KPOWER
伟创动力

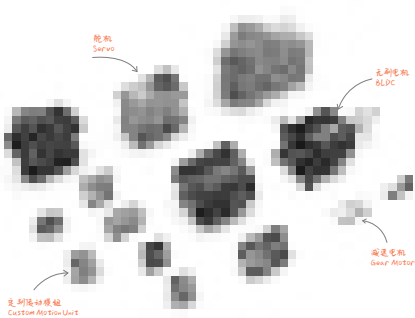
2026/06

一体化驱控模组制造商

Compact Drive Unit Manufacturer

全驱动产品系列

Product Catalog



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舵机系列 Servo Motor

无刷电机 Brushless Motor

微型减速电机 Micro Gear Motor

关于伟创动力

Who We Are

20+年
精密传动研发制造经验
20+ Year R&D Experience

47,000㎡
智造中心
47,000㎡ Plant Area

1,000,000
传动模组/电机月产能
1,000k Products Per Month

600+
员 工
600+ Employees

6+
体系&产品认证
6+ Industry Certifications

160+
知识产权
160+ Active Patents

「 **伟创动力（Kpower）**成立于2005年，定位为一体化驱控模组制造商，是一家专注于研发和生产配机、无刷电机和微型齿轮箱等高性能驱动部件的国家级高新技术企业，先后被认定为"专精特新中小企业"和"东莞市精密舵机传动及控制系统(伟创)工程技术研究中心"。

伟创动力致力于不断探索和创新模块化驱动技术，为客户提供高效、定制化的智能驱动系统解决方案，覆盖智能座舱、智能家居、机器人、智慧农业、无人机、工业自动化等多个行业领域，与全球范围内500＋客户达成深度合作。

Established in 2005, Kpower is positioned as an integrated drive module manufacturer. It is a national high-tech enterprise specializing in the research, development, and production of high-performance drive components, including servos, brushless motors, and micro gearboxes. The company has been recognized as a "Specialized, High-End, and Innovation-Driven SME" and as the "Dongguan Precision Servo Transmission and Control System (Kpower) Engineering Technology Research Center" its headquarters is located in Dongguan, Guangdong Province, China.

Kpower is dedicated to providing efficient, customized intelligent drive system solutions and differentiated products for our customers, serving multiple industries, including Smart Home, Automobile Cabin, Robotics, Industrial Automation, Drones, Precision Agriculture, providing smart drive system solutions and products to over 500 enterprise clients globally. 」



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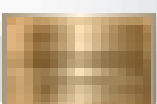
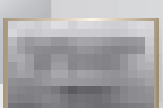
企业荣誉&认证

Honor & Certification

「国家级」高新技术企业



广东省「专精特新」中小企业



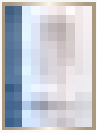
东莞市精密舵机传动及控制系统
(伟创)工程技术研究中心

广东省名优高新技术产品

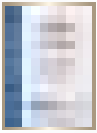
参与起草「多旋翼无人机系统
伺服电机国家标准」

体系认证
Quality Certification

IATF 16949
汽车质量管理体系认证

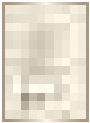


ISO14001
环境管理体系认证



ISO9001
质量管理体系认证

产品认证
Product Certification



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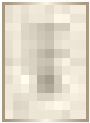


FCC

RoHS

REACH

发展历程

Milestones

20+年驱控模组研发&制造经验

20 Years of R&D Experience in Drive Module

2024

全球首创车载柔性屏升降机构装车交付

Delivered the Globally Pioneering Automotive Self-rollable Central Control Screen Drive

35,000㎡全新智造工厂正式启用

35,000㎡ Smart Manufacturing Factory

2022 与佛吉亚、BYD达成合作

Partnered with Forvia, BYD

2020 与雅迪集团联合推出全球首款全自动折叠电动车

Co-launched the World's First Fully Automatic Folding E-bike with Yadea

大扭矩外转无刷、工业化CAN通信舵机系列

High-torque External Rotor BLDC Series & Industrial CAN Communication Servo Series

2019 自有12,000㎡「智造工厂」正式启用

12,000㎡ Smart Manufacturing Factory

开展汽车传动模组研发

Automotive Drive Modules R&D

2019-2025年

智能制造

Smart Manufacturing

2018

投入无刷电机产品研发

Development of Brushless Motor

推出扁形中空轴机器人动力关节舵机

Launched Sector Hollow Axis Robot Joint Servo

2017

「国家级高新技术企业」认证

「National High-tech Enterprise」 Certification

与Deta合作推出 力控VR手套舵机

Co-Launched World's first Force-Feedback VR Gloves Servo with Deeta

2016 深圳研发分公司正式成立

Shenzhen R&D Branch Established

2013 成为DJI独家舵机供应商

DJI's Exclusive Servo Supplier

2013-2016年

行业布局

Industry Positioning

2012

创立Kpower自主品牌

「Kpower」 Brand Launched

2005

伟创动力创立

Kpower Established

专注于舵机减速箱OEM

Gearbox OEM Production

2005-2012年

初创探索

Startup Exploration

服务全球
Global Service

5 | 分支机构
5 Facilities

50+ | 国家地区销售
in over 50 countries, Kpower has a presence

FOTILE方太 DREAME SharkNINJA

FORVIA Faurecia 红旗 长安汽车 CHANGAN AUTO 雅迪 比亚迪

影石 Insta360 CREALITY 创想三维 TOMY Nidec HAIROBOTICS

XAG 极飞科技 小鹏汇天 美团 HORIZON

xiaomi UBTECH 优必选 CATL 宁德时代 Bambu Lab

研发实力
R&D Capability

研发技术团队
R&D Team of Kpower

伟创动力拥有一支80余人技术研发团队，其中核心团队15人，平均行业经验10年以上，覆盖电机设计、机械结构、硬件设计和算法开发领域，为客户提供项目评估、研发设计、样品制作、试样验证、产品量产和售后服务的全链条配置服务。

Kpower boasts a technical R&D team of over 80 members, including a core team of 15 professionals with an average of over 10 years of industry experience. The team covers key areas, including motor development, mechanical design, hardware design, and algorithm development, offering customers a comprehensive, end-to-end service package that includes project evaluation, R&D design, prototype development, sample testing and validation, mass production, and after-sales support.

40+
结构工程师
40+ Mechanical Engineers

10+
电机工程师
10+ Motor Engineers

10+
硬件工程师
10+ Hardware Engineers

20+
软件工程师
20+ Software Engineers

160+
知识产权和专利
Over 160 Intellectual Property and Patents

系统化的驱动设计

Systematic Drive Design

在驱动设计阶段，我们将会采用专业的设计和仿真软件，构建多维度仿真验证体系，实现传动强度、运动顺滑度及控制精度的同步达标，提高项目成功率。

In the drive design phase, Kpower utilizes platforms to build a multi-dimensional simulation and verification system, achieving simultaneous compliance with transmission strength, motion smoothness, and control accuracy, which improves the prototype success rate.

齿轮参数计算&啮合仿真

Gear Parameter Calculation & Meshing Simulation

基于ISO/DIN/AGMA标准进行齿轮啮合优化与疲劳寿命分析，确保传动平稳性和耐久性。

Gear meshing optimization and fatigue life analysis based on ISO/DIN/AGMA standards, ensuring transmission smoothness and durability.

整体结构建模设计&装配验证

Integrated Structural Modeling & Assembly Validation

通过参数化建模驱动快速迭代，结合运动仿真与装配验证，完成紧凑空间布局与量产工艺适配。

Rapid iteration is driven by parametric modeling, combined with motion simulation and assembly validation to achieve compact spatial layout and compatibility with mass production processes.

结构强度有限元分析

Structural Strength Finite Element Analysis (FEA)

通过结构强度有限元分析（FEA）及热-力耦合仿真，验证关键部件在极端工况下的可靠性。

Structural strength finite element analysis (FEA) and thermo-mechanical coupled simulation are used to verify the reliability of key components under extreme operating conditions.

运动精度验证&图纸输出

Motion Accuracy Verification & Drawing Output

完成传动系统高精度三维快速建模与装配验证，支持协同设计及工程图标准化输出。

Complete high-precision 3D rapid modeling and assembly validation of the transmission system, supporting collaborative design and standardized engineering drawing output.

核心技术突破

Breakthrough in Core Technologies

自研CDBUS总线通讯芯片 | In-house Developed CDBUS Communication Chip

- 增强RS-485支持CDBUS、TTL、单线串口等多种功能协议
  Enhanced RS-485 Support for Multiple Functional Protocols, Including CDBUS, TTL, Single-wire Serial, and More.
- 支持对等传输、组播功能
  Peer-to-peer Transmission and Multicast Functionality Supported.
- 支持仲裁、BS全程高速、传统、全双工等多种功能模式
  Multiple Functional Modes, Including Arbitration, BS Full-speed, Traditional, and Full-duplex Supported.
- 面向工业自动化、交通电子、智慧城市、IoT、消费电子等多种领域
  Targeting Various Industries Such as Industrial Automation, Traffic Electronics, Smart City IoT, Consumer Electronics, and More.

制造实力

Manufacturing Capability

精密核心部件制造

Precision Core Components Manufacturing

伟创动力拥有完整的CNC加工、金属齿轮加工、零部件注塑等生产线配置，可满足核心部件从快速打样到稳定批量生产周期需求。

Kpower has a complete set of production lines, including CNC machining, metal gear processing, and component injection molding, capable of meeting the demands for rapid prototyping to stable mass production cycles of core components.

人机协作的智能制造

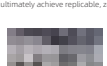
Human-machine Collaborative Intelligent Manufacturing

针对卯压、焊接等关键工序，引入一键单板测试仪、光学影像检测仪等IoT设备，通过设备联网与数据实时监控减少人为误差，实现可复制、零误差的规模化制造。

For key processes such as dowelling and welding, a variety of IoT devices such as one-touch PCB testers and optical image detectors are equipped to reduce human error and ultimately achieve replicable, zero-defect mass production.

无刷定子绕线机
Brushless Stator Winding Machine

自动铆压入磁机
Automatic Press-Fitting Magnet Machine



伺服压力机
Servo Press-fit Machine

自动点胶机
Automatic Dispensing Machine

数控焊锡机
CNC Soldering Machine

电动螺丝机
Electric Screw Machine

自研串口能机综合测试
Self-developed Serial Servo Comprehensive Tester

自研能机视觉自动校正仪
Self-developed Servo Visual Auto-calibration Device

100%可追溯MES系统

100% Traceable MES System

伟创动力通过MES系统针对生产全流程（从来料到成品）多个关键节点进行数字化建模以及实时记录，并同步至BI看板，实现生产与质量数据的实时监控与智能预警，构建全流程追溯体系与防错防呆机制，确保质量闭环可控。

Kpower uses the MES system to digitally model and record key points across the entire production process in real-time, synchronizing the data to the BI dashboard. This enables real-time monitoring of production and quality data, along with intelligent alerts, while establishing a traceability system and error-proofing mechanisms to ensure a controlled quality feedback loop.

质量体系管控

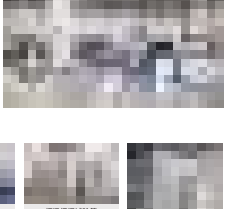
Quality System Control

综合性能评价实验室

Comprehensive Performance Evaluation Lab

伟创动力拥有400㎡产品综合试验室，由20+性能试验台架和10+环境测试设备组成，可满足驱动模组在DV、PV阶段的多种试验要求，保证产品质量。

Kpower's 400㎡ comprehensive product testing laboratory, consisting of 20+ performance test benches and 10+ environmental testing devices, can meet various testing requirements during the DV and PV stages of drive modules, ensuring product quality.



电机测功机

Motor Dynamometer

RoHS液相光谱仪

RoHS Liquid Phase Spectrometer

恒温恒湿试验箱

Constant Temperature and Humidity Test Chamber

25dB静音房

25dB Silent Room

盐雾试验机

Salt Spray Test Chamber

线材折弯试验机

Wire Bending Test Machine

喷淋防水试验箱

Spray Waterproof Test Chamber

漆包线针孔测试机

Enamelled Wire Pinhole Tester

磨耗试验机

Abrasion Tester

卤素分析仪

Halogen Analyzer ROHS 1.0

单臂跌落试验机

Single-arm Drop Tester

精密传动检测中心
Precision Parts Testing Center

为满足产品研发和制造阶段检测需求，伟创动力引入了日本基恩士光学测量仪、齿轮啮合仪等多台进口检测设备，实现核心零部件全过程的品质数据分析把控。

To meet the testing requirements during product R&D and manufacturing stages, Kpower has introduced multiple imported testing devices, including Keyence optical measurement instruments and gear meshing testers, to enable comprehensive quality data analysis and control of core components throughout the entire process.

基恩士光学测量仪
Keyence Optical Measuring Instrument

齿轮啮合仪
Gear Meshing Tester

齿轮综合测量仪
Gear Measuring Machine (GMM)

二次元
2D Coordinate Measuring Machine

三次元
Coordinate Measuring Machine (CMM)

洛氏硬度计
Rockwell Hardness Tester

极限工况验证体系
Extreme Operating Condition Validation System

从产品定制需求和终端应用场景出发，我们已建立从研发到产品生产、运输存储以及终端用户使用的多重严苛工况验证体系，保证每一环节产品质量可靠性与稳定性。

Based on product customization requirements and end-user application scenarios, we have established a multi-level, rigorous verification system that covers R&D, product manufacturing, transportation and storage, as well as end-user usage, ensuring the reliability and stability of product quality at every stage.

产品性能测试
Product Performance Testing

- 负载寿命 Load Life
- 工作噪音 Operating Noise
- 寿命加速模拟 Accelerated Lifespan Simulation
- 机械冲击 Mechanical Impact
- 模拟运输 Simulated Transportation
- 包装跌落 Packaging Drop Test
- 端子插拔力 Packaging Drop Test

电气可靠性测试
Electrical Reliability Testing

- 堵转保护 Stall Protection
- 过电压 Overvoltage Protection
- 反向电压 Reverse Voltage Protection
- 短路保护 Short Circuit Protection
- 供电电压中断 Power Supply Interrupt
- EMC(外协) Electromagnetic Compatibility (Outsourced)

环境&环保测试
Environmental Protection Testing

- 高低温 High and Low Temperature
- 恒温恒湿 Constant Temperature and Humidity
- 喷淋防水 Spray Waterproof
- 盐雾 Salt Spray
- RoHS RoHS
- 燃烧测试 Flammability Testing

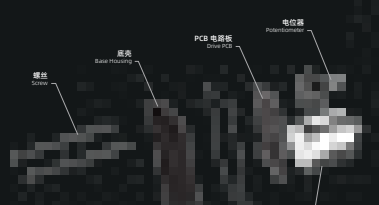
舵 机
Servo Motor

舵机是一个高度集成的智能位置伺服驱动器，核心由直流电机、多级减速齿轮组、高精度位置传感器和嵌入式控制电路构成。通过解析PWM脉冲信号，结合实时角度反馈与PID闭环控制算法，轻松实现0.5°级精度和毫秒级动态响应。支持高达1000kg·cm堵转扭矩和32V高压输入，兼具抗干扰与过载保护功能。

从早期的航模舵面控制、机器人关节驱动，到如今的智能家居、工业自动化及医疗设备，舵机正以高可靠性赋能精密运动控制场景。

The servo is a highly integrated intelligent position servo driver, composed of a DC motor, multi-stage reduction gearbox, high-precision position sensor, and embedded control circuit. By analyzing PWM pulse signals, combined with real-time angle feedback and a PID closed-loop control algorithm, it easily achieves 0.5° precision and dynamic response in the millisecond range. It supports up to 1000kg·cm of stall torque and 32V high voltage input, while also offering interference resistance and overload protection.

From the early days of model aircraft control surfaces and robot joint drives to today's applications in smart homes, industrial automation, and medical devices, servos are enabling precise motion control with high reliability.

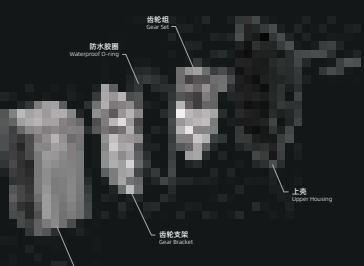


内置闭环电机驱动
Built-in Closed-loop Motor Controller

0.5°高控制精度
0.5° High Control Accuracy

毫秒级动态响应
Millisecond Dynamic Response

模块化快速开发
Modular Rapid Development



常用术语
Common Terms

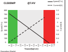
堵转扭矩 | Stall Torque

舵机在输出轴完全静止（即堵转）时，能够输出的最大扭矩，常用单位为 kg·cm（千克·厘米）或 N·m（牛·米）。例如"15kg·cm @6V"表示在6V电压下，舵机最大可输出15kg·cm的扭矩。

*在选型时，建议将堵转扭矩的1/4作为额定扭矩使用。

The maximum torque a servo can continuously output when its output shaft is completely stationary (stall) is typically measured in kg·cm or N·m. For example, "15kg·cm @6V" indicates that at 6V, the servo can produce a maximum torque of 15kg·cm.

*When choosing a servo, it is recommended to use one-quarter of the stall torque as the rated torque.



角度范围 | Travel Angle Range

舵机输出轴可旋转的最大角度，常见范围有120°、180°、270°，这个值与输出齿轮结构限位和电位器行程有关。如果需要360°可控，可以将电位器替换为磁编码传感器实现位置闭环。

The maximum rotational angle achievable by a servo's output shaft commonly falls within ranges such as 120°, 180°, or 270°. This value depends on the mechanical stops of the output gear structure and the potentiometer's range of motion. To enable 360° continuous rotation control, the potentiometer can be replaced with a magnetic encoder sensor, allowing for closed-loop position control.

空载转速 | No-load Speed

在无外部负载时，舵机输出轴旋转60°所需要的时间，比如0.12s/60°，空载转速由齿轮减速比和电机转速决定。

The time required for the servo's output shaft to rotate 60° under no external load is expressed as, e.g., 0.12s/60°. The no-load speed is governed by the gear ratio and the motor speed.

电压范围 | Voltage Range

舵机正常工作的输入电压区间（如4.8V~6.6V），超压使用可能导致电机过热甚至烧毁，欠压则影响扭矩输出或者舵机抖动。

The operating voltage range for a servo is typically e.g., 4.8V–6.6V. Exceeding this range may cause motor overheating or burnout, whereas insufficient voltage can reduce torque output or induce erratic behavior.

控制精度 | Position Precion

舵机到达目标位置的重复定位偏差，通常以角度误差表示（如±0.5°）。控制精度由齿轮虚位、位置传感器分辨率、PID控制算法决定。

The positioning repeatability of a servo – typically expressed as angular error (e.g., ±0.5°) – represents the deviation when reaching target positions. Control accuracy is determined by gear backlash, position sensor resolution, and the PID control algorithm.

