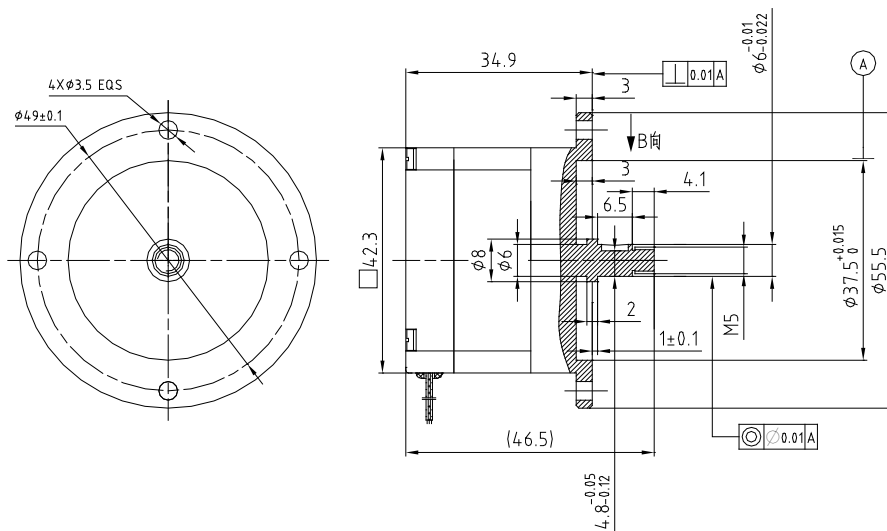
主份引出线 Main outgoing line	A 相 A-phase	B 相 B-phase	C 相 C-phase	D 相 D-phase	公共点 Common
引出线标识 Definition of lead wire	Am	Bm	Cm	Dm	COMm
备份引出线 Backup outgoing line	A 相 A-phase	B 相 B-phase	C 相 C-phase	D 相 D-phase	公共点 Common
引出线标识 Identification of lead wire	Ab	Bb	Cb	Db	COMb

42 系列(Series)-J42BH007 混合式步进电机(Hybrid Stepper Motor)



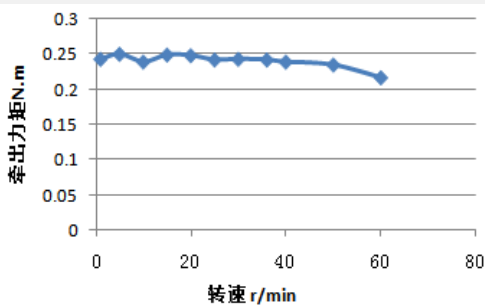
主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	28
保持转矩 Holding torque/ N·m	≥0.14@ A&B 通(Electrify)0.6A
自定位转矩 Detent torque/ N·m	≥0.015
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	3.2× (1±10%)
相电感 Phase inductance/mH	7.5× (1±20%)
牵出力矩 Put out torque/ N·m	≥0.2@36r/min
重量 Weight/kg	≤0.3

外形图(Outline Drawing)/mm

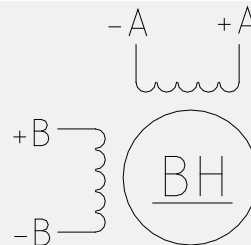


其他补充(Other Supplements)

电路图(Circuit Diagram)

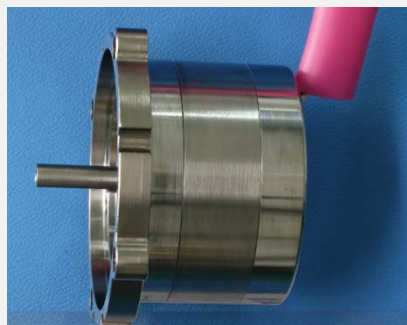


牵出矩频特性(Pull out torque frequency characteristics)



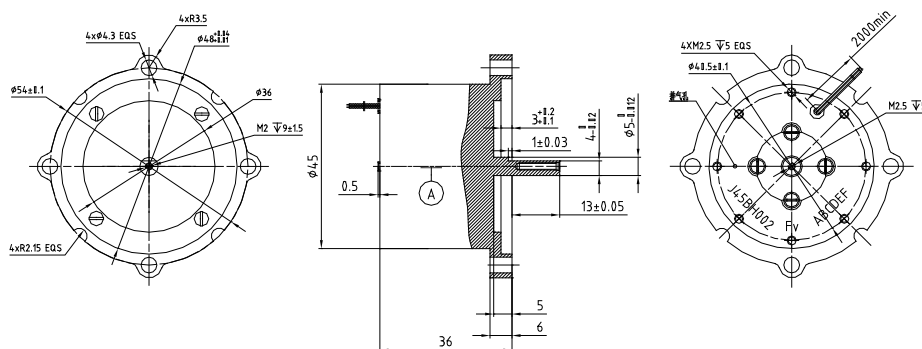
引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
引出线标识 Identification of lead wire	A+	A-	B+	B-

45 系列(Series)-J45BH002 混合式步进电机(Hybrid Stepper Motor)

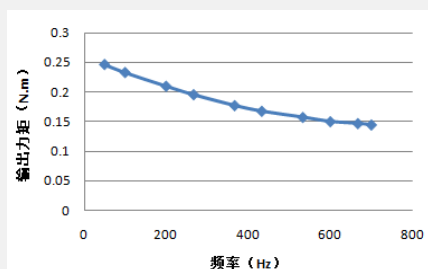


主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空短时(不超过 2h) Vacuum not exceeding 2 hours
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	15
保持转矩 Holding torque1/ N·m	≥0.2@ A&B 通(Electrify)0.8A
保持转矩 Holding torque2/ N·m	≥0.18@ A&B 通(Electrify)0.6A
自定位转矩 Detent torque/ N·m	≥0.017
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	5.85× (1±10%)
相电感 Phase inductance/mH	5.8× (1±15%)
牵出力矩 Put out torque1/ N·m	≥0.16@50rpm @A&B 通(Electrify)0.6A; ≥0.21@50rpm @A&B 通(Electrify)0.8A
牵出力矩 Put out torque2/ N·m	≥0.14@100rpm @A&B 通(Electrify)0.6A; ≥0.2@100rpm @A&B 通(Electrify)0.8A
牵出力矩 Put out torque3/ N·m	≥0.12@150rpm @A&B 通(Electrify)0.6A; ≥0.18@150rpm @A&B 通(Electrify)0.8A
重量 Weight/kg	≤0.28
电路图 Circuit Diagram	同上页电路图 (Circuit diagram on the same page)

外形图(Outline Drawing)/mm

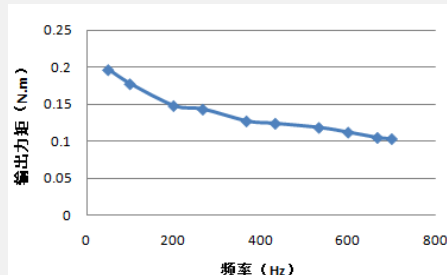


其他补充(Other Supplements)



牽出矩頻特性(Pull out torque frequency characteristics)
(A&B 通(Electrify)0.8A)

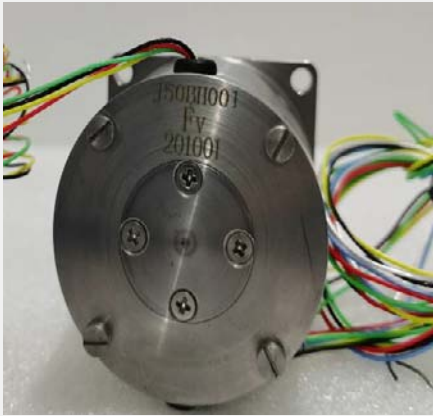
其他补充(Other Supplements)



牽出矩頻特性(Pull out torque frequency characteristics)
(A&B 通(Electrify)0.6A)

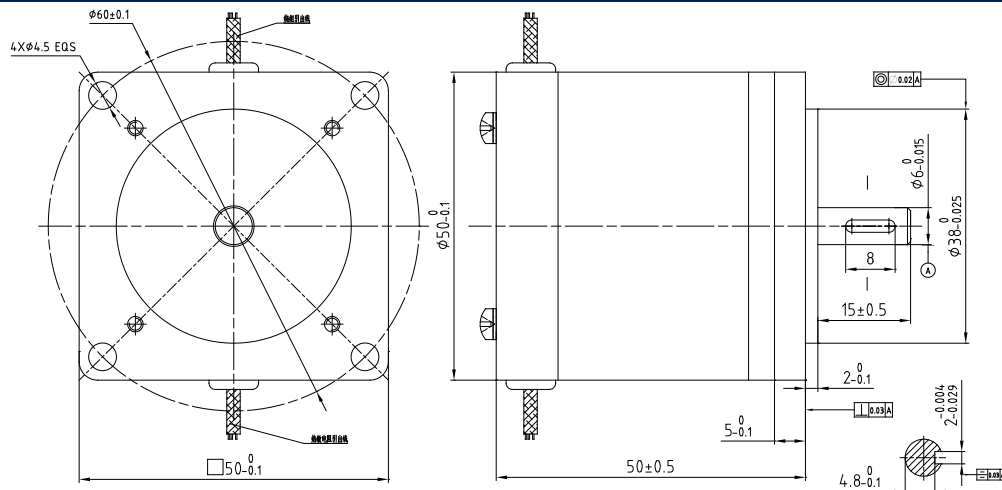
步进电机产品手册
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50 系列(Series)-J50BH001 混合式步进电机(Hybrid Stepper Motor)

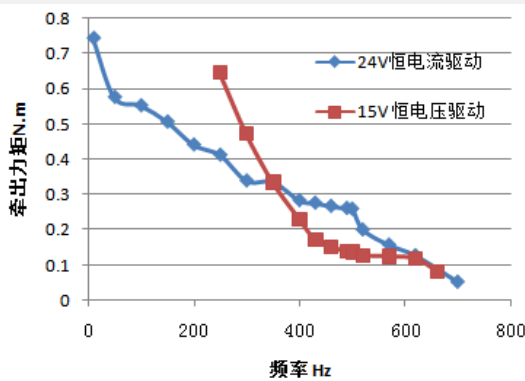


主要技术参数 Main technical parameters		
引出线形式 Lead out linear driver type	两相 6 线 Two Phase 6-line	
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive	
工作制 Working system	真空长时 Long term vacuum	
步距角 Step angle	1.8°	
额定电压 Rated voltage/VDC	24	
保持转矩 Holding torque/ N·m	≥0.75@ A&B 通(Electrify)1 A	
自定位转矩 Detent torque/ N·m	≥0.05	
步距角误差 Step angle error	±5%	
相电阻 Phase resistance/Ω	4.9× (1±10%)	
相电感 Phase inductance/mH	20× (1±25%)	
牵出力矩 Put out torque/ N·m	≥0.2@500Hz	
重量 Weight/kg	≤0.6	

外形图(Outline Drawing)/mm

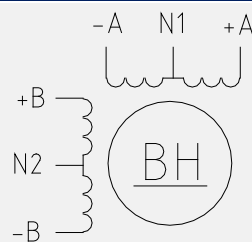


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	A 相中点 A-phase midpoint	B 相正 B-phase positive	B 相负 B-phase negative	B 相中点 B-phase midpoint
引出线标识 Identification of lead wire	A+	A-	N1	B+	B-	N2

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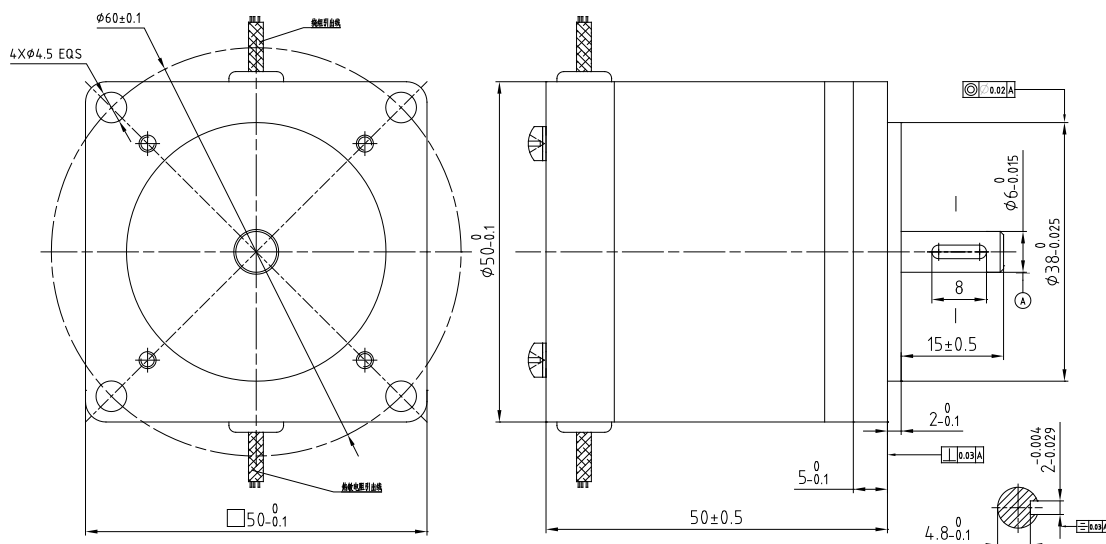
50 系列(Series)-J50BH002 混合式步进电机(Hybrid Stepper Motor)



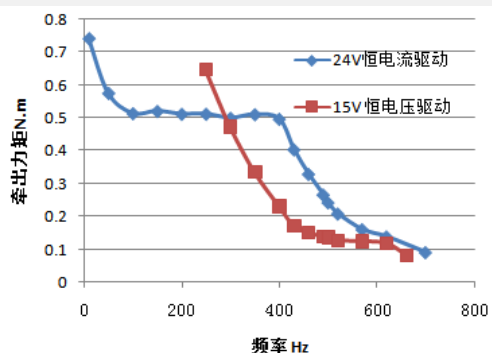
主要技术参数 Main technical parameters

引出线形式 Lead out linear driver type	两相 6 线 Two Phase 6-line
驱动方式 Drive model	bipolar 恒流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	24
保持转矩 Holding torque/ N·m	≥0.75@ A&B 通(Electrify)1 A
自定位转矩 Detent torque/ N·m	≤0.035
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	4.7× (1±10%)
相电感 Phase inductance/mH	20× (1±25%)
牵出力矩 Put out torque/ N·m	≥0.2@500Hz
重量 Weight/kg	≤0.6

外形图(Outline Drawing)/mm

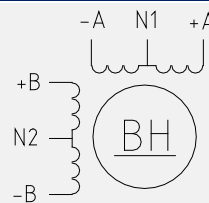


其他补充(Other Supplements)



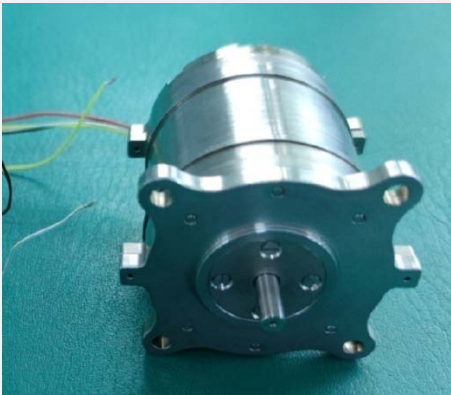
牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



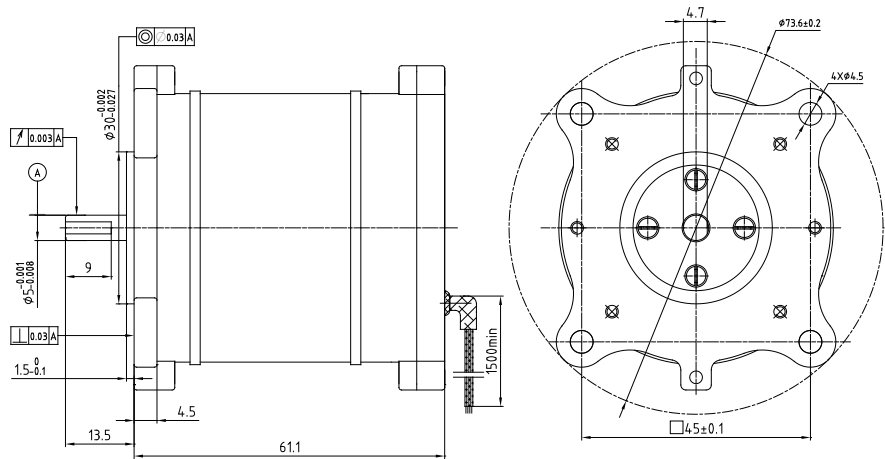
引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	A 相中点 A-phase midpoint	B 相正 B-phase positive	B 相负 B-phase negative	B 相中点 B-phase midpoint
引出线标识 Identification of lead wire	A+	A-	N1	B+	B-	N2

55 系列(Series)-J55BH001 混合式步进电机(Hybrid Stepper Motor)

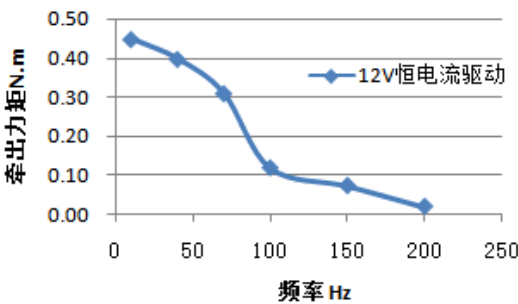


主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	12
保持转矩 Holding torque/ N·m	≥0.6@ A&B 通(Electrify)0.6A
自定位转矩 Detent torque/ N·m	≤0.055
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	6.3× (1±10%)
相电感 Phase inductance/mH	21× (1±20%)
牵出力矩 Put out torque/ N·m	≥0.4@10Hz
重量 Weight/kg	≤0.77

外形图(Outline Drawing)/mm

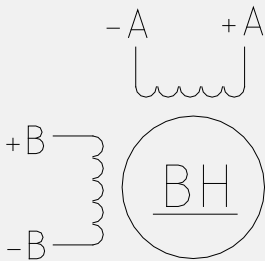


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



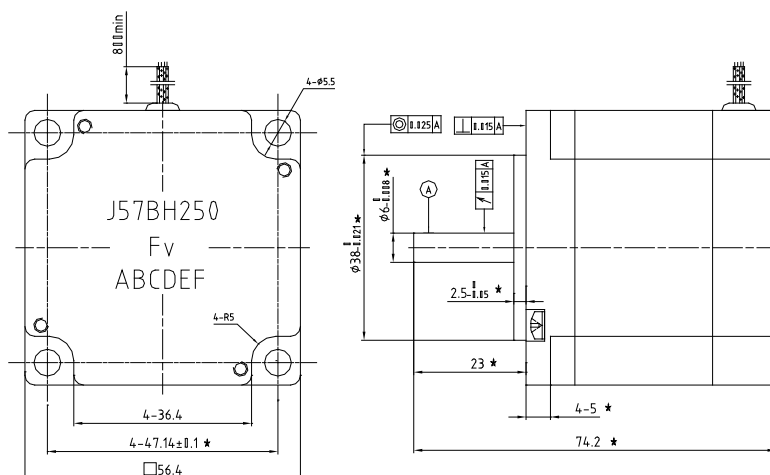
引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
引出线标识 Identification of lead wire	A+	A-	B+	B-

57 系列(Series)-J57BH250 混合式步进电机(Hybrid Stepper Motor)

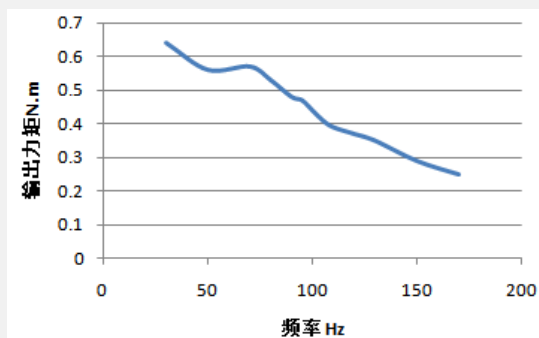


主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	两相 4 线（三点三线引出）Two Phase 4-line(Three point three line lead out)
驱动方式 Drive model	双极恒压双四拍驱动 Bipolar constant voltage double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	5
保持转矩 Holding torque/ N·m	≥0.6@ A&B 通(Electrify)1.3A
自定位转矩 Detent torque/ N·m	≥0.05
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	3.85× (1±10%)
相电感 Phase inductance/mH	10.5× (1±25%)
牵出力矩 Put out torque/ N·m	≥0.2@100Hz
重量 Weight/kg	≤0.7

外形图(Outline Drawing)/mm

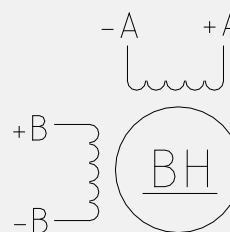


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
	A+	A-	B+	B-

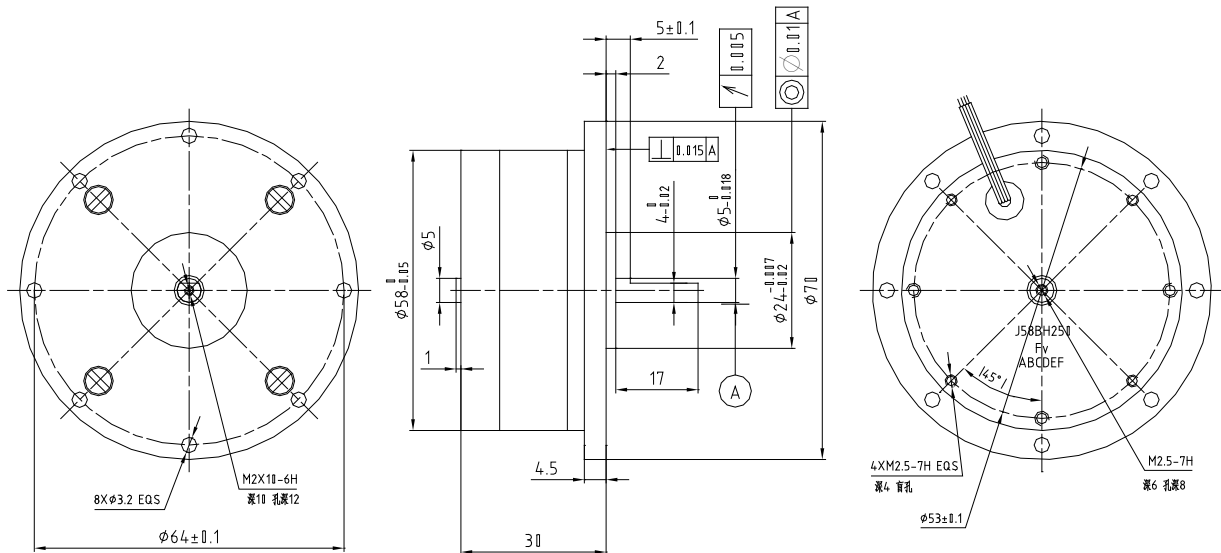
58 系列(Series)-J58BH001 混合式步进电机(Hybrid Stepper Motor)



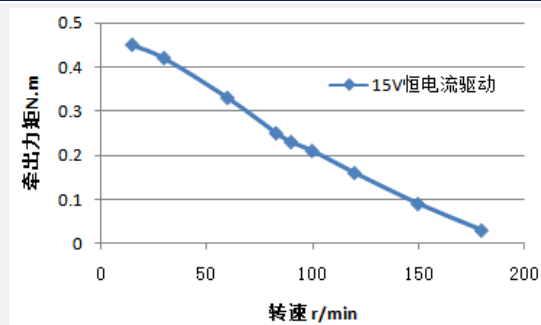
主要技术参数 Main technical parameters

引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	1.8°
额定电压 Rated voltage/VDC	15
保持转矩 Holding torque/ N·m	≥0.5@ A&B 通(Electrify)0.6A
自定位转矩 Detent torque/ N·m	≥0.02
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	6× (1±10%)
相电感 Phase inductance/mH	12× (1±20%)
牵出力矩 Put out torque/ N·m	≥0.2@333Hz
重量 Weight/kg	≤0.4

外形图(Outline Drawing)/mm

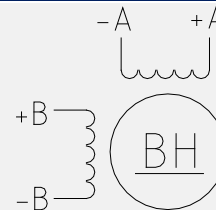


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



引出线定义 Definition of lead wire

A 相正
A-phase
positive

A 相负
A-phase
negative

B 相正
B-phase
positive

B 相负
B-phase
negative

引出线标识 Identification of lead wire

A+

A-

B+

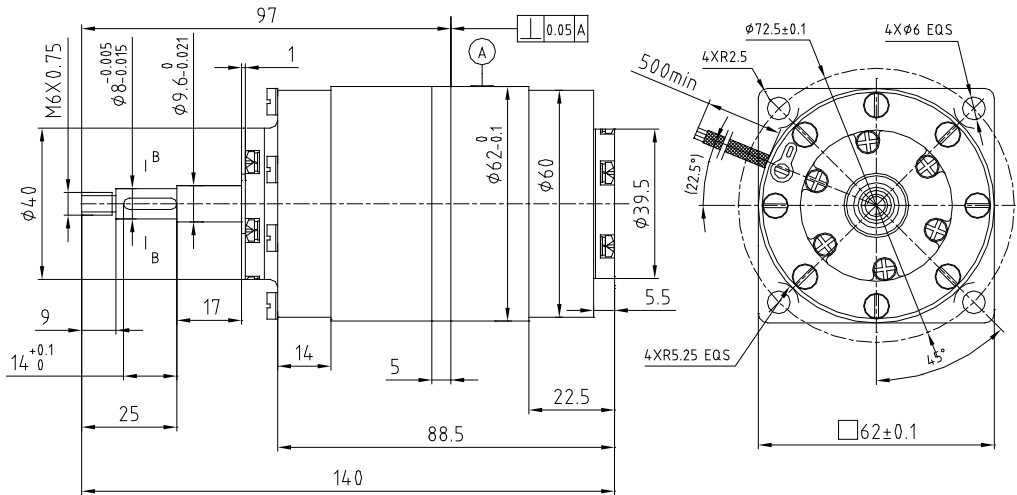
B-

60 系列(Series)-J60BH001 混合式步进电机(Hybrid Stepper Motor)

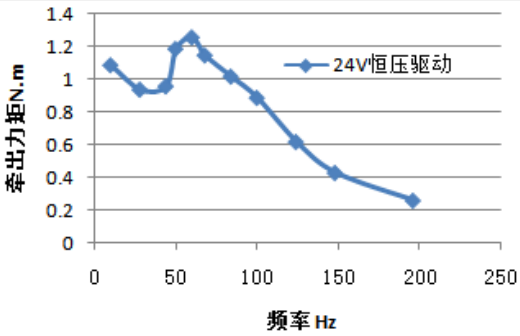


主要技术参数 Main technical parameters	
引出线形式 Lead out linear driver type	四相 5 线 Four Phase 5-line
驱动方式 Drive model	单极恒压双四拍驱动 Unipolar constant voltage double four beat drive
工作制 Working system	真空短时 Short term vacuum
步距角 Step angle	0.9°
额定电压 Rated voltage/VDC	24
保持转矩 Holding torque/ N·m	≥1.6@ A&B 通(Electrify)1.3A
自定位转矩 Detent torque/ N·m	≤0.04
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	18.7× (1±10%)
相电感 Phase inductance/mH	40× (1±20%)
牵出力矩 Put out torque/ N·m	≥0.8@50Hz
重量 Weight/kg	≤1.65

外形图(Outline Drawing)/mm

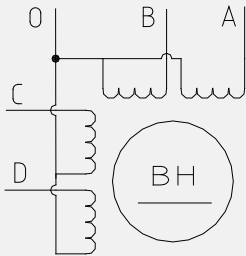


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



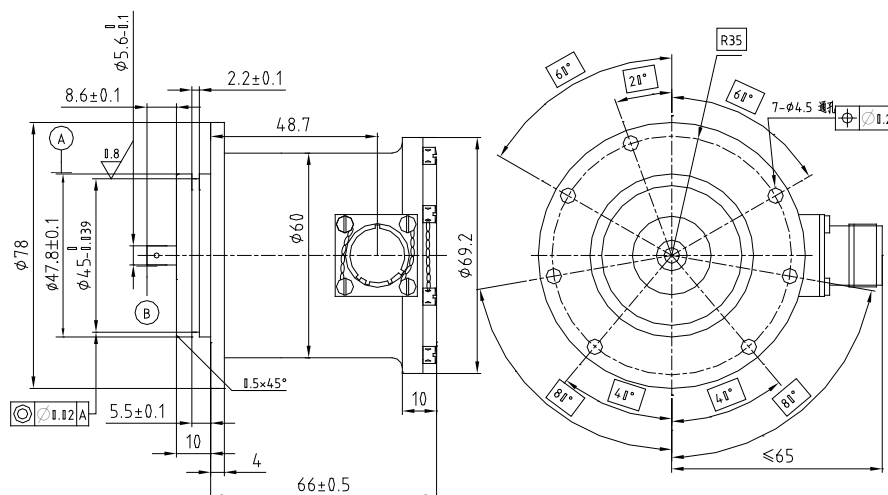
引出线定义 Definition of lead wire	A 相 A-phase	B 相 A-phase	C 相 A-phase	D 相 A-phase	公共点 Common
引出线标识 Identification of lead wire	A	B	C	D	O

60 系列(Series)-J60BH002 混合式步进电机(Hybrid Stepper Motor)

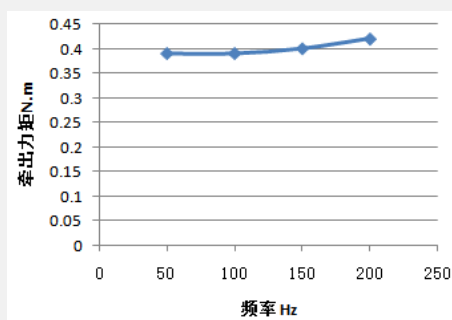


主要技术参数 Main technical parameters		
引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line	
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive	
工作制 Working system	常压长时工作 Long term operation under normal pressure	
步距角 Step angle	0.9°	
额定电压 Rated voltage/VDC	24	
保持转矩 Holding torque/ N·m	≥0.6@ 单通(Single-Electrify)1.2A	
自定位转矩 Detent torque/ N·m	≥0.03	
步距角误差 Step angle error	±5%	
相电阻 Phase resistance/Ω	4.5× (1±10%)	
相电感 Phase inductance/mH	10.5× (1±20%)	
牵出力矩 Put out torque/ N·m	≥0.35@50Hz~200Hz	
重量 Weight/kg	≤0.8	

