

Drive systems

Constar

产品目录
2024/25





扫码进入 Constar 官方网站
Scan the code for Constar official
website.

Constar 选型指南 /Constar selection guide

精密直流空心杯电机、无刷电机、无刷驱动器、精密齿轮减速电机、精密伺服电机、直流铁芯电机、声波振动电机等各系列微电机。

Precision DC Coreless Motor, Brushless DC Motor, Electronic Speed Controller, Precision Gearmotor, Precision Servo Motor, DC Core Motor, Sonic Motor and other series of micro motors.

我们的优势 /Our advantage

我们坚持以客户业务要求及产品应用要求为起点，组建了 8 个专业研发项目团队，与客户共同开发量身定制的个性化解决方案，帮助客户产品在市场上脱颖而出。

Starting out with our customers' business demands and products' application requirements, we have constructed 8 professional R&D project teams to jointly develop tailored personalized solutions with our customers to help their products win out among various products in the market.

- 02-03

我们是谁？ Who are we?

公司简介 Company Profile
- 04-05

我们能做什么？ What can we do?

Constar 选型指南 Constar Selection Guide
- 06-09

为什么选择我们？ Why choosing us?

研发实力 R&D Strength
客户定制 Customized Service
精工制造 Precision Manufacturing
品质保证 Quality Assurance

- 11-51

精密直流空心杯电机 Precision DC Coreless Motor

贵金属电刷 Precious Metal Brushes
碳刷 Graphite Brushes
- 53-113

无刷电机 Brushless DC Motor

内转子无槽高效率 Inner Rotor, Slotless, High Efficiency
内转子 Inner Rotor
外转子 Outer Rotor
扁平无刷电机 Flat BLDC Motor
无刷风机 Brushless DC Blower
- 115-121

无框力矩电机 Frameless Torque Motor

内转子有槽 Inner Rotor, Slotted, Sensorless
- 123-132

驱动器 Controller

无刷电机通用驱动器 Universal ESC for BLDC Motor
无刷电机紧凑型驱动器 Compact ESC for BLDC Motor
多旋翼无人机电调 ESC for Multi-rotor
内置伺服电机驱动器 Built-in Servo Motor Driver
外置伺服电机驱动器 External Servo Motor Driver
- 133-170

精密齿轮减速电机 Precision Gearmotor

行星齿轮系列 Planetary Gearbox Series
正齿轮系列 Spur Gearbox Series
- 171-186

精密伺服电机 Precision Servo Motor

直流空心杯有刷系列 DC Coreless Brushed Series
直流空心杯无刷系列 DC Coreless Brushless Series
- 187-229

直流空心杯电机 DC Coreless Motor

驱动系列 Driving Series
振动系列 Vibrating Series
- 231-247

直流铁芯电机 DC Core Motor

贵金属电刷 Precious Metal Brushes
碳刷 Graphite Brushes
- 249-263

声波振动电机 Sonic Motor
- 264-265

全球营销网络 Global Marketing Network

亚洲区域 Asia
欧洲区域 Europe
美洲区域 America

Who are we?

我们是 Constar

Company Profile

深圳市德达兴驱动科技有限公司是一家专注于微特电机及驱动系统研发、生产和销售的民营国家高新企业，主要产品有直流无刷电机、空心杯电机、齿轮减速电机、伺服电机和涡轮风机，产品广泛应用于医疗器械、新能源汽车、机器人、工业自动化、AI 智能等多个领域。自品牌 Constar 成立 24 年以来，通过持续技术创新和卓越品质满足了客户不同应用传动需求并取得认可。

公司拥有一支约百人由资深电机行业专家、工程师、高校顾问和德国专业技术支持共同组建的经验丰富、技术精湛的研发团队，不断探索新的技术，为客户提供最佳更有价值的电机驱动方案。产品由深圳和重庆两个厂区生产，4 万平方米的厂房及上千台自动半自动化设备，能够进行高效、优质、精准的生产和检测，工厂通过了 ISO9001、IATF16949、ISO13485、ISO14001、ISO45001 等国际体系认证，以确保生产和管理的科学化、标准化和规范化。经过不断的技术公关和产品升级也取得了近百项专利，为产品和客户提供了强大的技术支持。

德达兴尊重每一个客户和产品上的创意，将继续致力于研发更先进的微电机技术，以科技创新为动力，以市场需求为导向，不断提高自身的核心竞争力，为全球客户提供最优质的产品和服务。

Constar Motion Co., Ltd., is a leading private high-tech enterprise dedicated to the research, development, production, and sales of micro DC motors and drive systems. Our extensive range encompasses brushless DC motors, coreless motors, gearmotors, servo motors, and turbine blowers, catering to a wide array of industries including medical equipment, electric cars, robotics, industrial automation, and AI intelligence. With a rich history spanning 24 years, Constar has consistently earned customer recognition by addressing diverse drive requirements through continuous technological innovation and outstanding quality.

Our team, consisting of over a hundred members, is composed of seasoned experts, engineers, academy consultants, and overseas technical support personnel, all united in the pursuit of pioneering new technologies to deliver optimized motor drive solutions. With manufacturing facilities in Shenzhen and Chongqing, utilizing over 40,000 square meters of factory space and numerous automated and semi-automated equipment units. This ensures efficient, high-quality, and precise production and testing processes. Moreover, our manufacturing facilities have earned international certifications such as ISO9001, IATF16949, ISO13485, ISO14001, and ISO45001, guaranteeing scientific, standardized, and regulated production and management. Through continuous technological advancements and product upgrades, Constar has secured nearly a hundred patents, offering robust technical support for our products and customers.

At Constar, we highly value the creativity of every customer and product, underscoring our steadfast dedication to advancing micro DC motor and drive system technology. Driven by technological innovation and guided by market demand, we will continuously enhance our core competitiveness to provide the highest quality products and services to customers worldwide.



24^{years}

Established in 2000

40000^{m²}

Two Production Bases in
Shenzhen and Chongqing

30^{million units}

Annual Production Capacity

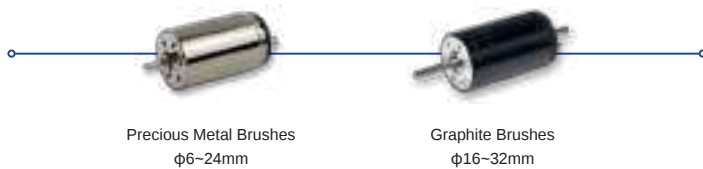


Constar 选型指南

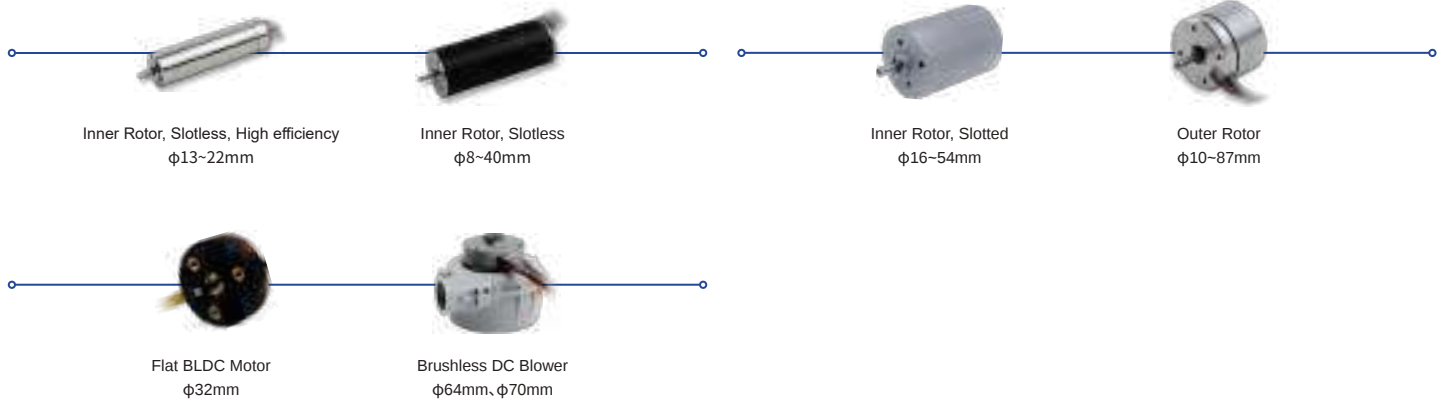
Constar selection guide

主要产品有直流无刷电机、空心杯电机、齿轮减速电机、伺服电机和涡轮风机,产品广泛应用于医疗器械、新能源汽车、机器人、工业自动化、AI 智能等多个领域。
Our extensive range encompasses brushless DC motors, coreless motors, gearmotors, servo motors, and turbine blowers, catering to a wide array of industries including medical equipment, electric cars, robotics, industrial automation, and AI intelligence.

精密直流空心杯电机 /Precision DC Coreless Motor



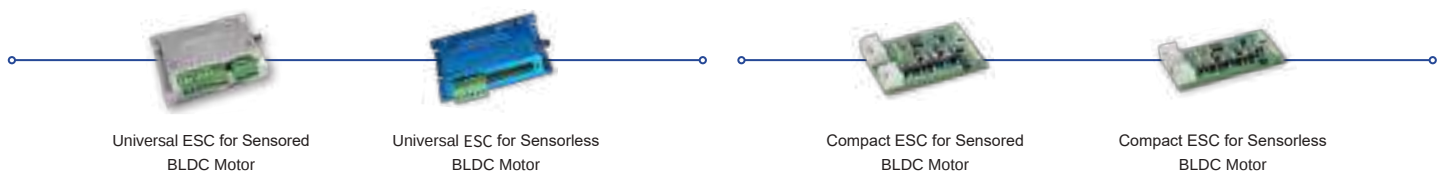
无刷电机 /Brushless DC Motor

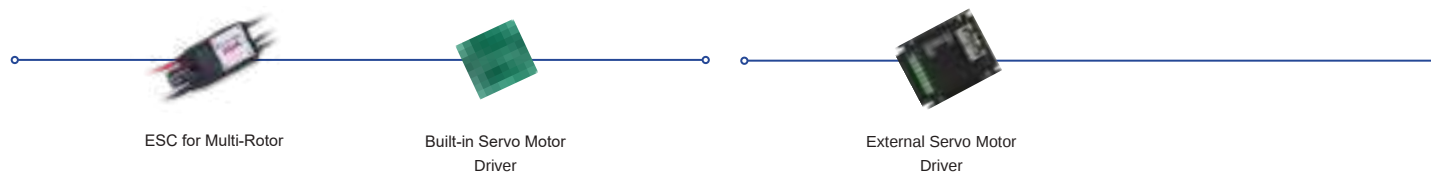


无框力矩电机 /Frameless Torque Motor

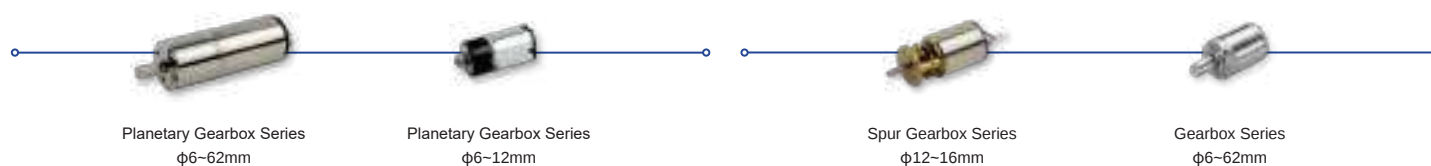


驱动器 /Controller

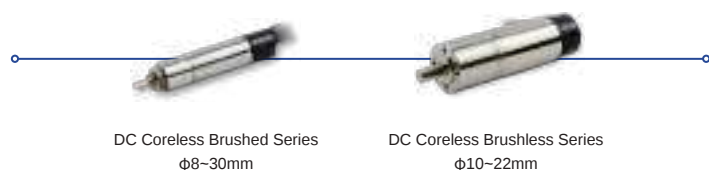




精密齿轮减速电机 / Precision Gearmotor



精密伺服电机 / Precision Servo Motor



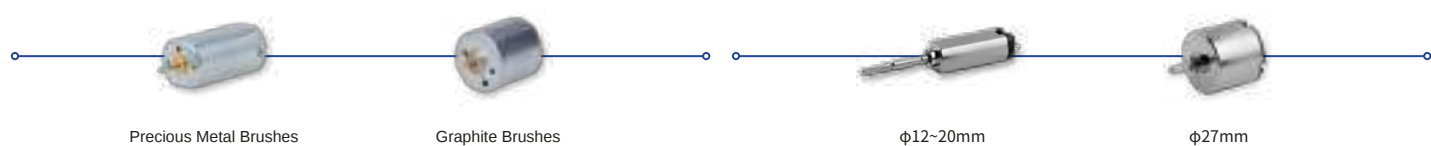
直流空心杯电机 / DC Coreless Motor



直流铁芯电机 / DC Core Motor



声波振动电机 / Sonic Motor



What can we do?

研发实力

R&D Strength

德达兴执着创新，荟萃电机行业资深专家及年轻、富有经验的专业人才，还拥有与著名高等院校合作的研发团队，以强大的研发力量带动技术突破，获得百余项专利授权。

Constar is devoted to innovation. To further that end, we have acquired both senior experts and young experienced professionals from motor industry, have our own research and development teams cooperating with famous higher educational institutions, make technological breakthroughs through our vast research and development power, and obtaining more than 100 patents.

100 ⁺	8	80 ⁺	20 ⁺
Patents	R&D Teams	Engineers	New Products/Year



我们的主要优势

Our main advantage

- 国际化研发团队 :80 余人
International R&D team: 80+ Engineers
- 与重庆大学等开展产学研合作
Established Industry-University-Institute Collaboration with Chongqing University
- 先进的研发设施
Advanced R&D Facilities
- PDM 研发管理系统
PDM R&D Management System
- 国家高新技术企业
Approved as National High-tech Enterprise
- 专利数量: 100 余项
100+ Patents
- 开发新产品: > 20 项 / 年
New Products: > 20 Projects / Year



Why choosing us?

客户定制

Customized Service

我们坚持以客户业务要求及产品应用要求为起点，组建了 8 个专业研发项目团队，与客户共同开发量身定制的个性化解决方案，帮助客户产品在市场上脱颖而出。我们的产品已成功应用于医疗器械、新能源汽车、机器人、工业自动化、AI 智能等多个领域，以其出色的可靠性赢得客户好评。

Starting out with our customers' business demands and products' application requirements, we have constructed 8 professional R&D project teams to jointly develop tailored personalized solutions with our customers to help their products win out among various products in the market. Our products are successfully applied to numerous fields like industries including medical equipment, electric cars, robotics, industrial automation, AI intelligence, etc. and have won great praise from our customers with excellent reliability.



8

R&D Project Teams

10⁺

Motor Series

10⁺

CNC Machines

48^{hour}

Preliminary Proposal



精工制造

Precision Manufacturing

德达兴充分发挥深圳的技术与市场优势，致力于客户需求产品（特别是中高端市场）的开发。与此同时，德达兴将重庆工厂作为大批量产品的生产基地，充分发挥西部地区的低成本优势，配以投入高效率的自动化、半自动化设备，卓然立足，茁壮成长。

Constar leverages its technology and market advantage in Shenzhen to devote itself to developing products (especially high-end products) required by customers. We have set a factory in Chongqing as the production base with large production volume, leveraging low-cost advantages of western regions, and have introduced effective automatic and semi-automatic equipment. These efforts have helped Constar develop and flourish in a stable and sustainable fashion.



50⁺

Production Lines

10000⁺

Clean Room

1000⁺

Automation / Semi-Automation
Equipment

30^{million sets}

Annual Capacity

品质保证

Quality Assurance

德达兴业务和生产流程均符合国际标准, 通过 ISO 9001 品质管理体系认证。Constar medical 已顺利经过 ISO 13485 体系认证, 汽车产品则符合 IATF 16949 标准的要求。

Our business and production processes meet international standards and are certified to ISO 9001 quality management systems. Constar medical has successfully passed the ISO 13485 certification system, and its automotive products meet the requirements of IATF 16949 standard.



Invention Patent

ISO 13485

ISO 9001

National High-tech Enterprises

IATF 16949

ISO 14001

ISO 45001



20⁺

Inspection Processes

0

Zero Defect
Management

在质量、安全、生产方面采用相同的标准, 确保只有优质产品出厂。

The same standards are adopted in terms of quality, safety and production to ensure that only quality products leave the factory.

Why choosing us?

助力创想 驱动未来

DRIVING IDEAS INTO
ACHIEVEMENTS



精密直流空心杯电机

PRECISION DC CORELESS MOTOR



CONTENT 目录

精密直流空心杯电机

PRECISION DC CORELESS MOTOR

贵金属电刷

PRECIOUS METAL BRUSHES

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	0615N5M	φ6*15 mm	贵金属电刷/Precious Metal Brushes	14
2	0816N5M	φ8*16.2 mm	贵金属电刷/Precious Metal Brushes	15
3	1016N7M	φ10*16 mm	贵金属电刷/Precious Metal Brushes	16
4	1020N5M	φ10*20.7 mm	贵金属电刷/Precious Metal Brushes	17
5	1024N5M	φ12*24 mm	贵金属电刷/Precious Metal Brushes	18
6	1221N5M	φ12*21 mm	贵金属电刷/Precious Metal Brushes	19
7	1221N5M2B	φ12*21 mm	贵金属电刷/Precious Metal Brushes	20
8	1230N5M	φ12.4*30.8 mm	贵金属电刷/Precious Metal Brushes	21
9	1319N5M	φ13*19.2 mm	贵金属电刷/Precious Metal Brushes	22
10	1319N7M	φ13*19.2 mm	贵金属电刷/Precious Metal Brushes	23
11	1331N5M	φ13*30.6 mm	贵金属电刷/Precious Metal Brushes	24
12	1331N7M	φ13*30.7 mm	贵金属电刷/Precious Metal Brushes	25
13	1515N5M	φ15*15.2 mm	贵金属电刷/Precious Metal Brushes	26
14	1620N5M	φ16*20 mm	贵金属电刷/Precious Metal Brushes	27
15	1625N5M	φ16*25.2 mm	贵金属电刷/Precious Metal Brushes	28
16	1625N5M2B	φ16*25.2 mm	贵金属电刷/Precious Metal Brushes	29
17	1625N9M	φ16*25.2 mm	贵金属电刷/Precious Metal Brushes	30
18	1627N5M(1)	φ16*27 mm	贵金属电刷/Precious Metal Brushes	31
19	1627N5M(2)	φ16*27 mm	贵金属电刷/Precious Metal Brushes	32
20	1630N5M	φ16*30 mm	贵金属电刷/Precious Metal Brushes	33
21	1630N5M2B	φ16*30 mm	贵金属电刷/Precious Metal Brushes	34
22	1635N9M	φ16*36.5 mm	贵金属电刷/Precious Metal Brushes	35
23	1925N9M	φ19*25 mm	贵金属电刷/Precious Metal Brushes	36
24	2224N5M	φ22*24 mm	贵金属电刷/Precious Metal Brushes	37
25	2224N5M2B	φ22*24 mm	贵金属电刷/Precious Metal Brushes	38
26	2225N5M	φ22*25.3 mm	贵金属电刷/Precious Metal Brushes	39
27	2232N5M	φ22*31.6 mm	贵金属电刷/Precious Metal Brushes	40
28	2232N5M2B	φ22*31.6 mm	贵金属电刷/Precious Metal Brushes	41
29	2232N9M	φ22*31.6 mm	贵金属电刷/Precious Metal Brushes	42

30	2232N9M2B	φ22*31.6 mm	贵金属电刷/Precious Metal Brushes	43
31	2433N5M2B	φ24*32.8 mm	贵金属电刷/Precious Metal Brushes	44

碳刷
GRAPHITE BRUSHES

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	1630N5C	φ16*30 mm	碳刷/Graphite Brushes	45
2	2233N5C	φ22*33.7 mm	碳刷/Graphite Brushes	46
3	2233N5C2B	φ22*33.7 mm	碳刷/Graphite Brushes	47
4	2543N9C2B	φ25*43.5 mm	碳刷/Graphite Brushes	48
5	2554N9C2B	φ25*53.3 mm	碳刷/Graphite Brushes	49
6	3068N9C2B	φ30*68 mm	碳刷/Graphite Brushes	50
7	3257N9C2B	φ32*57 mm	碳刷/Graphite Brushes	51

0615N5M $\varnothing 6\text{mm} \times 15\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

01-122-3.0 02-185-3.0 03-295-6.0

电机参数 / Motor Data

1	电压	Voltage	V	3.0	3.0	6.0
2	端电阻	Terminal resistance	Ω	19	18.5	10.1
3	空载转速	No-load speed	rpm	12200	18500	29500
4	空载电流	No-load current	mA	10	18	20
5	堵转转矩	Stall torque	mNm	0.33	0.2	1.07
6	堵转电流	Stall current	mA	160	160	590
7	额定转矩	Nominal torque	mNm	0.1	0.05	0.3
8	额定转速	Nominal speed	rpm	8500	13770	21230
9	额定电流	Nominal current	mA	60	50	180
10	最大输出功率	Max. output power	W	0.11	0.09	0.83
11	最大效率	Max. efficiency	%	56	44	67
12	反电势常数	Back-EMF constant	mV/rpm	0.2	0.1	0.2
13	转矩常数	Torque constant	mNm/A	2.2	1.4	1.9
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	37000	94600	27600
15	转子惯量	Rotor inertia	gcm^2	0.015	0.015	0.015
16	重量	Weight	g	2.5	2.5	2.5

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	75.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	42.1
19	热时间常数 (电机)	Thermal time constant motor	s	78
20	热时间常数 (线圈)	Thermal time constant winding	s	15
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	≤ 0.3
24	径向间隙	Radial play	mm	0.012
25	动态轴向载荷	Axial load dynamic	N	0.15
26	静态轴向载荷	Axial load static	N	10
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	0.7

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

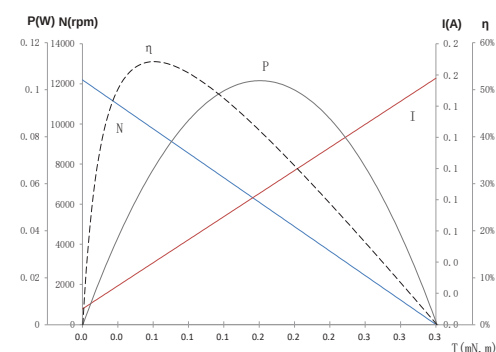
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve

0615N5M01-122-3.0



— 转速 (N) — 电流 (I) - - - 效率 (η)
—— 功率 (P)

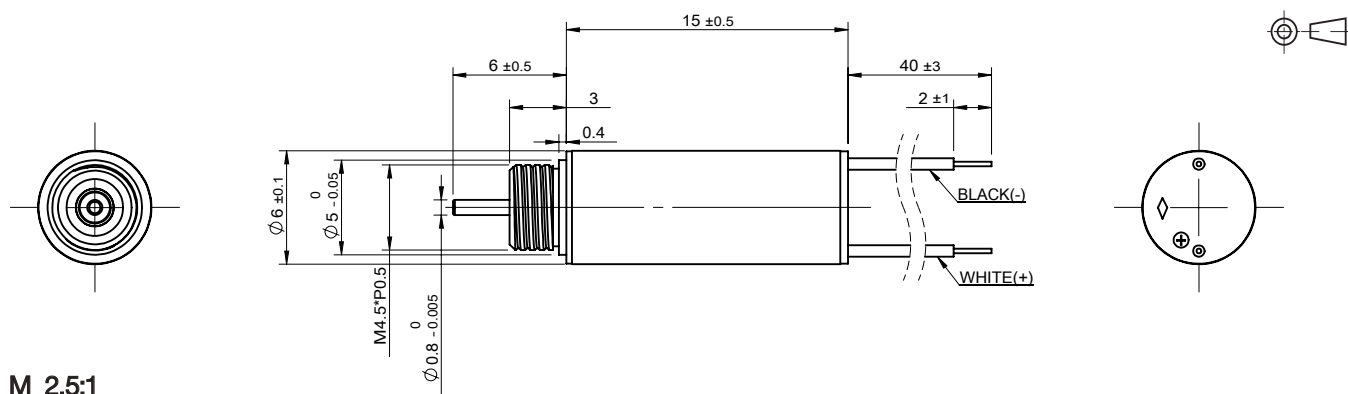
仅供参考，详细了解请以产品规格书为准。

For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 126 页

the main technical indicators of the gear group are detailed on page 126

外观图 / Outline Drawing



0816N5M $\varnothing 8\text{mm} \times 16.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

02-137-4.2 11-148-6.0 01-155-8.0

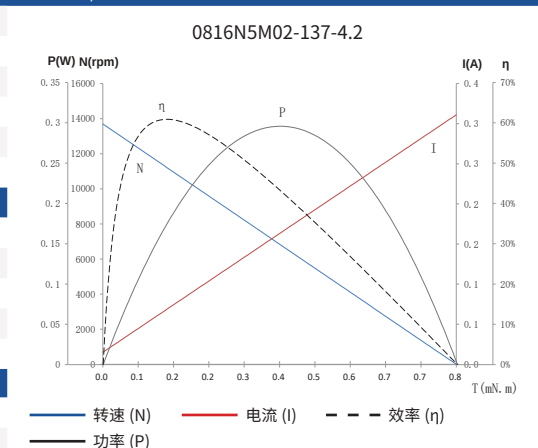
电机参数 / Motor Data

1	电压	Voltage	V	4.2	6.0	8.0			
2	端电阻	Terminal resistance	Ω	13.5	25.3	60			
3	空载转速	No-load speed	rpm	13700	14800	15500			
4	空载电流	No-load current	mA	15	7	6			
5	堵转转矩	Stall torque	mNm	0.82	0.88	0.58			
6	堵转电流	Stall current	mA	310	240	130			
7	额定转矩	Nominal torque	mNm	0.25	0.3	0.15			
8	额定转速	Nominal speed	rpm	9530	9730	11520			
9	额定电流	Nominal current	mA	100	90	40			
10	最大输出功率	Max. output power	W	0.3	0.34	0.24			
11	最大效率	Max. efficiency	%	61	69	62			
12	反电势常数	Back-EMF constant	mV/rpm	0.3	0.4	0.5			
13	转矩常数	Torque constant	mNm/A	2.8	3.8	4.7			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	16700	16900	26600			
15	转子惯量	Rotor inertia	gcm^2	0.04	0.04	0.04			
16	重量	Weight	g	3.6	3.6	3.6			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	66.2
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	27.3
19	热时常数 (电机)	Thermal time constant motor	s	104
20	热时常数 (线圈)	Thermal time constant winding	s	21
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	≤ 0.3
24	径向间隙	Radial play	mm	0.012
25	动态轴向载荷	Axial load dynamic	N	0.15
26	静态轴向载荷	Axial load static	N	10
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	0.7

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

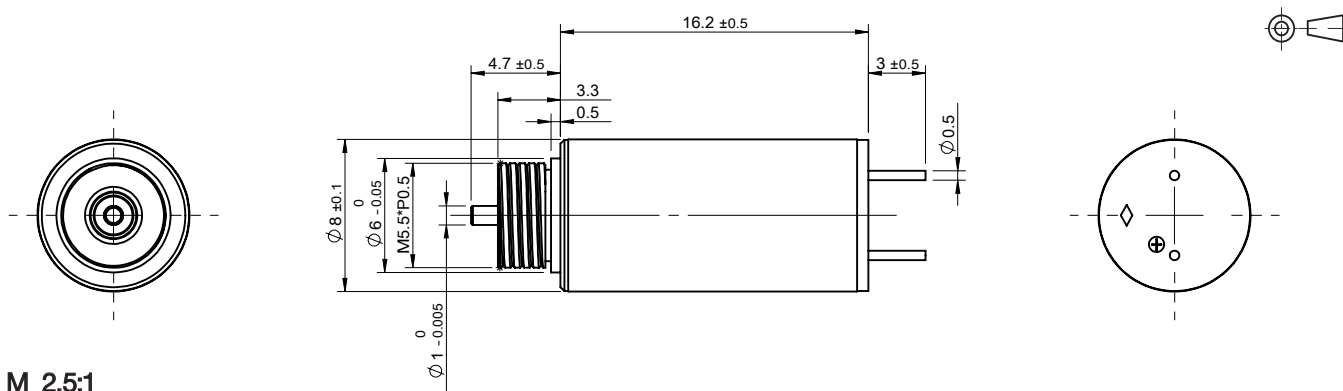
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 127 页

the main technical indicators of the gear group are detailed on page 127

外观图 / Outline Drawing



1016N7M $\varnothing$ 6mm*15mm, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。
Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				02-165-6.0	03-145-6.0	04-175-4.5			
电机参数 / Motor Data									
1	电压	Voltage	V	6.0	3.0	4.5			
2	端电阻	Terminal resistance	Ω	9.6	3.9	6.3			
3	空载转速	No-load speed	rpm	16500	14500	17500			
4	空载电流	No-load current	mA	20	40	35			
5	堵转转矩	Stall torque	mNm	2.1	1.4	1.6			
6	堵转电流	Stall current	mA	630	770	710			
7	额定转矩	Nominal torque	mNm	0.5	0.3	0.3			
8	额定转速	Nominal speed	rpm	12480	11320	14170			
9	额定电流	Nominal current	mA	170	200	160			
10	最大输出功率	Max. output power	W	0.89	0.52	0.72			
11	最大效率	Max. efficiency	%	68	60	61			
12	反电势常数	Back-EMF constant	mV/rpm	0.4	0.2	0.2			
13	转矩常数	Torque constant	mNm/A	3.4	1.9	2.3			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	8000	10600	11100			
15	转子惯量	Rotor inertia	gcm ²	0.05	0.05	0.05			
16	重量	Weight	g	6.4	6.4	6.4			
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	54.5	1016N7M02-165-6.0 — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.				
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	23.9					
19	热时间常数 (电机)	Thermal time constant motor	s	104					
20	热时间常数 (线圈)	Thermal time constant winding	s	28					
21	工作温度范围	Operating temperature range	°C	-20~+85					
22	绕组耐温等级	Thermal class of winding	°C	130					
机械参数 / Mechanical Data									
23	轴向间隙	Axial play	mm	0.01~0.15					
24	径向间隙	Radial play	mm	0.012					
25	动态轴向载荷	Axial load dynamic	N	0.15					
26	静态轴向载荷	Axial load static	N	10					
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	0.7					
其它参数 / Other Specifications									
28	极对数	No. of pole pairs		1					
29	含油轴承	Sleeve bearings		2					
30	换向结构	Number of commutator segments		7					
31	防护等级	Protection class		IP40					

可选配置 / Options

齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

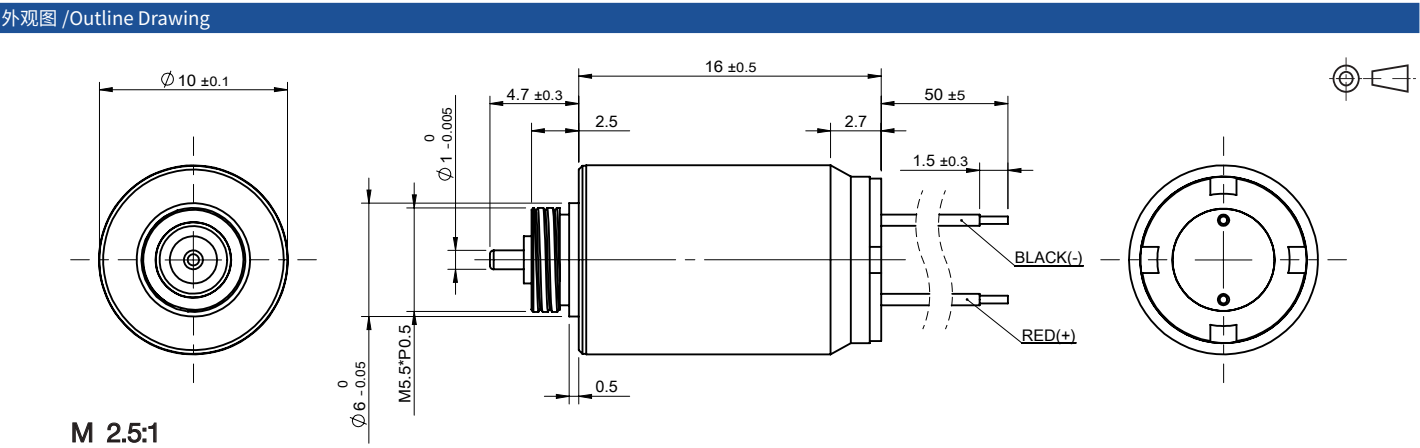
编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 128 页
the main technical parameters are detailed on page 128



1020N5M $\varnothing 10\text{mm} \times 20.7\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

52-115-3.0 14-125-6.0 16-280-7.4

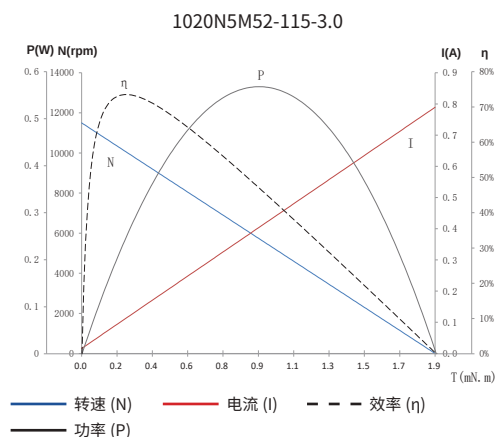
电机参数 / Motor Data

1	电压	Voltage	V	3.0	6.0	7.4			
2	端电阻	Terminal resistance	Ω	3.8	11.7	3.3			
3	空载转速	No-load speed	rpm	11500	12500	28000			
4	空载电流	No-load current	mA	16	15	30			
5	堵转转矩	Stall torque	mNm	1.9	2.2	5.5			
6	堵转电流	Stall current	mA	790	510	2240			
7	额定转矩	Nominal torque	mNm	0.5	0.5	1			
8	额定转速	Nominal speed	rpm	8460	9660	22910			
9	额定电流	Nominal current	mA	220	130	430			
10	最大输出功率	Max. output power	W	0.57	0.72	4.04			
11	最大效率	Max. efficiency	%	74	69	78			
12	反电势常数	Back-EMF constant	mV/rpm	0.3	0.5	0.3			
13	转矩常数	Torque constant	mNm/A	2.4	4.4	2.5			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	6100	6100	6100			
15	转子惯量	Rotor inertia	gcm^2	0.07	0.07	0.07			
16	重量	Weight	g	6.1	6.1	6.1			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	38.5
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	33.2
19	热时间常数 (电机)	Thermal time constant motor	s	78
20	热时间常数 (线圈)	Thermal time constant winding	s	61
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.01~0.15
24	径向间隙	Radial play	mm	0.012
25	动态轴向载荷	Axial load dynamic	N	0.15
26	静态轴向载荷	Axial load static	N	15
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	0.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

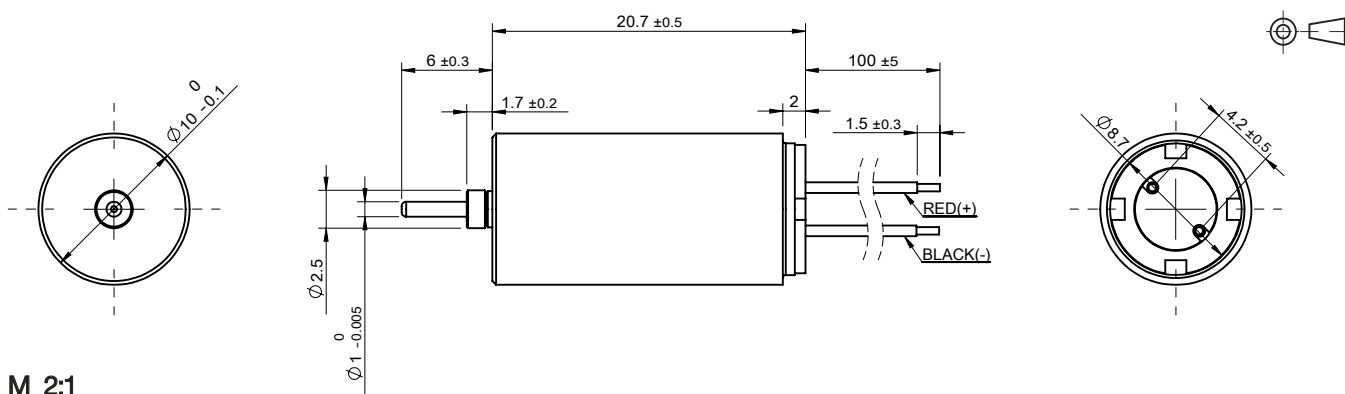
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 128 页

the main technical parameters are detailed on page 128

外观图 / Outline Drawing



1024N5M $\varnothing 10\text{mm} \times 24\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

02-130-6.0 05-150-12.0 07-95-3.0

电机参数 / Motor Data

1	电压	Voltage	V	6.0	12.0	3.0
2	端电阻	Terminal resistance	Ω	6.5	22.5	4.1
3	空载转速	No-load speed	rpm	13000	15000	9500
4	空载电流	No-load current	mA	20	10	15
5	堵转转矩	Stall torque	mNm	3.9	3.9	2.1
6	堵转电流	Stall current	mA	920	530	730
7	额定转矩	Nominal torque	mNm	1.0	1.0	0.6
8	额定转速	Nominal speed	rpm	9650	11150	6800
9	额定电流	Nominal current	mA	250	140	220
10	最大输出功率	Max. output power	W	1.32	1.53	0.53
11	最大效率	Max. efficiency	%	73	74	73
12	反电势常数	Back-EMF constant	mV/rpm	0.5	0.8	0.3
13	转矩常数	Torque constant	mNm/A	4.3	7.5	3.0
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3300	3800	4500
15	转子惯量	Rotor inertia	gcm^2	0.09	0.09	0.09
16	重量	Weight	g	9.2	9.2	9.2

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	33.6
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	36.8
19	热时常数 (电机)	Thermal time constant motor	s	113
20	热时常数 (线圈)	Thermal time constant winding	s	90
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.01~0.15
24	径向间隙	Radial play	mm	0.012
25	动态轴向载荷	Axial load dynamic	N	0.15
26	静态轴向载荷	Axial load static	N	15
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	0.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

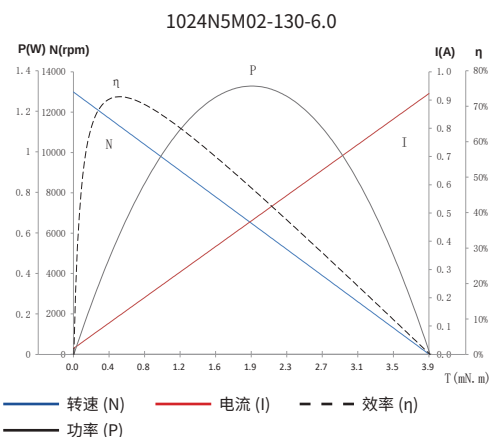
编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve



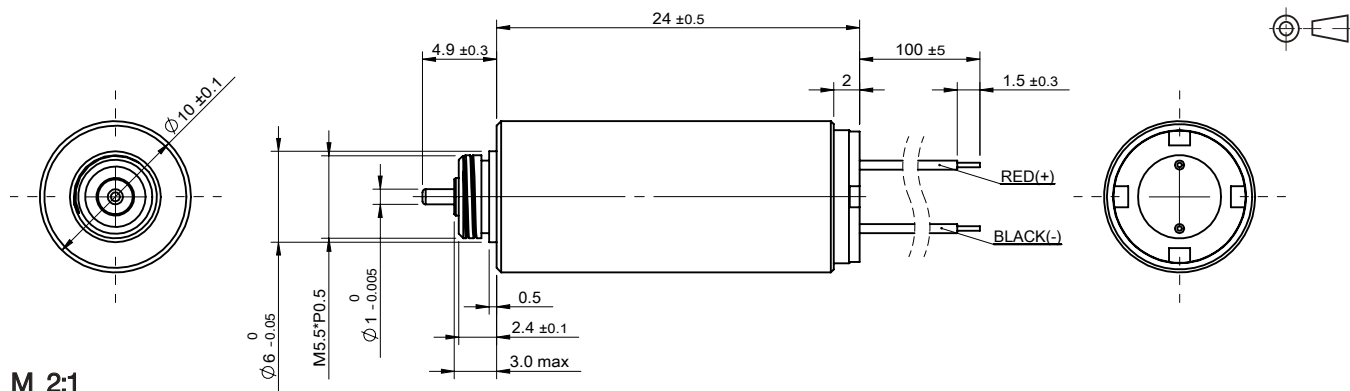
— 转速 (N) — 电流 (I) - - - 效率 (η)
— 功率 (P)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 128 页

the main technical parameters are detailed on page 128

外观图 / Outline Drawing



M 2:1

1221N5M $\varnothing 12\text{mm} \times 21\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

34-78-3.3 65-125-3.7 66-78-6.0

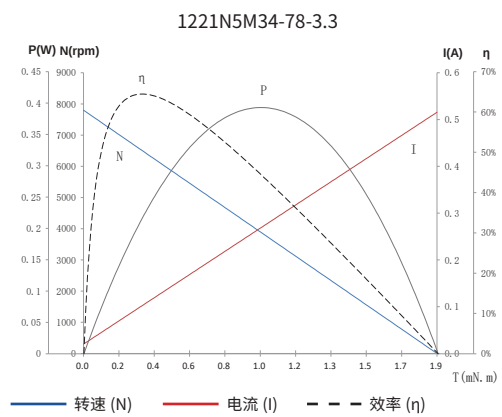
电机参数 / Motor Data

1	电压	Voltage	V	3.3	3.7	6.0			
2	端电阻	Terminal resistance	Ω	6.4	2.1	14.5			
3	空载转速	No-load speed	rpm	7800	12500	7800			
4	空载电流	No-load current	mA	20	35	25			
5	堵转转矩	Stall torque	mNm	1.9	4.8	2.7			
6	堵转电流	Stall current	mA	520	1760	410			
7	额定转矩	Nominal torque	mNm	0.5	1.0	1.0			
8	额定转速	Nominal speed	rpm	5790	9880	4860			
9	额定电流	Nominal current	mA	150	400	170			
10	最大输出功率	Max. output power	W	0.40	1.57	0.54			
11	最大效率	Max. efficiency	%	65	74	57			
12	反电势常数	Back-EMF constant	mV/rpm	0.4	0.3	0.7			
13	转矩常数	Torque constant	mNm/A	3.9	2.8	6.9			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	4000	2600	2900			
15	转子惯量	Rotor inertia	gcm^2	0.15	0.15	0.15			
16	重量	Weight	g	10.4	10.4	10.4			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	33.3
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	35.3
19	热时间常数 (电机)	Thermal time constant motor	s	144
20	热时间常数 (线圈)	Thermal time constant winding	s	120
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02-0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

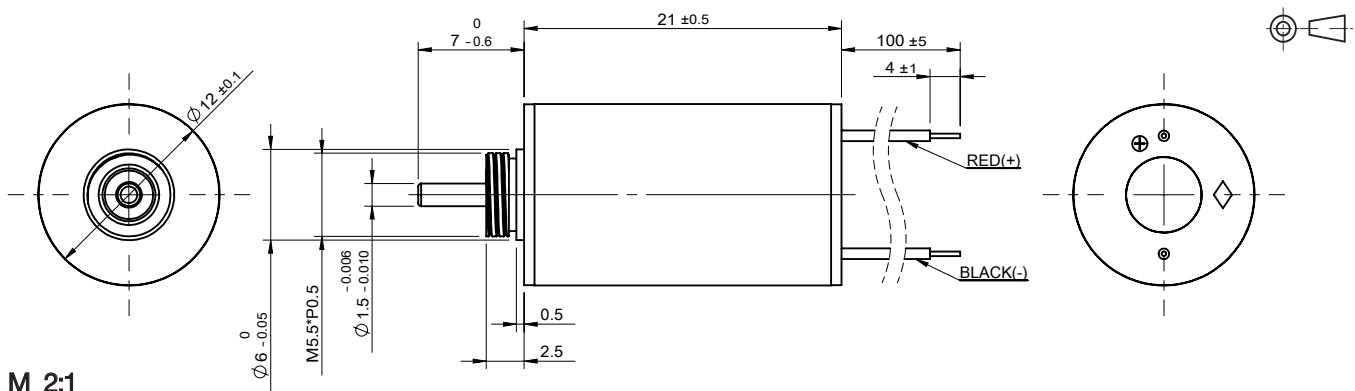
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 129 页

the main technical parameters are detailed on page 129

外观图 / Outline Drawing



1221N5M2B $\varnothing 12\text{mm} \times 21\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

27-28-3.0 34-78-3.3 55-79-3.3 45-84-5.0 58-91-12.0

电机参数 / Motor Data

1	电压	Voltage	V	3.0	3.3	3.3	5.0	12.0
2	端电阻	Terminal resistance	Ω	37.0	6.4	6.9	9.8	50
3	空载转速	No-load speed	rpm	2800	7800	7900	8400	9100
4	空载电流	No-load current	mA	5	12	15	10	5
5	堵转转矩	Stall torque	mNm	0.7	2.0	1.8	2.8	2.9
6	堵转电流	Stall current	mA	80	520	480	510	240
7	额定转矩	Nominal torque	mNm	0.1	0.2	0.2	0.5	0.5
8	额定转速	Nominal speed	rpm	2410	7020	7020	6890	7530
9	额定电流	Nominal current	mA	20	60	70	100	50
10	最大输出功率	Max. output power	W	0.05	0.41	0.37	0.61	0.69
11	最大效率	Max. efficiency	%	56	72	68	74	73
12	反电势常数	Back-EMF constant	mV/rpm	1.0	0.4	0.4	0.6	1.3
13	转矩常数	Torque constant	mNm/A	9.6	3.9	3.9	5.6	12.3
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3900	3900	4400	3000	3100
15	转子惯量	Rotor inertia	gcm^2	0.15	0.15	0.15	0.15	0.15
16	重量	Weight	g	10.4	10.4	10.4	10.4	10.4

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	33.3
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	35.3
19	热时间常数 (电机)	Thermal time constant motor	s	144
20	热时间常数 (线圈)	Thermal time constant winding	s	120
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	滚动轴承	Ball bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

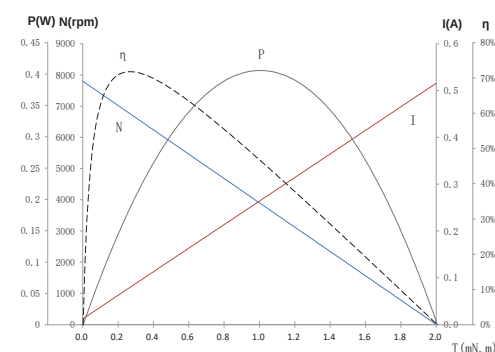
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve

1221N5M2B34-78-3.3



— 转速 (N) — 电流 (I) - - - 效率 (η)
—— 功率 (P)

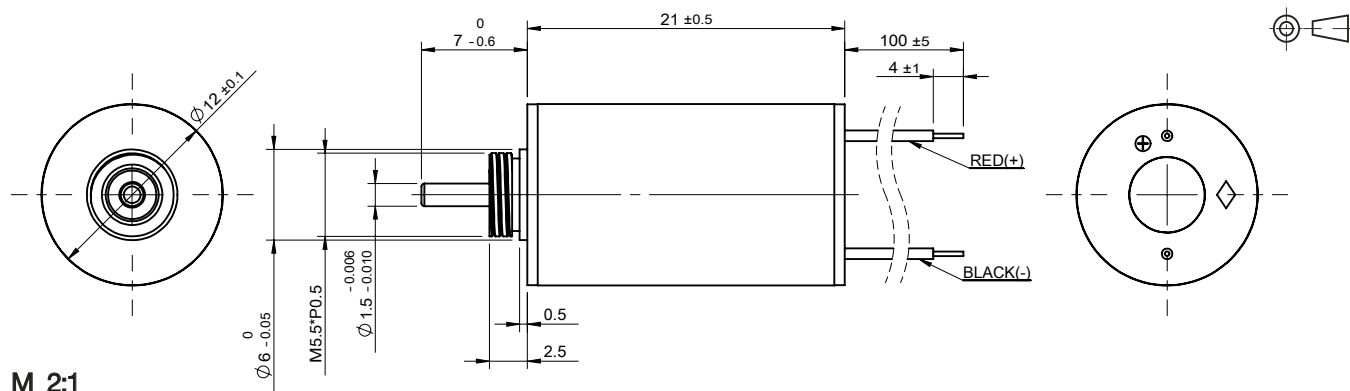
仅供参考，详细了解请以产品规格书为准。

For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 129 页

the main technical parameters are detailed on page 129

外观图 / Outline Drawing



1230N5M $\varnothing 12.4\text{mm} \times 30.8\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

06-44-5.3 15-113-12.0 05-76-24.0

电机参数 / Motor Data

1	电压	Voltage	V	5.3	12.0	24.0			
2	端电阻	Terminal resistance	Ω	12.9	10.4	81			
3	空载转速	No-load speed	rpm	4450	11300	7600			
4	空载电流	No-load current	mA	10	15	5			
5	堵转转矩	Stall torque	mNm	4.4	11.4	8.7			
6	堵转电流	Stall current	mA	410	1150	300			
7	额定转矩	Nominal torque	mNm	0.9	3	2.0			
8	额定转速	Nominal speed	rpm	3550	8320	5860			
9	额定电流	Nominal current	mA	90	310	70			
10	最大输出功率	Max. output power	W	0.52	3.36	1.74			
11	最大效率	Max. efficiency	%	71	79	76			
12	反电势常数	Back-EMF constant	mV/rpm	1.2	1	3.1			
13	转矩常数	Torque constant	mNm/A	11.1	10	29.6			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1000	990	900			
15	转子惯量	Rotor inertia	gcm^2	0.25	0.25	0.25			
16	重量	Weight	g	17.7	17.7	17.9			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	35.2
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	12.5
19	热时常数 (电机)	Thermal time constant motor	s	202
20	热时常数 (线圈)	Thermal time constant winding	s	20
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

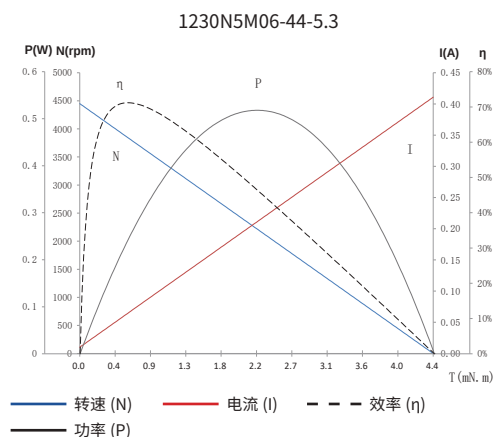
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

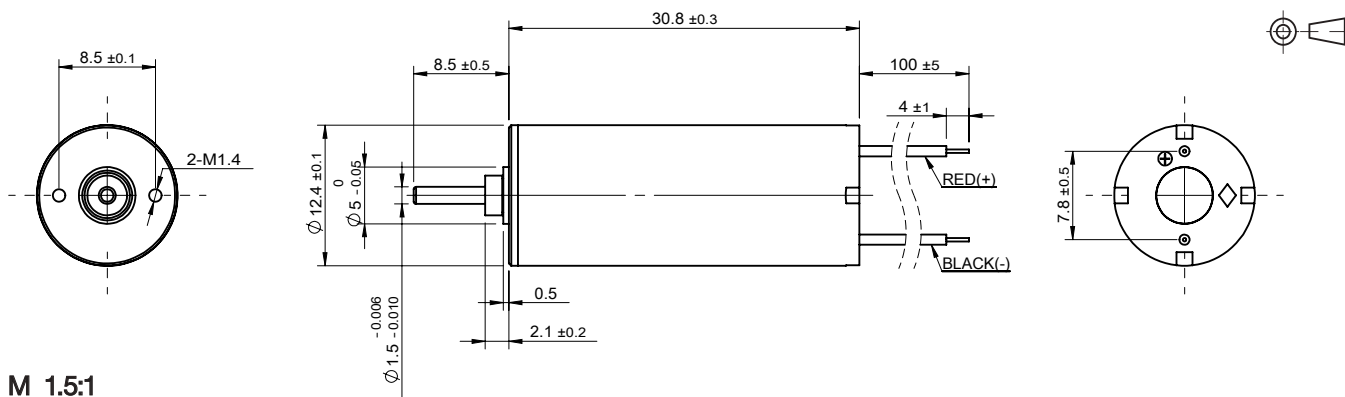
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

外观图 / Outline Drawing



1319N5M $\varnothing 13\text{mm} \times 19.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

02-86-6.0 03-120-9.0 01-130-12.0

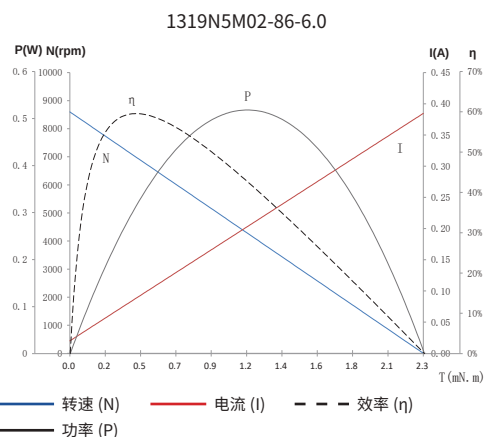
电机参数 / Motor Data

1	电压	Voltage	V	6.0	9.0	12.0
2	端电阻	Terminal resistance	Ω	15.6	22.5	33.0
3	空载转速	No-load speed	rpm	8600	12000	13000
4	空载电流	No-load current	mA	20	12	12
5	堵转转矩	Stall torque	mNm	2.3	2.7	3.0
6	堵转电流	Stall current	mA	380	400	360
7	额定转矩	Nominal torque	mNm	0.5	1.0	1.0
8	额定转速	Nominal speed	rpm	6710	7550	8620
9	额定电流	Nominal current	mA	100	160	130
10	最大输出功率	Max. output power	W	0.51	0.85	1.01
11	最大效率	Max. efficiency	%	59	68	67
12	反电势常数	Back-EMF constant	mV/rpm	0.7	0.7	0.9
13	转矩常数	Torque constant	mNm/A	6.3	6.9	8.5
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3800	4500	4400
15	转子惯量	Rotor inertia	gcm^2	0.2	0.2	0.2
16	重量	Weight	g	11	11	11

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	34.5
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	22.5
19	热时间常数 (电机)	Thermal time constant motor	s	280
20	热时间常数 (线圈)	Thermal time constant winding	s	120
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

齿轮组主要技术指标详见第 130 页

Gearbox: planetary gearbox

the main technical indicators of the gear group are detailed on page 130

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

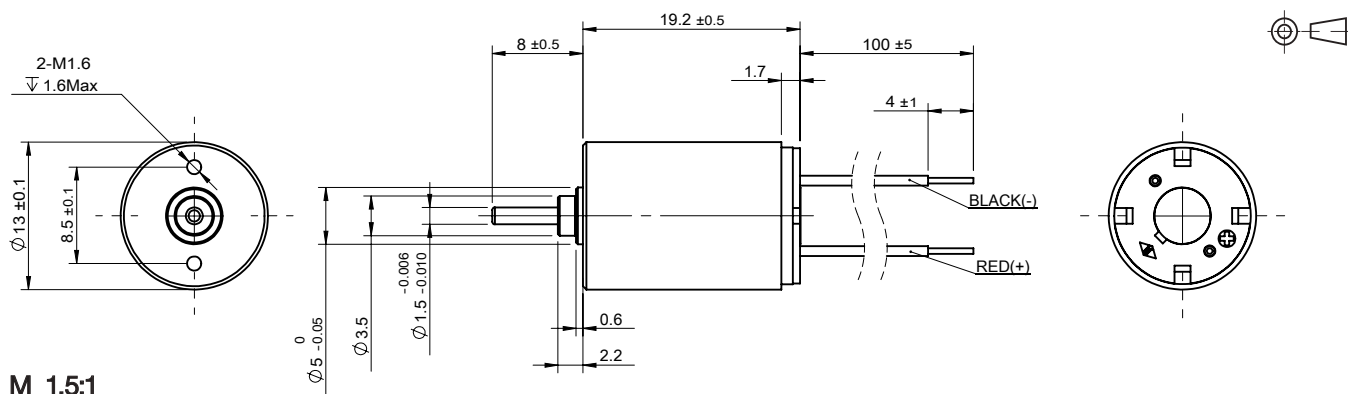
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



M 1.5:1

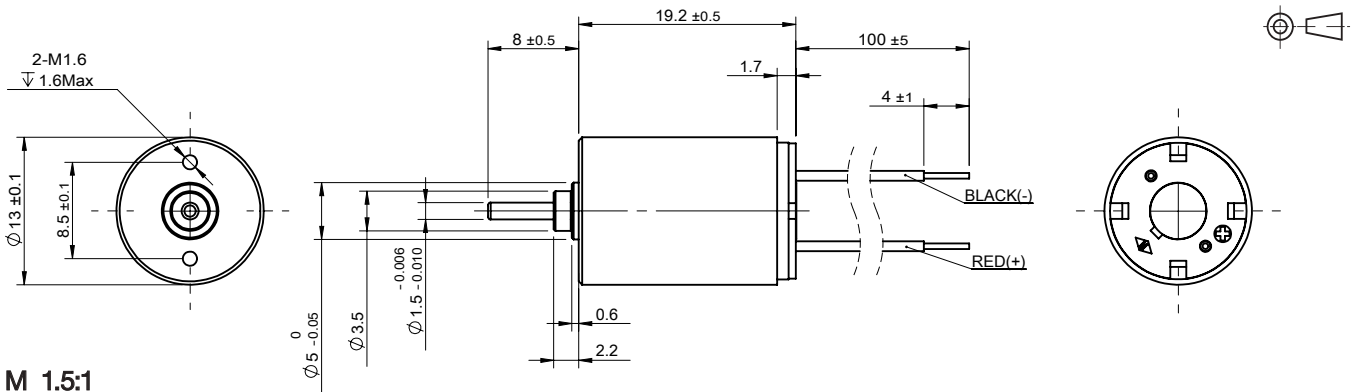
1319N7M $\varnothing 13\text{mm} \times 19.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。
Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				02-88-6.0	03-90-9.0	01-125-12.0			
电机参数 / Motor Data									
1	电压	Voltage	V	6.0	9.0	12.0			
2	端电阻	Terminal resistance	Ω	14.7	25.5	32.0			
3	空载转速	No-load speed	rpm	8800	10000	12500			
4	空载电流	No-load current	mA	20	15	12			
5	堵转转矩	Stall torque	mNm	2.4	2.8	3.3			
6	堵转电流	Stall current	mA	410	350	380			
7	额定转矩	Nominal torque	mNm	0.5	0.5	1.0			
8	额定转速	Nominal speed	rpm	6980	8190	8670			
9	额定电流	Nominal current	mA	100	80	120			
10	最大输出功率	Max. output power	W	0.56	0.72	1.07			
11	最大效率	Max. efficiency	%	61	63	68			
12	反电势常数	Back-EMF constant	mV/rpm	0.6	0.9	0.9			
13	转矩常数	Torque constant	mNm/A	6.2	8.2	8.9			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3600	3600	3800			
15	转子惯量	Rotor inertia	gcm ²	0.2	0.2	0.2			
16	重量	Weight	g	11	11	11			
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	34.5	1319N7M02-88-6.0 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P)				
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	22.5					
19	热时间常数 (电机)	Thermal time constant motor	s	280					
20	热时间常数 (线圈)	Thermal time constant winding	s	120					
21	工作温度范围	Operating temperature range	°C	-20~+85					
22	绕组耐温等级	Thermal class of winding	°C	130					
机械参数 / Mechanical Data									
23	轴向间隙	Axial play	mm	0.02~0.15					
24	径向间隙	Radial play	mm	0.014					
25	动态轴向载荷	Axial load dynamic	N	0.8					
26	静态轴向载荷	Axial load static	N	30					
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4					
其它参数 / Other Specifications									
28	极对数	No. of pole pairs		1					
29	含油轴承	Sleeve bearings		2					
30	换向结构	Number of commutator segments		7					
31	防护等级	Protection class		IP30					

可选配置 / Options	
齿轮箱：行星齿轮	齿轮组主要技术指标详见第 130 页
Gearbox: planetary gearbox	the main technical parameters are detailed on page 130
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	

外观图 / Outline Drawing



1331N5M $\varnothing 13\text{mm} \times 31.5\text{mm}$, 贵金属电刷 Precious Metal Brushes

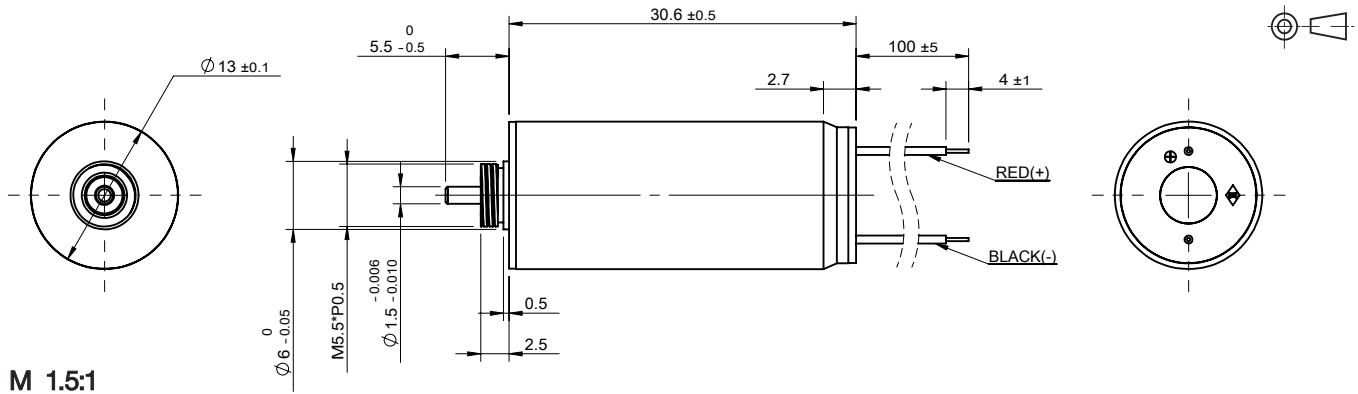
应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				02-40-4.5	01-67-9.0	09-87-12.0				
电机参数 / Motor Data										
1	电压	Voltage	V	4.5	9.0	12.0				
2	端电阻	Terminal resistance	Ω	9.9	17.7	15.7				
3	空载转速	No-load speed	rpm	4000	6700	8700				
4	空载电流	No-load current	mA	5	7	10				
5	堵转转矩	Stall torque	mNm	4.7	6.4	9.7				
6	堵转电流	Stall current	mA	450	510	760				
7	额定转矩	Nominal torque	mNm	1	1	2				
8	额定转速	Nominal speed	rpm	3150	5650	6920				
9	额定电流	Nominal current	mA	100	90	160				
10	最大输出功率	Max. output power	W	0.5	1.12	2.22				
11	最大效率	Max. efficiency	%	80	78	78				
12	反电势常数	Back-EMF constant	mV/rpm	1.1	1.3	1.4				
13	转矩常数	Torque constant	mNm/A	10.6	12.7	13.0				
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	800	1100	900				
15	转子惯量	Rotor inertia	gcm ²	0.52	0.52	0.52				
16	重量	Weight	g	20	20	20				
热参数 / Thermal Data				特性曲线 / Characteristics Curve						
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	34.8						
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	38.6						
19	热时常数 (电机)	Thermal time constant motor	s	211						
20	热时常数 (线圈)	Thermal time constant winding	s	163						
21	工作温度范围	Operating temperature range	°C	-20~+85						
22	绕组耐温等级	Thermal class of winding	°C	130						
机械参数 / Mechanical Data				1331N5M02-40-4.5 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.						
23	轴向间隙	Axial play	mm							0.02~0.15
24	径向间隙	Radial play	mm							0.014
25	动态轴向载荷	Axial load dynamic	N							0.8
26	静态轴向载荷	Axial load static	N							30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4						
其它参数 / Other Specifications				1331N5M02-40-4.5 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.						
28	极对数	No. of pole pairs								1
29	含油轴承	Sleeve bearings								2
30	换向结构	Number of commutator segments								5
31	防护等级	Protection class		IP30						

可选配置 / Options				齿轮组主要技术指标详见第 130 页					
齿轮箱：行星齿轮				the main technical indicators of the gear group are detailed on page 130					
Gearbox: planetary gearbox									
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range									
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges									
轴 Shaft: 长度 length / 异形 shape									
轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings									
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length									

外观图 / Outline Drawing



1331N7M $\varnothing 13\text{mm} \times 30.7\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

02-110-6.0 03-148-12.0 01-96-24.0

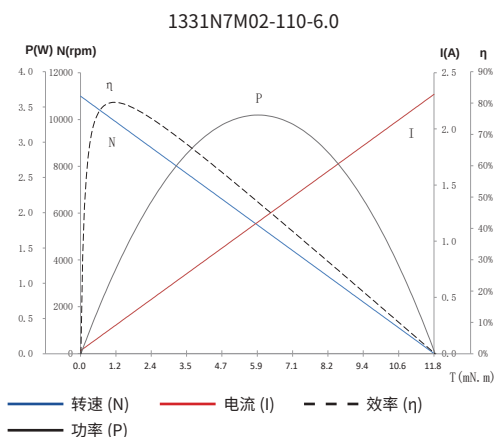
电机参数 / Motor Data

1	电压	Voltage	V	6.0	12.0	24.0
2	端电阻	Terminal resistance	Ω	2.6	5	38
3	空载转速	No-load speed	rpm	11000	14800	9200
4	空载电流	No-load current	mA	25	40	8
5	堵转转矩	Stall torque	mNm	11.8	18.0	15.3
6	堵转电流	Stall current	mA	2310	2400	630
7	额定转矩	Nominal torque	mNm	2	4	4.0
8	额定转速	Nominal speed	rpm	9130	11510	6790
9	额定电流	Nominal current	mA	410	570	170
10	最大输出功率	Max. output power	W	3.39	6.97	3.69
11	最大效率	Max. efficiency	%	80	76	79
12	反电势常数	Back-EMF constant	mV/rpm	0.5	0.8	2.6
13	转矩常数	Torque constant	mNm/A	5.2	7.6	24.6
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	900	800	600
15	转子惯量	Rotor inertia	gcm^2	0.52	0.52	0.52
16	重量	Weight	g	20	20	20

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	34.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	38.6
19	热时常数 (电机)	Thermal time constant motor	s	211
20	热时常数 (线圈)	Thermal time constant winding	s	163
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02-0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	7
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

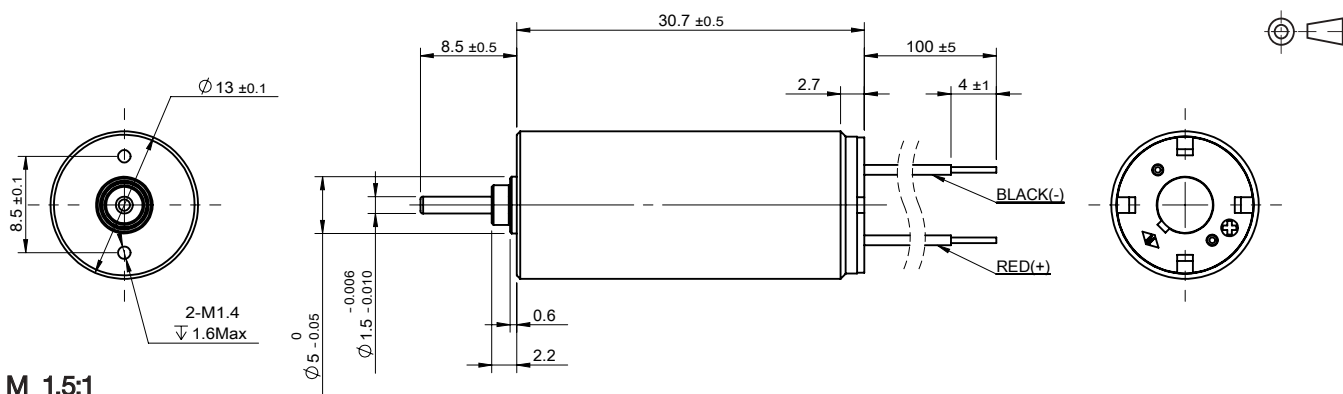
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 130 页

the main technical parameters are detailed on page 130

外观图 / Outline Drawing

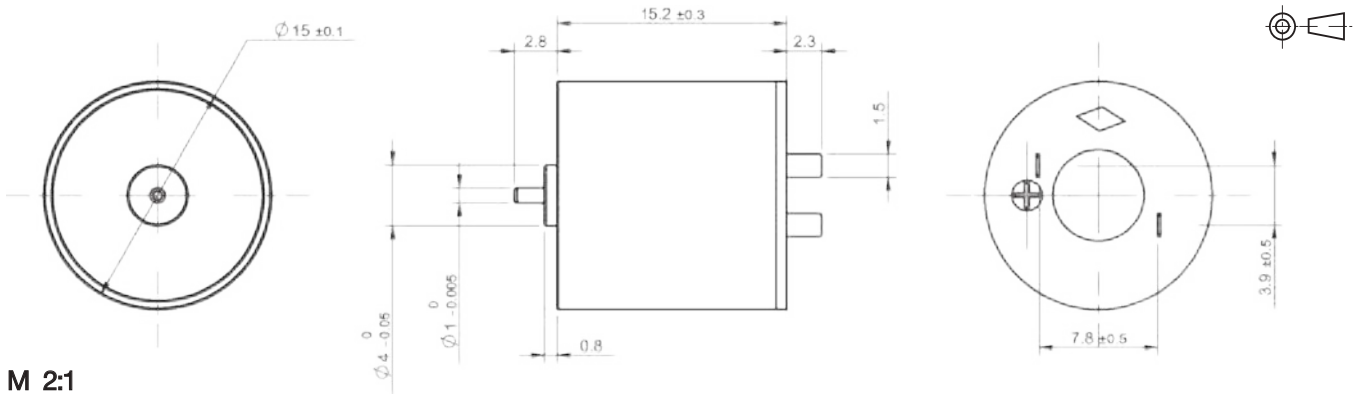


1515N5M $\varnothing 15\text{mm} \times 15.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。
Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				04-120-6.0	02-260-7.4	07-220-18.0			
电机参数 / Motor Data									
1	电压	Voltage	V	6.0	7.4	18.0			
2	端电阻	Terminal resistance	Ω	5.7	2.5	30.5			
3	空载转速	No-load speed	rpm	12000	26000	22000			
4	空载电流	No-load current	mA	20	40	15			
5	堵转转矩	Stall torque	mNm	4.8	7.8	4.4			
6	堵转电流	Stall current	mA	1050	2960	590			
7	额定转矩	Nominal torque	mNm	1	1.5	1			
8	额定转速	Nominal speed	rpm	9510	21020	16980			
9	额定电流	Nominal current	mA	230	600	150			
10	最大输出功率	Max. output power	W	1.52	5.33	2.52			
11	最大效率	Max. efficiency	%	74	78	71			
12	反电势常数	Back-EMF constant	mV/rpm	0.5	0.3	0.8			
13	转矩常数	Torque constant	mNm/A	4.7	2.7	7.6			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	2500	3300	5000			
15	转子惯量	Rotor inertia	gcm ²	0.21	0.21	0.21			
16	重量	Weight	g	12	12	12			
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	32.1	1515N5M04-120-6.0 — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.				
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	26.3					
19	热时常数 (电机)	Thermal time constant motor	s	130					
20	热时常数 (线圈)	Thermal time constant winding	s	98					
21	工作温度范围	Operating temperature range	°C	-20~+85					
22	绕组耐温等级	Thermal class of winding	°C	130					
机械参数 / Mechanical Data									
23	轴向间隙	Axial play	mm	≤0.3					
24	径向间隙	Radial play	mm	0.012					
25	动态轴向载荷	Axial load dynamic	N	0.15					
26	静态轴向载荷	Axial load static	N	15					
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1					
其它参数 / Other Specifications									
28	极对数	No. of pole pairs		1					
29	含油轴承	Sleeve bearings		2					
30	换向结构	Number of commutator segments		5					
31	防护等级	Protection class		IP40					
可选配置 / Options									
齿轮箱：行星齿轮				齿轮组主要技术指标详见第 131 页					
Gearbox: planetary gearbox				the main technical indicators of the gear group are detailed on page 131					
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range									
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges									
轴 Shaft: 长度 length / 异形 shape									
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length									

外观图 / Outline Drawing



1620N5M $\varnothing 16\text{mm} \times 20\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

32-48-3.0 01-75-5.0 30-180-6.0

电机参数 / Motor Data

1	电压	Voltage	V	3.0	5.0	6.0
2	端电阻	Terminal resistance	Ω	6.5	13.3	2.9
3	空载转速	No-load speed	rpm	4850	7500	18000
4	空载电流	No-load current	mA	5	12	50
5	堵转转矩	Stall torque	mNm	2.7	2.3	6.3
6	堵转电流	Stall current	mA	460	380	2070
7	额定转矩	Nominal torque	mNm	0.5	0.5	1.0
8	额定转速	Nominal speed	rpm	3940	5850	15130
9	额定电流	Nominal current	mA	90	90	370
10	最大输出功率	Max. output power	W	0.34	0.45	2.96
11	最大效率	Max. efficiency	%	80	68	71
12	反电势常数	Back-EMF constant	mV/rpm	0.6	0.6	0.3
13	转矩常数	Torque constant	mNm/A	5.8	6.2	3.1
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1800	3300	2900
15	转子惯量	Rotor inertia	gcm^2	0.25	0.25	0.25
16	重量	Weight	g	17	17	17

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	35.7
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	25.6
19	热时间常数 (电机)	Thermal time constant motor	s	172
20	热时间常数 (线圈)	Thermal time constant winding	s	122
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

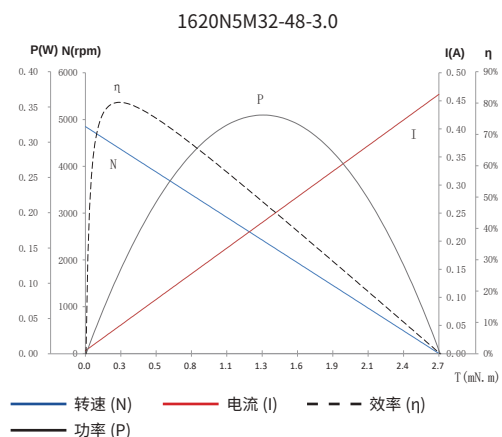
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

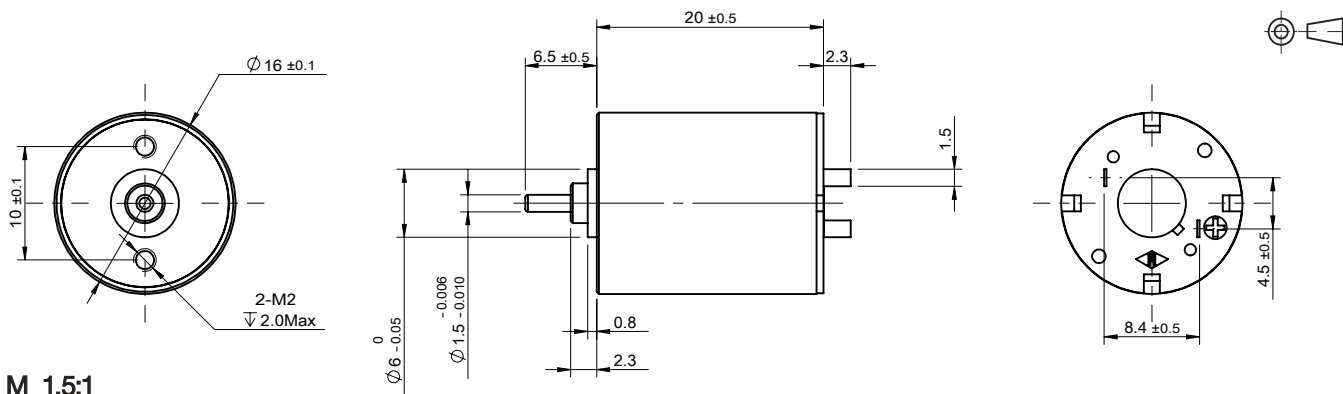
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

外观图 / Outline Drawing

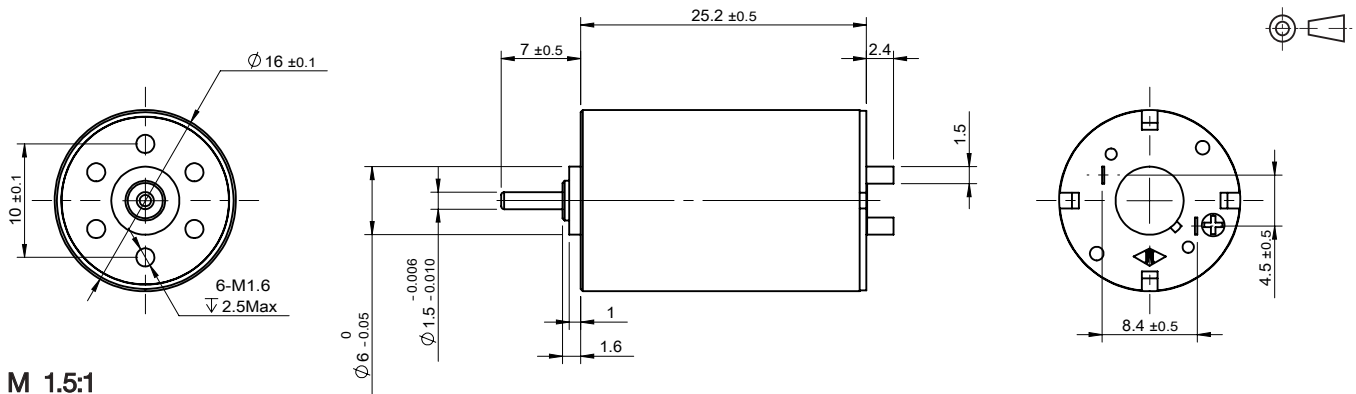


1625N5M $\varnothing$ 16mm*25.2mm, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。
Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				24-60-3.7	56-100-6.0	51-145-15.0
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	6.0	15.0
2	端电阻	Terminal resistance	Ω	7.6	6.1	45
3	空载转速	No-load speed	rpm	6000	10000	14500
4	空载电流	No-load current	mA	12	18	10
5	堵转转矩	Stall torque	mNm	2.7	5.4	3.1
6	堵转电流	Stall current	mA	490	980	330
7	额定转矩	Nominal torque	mNm	0.5	1.0	1.0
8	额定转速	Nominal speed	rpm	4910	8150	9770
9	额定电流	Nominal current	mA	100	200	110
10	最大输出功率	Max. output power	W	0.43	1.42	1.17
11	最大效率	Max. efficiency	%	71	75	68
12	反电势常数	Back-EMF constant	mV/rpm	0.6	0.6	1.0
13	转矩常数	Torque constant	mNm/A	5.7	5.6	9.6
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	2200	1800	4700
15	转子惯量	Rotor inertia	gcm ²	0.78	0.78	0.78
16	重量	Weight	g	21	21	21
热参数 / Thermal Data				特性曲线 / Characteristics Curve		
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	24.8	1625N5M24-60-3.7 — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.	
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	30.3		
19	热时常数 (电机)	Thermal time constant motor	s	201		
20	热时常数 (线圈)	Thermal time constant winding	s	175		
21	工作温度范围	Operating temperature range	°C	-20~+85		
22	绕组耐温等级	Thermal class of winding	°C	130		
机械参数 / Mechanical Data						
23	轴向间隙	Axial play	mm	0.02~0.15		
24	径向间隙	Radial play	mm	0.014		
25	动态轴向载荷	Axial load dynamic	N	0.8		
26	静态轴向载荷	Axial load static	N	30		
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4		
其它参数 / Other Specifications						
28	极对数	No. of pole pairs	1			
29	含油轴承	Sleeve bearings	2			
30	换向结构	Number of commutator segments	5			
31	防护等级	Protection class	IP30			

外观图 / Outline Drawing



1625N5M2B $\varnothing 12\text{mm} \times 21\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

47-96-7.5 65-92-9.0 66-110-12.0

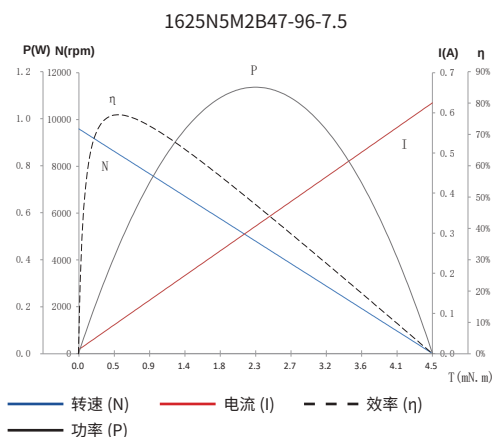
电机参数 / Motor Data

1	电压	Voltage	V	7.5	9.0	12.0			
2	端电阻	Terminal resistance	Ω	12.0	25.5	36			
3	空载转速	No-load speed	rpm	9600	9200	11000			
4	空载电流	No-load current	mA	10	9	8			
5	堵转转矩	Stall torque	mNm	4.6	3.1	3.3			
6	堵转电流	Stall current	mA	630	350	330			
7	额定转矩	Nominal torque	mNm	1.0	0.5	0.5			
8	额定转速	Nominal speed	rpm	7490	7720	9320			
9	额定电流	Nominal current	mA	150	60	60			
10	最大输出功率	Max. output power	W	1.15	0.75	0.94			
11	最大效率	Max. efficiency	%	76	71	71			
12	反电势常数	Back-EMF constant	mV/rpm	0.8	1.0	1.1			
13	转矩常数	Torque constant	mNm/A	7.3	9.1	10.2			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	2100	3000	3400			
15	转子惯量	Rotor inertia	gcm^2	0.78	0.78	0.78			
16	重量	Weight	g	19	19	19			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	24.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	30.3
19	热时间常数 (电机)	Thermal time constant motor	s	201
20	热时间常数 (线圈)	Thermal time constant winding	s	175
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	滚动轴承	Ball bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

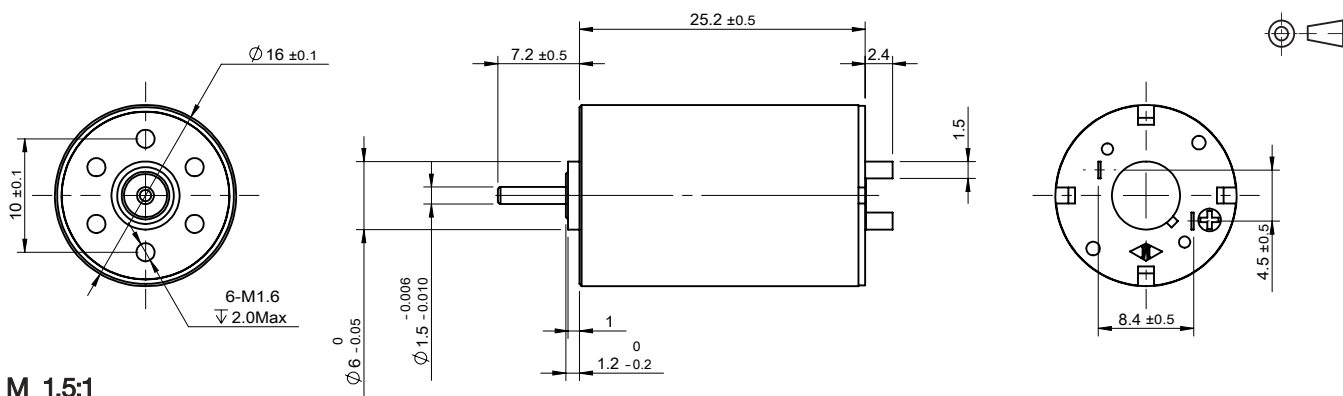
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 131 页

the main technical parameters are detailed on page 131

外观图 / Outline Drawing



1625N9M $\varnothing 16\text{mm} \times 25.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

01-115-3.0 02-92-6.0 03-115-12.0

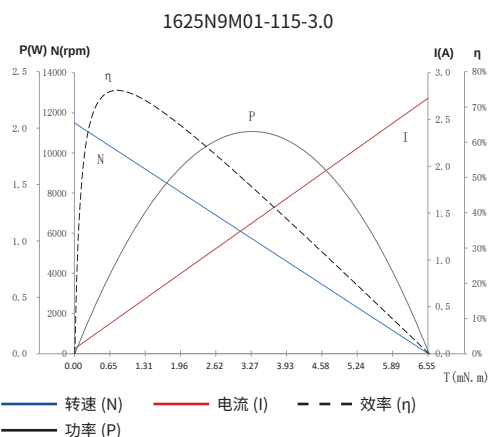
电机参数 / Motor Data

1	电压	Voltage	V	3.0	6.0	12.0
2	端电阻	Terminal resistance	Ω	1.1	4.4	13.4
3	空载转速	No-load speed	rpm	11500	9200	11500
4	空载电流	No-load current	mA	50	20	12
5	堵转转矩	Stall torque	mNm	6.6	8.2	8.7
6	堵转电流	Stall current	mA	2730	1360	900
7	额定转矩	Nominal torque	mNm	1	1.5	1.5
8	额定转速	Nominal speed	rpm	9750	7520	9520
9	额定电流	Nominal current	mA	460	260	160
10	最大输出功率	Max. output power	W	2	2	2.6
11	最大效率	Max. efficiency	%	75	77	78
12	反电势常数	Back-EMF constant	mV/rpm	0.3	0.6	1
13	转矩常数	Torque constant	mNm/A	2.4	6.1	9.8
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1800	1100	1300
15	转子惯量	Rotor inertia	gcm^2	0.78	0.78	0.78
16	重量	Weight	g	22	22	22

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	24.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	30.3
19	热时间常数 (电机)	Thermal time constant motor	s	201
20	热时间常数 (线圈)	Thermal time constant winding	s	175
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	9
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

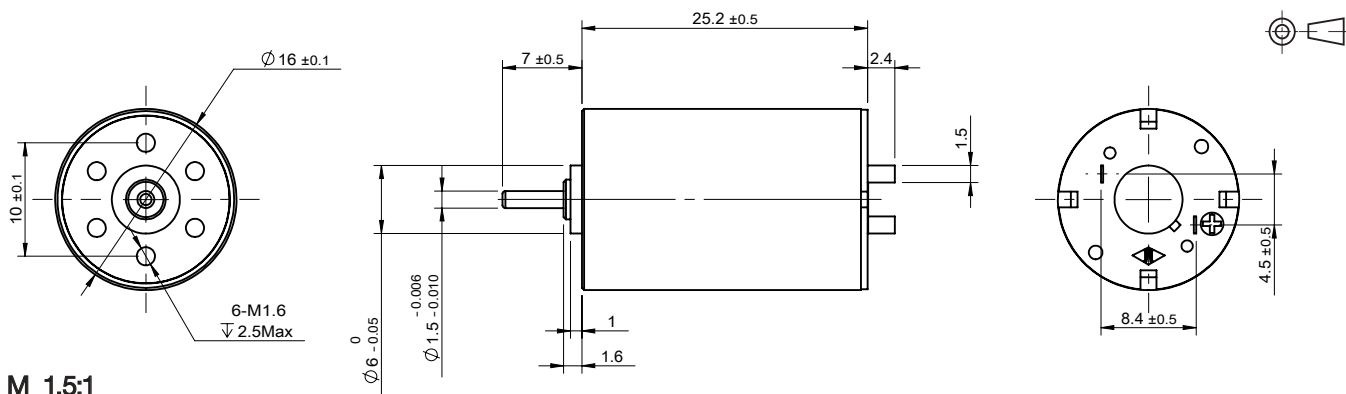
轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 131 页

the main technical parameters are detailed on page 131

外观图 / Outline Drawing



1627N5M (1) $\varnothing 16\text{mm} \times 27\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

36-66-5.0 20-113-6.0 14-118-12.0

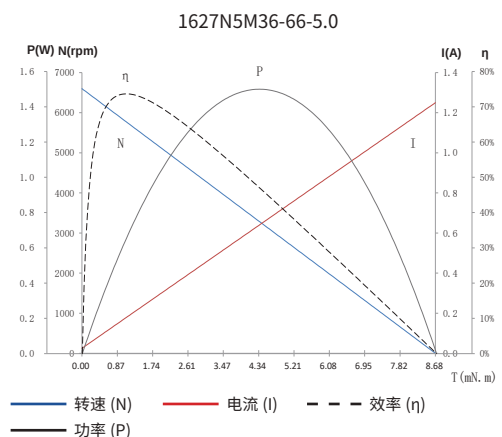
电机参数 / Motor Data

1	电压	Voltage	V	5.0	6.0	12.0
2	端电阻	Terminal resistance	Ω	4.0	1.8	8.7
3	空载转速	No-load speed	rpm	6600	11300	11800
4	空载电流	No-load current	mA	25	50	20
5	堵转转矩	Stall torque	mNm	8.7	16.4	13
6	堵转电流	Stall current	mA	1250	3330	1380
7	额定转矩	Nominal torque	mNm	2	4	3
8	额定转速	Nominal speed	rpm	5080	8540	9080
9	额定电流	Nominal current	mA	310	850	330
10	最大输出功率	Max. output power	W	1.5	4.9	4
11	最大效率	Max. efficiency	%	74	77	77
12	反电势常数	Back-EMF constant	mV/rpm	0.7	0.5	1
13	转矩常数	Torque constant	mNm/A	7.1	5.0	9.6
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	800	700	900
15	转子惯量	Rotor inertia	gcm^2	0.6	0.6	0.6
16	重量	Weight	g	23	23	23

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	24.9
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	29.4
19	热时间常数 (电机)	Thermal time constant motor	s	228
20	热时间常数 (线圈)	Thermal time constant winding	s	176
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

— 转速 (N) — 电流 (I) — 效率 (η)
— 功率 (P)
仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

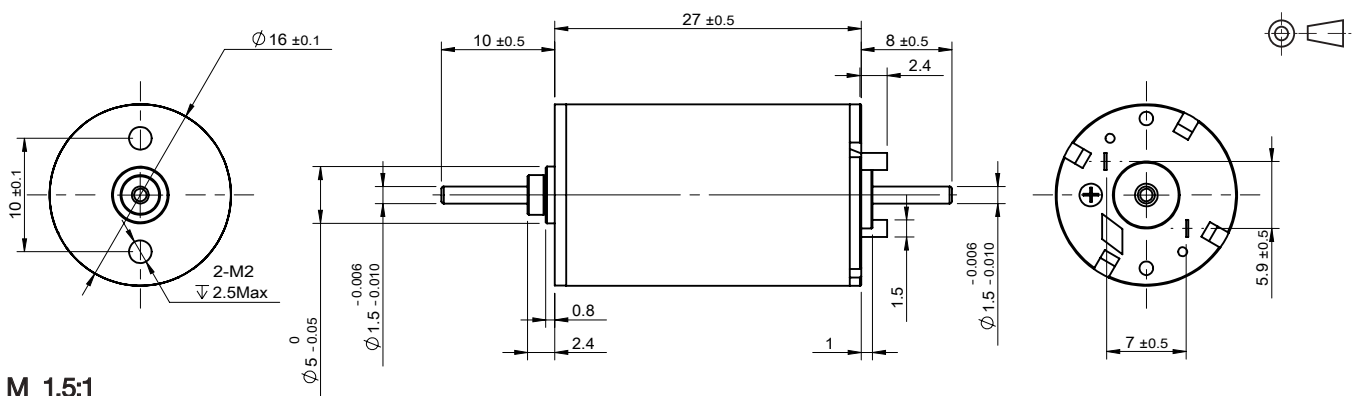
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