齿轮虚位 | Gear Backlash

齿轮啮合间隙导致的输出轴空转角度（如±0.5°），表现为输入反向时输出轴的延迟现象。塑胶齿轮虚位通常大于1°，机加工金属齿轮虚位通常在0.5°左右。

Gear backlash – defined as the angular displacement of the output shaft when reversing direction (e.g., ±0.5°) – manifests as a delayed response during input reversal. Typically, plastic gears exhibit backlash >1°, whereas precision-machined metal gears maintain backlash within ~0.5°.

回中差 | Centering Repeatability

舵机从任意位置返回中位的重复偏差（如±0.2°），反映的是舵机多次重复运动的一致性。回中差常受到电位器线性度和齿轮弹性的影响。

Centering repeatability – defined as the angular deviation (e.g., ±0.3°) when a servo returns to neutral position from arbitrary points – quantifies movement consistency during repeated operations. This parameter is primarily governed by potentiometer linearity error and gear windup effects.

死区 | Deadband

舵机对控制信号变化的最小响应阈值（例如2μs），小于该值的信号波动将被忽略。若死区设为2μs，脉宽变化<2μs时舵机保持静止，减少无意义的能耗。

The minimum control signal variation (e.g., 2μs) required to initiate servo movement, wherein any PWM pulse width change below this threshold is actively rejected to maintain position hold state and reduce dynamic losses when configured deadband exceeds signal noise amplitude.

减速比 | Gear Ratio

输入轴（电机）与舵机输出轴的转速比值，如300:1表示输出转速降低至1/300，但扭矩放大300倍。

The fixed ratio between the rotation speed of the motor's input shaft and the servo's output shaft. For a 300:1 ratio, the output shaft rotates 300 times slower than the input shaft while generating 300 times higher torque.

舵盘 | Servo Horn

安装在舵机输出轴上的标准连接件，用于连接外部负载。通常有一字、十字、圆形、星形等多种规格，可根据需求进行定制。

*选型时需关注舵机输出花键的直径和齿数。

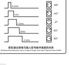
A standardized adapter mounted on the servo's output shaft to connect external loads. Available in common profiles: single-bar (flat), cross (4-arm), circular, and star (multi-point), with custom designs supported.

*Critical Selection Criteria: Ensure the servo horn's output spline diameter (e.g., 4.8mm/6.0mm) and tooth count (e.g., 21T/25T) precisely match the servo's shaft specifications.

脉冲宽度调制 | Pulse Width Modulation

通过调节脉冲信号的占空比控制舵机角度或转速。典型周期为20ms (50Hz)，脉宽0.5~2.5ms对应0°~180°。我司数字舵机可支持50~333Hz高频信号。

Servo position/speed is controlled via pulse width adjustment (duty cycle), where a standard 20ms period (50Hz) maps 0.5ms pulse → 0° to 2.5ms pulse → 180°. Our digital servos extend compatibility to 50-333Hz high-frequency signals.



舵机输出转角与输入信号脉冲宽度的关系
Relationship Between Servo Output Angle and Input Signal Pulse Width

PID控制算法 | Proportional-Integral-Derivative Control

常用的闭环控制算法，通过比例（P）、积分（I）、微分（D）参数调节舵机动态性能。

A closed-loop algorithm that optimizes servo dynamics by tuning P (proportional), I (integral), and D (derivative) parameters.

舵机的工作原理 | How a Servo Works?

当舵机接收来自控制器（如单片机）的PWM脉冲信号后，控制器将会通过电位器或磁编码传感器实时读取输出轴的实际角度，计算与目标角度的差值。最终通过PID算法驱动电机带动减速齿轮，驱动末端负载精准运动到目标位置。

When the servo receives a PWM pulse signal from a controller (e.g., a microcontroller), its internal control circuit uses a potentiometer or magnetic encoder sensor to continuously monitor the actual angle of the output shaft. This actual angle is compared against the target angle, and the difference (error) is calculated. Based on this error, the PID control algorithm drives the motor. The motor actuates the gearbox (reduction gears), which precisely positions the end load at the target location in a closed-loop manner.

如何选择合适的舵机？ | How to Select the Right Servo?

01 根据使用场景，明确扭矩和转速需求。

Determine torque and speed requirements based on the application scenario.

02 确定安装尺寸、工作电压和防护等级要求，是否有防水或低温需求。

Define installation dimensions, operating voltage, and IP rating requirements, considering any needs for waterproofing or low-temperature operation.

03 根据精度和寿命选择相应齿轮材质和电机的舵机。不同电机的寿命对比见下文。

Select a servo with appropriate gear material and motor type based on precision and operational lifespan requirements. A comparison of lifespans for different motor types is provided in the subsequent section.

04 根据终端产品软件信号协议确定舵机的通信方式，常见有PWM、TTL、RS-485、CAN等。

Determine the servo's communication interface based on the host controller's signal protocol. Common options include PWM, TTL, RS-485, and CAN.

舵机的安装和使用？ | How to Use a Servo?

机械安装： 使用合适的螺丝固定舵机，并适配舵臂连接输出轴。

Installation: Secure the servo using appropriate mounting screws and attach the selected servo horn to the output shaft.

安全接线： 根据线序要求连接舵机信号线，并提供相应等级的电压，注意不要反接！

Wiring: Connect the servo signal wires according to the specified pinout sequence and supply the rated voltage. Reverse wiring must be avoided!

信号控制： 根据协议发送PWM脉冲信号或通信指令，以控制舵机的运动。高端数字舵机可设置ID、调整死区与速度曲线。

Sending Signal: Control the servo's motion by sending PWM pulses or communication commands based on the communication protocol. Advanced digital servos support ID configuration, deadband adjustment, and speed profile customization.

校准与测试： 发送信号调整舵臂至实际中点进行校准，通过编程设定软限位，避免舵机超限损坏。

Calibration and Testing: Calibrate the servo by sending signals to position the servo horn at its true center position. Program software limits to prevent mechanical damage caused by over-travel.

其他常见问题
FAQs

模拟 vs 数字舵机 | Analog vs. Digital Servos

模拟舵机： 采用传统模拟电路实现控制，成本低但响应慢（50 – 60Hz），死区约为5μs。逐渐被取代。

数字舵机： 内置微控制器(MCU)，响应频率大于300Hz。具备更优秀的回中精度和保持力表现，支持死区、PID等参数调节，支持定制多种通信方式。

Analog Servo: Utilizes traditional analog circuitry for control. It offers a lower cost but has a slower response (50-60Hz update rate) and a wider deadband (~5μs). Analog servos are being phased out.

Digital Servo: Incorporates an embedded microcontroller (MCU). It operates at significantly higher frequencies (>300Hz), delivering superior positional repeatability (centering accuracy) and holding torque performance. Digital servos enable real-time tuning of parameters like deadband and PID gains, and support multiple customizable communication interfaces.

有刷电机 vs 无刷电机 vs 空心杯电机 | Brushed vs. Brushless vs. Coreless Motors

有刷电机： 电机的转子通过电刷和机械换向器实现电流换向，结构简单、制造工艺成熟。由于刷片磨损，寿命较短。

无刷电机： 通过控制器实现电子换向，不存在换向器摩擦，使用寿命更长。并且具备响应快、控制精度高、效率高、噪音低等优点。

空芯杯电机： 空芯杯电机的电枢是一个自支撑的杯状铜线圈，去除了铁芯，无铁损和涡流损耗，具备轻量化、高速响应、高寿命的优点。但是空芯杯电机存在发热严重，成本高等缺点。

Brushed Motor: Employs brushes and a mechanical commutator for rotor current commutation. It benefits from a simple design and mature manufacturing, but suffers from a shorter service life due to brush wear.

Brushless Motor (BLDC): Utilizes an electronic controller for commutation, eliminating mechanical commutator friction. This results in extended lifespan, faster dynamic response, higher control precision, improved efficiency, and lower operating noise.

Coreless Motor: Features a self-supporting, helically wound copper coil armature with no iron core, thus dramatically reducing iron and eddy current losses. Advantages include lightweight construction, high-speed response, and long service life. Drawbacks include significant heat generation and higher cost.

磁编码 vs 电位器 | Magnetic Encoder vs. Potentiometer

传统舵机大多采用电位器实现位置读取，输出信号与电位器直接连接，电位器通过滑动触点与碳膜接触测量角度，成本较低，但由于机械磨损，寿命较低，工作角度受限（常为270°），且存在线性度和温漂的风险，因此大多在消费级舵机上使用。

磁编码器作则通过霍尔传感器检测输出齿末端的磁铁角度，无接触式的设计带来了更大的角度范围（支持多圈360°），更高的精度和寿命表现。但是成本较高，因此高端的360°舵机才会使用磁编码设计。

Potentiometer (Traditional): Commonly employed in conventional servos for position feedback. The output gear is directly coupled to the potentiometer shaft. Position is measured by a sliding wiper contacting a resistive carbon film track. While offering lower cost, potentiometers suffer from mechanical wear, leading to a shorter lifespan. Their operational range is typically limited to ~270°, and they are susceptible to linearity errors and temperature drift. Consequently, they are primarily found in consumer-grade or entry-level servos.

Magnetic Encoder: Utilizes Hall-effect sensors to detect the angular position of a magnet mounted on the output gear shaft. This contactless principle enables superior performance characteristics: significantly wider angular range (enabling full 360° multi-turn

operations), higher accuracy, and virtually wear-free operation ensuring extended lifespan. However, the higher component cost means magnetic encoders are exclusively adopted in high-performance servos requiring 360° rotation or demanding precision.

PWM vs. TTL vs. RS-485 vs. CAN

PWM舵机： 通过脉宽调制控制舵机角度，简单易用，硬件成本低，但是精度有限且可扩展性差，R/C遥控模型上的舵机大多是PWM通信。

TTL串口舵机： 支持多台串联，可实时读取位置、电流、速度等信息，每个舵机独立ID控制，协议简单，适合短距离通信，大多用于小型机器人、智能家居等场景。

RS-485舵机： 采用工业标准的RS-485通信，抗干扰能力强，支持总线多节点扩展，远距离通信，RS-485通信速率较高，协议简单，因此大多用于工业自动化、智能建筑等场景。

CAN总线协议舵机： 具备优先级仲裁机制，支持多设备组网，传输距离长且抗电磁干扰强，常用于汽车电子和航空无人机等场景。

PWM Servo: Controls servo angle via Pulse Width Modulation (PWM). Valued for its simplicity, ease of use, and low hardware cost. However, it offers limited positional accuracy and scalability. PWM is the dominant communication standard for servos in radio-controlled (R/C) models.

TTL Serial (UART) Servo: Supports daisy-chaining of multiple servos. Provides real-time feedback on position, current draw, velocity, and other parameters. Each servo operates with a unique ID, enabling individual control. The protocol is straightforward, making it well-suited for short-range communication. Common applications include small robotics and smart home devices.

RS-485 Servo: Employs the robust, industrial-grade RS-485 communication standard. Key advantages include excellent noise immunity (EMI/RFI resistance), support for multi-node bus topology, and reliable long-distance communication. RS-485 offers relatively high data rates and a simple protocol structure. These characteristics make it ideal for demanding environments like industrial automation and smart building systems.

CAN Bus Protocol Servo: Leverages the Controller Area Network (CAN) bus protocol. Features built-in message priority arbitration, enabling reliable networking of multiple devices. Excels in long transmission distances and exceptional resistance to electromagnetic interference (EMI). The protocol's robustness and deterministic behavior make it the preferred choice for mission-critical applications such as automotive electronics and aerospace (e.g., drones).

舵机常用的电子保护有哪些？ | Common Electronic Protection Features in Servos

过载： 误差角度大于9度并持续 2s 后进入保护，重新发位置指令，会清除过载保护标志。可自定义设定堵转的百分比和持续时间。

过压： 大于7.4V或者小于4V进入保护，电压恢复正常范围后，自动解除保护，可自定义设定电压值范围。

过流： 运行中电流大于2A并持续 2s 后，关闭输出并进入过流保护，重新发位置指令，会清除过流保护标志。可自定义设定电流值和持续时间。

过热： 大于70℃关闭扭矩输出。

Overload: If the angle error exceeds 9 degrees for more than 2 seconds, the system will enter protection mode. Sending a new position command will clear the overload protection. The stall percentage and duration can be customized.

Overvoltage: Protection is triggered if the voltage exceeds 7.4V or drops below 4V. The protection will automatically reset once the voltage returns to the normal range. The voltage range can be customized.

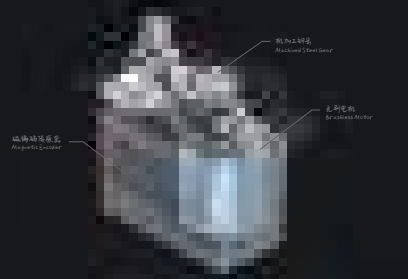
Overcurrent: If the current exceeds 2A for more than 2 seconds, the output will be cut off and overcurrent protection will engage. Sending a new position command will clear the overcurrent protection. The current threshold and duration can be customized.

Overheating: If the temperature exceeds 70°C, the torque output will be disabled.

高性能无刷舵机
High-performance Brushless Servo

核心特性 | Features

- **大扭矩无刷电机** High-torque Brushless Motor
- **抗冲击机加钢齿** Impact-resistant Steel Gears
- **高达百万次工作寿命** Up to Million Cycle Lifespan
- **支持定制磁编码** Magnetic Encoder Custom Supported



高压无刷半铝舵机 | HV Brushless Aluminum Mid Case Servo	**4.5~30.6** kg·cm		22
高压无刷全铝舵机 | HV Brushless Full Aluminum Case Servo	**4.5~48.0** kg·cm		23

典型应用 | Applications

无人机 | UAV Drone　R/C航模 | R/C Aircraft　机器人 | Robotics　工业自动化设备 | Industrial Automation

HBL 高压无刷半铝舵机

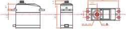
HV Brushless Aluminum Mid Case Servo

扭矩范围 Torque Range **4.5~30.6** [kg·cm] | 电压等级 Operating Voltage **DC 4.8~8.4** [V] | 齿轮材质 Gear **金属齿** [Metal] | 电机 Motor **无刷电机** [Brushless]

型号 | Model @7.4V	堵转扭矩 Stall Torque [kg·cm]	额定扭矩 Rated Torque [kg·cm]	空载转速 No Load Speed [sec/60°]	堵转电流 Stall Current [mA]
HBL045	5.6	1.5	0.05	3500
HBL090	9.0	2.5	0.08	3700
HBL150	16.6	4.0	0.12	3800
HBL200	22.6	5.5	0.12	4000
HBL300	30.6	7.5	0.15	4500

外形图 | Dimension Drawing

尺寸 Dimension | 40x20x39.4mm (1.57" x 0.79" x 1.55") 重量 Weight | 65g (2.29oz) 单位 Unit | mm



*适用于HBL以上型号

其他参数 | Other Specs

电压等级 Operating Voltage	4.8 ~ 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	25T φ5.82 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶+铝合金 Plastic/Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 ~ 50 °C
信号频率 Working Frequency	50 ~ 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP62

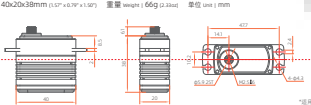
HBL 高压无刷全铝舵机

HV Brushless Full Aluminum Case Servo

型号 | Model	堵转扭矩 Stall Torque [kg·cm]	型号 | Model	堵转扭矩 Stall Torque [kg·cm]	型号 | Model	堵转扭矩 Stall Torque [kg·cm]
HBL830	4.5	HBL836	24.5	HBL1515	15
HBL833	10.6	HBL838	28	HBL1518	18
HBL835	15	HBL1512	12	HBL2048	48

HBL83x @7.4V

尺寸 Dimension | 40x20x38mm (1.57" x 0.79" x 1.50")　重量 Weight | 66g (2.33oz)　单位 Unit | mm



*适用于HBL83x以下型号

型号 | Model	堵转扭矩 Stall Torque [kg·cm]	额定扭矩 Rated Torque [kg·cm]	空载转速 No-load Speed [sec/60°]	堵转电流 Stall Current [mA]
HBL830	4.5	1.1	0.05	1950
HBL833	10.6	3	0.07	2500
HBL835	15	3.5	0.10	4100
HBL836	24.5	6	0.13	4300
HBL838	28	7	0.15	4500

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball-Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HBL1512 @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
12 [kg·cm]	3 [kg·cm]	0.06 [sec/60°]	2200 [mA]

尺寸 Dimension | 35.3x15x31.4mm (1.39"x0.59"x1.24") 重量 Weight | 44g (1.55oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HBL1515 @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
15 [kg·cm]	4 [kg·cm]	0.06 [sec/60°]	2200 [mA]

尺寸 Dimension | 35.3x15x34.6mm (1.39"x0.59"x1.36") 重量 Weight | 49g (1.73oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HBL1518 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
18 [kg·cm]	4.5 [kg·cm]	0.17 [sec/60°]	2050 [mA]

尺寸 Dimension | 30x15x31.4mm (1.18"x0.59"x1.24") 重量 Weight | 45g (1.59oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T ϕ5.94 mm
角度范围 Travel Angle	200° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HBL2048 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
48 [kg·cm]	12 [kg·cm]	0.14 [sec/60°]	3250 [mA]

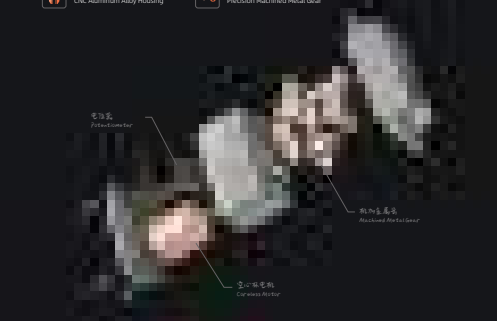
尺寸 Dimension | 40x20x40mm (1.57"x0.79"x1.57") 重量 Weight | 86g (3.03oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T ϕ6.0 mm
角度范围 Travel Angle	200° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

高压空心杯舵机
High-voltage Coreless Servo

核心特性 | Features

- 高速、高效空心杯电机 / High-efficiency Coreless Motor
- 工作电压高达8.4V / Up to 8.4V Rated Voltage
- CNC铝合金壳体 / CNC Aluminum Alloy Housing
- 高精度机加金属齿 / Precision Machined Metal Gear



高压空心杯半铝舵机 | Coreless Aluminum Mid Case Servo	**3.8~30.6** kg·cm	27
高压空心杯全铝舵机 | Coreless Full Aluminum Case Servo	**3.0~60** kg·cm	29

典型应用 | Applications

智能家电 | Smart Home　R/C车模 | 航模 | R/C Car & Aircraft　医疗设备 | Medical Device　机器人 | Robot