外形图(Outline Drawing)/mm

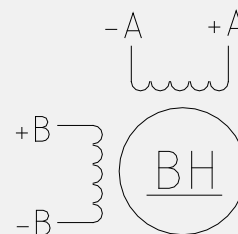


其他补充(Other Supplements)



牵出力矩频率特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
引出线标识 Identification of lead wire	A+	A-	B+	B-

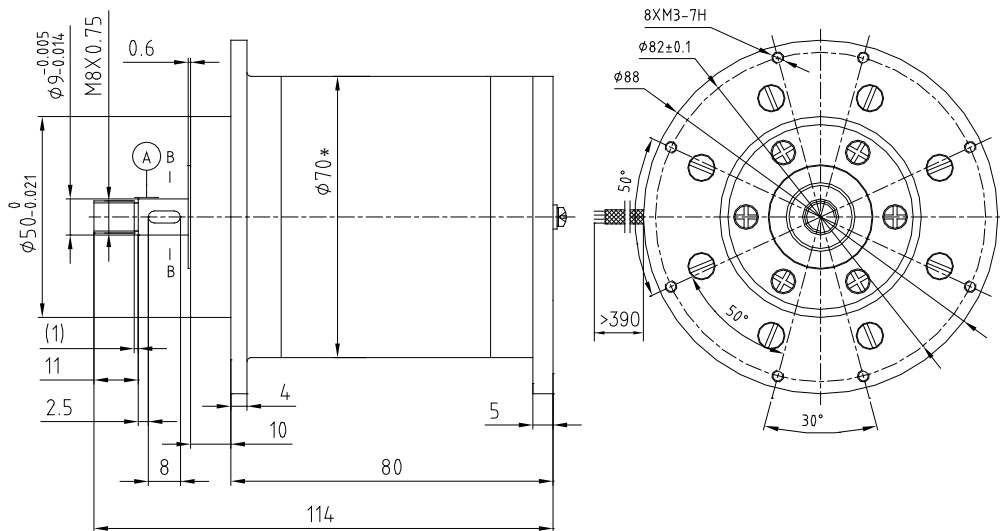
70 系列(Series)-J70BH2100 混合式步进电机(Hybrid Stepper Motor)



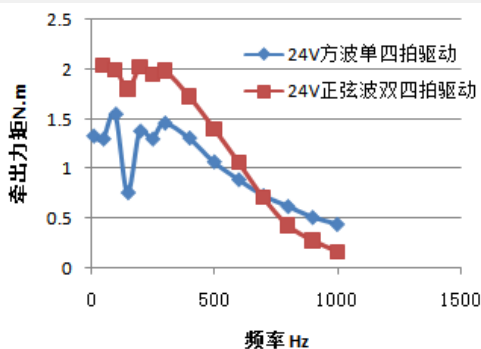
主要技术参数 Main technical parameters

引出线形式 Lead out linear driver type	两相 4 线 Two Phase 4-line
驱动方式 Drive model	双极恒流单（双）四拍驱动 Bipolar constant current single (double) four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	0.9°
额定电压 Rated voltage/VDC	24
保持转矩 Holding torque/ N·m	≥1.7@ 单相通(Single phase electrify)2.3A
自定位转矩 Detent torque/ N·m	≥0.04
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	3.1× (1±10%)
相电感 Phase inductance/mH	7.5× (1±20%)
牵出力矩 Put out torque/ N·m	≥1.2@100Hz
重量 Weight/kg	≤2.0

外形图(Outline Drawing)/mm

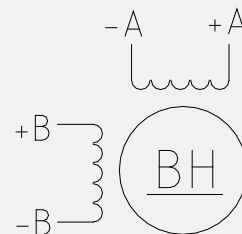


其他补充(Other Supplements)



牵出矩频特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



引出线定义 Definition of lead wire

A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
-----------------------------	-----------------------------	-----------------------------	-----------------------------

引出线标识 Identification of lead wire

A+	A-	B+	B-
----	----	----	----

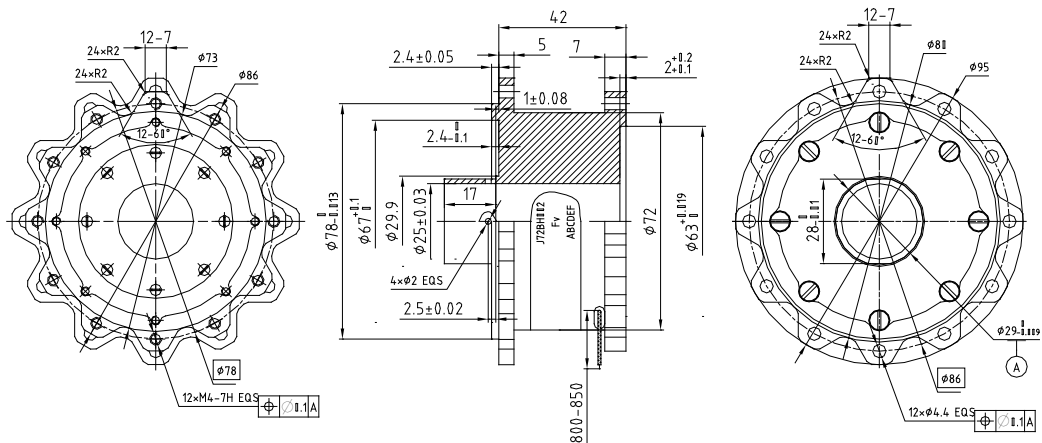
72 系列(Series)-J72BH002 混合式步进电机(Hybrid Stepper Motor)



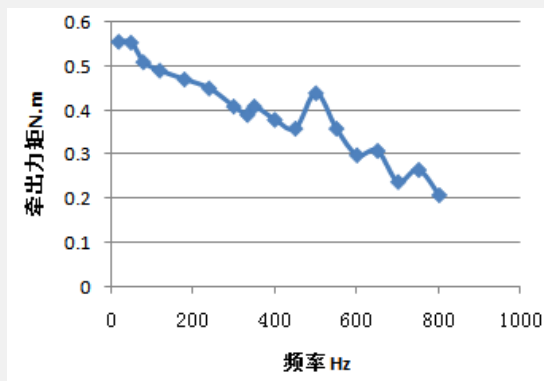
主要技术参数 Main technical parameters

引出线形式 Lead out linear driver type	两相 4 线(双备份绕组) Two Phase 4-line(Dual backup winding)
驱动方式 Drive model	双极恒流双四拍驱动 Bipolar constant current double four beat drive
工作制 Working system	真空长时 Long term vacuum
步距角 Step angle	0.9°
额定电压 Rated voltage/VDC	28
保持转矩 Holding torque/ N·m	≥0.6@ A&B 通(Elctrify) 1.2A
自定位转矩 Detent torque/ N·m	≥0.025
步距角误差 Step angle error	±5%
相电阻 Phase resistance/Ω	2.5× (1±10%)
相电感 Phase inductance/mH	4.4× (1±20%)
牵出力矩 Put out torque/ N·m	≥0.3@400Hz
重量 Weight/kg	≤0.8

外形图(Outline Drawing)/mm

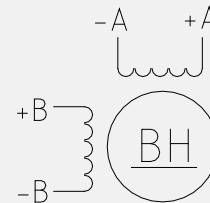


其他补充(Other Supplements)



牵出力矩特性(Pull out torque frequency characteristics)

电路图(Circuit Diagram)



引出线定义 Definition of lead wire	A 相正 A-phase positive	A 相负 A-phase negative	B 相正 B-phase positive	B 相负 B-phase negative
引出线标识 Identification of lead wire	A+	A-	B+	B-



无框无刷力矩电动机产品手册

BRUSHLESS DC TORQUE MOTOR

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1 概述 (Overview)

◆ 电机分类

◆ Classification of motor

按照驱动方式，按照驱动方式分类一般可分为方波、正弦波驱动无框无刷力矩电机。

According to the driving method, the motors can be categorized into square wave and sine wave drive frameless brushless torque motors.

◆ 使用场合

◆ Applicat situation

方波驱动无刷力矩电机因其电流换相过程引起力矩波动远大于正弦波驱动电机，其一般应用在精度要求不高场合，如泵等，最低转速一般在 30r/min 左右。正弦波驱动无刷力矩电机具有优异的电流力矩线性度、低力矩波动，是高精度直驱伺服系统中应用最多的电机类型，如天线及转台、雷达转台等，最低转速可达到 0.001°/s。

Square wave drive brushless torque motors are generally used in occasions with low precision requirements, such as pumps, etc., and the minimum speed is generally around 30r/min because the fluctuation of torque caused by the current phase change process is much larger than that of sine wave drive motors. Sine wave drive brushless torque motors have excellent current torque linearity and low torque fluctuation, and are the most widely used motors in high-precision direct-drive servo systems, such as antennas and turntables, radar turntables, etc., and the minimum speed can reach 0.001°/s.

◆ 电机特点

◆ Motor characteristics

无刷力矩电机属于低速直流伺服电动机，通常在堵转或低速工况下使用，具有连续堵转转矩大、转速低、过载能力强的特点。无刷力矩电机不需要任何减速装置就可以直接驱动负载，长期堵转时能产生足够大的力矩而不损坏，由传统“电机+减速装置（涡轮蜗杆、齿轮等）+负载”模式向“电机+负载”的直驱模式转变，省去减速装置，使驱动系统可靠性和控制精度提高，重量、体积、噪声大大降低。

Brushless torque motors belong to low-speed DC servo motors, which are usually used in blocking or low-speed working conditions, and are characterized by large continuous blocking torque, low rotational speed and strong overload capacity. Brushless torque motors can directly drive loads without any deceleration device, and can generate large enough torque without damage

during long-term blocking, which is a change from the traditional "motor + deceleration device (worm gear, gear, etc.)" to the traditional "motor + deceleration device (worm gear, etc.)".

It changes from the traditional "motor + load" mode to the "motor + load" direct drive mode, eliminating the deceleration device and improving the reliability and control accuracy of the drive system, as well as greatly reducing the weight, volume and noise.



2 专业术语 (Terminology)

◆ 峰值堵转转矩、峰值电流、峰值电压

◆ Peak blocking torque, Peak current, Peak voltage

峰值堵转转矩指满足电机短时堵转运行且不毁坏时（衡量标准：短时运行温升低于绝缘等级或材料器件最高工作温度）电机所能输出的最大力矩；此时电机消耗电流最大（也称为峰值电流），电压最大（也称为峰值电压，也是额定电压）。

Peak blocking torque refers to the maximum torque that can be output by the motor to meet the short-term blocking operation of the motor without destroying it (Measurement standard: the temperature rise of the short-term operation is lower than the maximum working temperature of the insulation grade or material device); at this time, the motor consumes the maximum current (also known as the peak current), and the voltage is the maximum (also known as the peak voltage, which is also the rated voltage).

◆ 连续堵转转矩、连续堵转电流、连续堵转电压

◆ Continuous blocking torque, Continuous blocking current, Continuous blocking voltage

满足电机长时堵转运行且不毁坏时（衡量标准：长时运行温升低于绝缘等级或材料器件最高工作温度）电机所能输出的力矩，此时电机消耗电流低于峰值电流，消耗电压低于峰值电压。

To meet the motor long-time blocking operation and not destroyed (measurement standard: long-time operation temperature rise is lower than the insulation level or the maximum working temperature of the material device) the motor can output torque, at this time the motor consumption current is lower than the peak current, consumption voltage is lower than the peak voltage.

◆ 转矩系数

◆ Torque coefficient

转矩系数指为力矩与相电流（有效值）的比值。一般有该参数时，电流指标可无。

Torque coefficient refers to the ratio of torque to phase current (RMS). Generally, when this parameter is available, the current index can be absent.

◆ 转矩波动系数

◆ Torque fluctuation coefficient

转矩波动系数是指电机旋转一周输出力矩的最大值与最小值的关系如下，转矩波动系数关系电机运行的平稳。

The torque fluctuation coefficient refers to the relationship between the maximum and minimum values of the output torque of the motor for one week of rotation as follows, and the torque fluctuation coefficient is related to the smoothness of motor operation.

$$K = \frac{T_{\max} - T_{\min}}{T_{\max} + T_{\min}} \times 100\%$$

式中：K—转矩波动系数，%； $T_{\max}$ —最大力矩，N·m； $T_{\min}$ —最小力矩，N·m。

Where: K - torque fluctuation coefficient, %; $T_{\max}$ —maximum torque, N·m; $T_{\min}$ —minimum torque, N·m.

◆ 电流-力矩线性度定义

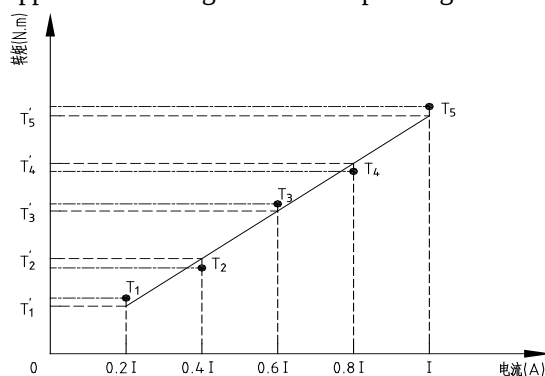
◆ Current-Torque linearity definition

按国标要求，电流力矩线性度定义为实际力矩-电流特性曲线与最近似的力矩-电流特性直线部分对应点的数值差，对该点的堵转转矩的比值。这里的电流一般指相电流。

According to the requirements of the national standard, the current torque linearity is defined as the difference between the actual torque-current characteristic curve and the ratio of the difference between the actual torque-current characteristic curve and the nearest torque-current characteristic curve to the corresponding point of the straight line part to the blocking torque of the point. The current here generally refers to the phase current.

式中： δ ——各测量点的力矩—电流特性线性度； T ——各测量点的连续堵转转矩，N·m； T' ——各测量点对应的近似直线上交点的堵转转矩，N·m。

Where: δ - the linearity of the torque-current characteristic of each measurement point; T - the continuous blocking torque of each measurement point, N·m; T' - blocking torque at the intersection point on the approximate straight line corresponding to each measurement point, N·m.



力矩-电流特性图

Haracteristic diagram of torque-current

◆ 齿槽转矩

◆ Cogging Torque

齿槽转矩是永磁齿槽式电机的固有属性,是指电机不通电时永磁体和定子铁芯之间相互作用产生的转矩,是永磁体与电枢齿槽之间相互作用力切向分量引起的。

Cogging torque is an intrinsic property of permanent magnet cogging type motors, which refers to the torque generated by the interaction between the permanent magnets and the stator core when the motor is not energized, and is caused by the tangential component of the interaction force between the permanent magnets and the armature cogging.

无框无刷力矩电机产品手册
BRUSHLESS DC TORQUE MOTOR Product Manual

3 正弦波驱动无框无刷力矩电机产品 (Sine wave drive frameless brushless torque motor products)

序号 (Serial number)	产品代号 (Product Code)	转子类型 (Rotor Type)	最大轮廓尺寸/mm (Maximum profile size/mm)	驱动方式 (Driving Method)	工作制 (Working system)	极对数 (Pole Number of pairs)	电压 /V (Voltage /V)	连续堵转转矩 / N·m (Continuous blocking Torque / N·m)	转矩系数 (N·m /A) (Torque coefficient/(N·m /A))	峰值堵转转矩/ N·m (Peak blocking Torque/ N·m)	空载转速 /(r/min) (No-load speed / (r/min))	相电阻/ Ω (Phase resistance / Ω)	相电感/mH (Phase inductance/ mH)	转矩波动系数 (Torque Fluctuation coefficient)	齿槽转矩/ N·m (Cogging torque / N·m)	重量 /kg (Weight /kg)	页码 (Page)	备注 (Remarks)
1	J50LWX06	内转子 Inner rotor	$\Phi 54 \times 32$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	11	28	≥ 0.3	≥ 0.4	≥ 0.5	$600 \pm 10\%$	$7.75 \times (1 \pm 15\%)$	$8 \times (1 \pm 20\%)$	$\leq 6\%$	/	≤ 0.28	167	
2	J55LWX001	内转子 Inner rotor	$\Phi 56 \times 15$	正弦波 Sine wave	地面长时工作 Ground long time working operation	8	28	≥ 0.3	≥ 0.1	≥ 0.5	$1300 \pm 10\%$	$3 \times (1 \pm 15\%)$	$2.8 \times (1 \pm 25\%)$	$\leq 5\%$	/	≤ 0.14	169	
3	J67LWX01	内转子 Inner rotor	$\Phi 56 \times 15$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	16	28	≥ 0.5	≥ 0.73	≥ 0.65	$390 \pm 10\%$	$9.7 \pm 10\%$	$7.2 \pm 20\%$	$\leq 5\%$	/	≤ 0.3	171	
4	J73SW001	内转子 Inner rotor	$\Phi 83 \times 27$	正弦波 Sine wave	真空长时工作制 Vacuum long-time working operation	6	28	≥ 0.9	≥ 0.65	≥ 1.2	$500 \pm 10\%$	$5.3 \pm 10\%$	$5.75 \pm 20\%$	/	≤ 0.03	≤ 0.42	173	
5	J75LWX01	外转子 Outer rotor	$\Phi 72 \times 40$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	13	28	≥ 0.45	≥ 0.8	≥ 0.9	$269 \pm 10\%$	$8.85 \pm 10\%$	$3.6 \pm 20\%$	$\leq 5\%$	/	≤ 0.53	175	

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序号 (Serial number)	产品代号 (Product Code)	转子类型 (Rotor Type)	最大轮廓尺寸/mm (Maximum profile size/mm)	驱动方式 (Driving Method)	工作制 (Working system)	极对数 (Pole Number of pairs)	电压 /V (Voltage /V)	连续堵转转矩 / N·m (Continuous blocking Torque / N·m)	转矩系数 (N·m /A) (Torque coefficient/(N·m /A))	峰值堵转转矩/ N·m (Peak blocking Torque/ N·m)	空载转速 /(r/min) (No-load speed / (r/min))	相电阻/ Ω (Phase resistance / Ω)	相电感/mH (Phase inductance/mH)	转矩波动系数 (Torque Fluctuation coefficient)	齿槽转矩/ $\text{N}\cdot\text{m}$ (Cogging torque / $\text{N}\cdot\text{m}$)	重量 /kg (Weight /kg)	页码 (Page)	备注 (Remarks)
6	J75LWX03	内转子 Inner rotor	$\Phi 87.8 \times 29.5$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	16	28	≥ 0.8	≥ 0.83	≥ 1.0	$330 \pm 10\%$	$7.2 \pm 10\%$	$6 \pm 20\%$	$\leq 5\%$	/	≤ 0.36	177	
7	J80LWX02	内转子 Inner rotor	$\Phi 83 \times 33.3$	正弦波 Sine wave	真空短时工作制 (15min) Vacuum short-time working operation (15min)	11	48	≥ 1.7	≥ 1.0	≥ 2.4	$300 \pm 10\%$	$10.5 \pm 10\%$	/	$\leq 5\%$	/	≤ 0.6	179	
8	J90LWX01	内转子 Inner rotor	$\Phi 88 \times 15$	正弦波 Sine wave	地面长时工作 Ground long time working operation	13	28	≥ 1	≥ 0.3	≥ 1.2	$760 \pm 10\%$	$2.3 \pm 10\%$	$2.7 \pm 20\%$	$\leq 5\%$	/	≤ 0.27	181	
9	J93LW02	内转子 Inner rotor	$\Phi 106 \times 24$	正弦波 Sine wave	真空长时工作制 Vacuum long-time working operation	16	28	≥ 0.6	≥ 0.8	≥ 1	$330 \pm 10\%$	$6.75 \pm 10\%$	$2.25 \pm 20\%$	$\leq 4\%$	≤ 0.02	≤ 0.31	183	
10	J96LWX01	内转子 Inner rotor	$\Phi 96 \times 29.6$	正弦波 Sine wave	真空短时工作制 (15min) Vacuum short-time working operation	16	48	≥ 2.0	≥ 1.5	≥ 2.8	$150 \pm 10\%$	$8.5 \pm 10\%$	$13 \pm 10\%$	$\leq 5\%$	≤ 0.03	≤ 0.61	185	

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序号 (Serial number)	产品代号 (Product Code)	转子类型 (Rotor Type)	最大轮廓尺寸/mm (Maximum profile size/mm)	驱动方式 (Driving Method)	工作制 (Working system)	极对数 (Pole Number of pairs)	电压 /V (Voltage /V)	连续堵转转矩 / N·m (Continuous blocking Torque / N·m)	转矩系数 (N·m /A) (Torque coefficient/(N·m)/A))	峰值堵转转矩/ N·m (Peak blocking Torque/ N·m)	空载转速 /(r/min) (No-load speed /r/min)	相电阻/ Ω (Phase resistance / Ω)	相电感/mH (Phase inductance/mH)	转矩波动系数 (Torque Fluctuation coefficient)	齿槽转矩/ $\text{N}\cdot\text{m}$ (Cogging torque / N·m)	重量 /kg (Weight /kg)	页码 (Page)	备注 (Remarks)
					(15min)													
11	J110LWX03	内转子 Inner rotor	$\Phi 120 \times 26$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	16	28	≥ 1.0	≥ 1.2	≥ 1.5	$219 \pm 10\%$	$6.96 \pm 10\%$	$10.6 \pm 20\%$	$\leq 4\%$	≤ 0.03	≤ 0.65	187	
12	J129LW02	内转子 Inner rotor	$\Phi 140 \times 23$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	16	28	≥ 1.2	≥ 1.5	≥ 1.8	$169 \pm 10\%$	$8.4 \pm 10\%$	$8.6 \pm 20\%$	$\leq 4\%$	≤ 0.03	≤ 0.75	189	
13	J130LWX002	外转子 Outer rotor	$\Phi 144 \times 40$	正弦波 Sine wave	地面长时工作 Ground long time working operation	16	36	≥ 3	≥ 1.9	≥ 5.5	$140 \pm 10\%$	$4.7 \pm 10\%$	$11.2 \pm 20\%$	$\leq 5\%$	/	≤ 1.8	191	
14	J130LWX03	内转子 Inner rotor	$\Phi 144 \times 44$	正弦波 Sine wave	地面长时工作 Ground long time working operation	16	36	≥ 5	≥ 1.7	≥ 7	$170 \pm 10\%$	$2.8 \pm 10\%$	$8.2 \pm 20\%$	$\leq 5\%$	/	≤ 2.1	193	
15	J150LWX01	内转子 Inner rotor	$\Phi 160 \times 25$	正弦波 Sine wave	真空短时工作制 Vacuum short-time working operation	16	28	≥ 2.1	≥ 2.4	≥ 3.1	$90 \pm 10\%$	$9.2 \pm 10\%$	$13 \pm 30\%$	$\leq 5\%$	/	≤ 1.1	195	

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序号 (Serial number)	产品代号 (Product Code)	转子类型 (Rotor Type)	最大轮廓尺寸/mm (Maximum profile size/mm)	驱动方式 (Driving Method)	工作制 (Working system)	极对数 (Pole Number of pairs)	电压 /V (Voltage /V)	连续堵转转矩 / N·m (Continuous blocking Torque / N·m)	转矩系数 (N·m /A) (Torque coefficient/(N·m /A))	峰值堵转转矩/ N·m (Peak blocking Torque/ N·m)	空载转速 /(r/min) (No-load speed / (r/min))	相电阻/ Ω (Phase resistance / Ω)	相电感/mH (Phase inductance/ mH)	转矩波动系数 (Torque Fluctuation coefficient)	齿槽转矩/ $\text{N}\cdot\text{m}$ (Cogging torque / N·m)	重量 /kg (Weight /kg)	页码 (Page)	备注 (Remarks)
16	J155LW01	内转子 Inner rotor	$\Phi 165 \times 23$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	16	28	≥ 2.1	≥ 2.4	≥ 2.8	$100 \pm 10\%$	$8.5 \pm 10\%$	$11.4 \pm 20\%$	$\leq 4\%$	≤ 0.04	≤ 0.96	197	
17	J168LWX01	内转子 Inner rotor	$\Phi 178 \times 52$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	19	12	≥ 3.6	≥ 3.25	≥ 3.6	$30 \pm 20\%$	$3.05 \pm 10\%$	$7.1 \pm 20\%$	$\leq 3\%$	≤ 0.15	≤ 3.2	199	
							42	≥ 4.5	≥ 3.25	≥ 15.5	$120 \pm 10\%$							
18	J170LWX01	内转子 Inner rotor	$\Phi 182 \times 30.5$	正弦波 Sine wave	真空长时工作 Vacuum long-time working operation	16	28	≥ 3	≥ 1	≥ 7	$260 \pm 10\%$	$1.1 \times (1 \pm 15\%)$	$6.0 \times (1 \pm 25\%)$	$\leq 4\%$	≤ 0.1	≤ 1.3	201	
19	J182TY37	内转子 Inner rotor	$\Phi 204 \times 39.5$	正弦波 Sine wave	地面长时工作 Ground long time working operation	13	27	≥ 5	≥ 1.6	≥ 10	$200 \pm 10\%$	$1.15 \pm 10\%$	$13.9 \pm 20\%$	$\leq 5\%$	/	≤ 3.2	203	
20	J198LWX001	内转子 Inner rotor	$\Phi 220 \times 66$	正弦波 Sine wave	地面长时工作 Ground long time working operation	19	48	≥ 27	≥ 1.8	≥ 35	$200 \pm 10\%$	$0.24 \pm 10\%$	$1.4 \pm 20\%$	$\leq 4\%$	/	≤ 5.2	205	

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序号 (Serial number)	产品代号 (Product Code)	转子类型 (Rotor Type)	最大轮廓尺寸/mm (Maximum profile size/mm)	驱动方式 (Driving Method)	工作制 (Working system)	极对数 (Pole Number of pairs)	电压/V (Voltage /V)	连续堵转转矩 / N·m (Continuous blocking Torque / N-m)	转矩系数 / (N·m / A) (Torque coefficient/(N-m) /A))	峰值堵转转矩/ N·m (Peak blocking Torque/ N-m)	空载转速 / (r/min) (No-load speed / (r/min))	相电阻/Ω (Phase resistance /Ω)	相电感/mH (Phase inductance/ mH)	转矩波动系数 (Torque Fluctuation coefficient)	齿槽转矩/ N·m (Cogging torque / N-m)	重量 /kg (Weight /kg)	页码 (Page)	备注 (Remarks)
21	J204TY53	内转子 Inner rotor	Φ 224×44	正弦波 Sine wave	地面长时工作 Ground long time working operation	13	27	≥10	≥1.8	≥15	120±10%	0.71±10%	10.1±20%	≤5%	/	≤3.8	207	
22	J216LWX001	内转子 Inner rotor	Φ 238×82	正弦波 Sine wave	地面长时工作 Ground long time working operation	19	48	≥30	≥3.1	≥50	200±10%	0.19±10%	1.1±20%	≤5%	/	≤7.9	209	

50 系列-J50LWX06-正弦波内转子 (50 series - J50LWX06 - Sine Wave Internal Rotor)



定子 (Stator)

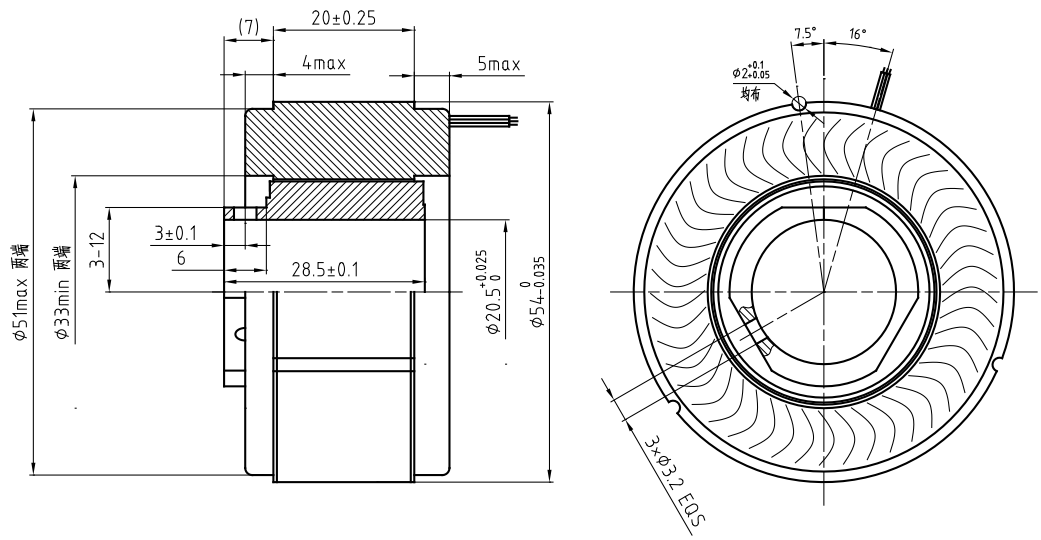
转子(Rotor)

主要技术参数

Main technical parameters

驱动方式 Driving method	正弦波 Sine wave
工作制 Working system	真空长时工作 Vacuum long-time operation
极对数 Number of poles	11
额定电压/V Rated voltage/V	28
连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥0.3
峰值堵转电流/A Peak blocking current/A	≤2.0
力矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥0.4
峰值堵转转矩/ N·m Peak blocking torque / N-m	≥0.5
空载转速/(r/min) No-load speed/(r/min)	600±10%
相电阻/Ω Phase resistance/Ω	7.75×(1±15%)
相电感/mH Phase inductance/mH	8×(1±20%)
力矩波动系数 Torque fluctuation coefficient	≤6%
齿槽力矩/ N·m Cogging torque/ N-m	/
重量/kg Weight/kg	≤0.28