1627N5M (2) $\varnothing$ 16mm*27mm, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

27-66-6.0 21-113-12.0 16-85-24.0

电机参数 / Motor Data

1	电压	Voltage	V	6.0	12.0	24.0
2	端电阻	Terminal resistance	Ω	8.2	11.8	72
3	空载转速	No-load speed	rpm	6600	11300	7500
4	空载电流	No-load current	mA	11	13	6
5	堵转转矩	Stall torque	mNm	6.1	10.1	9.7
6	堵转电流	Stall current	mA	730	1020	330
7	额定转矩	Nominal torque	mNm	1	1.5	1.5
8	额定转速	Nominal speed	rpm	5530	9620	6340
9	额定电流	Nominal current	mA	130	160	60
10	最大输出功率	Max. output power	W	1.1	3	1.9
11	最大效率	Max. efficiency	%	77	79	75
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1	3.1
13	转矩常数	Torque constant	mNm/A	8.6	10	30
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1100	1100	800
15	转子惯量	Rotor inertia	gcm ²	0.7	0.7	0.7
16	重量	Weight	g	25	25	25

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	24.9
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	19.4
19	热时间常数 (电机)	Thermal time constant motor	s	228
20	热时间常数 (线圈)	Thermal time constant winding	s	176
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

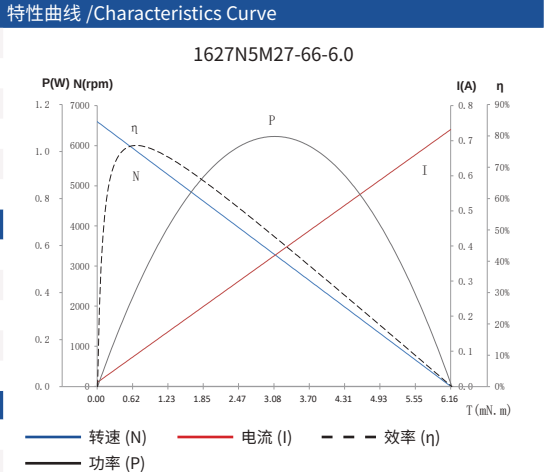
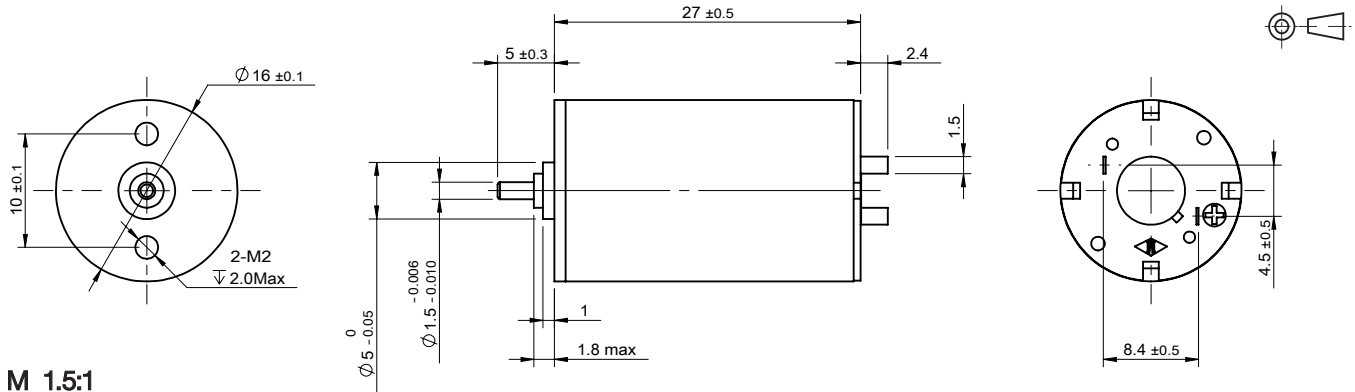
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 131 页

the main technical indicators of the gear group are detailed on page 131

1630N5M $\varnothing 16\text{mm} \times 30\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

39-65-5.0 29-78-7.4 36-87-12.0

电机参数 / Motor Data

1	电压	Voltage	V	5.0	7.4	12.0			
2	端电阻	Terminal resistance	Ω	5.7	5.9	9.4			
3	空载转速	No-load speed	rpm	6500	7800	8700			
4	空载电流	No-load current	mA	15	15	7			
5	堵转转矩	Stall torque	mNm	6.2	11.1	16.7			
6	堵转电流	Stall current	mA	880	1250	1280			
7	额定转矩	Nominal torque	mNm	1	2.5	4.0			
8	额定转速	Nominal speed	rpm	5460	6040	6610			
9	额定电流	Nominal current	mA	150	290	310			
10	最大输出功率	Max. output power	W	1.1	2.3	3.8			
11	最大效率	Max. efficiency	%	76	79	86			
12	反电势常数	Back-EMF constant	mV/rpm	0.8	0.9	1.4			
13	转矩常数	Torque constant	mNm/A	7.2	9.0	13.1			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1000	700	500			
15	转子惯量	Rotor inertia	gcm^2	0.6	0.6	0.6			
16	重量	Weight	g	26	26	26			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	26.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3.8
19	热时常数 (电机)	Thermal time constant motor	s	242
20	热时常数 (线圈)	Thermal time constant winding	s	232
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

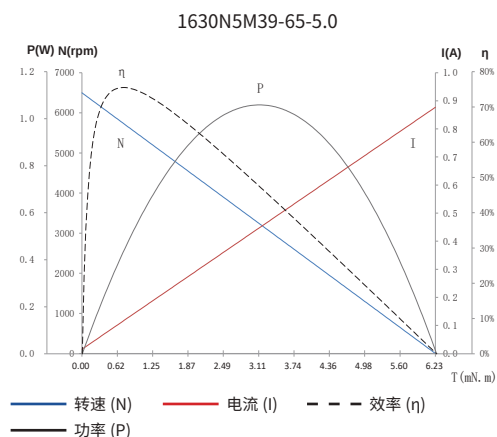
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

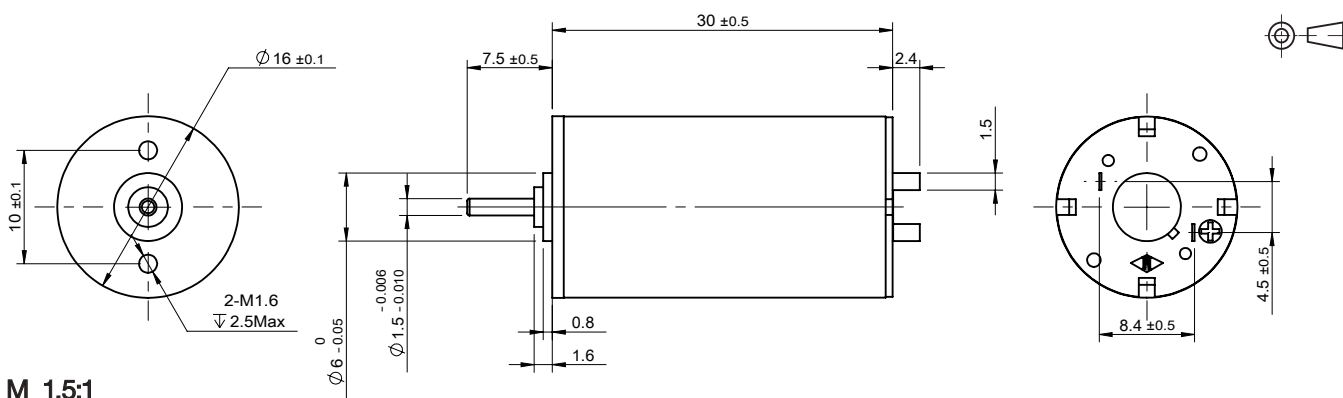
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

外观图 / Outline Drawing



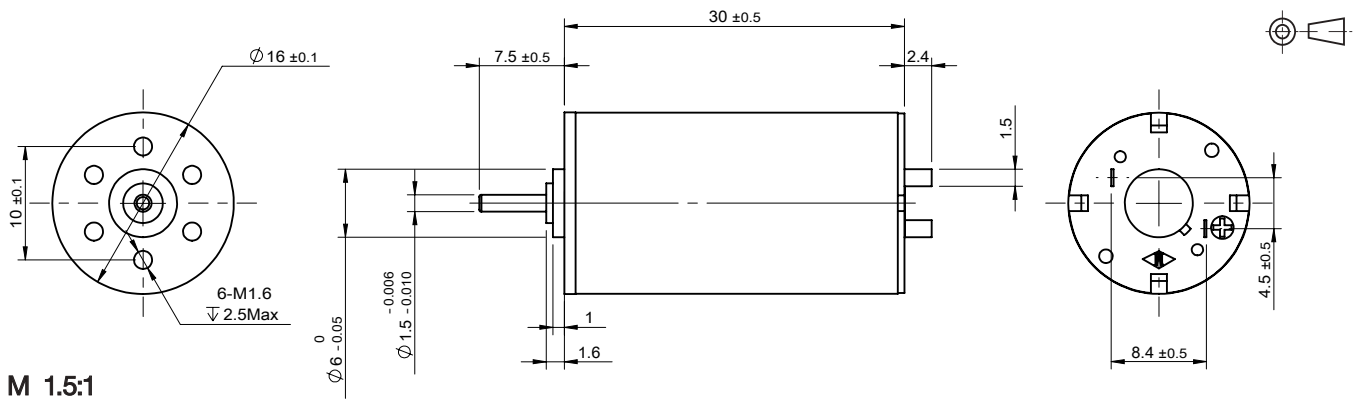
1630N5M2B

Ø 16mm*30mm, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。
Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				40-67-6.0	41-85-9.0	42-96-12.0					
电机参数 / Motor Data											
1	电压	Voltage	V	6.0	9.0	12.0					
2	端电阻	Terminal resistance	Ω	5.6	7.9	11.5					
3	空载转速	No-load speed	rpm	6700	8500	9600					
4	空载电流	No-load current	mA	8	8	8					
5	堵转转矩	Stall torque	mNm	9.0	11.4	12.2					
6	堵转电流	Stall current	mA	1070	1140	1040					
7	额定转矩	Nominal torque	mNm	1.0	2.0	3.0					
8	额定转速	Nominal speed	rpm	5960	7000	7240					
9	额定电流	Nominal current	mA	130	210	260					
10	最大输出功率	Max. output power	W	1.6	2.5	3.1					
11	最大效率	Max. efficiency	%	84	84	83					
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.1	1.2					
13	转矩常数	Torque constant	mNm/A	8.5	10	11.8					
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	700	700	800					
15	转子惯量	Rotor inertia	gcm ²	0.6	0.6	0.6					
16	重量	Weight	g	26	26	26					
热参数 / Thermal Data				特性曲线 / Characteristics Curve							
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	26.8	1630N5M2B40-67-6.0 — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.						
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3.8							
19	热时常数 (电机)	Thermal time constant motor	s	242							
20	热时常数 (线圈)	Thermal time constant winding	s	232							
21	工作温度范围	Operating temperature range	°C	-20~+85							
22	绕组耐温等级	Thermal class of winding	°C	130							
机械参数 / Mechanical Data											
23	轴向间隙	Axial play	mm	0.02~0.15							
24	径向间隙	Radial play	mm	0.025							
25	动态轴向载荷	Axial load dynamic	N	0.8							
26	静态轴向载荷	Axial load static	N	30							
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1							
其它参数 / Other Specifications											
28	极对数	No. of pole pairs		1							
29	滚动轴承	Ball bearings		2							
30	换向结构	Number of commutator segments		5							
31	防护等级	Protection class		IP30							

外观图 / Outline Drawing



1635N9M $\varnothing 16\text{mm} \times 36.5\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

02-77-12.0 01-137-24.0 04-130-24.0

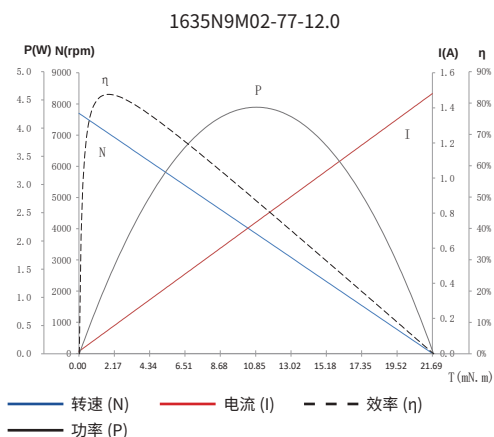
电机参数 / Motor Data

1	电压	Voltage	V	12.0	24.0	24.0
2	端电阻	Terminal resistance	Ω	8.1	11	13.4
3	空载转速	No-load speed	rpm	7700	13700	13000
4	空载电流	No-load current	mA	12	15	12
5	堵转转矩	Stall torque	mNm	21.7	36.0	31.1
6	堵转电流	Stall current	mA	1480	2180	1790
7	额定转矩	Nominal torque	mNm	5	6	6
8	额定转速	Nominal speed	rpm	5920	11410	10490
9	额定电流	Nominal current	mA	350	380	350
10	最大输出功率	Max. output power	W	4.4	12.9	10.6
11	最大效率	Max. efficiency	%	83	84	84
12	反电势常数	Back-EMF constant	mV/rpm	1.5	1.7	1.8
13	转矩常数	Torque constant	mNm/A	14.8	16.6	17.5
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	400	400
15	转子惯量	Rotor inertia	gcm^2	0.8	0.8	0.8
16	重量	Weight	g	33	33	33

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	22.6
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	5
19	热时常数 (电机)	Thermal time constant motor	s	255
20	热时常数 (线圈)	Thermal time constant winding	s	212
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	9
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

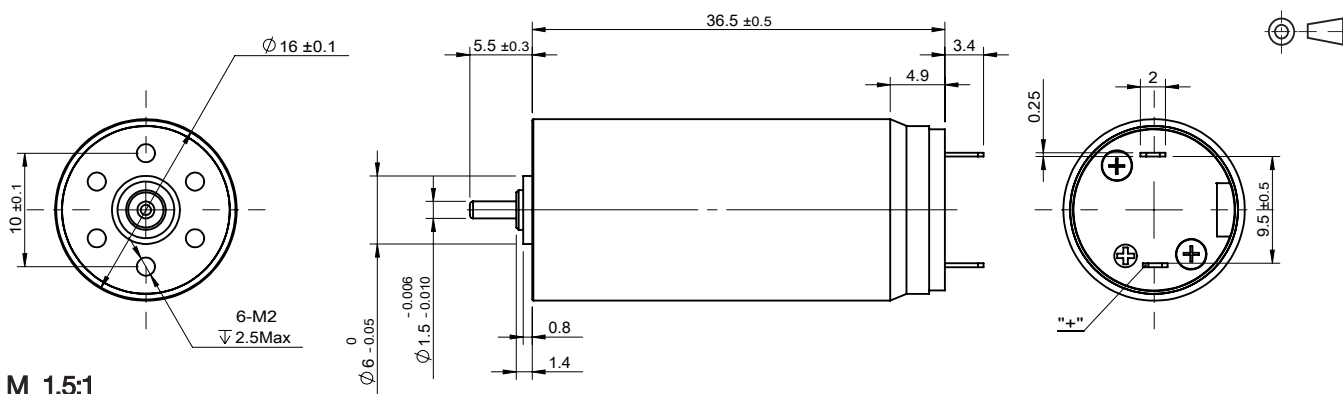
轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 131 页

the main technical parameters are detailed on page 131

外观图 / Outline Drawing



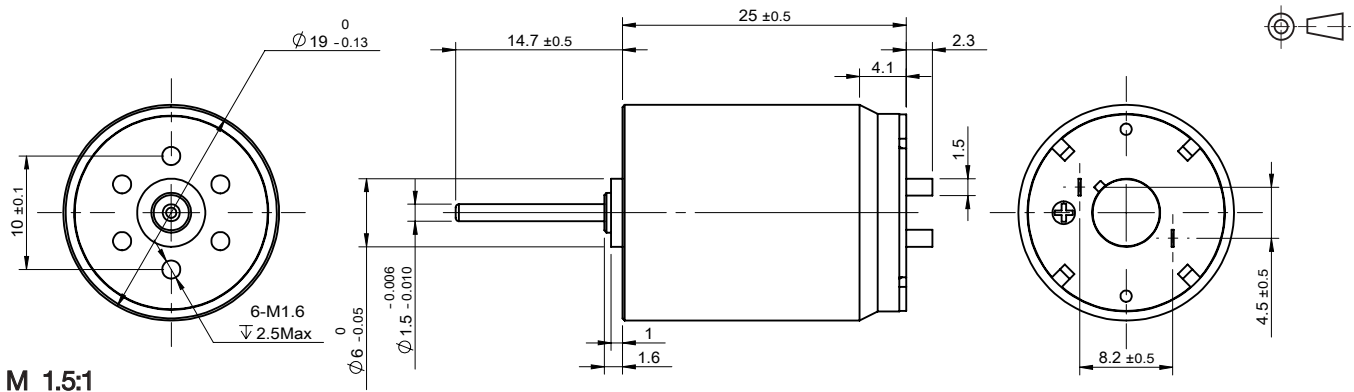
1925N9M

Ø 19mm*25mm, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。
Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				01-69-6.0	02-80-12.0	03-85-24.0			
电机参数 / Motor Data									
1	电压	Voltage	V	6.0	12.0	24.0			
2	端电阻	Terminal resistance	Ω	2.8	9.6	28.3			
3	空载转速	No-load speed	rpm	6900	8000	8500			
4	空载电流	No-load current	mA	25	15	9			
5	堵转转矩	Stall torque	mNm	17.4	17.5	22.4			
6	堵转电流	Stall current	mA	2140	1250	850			
7	额定转矩	Nominal torque	mNm	4	4	4			
8	额定转速	Nominal speed	rpm	5310	6170	6980			
9	额定电流	Nominal current	mA	510	300	160			
10	最大输出功率	Max. output power	W	3.1	3.7	5			
11	最大效率	Max. efficiency	%	80	79	81			
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.5	2.8			
13	转矩常数	Torque constant	mNm/A	8.2	14.2	26.7			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	500	400			
15	转子惯量	Rotor inertia	gcm ²	0.6	0.6	0.6			
16	重量	Weight	g	32	32	32			
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	22.4	1925N9M01-69-6.0 P(W) N(rpm) I(A) η — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.				
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3.8					
19	热时间常数 (电机)	Thermal time constant motor	s	267					
20	热时间常数 (线圈)	Thermal time constant winding	s	232					
21	工作温度范围	Operating temperature range	°C	-20~+85					
22	绕组耐温等级	Thermal class of winding	°C	130					
机械参数 / Mechanical Data									
23	轴向间隙	Axial play	mm	0.02~0.15					
24	径向间隙	Radial play	mm	0.014					
25	动态轴向载荷	Axial load dynamic	N	0.8					
26	静态轴向载荷	Axial load static	N	30					
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4					
其它参数 / Other Specifications									
28	极对数	No. of pole pairs	1						
29	含油轴承	Sleeve bearings	2						
30	换向结构	Number of commutator segments	9						
31	防护等级	Protection class	IP30						

外观图 / Outline Drawing



2224N5M $\varnothing 22\text{mm} \times 24\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

11-105-6.0 09-158-12.0 12-112-12.0

电机参数 / Motor Data

1	电压	Voltage	V	6.0	12.0	12.0
2	端电阻	Terminal resistance	Ω	1.3	2	5.9
3	空载转速	No-load speed	rpm	10500	15800	11200
4	空载电流	No-load current	mA	60	55	30
5	堵转转矩	Stall torque	mNm	24.6	42.7	20.2
6	堵转电流	Stall current	mA	4620	6000	2030
7	额定转矩	Nominal torque	mNm	5	5	4
8	额定转速	Nominal speed	rpm	8360	13950	8980
9	额定电流	Nominal current	mA	990	750	430
10	最大输出功率	Max. output power	W	6.8	17.7	5.9
11	最大效率	Max. efficiency	%	79	82	77
12	反电势常数	Back-EMF constant	mV/rpm	0.6	0.8	1.1
13	转矩常数	Torque constant	mNm/A	5.4	7.2	10.1
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	400	600
15	转子惯量	Rotor inertia	gcm^2	2.4	2.4	2.4
16	重量	Weight	g	40	40	40

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	22.3
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	6.1
19	热时间常数 (电机)	Thermal time constant motor	s	313
20	热时间常数 (线圈)	Thermal time constant winding	s	218
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	60
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

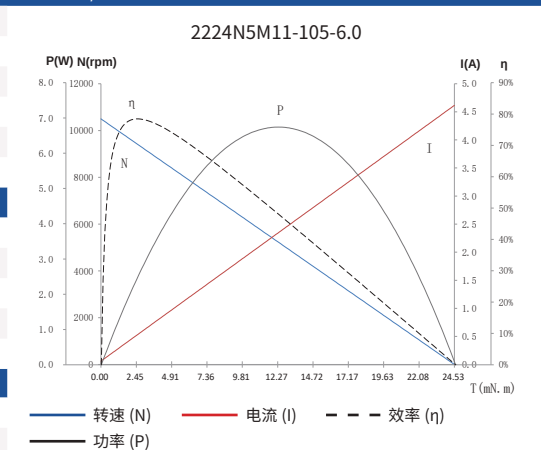
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

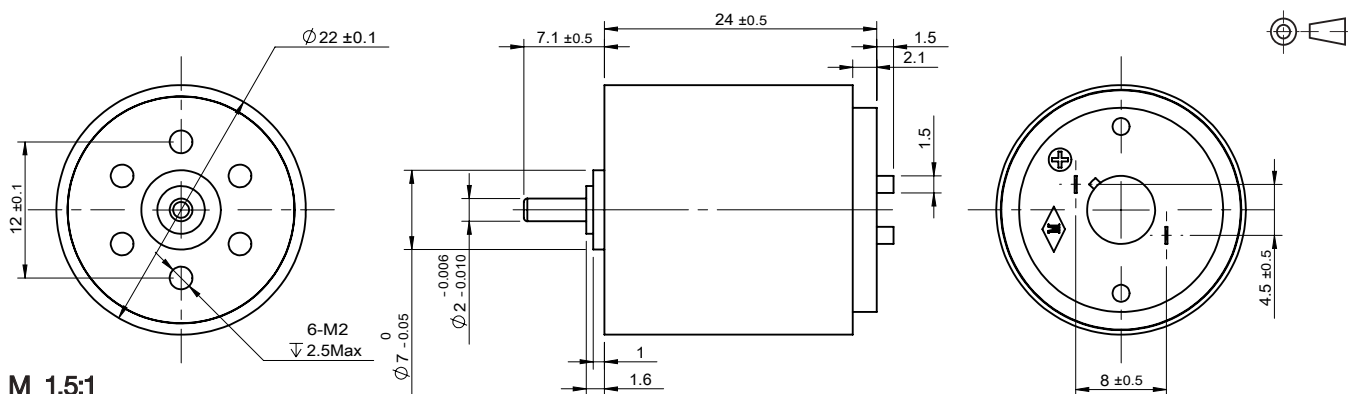
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

外观图 / Outline Drawing



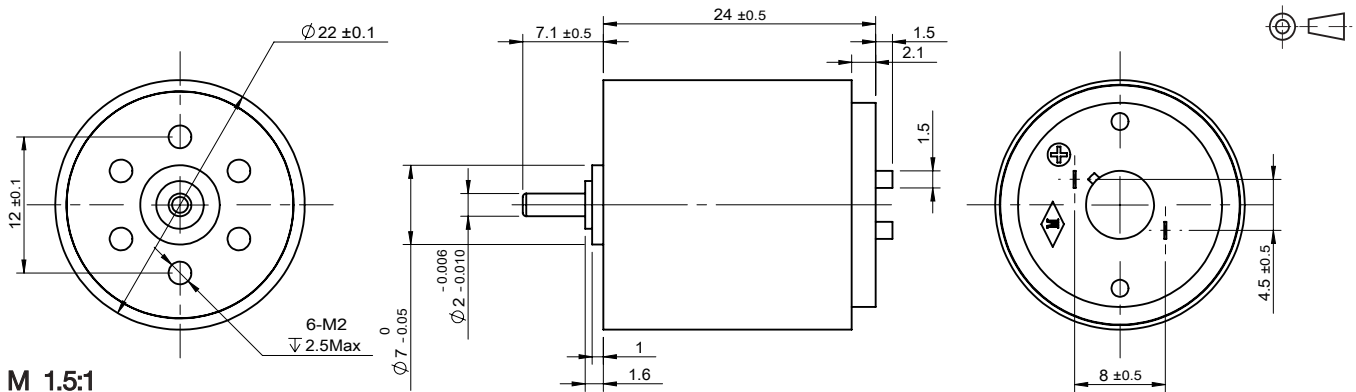
2224N5M2B

Ø22mm*24mm, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。
Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				16-64-6.0	18-83-12.0	19-82-18.0				
电机参数 / Motor Data										
1	电压	Voltage	V	6.0	12.0	18.0				
2	端电阻	Terminal resistance	Ω	6.8	6.8	19.6				
3	空载转速	No-load speed	rpm	6400	8300	8200				
4	空载电流	No-load current	mA	10	15	10				
5	堵转转矩	Stall torque	mNm	7.7	23.9	18.9				
6	堵转电流	Stall current	mA	880	1760	920				
7	额定转矩	Nominal torque	mNm	1.5	5.0	4.0				
8	额定转速	Nominal speed	rpm	5150	6560	6460				
9	额定电流	Nominal current	mA	180	380	200				
10	最大输出功率	Max. output power	W	1.3	5.2	4.1				
11	最大效率	Max. efficiency	%	80	82	80				
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.4	2.2				
13	转矩常数	Torque constant	mNm/A	8.9	13.7	20.7				
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	800	300	400				
15	转子惯量	Rotor inertia	gcm ²	2.4	2.4	2.4				
16	重量	Weight	g	40	40	40				
热参数 / Thermal Data				特性曲线 / Characteristics Curve						
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	22.3	2224N5M2B16-64-6.0 — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.					
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	6.1						
19	热时间常数 (电机)	Thermal time constant motor	s	313						
20	热时间常数 (线圈)	Thermal time constant winding	s	218						
21	工作温度范围	Operating temperature range	°C	-20~+85						
22	绕组耐温等级	Thermal class of winding	°C	130						
机械参数 / Mechanical Data										
23	轴向间隙	Axial play	mm	0.02~0.15						
24	径向间隙	Radial play	mm	0.025						
25	动态轴向载荷	Axial load dynamic	N	2						
26	静态轴向载荷	Axial load static	N	60						
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2						
其它参数 / Other Specifications										
28	极对数	No. of pole pairs		1						
29	滚动轴承	Ball bearings		2						
30	换向结构	Number of commutator segments		5						
31	防护等级	Protection class		IP30						

外观图 / Outline Drawing



2225N5M $\varnothing 22\text{mm} \times 25.3\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

01-161-7.2 02-118-12.0

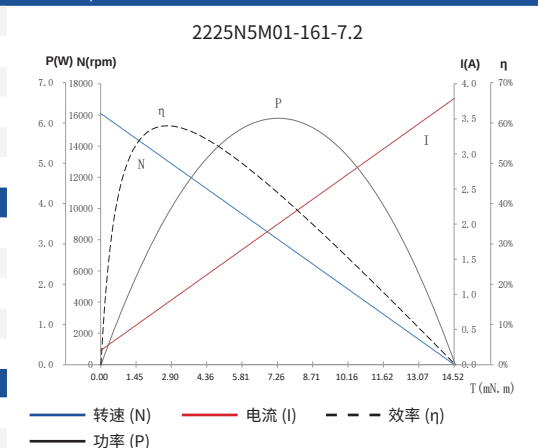
电机参数 / Motor Data

1	电压	Voltage	V	7.2	12.0				
2	端电阻	Terminal resistance	Ω	1.9	7.8				
3	空载转速	No-load speed	rpm	16100	11800				
4	空载电流	No-load current	mA	200	50				
5	堵转转矩	Stall torque	mNm	14.5	14.2				
6	堵转电流	Stall current	mA	3790	1540				
7	额定转矩	Nominal torque	mNm	3	3.0				
8	额定转速	Nominal speed	rpm	12770	9310				
9	额定电流	Nominal current	mA	940	360				
10	最大输出功率	Max. output power	W	6.1	4.4				
11	最大效率	Max. efficiency	%	59	68				
12	反电势常数	Back-EMF constant	mV/rpm	0.4	1				
13	转矩常数	Torque constant	mNm/A	4	9.5				
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1100	800				
15	转子惯量	Rotor inertia	gcm^2	2.3	2.3				
16	重量	Weight	g	43	43				

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	22.3
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	28.4
19	热时间常数 (电机)	Thermal time constant motor	s	313
20	热时间常数 (线圈)	Thermal time constant winding	s	218
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	150
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

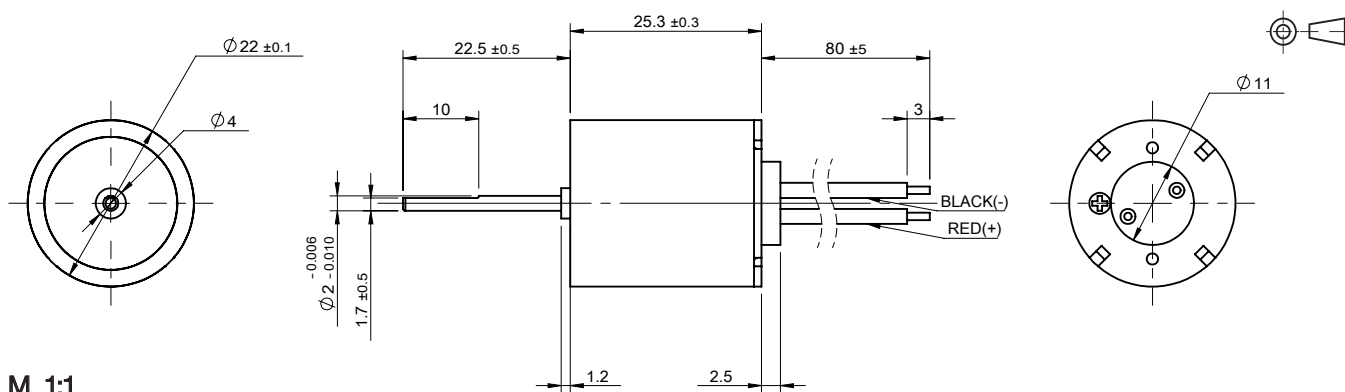
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 133 页

the main technical parameters are detailed on page 133

外观图 / Outline Drawing



2232N5M $\varnothing 22\text{mm} \times 31.6\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				08-63-6.0	13-79-9.0	05-54-12.0			
电机参数 / Motor Data									
1	电压	Voltage	V	6.0	9.0	12.0			
2	端电阻	Terminal resistance	Ω	2.9	2.4	17.5			
3	空载转速	No-load speed	rpm	6300	7900	5400			
4	空载电流	No-load current	mA	20	25	15			
5	堵转转矩	Stall torque	mNm	18.5	40.3	14			
6	堵转电流	Stall current	mA	2070	3750	690			
7	额定转矩	Nominal torque	mNm	4	6	4			
8	额定转速	Nominal speed	rpm	4940	6720	3860			
9	额定电流	Nominal current	mA	460	580	210			
10	最大输出功率	Max. output power	W	3	8.3	2			
11	最大效率	Max. efficiency	%	81	84	73			
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.1	2.2			
13	转矩常数	Torque constant	mNm/A	9	10.8	20.8			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	300	200	400			
15	转子惯量	Rotor inertia	gcm ²	4.4	4.4	4.4			
16	重量	Weight	g	55	55	55			
热参数 / Thermal Data				特性曲线 /Characteristics Curve					
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	19.4					
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	21.7					
19	热时常数 (电机)	Thermal time constant motor	s	383					
20	热时常数 (线圈)	Thermal time constant winding	s	329					
21	工作温度范围	Operating temperature range	°C	-20~+85					
22	绕组耐温等级	Thermal class of winding	°C	130					
机械参数 / Mechanical Data				2232N5M08-63.0 — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P)					
23	轴向间隙	Axial play	mm	0.02~0.15					
24	径向间隙	Radial play	mm	0.014					
25	动态轴向载荷	Axial load dynamic	N	2					
26	静态轴向载荷	Axial load static	N	60					
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2					
其它参数 / Other Specifications									
28	极对数	No. of pole pairs		1					
29	含油轴承	Sleeve bearings		2					
30	换向结构	Number of commutator segments		5					
31	防护等级	Protection class		IP40					

可选配置 / Options		齿轮组主要技术指标详见第 133 页 the main technical parameters are detailed on page 133	
齿轮箱：行星齿轮 Gearbox: planetary gearbox			
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range			
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges			
轴 Shaft: 长度 length / 异形 shape			
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings			
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length			

外观图 / Outline Drawing	
M 1:1	

2232N5M2B $\varnothing 22\text{mm} \times 31.6\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

03-81-6.0 08-100-9.0 04-100-12.0

电机参数 / Motor Data

1	电压	Voltage	V	6.0	9.0	12.0
2	端电阻	Terminal resistance	Ω	1.9	2.9	4.3
3	空载转速	No-load speed	rpm	8100	10000	10000
4	空载电流	No-load current	mA	20	20	20
5	堵转转矩	Stall torque	mNm	22.1	26.3	31.5
6	堵转电流	Stall current	mA	3160	3100	2790
7	额定转矩	Nominal torque	mNm	4.0	5.0	7.0
8	额定转速	Nominal speed	rpm	6630	8100	7780
9	额定电流	Nominal current	mA	590	610	640
10	最大输出功率	Max. output power	W	4.7	6.9	8.3
11	最大效率	Max. efficiency	%	85	85	84
12	反电势常数	Back-EMF constant	mV/rpm	0.7	0.9	1.2
13	转矩常数	Torque constant	mNm/A	7.0	8.5	11.4
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	400	300
15	转子惯量	Rotor inertia	gcm^2	4.4	4.4	4.4
16	重量	Weight	g	55	55	55

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	19.4
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	21.7
19	热时间常数 (电机)	Thermal time constant motor	s	383
20	热时间常数 (线圈)	Thermal time constant winding	s	329
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	3.3
26	静态轴向载荷	Axial load static	N	60
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	14

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	滚动轴承	Ball bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

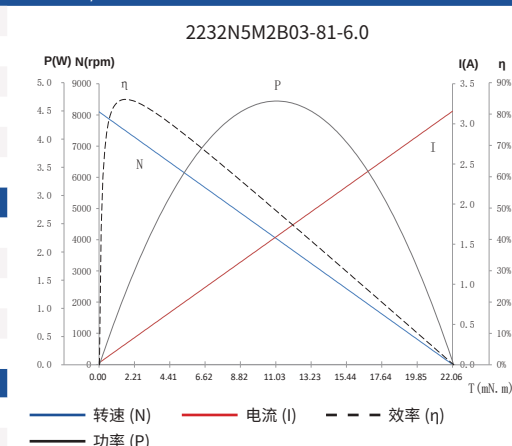
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve

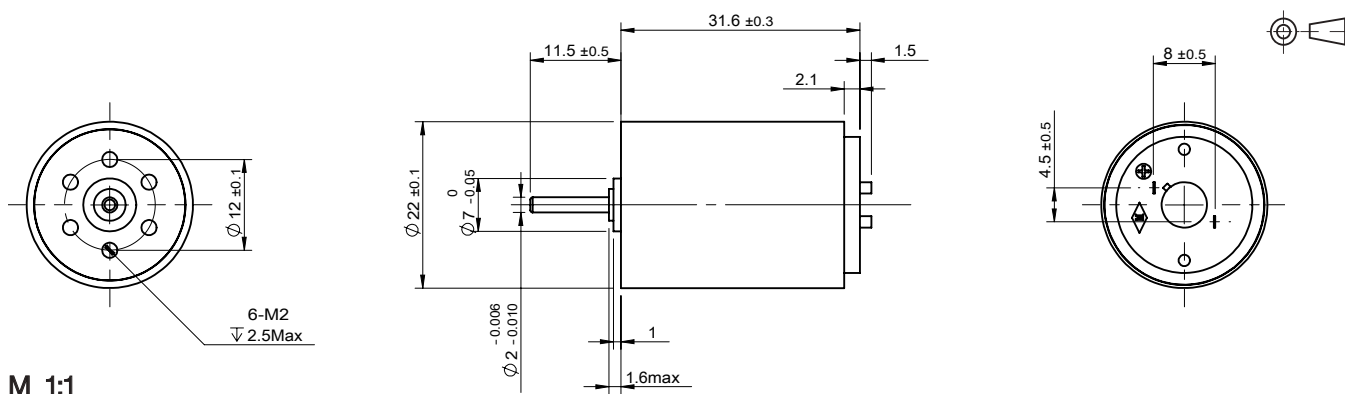


仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 133 页

the main technical parameters are detailed on page 133

外观图 / Outline Drawing



2232N9M $\varnothing 22\text{mm} \times 31.6\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

				03-66-6.0	02-60-6.8	01-100-24.0			
电机参数 / Motor Data									
1	电压	Voltage	V	6.0	6.8	24.0			
2	端电阻	Terminal resistance	Ω	2.9	3.0	17.2			
3	空载转速	No-load speed	rpm	6600	6000	10000			
4	空载电流	No-load current	mA	15	15	8			
5	堵转转矩	Stall torque	mNm	17.7	24.2	31.7			
6	堵转电流	Stall current	mA	2070	2270	1400			
7	额定转矩	Nominal torque	mNm	5.0	5.0	7.0			
8	额定转速	Nominal speed	rpm	4740	4760	7790			
9	额定电流	Nominal current	mA	600	480	320			
10	最大输出功率	Max. output power	W	3.1	3.8	8.3			
11	最大效率	Max. efficiency	%	84	84	86			
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.1	2.4			
13	转矩常数	Torque constant	mNm/A	8.6	10.8	22.8			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	200	300			
15	转子惯量	Rotor inertia	gcm ²	4.4	4.4	4.4			
16	重量	Weight	g	55	55	55			
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	19.4					
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	21.7					
19	热时间常数 (电机)	Thermal time constant motor	s	383					
20	热时间常数 (线圈)	Thermal time constant winding	s	329					
21	工作温度范围	Operating temperature range	°C	-20~+85					
22	绕组耐温等级	Thermal class of winding	°C	130					
机械参数 / Mechanical Data									
23	轴向间隙	Axial play	mm	0.02~0.15	2232N9M03-66-6.0 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.				
24	径向间隙	Radial play	mm	0.014					
25	动态轴向载荷	Axial load dynamic	N	2					
26	静态轴向载荷	Axial load static	N	60					
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2					
其它参数 / Other Specifications									
28	极对数	No. of pole pairs		1					
29	含油轴承	Sleeve bearings		2					
30	换向结构	Number of commutator segments		9					
31	防护等级	Protection class		IP40					
可选配置 / Options									

齿轮箱：行星齿轮箱
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

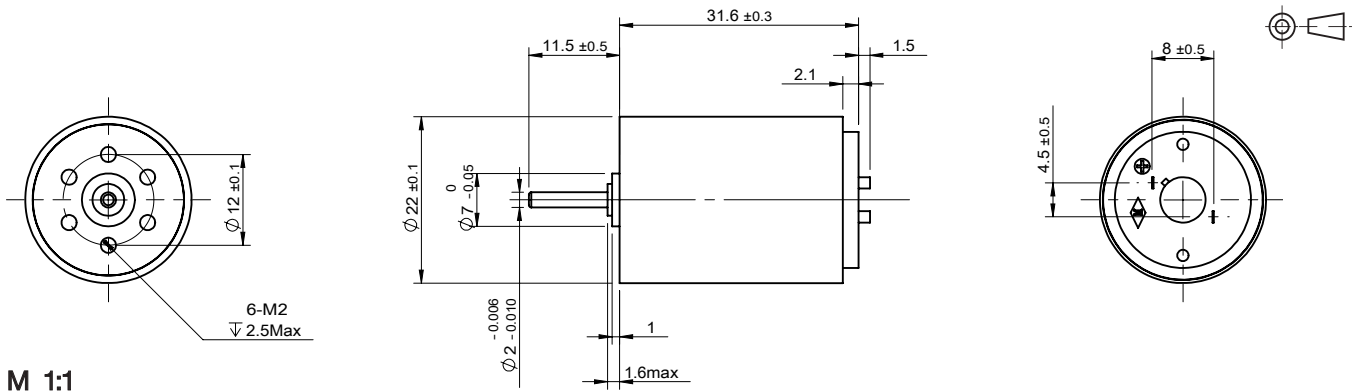
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 133 页
the main technical parameters are detailed on page 133

外观图 / Outline Drawing



2232N9M2B $\varnothing 22\text{mm} \times 31.6\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

04-74-6.0 05-99-9.0 04-110-12.0

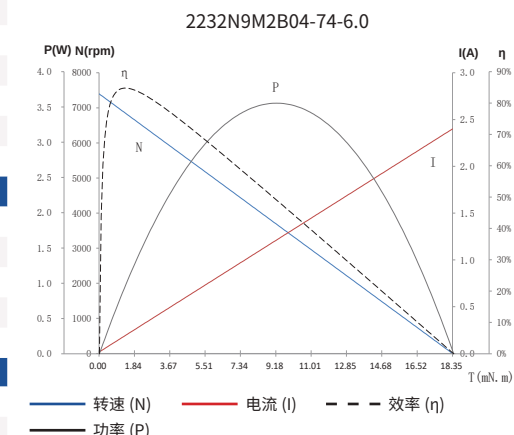
电机参数 / Motor Data

1	电压	Voltage	V	6.0	9.0	12.0			
2	端电阻	Terminal resistance	Ω	2.5	2.9	4.4			
3	空载转速	No-load speed	rpm	7400	9900	11000			
4	空载电流	No-load current	mA	15	20	20			
5	堵转转矩	Stall torque	mNm	18.4	26.6	28.0			
6	堵转电流	Stall current	mA	2400	3100	2730			
7	额定转矩	Nominal torque	mNm	5.0	6.0	7.0			
8	额定转速	Nominal speed	rpm	5380	7660	8250			
9	额定电流	Nominal current	mA	660	720	700			
10	最大输出功率	Max. output power	W	3.6	6.9	8.1			
11	最大效率	Max. efficiency	%	85	85	84			
12	反电势常数	Back-EMF constant	mV/rpm	0.8	0.9	1.1			
13	转矩常数	Torque constant	mNm/A	7.7	8.6	10.3			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	400	400			
15	转子惯量	Rotor inertia	gcm^2	4.4	4.4	4.4			
16	重量	Weight	g	55	55	55			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	19.4
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	21.7
19	热时间常数 (电机)	Thermal time constant motor	s	383
20	热时间常数 (线圈)	Thermal time constant winding	s	329
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	60
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	滚动轴承	Ball bearings	2
30	换向结构	Number of commutator segments	9
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

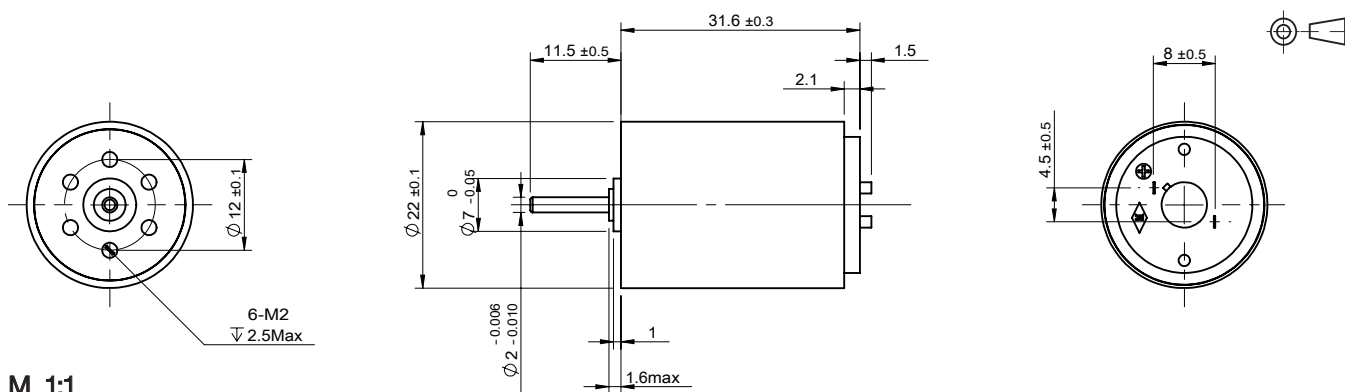
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 133 页

the main technical parameters are detailed on page 133

外观图 / Outline Drawing



2433N5M2B $\varnothing 24\text{mm} \times 32.8\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

01-76-4.5 02-79-9.0 04-81-12.0

电机参数 / Motor Data

1	电压	Voltage	V	4.5	9.0	12.0
2	端电阻	Terminal resistance	Ω	0.46	1.7	3.9
3	空载转速	No-load speed	rpm	7600	7900	8100
4	空载电流	No-load current	mA	30	15	15
5	堵转转矩	Stall torque	mNm	55.0	57.2	43.1
6	堵转电流	Stall current	mA	9780	5290	3080
7	额定转矩	Nominal torque	mNm	10.0	10.0	10.0
8	额定转速	Nominal speed	rpm	6220	6520	6220
9	额定电流	Nominal current	mA	1800	940	730
10	最大输出功率	Max. output power	W	10.9	11.8	9.2
11	最大效率	Max. efficiency	%	89	90	87
12	反电势常数	Back-EMF constant	mV/rpm	0.6	1.1	1.5
13	转矩常数	Torque constant	mNm/A	5.6	10.8	14.1
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	140	140	190
15	转子惯量	Rotor inertia	gcm^2	2.2	2.2	2.2
16	重量	Weight	g	66	66	66

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	16.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	22.1
19	热时间常数 (电机)	Thermal time constant motor	s	332
20	热时间常数 (线圈)	Thermal time constant winding	s	263
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	60
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	滚动轴承	Ball bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

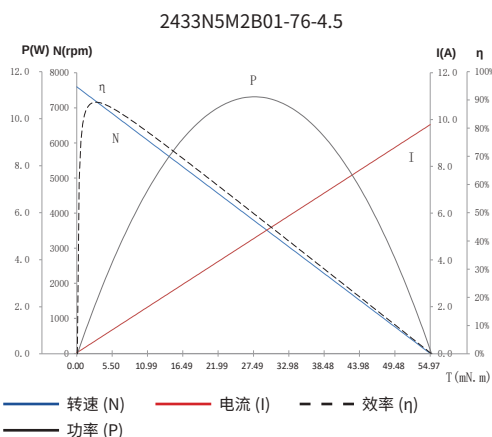
编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve

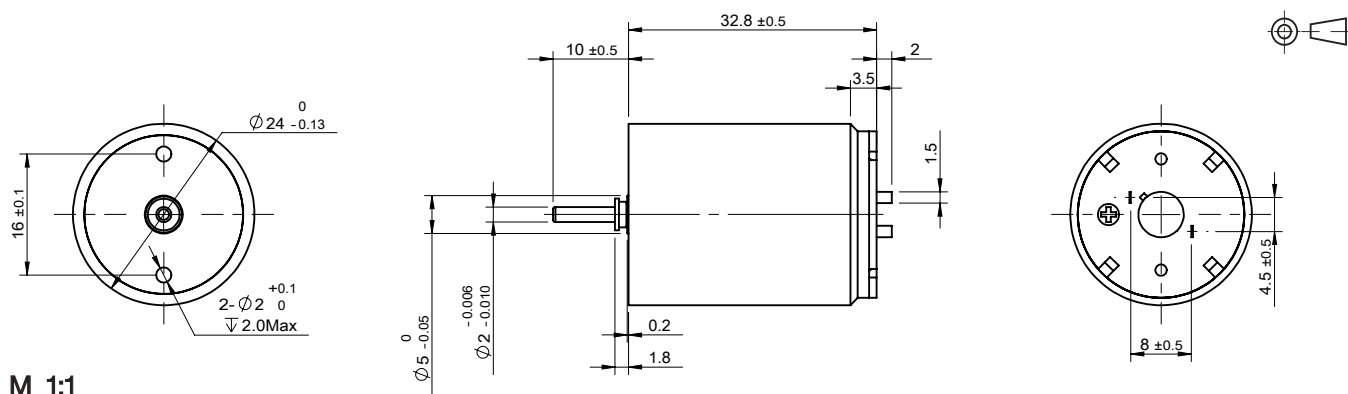


仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 134 页

the main technical parameters are detailed on page 134

外观图 / Outline Drawing



1630N5C $\varnothing 16\text{mm} \times 30\text{mm}$, 碳刷 Graphite Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

09-115-12.0 07-140-24.0 11-86-24.0

电机参数 / Motor Data

1	电压	Voltage	V	12.0	24.0	24.0			
2	端电阻	Terminal resistance	Ω	5.6	14	38.3			
3	空载转速	No-load speed	rpm	11500	14000	8600			
4	空载电流	No-load current	mA	50	30	20			
5	堵转转矩	Stall torque	mNm	20.3	27	15.7			
6	堵转电流	Stall current	mA	2140	1710	630			
7	额定转矩	Nominal torque	mNm	4	5	4			
8	额定转速	Nominal speed	rpm	9240	11410	6410			
9	额定电流	Nominal current	mA	460	340	180			
10	最大输出功率	Max. output power	W	6.1	9.9	3.5			
11	最大效率	Max. efficiency	%	72	75	68			
12	反电势常数	Back-EMF constant	mV/rpm	1	1.7	2.7			
13	转矩常数	Torque constant	mNm/A	9.7	16.1	25.8			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	600	500	500			
15	转子惯量	Rotor inertia	gcm^2	0.95	0.95	0.95			
16	重量	Weight	g	25	25	25			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	26.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	30.6
19	热时常数 (电机)	Thermal time constant motor	s	242
20	热时常数 (线圈)	Thermal time constant winding	s	232
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02-0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	0.8
26	静态轴向载荷	Axial load static	N	30
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	1.4

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

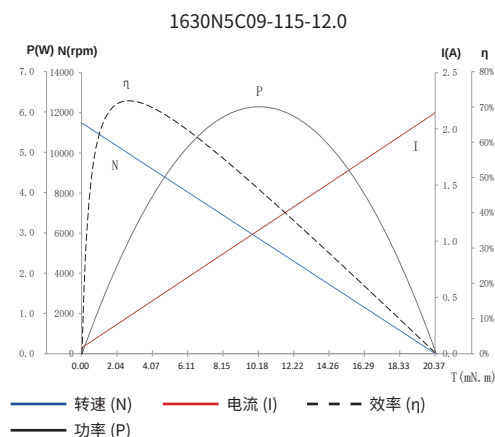
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

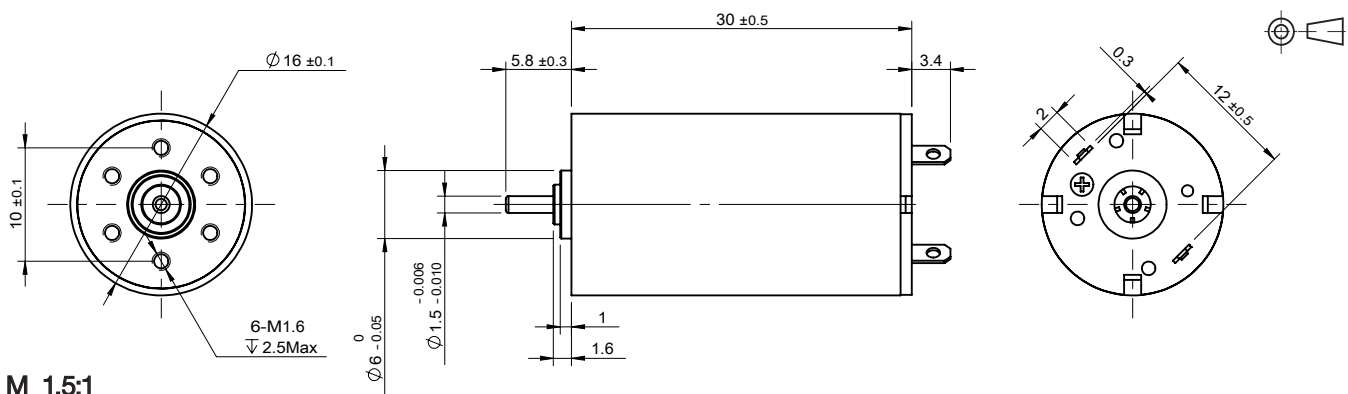
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

外观图 / Outline Drawing



2233N5C $\varnothing 22\text{mm} \times 33.7\text{mm}$, 碳刷 Graphite Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

21-155-12.0 23-96-24.0 01-71-24.0

电机参数 / Motor Data

1	电压	Voltage	V	12.0	24.0	24.0
2	端电阻	Terminal resistance	Ω	2.1	11.8	17
3	空载转速	No-load speed	rpm	15500	9600	7100
4	空载电流	No-load current	mA	180	40	30
5	堵转转矩	Stall torque	mNm	39.6	46.6	43.6
6	堵转电流	Stall current	mA	5710	2030	1410
7	额定转矩	Nominal torque	mNm	6	8	8
8	额定转速	Nominal speed	rpm	13150	7950	5800
9	额定电流	Nominal current	mA	1020	380	280
10	最大输出功率	Max. output power	W	16.08	11.72	8.11
11	最大效率	Max. efficiency	%	68	74	73
12	反电势常数	Back-EMF constant	mV/rpm	0.7	2.5	3.3
13	转矩常数	Torque constant	mNm/A	7.2	23.4	31.6
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	200	200
15	转子惯量	Rotor inertia	gcm^2	2.5	2.5	2.5
16	重量	Weight	g	52	52	52

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	21
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	11.2
19	热时间常数 (电机)	Thermal time constant motor	s	240
20	热时间常数 (线圈)	Thermal time constant winding	s	10
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	60
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

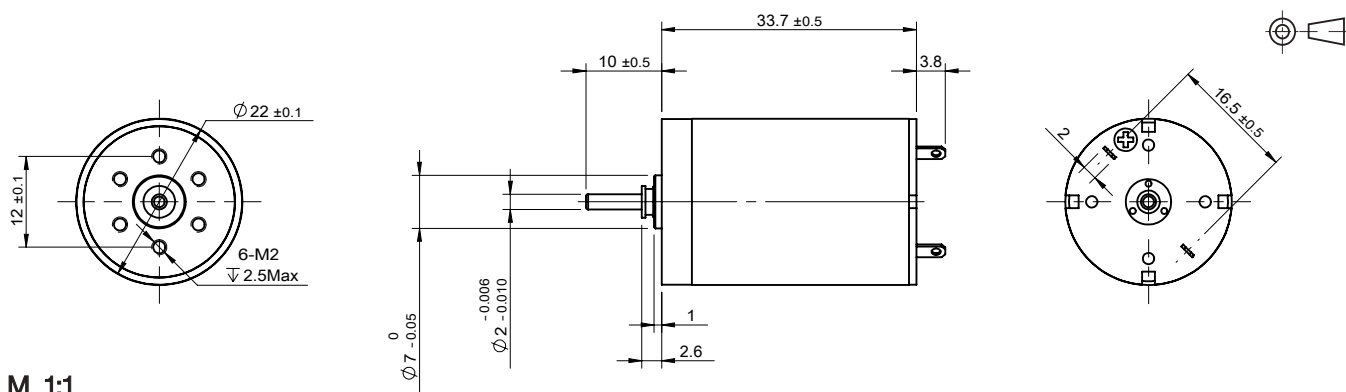
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

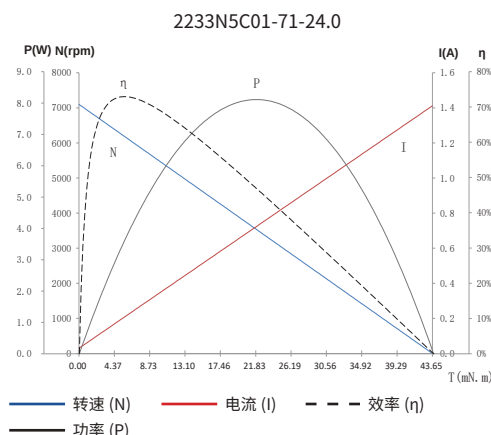
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



M 1:1

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 133 页

the main technical parameters are detailed on page 133

2233N5C2B $\varnothing 22\text{mm} \times 33.7\text{mm}$, 碳刷 Graphite Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

08-80-7.4 14-85-12.0 11-77-24.0

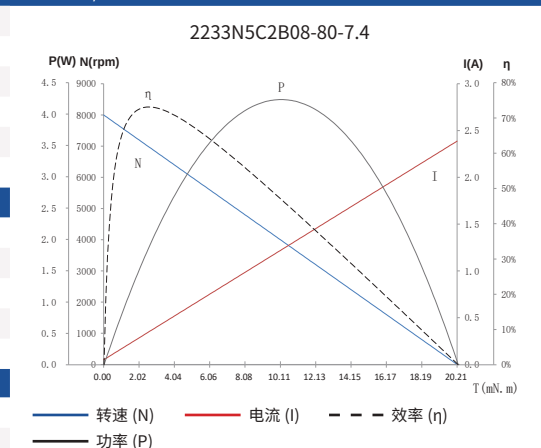
电机参数 / Motor Data

1	电压	Voltage	V	7.4	12.0	24.0			
2	端电阻	Terminal resistance	Ω	3.1	5.8	24.5			
3	空载转速	No-load speed	rpm	8000	8500	7700			
4	空载电流	No-load current	mA	50	35	12			
5	堵转转矩	Stall torque	mNm	20.2	27.0	28.5			
6	堵转电流	Stall current	mA	2390	2070	980			
7	额定转矩	Nominal torque	mNm	5.0	6.0	6.0			
8	额定转速	Nominal speed	rpm	6020	6610	6080			
9	额定电流	Nominal current	mA	630	490	220			
10	最大输出功率	Max. output power	W	4.2	6.0	5.7			
11	最大效率	Max. efficiency	%	73	76	79			
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.4	3.1			
13	转矩常数	Torque constant	mNm/A	8.6	13.3	29.4			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	400	300	300			
15	转子惯量	Rotor inertia	gcm^2	2.5	2.5	2.5			
16	重量	Weight	g	52	52	52			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	21
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	11.2
19	热时间常数 (电机)	Thermal time constant motor	s	240
20	热时间常数 (线圈)	Thermal time constant winding	s	10
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130

特性曲线 / Characteristics Curve



机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02-0.15
24	径向间隙	Radial play	mm	0.014
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	60
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	2

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	滚动轴承	Ball bearings	2
30	换向结构	Number of commutator segments	5
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

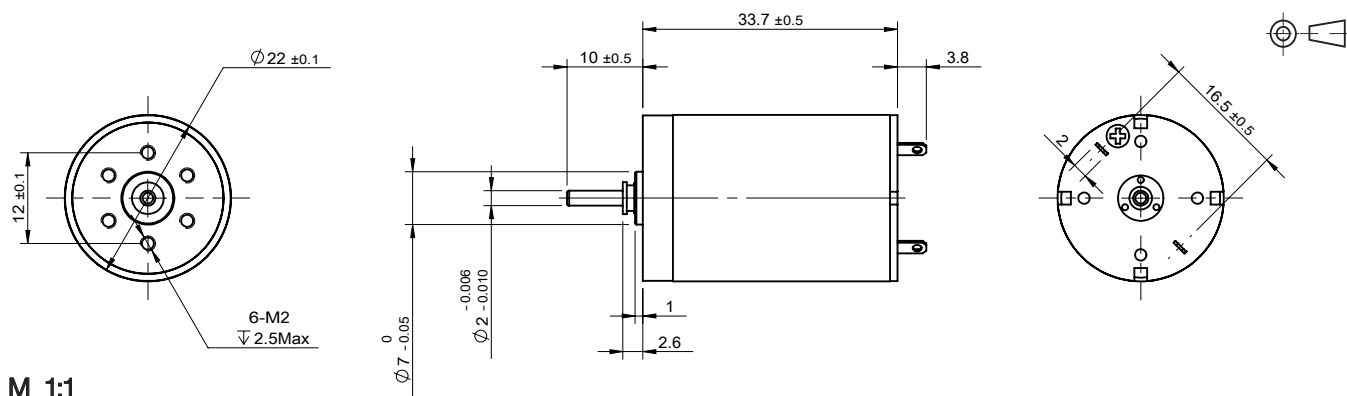
轴承类型 Bearing type: 含油轴承 sleeve bearings/ 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 133 页

the main technical parameters are detailed on page 133

外观图 / Outline Drawing



2543N9C2B $\varnothing 25\text{mm} \times 43.5\text{mm}$, 碳刷 Graphite Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

21-73-14.8 10-90-24.0 11-98-30.0 05-65-48.0

电机参数 / Motor Data

1	电压	Voltage	V	14.8	24.0	30.0	48.0
2	端电阻	Terminal resistance	Ω	3.1	3.9	4.4	23.5
3	空载转速	No-load speed	rpm	7300	9000	9800	6500
4	空载电流	No-load current	mA	40	35	30	30
5	堵转转矩	Stall torque	mNm	90.8	154.8	197.6	139.7
6	堵转电流	Stall current	mA	4770	6150	6820	2040
7	额定转矩	Nominal torque	mNm	20	30	40	40
8	额定转速	Nominal speed	rpm	5690	7260	7820	4640
9	额定电流	Nominal current	mA	1080	1220	1400	610
10	最大输出功率	Max. output power	W	17.4	36.5	50.8	23.8
11	最大效率	Max. efficiency	%	83	86	87	77
12	反电势常数	Back-EMF constant	mV/rpm	2	2.7	3	7.3
13	转矩常数	Torque constant	mNm/A	19.2	25.3	29.1	69.5
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	80.4	58.1	49.6	46.5
15	转子惯量	Rotor inertia	gcm^2	13.2	13.2	13.2	13.2
16	重量	Weight	g	96	96	96	96

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	11
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4.7
19	热时间常数 (电机)	Thermal time constant motor	s	266
20	热时间常数 (线圈)	Thermal time constant winding	s	123
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+120
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	20
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	20

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	9
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

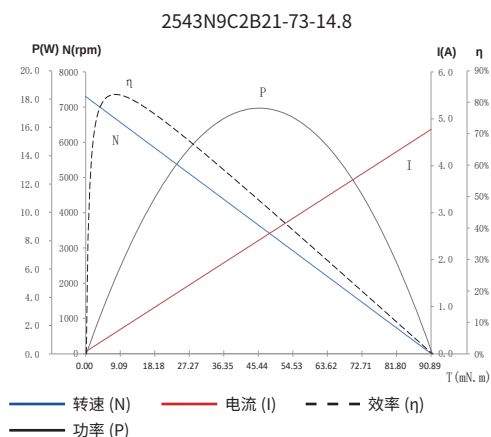
编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve

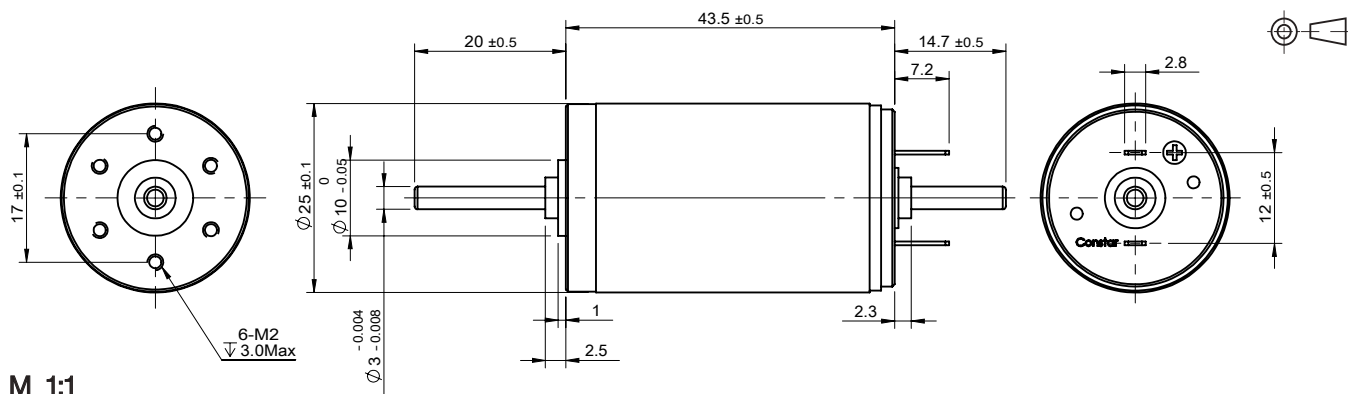


仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 135 页

the main technical parameters are detailed on page 135

外观图 / Outline Drawing



2554N9C2B $\varnothing 25\text{mm} \times 53.3\text{mm}$, 碳刷 Graphite Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

03-51-12.0 09-60-14.0 04-82-24.0 08-110-24.0

电机参数 / Motor Data

1	电压	Voltage	V	12.0	14.0	24.0	24.0
2	端电阻	Terminal resistance	Ω	2.4	2.7	3.6	2.8
3	空载转速	No-load speed	rpm	5100	6000	8200	11000
4	空载电流	No-load current	mA	20	50	30	60
5	堵转转矩	Stall torque	mNm	111.45	113.42	184.75	176.06
6	堵转电流	Stall current	mA	5000	5190	6670	8570
7	额定转矩	Nominal torque	mNm	20	20	30	30
8	额定转速	Nominal speed	rpm	4180	4940	6870	9130
9	额定电流	Nominal current	mA	910	960	1110	1510
10	最大输出功率	Max. output power	W	14.9	17.8	39.7	50.8
11	最大效率	Max. efficiency	%	88	81	87	84
12	反电势常数	Back-EMF constant	mV/rpm	2.3	2.3	2.9	2.2
13	转矩常数	Torque constant	mNm/A	22.4	22.1	27.8	20.7
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	45.8	52.9	44.4	62.5
15	转子惯量	Rotor inertia	gcm^2	14.2	14.2	14.2	14.2
16	重量	Weight	g	120	120	120	120

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	10.8
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4
19	热时间常数 (电机)	Thermal time constant motor	s	284
20	热时间常数 (线圈)	Thermal time constant winding	s	157
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+120
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	120

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	2
26	静态轴向载荷	Axial load static	N	20
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	20

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	9
31	防护等级	Protection class	IP30

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder: 可定制 customizable upon request

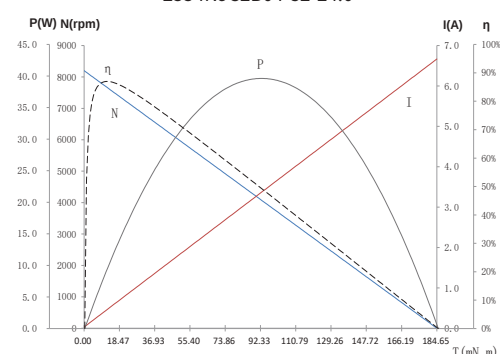
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve

2554N9C2B04-82-24.0



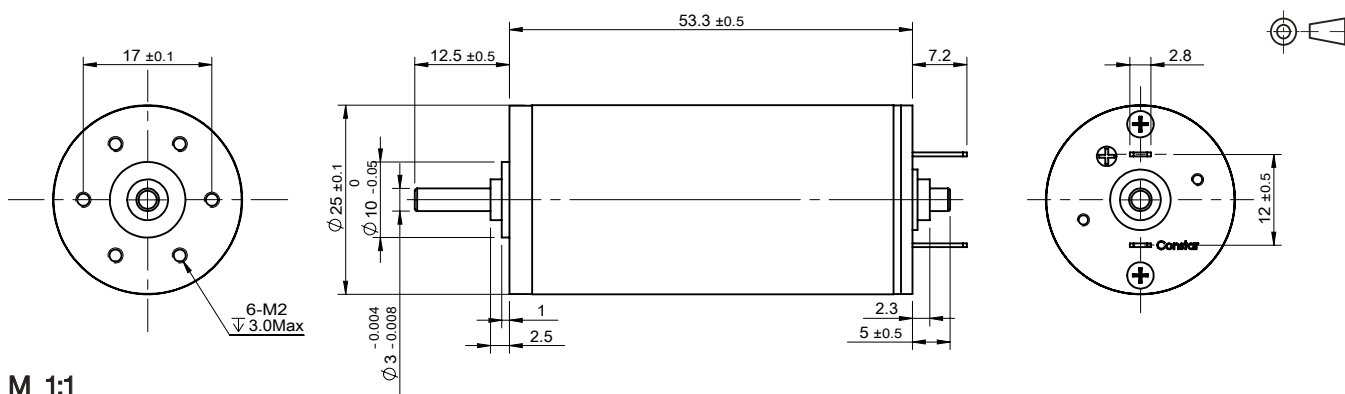
— 转速 (N) — 电流 (I) - - - 效率 (η)
—— 功率 (P)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 135 页

the main technical parameters are detailed on page 135

外观图 / Outline Drawing



M 1:1

3068N9C2B $\varnothing 30\text{mm} \times 68\text{mm}$, 碳刷 Graphite Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

06-86-18.0 10-100-24.0 02-82-36.0 04-87-48.0

电机参数 / Motor Data

1	电压	Voltage	V	18.0	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	1	1.6	2.5	4.1
3	空载转速	No-load speed	rpm	8600	10000	8200	8700
4	空载电流	No-load current	mA	150	120	100	50
5	堵转转矩	Stall torque	mNm	353.8	338.3	595.3	611.7
6	堵转电流	Stall current	mA	18000	15000	14400	11710
7	额定转矩	Nominal torque	mNm	40	40	60	80
8	额定转速	Nominal speed	rpm	7630	8820	7370	7560
9	额定电流	Nominal current	mA	2170	1880	1540	1570
10	最大输出功率	Max. output power	W	79.7	88.7	127.9	139.5
11	最大效率	Max. efficiency	%	83	83	84	87
12	反电势常数	Back-EMF constant	mV/rpm	2.1	2.4	4.4	5.5
13	转矩常数	Torque constant	mNm/A	19.8	22.7	41.6	52.5
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	24.3	29.6	13.8	14.2
15	转子惯量	Rotor inertia	gcm^2	33	33	33	33
16	重量	Weight	g	245	245	245	245

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	6.2
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3.8
19	热时常数 (电机)	Thermal time constant motor	s	225
20	热时常数 (线圈)	Thermal time constant winding	s	7.8
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+120
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	5
26	静态轴向载荷	Axial load static	N	50
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	50

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	9
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

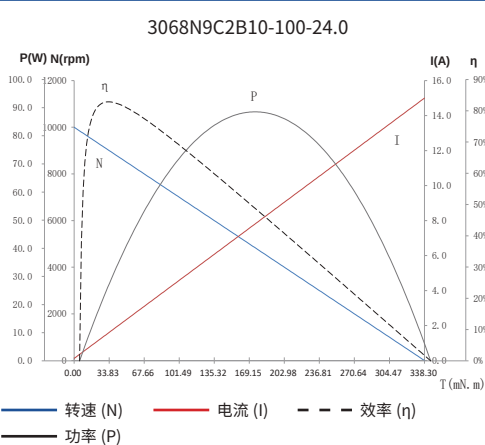
编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

特性曲线 / Characteristics Curve



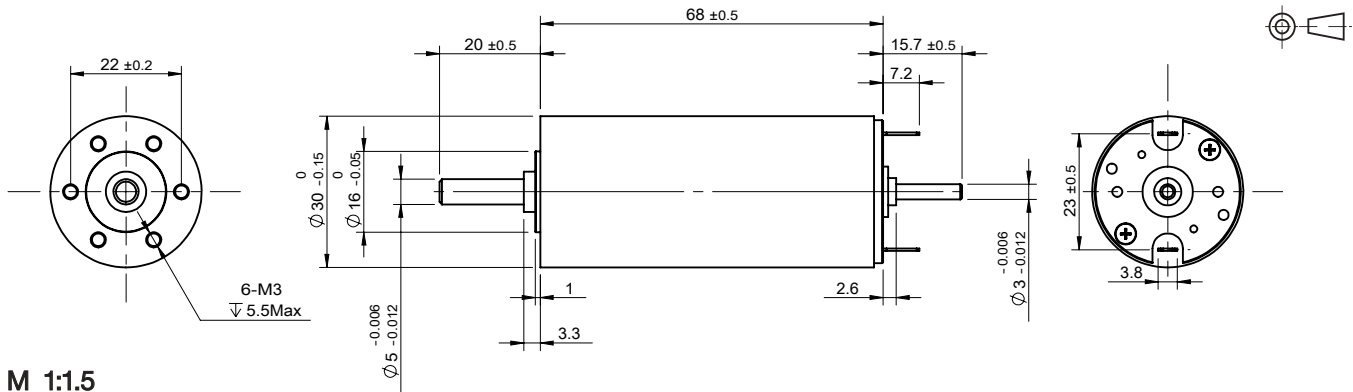
仅供参考，详细了解请以产品规格书为准。

For reference only, please refer to the product specification.

齿轮组主要技术指标详见第 136 页

the main technical parameters are detailed on page 136

外观图 / Outline Drawing



3257N9C2B $\varnothing 32\text{mm} \times 57\text{mm}$, 碳刷 Graphite Brushes

应用领域：医疗、保健、机器人、工业自动化等精密驱动领域。

Applications: precision drives in medical equipment and devices, healthcare products, robotics, and industrial automation.

01-54-12.0 02-64-24.0 08-74-24.0

电机参数 / Motor Data

1	电压	Voltage	V	12.0	24.0	24.0			
2	端电阻	Terminal resistance	Ω	1.0	2.8	2.4			
3	空载转速	No-load speed	rpm	5600	6400	7400			
4	空载电流	No-load current	mA	240	70	100			
5	堵转转矩	Stall torque	mNm	235.8	301.9	303.5			
6	堵转电流	Stall current	mA	12000	8570	10000			
7	额定转矩	Nominal torque	mNm	30.0	50.0	50.0			
8	额定转速	Nominal speed	rpm	4890	5340	6180			
9	额定电流	Nominal current	mA	1740	1480	1730			
10	最大输出功率	Max. output power	W	34.6	50.6	58.9			
11	最大效率	Max. efficiency	%	74	83	81			
12	反电势常数	Back-EMF constant	mV/rpm	2.1	3.7	3.2			
13	转矩常数	Torque constant	mNm/A	20.1	35.5	30.7			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	23.7	21.2	24.4			
15	转子惯量	Rotor inertia	gcm^2	42	42	42			
16	重量	Weight	g	230	230	230			

热参数 / Thermal Data

17	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	7.6
18	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4.1
19	热时常数 (电机)	Thermal time constant motor	s	725
20	热时常数 (线圈)	Thermal time constant winding	s	540
21	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+120
22	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155

机械参数 / Mechanical Data

23	轴向间隙	Axial play	mm	0.02~0.15
24	径向间隙	Radial play	mm	0.025
25	动态轴向载荷	Axial load dynamic	N	5
26	静态轴向载荷	Axial load static	N	50
27	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	50

其它参数 / Other Specifications

28	极对数	No. of pole pairs	1
29	含油轴承	Sleeve bearings	2
30	换向结构	Number of commutator segments	9
31	防护等级	Protection class	IP40

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

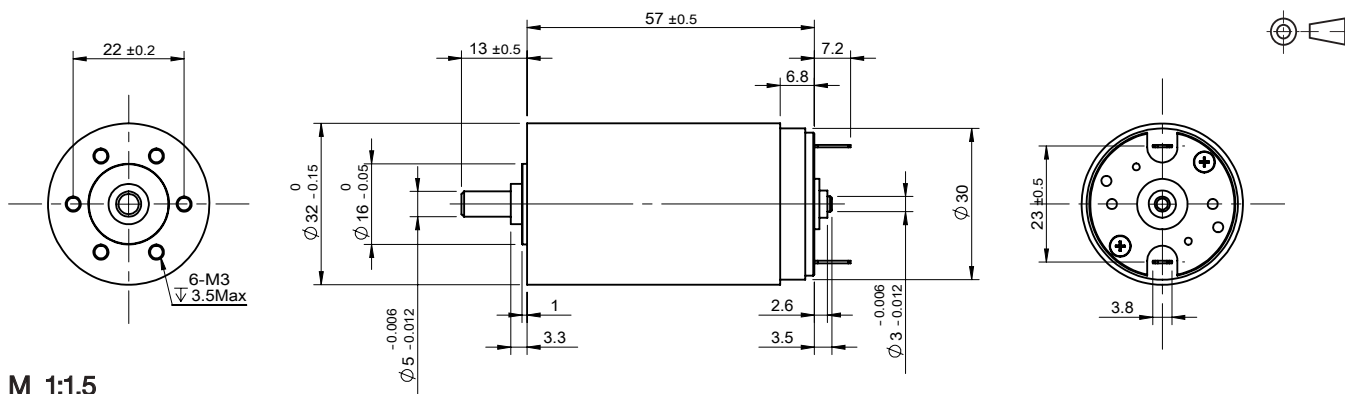
编码器 Encoder: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



M 1:1.5

您的个人备注 Your personal notes

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无刷电机

BRUSHLESS DC MOTOR



CONTENT 目录

无刷电机

BRUSHLESS DC MOTOR

内转子无槽高效率

INNER ROTOR, SLOTLESS,
HIGH EFFICIENCY

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	BH1350NH2B	φ13*50 mm	霍尔传感器/Hall Sensor	58
2	BH1659NH2B	φ16*58.6 mm	霍尔传感器/Hall Sensor	59
3	BH1960NH2B	φ19*60 mm	霍尔传感器/Hall Sensor	60
4	BH2245NH2B	φ22*45 mm	霍尔传感器/Hall Sensor	61
5	BH2260NH2B	φ22*60 mm	霍尔传感器/Hall Sensor	62

内转子无槽

INNER ROTOR, SLOTLESS

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	B0815N2B	φ8*15 mm	无传感器/Sensorless	63
2	B0832NH	φ8*32 mm	霍尔传感器/Hall Sensor	64
3	B1020N	φ10*20 mm	无传感器/Sensorless	65
4	B1023NH2B	φ9.8*23 mm	霍尔传感器/Hall Sensor	66
5	B1215N2B	φ12*15 mm	无传感器/Sensorless	67
6	B1220N2B	φ12*20 mm	无传感器/Sensorless	68
7	B1230N2B	φ12*30 mm	无传感器/Sensorless	69
8	B1231NH2B	φ12*30.8 mm	霍尔传感器/Hall Sensor	70
9	B1635N2B	φ16*35.7 mm	无传感器/Sensorless	71
10	B2040N2B	φ20*40 mm	无传感器/Sensorless	72
11	B2050NH2B	φ20*49.8 mm	霍尔传感器/Hall Sensor	73
12	B4040NH2B	φ40*40.3 mm	霍尔传感器/Hall Sensor	74

内转子有槽

INNER ROTOR, SLOTTED

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	BS1630NH2B	φ16*30 mm	霍尔传感器/Hall Sensor	75
2	BS2430NBIEH2B	φ24.4*30.8 mm	霍尔传感器/Hall Sensor	76
3	BS2838NB2B	φ27.6*37.6 mm	无传感器/Sensorless	77
4	BS3246NBH2B	φ32*46.5 mm	霍尔传感器/Hall Sensor	78
5	BS5470N2B	φ54*70 mm	无传感器/Sensorless	79

外转子 OUTER ROTOR

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	BO1410NBH2B	φ13.8*9.5 mm	霍尔传感器/Hall Sensor	80
2	BO1412NH2B	φ14.3*11.6 mm	霍尔传感器/Hall Sensor	81
3	BO1615N	φ16*15.7 mm	无传感器/Sensorless	82
4	BO1709NB2B	φ17*9.5 mm	无传感器/Sensorless	83
5	BO1808NBH2B	φ17.5*8.5 mm	霍尔传感器/Hall Sensor	84
6	BO1812N2B	φ17.6*12.6 mm	无传感器/Sensorless	85
7	BO1815N2B	φ18*14.5 mm	无传感器/Sensorless	86
8	BO2008NBH2B	φ20*8 mm	霍尔传感器/Hall Sensor	87
9	BO2010NB2B	φ20*9.8 mm	无传感器/Sensorless	88
10	BO2015NBH2B	φ20*15.1mm	霍尔传感器/Hall Sensor	89
11	BO2316N2B	φ23*15.9 mm	无传感器/Sensorless	90
12	BO2414NBH2B	φ24.5*14 mm	霍尔传感器/Hall Sensor	91
13	BO2814N2B	φ27.6*14.3 mm	无传感器/Sensorless	92
14	BO2820N2B	φ27.6*20.1 mm	无传感器/Sensorless	93
15	BO2824N2B	φ28*24.6 mm	无传感器/Sensorless	94
16	BO2826N2B	φ27.6*25.8 mm	无传感器/Sensorless	95
17	BO2828N2B	φ27.7*29.5 mm	无传感器/Sensorless	96
18	BO3216NBH2B	φ31.5*15.8 mm	霍尔传感器/Hall Sensor	97
19	BO3518NB2B	φ34.5*18 mm	无传感器/Sensorless	98
20	BO3823N2B	φ37.6*23 mm	无传感器/Sensorless	99
21	BO3850NH3B	φ37.6*50 mm	霍尔传感器/Hall Sensor	100
22	BO4316NB2B	φ42.8*15.9 mm	无传感器/Sensorless	101
23	BO4326NB2B	φ42.4*26.6 mm	无传感器/Sensorless	102
24	BO4416N2B	φ43.95*16 mm	无传感器/Sensorless	103
25	BO4831NH2B	φ48*31.5 mm	霍尔传感器/Hall Sensor	104
26	BO4840NH2B	φ48*38.5 mm	霍尔传感器/Hall Sensor	105
27	BO6133N2B	φ61.2*33 mm	无传感器/Sensorless	106
28	BO6452N3B	φ64*52mm	无传感器/Sensorless	107
29	BO8724N2B	φ87*24 mm	无传感器/Sensorless	108

CONTENT 目录

扁平无刷电机 FLAT BLDC MOTOR

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	BF3211N2B	φ32*11.2 mm	无传感器/Sensorless	109

无刷风机 BRUSHLESS DC BLOWER

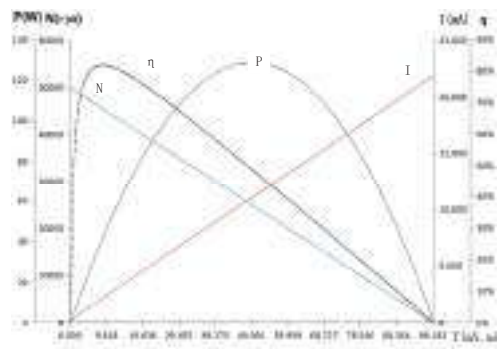
	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	6443ZWF	φ64*43 mm	霍尔传感器/Hall Sensor	110
2	6548ZWF	φ65*48 mm	霍尔传感器/Hall Sensor	111
3	6568ZWF	φ65*68 mm	霍尔传感器/Hall Sensor	112
4	7054ZWF	φ70*54 mm	霍尔传感器/Hall Sensor	113

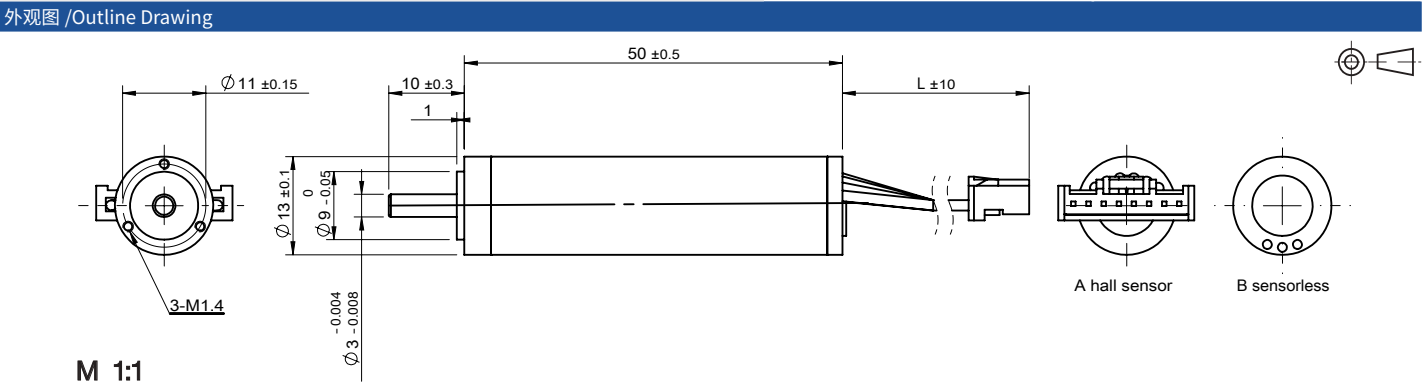
BH1350NH2B

Ø 13mm*50mm, 内转子无槽带传感器高效率 Inner Rotor, Slotless, Sensored, High efficiency

应用领域：医疗器械、工业设备等精密驱动领域。

Applications: precision drives in medical equipment, industrial automation fields.

				01-450-15.0		02-500-24.0		03-540-36.0	
电机参数 / Motor Data									
1	电压	Voltage	V	15.0		24.0		36.0	
2	端电阻	Terminal resistance	Ω	0.8		1.1		2.3	
3	空载转速	No-load speed	rpm	45000		50000		54000	
4	空载电流	No-load current	A	0.17		0.2		0.15	
5	堵转转矩	Stall torque	mNm	58.6		98.2		97.7	
6	堵转电流	Stall current	A	18.8		21.8		15.7	
7	额定转矩	Nominal torque	mNm	4		3		3	
8	额定转速	Nominal speed	rpm	41850		48250		52380	
9	额定电流	Nominal current	A	1.47		0.95		0.62	
10	最大输出功率	Max. output power	W	69		128		138	
11	最大效率	Max. efficiency	%	82		82		81	
12	反电势常数	Back-EMF constant	mV/rpm	0.33		0.476		0.66	
13	转矩常数	Torque constant	mNm/A	3.15		4.542		6.3	
14	KV 值	KV Value	rpm/V	3000		2080		1500	
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	768		509		552	
16	转子惯量	Rotor inertia	gcm ²	1.2		1.2		1.2	
17	重量	Weight	g	28		28		28	
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	17.68		BH1350NH2B02-500-24.0 			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	5.11					
20	热时常数 (电机)	Thermal time constant motor	s	778					
21	热时常数 (线圈)	Thermal time constant winding	s	726					
22	工作温度范围	Operating temperature range	°C	-40~+120					
23	绕组耐温等级	Thermal class of winding	°C	155					
机械参数 / Mechanical Data									
24	轴向间隙	Axial play	mm	0.012		— 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.			
25	径向间隙	Radial play	mm	0.008					
26	动态轴向载荷	Axial load dynamic	N	1.5					
27	静态轴向载荷	Axial load static	N	60					
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	10					
其它参数 / Other Specifications									
29	极对数	No. of pole pairs		1		端子定义 / Connection A 霍尔传感器 /hall sensor AWG 26/AWG 28 Pin1 U black Pin2 V yellow Pin3 W grey Pin4 + red Pin5 - brown Pin6 Hu yellow Pin7 Hv blue Pin8 Hw purple B 无传感器 /sensorless AWG 26 Pin1 U red Pin2 V white Pin3 W black			
30	滚珠轴承	Ball bearings		2					
31	换向结构	Commutation structure		hall sensor					
32	防护等级	Protection class		IP40					
可选配置 / Options				端子定义 / Connection					
齿轮箱 Gearbox: 行星齿轮 planetary gearbox 性能 Special coils: 定制 customizable				A 霍尔传感器 /hall sensor AWG 26/AWG 28 Pin1 U black Pin2 V yellow Pin3 W grey Pin4 + red Pin5 - brown Pin6 Hu yellow Pin7 Hv blue Pin8 Hw purple B 无传感器 /sensorless AWG 26 Pin1 U red Pin2 V white Pin3 W black					
蒸汽灭菌 Sterilization with steam: 温度 Temperature(134°C±4°C) 湿度 Rel. humidity(100%) 压力 Compression pressure up to(2.3 bar) 循环长度 Cycle length(18 min)									
灭菌周期 Sterilization cycles: 可定制 customizable upon request									
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request									
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges									
轴 Shaft: 长度 length / 异形 shape									
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length									
外观图 /Outline Drawing									

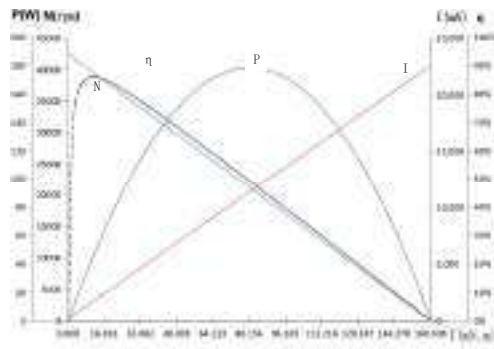


BH1659NH2B

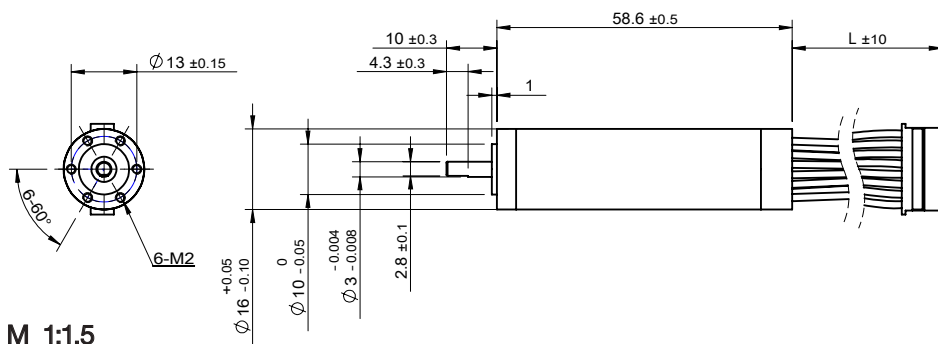
Ø 16mm*58.6mm, 内转子无槽带传感器高效率 Inner Rotor, Slotless, Sensored, High efficiency

应用领域：医疗器械、工业设备等精密驱动领域。

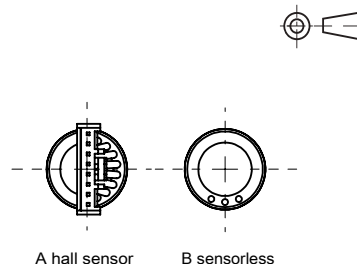
Applications: precision drives in medical equipment, industrial automation fields.