高压空心杯半铝舵机

HV Coreless Aluminum Mid Case Servo

型号 | Model	堵转扭矩 Stall Torque [kg·cm]	型号 | Model	堵转扭矩 Stall Torque [kg·cm]	型号 | Model	堵转扭矩 Stall Torque [kg·cm]
DHV045	5.8	DHV200	22.6	DHV026	5.5
DHV090	10.8	DHV300	30.6	/	/
DHV150	16.5	DHV027	3.8	/	/

DHVx @7.4V

尺寸 Dimension | 40x20x39.4mm (1.57" x 0.79" x 1.55")　重量 Weight | 63g (2.22oz)　单位 Unit | mm

*适用于DHVx以下型号

型号 | Model	堵转扭矩 Stall Torque [kg·cm]	额定扭矩 Rated Torque [kg·cm]	空载转速 No-load Speed [sec/60°]	堵转电流 Stall Current [mA]
DHV045	5.8	1.5	0.03	2500
DHV090	10.8	3	0.06	3000
DHV150	16.5	4	0.07	3500
DHV200	22.6	6	0.09	3800
DHV300	30.6	8	0.12	4200

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ5.82 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	半铝 Plastic-Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV027 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3.8 [kg·cm]	1.0 [kg·cm]	0.05 [sec/60°]	2000 [mA]

尺寸 Dimension | 35.8x15x29mm | 重量 Weight | 28g | 单位 Unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	舵臂 Spline	25T φ5.79 mm
角度范围 Travel Angle	120° [可调范围]	壳体材质 Case Material	塑铝 Plastic+Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

DHV026 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
5.5 [kg·cm]	1.5 [kg·cm]	0.11 [sec/60°]	2000 [mA]

尺寸 Dimension | 35.8x15x29mm | 重量 Weight | 28g | 单位 Unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	舵臂 Spline	25T φ5.79 mm
角度范围 Travel Angle	120° [可调范围]	壳体材质 Case Material	塑铝 Plastic+Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

高压空心杯全铝舵机

HV Coreless Full Aluminum Case Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
DHV821		5.9	DHV817		3	DHV2015		15
DHV822		11.8	DHV816		6	DHV1220		20
DHV823		18	DHV1310		10	DHV840		38
DHV826		25.7	DHV1213		13	DHV2248		48
DHV828		29.2	DHV1515		15	DHV860		60

DHV82x @7.4V

尺寸 Dimension | 40x20x39mm (1.57" x 0.79" x 1.54")　重量 Weight | 72g (2.54oz)　单位 Unit | mm

*适用于DHV82x以下型号

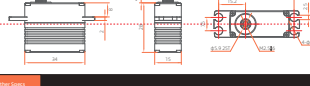
型号	Model	堵转扭矩 Stall Torque [kg·cm]	额定扭矩 Rated Torque [kg·cm]	空载转速 No-load Speed [sec/60°]	堵转电流 Stall Current [mA]
DHV821		5.9	1.5	0.03	3100
DHV822		11.8	3.0	0.06	3000
DHV823		18	4.0	0.08	3200
DHV826		25.7	6.5	0.11	3600
DHV828		29.2	7.5	0.13	4500

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV817 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3 [kg·cm]	0.8 [kg.cm]	0.05 [sec/60°]	2000 [mA]

尺寸 Dimension | 34x15x28mm (1.34"x0.59"x1.10")　重量 Weight | 32g (1.1oz)　单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV816 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
6 [kg·cm]	1.5 [kg.cm]	0.10 [sec/60°]	2000 [mA]

尺寸 Dimension | 34x15x28mm (1.34"x 0.59" x 1.10")　重量 Weight | 32g (1.1oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV1310 @8.4V

堵转扭矩 Stall Torque **10** [kg·cm]

额定扭矩 Rated Torque **2.5** [kg·cm]

空载转速 No-load Speed **0.10** [sec/60°]

堵转电流 Stall Current **1500** [mA]

尺寸 Dimension | 29.2x13x29.2 (1.15"x0.51"x1.15") 重量 Weight | 21g (0.74oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV1213 @8.4V

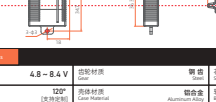
堵转扭矩 Stall Torque **13** [kg·cm]

额定扭矩 Rated Torque **3** [kg·cm]

空载转速 No-load Speed **0.08** [sec/60°]

堵转电流 Stall Current **3500** [mA]

尺寸 Dimension | 30x12x35.3mm (1.18"x0.47"x1.39") 重量 Weight | 32g (1.13oz) 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T φ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV1515 @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
15 [kg·cm]	4 [kg·cm]	0.08 [sec/60°]	2300 [mA]

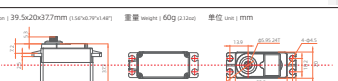
尺寸 Dimension | 36x15x32.4mm (1.42"x0.59"x1.28")　重量 Weight | 50g (1.76oz)　单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T Φ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV2015 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
15 [kg·cm]	4 [kg·cm]	0.1 [sec/60°]	3200 [mA]

尺寸 Dimension | 39.5x20x37.7mm (1.54"x0.79"x1.48")　重量 Weight | 60g (2.12oz)　单位 Unit | mm



其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	24T Φ5.95 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP54

DHV1220 @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
20 [kg-cm]	5 [kg-cm]	0.12 [sec/60°]	3500 [mA]

尺寸 Dimension | 30x12x35.3mm (1.18"x0.47"x1.39") 重量 Weight | 32g (1.12oz) 单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T ϕ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV840 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
38 [kg-cm]	9.5 [kg-cm]	0.18 [sec/60°]	5000 [mA]

尺寸 Dimension | 40x20x43mm (1.57"x0.79"x1.69") 重量 Weight | 72g (2.54oz) 单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV2248 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
48 [kg·cm]	12 [kg·cm]	0.16 [sec/60°]	5800 [mA]

尺寸 Dimension | 44x22.4x40mm　重量 Weight | 82g　单位 unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	24T φ5.95 mm
角度范围 Travel Angle	120° (实际定制)	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	3 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP54

DHV860 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
60 [kg·cm]	15 [kg·cm]	0.13 [sec/60°]	4500 [mA]

尺寸 Dimension | 40x20x43mm　重量 Weight | 72g　单位 unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ5.9 mm
角度范围 Travel Angle	120° (实际定制)	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

数码标准舵机
Digital Standard Servo

核心特性 | Features

- **长寿命电位器**
  Long Lifespan Potentiometer
- **0.1s/60°高速响应**
  0.1s/60° High-speed Response
- **支持数字&模拟PWM通讯**
  Supports Digital & Analog PWM Communication
- **位置反馈、堵转保护可选**
  Optional Position Feedback, Stall Protection

塑胶壳标准舵机	Plastic Case Standard Servo	**3.6~54** kg·cm	36
半铝中壳标准舵机	Aluminum Mid Case Standard Servo	**4.5~30** kg·cm	39

典型应用 | Applications

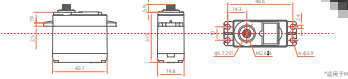
机器人关节 | Robot joint　　R/C模型 | R/C Model　　工业自动化设备 | Industrial Automation　　教育机器人套件 | Education Robot Kit

塑胶壳标准舵机
Plastic Case Standard Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
M0300		4.5	M1500		16.3	P0600		6.8
M0600		6.5	M4000		54	/		/
M0900		10.5	P0300		3.6	/		/

Mx @6.0V

尺寸 Dimension | 40.7x19.8x37.7 mm (1.60"x0.78"x1.48") 重量 Weight | 58g (2.05oz) 单位 Unit | mm



*适用于Mx以下型号

型号	Model	堵转扭矩 Stall Torque [kg·cm]	额定扭矩 Rated Torque [kg·cm]	空载转速 No-load Speed [sec/60°]	堵转电流 Stall Current [mA]
M0300		4.5	1.0	0.12	2500
M0600		6.5	1.5	0.12	3000
M0900		10.5	2.5	0.13	3000
M1500		16.3	4.0	0.15	3500

其他参数	Other Specs						
电压等级 Operating Voltage	4.8 ~ 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 spline	25T ϕ5.7 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 ~ 50 °C
信号频率 Working Frequency	50 ~ 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

M4000 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
54 [kg·cm]	13.5 [kg·cm]	0.15 [sec/60°]	6000 [mA]

尺寸 Dimension | 65.7x30x59mm (2.58"x1.18"x2.32") 重量 Weight | 148g (5.22oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ7.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

P0300 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3.6 [kg·cm]	0.9 [kg·cm]	0.13 [sec/60°]	4000 [mA]

尺寸 Dimension | 40.7x20x38mm (1.6"x0.79"x1.5") 重量 Weight | 38g (1.34oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	25T φ5.5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

P0600 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
6.8 [kg·cm]	1.7 [kg·cm]	0.13 [sec/60°]	1800 [mA]

尺寸 Dimension | 40.7x20x38mm | 重量 Weight | 40g | 单位 Unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	25T φ5.5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP62

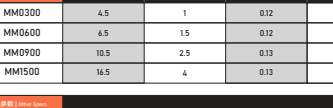
半铝中壳标准舵机

Aluminum Mid Case Standard Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
MM0300		4.5	MM0900		10.5	MM3000		30
MM0600		6.5	MM1500		16.5	/		/

MMx @6.0V

尺寸 Dimension | 40x20x37.5mm (1.57"x 0.79"x 1.48")　重量 Weight | 58g (2.05oz)　单位 Unit | mm



*适用于MMx以下型号

型号	Model	堵转扭矩 Stall Torque [kg·cm]	额定扭矩 Rated Torque [kg·cm]	空载转速 No-load Speed [sec/60°]	堵转电流 Stall Current [mA]
MM0300		4.5	1	0.12	2500
MM0600		6.5	1.5	0.12	3600
MM0900		10.5	2.5	0.13	3000
MM1500		16.5	4	0.13	2500

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	半铝 Plastic+Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

MM3000 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
30 [kg·cm]	7.5 [kg·cm]	0.18 [sec/60°]	5000 [mA]

尺寸 Dimension | 60x30x60.5mm | 重量 Weight | 188g | 单位 Unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	25T φ8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑铝 Plastic+Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP62

微型和迷你舵机
Micro & Mini Servo

核心特性 | Features

- **微型轻量化设计**
  Micro Lightweight Design
- **高速空心杯电机**
  High-speed Coreless Motor
- **支持3.7V低功耗**
  Supports 3.7V Low Power Consumption
- **支持堵转过热保护**
  Supports Stall Overheat Protection

微型全铝舵机	Full Aluminum Micro Servo	2.0~9.0 kg·cm	42
微型半铝舵机	Aluminum Mid Case Micro Servo	2.3~3.0 kg·cm	45
微型金属齿舵机	Metal Gear Micro Servo	2.0~5.5 kg·cm	47
微型塑胶齿舵机	Plastic Gear Mirco Servo	0.8~3.8 kg·cm	51

典型应用 | Applications

R/C模型 | R/C Model　　无人机 | UAV Drone　　微型机器人 | Micro Robot　　智能医疗器械 | Intelligent Medical Devices

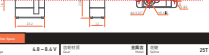
微型全铝舵机
Full Aluminum Micro Servo

型号 | Model	堵转扭矩 Stall Torque [kg·cm]	型号 | Model	堵转扭矩 Stall Torque [kg·cm]
DMC808	4.0	DMC810	2.0
DMC809	4.0	M1209	9.0

DMC808 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
4 [kg·cm]	1 [kg·cm]	0.09 [sec/60°]	1800 [mA]

尺寸 Dimension | 23.2x12x23.8mm　重量 Weight | 26g　单位 Unit | mm



其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ4.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

DMC809 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
4 [kg·cm]	1 [kg·cm]	0.07 [sec/60°]	2500 [mA]

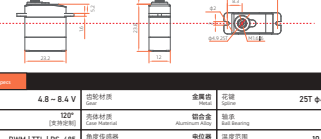
尺寸 Dimension | 23.2x12x23.8mm (0.91"x0.47"x0.94") 重量 Weight | 27.5g (0.97oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T Φ4.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DMC810 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
2 [kg·cm]	0.5 [kg·cm]	0.03 [sec/60°]	1600 [mA]

尺寸 Dimension | 23.2x12x23.8mm (0.91"x0.47"x0.94") 重量 Weight | 27.5g (0.97oz) 单位 Unit | mm

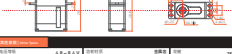


其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T Φ4.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

M1209 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
9 [kg·cm]	2.3 [kg·cm]	0.1 [sec/60°]	1200 [mA]

尺寸 Dimension | 26x12x26.6mm (1.02"x0.47"x1.05")　重量 Weight | 20g (0.71oz)　单位 Unit | mm



其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP62

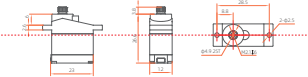
微型半铝舵机
Aluminum Mid Case Micro Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
MM0120	2.3	MM0160	0.8
MM0090	2.5	/	/

MM0120 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
2.3 [kg·cm]	0.6 [kg·cm]	0.11 [sec/60°]	2000 [mA]

尺寸 Dimension | 23x12x26.6mm (0.91"x0.47"x1.05") 重量 Weight | 14g (0.49oz) 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ4.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	半铝 Plastic+Aluminum Alloy	轴承 Ball Bearing	1 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

MM0090 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
2.5 [kg·cm]	0.6 [kg·cm]	0.09 [sec/60°]	1300 [mA]

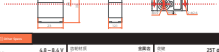
尺寸 Dimension | 23x12x27.5mm | 重量 Weight | 14g | 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	25T φ4.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑铝 Plastic/aluminum Alloy	轴承 Ball Bearing	1 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

MM0160 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3 [kg·cm]	0.8 [kg·cm]	0.12 [sec/60°]	1200 [mA]

尺寸 Dimension | 23x12x30mm | 重量 Weight | 15.5g | 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	25T φ4.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑铝 Plastic/aluminum Alloy	轴承 Ball Bearing	1 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

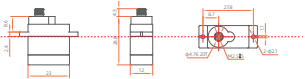
微型金属齿舵机
Metal Gear Micro Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
M0090	2.0	M0170	2.5
M8009O	3.5	M0200	3.5
M09YY	5.5	M0260	4.0

M0090 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
2 [kg·cm]	0.5 [kg·cm]	0.08 [sec/60°]	800 [mA]

尺寸 Dimension | 23x12x26.8mm (0.91"x0.47"x1.06") 重量 Weight | 14g (0.49oz) 单位 Unit | mm



其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	20T ϕ4.76 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	/
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

MB0090 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3.4 [kg·cm]	1 [kg·cm]	0.10 [sec/60°]	1300 [mA]

尺寸 Dimension | 23x12.4x28.3mm (0.91"x0.49"x1.11") 重量 Weight | 12.5g (0.44oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ4.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	1 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

M09YY @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
5.5 [kg·cm]	1.4 [kg·cm]	0.13 [sec/60°]	1300 [mA]

尺寸 Dimension | 23x12x24.3mm (0.91"x0.47"x0.96") 重量 Weight | 12g (0.42oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

M0170 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
2.5 [kg-cm]	**0.6** [kg-cm]	**0.11** [sec/60°]	**1500** [mA]

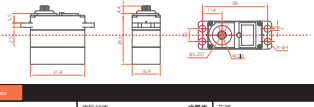
尺寸 Dimension | 30x13.2x29.5mm (1.18"x0.52"x1.16") 重量 Weight | 21g (0.74oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	1 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

M0200 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3.5 [kg-cm]	**0.9** [kg-cm]	**0.12** [sec/60°]	**1900** [mA]

尺寸 Dimension | 31.8x16.4x29.6mm (1.25"x0.65"x1.17") 重量 Weight | 25g (0.88oz) 单位 Unit | mm

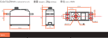


其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

M0260 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
4 [kg·cm]	1 [kg·cm]	0.12 [sec/60°]	1500 [mA]

尺寸 Dimension | 35.6x15x29mm 重量 Weight | 28g 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ4 mm
角度范围 Travel Angle	120° [可按需定制]	壳体材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP62

微型塑胶齿舵机
Plastic Gear Mirco Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
P0025	0.8	P0080	1.4
P0037	0.9	P0090	1.8
P0043	0.9	P0200	3.3
P0050	1	P0260	3.8
P0060	1.2	/	/

P0025 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
0.8 [kg·cm]	0.2 [kg·cm]	0.07 [sec/60°]	500 [mA]

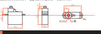
尺寸 Dimension | 19.8x8.2x18.9mm (0.78"x0.32"x0.74")　重量 Weight | 2.5g (0.09oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 6.0 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	20T Φ3.6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

P0037 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
0.9 [kg·cm]	0.2 [kg·cm]	0.07 [sec/60°]	500 [mA]

尺寸 Dimension | 19.8x8.2x22.2mm 重量 Weight | 3.7g 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 6.0 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	20T φ3.6 mm
角度范围 Travel Angle	120° [支持定制]	外壳材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

P0043 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
0.9 [kg·cm]	0.2 [kg·cm]	0.07 [sec/60°]	500 [mA]

尺寸 Dimension | 19.8x8.2x24.3mm 重量 Weight | 4.2g 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 6.0 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	20T φ3.6 mm
角度范围 Travel Angle	120° [支持定制]	外壳材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

P0050 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1 [kg·cm]	0.3 [kg·cm]	0.08 [sec/60°]	650 [mA]

尺寸 Dimension | 21.5x11.8x20.9mm (0.85"x0.46"x0.82") 重量 Weight | 5g (0.16oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 6.0 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	24T φ3.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

P0060 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1.2 [kg·cm]	0.3 [kg·cm]	0.08 [sec/60°]	600 [mA]

尺寸 Dimension | 21.5x11.8x22.9mm (0.85"x0.46"x0.9") 重量 Weight | 6g (0.21oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 6.0 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	24T φ3.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

P0080 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1.4 [kg·cm]	0.4 [kg·cm]	0.1 [sec/60°]	800 [mA]

尺寸 Dimension | 23x12x23.6mm (0.91"x0.47"x0.93")　重量 Weight | 8g (0.28oz)　单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 ~ 6.0 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	24T φ3.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 ~ 50 °C
信号频率 Working Frequency	50 ~ 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

P0090 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1.8 [kg·cm]	0.5 [kg·cm]	0.09 [sec/60°]	1000 [mA]

尺寸 Dimension | 22.7x12.5x26.9mm (0.89"x0.49"x1.06")　重量 Weight | 9g (0.32oz)　单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 ~ 6.0 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	21T φ4.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 ~ 50 °C
信号频率 Working Frequency	50 ~ 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

P0200 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3.3 [kg-cm]	**0.8** [kg-cm]	**0.13** [sec/60°]	**800** [mA]

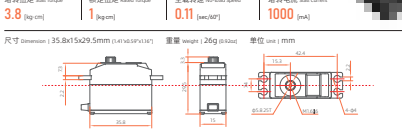
尺寸 Dimension | 31.5x16.5x29.6mm (1.24"x0.65"x1.17")　重量 Weight | 16g (0.56oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	25T ϕ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

P0260 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
3.8 [kg-cm]	**1** [kg-cm]	**0.11** [sec/60°]	**1000** [mA]