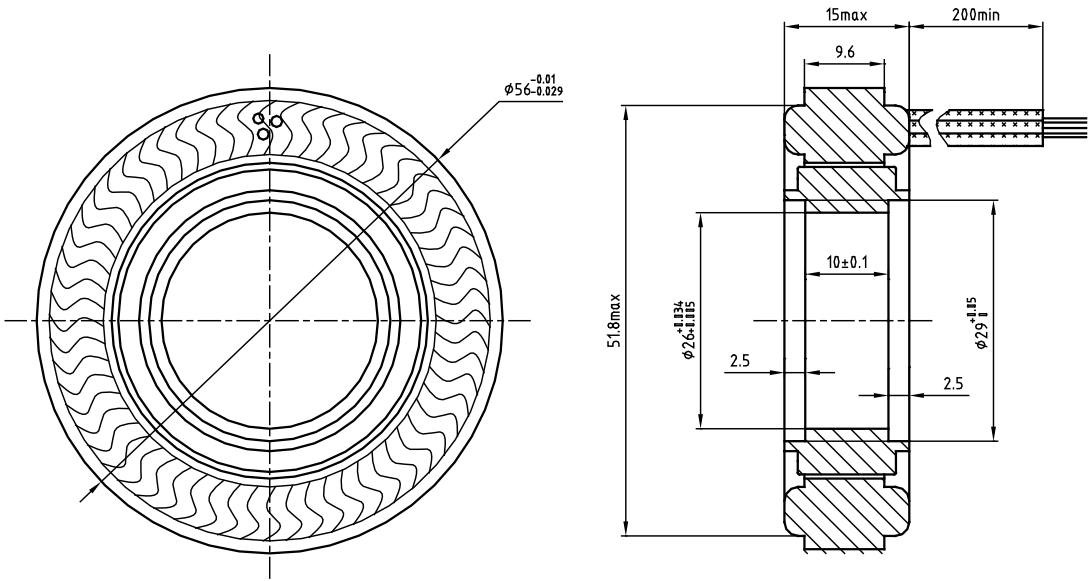
外形图/mm (Outline drawing/mm)



安装要求及注意事项 (Installation Requirement and Precautions)	电路图 (Circuit Diagram)								
a) 定子外圆3×φ2半孔定位；(Stator outer circle 3×φ2 half hole positioning;) b) 转子3个均布安装面，3×φ3.2安装孔。 (Rotor 3 even mounting surfaces, 3×φ3.2 mounting holes.)	A B C -M <table><tr><td>引出线定义 Lead wire definition</td><td>A 相 A phase</td><td>B 相 B phase</td><td>C 相 C phase</td></tr><tr><td>引出线标识 Lead wire identification</td><td>A</td><td>B</td><td>C</td></tr></table>	引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase	引出线标识 Lead wire identification	A	B	C
引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase						
引出线标识 Lead wire identification	A	B	C						

55 系列-J55LWX001-正弦波内转子 (50 series - J55LWX001 - Sine Wave
Internal Rotor)

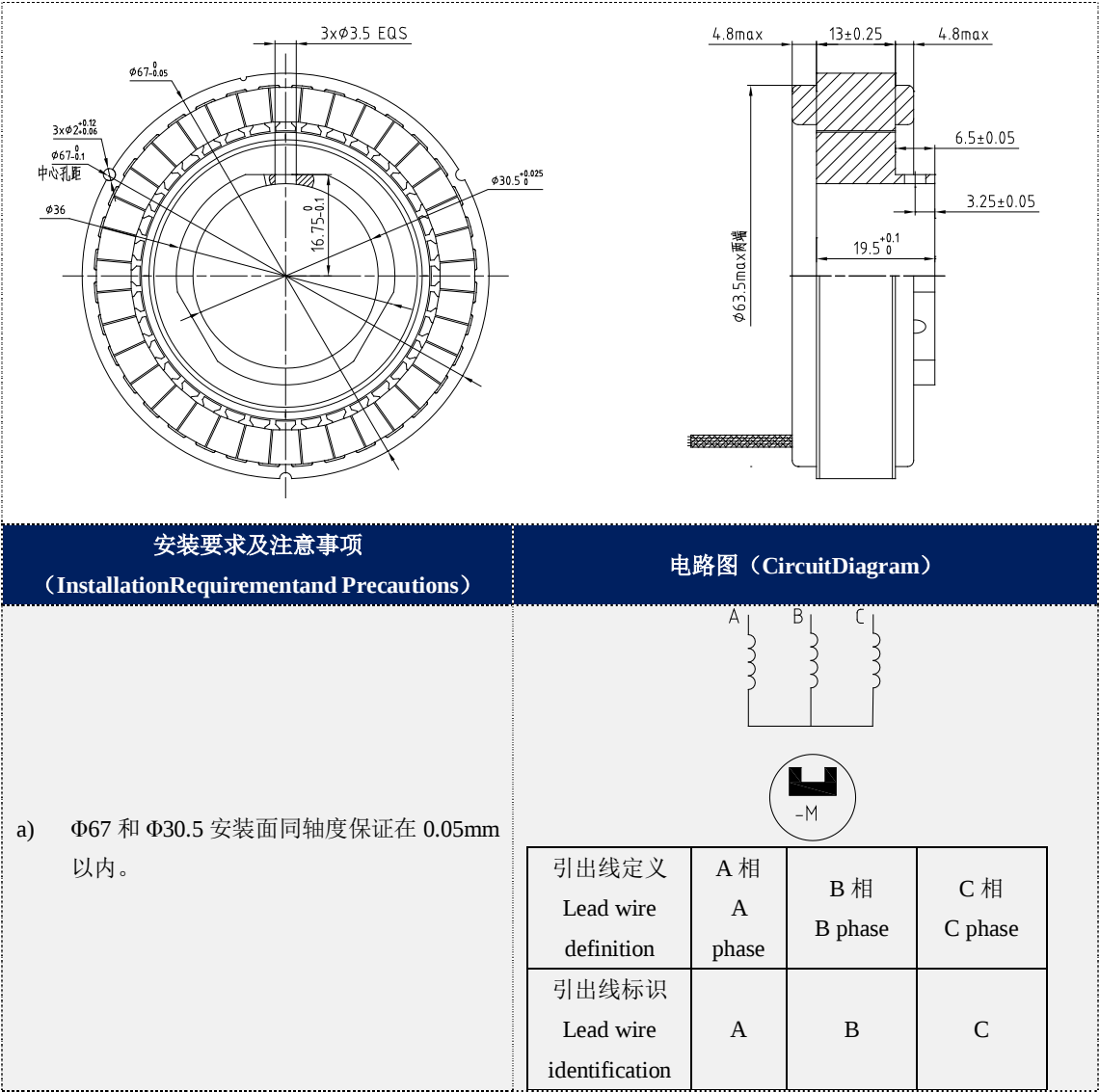
	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	地面长时工作 Ground long time workingoperation
	极对数 Number of poles	8
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥0.3
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥0.1
	峰值堵转转矩/ N·m Peak blocking current/A	≥0.5
	空载转速/(r/min) No-load speed/(r/min)	1300±10%
	相电阻/Ω Phase resistance/Ω	3×(1±15%)
	相电感/mH Phase inductance/mH	2.8×(1±25%)
	转矩波动系数 Torque fluctuation coefficient	≤5%
	齿槽转矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤0.14
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项 (Installation Requirement and Precautions)	电路图 (Circuit Diagram)		
a) $\phi 56$ 和 $\phi 29$ 安装面同轴度保证在0.05mm以内。(The coaxiality of $\phi 56$ and $\phi 29$ mounting surfaces is guaranteed to be within 0.05mm.)			
	引出线定义 Lead wire definition	A 相 A phase	B 相 B phase
	引出线标识 Lead wire identification	A	B

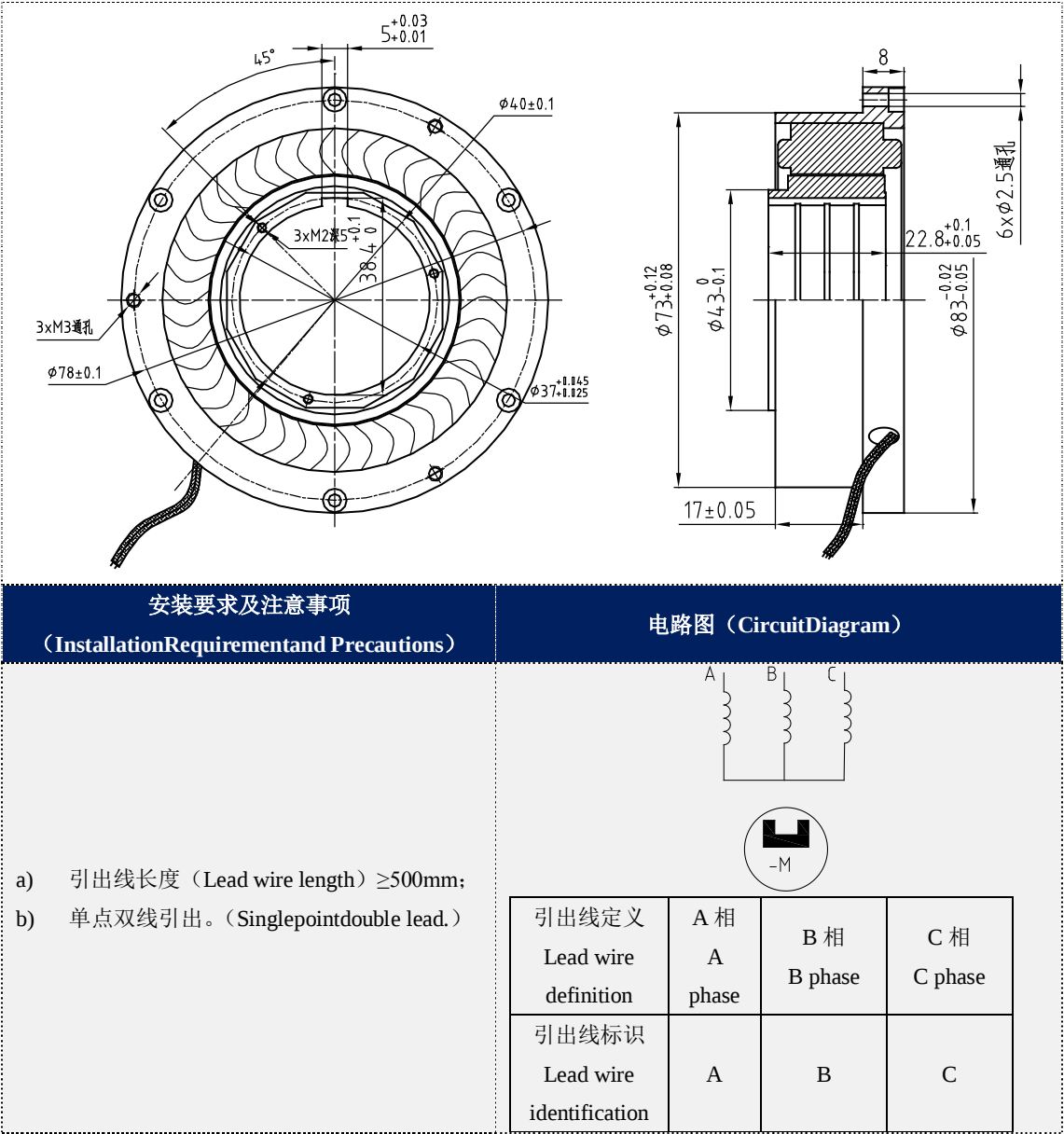
70 系列-J67LWX01-正弦波内转子 (70 series - J67LWX01 - Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空长时工作 Vacuum long-time operation
	极对数 Number of poles	16
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 0.5
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥ 0.73
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 0.65
	峰值电流/A Peak current / A	≤ 2.0
	空载转速/(r/min) No-load speed/(r/min)	$390 \pm 10\%$
	相电阻/ Ω Phase resistance/ Ω	$9.7 \pm 10\%$
	相电感/mH Phase inductance/mH	$7.2 \pm 20\%$
	转矩波动系数 Torque fluctuation coefficient	$\leq 5\%$
	齿槽转矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤ 0.3
	外形图/mm (Outline drawing/mm)	



75 系列-J73SW001-正弦波内转子 (75series – J73SW001 - Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空长时工作制 Vacuum long-time operation
	极对数 Number of poles	6
	额定电压/V DC Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 0.9
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥ 0.65
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 1.2
	空载转速/(r/min) No-load speed/(r/min)	$500 \pm 10\%$
	相电阻/ Ω Phase resistance/ Ω	$5.3 \pm 10\%$
	相电感/mH Phase inductance/mH	$5.75 \pm 20\%$
	转矩波动系数 Torque fluctuation coefficient	/
	齿槽转矩/ N·m Cogging torque/ N-m	≤ 0.03
	重量/kg Weight/kg	≤ 0.42
	外形图/mm (Outline drawing/mm)	



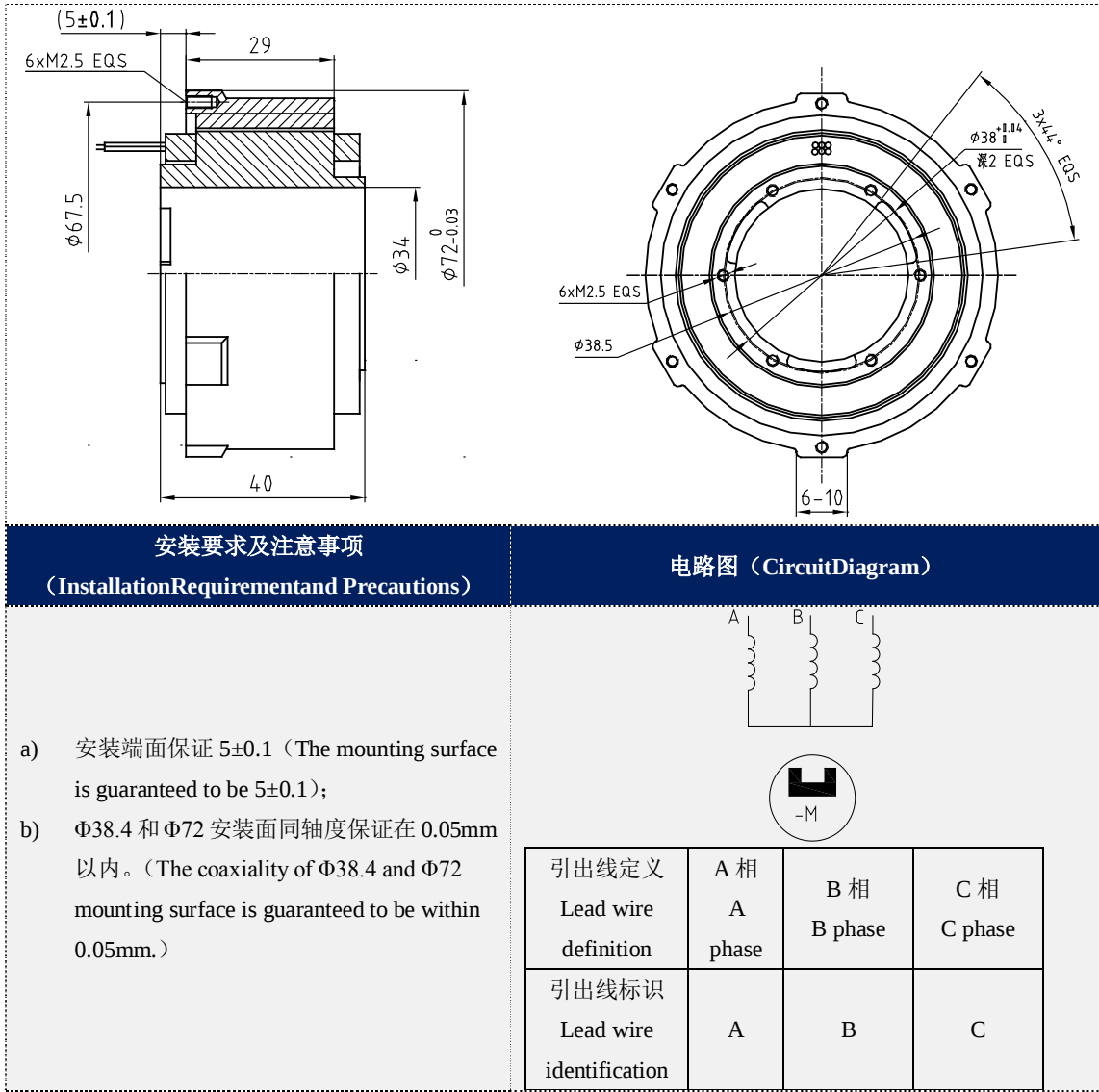
75 系列-J75LWX01-正弦波外转子 (75 series – J75LWX01 - Sine Wave Outer Rotor)



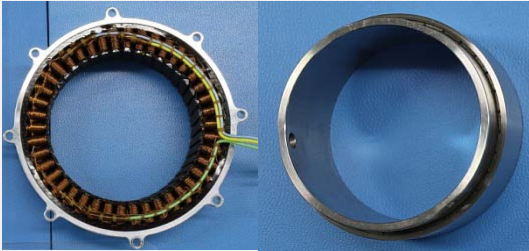
转子(Rotor)定子 (Stator)

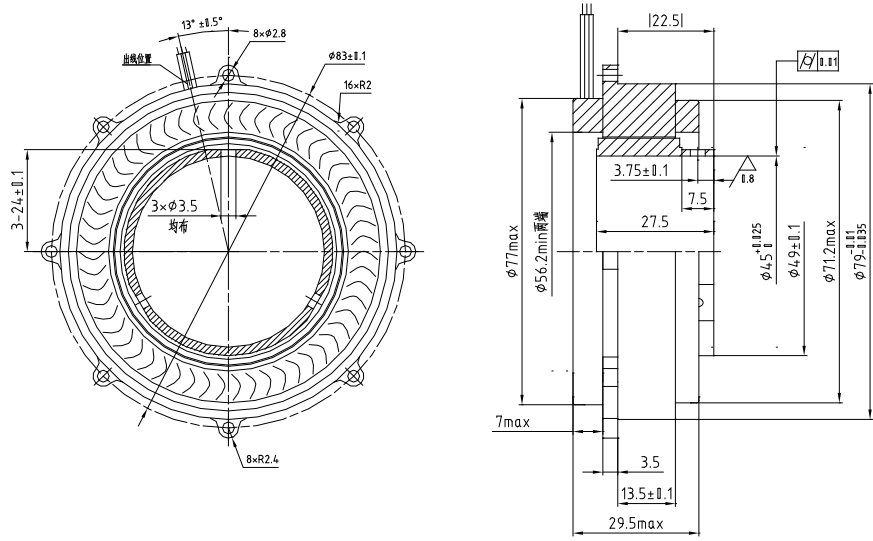
主要技术参数 Main technical parameters	
驱动方式 Driving method	正弦波 Sine wave
工作制 Working system	真空长时工作 Vacuum long-time operation
极对数 Number of poles	13
额定电压/V DC Rated voltage/V	28
连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 0.45
转矩系数/ (N·m /A) Torque coefficient / (N-m /A)	≥ 0.8
峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 0.9
空载转速/(r/min) No-load speed/(r/min)	$269 \pm 10\%$
相电阻/ Ω Phase resistance/ Ω	$8.85 \pm 10\%$
相电感/mH Phase inductance /mH	$3.6 \pm 20\%$
转矩波动系数 Torque fluctuation coefficient	$\leq 5\%$
齿槽转矩/ N·m Cogging torque/ N-m	/
重量/kg Weight/kg	≤ 0.53

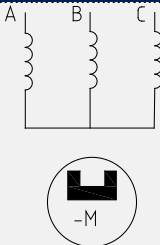
外形图/mm (Outline drawing/mm)



75 系列-J75LWX03-正弦波内转子 (75series - J75LWX03 - Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空长时工作 Vacuum long-time operation
	极对数 Number of poles	16
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥0.8
	力矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥0.83
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥1.0
	峰值电流/A Peak current	≤2.0
	空载转速/(r/min) No-load speed/(r/min)	330±10%
	相电阻/Ω Phase resistance/Ω	7.2±10%
	相电感/mH Phase inductance/mH	6±20%
	转矩波动系数 Torque fluctuation coefficient	≤5%
	齿槽力矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤0.36
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项 (Installation Requirement and Precautions)		电路图 (CircuitDiagram)			
a) 安装端面保证 22.5±0.1 (The mounting surface is guaranteed to be 22.5±0.1); b) Φ79 和 Φ45 安装面同轴度保证在 0.05mm 以内。(The coaxiality of Φ79 and Φ45 mounting surfaces is guaranteed to be within 0.05mm.)					
		引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
		引出线标识 Lead wire identification	A	B	C

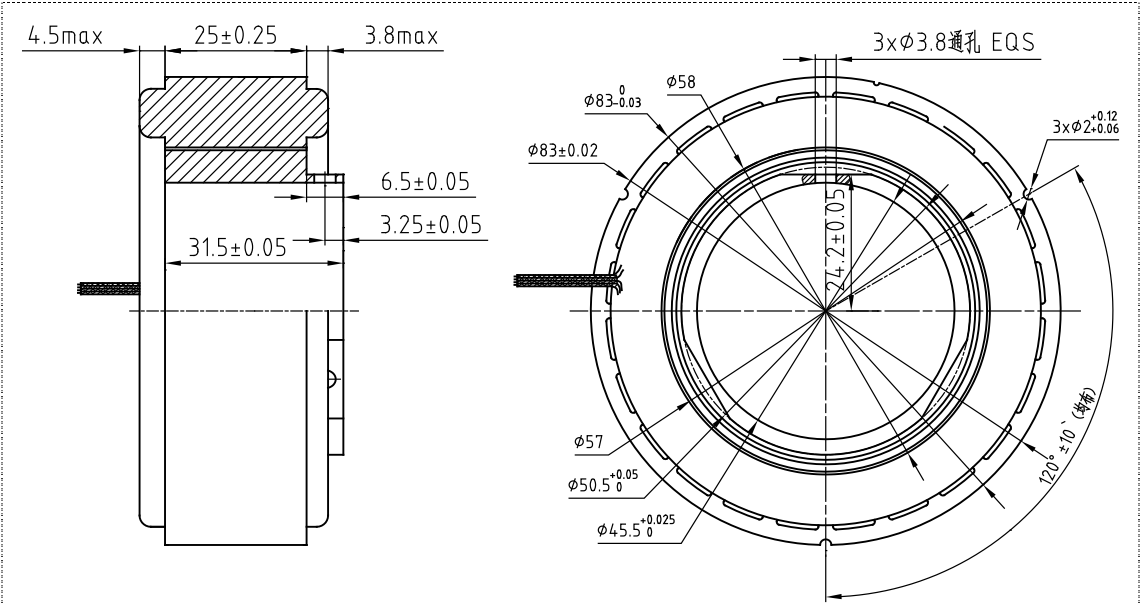
80 系列-J80LWX02-正弦波内转子 (80 series – J80LWX02 - Sine Wave Internal Rotor)

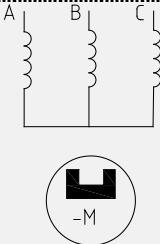


定子 (Stator) 转子(Rotor)

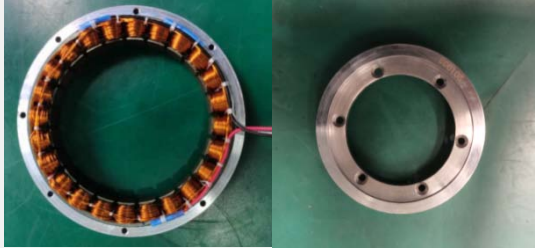
主要技术参数 Main technical parameters	
驱动方式 Driving method	正弦波 Sine wave
工作制 Working system	真空短时工作制 (15min) Vacuum short-time working operation (15min)
极对数 Number of poles	11
额定电压/V DC Rated voltage/VDC	48
连续堵转转矩/ N·m Continuous blocking torque/ N·m	≥1.7
转矩系数/ (N·m /A) Torque coefficient /(N·m /A)	≥1.0
峰值堵转转矩/ N·m Peak blocking torque / N·m	≥2.4
空载转速/(r/min) No-load speed /(r/min)	300±10%
相电阻/Ω Phase resistance/Ω	10.5±10%
相电感/mH Phase inductance /mH	/
转矩波动系数 Torque fluctuation coefficient	≤5%
齿槽转矩/ N·m Cogging torque/ N·m	/
重量/kg Weight/kg	≤0.6

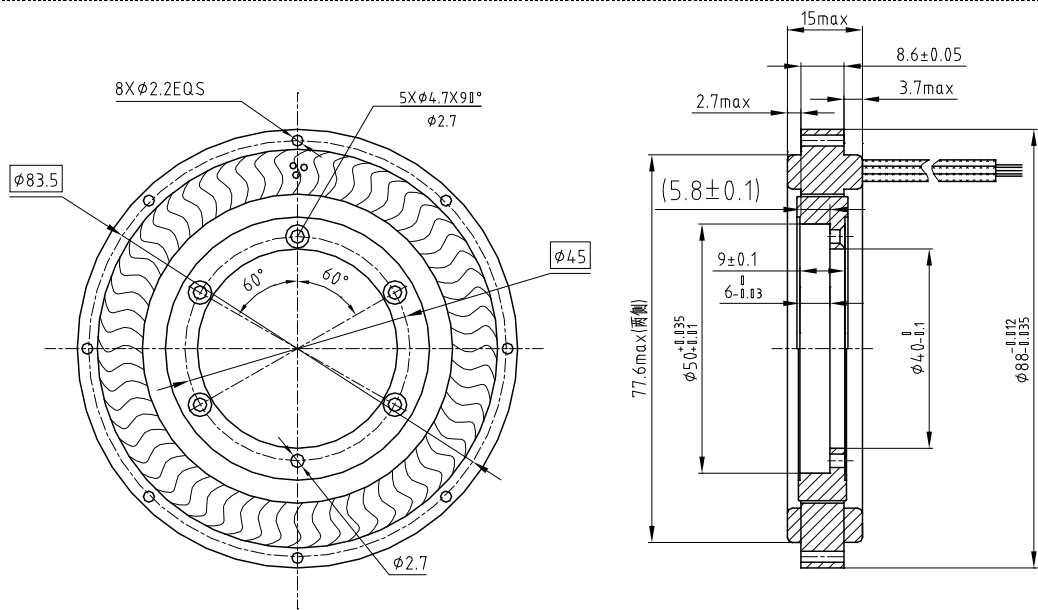
外形图/mm (Outline drawing/mm)

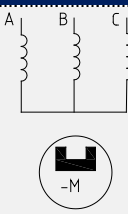


安装要求及注意事项 (Installation Requirement and Precautions)	电路图 (CircuitDiagram)								
a) 定子靠外援 3×φ2 半孔定位; (Stator outer circle 3×φ2 half hole positioning;) b) 转子安装面为三个 24.2±0.05 端面。(Rotor mounting surface is three 24.2±0.05 end faces.)	 <table><tr><td>引出线定义 Lead wire definition</td><td>A 相 A phase</td><td>B 相 B phase</td><td>C 相 C phase</td></tr><tr><td>引出线标识 Lead wire identification</td><td>A</td><td>B</td><td>C</td></tr></table>	引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase	引出线标识 Lead wire identification	A	B	C
引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase						
引出线标识 Lead wire identification	A	B	C						

90 系列-J90LWX01-正弦波内转子 (90 series – J90LWX01 - Sine Wave Internal Rotor)

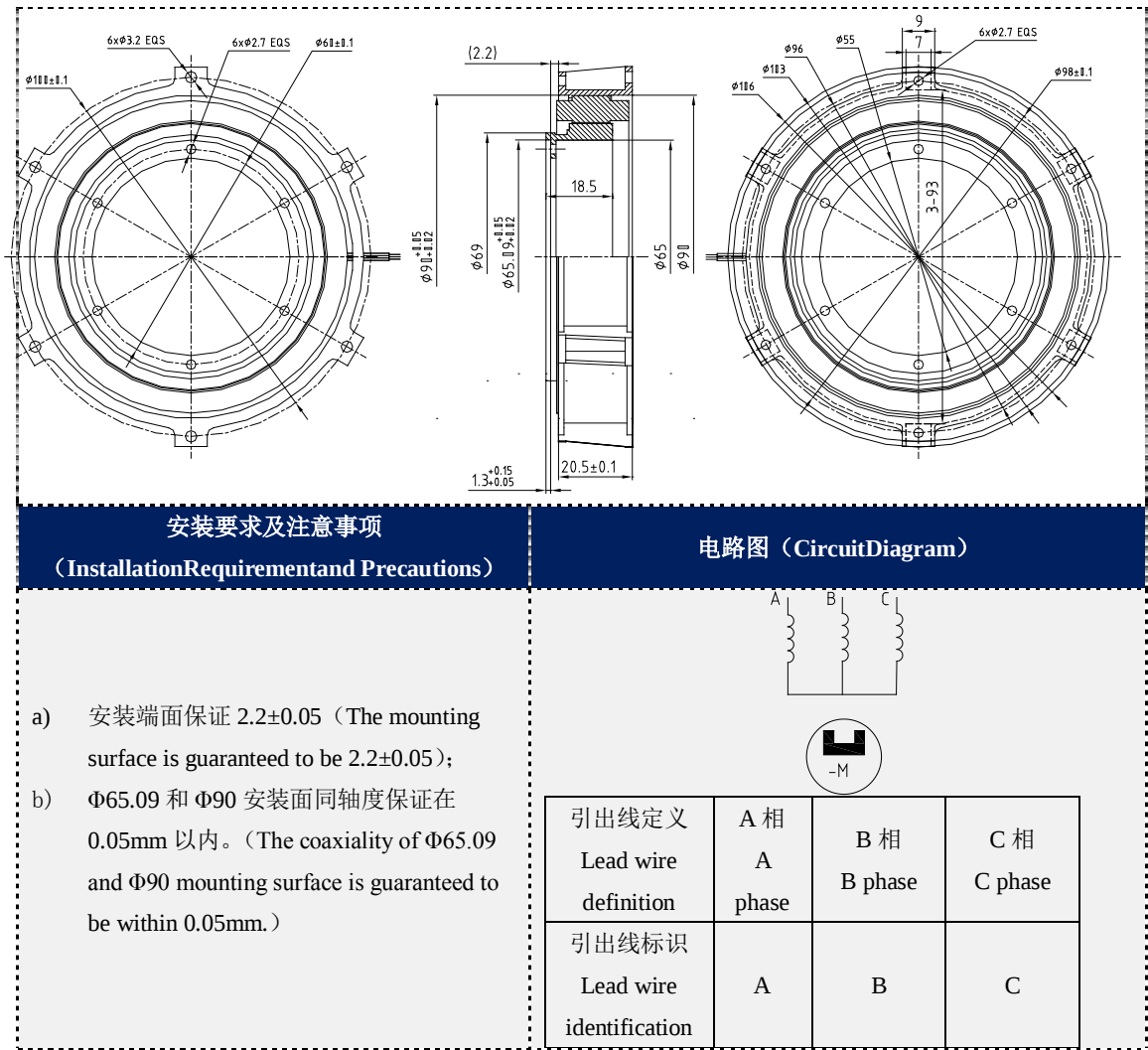
 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	地面长时工作 Ground long time workingoperation
	极对数 Number of poles	13
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 1
	转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥ 0.3
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 1.2
	空载转速/(r/min) No-load speed/(r/min)	$760 \pm 10\%$
	相电阻/ Ω Phase resistance/ Ω	$2.3 \pm 10\%$
	相电感/mH Phase inductance/mH	$2.7 \pm 20\%$
	转矩波动系数 Torque fluctuation coefficient	$\leq 5\%$
	齿槽力矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤ 0.27
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项 (Installation Requirement and Precautions)		电路图 (CircuitDiagram)			
a) 安装端面保证 5.8±0.1(The mounting surface is guaranteed to be 5.8±0.1); b) Φ88 和 Φ50 安装面同轴度保证在 0.05mm 以内。(The coaxiality of Φ88 and Φ50 mounting surfaces is guaranteed to be 0.05mm.)					
		引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
		引出线标识 Lead wire identification	A	B	C