				01-510-24.0		02-425-32.0		03-560-48.0	
电机参数 / Motor Data									
1	电压	Voltage	V	24.0		32.0		48.0	
2	端电阻	Terminal resistance	Ω	0.5		1.42		1.52	
3	空载转速	No-load speed	rpm	51000		42500		56000	
4	空载电流	No-load current	A	0.2		0.12		0.15	
5	堵转转矩	Stall torque	mNm	213.9		160		256	
6	堵转电流	Stall current	A	48		22.5		31.6	
7	额定转矩	Nominal torque	mNm	14		17		13	
8	额定转速	Nominal speed	rpm	47700		38000		53200	
9	额定电流	Nominal current	A	3.3		2.5		1.7	
10	最大输出功率	Max. output power	W	285		178		375	
11	最大效率	Max. efficiency	%	87		86		86	
12	反电势常数	Back-EMF constant	mV/rpm	0.469		0.749		0.853	
13	转矩常数	Torque constant	mNm/A	4.5		7.1		8.1	
14	KV 值	KV Value	rpm/V	2125		1888		1166	
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	238		266		219	
16	转子惯量	Rotor inertia	gcm²	1.59		1.59		1.59	
17	重量	Weight	g	85		85		85	
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	15.3		BH1659NH2B02-425-32.0  — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3.4					
20	热时常数 (电机)	Thermal time constant motor	s	362					
21	热时常数 (线圈)	Thermal time constant winding	s	233					
22	工作温度范围	Operating temperature range	°C	-40~+120					
23	绕组耐温等级	Thermal class of winding	°C	155					
机械参数 / Mechanical Data									
24	轴向间隙	Axial play	mm	0.012					
25	径向间隙	Radial play	mm	0.008					
26	动态轴向载荷	Axial load dynamic	N	1.5					
27	静态轴向载荷	Axial load static	N	60					
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	10					
其它参数 / Other Specifications									
29	极对数	No. of pole pairs		1					
30	滚珠轴承	Ball bearings		2					
31	换向结构	Commutation structure		hall sensor					
32	防护等级	Protection class		IP40					
可选配置 / Options				端子定义 / Connection					
齿轮箱 Gearbox: 行星齿轮 planetary gearbox 性能 Special coils: 定制 customizable				A 霍尔传感器 / hall sensor			B 无传感器 / sensorless		
蒸汽灭菌 Sterilization with steam: 温度 Temperature(134°C ±4°C) 湿度 Rel. humidity(100%) 压力 Compression pressure up to(2.3 bar) 循环长度 Cycle length(18 min)				AWG 26/AWG 28			AWG 26		
灭菌周期 Sterilization cycles: 可定制 customizable upon request				Pin1	U	black	Pin1	U	red
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin2	V	yellow	Pin2	V	white
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin3	W	grey	Pin3	W	black
轴 Shaft: 长度 length / 异形 shape				Pin4	+	red			
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin5	-	brown			
				Pin6	Hu	yellow			
				Pin7	Hv	blue			
				Pin8	Hw	purple			
外观图 /Outline Drawing									

外观图 / Outline Drawing



M 1:1.5



BH1960NH2B

Ø 19mm*60mm, 内转子无槽带传感器高效率 Inner Rotor, Slotless, Sensored, High efficiency

应用领域：医疗器械、工业设备等精密驱动领域。

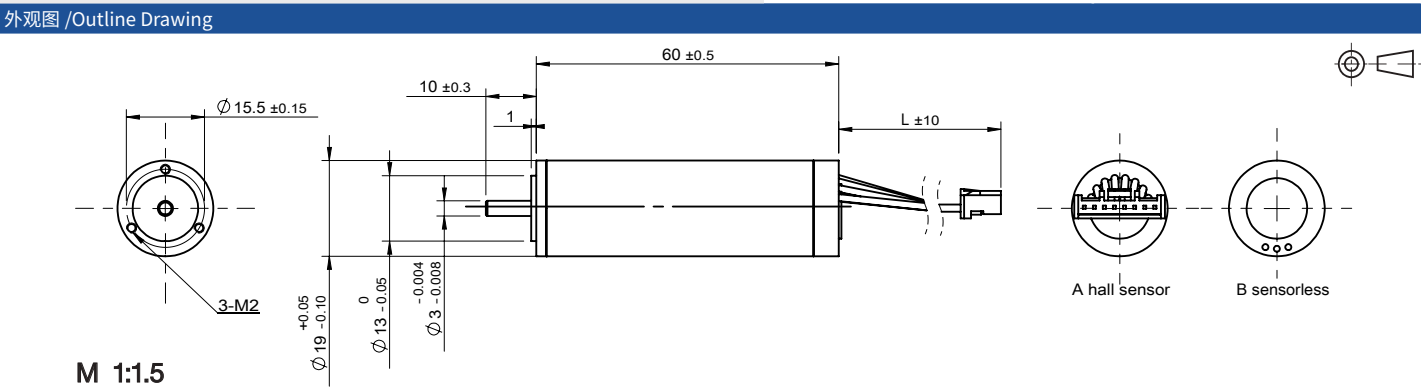
Applications: precision drives in medical equipment, industrial automation fields.

				01-482-24.0	02-482-36.0	03-482-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.36	0.71	1.41
3	空载转速	No-load speed	rpm	48200	48200	48200
4	空载电流	No-load current	A	0.24	0.2	0.14
5	堵转转矩	Stall torque	mNm	314.7	358.8	321
6	堵转电流	Stall current	A	66.67	50.7	34.04
7	额定转矩	Nominal torque	mNm	21	18	18
8	额定转速	Nominal speed	rpm	45070	45800	45550
9	额定电流	Nominal current	A	4.56	2.73	2.0
10	最大输出功率	Max. output power	W	397	452	404
11	最大效率	Max. efficiency	%	88	88	87
12	反电势常数	Back-EMF constant	mV/rpm	0.496	0.744	0.992
13	转矩常数	Torque constant	mNm/A	4.738	7.104	9.471
14	KV 值	KV Value	rpm/V	2008	1338	1004
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	153	134	150
16	转子惯量	Rotor inertia	gcm ²	1.66	1.66	1.66
17	重量	Weight	g	93	93	93

热参数 / Thermal Data					特性曲线 / Characteristics Curve			
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	9.2				
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	1				
20	热时常数 (电机)	Thermal time constant motor	s	500				
21	热时常数 (线圈)	Thermal time constant winding	s	460				
22	工作温度范围	Operating temperature range	°C	-40~+100				
23	绕组耐温等级	Thermal class of winding	°C	155				
机械参数 / Mechanical Data								
24	轴向间隙	Axial play	mm	0.012				
25	径向间隙	Radial play	mm	0.008				
26	动态轴向载荷	Axial load dynamic	N	1.5				
27	静态轴向载荷	Axial load static	N	60				
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	10	仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.			
其它参数 / Other Specifications								
29	极对数	No. of pole pairs		1				
30	滚珠轴承	Ball bearings		2				
31	换向结构	Commutation structure		hall sensor				
32	防护等级	Protection class		IP40				

24	轴向间隙	Axial play	mm	0.012
25	径向间隙	Radial play	mm	0.008
26	动态轴向载荷	Axial load dynamic	N	1.5
27	静态轴向载荷	Axial load static	N	60
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	10
其它参数 / Other Specifications				
29	极对数	No. of pole pairs		1
30	滚珠轴承	Ball bearings		2
31	换向结构	Commutation structure		hall sensor
32	防护等级	Protection class		IP40

可选配置 / Options		端子定义 / Connection		
齿轮箱 Gearbox: 行星齿轮 planetary gearbox 性能 Special coils: 定制 customizable		A 霍尔传感器 / hall sensor		
蒸汽灭菌 Sterilization with steam: 温度 Temperature(134°C ±4°C) 湿度 Rel. humidity(100%)		AWG 26/AWG 28		
压力 Compression pressure up to(2.3 bar) 循环长度 Cycle length(18 min)		Pin1	U	black
灭菌周期 Sterilization cycles: 可定制 customizable upon request		Pin2	V	yellow
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request		Pin3	W	grey
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges		Pin4	+	red
轴 Shaft: 长度 length / 异形 shape		Pin5	-	brown
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin6	Hu	yellow
		Pin7	Hv	blue
		Pin8	Hw	purple
		B 无传感器 / sensorless		
		AWG 26		
		Pin1	U	red
		Pin2	V	white
		Pin3	W	black



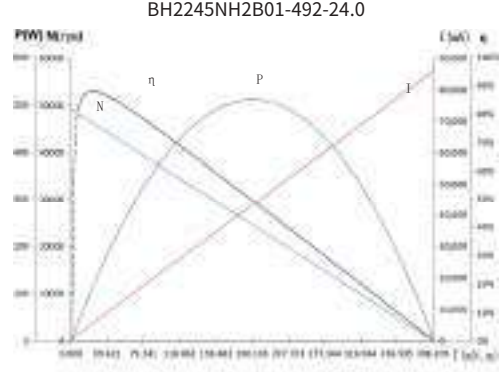
BH2245NH2B

Ø22mm*45mm, 内转子无槽带传感器高效率 Inner Rotor, Slotless, Sensored, High efficiency

应用领域：医疗器械、工业设备等精密驱动领域。

Applications: precision drives in medical equipment, industrial automation fields.

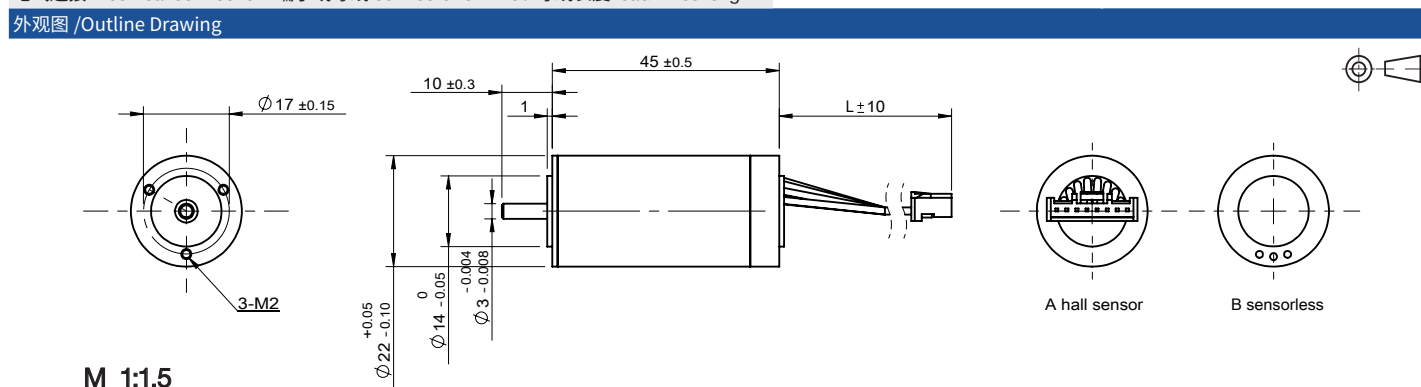
				01-492-24.0	02-505-36.0	03-492-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.28	0.55	1.13
3	空载转速	No-load speed	rpm	49200	50500	49200
4	空载电流	No-load current	A	0.33	0.26	0.16
5	堵转转矩	Stall torque	mNm	396	442	392
6	堵转电流	Stall current	A	85.71	65.46	42.48
7	额定转矩	Nominal torque	mNm	16	16	16
8	额定转速	Nominal speed	rpm	47232	48732	47232
9	额定电流	Nominal current	A	3.75	2.54	1.85
10	最大输出功率	Max. output power	W	510	584	505
11	最大效率	Max. efficiency	%	88	88	88
12	反电势常数	Back-EMF constant	mV/rpm	0.486	0.71	0.972
13	转矩常数	Torque constant	mNm/A	4.64	6.78	9.281
14	KV 值	KV Value	rpm/V	2050	1400	1025
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	124	114	125
16	转子惯量	Rotor inertia	gcm ²	1.49	1.49	1.49
17	重量	Weight	g	92	92	92

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	6.41		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	0.37		
20	热时间常数 (电机)	Thermal time constant motor	s	885		
21	热时间常数 (线圈)	Thermal time constant winding	s	830		
22	工作温度范围	Operating temperature range	°C	-40~+120		
23	绕组耐温等级	Thermal class of winding	°C	155		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm 0.012
25	径向间隙	Radial play	mm 0.008
26	动态轴向载荷	Axial load dynamic	N 1.5
27	静态轴向载荷	Axial load static	N 60
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N 10

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	1
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP40

可选配置 / Options			端子定义 / Connection		
齿轮箱 Gearbox: 行星齿轮 planetary gearbox 性能 Special coils: 定制 customizable			A 霍尔传感器 /hall sensor		
蒸汽灭菌 Sterilization with steam: 温度 Temperature(134°C ±4°C) 湿度 Rel. humidity(100%)			AWG 26/AWG 28		
压力 Compression pressure up to(2.3 bar) 循环长度 Cycle length(18 min)			Pin1	U	black
灭菌周期 Sterilization cycles: 可定制 customizable upon request			Pin2	V	yellow
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request			Pin3	W	grey
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges			Pin4	+	red
轴 Shaft: 长度 length / 异形 shape			Pin5	-	brown
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length			Pin6	Hu	yellow
			Pin7	Hv	blue
			Pin8	Hw	purple
			B 无传感器 /sensorless		
			AWG 26		
			Pin1	U	red
			Pin2	V	white
			Pin3	W	black

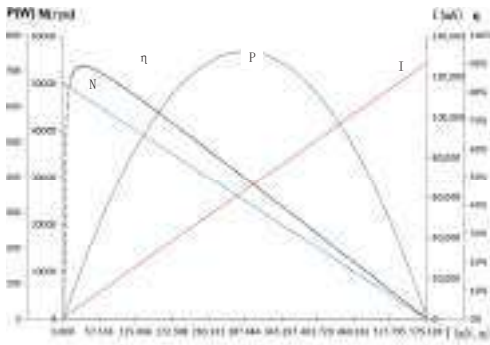


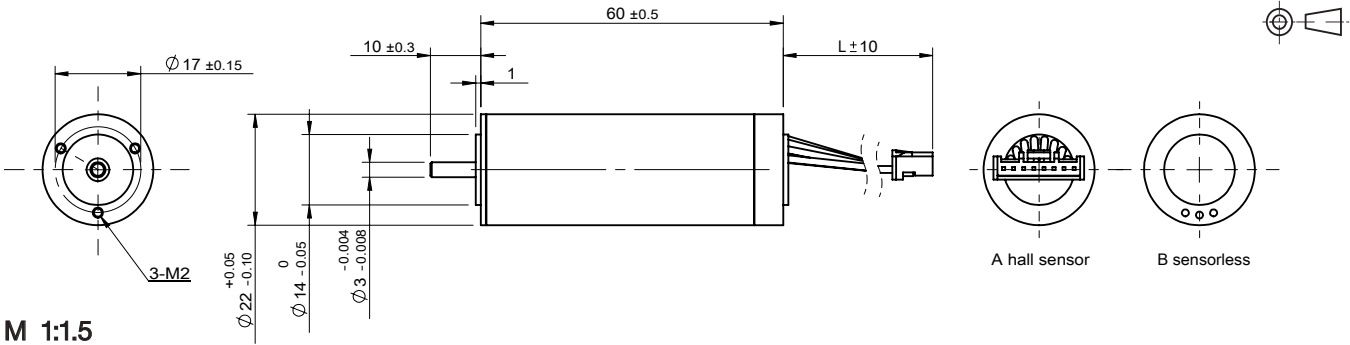
BH2260NH2B

Ø22mm*60mm, 内转子无槽带传感器高效率 Inner Rotor, Slotless, Sensored, High efficiency

应用领域：医疗器械、工业设备等精密驱动领域。

Applications: precision drives in medical equipment, industrial automation fields.

				01-500-24.0		02-500-36.0		03-500-48.0	
电机参数 / Motor Data									
1	电压	Voltage	V	24.0		36.0		48.0	
2	端电阻	Terminal resistance	Ω	0.19		0.43		0.76	
3	空载转速	No-load speed	rpm	50000		50000		50000	
4	空载电流	No-load current	A	0.4		0.26		0.21	
5	堵转转矩	Stall torque	mNm	575		572		575	
6	堵转电流	Stall current	A	126.32		83.72		42.48	
7	额定转矩	Nominal torque	mNm	14		14		14	
8	额定转速	Nominal speed	rpm	48750		48750		48750	
9	额定电流	Nominal current	A	3.55		2.35		1.78	
10	最大输出功率	Max. output power	W	752		748		752	
11	最大效率	Max. efficiency	%	89		89		89	
12	反电势常数	Back-EMF constant	mV/rpm	0.478		0.718		0.957	
13	转矩常数	Torque constant	mNm/A	4.569		6.854		9.137	
14	KV 值	KV Value	rpm/V	2083		1388		1040	
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	87		87		87	
16	转子惯量	Rotor inertia	gcm ²	2.53		2.53		2.53	
17	重量	Weight	g	107		107		107	
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	5.28		BH2260NH2B01-500-24.0  — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P)			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	0.57					
20	热时常数 (电机)	Thermal time constant motor	s	900					
21	热时常数 (线圈)	Thermal time constant winding	s	850					
22	工作温度范围	Operating temperature range	°C	-40~+120					
23	绕组耐温等级	Thermal class of winding	°C	155					
机械参数 / Mechanical Data									
24	轴向间隙	Axial play	mm	0.012					
25	径向间隙	Radial play	mm	0.008					
26	动态轴向载荷	Axial load dynamic	N	1.5					
27	静态轴向载荷	Axial load static	N	60					
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	10					
其它参数 / Other Specifications									
29	极对数	No. of pole pairs		1					
30	滚珠轴承	Ball bearings		2					
31	换向结构	Commutation structure		hall sensor					
32	防护等级	Protection class		IP40					
可选配置 / Options				端子定义 / Connection					
齿轮箱 Gearbox: 行星齿轮 planetary gearbox 性能 Special coils: 定制 customizable				A 霍尔传感器 /hall sensor			B 无传感器 /sensorless		
蒸汽灭菌 Sterilization with steam: 温度 Temperature(134°C±4°C) 湿度 Rel. humidity(100%)				AWG 26/AWG 28			AWG 26		
压力 Compression pressure up to(2.3 bar) 循环长度 Cycle length(18 min)				Pin1	U	black	Pin1	U	red
灭菌周期 Sterilization cycles: 可定制 customizable upon request				Pin2	V	yellow	Pin2	V	white
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin3	W	grey	Pin3	W	black
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin4	+	red			
轴 Shaft: 长度 length / 异形 shape				Pin5	-	brown			
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin6	Hu	yellow			
				Pin7	Hv	blue			
				Pin8	Hw	purple			
外观图 /Outline Drawing									



B0815N2B $\varnothing 8\text{mm} \times 15\text{mm}$, 内转子无槽无传感器 Inner Rotor, Slotless, Sensorless

应用领域: 医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				02-81-3.7	04-200-5.0	05-323-3.7
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	5.0	3.7
2	端电阻	Terminal resistance	Ω	36.5	12	3.1
3	空载转速	No-load speed	rpm	8100	20000	32300
4	空载电流	No-load current	A	0.02	0.06	0.1
5	堵转转矩	Stall torque	mNm	0.32	0.73	1.1
6	堵转电流	Stall current	A	0.1	0.42	1.2
7	额定转矩	Nominal torque	mNm	0.1	0.2	0.2
8	额定转速	Nominal speed	rpm	6800	14000	27800
9	额定电流	Nominal current	A	0.03	0.17	0.26
10	最大输出功率	Max. output power	W	0.07	0.38	0.92
11	最大效率	Max. efficiency	%	38	38	50
12	反电势常数	Back-EMF constant	mV/rpm	0.39	0.21	0.1
13	转矩常数	Torque constant	mNm/A	3.7	2.04	1
14	KV 值	KV Value	rpm/V	2180	4000	8730
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	25310	27397	29360
16	转子惯量	Rotor inertia	gcm^2	0.02	0.02	0.02
17	重量	Weight	g	3	3	3

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	110	B0815N2B04-200-5.0	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	26		
20	热时间常数 (电机)	Thermal time constant motor	s	63		
21	热时间常数 (线圈)	Thermal time constant winding	s	57		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130		

机械参数 / Mechanical Data				
24	轴向间隙	Axial play	mm	0.012
25	径向间隙	Radial play	mm	0.008
26	动态轴向载荷	Axial load dynamic	N	1
27	静态轴向载荷	Axial load static	N	25
28	径向载荷（距安装面 3mm）	Radial load at 3 mm from mounting face	N	6.3

其它参数 / Other Specifications						
29	极对数	No. of pole pairs	1			
30	滚珠轴承	Ball bearings	2			
31	换向结构	Commutation structure	sensorless			
32	防护等级	Protection class	IP30			

可选配置 / Options				端子定义 / Connection		
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齿轮箱: 行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

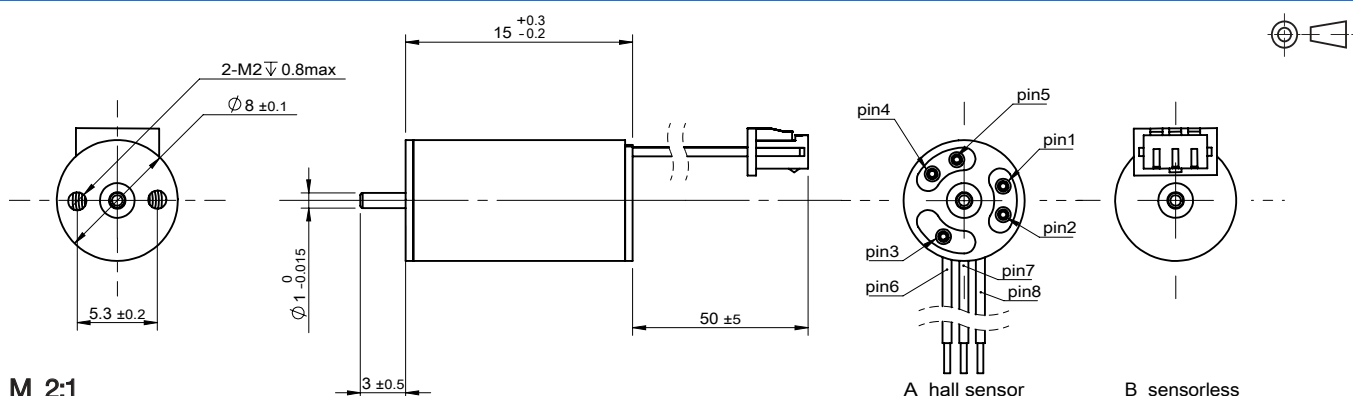
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 156 页				A 霍尔传感器 / hall sensor		
The main technical parameters are detailed on page 156				B 无传感器 / sensorless		
				AWG 30		
				Pin1	+	red
				Pin2	-	black
				Pin3	Hu	brown
				Pin4	Hv	red
				Pin5	Hw	black
				Pin6	W	blue
				Pin7	V	white
				Pin8	U	yellow

外观图 / Outline Drawing



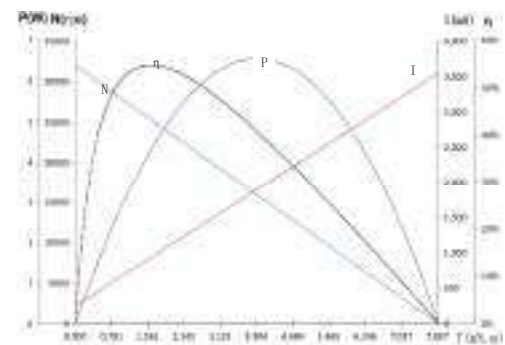
规格如有变更, 恕不另行通知。Specification subject to change without notice.

B0832NH $\varnothing 8\text{mm} \times 32\text{mm}$, 内转子无槽带传感器 Inner Rotor, Slotless, Sensored

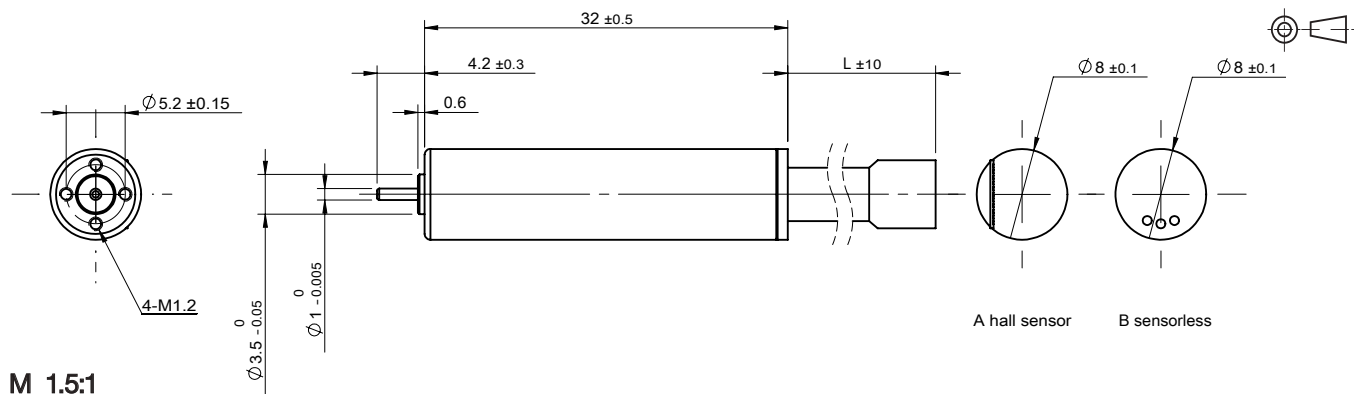
应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				01-320-6.0	02-320-8.5	03-320-12.0		
电机参数 / Motor Data								
1	电压	Voltage	V	6.0	8.5	12.0		
2	端电阻	Terminal resistance	Ω	1.26	2.4	1.56		
3	空载转速	No-load speed	rpm	32000	32000	32000		
4	空载电流	No-load current	A	0.27	0.24	0.4		
5	堵转转矩	Stall torque	mNm	7.59	7.8	24.76		
6	堵转电流	Stall current	A	4.76	3.54	7.69		
7	额定转矩	Nominal torque	mNm	1.3	1.3	1.7		
8	额定转速	Nominal speed	rpm	26720	26720	29760		
9	额定电流	Nominal current	A	1.1	0.78	0.91		
10	最大输出功率	Max. output power	W	6.3	6.5	21		
11	最大效率	Max. efficiency	%	57	57	58		
12	反电势常数	Back-EMF constant	mV/rpm	0.177	0.476	0.356		
13	转矩常数	Torque constant	mNm/A	1.7	2.2	3.4		
14	KV 值	KV Value	rpm/V	5333	3764	2670		
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	4216	4102	1292		
16	转子惯量	Rotor inertia	gcm²	0.36	0.36	0.36		
17	重量	Weight	g	30	30	30		
热参数 / Thermal Data				特性曲线 /Characteristics Curve				
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	47.4	B0832NH02-320-8.5			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	14.8				
20	热时常数 (电机)	Thermal time constant motor	s	120				
21	热时常数 (线圈)	Thermal time constant winding	s	0.7				
22	工作温度范围	Operating temperature range	°C	-20~+85				
23	绕组耐温等级	Thermal class of winding	°C	155				
机械参数 / Mechanical Data								
24	轴向间隙	Axial play	mm	0.3				
25	径向间隙	Radial play	mm	0.01				
26	动态轴向载荷	Axial load dynamic	N	0.05				
27	静态轴向载荷	Axial load static	N	10				
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	0.2	— 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.			
其它参数 / Other Specifications								
29	极对数	No. of pole pairs		1				
30	含油轴承	Sleeve bearings		2				
31	换向结构	Commutation structure		hall sensor				
32	防护等级	Protection class		IP30				
可选配置 / Options				端子定义 / Connection				
齿轮箱：行星齿轮		齿轮组主要技术指标详见第 156 页		A 霍尔传感器 /hall sensor				
Gearbox: planetary gearbox		the main technical parameters are detailed on page 156		FPC				
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				Pin1 U				
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin2 V				
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin3 W				
轴 Shaft: 长度 length / 异形 shape				Pin4 +				
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings				Pin5 -				
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin6 Hu				
				Pin7 Hv				
				Pin8 Hw				
无传感器 /sensorless				B 无传感器 /sensorless				
				AWG 26				
				Pin1 U				
				Pin2 V				
				Pin3 W				
				red				
				white				
				black				
外观图 /Outline Drawing								



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.



M 1.5:1

B1020N $\varnothing 10\text{mm} \times 20\text{mm}$, 内转子无槽无传感器 Inner Rotor, Slotless, Sensorless

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				01-393-7.4	03-85-3.7	05-382-7.4
电机参数 / Motor Data						
1	电压	Voltage	V	7.4	3.7	7.4
2	端电阻	Terminal resistance	Ω	1.08	6.2	1.4
3	空载转速	No-load speed	rpm	39300	8500	38200
4	空载电流	No-load current	A	0.32	0.07	0.24
5	堵转转矩	Stall torque	mNm	11.2	1.9	8.9
6	堵转电流	Stall current	A	6.85	0.6	5.3
7	额定转矩	Nominal torque	mNm	2.6	1.0	2.6
8	额定转速	Nominal speed	rpm	30000	4300	27000
9	额定电流	Nominal current	A	1.85	0.35	1.7
10	最大输出功率	Max. output power	W	11.5	0.4	9
11	最大效率	Max. efficiency	%	61	43	61
12	反电势常数	Back-EMF constant	mV/rpm	0.18	0.38	0.18
13	转矩常数	Torque constant	mNm/A	1.7	3.67	1.76
14	KV 值	KV Value	rpm/V	5300	2290	5160
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3500	4358	4290
16	转子惯量	Rotor inertia	gcm^2	0.06	0.06	0.06
17	重量	Weight	g	6.8	6.8	6.8

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	44		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	10		
20	热时间常数 (电机)	Thermal time constant motor	s	124		
21	热时间常数 (线圈)	Thermal time constant winding	s	119		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+100		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	1
30	含油轴承	Sleeve bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

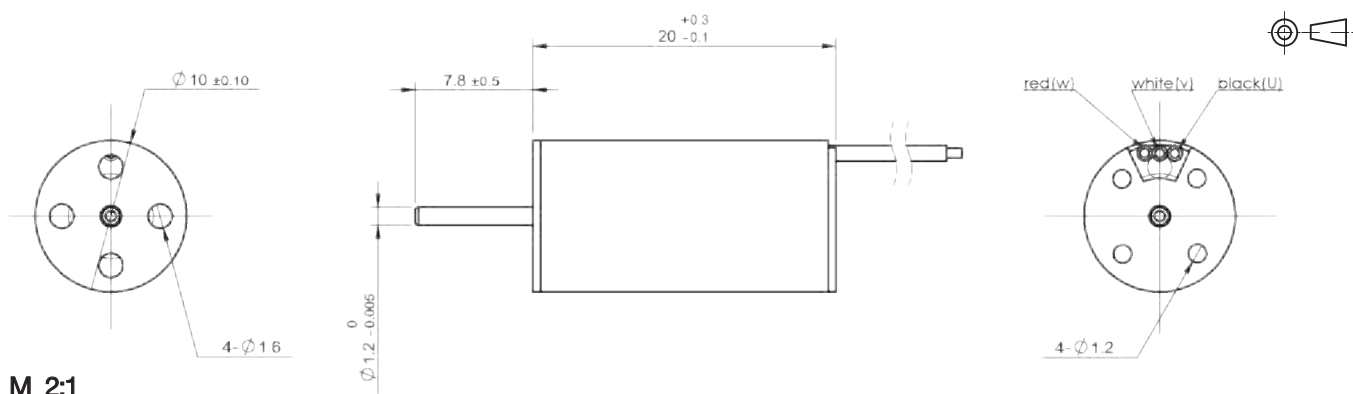
可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮 齿轮组主要技术指标详见第 128 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 128
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

无传感器 / sensorless
 AWG 26

Pin1 W red
 Pin2 V white
 Pin3 U black

外观图 / Outline Drawing



M 2:1

规格如有变更，恕不另行通知。Specification subject to change without notice.

B1023NH2B $\varnothing 9.8\text{mm} \times 23\text{mm}$, 内转子无槽带传感器 Inner Rotor, Slotless, Sensored

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				05-382-7.4	08-146-6.0	09-315-15.0
电机参数 / Motor Data						
1	电压	Voltage	V	7.4	6.0	15.0
2	端电阻	Terminal resistance	Ω	1.4	6.5	9
3	空载转速	No-load speed	rpm	38200	14600	31500
4	空载电流	No-load current	mA	240	40	80
5	堵转转矩	Stall torque	mNm	8.8	3.3	6.8
6	堵转电流	Stall current	mA	5300	950	1700
7	额定转矩	Nominal torque	mNm	1.7	0.7	1.0
8	额定转速	Nominal speed	rpm	30750	11500	27000
9	额定电流	Nominal current	mA	1270	220	310
10	最大输出功率	Max. output power	W	8.7	1.2	5.6
11	最大效率	Max. efficiency	%	61	60	60
12	反电势常数	Back-EMF constant	mV/rpm	0.18	0.39	0.45
13	转矩常数	Torque constant	mNm/A	1.76	3.8	4.3
14	KV 值	KV Value	rpm/V	5160	2430	2100
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	4340	4420	4630
16	转子惯量	Rotor inertia	gcm^2	0.06	0.06	0.06
17	重量	Weight	g	8.3	8.3	8.3

热参数 / Thermal Data					特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	44	B1023NH2B05-382-7.4	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	10		
20	热时常数 (电机)	Thermal time constant motor	s	124		
21	热时常数 (线圈)	Thermal time constant winding	s	119		
22	工作温度范围	Operating temperature range	°C	-40~+60		
23	绕组耐温等级	Thermal class of winding	°C	155		
机械参数 / Mechanical Data						
24	轴向间隙	Axial play	mm	0.05		
25	径向间隙	Radial play	mm	0.0125		
26	动态轴向载荷	Axial load dynamic	N	1		
27	静态轴向载荷	Axial load static	N	25		
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	6.3		

机械参数 / Mechanical Data				
24	轴向间隙	Axial play	mm	0.05
25	径向间隙	Radial play	mm	0.0125
26	动态轴向载荷	Axial load dynamic	N	1
27	静态轴向载荷	Axial load static	N	25
28	径向载荷（距安装面 3mm）	Radial load at 3 mm from mounting face	N	6.3
其它参数 / Other Specifications				
29	极对数	No. of pole pairs		1
30	滚珠轴承	Ball bearings		2
31	换向结构	Commutation structure		hall sensor
32	防护等级	Protection class		IP30

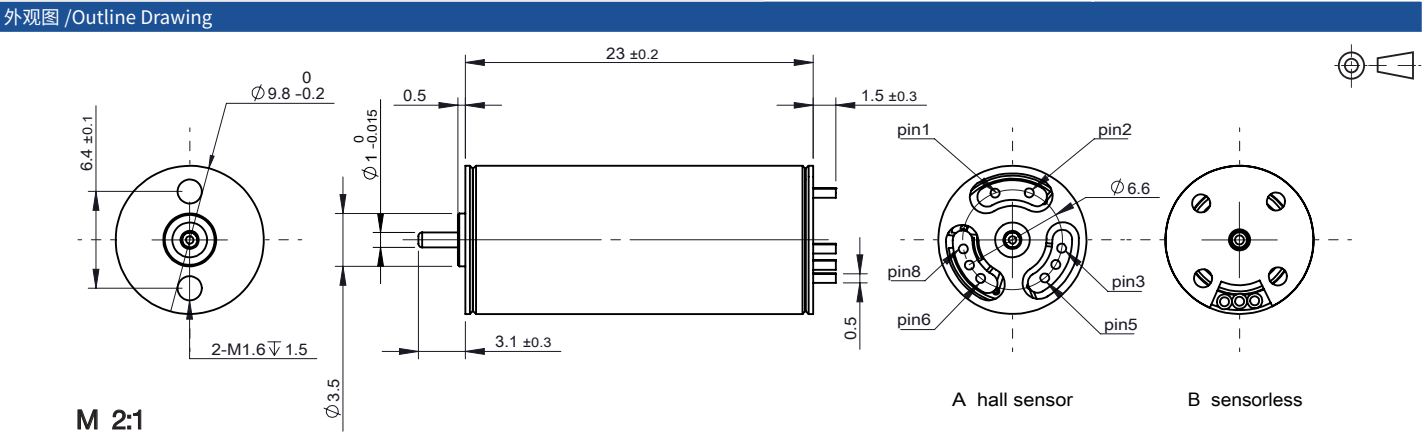
The graph plots three performance metrics against torque (T) in mN.m. The x-axis ranges from 0.00 to 8.91. The left y-axis represents speed (N) in rpm (0 to 6) and current (I) in A (0 to 25000). The right y-axis represents efficiency (η) in % (0% to 40%).

- 转速 (N) (Blue solid line):** Starts at 6 rpm at 0 torque and decreases linearly to 0 rpm at 8.91 mN.m.
- 电流 (I) (Red solid line):** Starts at 0 A at 0 torque and increases linearly to approximately 25000 A at 8.91 mN.m.
- 效率 (η) (Black dashed line):** Starts at 0% at 0 torque, peaks at approximately 35% around 2.67 mN.m, and then decreases to 0% at 8.91 mN.m.

Legend: — 转速 (N) — 电流 (I) - - - 效率 (η)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options				端子定义 / Connection		
齿轮箱：行星齿轮 Gearbox: planetary gearbox				A 霍尔传感器 / hall sensor		
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				B 无传感器 / sensorless		
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				AWG 30		
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin1	-	red
轴 Shaft: 长度 length / 异形 shape				Pin2	U	white
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings				Pin3	W	black
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin4	Hv	
				Pin5	Hu	
				Pin6	Hw	
				Pin7	W	
				Pin8	U	



B1215N2B $\varnothing 12\text{mm} \times 15\text{mm}$, 内转子无槽无传感器 Inner Rotor, Slotless, Sensorless

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				09-350-3.6	06-145-4.5	12-425-7.4
电机参数 / Motor Data						
1 电压	Voltage	V		3.6	4.5	7.4
2 端电阻	Terminal resistance	Ω		0.67	5.2	2.6
3 空载转速	No-load speed	rpm		35000	14500	42500
4 空载电流	No-load current	A		0.3	0.1	0.2
5 堵转转矩	Stall torque	mNm		4.7	2	4
6 堵转电流	Stall current	A		5.4	0.9	2.9
7 额定转矩	Nominal torque	mNm		0.7	1	0.3
8 额定转速	Nominal speed	rpm		28200	4400	38000
9 额定电流	Nominal current	A		1.1	0.5	0.4
10 最大输出功率	Max. output power	W		4.3	0.8	4.6
11 最大效率	Max. efficiency	%		58	44	54
12 反电势常数	Back-EMF constant	mV/rpm		0.1	0.27	0.16
13 转矩常数	Torque constant	mNm/A		0.93	2.62	1.55
14 KV 值	KV Value	rpm/V		9720	3220	5740
15 转速 / 转矩斜率	Speed/torque gradient	rpm/mNm		7440	7230	10400
16 转子惯量	Rotor inertia	gcm^2		0.14	0.14	0.14
17 重量	Weight	g		7	7	7

热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18 热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	37.8		
19 热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	6.2		
20 热时常数 (电机)	Thermal time constant motor	s	170		
21 热时常数 (线圈)	Thermal time constant winding	s	2		
22 工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+60		
23 绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	130		

机械参数 / Mechanical Data			
24 轴向间隙	Axial play	mm	0.012
25 径向间隙	Radial play	mm	0.008
26 动态轴向载荷	Axial load dynamic	N	1
27 静态轴向载荷	Axial load static	N	25
28 径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	6.3

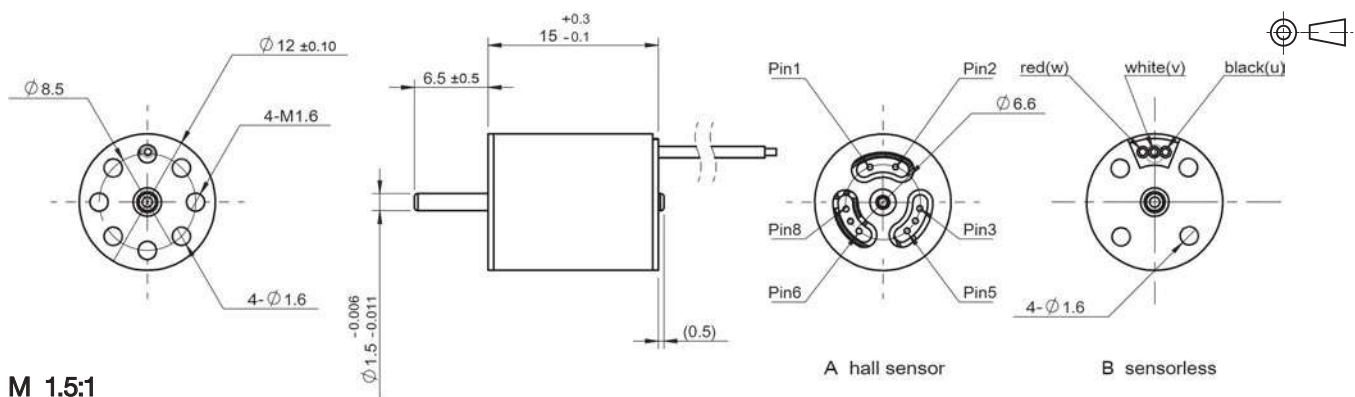
其它参数 / Other Specifications			
29 极对数	No. of pole pairs		1
30 滚珠轴承	Ball bearings		2
31 换向结构	Commutation structure		sensorless
32 防护等级	Protection class		IP30

可选配置 / Options		端子定义 / Connection	
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齿轮箱：行星齿轮 齿轮组主要技术指标详见第 129 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 129
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor		B 无传感器 / sensorless	
		AWG 30	
Pin1	+	Pin1	U red
Pin2	-	Pin2	V white
Pin3	Hu	Pin3	W black
Pin4	Hv		
Pin5	Hw		
Pin6	W		
Pin7	V		
Pin8	U		

外观图 / Outline Drawing



M 1.5:1

规格如有变更，恕不另行通知。Specification subject to change without notice.

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精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无刷力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

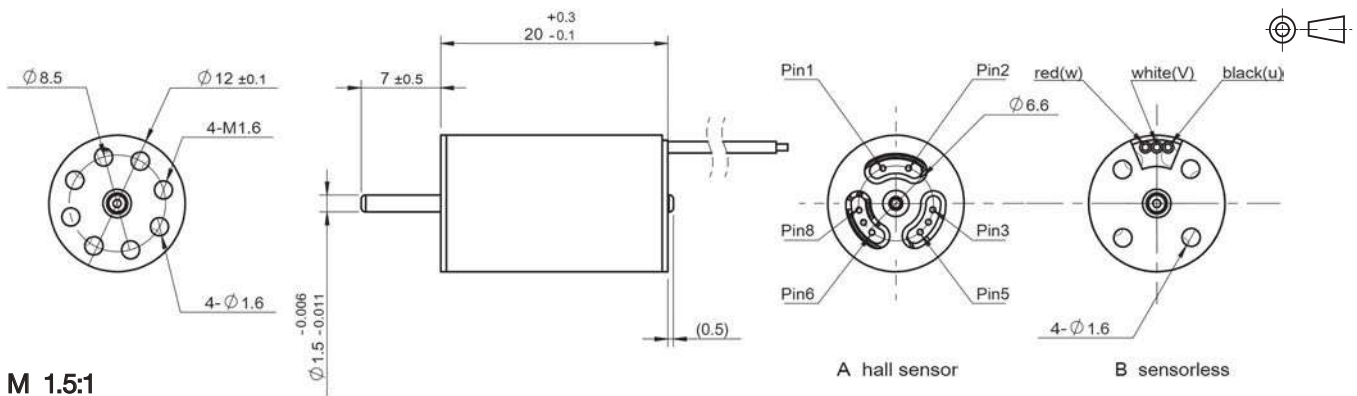
B1220N2B

Ø 12mm*20mm, 内转子无槽无传感器 Inner Rotor, Slotless, Sensorless

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。
Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				03-230-7.4		02-172-6.0		01-175-5.0	
电机参数 / Motor Data									
1	电压	Voltage	V	7.4		6.0		5.0	
2	端电阻	Terminal resistance	Ω	3.8		3.4		2	
3	空载转速	No-load speed	rpm	23000		17200		17500	
4	空载电流	No-load current	A	0.1		0.15		0.18	
5	堵转转矩	Stall torque	mNm	5.3		4.9		5.8	
6	堵转电流	Stall current	A	1.95		1.8		2.5	
7	额定转矩	Nominal torque	mNm	1.3		1.3		1.4	
8	额定转速	Nominal speed	rpm	15300		10800		11600	
9	额定电流	Nominal current	A	0.57		0.6		0.78	
10	最大输出功率	Max. output power	W	3.3		2.2		2.5	
11	最大效率	Max. efficiency	%	62		50		51	
12	反电势常数	Back-EMF constant	mV/rpm	0.3		0.3		0.3	
13	转矩常数	Torque constant	mNm/A	2.9		3		2.5	
14	KV 值	KV Value	rpm/V	3100		2900		3500	
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3800		3700		3030	
16	转子惯量	Rotor inertia	gcm ²	0.17		0.17		0.17	
17	重量	Weight	g	9.5		9.5		9.5	
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	32		B1220N2B03-230-7.4			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	5.5					
20	热时常数 (电机)	Thermal time constant motor	s	190					
21	热时常数 (线圈)	Thermal time constant winding	s	1.5					
22	工作温度范围	Operating temperature range	°C	-40~+60					
23	绕组耐温等级	Thermal class of winding	°C	155					
机械参数 / Mechanical Data									
24	轴向间隙	Axial play	mm	0.012					
25	径向间隙	Radial play	mm	0.008					
26	动态轴向载荷	Axial load dynamic	N	1					
27	静态轴向载荷	Axial load static	N	25					
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	6.3					
其它参数 / Other Specifications									
29	极对数	No. of pole pairs		1					
30	滚珠轴承	Ball bearings		2					
31	换向结构	Commutation structure		sensorless					
32	防护等级	Protection class		IP30					
可选配置 / Options				端子定义 / Connection					
齿轮箱：行星齿轮				齿轮组主要技术指标详见第 129 页		A 霍尔传感器 /hall sensor		B 无传感器 /sensorless	
Gearbox: planetary gearbox				the main technical parameters are detailed on page 129				AWG 30	
性能 Special coils: 连续运行范围内可定制				customizable in continuous operation range		Pin1 -		Pin1 U	
编码器 Encoder/ 驱动器 Driver: 可定制				customizable upon request		Pin2 +		Pin2 V	
法兰 Flange: 标准前后法兰				standard front and rear flanges / 定制法兰		Pin3 Hv		Pin3 W	
定制法兰				custom flanges		Pin4 Hu			
轴 Shaft: 长度				length / 异形		Pin5 Hw			
shape						Pin6 W			
轴承类型 Bearing type: 含油轴承				sleeve bearings / 滚珠轴承		Pin7 U			
ball bearings						Pin8 V			
电气连接 Electrical connection: 端子或导线				connector or wire / 导线长度		lead wires length			
connector or wire									
外观图 /Outline Drawing									

外观图 / Outline Drawing



B1230N2B $\varnothing 12\text{mm} \times 30\text{mm}$, 内转子无槽无传感器 Inner Rotor, Slotless, Sensorless

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				28-115-12.0	10-180-9.0	15-180-3.7	31-65-12.0
电机参数 / Motor Data							
1	电压	Voltage	V	12.0	9.0	3.7	12.0
2	端电阻	Terminal resistance	Ω	9	2.4	0.6	34
3	空载转速	No-load speed	rpm	11500	18000	18000	6600
4	空载电流	No-load current	A	0.05	0.15	0.23	0.04
5	堵转转矩	Stall torque	mNm	12.3	16.5	11.2	4.82
6	堵转电流	Stall current	A	1.4	3.8	6.2	0.35
7	额定转矩	Nominal torque	mNm	3.8	2.7	3	0.3
8	额定转速	Nominal speed	rpm	6800	14100	12200	5280
9	额定电流	Nominal current	A	0.45	0.74	1.7	0.6
10	最大输出功率	Max. output power	W	3.7	7.8	5.9	0.83
11	最大效率	Max. efficiency	%	65	64	64	44
12	反电势常数	Back-EMF constant	mV/rpm	1	0.5	0.2	0.448
13	转矩常数	Torque constant	mNm/A	9.6	4.6	1.9	1.6
14	KV 值	KV Value	rpm/V	960	2000	4860	550
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	930	1090	1430	1370
16	转子惯量	Rotor inertia	gcm^2	0.21	0.21	0.21	0.21
17	重量	Weight	g	15	15	15	15

热参数 / Thermal Data				特性曲线 / Characteristics Curve			
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	24			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4.5			
20	热时间常数 (电机)	Thermal time constant motor	s	240			
21	热时间常数 (线圈)	Thermal time constant winding	s	2			
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100			
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155			

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

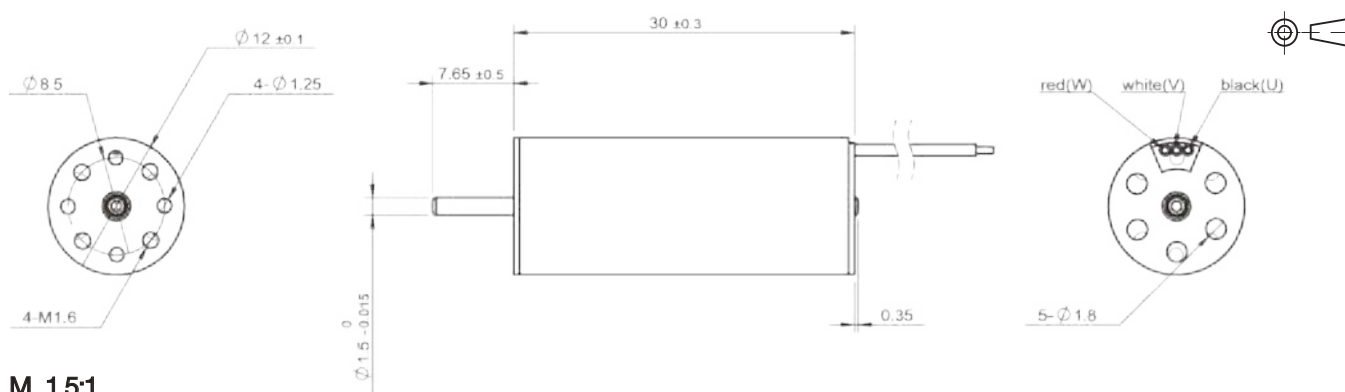
其它参数 / Other Specifications			
29	极对数	No. of pole pairs	1
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP30

可选配置 / Options		端子定义 / Connection	
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齿轮箱：行星齿轮 齿轮组主要技术指标详见第 129 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 129
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

无传感器 / sensorless
 AWG 28
 Pin1 W red
 Pin2 V white
 Pin3 U black

外观图 / Outline Drawing



M 15:1

规格如有变更，恕不另行通知。Specification subject to change without notice.

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精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无刷力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

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B1231NH2B

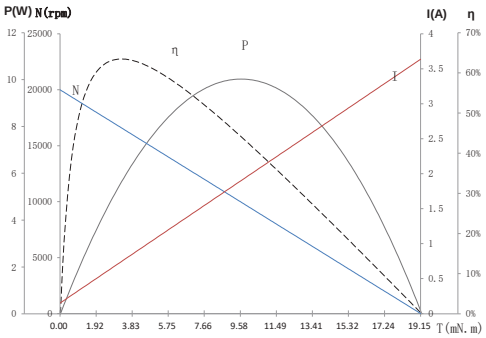
Ø12mm*30.8mm, 内转子无槽带传感器 Inner Rotor, Slotless, Sensored

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

42-200-12.0

电机参数 / Motor Data					
1	电压	Voltage	V	12.0	
2	端电阻	Terminal resistance	Ω	3.3	
3	空载转速	No-load speed	rpm	20000	
4	空载电流	No-load current	A	0.15	
5	堵转转矩	Stall torque	mNm	19.2	
6	堵转电流	Stall current	A	3.6	
7	额定转矩	Nominal torque	mNm	1.1	
8	额定转速	Nominal speed	rpm	18900	
9	额定电流	Nominal current	A	0.35	
10	最大输出功率	Max. output power	W	10	
11	最大效率	Max. efficiency	%	63	
12	反电势常数	Back-EMF constant	mV/rpm	0.6	
13	转矩常数	Torque constant	mNm/A	5.5	
14	KV 值	KV Value	rpm/V	1660	
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1040	
16	转子惯量	Rotor inertia	gcm ²	0.21	
17	重量	Weight	g	16	

热参数 / Thermal Data					特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	24		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4.5		
20	热时常数 (电机)	Thermal time constant motor	s	240		
21	热时常数 (线圈)	Thermal time constant winding	s	2		
22	工作温度范围	Operating temperature range	°C	-40~+100		
23	绕组耐温等级	Thermal class of winding	°C	155		

机械参数 / Mechanical Data				
24	轴向间隙	Axial play	mm	0.012
25	径向间隙	Radial play	mm	0.008
26	动态轴向载荷	Axial load dynamic	N	1
27	静态轴向载荷	Axial load static	N	25
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	6.3

其它参数 / Other Specifications				
29	极对数	No. of pole pairs		1
30	滚珠轴承	Ball bearings		2
31	换向结构	Commutation structure	hall sensor	
32	防护等级	Protection class	IP30	

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

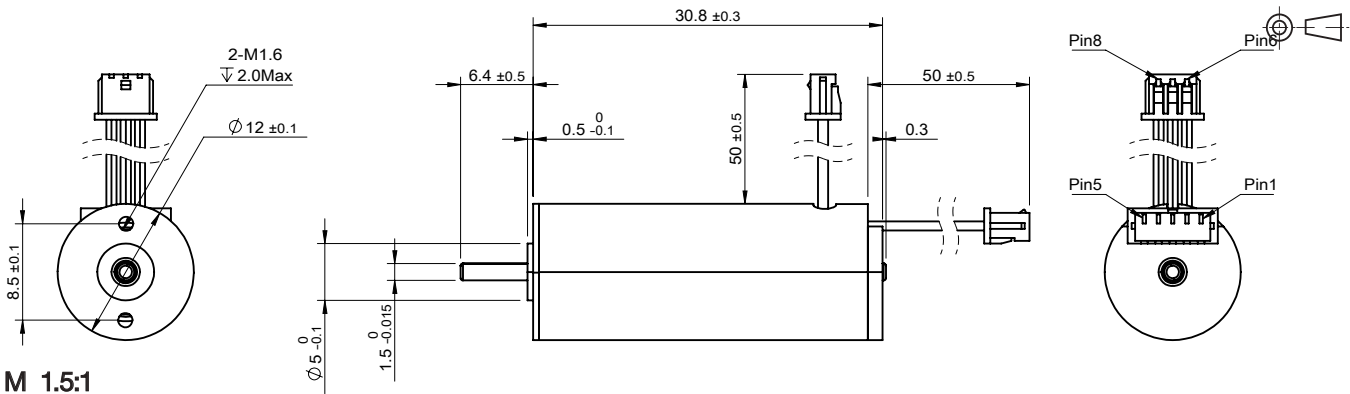
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 129 页
the main technical parameters are detailed on page 129

霍尔传感器 / hall sensor
AWG 28

Pin1 H-
Pin2 H+
Pin3 Hw
Pin4 Hv
Pin5 Hu
Pin6 W
Pin7 V
Pin8 U

外观图 /Outline Drawing



B1635N2B $\varnothing 16\text{mm} \times 35.7\text{mm}$, 内转子无槽无传感器 Inner Rotor, Slotless, Sensorless

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				B1635N2B 01-450-12.0	B1635NH2B 16-79-12.0
电机参数 / Motor Data					
1	电压	Voltage	V	12.0	12.0
2	端电阻	Terminal resistance	Ω	0.35	10.1
3	空载转速	No-load speed	rpm	45000	7900
4	空载电流	No-load current	A	0.35	0.07
5	堵转转矩	Stall torque	mNm	85	15.2
6	堵转电流	Stall current	A	34	1.2
7	额定转矩	Nominal torque	mNm	1.5	3.0
8	额定转速	Nominal speed	rpm	43800	6360
9	额定电流	Nominal current	A	0.96	0.29
10	最大输出功率	Max. output power	W	100	3.16
11	最大效率	Max. efficiency	%	81	57.3
12	反电势常数	Back-EMF constant	mV/rpm	0.3	1.43
13	转矩常数	Torque constant	mNm/A	2.5	13.6
14	KV 值	KV Value	rpm/V	3750	658
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	530	517
16	转子惯量	Rotor inertia	gcm^2	1.5	1.5
17	重量	Weight	g	40	40

热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	17	B1635N2B01-450-12.0 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P)
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4.8	
20	热时间常数 (电机)	Thermal time constant motor	s	250	
21	热时间常数 (线圈)	Thermal time constant winding	s	6	
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100	
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155	

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

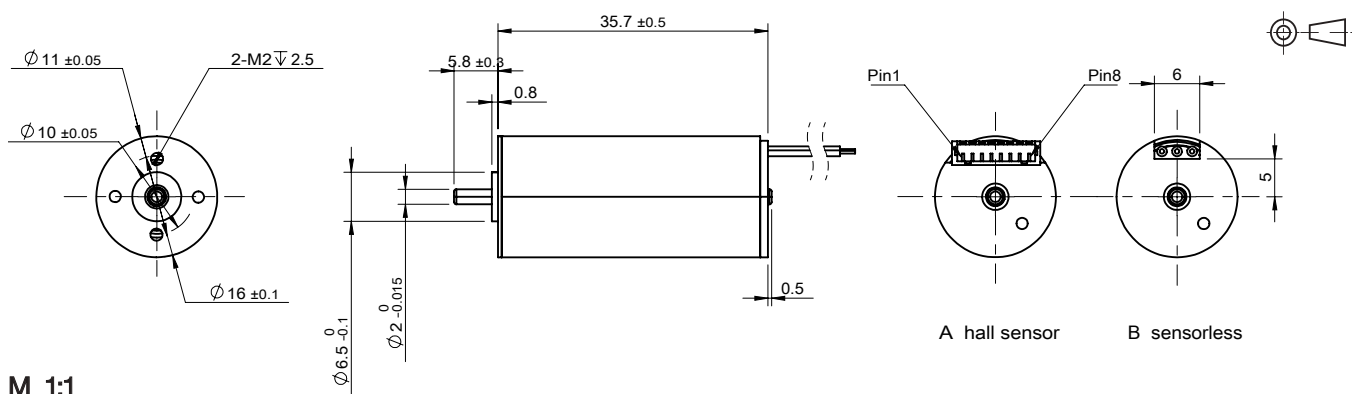
其它参数 / Other Specifications			
29	极对数	No. of pole pairs	1
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP30

可选配置 / Options		端子定义 / Connection	
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齿轮箱：行星齿轮 齿轮组主要技术指标详见第 131 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 131
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor AWG 28		B 无传感器 / sensorless AWG 28	
Pin1	H-	Pin1	U
Pin2	H+	Pin2	V
Pin3	Hw	Pin3	W
Pin4	Hv		
Pin5	Hu		
Pin6	W		
Pin7	V		
Pin8	U		

外观图 / Outline Drawing



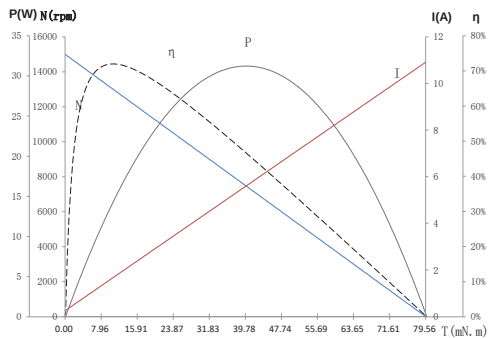
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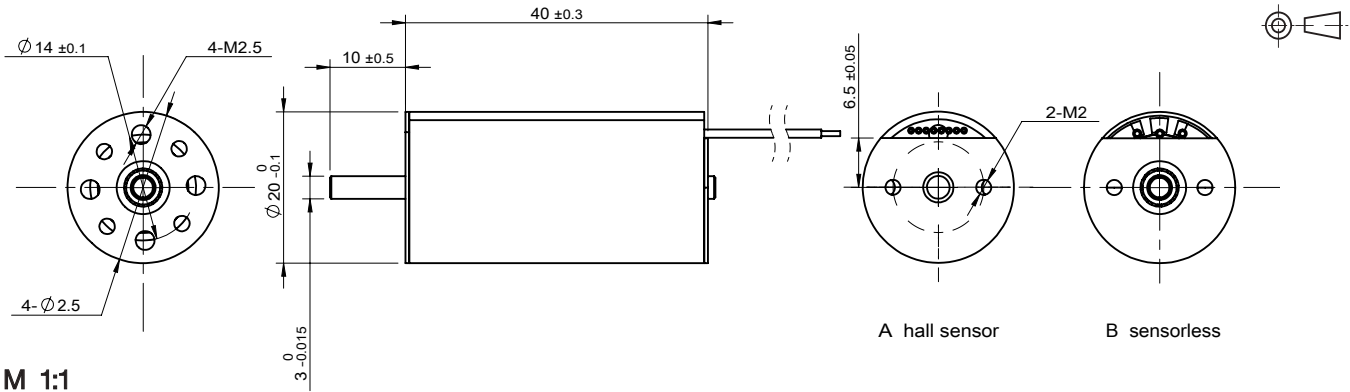
规格如有变更，恕不另行通知。Specification subject to change without notice.

B2040N2B

Ø20mm*40mm, 内转子无槽无传感器 Inner Rotor, Slotless, Sensorless

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。
Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				03-150-12.0	B2040N2B 09-80-12.0	05-67-9.0	B2040NH2B 21-158-24.0
电机参数 / Motor Data							
1	电压	Voltage	V	12.0	12.0	9.0	24.0
2	端电阻	Terminal resistance	Ω	1.1	3.6	2.5	15
3	空载转速	No-load speed	rpm	15000	8000	6700	15800
4	空载电流	No-load current	A	0.25	0.22	0.2	0.08
5	堵转转矩	Stall torque	mNm	79.6	41.7	41.2	21
6	堵转电流	Stall current	A	10.9	3.3	3.6	1.6
7	额定转矩	Nominal torque	mNm	7.6	7.6	10.2	4.0
8	额定转速	Nominal speed	rpm	13000	5900	4300	12800
9	额定电流	Nominal current	A	1.3	0.8	1.1	0.37
10	最大输出功率	Max. output power	W	31	8.7	7.2	8.67
11	最大效率	Max. efficiency	%	72	55	58	60
12	反电势常数	Back-EMF constant	mV/rpm	0.8	1.4	1.3	1.44
13	转矩常数	Torque constant	mNm/A	7.5	13.4	12.1	13.7
14	KV 值	KV Value	rpm/V	1250	666.7	744.4	658.3
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	188.5	192.1	162.7	754.3
16	转子惯量	Rotor inertia	gcm ²	2	2	2	2
17	重量	Weight	g	55	55	55	55
热参数 / Thermal Data				特性曲线 /Characteristics Curve			
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	16	B2040N2B03-150-12.0 		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3.5			
20	热时常数 (电机)	Thermal time constant motor	s	620			
21	热时常数 (线圈)	Thermal time constant winding	s	4			
22	工作温度范围	Operating temperature range	°C	-40~+100			
23	绕组耐温等级	Thermal class of winding	°C	155			
机械参数 / Mechanical Data							
24	轴向间隙	Axial play	mm	0.012	— 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.		
25	径向间隙	Radial play	mm	0.008			
26	动态轴向载荷	Axial load dynamic	N	5			
27	静态轴向载荷	Axial load static	N	80			
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	29			
其它参数 / Other Specifications				端子定义 / Connection			
29	极对数	No. of pole pairs		1	A 霍尔传感器 /hall sensor AWG 26 B 无传感器 /sensorless AWG 26		
30	滚珠轴承	Ball bearings		2			
31	换向结构	Commutation structure		sensorless			
32	防护等级	Protection class		IP30			
可选配置 / Options				齿轮箱 / Gearbox			
齿轮箱：行星齿轮		齿轮组主要技术指标详见第 132 页		A 霍尔传感器 /hall sensor			
Gearbox: planetary gearbox		the main technical parameters are detailed on page 132		AWG 26			
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				Pin1 U			
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin2 V			
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin3 W			
轴 Shaft: 长度 length / 异形 shape				Pin4 Hu			
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings				Pin5 Hv			
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin6 Hw			
外观图 /Outline Drawing				Pin7 H+			
				Pin8 H-			



B2050NH2B $\varnothing 20\text{mm} \times 49.8\text{mm}$, 内转子无槽带传感器 Inner Rotor, Slotless, Sensored

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

				08-83-24.0	09-130-24.0
电机参数 / Motor Data					
1	电压	Voltage	V	24.0	24.0
2	端电阻	Terminal resistance	Ω	16	6.9
3	空载转速	No-load speed	rpm	8300	13000
4	空载电流	No-load current	mA	80	150
5	堵转转矩	Stall torque	mNm	37	56
6	堵转电流	Stall current	mA	1500	3500
7	额定转矩	Nominal torque	mNm	7	8
8	额定转速	Nominal speed	rpm	6600	11000
9	额定电流	Nominal current	mA	400	650
10	最大输出功率	Max. output power	W	8	19
11	最大效率	Max. efficiency	%	61	62
12	反电势常数	Back-EMF constant	mV/rpm	2.75	1.77
13	转矩常数	Torque constant	mNm/A	26.3	16.9
14	KV 值	KV Value	rpm/V	345	540
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	224	232
16	转子惯量	Rotor inertia	gcm^2	0.79	0.79
17	重量	Weight	g	77.5	77.5

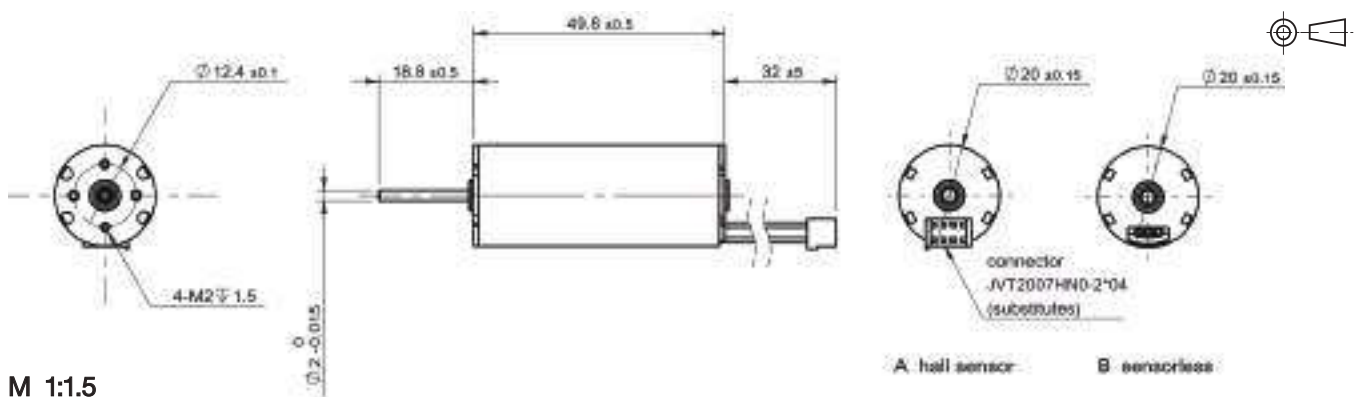
热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	14.6	B2050NH2B08-83-24.0 Legend: — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) For reference only, please refer to the product specification.
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4.7	
20	热时间常数 (电机)	Thermal time constant motor	s	385	
21	热时间常数 (线圈)	Thermal time constant winding	s	370	
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+70	
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155	

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	1
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP30

可选配置 / Options		端子定义 / Connection	
齿轮箱：行星齿轮 Gearbox: planetary gearbox 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges 轴 Shaft: 长度 length / 异形 shape 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		齿轮组主要技术指标详见第 132 页 the main technical parameters are detailed on page 132 A 霍尔传感器 / hall sensor AWG 22 Pin1 Hw green Pin2 Hv grey Pin3 Hu brown Pin4 + red Pin5 - black Pin6 U blue Pin7 W white Pin8 V yellow B 无传感器 / sensorless AWG 22 Pin1 U red Pin2 V white Pin3 W black	

外观图 / Outline Drawing



B4040NH2B $\varnothing 40\text{mm} \times 40.3\text{mm}$, 内转子无槽带传感器 Inner Rotor, Slotless, Sensored

应用领域：医疗器械、自动化设备、精密仪器等精密驱动领域。

Applications: precision drives in medical equipment, automation equipment, precision instrument, etc.

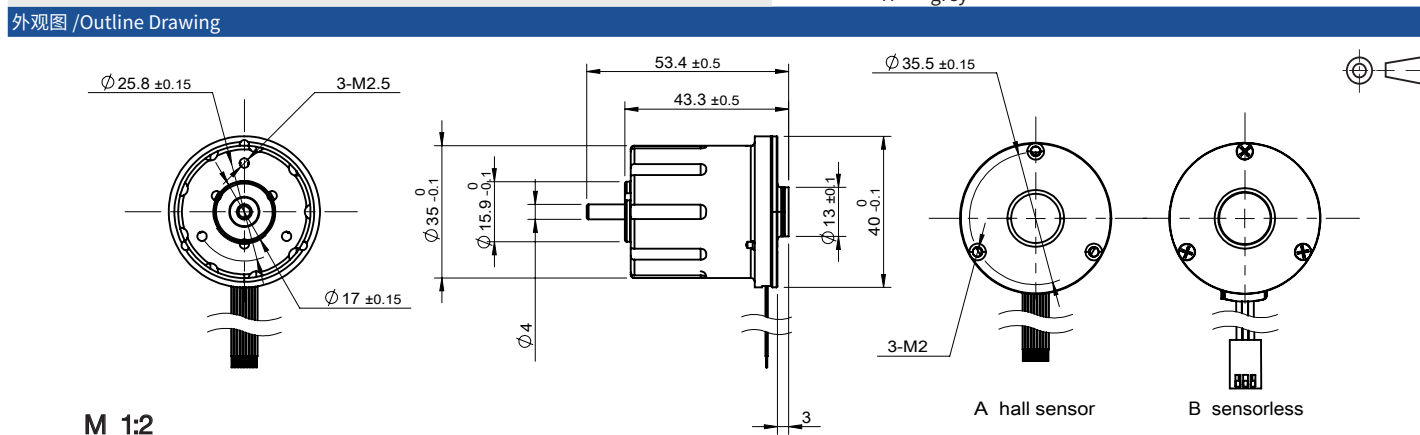
				02-420-18.0	01-420-24.0	03-300-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	18.0	24.0	24.0
2	端电阻	Terminal resistance	Ω	1.5	2	2.8
3	空载转速	No-load speed	rpm	42000	42000	30000
4	空载电流	No-load current	A	0.168	0.2	0.2
5	堵转转矩	Stall torque	mNm	47.7	63.3	62.5
6	堵转电流	Stall current	A	12	12	8.6
7	额定转矩	Nominal torque	mNm	5	5	5
8	额定转速	Nominal speed	rpm	37000	38000	27000
9	额定电流	Nominal current	A	1.4	1.2	0.9
10	最大输出功率	Max. output power	W	52.6	69.7	49.1
11	最大效率	Max. efficiency	%	77.7	75.8	71.7
12	反电势常数	Back-EMF constant	mV/rpm	0.4	0.56	0.78
13	转矩常数	Torque constant	mNm/A	4	5.4	7.5
14	KV 值	KV Value	rpm/V	2333.3	1750	1250
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	879.7	663.3	480.3
16	转子惯量	Rotor inertia	gcm^2	20	20	20
17	重量	Weight	g	200	200	200

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	9		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2.4		
20	热时常数 (电机)	Thermal time constant motor	s	1400		
21	热时常数 (线圈)	Thermal time constant winding	s	20		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	$-40 \sim +120$		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	2
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP20

可选配置 / Options		端子定义 / Connection	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		A 霍尔传感器 / hall sensor	
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request		B 无传感器 / sensorless	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges		Pin1 U red 3P lead-out	
轴 Shaft: 长度 length / 异形 shape		Pin2 V yellow 3P lead-out	
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings		Pin3 W black 3P lead-out	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin1 Hw red 6P lead-out	
		Pin2 Hu grey 6P lead-out	
		Pin3 GND grey 6P lead-out	
		Pin4 Hv grey 6P lead-out	
		Pin5 NTC grey 6P lead-out	
		Pin6 H+ grey 6P lead-out	



M 1:2

BS1630NH2B

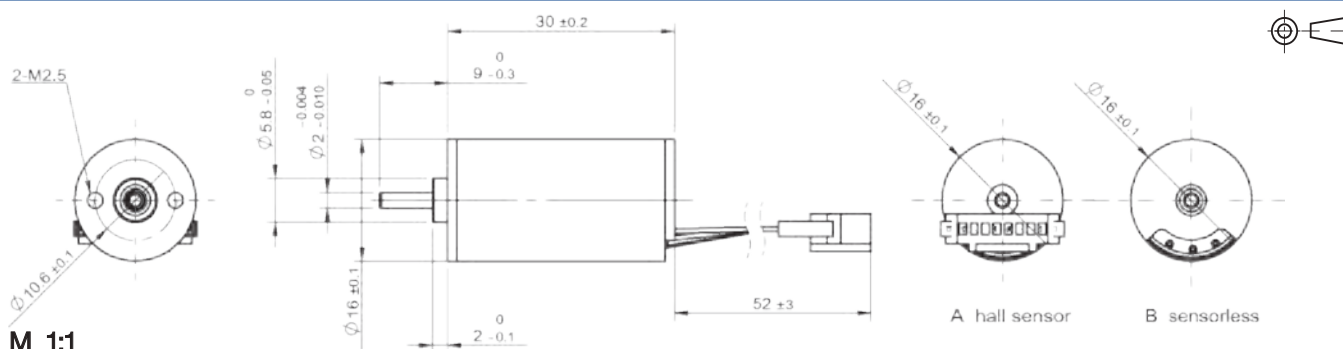
Ø16mm*30mm, 内转子有槽带传感器 Inner Rotor, Slotted, Sensored

应用领域: 医疗器械、工业设备等精密驱动领域。

Applications: precision drives in medical equipment, industrial automation fields.

				01-160-24.0	02-100-24.0	02-100-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	24.0	24.0
2	端电阻	Terminal resistance	Ω	10.5	16.8	8.4
3	空载转速	No-load speed	rpm	16000	10000	20000
4	空载电流	No-load current	A	0.1	0.1	0.1
5	堵转转矩	Stall torque	mNm	29.9	28	30.5
6	堵转电流	Stall current	A	2.3	1.5	2.9
7	额定转矩	Nominal torque	mNm	7	7	7
8	额定转速	Nominal speed	rpm	12000	7500	15300
9	额定电流	Nominal current	A	0.6	0.5	0.8
10	最大输出功率	Max. output power	W	12	7.4	16
11	最大效率	Max. efficiency	%	62	54	66
12	反电势常数	Back-EMF constant	mV/rpm	1.43	2.2	1.15
13	转矩常数	Torque constant	mNm/A	13.6	21.3	11
14	KV 值	KV Value	rpm/V	667	416	833
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	534	353	656
16	转子惯量	Rotor inertia	gcm ²	0.36	0.36	0.36
17	重量	Weight	g	30	30	30
热参数 / Thermal Data				特性曲线 /Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	17.3	BS1630NH2B01-160-24.0 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考, 详细了解请以产品规格书为准。 For reference only, please refer to the product specification.	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4		
20	热时间常数 (电机)	Thermal time constant motor	s	600		
21	热时间常数 (线圈)	Thermal time constant winding	s	3		
22	工作温度范围	Operating temperature range	°C	-40~+100		
23	绕组耐温等级	Thermal class of winding	°C	155		
机械参数 / Mechanical Data						
24	轴向间隙	Axial play	mm	0.012		
25	径向间隙	Radial play	mm	0.008		
26	动态轴向载荷	Axial load dynamic	N	5		
27	静态轴向载荷	Axial load static	N	80		
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	29		
其它参数 / Other Specifications						
29	极对数	No. of pole pairs		2		
30	滚珠轴承	Ball bearings		2		
31	换向结构	Commutation structure		hall sensor		
32	防护等级	Protection class		IP30		
可选配置 / Options				端子定义 / Connection		
齿轮箱 : 行星齿轮 Gearbox: planetary gearbox				A 霍尔传感器 /hall sensor AWG 28		
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				Pin1	Hw	green
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin2	Hv	grey
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin3	Hu	brown
轴 Shaft: 长度 length / 异形 shape				Pin4	+	red
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings				Pin5	-	black
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin6	U	blue
				Pin7	W	white
				Pin8	V	yellow
				Pin1	U	red
				Pin2	V	white
				Pin3	W	black
				B 无传感器 /sensorless AWG 26		

外观图 / Outline Drawing



规格如有变更, 恕不另行通知。Specification subject to change without notice.

www.constarmotor.com 75

BS2430NBIEH2B

Ø24.4mm*30.8mm, 内转子有槽带内置驱动器 Inner Rotor With Integrated Driver, Slotted

应用领域：汽车、医疗器械、工业设备等精密驱动领域。
Applications: automobile, precision drives in medical equipment, industrial automation fields.

03-50-12.0

04-53-12.0

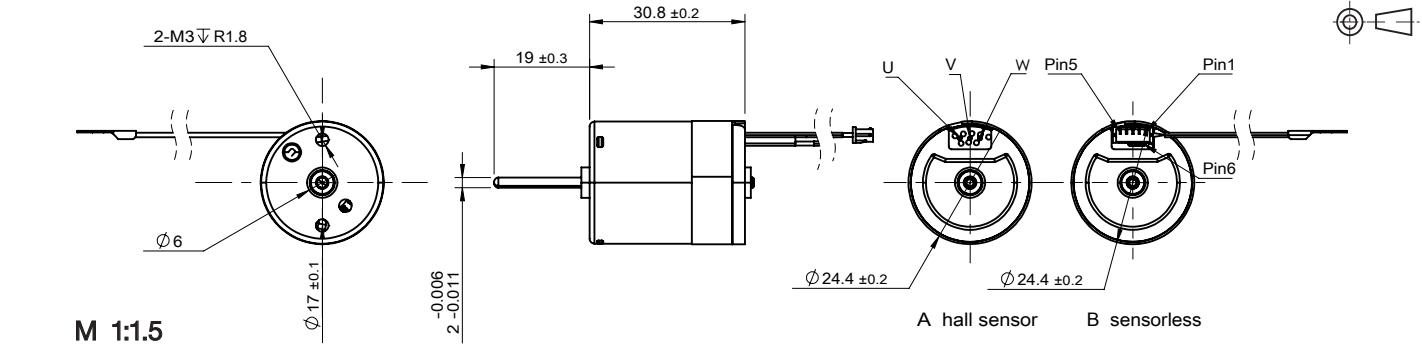
电机参数 / Motor Data					
1	电压	Voltage	V	12.0	
2	端电阻	Terminal resistance	Ω	7.5	
3	空载转速	No-load speed	rpm	4800	
4	空载电流	No-load current	A	0.1	
5	堵转转矩	Stall torque	mNm	24	
6	堵转电流	Stall current	A	1.6	
7	额定转矩	Nominal torque	mNm	4.9	
8	额定转速	Nominal speed	rpm	3800	
9	额定电流	Nominal current	A	0.35	
10	最大输出功率	Max. output power	W	4.2	
11	最大效率	Max. efficiency	%	56	
12	反电势常数	Back-EMF constant	mV/rpm	2.34	
13	转矩常数	Torque constant	mNm/A	22.38	
14	KV 值	KV Value	rpm/V	400	
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	200	
16	转子惯量	Rotor inertia	gcm ²	9	
17	重量	Weight	g	62	
热参数 / Thermal Data					
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	16.7	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	7.48	
20	热时间常数 (电机)	Thermal time constant motor	s	336	
21	热时间常数 (线圈)	Thermal time constant winding	s	250	
22	工作温度范围	Operating temperature range	°C	-40~+70	
23	绕组耐温等级	Thermal class of winding	°C	155	
机械参数 / Mechanical Data					
24	轴向间隙	Axial play	mm	0.008	
25	径向间隙	Radial play	mm	0.006	
26	动态轴向载荷	Axial load dynamic	N	5	
27	静态轴向载荷	Axial load static	N	80	
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	29	
其它参数 / Other Specifications					
29	极对数	No. of pole pairs		6	
30	滚珠轴承	Ball bearings		2	
31	换向结构	Commutation structure		hall sensor	
32	防护等级	Protection class		IP30	
可选配置 / Options					
齿轮箱：行星齿轮		齿轮组主要技术指标详见第 157 页			
Gearbox: planetary gearbox the main technical parameters are detailed on page 157					
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range					
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request					
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges					
轴 Shaft: 长度 length / 异形 shape					
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings					
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length					
端子定义 / Connection					
A 霍尔传感器 /hall sensor		B 无传感器 /sensorless			
AWG 28		AWG 28			
Pin1	PWM	blue	Pin1	U	red
Pin2	GND	black	Pin2	V	white
Pin3	CW/CCW	yellow	Pin3	W	black
Pin4	FG	green			
Pin5	Vcc	red			
Pin6	RX	brown			
Pin7	TX	white			
Pin8	BOOT0	purple			

特性曲线 /Characteristics Curve

BS2430NBIEH2B04-53-12.0

— 转速 (N) — 电流 (I) - - - 效率 (η)
—— 功率 (P)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.



BS2838NB2B $\varnothing 27.6\text{mm} \times 37.6\text{mm}$, 内转子有槽无传感器 Inner Rotor, Slotted, Sensorless

应用领域：医疗器械、工业设备等精密驱动领域。

Applications: precision drives in medical equipment, industrial automation fields.

				01-66-12	03-45-16.0	02-66-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	16.0	24.0
2	端电阻	Terminal resistance	Ω	2.3	14	12.7
3	空载转速	No-load speed	rpm	6600	4500	6600
4	空载电流	No-load current	A	0.25	0.1	0.1
5	堵转转矩	Stall torque	mNm	83	32	58
6	堵转电流	Stall current	A	5	1.1	1.9
7	额定转矩	Nominal torque	mNm	10	10	10
8	额定转速	Nominal speed	rpm	5550	3000	5400
9	额定电流	Nominal current	A	0.9	0.5	0.4
10	最大输出功率	Max. output power	W	14	3.8	10
11	最大效率	Max. efficiency	%	61	50	59
12	反电势常数	Back-EMF constant	mV/rpm	1.7	3	3.4
13	转矩常数	Torque constant	mNm/A	16.5	30.9	32.8
14	KV 值	KV Value	rpm/V	550	281	275
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	80	139	112
16	转子惯量	Rotor inertia	gcm^2	13	13	13
17	重量	Weight	g	80	80	80

热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	17.3	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4	
20	热时间常数 (电机)	Thermal time constant motor	s	600	
21	热时间常数 (线圈)	Thermal time constant winding	s	3	
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100	
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155	

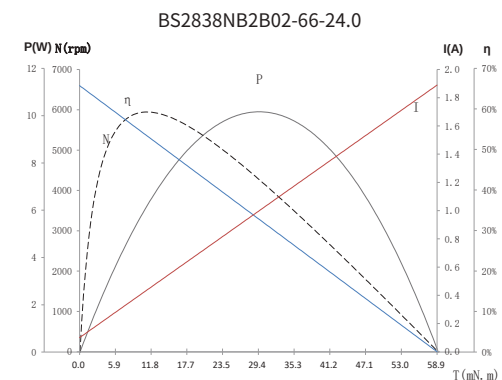
机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm 0.012
25	径向间隙	Radial play	mm 0.008
26	动态轴向载荷	Axial load dynamic	N 5
27	静态轴向载荷	Axial load static	N 80
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N 29

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	2
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP30

可选配置 / Options	端子定义 / Connection
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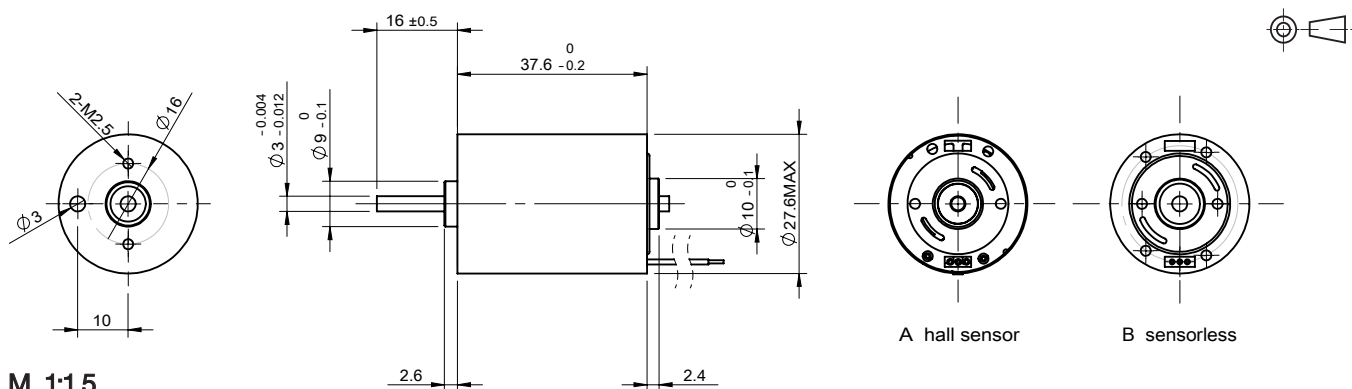
齿轮箱：行星齿轮 齿轮组主要技术指标详见第 157 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 157
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor		B 无传感器 / sensorless	
AWG 24		AWG 24	
Pin1	+	Pin1	U
Pin2	-	Pin2	V
Pin3	HSF	Pin3	W
Pin4	CW/CCW		
Pin5	PWM		



仅供参考，详细了解请以产品规格书为准。
 For reference only, please refer to the product specification.

外观图 / Outline Drawing



BS3246NBH2B $\varnothing 32\text{mm} \times 46.5\text{mm}$, 内转子有槽带传感器 Inner Rotor, Slotted, Sensored

应用领域: 医疗器械、工业设备等精密驱动领域。

Applications: precision drives in medical equipment, industrial automation fields.

				01-51-12.0	02-80-12.0	03-40-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	12.0	12.0
2	端电阻	Terminal resistance	Ω	2.4	1.5	3
3	空载转速	No-load speed	rpm	5100	8000	4000
4	空载电流	No-load current	A	0.2	0.2	0.2
5	堵转转矩	Stall torque	mNm	103.5	108	103
6	堵转电流	Stall current	A	5	8	4
7	额定转矩	Nominal torque	mNm	24	24	24
8	额定转速	Nominal speed	rpm	4000	6000	2800
9	额定电流	Nominal current	A	1.3	2	1
10	最大输出功率	Max. output power	W	14	22.8	10.8
11	最大效率	Max. efficiency	%	64	70.8	60
12	反电势常数	Back-EMF constant	mV/rpm	2.2	1.5	2.8
13	转矩常数	Torque constant	mNm/A	21.5	14	27
14	KV 值	KV Value	rpm/V	420	666	333
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	48	73	38
16	转子惯量	Rotor inertia	gcm^2	26	26	26
17	重量	Weight	g	130	130	130

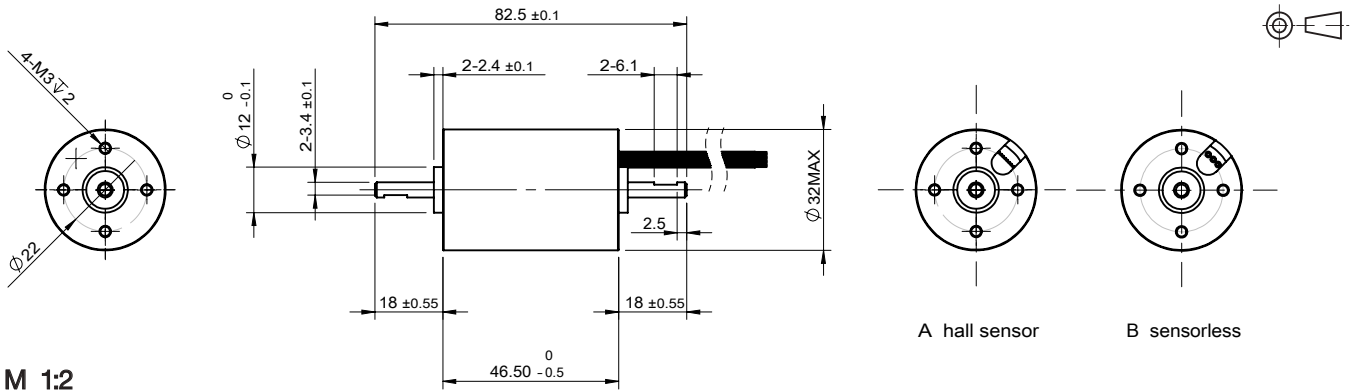
热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	16	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3.5	
20	热时常数 (电机)	Thermal time constant motor	s	620	
21	热时常数 (线圈)	Thermal time constant winding	s	4	
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100	
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155	

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	2
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP30

可选配置 / Options		端子定义 / Connection	
齿轮箱: 行星齿轮 Gearbox: planetary gearbox		齿轮组主要技术指标详见第 157 页 the main technical parameters are detailed on page 157	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		A 霍尔传感器 / hall sensor AWG 24	
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request		Pin1 + red	Pin1 U
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges		Pin2 - black	Pin2 V
轴 Shaft: 长度 length / 异形 shape		Pin3 HSF yellow	Pin3 W
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings		Pin4 CW/CCW white	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin5 PWM green	

外观图 / Outline Drawing



BS5470N2B $\varnothing 54\text{mm} \times 70\text{mm}$, 内转子有槽无传感器 Inner Rotor, Slotted, Sensorless

应用领域: 医疗器械、工业设备等精密驱动领域。

Applications: precision drives in medical equipment, industrial automation fields.