尺寸 Dimension | 35.8x15x29.5mm (1.41"x0.59"x1.16")　重量 Weight | 26g (0.92oz)　单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	25T ϕ5.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

扁舵机&矮舵机
Slim & Low-profile Servo

核心特性 | Features

- **专为机翼和车模产品设计**
  Designed for R/C Airplane Wings & Cars
- **0.06s/60°瞬时响应**
  0.06s/60° Instant Response
- **低虚位机加齿轮**
  Low Backlash Machined Gears
- **抗冲击金属齿轮**
  Impact-resistant Metal Gears

扁舵机 | Slim Servo	**1.8~10** kg·cm	57	
矮舵机 | Low Profile Servo	**10~30** kg·cm	61	

典型应用 | Applications

R/C 航模和车模 | R/C Airplane & Cars　　医疗设备 | Medical Equipment　　智能消费电子 | Consumer Electronic

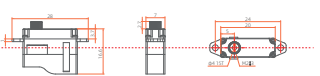
扁舵机
Slim Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
DHV0702	1.8	DHV1008	8.0
DHV0802	1.8	DMC811	8.2
M0806	6.0	DHV813	9.0

DHV0702 @8.4V

堵转扭矩 Stall Torque **1.8** [kg·cm]　额定扭矩 Rated Torque **0.5** [kg·cm]　空载转速 No-load Speed **0.07** [sec/60°]　堵转电流 Stall Current **580** [mA]

尺寸 Dimension | 20x7x16.6mm (0.79"x0.28"x0.65")　重量 Weight | 6g (0.21oz)　单位 Unit | mm

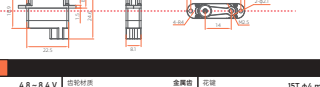


其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	第 齿 Steel	花键 Spline	15T φ4 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DHV0802 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1.8 [kg·cm]	0.5 [kg·cm]	0.08 [sec/60°]	1600 [mA]

尺寸 Dimension | 22.5x8.1x24.6mm (0.88"x0.32"x0.97") 重量 Weight | 15g (0.53oz) 单位 Unit | mm



其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	15T ϕ4 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

M0806 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
6 [kg·cm]	1.5 [kg·cm]	0.14 [sec/60°]	850 [mA]

尺寸 Dimension | 23.5x8x25.1mm (0.93"x0.31"x0.99") 重量 Weight | 11g (0.39oz) 单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢齿 Steel	花键 Spline	15T ϕ4 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

DHV1008 @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
8 [kg-cm]	2 [kg-cm]	0.08 [sec/60°]	2000 [mA]

尺寸 Dimension | 30x10x33.5mm (1.18"x0.39"x1.32") 重量 Weight | 20g (0.7 1oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T ϕ5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

DMC811 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
8.2 [kg-cm]	2.1 [kg-cm]	0.12 [sec/60°]	1600 [mA]

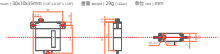
尺寸 Dimension | 30x10x35mm (1.18"x 0.39" x 1.38") 重量 Weight | 29g (1.42oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

DHV813 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
9 [kg·cm]	2.3 [kg·cm]	0.09 [sec/60°]	2500 [mA]

尺寸 Dimension | 30x10x35mm (1.18" x 0.39" x 1.38") 重量 Weight | 29g (1.02oz) 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	25T φ5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

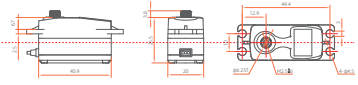
矮舵机
Low Profile Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
DSC090	9		HC1510	12
HB1106	10		HB2032	32
HC1007	12		/	/

DSC090 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
9 [kg·cm]	2.3 [kg·cm]	0.08 [sec/60°]	4000 [mA]

尺寸 Dimension | 40.9x20x25.5mm (1.61"x0.79"x1.00") 重量 Weight | 45g (1.59oz) 单位 Unit | mm

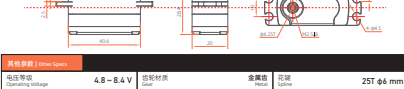


其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	半铝 Plastic+Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

HB1106 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
10 [kg·cm]	2.5 [kg·cm]	0.06 [sec/60°]	2600 [mA]

尺寸 Dimension | 40.6x20x28.4mm (1.60"x0.79"x1.12") 重量 Weight | 55g (1.94oz) 单位 Unit | mm

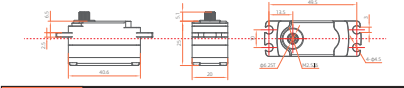


其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HC1007 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
12 [kg·cm]	3 [kg·cm]	0.09 [sec/60°]	3200 [mA]

尺寸 Dimension | 40.6x20x25mm (1.60"x0.79"x0.98") 重量 Weight | 55.5g (1.96oz) 单位 Unit | mm

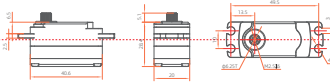


其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

HC1510 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
12 [kg·cm]	3 [kg·cm]	0.11 [sec/60°]	5000 [mA]

尺寸 Dimension | 40.6x20x28.4mm (1.60"x0.79"x1.12") 重量 Weight | 60g (2.12oz) 单位 Unit | mm

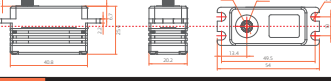


其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

HB2032 @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
32 [kg·cm]	8 [kg·cm]	0.08 [sec/60°]	6300 [mA]

尺寸 Dimension | 40.8x20.2x25.4mm (1.61"x0.8"x1.0") 重量 Weight | 62g (2.19oz) 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T φ5 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

机器人舵机
Robotic Servo

核心特性 | Features

- 级联TTL串口总线通讯
  Cascaded TTL Serial Bus Communication
- 内置智能力控算法
  Built-in Force Control Algorithm
- 支持位置、电流多种闭环
  Supports Multiple Feedbacks
- 支持主副双舵盘设计
  Supporting Dual Servo Horn Design

双出轴 机器人舵机	Dual Shaft Robotic Servo	1.8~200 kg·cm	65
离合齿机器人舵机	Overload-clutch Robotic Servo	3.0~27 kg·cm	73
单出轴机器人	Single Shaft Robotic Servo	1.4~42 kg·cm	76

典型应用 | Applications

桌面机器人 | Desktop Robot　仿生多足机器人 | Bio Robot　教育机器人 | Education Robot　服务机器人 | Service Robot

双出轴 机器人舵机

Dual Shaft Robotic Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
EXA4015	15	RC05P	5.0
EXA4030	30	RC08P	6.0
EXA4060	60	RC20P	21
EPS5030	30	RC40R	46
EPS5060	60	RDM2009	9.0
EPS5090	90	RDM2630	32
DMC114	1.8	RDM200T	200

EXA4015 @12V

堵转扭矩 Stall Torque **15** [kg·cm]

额定扭矩 Rated Torque **3.8** [kg·cm]

空载转速 No-load Speed **0.16** [sec/60°]

堵转电流 Stall Current **1200** [mA]

尺寸 Dimension | 29x16.5x24.5mm (1.14"x 0.65"x 0.96")

重量 Weight | 35g (1.23oz)

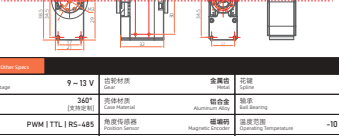
单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

EXA4030 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
30 [kg·cm]	7.5 [kg·cm]	0.20 [sec/60°]	4000 [mA]

尺寸 Dimension | 38.5x21x32mm (1.52"x0.83"x1.26") 重量 Weight | 65g (2.29oz) 单位 Unit | mm

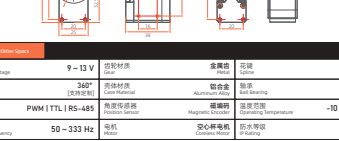


其他参数	Other Specs				
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

EXA4060 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
60 [kg·cm]	15 [kg·cm]	0.25 [sec/60°]	3600 [mA]

尺寸 Dimension | 44x25x38mm (1.73" x 0.98" x 1.50") 重量 Weight | 100g (3.53oz) 单位 Unit | mm



其他参数	Other Specs				
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

EPS5030 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
30 [kg-cm]	7.5 [kg-cm]	0.09 [sec/60°]	10000 [mA]

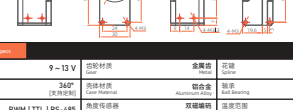
尺寸 Dimension | 47x27x30mm (1.85"x1.06"x1.18")　重量 Weight | 65g (2.29oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	双磁编码 Dual Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	外转无刷电机 External Rotor Motor	防水等级 IP Rating	IP42

EPS5060 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
60 [kg-cm]	15 [kg-cm]	0.12 [sec/60°]	9000 [mA]

尺寸 Dimension | 53x30x33mm (2.09"x1.18"x1.30")　重量 Weight | 90g (3.17oz)　单位 Unit | mm

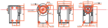


其他参数 | Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	双磁编码 Dual Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	外转无刷电机 External Rotor Motor	防水等级 IP Rating	IP42

EPS5090 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
90 [kg·cm]	22.5 [kg·cm]	0.19 [sec/60°]	8000 [mA]

尺寸 Dimension | 65x36x38mm ([illegible]) 重量 Weight | 120g ([illegible]) 单位 Unit | mm

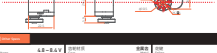


其他参数 | Other Specs					
电压范围 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	双磁编码 Dual Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	外转无刷电机 External Rotor Motor	防水等级 IP Rating	IP62

DMC114 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1.8 [kg·cm]	0.5 [kg·cm]	0.16 [sec/60°]	2600 [mA]

尺寸 Dimension | 22.5x6.2x24.2mm ([illegible]) 重量 Weight | 26g ([illegible]) 单位 Unit | mm



其他参数 | Other Specs					
电压范围 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	/
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	/
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

RC05P @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
5 [kg·cm]	1.3 [kg·cm]	0.08 [sec/60°]	2000 [mA]

尺寸 Dimension | 23x12x28mm (0.91"x0.47"x1.10") 重量 Weight | 24.4g (0.86oz) 单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

RC08P @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
6 [kg·cm]	1.5 [kg·cm]	0.05 [sec/60°]	2500 [mA]

尺寸 Dimension | 28x15x22mm (1.10"x0.59"x0.87") 重量 Weight | 36g (1.27oz) 单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

RC20P @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
21 [kg·cm]	5.3 [kg·cm]	0.2 [sec/60°]	7000 [mA]

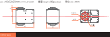
尺寸 Dimension | 40x20x37mm | 重量 Weight | 65g | 单位 unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	25T φ6 mm
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

RC40R @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
46 [kg·cm]	11.5 [kg·cm]	0.21 [sec/60°]	2800

尺寸 Dimension | 45x32x25mm | 重量 Weight | 80g | 单位 unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	9 – 14.8 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

RDM2009 @12V

堵转扭矩 Stall Torque **9** [kg·cm]

额定扭矩 Rated Torque **2.3** [kg·cm]

空载转速 No-load Speed **0.16** [sec/60°]

堵转电流 Stall Current **1100** [mA]

尺寸 Dimension | 23.3x20x27mm (0.92"x0.79"x1.06") 重量 Weight | 24g (0.85oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	9 – 16 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

RDM2630 @12V

堵转扭矩 Stall Torque **32** [kg·cm]

额定扭矩 Rated Torque **8** [kg·cm]

空载转速 No-load Speed **0.19** [sec/60°]

堵转电流 Stall Current **3100** [mA]

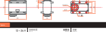
尺寸 Dimension | 34x26x38.7mm (1.34"x1.02"x1.52") 重量 Weight | 66g (2.33oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	9 – 16 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

RDM200T @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
200 [kg·cm]	50 [kg·cm]	0.17 [sec/60°]	4000 [mA]

尺寸 Dimension | 69x32x56mm (2.72x1.26x2.20") 重量 Weight | 300g (10.58oz) 单位 Unit | mm



其他参数 | Other Specs

电压等级 Operating Voltage	12 – 24 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	
角度范围 Travel Angle	360° (支持定制)	壳体材质 Case Material	铝合金 Aluminum alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP62

离合齿机器人舵机

Overload-clutch Robotic Servo

型号	Model	堵转扭矩 Stall Torque [kg·cm]	型号	Model	堵转扭矩 Stall Torque [kg·cm]
EM3		3.0	QX450		27
EM10		10	RS401		27

EM3 @8.4V

堵转扭矩 Stall Torque **3** [kg·cm]

额定扭矩 Rated Torque **0.8** [kg·cm]

空载转速 No-load Speed **0.08** [sec/60°]

堵转电流 Stall Current **1000** [mA]

尺寸 Dimension | 28.5x12x22.5mm (1.12"x0.47"x0.88")　重量 Weight | 9g (0.32oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	N/A
角度范围 Travel Angle	300° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	/
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

EM10 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
10 [kg·cm]	2.5 [kg·cm]	0.2 [sec/60°]	3000 [mA]

尺寸 Dimension | 48x26x44mm (1.89"x1.02"x1.73") 重量 Weight | 56g (1.98oz) 单位 Unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	N/A
角度范围 Travel Angle	300° [支持定制]	壳体材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP62

QX450 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
27 [kg·cm]	6.8 [kg·cm]	6.45 [sec/60°]	1900 [mA]

尺寸 Dimension | 63.7x67.6x23mm 重量 Weight | 84g 单位 Unit | mm

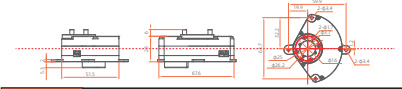
其他参数 | Other Specs

电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	塑胶齿 POM	花键 Spline	N/A
角度范围 Travel Angle	290°±5° [支持定制]	壳体材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	4 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP62

RS401 @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
27 [kg·cm]	**6.8** [kg·cm]	**6.45** [sec/60°]	**1900** [mA]

尺寸 Dimension | 63.7x67.6x23mm (2.51"x2.66"x0.91")　重量 Weight | 108g (3.81oz)　单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	270°+5° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	4 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP42

单出轴机器人

Single Shaft Robotic Servo

型号 | Model	堵转扭矩 Stall Torque [kg·cm]	型号 | Model	堵转扭矩 Stall Torque [kg·cm]
RC003T	1.4	RC30P	32
RD13T	13	RC42P	42

RC003T @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1.4 [kg·cm]	0.4 [kg·cm]	0.09 [sec/60°]	650 [mA]

尺寸 Dimension | 20.5x11x17.5mm (0.81"x0.43"x0.69")　重量 Weight | 8.5g (0.3oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 spline	25T φ3.5 mm
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

RD13T @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
13 [kg·cm]	3.3 [kg·cm]	0.24 [sec/60°]	2000 [mA]

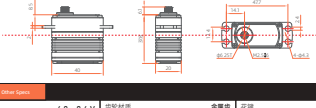
尺寸 Dimension | 44.4x22.7x25.9mm (1.75"x0.89"x1.02") 重量 Weight | 46g (1.64oz) 单位 Unit | mm

其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

RC30P @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
32 [kg·cm]	8 [kg·cm]	0.15 [sec/60°]	4000 [mA]

尺寸 Dimension | 40x20x37.8mm (1.57"x0.79"x1.49") 重量 Weight | 60g (2.12oz) 单位 Unit | mm

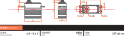


其他参数	Other Specs				
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ6 mm
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP42

RC42P @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
42 [kg·cm]	10.5 [kg·cm]	0.17 [sec/60°]	5000 [mA]

尺寸 Dimension | 40x20x37.8mm (1.57x0.79x1.49") 重量 Weight | 60g (2.12oz) 单位 Unit | mm



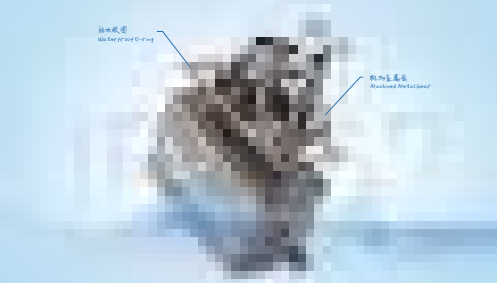
其他参数 | Other Specs

电压等级 Operating Voltage: 4.8 – 8.4 V	齿轮材质 Gear: 金属齿 Metal	花键 Spline: 25T φ6 mm
角度范围 Travel Angle: 300° [支持定制]	壳体材质 Case Material: 铝合金 Aluminum Alloy	轴承 Ball Bearing: 2 BB
协议支持 Protocol: PWM | TTL | RS-485	角度传感器 Position Sensor: 磁编码 Magnetic Encoder	温度范围 Operating Temperature: -10 – 50 °C
信号频率 Working Frequency: 50 – 333 Hz	电机 Motor: 空心杯电机 Coreless Motor	防水等级 IP Rating: IP62

IP67防水舵机
Waterproof Servo

核心特性 | Features

- **IP67级防水设计，无惧水下工作**
  IP67 Waterproof Rating for Underwater Condition
- **3.8～70kg·cm多款扭矩可选**
  3.8～70kg·cm Wide Model Torque Range
- **支持高精度磁编码传感**
  Supporting High-precision Magnetic Encoder
- **支持PWM、串口、CAN等协议**
  Support PWM, Serial, CAN-bus Communication



典型应用 | Applications

智能家居 | Smart Home　水下机器人 | Under-water Robot　农业设备 | Agricultural Machine　工业自动化设备 | Industrial Equipment

DMC009-W @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
4.6 [kg·cm]	1.5 [kg·cm]	0.06 [sec/60°]	2.1 [mA]

尺寸 Dimension | 22.4*12.4*22.7mm 重量 Weight | 20.8g 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	20T φ4.76 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	/
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 ℃
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP67

DM090W @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
10.5 [kg·cm]	2.5 [kg·cm]	0.08 [sec/60°]	1800 [mA]

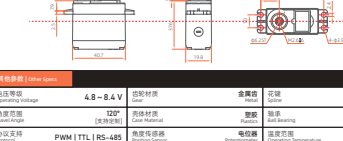
尺寸 Dimension | 40.7x19.8x37.6mm 重量 Weight | 60g 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	齿轮 Spline	25T φ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastic	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 ℃
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP67

DM1500W @6.0V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
16.3 [kg·cm]	4 [kg·cm]	0.13 [sec/60°]	2500 [mA]

尺寸 Dimension | 40.7x19.8x37.6mm (1.60"x0.78"x1.48")　重量 Weight | 60g (2.12oz)　单位 Unit | mm

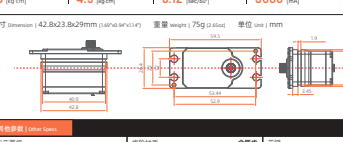


其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP67

HC1812-W @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
18 [kg·cm]	4.5 [kg·cm]	0.12 [sec/60°]	3000 [mA]

尺寸 Dimension | 42.8x23.8x29mm (1.68"x0.94"x1.14")　重量 Weight | 75g (2.65oz)　单位 Unit | mm



其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP67

DHV823-W @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
20 [kg·cm]	5 [kg·cm]	0.08 [sec/60°]	3200 [mA]