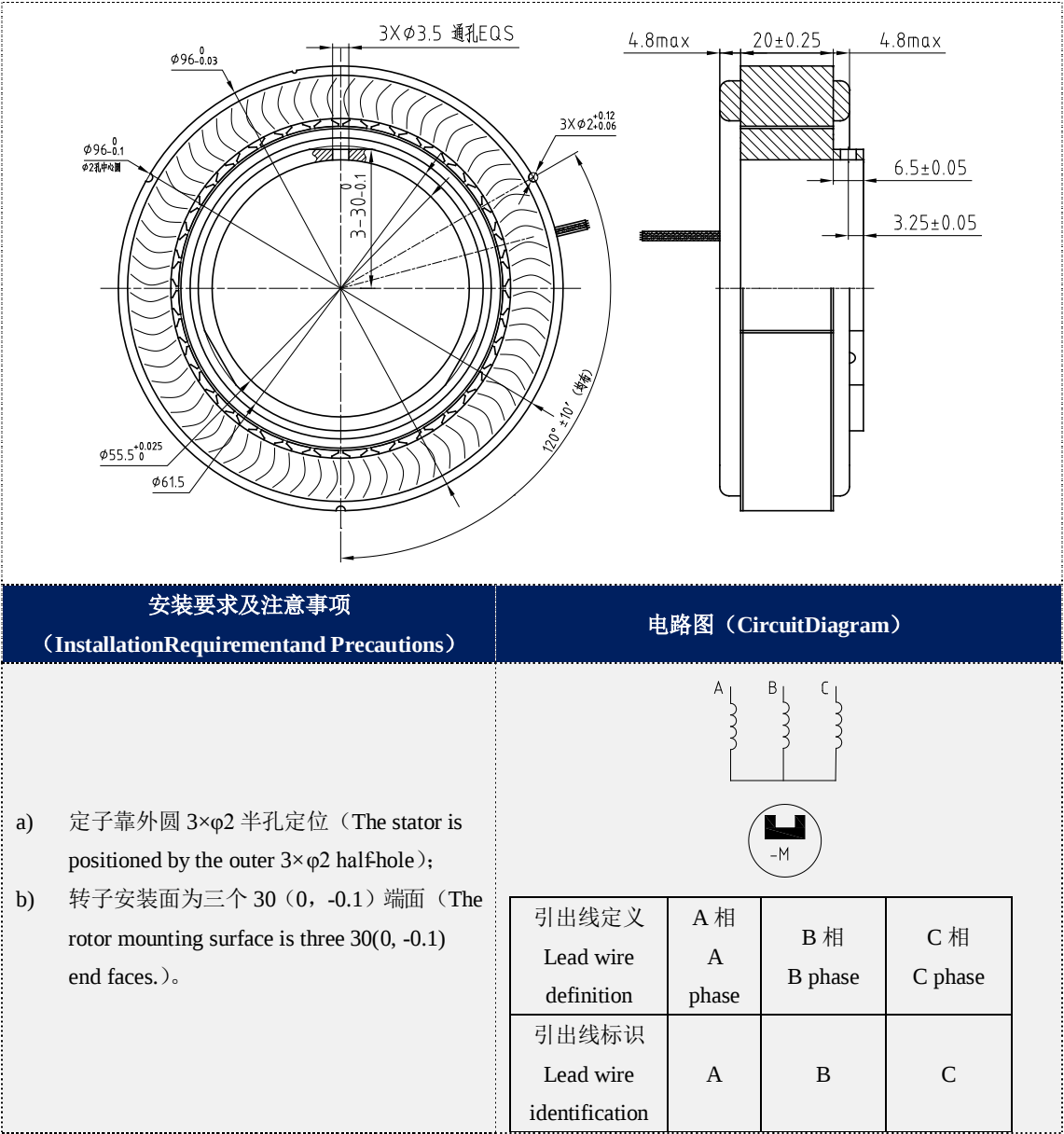
93 系列-J93LW02-正弦波内转子 (93 series – J93LWX02 - Sine Wave Internal Rotor)

 转子(Rotor) 定子 (Stator)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空长时工作 Vacuum long-time operation
	极对数 Number of poles	16
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 0.6
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥ 0.8
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 1
	空载转速/(r/min) No-load speed/(r/min)	$330 \pm 10\%$
	相电阻/ Ω Phase resistance/ Ω	$6.75 \pm 10\%$
	相电感/mH Phase inductance/mH	$2.25 \pm 20\%$
	转矩波动系数 Torque fluctuation coefficient	$\leq 4\%$
	齿槽力矩/ N·m Cogging torque/ N-m	≤ 0.02
	重量/kg Weight/kg	≤ 0.31
	外形图/mm (Outline drawing/mm)	



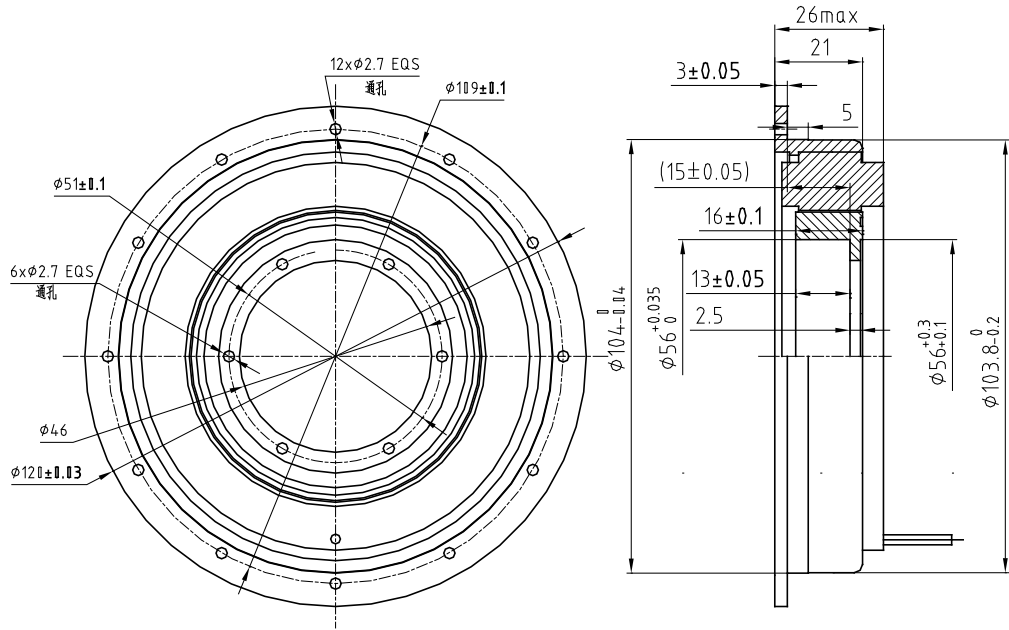
95 系列-J96LWX01-正弦波内转子 (95 series – J96LWX061- Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空短时工作制 (15min) Vacuum short-time working operation (15min)
	极对数 Number of poles	16
	额定电压/V DC Rated voltage/VDC	48
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 2.0
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥ 1.5
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 2.8
	空载转速/(r/min) No-load speed/(r/min)	$150 \pm 10\%$
	相电阻/ Ω Phase resistance/ Ω	$8.5 \pm 10\%$
	相电感/mH Phase inductance/mH	$13 \pm 10\%$
	转矩波动系数 Torque fluctuation coefficient	$\leq 5\%$
	齿槽转矩/ N·m Cogging torque/ N-m	≤ 0.03
	重量/kg Weight/kg	≤ 0.61
	外形图/mm (Outline drawing/mm)	



110 系列-J110LWX03-正弦波内转子(110 series – J110LWX03 - Sine Wave Internal Rotor)

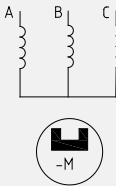
 转子(Rotor)定子 (Stator)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空长时工作 Vacuum long-time operation
	极对数 Number of poles	16
	额定电压/V DC Rated voltage/VDC	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥1.0
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥1.2
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥1.5
	空载转速/(r/min) No-load speed/(r/min)	219±10%
	相电阻/Ω Phase resistance/Ω	6.96±10%
	相电感/mH Phase inductance/mH	10.6±20%
	转矩波动系数 Torque fluctuation coefficient	≤4%
	齿槽转矩/ N·m Cogging torque/ N-m	≤0.03
	重量/kg Weight/kg	≤0.65
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项
(Installation Requirement and Precautions)

- a) 安装端面保证 15 ± 0.05 (The mounting surface is guaranteed to be 15 ± 0.05);
- b) $\phi 56$ 和 $\phi 104$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\phi 56$ and $\phi 104$ mounting surface is guaranteed to be within 0.05mm).

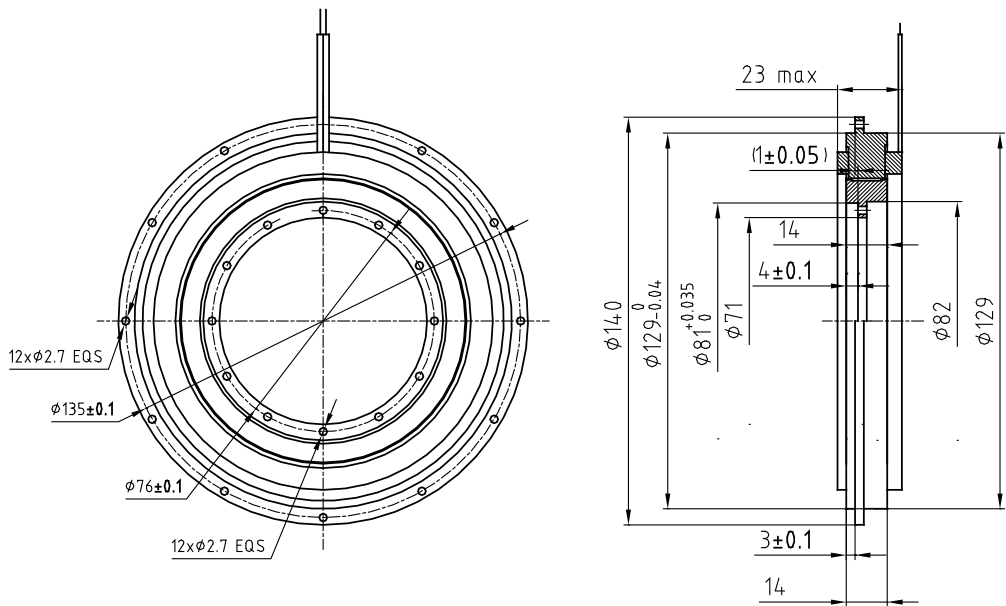
电路图 (Circuit Diagram)

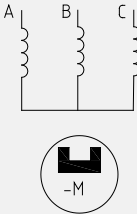


引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
引出线标识 Lead wire identification	A	B	C

130 系列-J129LW02-正弦波内转子 (130 series – J129LWX02 - Sine Wave Internal Rotor)

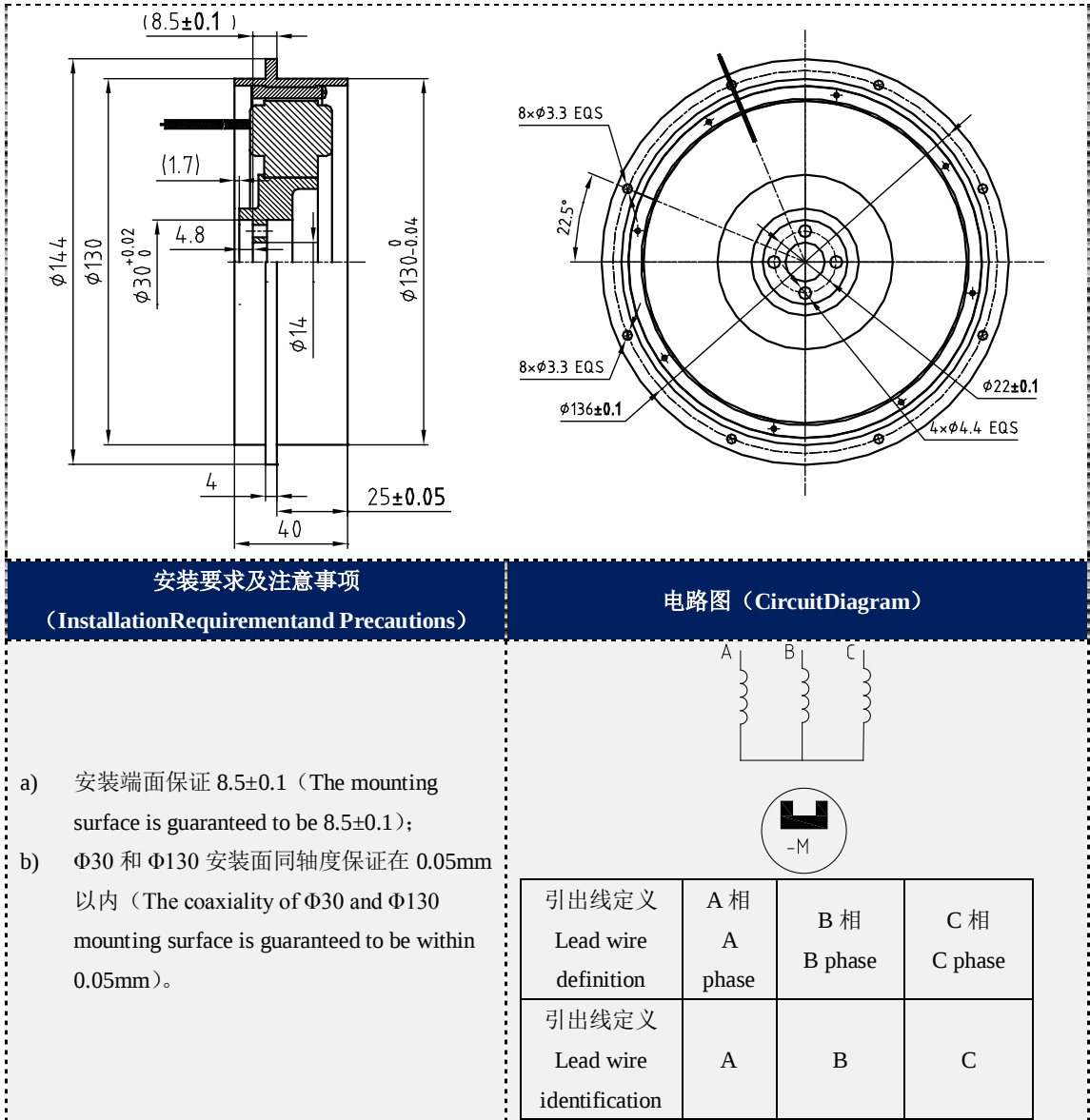
 转子(Rotor)定子 (Stator)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空长时工作 Vacuum long-time operation
	极对数 Number of poles	16
	额定电压/V DC Rated voltage/VDC	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥1.2
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥1.5
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥1.8
	空载转速/(r/min) No-load speed/(r/min)	169±10%
	相电阻/Ω Phase resistance/Ω	8.4±10%
	相电感/mH Phase inductance/mH	8.6±20%
	转矩波动系数 Torque fluctuation coefficient	≤4%
	齿槽转矩/ N·m Cogging torque/ N-m	≤0.03
	重量/kg Weight/kg	≤0.75
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项 (Installation Requirement and Precautions)		电路图 (CircuitDiagram)			
a) 安装端面保证 1±0.05 (The mounting surface is guaranteed to be 1±0.05); b) Φ81 和 Φ129 安装面同轴度保证在 0.05mm 以内 (The coaxiality of Φ81 and Φ129 mounting surface is guaranteed to be within 0.05mm)。					
		引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
		引出线标识 Lead wire identification	A	B	C

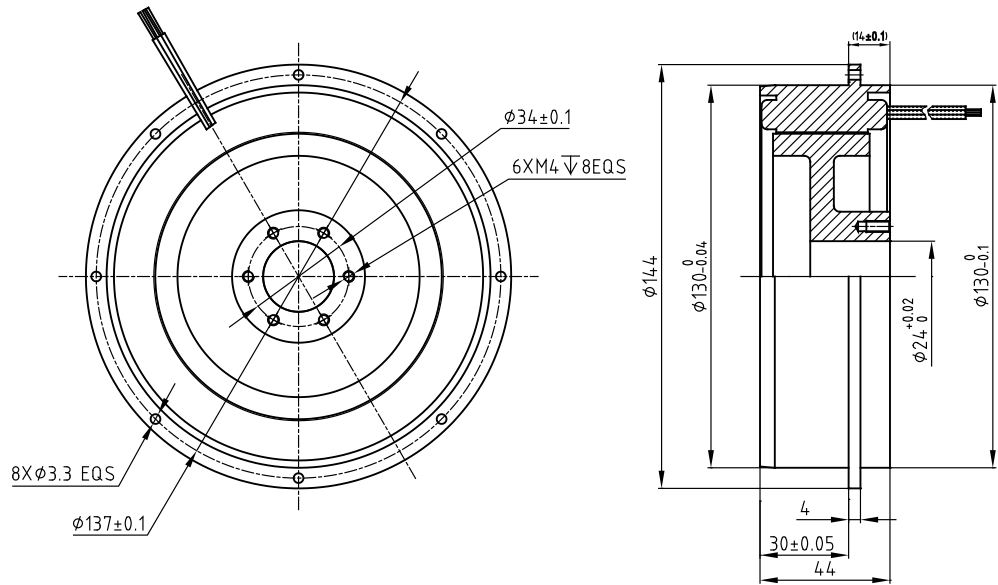
130 系列-J130LWX002-正弦波外转子 (130 series – J130LWX002 - Sine Wave Outer Rotor)

 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	地面长时工作 Ground long time workingoperation
	极对数 Number of poles	16
	额定电压/V Rated voltage/V	36
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥3
	转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥1.9
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥5.5
	空载转速/(r/min) No-load speed/(r/min)	140±10%
	相电阻/Ω Phase resistance/Ω	4.7±10%
	相电感/mH Phase inductance/mH	11.2±20%
	转矩波动系数 Torque fluctuation coefficient	≤5%
	齿槽转矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤1.8
	外形图/mm (Outline drawing/mm)	



130 系列-J130LWX03-正弦波内转子(130 series – J130LWX03 - Sine Wave Internal Rotor)

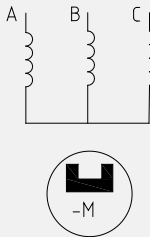
 定子 (Stator) 转子(Rotor)		主要技术参数 Main technical parameters	
		驱动方式 Driving method	正弦波 Sine wave
		工作制 Working system	地面长时工作 Ground long time workingoperation
		极对数 Number of poles	16
		额定电压/V Rated voltage/V	36
		连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 5
		转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥ 1.7
		峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 7
		空载转速/(r/min) No-load speed/(r/min)	$170 \pm 10\%$
		相电阻/ Ω Phase resistance/ Ω	$2.8 \pm 10\%$
		相电感/mH Phase inductance/mH	$8.2 \pm 20\%$
		转矩波动系数 Torque fluctuation coefficient	$\leq 5\%$
		齿槽转矩/ N·m Cogging torque/ N-m	/
		重量/kg Weight/kg	≤ 2.1
		外形图/mm (Outline drawing/mm)	



安装要求及注意事项
(Installation Requirement and Precautions)

- a) 安装端面保证 14 ± 0.1 (The mounting surface is guaranteed to be 14 ± 0.1);
- b) $\phi 130$ 和 $\phi 24$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\phi 130$ and $\phi 24$ mounting surface is guaranteed to be within 0.05mm).

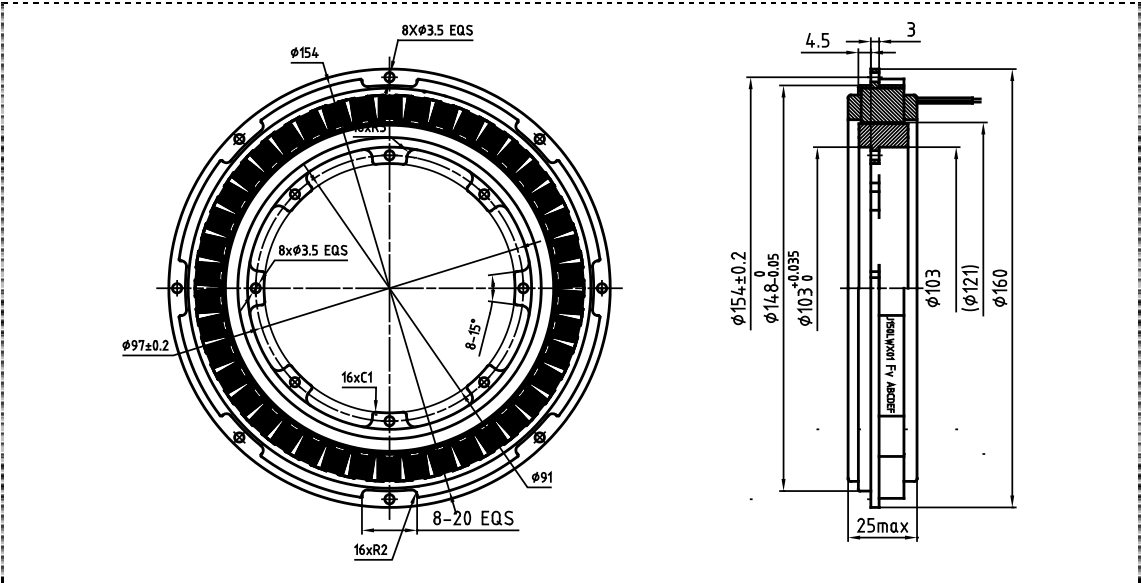
电路图 (Circuit Diagram)

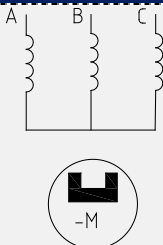


引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
引出线定义 Lead wire identification	A	B	C

150 系列-J150LWX01-正弦波内转子(150 series – J150LWX01 - Sine Wave Internal Rotor)

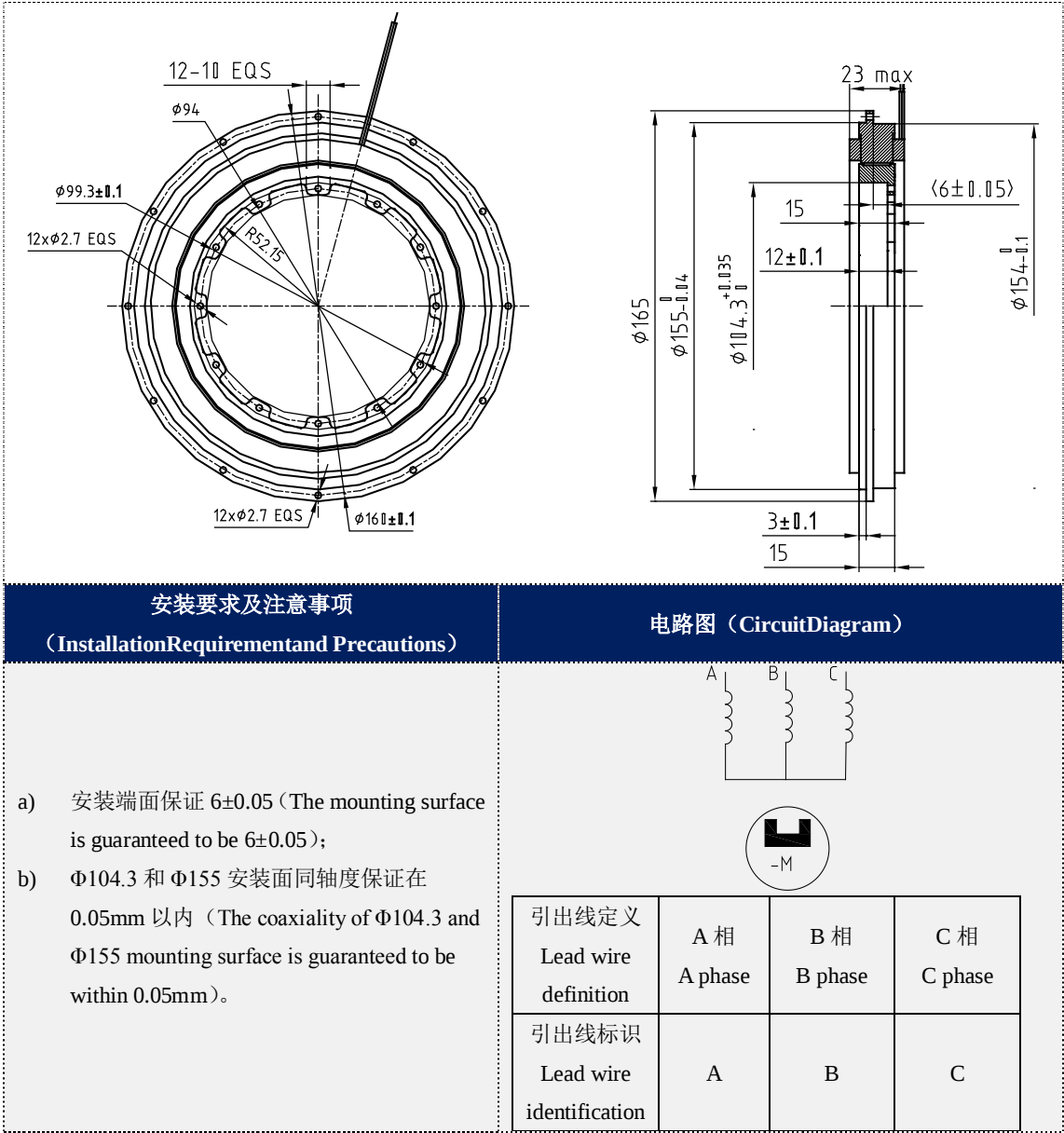
 定子 (Stator) 转子(Rotor)	主要技术参数	
	Main technical parameters	
	驱动方式	正弦波
	Driving method	Sine wave
	工作制	真空短时工作制
	Working system	Vacuum short-time working operation
	极对数	16
	Number of poles	16
	额定电压/V	28
	Rated voltage/V	28
	连续堵转转矩/ N·m	≥ 2.1
	Continuous blocking torque/ N-m	≥ 2.1
	转矩系数/ (N·m /A)	≥ 2.4
	Torque coefficient/(N-m /A)	≥ 2.4
	峰值堵转转矩/ N·m	≥ 3.1
	Peak blocking torque / N-m	≥ 3.1
	空载转速/(r/min)	$90 \pm 10\%$
	No-load speed/(r/min)	$90 \pm 10\%$
	相电阻/ Ω	$9.2 \pm 10\%$
	Phase resistance/ Ω	$9.2 \pm 10\%$
	相电感/mH	$13 \pm 30\%$
	Phase inductance/mH	$13 \pm 30\%$
	转矩波动系数	$\leq 5\%$
	Torque fluctuation coefficient	$\leq 5\%$
	齿槽转矩/ N·m	/
	Cogging torque/ N-m	/
	重量/kg	≤ 1.1
	Weight/kg	≤ 1.1
外形图/mm (Outline drawing/mm)		



安装要求及注意事项 (Installation Requirement and Precautions)		电路图 (CircuitDiagram)			
a) 安装端面保证 4.5±0.1(The mounting surface is guaranteed to be 4.5±0.1); b) Φ103 和 Φ148 安装面同轴度保证在 0.05mm 以内 (The coaxiality of Φ103 and Φ148 mounting surface is guaranteed to be within 0.05mm)。					
		引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
		引出线定义 Lead wire identification	A	B	C