01-74-24.0

02-55-24.0

电机参数 / Motor Data

1	电压	Voltage	V	24.0	24.0
2	端电阻	Terminal resistance	Ω	3.2	0.6
3	空载转速	No-load speed	rpm	7400	7600
4	空载电流	No-load current	mA	400	360
5	堵转转矩	Stall torque	mNm	208	1184
6	堵转电流	Stall current	mA	7500	40000
7	额定转矩	Nominal torque	mNm	84	84
8	额定转速	Nominal speed	rpm	4300	6100
9	额定电流	Nominal current	mA	2.3	3.6
10	最大输出功率	Max. output power	W	40.3	235
11	最大效率	Max. efficiency	%	59.9	81.8
12	反电势常数	Back-EMF constant	mV/rpm	3.1	3.1
13	转矩常数	Torque constant	mNm/A	29	29
14	KV 值	KV Value	rpm/V	30.8	31.6
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	36	6.4
16	转子惯量	Rotor inertia	gcm^2	120	120
17	重量	Weight	g	500	500

热参数 / Thermal Data

18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	20
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	3
20	热时间常数 (电机)	Thermal time constant motor	s	600
21	热时间常数 (线圈)	Thermal time constant winding	s	4
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180

机械参数 / Mechanical Data

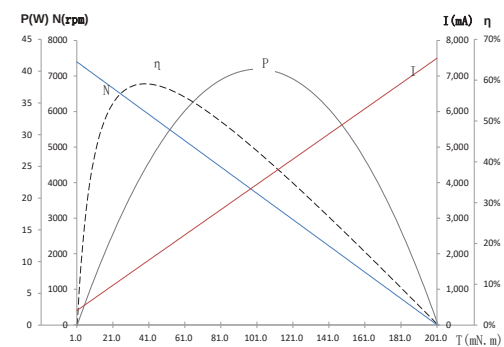
24	轴向间隙	Axial play	mm	0.012
25	径向间隙	Radial play	mm	0.008
26	动态轴向载荷	Axial load dynamic	N	5
27	静态轴向载荷	Axial load static	N	80
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	29

其它参数 / Other Specifications

29	极对数	No. of pole pairs	2
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP30

特性曲线 / Characteristics Curve

BS5470N2B01-74-24.0



— 转速 (N) — 电流 (I) - - - 效率 (η)
— 功率 (P)

仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

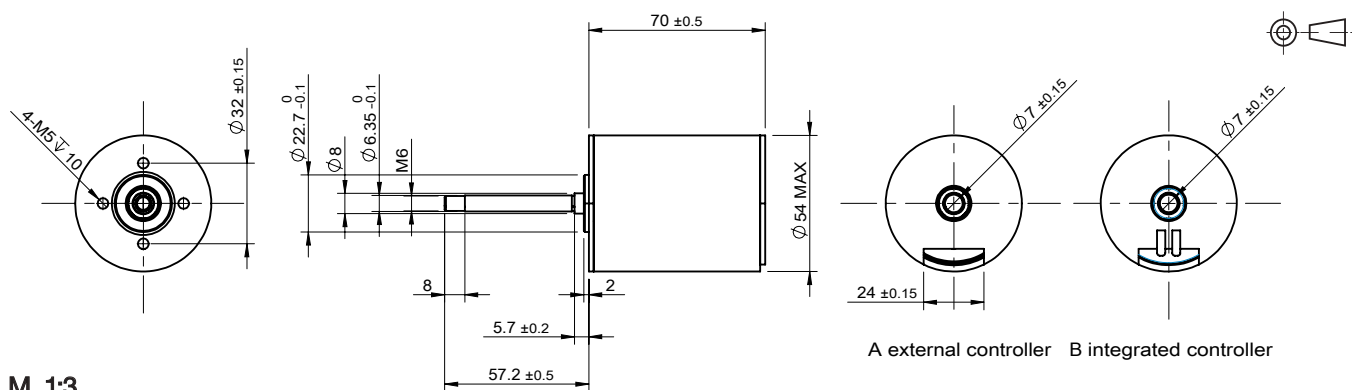
可选配置 / Options

齿轮箱: 行星齿轮 齿轮组主要技术指标详见第 158 页
Gearbox: planetary gearbox the main technical parameters are detailed on page 158
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
驱动器 Driver: 可定制 customizable upon request
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection

A 霍尔传感器 / hall sensor AWG 24	B 无传感器 / sensorless AWG 24
Pin1 U black	Pin1 + red
Pin2 V red	Pin2 - white
Pin3 W white	

外观图 / Outline Drawing



M 1:3

规格如有变更, 恕不另行通知。Specification subject to change without notice.

www.constarmotor.com 79

精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

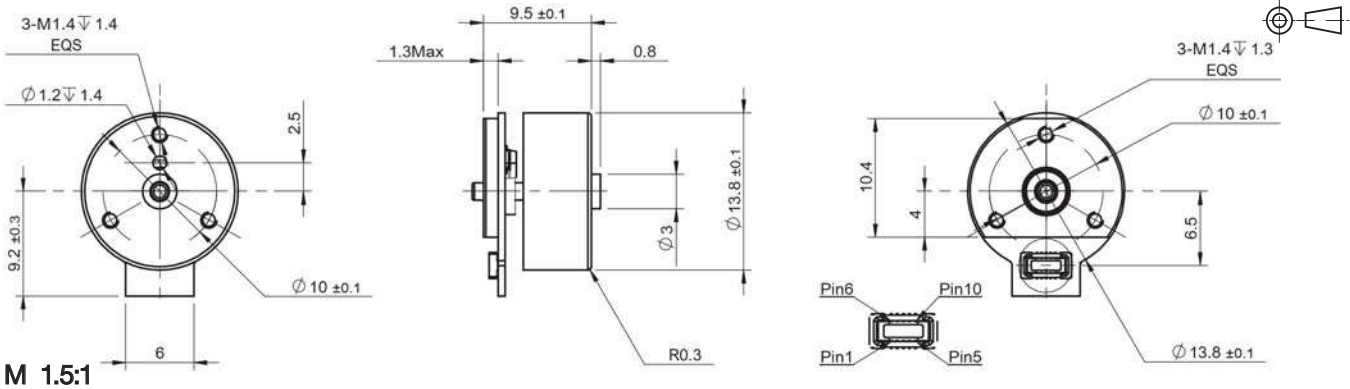
全球营销网络
GLOBAL MARKETING NETWORK

BO1410NBH2B

Ø 13.8mm*9.5mm, 外转子带线性霍尔传感器 Outer Rotor, With Linear Hall Sensor

应用领域：无人机云台、激光雷达、激光扫描、手持云台。
Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				01-142-9.0		02-142-7.6					
电机参数 / Motor Data											
1	电压	Voltage	V	9.0		7.6					
2	端电阻	Terminal resistance	Ω	10		7					
3	空载转速	No-load speed	rpm	14200		14200					
4	空载电流	No-load current	mA	80		90					
5	堵转转矩	Stall torque	mNm	4.5		4.6					
6	堵转电流	Stall current	mA	900		1080					
7	额定转矩	Nominal torque	mNm	1.3		1.5					
8	额定转速	Nominal speed	rpm	7950		7650					
9	额定电流	Nominal current	mA	350		430					
10	最大输出功率	Max. output power	W	1.7		1.7					
11	最大效率	Max. efficiency	%	49.2		50.7					
12	反电势常数	Back-EMF constant	mV/rpm	0.57		0.49					
13	转矩常数	Torque constant	mNm/A	5.5		4.7					
14	电感	Terminal inductance	mH	0.65		0.46					
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3140		3020					
16	转子惯量	Rotor inertia	gcm ²	1		1					
17	重量	Weight	g	5.4		5.4					
热参数 / Thermal Data				特性曲线 / Characteristics Curve							
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	28.4							
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	23.6							
20	热时常数 (电机)	Thermal time constant motor	s	65							
21	热时常数 (线圈)	Thermal time constant winding	s	105							
22	工作温度范围	Operating temperature range	°C	-40~+120							
23	绕组耐温等级	Thermal class of winding	°C	155							
机械参数 / Mechanical Data				BO1410NBH2B01-142-9.0 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.							
24	轴向间隙	Axial play	mm					0.012			
25	径向间隙	Radial play	mm					0.008			
26	动态轴向载荷	Axial load dynamic	N					1			
27	静态轴向载荷	Axial load static	N					25			
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	6.3							
其它参数 / Other Specifications				端子定义 / Connection							
29	极对数	No. of pole pairs		5							
30	滚珠轴承	Ball bearings		2							
31	换向结构	Commutation structure		hall sensor							
32	防护等级	Protection class		IP20							
可选配置 / Options				霍尔传感器 / hall sensor							
齿轮箱：行星齿轮				齿轮组主要技术指标详见第 156 页							
Gearbox: planetary gearbox				the main technical parameters are detailed on page 156							
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				Pin1 Phase U Pin9 HALL 1							
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin2 Phase V Pin10 HALL 2							
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin3 Phase W							
轴 Shaft: 长度 length / 异形 shape				Pin4 VDD(3~5.5V)							
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings				Pin5 AGND							
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin6 Phase U							
外观图 /Outline Drawing				Pin7 Phase V							
				Pin8 Phase W							



BO1412N2B $\varnothing 14.3\text{mm} \times 11.6\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、航模等驱动领域。
Applications: UAV, aeromodelling, etc.

				04-308-5.0	05-309-7.4	06-330-12.0
电机参数 / Motor Data						
1 电压	Voltage	V		5.0	7.4	12.0
2 端电阻	Terminal resistance	Ω		0.18	0.4	0.82
3 空载转速	No-load speed	rpm		30800	30900	33000
4 空载电流	No-load current	A		0.5	0.28	0.2
5 堵转转矩	Stall torque	mNm		41	41	49
6 堵转电流	Stall current	A		27	18	15
7 额定转矩	Nominal torque	mNm		5	8	9
8 额定转速	Nominal speed	rpm		22600	21200	24200
9 额定电流	Nominal current	A		3.4	3.4	2.5
10 最大输出功率	Max. output power	W		33	33	42
11 最大效率	Max. efficiency	%		74	76	77
12 反电势常数	Back-EMF constant	mV/rpm		0.16	0.23	0.35
13 转矩常数	Torque constant	mNm/A		1.5	2.25	3.42
14 KV 值	KV Value	rpm/V		6160	4180	2750
15 转速 / 转矩斜率	Speed/torque gradient	rpm/mNm		751	753	673
16 转子惯量	Rotor inertia	gcm^2		0.98	0.98	0.98
17 重量	Weight	g		6	6	6

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18 热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	26.8			
19 热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	0.52			
20 热时间常数 (电机)	Thermal time constant motor	s	226			
21 热时间常数 (线圈)	Thermal time constant winding	s	200			
22 工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100			
23 绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180			

机械参数 / Mechanical Data			
24 轴向间隙	Axial play	mm	0.012
25 径向间隙	Radial play	mm	0.008
26 动态轴向载荷	Axial load dynamic	N	1.5
27 静态轴向载荷	Axial load static	N	37
28 径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	12

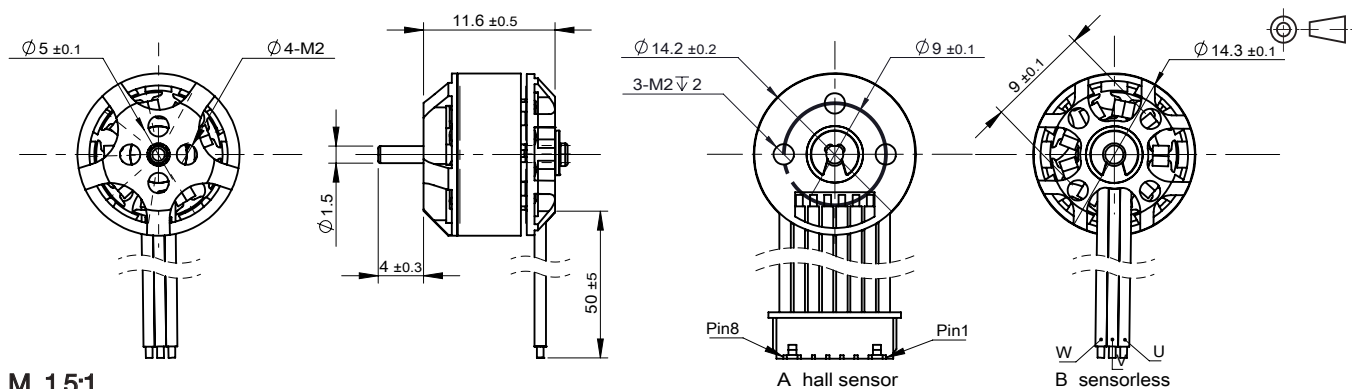
其它参数 / Other Specifications			
29 极对数	No. of pole pairs		6
30 滚珠轴承	Ball bearings		2
31 换向结构	Commutation structure		sensorless
32 防护等级	Protection class		IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮 齿轮组主要技术指标详见第 156 页
Gearbox: planetary gearbox the main technical parameters are detailed on page 156
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
驱动器 Driver: 可定制 customizable upon request
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor AWG 30				B 无传感器 / sensorless AWG 28			
Pin1	Hv	green		Pin1	U	red	
Pin2	Hv	grey		Pin2	V	white	
Pin3	Hu	brown		Pin3	W	black	
Pin4	+	red					
Pin5	-	black					
Pin6	U	blue					
Pin7	W	white					
Pin8	V	yellow					

外观图 / Outline Drawing



BO1615N

Ø 16mm*15.7mm, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、航模等驱动领域。
Applications: UAV, aeromodelling, etc.

01-73-3.7

电机参数 / Motor Data

1	电压	Voltage	V	3.7		
2	端电阻	Terminal resistance	Ω	0.68		
3	空载转速	No-load speed	rpm	7300		
4	空载电流	No-load current	A	0.15		
5	堵转转矩	Stall torque	mNm	24.9		
6	堵转电流	Stall current	A	5.5		
7	额定转矩	Nominal torque	mNm	4		
8	额定转速	Nominal speed	rpm	5930		
9	额定电流	Nominal current	A	0.105		
10	最大输出功率	Max. output power	W	4.5		
11	最大效率	Max. efficiency	%	69		
12	反电势常数	Back-EMF constant	mV/rpm	0.5		
13	转矩常数	Torque constant	mNm/A	4.7		
14	KV 值	KV Value	rpm/V	1970		
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	304		
16	转子惯量	Rotor inertia	gcm ²	1.7		
17	重量	Weight	g	13		

热参数 / Thermal Data

18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	7.9
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	6.4
20	热时常数 (电机)	Thermal time constant motor	s	123
21	热时常数 (线圈)	Thermal time constant winding	s	100
22	工作温度范围	Operating temperature range	°C	-40~+120
23	绕组耐温等级	Thermal class of winding	°C	155

机械参数 / Mechanical Data

24	轴向间隙	Axial play	mm	0.012
25	径向间隙	Radial play	mm	0.008
26	动态轴向载荷	Axial load dynamic	N	1
27	静态轴向载荷	Axial load static	N	25
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	6.3

其它参数 / Other Specifications

29	极对数	No. of pole pairs	5
30	滚珠轴承	Ball bearings	N/A
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

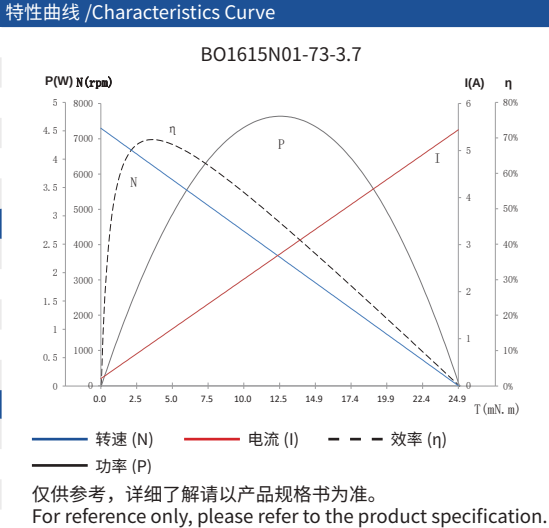
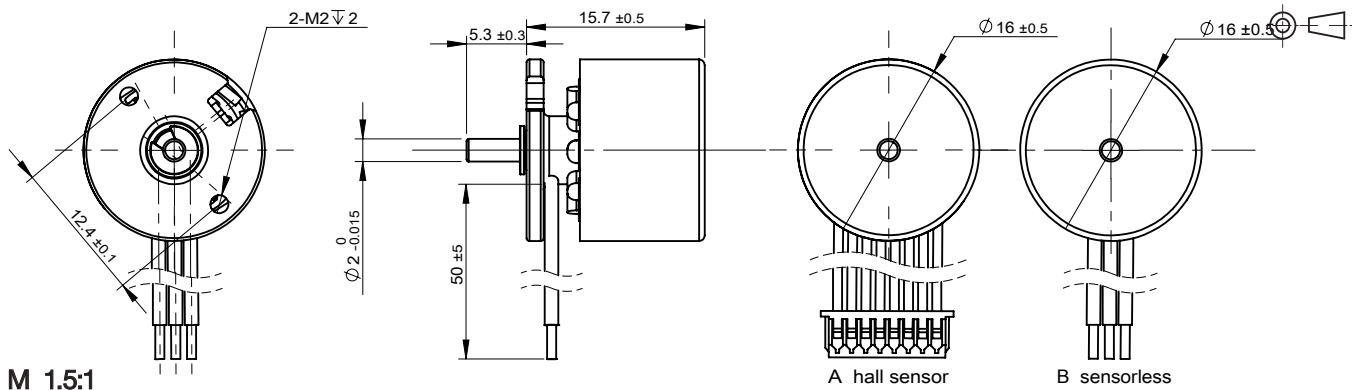
可选配置 / Options

齿轮箱：行星齿轮
Gearbox: planetary gearbox
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
驱动器 Driver: 可定制 customizable upon request
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection

A 霍尔传感器 /hall sensor AWG 30			B 无传感器 /sensorless AWG 28		
Pin1	Hw	green	Pin1	U	red
Pin2	Hv	grey	Pin2	V	white
Pin3	Hu	brown	Pin3	W	black
Pin4	+	red			
Pin5	-	black			
Pin6	U	blue			
Pin7	W	white			
Pin8	V	yellow			

外观图 /Outline Drawing



BO1709NB2B $\varnothing 17\text{mm} \times 9.5\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				02-260-5.0	01-260-10.0	03-260-15.0
电机参数 / Motor Data						
1	电压	Voltage	V	5.0	10.0	15.0
2	端电阻	Terminal resistance	Ω	1.1	4.3	10
3	空载转速	No-load speed	rpm	26000	26000	26000
4	空载电流	No-load current	mA	240	120	80
5	堵转转矩	Stall torque	mNm	7.5	7.6	7.3
6	堵转电流	Stall current	mA	4550	2300	1480
7	额定转矩	Nominal torque	mNm	1.9	1.9	1.9
8	额定转速	Nominal speed	rpm	16250	16400	16120
9	额定电流	Nominal current	mA	1370	680	450
10	最大输出功率	Max. output power	W	5.1	5.2	5.0
11	最大效率	Max. efficiency	%	59	59	59
12	反电势常数	Back-EMF constant	mV/rpm	0.182	0.365	0.546
13	转矩常数	Torque constant	mNm/A	1.7	3.4	5.2
14	KV 值	KV Value	rpm/V	5200	2600	1700
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3460	3384	3540
16	转子惯量	Rotor inertia	gcm^2	1.2	1.2	1.2
17	重量	Weight	g	8.8	8.8	8.8

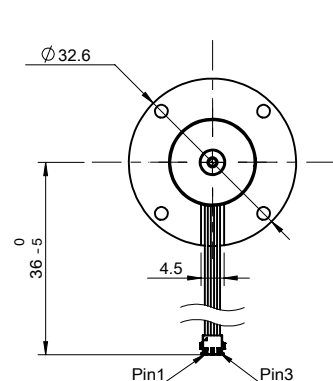
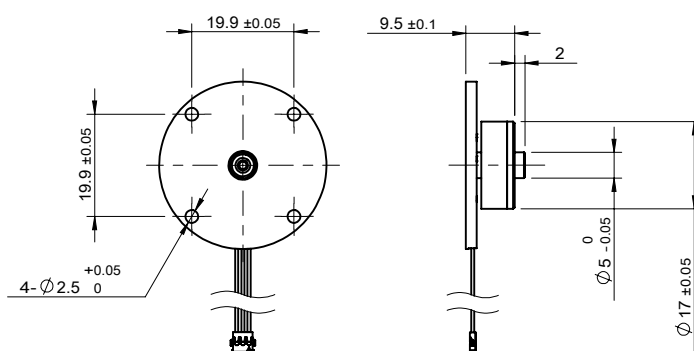
热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	15.4	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	13.6	
20	热时常数 (电机)	Thermal time constant motor	s	128	
21	热时常数 (线圈)	Thermal time constant winding	s	43	
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120	
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155	

机械参数 / Mechanical Data				
24	轴向间隙	Axial play	mm	0.012
25	径向间隙	Radial play	mm	0.008
26	动态轴向载荷	Axial load dynamic	N	1.5
27	静态轴向载荷	Axial load static	N	37
28	径向载荷（距安装面 3mm）	Radial load at 3 mm from mounting face	N	12

其它参数 / Other Specifications				端子定义 / Connection	
29	极对数	No. of pole pairs		4	无传感器 / sensorless AWG 30 Pin1 U white Pin2 V red Pin3 W black
30	滚珠轴承	Ball bearings		2	
31	换向结构	Commutation structure		sensorless	
32	防护等级	Protection class		IP20	

可选配置 / Options		齿轮组主要技术指标详见第 156 页	
齿轮箱: 行星齿轮		the main technical parameters are detailed on page 156	
性能 Special coils: 连续运行范围内可定制	customizable in continuous operation range		
编码器 Encoder/ 驱动器 Driver: 可定制	customizable upon request		
法兰 Flange: 标准前后法兰	standard front and rear flanges / 定制法兰 custom flanges		
轴 Shaft: 长度 length / 异形 shape			
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings			
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length			

外观图 / Outline Drawing



M 1:1.5

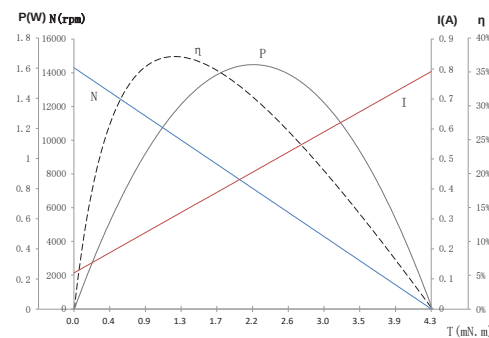
规格如有变更，恕不另行通知。Specification subject to change without notice.

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BO1808NBH2B $\varnothing 17.5\text{mm} \times 8.5\text{mm}$, 外转子带线性霍尔传感器 Outer Rotor, With Linear Hall Sensor

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				01-144-11.4		03-144-7.6		
电机参数 / Motor Data								
1	电压	Voltage	V	11.4	7.6			
2	端电阻	Terminal resistance	Ω	14.4	6.4			
3	空载转速	No-load speed	rpm	14300	14300			
4	空载电流	No-load current	mA	120	180			
5	堵转转矩	Stall torque	mNm	4.3	4.28			
6	堵转电流	Stall current	mA	800	1190			
7	额定转矩	Nominal torque	mNm	1.2	1.2			
8	额定转速	Nominal speed	rpm	7790	7830			
9	额定电流	Nominal current	mA	320	480			
10	最大输出功率	Max. output power	W	1.61	1.6			
11	最大效率	Max. efficiency	%	37.1	37.2			
12	反电势常数	Back-EMF constant	mV/rpm	0.67	0.44			
13	转矩常数	Torque constant	mNm/A	6.4	4.2			
14	电感	Terminal inductance	mH	0.74	0.33			
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3320	3350			
16	转子惯量	Rotor inertia	gcm ²	1.4	1.4			
17	重量	Weight	g	6.5	6.5			
热参数 / Thermal Data				特性曲线 /Characteristics Curve				
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	36.8	BO1808NBH2B01-144-11.4 			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2.4				
20	热时常数 (电机)	Thermal time constant motor	s	65				
21	热时常数 (线圈)	Thermal time constant winding	s	105				
22	工作温度范围	Operating temperature range	°C	-40~+120				
23	绕组耐温等级	Thermal class of winding	°C	155				
机械参数 / Mechanical Data								
24	轴向间隙	Axial play	mm	0.012				
25	径向间隙	Radial play	mm	0.008				
26	动态轴向载荷	Axial load dynamic	N	1				
27	静态轴向载荷	Axial load static	N	25				
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	6.3				
其它参数 / Other Specifications								
29	极对数	No. of pole pairs		4				
30	滚珠轴承	Ball bearings		2				
31	换向结构	Commutation structure		hall sensor				
32	防护等级	Protection class		IP20				
可选配置 / Options				端子定义 / Connection				
齿轮箱：行星齿轮				霍尔传感器 /hall sensor				
Gearbox: planetary gearbox the main technical parameters are detailed on page 156								
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				Pin1	GND	Pin9	Phase W	
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin2	Phase U	Pin10	Phase W	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin3	Phase U	Pin11	3V3	
轴 Shaft: 长度 length / 异形 shape				Pin4	Phase U	Pin12	HALL 1	
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings				Pin5	Phase V	Pin13	HALL 2	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin6	Phase V	Pin14	AGND	
				Pin7	Phase V	Pin15	GND	
				Pin8	Phase W			

M 1:1

BO1812N2B $\varnothing 17.6\text{mm} \times 12.6\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、航模等驱动领域。
Applications: UAV, aeromodelling, etc.

				01-158-6.0	02-158-9.0	03-158-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	9.0	12.0
2	端电阻	Terminal resistance	Ω	0.43	0.96	1.7
3	空载转速	No-load speed	rpm	15800	15800	15800
4	空载电流	No-load current	A	0.14	0.1	0.08
5	堵转转矩	Stall torque	mNm	49.6	49.9	50.1
6	堵转电流	Stall current	A	14	9.4	7.1
7	额定转矩	Nominal torque	mNm	9.4	10	10
8	额定转速	Nominal speed	rpm	9690	9580	10200
9	额定电流	Nominal current	A	2.1	2.1	1.5
10	最大输出功率	Max. output power	W	20.6	20.7	20.7
11	最大效率	Max. efficiency	%	81.2	80	80.2
12	反电势常数	Back-EMF constant	mV/rpm	0.38	0.56	0.75
13	转矩常数	Torque constant	mNm/A	3.6	5.4	7.2
14	电感	Terminal inductance	mH	2630	1750	1320
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	318.4	316.8	315.5
16	转子惯量	Rotor inertia	gcm^2	2.1	2.1	2.1
17	重量	Weight	g	11	11	11

热参数 / Thermal Data				特性曲线 / Characteristics Curve
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	10.6
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	14.6
20	热时间常数 (电机)	Thermal time constant motor	s	142
21	热时间常数 (线圈)	Thermal time constant winding	s	99
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	6
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options

齿轮箱：行星齿轮 齿轮组主要技术指标详见第 156 页
Gearbox: planetary gearbox the main technical parameters are detailed on page 156

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

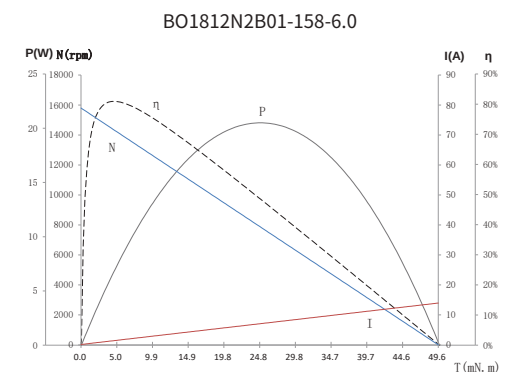
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection

无传感器 / sensorless
AWG 30

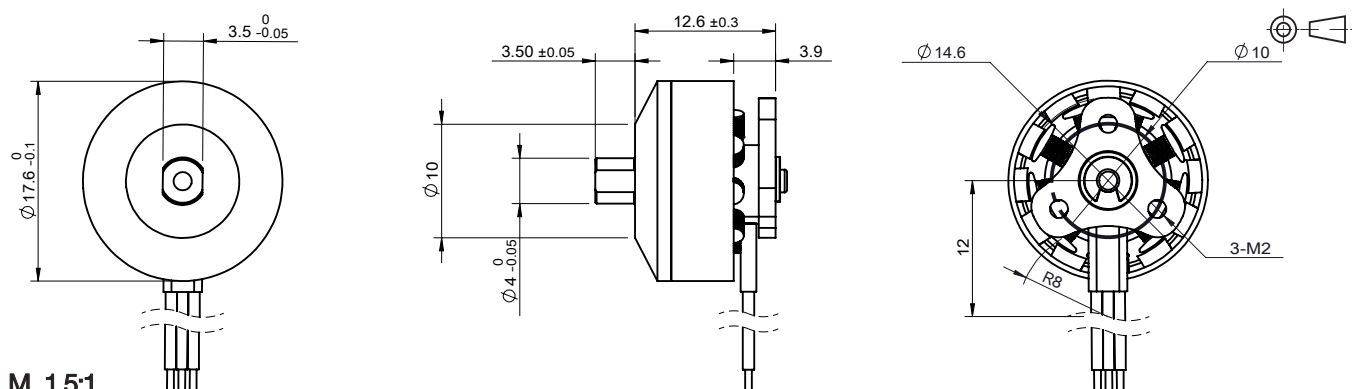
Pin1	U	red
Pin2	V	white
Pin3	W	black



— 转速 (N) — 电流 (I) — 效率 (η)
— 功率 (P)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

外观图 / Outline Drawing



BO1815N2B $\varnothing 18\text{mm} \times 14.5\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域: 无人机、航模等驱动领域。

Applications: UAV, aeromodelling, etc.

				01-199-6.0	02-199-9.0	03-199-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	9.0	12.0
2	端电阻	Terminal resistance	Ω	0.21	0.43	0.72
3	空载转速	No-load speed	rpm	19900	19900	19900
4	空载电流	No-load current	A	0.32	0.21	0.14
5	堵转转矩	Stall torque	mNm	81	89	94
6	堵转电流	Stall current	A	28.9	21.1	16.7
7	额定转矩	Nominal torque	mNm	18	17	19
8	额定转速	Nominal speed	rpm	9550	11100	11070
9	额定电流	Nominal current	A	6.1	4.6	3.7
10	最大输出功率	Max. output power	W	42	47	49
11	最大效率	Max. efficiency	%	80	81.1	82.6
12	反电势常数	Back-EMF constant	mV/rpm	0.3	0.4	0.6
13	转矩常数	Torque constant	mNm/A	2.9	4.3	5.7
14	电感	Terminal inductance	mH	3307	2212	1664
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	243.5	223.2	212
16	转子惯量	Rotor inertia	gcm^2	2.8	2.8	2.8
17	重量	Weight	g	11	11	11

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	2.8	BO1815N2B01-199-6.0	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2.4		
20	热时常数 (电机)	Thermal time constant motor	s	173		
21	热时常数 (线圈)	Thermal time constant winding	s	112		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

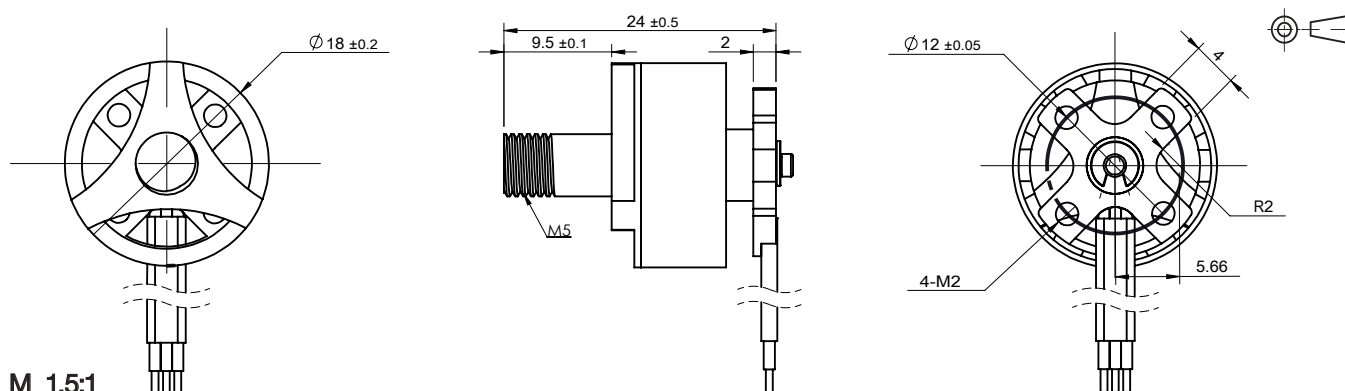
机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm 0.012
25	径向间隙	Radial play	mm 0.008
26	动态轴向载荷	Axial load dynamic	N 1.5
27	静态轴向载荷	Axial load static	N 37
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N 12

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	6
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

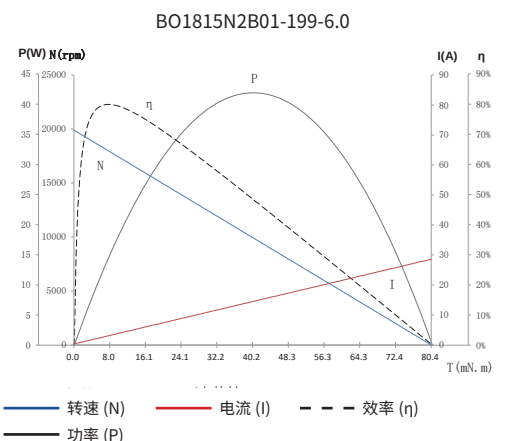
可选配置 / Options	端子定义 / Connection
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齿轮箱: 行星齿轮 Gearbox: planetary gearbox	齿轮组主要技术指标详见第 156 页 the main technical parameters are detailed on page 156	无传感器 / sensorless
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		AWG 30
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request		Pin1 U red
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges		Pin2 V white
轴 Shaft: 长度 length / 异形 shape		Pin3 W black
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings		
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		

外观图 / Outline Drawing



M 1.5:1



— 转速 (N) — 电流 (I) - - - 效率 (η)
— 功率 (P)
仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

BO2008NBH2B $\varnothing 20\text{mm} \times 8.5\text{mm}$, 外转子带线性霍尔传感器 Outer Rotor, With Linear Hall Sensor

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				01-72-11.4	02-72-7.6
电机参数 / Motor Data					
1	电压	Voltage	V	11.4	7.6
2	端电阻	Terminal resistance	Ω	26	11.5
3	空载转速	No-load speed	rpm	7200	7200
4	空载电流	No-load current	mA	50	75
5	堵转转矩	Stall torque	mNm	5.2	5.2
6	堵转电流	Stall current	mA	438	657
7	额定转矩	Nominal torque	mNm	2.8	2.8
8	额定转速	Nominal speed	rpm	1080	1080
9	额定电流	Nominal current	mA	300	409
10	最大输出功率	Max. output power	W	1	1
11	最大效率	Max. efficiency	%	43.8	43.8
12	反电势常数	Back-EMF constant	mV/rpm	1.4	0.93
13	转矩常数	Torque constant	mNm/A	13.4	8.9
14	电感	Terminal inductance	mH	2.6	1
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1384	2951
16	转子惯量	Rotor inertia	gcm^2	2	2
17	重量	Weight	g	6.8	6.8

热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	28.9	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	8.6	
20	热时间常数 (电机)	Thermal time constant motor	s	135	
21	热时间常数 (线圈)	Thermal time constant winding	s	165	
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120	
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155	

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	4
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP20

可选配置 / Options

齿轮箱：行星齿轮 齿轮组主要技术指标详见第 156 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 156

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

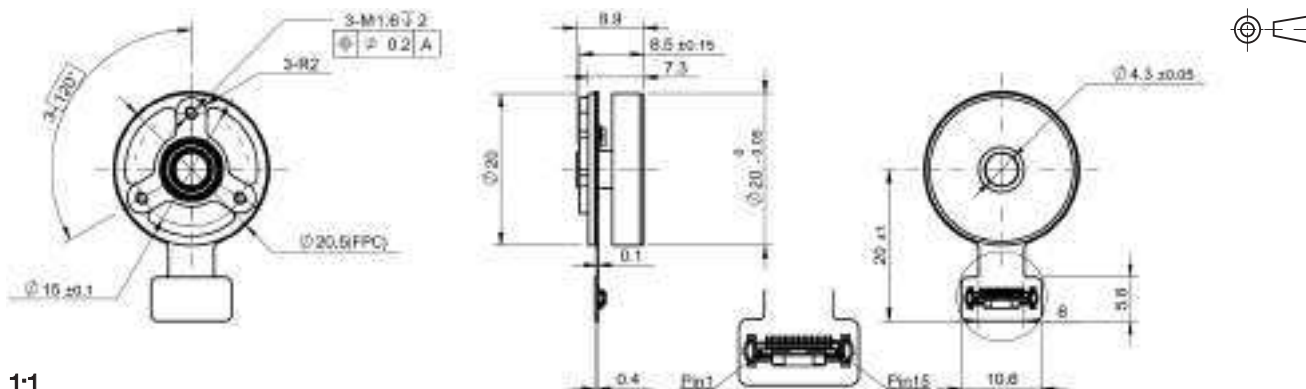
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection			
霍尔传感器 / hall sensor			
Pin1	GND	Pin9	Phase W
Pin2	Phase U	Pin10	Phase W
Pin3	Phase U	Pin11	3V3
Pin4	Phase U	Pin12	HALL 1
Pin5	Phase V	Pin13	HALL 2
Pin6	Phase V	Pin14	AGND
Pin7	Phase V	Pin15	GND
Pin8	Phase W		

外观图 / Outline Drawing



M 1:1

规格如有变更，恕不另行通知。Specification subject to change without notice.

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精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波振动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

BO2010NB2B $\varnothing 20\text{mm} \times 9.8\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域: 无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				14-280-6.0	13-277-9.0	11-280-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	9.0	12.0
2	端电阻	Terminal resistance	Ω	0.55	1.35	2.2
3	空载转速	No-load speed	rpm	28000	27750	28000
4	空载电流	No-load current	A	0.4	0.27	0.2
5	堵转转矩	Stall torque	mNm	20.7	19	20.7
6	堵转电流	Stall current	A	10.9	6.6	5.5
7	额定转矩	Nominal torque	mNm	3.5	3.5	3.5
8	额定转速	Nominal speed	rpm	23240	22820	21420
9	额定电流	Nominal current	A	2.2	1.5	1.0
10	最大输出功率	Max. output power	W	15	13.8	15
11	最大效率	Max. efficiency	%	65	63	65
12	反电势常数	Back-EMF constant	mV/rpm	0.2	0.31	0.4
13	转矩常数	Torque constant	mNm/A	1.97	2.97	3.9
14	电感	Terminal inductance	mH	0.07	0.16	0.29
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1351	1456	1311
16	转子惯量	Rotor inertia	gcm^2	2.8	2.8	2.8
17	重量	Weight	g	11	11	11

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	12.5		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	12		
20	热时常数 (电机)	Thermal time constant motor	s	354		
21	热时常数 (线圈)	Thermal time constant winding	s	15		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	4
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱: 行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

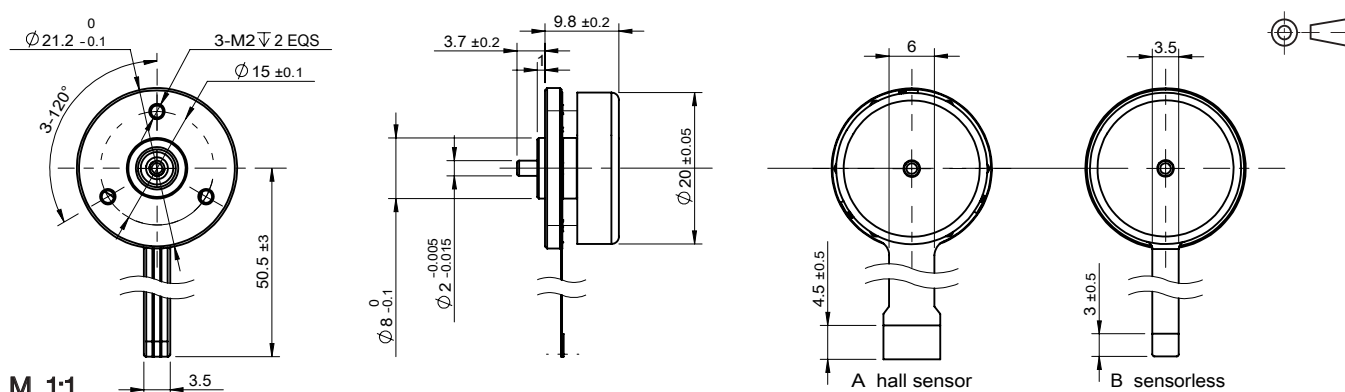
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor	B 无传感器 / sensorless
FPC	FPC
Pin1 H+	Pin1 U
Pin2 Hw	Pin2 V
Pin3 Hu	Pin3 W
Pin4 Hv	
Pin5 H-	
Pin6 W	
Pin7 V	
Pin8 U	

外观图 / Outline Drawing



BO2015NBH2B $\varnothing 20\text{mm} \times 15.1\text{mm}$, 外转子带传感器 Outer Rotor, Sensored

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				22-113-6.0	03-113-12.0	19-113-24.0
电机参数 / Motor Data						
1 电压	Voltage	V		6.0	12.0	24.0
2 端电阻	Terminal resistance	Ω		0.98	3.8	17.1
3 空载转速	No-load speed	rpm		11300	11300	11300
4 空载电流	No-load current	A		0.16	0.08	0.04
5 堵转转矩	Stall torque	mNm		29.2	30.4	26.8
6 堵转电流	Stall current	A		6	3.2	1.4
7 额定转矩	Nominal torque	mNm		9.1	9.1	9.1
8 额定转速	Nominal speed	rpm		7790	6440	7450
9 额定电流	Nominal current	A		2	1	0.5
10 最大输出功率	Max. output power	W		8.7	9	7.9
11 最大效率	Max. efficiency	%		70	71	69
12 反电势常数	Back-EMF constant	mV/rpm		0.5	1	2
13 转矩常数	Torque constant	mNm/A		4.9	9.9	17.7
14 电感	Terminal inductance	mH		0.15	0.63	2.52
15 转速 / 转矩斜率	Speed/torque gradient	rpm/mNm		385	370	420
16 转子惯量	Rotor inertia	gcm^2		6.7	6.7	6.7
17 重量	Weight	g		21	21	21

热参数 / Thermal Data				特性曲线 / Characteristics Curve			
18 热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	9.5				
19 热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	8				
20 热时间常数 (电机)	Thermal time constant motor	s	354				
21 热时间常数 (线圈)	Thermal time constant winding	s	23				
22 工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120				
23 绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155				

机械参数 / Mechanical Data			
24 轴向间隙	Axial play	mm	0.012
25 径向间隙	Radial play	mm	0.008
26 动态轴向载荷	Axial load dynamic	N	1.5
27 静态轴向载荷	Axial load static	N	37
28 径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	12

其它参数 / Other Specifications			
29 极对数	No. of pole pairs		4
30 滚珠轴承	Ball bearings		2
31 换向结构	Commutation structure		hall sensor
32 防护等级	Protection class		IP20

可选配置 / Options

齿轮箱：行星齿轮 齿轮组主要技术指标详见第 156 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 156

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

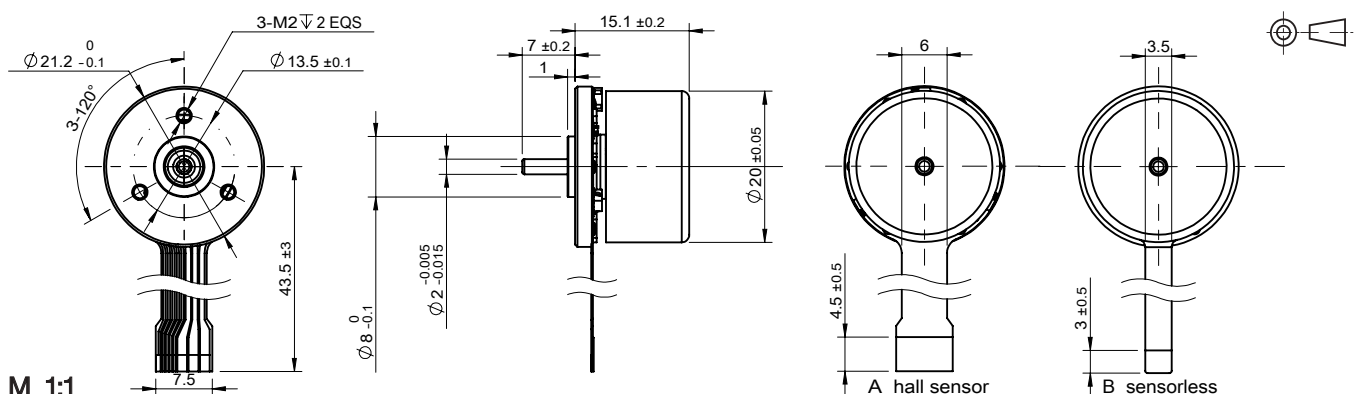
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection			
A 霍尔传感器 / hall sensor		B 无传感器 / sensorless	
FPC		FPC	
Pin1	H+	Pin1	U
Pin2	Hw	Pin2	V
Pin3	Hu	Pin3	W
Pin4	Hv		
Pin5	H-		
Pin6	W		
Pin7	V		
Pin8	U		

外观图 / Outline Drawing



BO2316N2B $\varnothing 23\text{mm} \times 15.9\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、航模等驱动领域。
Applications: UAV, aeromodelling, etc.

				01-170-6.0	02-170-9.0	03-170-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	9.0	12.0
2	端电阻	Terminal resistance	Ω	0.13	0.28	0.45
3	空载转速	No-load speed	rpm	17000	17000	17000
4	空载电流	No-load current	A	0.34	0.24	0.19
5	堵转转矩	Stall torque	mNm	158	160	177
6	堵转电流	Stall current	A	47.2	32.1	26.7
7	额定转矩	Nominal torque	mNm	30.4	30	30
8	额定转速	Nominal speed	rpm	7310	9920	10560
9	额定电流	Nominal current	A	8.1	6.3	4.9
10	最大输出功率	Max. output power	W	70	71	79
11	最大效率	Max. efficiency	%	83.6	83.5	83.6
12	反电势常数	Back-EMF constant	mV/rpm	0.4	0.5	0.7
13	转矩常数	Torque constant	mNm/A	3.4	5	6.7
14	电感	Terminal inductance	mH	2810	1887	1420
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	106.6	105.9	96.4
16	转子惯量	Rotor inertia	gcm^2	6.3	6.3	6.3
17	重量	Weight	g	15	15	15

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	3		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2.5		
20	热时常数 (电机)	Thermal time constant motor	s	160		
21	热时常数 (线圈)	Thermal time constant winding	s	26		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	$-40 \sim +120$		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	6
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

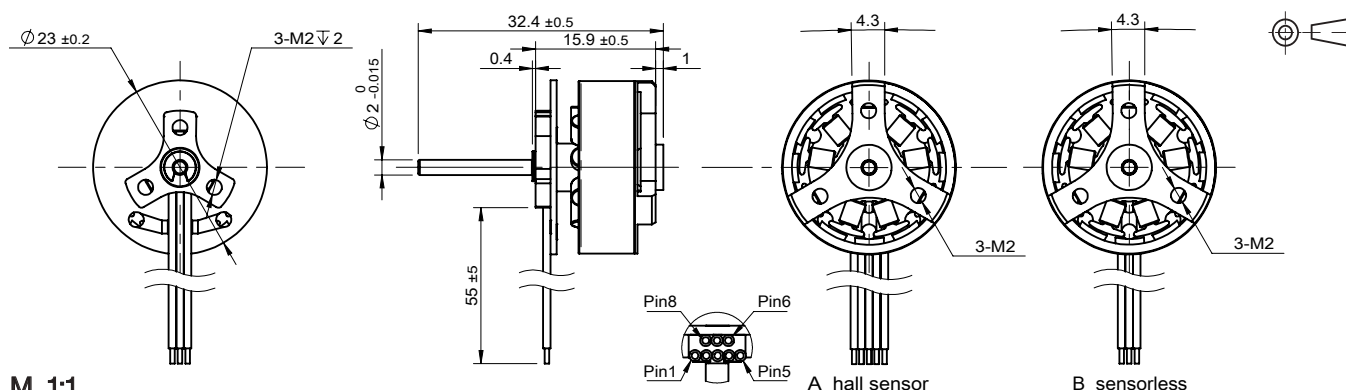
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 /hall sensor)			B 无传感器 /sensorless)		
AWG 28			AWG 28		
Pin1	Hw	green	Pin1	U	red
Pin2	Hv	grey	Pin2	V	white
Pin3	Hu	brown	Pin3	W	black
Pin4	+	red			
Pin5	-	black			
Pin6	U	blue			
Pin7	W	white			
Pin8	V	yellow			

外观图 /Outline Drawing



M 1:1

BO2414NBH2B $\varnothing 24.5\text{mm} \times 14\text{mm}$, 外转子带传感器 Outer Rotor, Sensored

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				05-80-12.0	11-81-18.0	10-81-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	18.0	24.0
2	端电阻	Terminal resistance	Ω	4.2	8.8	15.7
3	空载转速	No-load speed	rpm	8000	8160	8160
4	空载电流	No-load current	A	0.1	0.06	0.05
5	堵转转矩	Stall torque	mNm	37.4	39.8	39.9
6	堵转电流	Stall current	A	2.8	2	1.5
7	额定转矩	Nominal torque	mNm	12.3	12.3	12.3
8	额定转速	Nominal speed	rpm	4480	5700	5670
9	额定电流	Nominal current	A	0.9	0.65	0.5
10	最大输出功率	Max. output power	W	7.8	8.6	8.5
11	最大效率	Max. efficiency	%	67.3	68	67
12	反电势常数	Back-EMF constant	mV/rpm	1.45	2.13	2.84
13	转矩常数	Torque constant	mNm/A	13.9	20.3	27.1
14	电感	Terminal inductance	mH	1.3	2.81	4.99
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	214	204	204
16	转子惯量	Rotor inertia	gcm^2	7.2	7.2	7.2
17	重量	Weight	g	21.5	21.5	21.5

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	13.7		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	7.6		
20	热时间常数 (电机)	Thermal time constant motor	s	120		
21	热时间常数 (线圈)	Thermal time constant winding	s	12		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

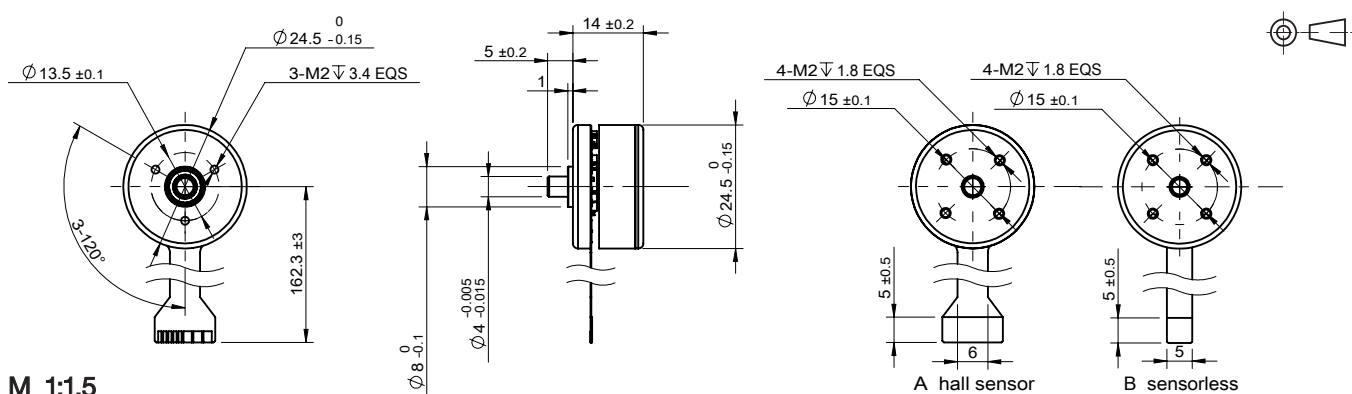
其它参数 / Other Specifications			
29	极对数	No. of pole pairs	6
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP20

可选配置 / Options		端子定义 / Connection	
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齿轮箱：行星齿轮 齿轮组主要技术指标详见第 157 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 157
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor		B 无传感器 / sensorless	
FPC		FPC	
Pin1	H+	Pin1	U
Pin2	Hw	Pin2	V
Pin3	Hu	Pin3	W
Pin4	Hv	Pin4	COM
Pin5	H-		
Pin6	W		
Pin7	V		
Pin8	U		

外观图 / Outline Drawing



BO2814N2B $\varnothing 27.6\text{mm} \times 14.3\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、航模等驱动领域。
Applications: UAV, aeromodelling, etc.

				01-153-12.0	02-153-24.0	03-153-36.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.5	1.7	3.77
3	空载转速	No-load speed	rpm	15300	15300	15300
4	空载电流	No-load current	A	0.26	0.12	0.12
5	堵转转矩	Stall torque	mNm	179	207	209
6	堵转电流	Stall current	A	24.2	14.1	9.6
7	额定转矩	Nominal torque	mNm	34.1	35	31
8	额定转速	Nominal speed	rpm	9330	10390	10980
9	额定电流	Nominal current	A	4.8	2.4	1.5
10	最大输出功率	Max. output power	W	71	83	84
11	最大效率	Max. efficiency	%	80.4	82	78.8
12	反电势常数	Back-EMF constant	mV/rpm	0.8	1.5	2.3
13	转矩常数	Torque constant	mNm/A	7.5	14.8	22.2
14	电感	Terminal inductance	mH	1268	642	425
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	85.2	74.5	73
16	转子惯量	Rotor inertia	gcm^2	12	12	12
17	重量	Weight	g	21	21	21

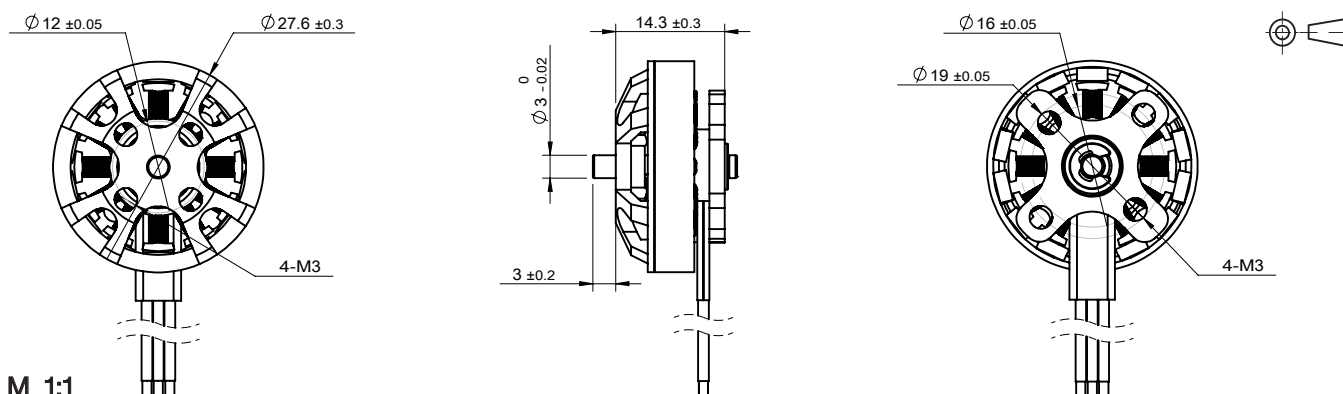
热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	2.5		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2		
20	热时常数 (电机)	Thermal time constant motor	s	180		
21	热时常数 (线圈)	Thermal time constant winding	s	25		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options		端子定义 / Connection	
齿轮箱：行星齿轮 Gearbox: planetary gearbox 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges 轴 Shaft: 长度 length / 异形 shape 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		无传感器 / sensorless AWG 22 Pin1 U red Pin2 V white Pin3 W black	

外观图 / Outline Drawing



BO2820N2B $\varnothing 27.6\text{mm} \times 20.1\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、航模等驱动领域。
Applications: UAV, aeromodelling, etc.

				01-140-12.0	02-140-24.0	03-140-36.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.14	0.58	1.22
3	空载转速	No-load speed	rpm	14000	14000	14000
4	空载电流	No-load current	A	0.48	0.24	0.16
5	堵转转矩	Stall torque	mNm	698	664	718
6	堵转电流	Stall current	A	86.3	41.2	29.6
7	额定转矩	Nominal torque	mNm	68.5	75	73
8	额定转速	Nominal speed	rpm	10350	10680	11310
9	额定电流	Nominal current	A	9.1	4.7	3.0
10	最大输出功率	Max. output power	W	256	244	263
11	最大效率	Max. efficiency	%	85.6	85.1	85.9
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.7	2.6
13	转矩常数	Torque constant	mNm/A	8.1	16.2	24.4
14	电感	Terminal inductance	mH	1168	585	389
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	20.1	21.2	19.5
16	转子惯量	Rotor inertia	gcm^2	19	19	19
17	重量	Weight	g	41	41	41

热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	2.3	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2	
20	热时间常数 (电机)	Thermal time constant motor	s	280	
21	热时间常数 (线圈)	Thermal time constant winding	s	37	
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120	
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180	

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm 0.012
25	径向间隙	Radial play	mm 0.008
26	动态轴向载荷	Axial load dynamic	N 5
27	静态轴向载荷	Axial load static	N 80
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N 29

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options

齿轮箱：行星齿轮 齿轮组主要技术指标详见第 157 页
Gearbox: planetary gearbox the main technical parameters are detailed on page 157

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

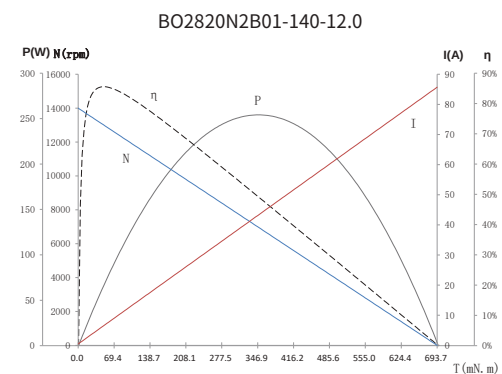
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection

无传感器 / sensorless
AWG 22

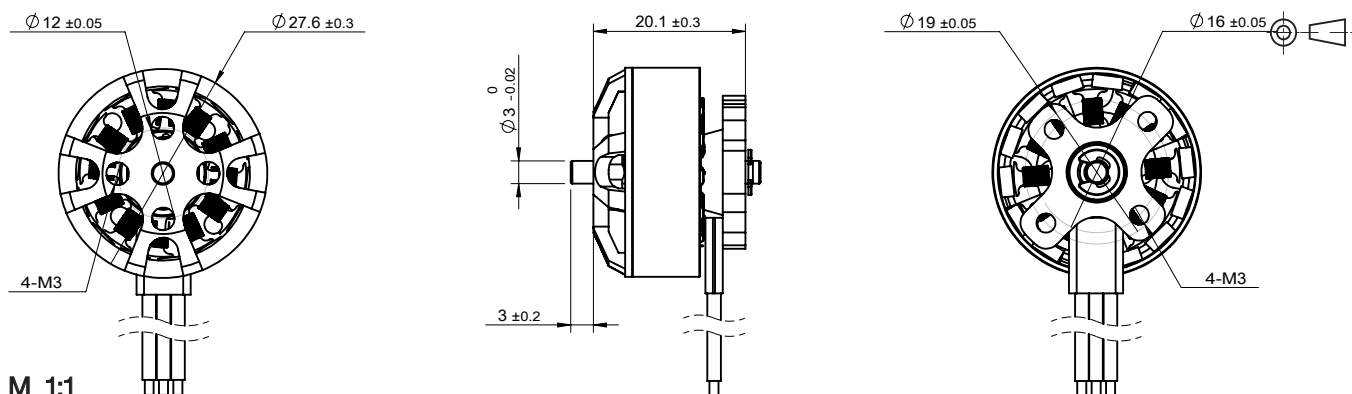
Pin1	U	red
Pin2	V	white
Pin3	W	black



— 转速 (N) — 电流 (I) - - - 效率 (η)
— 功率 (P)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

外观图 / Outline Drawing



BO2824N2B $\varnothing$ 28mm*24.6mm, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				01-98-12.0	02-98-24.0	03-98-36.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.18	0.74	1.62
3	空载转速	No-load speed	rpm	9800	9800	9800
4	空载电流	No-load current	A	0.37	0.19	0.12
5	堵转转矩	Stall torque	mNm	752	749	769
6	堵转电流	Stall current	A	65.2	32.7	22.2
7	额定转矩	Nominal torque	mNm	79.9	75.5	73.2
8	额定转速	Nominal speed	rpm	7430	8040	8040
9	额定电流	Nominal current	A	6.9	3.3	2.2
10	最大输出功率	Max. output power	W	193	194	198
11	最大效率	Max. efficiency	%	85.5	85.3	86.1
12	反电势常数	Back-EMF constant	mV/rpm	1.2	2.4	3.6
13	转矩常数	Torque constant	mNm/A	11.6	23.1	34.8
14	电感	Terminal inductance	mH	819	412	273
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	13.1	13.2	12.8
16	转子惯量	Rotor inertia	gcm ²	27	27	27
17	重量	Weight	g	47	47	47

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	2	BO2824N2B01-98-12.0	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2		
20	热时常数 (电机)	Thermal time constant motor	s	290		
21	热时常数 (线圈)	Thermal time constant winding	s	41		
22	工作温度范围	Operating temperature range	°C	-40~+120		
23	绕组耐温等级	Thermal class of winding	°C	180		

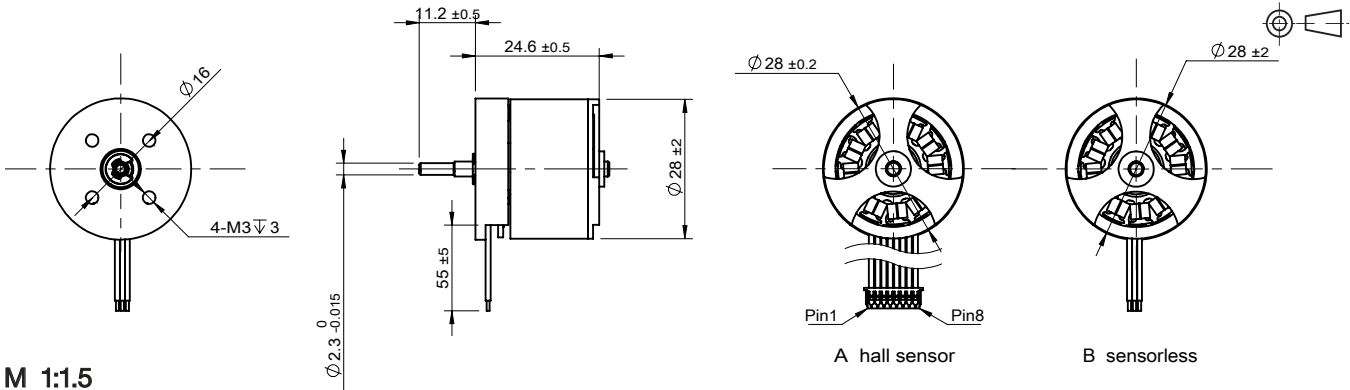
机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm 0.014
25	径向间隙	Radial play	mm 0.008
26	动态轴向载荷	Axial load dynamic	N 5
27	静态轴向载荷	Axial load static	N 80
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N 29

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮 Gearbox: planetary gearbox	齿轮组主要技术指标详见第 157 页 the main technical parameters are detailed on page 157	A 霍尔传感器 /hall sensor) AWG 22	B 无传感器 /sensorless) AWG 22
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		Pin1 Hw green	Pin1 U red
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request		Pin2 Hv grey	Pin2 V white
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges		Pin3 Hu brown	Pin3 W black
轴 Shaft: 长度 length / 异形 shape		Pin4 + red	
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings		Pin5 - black	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin6 U blue	
		Pin7 W white	
		Pin8 V yellow	

外观图 /Outline Drawing



BO2826N2B $\varnothing 27.6\text{mm} \times 25.8\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				01-104-12.0	02-104-24.0	03-104-36.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.14	0.58	1.26
3	空载转速	No-load speed	rpm	10400	10400	10400
4	空载电流	No-load current	A	0.44	0.23	0.15
5	堵转转矩	Stall torque	mNm	930	912	931
6	堵转电流	Stall current	A	83.3	41.7	28.6
7	额定转矩	Nominal torque	mNm	86.7	89.5	89.6
8	额定转速	Nominal speed	rpm	7820	8040	8500
9	额定电流	Nominal current	A	8.1	4.1	2.7
10	最大输出功率	Max. output power	W	247	248	254
11	最大效率	Max. efficiency	%	86	85.7	86.2
12	反电势常数	Back-EMF constant	mV/rpm	1.1	2.3	3.4
13	转矩常数	Torque constant	mNm/A	10.9	22	32.8
14	电感	Terminal inductance	mH	871	433	290
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	11.6	11.4	11.2
16	转子惯量	Rotor inertia	gcm^2	31	31	31
17	重量	Weight	g	53	53	53

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	1.7		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	1.8		
20	热时常数 (电机)	Thermal time constant motor	s	300		
21	热时常数 (线圈)	Thermal time constant winding	s	43		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options		端子定义 / Connection	
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齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

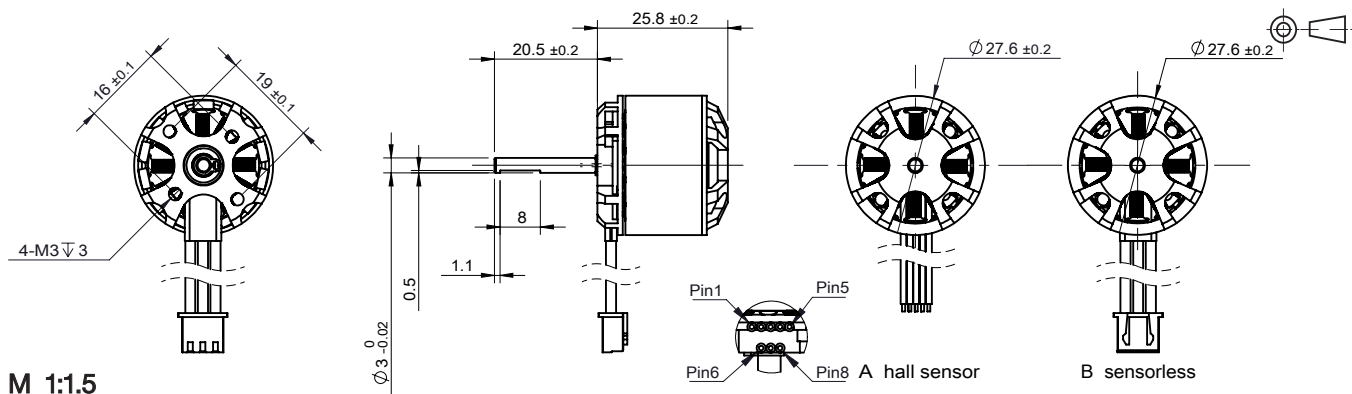
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor)				B 无传感器 / sensorless)			
AWG 26				AWG 22			
Pin1	Hw	green		Pin1	U	red	
Pin2	Hv	grey		Pin2	V	white	
Pin3	Hu	brown		Pin3	W	black	
Pin4	+	red					
Pin5	-	black					
Pin6	U	blue					
Pin7	W	white					
Pin8	V	yellow					

外观图 / Outline Drawing

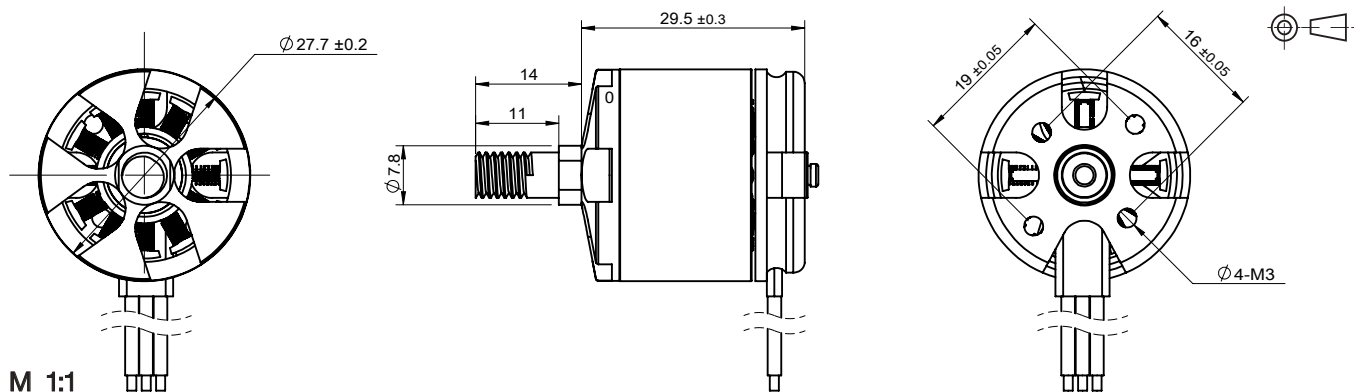


BO2828N2B $\varnothing 27.7\text{mm} \times 29.5\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				01-112-12.0		02-112-24.0		03-112-36.0	
电机参数 / Motor Data									
1	电压	Voltage	V	12.0		24.0		36.0	
2	端电阻	Terminal resistance	Ω	0.09		0.38		0.81	
3	空载转速	No-load speed	rpm	11200		11200		11200	
4	空载电流	No-load current	A	0.63		0.32		0.2	
5	堵转转矩	Stall torque	mNm	1301		1289		1357	
6	堵转电流	Stall current	A	127.7		64		44.3	
7	额定转矩	Nominal torque	mNm	122.7		120		157	
8	额定转速	Nominal speed	rpm	7320		8750		8540	
9	额定电流	Nominal current	A	11.3		5.9		4.8	
10	最大输出功率	Max. output power	W	379		380		395	
11	最大效率	Max. efficiency	%	86.4		86.3		87.1	
12	反电势常数	Back-EMF constant	mV/rpm	1.1		2.1		3.2	
13	转矩常数	Torque constant	mNm/A	10.2		20.2		30.8	
14	电感	Terminal inductance	mH	928		470		309	
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	8.6		8.7		8.2	
16	转子惯量	Rotor inertia	gcm ²	35		35		35	
17	重量	Weight	g	61		61		61	
热参数 / Thermal Data				特性曲线 / Characteristics Curve					
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	1.6		BO2828N2B01-112-12.0 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	1.4					
20	热时常数 (电机)	Thermal time constant motor	s	315					
21	热时常数 (线圈)	Thermal time constant winding	s	45					
22	工作温度范围	Operating temperature range	°C	-40~+120					
23	绕组耐温等级	Thermal class of winding	°C	180					
机械参数 / Mechanical Data									
24	轴向间隙	Axial play	mm	0.012					
25	径向间隙	Radial play	mm	0.008					
26	动态轴向载荷	Axial load dynamic	N	8					
27	静态轴向载荷	Axial load static	N	85					
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	26					
其它参数 / Other Specifications									
29	极对数	No. of pole pairs		7					
30	滚珠轴承	Ball bearings		2					
31	换向结构	Commutation structure		sensorless					
32	防护等级	Protection class		IP20					
可选配置 / Options				端子定义 / Connection					
齿轮箱 : 行星齿轮				无传感器 /sensorless					
Gearbox: planetary gearbox 齿轮组主要技术指标详见第 157 页				AWG 22					
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				Pin1 U red					
编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request				Pin2 V white					
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				Pin3 W black					
轴 Shaft: 长度 length / 异形 shape									
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings									
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length									
外观图 /Outline Drawing									



BO3216NBH2B $\varnothing 31.5\text{mm} \times 15.8\text{mm}$, 外转子带传感器 Outer Rotor, Sensored

应用领域: 无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				15-56-9.0	14-56-12.0	02-56-24.0
电机参数 / Motor Data						
1 电压	Voltage	V		9.0	12.0	24.0
2 端电阻	Terminal resistance	Ω		0.6	1.1	4.4
3 空载转速	No-load speed	rpm		5670	5600	5600
4 空载电流	No-load current	A		0.16	0.12	0.06
5 堵转转矩	Stall torque	mNm		216	219	218
6 堵转电流	Stall current	A		14.5	10.9	5.4
7 额定转矩	Nominal torque	mNm		41.5	41.5	41.5
8 额定转速	Nominal speed	rpm		4590	4540	4530
9 额定电流	Nominal current	A		2.9	2.1	1
10 最大输出功率	Max. output power	W		32.4	31.9	31.9
11 最大效率	Max. efficiency	%		80	80	79
12 反电势常数	Back-EMF constant	mV/rpm		1.5	2.1	4.2
13 转矩常数	Torque constant	mNm/A		14.9	20.2	40.4
14 电感	Terminal inductance	mH		0.23	0.42	1.7
15 转速 / 转矩斜率	Speed/torque gradient	rpm/mNm		26	25	25
16 转子惯量	Rotor inertia	gcm^2		32	32	32
17 重量	Weight	g		48	48	48

热参数 / Thermal Data				特性曲线 / Characteristics Curve			
18 热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	3.8				
19 热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	4				
20 热时间常数 (电机)	Thermal time constant motor	s	110				
21 热时间常数 (线圈)	Thermal time constant winding	s	6.9				
22 工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120				
23 绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155				

机械参数 / Mechanical Data			
24 轴向间隙	Axial play	mm	0.08
25 径向间隙	Radial play	mm	0.006
26 动态轴向载荷	Axial load dynamic	N	5
27 静态轴向载荷	Axial load static	N	80
28 径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	29

其它参数 / Other Specifications			
29 极对数	No. of pole pairs		7
30 滚珠轴承	Ball bearings		2
31 换向结构	Commutation structure		hall sensor
32 防护等级	Protection class		IP20

可选配置 / Options

齿轮箱: 行星齿轮 齿轮组主要技术指标详见第 157 页
Gearbox: planetary gearbox the main technical parameters are detailed on page 157

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

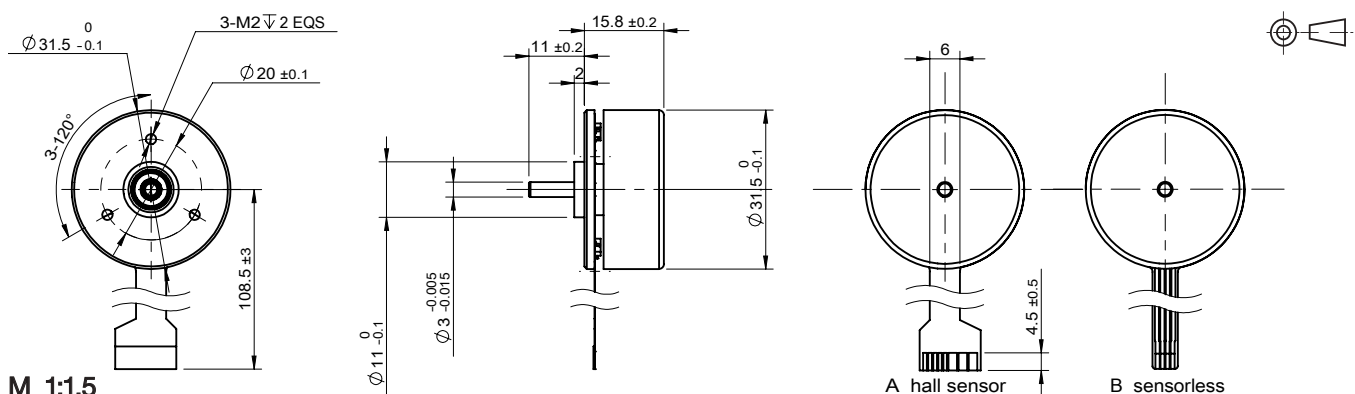
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection			
A 霍尔传感器 / hall sensor		B 无传感器 / sensorless	
FPC		FPC	
Pin1	H+	Pin1	U
Pin2	Hw	Pin2	V
Pin3	Hu	Pin3	W
Pin4	Hv	Pin4	COM
Pin5	H-		
Pin6	W		
Pin7	V		
Pin8	U		

外观图 / Outline Drawing



规格如有变更, 恕不另行通知。Specification subject to change without notice.

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PRECISION DC CORELESS MOTOR

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驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波振动电机
SONIC MOTOR

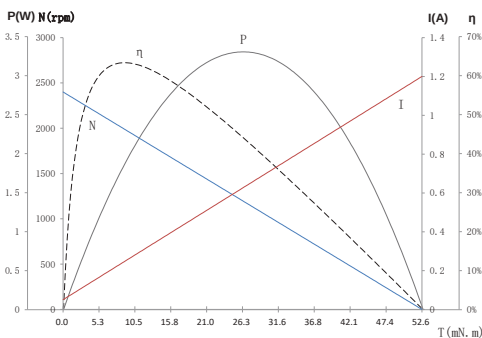
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BO3518NB2B $\varnothing 34.5\text{mm} \times 18\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				10-24-5.0	02-24-12.0	11-24-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	5.0	12.0	24.0
2	端电阻	Terminal resistance	Ω	1.9	10	38.3
3	空载转速	No-load speed	rpm	2400	2400	2400
4	空载电流	No-load current	mA	120	50	25
5	堵转转矩	Stall torque	mNm	49	52.6	55
6	堵转电流	Stall current	mA	2680	1200	626
7	额定转矩	Nominal torque	mNm	31	32	32
8	额定转速	Nominal speed	rpm	210	300	348
9	额定电流	Nominal current	mA	1750	755	384
10	最大输出功率	Max. output power	W	3	3.3	3.4
11	最大效率	Max. efficiency	%	62	63	64
12	反电势常数	Back-EMF constant	mV/rpm	2	4.8	9.6
13	转矩常数	Torque constant	mNm/A	19.1	45.7	91.6
14	KV 值	KV Value	rpm/V	476	200	100
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	48.6	45.6	43.5
16	转子惯量	Rotor inertia	gcm^2	68	68	68
17	重量	Weight	g	64	64	64

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	7.3		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	5.7		
20	热时常数 (电机)	Thermal time constant motor	s	120		
21	热时常数 (线圈)	Thermal time constant winding	s	9		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP30

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

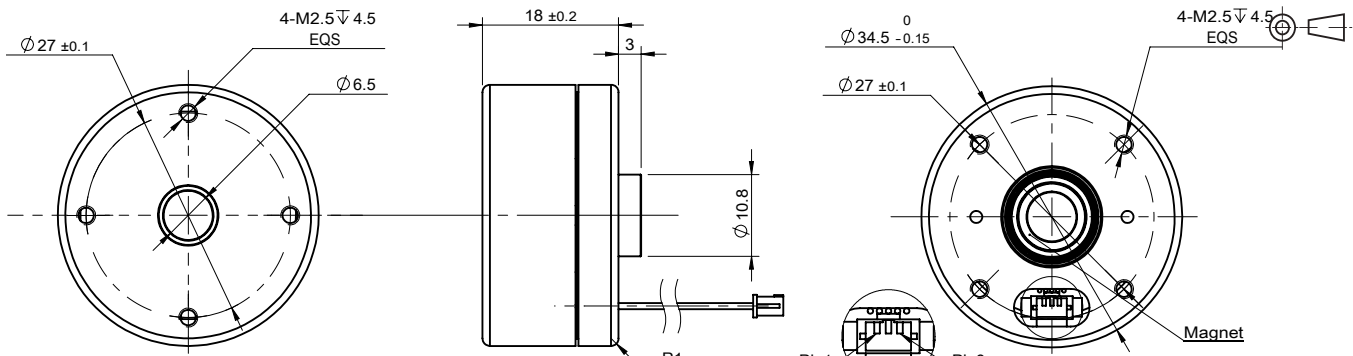
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

无传感器 / sensorless
AWG 26

Pin1	U	red
Pin2	V	black
Pin3	W	white

外观图 / Outline Drawing



M 1:1

BO3823N2B $\varnothing 37.6\text{mm} \times 23\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				01-79-12.0	02-79-24.0	03-79-36.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.11	0.47	1.01
3	空载转速	No-load speed	rpm	7900	7900	7900
4	空载电流	No-load current	A	0.49	0.26	0.18
5	堵转转矩	Stall torque	mNm	1534	1439	1529
6	堵转电流	Stall current	A	107.1	50.6	35.6
7	额定转矩	Nominal torque	mNm	173.5	163	164
8	额定转速	Nominal speed	rpm	5690	6210	6300
9	额定电流	Nominal current	A	12.3	5.8	3.8
10	最大输出功率	Max. output power	W	318	301	317
11	最大效率	Max. efficiency	%	86.9	86.2	86.4
12	反电势常数	Back-EMF constant	mV/rpm	1.5	3	4.5
13	转矩常数	Torque constant	mNm/A	14.4	28.6	43.2
14	电感	Terminal inductance	mH	661	333	220
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	5.2	5.5	5.2
16	转子惯量	Rotor inertia	gcm^2	42	42	42
17	重量	Weight	g	73	73	73

热参数 / Thermal Data				特性曲线 / Characteristics Curve			
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	1.3			
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	1.2			
20	热时间常数 (电机)	Thermal time constant motor	s	300			
21	热时间常数 (线圈)	Thermal time constant winding	s	69			
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120			
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180			

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

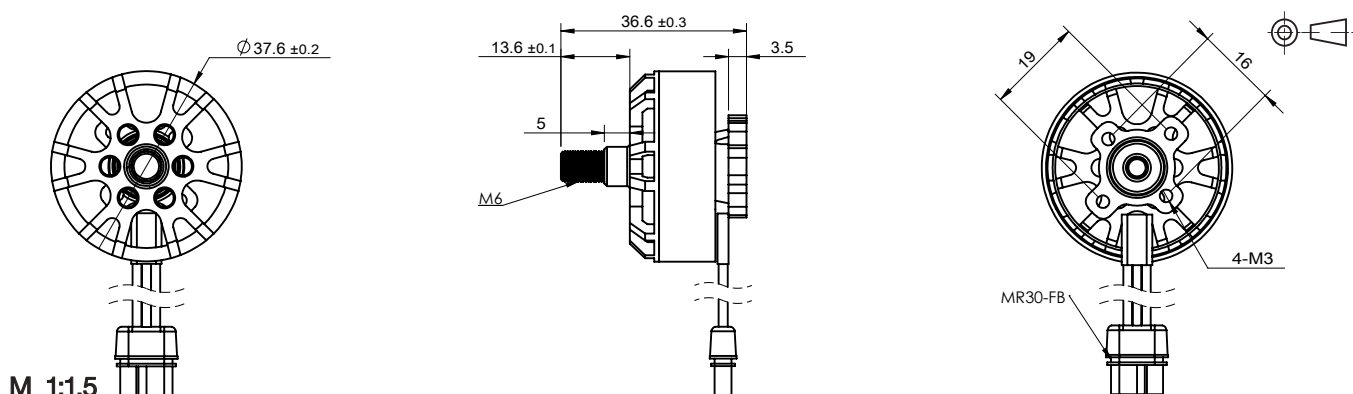
轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

无传感器 / sensorless
AWG 26

Pin1 U red
Pin2 V white
Pin3 W black

外观图 / Outline Drawing



规格如有变更，恕不另行通知。Specification subject to change without notice.

BO3850NH3B $\varnothing 37.6\text{mm} \times 50\text{mm}$, 外转子带传感器 Outer Rotor, Sensored

应用领域：无人机、电动工具、自动化设备、机器人等驱动领域。

Applications: UAV, electrical tools, automation equipment, robotics, etc.

				01-88-24.0	01-88-36.0	01-88-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.1	0.23	0.39
3	空载转速	No-load speed	rpm	8800	8800	8800
4	空载电流	No-load current	A	1	0.7	0.5
5	堵转转矩	Stall torque	mNm	6198	6060	6358
6	堵转电流	Stall current	A	240	156.5	123.1
7	额定转矩	Nominal torque	mNm	346	345	347
8	额定转速	Nominal speed	rpm	7650	7480	7850
9	额定电流	Nominal current	A	13.1	8.5	6.7
10	最大输出功率	Max. output power	W	1427	1395	1464
11	最大效率	Max. efficiency	%	87.5	87	87.6
12	反电势常数	Back-EMF constant	mV/rpm	2.7	4.1	5.4
13	转矩常数	Torque constant	mNm/A	25.9	38.9	51.9
14	KV 值	KV Value	rpm/V	367	244	183
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1.42	1.45	1.38
16	转子惯量	Rotor inertia	gcm^2	228	228	228
17	重量	Weight	g	198	198	198

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	1.1	BO3850NH3B01-88-48.0	
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	1.2		
20	热时常数 (电机)	Thermal time constant motor	s	350		
21	热时常数 (线圈)	Thermal time constant winding	s	63		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

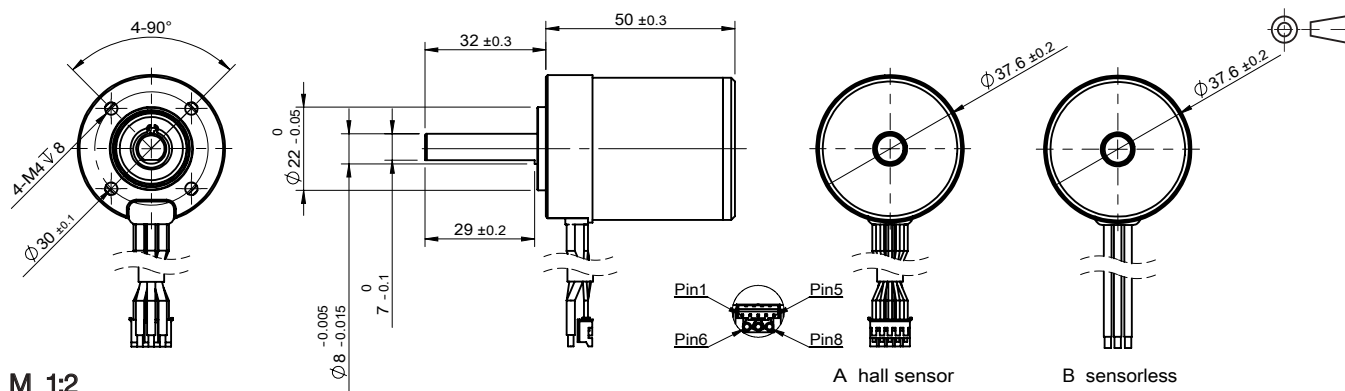
机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	3
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮 Gearbox: planetary gearbox 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges 轴 Shaft: 长度 length / 异形 shape 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	齿轮组主要技术指标详见第 158 页 the main technical parameters are detailed on page 158 A 霍尔传感器 / hall sensor AWG 24/AWG 28 Pin1 H- black Pin2 Hw yellow Pin3 Hv white Pin4 Hu blue Pin5 H+ red Pin6 U black Pin7 V yellow Pin8 W red	B 无传感器 / sensorless AWG 18 Pin1 U black Pin2 V yellow Pin3 W red
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外观图 / Outline Drawing



BO4316NB2B $\varnothing 42.8\text{mm} \times 15.9\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				27-38-9.0	26-39-12.0	05-38-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	9.0	12.0	24.0
2	端电阻	Terminal resistance	Ω	0.56	0.9	3.8
3	空载转速	No-load speed	rpm	3730	3910	3800
4	空载电流	No-load current	A	0.21	0.16	0.08
5	堵转转矩	Stall torque	mNm	359	379	371
6	堵转电流	Stall current	A	15.9	13.2	6.3
7	额定转矩	Nominal torque	mNm	79.7	79.7	79.7
8	额定转速	Nominal speed	rpm	2910	3080	2640
9	额定电流	Nominal current	A	3.69	2.92	1.43
10	最大输出功率	Max. output power	W	35	39	37
11	最大效率	Max. efficiency	%	78	79	78
12	反电势常数	Back-EMF constant	mV/rpm	2.38	3.02	6.24
13	转矩常数	Torque constant	mNm/A	22.7	28.9	59.5
14	电感	Terminal inductance	mH	0.4	0.65	2.8
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	10	10	10
16	转子惯量	Rotor inertia	gcm^2	97	97	97
17	重量	Weight	g	72	72	72

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	5.8		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2.8		
20	热时间常数 (电机)	Thermal time constant motor	s	400		
21	热时间常数 (线圈)	Thermal time constant winding	s	13		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm 0.012
25	径向间隙	Radial play	mm 0.008
26	动态轴向载荷	Axial load dynamic	N 8
27	静态轴向载荷	Axial load static	N 85
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N 26

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	8
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP30

可选配置 / Options		端子定义 / Connection	
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齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

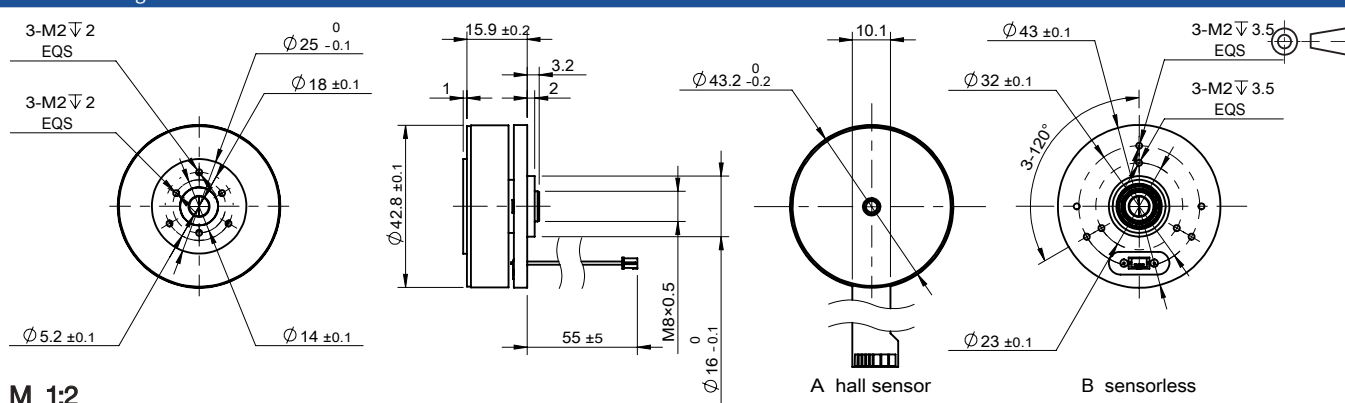
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 / hall sensor				B 无传感器 / sensorless			
FPC				AWG 28			
Pin1	H+			Pin1	U	red	
Pin2	Hw			Pin2	V	black	
Pin3	Hu			Pin3	W	white	
Pin4	Hv						
Pin5	H-						
Pin6	W						
Pin7	V						
Pin8	U						

外观图 / Outline Drawing



规格如有变更，恕不另行通知。Specification subject to change without notice.

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驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

BO4326NB2B $\varnothing 42.4\text{mm} \times 26.6\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机云台、激光雷达、激光扫描、手持云台。

Applications: UAV gimbals, LiDAR, laser scanner, handheld gimbals.