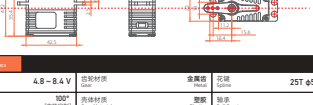
尺寸 Dimension | 40x20x39mm (1.57x0.79x1.54") 重量 Weight | 72g (2.54oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	钛合金 Titanium	花键 Spline	25T ϕ6 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP67

M1630-WP-I @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
30 [kg·cm]	7.5 [kg·cm]	0.14 [sec/60°]	4500 [mA]

尺寸 Dimension | 42.5x22x35.4mm (1.67"x0.87"x1.39") 重量 Weight | 72g (2.54oz) 单位 Unit | mm



其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T ϕ5.94 mm
角度范围 Travel Angle	100° [支持定制]	壳体材质 Case Material	塑胶 Plastics	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	有刷电机 DC Brushed	防水等级 IP Rating	IP67

HBL838-W @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
30 [kg-cm]	7.5 [kg-cm]	0.04 [sec/60°]	2500 [mA]

尺寸 Dimension | 40x20x38mm (1.57"x0.79"x1.5") 重量 Weight | 66g (2.33oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP67

DHV840-W @7.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
38 [kg-cm]	9.5 [kg-cm]	0.18 [sec/60°]	5000 [mA]

尺寸 Dimension | 40x20x43mm (1.61"x0.79"x 1.54") 重量 Weight | 73g (2.58oz) 单位 Unit | mm

其他参数 Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP67

HBL2050-WP @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
50 [kg·cm]	**12.5** [kg·cm]	**0.07** [sec/60°]	**6000** [mA]

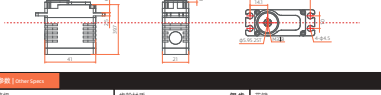
尺寸 Dimension | 40x20x29mm (1.57"x0.79"x1.14")　重量 Weight | 70g (2.47oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢齿 Steel	花键 Spline	25T φ6 mm
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP67

HBL2170-WP @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
70 [kg·cm]	**17.5** [kg·cm]	**0.08** [sec/60°]	**6200** [mA]

尺寸 Dimension | 41x21x39.7mm (1.61"x0.83"x1.56")　重量 Weight | 100g (3.53oz)　单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢齿 Steel	花键 Spline	25T φ5.95 mm
角度范围 Travel Angle	360° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP68

RS-485串口&CAN 总线舵机

RS-485 & CAN Bus Servo

核心特性 | Features

- 串联总线通讯
  Multi-node Bus Communication
- 支持位置、电流多种闭环
  Supports Multiple Feedbacks
- DC 28V超高耐压设计
  Up to 28V Working Voltage
- -20~65°C工业级耐温设计
  Industrial-grade Temperature Resistance

典型应用 | Applications

物流仓储自动化 | Warehouse Automation　无人机 | UAV Drone　服务机器人 | Service Robot　工业自动化 | Industrial Automation

HBL820-CAN @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
12 [kg·cm]	3 [kg·cm]	0.16 [sec/60°]	2100 [mA]

尺寸 Dimension | 37.4x20x38.8mm (1.47"x0.79"x1.53")　重量 Weight | 65g (2.29oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	18 – 28 V	齿轮材质 Gear	钢齿 Steel	花键 Spline	25T φ5.9 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	CAN	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-20 – 60 ℃
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP62

DHV828 @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
29.2 [kg·cm]	7.3 [kg·cm]	0.13 [sec/60°]	2000 [mA]

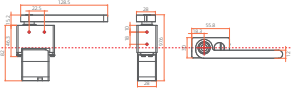
尺寸 Dimension | 40x20x39mm (1.57"x0.79"x1.54")　重量 Weight | 72g (2.54oz)　单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	9 – 13 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	25T φ6 mm
角度范围 Travel Angle	180° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-10 – 50 ℃
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	空心杯电机 Coreless Motor	防水等级 IP Rating	IP62

E153 @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
8 [kg·cm]	**2** [kg·cm]	**0.1** [sec/60°]	**1500** [mA]

尺寸 Dimension | 30x55.8x82mm (1.18"x2.20"x3.23") 重量 Weight | 260g (9.17oz) 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	18 – 28 V	齿轮材质 Gear	金属齿 Metal	花键 Spline	N/A
角度范围 Travel Angle	90° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	4 BB
协议支持 Protocol	RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

超大扭矩舵机
Ultra Torque Servo

核心特性 | Features

- **高达1200kg·cm堵转扭矩**
  Supporting Up to 120N·m Stall Torque
- **大扭矩无刷+高强度钢齿**
  BLDC + CNC Steel Gear
- **内置多组滚珠轴承**
  Built-in Multiple Ball Bearing
- **支持-40℃低温工作**
  Supports -40℃ Operating Temperature

典型应用 | Applications

大型无人机 | Large-scale Drone　特种飞行器 | Special Aircraft　eVTOL载人无人机 | eVTOL Drone　工业自动化设备 | Industrial Equipment

HB80T @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
80 [kg-cm]	20 [kg-cm]	0.11 [sec/60°]	12300 [mA]

尺寸 Dimension | 40.5x20x36.4mm (1.59"x0.79"x1.43") 重量 Weight | 88g (3.1oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T φ6 mm
角度范围 Travel Angle	100° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP65

HB85T @8.4V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
85 [kg-cm]	21.3 [kg-cm]	0.18 [sec/60°]	5000 [mA]

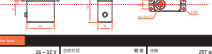
尺寸 Dimension | 65.1x30x62.5mm (2.56"x1.18"x2.46") 重量 Weight | 280g (9.88oz) 单位 Unit | mm

其他参数 | Other Specs					
电压等级 Operating Voltage	4.8 – 8.4 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T φ11.8 mm
角度范围 Travel Angle	100° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-20 – 60 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP65

HB150T @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
150 [kg·cm]	37.5 [kg·cm]	0.16 [sec/60°]	8500 [mA]

尺寸 Dimension | 64x33x70.1mm | 重量 Weight | 350g | 单位 Unit | mm



其他参数 | Other Specs

电压等级 Operating Voltage	24 – 32 V	齿轮材质 Gear	钢 齿 Steel	齿轮 Spline	25T φ11.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	电位器 Potentiometer	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP62

HB165T @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
165 [kg·cm]	41.3 [kg·cm]	0.15 [sec/60°]	15000 [mA]

尺寸 Dimension | 64x33x81.1mm | 重量 Weight | 435g | 单位 Unit | mm

其他参数 | Other Specs

电压等级 Operating Voltage	12 – 24 V	齿轮材质 Gear	钢 齿 Steel	齿轮 Spline	25T φ11.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	4 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HB200T @12V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
200 [kg-cm]	50 [kg-cm]	0.18 [sec/60°]	15000 [mA]

尺寸 Dimension：64x33x81.1 mm (2.52"x1.30"x3.19")　重量 Weight：435g (15.34oz)　单位 Unit：mm

其他参数 | Other Specs					
电压等级 Operating Voltage	12 – 24 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T φ11.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	2 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HB300T @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
300 [kg-cm]	75 [kg-cm]	0.18 [sec/60°]	6000 [mA]

尺寸 Dimension：64x33x92.3mm (2.52"x1.30"x3.63")　重量 Weight：500g (17.64oz)　单位 Unit：mm

其他参数 | Other Specs					
电压等级 Operating Voltage	24 – 32 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T φ11.8 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

HB400T @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
400 [kg·cm]	100 [kg·cm]	0.18 [sec/60°]	4000 [mA]

尺寸 Dimension | 100x51x79.6mm 重量 Weight | 755g 单位 Unit | mm

其他参数 | Other Specs

电压范围 Operating Voltage	24 – 32 V	齿轮材质 Gear	钢 齿 Steel	齿轮 Spline	N/A
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP62

HB650T @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
600 [kg·cm]	150 [kg·cm]	0.35 [sec/60°]	8500 [mA]

尺寸 Dimension | 98.7x48x125.6mm 重量 Weight | 860g 单位 Unit | mm

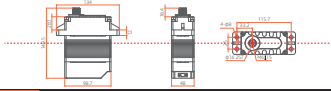
其他参数 | Other Specs

电压范围 Operating Voltage	24 – 32 V	齿轮材质 Gear	钢 齿 Steel	齿轮 Spline	25T φ16 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	-40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP62

HB1200T @24V

堵转扭矩 Stall Torque	额定扭矩 Rated Torque	空载转速 No-load Speed	堵转电流 Stall Current
1200 [kg·cm]	300 [kg·cm]	0.25 [sec/60°]	30000 [mA]

尺寸 Dimension | 98.7x48x131.1 mm (3.89"x1.89"x5.16") 重量 Weight | 1700g (59.97oz) 单位 Unit | mm



其他参数 | Other Specs					
电压等级 Operating Voltage	24 – 32 V	齿轮材质 Gear	钢 齿 Steel	花键 Spline	25T ϕ16 mm
角度范围 Travel Angle	120° [支持定制]	壳体材质 Case Material	铝合金 Aluminum Alloy	轴承 Ball Bearing	6 BB
协议支持 Protocol	PWM | TTL | RS-485	角度传感器 Position Sensor	磁编码 Magnetic Encoder	温度范围 Operating Temperature	–40 – 85 °C
信号频率 Working Frequency	50 – 333 Hz	电机 Motor	无刷电机 Brushless	防水等级 IP Rating	IP42

无刷电机
Brushless Motor

核心特性 | Features

- **寿命高达2000小时**
  Up to 2,000 Hours Lifetime
- **支持位置、电流等多种闭环**
  Multiple Feedbacks Supported
- **内置磁编码+FOC控制器**
  Built-in Magnetic Encoder + FOC Controller
- **应用导向线磁路设计**
  Application-oriented Magnetic Field Design

典型应用 | Applications

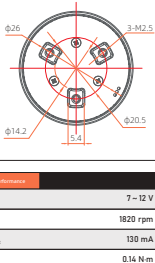
智能家居 | Smart Home　机器人 | Robot　无人机 | UAV Drone　农业设备 | Agricultural Device　摄影云台 | Camera Gimbal

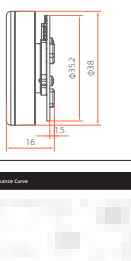
EC3206

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
8.4 [V]	1450 [rpm]	0.03 [N·m]	0.63 [A]	3.6 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ38x16mm (Ø1.50"x0.63") 重量 Weight | 30g (1.06oz) 单位 Unit | mm





性能参数 | Performance

电压范围 Voltage Range	7 – 12 V
空载转速 No-load Speed	1820 rpm
空载电流 No-load Current	130 mA
峰值转矩 Peak Torque	0.14 N·m
峰值电流 Peak Current	3.5 A
最高效率 Max Efficiency	68%

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	FOC
通讯方式 Communication	UART TTL
磁码器类型 Encoder Sensor	Magnetic
磁码器分辨率 Encoder Resolution	14 bit

其他参数 | Other Specs

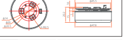
极对数 Pole Pairs	10
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-10~50 °C
防护等级 IP Rating	IP42

EC4012

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
12 [V]	400 [rpm]	0.13 [Nm]	0.95 [A]	7.4 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ47.8x20.2mm   重量 Weight | 132g   单位 Unit | mm



性能参数 | Performance	
电压范围 Voltage Range	9 – 16 V
空载转速 No-load Speed	950 rpm
空载电流 No-load Current	115 mA
峰值转矩 Peak Torque	0.2 N·m
峰值电流 Peak Current	2 A
最高效率 Max Efficiency	65%

特性曲线 | Performance Curve

控制参数 | Control Specs	
控制方式 Control Method	FOC
通讯方式 Communication	UART TTL
编码器类型 Encoder Type	Magnetic
编码器分辨率 Encoder Resolution	14 bit

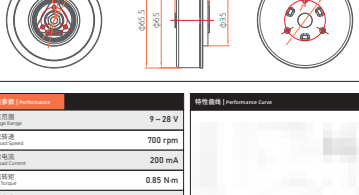
其他参数 | Other Specs	
极对数 Pole Pairs	10
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-10~50 °C
防护等级 IP Rating	IP62

EC6525

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
14.4 [V]	400 [rpm]	0.33 [N·m]	1.6 [A]	17.3 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ65.5x23.6mm (Φ2.58"x0.93")　　重量 Weight | 210g (7.41oz)　　单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	9 – 28 V
空载转速 No-load Speed	700 rpm
空载电流 No-load Current	200 mA
峰值转矩 Peak Torque	0.85 N·m
峰值电流 Peak Current	4.8 A
最高效率 Max Efficiency	75 %

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	FOC
通讯方式 Communication	UART TTL
磁码器类型 Encoder Sensor	Magnetic
磁码器分辨率 Encoder Resolution	14 bit

其他参数 | Other Specs

极对数 Pole Pairs	14
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-10~50 °C
防护等级 IP Rating	IP42

EC8320

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
21.6 [V]	160 [rpm]	1.5 [N·m]	1.5 [A]	23 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ145x37mm (Ø5.71"x1.46") 重量 Weight | 1250g (About) 单位 Unit | mm

性能参数 | Performance	
电压范围 Voltage Range	18 – 25 V
空载转速 No-load Speed	270 rpm
空载电流 No-load Current	600 mA
峰值转矩 Peak Torque	5.2 N·m
峰值电流 Peak Current	4.8 A
最高效率 Max Efficiency	71 %

特性曲线 | Performance Curve

控制参数 | Control Specs	
控制方式 Control Method	FOC
通讯方式 Communication	UART TTL
编码器类型 Encoder Sensor	Magnetic
编码器分辨率 Encoder Resolution	14 bit

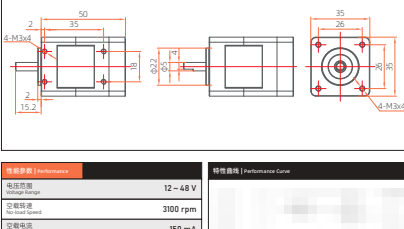
其他参数 | Other Specs	
极对数 Pole Pairs	21
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-10~50 ℃
防护等级 IP Rating	IP42

EC3522

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
24 [V]	2500 [rpm]	0.25 [N·m]	1.8 [A]	34 [W]

外形图 | Dimension Drawing

尺寸 Dimension | 50x35x35mm (1.97"x1.38"x1.38")　重量 Weight | 210g (7.41oz)　单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	12 ~ 48 V
空载转速 No-load Speed	3100 rpm
空载电流 No-load Current	150 mA
峰值转矩 Peak Torque	0.85 N·m
峰值电流 Peak Current	11 A
最高效率 Max Efficiency	79 %

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	FOC
通讯方式 Communication	UART TTL
编码器类型 Encoder Sensor	Magnetic
编码器分辨率 Encoder Resolution	14 bit

其他参数 | Other Specs

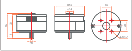
极对数 Pole Pairs	14
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-20~60 °C
防护等级 IP Rating	IP42

EC5013

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
24 [V]	2000 [rpm]	0.32 [N·m]	3.8 [A]	74.8 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ55x33mm 重量 Weight | 220g 单位 Unit | mm



性能参数 | Performance	
电压范围 Voltage Range	12 ~ 48 V
空载转速 No-load Speed	2650 rpm
空载电流 No-load Current	500 mA
峰值转矩 Peak Torque	3.5 N·m
峰值电流 Peak Current	44.8 A
最高效率 Max Efficiency	82 %

特性曲线 | Performance Curve

控制参数 | Control Specs	
控制方式 Control Method	FOC
通讯方式 Communication	CAN/CAN-open
编码器类型 Encoder Sensor	Magnetic
编码器分辨率 Encoder Resolution	14 bit

其他参数 | Other Specs	
极对数 Pole Pairs	10
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-20~60 ℃
防护等级 IP Rating	IP54

无人机动力电机
UAV Drone Motor

核心特性 | Features

优化绕线磁路设计，覆盖竞技暴力&长航时应用
Optimized winding and magnetic circuit design, suitable for both high-performance racing and long-endurance applications

高耐温绕组+散热结构设计
High-temperature-resistant windings combined with an efficient heat dissipation structure

高强度航空铝转子+钢合金出轴
High-strength aerospace aluminum rotor with a steel alloy shaft

支持防水防尘&抗腐蚀定制
Supports waterproof, dustproof, and corrosion-resistant customization

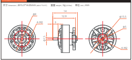
典型应用 | Applications
FPV穿越机 | FPV　多旋翼无人机 | Multirotor Drone　工业巡检无人机 | Industrial Inspection Drone　农业植保无人机 | Agricultural Drone

UV1203 @KV7000

重量 Weight	支持电压 Support Voltage	最大拉力 Max Thrust	峰值电流 Max Current
5 [g]	2~3 [s]	190 [g]	10.85 [A]

外形图 | Dimension Drawing

尺寸 Dimension | Φ15.5*14.05mm　重量 Weight | 5g　单位 Unit | mm



性能参数 | Performance

轴径 Shaft Diameter	1.5 mm
槽极数 Slot Pole	9N12P
支持电压 Support Voltage	2~3 S
峰值电流 Max Current	10.85 A
峰值功率 Max Power	192 W
最大拉力 Max Thrust	190 g
空载电流 No Load Current	0.66 A @ 10 V
内阻 Internal Resistance	0.19 Ω

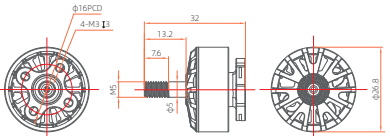
电机线规格 Wire	28# 75 mm
转子动平衡 Rotor Balance	2 mg
防护等级 IP Rating	IP62
工作温度 Working Temperature	-20~60 °C

UV2208 @KV1890

重量 Weight	支持电压 Support Voltage	最大拉力 Max Thrust	峰值电流 Max Current
32.6 [g]	5-6 [s]	1990 [g]	40.5 [A]

外形图 | Dimension Drawing

尺寸 Dimension | Φ26.8x31.7mm [Φ1.06"x1.25"] 重量 Weight | 32.6g [1.15oz] 单位 Unit | mm



性能参数 | Performance

轴径 Shaft Diameter	4 mm
槽极数 Slot/Pole	12N14P
支持电压 Support Voltage	5-6 S
峰值电流 Max Current	40.5 A
峰值功率 Max Power	1210 W
最大拉力 Max Thrust	1990 g
空载电流 No-load Current	1.05 A @ 10 V
内阻 Internal Resistance	0.05 Ω

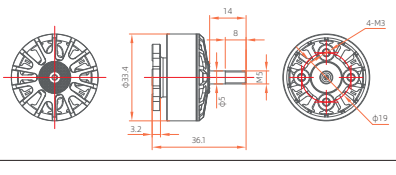
电机线规格 Wire	20# 150 mm
转子动平衡 Rotor Balance	3 mg
防护等级 IP Rating	IP42
工作温度 Working Temperature	-20~60 °C

UV2810 @KV1350

重量 Weight	支持电压 Support Voltage	最大拉力 Max Thrust	峰值电流 Max Current
63 [g]	5-6 [+]	2560 [g]	61.65 [A]