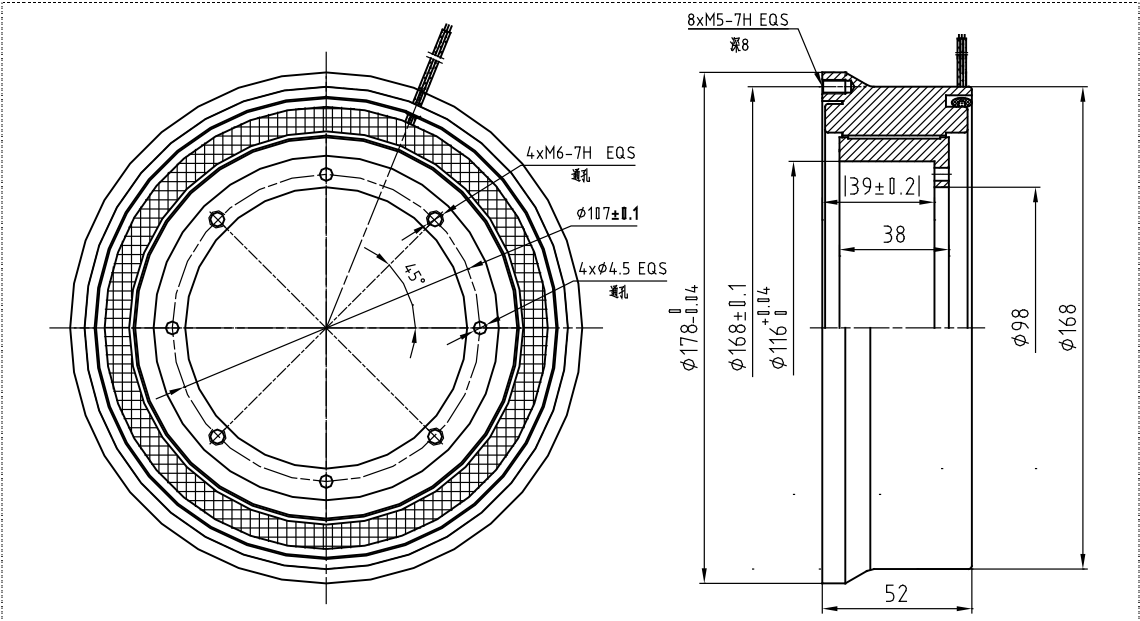
155 系列-J155LW01-正弦波内转子 (155 series – J155LWX01 - Sine Wave Internal Rotor)

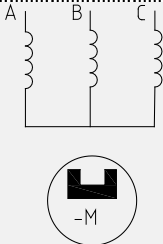
 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	真空长时工作 Vacuum long-time operation
	极对数 Number of poles	16
	额定电压/V DC Rated voltage/VDC	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 2.1
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥ 2.4
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 2.8
	空载转速/(r/min) No-load speed/(r/min)	100 $\pm$ 10%
	相电阻/ Ω Phase resistance/ Ω	8.5 $\pm$ 10%
	相电感/mH Phase inductance/mH	11.4 $\pm$ 20%
	转矩波动系数 Torque fluctuation coefficient	$\leq 4\%$
	齿槽转矩/ N·m Cogging torque/ N-m	≤ 0.04
	重量/kg Weight/kg	≤ 0.96
	外形图/mm (Outline drawing/mm)	



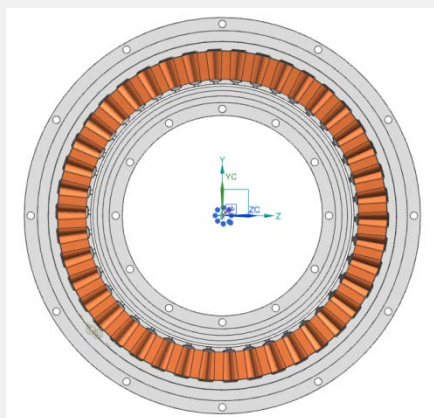
170 系列-J168LWX01-正弦波内转子(170 series – J168LWX01 - Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)		主要技术参数 Main technical parameters	
		驱动方式 Driving method	正弦波 Sine wave
		工作制 Working system	真空长时工作 Vacuum long-time operation
		极对数 Number of poles	19
		额定电压/V DC Rated voltage/VDC	12 42
		连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥3.6 ≥4.5
		转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥3.25 ≥3.25
		峰值堵转转矩/ N·m Peak blocking torque / N-m	≥3.6 ≥15.5
		空载转速/(r/min) No-load speed/(r/min)	30±20% 120±10%
		相电阻/Ω Phase resistance/Ω	3.05±10%
		相电感/mH Phase inductance/mH	7.1±20%
		转矩波动系数 Torque fluctuation coefficient	≤3%
		齿槽转矩/ N·m Cogging torque/ N-m	≤0.15
		重量/kg Weight/kg	≤3.2
		外形图/mm (Outline drawing/mm)	



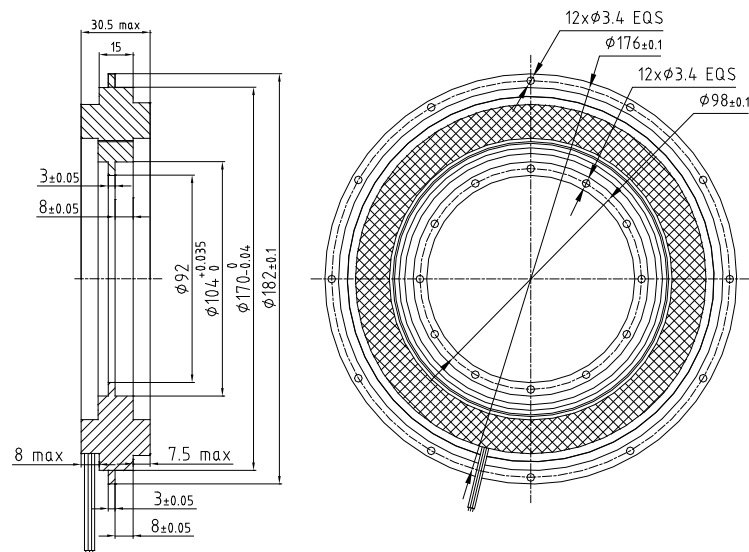
安装要求及注意事项 (Installation Requirement and Precautions)	电路图 (CircuitDiagram)								
a) 安装端面保证 39 ± 0.2 (The mounting surface is guaranteed to be 39 ± 0.2); b) $\Phi 116$ 和 $\Phi 178$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\Phi 116$ and $\Phi 178$ mounting surface is guaranteed to be within 0.05mm).	 <table><tr><th>引出线定义 Lead wire definition</th><th>A 相 A phase</th><th>B 相 B phase</th><th>C 相 C phase</th></tr><tr><th>引出线标识 Lead wire identification</th><td>A</td><td>B</td><td>C</td></tr></table>	引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase	引出线标识 Lead wire identification	A	B	C
引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase						
引出线标识 Lead wire identification	A	B	C						

170 系列-J170LWX01-正弦波内转子(170 series – J170LWX01 - Sine Wave Internal Rotor)



主要技术参数 Main technical parameters	
驱动方式 Driving method	正弦波 Sine wave
工作制 Working system	真空长时工作 Vacuum long-time operation
极对数 Number of poles	16
额定电压/V Rated voltage/V	28
连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥3
力矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥1
峰值堵转转矩/ N·m Peak blocking torque / N-m	≥7
空载转速/(r/min) No-load speed/(r/min)	260±10%
相电阻/Ω Phase resistance/Ω	1.1×(1±15%)
相电感/mH Phase inductance/mH	6.0×(1±25%)
力矩波动系数 Torque fluctuation coefficient	≤4%
齿槽力矩/ N·m Cogging torque/ N-m	≤0.1
重量/kg Weight/kg	≤1.3

外形图/mm (Outline drawing/mm)

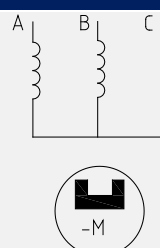


安装要求及注意事项

(Installation Requirement and Precautions)

a) $\Phi 170$ 和 $\Phi 104$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\Phi 170$ and $\Phi 104$ mounting surface is guaranteed to be within 0.05mm)。

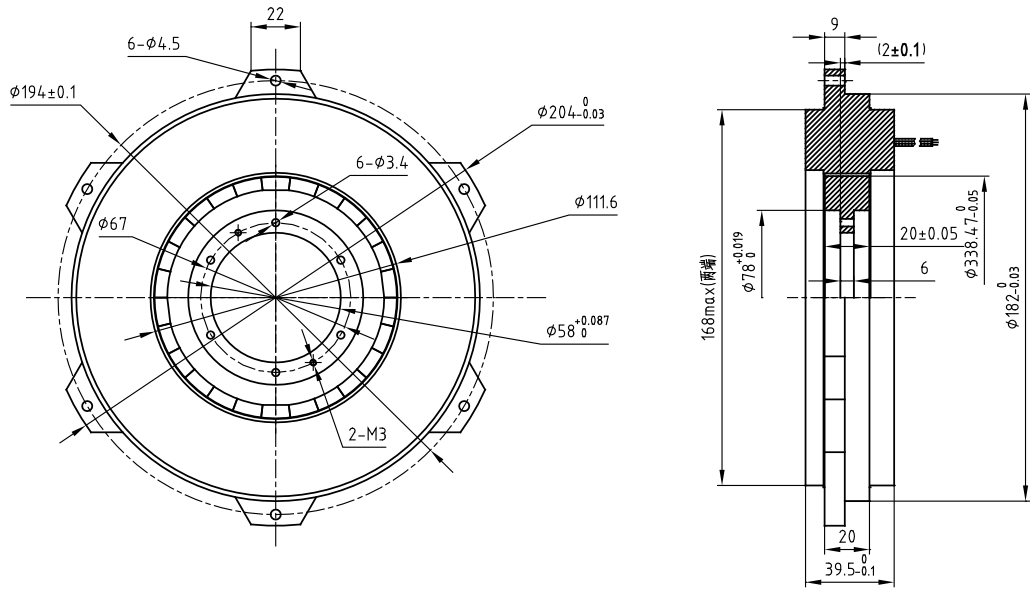
电路图 (Circuit Diagram)



引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
引出线标识 Lead wire identification	A	B	C

180 系列-J182TY37-正弦波内转子 (180 series – J182TY37 - Sine Wave Internal Rotor)

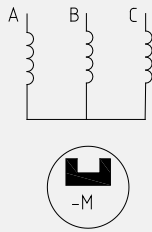
 定子 (Stator) 转子(Rotor)		主要技术参数 Main technical parameters	
		驱动方式 Driving method	正弦波 Sine wave
		工作制 Working system	地面长时工作 Ground long time workingoperation
		极对数 Number of poles	13
		额定电压/V Rated voltage/V	27
		连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥5
		转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥1.6
		峰值堵转转矩/ N·m Peak blocking torque / N-m	≥10
		空载转速/(r/min) No-load speed/(r/min)	200±10%
		相电阻/Ω Phase resistance/Ω	1.15±10%
		相电感/mH Phase inductance/mH	13.9±20%
		转矩波动系数 Torque fluctuation coefficient	≤5%
		齿槽转矩/ N·m Cogging torque/ N-m	/
		重量/kg Weight/kg	≤3.2
		外形图/mm (Outline drawing/mm)	



安装要求及注意事项
(Installation Requirement and Precautions)

- a) 安装端面保证 2 ± 0.1 (The mounting surface is guaranteed to be 2 ± 0.1);
- b) $\Phi 182$ 和 $\Phi 78$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\Phi 182$ and $\Phi 78$ mounting surface is guaranteed to be within 0.05mm).

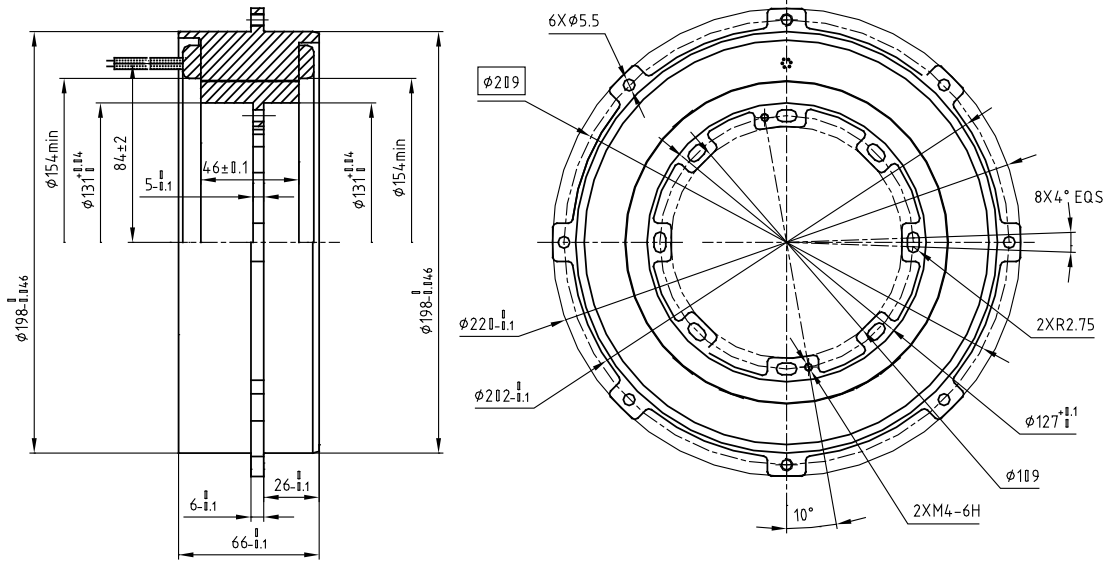
电路图 (Circuit Diagram)



引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
引出线标识 Lead wire identification	A	B	C

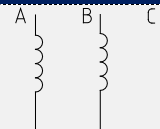
200 系列-J198LWX001-正弦波内转子 (200 series – J198LWX001 - Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	正弦波 Sine wave
	工作制 Working system	地面长时工作 Ground long time workingoperation
	极对数 Number of poles	19
	额定电压/V Rated voltage/V	48
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥27
	转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥1.8
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥35
	空载转速/(r/min) No-load speed/(r/min)	200±10%
	相电阻/Ω Phase resistance/Ω	0.24±10%
	相电感/mH Phase inductance/mH	1.4±20%
	转矩波动系数 Torque fluctuation coefficient	≤4%
	齿槽转矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤5.2
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项 (Installation Requirement and Precautions)

电路图 (CircuitDiagram)

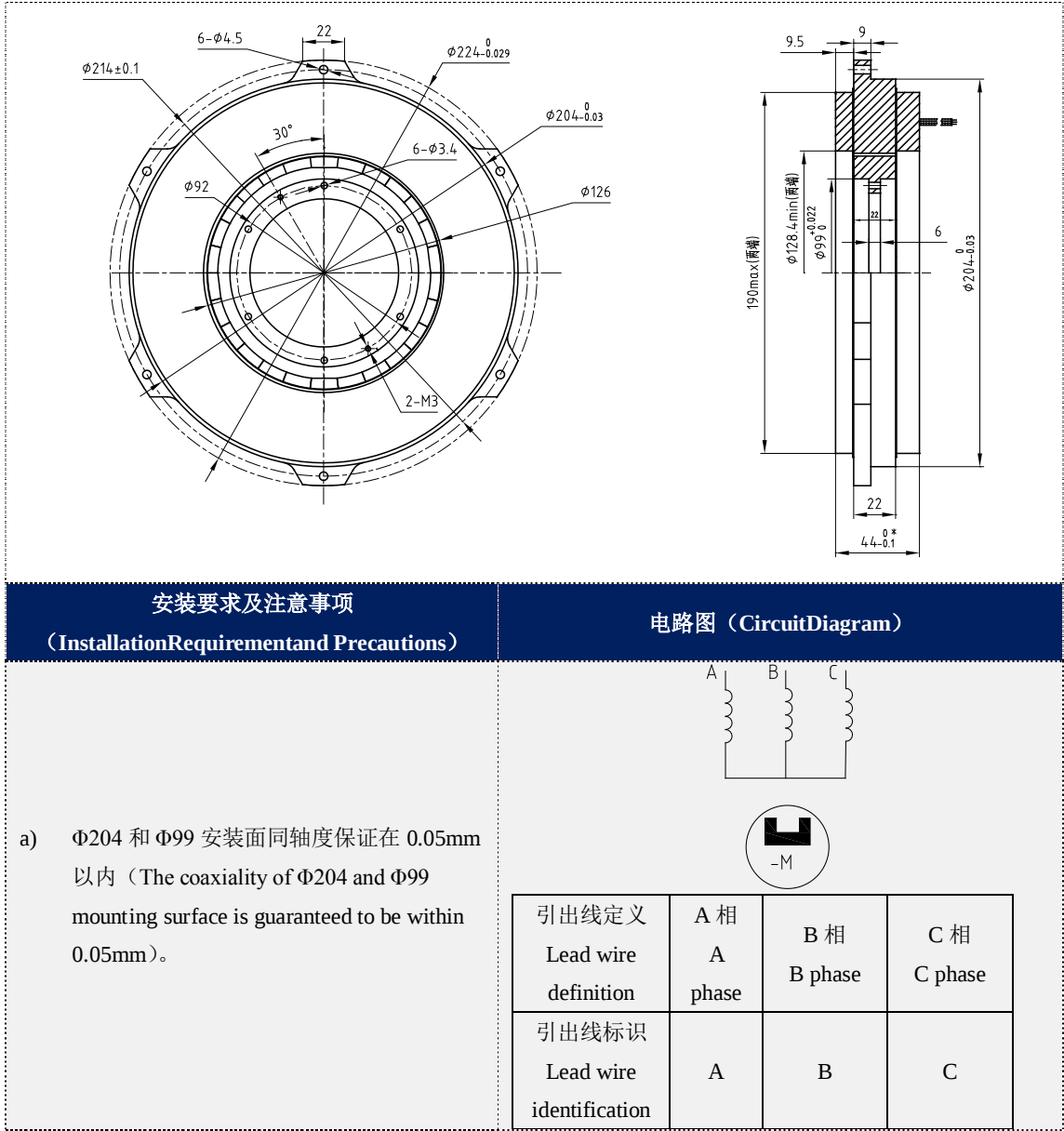


- a) $\Phi 198$ 和 $\Phi 131$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\Phi 198$ and $\Phi 131$ mounting surface is guaranteed to be within 0.05mm)。

引出线定义 Lead wire definition	A 相 A phase	B 相 B phase	C 相 C phase
引出线标识 Lead wire identification	A	B	C

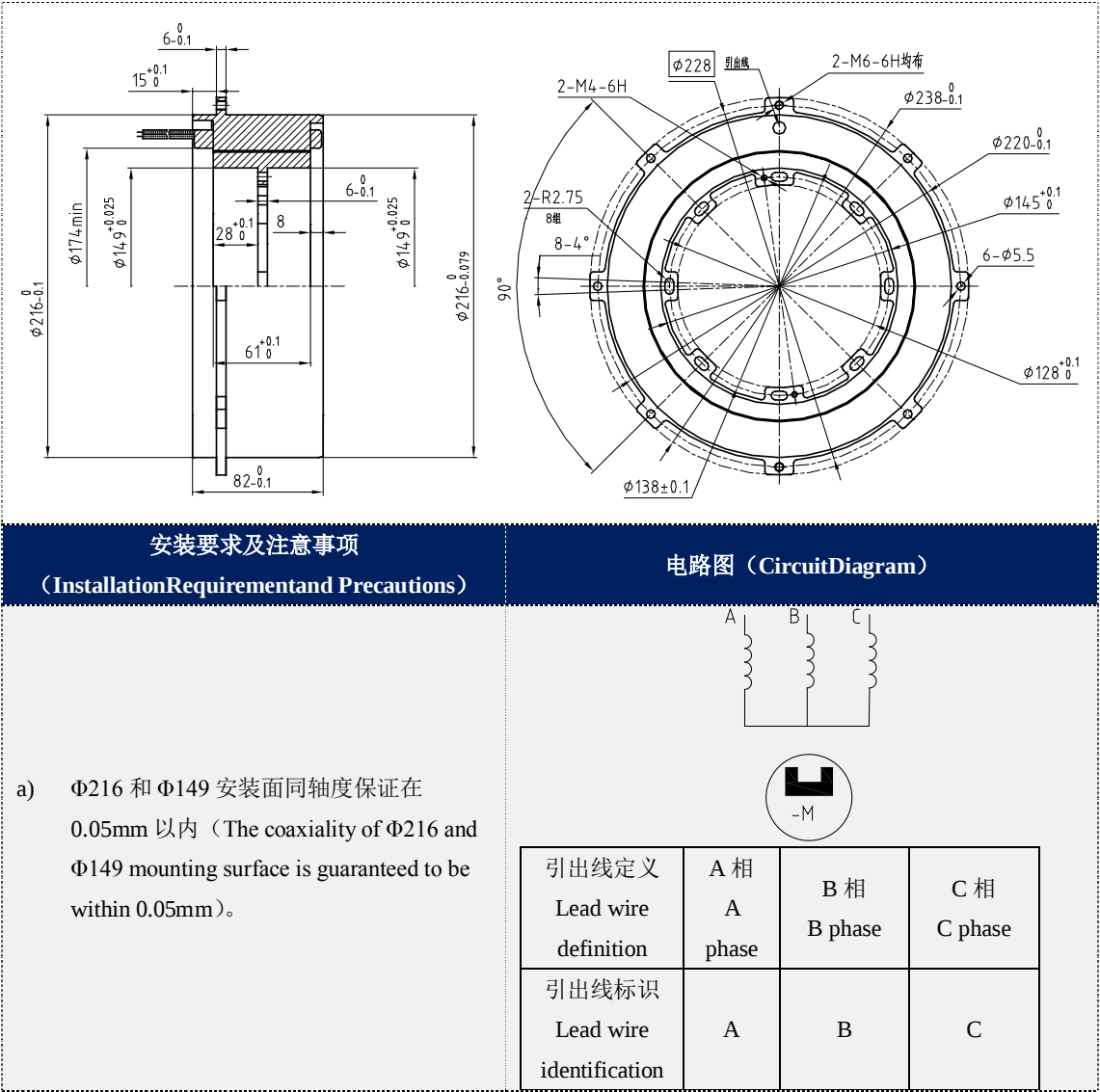
205 系列-J204TY53-正弦波内转子 (205 series – J204TY53 - Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)		主要技术参数 Main technical parameters	
		驱动方式 Driving method	正弦波 Sine wave
		工作制 Working system	地面长时工作 Ground long time workingoperation
		极对数 Number of poles	13
		额定电压/V Rated voltage/V	27
		连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥10
		转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥1.8
		峰值堵转转矩/ N·m Peak blocking torque / N-m	≥15
		空载转速/(r/min) No-load speed/(r/min)	120±10%
		相电阻/Ω Phase resistance/Ω	0.71±10%
		相电感/mH Phase inductance/mH	10.1±20%
		转矩波动系数 Torque fluctuation coefficient	≤5%
		齿槽转矩/ N·m Cogging torque/ N-m	/
		重量/kg Weight/kg	≤3.8
		外形图/mm (Outline drawing/mm)	



215 系列-J216LWX001-正弦波内转子 (215 series – J216LWX001 - Sine Wave Internal Rotor)

 定子 (Stator) 转子(Rotor)		主要技术参数 Main technical parameters	
		驱动方式 Driving method	正弦波 Sine wave
		工作制 Working system	地面长时工作 Ground long time workingoperation
		极对数 Number of poles	19
		额定电压/V Rated voltage/V	48
		连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥30
		转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥3.1
		峰值堵转转矩/ N·m Peak blocking torque / N-m	≥50
		空载转速/(r/min) No-load speed/(r/min)	200±10%
		相电阻/Ω Phase resistance/Ω	0.19±10%
		相电感/mH Phase inductance/mH	1.1±20%
		转矩波动系数 Torque fluctuation coefficient	≤5%
		齿槽转矩/ N·m Cogging torque/ N-m	/
		重量/kg Weight/kg	≤7.9
		外形图/mm (Outline drawing/mm)	



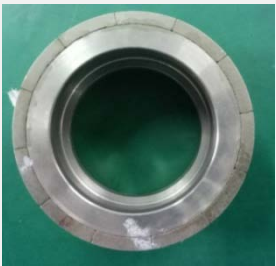
4 方波驱动无框无刷力矩电机产品

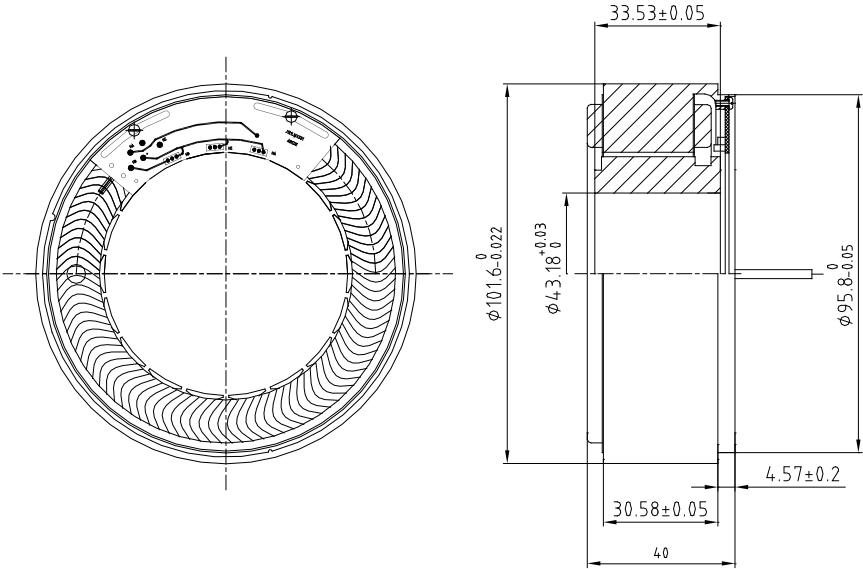
序号 (Serial number)	产品代号 (Product Code)	转子类型 (Rotor Type)	最大轮廓尺寸/mm (Maximum profile size/mm)	驱动方式 (Driving Method)	工作制 (Working system)	极对数 (Pole Number of pairs)	电压/V (Voltage/V)	连续堵转转矩/N·m (Continuous blocking Torque /N-m)	转矩系数/(N·m/A) (Torque coefficient/(N-m/A))	峰值堵转转矩/N·m (Peak blocking Torque/N-m)	空载转速/(r/min) (No-load speed /r/min)	相电阻/Ω (Phase resistance /Ω)	相电感/mH (Phase inductance/mH)	转矩波动系数 (Torque Fluctuation coefficient)	齿槽转矩/N·m (Cogging torque /N-m)	重量/kg (Weight /kg)	页码 (Page)	备注 (Remarks)
1	J101LWX01	内转子 Inner rotor	Φ101.6×40	方波 Square wave	地面长时工作 Ground long time working operation	6	46	≥4.6	≥0.3	≥8	1000±10%	0.65±10%	2±20%	≤15%	/	≤1.2	211	
2	J110ZWX05	内转子 Inner rotor	Φ130×60	方波 Square wave	真空长时工作 Vacuum long-time working operation	16	31	≥1.5	≥1.5	≥5.5	151±10%	4±10%	23±20%	≤15%	≤0.15	≤2.1	215	
3	J130LWX01	内转子 Inner rotor	Φ130.18×47.88	方波 Square wave	长时工作 long-time working operation	12	46	≥6.4	≥0.35	≥16.2	1000±10%	0.32±10%	0.46±20%	≤15%	/	≤1.5	217	
4	J155LWX02	内转子 Inner rotor	Φ181×47.5	方波 Square wave	长时工作 long-time working operation	25	28	≥4	≥1.2	≥7	178±10%	2.25±10%	2.7±20%	≤15%	≤0.09	≤2.1	219	
5	J270LWX01	内转子 Inner rotor	Φ300×49	方波 Square wave	真空长时工作 Vacuum long-time working operation	31	28	≥15	≥2.8	≥30	81±10%	0.975±10%	3.3±20%	≤15%	≤0.4	≤5.2	221	

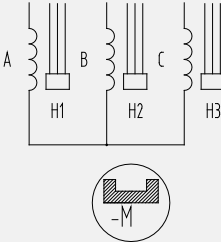
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序号 (Serial number)	产品代号 (Product Code)	转子类型 (Rotor Type)	最大轮廓尺寸/mm (Maximum profile size/mm)	驱动方式 (Driving Method)	工作制 (Working system)	极对数 (Pole Number of pairs)	电压/V (Voltage/V)	连续堵转转矩/N·m (Continuous blocking Torque /N-m)	转矩系数/(N·m/A) (Torque coefficient/(N-m)/A))	峰值堵转转矩/N·m (Peak blocking Torque/N-m)	空载转速/(r/min) (No-load speed /(r/min)	相电阻/ Ω (Phase resistance / Ω)	相电感/mH (Phase inductance/mH)	转矩波动系数 (Torque Fluctuation coefficient)	齿槽转矩/N·m (Cogging torque /N-m)	重量/kg (Weight /kg)	页码 (Page)	备注 (Remarks)
6	J270LWX02	内转子 Inner rotor	$\Phi 310 \times 68$	方波 Square wave	真空长时工作 Vacuum long-time working operation	31	28	≥ 35	≥ 4	≥ 55	$60 \pm 10\%$	$0.77 \pm 10\%$	$3.2 \pm 20\%$	$\leq 15\%$	≤ 0.7	≤ 8.3	223	

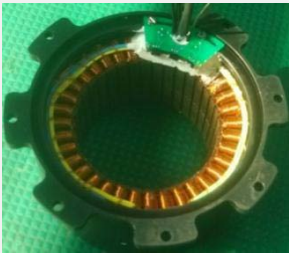
101 系列-J101LWX01-方波内转子(101 series – J101LWX01 - Square Wave Internal Rotor)

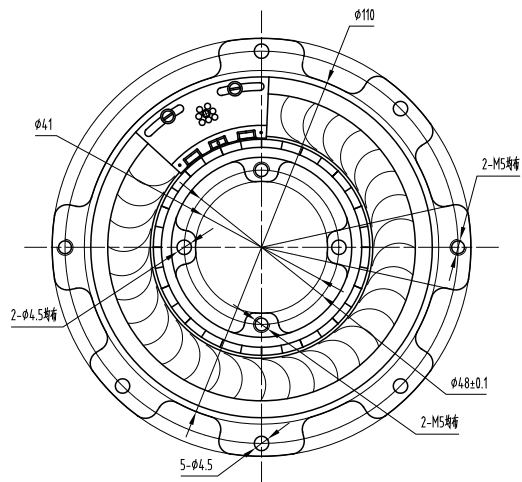
 定子 (Stator)  转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	方波 Squarewave
	工作制 Working system	地面长时工作 Ground long time working operation
	极对数 Number of poles	6
	额定电压/V Rated voltage/V	46
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥4.6
	转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥0.3
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥8
	空载转速/(r/min) No-load speed/(r/min)	1000±10%
	相电阻/Ω Phase resistance/Ω	0.65±10%
	相电感/mH Phase inductance/mH	2±20%
	转矩波动系数 Torque fluctuation coefficient	≤15%
	齿槽转矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤1.2
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项 (Installation Requirement and Precautions)		电路图 (CircuitDiagram)						
a) Φ101.6 和 Φ43.18 安装面同轴度保证在 0.05mm 以内 (The coaxiality of Φ101.6 and Φ43.18 mounting surface is guaranteed to be within 0.05mm)。								
定义 Definition	A 相 A Phase	B 相 B Phase	C 相 C Phase	信号正 Signal Positive	信号地 Signal Ground	信号 A Signal A	信号 B Signal B	信号 C Signal C
标识 Marker	A	B	C	VCC	GND	HA	HB	HC