				03-92-24.0	02-92-36.0	01-92-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.21	0.45	1
3	空载转速	No-load speed	rpm	9200	9200	9200
4	空载电流	No-load current	A	0.6	0.5	0.3
5	堵转转矩	Stall torque	mNm	2817	2952	2361
6	堵转电流	Stall current	A	114	80	48
7	额定转矩	Nominal torque	mNm	194	190	192
8	额定转速	Nominal speed	rpm	7000	7000	7000
9	额定电流	Nominal current	A	7.2	4.8	3.6
10	最大输出功率	Max. output power	W	678	711	569
11	最大效率	Max. efficiency	%	86	84.8	84.8
12	反电势常数	Back-EMF constant	mV/rpm	2.6	3.89	5.18
13	转矩常数	Torque constant	mNm/A	24.8	37.1	48.5
14	KV 值	KV Value	rpm/V	383	256	192
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3.3	3.1	3.9
16	转子惯量	Rotor inertia	gcm^2	153	153	153
17	重量	Weight	g	132	132	132

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	2.19		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	0.73		
20	热时常数 (电机)	Thermal time constant motor	s	360		
21	热时常数 (线圈)	Thermal time constant winding	s	69		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155		

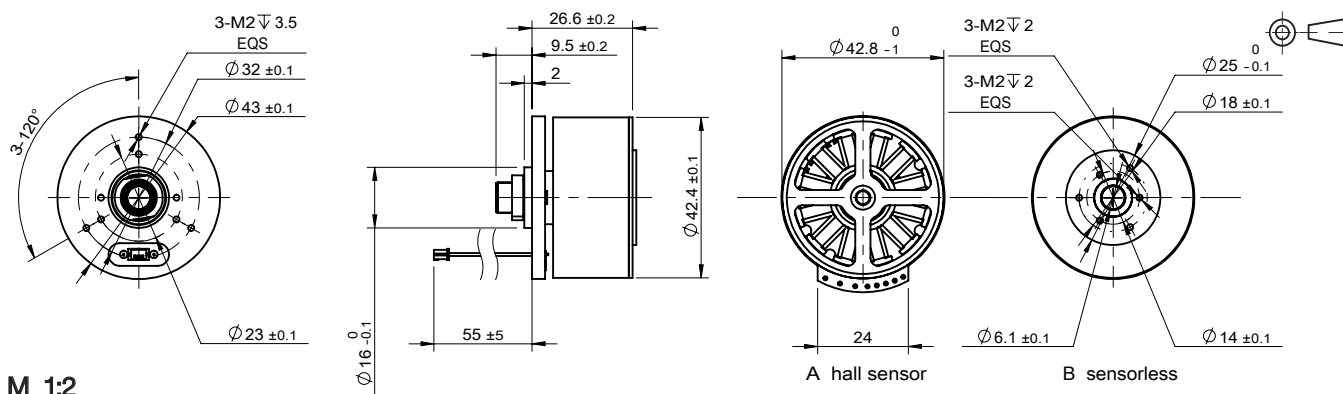
机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	8
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮 Gearbox: planetary gearbox 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges 轴 Shaft: 长度 length / 异形 shape 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	齿轮组主要技术指标详见第 138 页 the main technical parameters are detailed on page 138 A 霍尔传感器 / hall sensor AWG 28 Pin1 H+ red Pin2 Hw white Pin3 Hu blue Pin4 Hv green Pin5 H- black Pin6 W yellow Pin7 V brown Pin8 U grey	B 无传感器 / sensorless AWG 28 Pin1 U red Pin2 V black Pin3 W white
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外观图 / Outline Drawing



BO4416N2B $\varnothing 43.95\text{mm} \times 16\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				02-34-12.0	03-34-18.0	04-24-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	18.0	24.0
2	端电阻	Terminal resistance	Ω	0.37	0.75	3
3	空载转速	No-load speed	rpm	3450	3450	2360
4	空载电流	No-load current	A	0.3	0.17	0.09
5	堵转转矩	Stall torque	mNm	1057	1178	759
6	堵转电流	Stall current	A	32	24	8
7	额定转矩	Nominal torque	mNm	95	150	80
8	额定转速	Nominal speed	rpm	3100	2800	2060
9	额定电流	Nominal current	A	3.2	2.4	0.7
10	最大输出功率	Max. output power	W	95	106	46
11	最大效率	Max. efficiency	%	81	83	79
12	反电势常数	Back-EMF constant	mV/rpm	3.4	5.2	10
13	转矩常数	Torque constant	mNm/A	33	49.5	96
14	电感	Terminal inductance	mH	290	190	98
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3.3	2.9	3.1
16	转子惯量	Rotor inertia	gcm^2	70	70	70
17	重量	Weight	g	66	66	66

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	8.9		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	2.7		
20	热时常数 (电机)	Thermal time constant motor	s	325		
21	热时常数 (线圈)	Thermal time constant winding	s	252		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	12
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮
Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

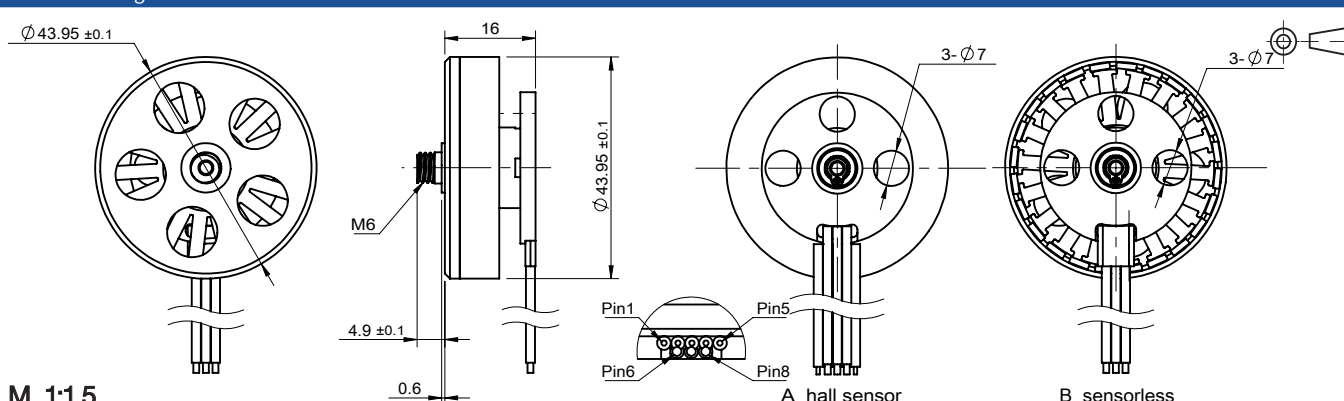
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

A 霍尔传感器 /hall sensor)				B 无传感器 /sensorless)			
AWG 26				AWG 22			
Pin1	Hw	green		Pin1	U	red	
Pin2	Hv	grey		Pin2	V	white	
Pin3	Hu	brown		Pin3	W	black	
Pin4	+	red					
Pin5	-	black					
Pin6	U	blue					
Pin7	W	white					
Pin8	V	yellow					

外观图 /Outline Drawing



规格如有变更，恕不另行通知。Specification subject to change without notice.

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DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

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GLOBAL MARKETING NETWORK

BO4831NH2B $\varnothing 48\text{mm} \times 31.5\text{mm}$, 外转子带传感器 Outer Rotor, Sensored

应用领域: 无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				01-101-18.0	02-101-24.0	03-101-36.0
电机参数 / Motor Data						
1	电压	Voltage	V	18.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.05	0.08	0.18
3	空载转速	No-load speed	rpm	10160	10160	10160
4	空载电流	No-load current	A	1.1	0.9	0.6
5	堵转转矩	Stall torque	mNm	6053	6726	6727
6	堵转电流	Stall current	A	360	300	200
7	额定转矩	Nominal torque	mNm	449	447	457
8	额定转速	Nominal speed	rpm	7600	7700	7700
9	额定电流	Nominal current	A	23.5	17.6	12
10	最大输出功率	Max. output power	W	1609	1788	1788
11	最大效率	Max. efficiency	%	89.2	89.3	89.3
12	反电势常数	Back-EMF constant	mV/rpm	1.8	2.4	3.5
13	转矩常数	Torque constant	mNm/A	16.9	22.5	33.7
14	KV 值	KV Value	rpm/V	564	423	282
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1.68	1.51	1.51
16	转子惯量	Rotor inertia	gcm^2	306	306	306
17	重量	Weight	g	211	211	211

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	1.14		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	0.38		
20	热时常数 (电机)	Thermal time constant motor	s	350		
21	热时常数 (线圈)	Thermal time constant winding	s	60		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

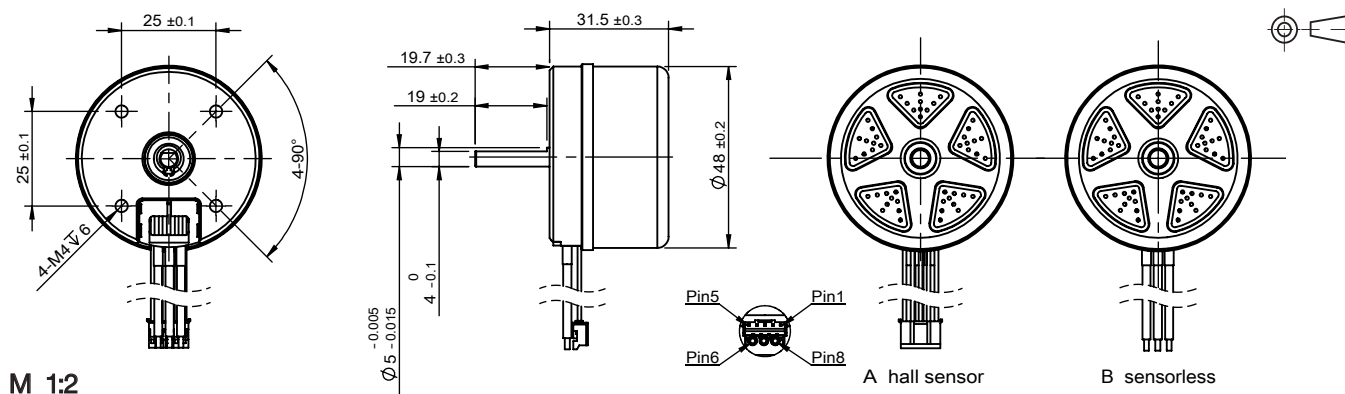
机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱: 行星齿轮 Gearbox: planetary gearbox		齿轮组主要技术指标详见第 139 页 the main technical parameters are detailed on page 139		A 霍尔传感器 / hall sensor AWG 24/AWG 16		B 无传感器 / sensorless AWG 16	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges 轴 Shaft: 长度 length / 异形 shape 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				Pin1 H- black Pin2 Hw yellow Pin3 Hv white Pin4 Hu blue Pin5 H+ red Pin6 U black Pin7 V yellow Pin8 W red		Pin1 U black Pin2 V yellow Pin3 W red	

外观图 / Outline Drawing



BO4840NH2B $\varnothing 48\text{mm} \times 38.5\text{mm}$, 外转子带传感器 Outer Rotor, Sensored

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				01-105-18.0	02-105-24.0	03-105-36.0
电机参数 / Motor Data						
1	电压	Voltage	V	18.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.034	0.053	0.11
3	空载转速	No-load speed	rpm	10500	10500	10500
4	空载电流	No-load current	A	1.6	1.2	0.9
5	堵转转矩	Stall torque	mNm	8614	9831	10656
6	堵转电流	Stall current	A	529.4	452.8	327.3
7	额定转矩	Nominal torque	mNm	423	427	420
8	额定转速	Nominal speed	rpm	9350	9400	9440
9	额定电流	Nominal current	A	25.7	19.5	12.9
10	最大输出功率	Max. output power	W	2367	2701	2928
11	最大效率	Max. efficiency	%	89.2	89.9	89.7
12	反电势常数	Back-EMF constant	mV/rpm	1.7	2.3	3.4
13	转矩常数	Torque constant	mNm/A	16.3	21.8	32.7
14	KV 值	KV Value	rpm/V	583	437.5	292
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1.22	1.07	0.99
16	转子惯量	Rotor inertia	gcm^2	398	398	398
17	重量	Weight	g	267	267	267

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	0.9		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	1		
20	热时间常数 (电机)	Thermal time constant motor	s	300		
21	热时间常数 (线圈)	Thermal time constant winding	s	60		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	hall sensor
32	防护等级	Protection class	IP20

可选配置 / Options

齿轮箱：行星齿轮 齿轮组主要技术指标详见第 139 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 139

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

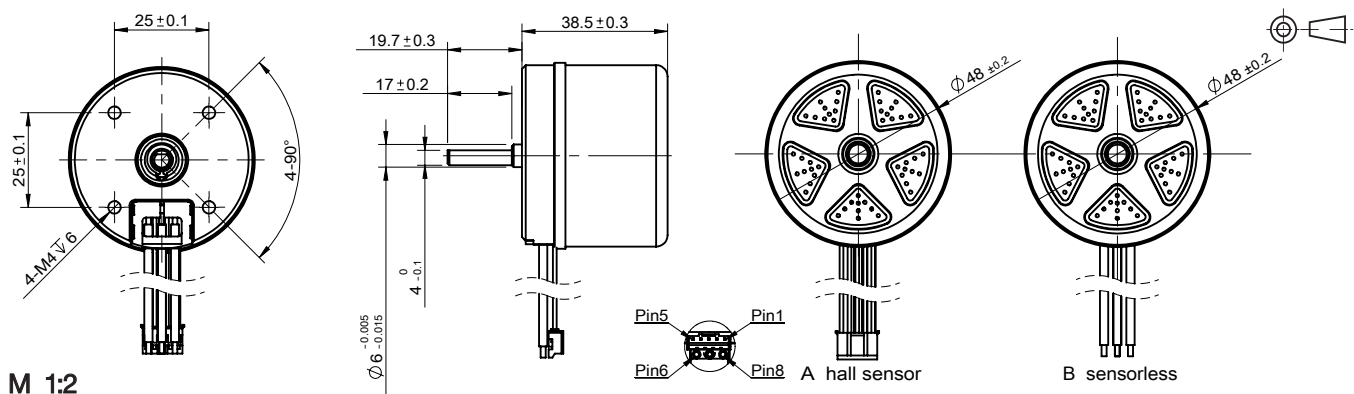
轴 Shaft: 长度 length / 异形 shape

轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection			
A 霍尔传感器 / hall sensor		B 无传感器 / sensorless	
AWG 24/AWG 16		AWG 16	
Pin1	H-	Pin1	U
Pin2	Hw	Pin2	V
Pin3	Hv	Pin3	W
Pin4	Hu		
Pin5	H+		
Pin6	U		
Pin7	V		
Pin8	W		

外观图 / Outline Drawing



规格如有变更，恕不另行通知。Specification subject to change without notice.

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精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

BO6133N2B $\varnothing 61.2\text{mm} \times 33\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				03-50-24.0	02-50-36.0	01-50-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.19	0.43	0.78
3	空载转速	No-load speed	rpm	5000	5000	5000
4	空载电流	No-load current	A	0.7	0.5	0.35
5	堵转转矩	Stall torque	mNm	5725	5687	5577
6	堵转电流	Stall current	A	126.3	83.7	61.5
7	额定转矩	Nominal torque	mNm	558	553	558
8	额定转速	Nominal speed	rpm	3700	3700	3700
9	额定电流	Nominal current	A	11	7.3	5.5
10	最大输出功率	Max. output power	W	749	744	730
11	最大效率	Max. efficiency	%	85.6	85.1	85.4
12	反电势常数	Back-EMF constant	mV/rpm	4.8	7.2	9.5
13	转矩常数	Torque constant	mNm/A	45.6	68.3	91.2
14	KV 值	KV Value	rpm/V	208	139	104
15	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	0.9	0.9	0.9
16	转子惯量	Rotor inertia	gcm^2	599	599	599
17	重量	Weight	g	230	230	230

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18	热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	1.47		
19	热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	0.49		
20	热时常数 (电机)	Thermal time constant motor	s	300		
21	热时常数 (线圈)	Thermal time constant winding	s	80		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	$-40 \sim +120$		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

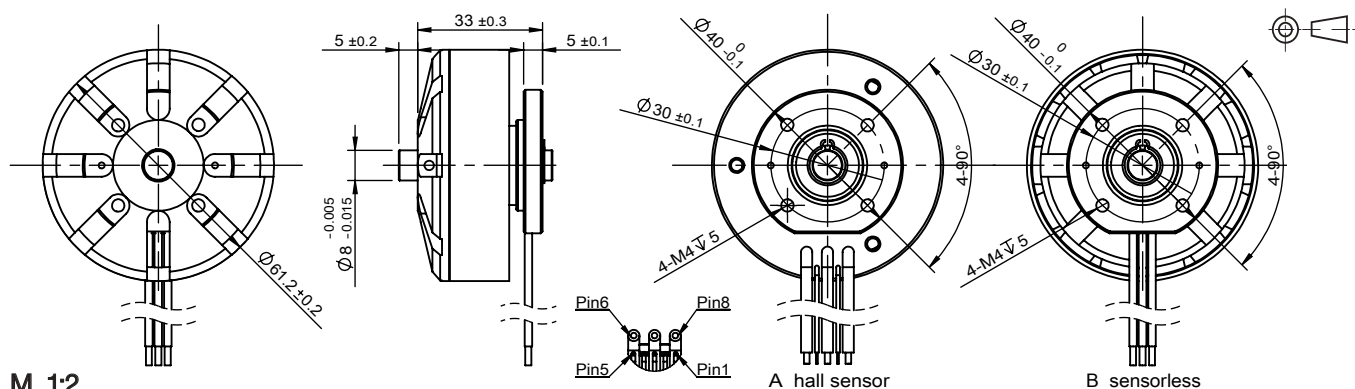
机械参数 / Mechanical Data			
24	轴向间隙	Axial play	mm
25	径向间隙	Radial play	mm
26	动态轴向载荷	Axial load dynamic	N
27	静态轴向载荷	Axial load static	N
28	径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N

其它参数 / Other Specifications			
29	极对数	No. of pole pairs	7
30	滚珠轴承	Ball bearings	2
31	换向结构	Commutation structure	sensorless
32	防护等级	Protection class	IP20

可选配置 / Options	端子定义 / Connection
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齿轮箱：行星齿轮 Gearbox: planetary gearbox 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges 轴 Shaft: 长度 length / 异形 shape 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	齿轮组主要技术指标详见第 140 页 the main technical parameters are detailed on page 140 A 霍尔传感器 / hall sensor AWG 24/AWG 16 Pin1 H- black Pin2 Hw yellow Pin3 Hv white Pin4 Hu blue Pin5 H+ red Pin6 U red Pin7 V yellow Pin8 W black	B 无传感器 / sensorless AWG 16 Pin1 U red Pin2 V yellow Pin3 W black
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外观图 / Outline Drawing



BO6452N3B $\varnothing 64\text{mm} \times 52\text{mm}$, 外转子无传感器 Outer Rotor, Sensorless

应用领域：无人机、电动工具、自动化设备、智能家居等驱动领域。

Applications: UAV, electrical tools, automation equipment, smart home, etc.

				03-95-24.0	02-95-36.0	01-95-48.0
电机参数 / Motor Data						
1 电压	Voltage	V		24.0	36.0	48.0
2 端电阻	Terminal resistance	Ω		0.02	0.045	0.08
3 空载转速	No-load speed	rpm		9500	9500	9500
4 空载电流	No-load current	A		2.6	1.8	1.3
5 堵转转矩	Stall torque	mNm		28824	28819	28824
6 堵转电流	Stall current	A		1200	800	600
7 额定转矩	Nominal torque	mNm		985	983	985
8 额定转速	Nominal speed	rpm		7400	7400	7400
9 额定电流	Nominal current	A		37	24.7	18.5
10 最大输出功率	Max. output power	W		7165	7163	7165
11 最大效率	Max. efficiency	%		90.9	90.7	90.9
12 反电势常数	Back-EMF constant	mV/rpm		2.5	3.8	5
13 转矩常数	Torque constant	mNm/A		24.1	36.1	48.1
14 KV 值	KV Value	rpm/V		396	264	198
15 转速 / 转矩斜率	Speed/torque gradient	rpm/mNm		0.33	0.33	0.33
16 转子惯量	Rotor inertia	gcm^2		1750	1750	1750
17 重量	Weight	g		625	625	625

热参数 / Thermal Data				特性曲线 / Characteristics Curve	
18 热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	0.58		
19 热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	0.19		
20 热时间常数 (电机)	Thermal time constant motor	s	180		
21 热时间常数 (线圈)	Thermal time constant winding	s	60		
22 工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120		
23 绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

机械参数 / Mechanical Data			
24 轴向间隙	Axial play	mm	0.012
25 径向间隙	Radial play	mm	0.008
26 动态轴向载荷	Axial load dynamic	N	12
27 静态轴向载荷	Axial load static	N	235
28 径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	146

其它参数 / Other Specifications			
29 极对数	No. of pole pairs		4
30 滚珠轴承	Ball bearings		3
31 换向结构	Commutation structure		sensorless
32 防护等级	Protection class		IP20

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 / Connection

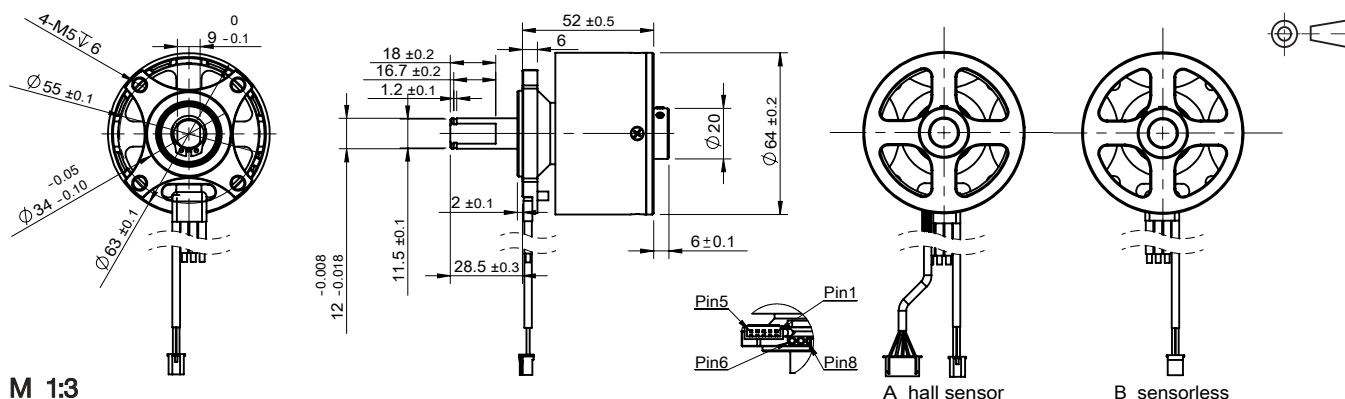
A 霍尔传感器 / hall sensor AWG 24/AWG 14

Pin1	H-	black
Pin2	Hw	yellow
Pin3	Hv	white
Pin4	Hu	blue
Pin5	H+	red
Pin6	U	black
Pin7	V	yellow
Pin8	W	red

B 无传感器 / sensorless AWG 14

Pin1	U	black
Pin2	V	yellow
Pin3	W	red

外观图 / Outline Drawing



规格如有变更，恕不另行通知。Specification subject to change without notice.

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精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流感应电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

BF3211N2B $\varnothing 32\text{mm} \times 11.2\text{mm}$, 扁平无刷电机 Flat BLDC Motor

应用领域：医疗设备、精密仪器设备领域。

Applications: medical equipment, precision instruments, etc.

				03-145-6.0	02-145-12.0	04-145-24.0
电机参数 / Motor Data						
1 电压	Voltage	V		6.0	12.0	24.0
2 端电阻	Terminal resistance	Ω		1	4.2	16.8
3 空载转速	No-load speed	rpm		14500	14500	14500
4 空载电流	No-load current	A		300	150	75
5 堵转转矩	Stall torque	mNm		20.3	20.2	20.3
6 堵转电流	Stall current	A		5680	2850	1430
7 额定转矩	Nominal torque	mNm		7.8	7.8	7.8
8 额定转速	Nominal speed	rpm		6180	6300	6300
9 额定电流	Nominal current	A		2435	1220	610
10 最大输出功率	Max. output power	W		7.6	7.7	7.7
11 最大效率	Max. efficiency	%		59	59	59
12 反电势常数	Back-EMF constant	mV/rpm		1.43	0.78	1.5
13 转矩常数	Torque constant	mNm/A		3.7	7.4	14.9
14 KV 值	KV Value	rpm/V		2390	1208	604
15 转速 / 转矩斜率	Speed/torque gradient	rpm/mNm		707	715	715
16 转子惯量	Rotor inertia	gcm^2		12.3	12.3	12.3
17 重量	Weight	g		28	28	28

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
18 热阻 (机壳 - 环境)	Thermal resistance housing-ambient	K/W	6			
19 热阻 (线圈 - 机壳)	Thermal resistance winding-housing	K/W	5			
20 热时间常数 (电机)	Thermal time constant motor	s	450			
21 热时间常数 (线圈)	Thermal time constant winding	s	224			
22 工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+120			
23 绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	155			

机械参数 / Mechanical Data			
24 轴向间隙	Axial play	mm	0.012
25 径向间隙	Radial play	mm	0.008
26 动态轴向载荷	Axial load dynamic	N	8
27 静态轴向载荷	Axial load static	N	85
28 径向载荷 (距安装面 3mm)	Radial load at 3 mm from mounting face	N	26

其它参数 / Other Specifications			
29 极对数	No. of pole pairs		4
30 滚珠轴承	Ball bearings		2
31 换向结构	Commutation structure		sensorless
32 防护等级	Protection class		IP20

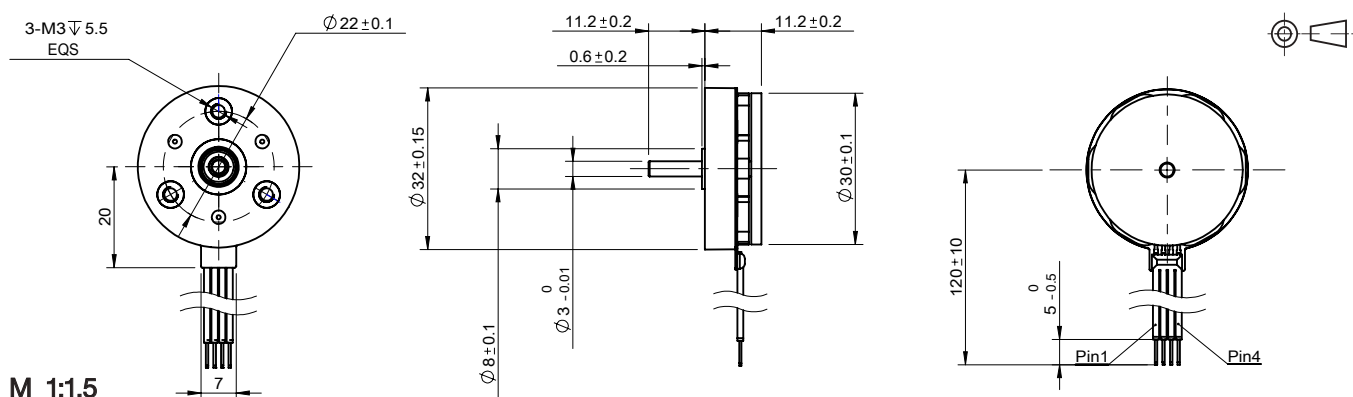
可选配置 / Options		端子定义 / Connection	
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齿轮箱：行星齿轮 齿轮组主要技术指标详见第 156 页
 Gearbox: planetary gearbox the main technical parameters are detailed on page 156
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 编码器 Encoder/ 驱动器 Driver: 可定制 customizable upon request
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 轴承类型 Bearing type: 含油轴承 sleeve bearings / 滚珠轴承 ball bearings
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

无传感器 / sensorless
 AWG 26

Pin1	U	red
Pin2	V	white
Pin3	W	black
Pin4	common	green

外观图 / Outline Drawing



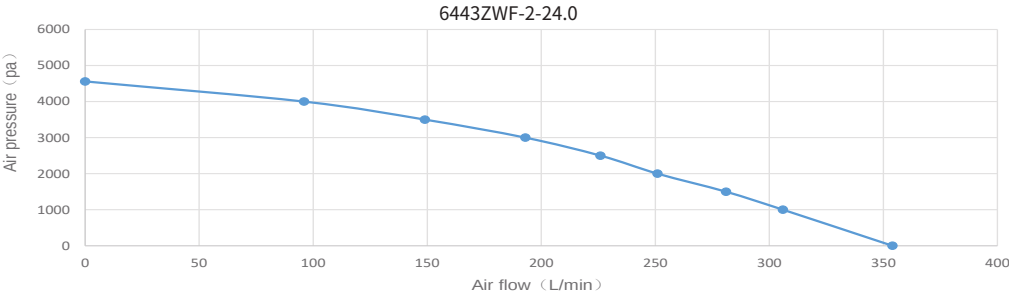
6443ZWF $\varnothing$ 64mm*43mm, 无刷风机 Brushless DC Blower

应用领域：医疗器械等精密驱动领域。
Applications: precision drives in medical equipment fields.

				-2-24.0	-3-24.0	-4-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	24.0	24.0
2	端电阻	Terminal resistance	Ω	0.83	0.24	1.33
3	相数	NO. of phase		3	3	3
4	输入功率	Input power	W	81	112	48
5	额定负载	Rated Load		风叶 /Blades (出气孔 / Blow hole: 4mm)	风叶 /Blades (出气孔 / Blow hole: 4mm)	风叶 /Blades (出气孔 / Blow hole: 4mm)
6	负载转速	Load speed	rpm	37400	43700	33000
7	负载电流	Load current	A	3.4	4.7	2
8	风压	Air pressure	Pa	8160	10190	6200
9	流量	Air flow	L/min	430	425	360
10	噪音	Noise	dB	≤ 45	≤ 45	≤ 45
11	重量	Weight	g	190	190	190
12	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	10~70	10~70	10~70

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

特性曲线 /Characteristics Curve



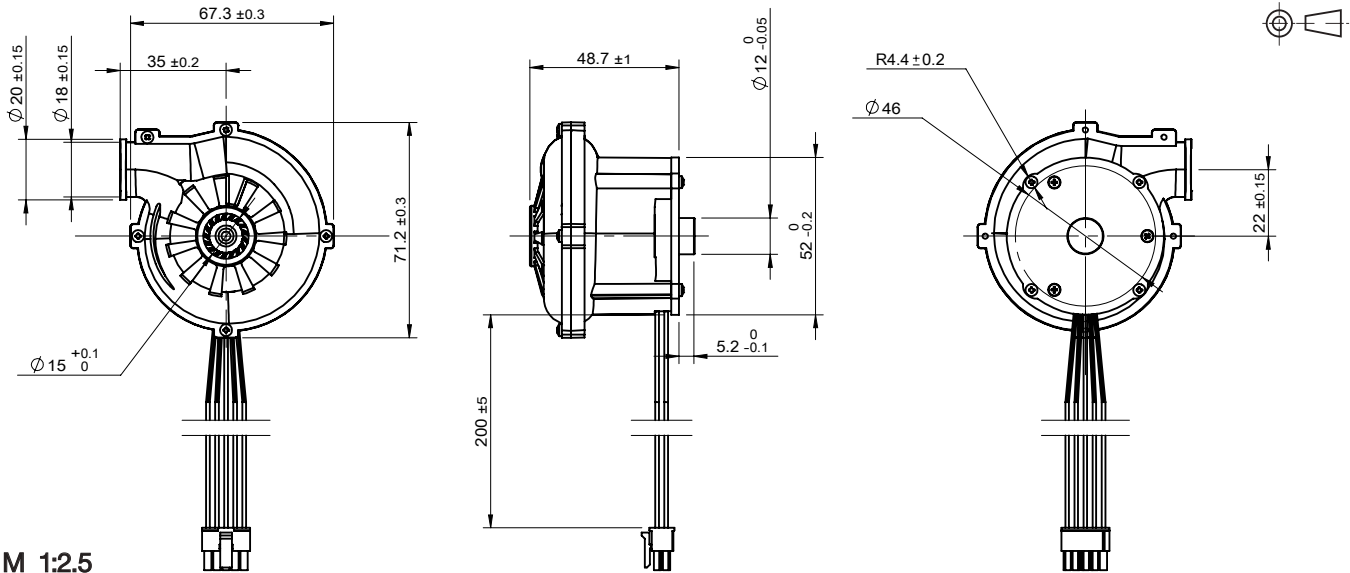
可选配置 /Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
驱动器 Driver: 可定制 customizable upon request
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 /Connection

霍尔传感器 /hall sensor					
AWG 24					
Pin1	Hu	blue	Pin9	V	red
Pin2	Hv	black	Pin10	NTC	white
Pin3	H+	yellow			
Pin4	W	red			
Pin5	NTC	white			
Pin6	Hw	black			
Pin7	H-	green			
Pin8	U	blue			

外观图 /Outline Drawing



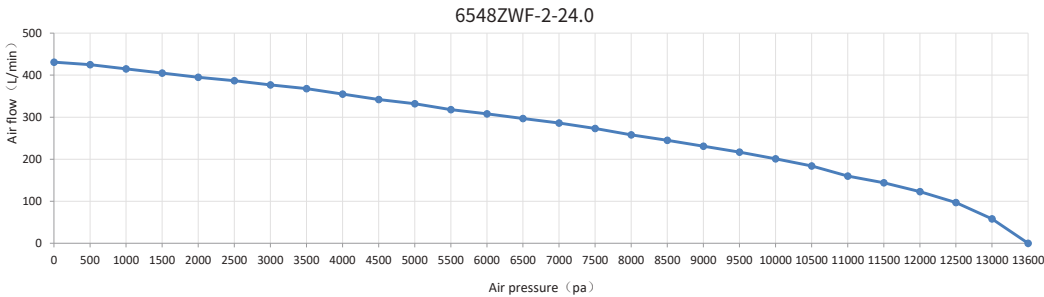
6548ZWF $\varnothing$ 65mm*48mm, 无刷风机 Brushless DC Blower

应用领域：医疗器械等精密驱动领域。
Applications: precision drives in medical equipment fields.

				-2-24.0		
电机参数 / Motor Data						
1	电压	Voltage	V	24.0		
2	端电阻	Terminal resistance	Ω	0.19		
3	相数	NO. of phase		3		
4	输入功率	Input power	W	100		
5	额定负载	Rated Load	风叶 /Blades (出气孔 / Blow hole: 4mm)			
6	负载转速	Load speed	rpm	50000		
7	负载电流	Load current	A	4.4		
8	风压	Air pressure	Pa	10000		
9	流量	Air flow	L/min	300		
10	噪音	Noise	dB	≤39		
11	重量	Weight	g	272		
12	工作温度范围	Operating temperature range	°C	10~70		

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

特性曲线 /Characteristics Curve



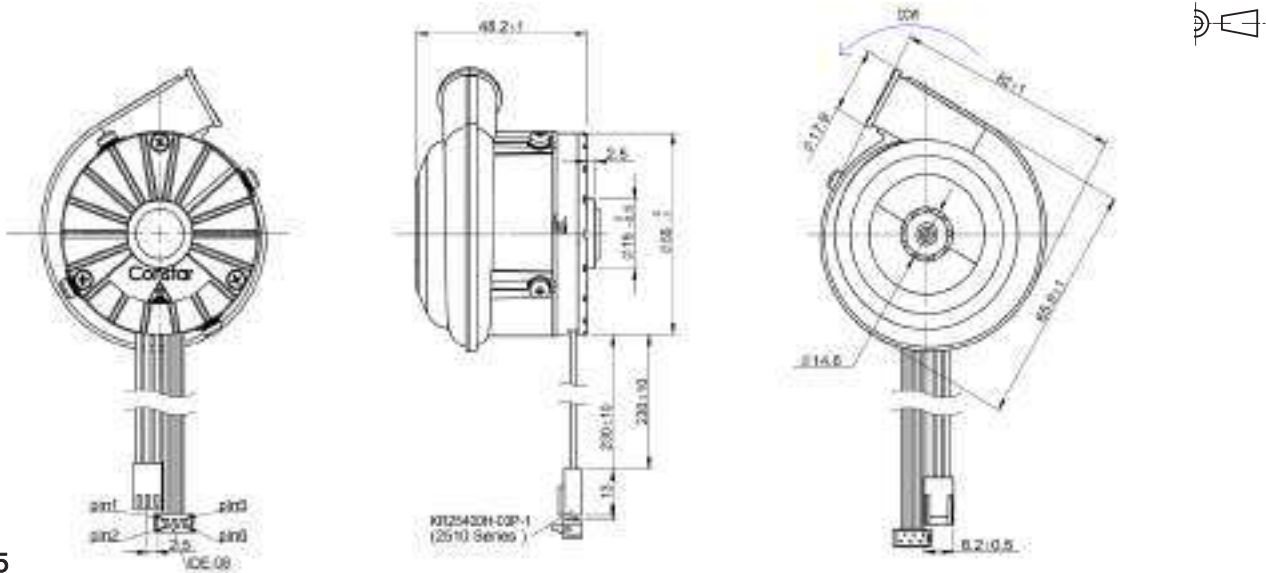
可选配置 /Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
驱动器 Driver: 可定制 customizable upon request
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 /Connection

A 霍尔传感器 /hall sensor			B 无传感器 /sensorless AWG 30		
Pin1	Hw	red	Pin1	U	red
Pin2	Hu	grey	Pin2	W	yellow
Pin3	GND	grey	Pin3	V	black
Pin4	Hv	grey	3P lead-out group		
Pin5	NTC	grey			
Pin6	H+	grey			

外观图 /Outline Drawing



M 1:2.5

规格如有变更，恕不另行通知。Specification subject to change without notice.

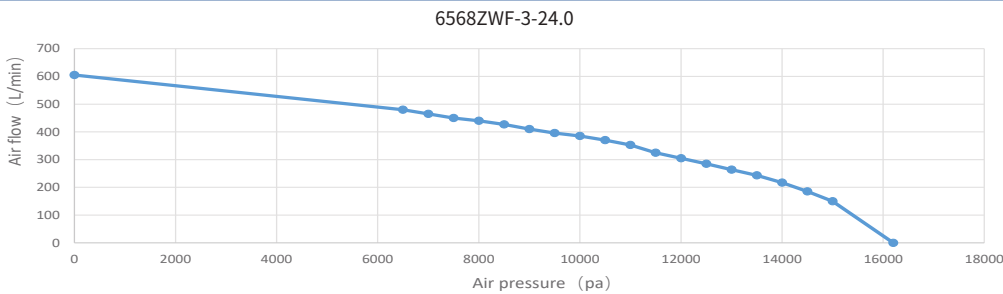
6568ZWF $\varnothing$ 65mm*68mm, 无刷风机 Brushless DC Blower

应用领域：医疗器械等精密驱动领域。
Applications: precision drives in medical equipment fields.

				-3-24.0		
电机参数 / Motor Data						
1	电压	Voltage	V	24.0		
2	端电阻	Terminal resistance	Ω	0.2		
3	相数	NO. of phase		3		
4	输入功率	Input power	W	200		
5	额定负载	Rated Load	风叶 /Blades (出气孔 / Blow hole: 4mm)			
6	负载转速	Load speed	rpm	66000		
7	负载电流	Load current	A	9.0		
8	风压	Air pressure	Pa	13000		
9	流量	Air flow	L/min	600		
10	噪音	Noise	dB	≤40		
11	重量	Weight	g	237		
12	工作温度范围	Operating temperature range	°C	10~70		

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

特性曲线 /Characteristics Curve



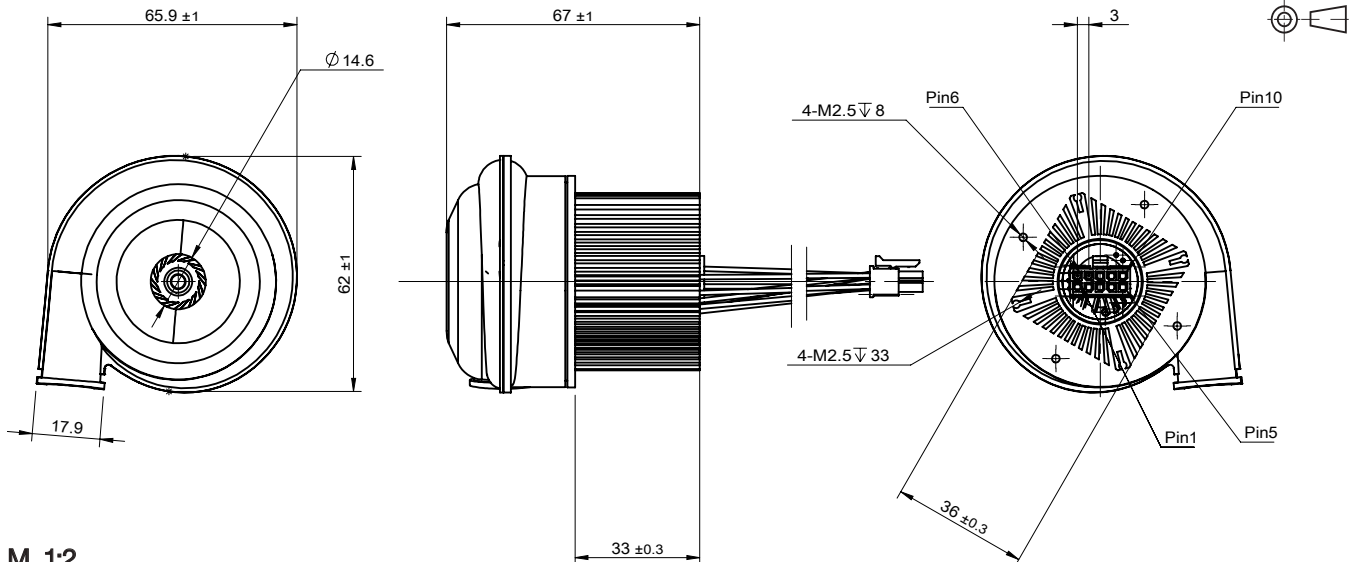
可选配置 /Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
驱动器 Driver: 可定制 customizable upon request
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 /Connection

霍尔传感器 /hall sensor AWG 26/AWG 18					
Pin1	Hu	red	Pin9	V	black
Pin2	Hw	white	Pin10	IT2	green
Pin3	H+	black			
Pin4	U	white			
Pin5	IT1	blue			
Pin6	U	black			
Pin7	GND	blue			
Pin8	W	red			

外观图 /Outline Drawing



M 1:2

7054ZWF $\varnothing$ 70mm*54mm, 无刷风机 Brushless DC Blower

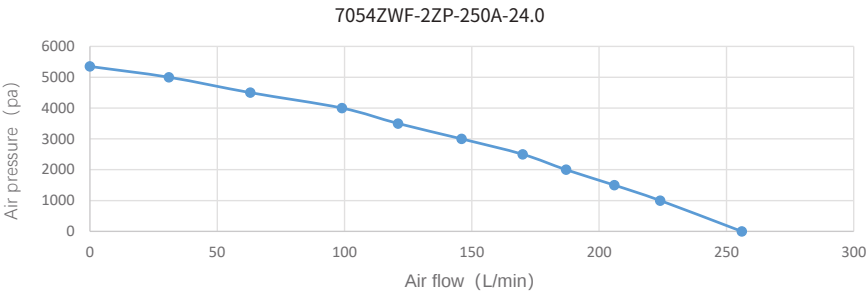
应用领域：医疗器械等精密驱动领域。
Applications: precision drives in medical equipment fields.

-2ZP-250A-24.0

电机参数 / Motor Data					
1	电压	Voltage	V	24.0	
2	端电阻	Terminal resistance	Ω	2	
3	相数	NO. of phase		3	
4	输入功率	Input power	W	29	
5	额定负载	Rated Load	风叶 /Blades (出气孔 / Blow hole: 4mm)		
6	负载转速	Load speed	rpm	33000	
7	负载电流	Load current	A	1.4	
8	风压	Air pressure	Pa	4000	
9	流量	Air flow	L/min	220	
10	噪音	Noise	dB	≤ 40	
11	重量	Weight	g	237	
12	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	10~70	

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

特性曲线 /Characteristics Curve



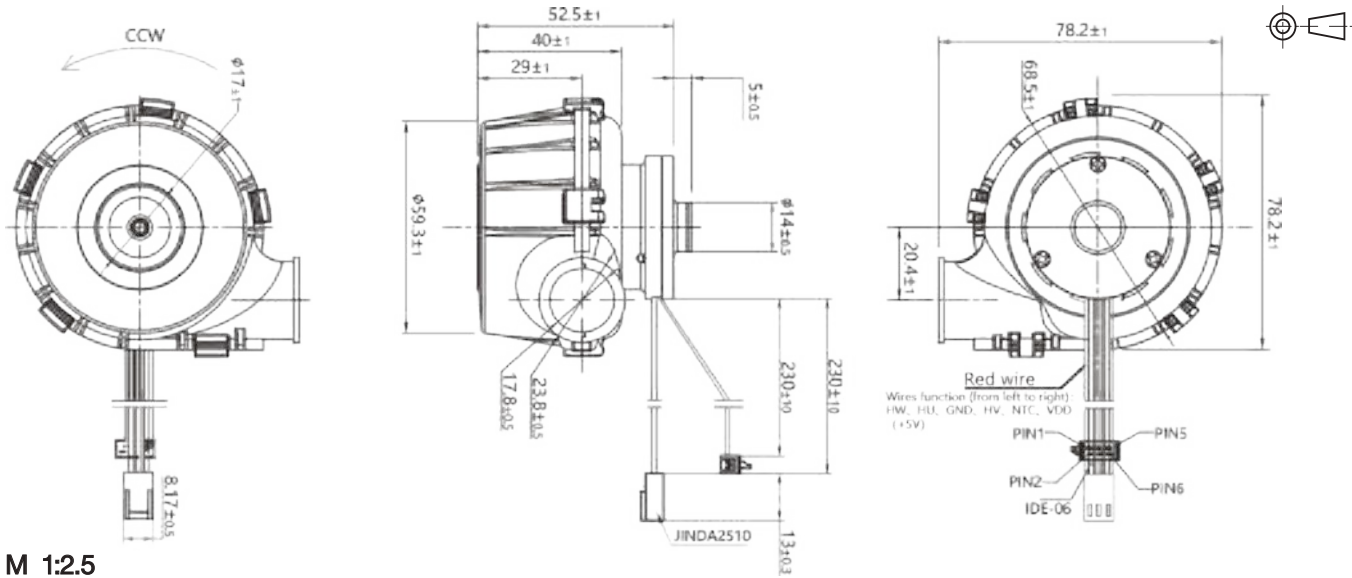
可选配置 /Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
驱动器 Driver: 可定制 customizable upon request
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

端子定义 /Connection

A 霍尔传感器 /hall sensor			B 无传感器 /sensorless AWG 30		
Pin1	Hw	red	Pin1	U	red
Pin2	Hu	grey	Pin2	W	yellow
Pin3	GND	grey	Pin3	V	black
Pin4	Hv	grey	3P lead-out group		
Pin5	NTC	grey			
Pin6	H+	grey			

外观图 /Outline Drawing



您的个人备注 Your personal notes

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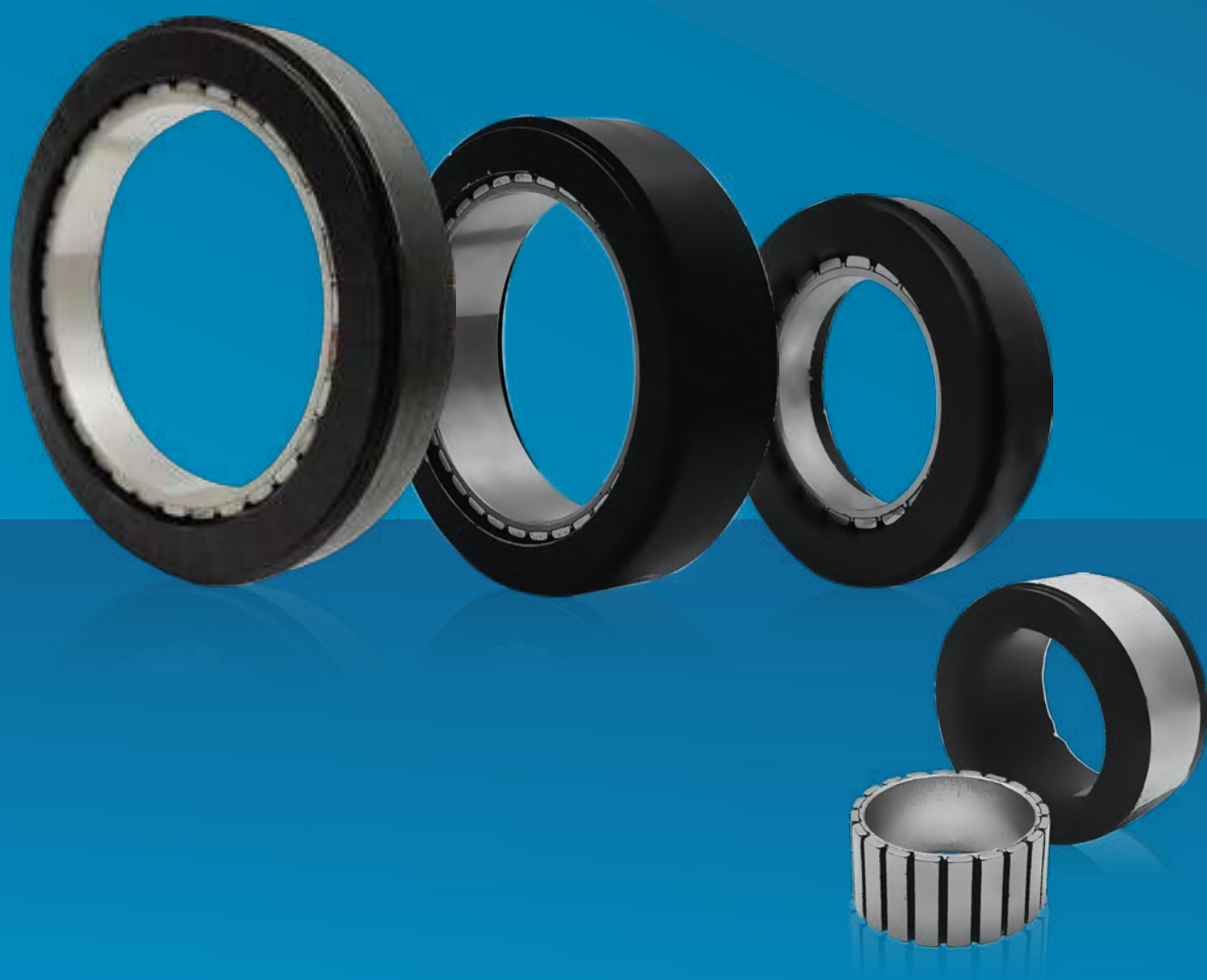
您的个人备注

Your personal notes

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无框力矩电机

FRAMELESS TORQUE MOTOR



CONTENT 目录

无框力矩电机

FRAMELESS TORQUE MOTOR

内转子有槽

INNER ROTOR, SLOTTED

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	BS5016NFL	φ50*24 mm	无传感器/Sensorless	118
2	BS6008NFL	φ60*16 mm	无传感器/Sensorless	119
3	BS8413NFL	φ84*21 mm	无传感器/Sensorless	120
4	BS10413NFL	φ104*21 mm	无传感器/Sensorless	121

BS5016NFL $\varnothing 50\text{mm} \times 24\text{mm}$, 内转子有槽无传感器 Inner Rotor, Slotted, Sensorless

应用领域：协作机器人、机器人关节、工业自动化设备等领域。

Applications: cooperative robotic, robotic joint, industrial automation, etc.

精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波驱动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

-14-48.0 -29-48.0 -58-48.0

电机参数 / Motor Data				-14-48.0	-29-48.0	-58-48.0
1	电压	Voltage	V	48.0	48.0	48.0
2	线电阻	Line resistance	Ω	10.0	2.5	0.63
3	线电感	Line inductance	mH	5.2	1.3	0.33
4	空载转速	No-load speed	rpm	1440	2880	5760
5	空载电流	No-load current	A	0.1	0.2	0.3
6	堵转转矩	Stall torque	N.m	1.5	3.0	6.1
7	堵转电流	Stall current	A	4.8	19.2	76.8
8	额定转矩	Nominal torque	N.m	0.53	0.46	0.38
9	额定转速	Nominal speed	rpm	835	2194	4857
10	额定电流	Nominal current	A	1.8	3.1	5.1
11	最大输出功率	Max.output power	W	56	227	914
12	最大效率	Max. efficiency	%	85	85	85
13	反电势常数	Back-EMF constant	mV/rpm	32.8	16.5	8.3
14	转矩常数	Torque constant	Nm/A	0.31	0.16	0.08
15	KV 值	KV Value	rpm/V	30	60	120
16	转速 / 转矩斜率	Speed/torque gradient	rpm/Nm	973	957	950
17	转子惯量	Rotor inertia	gcm^2	61	61	61
18	重量	Weight	g	138	138	138

热参数 / Thermal Data				特性曲线 / Characteristics Curve		
19	热阻 (线圈 - 环境)	Thermal resistance winding-ambient	K/W	3.3	BS5016NFL-29-48.0	
20	热时常数 (线圈)	Thermal time constant winding	s	120		
21	绝缘等级	Insulation class		B		
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100		
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180		

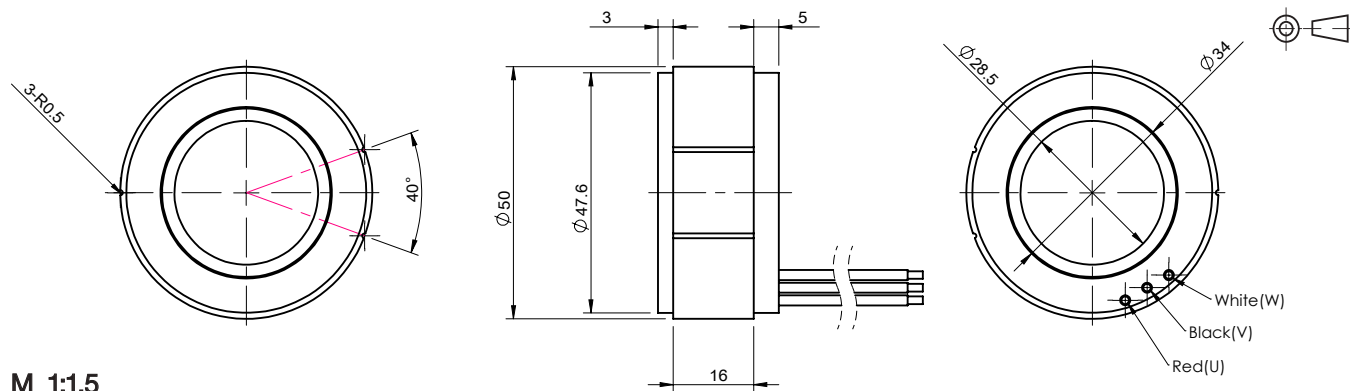
其它参数 / Other Specifications			
24	绕组联结	Circuit type	Y
25	耐电压	Puncture	500VAC / 5mA / 1s
26	绝缘电阻	Insulation Resistance	100M Ω / 500VDC
27	极对数	No. of pole pairs	10
28	槽数	No. of slots	18
29	换向结构	Commutation structure	sensorless
30	防护等级	Protection class	IP20

功率 (W) 电压 (V) 电流 (A)
输出功率 (W) 转速 (r/min) 效率 (%)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options		端子定义 / Connection	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		无传感器 / sensorless	
传感器 Sensor: 无传感器 sensorless/ 霍尔传感器 hall sensor		AWG 24	
驱动器 Driver: 可定制 customizable upon request		Pin1	U red
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin2	V black
		Pin3	W white

外观图 / Outline Drawing



M 1:1.5

BS6008NFL $\varnothing 60\text{mm} \times 16\text{mm}$, 内转子有槽无传感器 Inner Rotor, Slotted, Sensorless

应用领域: 协作机器人、机器人关节、工业自动化设备等领域。

Applications: cooperative robotic, robotic joint, industrial automation, etc.

				-16-48.0	-33-48.0	-29-48.0			
电机参数 / Motor Data									
1	电压	Voltage	V	48.0	48.0	48.0			
2	线电阻	Line resistance	Ω	9.92	2.48	0.6			
3	线电感	Line inductance	mH	4.16	1.04	0.26			
4	空载转速	No-load speed	rpm	1640	3280	6560			
5	空载电流	No-load current	A	0.08	0.15	0.3			
6	堵转转矩	Stall torque	N.m	1.3	2.7	5.4			
7	堵转电流	Stall current	A	4.8	19.4	77.4			
8	额定转矩	Nominal torque	N.m	0.56	0.52	0.40			
9	额定转速	Nominal speed	rpm	841	2377	5459			
10	额定电流	Nominal current	A	2.1	3.9	6.1			
11	最大输出功率	Max.output power	W	56	229	922			
12	最大效率	Max.efficiency	%	86	86	86			
13	反电势常数	Back-EMF constant	mV/rpm	28.8	14.5	7.3			
14	转矩常数	Torque constant	Nm/A	0.28	0.14	0.07			
15	KV 值	KV Value	rpm/V	34.2	68.3	136.7			
16	转速 / 转矩斜率	Speed/torque gradient	rpm/Nm	1251	1232	1222			
17	转子惯量	Rotor inertia	gcm ²	81	81	81			
18	重量	Weight	g	119	119	119			

热参数 / Thermal Data				特性曲线 / Characteristics Curve				
19	热阻 (线圈 - 环境)	Thermal resistance winding-ambient	K/W	1.6				
20	热时常数 (线圈)	Thermal time constant winding	s	120				
21	绝缘等级	Insulation class		B				
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100				
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180				

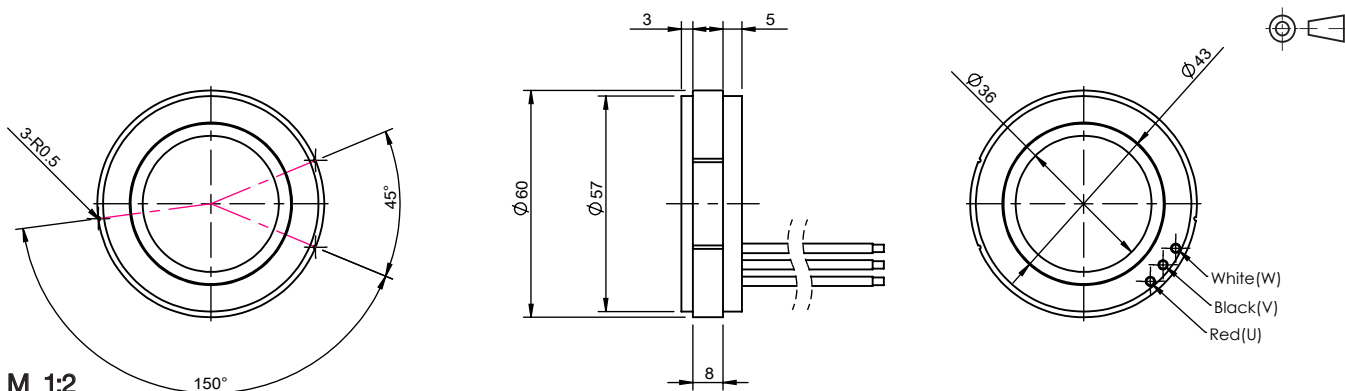
其它参数 / Other Specifications			
24	绕组联结	Circuit type	Y
25	耐电压	Puncture	500VAC / 5mA / 1s
26	绝缘电阻	Insulation Resistance	100M Ω / 500VDC
27	极对数	No. of pole pairs	10
28	槽数	No. of slots	24
29	换向结构	Commutation structure	sensorless
30	防护等级	Protection class	IP20

功率 (W) 电压 (V) 电流 (A)
输出功率 (W) 转速 (r/min) 效率 (%)

仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options		端子定义 / Connection	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		无传感器 / sensorless	
传感器 Sensor: 无传感器 sensorless/ 霍尔传感器 hall sensor		AWG 24	
驱动器 Driver: 可定制 customizable upon request		Pin1 U red	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin2 V black	
		Pin3 W white	

外观图 / Outline Drawing



BS8413NFL $\varnothing 84\text{mm} \times 21\text{mm}$, 内转子有槽无传感器 Inner Rotor, Slotted, Sensorless

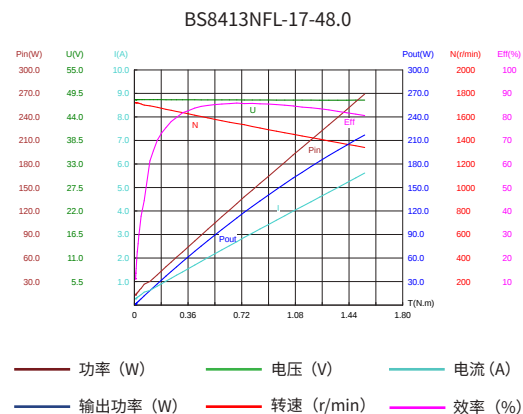
应用领域：协作机器人、机器人关节、工业自动化设备等领域。

Applications: cooperative robotic, robotic joint, industrial automation, etc.

				-9-48.0	-17-48.0	-35-48.0			
电机参数 / Motor Data									
1	电压	Voltage	V	48.0	48.0	48.0			
2	线电阻	Line resistance	Ω	4.4	1.1	0.28			
3	线电感	Line inductance	mH	2.36	0.59	0.15			
4	空载转速	No-load speed	rpm	865	1730	3460			
5	空载电流	No-load current	A	0.13	0.25	0.5			
6	堵转转矩	Stall torque	N.m	5.6	11.4	23.0			
7	堵转电流	Stall current	A	10.9	43.6	174.5			
8	额定转矩	Nominal torque	N.m	1.5	1.3	1.0			
9	额定转速	Nominal speed	rpm	565	1379	2979			
10	额定电流	Nominal current	A	3.1	5.2	8.0			
11	最大输出功率	Max.output power	W	128	518	2082			
12	最大效率	Max.efficiency	%	86	86	86			
13	反电势常数	Back-EMF constant	mV/rpm	54.9	27.6	13.8			
14	转矩常数	Torque constant	Nm/A	0.52	0.26	0.13			
15	KV 值	KV Value	rpm/V	18.0	36.0	72.1			
16	转速 / 转矩斜率	Speed/torque gradient	rpm/Nm	153	151	150			
17	转子惯量	Rotor inertia	gcm ²	535	535	535			
18	重量	Weight	g	255	255	255			

热参数 / Thermal Data				特性曲线 / Characteristics Curve				
19	热阻 (线圈 - 环境)	Thermal resistance winding-ambient	K/W	1.9				
20	热时间常数 (线圈)	Thermal time constant winding	s	120				
21	绝缘等级	Insulation class		B				
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100				
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180				

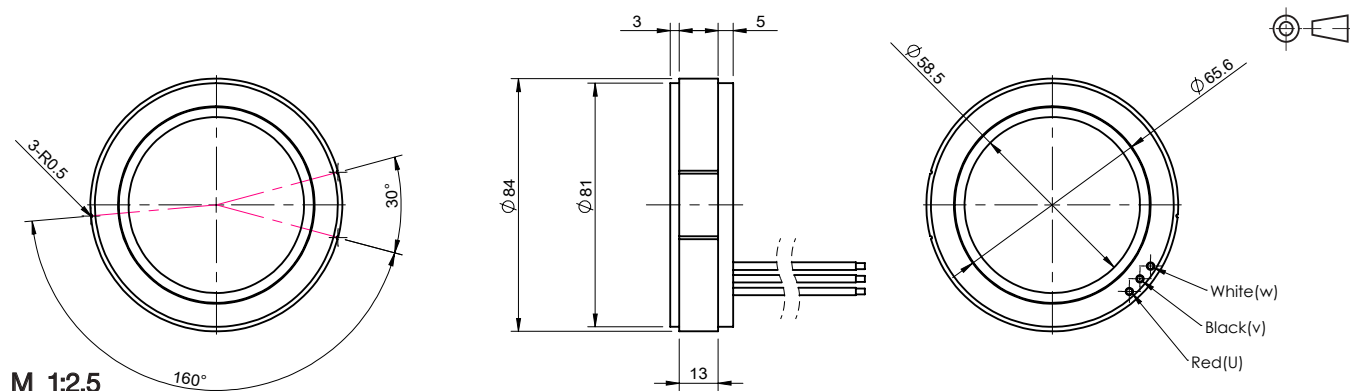
其它参数 / Other Specifications			
24	绕组联结	Circuit type	Y
25	耐电压	Puncture	500VAC / 5mA / 1s
26	绝缘电阻	Insulation Resistance	100M Ω / 500VDC
27	极对数	No. of pole pairs	16
28	槽数	No. of slots	36
29	换向结构	Commutation structure	sensorless
30	防护等级	Protection class	IP20



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options		端子定义 / Connection	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		无传感器 / sensorless	
传感器 Sensor: 无传感器 sensorless / 霍尔传感器 hall sensor		AWG 24	
驱动器 Driver: 可定制 customizable upon request		Pin1 U red	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin2 V black	
		Pin3 W white	

外观图 / Outline Drawing



BS10413NFL $\varnothing 104\text{mm} \times 21\text{mm}$, 内转子有槽无传感器 Inner Rotor, Slotted, Sensorless

应用领域: 协作机器人、机器人关节、工业自动化设备等领域。

Applications: cooperative robotic, robotic joint, industrial automation, etc.

				-9-48.0	-17-48.0	-34-48.0			
电机参数 / Motor Data									
1	电压	Voltage	V	48.0	48.0	48.0			
2	线电阻	Line resistance	Ω	1.8	0.45	0.11			
3	线电感	Line inductance	mH	1.7	0.43	0.11			
4	空载转速	No-load speed	rpm	850	1700	3400			
5	空载电流	No-load current	A	0.2	0.40	0.80			
6	堵转转矩	Stall torque	N.m	14.2	28.5	57.3			
7	堵转电流	Stall current	A	27	107	427			
8	额定转矩	Nominal torque	N.m	2.2	1.8	1.4			
9	额定转速	Nominal speed	rpm	646	1431	2985			
10	额定电流	Nominal current	A	4.3	7.3	11.2			
11	最大输出功率	Max.output power	W	315	1270	5100			
12	最大效率	Max.efficiency	%	86	86	86			
13	反电势常数	Back-EMF constant	mV/rpm	56.0	28.1	14.1			
14	转矩常数	Torque constant	Nm/A	0.54	0.27	0.13			
15	KV 值	KV Value	rpm/V	17.7	35.4	70.8			
16	转速 / 转矩斜率	Speed/torque gradient	rpm/Nm	60	60	59			
17	转子惯量	Rotor inertia	gcm²	1256	1256	1256			
18	重量	Weight	g	405	405	405			

热参数 / Thermal Data				特性曲线 / Characteristics Curve					
19	热阻 (线圈 - 环境)	Thermal resistance winding-ambient	K/W	2.3					
20	热时常数 (线圈)	Thermal time constant winding	s	120					
21	绝缘等级	Insulation class		B					
22	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-40~+100					
23	绕组耐温等级	Thermal class of winding	$^{\circ}\text{C}$	180					

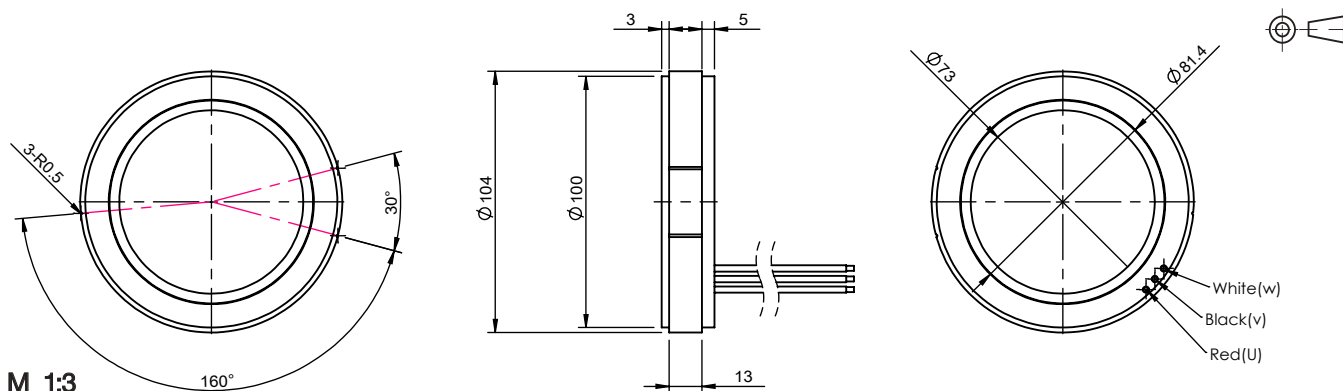
其它参数 / Other Specifications			
24	绕组联结	Circuit type	Y
25	耐电压	Puncture	500VAC / 5mA / 1s
26	绝缘电阻	Insulation Resistance	100M Ω / 500VDC
27	极对数	No. of pole pairs	16
28	槽数	No. of slots	36
29	换向结构	Commutation structure	sensorless
30	防护等级	Protection class	IP20

功率 (W) 电压 (V) 电流 (A)
输出功率 (W) 转速 (r/min) 效率 (%)

仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options		端子定义 / Connection	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range		无传感器 / sensorless	
传感器 Sensor: 无传感器 sensorless/ 霍尔传感器 hall sensor		AWG 24	
驱动器 Driver: 可定制 customizable upon request		Pin1 U red	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length		Pin2 V black	
		Pin3 W white	

外观图 / Outline Drawing



您的个人备注 Your personal notes

[illegible]

驱动器

CONTROLLER



CONTENT 目录

驱动器

CONTROLLER

有感无刷电机通用驱动器 UNIVERSAL ESC FOR SENSORED BLDC MOTOR

	驱动器型号 ESC No.	尺寸 Size	持续电流 Constant Current	页码 Page
1	S17-112503H-FR	99*72*25 mm	3A	126
2	S17-114820H-FR	99*72*25 mm	20A	126
3	S25-112503H-7054	99*72*25 mm	3A	126

无感无刷电机通用驱动器 UNIVERSAL ESC FOR SENSORLESS BLDC MOTOR

	驱动器型号 ESC No.	尺寸 Size	持续电流 Constant Current	页码 Page
1	S17-112503	99*72*25 mm	3A	127
2	S17-114820	99*72*25 mm	20A	127

有感无刷电机紧凑型驱动器 COMPACT ESC FOR SENSORED BLDC MOTOR

	电机型号 Motor No.	尺寸 Dimension	持续电流 Constant Current	页码 Page
1	S13-071502H	28.5*20*6.1 mm	2A	128
2	A18-154820H	78*55*29.4 mm	20A	128

无感无刷电机紧凑型驱动器 COMPACT ESC FOR SENSORLESS BLDC MOTOR

	驱动器型号 ESC No.	尺寸 Size	持续电流 Constant Current	页码 Page
1	S13-071502	28.5*20*6.1 mm	2A	129
2	S15-072510	45*23*10 mm	10A	129
3	S20-076015	92*27*17.5 mm	15A	129

多旋翼无人机电调 ESC FOR MULTI-ROTOR

	电调型号 ESC No.	尺寸 Size	持续电流 Constant Current	页码 Page
1	Xs420	26*14.5*5.5 mm	20A	130
2	Xs630	32*15*6.6 mm	30A	130

内置伺服电机驱动器

BUILT-IN SERVO MOTOR CONTROLLER

	驱动器型号 ESC No.	持续输出功率 Continuous Output Power	额定电流 Rated Current	页码 Page
1	IN50G-112503E-V011	24W	1A	131

外置伺服电机驱动器

EXTERNAL SERVO MOTOR CONTROLLER

	驱动器型号 ESC No.	持续输出功率 Continuous Output Power	额定电流 Rated Current	页码 Page
1	ASG1-112503H-CAN	75W	3A	132
2	ASG1-112503H-RS485	75W	3A	132

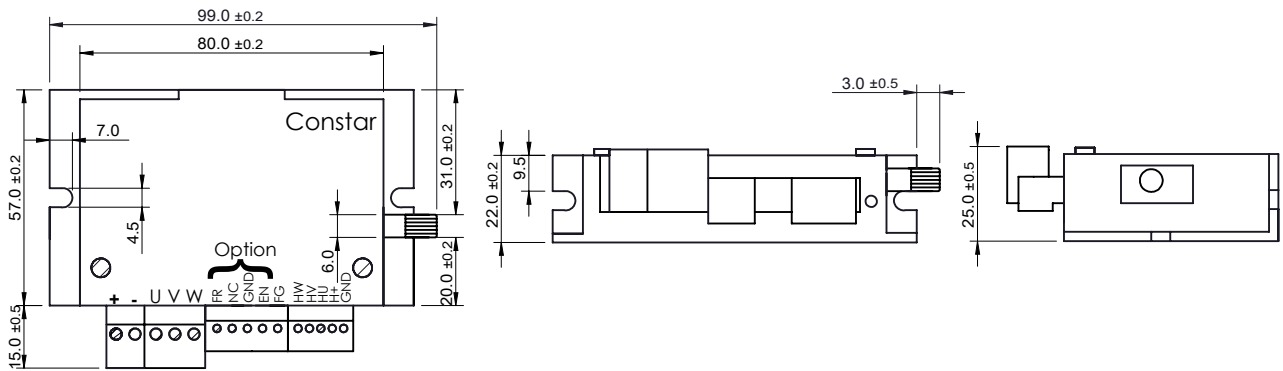
有感无刷电机通用驱动器 Universal ESC for Sensored BLDC Motor

应用领域：风机、电动工具、泵类等领域。
Applications: blowers, electrical tools, pumps, etc.

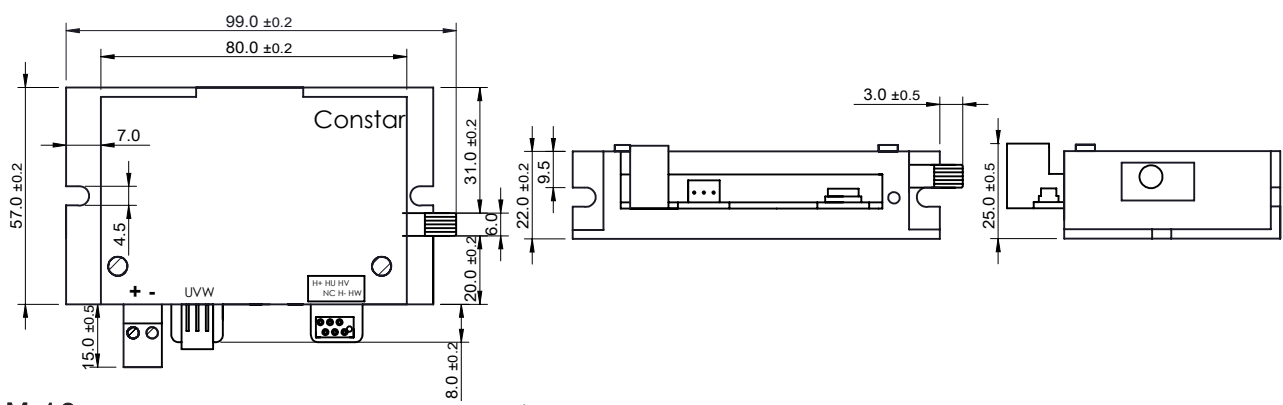
- 精密直流空心杯电机
PRECISION DC CORELESS MOTOR
- 无刷电机
BRUSHLESS DC MOTOR
- 无框力矩电机
FRAMELESS TORQUE MOTOR
- 驱动器
CONTROLLER
- 精密齿轮减速电机
PRECISION GEAR MOTOR
- 精密伺服电机
PRECISION SERVO MOTOR
- 直流空心杯电机
DC CORELESS MOTOR
- 直流铁芯电机
DC CORE MOTOR
- 声波驱动电机
SONIC MOTOR
- 全球营销网络
GLOBAL MARKETING NETWORK

					S17-112503H-FR	S17-114820H-FR	S25-112503H-7054
驱动器参数 / Controller Data							
1	持续电流	Constant current	A	3	20	3	
2	峰值电流	Peak current(10s)	A	4.5	26	4.5	
3	输入电压范围	Input voltage range	V	11~25	11~48	11~25	
4	尺寸	Size	mm	99*72*25	99*72*25	99*72*25	
5	速度控制信号	Speed control signal		Analog voltage/PWM	Analog voltage/PWM	Analog voltage/PWM	
6	过载保护	Overload protection		Yes	Yes	Yes	
7	堵转保护	Blockage protection		No	No	No	
8	过热保护	Thermal overload protection		Yes	Yes	Yes	
9	反接保护	Inverse-polarity protection		Yes	Yes	Yes	
10	正反转控制	CW/CCW direction control		Yes	Yes	Optional	
11	使能控制	Enable		Optional	Optional	Optional	
12	速度信号输出	Speed feedback output(6 pulses*pole pairs)		Optional	Optional	Optional	
13	工作环境温度	Operating temperature	°C	-20~+60	-20~+60	-20~+60	
14	换向方式	Sensorless or sensed		Sensored	Sensored	Sensored	

外观图 / Outline Drawing



M 1:2 型号 / Model S17-112503H-FR/S17-114820H-FR



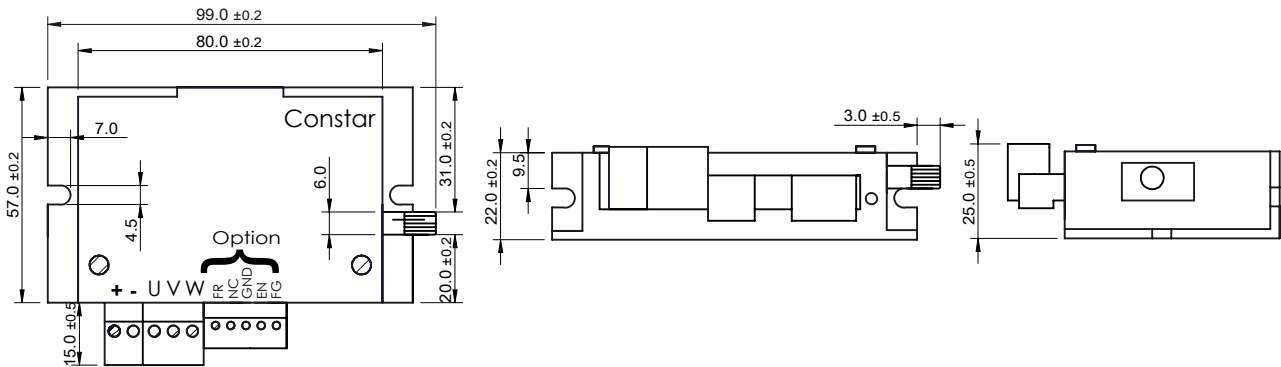
M 1:2 型号 / Model S25-112503H-7054

无感无刷电机通用驱动器 Universal ESC for Sensorless BLDC Motor

应用领域：风机、电动工具、泵类等领域。
Applications: blowers, electrical tools, pumps, etc.

				S17-112503	S17-114820
驱动器参数 / Driver Data					
1	持续电流	Constant current	A	3	20
2	峰值电流	Peak current(10s)	A	4.5	26
3	输入电压范围	Input voltage range	V	11~25	11~48
4	尺寸	Size	mm	99*72*25	99*72*25
5	速度控制信号	Speed control signal		Analog voltage/PWM	Analog voltage/PWM
6	过载保护	Overload protection		Yes	Yes
7	堵转保护	Blockage protection		Yes	Yes
8	过热保护	Thermal overload protection		Yes	Yes
9	反接保护	Inverse-polarity protection		Yes	Yes
10	正反转控制	CW/CCW direction control		Optional	Optional
11	使能控制	Enable		Optional	Optional
12	速度信号输出	Speed feedback output(6 pulses*pole pairs)		Optional	Optional
13	工作环境温度	Operating temperature	°C	-20~+60	-20~+60
14	换向方式	Sensorless or sensed		Sensorless	Sensorless

外观图 /Outline Drawing



M 1:2

型号 / Model S17-112503/S17-114820

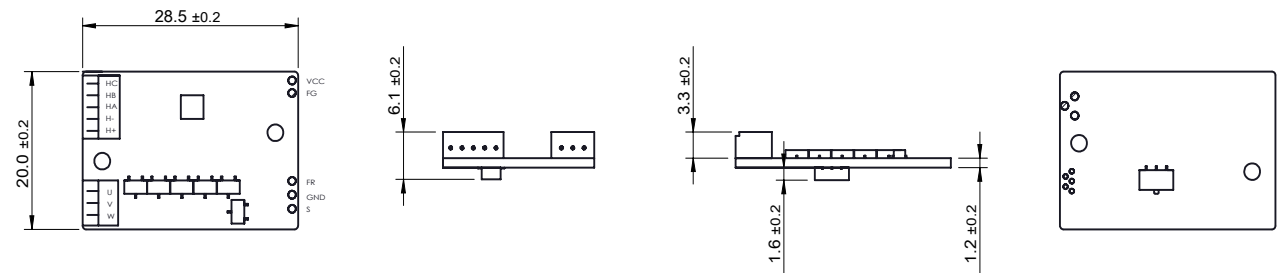
有感无刷电机紧凑型驱动器

Compact ESC for Sensored BLDC Motor

应用领域：风机、电动工具、泵类等领域。
Applications: blowers, electrical tools, pumps, etc.

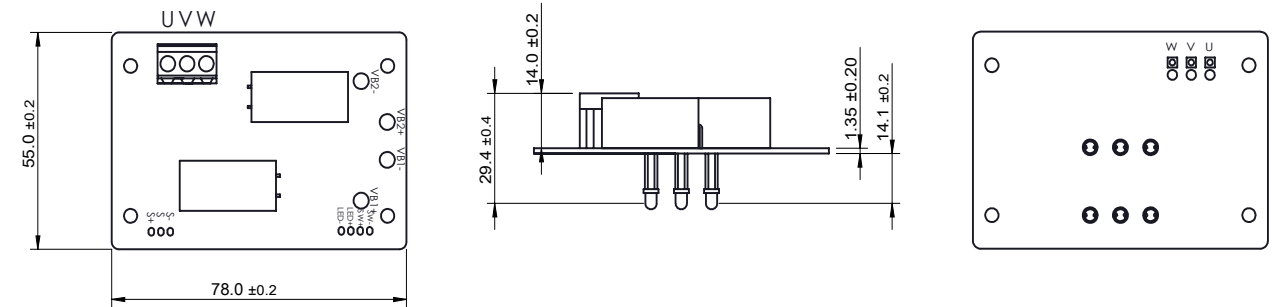
				S13-071502H	A18-154820H
驱动器参数 / Driver Data					
1	持续电流	Constant current	A	2	20
2	峰值电流	Peak current(10s)	A	3	30
3	输入电压范围	Input voltage range	V	7~15	15~48
4	尺寸	Size	mm	28.5*20*6.1	78*55*29.4
5	速度控制信号	Speed control signal		Analog voltage/PWM	Analog voltage/PWM
6	过载保护	Overload protection		No	Yes
7	堵转保护	Blockage protection		Yes	Yes
8	过热保护	Thermal overload protection		Yes	Yes
9	反接保护	Inverse-polarity protection		No	No
10	正反转控制	CW/CCW direction control		Optional	Optional
11	使能控制	Enable		Optional	Optional
12	速度信号输出	Speed feedback output(6 pulses*pole pairs)		Optional	Optional
13	工作环境温度	Operating temperature	°C	-20~+60	-20~+60
14	换向方式	Sensorless or sensed		Sensored	Sensored

外观图 /Outline Drawing



M 1:1

型号 / Model S13-071502H



M 1:2

型号 / Model A18-154820H

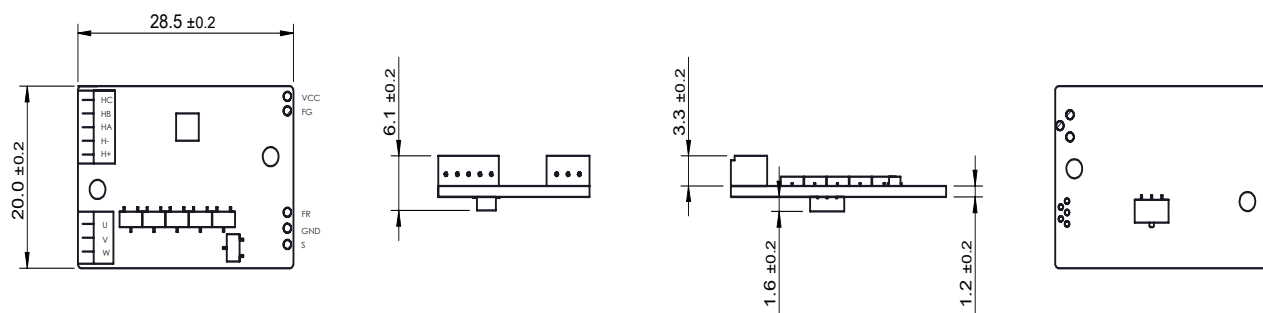
无感无刷电机紧凑型驱动器 Compact ESC for Sensorless BLDC Motor

应用领域：风机、电动工具、泵类等领域。

Applications: blowers, electrical tools, pumps, etc.

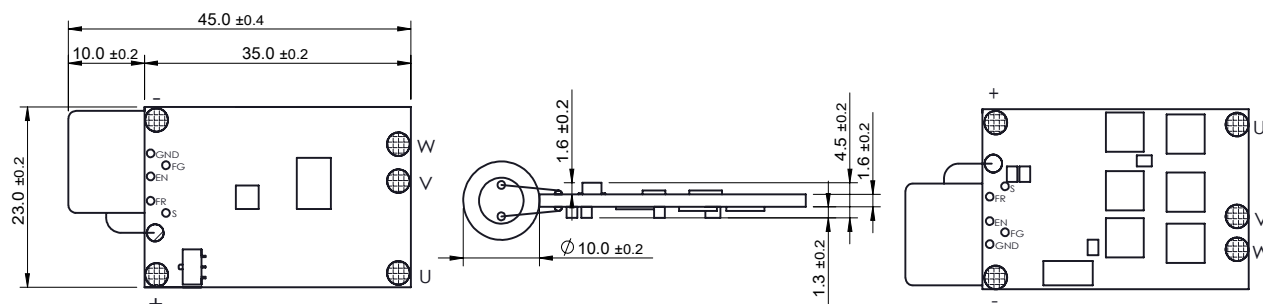
				S13-071502	S15-072510	S20-076015
驱动器参数 / Driver Data						
1	持续电流	Constant current	A	2	10	15
2	峰值电流	Peak current(10s)	A	3	15	25
3	输入电压范围	Input voltage range	V	7~15	7~25	7~25/15~60
4	尺寸	Size	mm	28.5*20*6.1	45*23*10	92*27*17.5
5	速度控制信号	Speed control signal		Analog voltage/PWM	Analog voltage/PWM	Analog voltage/PWM
6	过载保护	Overload protection		No	Yes	Yes
7	堵转保护	Blockage protection		Yes	Yes	Yes
8	过热保护	Thermal overload protection		Yes	Yes	Yes
9	反接保护	Inverse-polarity protection		No	No	Yes
10	正反转控制	CW/CCW direction control		Optional	Optional	Optional
11	使能控制	Enable		Optional	Optional	Optional
12	速度信号输出	Speed feedback output(6 pulses*pole pairs)		Optional	Optional	Optional
13	工作环境温度	Operating temperature	°C	-20~+60	-20~+60	-20~+60
14	换向方式	Sensorless or sensed		Sensorless	Sensorless	Sensorless

外观图 / Outline Drawing



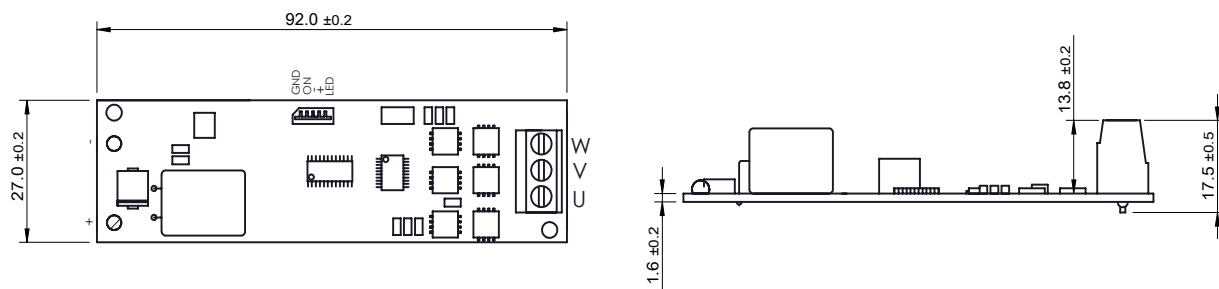
M 1:1

型号 / Model S13-071502



M 1:1

型号 / Model S15-072510



M 1:1.5

型号 / Model S20-076015

内置伺服电机控制器 Built-in Servo Motor Controller

应用领域：医疗器械、工业设备等精密驱动领域。
Applications: precision drives in medical equipment, industrial automation fields.

				IN50G-112503E-V011		
驱动器参数 / Driver Data						
1	电压	Voltage	V	15~29		
2	持续输出功率	Continuous output power	W	24		
3	额定电流	Rated current	A	1		
4	电流环频率	Current loop frequency	KHz	24		
5	FOC	FOC		√		
6	HALL 接口	HALL interface		×		
7	RS232	RS232		×		
8	RS485	RS485		×		
9	CAN	CAN		√		
10	内置编码器	Built-in encoder		√		
11	通信协议	Communication protocol		EasyCAN/CANOpen		
12	力矩控制	Moment control		Optional		
13	速度控制	Speed control		√		
14	位置控制	Position control		√		
15	运动曲线规划	Motion curve planning		Trapezoidal Profile		

外置伺服电机控制器 External Servo Motor Controller

应用领域：离心机、康复医疗等精密驱动领域。
Applications: Centrifuge, rehabilitation medical fields.