外形图 | Dimension Drawing

尺寸 Dimension | Φ33.4*38.05mm [ø1.31"*1.50"]　重量 Weight | 32.6g [1.22oz]　单位 Unit | mm



性能参数 | Performance

轴径 Shaft Diameter	4 mm
槽极数 Slots/Pole	12N14P
支持电压 Support Voltage	5-6 S
峰值电流 Max Current	61.65 A
峰值功率 Max Power	1237 W
最大拉力 Max Thrust	2560 g
空载电流 No-load Current	1.5 A @ 10 V
内阻 Internal Resistance	0.03 Ω

其他参数 | Other Specs

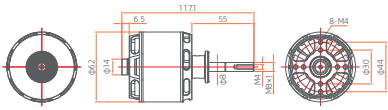
电机线规格 Wire	18# 250mm
转子动平衡 Rotor Balance	3 mg
防护等级 IP Rating	IP42
工作温度 Working Temperature	-20~60 °C

UV5330 @KV210

重量 Weight	支持电压 Support Voltage	最大拉力 Max Thrust	峰值电流 Max Current
650 [g]	12 [s]	11900 [g]	75 [A]

外形图 | Dimension Drawing

尺寸 Dimension | Φ63*117.3mm (Φ2.48"*4.62") 重量 Weight | 650g (22.93oz) 单位 Unit | mm



性能参数 | Performance

轴径 Shaft Diameter	IN:10 OUT:8 mm
槽极数 Slot/Pole	12N14P
支持电压 Support Voltage	12 S
峰值电流 Max Current	75 A
峰值功率 Max Power	3600 W
最大拉力 Max Thrust	11900 g
空载电流 No-load Current	3.0 A @ 18 V
内阻 Internal Resistance	0.02 Ω

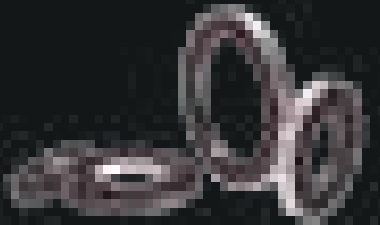
其他参数 | Other Specs

电机线规格 Wire	18# 250mm
转子动平衡 Rotor Balance	5 mg
防护等级 IP Rating	IP42
工作温度 Working Temperature	-20~80 ℃

无框电机
Frameless Torque Motor

核心特性 | Features

- **与壳体和负载高度集成**
  Highly Integrated with Housing and Load Height
- **155℃耐温绕组**
  155℃ High-temperature Resistant Winding
- **稀土钕铁硼磁体**
  Rare Earth Neodymium-iron-boron Magnets
- **支持体积和力矩定制**
  Customization of Size and Torque Supported



典型应用 | Applications

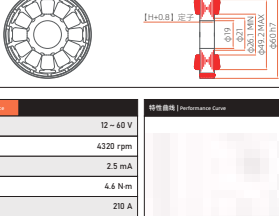
机器人 | Robot　　人体外骨骼 | Exoskeleton Suit　　工业自动化 | Industrial Automation　　医疗设备 | Medical Equipment

RO6019

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
12 [V]	3400 [rpm]	0.43 [N·m]	15.35 [A]	153.6 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ60x19mm (Φ2.36"x0.75") 重量 Weight | 152g (5.36oz) 单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	12 ~ 60 V
空载转速 No-load Speed	4320 rpm
空载电流 No-load Current	2.5 mA
峰值转矩 Peak Torque	4.6 N·m
峰值电流 Peak Current	210 A
最高效率 Max Efficiency	83 %

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	/
通讯方式 Communication	/
编码器类型 Encoder Sensor	/
编码器分辨率 Encoder Resolution	/

其他参数 | Other Specs

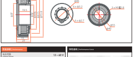
槽极数 Slot/Pole	12N14P
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-20~60 °C
防护等级 IP Rating	IP42

RO7419

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
48 [V]	4500 [rpm]	0.97 [N·m]	10.9 [A]	457.3 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ73.8x19mm 重量 Weight | 230g 单位 Unit | mm



性能参数 | Performance	
电压范围 Voltage Range	12 – 60 V
空载转速 No-load Speed	5650 rpm
空载电流 No-load Current	300 mA
峰值转矩 Peak Torque	15 N·m
峰值电流 Peak Current	220 A
最高效率 Max Efficiency	87 %

特性曲线 | Performance Curve

控制参数 | Control Specs	
控制方式 Control Method	/
通讯方式 Communication	/
编码器类型 Encoder Sensor	Hall Sensor
编码器分辨率 Encoder Resolution	14 bit

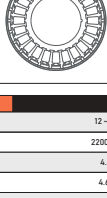
其他参数 | Other Specs	
槽极数 Slot/Pole	10
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-10~50 °C
防护等级 IP Rating	IP62

RO8018

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
12 [V]	1550 [rpm]	0.78 [N·m]	14.7 [A]	125.2 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ80x18mm (±0.1°±0.1°) 重量 Weight | 213g (7.51oz) 单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	12 – 60 V
空载转速 No-load Speed	2200 rpm
空载电流 No-load Current	4.8 mA
峰值转矩 Peak Torque	4.6 N·m
峰值电流 Peak Current	91 A
最高效率 Max Efficiency	71 %

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	/
通讯方式 Communication	/
编码器类型 Encoder Sensor	/
编码器分辨率 Encoder Resolution	/

其他参数 | Other Specs

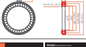
槽极数 Slot/Pole	24N26P
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-20~60 °C
防护等级 IP Rating	IP42

RO11017

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
12 [V]	1200 [rpm]	1.83 [N.m]	23.32 [A]	229.5 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ110x16.9mm (Φ4.33"x0.67")　重量 Weight | 300g (10.58oz)　单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	12 ~ 60 V
空载转速 No-load Speed	1420 rpm
空载电流 No-load Current	1.2 mA
峰值转矩 Peak Torque	15.7 N·m
峰值电流 Peak Current	225 A
最高效率 Max Efficiency	82 %

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	/
通讯方式 Communication	/
编码器类型 Encoder Sensor	/
编码器分辨率 Encoder Resolution	/

其他参数 | Other Specs

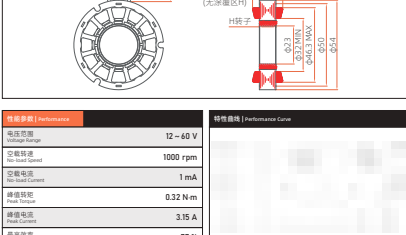
槽极数 Slot Pole	36N42P
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-20~60 ℃
防护等级 IP Rating	IP62

RI5420

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
12 [V]	950 [rpm]	0.05 [N·m]	0.56 [A]	5.2 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ54x19.8mm (Φ2.13x0.78") 重量 Weight | 130g (4.59oz) 单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	12 ~ 60 V
空载转速 No-load Speed	1000 rpm
空载电流 No-load Current	1 mA
峰值转矩 Peak Torque	0.32 N·m
峰值电流 Peak Current	3.15 A
最高效率 Max Efficiency	77 %

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	/
通讯方式 Communication	/
编码器类型 Encoder Sensor	/
编码器分辨率 Encoder Resolution	/

其他参数 | Other Specs

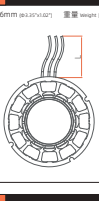
槽极数 Slot/Pole	12N14P
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-20~60 °C
防护等级 IP Rating	IP42

RI8526

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	额定电流 Rated Current	额定功率 Rated Power
12 [V]	1000 [rpm]	0.18 [N·m]	2.32 [A]	21.4 [W]

外形图 | Dimension Drawing

尺寸 Dimension | Φ85x26mm (Φ3.35"x1.02") 重量 Weight | 255g (8.99oz) 单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	12 ~ 60 V
空载转速 No-load Speed	1100 rpm
空载电流 No-load Current	1.2 mA
堵值转矩 Peak Torque	1.28 N·m
堵值电流 Peak Current	15.3 A
最高效率 Max Efficiency	77 %

特性曲线 | Performance Curve

控制参数 | Control Specs

控制方式 Control Method	/
通讯方式 Communication	/
编码器类型 Encoder Sensor	/
编码器分辨率 Encoder Resolution	/

其他参数 | Other Specs

槽极数 Slot/Pole	12N14P
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-20~60 °C
防护等级 IP Rating	IP42

微型减速电机
Micro Gear Motor

核心特性 | Features

- 覆盖行星、蜗杆、丝杆等传动形式
  Multiple Transmission Types: Planetary, Worm, Lead Screw, etc.
- 内置闭环伺服驱控
  Built-in Closed-loop Servo Controller
- 12V、24V、48V等多种电压可选
  Multiple Voltage Options: 12V, 24V, 48V, etc

典型应用 | Applications

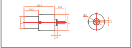
机器人 | Robot　　汽车电子 | Vehicle　　智能家居 | Smart Home　　工业自动化 | Industrial Automation

PL1625

额定电压 Rated Voltage **7.4** [V] | 额定转速 Rated Speed **127** [rpm] | 额定转矩 Rated Torque **0.1** [N·m] | 齿轮材质 Gear **金属齿** [Metal] | 电机类型 Motor **空心杯电机** [Coreless]

外形图 | Dimension Drawing

尺寸 Dimension | Ø16x30.3mm　重量 Weight | 25.7g　单位 Unit | mm



性能参数 | Performance	
电压范围 Voltage Range	9 – 13 V
额定电压 Rated Voltage	7.4 V
空载转速 No-load Speed	140 rpm
空载电流 No-load Current	70 mA
额定转速 Rated Speed	127 rpm
额定转矩 Rated Torque	0.1 N·m
额定电流 Rated Current	0.2 A
额定功率 Rated Power	1.628 W
峰值转矩 Peak Torque	0.7 N·m
峰值电流 Peak Current	3 A
最高效率 Max Efficiency	65%

齿轮箱参数 | Gearbox Specs	
减速器类型 Reducer	行星减速 Planetary
减速比 Gear Ratio	216
齿轮背隙 Backlash	30 arcmin
旋转方向 Direction	CCW
噪音 Noise Level	50 dB
使用温度 Operating Temperature	-10~55 °C
防护等级 IP Rating	IP62

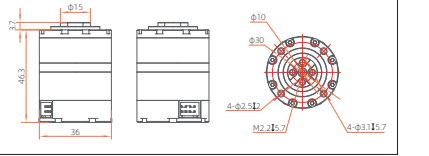
电机参数 | Motor Specs	
通讯方式 Communication	/
编码器类型 Encoder Type	/
编码器分辨率 Encoder Resolution	/

PL3646-18

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	齿轮材质 Gear	电机类型 Motor
12.6 [V]	180 [rpm]	2 [N·m]	钢 [Steel]	无刷电机 [Brushless]

外形图 | Dimension Drawing

尺寸 Dimension | Φ36x46.3 mm (Φ1.42"x1.82") 重量 Weight | 110g (3.88oz) 单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	9 – 12.6 V
额定电压 Rated Voltage	12.6 V
空载转速 No-load Speed	220 rpm
空载电流 No-load Current	800 mA
额定转速 Rated Speed	180 rpm
额定转矩 Rated Torque	2 N·m
额定电流 Rated Current	1.5 A
额定功率 Rated Power	18.9 W
峰值转矩 Peak Torque	3 N·m
峰值电流 Peak Current	3.5 A
最高效率 Max Efficiency	55 %

齿轮箱参数 | Gearbox Specs

减速器类型 Reducer	行星减速 Planetary
减速比 Gear Ratio	17.9
齿轮背隙 Backlash	30 arcmin
旋转方向 Direction	CCW
噪音 Noise Level	60 dB
使用温度 Operating Temperature	-10~55 °C
防护等级 IP Rating	IP42

电机参数 | Motor Specs

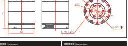
通讯方式 Communication	UART TTL
编码器类型 Encoder Sensor	Magnetic
编码器分辨率 Encoder Resolution	14 bit

PL5020-45

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	齿轮材质 Gear	电机类型 Motor
24 [V]	53 [rpm]	20 [N.m]	钢 [Steel]	无刷电机 [Brushless]

外形图 | Dimension Drawing

尺寸 Dimension | Φ68x76mm　重量 Weight | 830g　单位 Unit | mm



性能参数 | Performance	
电压范围 Voltage Range	24 ~ 32 V
额定电压 Rated Voltage	24 V
空载转速 No-load Speed	71 rpm
空载电流 No-load Current	400 mA
额定转速 Rated Speed	53 rpm
额定转矩 Rated Torque	20 N·m
额定电流 Rated Current	10 A
额定功率 Rated Power	240 W
峰值转矩 Peak Torque	50 N·m
峰值电流 Peak Current	35 A
最高效率 Max Efficiency	67 %

齿轮箱参数 | Gearbox Specs	
减速器类型 Reducer	行星减速 Planetary
减速比 Gear Ratio	45
齿轮背隙 Backlash	30 arcmin
旋转方向 Direction	CCW
噪音 Noise Level	60 dB
使用温度 Operating Temperature	-10~55 ℃
防护等级 IP Rating	IP42

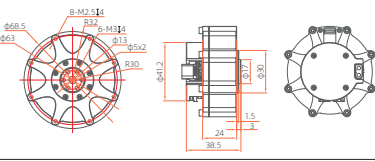
电机参数 | Motor Specs	
通讯方式 Communication	UART TTL
编码器类型 Encoder Sensor	/
编码器分辨率 Encoder Resolution	/

EXT6006

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	齿轮材质 Gear	电机类型 Motor
12 [V]	146 [rpm]	1.2 [N·m]	钢 [Steel]	无刷电机 [Brushless]

外形图 | Dimension Drawing

尺寸 Dimension | Φ68.5x24 mm (Φ2.70"x0.94") 重量 Weight | 240g (8.47oz) 单位 Unit | mm



性能参数 | Performance

电压范围 Voltage Range	12 – 24 V
额定电压 Rated Voltage	12 V
空载转速 No-load Speed	170 rpm
空载电流 No-load Current	300 mA
额定转速 Rated Speed	146 rpm
额定转矩 Rated Torque	1.2 N·m
额定电流 Rated Current	2 A
额定功率 Rated Power	24 W
峰值转矩 Peak Torque	6 N·m
峰值电流 Peak Current	13 A
最高效率 Max Efficiency	70 %

齿轮箱参数 | Gearbox Specs

减速器类型 Reducer	行星减速 Planetary
减速比 Gear Ratio	/
齿轮背隙 Backlash	15 arcmin
旋转方向 Direction	CCW
噪音 Noise Level	55 dB
使用温度 Operating Temperature	-20~80 °C
防护等级 IP Rating	IP42

电机参数 | Motor Specs

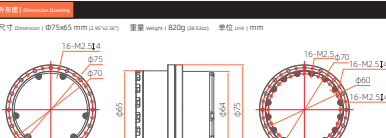
通讯方式 Communication	UART TTL
编码器类型 Encoder Sensor	Magnetic
编码器分辨率 Encoder Resolution	14 bit

EXT6100

额定电压 Rated Voltage	额定转速 Rated Speed	额定转矩 Rated Torque	齿轮材质 Gear	电机类型 Motor
12 [V]	7 [rpm]	15 [N·m]	钢 [Steel]	无刷电机 [Brushless]

外形图 | Dimension Drawing

尺寸 Dimension | Φ75x65 mm (2.95"x2.56") 重量 Weight | 820g (28.93oz) 单位 Unit | mm



性能参数 | Performance	
电压范围 Voltage Range	12 – 24 V
额定电压 Rated Voltage	12 V
空载转速 No-load Speed	9 rpm
空载电流 No-load Current	1000 mA
额定转速 Rated Speed	7 rpm
额定转矩 Rated Torque	15 N·m
额定电流 Rated Current	10 A
额定功率 Rated Power	120 W
峰值转矩 Peak Torque	50 N·m
峰值电流 Peak Current	13 A
最高效率 Max Efficiency	65 %

齿轮箱参数 | Gearbox Specs	
减速器类型 Reducer	RV减速器 RV Reducer
减速比 Gear Ratio	158.6
齿轮背隙 Backlash	/
旋转方向 Direction	CCW
噪音 Noise Level	55 dB
使用温度 Operating Temperature	-20~80 °C
防护等级 IP Rating	IP42

电机参数 | Motor Specs	
通讯方式 Communication	UART TTL
编码器类型 Encoder Sensor	Magnetic
编码器分辨率 Encoder Resolution	14 bit

跨行业驱动解决方案

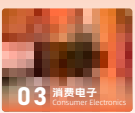
Cross-industries Drive Solutions

全方位探索驱控模组在更多行业的可能性，给用户带来更“人性化”的智能交互体验。

Explore More Possibilities of Drive and Control Modules in Various Industries for a More 'Humanized' Intelligent Interaction Experience.

6+行业覆盖

6+ Industries Covered



智能家居驱动电机解决方案

Smart Home Motor Solutions

智能化体验
Smart Experience

功能快速迭代
Rapid Iteration

高效静音电机
High-efficiency Silent Motor

内置通信驱控
Built-in Drive Controller

「在个性化需求激增的消费升级浪潮中，智能家居正加速向机器人化、场景融合化演进。Kpower创新研发的驱控一体化解决方案，采用模块化设计，集成高效电机、传动齿轮、串口驱动等核心部件，为客户提供平台化、智能化的驱动电机，共同为终端消费者的理想化、智能化的生活体验。

As personalized demand rises in the consumer upgrade wave, smart homes are swiftly evolving towards robotics and scene integration. Kpower's modular drive control solution combines high-efficiency motors, gears, and serial communication drivers, offering customers intelligent, platform-based motors to enhance the smart living experience for end consumers.」

| 扫地机器人

底盘抬升越障舵机

Active Lift-up Servo Motor in Robot Vacuums

安装于在扫地机驱动轮上方，主动抬升机身，轻松越过地毯、门槛等障碍物。采用高寿命碳刷DC电机和粉末冶金齿轮，实现了7.5kg·cm的超大扭矩和65万次循环的超高寿命。

Installed above the drive wheels of the robot vacuum, the active lift-up servo motor helps lift & lower to maneuver over obstacles such as carpets and thresholds. Leveraging a high-lifespan carbon-brushed DC motor and powder metallurgy gears, it achieves an impressive torque of 7.5 kg·cm and an exceptional lifespan of 650k cycles.

4 [mm]	7.5 [kg·cm]	0.5 [s]	650,000 [次]
超强越障表现 Obstacle Climbing Capability	堵转扭矩 Stall Torque	快速升降响应 Rapid Lifting & Lowering Response	高循环寿命 High Lifespan

| 扫地机器人

边刷外摆机械臂驱动

Side Brush Extending Robotic Arm Drive in Robot Vacuums

位于扫地机器人侧边，通过微型行星电机驱动连杆机械臂，带动边刷外摆伸出，实现无死角清洁，高速空心杯电机搭配3级行星减速，带来大扭矩、静音表现。

This drive is located on the side of robot vacuums. It uses a compact planetary motor to drive a mechanism arm, extending the side brush for comprehensive, edge-to-edge cleaning. The built-in high-speed hollow cup motor, paired with a 3-stage planetary gearbox, provides high torque and quiet operation.