110 系列-J110ZWX05-方波内转子 (110 series – J110ZWX05 - Square Wave Internal Rotor)

 定子 (Stator)  转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	方波 Squarewave
	工作制 Working system	真空长时工作 Vacuum long-time working operation
	极对数 Number of poles	16
	额定电压/V DC Rated voltage/VDC	31
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 1.5
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥ 1.5
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 5.5
	空载转速/(r/min) No-load speed/(r/min)	$151 \pm 10\%$
	相电阻/ Ω Phase resistance/ Ω	$4 \pm 10\%$
	相电感/mH Phase inductance/mH	$23 \pm 20\%$
	转矩波动系数 Torque fluctuation coefficient	$\leq 15\%$
	齿槽转矩/ N·m Cogging torque/ N-m	≤ 0.15
	重量/kg Weight/kg	≤ 2.1
	外形图/mm (Outline drawing/mm)	

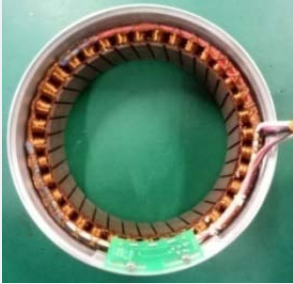


电路图 (CircuitDiagram)

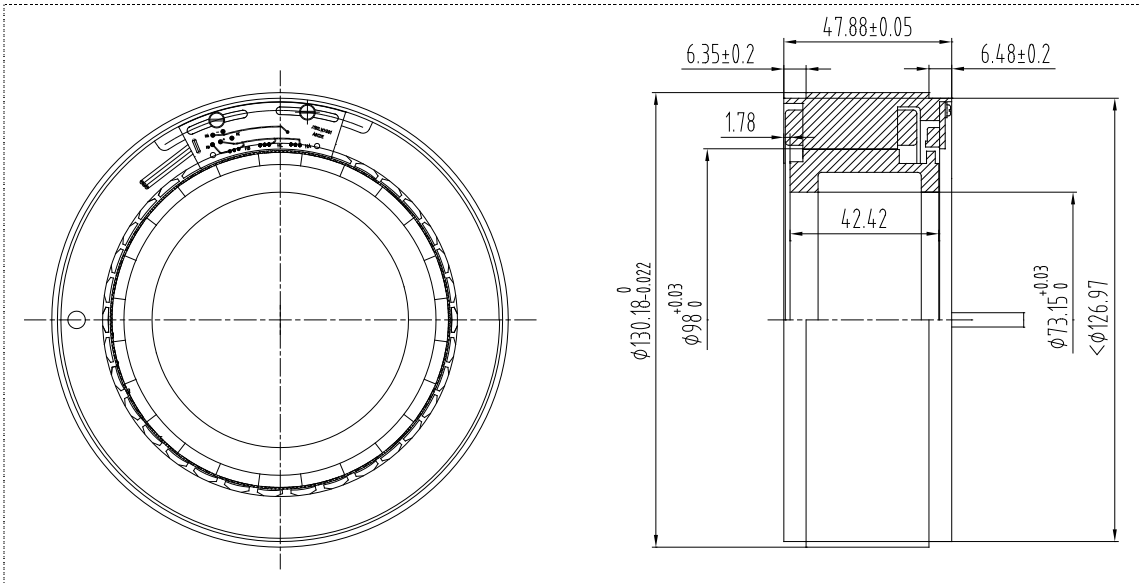
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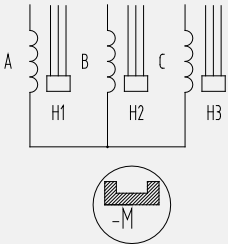
定义 Definition	A 相 Phase	B 相 Phase	C 相 Phase	信号正 Signal Positive	信号地 Signal Ground	信号 A Signal A	信号 B Signal B	信号 C Signal C
标识 Marker	A	B	C	VCC	GND	HA	HB	HC

130 系列-J130LWX01-方波内转子(130 series – J130LWX01 - Square Wave Internal Rotor)

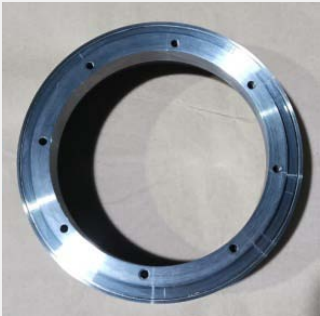
 定子 (Stator)  转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	方波 Squarewave
	工作制 Working system	长时工作 long-time working operation
	极对数 Number of poles	12
	额定电压/V Rated voltage/V	46
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥6.4
	转矩系数/ (N·m /A) Torquecoefficient/(N-m /A)	≥0.35
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥16.2
	空载转速/(r/min) No-load speed/(r/min)	1000±10%
	相电阻/Ω Phase resistance/Ω	0.32±10%
	相电感/mH Phase inductance/mH	0.46±20%
	转矩波动系数 Torque fluctuation coefficient	≤15%
	齿槽转矩/ N·m Cogging torque/ N-m	/
	重量/kg Weight/kg	≤1.5
	外形图/mm (Outline drawing/mm)	

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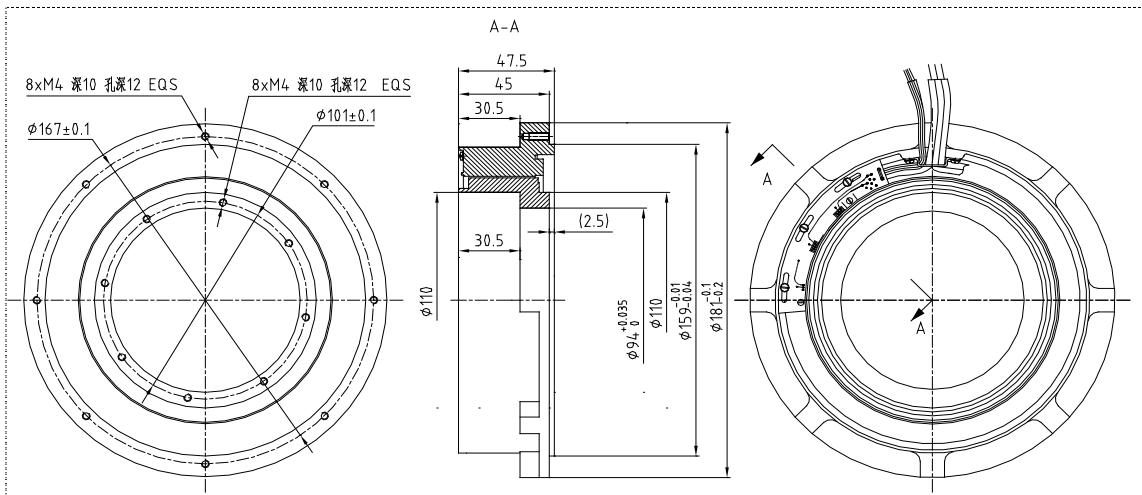


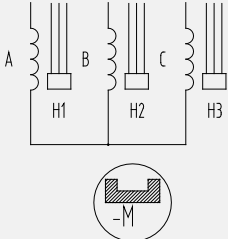
安装要求及注意事项 (Installation Requirement and Precautions)		电路图 (Circuit Diagram)						
a) Φ130.18 和 Φ73.15 安装面同轴度保证在 0.05mm 以内 (The coaxiality of Φ130.18 and Φ73.15 mounting surface is guaranteed to be within 0.05mm)。								
定义 Definition	A 相 A Phase	B 相 B Phase	C 相 C Phase	信号正 Signal Positive	信号地 Signal Ground	信号 A Signal A	信号 B Signal B	信号 C Signal C
标识 Marker	A	B	C	VCC	GND	HA	HB	HC

155 系列-J155LWX02-方波内转子(155 series – J155LWX02 - Square Wave Internal Rotor)

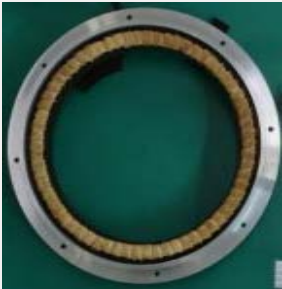
 定子 (Stator)  转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	方波 Squarewave
	工作制 Working system	长时工作 long-time working operation
	极对数 Number of poles	25
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥4
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥1.2
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥7
	空载转速/(r/min) No-load speed/(r/min)	178±10%
	相电阻/Ω Phase resistance/Ω	2.25±10%
	相电感/mH Phase inductance/mH	2.7±20%
	转矩波动系数 Torque fluctuation coefficient	≤15%
	齿槽转矩/ N·m Cogging torque/ N-m	≤0.09
	重量/kg Weight/kg	≤2.1
	外形图/mm (Outline drawing/mm)	

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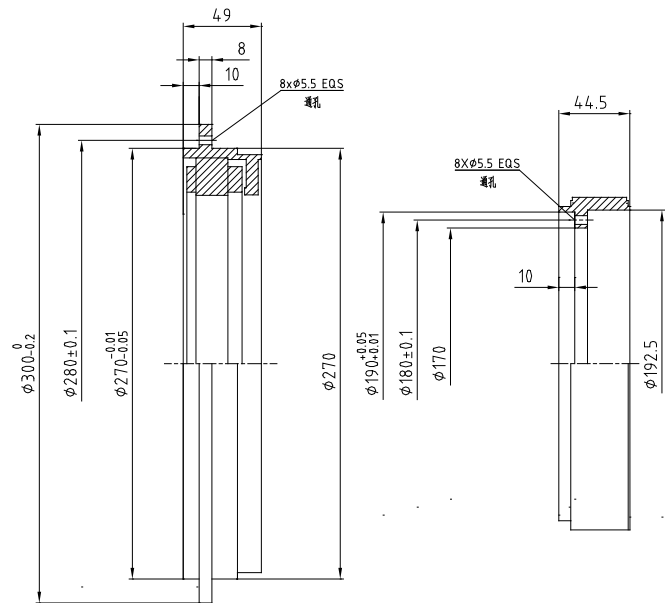


安装要求及注意事项 (Installation Requirement and Precautions)		电路图 (CircuitDiagram)						
a) Φ159 和 Φ94 安装面同轴度保证在 0.05mm 以内 (The coaxiality of Φ159 and Φ94 mounting surface is guaranteed to be within 0.05mm)。								
定义 Definition	A 相 A Phase	B 相 B Phase	C 相 C Phase	信号正 Signal Positive	信号地 Signal Ground	信号 A Signal A	信号 B Signal B	信号 C Signal C
标识 Marker	A	B	C	VCC	GND	HA	HB	HC

270 系列-J270LWX01-方波内转子(270 series – J270LWX01 - Square Wave Internal Rotor)

 定子 (Stator)  转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	方波 Squarewave
	工作制 Working system	真空长时工作 Vacuum long-time working operation
	极对数 Number of poles	31
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥ 15
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥ 2.8
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥ 30
	空载转速/(r/min) No-load speed/(r/min)	$81 \pm 10\%$
	相电阻/ Ω Phase resistance/ Ω	$0.975 \pm 10\%$
	相电感/mH Phase inductance/mH	$3.3 \pm 20\%$
	转矩波动系数 Torque fluctuation coefficient	$\leq 15\%$
	齿槽转矩/ N·m Cogging torque/ N-m	≤ 0.4
	重量/kg Weight/kg	≤ 5.2
	外形图/mm (Outline drawing/mm)	

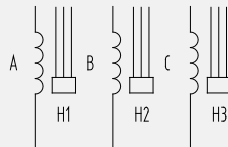
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安装要求及注意事项
(Installation Requirement and Precautions)

电路图 (Circuit Diagram)

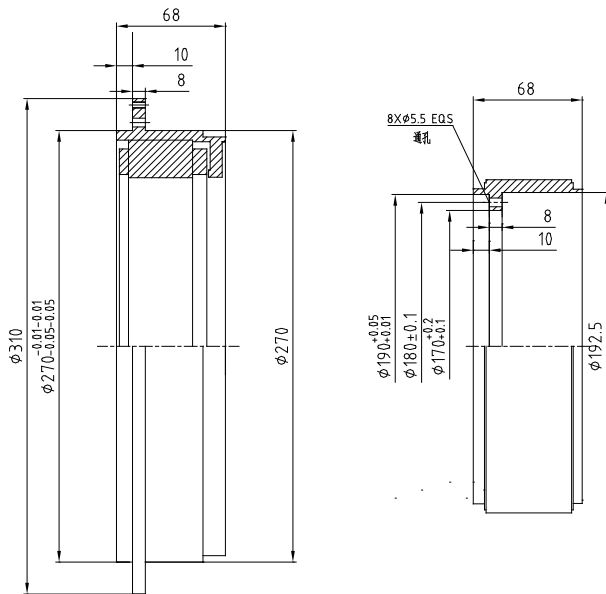
- a) $\phi 270$ 和 $\phi 190$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\phi 270$ and $\phi 190$ mounting surface is guaranteed to be within 0.05mm)。



定义 Definition	A 相 A Phase	B 相 B Phase	C 相 C Phase	信号正 Signal Positive	信号地 Signal Ground	信号 A Signal A	信号 B Signal B	信号 C Signal C
标识 Marker	A	B	C	VCC	GND	HA	HB	HC

270 系列-J270LWX02-方波内转子(270 series – J270LWX02- Square Wave Internal Rotor)

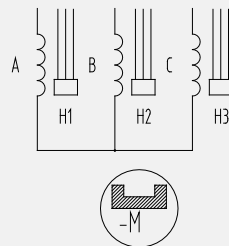
 定子 (Stator)  转子(Rotor)	主要技术参数 Main technical parameters	
	驱动方式 Driving method	方波 Squarewave
	工作制 Working system	真空长时工作 Vacuum long-time working operation
	极对数 Number of poles	31
	额定电压/V Rated voltage/V	28
	连续堵转转矩/ N·m Continuous blocking torque/ N-m	≥35
	转矩系数/ (N·m /A) Torque coefficient/(N-m /A)	≥4
	峰值堵转转矩/ N·m Peak blocking torque / N-m	≥55
	空载转速/(r/min) No-load speed/(r/min)	60±10%
	相电阻/Ω Phase resistance/Ω	0.77±10%
	相电感/mH Phase inductance/mH	3.2±20%
	转矩波动系数 Torque fluctuation coefficient	≤15%
	齿槽转矩/ N·m Cogging torque/ N-m	≤0.7
	重量/kg Weight/kg	≤8.3
	外形图/mm (Outline drawing/mm)	



安装要求及注意事项 (Installation Requirement and Precautions)

电路图 (CircuitDiagram)

- a) $\Phi 270$ 和 $\Phi 190$ 安装面同轴度保证在 0.05mm 以内 (The coaxiality of $\Phi 270$ and $\Phi 190$ mounting surface is guaranteed to be within 0.05mm)。



定义 Definition	A 相 A Phase	B 相 B Phase	C 相 C Phase	信号正 Signal Positive	信号地 Signal Ground	信号 A Signal A	信号 B Signal B	信号 C Signal C
标识 Marker	A	B	C	VCC	GND	HA	HB	HC

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DC BRUSHLESS FANS& AC FANS



选型目录 (Product selection catalogue)

无刷直流风机 (DC Brushless Fan)

序号 Serial Number	代号 Product Code	额定电压 Rated Voltage VDC	功率 Power W	基准转速 Rated Speed rpm	最大静压 Static Pressure Pa	最大风量 Air Flow m³/h	工作噪声 Acoustic Noise dB (A)	重量 Weight g	工作温度 Operating Temperature ℃
1	J40FZW59-28G	28	≤5.5	≥13500	≥220	≥24	≤52	≤70	-55~85
2	J45FZW45-15G	24	≤1	≥5000	≥30	≥20	≤33	≤60	-55~85
3	J47FZW59-48GD	28	≤42	≥22000	≥880	≥90	≤85	≤160	-55~85
4	J55FZW49-32G	24	≤8	≥11700	≥280	≥70	≤55	≤180	-55~85
5	J55FZW49-32GA	24	≤15	≥15000	≥550	≥82	≤65	≤180	-55~85
6	J63FZW59-43GD	28	≤43	≥9500	≥320	≥140	≤80	≤350	-55~85
7	J65FZW59-70GD	28	≤126	≥22000	≥1100	≥210	≤90	≤450	-55~85
8	J75FZW45-32G	24	≤6	≥5000	≥135	≥80	≤51	≤200	-55~85
10	J75FZW49-38G	24	≤40	≥14000	≥700	≥220	≤75	≤350	-55~85
9	J75FZW78-38G	24	≤12	≥8400	≥280	≥132	≤55	≤350	-55~85
11	J84FZW45-38G	24	≤7.2	≥5800	≥205	≥130	≤51	≤350	-55~100
12	J84FZW49-38G	24	≤30	≥11000	≥540	≥240	≤69	≤350	-55~100
13	J85FZW59-80GD	28	≤150	≥15000	≥1400	≥400	≤80	≤550	-55~100
14	J85FZW79-38GB	48	≤55	≥13000	≥800	≥280	≤73	≤350	-55~85
15	J87FZW43-25G	24	≤3.5	≥3250	≥46	≥100	≤40	≤180	-55~85
16	J110FZW45-38G	24	≤30	≥5000	≥220	≥330	≤75	≤500	-55~85
17	J110FZW47-38G	24	≤45	≥7500	≥480	≥390	≤73	≤550	-55~85
18	J110FZW48-38G	24	≤60	≥8400	≥680	≥440	≤78	≤500	-55~100

风机产品手册 FANS

序号 Serial Number	代号 Product Code	额定电压 Rated Voltage VDC	功率 Power W	基准转速 Rated Speed rpm	最大静压 Static Pressure Pa	最大风量 Air Flow m³/h	工作噪声 Acoustic Noise dB (A)	重量 Weight g	工作温度 Operating Temperature ℃
19	J110FZW76-38G	48	≤30	≥6800	≥350	≥355	≤70	≤550	-55~85
20	J110FZW49-38GB	24	≤125	≥11000	≥1200	≥570	≤83	≤550	-55~85
21	J110FZW79-38GB	48	≤125	≥11000	≥1200	≥570	≤83	≤550	-55~85
22	J150FZW45-51G	24	≤46	≥5800	≥520	≥600	≤67	≤1200	-55~100
23	J150FZW47-51G	24	≤70	≥7000	≥750	≥710	≤73	≤1200	-55~85
24	J150FZW49-51GB	24	≤155	≥9000	≥1000	≥930	≤80	≤1200	-55~85
26	J200FZW55-125GD	28	≤420	≥5500	≥950	≥1500	≤90	≤4500	-55~85
27									

交流风机 (Ac fan)

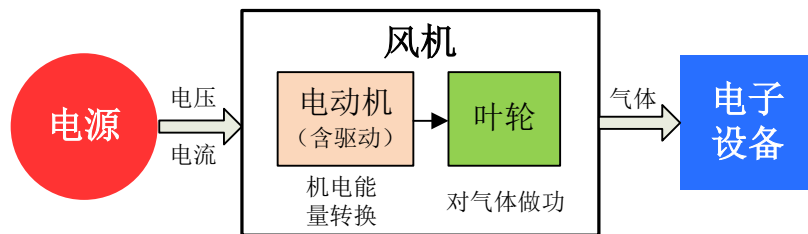
序号 Serial Number	代号 Product Code	额定电压 Rated Voltage VDC	功率 Power W	基准转速 Rated Speed rpm	最大静压 Static Pressure Pa	最大风量 Air Flow m³/h	工作噪声 Acoustic Noise dB (A)	重量 Weight g	工作温度 Operating Temperature ℃
1	J70FZY72-38G	230/50	≤12	≥2800	≥49	≥49	≤31	≤500	-55~100
2	J110FZY72-25G	230/50	≤14	≥2450	≥47	≥117	≤37	≤380	-55~100
3	J110FZY72-38G	230/50	≤19	≥2650	≥80	≥160	≤47	≤600	-55~100
4	J110FZY72-38GA	230/50	≤19	≥2650	≥70	≥160	≤40	≤600	-55~100
5	J125FZY72-38G	230/50	≤30	≥2700	≥98	≥235	≤46	≤850	-55~100

概述 (Overview)

1、风机类型 (Fan type)

风机是一种利用电动机带动叶轮旋转提升气体压力并连续输送气体的机电一体化设备，根据电动机类型划分，本手册所列举的风机类型为无刷直流风机和交流风机，按气流运动方向分类，本手册所列举的风机均为轴流式风机（气体沿着与叶轮同轴的圆柱面进入和离开叶轮）。

Fan is a kind of electromechanical integration equipment that uses motor to drive the impeller to rotate to raise gas pressure and continuously transport gas. According to the type of motor, the fan types listed in this manual are brushless DC fan and AC fan. According to the direction of air flow movement, the fan types listed in this manual are axial fan (gas enters and leaves the impeller along the cylindrical surface coaxial with the impeller).



风机工作原理

Fan working principle

2、产品特点 (Features)

- 100%国产化
100% domestic
- 执行 GJB7246-2011 《小型无刷直流风机通用规范》、GJB1423-1992 《小型交流风机通用规范》
Execute GJB7246-2011 "General Specifications for Small Brushless DC Trip", GJB1423-1992 "General Specifications for Small Exchange Fans"
- 电磁兼容满足 GJB151B-2013 《军用设备和分系统电磁发射和敏感度要求与测量》中 CE102、RE102 等测试项
Electromagnetic compatibility meets the GJB151B-2013 "Military Equipment and System Electromagnetic Launch and Sensitivity Requirements and Measurement" CE102, RE102 and other test items
- 电源特性满足 GJB181B-2012 《飞机供电特性》中 28V 直流供电系统中正常工作的电压瞬变和非正常工作的过压和欠压要求
The power supply characteristics meet the requirements of voltage transients in normal operation and overvoltage and undervoltage in abnormal operation of 28V DC power supply system in

GJB181B-2012 "Aircraft Power Supply Characteristics"

- 结构紧凑、安装简便、可靠性高、寿命长

Compact structure, easy installation, high reliability and long life

- 具备软启动、防堵转、调速、转速信号反馈、故障报警、超转保护等功能

It has the functions of soft start, anti-blockage, speed regulation, speed signal feedback, fault alarm, overrotation protection and so on

3、使用场合 (Use occasion)

在机载、车载、舰船等军用装备的风冷散热系统中，作为电子设备的散热元件使用。

It is used as a heat dissipation element for electronic equipment in the air-cooled heat dissipation system of airborne, vehicle-mounted, ship and other military equipment.

功能释义 (Functional Definition)

1、防反接 (Polarity Protection)

防止风机的正负极引出线与电源的正负极反接，风机被施加反向电压而损坏。

To prevent the positive and negative verses of the fan, the positive and negative poles of the power supply are damaged by the reverse voltage of the fan.

2、软启动 (Soft Start)

风机起动过程中，起动电流逐渐上升，最大尖峰电流小于风机的 3 倍额定电流。

During the start of the fan, the starting current gradually increased, and the maximum peak current was less than 3 times the rated current of the fan.

3、逆风起启动 (Push against the wind)

风机能克服开机前因外界风场引起的叶轮反转，然后正向起启动运行。

The fan can overcome the impeller reversal caused by the outside wind field before booting, and then runs towards the start.

4、堵转保护与自动重启 (Locked-rotor protection and automatic restart)

风机上电若发生堵转，会进行保护防止堵转电流过大引起风机损坏，并会间隔一定的时间进行反复重启直至堵转消失，然后起启动风机正常运行。

If the fan is locked when it is powered on, it will be protected to prevent damage to the fan caused by excessive locked-rotor current, and will be restarted repeatedly at certain intervals until the stall disappears, and then the fan will be started to operate normally.

5、PWM 信号调速 (PWM signal speed regulation)

通过调速接口，外部输入频率为 2kHz，高电平幅值为 3.3V~5V，低电平幅值小于 0.7V 的 PWM 信号控制风机转速，0~100% 占空比对应控制风机在 0~100% 基准转速下运行。

Through the speed control interface, the external input frequency is 2kHz, the high level amplitude is 3.3V~5V, and the PWM signal with the low level amplitude is less than 0.7V to control the fan speed, and the 0~100% duty cycle corresponds to control the fan to run at 0~100% base speed.

6、模拟信号调速 (Analog signal speed regulation)

通过调速接口，外部输入 0V~10V 模拟电压信号，对应控制风机在 0~100% 基准转速下运行。

Through the speed control interface, the external input 0V ~ 10V analog voltage signal, corresponding to the control fan running at 0 ~ 100% reference speed.

7、转速信号输出 (Speed signal output)

风机转速信号引出线时时输出反应风机转速的方波频率信号,频率与转速满足确定的数学关系。

The fan speed signal lead line always outputs a square wave frequency signal reflecting the fan speed, and the frequency and speed meet the determined mathematical relationship.

8、故障报警 (Fault alarm)

风机故障信号引出线时时输出反应风机工作状态的电平信号,风机正常运行时输出电平为低电平 (不大于 0.7V),风机发生故障时输出电平为 3.3V~5V 的高电平。

The fan fault signal lead line outputs the level signal that reflects the working status of the fan. The output level is low (not more than 0.7V) when the fan is in normal operation, and the output level is high (3.3V~5V) when the fan is in fault.

9、超转保护 (Overspeed protection)

外界环境因素如过电压、低气压等会引起无刷直流风机转速升高,风机的工作转速能被限制在基准转速的 110%以下运行。

External environmental factors such as overvoltage and low pressure will cause the brushless DC fan speed to increase, and the working speed of the fan can be limited to 110% of the reference speed.

无刷直流风机（Dc Brushless Fan）

J40FZW59-28G

□40×27.4mm



产品功能（FUNCTION）

- ✓ 防反接

Polarity Protection
- ✓ 软启动

Soft Start
- ✓ 逆风起动

Pushagainst thewind
- ✓ 堵转保护与自动重启

Locked-rotor protection and automatic restart
- ✓ 转速信号输出

Speed signal output
- ✓ 超转保护

Overspeed protection

产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
28	≤5.5	≥13500	≥220	≥24	≤52	≤70	-55~+85

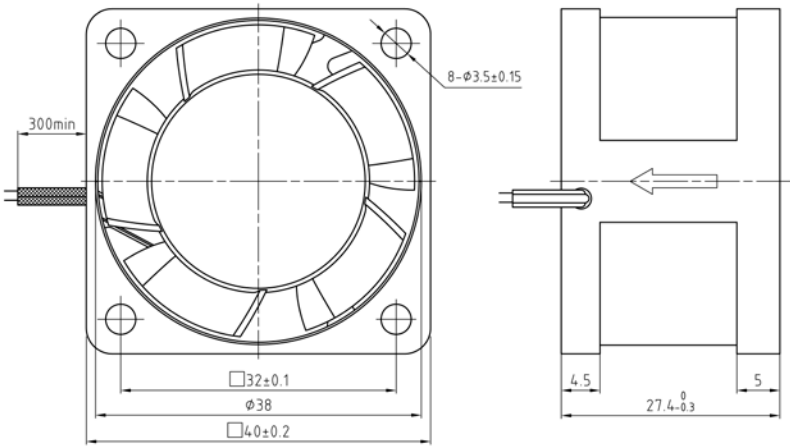
环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011，以及 GJB150.8A-2009 淋雨、GJB150.12A-2009 沙尘、酸性大气试验。
Environmental adaptability:Meet GJB7246-2011, and GJB150.8A-2009 rain, GJB150.12A-2009 sand, acid atmosphere test.

电磁兼容：满足 GJB151B-2013 中 CE102、CE107、RE102 测试项。
EMC:Meet the test items of CE102, CE107 and RE102 in GJB151B-2013.