ASG1-112503H-CAN ASG1-112503H-RS485

驱动器参数 / Driver Data					
1	电压	Voltage	V	11~25	
2	持续输出功率	Continuous output power	W	75	
3	额定电流	Rated current	A	3	
4	电流环频率	Current loop frequency	KHz	20	
5	FOC	FOC		√	
6	HALL 接口	HALL interface		√	
7	RS232	RS232		√	
8	RS485	RS485		×	√
9	CAN	CAN		√	×
10	内置编码器	Built-in encoder		ABI Single-ended or Differential	
11	通信协议	Communication protocol		命令行 /EasyCAN/ CANOpen	命令行 /Modbus RTU
12	力矩控制	Moment control		√	
13	速度控制	Speed control		√	
14	位置控制	Position control		√	
15	运动曲线规划	Motion curve planning		Trapezoidal Profile	



精密齿轮减速电机

PRECISION GEARMOTOR



CONTENT 目录

精密齿轮减速电机

PRECISION GEARMOTOR

行星齿轮系列

PLANETARY GEARBOX SERIES

	电机型号 Motor No.	直径 Gearbox Diameter	减速比 Reduction Ratio	页码 Page
1	06**...06*P...	φ6 mm	23 ~ 1275	136
2	08**...08*P...	φ8 mm	13 ~ 809	137
3	10**...10*P...	φ10 mm	4 ~ 4096	138
4	B10**...10*P...	φ10 mm	4 ~ 4096	138
5	C10**...10*P...	φ10 mm	4 ~ 4096	138
6	12**...12*P...	φ12 mm	4 ~ 4096	139
7	B12**...12*P...	φ12 mm	4 ~ 4096	139
8	13**...13*P...	φ13 mm	4 ~ 4096	140
9	16**...16*P...	φ16 mm	4 ~ 3027	141
10	B16**...16*P...	φ16 mm	4 ~ 3027	141
11	19**...20*P...	φ20 mm	16 ~ 1296	142
12	B20**...20*P...	φ20 mm	16 ~ 1296	142
13	C20**...20*P...	φ20 mm	16 ~ 1296	142
14	22**...22*P...	φ22 mm	5 ~ 3968	143
15	24**...24*P...	φ24.4 mm	16 ~ 1296	144
16	B20**...24*P...	φ24.4 mm	16 ~ 1296	144
17	C24**...24*P...	φ24.4 mm	16 ~ 1296	144
18	25**...26MP...	φ26 mm	3.7 ~ 352	145
19	30**...28*P...	φ28 mm	4 ~ 939	146
20	B29**...28*P...	φ28 mm	4 ~ 939	146
21	C28**...28*P...	φ28 mm	4 ~ 939	146
22	32**...32MP...	φ32 mm	16 ~ 1076	147
23	BO43**...42MP...	φ42 mm	3.65 ~ 393	148
24	BO48**...52MP...	φ52 mm	3.65 ~ 393	149
25	BO61**...62MP...	φ62 mm	3.65 ~ 393	150
26	LO616...06PP...	φ6 mm	25	151
27	LO830...08PP...	φ8 mm	28,152	152
28	C1020...10PP... (1)	φ10 mm	171	153
29	C1020...10PP... (2)	φ10 mm	171	154

30	C1019...10PRC... (2)	φ10 mm	171	154
31	C1020...10PP... (3)	φ10 mm	171	155
32	C1019...10PP... (3)	φ10 mm	171	155
33	C1019...10PRC... (3)	φ10 mm	171	155
34	C1222...12PP...	φ12 mm	120	156
35	C1222...12PRC...	φ12 mm	120	156
36	L1638...16PP...	φ16 mm	144	157
37	C1642...16PP...	φ16 mm	16	157

正齿轮系列 SPUR GEARBOX SERIES

	电机型号 Motor No.	直径 Gearbox Diameter	减速比 Reduction Ratio	页码 Page
1	S15**...12MS...	φ12 mm	3 ~ 1000	158
2	C12**...12MS...	φ12 mm	3 ~ 1000	159
3	C12**...14MS...	φ14 mm	3 ~ 1000	160
4	C16**...13MS...	φ13 mm	3 ~ 360	161
5	C1631...14MS...	φ14 mm	63 ~ 350	162
6	C1630...16MS...	φ15.5 mm	3 ~ 360	163
7	1526...16MS...	φ15.5 mm	3 ~ 360	164
8	1638...16MS...	φ15.5 mm	10 ~ 360	165

06**...06*P...

Ø6mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

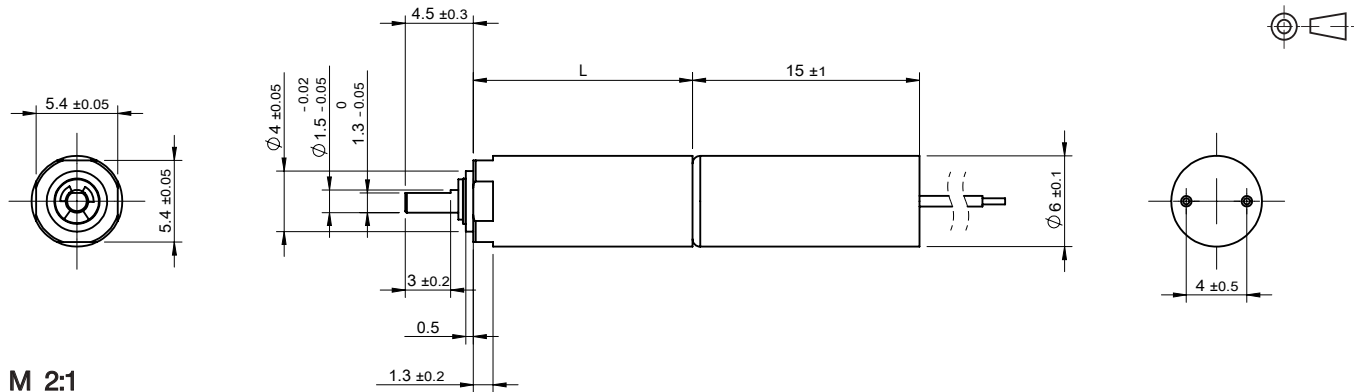
				0615N5M01-122-3.0	0615N5M02-185-3.0	0615N5M03-295-6.0
电机参数 / Motor Data						
1	电压	Voltage	V	3.0	3.0	6.0
2	端电阻	Terminal resistance	Ω	19	18.5	10.1
3	空载转速	No-load speed	rpm	12200	18500	29500
4	空载电流	No-load current	mA	10	18	20
5	堵转转矩	Stall torque	mNm	0.33	0.2	1.07
6	堵转电流	Stall current	mA	160	160	590
7	负载转矩	Load torque	mNm	0.1	0.05	0.3
8	负载转速	Load speed	rpm	8500	13770	21230
9	负载电流	Load current	mA	60	50	180
10	最大输出功率	Max. output power	W	0.11	0.09	0.83
11	最大效率	Max. efficiency	%	56	44	67
12	反电势常数	Back-EMF constant	mV/rpm	0.2	0.1	0.2
13	转矩常数	Torque constant	mNm/A	2.2	1.4	1.9
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	37000	94600	27600
15	转子惯量	Rotor inertia	gcm ²	0.015	0.015	0.015
16	重量	Weight	g	2.5	2.5	2.5
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		--	23~41	110~266	531~1708	--	--
20	最大额定转矩	Max. rated torque	mNm	--	33	33	33	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	--	50	50	50	--	--
22	长度 (L)	Length (L)	mm	--	12.1	14.5	16.9	--	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属注塑 /Metal injection					

可选配置 / Options			
25	适配电机类型	Matched motor type	☒ 空心杯电机 Coreless motor ☐ 无刷电机 BLDC motor ☐ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☐ 金属加工 Metal CNC ☒ 金属注塑 Metal injection ☐ 粉末冶金 Powder metallurgy ☒ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



10**...10*P... | B10**...10*P... | C10**...10*P...

Ø 10mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

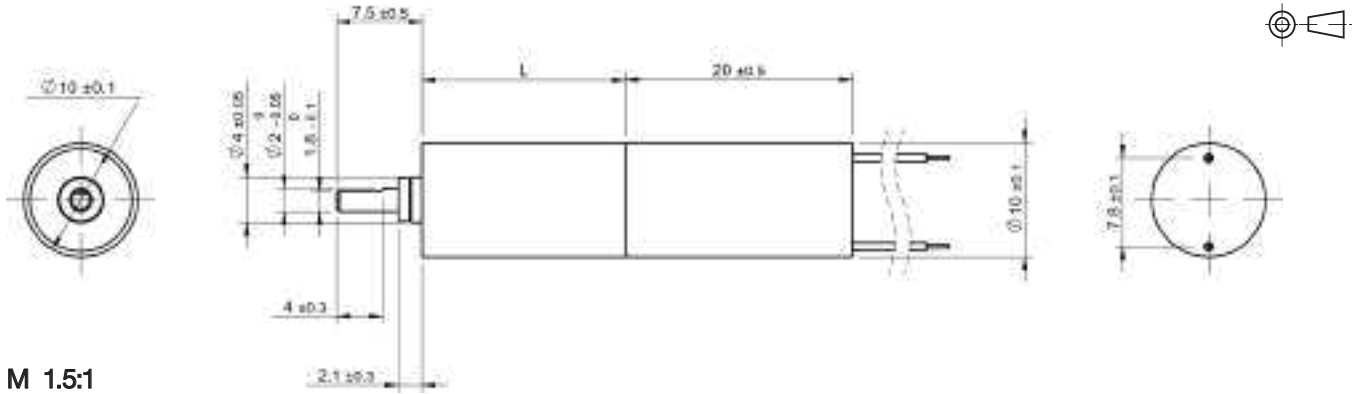
				1020N5M52-115-3.0	B1020N03-85-3.7	C1012F43-0113-3.0
电机参数 / Motor Data						
1	电压	Voltage	V	3.0	3.7	3.0
2	端电阻	Terminal resistance	Ω	3.8	6.2	11.1
3	空载转速	No-load speed	rpm	11500	8500	12900
4	空载电流	No-load current	mA	16	70	30
5	堵转转矩	Stall torque	mNm	1.89	1.9	0.5
6	堵转电流	Stall current	mA	790	600	288
7	负载转矩	Load torque	mNm	0.5	1	0.17
8	负载转速	Load speed	rpm	8460	4300	8400
9	负载电流	Load current	mA	220	350	120
10	最大输出功率	Max. output power	W	0.57	0.4	0.17
11	最大效率	Max. efficiency	%	74	43	45
12	反电势常数	Back-EMF constant	mV/rpm	0.26	0.38	0.21
13	转矩常数	Torque constant	mNm/A	2.44	3.67	1.94
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	6088	4474	25800
15	转子惯量	Rotor inertia	gcm ²	0.07	0.06	0.04
16	重量	Weight	g	6.1	6.8	3
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		4	16	64	256	1024	4096
20	最大额定转矩	Max. rated torque	mNm	5	10	30	40	50	60
21	瞬间允许转矩	Max. momentary torque	mNm	15	30	90	120	150	180
22	长度 (L)	Length (L)	mm	11.7	14.8	17.9	21	24.1	27.2
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options			
25	适配电机类型	Matched motor type	☒ 空心杯电机 Coreless motor ☒ 无刷电机 BLDC motor ☒ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☒ 金属注塑 Metal injection ☐ 粉末冶金 Powder metallurgy ☒ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



12**...12*P... | B12**...12*P...

Ø 12mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

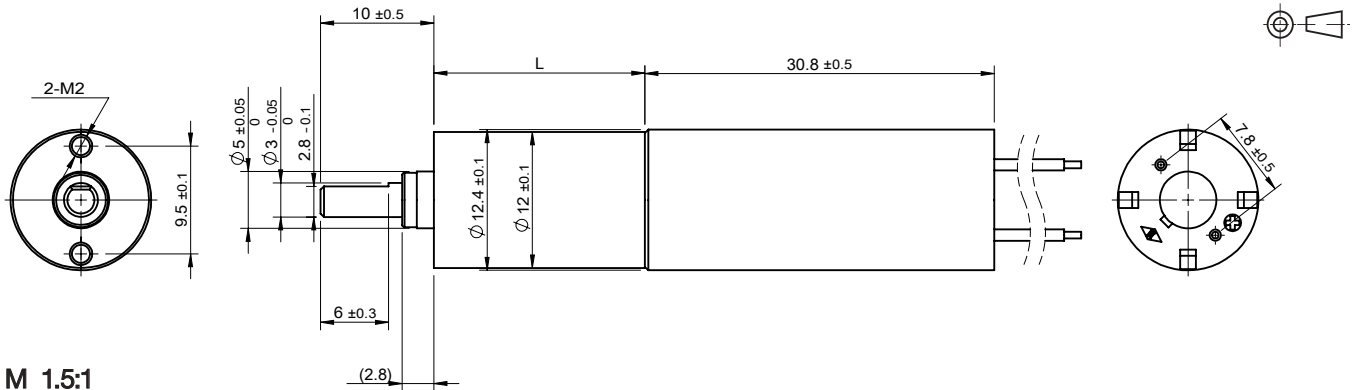
				1230N5M15-113-12.0	1230N7M**-100-6.0	B1220N2B01-175-5.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	6.0	5.0
2	端电阻	Terminal resistance	Ω	10.4	2.9	2
3	空载转速	No-load speed	rpm	11300	10000	17500
4	空载电流	No-load current	mA	15	25	180
5	堵转转矩	Stall torque	mNm	11.4	11.6	5.8
6	堵转电流	Stall current	mA	1150	2070	2500
7	负载转矩	Load torque	mNm	3.0	2.0	1.4
8	负载转速	Load speed	rpm	8320	8270	11600
9	负载电流	Load current	mA	310	380	780
10	最大输出功率	Max. output power	W	3.36	3.03	2.5
11	最大效率	Max. efficiency	%	79	79	51
12	反电势常数	Back-EMF constant	mV/rpm	1	0.6	0.3
13	转矩常数	Torque constant	mNm/A	10	5.7	2.5
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	990	860	3030
15	转子惯量	Rotor inertia	gcm ²	0.25	0.25	0.17
16	重量	Weight	g	17.7	17.7	9.5
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		4	16	64	256	1024	4096
20	最大额定转矩	Max. rated torque	mNm	80	120	160	180	200	200
21	瞬间允许转矩	Max. momentary torque	mNm	240	360	180	540	600	600
22	长度 (L)	Length (L)	mm	12.8	16.1	19.4	22.7	26	29.3
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options			
25	适配电机类型	Matched motor type	■ 空心杯电机 Coreless motor ■ 铁芯电机 Core motor ■ 金属加工 Metal CNC □ 粉末冶金 Powder metallurgy ■ 含油轴承 Slewing bearing ■ 无刷电机 BLDC motor ■ 金属注塑 Metal injection ■ 塑胶注塑 Plastic injection ■ 滚珠轴承 Ball bearing
27	齿轮工艺	Gear processing technology	
28	齿轮组输出轴承	Gearbox output bearing	

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



13**...13*P...

Ø 13mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

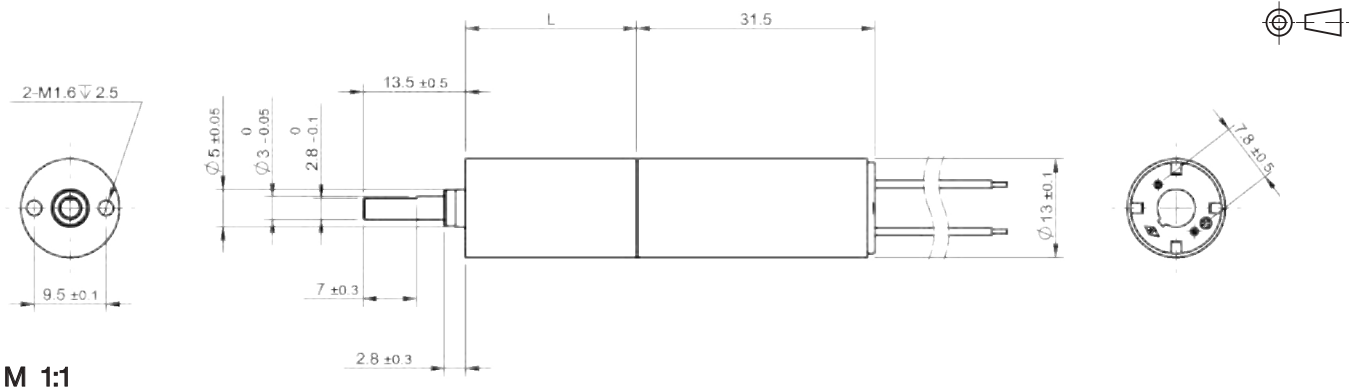
				1331N5M09-87-12.0	1331N7M02-110-6.0	1331N7M01-96-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	6.0	24.0
2	端电阻	Terminal resistance	Ω	15.7	2.6	38
3	空载转速	No-load speed	rpm	8700	11000	9600
4	空载电流	No-load current	mA	10	25	8
5	堵转转矩	Stall torque	mNm	9.7	11.8	15.3
6	堵转电流	Stall current	mA	760	2310	630
7	负载转矩	Load torque	mNm	2	2	4
8	负载转速	Load speed	rpm	6920	9130	6790
9	负载电流	Load current	mA	160	410	170
10	最大输出功率	Max. output power	W	2.22	3.39	3.69
11	最大效率	Max. efficiency	%	78	80	79
12	反电势常数	Back-EMF constant	mV/rpm	1.4	0.5	2.6
13	转矩常数	Torque constant	mNm/A	13	5.2	24.6
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	900	900	600
15	转子惯量	Rotor inertia	gcm ²	0.52	0.52	0.52
16	重量	Weight	g	20	20	20
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		4	16	64	256	1024	4096
20	最大额定转矩	Max. rated torque	mNm	80	120	160	180	200	200
21	瞬间允许转矩	Max. momentary torque	mNm	240	360	480	540	600	600
22	长度 (L)	Length (L)	mm	10.3	13.6	16.9	20.2	23.5	26.8
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options					
25	适配电机类型	Matched motor type		☒ 空心杯电机 Coreless motor	☒ 无刷电机 BLDC motor
				☒ 铁芯电机 Core motor	
27	齿轮工艺	Gear processing technology		☒ 金属加工 Metal CNC	☐ 金属注塑 Metal injection
				☐ 粉末冶金 Powder metallurgy	☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing		☒ 含油轴承 Slewing bearing	☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



16**...16*P... | B16**...16*P... | C16**...16*P...

Ø 16mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

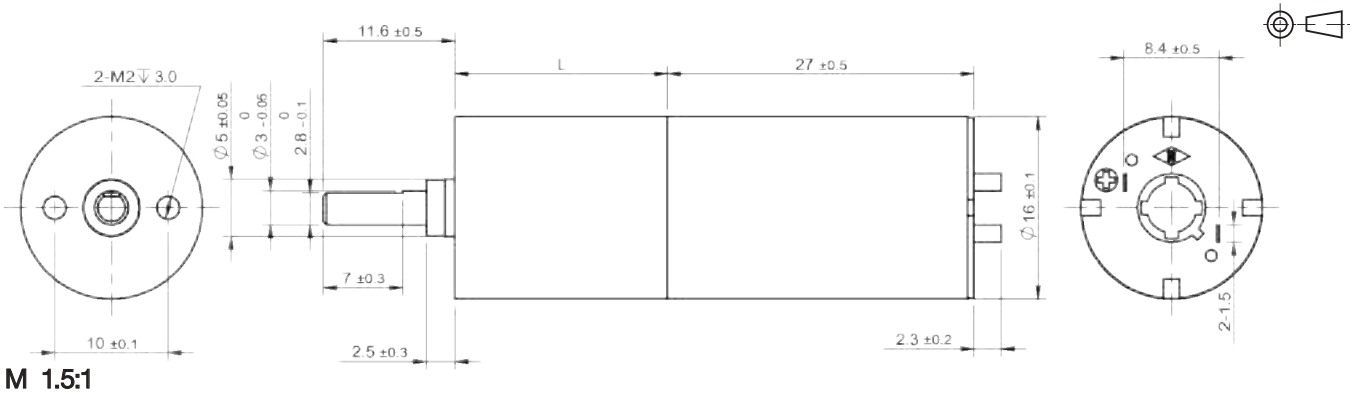
				1627N5M21-113-12.0	B1635N2B01-450-12.0	C1627F34AH-0055-6.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	12.0	6.0
2	端电阻	Terminal resistance	Ω	11.8	0.35	8.8
3	空载转速	No-load speed	rpm	11300	45000	8600
4	空载电流	No-load current	A	0.013	0.35	0.055
5	堵转转矩	Stall torque	mNm	10.1	85	3.75
6	堵转电流	Stall current	A	1.02	34	0.65
7	负载转矩	Load torque	mNm	1.5	1.5	0.79
8	负载转速	Load speed	rpm	9620	43800	6800
9	负载电流	Load current	A	0.16	0.96	0.18
10	最大输出功率	Max. output power	W	3	100	0.85
11	最大效率	Max. efficiency	%	79	81	51.9
12	反电势常数	Back-EMF constant	mV/rpm	1	0.3	0.64
13	转矩常数	Torque constant	mNm/A	10	2.5	6.28
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1100	530	2293
15	转子惯量	Rotor inertia	gcm ²	0.7	1.5	0.6
16	重量	Weight	g	25	40	16.7
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		4	14~29	53~157	231~690	1014~3027	--
20	最大额定转矩	Max. rated torque	mNm	80	120	160	200	240	--
21	瞬间允许转矩	Max. momentary torque	mNm	240	360	480	600	720	--
22	长度 (L)	Length (L)	mm	15.05	18.7	22.35	26	29.65	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		粉末冶金 /Powder metallurgy					

可选配置 / Options			
25	适配电机类型	Matched motor type	■ 空心杯电机 Coreless motor ■ 铁芯电机 Core motor ■ 金属加工 Metal CNC ■ 粉末冶金 Powder metallurgy ■ 含油轴承 Slewing bearing ■ 无刷电机 BLDC motor ■ 金属注塑 Metal injection ■ 塑胶注塑 Plastic injection ■ 滚珠轴承 Ball bearing
27	齿轮工艺	Gear processing technology	
28	齿轮组输出轴承	Gearbox output bearing	

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



19**...20*P... | B20**...20*P... | C20**...20*P...

Ø20mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

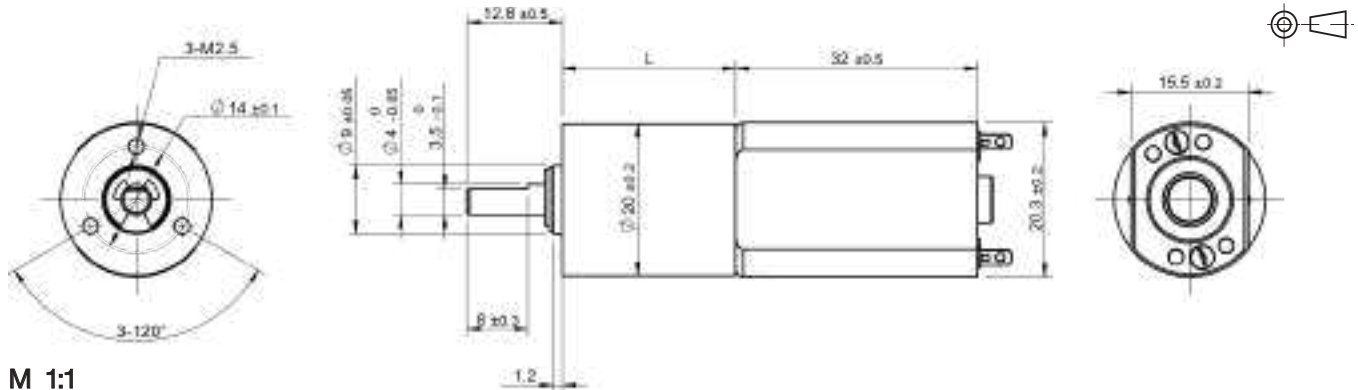
				1925N9M02-80-12.0	B2040NH2B21-158-24.0	C2032F41-0141-6.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	24.0	6.0
2	端电阻	Terminal resistance	Ω	9.6	15	3.8
3	空载转速	No-load speed	rpm	8000	15800	7400
4	空载电流	No-load current	A	0.015	0.08	0.1
5	堵转转矩	Stall torque	mNm	17.5	21	10.5
6	堵转电流	Stall current	A	1.25	1.6	1.56
7	负载转矩	Load torque	mNm	4	4	1.8
8	负载转速	Load speed	rpm	6170	12800	6300
9	负载电流	Load current	A	0.3	0.37	0.35
10	最大输出功率	Max. output power	W	3.7	8.67	2.1
11	最大效率	Max. efficiency	%	79	60	57
12	反电势常数	Back-EMF constant	mV/rpm	1.5	1.44	0.74
13	转矩常数	Torque constant	mNm/A	14.2	13.7	7.06
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	500	754.3	724
15	转子惯量	Rotor inertia	gcm ²	0.6	2	--
16	重量	Weight	g	32	55	33
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		6	36	216	256	--	--
20	最大额定转矩	Max. rated torque	mNm	50	150	300	600	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	100	300	600	1200	--	--
22	长度 (L)	Length (L)	mm	17.6	22.9	28.2	33.5	--	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		塑胶注塑 /Plastic injection					

可选配置 / Options			
25	适配电机类型	Matched motor type	☒ 空心杯电机 Coreless motor ☒ 无刷电机 BLDC motor ☒ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☐ 金属加工 Metal CNC ☒ 金属注塑 Metal injection ☐ 粉末冶金 Powder metallurgy ☒ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



22**...22*P...

Ø22mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

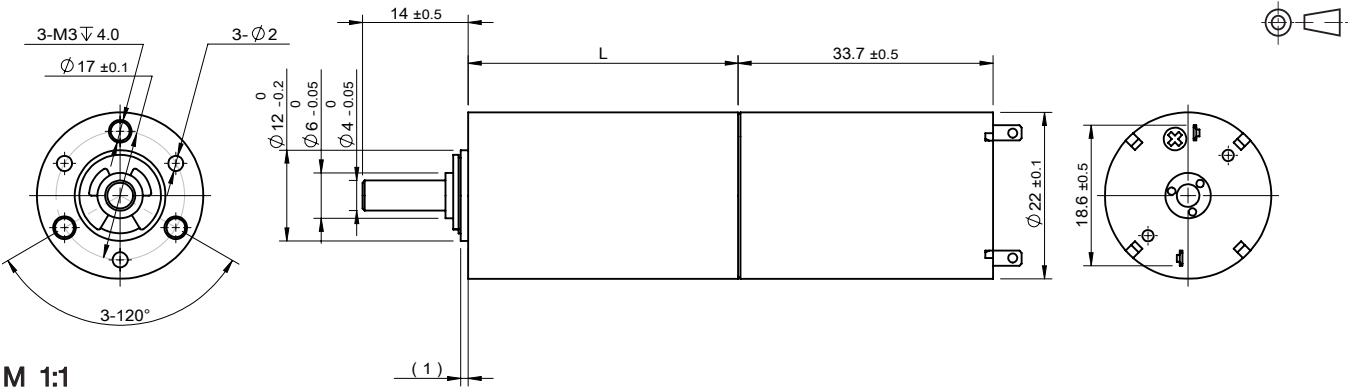
				2232N5M2B08-63-6.0	2232N9M02-60-6.8	2232N9M01-100-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	6.8	24.0
2	端电阻	Terminal resistance	Ω	2.9	3	17.2
3	空载转速	No-load speed	rpm	6300	6000	10000
4	空载电流	No-load current	A	0.02	0.015	0.008
5	堵转转矩	Stall torque	mNm	18.5	24.2	31.7
6	堵转电流	Stall current	A	2.07	2.27	1.4
7	负载转矩	Load torque	mNm	4	5	7
8	负载转速	Load speed	rpm	4940	4760	7790
9	负载电流	Load current	A	0.46	0.48	0.32
10	最大输出功率	Max. output power	W	3	3.8	8.3
11	最大效率	Max. efficiency	%	81	84	86
12	反电势常数	Back-EMF constant	mV/rpm	0.9	1.1	2.4
13	转矩常数	Torque constant	mNm/A	9	10.8	22.8
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	300	200	300
15	转子惯量	Rotor inertia	gcm ²	4.4	4.4	4.4
16	重量	Weight	g	55	55	55
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data				1	2	3	4	5	6
18	级数	Number of stages							
19	减速比	Reduction ratio		5	18~25	66~136	246~735	1079~3968	--
20	最大额定转矩	Max. rated torque	mNm	100	300	400	500	600	--
21	瞬间允许转矩	Max. momentary torque	mNm	300	900	1200	1500	1800	--
22	长度 (L)	Length (L)	mm	23.3	29.5	35.7	41.9	48.1	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		粉末冶金 /Powder metallurgy					

可选配置 / Options					
25	适配电机类型	Matched motor type		☒ 空心杯电机 Coreless motor ☒ 铁芯电机 Core motor ☒ 金属加工 Metal CNC ☒ 粉末冶金 Powder metallurgy ☒ 含油轴承 Slewing bearing	☒ 无刷电机 BLDC motor ☒ 金属注塑 Metal injection ☒ 塑胶注塑 Plastic injection ☒ 滚珠轴承 Ball bearing
27	齿轮工艺	Gear processing technology			
28	齿轮组输出轴承	Gearbox output bearing			

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



24**...24*P... | B20**...24*P... | C24**...24*P...

Ø24.4mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

2433N5M2B01-76-4.5 B2040NH2B21-158-24.0 C2430R43-0010-12.0

电机参数 / Motor Data

1	电压	Voltage	V	4.5	24.0	12.0
2	端电阻	Terminal resistance	Ω	0.46	15	11
3	空载转速	No-load speed	rpm	7600	15800	6150
4	空载电流	No-load current	A	0.03	0.08	0.035
5	堵转转矩	Stall torque	mNm	55	21	16.1
6	堵转电流	Stall current	A	9.78	1.6	9.78
7	负载转矩	Load torque	mNm	10	4	1.96
8	负载转速	Load speed	rpm	6220	12800	5400
9	负载电流	Load current	A	1.8	0.37	0.15
10	最大输出功率	Max. output power	W	10.9	8.67	2.59
11	最大效率	Max. efficiency	%	89	60	62.5
12	反电势常数	Back-EMF constant	mV/rpm	0.6	1.44	1.89
13	转矩常数	Torque constant	mNm/A	5.6	13.7	17.07
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	140	754.3	382
15	转子惯量	Rotor inertia	gcm ²	2.2	2	--
16	重量	Weight	g	66	55	14.5
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data

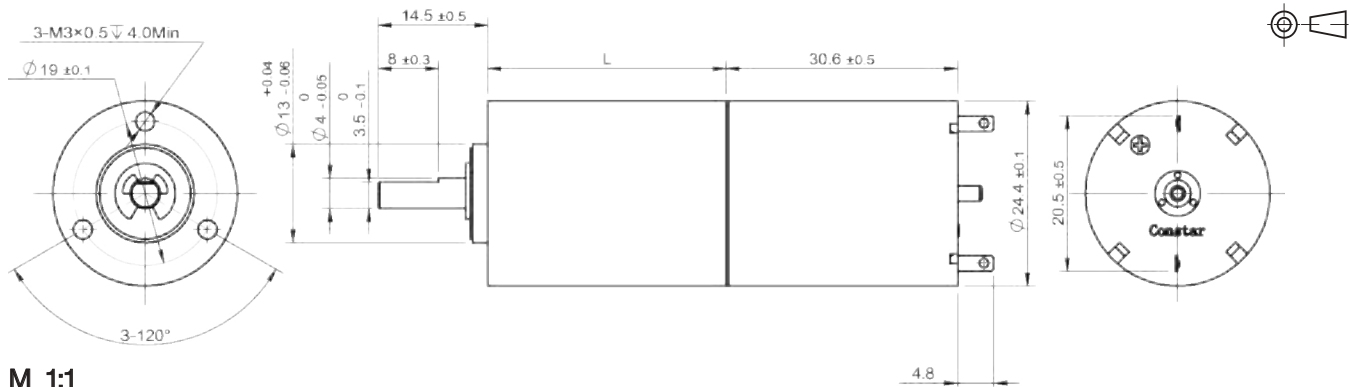
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		--	36	216	256	--	--
20	最大额定转矩	Max. rated torque	mNm	--	500	1000	1500	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	--	1000	2000	3000	--	--
22	长度 (L)	Length (L)	mm	--	24.5	31.5	38.65	--	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		塑胶注塑 /Plastic injection					

可选配置 / Options

25	适配电机类型	Matched motor type	☒ 空心杯电机 Coreless motor ☒ 无刷电机 BLDC motor
			☒ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☐ 金属加工 Metal CNC ☒ 金属注塑 Metal injection
			☐ 粉末冶金 Powder metallurgy ☒ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



25**...26MP...

Ø26mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

2543N9C2B05-65-48.0 2543N9C2B10-90-24.0 2554N9C2B09-60-14.0

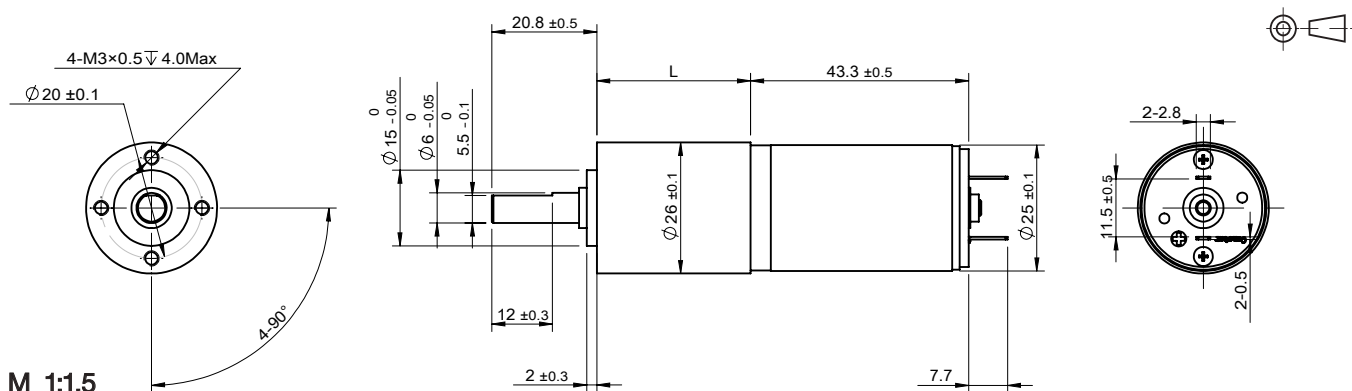
电机参数 / Motor Data				2543N9C2B05-65-48.0	2543N9C2B10-90-24.0	2554N9C2B09-60-14.0
1	电压	Voltage	V	48.0	24.0	14.0
2	端电阻	Terminal resistance	Ω	23.5	3.9	2.7
3	空载转速	No-load speed	rpm	6500	9000	6000
4	空载电流	No-load current	A	0.03	0.035	0.05
5	堵转转矩	Stall torque	mNm	139.7	154.8	113.42
6	堵转电流	Stall current	A	2.04	6.15	5.19
7	负载转矩	Load torque	mNm	40	30	20
8	负载转速	Load speed	rpm	4640	7260	4940
9	负载电流	Load current	A	0.61	1.22	0.96
10	最大输出功率	Max. output power	W	23.8	36.5	17.8
11	最大效率	Max. efficiency	%	77	86	81
12	反电势常数	Back-EMF constant	mV/rpm	7.3	2.7	2.3
13	转矩常数	Torque constant	mNm/A	69.5	25.3	22.1
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	46.5	58.1	52.9
15	转子惯量	Rotor inertia	gcm ²	13.2	13.2	14.2
16	重量	Weight	g	96	96	120
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data				1	2	3	4	5	6
18	级数	Number of stages							
19	减速比	Reduction ratio		3.7~5.2	13~27	50~140	187~352	--	--
20	最大额定转矩	Max. rated torque	mNm	500	750	2000	2500	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	750	1100	3000	3750	--	--
22	长度 (L)	Length (L)	mm	21.5	30.5	39.5	48.5	--	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options			
25	适配电机类型	Matched motor type	☒ 空心杯电机 Coreless motor ☒ 无刷电机 BLDC motor ☒ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☐ 金属注塑 Metal injection ☐ 粉末冶金 Powder metallurgy ☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☐ 含油轴承 Slewing bearing ☒ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



30**...28*P... | B29**...28*P... | C28**...28*P...

Ø28mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

3068N9C2B10-100-24.0 B2950NH2B01-130-24.0 C2838R41-0007-9.0

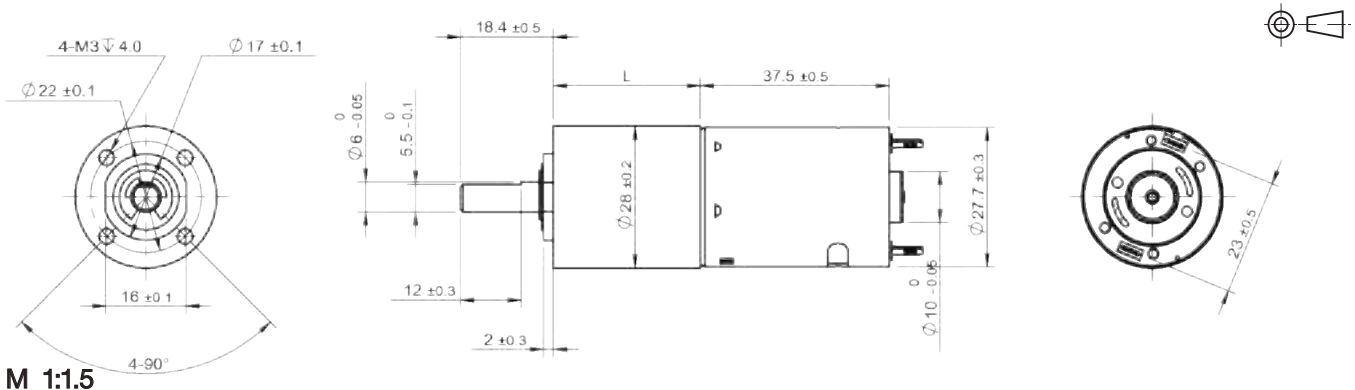
电机参数 / Motor Data					
1	电压	Voltage	V	24.0	24.0 9.0
2	端电阻	Terminal resistance	Ω	1.6	1.32 1.1
3	空载转速	No-load speed	rpm	10000	13000 13200
4	空载电流	No-load current	A	0.12	0.3 0.25
5	堵转转矩	Stall torque	mNm	338.3	310 55
6	堵转电流	Stall current	A	15	18.2 8.17
7	负载转矩	Load torque	mNm	40	28 8.33
8	负载转速	Load speed	rpm	8820	11800 11200
9	负载电流	Load current	A	1.88	1.9 1.45
10	最大输出功率	Max. output power	W	88.7	105 19.03
11	最大效率	Max. efficiency	%	83	75 75
12	反电势常数	Back-EMF constant	mV/rpm	2.4	1.8 0.68
13	转矩常数	Torque constant	mNm/A	22.7	17.3 6.94
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	29.6	41.9 240
15	转子惯量	Rotor inertia	gcm ²	33	5 --
16	重量	Weight	g	245	140 70
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80 -10~+80

齿轮组参数 / Gearbox Data							
18	级数	Number of stages		1	2	3	4 5 6
19	减速比	Reduction ratio		4~5	14~35	51~139	189~939 -- --
20	最大额定转矩	Max. rated torque	mNm	200	300	600	1000 -- --
21	瞬间允许转矩	Max. momentary torque	mNm	600	900	1800	3000 -- --
22	长度 (L)	Length (L)	mm	24.5	30.9	37.3	43.7 -- --
23	机壳材料	Shell material		金属 /Metal			
24	齿轮工艺	Gear processing technology		粉末冶金 /Powder metallurgy			

可选配置 / Options			
25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☐ 无刷电机 BLDC motor
			☐ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☐ 金属加工 Metal CNC ☐ 金属注塑 Metal injection
			☐ 粉末冶金 Powder metallurgy ☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☐ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



32**...32MP...

Ø32mm, 行星齿轮系列 Planetary Gearbox Series

应用领域: 医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

3257N9C2B01-54-12.0 3257N9C2B02-64-24.0 3257N9C2B08-74-24.0

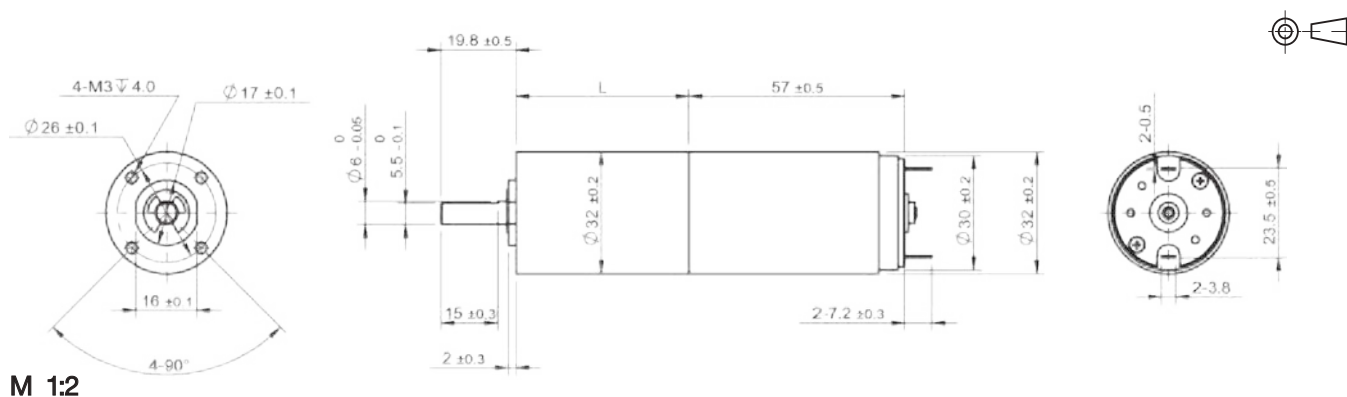
电机参数 / Motor Data					
1	电压	Voltage	V	12.0	24.0
2	端电阻	Terminal resistance	Ω	1	2.8
3	空载转速	No-load speed	rpm	5600	6400
4	空载电流	No-load current	A	0.24	0.07
5	堵转转矩	Stall torque	mNm	235.8	301.9
6	堵转电流	Stall current	A	12	8.57
7	负载转矩	Load torque	mNm	30	50
8	负载转速	Load speed	rpm	4890	5340
9	负载电流	Load current	A	1.74	1.48
10	最大输出功率	Max. output power	W	34.6	50.6
11	最大效率	Max. efficiency	%	74	83
12	反电势常数	Back-EMF constant	mV/rpm	2.1	3.7
13	转矩常数	Torque constant	mNm/A	20.1	35.5
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	23.7	21.2
15	转子惯量	Rotor inertia	gcm ²	42	42
16	重量	Weight	g	230	230
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80

齿轮组参数 / Gearbox Data								
18	级数	Number of stages		1	2	3	4	5
19	减速比	Reduction ratio		--	16~33	67~188	272~1076	--
20	最大额定转矩	Max. rated torque	mNm	--	400	800	1200	--
21	瞬间允许转矩	Max. momentary torque	mNm	--	1200	2400	3600	--
22	长度 (L)	Length (L)	mm	--	35.7	45.7	55.7	--
23	机壳材料	Shell material		金属 /Metal				
24	齿轮工艺	Gear processing technology		塑胶注塑 /Plastic injection				

可选配置 / Options			
25	适配电机类型	Matched motor type	☒ 空心杯电机 Coreless motor ☒ 无刷电机 BLDC motor ☐ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☒ 金属注塑 Metal injection ☒ 粉末冶金 Powder metallurgy ☒ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☒ 滚珠轴承 Ball bearing

适配仅供参考, 详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



BO43**...42MP...

Ø42mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

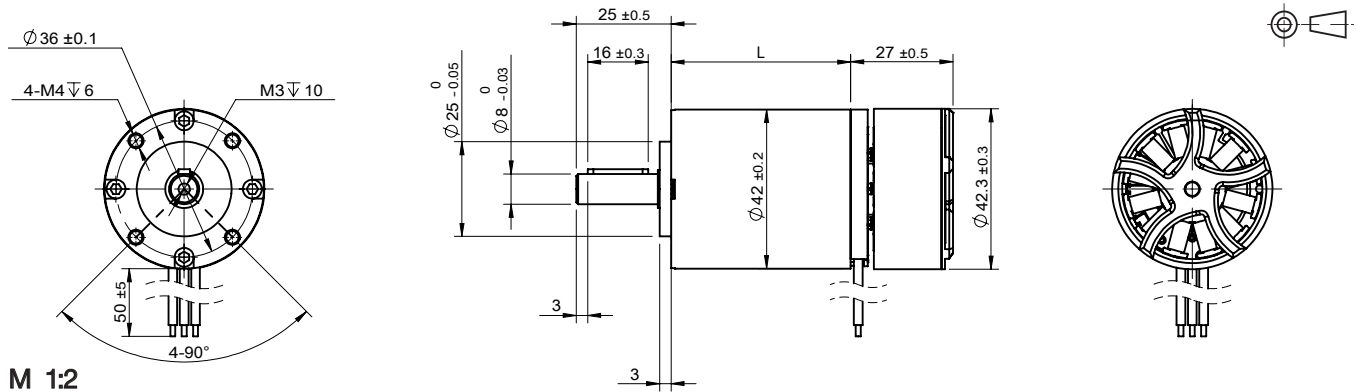
				BO4326NBH2B01-92-48.0	BO4326NBH2B02-92-36.0	BO4326NBH2B03-92-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	48.0	36.0	24.0
2	端电阻	Terminal resistance	Ω	1	0.45	0.21
3	空载转速	No-load speed	rpm	9200	9200	9200
4	空载电流	No-load current	A	0.3	0.5	0.6
5	堵转转矩	Stall torque	mNm	2361	2952	2817
6	堵转电流	Stall current	A	48	80	114
7	负载转矩	Load torque	mNm	192	190	194
8	负载转速	Load speed	rpm	7000	7000	7000
9	负载电流	Load current	A	3.6	4.8	7.2
10	最大输出功率	Max. output power	W	569	711	678
11	最大效率	Max. efficiency	%	84.8	84.8	86
12	反电势常数	Back-EMF constant	mV/rpm	5.18	3.89	2.6
13	转矩常数	Torque constant	mNm/A	48.5	37.1	24.8
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3.9	3.1	3.3
15	转子惯量	Rotor inertia	gcm ²	153	153	153
16	重量	Weight	g	132	132	132
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		3.65~8.63	14~58	67~393	--	--	--
20	最大额定转矩	Max. rated torque	mNm	3000	7500	15000	--	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	6000	15000	30000	--	--	--
22	长度 (L)	Length (L)	mm	33.8	47.4	61	--	--	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options			
25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☒ 无刷电机 BLDC motor
			☐ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☐ 金属注塑 Metal injection
			☐ 粉末冶金 Powder metallurgy ☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☐ 含油轴承 Slewing bearing ☒ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



BO48**...52MP...

Ø52mm, 行星齿轮系列 Planetary Gearbox Series

应用领域: 医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

BO4831NH2B01-101-18.0 BO4831NH2B02-101-24.0 BO4831NH2B03-101-36.0

电机参数 / Motor Data

1	电压	Voltage	V	18.0	24.0	36.0
2	端电阻	Terminal resistance	Ω	0.05	0.08	0.18
3	空载转速	No-load speed	rpm	10160	10160	10160
4	空载电流	No-load current	A	1.1	0.9	0.6
5	堵转转矩	Stall torque	mNm	6053	6726	6727
6	堵转电流	Stall current	A	360	300	200
7	负载转矩	Load torque	mNm	449	447	457
8	负载转速	Load speed	rpm	7600	7700	7700
9	负载电流	Load current	A	23.5	17.6	12
10	最大输出功率	Max. output power	W	1609	1788	1788
11	最大效率	Max. efficiency	%	89.2	89.3	89.3
12	反电势常数	Back-EMF constant	mV/rpm	1.8	2.4	3.5
13	转矩常数	Torque constant	mNm/A	16.9	22.5	33.7
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1.68	1.51	1.51
15	转子惯量	Rotor inertia	gcm ²	306	306	306
16	重量	Weight	g	211	211	211
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data

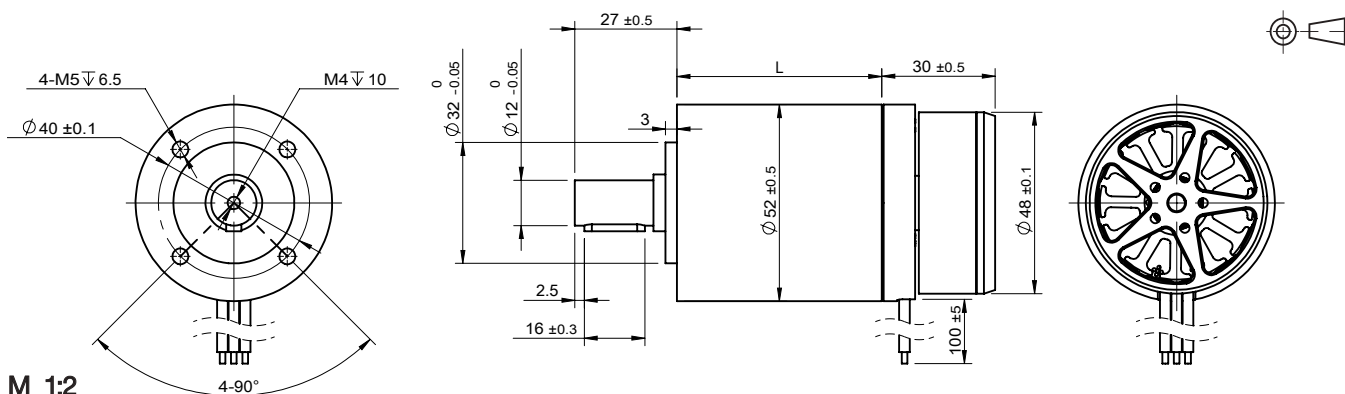
18	级数	Number of stages		1	2	3	4	5	6
19	减速比	Reduction ratio		3.65~8.63	14~58	67~393	--	--	--
20	最大额定转矩	Max. rated torque	mNm	4000	12000	25000	--	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	8000	24000	50000	--	--	--
22	长度 (L)	Length (L)	mm	38.6	54.2	69.8	--	--	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options

25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☐ 铁芯电机 Core motor ☒ 金属加工 Metal CNC ☐ 粉末冶金 Powder metallurgy ☐ 含油轴承 Slewing bearing	☒ 无刷电机 BLDC motor ☐ 金属注塑 Metal injection ☐ 塑胶注塑 Plastic injection ☒ 滚珠轴承 Ball bearing
27	齿轮工艺	Gear processing technology		
28	齿轮组输出轴承	Gearbox output bearing		

适配仅供参考, 详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



规格如有变更, 恕不另行通知。Specification subject to change without notice.

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BO61**...62MP...

Ø62mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

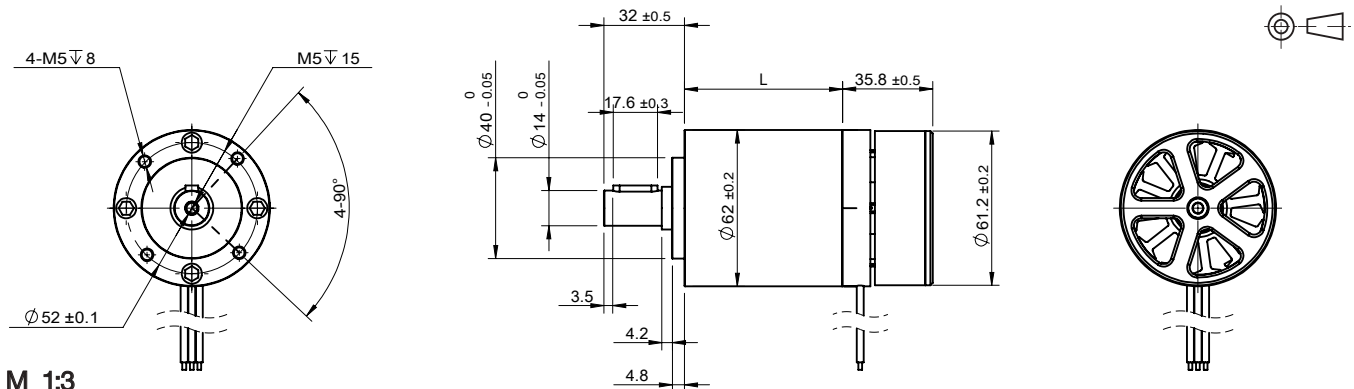
				BO6133N2B01-50-48.0	BO6133N2B02-50-36.0	BO6133N2B03-50-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	48.0	36.0	24.0
2	端电阻	Terminal resistance	Ω	0.78	0.43	0.19
3	空载转速	No-load speed	rpm	5000	5000	5000
4	空载电流	No-load current	A	0.35	0.5	0.7
5	堵转转矩	Stall torque	mNm	5577	5687	5725
6	堵转电流	Stall current	A	61.5	83.7	126.3
7	负载转矩	Load torque	mNm	558	553	558
8	负载转速	Load speed	rpm	3700	3700	3700
9	负载电流	Load current	A	5.5	7.3	11
10	最大输出功率	Max. output power	W	730	744	749
11	最大效率	Max. efficiency	%	85.4	85.1	85.6
12	反电势常数	Back-EMF constant	mV/rpm	9.5	7.2	4.8
13	转矩常数	Torque constant	mNm/A	91.2	68.3	45.6
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	0.9	0.9	0.9
15	转子惯量	Rotor inertia	gcm ²	599	599	599
16	重量	Weight	g	230	230	230
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data								
18	级数	Number of stages		1	2	3	4	5
19	减速比	Reduction ratio		3.65~8.63	14~58	67~393	--	--
20	最大额定转矩	Max. rated torque	mNm	8000	25000	50000	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	16000	50000	100000	--	--
22	长度 (L)	Length (L)	mm	45.1	62.7	80.3	--	--
23	机壳材料	Shell material		金属 /Metal				
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC				

可选配置 / Options			
25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☒ 无刷电机 BLDC motor ☐ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☐ 金属注塑 Metal injection ☐ 粉末冶金 Powder metallurgy ☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☐ 含油轴承 Sleeve bearing ☒ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



L0616...06PP... | L0616...06PF... | L0616...06PR...

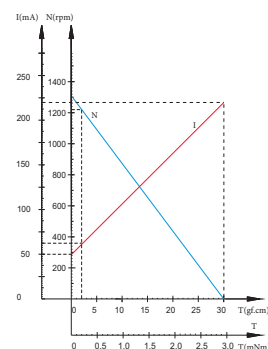
Ø6mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、安防设备、视像产品、高端智能电玩、个人保健产品等领域。

Applications: medical equipment, security systems and locks, audio and visual products, personal healthcare products, and high-end hobby products.

				L0616-1300-3.0 -06PP25-0001	L0615-1300-3.0 -06PF25-0025	L0615-1800-3.0 -06PR25-0035
电机参数 / Motor Data						
1	电压	Voltage	V	3.0	3.0	3.0
2	端电阻	Terminal resistance	Ω	13.7	13.7	7.8
3	空载转速	No-load speed	rpm	1300	1300	1750
4	空载电流	No-load current	mA	50	50	55
5	最大转矩	Max torque	mNm	2.94	2.94	3.4
6	负载转矩	Load torque	mNm	0.2	0.2	0.2
7	负载转速	Load speed	rpm	1210	1200	1680
8	负载电流	Load current	mA	60	60	65
9	减速比	Reduction ratio		1/25	1/25	1/25
10	重量	Weight	g	1.2	1.2	1.2
11	工作温度范围	Operating temperature range	°C	-10~+70	-10~+70	-10~+70
特性曲线 / Characteristics Curve						

L0616-1300-3.0-06PP25-0001



— 转速 (N) — 电流 (I)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

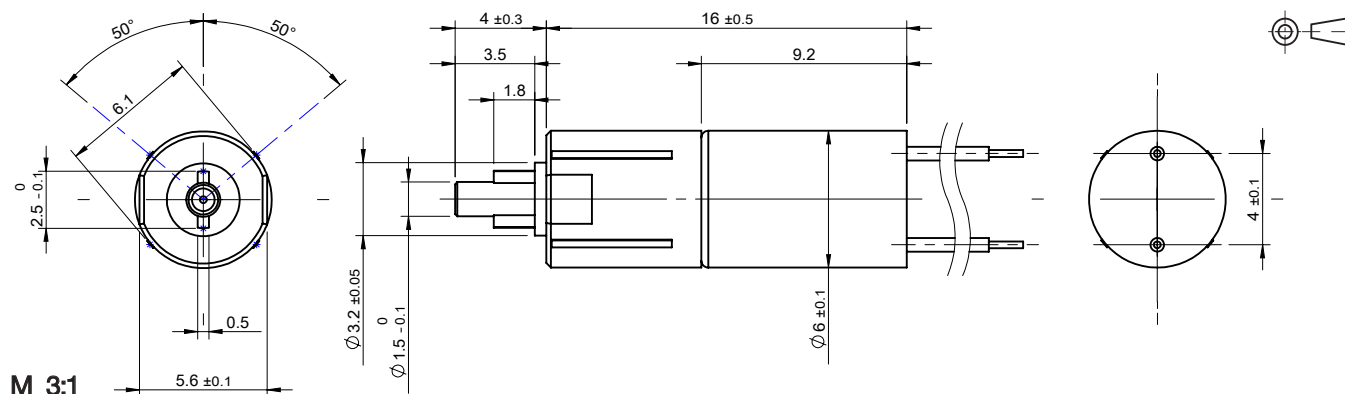
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation rang

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



L0830...08PP...

Ø8mm, 行星齿轮系列 Planetary Gearbox Series

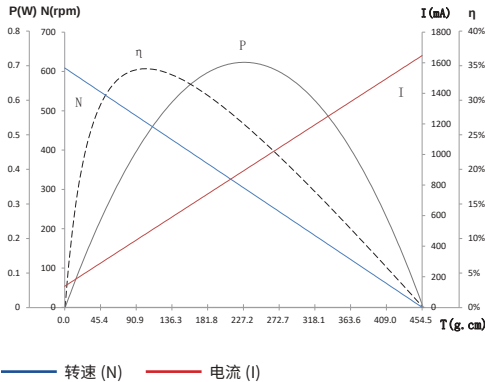
应用领域：医疗器械、安防设备、视像产品、高端智能电玩、个人保健产品等领域。

Applications: medical equipment, security systems and locks, audio and visual products, personal healthcare products, and high-end hobby products.

				L0831-620-3.0	L0830-92-3.5
				-08PP28-0017	-08PP152-0080
电机参数 / Motor Data					
1	电压	Voltage	V	3.0	3.5
2	端电阻	Terminal resistance	Ω	1.75	8.5
3	空载转速	No-load speed	rpm	620	92
4	空载电流	No-load current	mA	150	50
5	最大转矩	Max torque	mNm	45	76
6	负载转矩	Load torque	mNm	10	10
7	负载转速	Load speed	rpm	480	82
8	负载电流	Load current	mA	560	100
9	减速比	Reduction ratio		1/28	1/152
10	重量	Weight	g	5.07	5.07
11	工作温度范围	Operating temperature range	°C	-10~+70	-10~+70

特性曲线 / Characteristics Curve

L0831-620-3.0-08PP28-0017



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

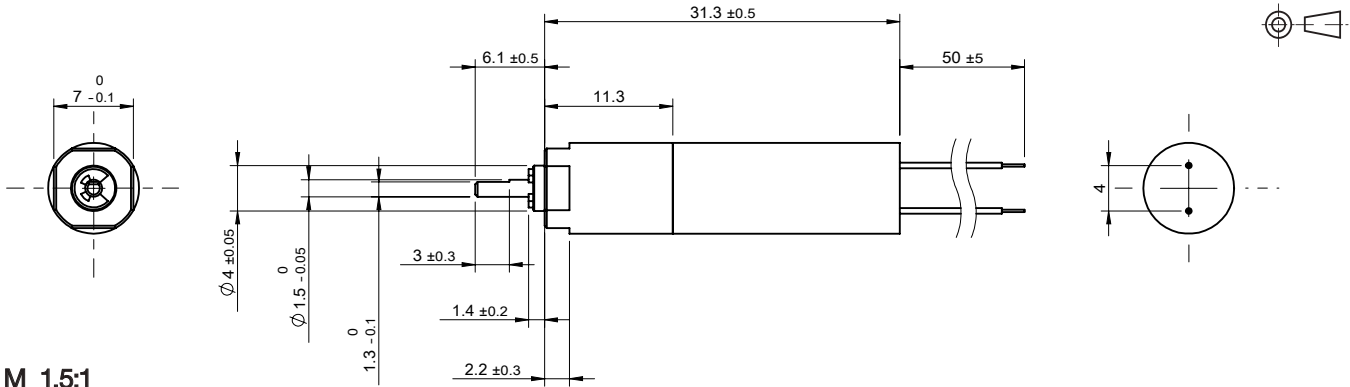
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation rang

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



C1020...10PP...(1)

Ø 10mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、安防设备、视像产品、高端智能电玩、个人保健产品等领域。

Applications: medical equipment, security systems and locks, audio and visual products, personal healthcare products, and high-end hobby products.

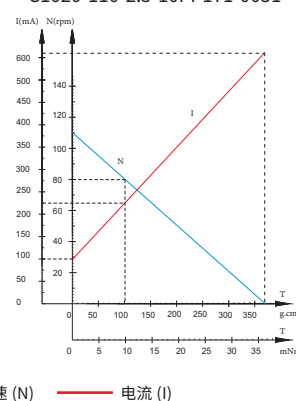
C1020-110-2.5
-10PP171-0051

电机参数 / Motor Data

1	电压	Voltage	V	2.5
2	端电阻	Terminal resistance	Ω	3.7
3	空载转速	No-load speed	rpm	110
4	空载电流	No-load current	mA	100
5	最大转矩	Max torque	mNm	37.2
6	负载转矩	Load torque	mNm	9.8
7	负载转速	Load speed	rpm	80
8	负载电流	Load current	mA	230
9	减速比	Reduction ratio		1/171
10	重量	Weight	g	3.8
11	工作温度范围	Operating temperature range	°C	-10~+70

特性曲线 / Characteristics Curve

C1020-110-2.5-10PP171-0051



— 转速 (N) — 电流 (I)

仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

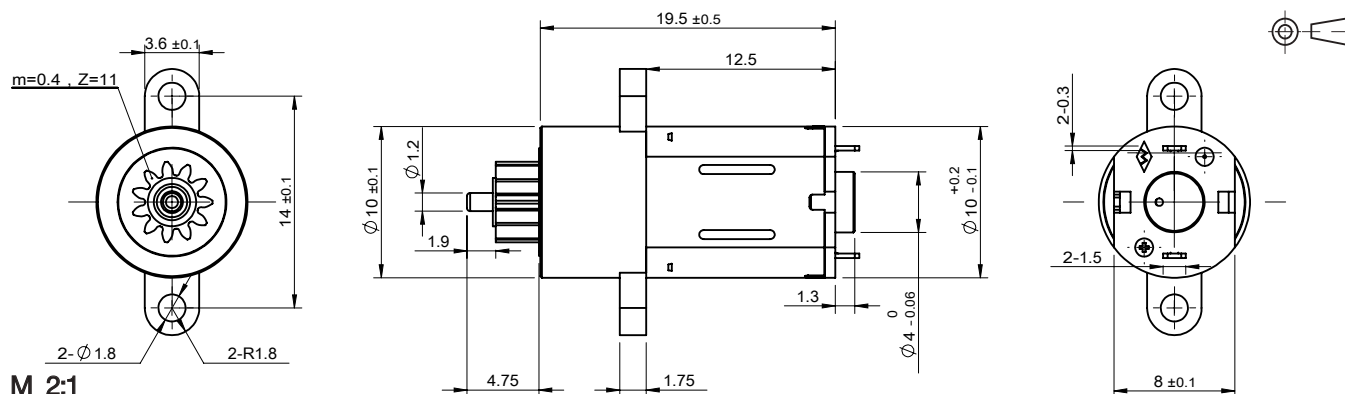
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation rang

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



C1020...10PP... | C1019...10PRC...(2)

Ø 10mm, 行星齿轮系列 Planetary Gearbox Series

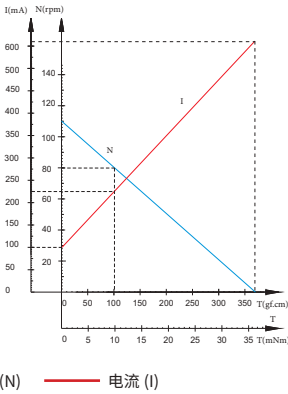
应用领域：医疗器械、安防设备、视像产品、高端智能电玩、个人保健产品等领域。

Applications: medical equipment, security systems and locks, audio and visual products, personal healthcare products, and high-end hobby products.

				C1020-110-2.5 -10PP171-0053	C1019-80-3.0 -10PRC171-0108	C1019-110-3.0 -10PRC171-0078
电机参数 / Motor Data						
1	电压	Voltage	V	2.5	3.0	3.0
2	端电阻	Terminal resistance	Ω	3.7	10.5	5.6
3	空载转速	No-load speed	rpm	110	80	115
4	空载电流	No-load current	mA	100	40	75
5	最大转矩	Max torque	mNm	37.2	25	38
6	负载转矩	Load torque	mNm	9.8	9.8	9.8
7	负载转速	Load speed	rpm	80	48	85
8	负载电流	Load current	mA	230	140	195
9	减速比	Reduction ratio		1/171	1/171	1/171
10	重量	Weight	g	3.8	3.8	3.8
11	工作温度范围	Operating temperature range	°C	-10~+70	-10~+70	-10~+70

特性曲线 / Characteristics Curve

C1020-110-2.5-10PP171-0053



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

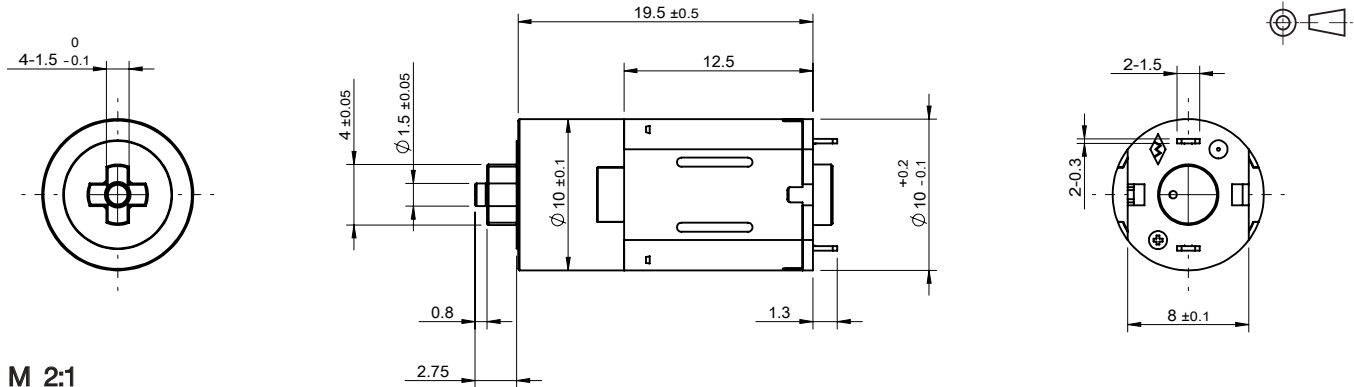
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation rang

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



C1020...10PP... | C1019...10PP... | C1019...10PFC...(3)

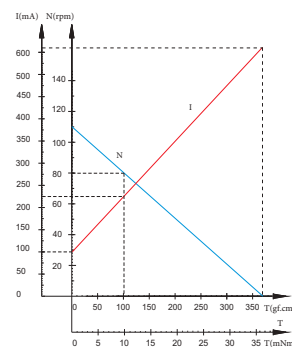
Ø10mm, 行星齿轮系列 Planetary Gearbox Series

应用领域: 医疗器械、安防设备、视像产品、高端智能电玩、个人保健产品等领域。

Applications: medical equipment, security systems and locks, audio and visual products, personal healthcare products, and high-end hobby products.

				C1020-110-2.5 -10PP171-0052	C1019-110-2.5 -10PP171-0050	C1019-180-3.0 -10PFC171-0097
电机参数 / Motor Data						
1	电压	Voltage	V	2.5	2.5	3.0
2	端电阻	Terminal resistance	Ω	3.7	3.5	1.8
3	空载转速	No-load speed	rpm	110	110	178
4	空载电流	No-load current	mA	100	80	90
5	最大转矩	Max torque	mNm	37.2	37.2	72
6	负载转矩	Load torque	mNm	9.8	9.8	9.8
7	负载转速	Load speed	rpm	80	80	153
8	负载电流	Load current	mA	230	240	320
9	减速比	Reduction ratio		1/171	1/171	1/171
10	重量	Weight	g	3.8	3.8	3.8
11	工作温度范围	Operating temperature range	°C	-10~+70	-10~+70	-10~+70
特性曲线 / Characteristics Curve						

C1020-110-2.5-10PP171-0052



— 转速 (N) — 电流 (I)

仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

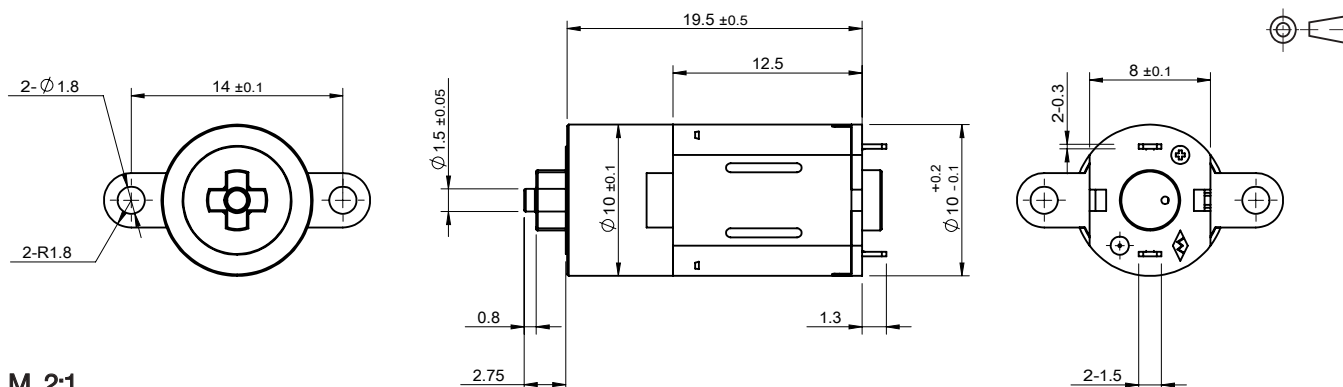
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation rang

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



C1222...12PP... | C1222...12PFC...

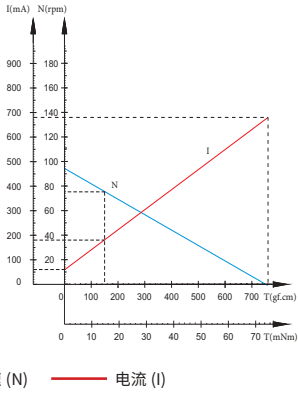
Ø 12mm, 行星齿轮系列 Planetary Gearbox Series

应用领域：医疗器械、安防设备、视像产品、高端智能电玩、个人保健产品等领域。

Applications: medical equipment, security systems and locks, audio and visual products, personal healthcare products, and high-end hobby products.

				C1222-95-2.5 -12PP120-0141	C1222-88-5.0 -12PP120-0142	C1222-80-2.5 -12PFC120-0228
电机参数 / Motor Data						
1	电压	Voltage	V	2.5	5.0	2.5
2	端电阻	Terminal resistance	Ω	3.5	17.8	5.3
3	空载转速	No-load speed	rpm	95	88	80
4	空载电流	No-load current	mA	60	35	50
5	最大转矩	Max torque	mNm	68.6	62.7	50
6	负载转矩	Load torque	mNm	14.7	14.7	15
7	负载转速	Load speed	rpm	75	66	56
8	负载电流	Load current	mA	180	100	185
9	减速比	Reduction ratio		1/120	1/120	1/120
10	重量	Weight	g	6.5	6.5	6.5
11	工作温度范围	Operating temperature range	°C	-10~+70	-10~+70	-10~+70
特性曲线 / Characteristics Curve						

C1222-95-2.5-12PP120-0141



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

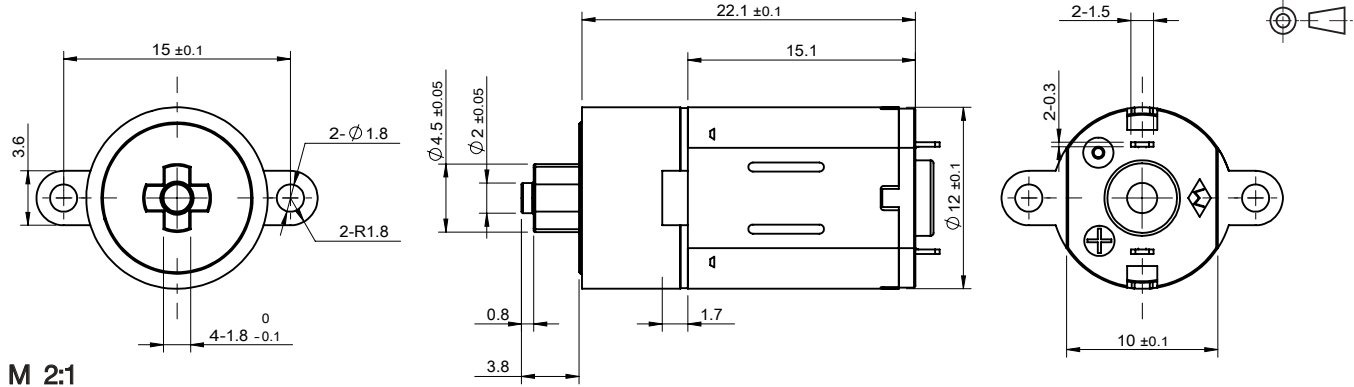
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation rang

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



C12**...12MS...

Ø12mm, 正齿轮系列 Spur Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

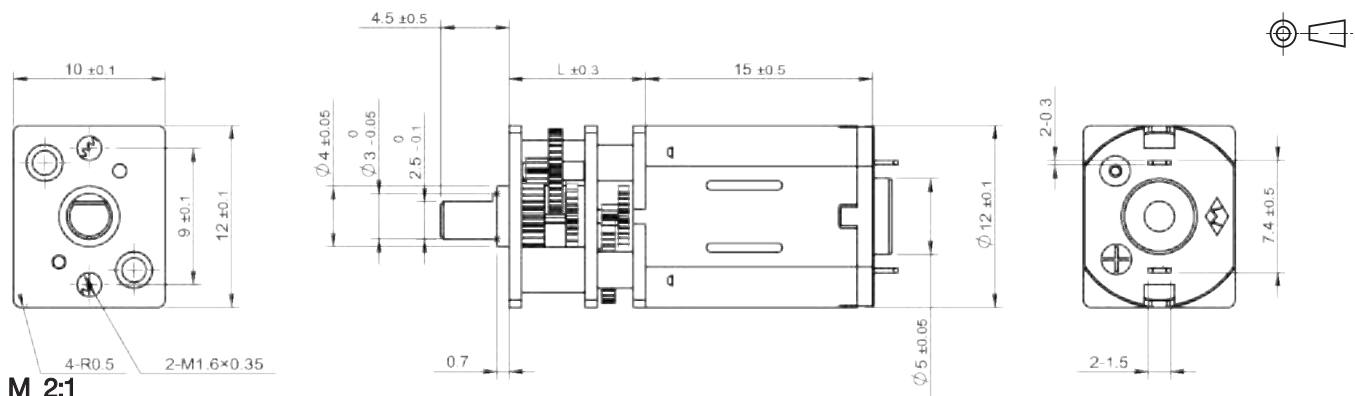
				C1215F33-0128	C1215F13-0462	C1215F13-0260
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	1.5	3.0
2	端电阻	Terminal resistance	Ω	40	1.2	10.8
3	空载转速	No-load speed	rpm	8300	11800	9600
4	空载电流	No-load current	mA	25	100	40
5	堵转转矩	Stall torque	mNm	0.72	1.28	0.7
6	堵转电流	Stall current	mA	150	1250	274
7	额定转矩	Nominal torque	mNm	0.35	0.6	0.29
8	额定转速	Nominal speed	rpm	4260	6287	5500
9	额定电流	Nominal current	mA	90	640	140
10	最大输出功率	Max. output power	W	0.16	0.4	0.18
11	最大效率	Max. efficiency	%	35	51	44.8
12	反电势常数	Back-EMF constant	mV/rpm	0.6	0.12	0.27
13	转矩常数	Torque constant	mNm/A	5.75	1.12	2.99
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	11543	9188	13714
15	转子惯量	Rotor inertia	gcm ²	0.3	0.3	0.3
16	重量	Weight	g	5.4	5.4	5.4
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		2	4	4	5	5	7
19	减速比	Reduction ratio		3,5,10	17,20,30,36	50,63,100	110,150	210,250,298,380	372,625,1000
20	最大额定转矩	Max. rated torque	mNm	20	30	40	50	80	100
21	瞬间允许转矩	Max. momentary torque	mNm	60	90	120	150	240	300
22	长度 (L)	Length (L)	mm	9	9	9	9	9	12
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options					
25	适配电机类型	Matched motor type		☐ 空心杯电机 Coreless motor ☒ 铁芯电机 Core motor ☒ 金属加工 Metal CNC ☐ 粉末冶金 Powder metallurgy ☒ 含油轴承 Slewing bearing	☐ 无刷电机 BLDC motor ☒ 金属注塑 Metal injection ☐ 塑胶注塑 Plastic injection ☐ 滚珠轴承 Ball bearing
27	齿轮工艺	Gear processing technology			
28	齿轮组输出轴承	Gearbox output bearing			

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing

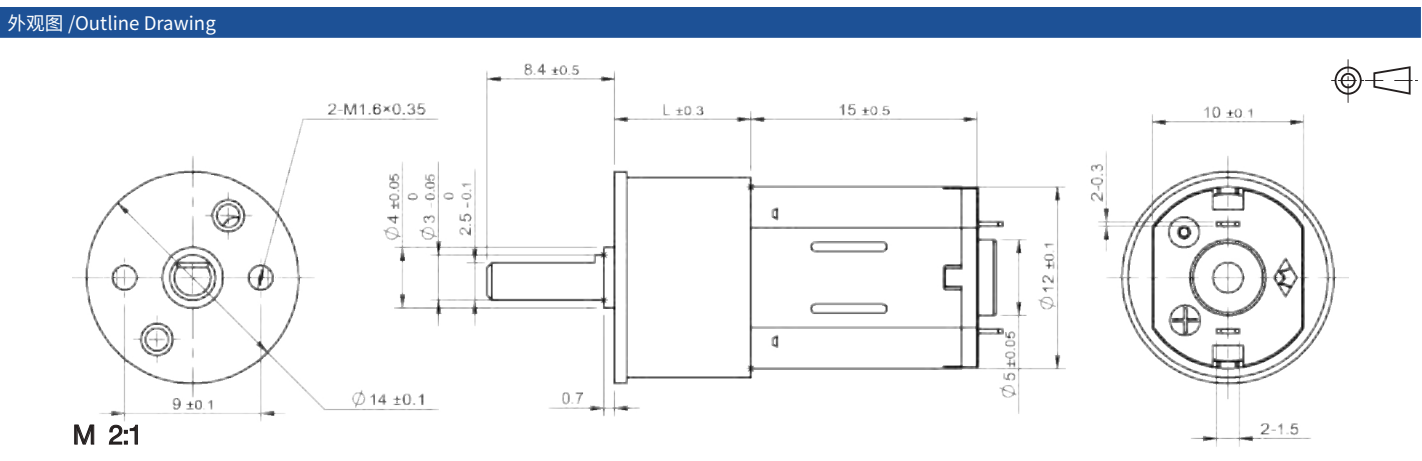


C12**...14MS...

Ø 14mm, 正齿轮系列 Spur Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。
Applications: medical equipment, scientific instruments, industrial equipment, etc.

				C1215F33-0128		C1215F13-0462		C1215F13-0260							
电机参数 / Motor Data															
1	电压	Voltage	V	6.0		1.5		3.0							
2	端电阻	Terminal resistance	Ω	40		1.2		10.8							
3	空载转速	No-load speed	rpm	8300		11800		9600							
4	空载电流	No-load current	mA	25		100		40							
5	堵转转矩	Stall torque	mNm	0.72		1.28		0.7							
6	堵转电流	Stall current	mA	150		1250		274							
7	负载转矩	Load torque	mNm	0.35		0.6		0.29							
8	负载转速	Load speed	rpm	4260		6287		5500							
9	负载电流	Load current	mA	90		640		140							
10	最大输出功率	Max. output power	W	0.16		0.4		0.18							
11	最大效率	Max. efficiency	%	35		51		44.8							
12	反电势常数	Back-EMF constant	mV/rpm	0.6		0.12		0.27							
13	转矩常数	Torque constant	mNm/A	5.75		1.12		2.99							
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	11543		9188		13714							
15	转子惯量	Rotor inertia	gcm ²	0.3		0.3		0.3							
16	重量	Weight	g	5.4		5.4		5.1							
17	工作温度范围	Operating temperature range	°C	-10~+80		-10~+80		-10~+80							
齿轮组参数 / Gearbox Data															
18	级数	Number of stages		2		4		4		5		5		7	
19	减速比	Reduction ratio		3,5,10		17,20,30,36		50,63		100,150,210		250,298,380		372,625,1000	
20	最大额定转矩	Max. rated torque	mNm	20		30		40		60		80		100	
21	瞬间允许转矩	Max. momentary torque	mNm	60		90		120		180		240		300	
22	长度 (L)	Length (L)	mm	9		9		9		9		9		12	
23	机壳材料	Shell material		金属 /Metal											
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC											
可选配置 /Options															
25	适配电机类型	Matched motor type		☐ 空心杯电机 Coreless motor						☐ 无刷电机 BLDC motor					
				☒ 铁芯电机 Core motor											
27	齿轮工艺	Gear processing technology		☒ 金属加工 Metal CNC						☒ 金属注塑 Metal injection					
				☐ 粉末冶金 Powder metallurgy						☐ 塑胶注塑 Plastic injection					
28	齿轮组输出轴承	Gearbox output bearing		☒ 含油轴承 Sleevling bearing						☐ 滚珠轴承 Ball bearing					
适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.															



C16**...13MS...

Ø13mm, 正齿轮系列 Spur Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

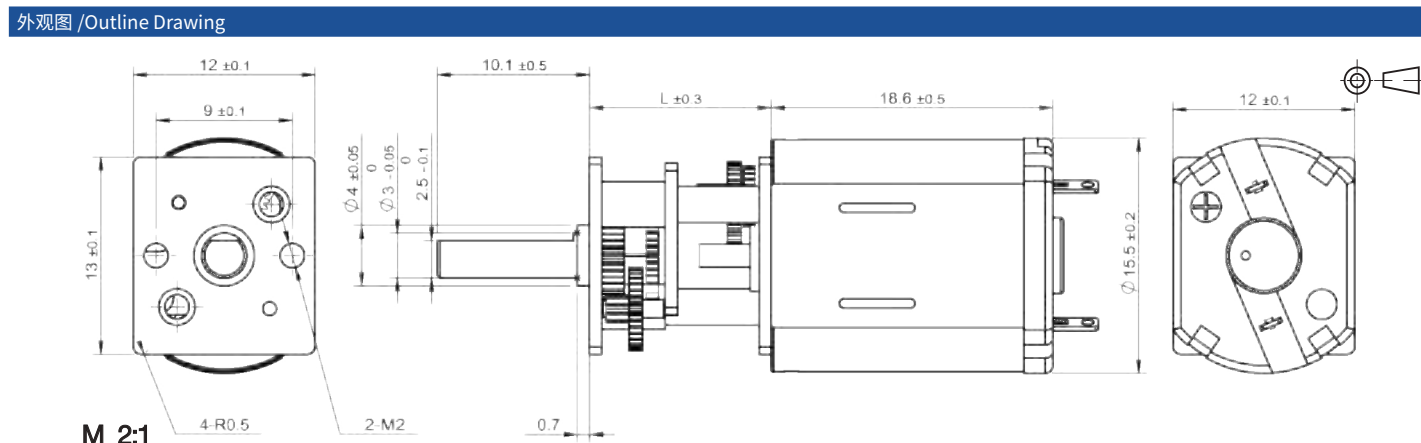
Applications: medical equipment, scientific instruments, industrial equipment, etc.

				C1627F34AH-0055	C1620F13-0032
电机参数 / Motor Data					
1	电压	Voltage	V	6.0	6.0
2	端电阻	Terminal resistance	Ω	8.8	10.3
3	空载转速	No-load speed	rpm	8600	11700
4	空载电流	No-load current	mA	55	51
5	堵转转矩	Stall torque	mNm	3.75	2.36
6	堵转电流	Stall current	mA	652	580
7	额定转矩	Nominal torque	mNm	0.79	2.1
8	额定转速	Nominal speed	rpm	6800	1305
9	额定电流	Nominal current	mA	180	520
10	最大输出功率	Max. output power	W	0.85	0.73
11	最大效率	Max. efficiency	%	51.9	50
12	反电势常数	Back-EMF constant	mV/rpm	0.64	0.47
13	转矩常数	Torque constant	mNm/A	6.28	4.47
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	2293	4950
15	转子惯量	Rotor inertia	gcm ²	0.5	0.5
16	重量	Weight	g	16.7	11
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80

齿轮组参数 / Gearbox Data											
18	级数	Number of stages		2	4	4	4	5	5	5	--
19	减速比	Reduction ratio		3,7,10	16,17,20,30,35	50,63	70,86	115,150	210,250	360	--
20	最大额定转矩	Max. rated torque	mNm	20	30	40	50	60	70	80	--
21	瞬间允许转矩	Max. momentary torque	mNm	60	90	120	150	180	210	240	--
22	长度 (L)	Length (L)	mm	11	11	11	11	11	11	12	--
23	机壳材料	Shell material		金属 /Metal							
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC							

可选配置 / Options			
25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☐ 无刷电机 BLDC motor ☒ 铁芯电机 Core motor ☐ 金属注塑 Metal injection ☒ 金属加工 Metal CNC ☐ 塑胶注塑 Plastic injection ☐ 粉末冶金 Powder metallurgy ☐ 滚珠轴承 Ball bearing ☒ 含油轴承 Slewing bearing
27	齿轮工艺	Gear processing technology	
28	齿轮组输出轴承	Gearbox output bearing	

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.



C1631...14MS...

Ø 14mm, 正齿轮系列 Spur Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

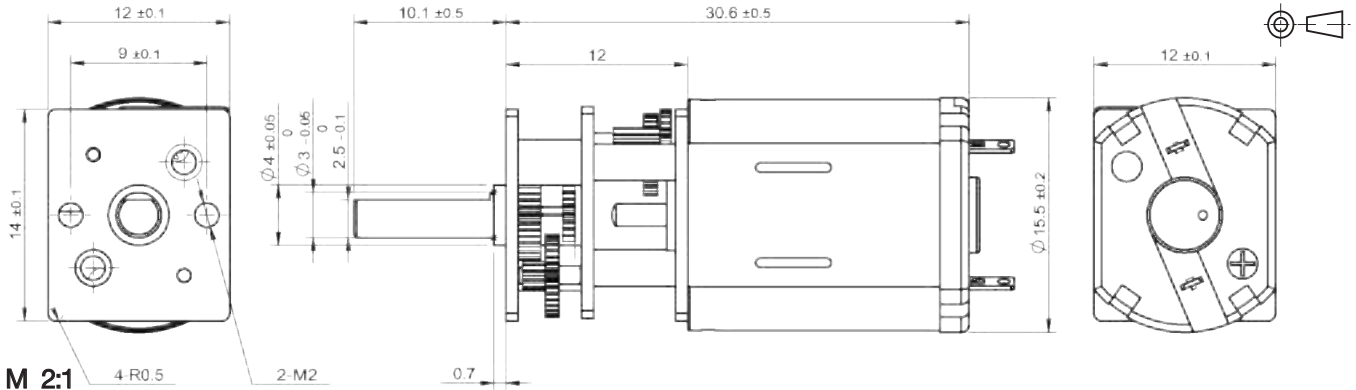
				C1620F13-0032	C1627F13-0013	C1627F13-0050
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	12.0	4.5
2	端电阻	Terminal resistance	Ω	10.3	28.2	5.5
3	空载转速	No-load speed	rpm	11700	12100	10500
4	空载电流	No-load current	mA	51	25	60
5	堵转转矩	Stall torque	mNm	2.36	3.23	2.78
6	堵转电流	Stall current	mA	580	447	790
7	额定转矩	Nominal torque	mNm	2.1	0.88	0.686
8	额定转速	Nominal speed	rpm	1305	8800	7910
9	额定电流	Nominal current	mA	520	140	240
10	最大输出功率	Max. output power	W	0.73	1.02	0.77
11	最大效率	Max. efficiency	%	50	49.9	52.9
12	反电势常数	Back-EMF constant	mV/rpm	0.47	0.93	0.4
13	转矩常数	Torque constant	mNm/A	4.47	7.65	3.81
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	4950	3750	3776
15	转子惯量	Rotor inertia	gcm ²	0.5	0.5	0.5
16	重量	Weight	g	10.7	10.7	10.7
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data									
18	级数	Number of stages		2	2	4	4	--	--
19	减速比	Reduction ratio		63	115,130, 150,180	210,250, 260	300,350	--	--
20	最大额定转矩	Max. rated torque	mNm	60	70	80	100	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	180	210	240	300	--	--
22	长度 (L)	Length (L)	mm	12	12	12	12	--	--
23	机壳材料	Shell material		金属 /Metal					
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options			
25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☐ 无刷电机 BLDC motor
			☒ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☒ 金属注塑 Metal injection
			☐ 粉末冶金 Powder metallurgy ☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



C1630...16MS...

Ø 15.5mm, 正齿轮系列 Spur Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

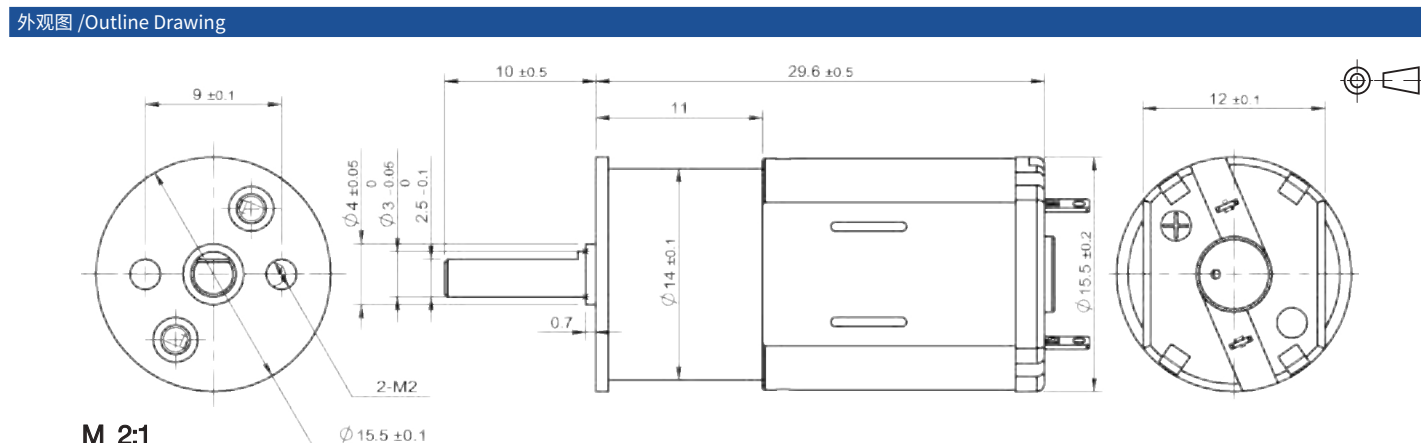
Applications: medical equipment, scientific instruments, industrial equipment, etc.