< 2 [mm]	Φ16	3 [级]	50,000 [次]
贴边清洁距离 Edge cleaning Distance	精密微型大扭矩行星 Precision Micro Planetary Motor	高功率密度行星减速 High Power Density Planetary Gearbox	循环工作寿命 High Lifespan

扫地机器人
驱动轮毂电机
BLDC Hub Motor in Robot Vacuums & Floor Cleaner

集无刷电机、编码器、伺服驱动于一体的直驱轮毂电机，体积比传统减速电机小了40%。电机峰值扭矩高达0.85 N·m，支持调速、UART实时回读和故障管理。

The direct-drive hub motor integrates a brushless motor, encoder, and servo drive board, achieving a 40% reduction in volume compared to traditional gear motors. The hub motor provides a peak torque of 0.85 N·m and supports speed control, UART real-time feedback, and fault management.

洗地机器人
助力轮毂电机

0.85 [N·m]
超高峰值扭矩
Peak Torque

每秒500 [次]
闭环算法
500Hz Closed-loop Algorithm

IPX4
防护等级
Protection

≤40 [dB]
宣内静音表现
Noise Level

扫地机器人
拖布抬升机构
Side Mop Lift-up Motor in Robot Vacuums

位于拖布上方的升降驱动电机，通过微型减速电机带动丝杆，支持拖布短升跨越地毯和主动下压提高清洁效率。壳体、齿轮和丝杆采用精密注塑工艺实现降本，内置无接触式霍尔闭环。

The lift motor above the mop operates via a micro reduction motor driving a lead screw, enabling the mop to lift over carpets and actively press down to enhance cleaning efficiency. The housing, gears, and lead screw are produced using precision plastic injection to reduce costs, and a contactless Hall-effect closed-loop system is integrated.

低成本
精密注塑丝杆
Precision Plastic Leadscrew

2.5 [kg·cm]
峰值扭矩
Peak Torque

内置无接触式霍尔闭环
Built-in Hall Closed Loop

30,000 [次]
循环寿命
30k Lifetime Cycles

| 洗地机器人

刮条贴边下压舵机

Front Scraper Servo Motor in Floor Cleaners

「 位于洗地机器人前端的刮条舵机，通过连杆带动刮条主动下压，实现贴边0死角清洁。刮条取代了传统的纺布滚筒，解决了滚筒无臭和细菌滋生的问题。

The Front Scraper Servo Motor in Floor Cleaners actuates the scraper to actively press down via a linkage mechanism, ensuring edge-to-edge cleaning with no blind spots. The scraper replaces traditional fabric rollers, eliminating problems of odor and bacterial breeding. 」

3.5 [kg·cm]
堵转扭矩
Stall Torque

全钢齿轮设计
Full-steel Gears

内置闭环驱动和多种保护模式
Built-in Closed-loop Drive & Electronic Protection Modes

500,000 [次]
循环工作寿命
500k Cycles Lifetime

| 智能电子门锁

减速电机

Smart Lock Reduction Motor

「 采用多级行星齿轮结构设计的电子门锁齿轮传动系统。通过运转带动内置钥匙旋转开关门锁，具有低成本、快速安装、一键远程控制门锁开关的优势。

The electronic door lock gear drive system, designed with a multi-stage planetary gear structure, drives the built-in key to rotate and switch the door lock. It offers advantages such as low cost, quick installation, and one-click remote control for locking and unlocking. 」

行星正齿复合传动系统
Planetary Spur Gear Compound Drive System

集成化圆柱行星减速电机
Integrated Cylindrical Planetary Gear Motor

低成本快速安装
Low Cost, Quick Installation

360°
多圈正反转控制
Multi-turn 360° Bidirectional Control

户外烤炉

自动送料电机

Automatic Feed Motor for Smart Grills

位于烤炉左下角的自动送料电机驱动送料螺杆向前进料，协同传感器将烤炉温度波动精准控制在5℃以内。采用全金属壳体和耐温绝缘线序保护，支持85℃高温环境下正常运转。

The automatic feed motor for smart grills located at the lower-left corner of the oven drives the feed screw forward, precisely controlling oven temperature within ±5°C in coordination with sensors. Featuring all-metal housing and heat-resistant insulated wire, it operates reliably in high-temperature environments up to 85°C.

大扭矩 无刷电机
High-torque Brushless Motor

自带PWM 圈数反馈
Integrated PWM Turns Feedback

85 [℃]
高温工况
Temperature Supported

500 [h]
工作寿命
Operation Lifespan

车载智能座舱驱动模组

Automobile Smart Cabin Drive Module

模块化静音传动
Modular Silent Drive

高性能无刷电机
High-performance Brushless Motor

完善交付流程
Optimized Delivery Process

制造工艺沉淀
Accumulated Manufacturing Processes

「在车载智能座舱领域，Kpower以精密静音传动和高性能无刷电机技术为核心，为新能源汽车屏幕、音响、摄像头等部件提供了可靠稳定的驱动解决方案。产品具备45dB静音和3万次循环寿命表现，经过多轮可靠性验证，100%满足「车规级」高低温、震动冲击要求。

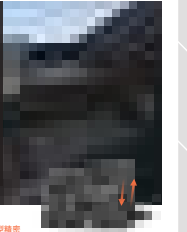
Kpower leveages precision silent transmission and high-performance brushless motor technology to provide reliable drive systems for screens, audio systems, and cameras in automotive smart cabins. Featuring a 45dB noise level and 30,000 cycle lifespan, the products pass through strict reliability testing to fully meet "automotive-grade" high/low temperature and vibration shock standards.」

中控柔性屏升降驱动

Automotive Self-rollable Screen Drive

全球首款量产装车的中控柔性屏升降驱动机构，支持50mm升降行程。采用创新性的柔性铝合金铰链支撑设计，模具级不锈钢连杆结合丝杆减速电机，单边方实现升降和伸缩单轴运动。

The world's first mass-produced flexible screen lift for center consoles supports a 50mm travel range. It features an innovative aluminum alloy hinge support and mold-grade stainless steel linkages for durability and precision. A lead screw reduction motor drives both lifting and telescopic motion with a single motor.



柔性支撑铰链卷轴设计
Flexible Support Hinge Shaft

单电机-双轴升降伸缩
Single Motor - Dual-axis Lifting and Telescoping

内置高效FOC无刷电机
Built-in High-efficiency FOC Brushless Motor

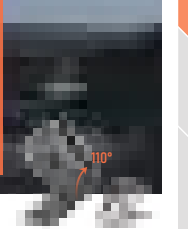
微型精密直线导轨
Micro Precision Linear Guide Rail

吸顶屏翻转机构

Ceiling Screen Drive Module

驱控一体的吸顶屏驱动模组，支持高达3kg屏幕负载，满足110°开合需求。内置高寿命无刷电机和金属蜗轮蜗杆减速箱，实现3W次开合寿命。

The ceiling screen drive module features an integrated drive-control design, supporting up to 3kg screen load and meeting 110° opening and closing requirements. It incorporates a built-in high-lifespan brushless motor and metal worm gearbox, achieving 3W working cycles.



无刷电机+蜗轮蜗杆减速箱结构
Brushless Motor+Worm Gear Reducer

耐高低温金属阻尼设计
Temp-Resistant Metal Damping

110°
开合角度范围
Operating Angle Range

3G
车载级抗震
Automotive-grade Vibration Resistance

中控屏左右倾机构

Swiveling Central Control Screen Drive Module

轻量化设计的中控屏驱动模组，内置高性能无刷电机和CAN协议驱动控制器，满足高达2kg的中控屏负载要求，支持左右倾、上下俯仰方向各30°运动，单轴30°大角度运动。

The Swiveling Central Control Screen Driver Module adopts a lightweight design, built-in high-performance brushless motor and CAN controller. It meets the load requirement of up to 2kg of center control screen and supports a 30°-range pitch movement in all directions (up, down, left, right).

无刷电机+CAN协议驱动控制

Brushless Motor +CAN Controller

消隙阻尼+蜗轮蜗杆结构

Backlash Damping+ Worm Gear Structure

单轴30°大角度运动

Single Axis 30° Large-Angle Motion

3G

车载级抗震

Automotive-grade Vibration Resistance

头枕屏俯仰模组

Tilting Entertainment Screen Driver Module

与前排座椅联动的智能俯仰屏驱动机构，支持手动和联动等多种工作模式，跟随座椅角度调整屏幕倾角，支持2kg屏幕负载，30°工作行程，集成化设计兼容大部分车型座椅。

It enables the screen and the front seats to operate in tandem through various working modes, including manual and collaborative command modes, facilitating synchronized adjustments to both the seat angle and screen tilt.

30°

角度行程

Angle Stroke

无刷电机+CAN协议驱动控制

Brushless Motor+CAN Controller

支持手动和联动等多种工作模式

Manual and Linkage Operating Modes Supported

3G

车载级抗震

Automotive-grade Vibration Resistance

音响升降驱动
Speaker Lifting Drive

适用于车内狭小空间的小体积音响升降驱动，通过无刷电机结合平行传动结构设计实现丝滑伸缩，确保高效性能的同时，最大限度减少占用空间和重量，满足车辆设计需求。

A compact speaker lift drive designed for confined spaces within vehicles. Utilizing a brushless motor combined with a parallel transmission structure, it enables smooth and seamless extension and retraction while ensuring high efficiency. This design minimizes space occupation and weight, meeting the demands of modern vehicle design.

9–16 [V]	> 0.05 [N.m]	168 [rpm]	≤40 [dB]
宽电压 Wide Voltage Range	负载扭矩 Load Torque	额定转速 Rated Speed	工作噪音 Noise Level

摄像头升降驱动
DMS/OMS Camera Drive

一体化摄像头传动模组，实现摄像头的隐藏收纳，消除消费者的隐私担忧。采用微型步进电机结合精密丝杆实现摄像头模组升降，支持高达100g摄像头模组负载，集成化设计，满足多种车内布局需求。

The integrated camera transmission module achieves hidden storage for cameras, eliminating consumer privacy concerns. It adopts a miniature stepper motor combined with a precision lead screw to enable camera module lifting, supporting up to 100 grams of camera module load. The integrated design meets the demands of various in-vehicle layouts.

60 [g]	≤40 [dB]	12 [V]	50,000 [次]
额定负载 Rated Load	工作噪音 Noise Level	额定电压 Rated Voltage	使用寿命 Cycles Lifetime

充电枪锁止舵机

Charging Gun Locking Servo

「 应用于电动汽车充电设备的充电枪锁止舵机，小体积集成，通过信号反馈确保充电枪在充电过程中稳固锁止和解锁，提升充电过程的安全性和稳定性。

The charging gun locking servo, designed for electric vehicle charging equipment, features a compact integrated design. It ensures secure locking and unlocking of the charging gun during the charging process through signal feedback, improving both the safety and stability of the charging process. 」

PWM
信号反馈
PWM Signal Feedback

高精度
耐用金属齿轮
High-precision
Durable Metal Gears

小体积
轻薄塑胶机身
Compact and Light-weight Plastic Housing

支持户外
防尘防水
Outdoor Dustproof and Waterproof Support

消费电子驱动系统

Consumer Electronics Motor Solutions

创新竞争力
Innovative Competitiveness

系统化设计
Systematic Solution

供应链管理
Supply Chain Integration

成本效益
Cost-effectiveness

消费电子行业正迈向更智能、高效的交互时代。Kpower 的智能驱动方案集成高效电机、多协议驱动和高精度控制算法，突破传统设计界限，赋能智能桌面机器人、R/C 模型等创新产品。依托成熟的供应链体系与先进制造工艺，我们支持规模化生产与个性化定制，助力品牌快速落地创新，占领先机。

As consumer electronics enter a smarter, more interactive era, Kpower's intelligent drive solutions integrate high-efficiency motors, multi-protocol drive systems, and high-precision control algorithms, pushing design boundaries to power smart desktop robots, R/C models, and beyond. Backed by a robust supply chain and advanced manufacturing, we support both large-scale and custom production, helping brands bring innovations to market quickly and gain a competitive edge.

RC车/船/航模舵机

R/C Model Servo Series

Kpower RC模型舵机系列以卓越的精度、耐用性和高效性能，满足不同类型RC模型的需求。我们提供多种扭矩和转向速度选择，确保在高速运转和复杂操作下依旧能提供强大的动力支持，为RC爱好者和专业人员提供更高效、更可靠的操控体验。

Kpower RC Model Servos provide exceptional precision, durability, and performance to meet the diverse requirements of various RC models. We offer a wide range of torque and response speed options, ensuring reliable power and support during high-speed maneuvers and complex operations. This guarantees smooth, efficient, and consistent control, delivering an excellent driving experience for both RC Hobbyists and professionals.

2-200 [kg·cm]
堵转扭矩
Stall Torque

0.05s/60°
响应速度
Response Speed

4.8-8.4 [V]
操作电压
Operating Voltage

IP67 [级]
防水设计
Waterproof Design

智能印章机舵机

Intelligent Stamp Machine Servo

适用于智能印章机的空心杯舵机，一体化执行解锁印章和上下盖印功能。实现精准的扭矩控制和稳定的低噪音升降，小巧节能，在操作效率、定位精度、安全性等方面极具优势。

The hollow cup servo motor designed for intelligent stamping machines integrates the functions of unlocking stamps and stamping up and down. It delivers precise torque control and stable low-noise lifting, featuring a compact and energy-efficient design with significant advantages in operational efficiency, positioning accuracy, and safety.

3.8 [kg·cm]
堵转扭矩
Stall Torque

PWM
协议控制
Protocol Control

全铝机身 不锈钢钢齿
Aluminum Housing
Stainless Steel Gears

>300,000 [次]
空载寿命
300K Cycles Lifespan

电动随行车折叠驱动模组

Automatic Folding E-bike Servo

专为全自动折叠电动行车打造，6个舵机联动，4s自动折叠，缩小40%车身体积，扭矩高达200kg·cm，核心部件由大扭矩外转无刷电机、粉末冶金齿轮、铝合金压铸外壳组成，兼顾轻量化与耐久性。

Designed for fully automatic folding electric vehicles, this system features six synchronized servos, achieving full folding in just 4 seconds and reducing vehicle size by 40%. With a torque of up to 200 kg·cm, it combines a high-torque outer rotor brushless motor, powder metallurgy gears, and an aluminum die-cast housing for both lightweight design and durability.

4 s
切换车体形态
Switching Vehicle Body Shape

锐减50%
车身体积
Reduction in Vehicle Body Volume

高强度粉末冶金齿轮
High-strength Powder Metallurgy Gears

轻量化铝合金压铸壳体
Lightweight Aluminum Alloy Die-cast Housing

无人机动力&驱动电机

UAV Drone Power & Drive Motor

高功率密度
High Power Density

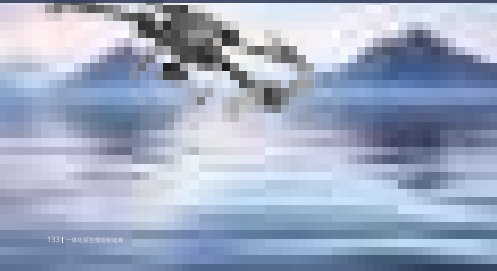
模块化装配
Modular Assembly

轻量型结构
Lightweight Design

行业定制化
Industry Customization

低空经济加速发展，无人机正向更高效、更智能演进。Kpower 提供高功率密度动力电机，优化磁路布局与绕组设计，提升推重比与续航能力。云台电机采用低齿槽转矩结构，实现高精度稳定控制，适配测绘、物流、农业等行业应用。模块化架构降低集成难度，行业定制方案助力应用快速落地。

The low-altitude economy is advancing fast, pushing drones toward greater efficiency and intelligence. Kpower's high-power-density motors leverage optimized magnetic circuits and winding designs to improve thrust-to-weight ratio and extend battery life. Our low-cogging gimbal motors ensure precise, stable control for mapping, logistics, and agriculture. Modular architecture simplifies integration, while industry-specific solutions accelerate deployment.

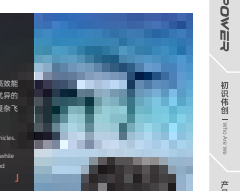


无人机动力电机

UAV Drone Power Motor

针对多旋翼和固定翼无人机分别研发的动力电机，具备高效能转化、强劲扭矩输出和精准调速性能。其轻量化设计和优异的功率重量比，不仅能够提供稳定的飞行动力，还能满足复杂飞行动作的需求。

A compact speaker lift drive designed for confined spaces within vehicles. Utilizing a brushless motor combined with a parallel transmission structure, it enables smooth and seamless extension and retraction while ensuring high efficiency. This design minimizes space occupation and weight, meeting the demands of modern vehicle design.



115 [g]
轻量结构
Lightweight Structure

离心式
高效散热
Centrifugal Efficient Cooling

兼容多种
宽电压
Wide Voltage Compatibility

支持户外
复杂工况防护
Outdoor Complex Operating Conditions Protection

多旋翼无人机

起落架折展舵机

Imaging Drone Landing Gear Folding Servo

专为「摄影级影像无人机」研制的起落架折展舵机。采用23V高压无刷电机和滚齿研磨钢齿设计，支持360°多圈霍尔传感和TTL串口通信，IP67防水等级，低温-25℃工况稳定输出。

This retractable landing gear servo, designed for high-end imaging drones, features a 23V high-voltage brushless motor and precision-ground steel gears. It supports 360° multi-turn Hall sensors and TTL serial communication, with an IP67 waterproof rating. The servo operates reliably even at temperatures as low as -25°C, ensuring stable performance in extreme conditions.