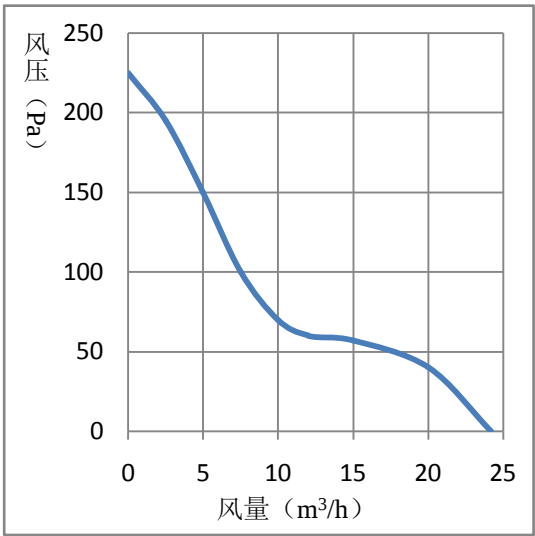
外形安装尺寸（DIMENSION）

PQ 曲线（PQ curve）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	黄 (YELLOW)



无刷直流风机（Dc Brushless Fan）

J45FZW45-15G

□50×15mm



产品功能（FUNCTION）

- ✓ 防反接

Polarity Protection
- ✓ 软启动

Soft Star
- ✓ 逆风起动

Push against the wind
- ✓ 堵转保护与自动重启

Locked-rotor protection and automatic restart
- ✓ 故障报警

Fault alarm
- ✓ 超转保护

Overspeed protection

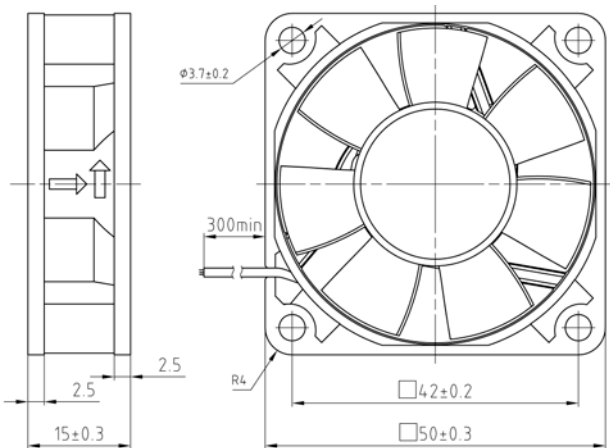
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤1	≥5000	≥30	≥20	≤33	≤60	-55~+85

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

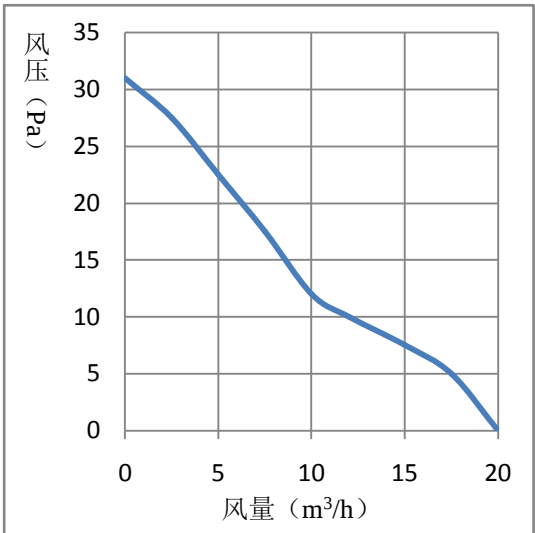
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	故障信号 (Fault signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	黄 (YELLOW)

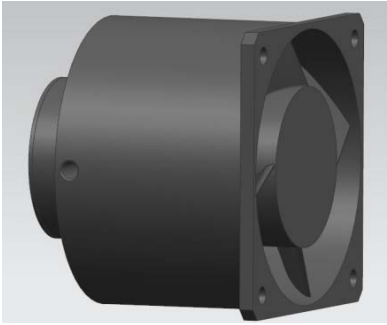
PQ 曲线（PQ curve）



无刷直流风机 (Dc Brushless Fan)

J47FZW59-48GD

□50.7×47mm



产品功能 (FUNCTION)

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ 模拟信号调速
Analog signal speed regulation
- ✓ 故障报警
Fault alarm
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

产品参数 (PARAMETER)

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
28	≤42	≥22000	≥880	≥90	≤85	≤160	-55~+85

环境适应性&电磁兼容 (Environmental adaptability&EMC)

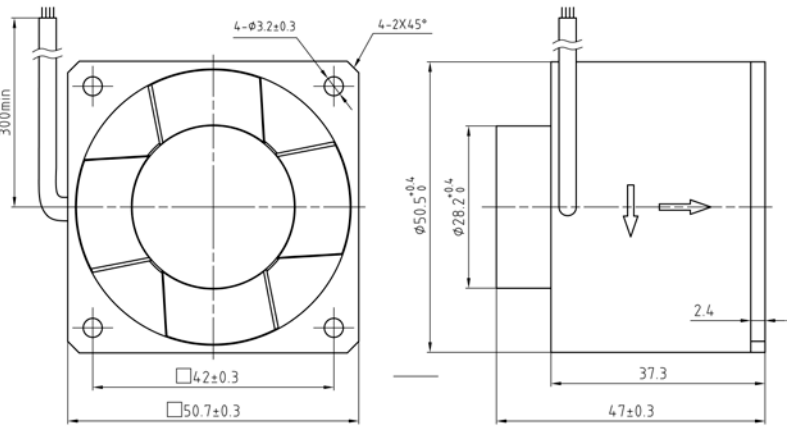
环境适应性：满足 GJB7246-2011，以及 GJB150.24A-2009 温度-高度-湿度、GJB4.8-1983 颠簸、GJB150.12A-2009 沙尘、GB/T4208-2008 浸渍试验。

Environmental adaptability: Meet GJB7246-2011, as well as GJB150.24A-2009 temperature-height-humidity, GJB4.8-1983 bump, GJB150.12A-2009 sand and dust, GB/T4208-2008 impregnation test.

电磁兼容：满足 GJB151B-2013 中 CE102、CS101、CS114、RE102、RS101、RS103 测试项。

EMC: Meet the test items of CE102, CS101, CS114, RE102, RS101 and RS103 in GJB151B-2013.

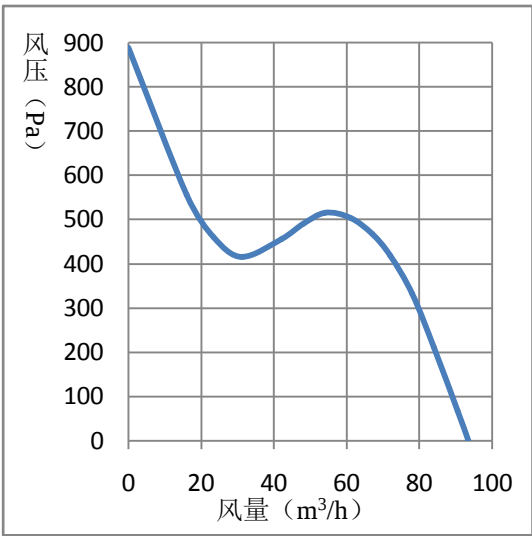
外形安装尺寸 (DIMENSION)



引出线定义 (Lead wire)

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	故障信号 (Fault signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	黄 (YELLOW)

PQ 曲线 (PQ curve)



无刷直流风机（Dc Brushless Fan）

J55FZW49-32G、J55FZW49-32GA

□60×32mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Pushagainst thewind
- ✓ PWM 信号调速
PWM
signalspeedregulation
- ✓ 故障报警
Fault alarm
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

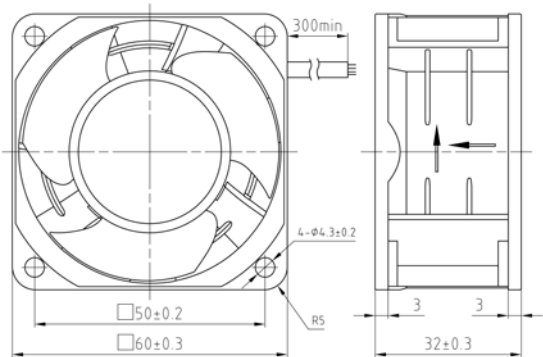
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤8	≥11700	≥280	≥70	≤55	≤180	-55~+85
	≤15	≥15000	≥550	≥82	≤65		

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

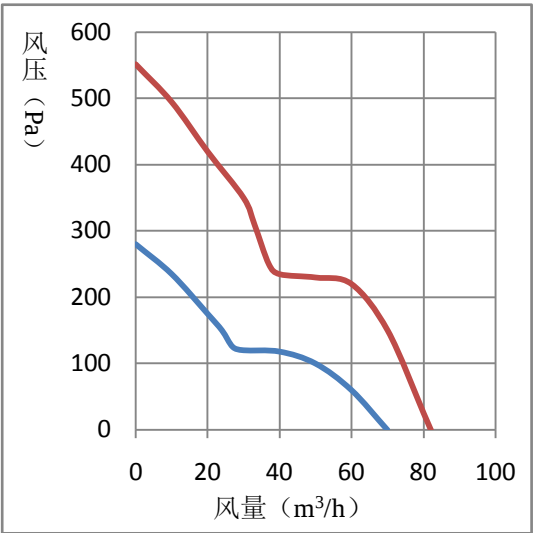
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	故障信号 (Fault signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	黄 (YELLOW)

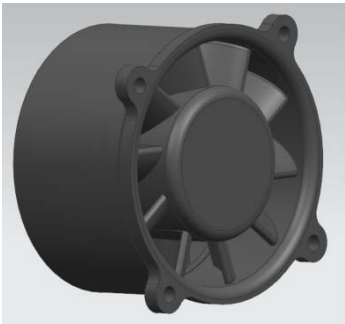
PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J63FZW59-43GD

□60×32mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ 转速信号输出
Speed signal output
- ✓ 过流保护
Overcurrent protection

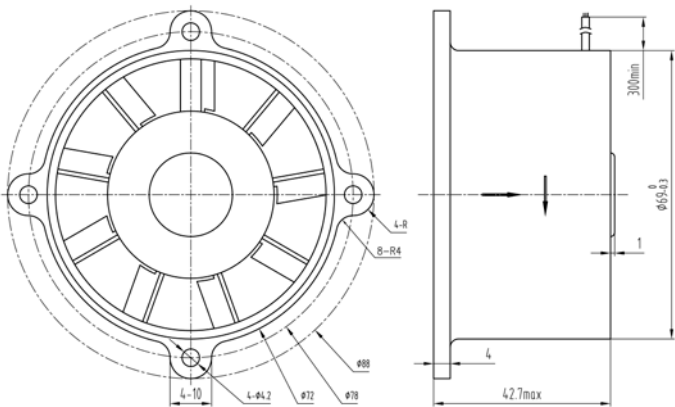
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
28	≤43	≥9500	≥320	≥140	≤80	≤350	-55~+85

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

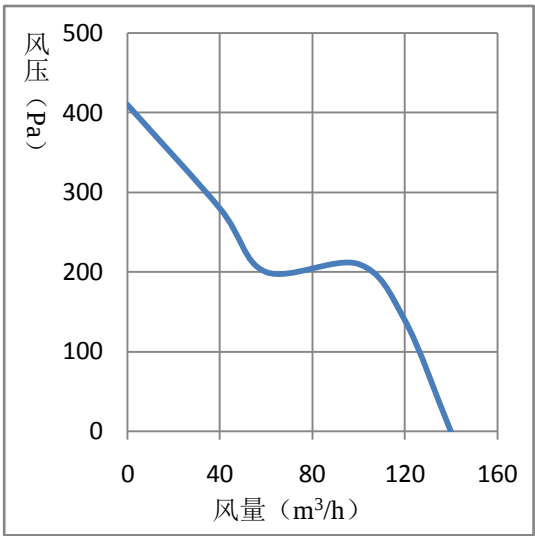
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	黄 (YELLOW)

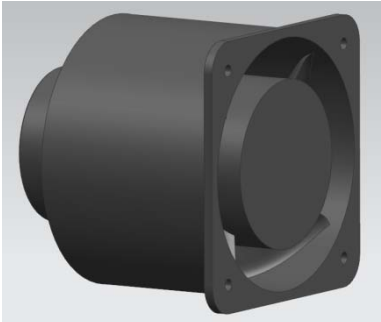
PQ 曲线（PQ curve）



无刷直流风机 (Dc Brushless Fan)

J65FZW59-70GD

□72.5×70mm



产品功能 (FUNCTION)

- ✓ 防反接
Polarity Protection
 - ✓ 软启动
Soft Star
 - ✓ 逆风起动
Push against the wind
 - ✓ 模拟信号调速
Analog signal speed regulation
- ✓ 故障报警
Fault alarm
 - ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
 - ✓ 超转保护
Overspeed protection

产品参数 (PARAMETER)

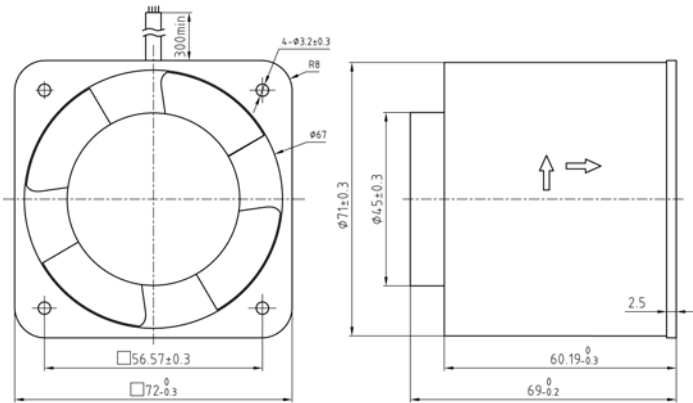
额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
28	≤126	≥22000	≥1100	≥210	≤90	≤450	-55~+85

环境适应性&电磁兼容 (Environmental adaptability&EMC)

环境适应性：满足 GJB7246-2011，以及 GJB150.24A-2009 温度-高度-湿度、GJB4.8-1983 颠簸、GJB150.12A-2009 沙尘、GB/T4208-2008 浸渍试验。
Environmental adaptability: Meet GJB7246-2011, as well as GJB150.24A-2009 temperature-height-humidity, GJB4.8-1983 bump, GJB150.12A-2009 sand and dust, GB/T4208-2008 impregnation test.
电磁兼容：满足 GJB151B-2013 中 CE102、CS101、CS114、RE102、RS101、RS103 测试项。
EMC: Meet the test items of CE102, CS101, CS114, RE102, RS101 and RS103 in GJB151B-2013.

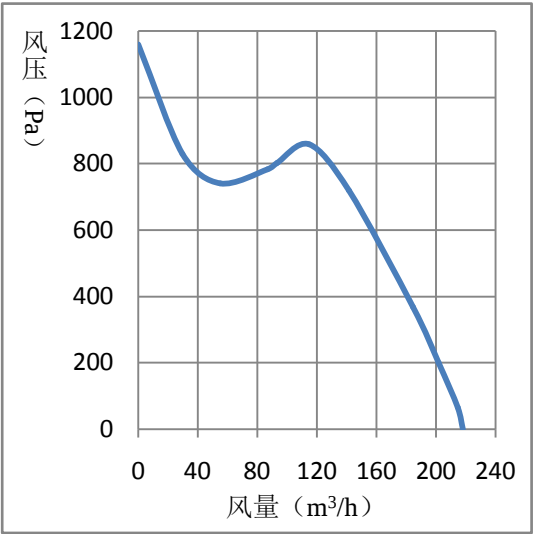
外形安装尺寸 (DIMENSION)

PQ 曲线 (PQ curve)



引出线定义 (Lead wire)

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	故障信号 (Fault signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	黄 (YELLOW)



无刷直流风机 (Dc Brushless Fan)

J75FZW45-32G

□80×32mm



产品功能 (FUNCTION)

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

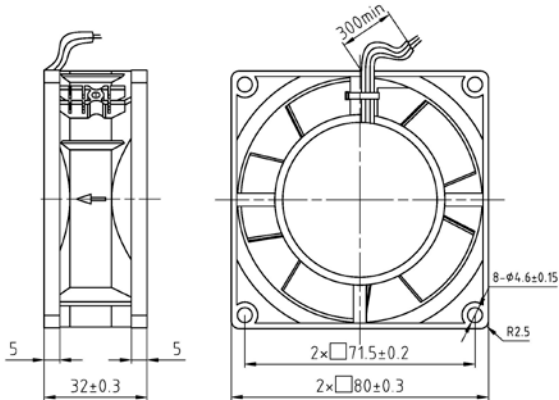
产品参数 (PARAMETER)

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤6	≥5000	≥135	≥80	≤51	≤200	-55~+85

环境适应性&电磁兼容 (Environmental adaptability&EMC)

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

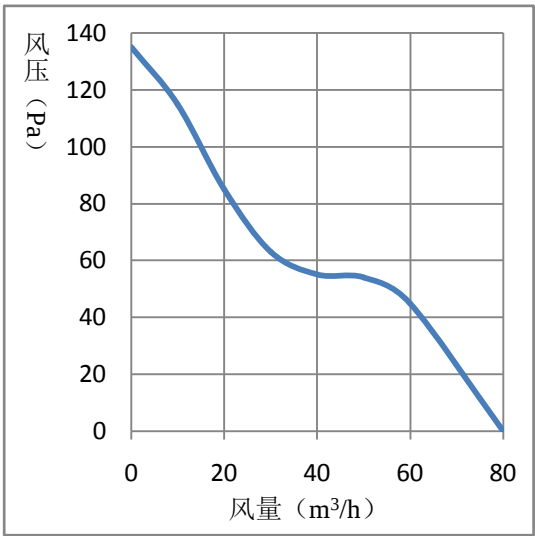
外形安装尺寸 (DIMENSION)



引出线定义 (Lead wire)

导线功能 (Wire Function)	电源正 (VCC)	GND	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	白 (WHITE)

PQ 曲线 (PQ curve)



无刷直流风机（Dc Brushless Fan）

J75FZW49-38G、J75FZW78-38G

□80×38mm



产品功能（FUNCTION）

- ✓ 防反接

Polarity Protection

✓ 软启动

Soft Star

✓ 逆风起动

Push against the wind

✓ PWM 信号调速

PWM signals speed regulation
- ✓ 转速信号输出

Speed signal output

✓ 堵转保护与自动重启

Locked-rotor protection and automatic restart

✓ 超转保护

Overspeed protection

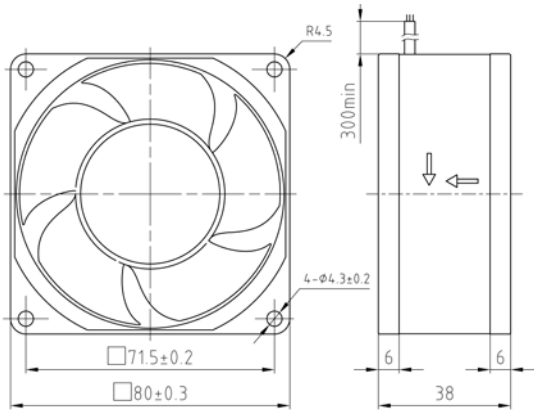
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m ³ /h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤40	≥14000	≥700	≥220	≤75	≤350	-55~+85
	≤12	≥8400	≥280	≥132	≤55		

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

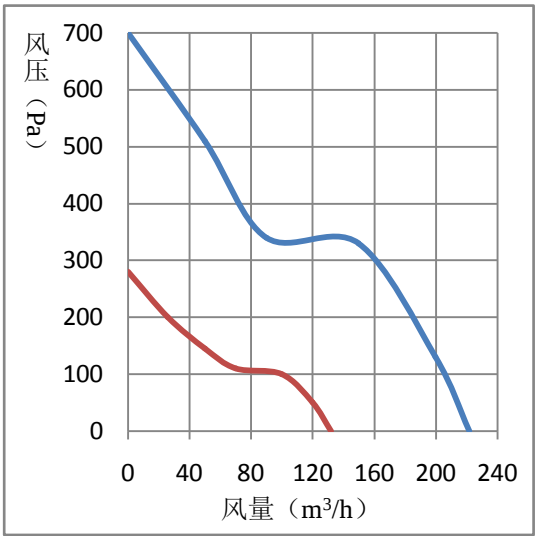
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	黄 (YELLOW)

PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J84FZW45-38G、J84FZW49-38G

□92×38mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ PWM 信号调速
PWM signals speed regulation
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m ³ /h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤7.2	≥5800	≥205	≥130	≤51	≤350	-55~+100
	≤30	≥11000	≥540	≥240	≤69		

环境适应性&电磁兼容（Environmental adaptability&EMC）

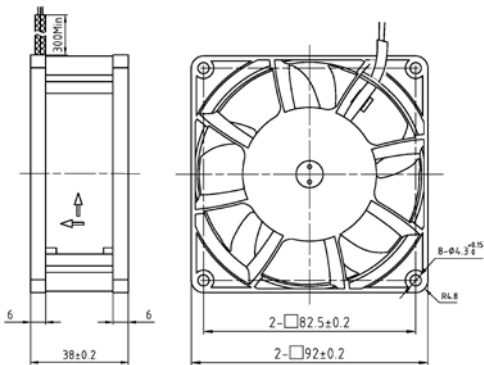
环境适应性：满足 GJB7246-2011，以及 GJB150.8A-2009 淋雨、GJB150.12A-2009 砂尘、GJB150.24A-2009 温度-高度-湿度、GB/T4208-2017 中 IP55 防护等级。

Environmental adaptability: Meet GJB7246-2011, as well as GJB150.8A-2009 rain, GJB150.12A-2009 sand, GJB150.24A-2009 temperature-height-humidity, and IP55 protection level in GB/T4208-2017.

电磁兼容：满足 GJB151B-2013 中 CE102、CE107、RE102 测试项。

EMC: Meet the test items of CE102, CE107 and RE102 in GJB151B-2013.

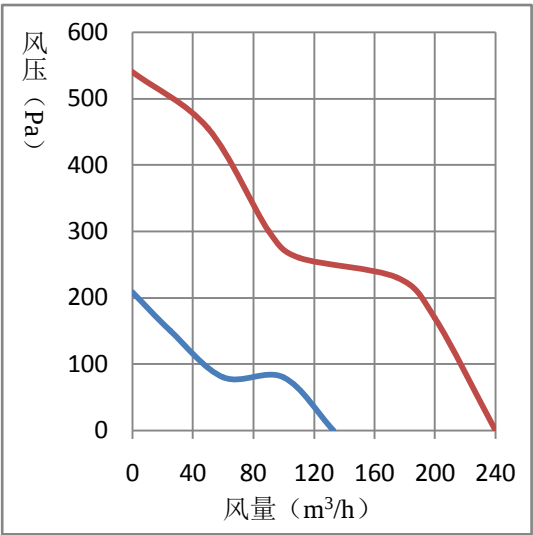
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	蓝 (BLUE)	棕 (BROWN)

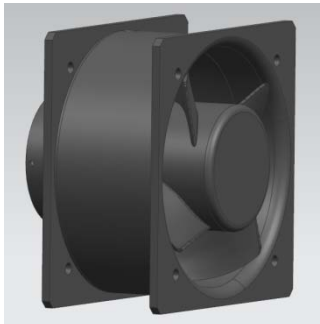
PQ 曲线（PQ curve）



无刷直流风机 (Dc Brushless Fan)

J85FZW59-80GD

□95.5×82.5mm



产品功能 (FUNCTION)

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ 模拟信号调速
Analog signal speed regulation
- ✓ 故障报警
Fault alarm
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

产品参数 (PARAMETER)

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
28	≤150	≥15000	≥1400	≥400	≤80	≤550	-55~+100

环境适应性&电磁兼容 (Environmental adaptability&EMC)

环境适应性：满足 GJB7246-2011，以及 GJB150.24A-2009 温度-高度-湿度、GJB4.8-1983 颠簸、GJB150.12A-2009 沙尘、GB/T4208-2008 浸渍试验。

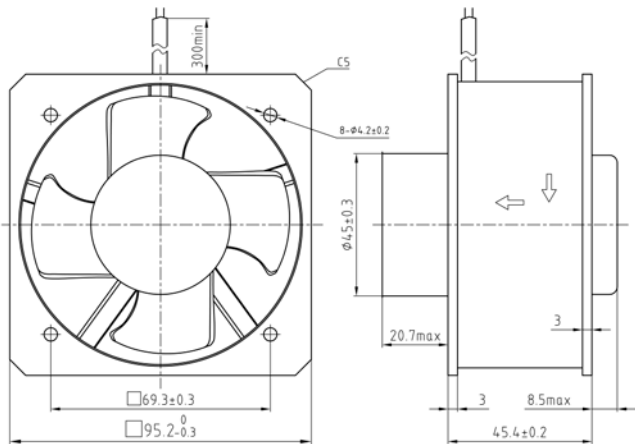
Environmental adaptability: Meet GJB7246-2011, as well as GJB150.24A-2009 temperature-height-humidity, GJB4.8-1983 bump, GJB150.12A-2009 sand and dust, GB/T4208-2008 impregnation test.

电磁兼容：满足 GJB151B-2013 中 CE102、CS101、CS114、RE102、RS101、RS103 测试项。

EMC: Meet the test items of CE102, CS101, CS114, RE102, RS101 and RS103 in GJB151B-2013.

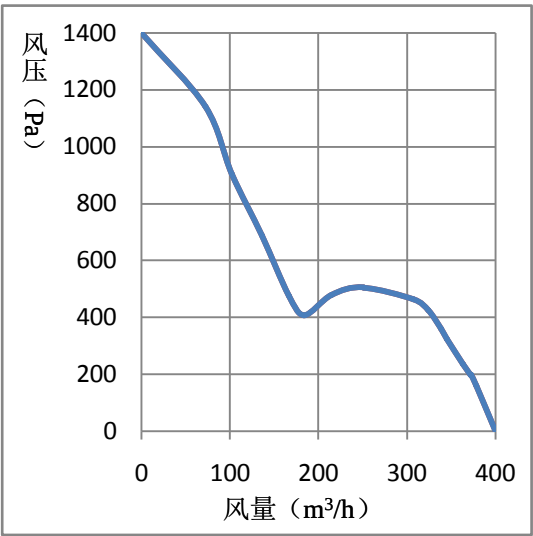
外形安装尺寸 (DIMENSION)

PQ 曲线 (PQ curve)



引出线定义 (Lead wire)

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	故障信号 (Fault signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	黄 (YELLOW)



无刷直流风机（Dc Brushless Fan）

J85FZW79-38GB

□92×38mm



产品功能（FUNCTION）

- ✓

防反接
Polarity Protection
- ✓

软启动
Soft Star
- ✓

逆风起动
Push against the wind
- ✓

PWM 信号调速
PWM signals speed regulation
- ✓

故障报警
Fault alarm
- ✓

堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓

超转保护
Overspeed protection

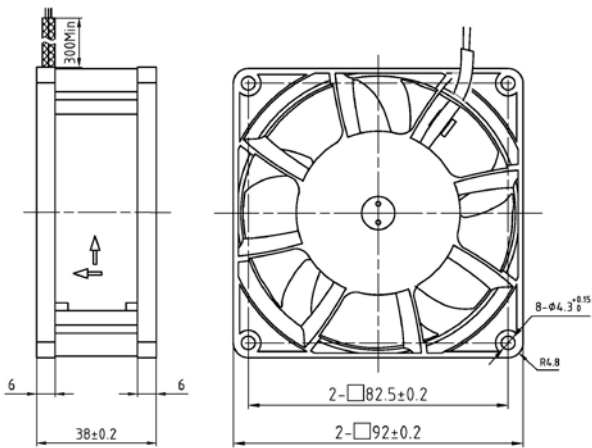
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
48	≤55	≥13000	≥800	≥280	≤73	≤350	-55~+85

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

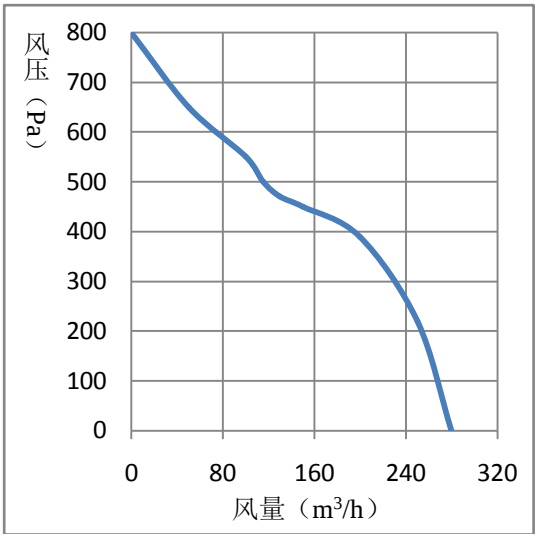
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	故障信号 (Fault signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	棕 (BROWN)

PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J87FZW43-25G

□92×25.4mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

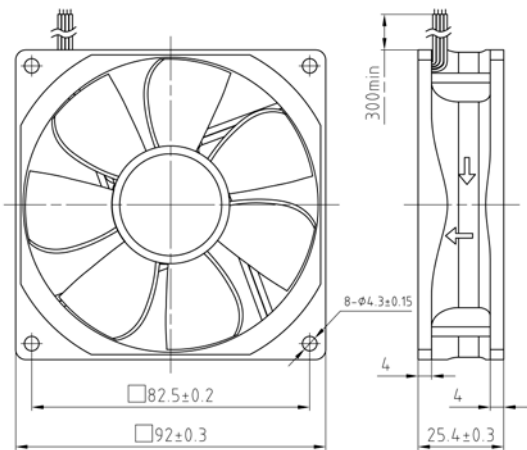
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤3.5	≥3250	≥46	≥100	≤40	≤180	-55~+85

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

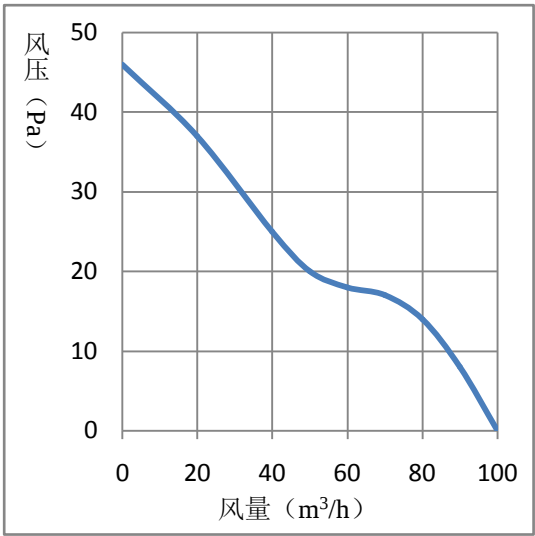
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	棕 (BROWN)

PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J110FZW45-38G

□127×38mm



产品功能（FUNCTION）

- ✓

防反接
Polarity Protection
- ✓

软启动
Soft Star
- ✓

逆风起动
Push against the wind
- ✓

PWM 信号调速
PWM signalspeed regulation
- ✓

转速信号输出
Speed signal output
- ✓

堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓

超转保护
Overspeed protection

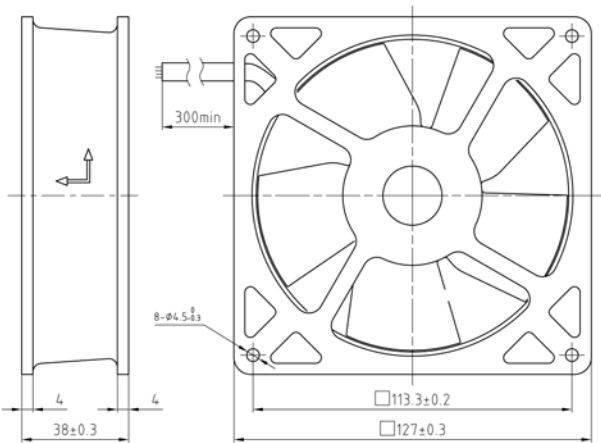
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤30	≥5000	≥220	≥330	≤75	≤500	-55~+85

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

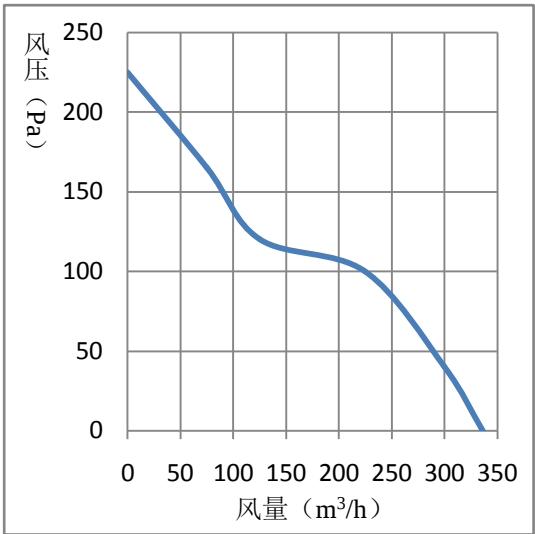
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	棕 (BROWN)

PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J110FZW47-38G

□119×38mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ PWM 信号调速
PWM signalspeed regulation
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

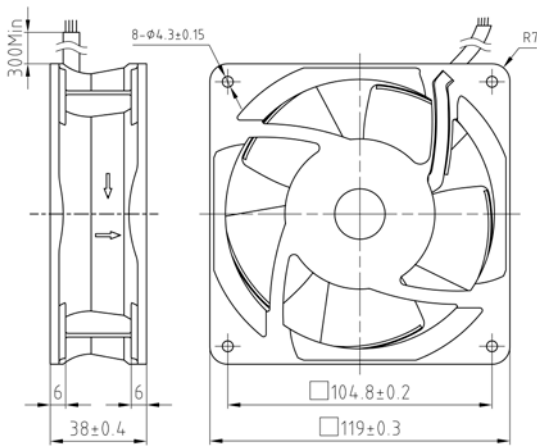
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤45	≥7500	≥480	≥390	≤73	≤550	-55~+85

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

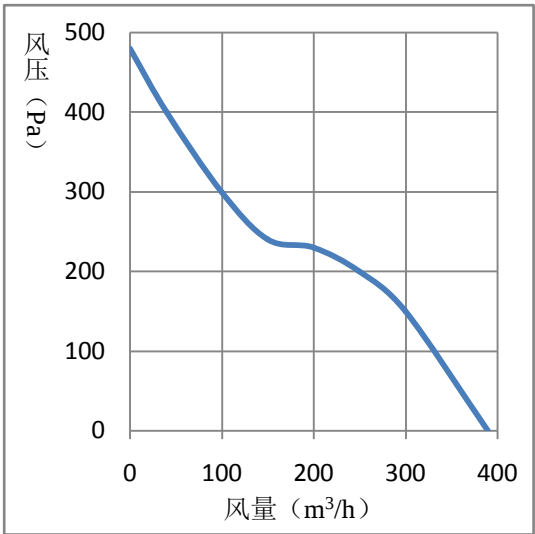
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	棕 (BROWN)

PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J110FZW48-38G

□119×38mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ PWM 信号调速
PWM signals speed regulation
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤60	≥8400	≥680	≥440	≤78	≤500	-55~+100

环境适应性&电磁兼容（Environmental adaptability&EMC）

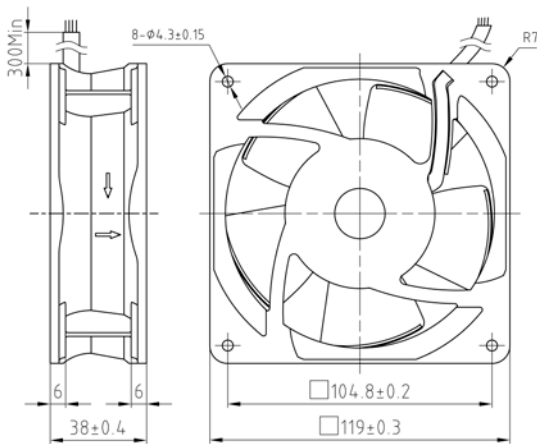
环境适应性：满足 GJB7246-2011，以及 GJB150. 8A-2009 淋雨、GJB150. 12A-2009 砂尘、GJB150. 24A-2009 温度-高度-湿度、GB/T4208-2017 中 IP55 防护等级。

Environmental adaptability: Meet GJB7246-2011, as well as GJB150.8A-2009 rain, GJB150.12A-2009 sand, GJB150.24A-2009 temperature-height-humidity, and IP55 protection level in GB/T4208-2017.