				C1620F13-0032	C1627F13-0013	C1627F13-0050
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	12.0	4.5
2	端电阻	Terminal resistance	Ω	10.3	28.2	5.5
3	空载转速	No-load speed	rpm	11700	12100	10500
4	空载电流	No-load current	mA	51	25	60
5	堵转转矩	Stall torque	mNm	2.36	3.23	2.78
6	堵转电流	Stall current	mA	580	447	790
7	额定转矩	Nominal torque	mNm	2.1	0.88	0.686
8	额定转速	Nominal speed	rpm	1305	8800	7910
9	额定电流	Nominal current	mA	520	140	240
10	最大输出功率	Max. output power	W	0.73	1.02	0.77
11	最大效率	Max. efficiency	%	50	49.9	52.9
12	反电势常数	Back-EMF constant	mV/rpm	0.47	0.93	0.4
13	转矩常数	Torque constant	mNm/A	4.47	7.65	3.81
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	4950	3750	3776
15	转子惯量	Rotor inertia	gcm ²	0.5	0.5	0.5
16	重量	Weight	g	10.7	10.7	10.7
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80	-10~+80

齿轮组参数 / Gearbox Data											
18	级数	Number of stages		2	4	4	4	5	5	5	--
19	减速比	Reduction ratio		3,7,10	16,17,20,30,35	50,63	70,86	115,150	210,250	360	--
20	最大额定转矩	Max. rated torque	mNm	20	30	40	50	60	70	80	--
21	瞬间允许转矩	Max. momentary torque	mNm	60	90	120	150	180	210	240	--
22	长度 (L)	Length (L)	mm	11	11	11	11	11	11	11	--
23	机壳材料	Shell material		金属 /Metal							
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC							

可选配置 / Options									
25	适配电机类型	Matched motor type		☐ 空心杯电机 Coreless motor	☐ 无刷电机 BLDC motor				
				☒ 铁芯电机 Core motor					
27	齿轮工艺	Gear processing technology		☒ 金属加工 Metal CNC	☒ 金属注塑 Metal injection				
				☐ 粉末冶金 Powder metallurgy	☐ 塑胶注塑 Plastic injection				
28	齿轮组输出轴承	Gearbox output bearing		☒ 含油轴承 Slewing bearing	☐ 滚珠轴承 Ball bearing				

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.



1526...16MS...

Ø 15.5mm, 正齿轮系列 Spur Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

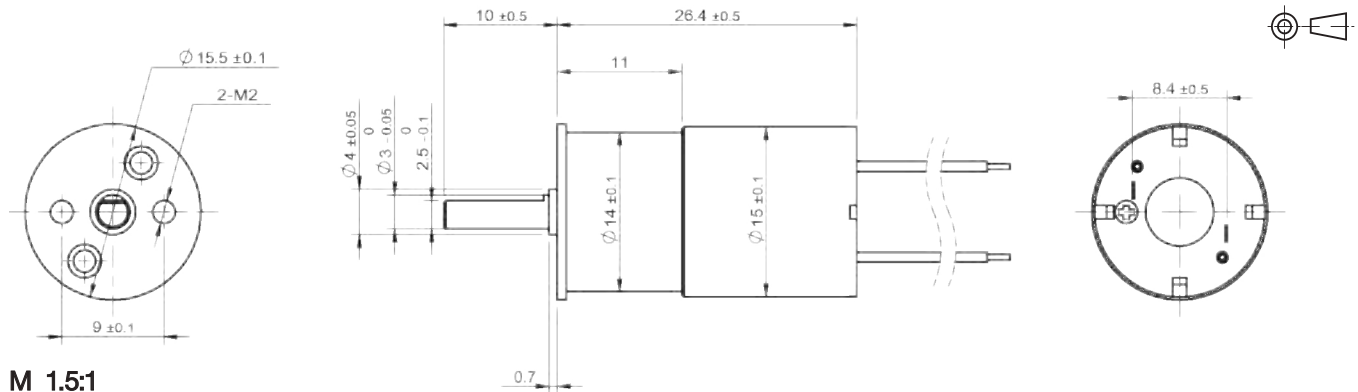
				1515N5M			
				07-220-18.0		10-220-12.0	
电机参数 / Motor Data							
1	电压	Voltage	V	18.0	12.0		
2	端电阻	Terminal resistance	Ω	30.8	8.1		
3	空载转速	No-load speed	rpm	22000	24000		
4	空载电流	No-load current	mA	15	50		
5	堵转转矩	Stall torque	mNm	4.4	6.6		
6	堵转电流	Stall current	mA	590	1480		
7	额定转矩	Nominal torque	mNm	1	1.5		
8	额定转速	Nominal speed	rpm	16890	18540		
9	额定电流	Nominal current	mA	150	380		
10	最大输出功率	Max. output power	W	2.52	4.15		
11	最大效率	Max. efficiency	%	71	67		
12	反电势常数	Back-EMF constant	mV/rpm	0.8	0.5		
13	转矩常数	Torque constant	mNm/A	7.6	4.6		
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	5000	3640		
15	转子惯量	Rotor inertia	gcm ²	0.21	0.21		
16	重量	Weight	g	12	12		
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80		

齿轮组参数 / Gearbox Data										
18	级数	Number of stages	2	4	4	4	5	5	5	--
19	减速比	Reduction ratio	3,7,10	16,17,20,30,35	50,63	70,86	115,150	210,250	360	--
20	最大额定转矩	Max. rated torque	mNm	20	30	40	50	60	70	80
21	瞬间允许转矩	Max. momentary torque	mNm	60	90	120	150	180	210	240
22	长度 (L)	Length (L)	mm	11	11	11	11	11	11	11
23	机壳材料	Shell material	金属 /Metal							
24	齿轮工艺	Gear processing technology	金属加工 /Metal CNC							

可选配置 / Options			
25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☐ 无刷电机 BLDC motor
			☒ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☒ 金属注塑 Metal injection
			☐ 粉末冶金 Powder metallurgy ☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



1638...16MS...

Ø 15.5mm, 正齿轮系列 Spur Gearbox Series

应用领域：医疗器械、精密仪器、工业设备等领域。

Applications: medical equipment, scientific instruments, industrial equipment, etc.

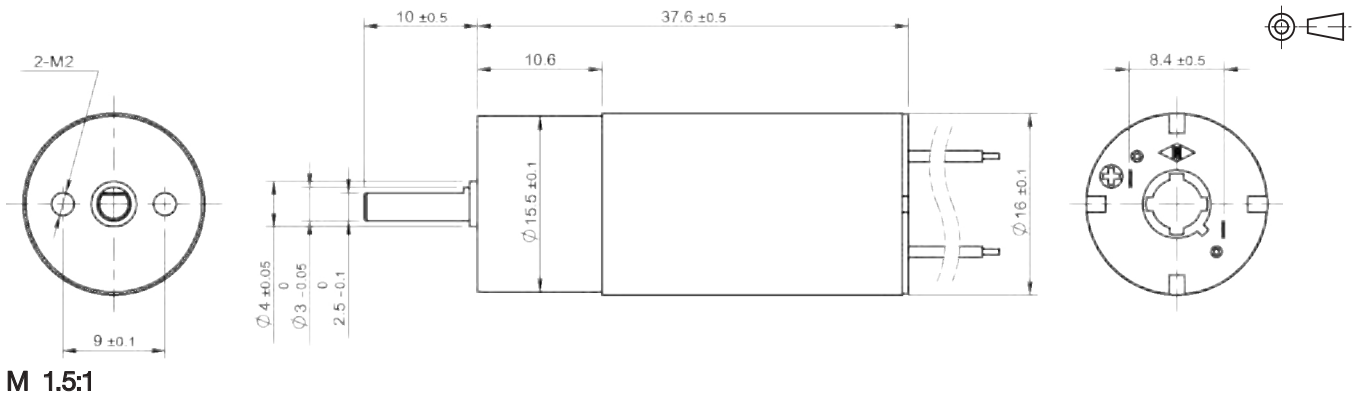
				1627N5M	
				21-113-12.0	27-66-6.0
电机参数 / Motor Data					
1	电压	Voltage	V	12.0	6.0
2	端电阻	Terminal resistance	Ω	11.8	8.2
3	空载转速	No-load speed	rpm	11300	6600
4	空载电流	No-load current	mA	13	11
5	堵转转矩	Stall torque	mNm	10.1	6.1
6	堵转电流	Stall current	mA	1020	730
7	额定转矩	Nominal torque	mNm	1.5	1
8	额定转速	Nominal speed	rpm	9620	5530
9	额定电流	Nominal current	mA	160	130
10	最大输出功率	Max. output power	W	3	1.1
11	最大效率	Max. efficiency	%	79	77
12	反电势常数	Back-EMF constant	mV/rpm	1	0.9
13	转矩常数	Torque constant	mNm/A	10	8.6
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1100	1100
15	转子惯量	Rotor inertia	gcm ²	0.7	0.7
16	重量	Weight	g	25	25
17	工作温度范围	Operating temperature range	°C	-10~+80	-10~+80

齿轮组参数 / Gearbox Data										
18	级数	Number of stages		2	4	4	4	5	--	--
19	减速比	Reduction ratio		10	21,34	59,75	105,146	203,257, 294,360	--	--
20	最大额定转矩	Max. rated torque	mNm	20	30	50	80	100	--	--
21	瞬间允许转矩	Max. momentary torque	mNm	60	90	150	240	300	--	--
22	长度 (L)	Length (L)	mm	10.6	10.6	10.6	10.6	10.6	--	--
23	机壳材料	Shell material		金属 /Metal						
24	齿轮工艺	Gear processing technology		金属加工 /Metal CNC						

可选配置 / Options			
25	适配电机类型	Matched motor type	☐ 空心杯电机 Coreless motor ☐ 无刷电机 BLDC motor ☒ 铁芯电机 Core motor
27	齿轮工艺	Gear processing technology	☒ 金属加工 Metal CNC ☒ 金属注塑 Metal injection ☐ 粉末冶金 Powder metallurgy ☐ 塑胶注塑 Plastic injection
28	齿轮组输出轴承	Gearbox output bearing	☒ 含油轴承 Slewing bearing ☐ 滚珠轴承 Ball bearing

适配仅供参考，详细了解请以产品规格书为准。For reference only, please refer to the product specification.

外观图 /Outline Drawing



Constar 齿轮箱选型指南

Constar gearbox selection guide

金属行星齿轮系列
Planetary Metal Gearbox Series

Ø 6mm, 系列代码 Serial Code: 2087									
1	级数	Number of stages		1	2	3	4	5	6
2	减速比	Reduction ratio		--	23~41/1	110~266/1	531~1708/1	--	--
3	最大额定转矩	Max. rated torque	mNm	--	33	33	33	--	--
4	长度 (L)	Length (L)	mm	--	12.1	14.5	16.9	--	--
Ø 6mm, 系列代码 Serial Code: 1187									
5	级数	Number of stages		1	2	3	4	5	6
6	减速比	Reduction ratio		4/1	16/1	64/1	256/1	--	--
7	最大额定转矩	Max. rated torque	mNm	1	2.5	5	15	--	--
8	长度 (L)	Length (L)	mm	9.2	11.9	14.6	17.3	--	--
Ø 8mm, 系列代码 Serial Code: 1187									
9	级数	Number of stages		1	2	3	4	5	6
10	减速比	Reduction ratio		4/1	16/1	64/1	256/1	1024/1	4096/1
11	最大额定转矩	Max. rated torque	mNm	5	10	20	30	35	40
12	长度 (L)	Length (L)	mm	9.6	12.3	15	17.7	20.4	23.1
Ø 8mm, 系列代码 Serial Code: 2082									
13	级数	Number of stages		1	2	3	4	5	6
14	减速比	Reduction ratio		4/1	16/1	64/1	256/1	1024/1	--
15	最大额定转矩	Max. rated torque	mNm	10	20	60	80	100	--
16	长度 (L)	Length (L)	mm	12.7	15.3	17.9	20.5	23.1	--
Ø 10mm, 系列代码 Serial Code: 1187									
17	级数	Number of stages		1	2	3	4	5	6
18	减速比	Reduction ratio		4/1	16/1	64/1	256/1	1024/1	4096/1
19	最大额定转矩	Max. rated torque	mNm	5	10	30	40	50	60
20	长度 (L)	Length (L)	mm	11.7	14.8	17.9	21	24.1	27.2
Ø 10mm, 系列代码 Serial Code: 2082									
21	级数	Number of stages		1	2	3	4	5	6
22	减速比	Reduction ratio		4/1	16/1	64/1	256/1	1024/1	--
23	最大额定转矩	Max. rated torque	mNm	30	50	100	200	300	--
24	长度 (L)	Length (L)	mm	11.8	15.6	19.4	23.2	27	--
Ø 12mm, 系列代码 Serial Code: 1187									
25	级数	Number of stages		1	2	3	4	5	6
26	减速比	Reduction ratio		4/1	16/1	64/1	256/1	1024/1	4096/1
27	最大额定转矩	Max. rated torque	mNm	80	120	160	180	200	200
28	长度 (L)	Length (L)	mm	12.8	16.1	19.4	22.7	26.0	29.3
Ø 12mm, 系列代码 Serial Code: 2082									
29	级数	Number of stages		1	2	3	4	5	6
30	减速比	Reduction ratio		4/1	16/1	64/1	256/1	1024/1	--
31	最大额定转矩	Max. rated torque	mNm	50	100	200	300	400	--
32	长度 (L)	Length (L)	mm	14.4	18.4	22.4	26.4	30.4	--
Ø 13mm, 系列代码 Serial Code: 1187									
33	级数	Number of stages		1	2	3	4	5	6
34	减速比	Reduction ratio		4/1	16/1	64/1	256/1	1024/1	4096/1
35	最大额定转矩	Max. rated torque	mNm	80	120	160	180	200	200
36	长度 (L)	Length (L)	mm	10.3	13.6	16.9	20.2	23.5	26.8
Ø 16mm, 系列代码 Serial Code: 1187									
37	级数	Number of stages		1	2	3	4	5	6
38	减速比	Reduction ratio		4/1	14~29/1	53~157/1	231~690/1	1014~3027/1	--
39	最大额定转矩	Max. rated torque	mNm	80	120	160	200	240	--
40	长度 (L)	Length (L)	mm	15.05	18.7	22.35	26.0	29.65	--
Ø 16mm, 系列代码 Serial Code: 2082									
41	级数	Number of stages		1	2	3	4	5	6
42	减速比	Reduction ratio		3.8/1,4.6/1,6/1	15~36/1	57~167/1	221~834/1	854~2066/1	--
43	最大额定转矩	Max. rated torque	mNm	200	400	800	1000	1200	--
44	长度 (L)	Length (L)	mm	14	17.9	21.8	25.7	29.6	--
Ø 20mm, 系列代码 Serial Code: 2087									
45	级数	Number of stages		1	2	3	4	5	6
46	减速比	Reduction ratio		--	16~36/1	64~216/1	256~1296/1	--	--
47	最大额定转矩	Max. rated torque	mNm	--	150~200	300~400	500~600	--	--
48	长度 (L)	Length (L)	mm	--	22.9	28.2	33.5	--	--

Ø 22mm, 系列代码 Serial Code: 1187									
1	级数	Number of stages		1	2	3	4	5	6
2	减速比	Reduction ratio		4/1	14~19/1	53~104/1	198~455/1	742~1996/1	--
3	最大额定转矩	Max. rated torque	mNm	100	150	200	250	300	--
4	长度 (L)	Length (L)	mm	14.4	18.05	21.7	25.35	29	--
Ø 22mm(22C), 系列代码 Serial Code: 1187									
5	级数	Number of stages		1	2	3	4	5	6
6	减速比	Reduction ratio		5/1	18~25/1	66~136/1	246~735/1	1079~3968/1	--
7	最大额定转矩	Max. rated torque	mNm	100	300	400	500	600	--
8	长度 (L)	Length (L)	mm	23.3	29.5	35.7	41.9	48.1	--
Ø 22mm, 系列代码 Serial Code: 2082									
9	级数	Number of stages		1	2	3	4	5	6
10	减速比	Reduction ratio		3.7,4.3,5.2/1	13.7~27/1	51~139/1	189~337/1	--	--
11	最大额定转矩	Max. rated torque	mNm	300	550	1500	2000	--	--
12	长度 (L)	Length (L)	mm	19.4	25.4	31.4	37.4	--	--
Ø 24mm, 系列代码 Serial Code: 2087									
13	级数	Number of stages		1	2	3	4	5	6
14	减速比	Reduction ratio		--	16~36/1	64~216/1	256~1296/1	--	--
15	最大额定转矩	Max. rated torque	mNm	--	500	1000	1500	--	--
16	长度 (L)	Length (L)	mm	--	25	32	39	--	--
Ø 26mm, 系列代码 Serial Code: 2082									
17	级数	Number of stages		1	2	3	4	5	6
18	减速比	Reduction ratio		3.7~5.2/1	13~27/1	50~140/1	187~352/1	--	--
19	最大额定转矩	Max. rated torque	mNm	500	750	2000	2500	--	--
20	长度 (L)	Length (L)	mm	21.5	30.5	39.5	48.5	--	--
Ø 28mm, 系列代码 Serial Code: 1187									
21	级数	Number of stages		1	2	3	4	5	6
22	减速比	Reduction ratio		4~5/1	14~35/1	51~139/1	189~939/1	--	--
23	最大额定转矩	Max. rated torque	mNm	200	300~400	600~800	1000	--	--
24	长度 (L)	Length (L)	mm	24.5	30.9	37.3	43.7	--	--
Ø 28mm, 系列代码 Serial Code: 2082									
25	级数	Number of stages		1	2	3	4	5	6
26	减速比	Reduction ratio		3.7,4.3,5.2,6.7/1	16~45.5/1	51~139/1	190~1012/1	--	--
27	最大额定转矩	Max. rated torque	mNm	750	3000	5000	6000	--	--
28	长度 (L)	Length (L)	mm	28.7	35.7	42.7	49.7	--	--
Ø 30mm, 系列代码 Serial Code: 1187									
29	级数	Number of stages		1	2	3	4	5	6
30	减速比	Reduction ratio		4~5/1	14~35/1	51~139/1	189~939/1	--	--
31	最大额定转矩	Max. rated torque	mNm	200	300~400	600~800	800~1000	--	--
32	长度 (L)	Length (L)	mm	23.6	30	36.4	42.8	--	--
Ø 32mm, 系列代码 Serial Code: 1187									
33	级数	Number of stages		1	2	3	4	5	6
34	减速比	Reduction ratio		4~5/1	14~35/1	51~139/1	189~939/1	--	--
35	最大额定转矩	Max. rated torque	mNm	200	400~600	800~1000	1200	--	--
36	长度 (L)	Length (L)	mm	20.6	27	33.4	39.8	--	--
Ø 32mm, 系列代码 Serial Code: 2082									
37	级数	Number of stages		1	2	3	4	5	6
38	减速比	Reduction ratio		3.7,4.3,5.2,6.7/1	13.7~45.5/1	51~139/1	190~1012/1	--	--
39	最大额定转矩	Max. rated torque	mNm	750	4000	7000	8000	--	--
40	长度 (L)	Length (L)	mm	30	39.5	49	58.5	--	--
Ø 36mm, 系列代码 Serial Code: 1187									
41	级数	Number of stages		1	2	3	4	5	6
42	减速比	Reduction ratio		4~5/1	14~27/1	51~139/1	189~721/1	--	--
43	最大额定转矩	Max. rated torque	mNm	300	800~1000	1800~2000	2500~3000	--	--
44	长度 (L)	Length (L)	mm	33.1	41.8	50.5	59.2	--	--
Ø 36mm, 系列代码 Serial Code: 2082									
45	级数	Number of stages		1	2	3	4	5	6
46	减速比	Reduction ratio		3.7,4.2,5.6,3/1	13.4~40/1	49~254/1	370~1608/1	--	--
47	最大额定转矩	Max. rated torque	mNm	750	4000	6000	6000	--	--
48	长度 (L)	Length (L)	mm	29.2	37.4	45.6	53.8	--	--

Ø 38mm, 系列代码 Serial Code: 1187									
1	级数	Number of stages		1	2	3	4	5	6
2	减速比	Reduction ratio		4~5/1	14~27/1	51~139/1	189~721/1	--	--
3	最大额定转矩	Max. rated torque	mNm	300	800~1000	1800~2000	2500~3000	--	--
4	长度 (L)	Length (L)	mm	33.1	41.8	50.5	59.2	--	--
Ø 42mm, 系列代码 Serial Code: 2082									
5	级数	Number of stages		1	2	3	4	5	6
6	减速比	Reduction ratio		3.6,4.2,5.6,3/1	13~40/1	49~254/1	441~1608/1	--	--
7	最大额定转矩	Max. rated torque	mNm	1000	5000	10000	12000	--	--
8	长度 (L)	Length (L)	mm	31.6	42.5	53.4	64.3	--	--
Ø 42mm, 系列代码 Serial Code: 0394									
9	级数	Number of stages		1	2	3	4	5	6
10	减速比	Reduction ratio		3.65~8.63/1	14~58/1	67~393/1	--	--	--
11	最大额定转矩	Max. rated torque	mNm	3000	7500	15000	--	--	--
12	长度 (L)	Length (L)	mm	33.8	47.4	61	--	--	--
Ø 52mm, 系列代码 Serial Code: 0394									
13	级数	Number of stages		1	2	3	4	5	6
14	减速比	Reduction ratio		3.65~8.63/1	14~58/1	67~393/1	--	--	--
15	最大额定转矩	Max. rated torque	mNm	4000	12000	25000	--	--	--
16	长度 (L)	Length (L)	mm	38.6	54.2	69.8	--	--	--
Ø 62mm, 系列代码 Serial Code: 0394									
17	级数	Number of stages		1	2	3	4	5	6
18	减速比	Reduction ratio		3.65~8.63/1	14~58/1	67~393/1	--	--	--
19	最大额定转矩	Max. rated torque	mNm	8000	25000	50000	--	--	--
20	长度 (L)	Length (L)	mm	45.1	62.7	80.3	--	--	--

塑胶行星齿轮系列 Planetary Plastic Gearbox Series

Ø 6mm, 系列代码 Serial Code: 2084									
21	级数	Number of stages		1	2	3	4	5	6
22	减速比	Reduction ratio		--	25/1(Max)	136/1(Max)	699/1(Min)	--	--
23	最大额定转矩	Max. rated torque	mNm	--	10	10	20	--	--
24	长度 (L)	Length (L)	mm	--	7.5	9.7	12	--	--
Ø 8mm, 系列代码 Serial Code: 2089									
25	级数	Number of stages		1	2	3	4	5	6
26	减速比	Reduction ratio		--	13,19,28/1	47,69,102,152/1	--	--	--
27	最大额定转矩	Max. rated torque	mNm	--	10	20	--	--	--
28	长度 (L)	Length (L)	mm	--	11.3	14	--	--	--
Ø 8mm, 系列代码 Serial Code: 2087									
29	级数	Number of stages		1	2	3	4	5	6
30	减速比	Reduction ratio		--	--	--	168/1(Min)	--	--
31	最大额定转矩	Max. rated torque	mNm	--	--	--	30	--	--
32	长度 (L)	Length (L)	mm	--	--	--	16.9	--	--
Ø 10mm, 系列代码 Serial Code: 2087									
33	级数	Number of stages		1	2	3	4	5	6
34	减速比	Reduction ratio		--	28/1(Max)	151/1(Max)	168/1(Min)	--	--
35	最大额定转矩	Max. rated torque	mNm	--	30	50	100	--	--
36	长度 (L)	Length (L)	mm	--	12.8	15.9	19	--	--
Ø 12mm, 系列代码 Serial Code: 0394									
37	级数	Number of stages		1	2	3	4	5	6
38	减速比	Reduction ratio		6/1(Max)	36/1(Max)	216/1(Max)	256/1(Min)	--	--
39	最大额定转矩	Max. rated torque	mNm	10	40	60	85	--	--
40	长度 (L)	Length (L)	mm	6.8	10.6	14.4	18.2	--	--
Ø 16mm, 系列代码 Serial Code: 2085									
41	级数	Number of stages		1	2	3	4	5	6
42	减速比	Reduction ratio		--	36/1(Max)	216/1(Max)	--	--	--
43	最大额定转矩	Max. rated torque	mNm	--	100	250	--	--	--
44	长度 (L)	Length (L)	mm	--	14.3	18.7	--	--	--

Ø 16mm, 系列代码 Serial Code: 0089								
1	级数	Number of stages	1	2	3	4	5	6
2	减速比	Reduction ratio	--	--	144/1	--	--	--
3	最大额定转矩	Max. rated torque	mNm	--	200	--	--	--
4	长度 (L)	Length (L)	mm	--	18.1	--	--	--
Ø 16mm, 系列代码 Serial Code: 0394								
5	级数	Number of stages	1	2	3	4	5	6
6	减速比	Reduction ratio	--	16~36/1	64~216/1	256~1296/1	--	--
7	最大额定转矩	Max. rated torque	mNm	50	100	400	--	--
8	长度 (L)	Length (L)	mm	14.8	18.1	21.4	--	--
Ø 20mm, 系列代码 Serial Code: 0394								
9	级数	Number of stages	1	2	3	4	5	6
10	减速比	Reduction ratio	6/1(Max)	36/1(Max)	216/1(Max)	256/1(Min)	--	--
11	最大额定转矩	Max. rated torque	mNm	50	150	300	600	--
12	长度 (L)	Length (L)	mm	17.6	22.9	28.2	33.5	--
Ø 22mm, 系列代码 Serial Code: 0394								
13	级数	Number of stages	1	2	3	4	5	6
14	减速比	Reduction ratio	--	36/1(Max)	216/1(Max)	256/1(Min)	--	--
15	最大额定转矩	Max. rated torque	mNm	--	500	750	1000	--
16	长度 (L)	Length (L)	mm	--	26.4	33.7	41	--
Ø 24mm, 系列代码 Serial Code: 2087								
17	级数	Number of stages	1	2	3	4	5	6
18	减速比	Reduction ratio	--	36/1(Max)	216/1(Max)	256/1(Min)	--	--
19	最大额定转矩	Max. rated torque	mNm	--	500	1000	1500	--
20	长度 (L)	Length (L)	mm	--	24.5	31.5	38.65	--
Ø 28mm, 系列代码 Serial Code: 2087								
21	级数	Number of stages	1	2	3	4	5	6
22	减速比	Reduction ratio	--	36/1(Max)	216/1(Max)	256/1(Min)	--	--
23	最大额定转矩	Max. rated torque	mNm	--	400	800	1200	--
24	长度 (L)	Length (L)	mm	--	29.1	37.6	46.1	--
Ø 32mm, 系列代码 Serial Code: 2087								
25	级数	Number of stages	1	2	3	4	5	6
26	减速比	Reduction ratio	--	33/1(Max)	188/1(Max)	272/1(Min)	--	--
27	最大额定转矩	Max. rated torque	mNm	--	400	800	1200	--
28	长度 (L)	Length (L)	mm	--	35.7	45.7	55.7	--

金属正齿轮系列 Spur Metal Gearbox Series

Ø 12mm, S, 系列代码 Serial Code: 1180								
29	级数	Number of stages	2	4	5	7	--	--
30	减速比	Reduction ratio	3~10/1	17~100/1	110~380/1	372,625,1000/1	--	--
31	最大额定转矩	Max. rated torque	mNm	20	30~50	50~80	100	--
32	长度 (L)	Length (L)	mm	9	9	9	12	--
Ø 12mm, R, 系列代码 Serial Code: 1180								
33	级数	Number of stages	2	4	5	7	--	--
34	减速比	Reduction ratio	3~10/1	17~100/1	110~380/1	372,625,1000/1	--	--
35	最大额定转矩	Max. rated torque	mNm	20	30~40	50~80	100	--
36	长度 (L)	Length (L)	mm	9	9	9	12	--
Ø 13mm, S, 系列代码 Serial Code: 1180								
37	级数	Number of stages	2	4	5	5	--	--
38	减速比	Reduction ratio	3~10/1	16~86/1	115~210/1	250,360/1	--	--
39	最大额定转矩	Max. rated torque	mNm	20	30~50	60~70	70~80	--
40	长度 (L)	Length (L)	mm	11	11	11	12	--
Ø 14mm, S, 系列代码 Serial Code: 1180								
41	级数	Number of stages	2	4	--	--	--	--
42	减速比	Reduction ratio	63~150/1	180~350/1	--	--	--	--
43	最大额定转矩	Max. rated torque	mNm	60~70	70~100	--	--	--
44	长度 (L)	Length (L)	mm	12	12	--	--	--

Ø 15.5mm, R, 系列代码 Serial Code: 1180								
1	级数	Number of stages		2	4	5	--	--
2	减速比	Reduction ratio		3~10/1	16~86/1	115~360/1	--	--
3	最大额定转矩	Max. rated torque	mNm	20	30~50	60~80	--	--
4	长度 (L)	Length (L)	mm	11	11	11	--	--
Ø 15.5mm, R, 系列代码 Serial Code: 1187								
5	级数	Number of stages		1	2	3	4	5
6	减速比	Reduction ratio		10/1	21~34/1	59~105/1	146~360/1	--
7	最大额定转矩	Max. rated torque	mNm	20	30	50~80	80~100	--
8	长度 (L)	Length (L)	mm	10.6	10.6	10.6	10.6	--

Constar

精密伺服电机

PRECISION SERVO MOTOR



CONTENT 目录

精密伺服电机

PRECISION SERVO MOTOR

直流空心杯有刷系列

DC CORELESS BRUSHED SERIES

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	08**M5...M...	φ8 mm	贵金属电刷/Precious Metal Brushes	174
2	10**M7...M...	φ10 mm	贵金属电刷/Precious Metal Brushes	175
3	12**M7...M...	φ12 mm	贵金属电刷/Precious Metal Brushes	176
4	13**M7...M...	φ13 mm	贵金属电刷/Precious Metal Brushes	177
5	16**M9...M...	φ16 mm	贵金属电刷/Precious Metal Brushes	178
6	25**C9...M...	φ25 mm	贵金属电刷/Precious Metal Brushes	179
7	30**C9...M...	φ30 mm	贵金属电刷/Precious Metal Brushes	180

直流空心杯无刷系列

DC CORELESS BRUSHLESS SERIES

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	10**NH...M...	φ10 mm	霍尔传感器/Hall Sensor	181
2	13**NH...M...	φ13 mm	霍尔传感器/Hall Sensor	182
3	16**NH...M...	φ16 mm	霍尔传感器/Hall Sensor	183
4	19**NH...M...	φ19 mm	霍尔传感器/Hall Sensor	184
5	22**NH...M...(1)	φ22 mm	霍尔传感器/Hall Sensor	185
6	22**NH...M...(2)	φ22 mm	霍尔传感器/Hall Sensor	186

08**M5...M... Ø8mm, 直流空心杯有刷系列 DC Coreless Brushed Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。
Applications: medical equipment, robotics, precision instrument, etc.

				0816N5M10-90-3.0	0816N5M27-165-6.0	0816N5M31-120-3.0
电机参数 / Motor Data						
1	电压	Voltage	V	3.0	3.0	3.0
2	端电阻	Terminal resistance	Ω	14.2	20.6	8.5
3	空载转速	No-load speed	rpm	9000	16000	12000
4	空载电流	No-load current	mA	8	15	25
5	堵转转矩	Stall torque	mNm	0.6	0.94	0.73
6	堵转电流	Stall current	mA	210	290	350
7	额定转矩	Nominal torque	mNm	0.3	0.42	0.15
8	额定转速	Nominal speed	rpm	5490	8800	9500
9	额定电流	Nominal current	mA	88	140	90
10	反电势常数	Back-EMF constant	mV/rpm	0.32	0.36	0.23
11	转矩常数	Torque constant	mNm/A	3.06	3.39	2.22
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

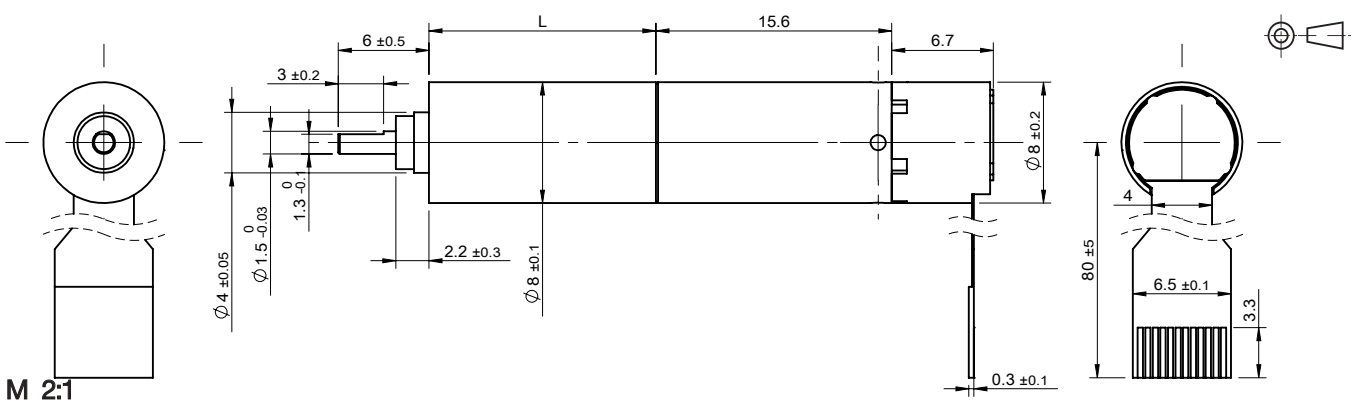
编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512	16,32,64,256,512	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	30000	30000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--
19	直径	Diameter	mm	8	8	--
20	长度 (L)	Length (L)	mm	6.7	6.7	--

齿轮组参数 / Gearbox Data									
21	级数	Number of stages		1	2	3	4	5	6
22	减速比	Reduction ratio		4	16	64	256	1024	4096
23	最大额定转矩	Max. rated torque	mNm	5	10	20	30	35	40
24	瞬间允许转矩	Max. momentary torque	mNm	15	30	60	90	105	120
25	长度 (L)	Length (L)	mm	9.6	12.3	15	17.7	20.4	23.1
26	机壳材料	Shell material		金属 /Metal					
27	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 /Outline Drawing



10**M7...M... Ø10mm, 直流空心杯有刷系列 DC Coreless Brushed Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。
Applications: medical equipment, robotics, precision instrument, etc.

				1026N7M03-125-6.0	1026N7M01-125-12.0	1026N7M04-130-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	12.0	12.0
2	端电阻	Terminal resistance	Ω	6	23.7	29.6
3	空载转速	No-load speed	rpm	11000	11000	12700
4	空载电流	No-load current	mA	30	15	15
5	堵转转矩	Stall torque	mNm	4.9	5.0	3.39
6	堵转电流	Stall current	mA	1000	510	405
7	额定转矩	Nominal torque	mNm	2.0	2.1	0.88
8	额定转速	Nominal speed	rpm	6500	6400	9400
9	额定电流	Nominal current	mA	430	220	120
10	反电势常数	Back-EMF constant	mV/rpm	0.53	1.07	0.91
11	转矩常数	Torque constant	mNm/A	5.05	10.19	8.69
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	12,16,64,256,512	12,16,64,256,512	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	30000	30000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--
19	直径	Diameter	mm	10	10	--
20	长度 (L)	Length (L)	mm	6.5	6.5	--

齿轮组参数 / Gearbox Data						
21	级数	Number of stages		1	2	3
22	减速比	Reduction ratio		4	16	64
23	最大额定转矩	Max. rated torque	mNm	5	10	30
24	瞬间允许转矩	Max. momentary torque	mNm	15	30	90
25	长度 (L)	Length (L)	mm	9.7	12.8	15.9
26	机壳材料	Shell material		金属 /Metal		
27	齿轮工艺	Gear processing technology		金属加工 /Metal CNC		

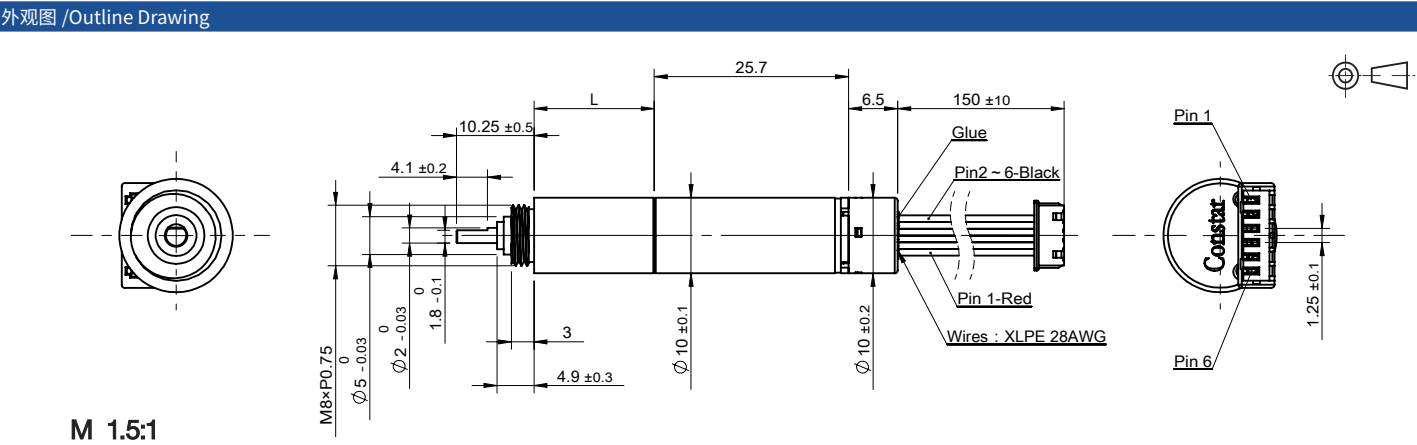
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length



12**M7...M... ∅12mm, 直流空心杯有刷系列 DC Coreless Brushed Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。
Applications: medical equipment, robotics, precision instrument, etc.

				1230N7M04-48-4.5	1220N7M64-140-6.0	1220N7M65-162-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	4.5	6.0	12.0
2	端电阻	Terminal resistance	Ω	8.5	3.8	22
3	空载转速	No-load speed	rpm	4800	14000	16200
4	空载电流	No-load current	mA	15	60	20
5	堵转转矩	Stall torque	mNm	4.48	5.98	3.58
6	堵转电流	Stall current	mA	530	1580	550
7	额定转矩	Nominal torque	mNm	2.0	2.78	2.45
8	额定转速	Nominal speed	rpm	2760	7500	5200
9	额定电流	Nominal current	mA	235	770	380
10	反电势常数	Back-EMF constant	mV/rpm	0.91	0.41	0.71
11	转矩常数	Torque constant	mNm/A	8.72	3.94	6.81
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512	16,32,64,256,512	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	30000	30000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--
19	直径	Diameter	mm	8	8	--
20	长度 (L)	Length (L)	mm	6.7	6.7	--

齿轮组参数 / Gearbox Data									
21	级数	Number of stages		1	2	3	4	5	6
22	减速比	Reduction ratio		4	16	64	256	1024	4096
23	最大额定转矩	Max. rated torque	mNm	80	120	160	180	200	200
24	瞬间允许转矩	Max. momentary torque	mNm	240	360	480	540	600	600
25	长度 (L)	Length (L)	mm	12.8	16.1	19.4	22.7	26	29.3
26	机壳材料	Shell material		金属 /Metal					
27	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options

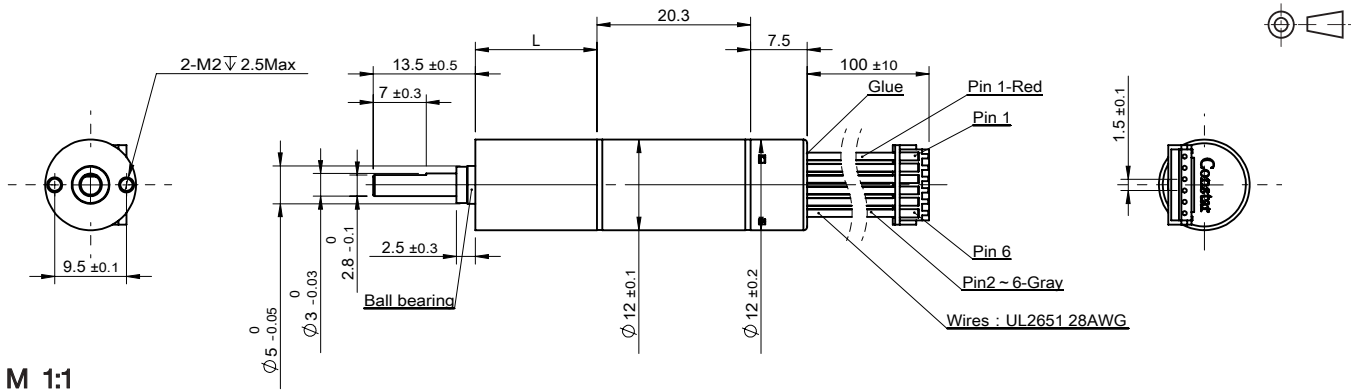
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 /Outline Drawing



13**M7...M... Ø 13mm, 直流空心杯有刷系列 DC Coreless Brushed Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。
Applications: medical equipment, robotics, precision instrument, etc.

				1331N7M08-100-12.0	1331N7M04-135-15.0	1331N7M07-90-24.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	15.0	24.0
2	端电阻	Terminal resistance	Ω	12.6	12.5	79
3	空载转速	No-load speed	rpm	10000	13500	9000
4	空载电流	No-load current	mA	10	20	10
5	堵转转矩	Stall torque	mNm	10.68	12.31	7.24
6	堵转电流	Stall current	mA	950	1200	300
7	额定转矩	Nominal torque	mNm	0.84	1.2	0.48
8	额定转速	Nominal speed	rpm	9200	12100	8400
9	额定电流	Nominal current	mA	80	140	50
10	反电势常数	Back-EMF constant	mV/rpm	1.19	1.09	2.58
11	转矩常数	Torque constant	mNm/A	11.33	10.43	24.63
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

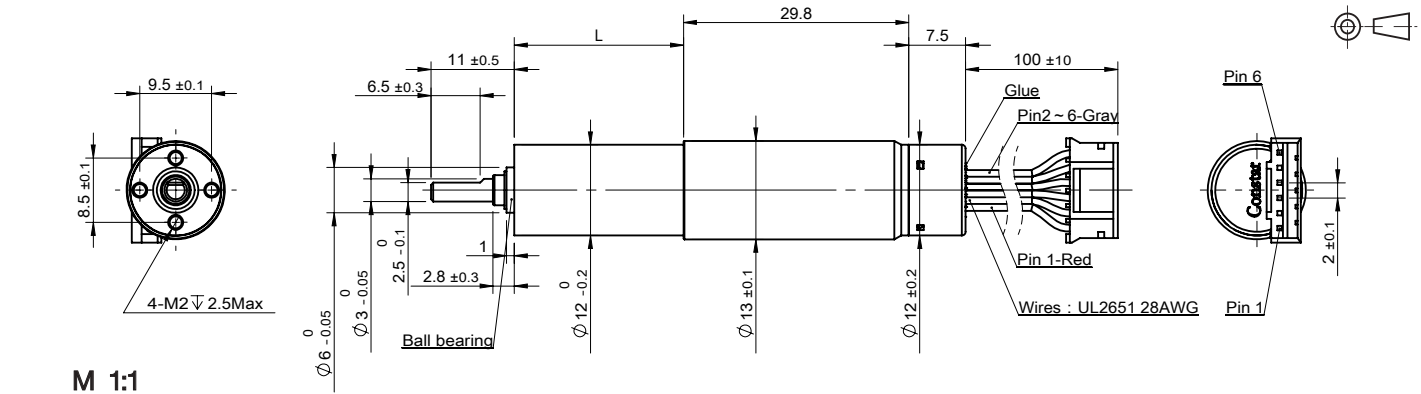
编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512	16,32,64,256,512	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	30000	30000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--
19	直径	Diameter	mm	12	12	--
20	长度 (L)	Length (L)	mm	7.5	7.5	--

齿轮组参数 / Gearbox Data									
21	级数	Number of stages		1	2	3	4	5	6
22	减速比	Reduction ratio		4	16	64	256	1024	--
23	最大额定转矩	Max. rated torque	mNm	80	120	160	180	200	--
24	瞬间允许转矩	Max. momentary torque	mNm	240	360	480	540	600	--
25	长度 (L)	Length (L)	mm	14.4	18.4	22.4	26.4	30.4	--
26	机壳材料	Shell material		金属 /Metal					
27	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 /Outline Drawing



16**M9...M... Ø16mm, 直流空心杯有刷系列 DC Coreless Brushed Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。

Applications: medical equipment, robotics, precision instrument, etc.

精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波振动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

1625N9M06-110-12.0

1625N9M04-140-15.0

1625N9M08-127-24.0

电机参数 / Motor Data

1	电压	Voltage	V	12.0	15.0	24.0
2	端电阻	Terminal resistance	Ω	13	10.6	39
3	空载转速	No-load speed	rpm	11000	14500	12700
4	空载电流	No-load current	mA	10	20	15
5	堵转转矩	Stall torque	mNm	9.45	13.59	10.58
6	堵转电流	Stall current	mA	920	1420	620
7	额定转矩	Nominal torque	mNm	2.43	2.35	1.40
8	额定转速	Nominal speed	rpm	8150	12000	11000
9	额定电流	Nominal current	mA	250	260	100
10	反电势常数	Back-EMF constant	mV/rpm	1.08	1.02	1.84
11	转矩常数	Torque constant	mNm/A	10.33	9.74	17.61
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data

13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512	16,32,64,256,512	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	30000	30000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--
19	直径	Diameter	mm	15	15	--
20	长度 (L)	Length (L)	mm	6.8	6.8	--

齿轮组参数 / Gearbox Data

21	级数	Number of stages		1	2	3	4	5	6
22	减速比	Reduction ratio		4	14,16,19,29	53,72,84,104,128,157	231,316,370,455,561,690	1014,1621,1996,3027	--
23	最大额定转矩	Max. rated torque	mNm	200	400	800	1000	1200	--
24	瞬间允许转矩	Max. momentary torque	mNm	300	600	1200	1500	1800	--
25	长度 (L)	Length (L)	mm	14	17.9	21.8	25.7	29.6	--
26	机壳材料	Shell material		金属 / Metal					
27	齿轮工艺	Gear processing technology		金属加工 / Metal CNC					

可选配置 / Options

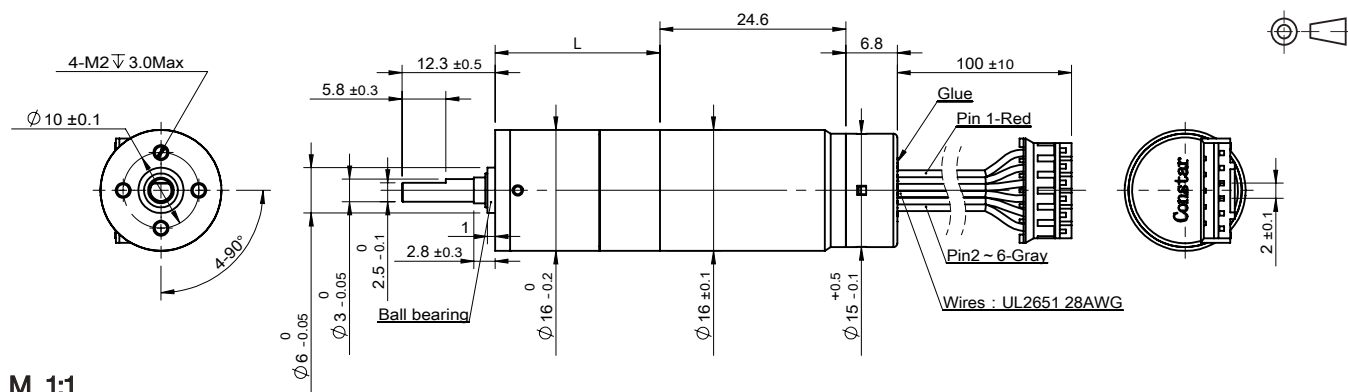
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



25**C9...M... Ø25mm, 直流空心杯有刷系列 DC Coreless Brushed Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。

Applications: medical equipment, robotics, precision instrument, etc.

				2543N9C2B09-95-12.0	2543N9C2B10-94-24.0	2543N9C2B11-98-30.0
电机参数 / Motor Data						
1	电压	Voltage	V	12.0	24.0	30.0
2	端电阻	Terminal resistance	Ω	0.95	3.4	3.9
3	空载转速	No-load speed	rpm	9500	9000	9800
4	空载电流	No-load current	mA	80	35	40
5	堵转转矩	Stall torque	mNm	142.8	140.3	196.9
6	堵转电流	Stall current	mA	12000	5600	7100
7	额定转矩	Nominal torque	mNm	20	37.6	19.6
8	额定转速	Nominal speed	rpm	8200	6600	8900
9	额定电流	Nominal current	mA	1800	1500	710
10	反电势常数	Back-EMF constant	mV/rpm	1.26	2.65	3.04
11	转矩常数	Torque constant	mNm/A	11.98	25.31	29.06
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,128,256,512,1024	16,32,64,128,256,512,1024	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	30000	30000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--
19	直径	Diameter	mm	22	22	--
20	长度 (L)	Length (L)	mm	12	12	--

齿轮组参数 / Gearbox Data							
21	级数	Number of stages		1	2	3	4
22	减速比	Reduction ratio		3.7,4.3,5.2	13.7,16.18.3,19.2,22,27	51,79,99,115,139	189,218,337,721
23	最大额定转矩	Max. rated torque	mNm	500	750	2000	2500
24	瞬间允许转矩	Max. momentary torque	mNm	750	1100	3000	3750
25	长度 (L)	Length (L)	mm	21.5	30.5	39.5	48.5
26	机壳材料	Shell material		金属 /Metal			
27	齿轮工艺	Gear processing technology		金属加工 /Metal CNC			

可选配置 / Options

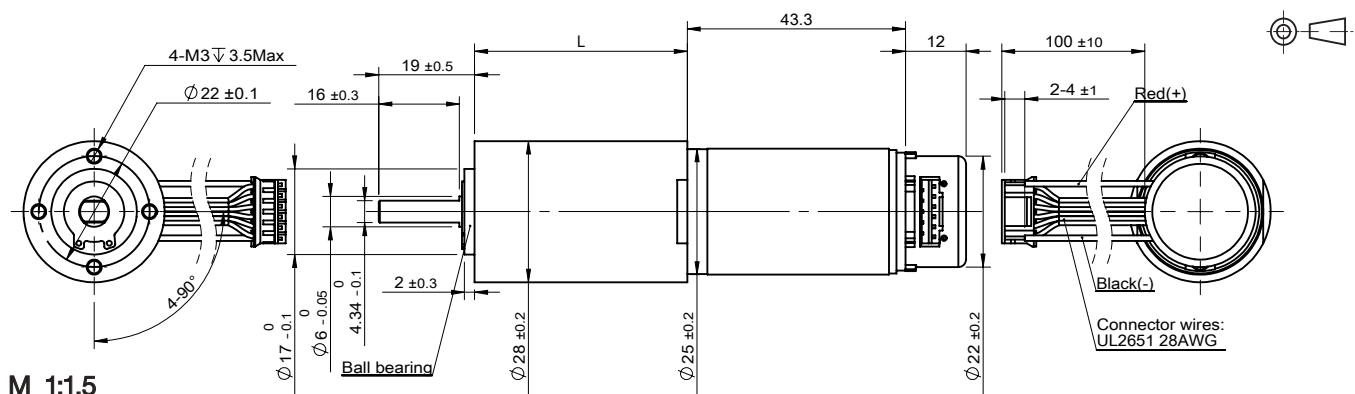
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



30**C9...M... Ø30mm, 直流空心杯有刷系列 DC Coreless Brushed Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。

Applications: medical equipment, robotics, precision instrument, etc.

3068N9C2B06-88-18.0 3068N9C2B09-100-24.0 3068N9C2B10-100-24.0

电机参数 / Motor Data					
1	电压	Voltage	V	18.0	24.0
2	端电阻	Terminal resistance	Ω	0.5	0.8
3	空载转速	No-load speed	rpm	8800	11000
4	空载电流	No-load current	mA	220	105
5	堵转转矩	Stall torque	mNm	343.2	338.9
6	堵转电流	Stall current	mA	18000	15000
7	额定转矩	Nominal torque	mNm	20	61.5
8	额定转速	Nominal speed	rpm	8200	8200
9	额定电流	Nominal current	mA	1300	2800
10	反电势常数	Back-EMF constant	mV/rpm	2.02	2.38
11	转矩常数	Torque constant	mNm/A	19.29	22.78
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85

编码器参数 / Encoder Data					
13	通道数	Number of channels	2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,128,256,512,1024	16,32,64,128,256,512,1024
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)
16	最大转速	Max. speed	rpm	30000	30000
17	相移	Phase shift	°e	90±45	90±45
18	信号输出	Output signal		TTL	TTL
19	直径	Diameter	mm	29	29
20	长度 (L)	Length (L)	mm	11	11

齿轮组参数 / Gearbox Data					
21	级数	Number of stages	1	2	3
22	减速比	Reduction ratio	3.7,4.3,5.2,6.7	13.7,16.19,27.35	45.51,79,100,115,139,169,190
23	最大额定转矩	Max. rated torque	mNm	750	4000
24	瞬间允许转矩	Max. momentary torque	mNm	1100	6000
25	长度 (L)	Length (L)	mm	30	39.5
26	机壳材料	Shell material		金属 /Metal	
27	齿轮工艺	Gear processing technology		金属加工 /Metal CNC	

可选配置 / Options

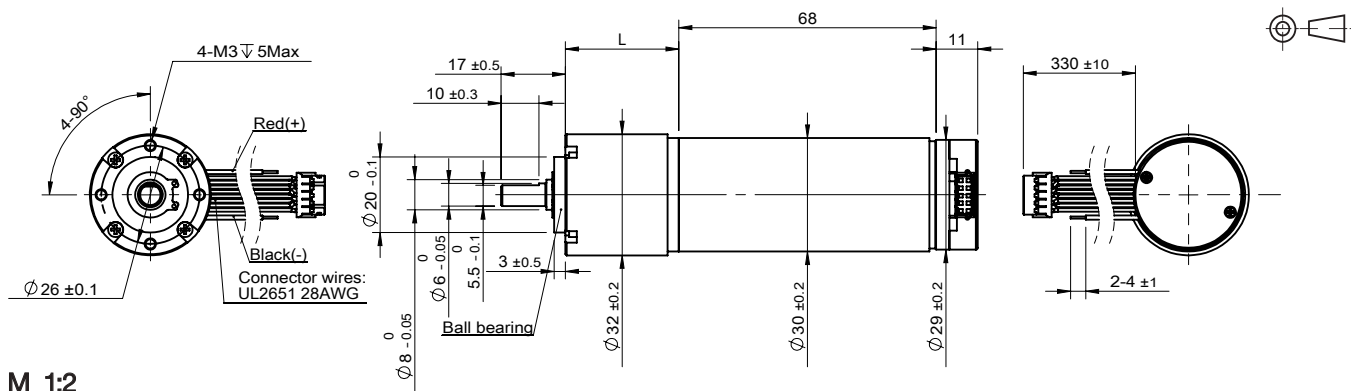
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



10**NH...M...

应用领域：医疗设备、机器人、精密仪器等精密控制领域。

Applications: medical equipment, robotics, precision instrument, etc.

05-382-7.4

电机参数 / Motor Data

1	电压	Voltage	V	7.4		
2	端电阻	Terminal resistance	Ω	1.4		
3	空载转速	No-load speed	rpm	38200		
4	空载电流	No-load current	A	0.3		
5	堵转转矩	Stall torque	mNm	8.7		
6	堵转电流	Stall current	A	5.3		
7	额定转矩	Nominal torque	mNm	1.7		
8	额定转速	Nominal speed	rpm	30750		
9	额定电流	Nominal current	A	1.27		
10	反电势常数	Back-EMF constant	mV/rpm	0.18		
11	转矩常数	Torque constant	mNm/A	1.75		
12	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85		

编码器参数 / Encoder Data

13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	12,16,64,256,512	12,16,64,256,512	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	40000	40000	--
17	相移	Phase shift	$^{\circ}\text{e}$	90 $\pm$ 45	90 $\pm$ 45	--
18	信号输出	Output signal		TTL	TTL	--

齿轮组参数 / Gearbox Data

19	级数	Number of stages		1	2	3	4	5	6
20	减速比	Reduction ratio		4	16	64	256	1024	4096
21	最大额定转矩	Max. rated torque	mNm	5	10	30	40	50	60
22	瞬间允许转矩	Max. momentary torque	mNm	15	30	90	120	150	180
23	长度 (L)	Length (L)	mm	9.7	12.8	15.9	19	22.1	25.2
24	机壳材料	Shell material		金属 /Metal					
25	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options

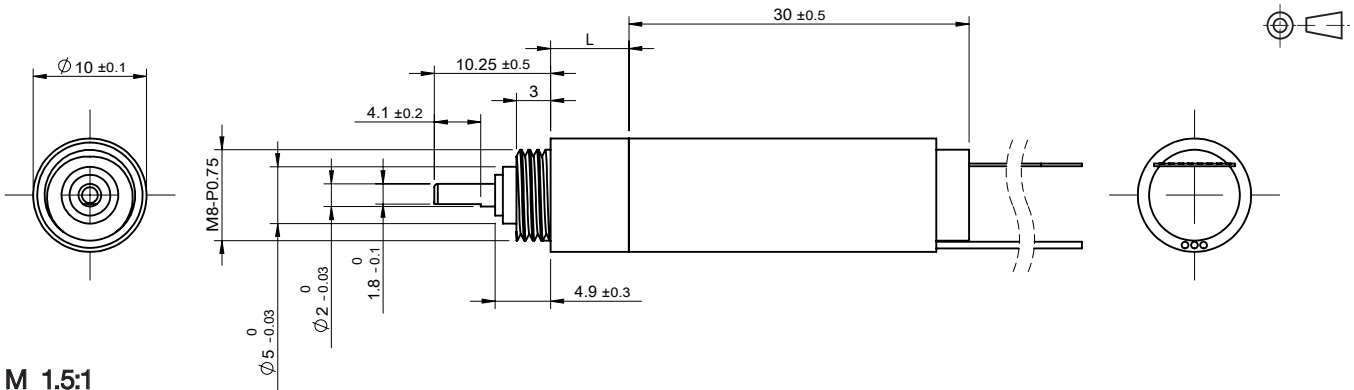
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



13**NH...M... Ø13mm, 直流空心杯无刷系列 DC Coreless Brushless Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。

Applications: medical equipment, robotics, precision instrument, etc.

01-250-12.0

电机参数 / Motor Data

1	电压	Voltage	V	12.0		
2	端电阻	Terminal resistance	Ω	7.5		
3	空载转速	No-load speed	rpm	25000		
4	空载电流	No-load current	A	0.1		
5	堵转转矩	Stall torque	mNm	6.4		
6	堵转电流	Stall current	A	1.6		
7	额定转矩	Nominal torque	mNm	1.7		
8	额定转速	Nominal speed	rpm	15300		
9	额定电流	Nominal current	A	0.51		
10	反电势常数	Back-EMF constant	mV/rpm	0.45		
11	转矩常数	Torque constant	mNm/A	4.3		
12	工作温度范围	Operating temperature range	°C	-20~+85		

编码器参数 / Encoder Data

13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512	16,32,64,256,512	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	40000	40000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--

齿轮组参数 / Gearbox Data

19	级数	Number of stages		1	2	3	4	5	6
20	减速比	Reduction ratio		4	16	64	256	1024	--
21	最大额定转矩	Max. rated torque	mNm	80	120	160	180	200	--
22	瞬间允许转矩	Max. momentary torque	mNm	240	360	480	540	600	--
23	长度 (L)	Length (L)	mm	14.4	18.4	22.4	26.4	30.4	--
24	机壳材料	Shell material		金属 /Metal					
25	齿轮工艺	Gear processing technology		金属加工 /Metal CNC					

可选配置 / Options

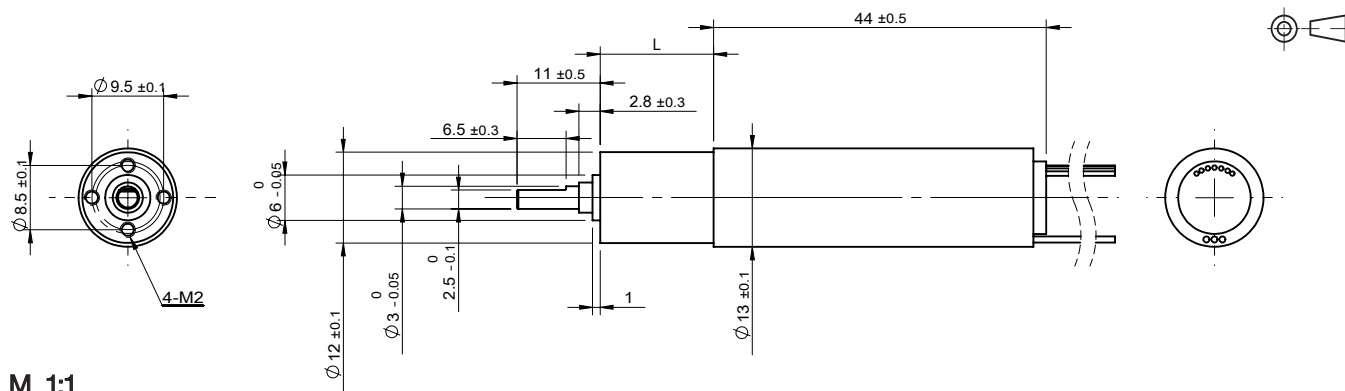
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 /Outline Drawing



M 1:1

16**NH...M... Ø16mm, 直流空心杯无刷系列 DC Coreless Brushless Series

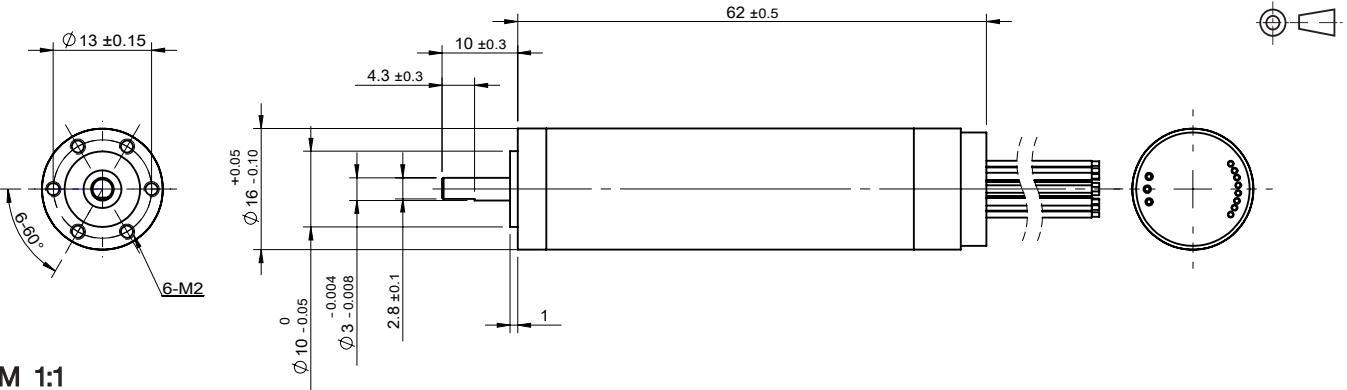
应用领域：医疗设备、机器人、精密仪器等精密控制领域。
Applications: medical equipment, robotics, precision instrument, etc.

				01-510-24.0	02-425-32.0	03-560-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	32.0	48.0
2	端电阻	Terminal resistance	Ω	0.5	1.42	1.52
3	空载转速	No-load speed	rpm	51000	42500	56000
4	空载电流	No-load current	A	0.2	0.12	0.15
5	堵转转矩	Stall torque	mNm	213.9	160	256
6	堵转电流	Stall current	A	48	22.5	31.6
7	额定转矩	Nominal torque	mNm	14	17	13
8	额定转速	Nominal speed	rpm	47700	38000	53200
9	额定电流	Nominal current	A	3.3	2.5	1.7
10	反电势常数	Back-EMF constant	mV/rpm	0.469	0.749	0.853
11	转矩常数	Torque constant	mNm/A	4.5	7.1	8.1
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512,1024	16,32,64,256,512,1024	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	100000	100000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--

可选配置 / Options
 齿轮箱：行星齿轮
 Gearbox: planetary gearbox
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



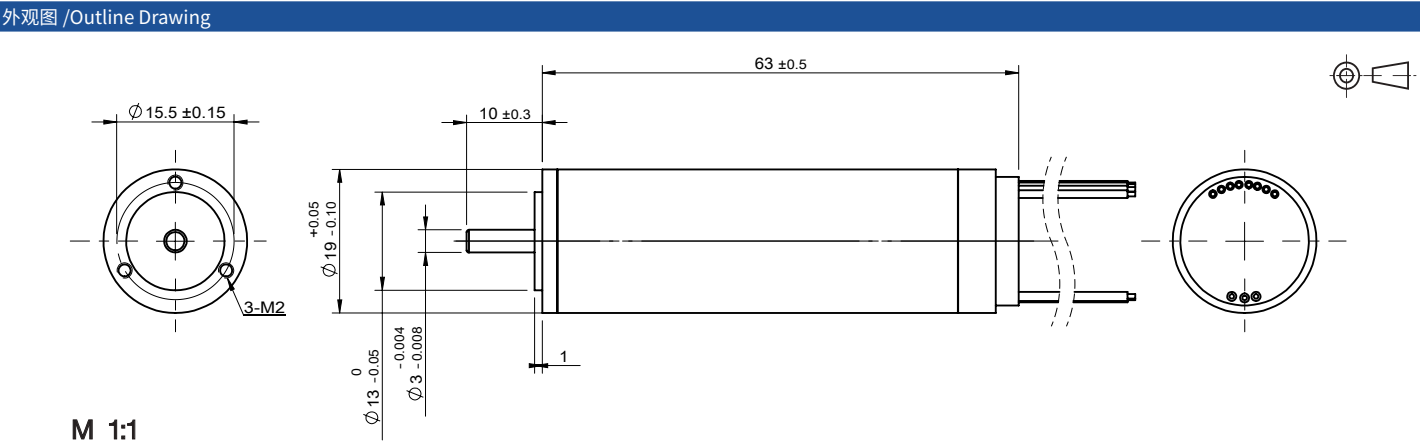
19**NH...M... Ø19mm, 直流空心杯无刷系列 DC Coreless Brushless Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。
Applications: medical equipment, robotics, precision instrument, etc.

				01-482-24.0	02-482-36.0	03-482-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.36	0.71	1.41
3	空载转速	No-load speed	rpm	48200	48200	48200
4	空载电流	No-load current	A	0.24	0.2	0.14
5	堵转转矩	Stall torque	mNm	314.7	358.8	321
6	堵转电流	Stall current	A	66.67	50.7	34.04
7	额定转矩	Nominal torque	mNm	21	18	18
8	额定转速	Nominal speed	rpm	45070	45800	45550
9	额定电流	Nominal current	A	4.56	2.73	2
10	反电势常数	Back-EMF constant	mV/rpm	0.496	0.744	0.992
11	转矩常数	Torque constant	mNm/A	4.738	7.104	9.471
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512,1024	16,32,64,256,512,1024	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	100000	100000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--

可选配置 / Options	
齿轮箱：行星齿轮 Gearbox: planetary gearbox	
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	



22**NH...M...(1) $\varnothing$ 22mm, 直流空心杯无刷系列 DC Coreless Brushless Series

应用领域：医疗设备、机器人、精密仪器等精密控制领域。

Applications: medical equipment, robotics, precision instrument, etc.

				01-492-24.0	02-505-36.0	03-492-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.28	0.55	1.13
3	空载转速	No-load speed	rpm	49200	50500	49200
4	空载电流	No-load current	A	0.33	0.26	0.16
5	堵转转矩	Stall torque	mNm	396	442	392
6	堵转电流	Stall current	A	85.71	65.46	42.48
7	额定转矩	Nominal torque	mNm	16	16	16
8	额定转速	Nominal speed	rpm	47232	48732	47232
9	额定电流	Nominal current	A	3.75	2.54	1.85
10	反电势常数	Back-EMF constant	mV/rpm	0.486	0.71	0.972
11	转矩常数	Torque constant	mNm/A	4.64	6.78	9.281
12	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data						
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512,1024	16,32,64,256,512,1024	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	100000	100000	--
17	相移	Phase shift	$^{\circ}\text{e}$	90 $\pm$ 45	90 $\pm$ 45	--
18	信号输出	Output signal		TTL	TTL	--

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

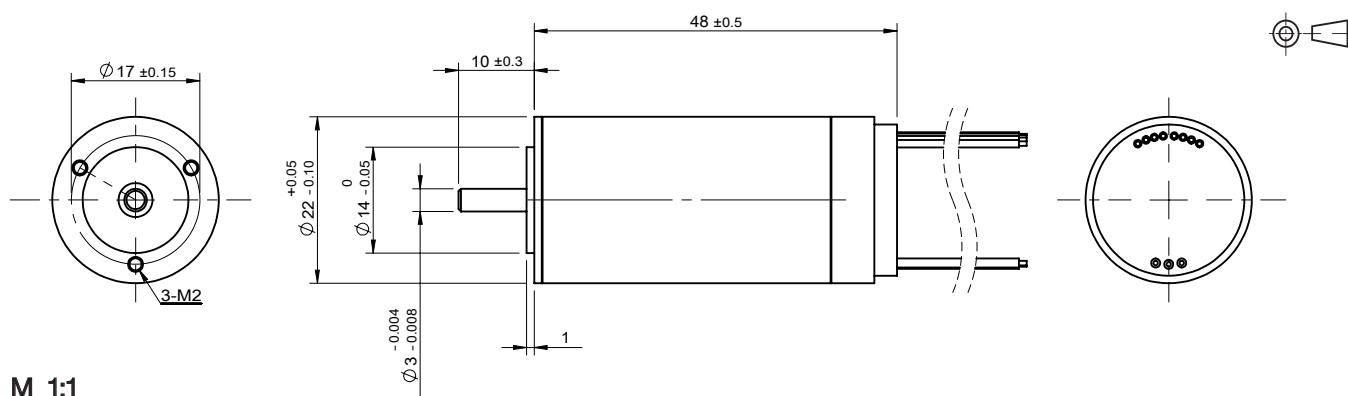
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



22**NH...M...(2) Ø22mm, 直流空心杯无刷系列 DC Coreless Brushless Series

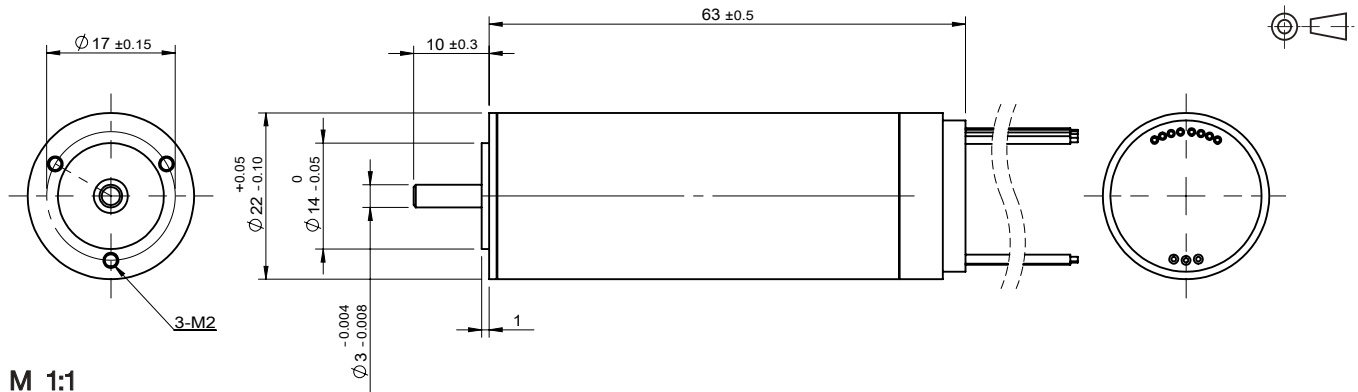
应用领域：医疗设备、机器人、精密仪器等精密控制领域。
Applications: medical equipment, robotics, precision instrument, etc.

				01-500-24.0	02-500-36.0	03-500-48.0
电机参数 / Motor Data						
1	电压	Voltage	V	24.0	36.0	48.0
2	端电阻	Terminal resistance	Ω	0.19	0.43	0.76
3	空载转速	No-load speed	rpm	50000	50000	50000
4	空载电流	No-load current	A	0.4	0.26	0.21
5	堵转转矩	Stall torque	mNm	575	572	575
6	堵转电流	Stall current	A	126.32	83.72	42.48
7	额定转矩	Nominal torque	mNm	14	14	14
8	额定转速	Nominal speed	rpm	48750	48750	48750
9	额定电流	Nominal current	A	3.55	2.35	1.78
10	反电势常数	Back-EMF constant	mV/rpm	0.478	0.718	0.957
11	转矩常数	Torque constant	mNm/A	4.569	6.854	9.137
12	工作温度范围	Operating temperature range	°C	-20~+85	-20~+85	-20~+85

编码器参数 / Encoder Data				2	3	--
13	通道数	Number of channels		2	3	--
14	分辨率	Counts per turn	cpt	16,32,64,256,512,1024	16,32,64,256,512,1024	--
15	工作电压	Supply voltage	V	5.0 (5.0)	5.0 (5.0)	--
16	最大转速	Max. speed	rpm	100000	100000	--
17	相移	Phase shift	°e	90±45	90±45	--
18	信号输出	Output signal		TTL	TTL	--

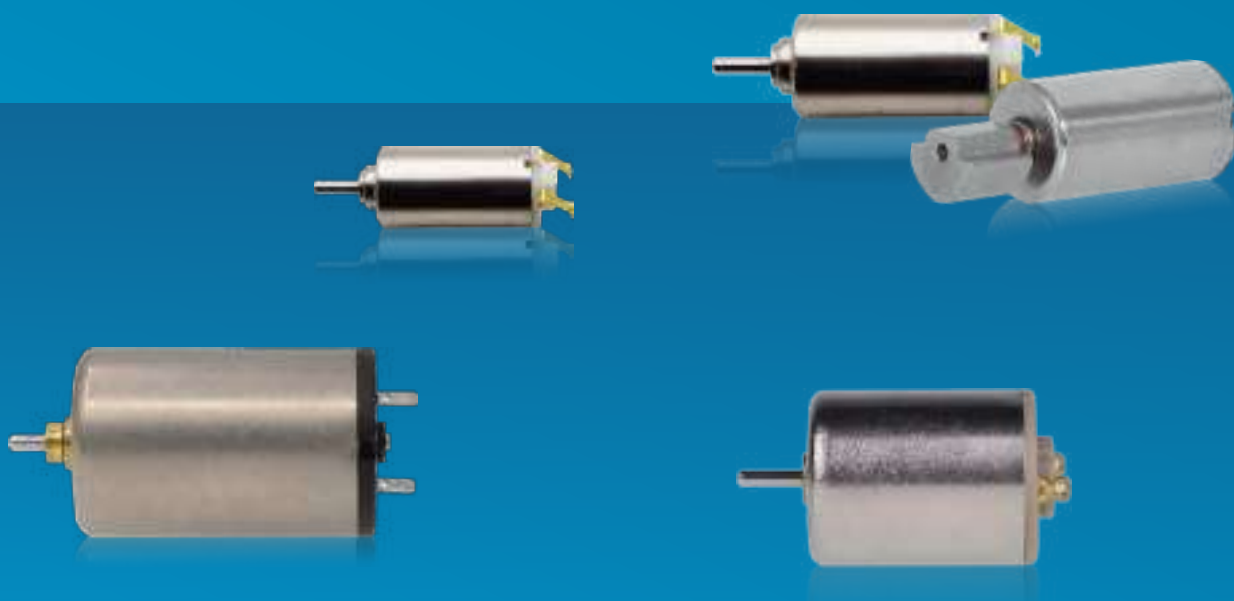
可选配置 / Options	
齿轮箱：行星齿轮 0	Gearbox: planetary gearbox
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	

外观图 /Outline Drawing



直流空心杯电机

DC CORELESS MOTOR



CONTENT 目录

直流空心杯电机 DC CORELESS MOTOR

驱动系列 DRIVING SERIES

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	L0408N3M	φ4.08*8.2 mm	贵金属电刷/Precious Metal Brushes	190
2	L0412N3M	φ4.08*12.1 mm	贵金属电刷/Precious Metal Brushes	191
3	L0510N3M	φ5*9.8 mm	贵金属电刷/Precious Metal Brushes	192
4	L0609N3M	φ6*9 mm	贵金属电刷/Precious Metal Brushes	193
5	L0610N5M	φ6*10.4 mm	贵金属电刷/Precious Metal Brushes	194
6	L0612N3M	φ6*12.2 mm	贵金属电刷/Precious Metal Brushes	195
7	L0612N5M	φ6*12.2 mm	贵金属电刷/Precious Metal Brushes	196
8	L0614N5M	φ6*13.9 mm	贵金属电刷/Precious Metal Brushes	197
9	L0615N5M	φ6*15 mm	贵金属电刷/Precious Metal Brushes	198
10	L0710N5M	φ7*10.2 mm	贵金属电刷/Precious Metal Brushes	199
11	L0716N5M	φ7*16.7 mm	贵金属电刷/Precious Metal Brushes	200
12	L0720N5M	φ7*20 mm	贵金属电刷/Precious Metal Brushes	201
13	L0816N5M	φ8*16 mm	贵金属电刷/Precious Metal Brushes	202
14	L0816N7M	φ8.1*16.8 mm	贵金属电刷/Precious Metal Brushes	203
15	L0820N5M	φ8*20 mm	贵金属电刷/Precious Metal Brushes	204
16	L8.520N5M	φ8.5*20 mm	贵金属电刷/Precious Metal Brushes	205
17	L8.520N7M	φ8.5*21 mm	贵金属电刷/Precious Metal Brushes	206
18	L8.523N5M	φ8.5*23.2 mm	贵金属电刷/Precious Metal Brushes	207
19	L1013N5M	φ10*13 mm	贵金属电刷/Precious Metal Brushes	208
20	L1015N5M	φ10*15 mm	贵金属电刷/Precious Metal Brushes	209
21	L1020N5M	φ10*20.7 mm	贵金属电刷/Precious Metal Brushes	210
22	L1212N5M	φ12*12.3 mm	贵金属电刷/Precious Metal Brushes	211
23	L1213N5M	φ12*13 mm	贵金属电刷/Precious Metal Brushes	212
24	L1215N5M	φ12*14.6 mm	贵金属电刷/Precious Metal Brushes	213
25	L1515N5M	φ15*15.2 mm	贵金属电刷/Precious Metal Brushes	214
26	L1620N5M	φ16*19.6 mm	贵金属电刷/Precious Metal Brushes	215
27	L1625N5M	φ16*25.5mm	贵金属电刷/Precious Metal Brushes	216
28	L1630N5M	φ16*30 mm	贵金属电刷/Precious Metal Brushes	217
29	L1718N5M	φ17.4*18.2 mm	贵金属电刷/Precious Metal Brushes	218

振动系列
VIBRATING SERIES

30	L1722N5M	φ17.4×22.1 mm	贵金属电刷/Precious Metal Brushes	219
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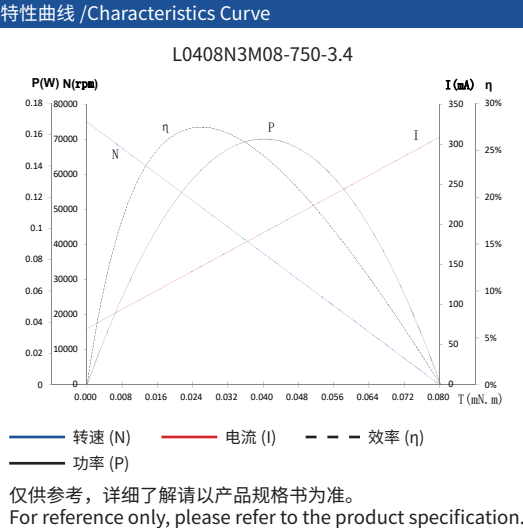
	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	VL0408N3M	φ4.08×8 mm	贵金属电刷/Precious Metal Brushes	220
2	VL0510N3M	φ5×9.8 mm	贵金属电刷/Precious Metal Brushes	221
3	VL0610N5M	φ6×10.4 mm	贵金属电刷/Precious Metal Brushes	222
4	VL0612N3M	φ6×12.2 mm	贵金属电刷/Precious Metal Brushes	223
5	VL0614N5M	φ6×13.9 mm	贵金属电刷/Precious Metal Brushes	224
6	VL0615N5M	φ6×15.2 mm	贵金属电刷/Precious Metal Brushes	225
7	VL0716N5M	φ7×16.7 mm	贵金属电刷/Precious Metal Brushes	226
8	VL8.520N5M	φ8.5×20 mm	贵金属电刷/Precious Metal Brushes	227
9	VL1013N5M	φ10×13 mm	贵金属电刷/Precious Metal Brushes	228
10	VL1015N5M	φ10×15 mm	贵金属电刷/Precious Metal Brushes	229

L0408N3M $\varnothing 4.08\text{mm} \times 8.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

08-750-3.4 32-580-3.4 12-785-5.0

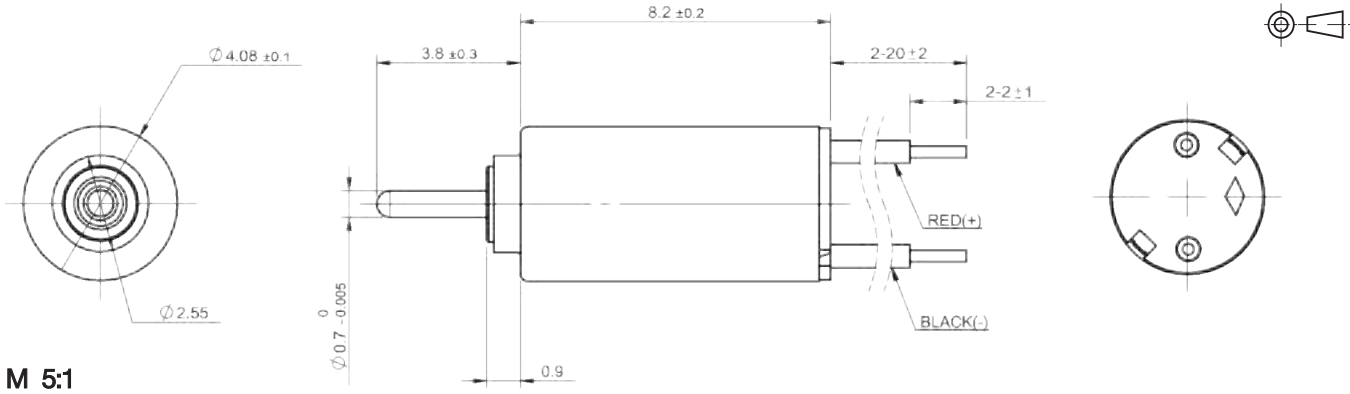
电机参数 / Motor Data						
1	电压	Voltage	V	3.4	3.4	5.0
2	端电阻	Terminal resistance	Ω	11	22	25
3	空载转速	No-load speed	rpm	75000	58000	78500
4	空载电流	No-load current	mA	70	40	50
5	堵转转矩	Stall torque	mNm	0.08	0.05	0.07
6	堵转电流	Stall current	mA	309	155	200
7	负载转矩	Load torque	mNm	0.03	0.03	0.03
8	负载转速	Load speed	rpm	46880	21750	43870
9	负载电流	Load current	mA	160	110	120
10	最大输出功率	Max. output power	W	0.16	0.07	0.14
11	最大效率	Max. efficiency	%	27.5	24.4	24.9
12	反电势常数	Back-EMF constant	mV/rpm	0.04	0.04	0.05
13	转矩常数	Torque constant	mNm/A	0.33	0.41	0.46
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	937500	1208333	1154412
15	转子惯量	Rotor inertia	gcm^2	0.003	0.003	0.003
16	重量	Weight	g	0.5	0.5	0.5
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+65		



可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



L0510N3M $\varnothing 5\text{mm} \times 9.8\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域: 微型无人机、智能电玩、小家电产品等领域。

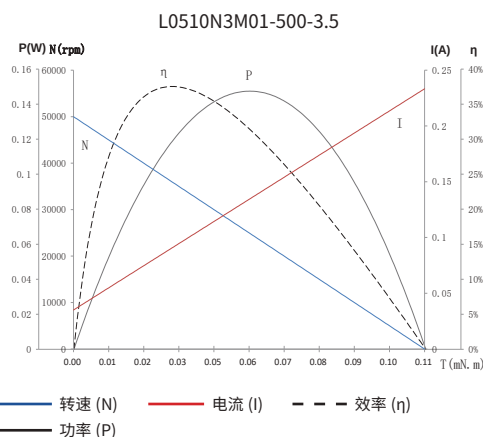
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

01-500-3.5 01-550-4.2 10-900-5.0

电机参数 / Motor Data

1	电压	Voltage	V	3.5	4.2	5.0			
2	端电阻	Terminal resistance	Ω	15	15	7.6			
3	空载转速	No-load speed	rpm	50000	55000	87000			
4	空载电流	No-load current	mA	35	40	70			
5	堵转转矩	Stall torque	mNm	0.11	0.15	0.28			
6	堵转电流	Stall current	mA	233	280	660			
7	负载转矩	Load torque	mNm	0.03	0.03	0.03			
8	负载转速	Load speed	rpm	36730	44000	77680			
9	负载电流	Load current	mA	90	90	130			
10	最大输出功率	Max. output power	W	0.15	0.22	0.64			
11	最大效率	Max. efficiency	%	37.7	38.7	44			
12	反电势常数	Back-EMF constant	mV/rpm	0.06	0.07	0.05			
13	转矩常数	Torque constant	mNm/A	0.57	0.63	0.49			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	442478	366667	310714			
15	转子惯量	Rotor inertia	gcm^2	0.006	0.006	0.006			
16	重量	Weight	g	0.8	0.8	0.8			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+65					

特性曲线 / Characteristics Curve



仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

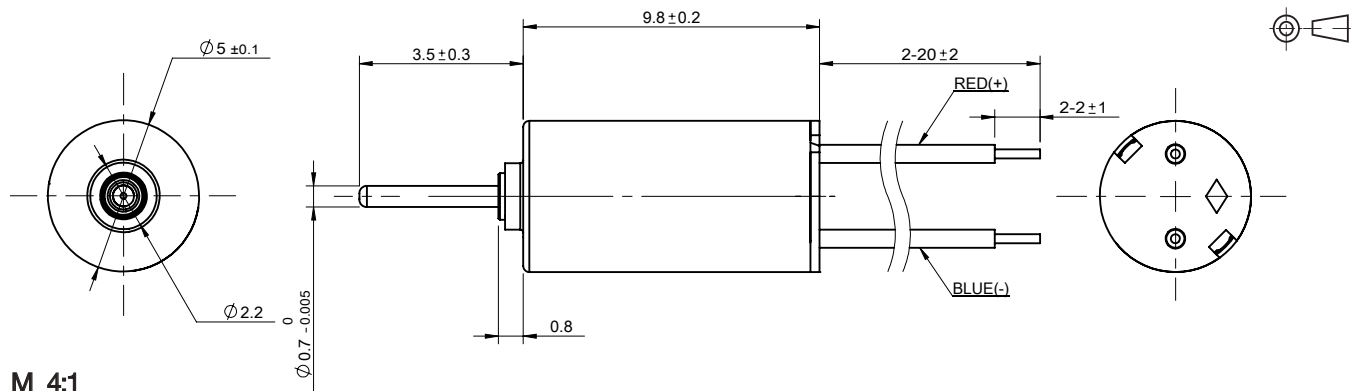
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



L0609N3M $\varnothing$ 6mm*9mm, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

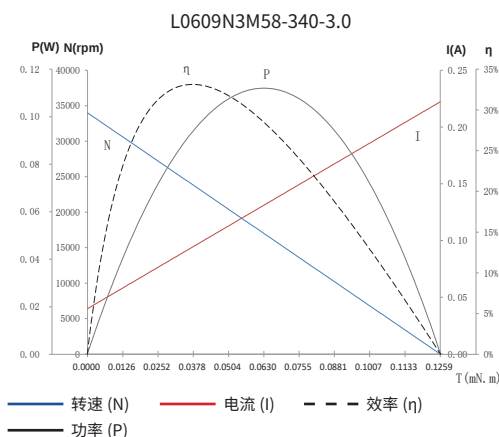
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

58-340-3.0 09-490-3.0 10-435-3.0

电机参数 / Motor Data

1	电压	Voltage	V	3.0	3.0	3.0			
2	端电阻	Terminal resistance	Ω	13.5	7.8	7.7			
3	空载转速	No-load speed	rpm	34000	49000	43500			
4	空载电流	No-load current	mA	40	50	65			
5	堵转转矩	Stall torque	mNm	0.126	0.17	0.18			
6	堵转电流	Stall current	mA	222	385	390			
7	负载转矩	Load torque	mNm	0.05	0.05	0.05			
8	负载转速	Load speed	rpm	20510	34590	31280			
9	负载电流	Load current	mA	110	150	160			
10	最大输出功率	Max. output power	W	0.11	0.22	0.2			
11	最大效率	Max. efficiency	%	33.2	40.9	35			
12	反电势常数	Back-EMF constant	mV/rpm	0.07	0.05	0.06			
13	转矩常数	Torque constant	mNm/A	0.69	0.51	0.55			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	269841	288235	244382			
15	转子惯量	Rotor inertia	gcm ²	0.008	0.008	0.008			
16	重量	Weight	g	1	1	1			
17	工作温度范围	Operating temperature range	°C	-20~+65	特性曲线 /Characteristics Curve				

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

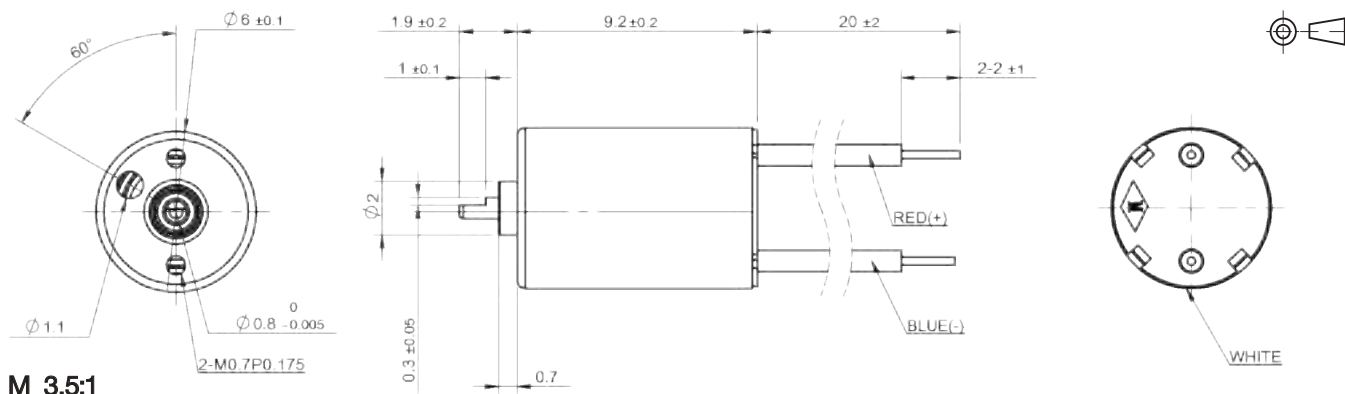
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 /Outline Drawing