23 [V]
高压无刷舵机
High-voltage BLDC Servo

-25[℃]**+IP67**
户外防护
Protection

多圈360°
霍尔传感
Multi-turn 360° Hall Sensor

MCU金属
屏蔽防护罩
MCU Metal Shielding Protective Cover

| 巡检无人机

停机坪充电舱定位舵机

Servo for Charging Dock Positioning in Inspection Drones

「 面向巡检无人机充电基站开发的高速空心杯舵机，360°多圈闭环控制，6W超低峰值功耗，采用油封+防水胶圈双防护设计，满足IP67防水和「车规级」低温-40°C工作。

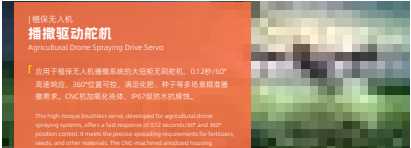
Developed for inspection drone charging stations, this high-speed hollow cup servo offers 360° multi-turn closed-loop control with a peak power consumption of only 6W. It features a dual protection system of oil seals and waterproof gaskets, providing IP67 waterproofing and ensuring reliable performance at -40°C, meeting automotive-grade low-temperature requirements. 」

360°
多圈高精度舵机
360° Multiple-turn Precision Servo

IP67
户外复杂工况防护
Protection for Outdoor Conditions

20 [mA]
休眠电流，超低功耗
Idle Current, Low Power Comsuption

10,000
线束反复弯折寿命
10,000-cycle Wire Harness Bending Life



| 植保无人机

播撒驱动舵机

Agricultural Drone Spraying Drive Servo

「 应用于植保无人机播撒系统的大扭矩无刷舵机，0.12秒/60°高速响应，360°位置可控，满足化肥、种子等多场景精准播撒需求。CNC机加氧化壳体，IP67级防水抗腐蚀。

This high-torque brushless servo, developed for agricultural drone spraying systems, offers a fast response of 0.12 seconds/60° and 360° position control. It meets the precise spreading requirements for fertilizers, seeds, and other materials. The CNC-machined anodized housing provides IP67 waterproof and corrosion resistance. 」

16 [kg·cm]
大扭矩无刷舵机
High-torque BLDC Servo

360°
精准位置闭环
360° Close-loop Design

高精度机加金属齿轮
High-precision Metal Gear

IP67
防水抗腐蚀
IP67 Waterproof

植保无人机

无刷柱塞水泵

Agricultural Drone Brushless Plunger Pump

装备于植保无人机内部的水泵电机，采用外转无刷电机驱动柱塞，功率密度更高，提供8L/min的超大流量，助力高效植保。机身采用ADC12铝合金压铸工艺，防水抗腐蚀。

This pump motor is designed for agricultural spraying drones. It features an out-rotor brushless motor that drives the plunger, achieving high power density and delivering an 8L/min flow rate for efficient spraying. The ADC12 die-cast aluminum housing ensures waterproof and corrosion-resistant protection.

内置大扭矩外转无刷电机
Built-in High Torque Out-rotor BLDC Motor

高效FOC无刷电机驱动
Efficient FOC Brushless Motor Drive

IP67 [等]
防水防尘抗腐蚀
Waterproof and Corrosion-Resistant

DC52 [+]
高耐压设计
High Voltage Tolerance Design

植保无人机

雾化离心喷头

Agricultural Drone Atomizing Centrifugal Nozzle

采用模块化设计的离心喷头，搭配高速无刷电机，确保均匀雾化效果。中空轴水冷设计支持长时间稳定作业。喷头材料抗腐蚀，适配多种药剂，提升植保作业效率与可靠性。

The modular centrifugal nozzle, powered by a high-speed brushless motor, ensures consistent and uniform atomization. The hollow shaft water-cooling system supports extended stable operation. Its corrosion-resistant material allows compatibility with a wide range of chemicals, enhancing the efficiency and reliability of crop protection tasks.

模块化离心喷头
Modular Centrifugal Nozzle

大扭力52V无刷电机
High Torque 52V Brushless Motor

创新性的中空轴水冷设计
Innovative Hollow Shaft Water-Cooling

3L/min
喷雾作业流量
3L/min Spray Flow Rate

| 配送无人机

抛投架开合舵机

Delivery Drone Drop Release Servo

适用于外卖、物流配送无人机抛投开合的高速空心杯舵机，30g轻量化设计，堵转扭矩高达8.5kg·cm，UART串口通信，支持挂载闭环检测，寿命高达20W次循环。

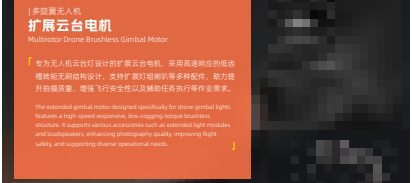
This high-speed coreless servo is designed for the payload release mechanism of food delivery and logistics drones, weighing only 30g. It delivers a stall torque of up to 8.5 kg·cm. Equipped with UART communication and real-time load monitoring, it ensures precise control. With a lifespan of up to 200,000 cycles, it supports frequent operations with high reliability.

7.5 [kg]
配送载重
Delivery Payload

支持挂载闭环检测
Supports Closed-Loop Detection

IP45
防水设计
Waterproof Design

>20 [万次]
循环寿命
Over 200k Cycles Lifespan



| 多旋翼无人机

扩展云台电机

Multirotor Drone Brushless Gimbal Motor

专为无人机云台灯设计的扩展云台电机，采用高速响应的低齿槽转矩无刷结构设计，支持扩展灯组喇叭等多种配件，助力提升拍摄质量、增强飞行安全性以及辅助任务执行等作业需求。

The extended gimbal motor designed specifically for drone gimbal lights features a high-speed responsive, low-cogging-torque brushless structure. It supports various accessories such as extended light modules and loudspeakers, enhancing photography quality, improving flight safety, and supporting diverse operational needs.

0.05°
定位精度磁编码
Positioning Accuracy Magnetic Encoder

低成本限位结构失效保护
Low-cost Limit Structure Failure Protection

定子、转子集成至外筒
Stator and Rotor Integrated into the Boom

支持多种配件扩展
Accessory Expansions Supported

| 固定翼

超薄翼面舵机

Ultra-thin Airfoil Servo

「专为无人飞行器打造的超薄翼面舵机系列产品，采用轻量化避空设计，整体厚度仅有8mm，精准实现舵面调节和飞行器姿态动态控制。

Ultra-thin wing surface servo series, specifically designed for unmanned aerial vehicles, features a lightweight, space-saving design with an overall thickness of only 8mm, enabling precise control of control surface adjustments and dynamic attitude control of the aircraft.」

9 [kg·cm]
堵转扭矩
Stall Torque

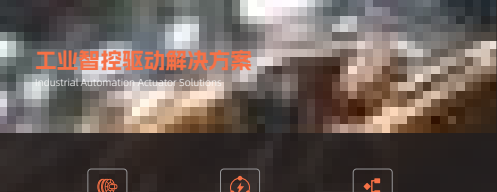
4.6~8.4 [v]
宽电压范围
Wide Voltage Range

25 [g]
轻量化避空设计
Lightweight Clearance Design

> 100,000
负载寿命
Cycles Lifespan

工业智控驱动解决方案

Industrial Automation Actuator Solutions



精密力控伺服电机
Servo Motor for Accurate Force Control

支持位置电流多种闭环
Supports Multiple Closed Loops: Position and Current

RS-485组网通信
RS-485 Network Communication

随着终端消费市场定制化、多元化的要求，工业制造的精细化、柔性化、高响应是未来产业升级的趋势。Kpower推出的一体化驱动模组可以实现对传统气动执行器的100%替代。通过内置的多种闭环功能，实现全方位的数据收集，无需复杂的气动管道和传感模块。

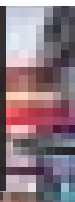
As the consumer market demands more customization and diversity, industrial manufacturing is trending towards greater precision, flexibility, and high responsiveness. Kpower introduces integrated drive modules that can completely replace traditional pneumatic actuators. With built-in multiple closed-loop functions, it enables comprehensive data collection without complex pneumatic pipelines and sensor modules.

物流穿梭叉拨杆驱动舵机

Logistics Shuttle Fork and Pusher Servo

专为智能仓储系统设计的叉杆驱动舵机。模块化设计，兼容多种规格拨杆。内置MCU，支持多种反馈。无刷电机配合钢齿设计，寿命超过200万次。

Designed specifically for automatic warehouse systems, the fork and pusher servo features a modular design compatible with various pushers. It includes a built-in MCU and supports multiple feedback options. The brushless motor paired with steel gear design ensures a lifespan of over 2 million cycles.



RS-485
通信
Interface

> 8 [kg·cm]
堵转扭矩
Stall Torque

一键设定基准中位
One-Click Center Position Calibration

高精度磁编码传感器
High-Precision Magnetic Encoder Sensor

电动夹爪执行器

Electric Gripper Actuator

适配于工业机械臂，自动化夹持设备等应用的电动夹爪执行器。内置力控电机，实现力矩、位置闭环。铝合金机身预留四周螺丝孔，支持多种安装角度。

Electric gripper actuator is designed for applications in industrial robotic arms and automated gripping equipment. It features an integrated force control motor for torque and position closed-loop feedback. The aluminum alloy body has pre-drilled screw holes on all sides, supporting various mounting angles.

力控电机/支持力矩/位置闭环
Closed-loop Force Control Motor

齿条设计 支持掉电自锁
Power-off Self-locking

RS-485 通信
Interface

铝合金机身
Aluminum Alloy Housing

EOAT电动快换机构

EOAT Electric Quick-Change Mechanism

创新性的电控快换机构，内置位置、速度、电压等多种闭环反馈。零间隙双金属蜗杆，带来了超高的动率密度和30万次循环寿命，支持85℃高温工作。

This innovative electric quick-change mechanism features built-in closed-loop feedback for position, speed, and voltage. The zero-backlash dual-metal worm gears provide ultra-high power density and a lifespan of 300,000 cycles. It supports high-temperature operation up to 85°C.

电气分离 内置到位识别
Electrical Isolation with Built-in Position Recognition

支持ModBUS 协议
ModBUS Communication

支持手动 紧急解锁
Manual Emergency Release Supported

零间隙 双蜗杆
Zero-Backlash Dual Worm Gears

电动推剪驱动

Electric Heating Nipper Actuator

专为汽车车灯、PC塑料、亚克力等高硬度塑料设计的推剪执行器，采用外转无刷搭配金属齿轮，实现高寿命大扭矩，内置MCU，速度可调。

Designed specifically for automotive headlights, PC plastics, acrylics, and other high-hardness plastics, this push cutter actuator utilizes an external brushless motor paired with metal gears to achieve high torque and long lifespan. It includes a built-in MCU for adjustable speed control.

高寿命 外转无刷电机
High-lifetime Outrunner Brushless Motor

耐用金属齿轮
Durable Metal Gears

内置MCU驱动
Built-in MCU Drive

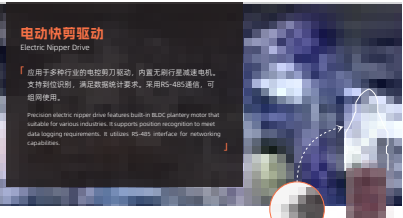
铝合金机身
Aluminum Alloy Body

电动快剪驱动

Electric Nipper Drive

应用于多种行业的电控剪刀驱动，内置无刷行星减速电机。支持到位识别，满足数据统计要求。采用RS-485通信，可组网使用。

Precision electric nipper drive features built-in BLDC planetary motor that suitable for various industries. It supports position recognition to meet data logging requirements. It utilizes RS-485 interface for networking capabilities.



500 [N]
剪切力
Cutting Force

6-8 [mm]
多种刀头兼容设计
Compatible with Multiple 6-8mm Blade

30 [万次]
循环寿命
300k Cycles Lifespan

全金属齿轮传动
All Metal Gear Design

电动水口剪执行器

Electric Sprue Nipper Actuator

专为多穴注塑设计的卧式水口剪执行器，可一次性剪除多个零件水口。内置精密无刷行星，支持精密力控。采用RS-485通信，可组网使用。

Designed specifically for multi-cavity injection molding, this horizontal sprue cutter actuator can simultaneously trim multiple part sprues. It features a built-in precision brushless planetary gearbox for accurate force control and utilizes RS-485 communication for networking capabilities.

凸轮+导轨
支持剪切接投
双向运动
Two-way Adjustable Design

5 [mm]
推拉位移，
小空间也支持
Linear Movement

RS-485
组网通信
communication

精密无刷
行星结构设计
Brushless Motor &
Planetary Gear

机器人关节动力电机

URobot Joint Motor Series

轻量化设计
Lightweight Design

强劲大扭矩
Ultra Torque

高动态响应
High Dynamic Response

闭环驱控
Closed-loop Drive Control

机器人行业正迎来智能化与模块化升级，从AI赋能的人形机器人到高自由度的灵巧手，精密驱动技术成为突破瓶颈的关键。Kpower的高扭矩、小型化关节电机，兼具轻量化和高动态响应特性，实现精准操控与智能反馈。模块化设计加速开发进程，让机器人行业以更低成本、更快周期迈向智能协作新时代。

The robotics industry is advancing toward intelligence and modularity. From AI-driven humanoid robots to dexterous hands, precision drive technology is key to unlocking performance breakthroughs. Kpower's compact, high-torque joint motors offer a lightweight design and fast dynamic response, enabling precise control and smart feedback. Modular design accelerates development, helping the industry achieve smarter collaboration with lower costs and faster deployment.

| 人形机器人

关节动力电机

Humanoid Robot Joint Actuator Motor

应用于人形机器人和外骨骼机器人的关节动力模组系列，采用高度集成的轻量化设计，峰值扭矩高达120N·m，内置高精度闭环驱控和双磁性编码器，支持过载保护、防水防尘。

The joint actuation motor modules, designed for humanoid robots and exoskeleton robots, feature a highly integrated, lightweight design with powerful performance. It incorporates high-precision closed-loop drive control and dual magnetic encoders, providing precise position and speed regulation. The modules are equipped with overload protection and are engineered to meet IP-rated waterproof and dustproof standards.

120 [N·m]	16-28 [V]	120 [rpm]	支持CAN/RS-485
大扭矩输出 High Torque	宽电压设计 Voltage Range	额定转速 Rated Speed	通讯 CAN/RS-485 Protocol

| 足式机器人

关节电机

Robotic Dog Joints Motor

适用于多足机器狗的关节电机模组，集成了高扭矩电机、精密行星减速器和高分辨率编码器，优化散热、控制算法和磁路设计等多项内容，为机器人、机器狗运动提供稳定的扭矩输出和精准高效的控制。

The robotic dog joints brushless motor, suitable for multi-legged dog robots, integrates a high-torque motor, precision planetary gearbox, and high-resolution encoder. It optimizes multiple aspects, such as the cooling system, control algorithms, and magnetic circuit design, providing stable torque output and precise, efficient control for robotic and robotic dog movements.

集成无刷电机 行星减速箱和编码器	24E克轻量化设计 高效输出	支持位置、速度 闭环精准反馈	安装方便 即插即用
Integrated Brushless Motor Planetary Gearbox, and Encoder	24E Lightweight Design Efficient Output	Position and Speed Closed-loop Precise Feedback	Easy Installation Plug and play

| 微型灵巧手

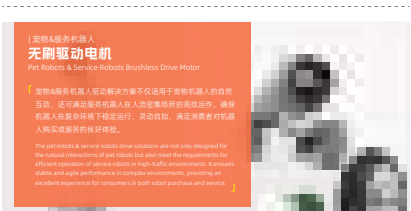
舵机&行星减速电机

Dexterous Hand Joint Drive Solutions

专为仿生灵巧手关节设计的微型行星减速电机和精密微型舵机，分别采用多级直齿减速和行星减速的传动形式，具备高功率密度、高动态响应、低温升等特性，满足机器人空间有限的结构中实现复杂运动控制需求。

The micro planetary gear motors and precision micro servos, specifically designed for bionic dexterous hand joints, feature multi-stage straight gear and planetary gear transmission systems. They offer high power density, rapid dynamic response, and low temperature rise, effectively meeting the complex motion control requirements within the constrained space of robotic structures.

26 [g]	4.8–6 [v]	130 [mN·m]	62.5 [rpm]
轻量化设计 Grams Lightweight Design	电压范围 Voltage Range	额定扭矩 Rated Torque	空载转速 No-load Speed



| 宠物&服务机器人

无刷驱动电机

Pet Robots & Service Robots Brushless Drive Motor

宠物&服务机器人驱动解决方案不仅适用于宠物机器人的自然互动，还可满足服务机器人在人流密集场所的高效运作，确保机器人在复杂环境下稳定运行、灵动自如，满足消费者对机器人购买或服务的良好体验。

The pet robots & service robots drive solutions are not only designed for the natural interactions of pet robots but also meet the requirements for efficient operation of service robots in high-traffic environments. It ensures stable and agile performance in complex environments, providing an excellent experience for consumers in both robot purchase and service.

9–16 [V]	-30–50 [℃]	IP4X [级]	2000 [h]
电压范围 Voltage Range	耐温 Temp Resistance	防水 IP4X-rated waterproof	超高寿命 High-lifespan

| 仿生玩具机器人

关节舵机

Bionic Toy Robot Joint Drive Solutions

「在对交互式STEM解决方案的需求推动下，仿生玩具机器人市场正在迅速扩大。伟创动力的高精度伺服舵机提供可靠高效的的运动控制，可集成到仿生玩具机器人中完成灵动的动作效果。

Driven by the growing demand for interactive STEM solutions, the bionic toy robot market is rapidly expanding. Kpower's high-precision servo motors deliver reliable and efficient motion control, enabling seamless integration into bionic robots to achieve agile and lifelike movements.」

1.8 [kg·cm]
堵转扭矩
Stall Torque

4~6.0 [V]
电压范围
Voltage Range

0.14s/60°
响应速度
Response Speed

> 100,000 [次]
循环寿命
Cycles Lifetime

| 桌面机器人

驱动舵机

Speaker Lifting Drive

「桌面机器人因其灵活性和适应性，广泛应用于日常陪伴、实验室操作、教育演示等场景，伟创动力研发的多款力控串口舵机和关节舵机，具备结构紧凑、静音运行和运动灵活等特点，满足消费者对微型机器人灵活互动的不同需求。

Desktop robots, known for their flexibility and adaptability, are widely used in daily companionship, lab operations, educational demonstrations, and other scenarios. The various force-controlled serial servo motors and joint servos developed by Kpower feature a compact structure, silent operation, and agile motion, meeting the diverse needs of consumers for interactive miniature robots.」

1:390
超大传动比
Ultra-High Gear Ratio

9g重量 3kg扭矩输出
9g Weight,
3kg Torque Output

1M TTL单线 半双工通讯
1M TTL Single-wire
Half-duplex Communication

300°
位置控制区间
Effective Operating Range

面向产品开发的

定制化服务

Product-oriented ODM Service

产品需求 Needs

1 参数评估 Parameters Evaluating

2 开发协议 Developing Agreement

3 产品设计 Product Design

4 仿真验证 Software Simulation

5 手板制作 Sample Making

6 手板验证*N Sample Proofing x N

7 模具制作 Mold Making

8 样品制作 Sample Making

9 样品验证*N Sample Proofing x N

10 方案确认 Parameters Confirm

11 规格书 Datasheet

12 样品承认 Design Lockdown

13 采购订单 Purchasing Orders

14 产品量产 Mass Production

需求驱动模组？

Looking For a Transmission Module?

Kpower专注于集高寿命电机、精密减速齿轮、多协议控制方案于一体的传动机构，产品覆盖无刷电机、减速电机、舵机等多种驱动部件。

扫码提交需求，我们的产品专家将会在24小时内与您联系。

Scan me↑,

驱动未来，为美好生活赋能。

Drive for the future. Drive for your life.

东莞市伟创动力科技有限公司

Dongguan Kpower Technology Co., Ltd.

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Get Your Customized Solution

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