电磁兼容：满足 GJB151B-2013 中 CE102、CE107、RE102 测试项。

EMC: Meet the test items of CE102, CE107 and RE102 in GJB151B-2013.

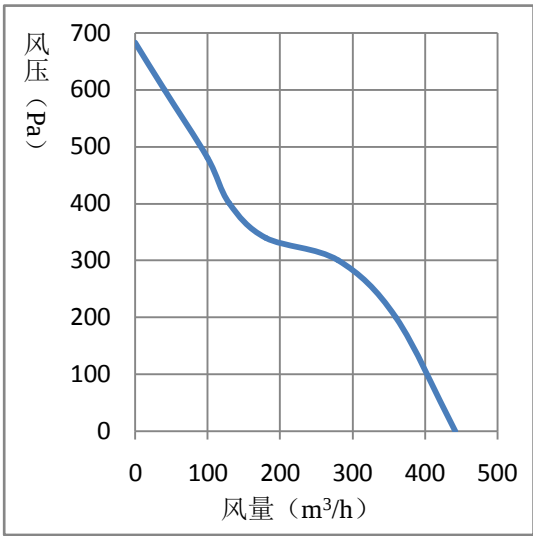
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	蓝 (BLUE)	棕 (BROWN)

PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J110FZW76-38G

□119×38mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ PWM 信号调速
PWM signals speed regulation
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

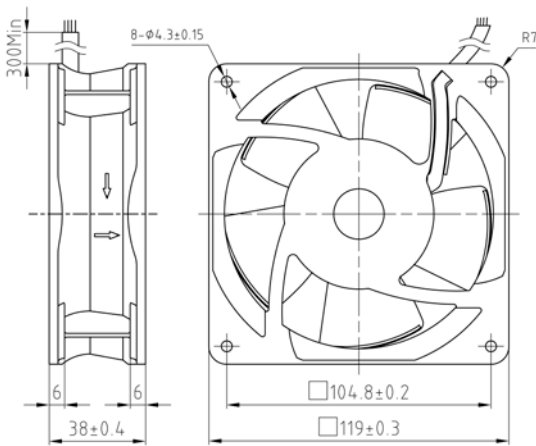
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
48	≤30	≥6800	≥350	≥355	≤70	≤550	-55~+85

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

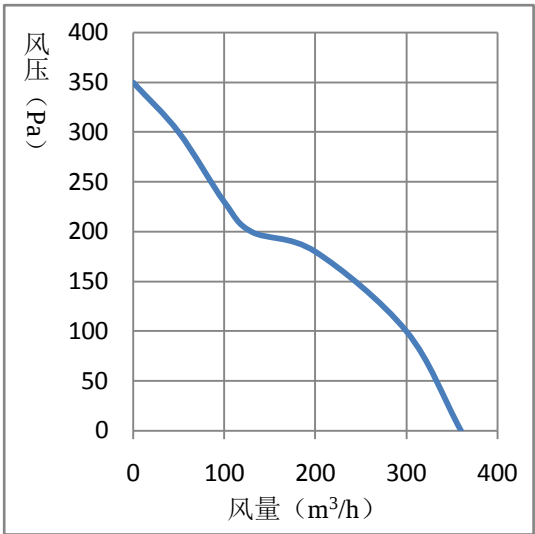
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	棕 (BROWN)

PQ 曲线（PQ curve）



无刷直流风机（Dc Brushless Fan）

J110FZW49-38GB、J110FZW79-38GB

□119×38mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ PWM 信号调速
PWM signals speed regulation
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

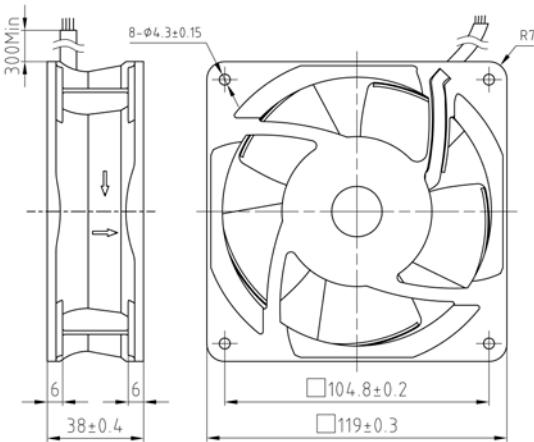
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m ³ /h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤125	≥11000	≥1200	≥570	≤83	≤550	-55~+85
48							

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

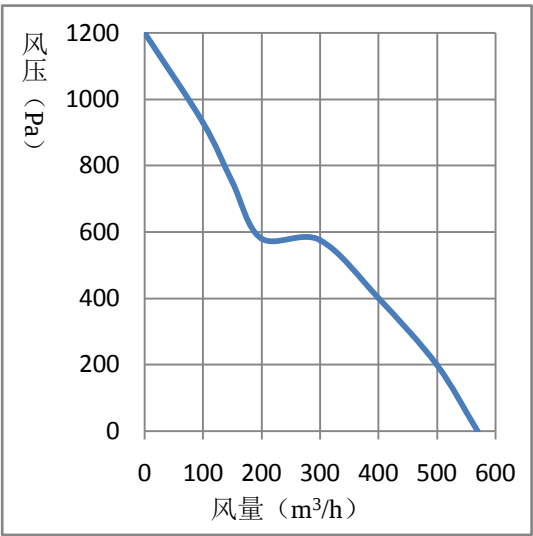
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	蓝 (BLUE)	棕 (BROWN)

PQ 曲线（PQ curve）



无刷直流风机 (Dc Brushless Fan)

J150FZW45-51G

□171.5×51mm



产品功能 (FUNCTION)

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ PWM 信号调速
PWM signal speed regulation
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

产品参数 (PARAMETER)

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤46	≥5800	≥520	≥600	≤67	≤1200	-55~+100

环境适应性&电磁兼容 (Environmental adaptability&EMC)

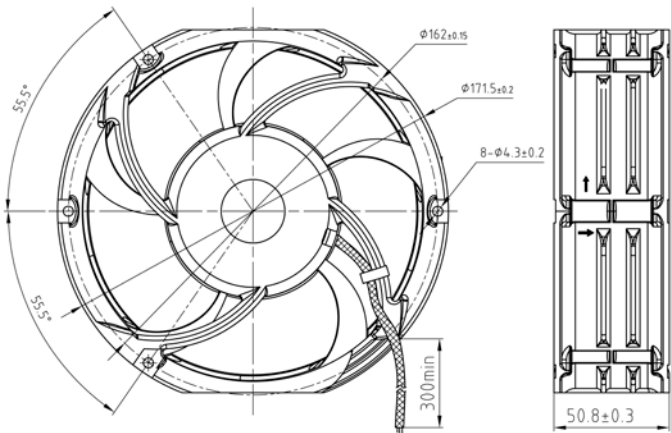
环境适应性：满足 GJB7246-2011，以及 GJB150. 8A-2009 淋雨、GJB150. 12A-2009 砂尘、GJB150. 24A-2009 温度-高度-湿度、GB/T4208-2017 中 IP55 防护等级。

Environmental adaptability: Meet GJB7246-2011, as well as GJB150.8A-2009 rain, GJB150.12A-2009 sand, GJB150.24A-2009 temperature-height-humidity, and IP55 protection level in GB/T4208-2017.

电磁兼容：满足 GJB151B-2013 中 CE102、CE107、RE102 测试项。

EMC: Meet the test items of CE102, CE107 and RE102 in GJB151B-2013.

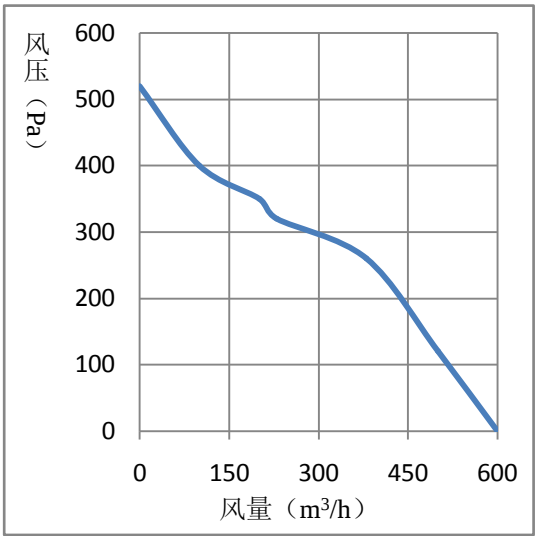
外形安装尺寸 (DIMENSION)



引出线定义 (Lead wire)

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	棕 (BROWN)

PQ 曲线 (PQ curve)



无刷直流风机（Dc Brushless Fan）

J150FZW47-51G、J150FZW49-51GB、J150FZW79-51GB

□171.5×51mm



产品功能（FUNCTION）

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ PWM 信号调速
PWM signals speed regulation
- ✓ 转速信号输出
Speed signal output
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

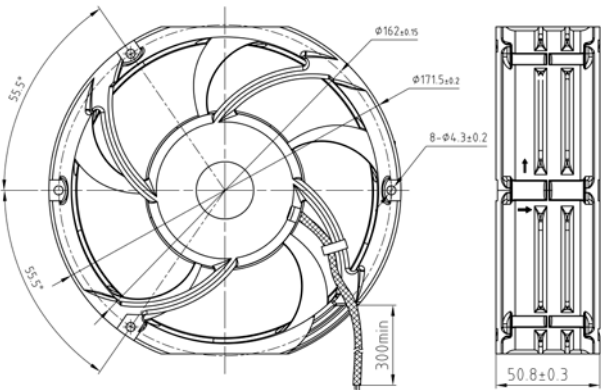
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m ³ /h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
24	≤70	≥7000	≥750	≥710	≤73	≤1200	-55~+85
24	≤155	≥9000	≥1000	≥930	≤80		
48							

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

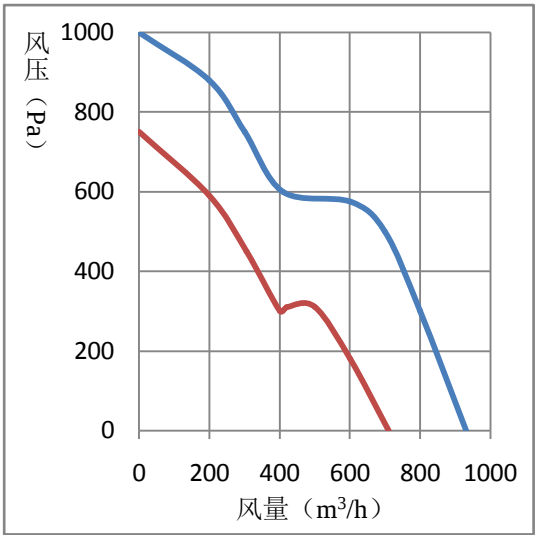
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	转速信号 (Speed signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	蓝 (BLUE)	棕 (BROWN)

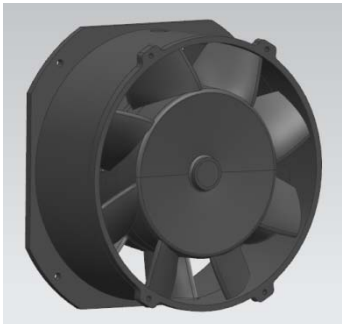
PQ 曲线（PQ curve）



无刷直流风机 (Dc Brushless Fan)

J200FZW55-125GD

□240×125mm



产品功能 (FUNCTION)

- ✓ 防反接
Polarity Protection
- ✓ 软启动
Soft Star
- ✓ 逆风起动
Push against the wind
- ✓ 模拟信号调速
Analog signal speed regulation
- ✓ 故障报警
Fault alarm
- ✓ 堵转保护与自动重启
Locked-rotor protection and automatic restart
- ✓ 超转保护
Overspeed protection

产品参数 (PARAMETER)

额定电压 Rated Voltage (VDC)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
28	≤420	≥5500	≥950	≥1500	≤90	≤4500	-55~+85

环境适应性&电磁兼容 (Environmental adaptability&EMC)

环境适应性：满足 GJB7246-2011，以及 GJB150.24A-2009 温度-高度-湿度、GJB4.8-1983 颠簸、GJB150.12A-2009 沙尘、GB/T4208-2008 浸渍试验。

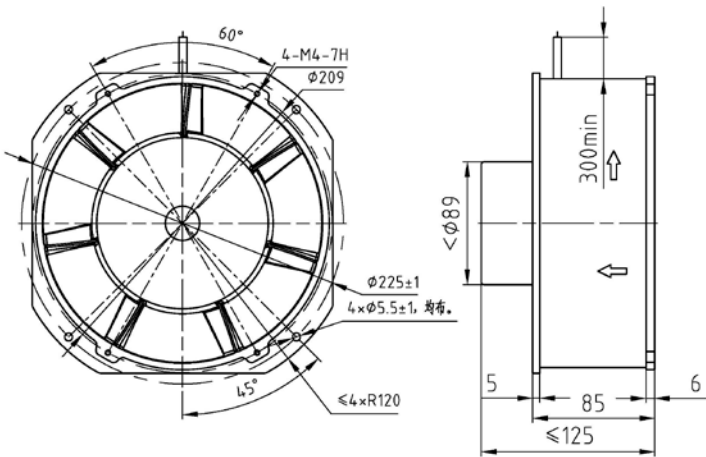
Environmental adaptability: Meet GJB7246-2011, as well as GJB150.24A-2009 temperature-height-humidity, GJB4.8-1983 bump, GJB150.12A-2009 sand and dust, GB/T4208-2008 impregnation test.

电磁兼容：满足 GJB151B-2013 中 CE102、CS101、CS114、RE102、RS101、RS103 测试项。

EMC: Meet the test items of CE102, CS101, CS114, RE102, RS101 and RS103 in GJB151B-2013.

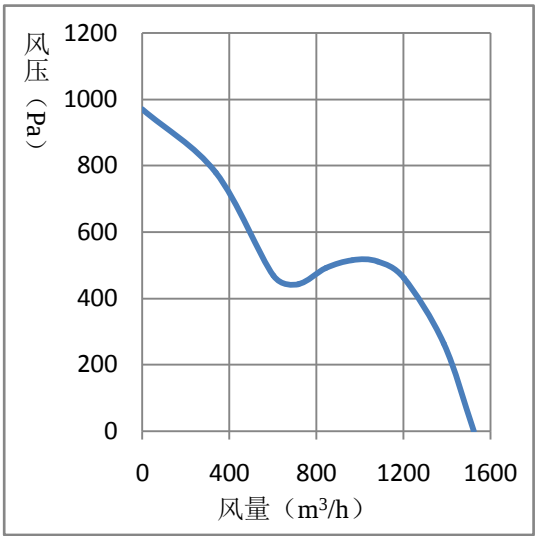
外形安装尺寸 (DIMENSION)

PQ 曲线 (PQ curve)



引出线定义 (Lead wire)

导线功能 (Wire Function)	电源正 (VCC)	GND	调速 (Speed regulation)	故障信号 (Fault signal)
导线颜色 (Wire Color)	红 (RED)	黑 (BLACK)	绿 (GREEN)	棕 (BROWN)



交流风机（Ac Fan）

J70FZY72-38G

□80×38mm



产品参数（PARAMETER）

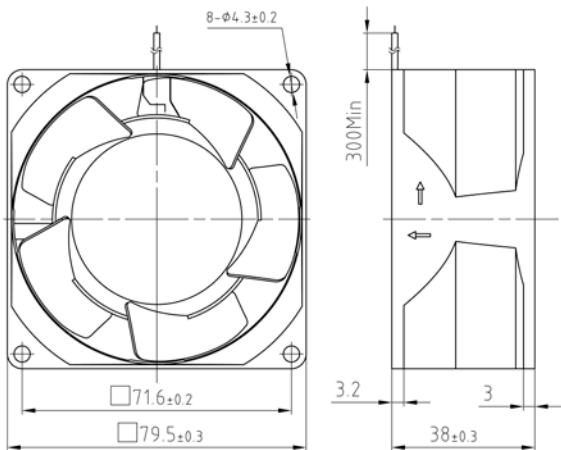
额定电压 Rated Voltage (VDC)	频率 Frequency (HZ)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
230	50	≤12	≥2800	≥49	≥49	≤31	≤500	-55~+100

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

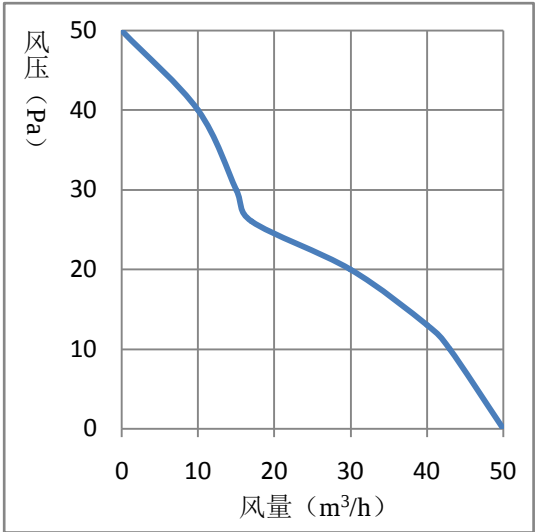
外形安装尺寸

PQ 曲线



引出线定义（Lead wire）

导线类型 (Wire Type)	火线 (Fireline)	零线 (Zero line)
导线颜色 (Wire Color)	蓝 (BLUE)	蓝 (BLUE)



交流风机（Ac Fan）

J110FZY72-25G

□119×25mm



产品参数（PARAMETER）

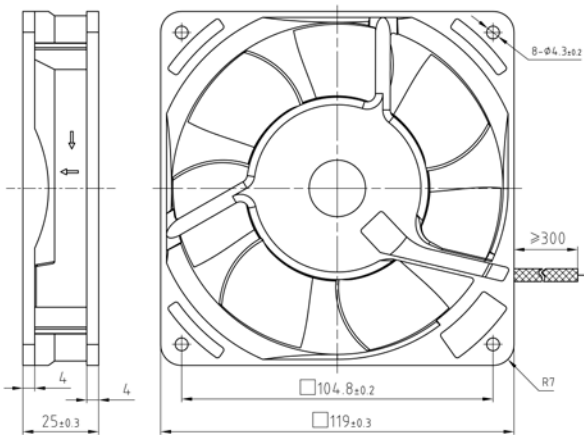
额定电压 Rated Voltage (VDC)	频率 Frequency (HZ)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
230	50	≤14	≥2450	≥47	≥117	≤37	≤380	-55~+100

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

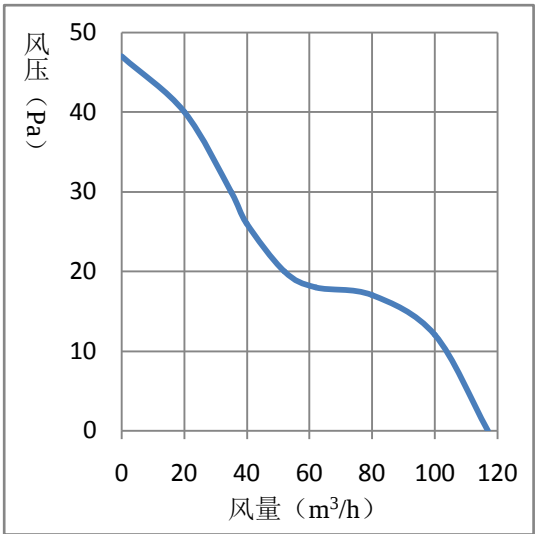
外形安装尺寸（DIMENSION）

PQ 曲线（PQ curve）



引出线定义（Lead wire）

导线类型 (Wire Type)	火线 (Fireline)	零线 (Zero line)
导线颜色 (Wire Color)	蓝 (BLUE)	蓝 (BLUE)



交流风机（Ac Fan）

J110FZY72-38G

□119×38mm



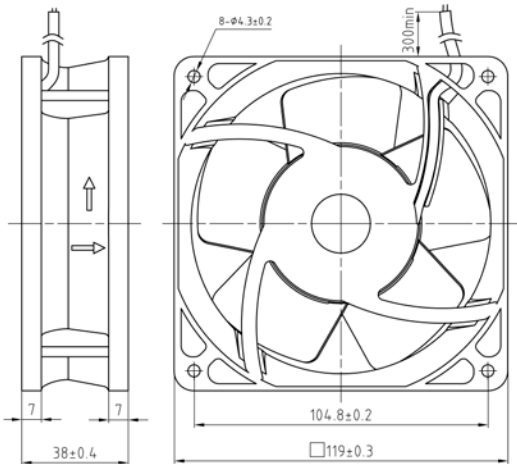
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	频率 Frequency (HZ)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m³/h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
230	50	≤19	≥2650	≥80	≥160	≤47	≤600	-55~+100

环境适应性&电磁兼容（Environmental adaptability&EMC）

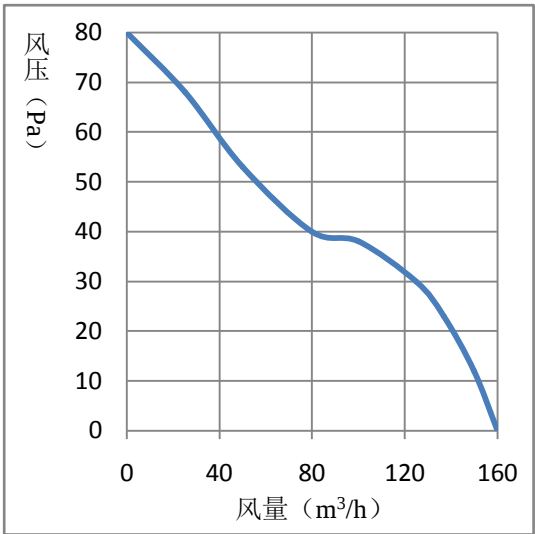
环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

外形安装尺寸（DIMENSION）PQ 曲线（PQ curve）



引出线定义（Lead wire）

导线类型 (Wire Type)	火线 (Fireline)	零线 (Zero line)
导线颜色 (Wire Color)	蓝 (BLUE)	蓝 (BLUE)



交流风机（Ac Fan）

J110FZY72-38GA

□119×38mm



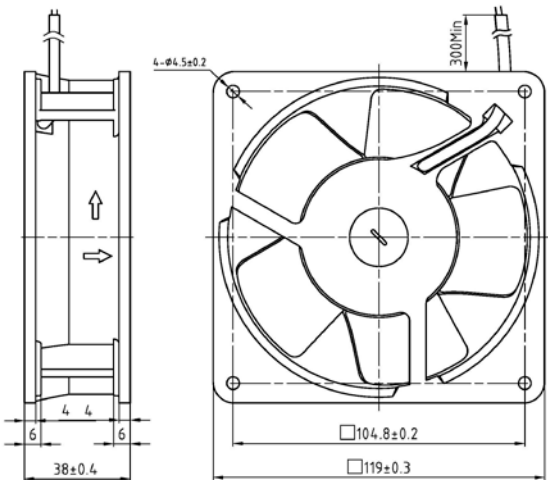
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	频率 Frequency (HZ)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m ³ /h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
230	50	≤19	≥2650	≥70	≥160	≤40	≤600	-55~+100

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

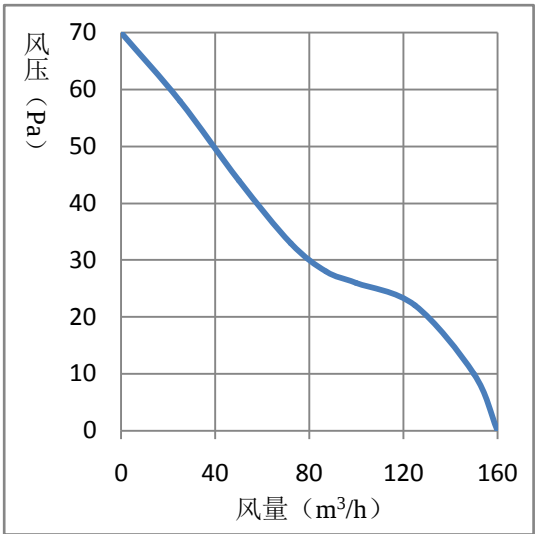
外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线类型 (Wire Type)	火线 (Fireline)	零线 (Zero line)
导线颜色 (Wire Color)	蓝 (BLUE)	蓝 (BLUE)

PQ 曲线（PQ curve）



交流风机（Ac Fan）

J125FZY72-38G

□135×38mm



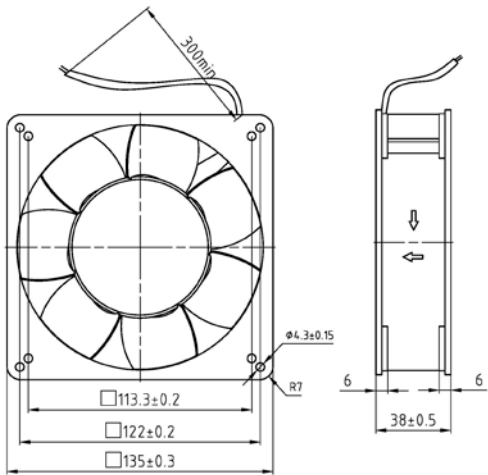
产品参数（PARAMETER）

额定电压 Rated Voltage (VDC)	频率 Frequency (HZ)	功率 Power (W)	基准转速 Rated Speed (r/min)	最大静压 Static Pressure (Pa)	最大风量 Air Flow (m ³ /h)	噪声 Acoustic Noise (dB(A))	重量 Weight (g)	工作温度 Operating Temperature (℃)
230	50	≤30	≥2700	≥98	≥235	≤46	≤850	-55~+100

环境适应性&电磁兼容（Environmental adaptability&EMC）

环境适应性：满足 GJB7246-2011。
Environmental adaptability: Meet GJB7246-2011.
电磁兼容：满足 GJB151B-2013 中 CE102、RE102 测试项。
EMC: Meet the test items of CE102 and RE102 in GJB151B-2013.

外形安装尺寸（DIMENSION）



引出线定义（Lead wire）

导线类型 (Wire Type)	火线 (Fireline)	零线 (Zero line)
导线颜色 (Wire Color)	蓝 (BLUE)	蓝 (BLUE)

PQ 曲线（PQ curve）