L0610N5M $\varnothing 6\text{mm} \times 10.4\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

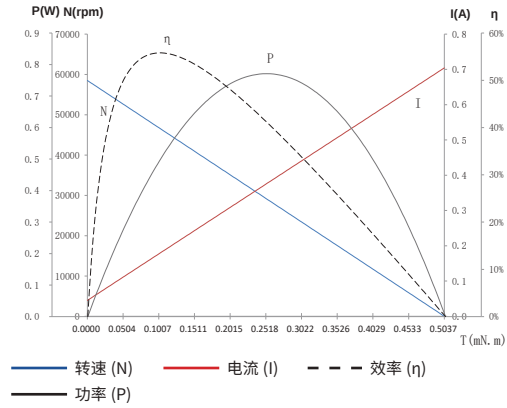
11-585-5.0 22-665-3.4 05-550-3.2

电机参数 / Motor Data

1	电压	Voltage	V	5.0	3.4	3.2			
2	端电阻	Terminal resistance	Ω	7.1	2.7	3.8			
3	空载转速	No-load speed	rpm	58500	66500	55000			
4	空载电流	No-load current	mA	45	100	85			
5	堵转转矩	Stall torque	mNm	0.5	0.52	0.38			
6	堵转电流	Stall current	mA	704	1259	842			
7	负载转矩	Load torque	mNm	0.05	0.05	0.05			
8	负载转速	Load speed	rpm	52700	60120	47720			
9	负载电流	Load current	mA	110	210	190			
10	最大输出功率	Max. output power	W	0.77	0.9	0.55			
11	最大效率	Max. efficiency	%	55.9	51.6	46.6			
12	反电势常数	Back-EMF constant	mV/rpm	0.08	0.05	0.05			
13	转矩常数	Torque constant	mNm/A	0.76	0.45	0.5			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	116071	127639	145503			
15	转子惯量	Rotor inertia	gcm^2	0.01	0.01	0.01			
16	重量	Weight	g	1.2	1.2	1.3			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+80					

特性曲线 / Characteristics Curve

L0610N5M11-585-5.0



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

齿轮组主要技术指标详见第 158 页

Gearbox: planetary gearbox

the main technical indicators of the gear group are detailed on page 158

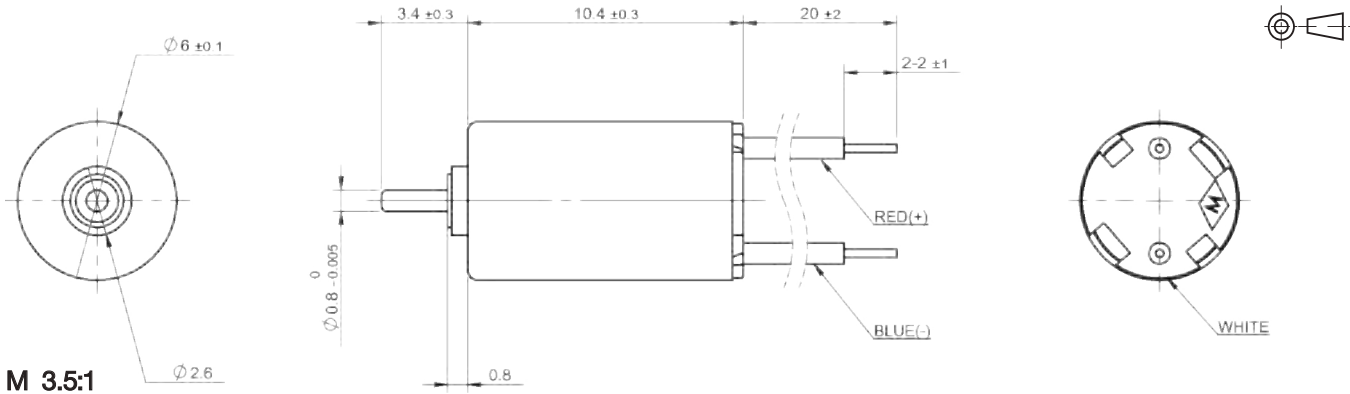
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



L0612N3M $\varnothing 6\text{mm} \times 12.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

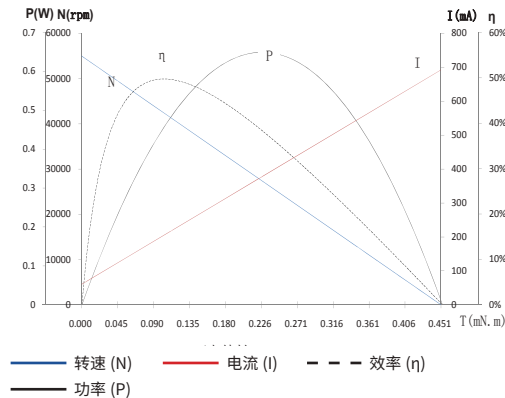
应用领域：微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

08-550-4.5 90-160-3.0 63-250-4.5

电机参数 / Motor Data									
1	电压	Voltage	V	4.5	3.0	4.5			
2	端电阻	Terminal resistance	Ω	6.5	39	23.3			
3	空载转速	No-load speed	rpm	55000	16030	25000			
4	空载电流	No-load current	mA	60	8	20			
5	堵转转矩	Stall torque	mNm	0.45	0.11	0.27			
6	堵转电流	Stall current	mA	692	77	193			
7	负载转矩	Load torque	mNm	0.05	0.05	0.05			
8	负载转速	Load speed	rpm	48900	8740	20320			
9	负载电流	Load current	mA	130	40	50			
10	最大输出功率	Max. output power	W	0.7	0.05	0.17			
11	最大效率	Max. efficiency	%	49.8	45.8	46.1			
12	反电势常数	Back-EMF constant	mV/rpm	0.07	0.17	0.16			
13	转矩常数	Torque constant	mNm/A	0.71	1.60	1.54			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	121951	145727	93633			
15	转子惯量	Rotor inertia	gcm ²	0.014	0.014	0.014			
16	重量	Weight	g	1.3	1.3	1.3			
17	工作温度范围	Operating temperature range	°C	-20~+80					

特性曲线 / Characteristics Curve

L0612N3M08-550-4.5



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

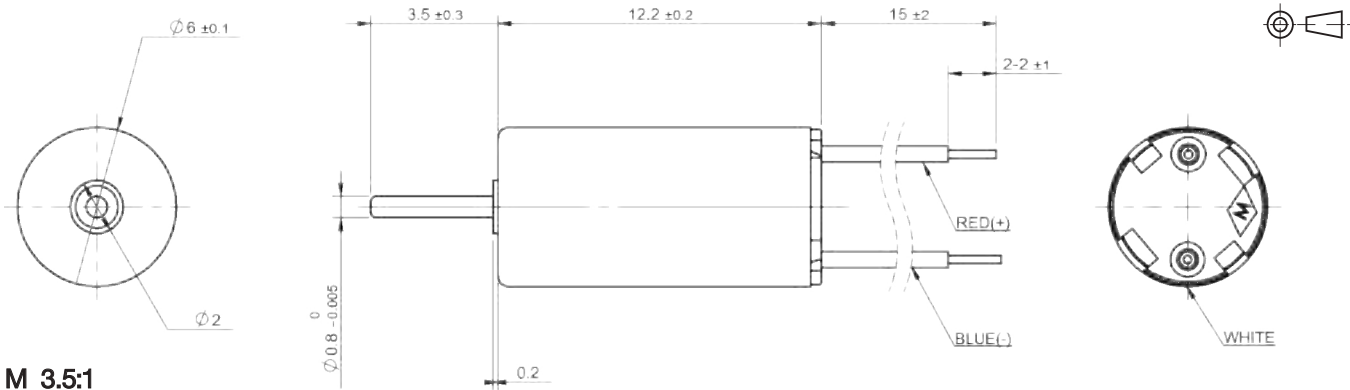
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 / Outline Drawing



L0612N5M $\varnothing 6\text{mm} \times 12.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

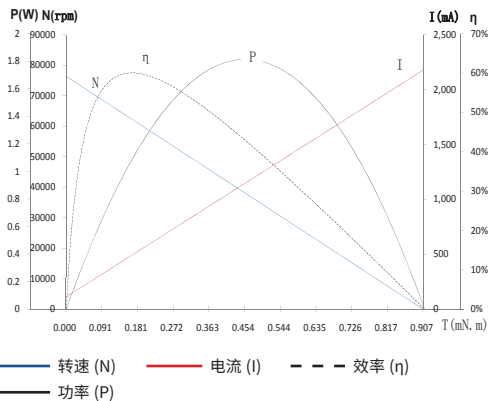
55-764-3.7 20-500-3.2 78-730-3.7

电机参数 / Motor Data

1	电压	Voltage	V	3.7	3.2	3.7			
2	端电阻	Terminal resistance	Ω	1.7	2.2	2			
3	空载转速	No-load speed	rpm	76400	50000	73000			
4	空载电流	No-load current	mA	110	80	90			
5	堵转转矩	Stall torque	mNm	0.91	0.79	0.81			
6	堵转电流	Stall current	mA	2176	1455	1850			
7	负载转矩	Load torque	mNm	0.05	0.05	0.05			
8	负载转速	Load speed	rpm	72190	46850	68490			
9	负载电流	Load current	mA	220	170	200			
10	最大输出功率	Max. output power	W	1.8	1	1.5			
11	最大效率	Max. efficiency	%	60.1	58.7	60.8			
12	反电势常数	Back-EMF constant	mV/rpm	0.05	0.06	0.05			
13	转矩常数	Torque constant	mNm/A	0.44	0.58	0.46			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	84234	62972	90123			
15	转子惯量	Rotor inertia	gcm^2	0.014	0.014	0.014			
16	重量	Weight	g	1.3	1.3	1.3			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+100					

特性曲线 / Characteristics Curve

L0612N5M55-764-3.7



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

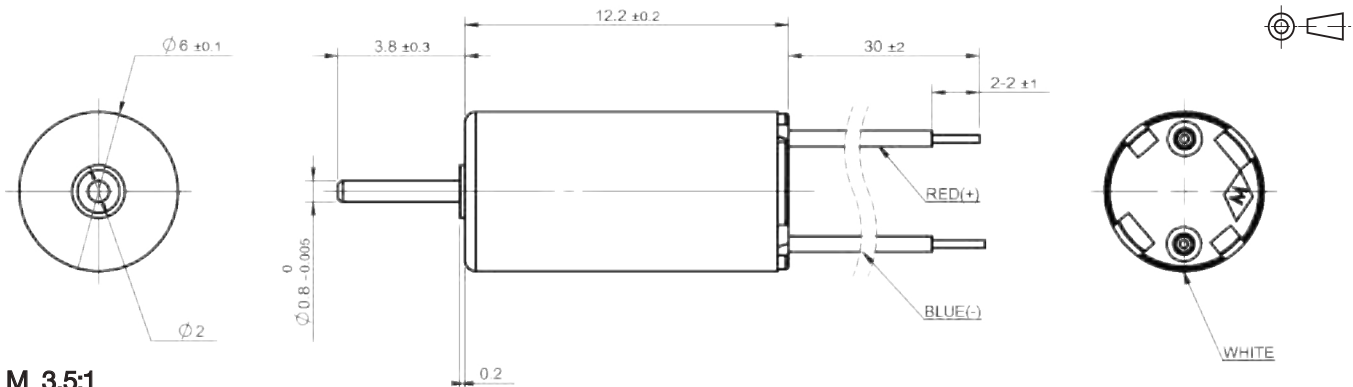
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 / Outline Drawing



L0614N5M $\varnothing 6\text{mm} \times 13.9\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

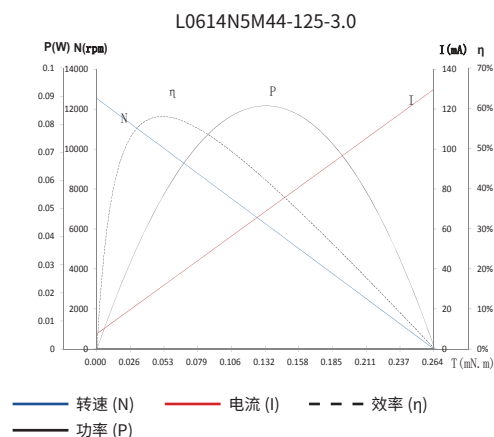
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

44-125-3.0 28-420-3.4 67-500-3.2

电机参数 / Motor Data

1	电压	Voltage	V	3.0	3.4	3.2			
2	端电阻	Terminal resistance	Ω	23.1	2.6	1.7			
3	空载转速	No-load speed	rpm	12540	42000	50000			
4	空载电流	No-load current	mA	7.4	60	80			
5	堵转转矩	Stall torque	mNm	0.26	0.9	1.1			
6	堵转电流	Stall current	mA	130	1308	1882			
7	负载转矩	Load torque	mNm	0.05	0.1	0.1			
8	负载转速	Load speed	rpm	10170	37430	45260			
9	负载电流	Load current	mA	30	200	250			
10	最大输出功率	Max. output power	W	0.09	1	1.4			
11	最大效率	Max. efficiency	%	58.1	61.8	63.1			
12	反电势常数	Back-EMF constant	mV/rpm	0.23	0.08	0.06			
13	转矩常数	Torque constant	mNm/A	2.15	0.74	0.59			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	47500	45652	47393			
15	转子惯量	Rotor inertia	gcm ²	0.016	0.016	0.016			
16	重量	Weight	g	1.7	1.7	1.7			
17	工作温度范围	Operating temperature range	°C	-20~+65	特性曲线 /Characteristics Curve				

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

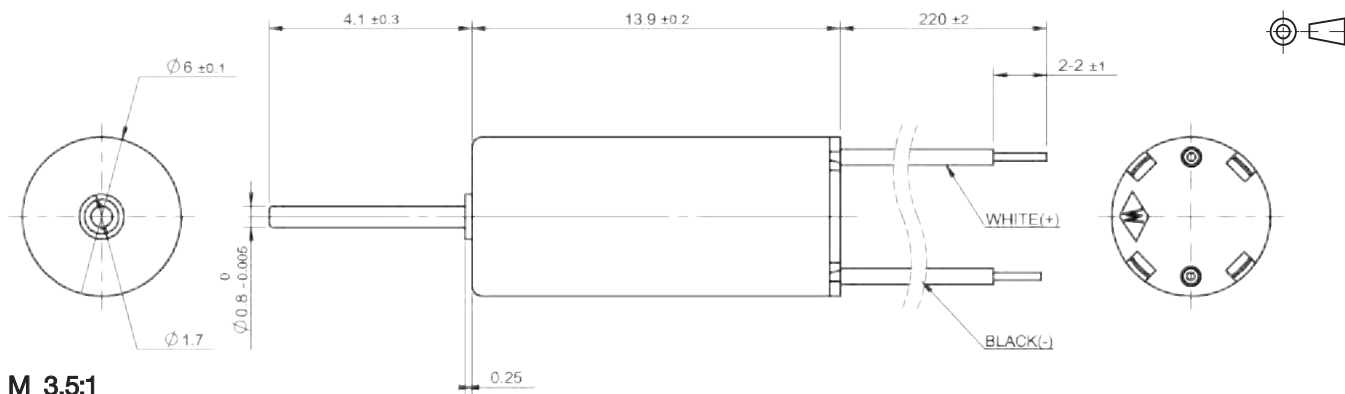
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 /Outline Drawing



规格如有变更，恕不另行通知。Specification subject to change without notice.

L0615N5M $\varnothing 6\text{mm} \times 15\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

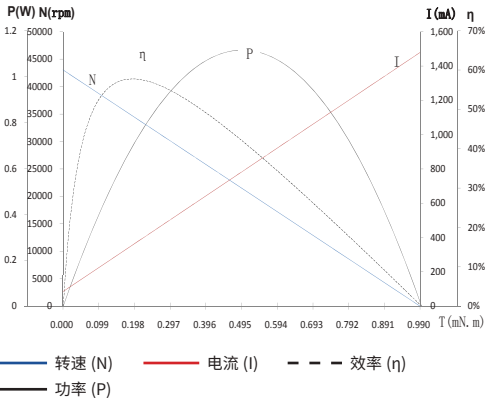
29-430-3.4 35-387-2.5 49-360-2.5

电机参数 / Motor Data

1	电压	Voltage	V	3.4	2.5	2.5			
2	端电阻	Terminal resistance	Ω	2.3	1.45	1.4			
3	空载转速	No-load speed	rpm	43050	38700	36000			
4	空载电流	No-load current	mA	85	80	75			
5	堵转转矩	Stall torque	mNm	1	1	1.1			
6	堵转电流	Stall current	mA	1478	1724	1786			
7	负载转矩	Load torque	mNm	0.15	0.15	0.15			
8	负载转速	Load speed	rpm	36530	32700	31030			
9	负载电流	Load current	mA	300	340	310			
10	最大输出功率	Max. output power	W	1.1	1	1			
11	最大效率	Max. efficiency	%	57.8	61.6	63.3			
12	反电势常数	Back-EMF constant	mV/rpm	0.07	0.06	0.07			
13	转矩常数	Torque constant	mNm/A	0.71	0.59	0.64			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	43485	40021	33119			
15	转子惯量	Rotor inertia	gcm^2	0.016	0.016	0.016			
16	重量	Weight	g	1.8	1.8	1.8			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+120					

特性曲线 / Characteristics Curve

L0615N5M29-430-3.4



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

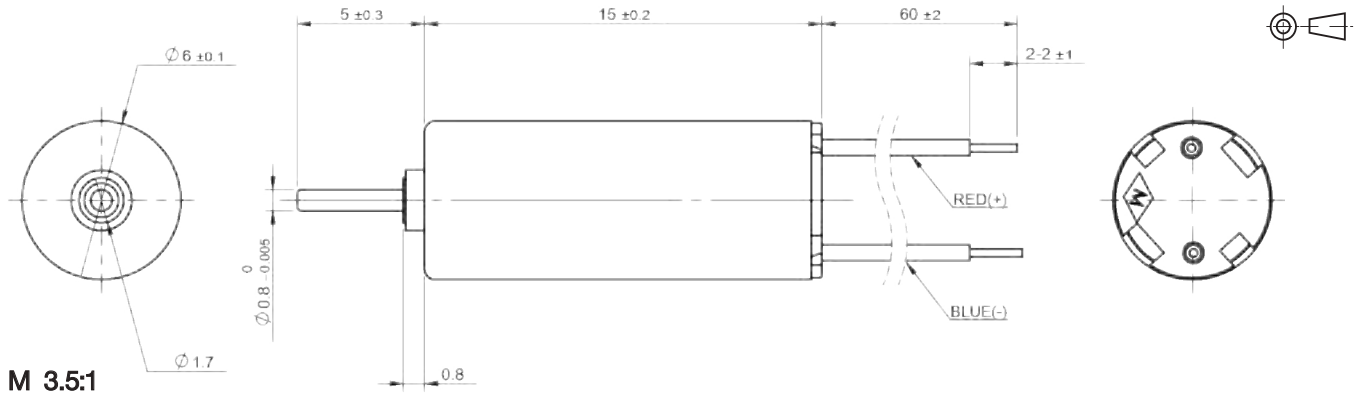
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 / Outline Drawing

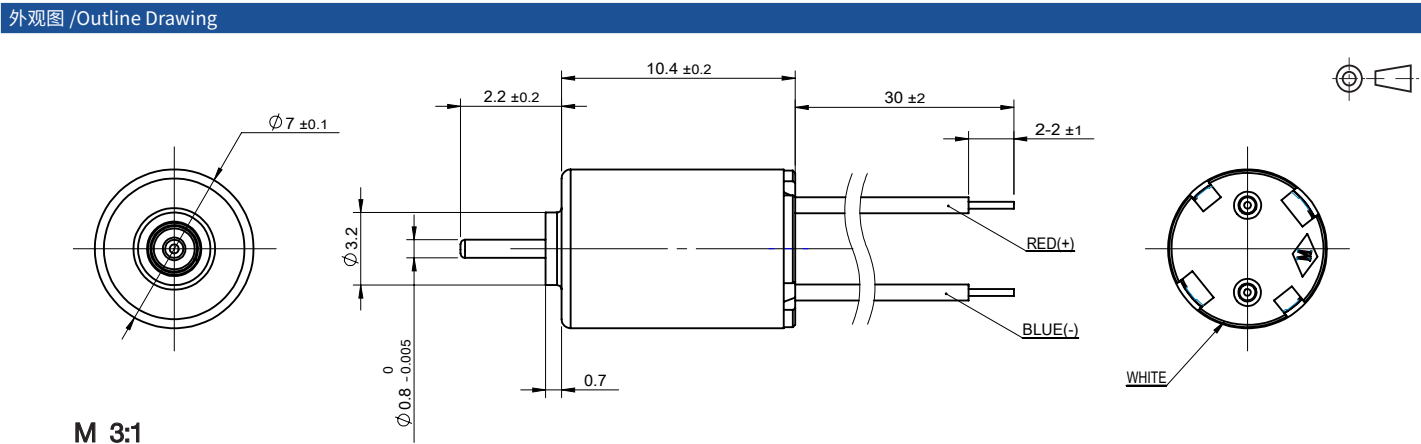


L0710N5M $\varnothing 7\text{mm} \times 10.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				61-780-8.0	51-325-3.0	08-618-5.0			
电机参数 / Motor Data									
1	电压	Voltage	V	8.0	3.0	5.0			
2	端电阻	Terminal resistance	Ω	7.2	6.3	3.4			
3	空载转速	No-load speed	rpm	78050	32500	61800			
4	空载电流	No-load current	mA	95	50	80			
5	堵转转矩	Stall torque	mNm	0.9	0.3	1			
6	堵转电流	Stall current	mA	1110	480	1470			
7	负载转矩	Load torque	mNm	0.55	0.12	0.12			
8	负载转速	Load speed	rpm	30880	20890	54500			
9	负载电流	Load current	mA	710	200	240			
10	最大输出功率	Max. output power	W	1.9	0.29	1.65			
11	最大效率	Max. efficiency	%	50.2	45.4	58.9			
12	反电势常数	Back-EMF constant	mV/rpm	0.09	0.08	0.08			
13	转矩常数	Torque constant	mNm/A	0.9	0.79	0.73			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	85769	96726	60827			
15	转子惯量	Rotor inertia	gcm²	0.02	0.02	0.02			
16	重量	Weight	g	1.6	1.6	1.6			
17	工作温度范围	Operating temperature range	°C	-20~+100	特性曲线 / Characteristics Curve				
				L0710N5M61-780-8.0 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.					

可选配置 / Options
 性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

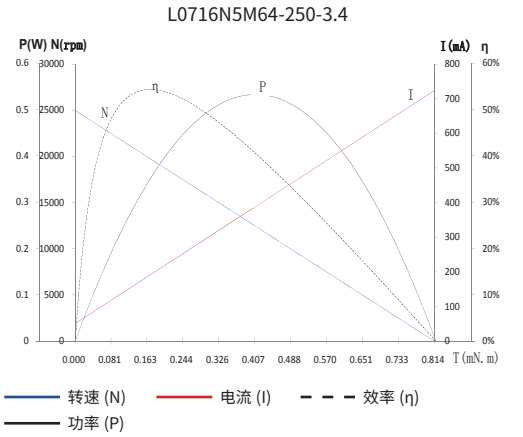


L0716N5M $\varnothing$ 7mm*16.7mm, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

64-250-3.4 31-430-2.5 94-430-3.2

电机参数 / Motor Data						
1	电压	Voltage	V	3.4	2.5	3.2
2	端电阻	Terminal resistance	Ω	4.7	0.66	1.1
3	空载转速	No-load speed	rpm	25000	43000	43000
4	空载电流	No-load current	mA	50	90	90
5	堵转转矩	Stall torque	mNm	0.81	2.0	1.9
6	堵转电流	Stall current	mA	720	3790	2910
7	负载转矩	Load torque	mNm	0.5	0.50	0.5
8	负载转速	Load speed	rpm	9640	32270	31920
9	负载电流	Load current	mA	460	1010	820
10	最大输出功率	Max. output power	W	0.53	2.3	2.2
11	最大效率	Max. efficiency	%	54.6	71.6	68
12	反电势常数	Back-EMF constant	mV/rpm	0.13	0.06	0.07
13	转矩常数	Torque constant	mNm/A	1.21	0.54	0.69
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	30713	21457	22154
15	转子惯量	Rotor inertia	gcm ²	0.05	0.05	0.05
16	重量	Weight	g	2.5	2.5	2.5
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+100	特性曲线 / Characteristics Curve	

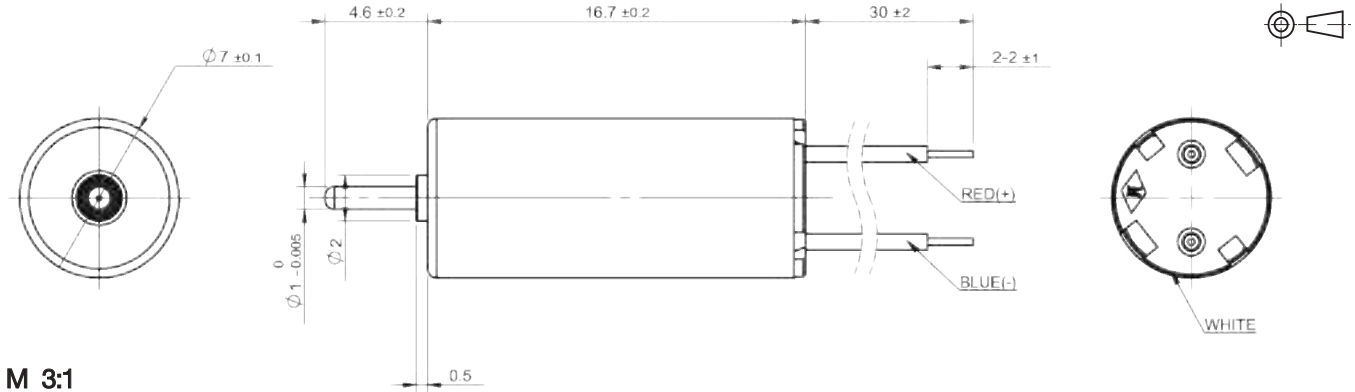


仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



L0720N5M $\varnothing 7\text{mm} \times 20\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				55-448-3.2	33-423-3.0	42-448-3.0				
电机参数 / Motor Data										
1	电压	Voltage	V	3.2	3.0	3.0				
2	端电阻	Terminal resistance	Ω	0.7	0.67	0.51				
3	空载转速	No-load speed	rpm	44800	42370	44860				
4	空载电流	No-load current	mA	140	100	190				
5	堵转转矩	Stall torque	mNm	2.9	2.9	3.5				
6	堵转电流	Stall current	mA	4570	4480	5880				
7	负载转矩	Load torque	mNm	0.5	0.5	0.5				
8	负载转速	Load speed	rpm	37150	35050	38480				
9	负载电流	Load current	mA	900	860	1000				
10	最大输出功率	Max. output power	W	3.4	3.2	4.1				
11	最大效率	Max. efficiency	%	68.1	72.4	67.4				
12	反电势常数	Back-EMF constant	mV/rpm	0.07	0.07	0.06				
13	转矩常数	Torque constant	mNm/A	0.66	0.66	0.62				
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	15290	14641	12752				
15	转子惯量	Rotor inertia	gcm²	0.06	0.06	0.06				
16	重量	Weight	g	3.3	3.9	3.9				
17	工作温度范围	Operating temperature range	°C	-20~+120	特性曲线 / Characteristics Curve					
					L0720N5M55-448-3.2					
					仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.					

可选配置 / Options

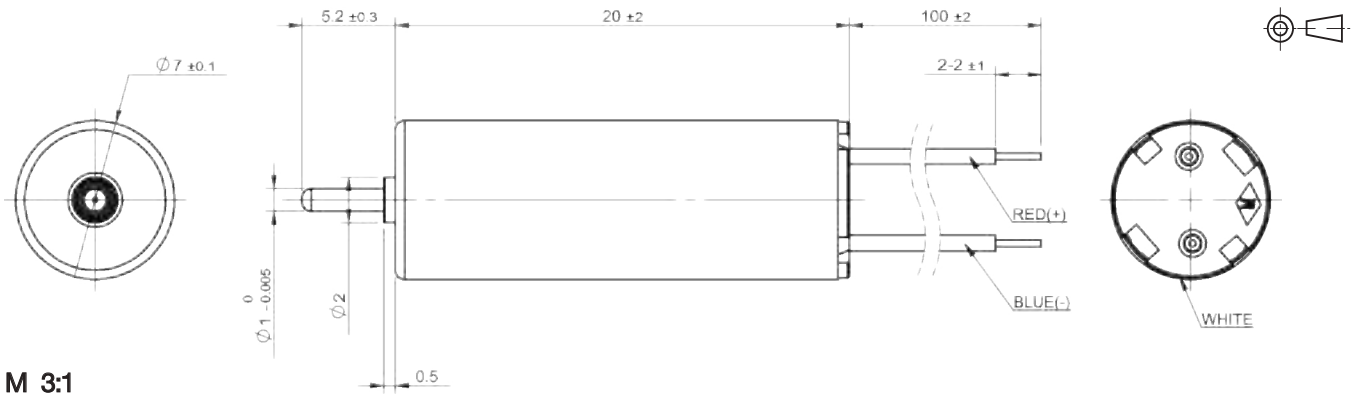
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing

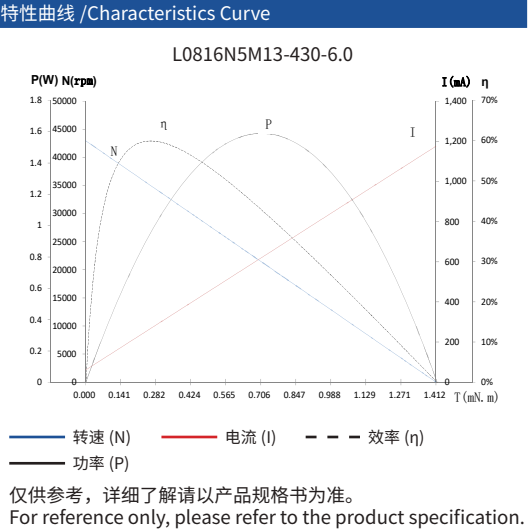


L0816N5M $\varnothing$ 8mm*16mm, 贵金属电刷 Precious Metal Brushes

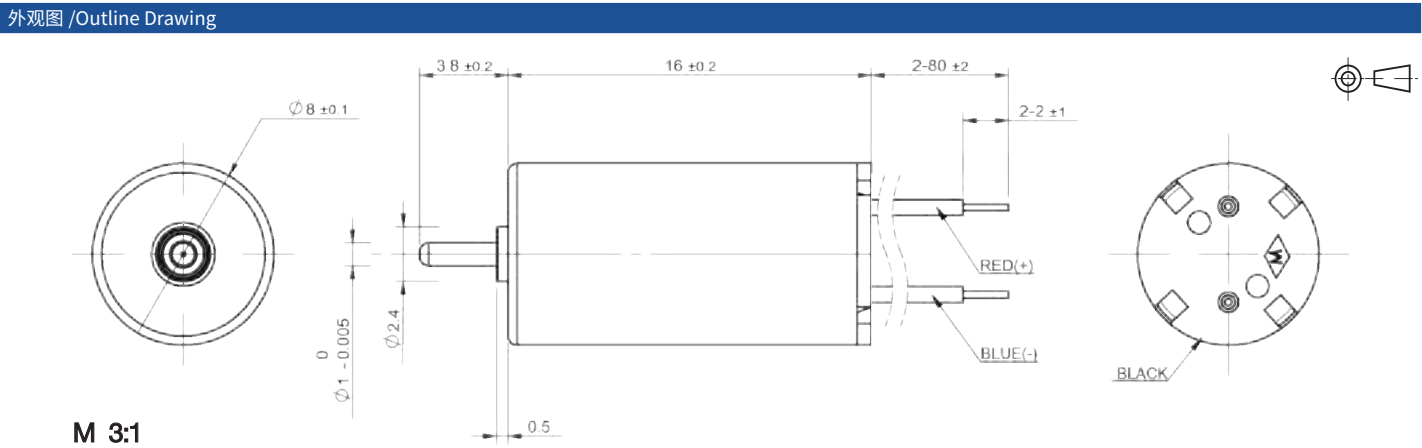
应用领域：微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

13-430-6.0 06-243-3.4 35-262-5.5

电机参数 / Motor Data									
1	电压	Voltage	V	6.0	3.4	5.5			
2	端电阻	Terminal resistance	Ω	5.1	2.7	4.95			
3	空载转速	No-load speed	rpm	43000	24300	26200			
4	空载电流	No-load current	mA	60	40	60			
5	堵转转矩	Stall torque	mNm	1.4	1.6	1.99			
6	堵转电流	Stall current	mA	1180	1260	1100			
7	负载转矩	Load torque	mNm	0.5	0.5	0.5			
8	负载转速	Load speed	rpm	27770	16600	19620			
9	负载电流	Load current	mA	460	430	320			
10	最大输出功率	Max. output power	W	1.59	1	1.37			
11	最大效率	Max. efficiency	%	59.9	67.6	59.4			
12	反电势常数	Back-EMF constant	mV/rpm	0.13	0.14	0.2			
13	转矩常数	Torque constant	mNm/A	1.26	1.29	1.9			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	30453	15409	13166			
15	转子惯量	Rotor inertia	gcm ²	0.07	0.07	0.07			
16	重量	Weight	g	3.1	3.1	3.4			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+80					



可选配置 /Options	
齿轮箱：行星齿轮	齿轮组主要技术指标详见第 158 页
Gearbox: planetary gearbox	the main technical indicators of the gear group are detailed on page 158
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	



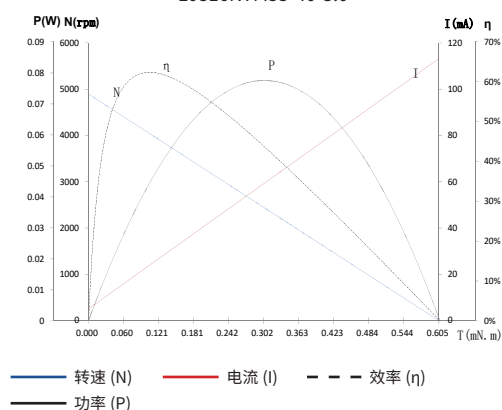
L0816N7M Ø8.1mm*16.8mm, 贵金属电刷 Precious Metal Brushes

应用领域:微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				55-40-3.0		54-45-3.0		006065-60-3.0	
电机参数 / Motor Data									
1	电压	Voltage	V	3.0		3.0		3.0	
2	端电阻	Terminal resistance	Ω	26.5		36		21.5	
3	空载转速	No-load speed	rpm	4900		4500		6000	
4	空载电流	No-load current	mA	5		5		8	
5	堵转转矩	Stall torque	mNm	0.6		0.47		0.6	
6	堵转电流	Stall current	mA	113		83		140	
7	负载转矩	Load torque	mNm	0.3		0.3		0.3	
8	负载转速	Load speed	rpm	2450		1630		3000	
9	负载电流	Load current	mA	60		60		70	
10	最大输出功率	Max. output power	W	0.1		0.1		0.1	
11	最大效率	Max. efficiency	%	62		57.2		58.7	
12	反电势常数	Back-EMF constant	mV/rpm	0.59		0.63		0.47	
13	转矩常数	Torque constant	mNm/A	5.59		5.98		4.5	
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	8167		9574		10000	
15	转子惯量	Rotor inertia	gcm ²	0.01		0.01		0.01	
16	重量	Weight	g	3.7		3.7		3.7	
17	工作温度范围	Operating temperature range	°C	-20~+80		特性曲线 /Characteristics Curve			

L0816N7M55-40-3.0



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

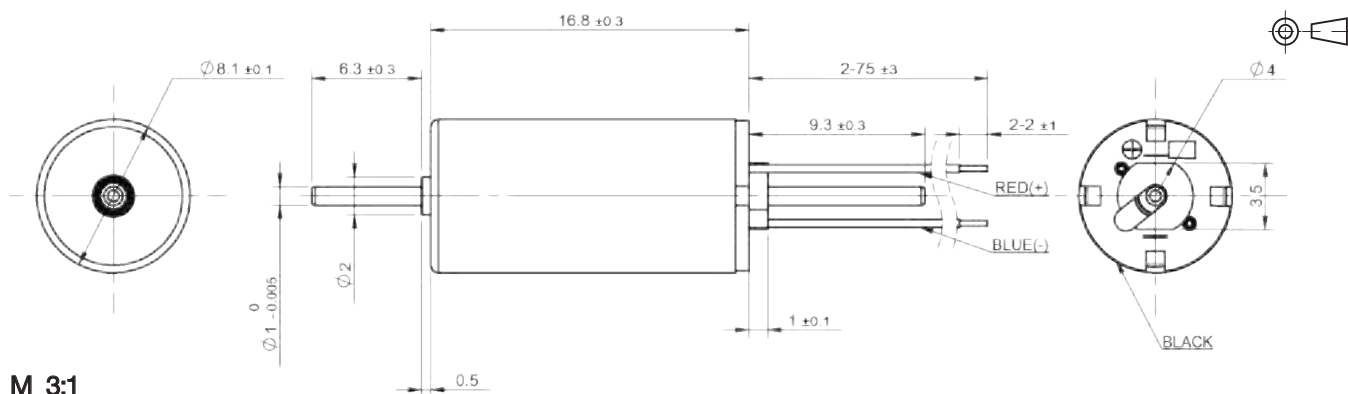
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 /Outline Drawing



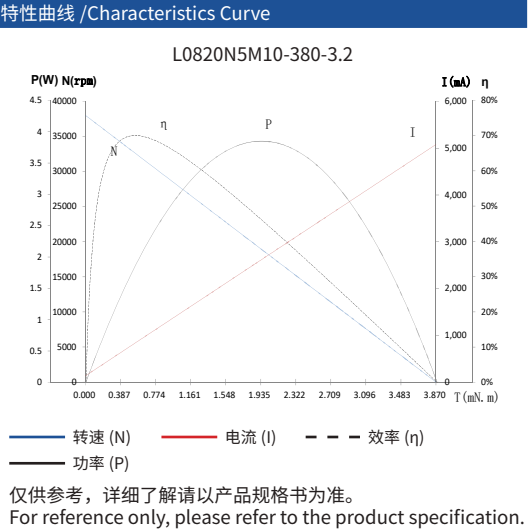
规格如有变更，恕不另行通知。Specification subject to change without notice.

L0820N5M $\varnothing$ 8mm*20mm, 贵金属电刷 Precious Metal Brushes

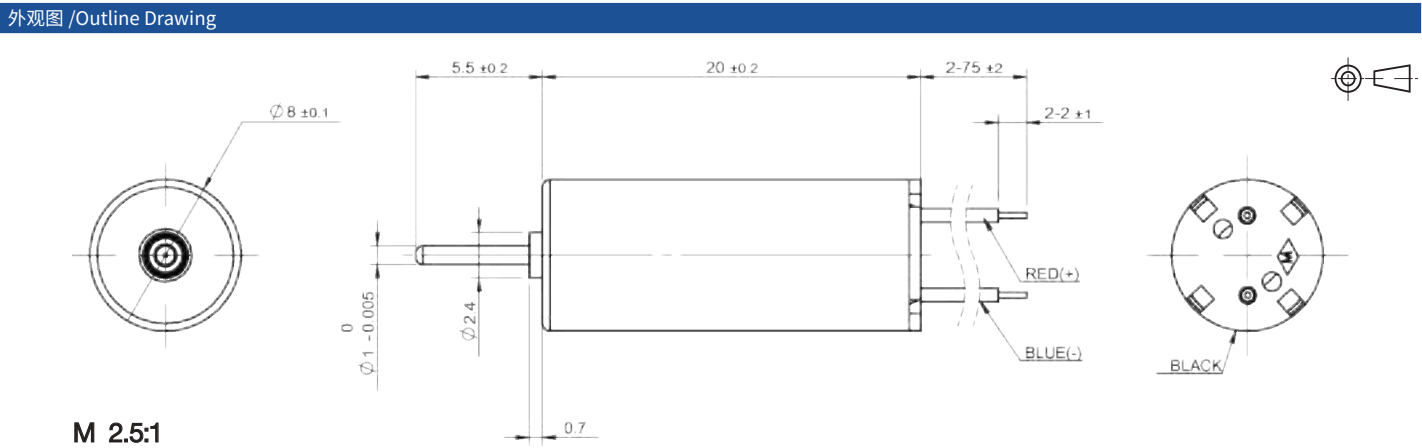
应用领域：微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

10-380-3.2 16-420-3.0 37-460-3.4

电机参数 / Motor Data									
1	电压	Voltage	V	3.2	3.0	3.4			
2	端电阻	Terminal resistance	Ω	0.63	0.4	0.39			
3	空载转速	No-load speed	rpm	38000	42000	46000			
4	空载电流	No-load current	mA	135	160	200			
5	堵转转矩	Stall torque	mNm	3.9	4.9	5.9			
6	堵转电流	Stall current	mA	5080	7500	8720			
7	负载转矩	Load torque	mNm	0.5	0.5	0.5			
8	负载转速	Load speed	rpm	33090	37710	42080			
9	负载电流	Load current	mA	770	910	930			
10	最大输出功率	Max. output power	W	3.85	5.39	7.08			
11	最大效率	Max. efficiency	%	70.1	73	72.1			
12	反电势常数	Back-EMF constant	mV/rpm	0.08	0.07	0.07			
13	转矩常数	Torque constant	mNm/A	0.78	0.67	0.69			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	9819	8571	7831			
15	转子惯量	Rotor inertia	gcm ²	0.07	0.07	0.07			
16	重量	Weight	g	4.2	4.2	4.2			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+120					



可选配置 /Options	
齿轮箱：行星齿轮	齿轮组主要技术指标详见第 158 页
Gearbox: planetary gearbox	the main technical indicators of the gear group are detailed on page 158
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	



L8.520N7M $\varnothing 8.5\text{mm} \times 21\text{mm}$, 贵金属电刷 Precious Metal Brushes

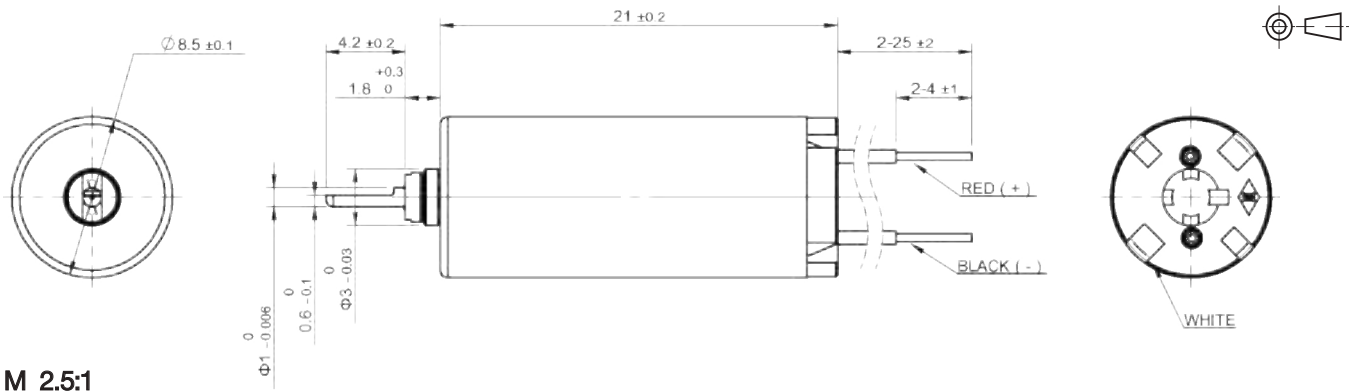
应用领域: 微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				11-240-3.0	01-300-7.0-0566	02-200-3.0
电机参数 / Motor Data						
1	电压	Voltage	V	3.0	7.0	3.0
2	端电阻	Terminal resistance	Ω	0.83	2.3	0.37
3	空载转速	No-load speed	rpm	23650	30300	39000
4	空载电流	No-load current	mA	90	70	70
5	堵转转矩	Stall torque	mNm	4.2	6.4	5.9
6	堵转电流	Stall current	mA	3610	3040	8110
7	负载转矩	Load torque	mNm	0.5	1	1.0
8	负载转速	Load speed	rpm	20810	25570	32340
9	负载电流	Load current	mA	510	530	1440
10	最大输出功率	Max. output power	W	2.58	5.1	6.0
11	最大效率	Max. efficiency	%	71.1	72	82
12	反电势常数	Back-EMF constant	mV/rpm	0.12	0.2	0.08
13	转矩常数	Torque constant	mNm/A	1.18	2.2	0.73
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	5681	4730	6660
15	转子惯量	Rotor inertia	gcm ²	0.07	0.8	0.8
16	重量	Weight	g	4.87	5	4.9
17	工作温度范围	Operating temperature range	°C	-20~+80	特性曲线 / Characteristics Curve	
					L8.520N7M11-240-3.0	
					— 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P)	
					仅供参考, 详细了解请以产品规格书为准。 For reference only, please refer to the product specification.	

可选配置 / Options	
齿轮箱: 行星齿轮	齿轮组主要技术指标详见第 158 页
Gearbox: planetary gearbox	the main technical indicators of the gear group are detailed on page 158
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	

外观图 / Outline Drawing



L1013N5M $\varnothing 10\text{mm} \times 13\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域: 微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

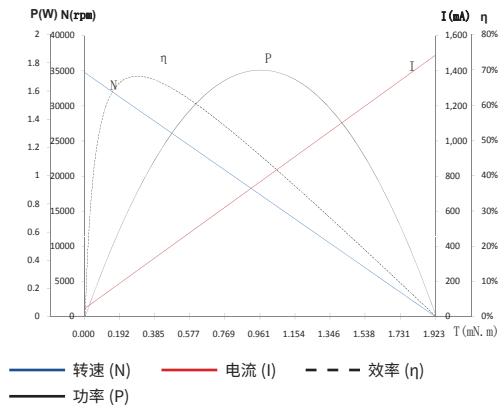
06-347-5.0 07-295-5.5 11-100-3.0

电机参数 / Motor Data

1	电压	Voltage	V	5.0	5.5	3.0			
2	端电阻	Terminal resistance	Ω	3.4	3.9	15.5			
3	空载转速	No-load speed	rpm	34750	29500	10000			
4	空载电流	No-load current	mA	45	37	10			
5	堵转转矩	Stall torque	mNm	1.9	2.4	0.5			
6	堵转电流	Stall current	mA	1488	1421	194			
7	负载转矩	Load torque	mNm	0.3	0.3	0.3			
8	负载转速	Load speed	rpm	29330	25810	4000			
9	负载电流	Load current	mA	270	210	120			
10	最大输出功率	Max. output power	W	1.8	1.9	0.1			
11	最大效率	Max. efficiency	%	68	70	60			
12	反电势常数	Back-EMF constant	mV/rpm	0.1	0.2	0.3			
13	转矩常数	Torque constant	mNm/A	1.3	1.7	2.7			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	18070	12290	20000			
15	转子惯量	Rotor inertia	gcm^2	0.06	0.06	0.06			
16	重量	Weight	g	4.1	4.1	4.1			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+65					

特性曲线 / Characteristics Curve

L1013N5M06-347-5.0



仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱: 行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

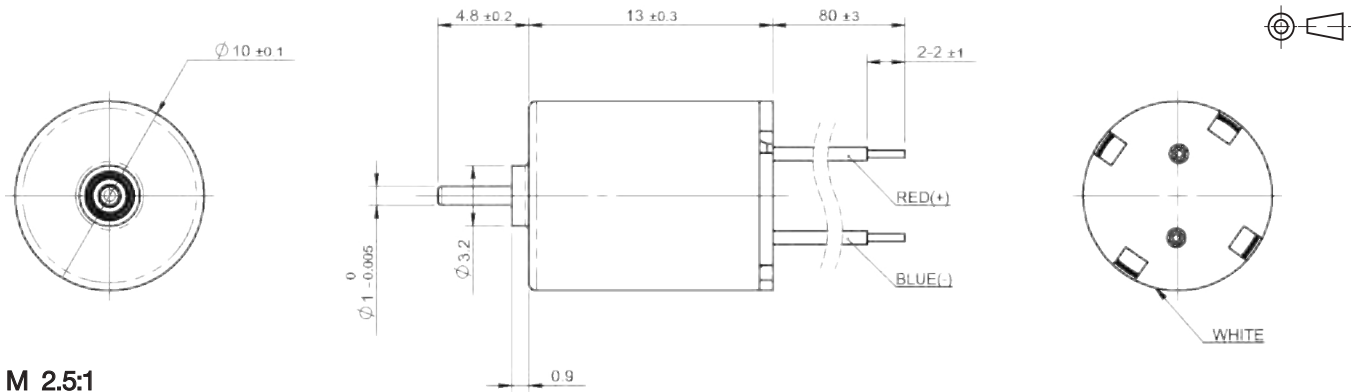
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 / Outline Drawing



L1015N5M $\varnothing 10\text{mm} \times 15\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				22-212-6.0	93-213-3.7	95-267-5.0			
电机参数 / Motor Data									
1	电压	Voltage	V	6.0	3.7	5.0			
2	端电阻	Terminal resistance	Ω	7	2.5	3.9			
3	空载转速	No-load speed	rpm	21200	21300	26700			
4	空载电流	No-load current	mA	20	35	35			
5	堵转转矩	Stall torque	mNm	2.21	2.32	2.17			
6	堵转电流	Stall current	mA	860	1470	1280			
7	负载转矩	Load torque	mNm	0.5	0.5	1.5			
8	负载转速	Load speed	rpm	16400	16710	8240			
9	负载电流	Load current	mA	210	340	900			
10	最大输出功率	Max. output power	W	1.23	1.3	1.52			
11	最大效率	Max. efficiency	%	72	72	70			
12	反电势常数	Back-EMF constant	mV/rpm	0.3	0.2	0.2			
13	转矩常数	Torque constant	mNm/A	2.6	1.6	1.7			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	9590	9180	12310			
15	转子惯量	Rotor inertia	gcm²	0.07	0.07	0.07			
16	重量	Weight	g	5.1	5.1	5.1			
17	工作温度范围	Operating temperature range	°C	-20~+65	特性曲线 / Characteristics Curve				
					L1015N5M22-212-6.0 P(W) N(rpm) I (mA) η 0.000 0.221 0.442 0.663 0.884 1.105 1.326 1.547 1.768 1.989 2.210 T (mN.m) — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P)				
					仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.				

可选配置 / Options	
齿轮箱：行星齿轮	齿轮组主要技术指标详见第 158 页
Gearbox: planetary gearbox	the main technical indicators of the gear group are detailed on page 158
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	

外观图 / Outline Drawing	
M 2.5:1	

L1020N5M $\varnothing 10\text{mm} \times 20.7\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域: 微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

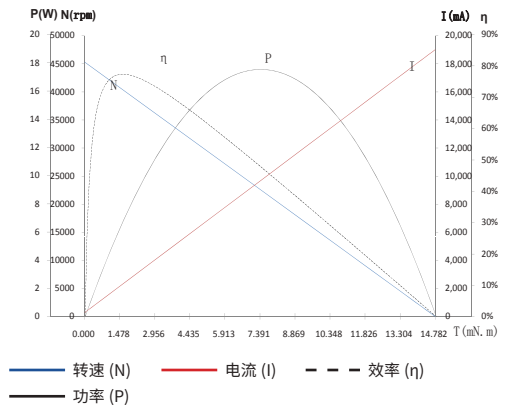
50-453-3.8 66-336-7.4 69-291-5.0

电机参数 / Motor Data

1	电压	Voltage	V	3.8	7.4	5.0			
2	端电阻	Terminal resistance	Ω	0.2	1.8	1.4			
3	空载转速	No-load speed	rpm	45300	33600	29100			
4	空载电流	No-load current	mA	275	65	32			
5	堵转转矩	Stall torque	mNm	14.8	8.4	8.4			
6	堵转电流	Stall current	mA	19000	4111	3571			
7	负载转矩	Load torque	mNm	2	2	3			
8	负载转速	Load speed	rpm	39170	25580	18680			
9	负载电流	Load current	mA	2810	1030	1300			
10	最大输出功率	Max. output power	W	17.5	7.4	6.4			
11	最大效率	Max. efficiency	%	77	77	119			
12	反电势常数	Back-EMF constant	mV/rpm	0.1	0.2	0.2			
13	转矩常数	Torque constant	mNm/A	0.8	2.1	1.6			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3060	4010	3470			
15	转子惯量	Rotor inertia	gcm^2	0.15	0.15	0.15			
16	重量	Weight	g	7.5	7.5	7.5			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85					

特性曲线 / Characteristics Curve

L1020N5M50-453-3.8



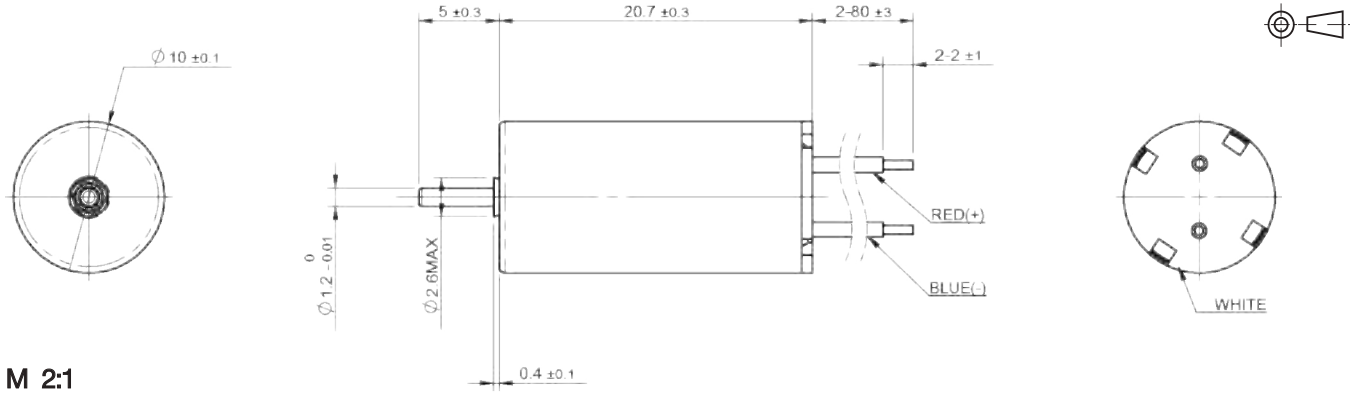
仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱: 行星齿轮
Gearbox: planetary gearbox
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页
the main technical indicators of the gear group are detailed on page 158

外观图 / Outline Drawing



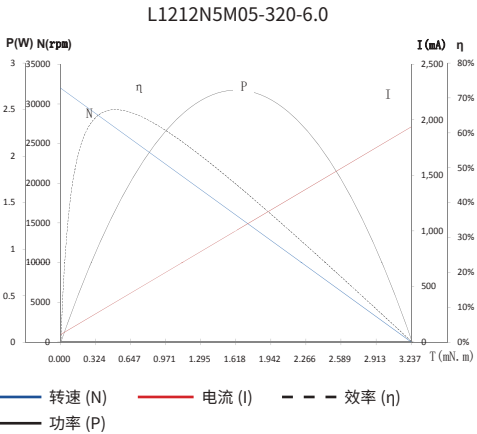
L1212N5M $\varnothing 12\text{mm} \times 12.3\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

05-320-6.0 01-335-6.0 04-375-6.0

电机参数 / Motor Data						
1	电压	Voltage	V	6.0	6.0	6.0
2	端电阻	Terminal resistance	Ω	3.1	3.9	5.1
3	空载转速	No-load speed	rpm	32000	33500	37500
4	空载电流	No-load current	mA	65	65	65
5	堵转转矩	Stall torque	mNm	3.2	2.4	1.6
6	堵转电流	Stall current	mA	1940	1540	1180
7	负载转矩	Load torque	mNm	0.5	0.5	0.5
8	负载转速	Load speed	rpm	27070	26570	25850
9	负载电流	Load current	mA	350	370	410
10	最大输出功率	Max. output power	W	2.7	2.1	1.6
11	最大效率	Max. efficiency	%	67	63	59
12	反电势常数	Back-EMF constant	mV/rpm	0.2	0.2	0.2
13	转矩常数	Torque constant	mNm/A	1.7	1.6	1.4
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	9860	13870	23300
15	转子惯量	Rotor inertia	gcm ²	0.1	0.1	0.1
16	重量	Weight	g	5.5	5.5	5.5
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85	特性曲线 / Characteristics Curve	



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

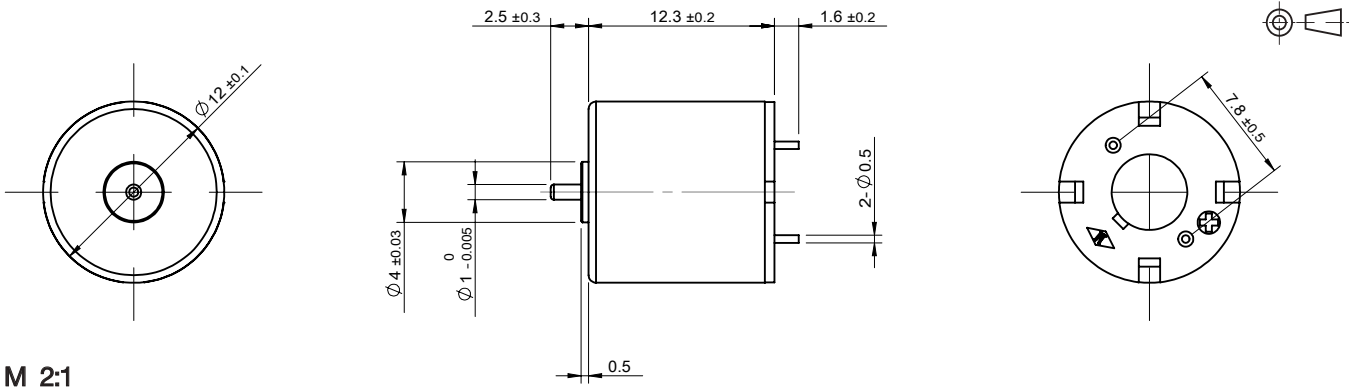
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

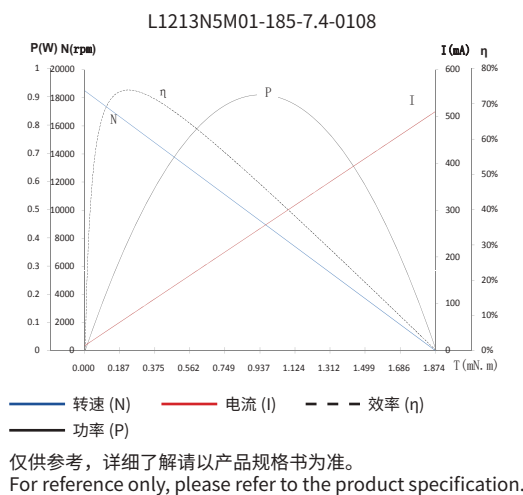
外观图 / Outline Drawing



L1213N5M $\varnothing 12\text{mm} \times 13\text{mm}$, 贵金属电刷 Precious Metal Brushes

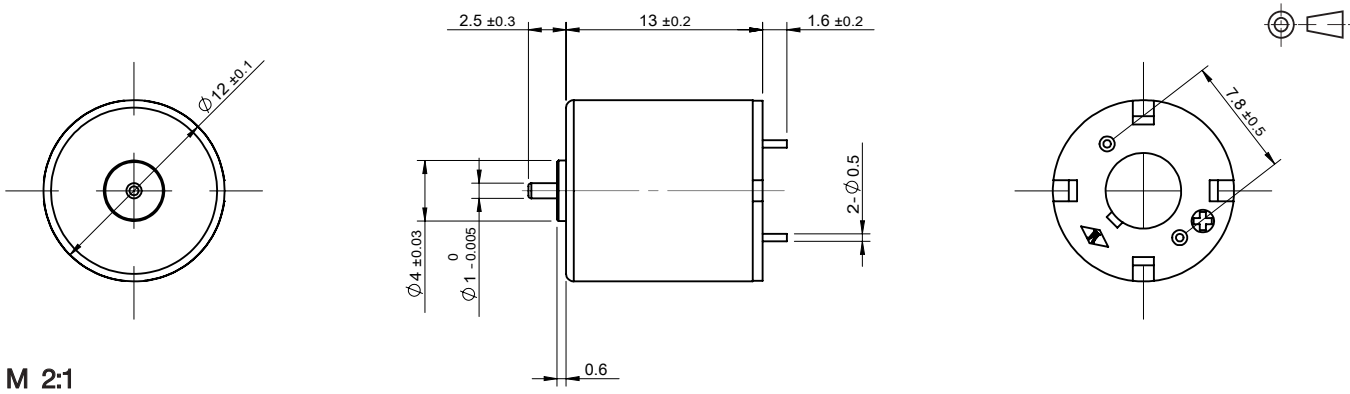
应用领域: 微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				01-185-7.4-0108	02-300-6.0	05-400-7.4-0177
电机参数 / Motor Data						
1	电压	Voltage	V	7.4	6.0	7.4
2	端电阻	Terminal resistance	Ω	14.5	4	3.2
3	空载转速	No-load speed	rpm	18500	30000	40500
4	空载电流	No-load current	mA	10	25	120
5	堵转转矩	Stall torque	mNm	1.9	2.8	3.7
6	堵转电流	Stall current	mA	510	1500	2350
7	负载转矩	Load torque	mNm	0.5	0.5	0.5
8	负载转速	Load speed	rpm	13560	24590	35020
9	负载电流	Load current	mA	140	290	420
10	最大输出功率	Max. output power	W	0.9	2.2	3.9
11	最大效率	Max. efficiency	%	74	76	60
12	反电势常数	Back-EMF constant	mV/rpm	0.4	0.2	0.2
13	转矩常数	Torque constant	mNm/A	3.7	1.9	1.7
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	9880	10830	10970
15	转子惯量	Rotor inertia	gcm^2	0.1	0.1	0.1
16	重量	Weight	g	6.5	6.5	5.6
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85	特性曲线 / Characteristics Curve	



可选配置 / Options	
齿轮箱: 行星齿轮	齿轮组主要技术指标详见第 158 页
Gearbox: planetary gearbox	the main technical indicators of the gear group are detailed on page 158
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	

外观图 / Outline Drawing



L1215N5M Ø12mm*14.6mm, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。

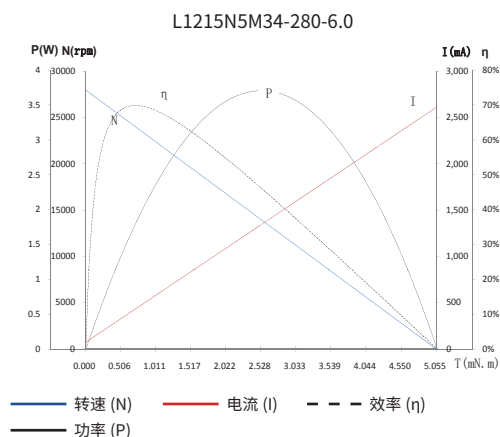
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

43-230-6.0 48-330-8.0 34-280-6.0

电机参数 / Motor Data

1	电压	Voltage	V	6.0	8.0	6.0			
2	端电阻	Terminal resistance	Ω	3.4	3.3	2.3			
3	空载转速	No-load speed	rpm	23000	33000	28000			
4	空载电流	No-load current	mA	50	80	70			
5	堵转转矩	Stall torque	mNm	4.1	5.2	5.1			
6	堵转电流	Stall current	mA	1760	2420	2610			
7	负载转矩	Load torque	mNm	1	1	0.5			
8	负载转速	Load speed	rpm	20220	29850	25230			
9	负载电流	Load current	mA	260	300	320			
10	最大输出功率	Max. output power	W	2	5	3.7			
11	最大效率	Max. efficiency	%	69.2	67	70			
12	反电势常数	Back-EMF constant	mV/rpm	0.3	0.2	0.2			
13	转矩常数	Torque constant	mNm/A	2.4	2.2	2			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	5560	6300	5540			
15	转子惯量	Rotor inertia	gcm ²	0.1	0.1	0.1			
16	重量	Weight	g	7	7	6.5			
17	工作温度范围	Operating temperature range	°C	-20~+85	特性曲线 /Characteristics Curve				

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：行星齿轮

Gearbox: planetary gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

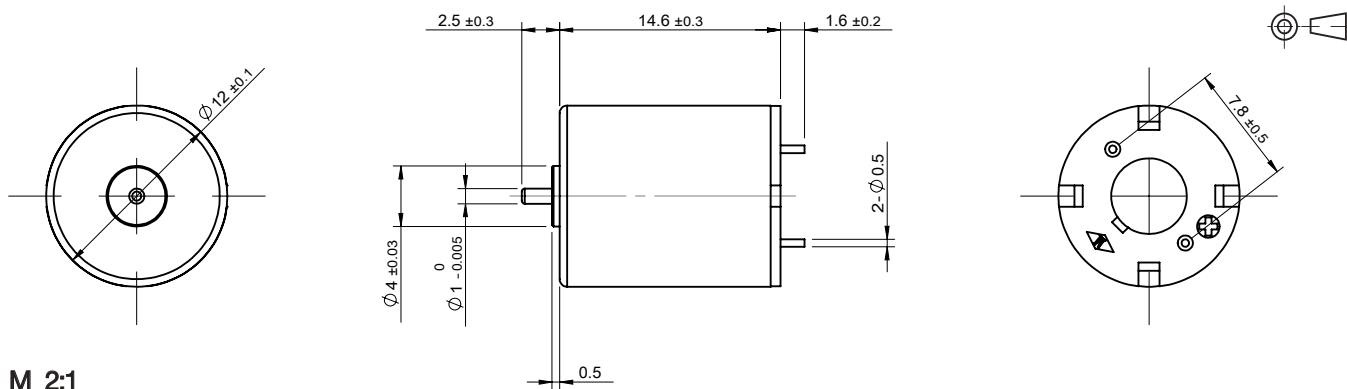
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 158 页

the main technical indicators of the gear group are detailed on page 158

外观图 /Outline Drawing



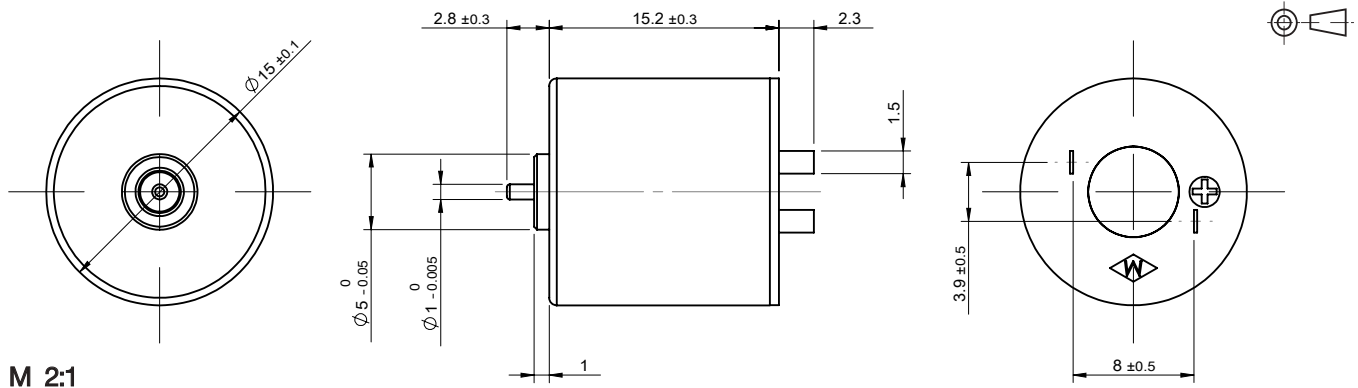
M 2:1

L1515N5M $\varnothing 15\text{mm} \times 15.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				12-325-7.4	13-250-12.0	02-260-7.4		
电机参数 / Motor Data								
1	电压	Voltage	V	7.4	12.0	7.4		
2	端电阻	Terminal resistance	Ω	1.6	7.7	2.5		
3	空载转速	No-load speed	rpm	32500	25000	26000		
4	空载电流	No-load current	mA	60	35	70		
5	堵转转矩	Stall torque	mNm	9.8	6.8	7.7		
6	堵转电流	Stall current	mA	4625	1558	2960		
7	负载转矩	Load torque	mNm	1	1	1		
8	负载转速	Load speed	rpm	29180	21340	22610		
9	负载电流	Load current	mA	526	260	600		
10	最大输出功率	Max. output power	W	8.3	4.5	5.2		
11	最大效率	Max. efficiency	%	79	72	72		
12	反电势常数	Back-EMF constant	mV/rpm	0.22	0.47	0.28		
13	转矩常数	Torque constant	mNm/A	2.15	4.48	2.65		
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	3320	3660	3390		
15	转子惯量	Rotor inertia	gcm^2	0.7	0.7	0.7		
16	重量	Weight	g	12	12	12.1		
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85	特性曲线 / Characteristics Curve			
				L1515N5M12-325-7.4				
				— 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P)				
				仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.				
可选配置 / Options								
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range								
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges								
轴 Shaft: 长度 length / 异形 shape								
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length								

外观图 / Outline Drawing



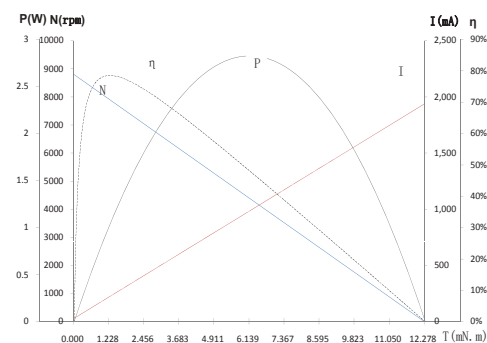
L1625N5M $\varnothing 16\text{mm} \times 25.5\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域: 微型无人机、智能电玩、小家电产品等领域。

Applications: mini UAV's, remote control hobby products, small household appliances, etc.

				25-88-6.0	35-60-5.0	54-170-12.0
电机参数 / Motor Data						
1	电压	Voltage	V	6.0	5.0	12.0
2	端电阻	Terminal resistance	Ω	3.1	4.4	3.2
3	空载转速	No-load speed	rpm	8800	6000	18700
4	空载电流	No-load current	mA	25	25	60
5	堵转转矩	Stall torque	mNm	12.3	8.6	22.3
6	堵转电流	Stall current	mA	1935	1136	3750
7	负载转矩	Load torque	mNm	3.5	1	3.8
8	负载转速	Load speed	rpm	6290	5310	15470
9	负载电流	Load current	mA	570	153	697
10	最大输出功率	Max. output power	W	2.8	1.4	10.9
11	最大效率	Max. efficiency	%	79	73	76
12	反电势常数	Back-EMF constant	mV/rpm	0.67	0.82	0.63
13	转矩常数	Torque constant	mNm/A	6.43	7.78	6.03
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	720	690	840
15	转子惯量	Rotor inertia	gcm^2	0.7	0.7	0.7
16	重量	Weight	g	20.5	20.5	20.5
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85	特性曲线 / Characteristics Curve	

L1625N5M25-88-6.0



— 转速 (N) — 电流 (I) - - - 效率 (η)
—— 功率 (P)

仅供参考, 详细了解请以产品规格书为准。

For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱: 行星齿轮

齿轮组主要技术指标详见第 158 页

Gearbox: planetary gearbox

the main technical indicators of the gear group are detailed on page 158

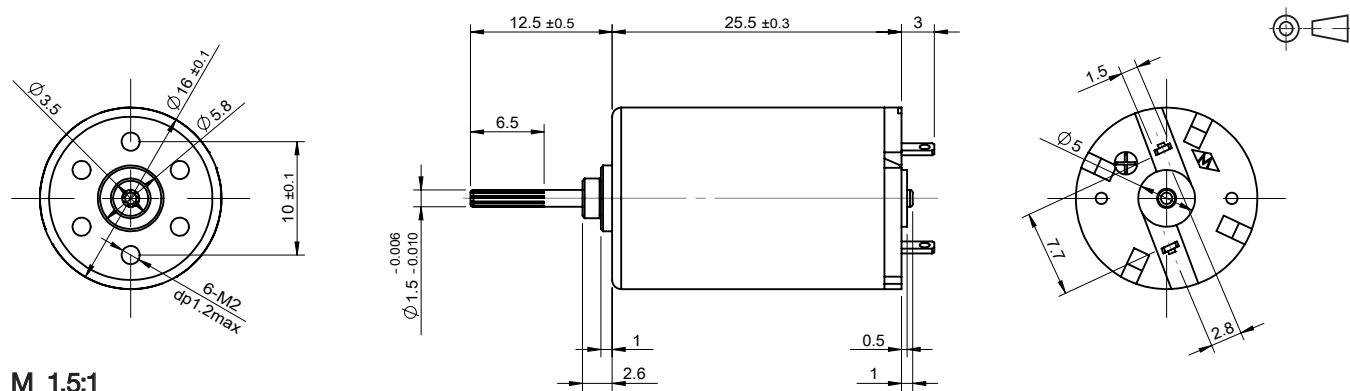
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



M 1.5:1

L1718N5M $\varnothing 17.4\text{mm} \times 18.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

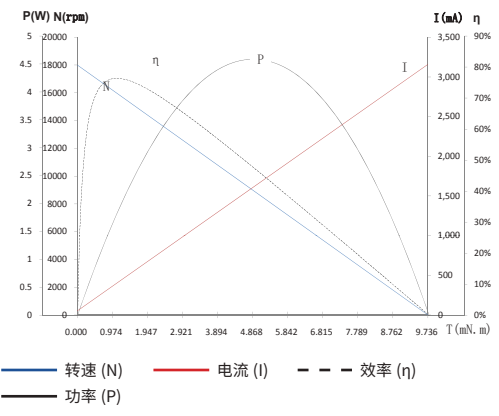
应用领域: 微型无人机、智能电玩、小家电产品等领域。
Applications: mini UAV's, remote control hobby products, small household appliances, etc.

06-180-6.0 67-185-6.5 46-245-7.4 57-260-7.4

电机参数 / Motor Data

1	电压	Voltage	V	6.0	6.5	7.4	7.4
2	端电阻	Terminal resistance	Ω	1.9	1.7	1.2	1.3
3	空载转速	No-load speed	rpm	18000	18500	24500	26000
4	空载电流	No-load current	mA	50	50	40	60
5	堵转转矩	Stall torque	mNm	9.7	12.5	17.6	15.1
6	堵转电流	Stall current	mA	3160	3820	6170	5690
7	负载转矩	Load torque	mNm	1	1	1	2
8	负载转速	Load speed	rpm	16150	17020	23110	22570
9	负载电流	Load current	mA	370	350	390	800
10	最大输出功率	Max. output power	W	4.6	6.1	11.3	10.3
11	最大效率	Max. efficiency	%	77	79	85	81
12	反电势常数	Back-EMF constant	mV/rpm	0.3	0.3	0.3	0.3
13	转矩常数	Torque constant	mNm/A	3.1	3.3	2.9	2.7
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1850	1480	1390	1720
15	转子惯量	Rotor inertia	gcm^2	0.8	0.8	0.8	0.8
16	重量	Weight	g	18.3	18.3	18.5	20.5
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+85	特性曲线 / Characteristics Curve		

L1718N5M06-180-6.0

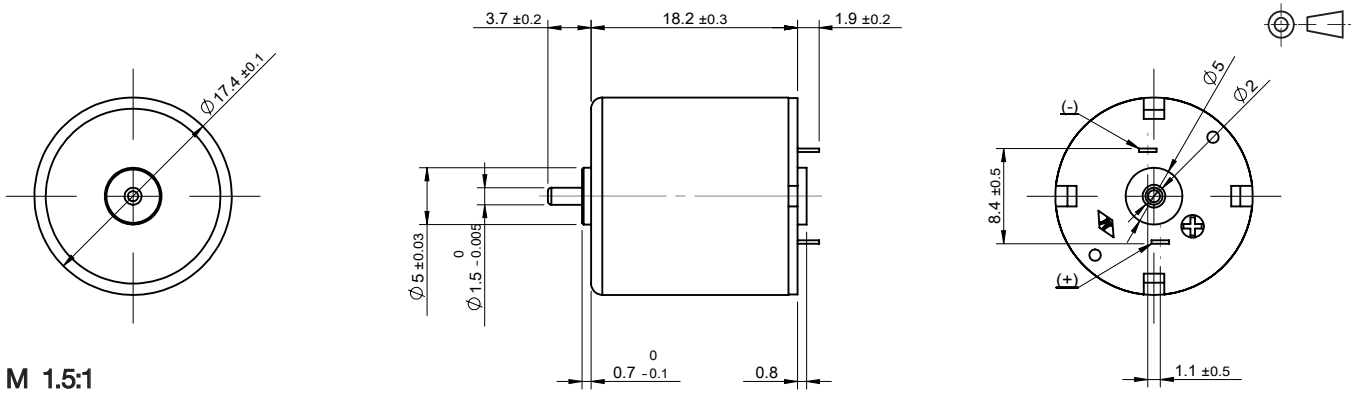


仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



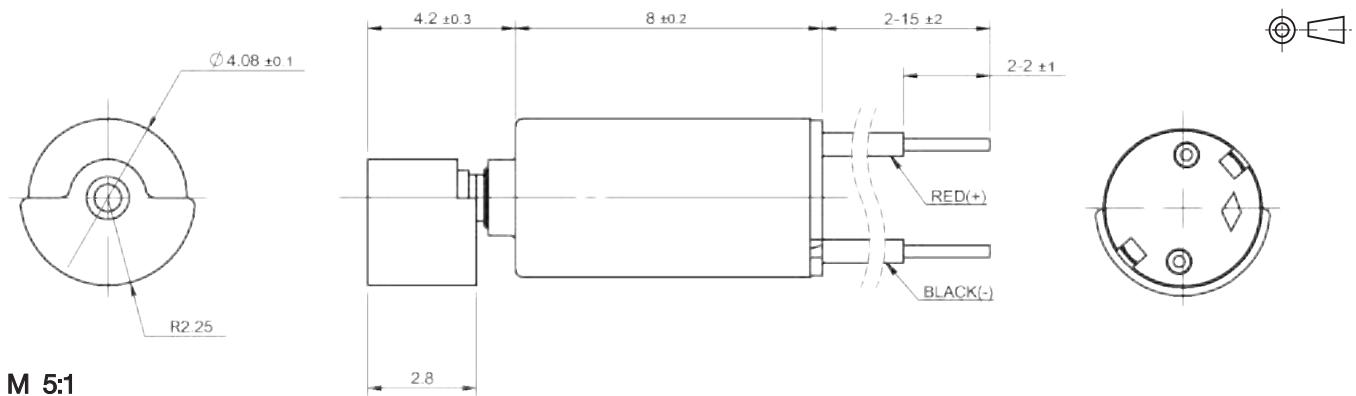
VL0408N3M $\varnothing 4.08\text{mm} \times 8\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。
Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

				10-120-3.0	10-85-2.7	70-220-3.0			
电机参数 / Motor Data									
1	电压	Voltage	V	3.0	2.7	3.0			
2	端电阻	Terminal resistance	Ω	32	32	12.8			
3	转速	Speed	rpm	12000	8500	20000			
4	电流	Current	mA	75	70	185			
5	启动电压	Starting voltage	V	1.4	1.5	1.5			
6	堵转电流	Stall current	mA	95	100	230			
7	重量	Weight	g	0.8	1.15	0.85			
8	工作温度范围	Operating temperature range	°C	-10~+65	-10~+65	-10~+65			
可选配置 / Options									

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length
偏心锤 Eccentric weight: 可定制 customizable
胶套 Silicone sets: 可定制 customizable

外观图 / Outline Drawing



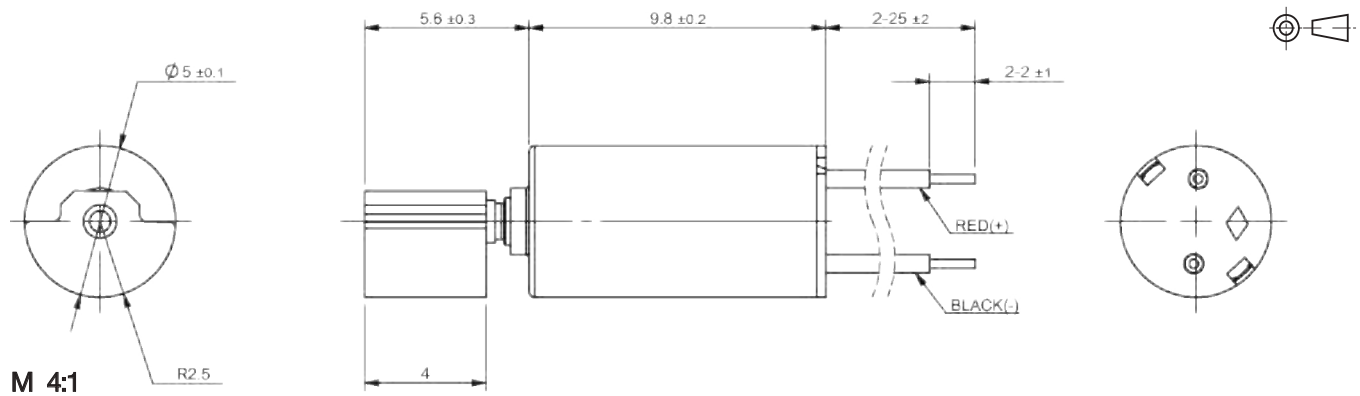
VL0510N3M $\varnothing 5\text{mm} \times 9.8\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。
Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

				05-120-3.0	10-200-3.0	04-150-3.0			
电机参数 / Motor Data									
1	电压	Voltage	V	3.0	3.0	3.0			
2	端电阻	Terminal resistance	Ω	17	7.4	10.7			
3	转速	Speed	rpm	12000	20000	15000			
4	电流	Current	mA	130	250	180			
5	启动电压	Starting voltage	V	0.8	0.8	0.8			
6	堵转电流	Stall current	mA	190	500	420			
7	重量	Weight	g	1.5	1.5	1.5			
8	工作温度范围	Operating temperature range	°C	-10~+65	-10~+65	-10~+65			
可选配置 / Options									

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length
 偏心锤 Eccentric weight: 可定制 customizable
 胶套 Silicone sets: 可定制 customizable

外观图 / Outline Drawing



VL0610N5M $\varnothing 6\text{mm} \times 10.4\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。

Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

36-90-1.5 80-87-1.3 40-110-3.0

电机参数 / Motor Data

1	电压	Voltage	V	1.5	1.3	3.0			
2	端电阻	Terminal resistance	Ω	22	13.1	55			
3	转速	Speed	rpm	9000	8700	11000			
4	电流	Current	mA	16	65	20			
5	启动电压	Starting voltage	V	0.8	0.8	0.8			
6	堵转电流	Stall current	mA	80	120	120			
7	重量	Weight	g	1.6	1.8	1.8			
8	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+65	-10~+65	-10~+65			

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

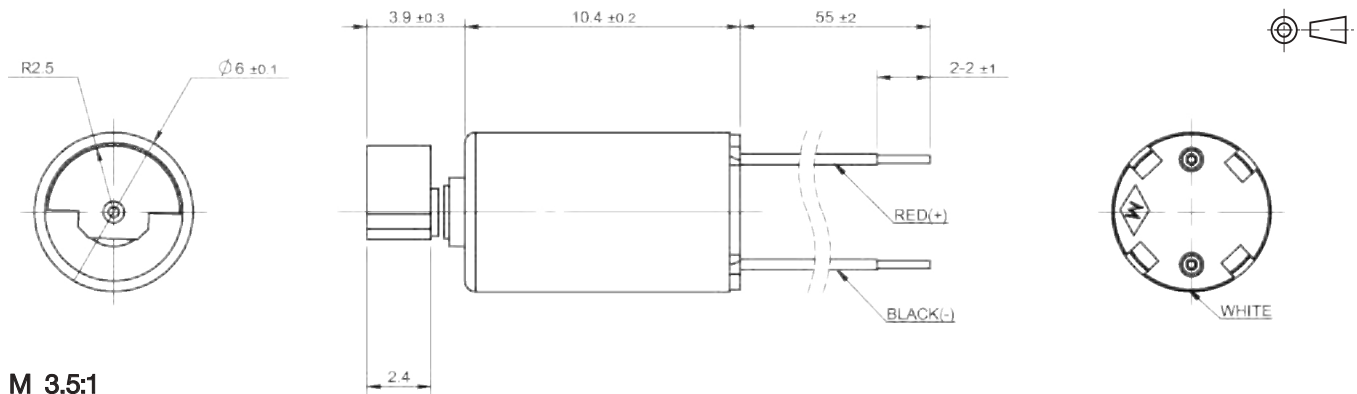
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

偏心锤 Eccentric weight: 可定制 customizable

胶套 Silicone sets: 可定制 customizable

外观图 / Outline Drawing



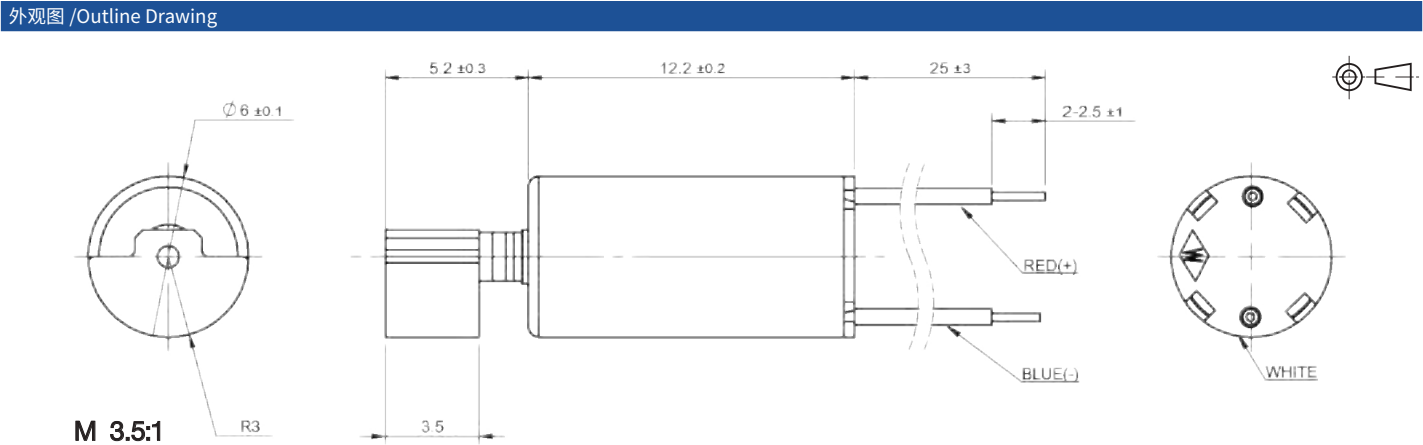
M 3.5:1

VL0612N3M $\varnothing 6\text{mm} \times 12.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。
Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

				42-95-1.3	24-125-3.7	52-130-1.5			
电机参数 / Motor Data									
1	电压	Voltage	V	1.3	3.7	1.5			
2	端电阻	Terminal resistance	Ω	7.8	26.4	6.4			
3	转速	Speed	rpm	9500	12500	13000			
4	电流	Current	mA	70	80	90			
5	启动电压	Starting voltage	V	0.8	1.5	0.8			
6	堵转电流	Stall current	mA	200	200	200			
7	重量	Weight	g	2.3	2.49	2.1			
8	工作温度范围	Operating temperature range	°C	-10~+65	-10~+65	-10~+65			
可选配置 / Options									

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length
偏心锤 Eccentric weight: 可定制 customizable
胶套 Silicone sets: 可定制 customizable



VL0614N5M $\varnothing 6\text{mm} \times 13.9\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。

Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

51-102-3.0 17-150-1.5 41-71-1.3

电机参数 / Motor Data

1	电压	Voltage	V	3.0	1.5	1.3			
2	端电阻	Terminal resistance	Ω	18	3.3	8.1			
3	转速	Speed	rpm	10200	15000	7100			
4	电流	Current	mA	50	100	50			
5	启动电压	Starting voltage	V	0.6	0.6	0.6			
6	堵转电流	Stall current	mA	180	170	170			
7	重量	Weight	g	2.9	2.25	2.8			
8	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+65	-10~+65	-10~+65			

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

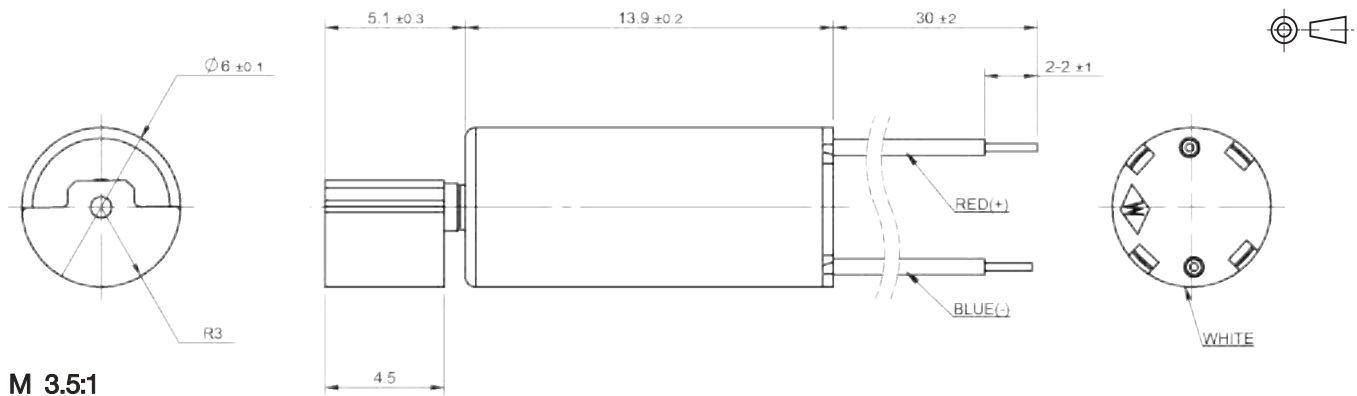
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

偏心锤 Eccentric weight: 可定制 customizable

胶套 Silicone sets: 可定制 customizable

外观图 / Outline Drawing



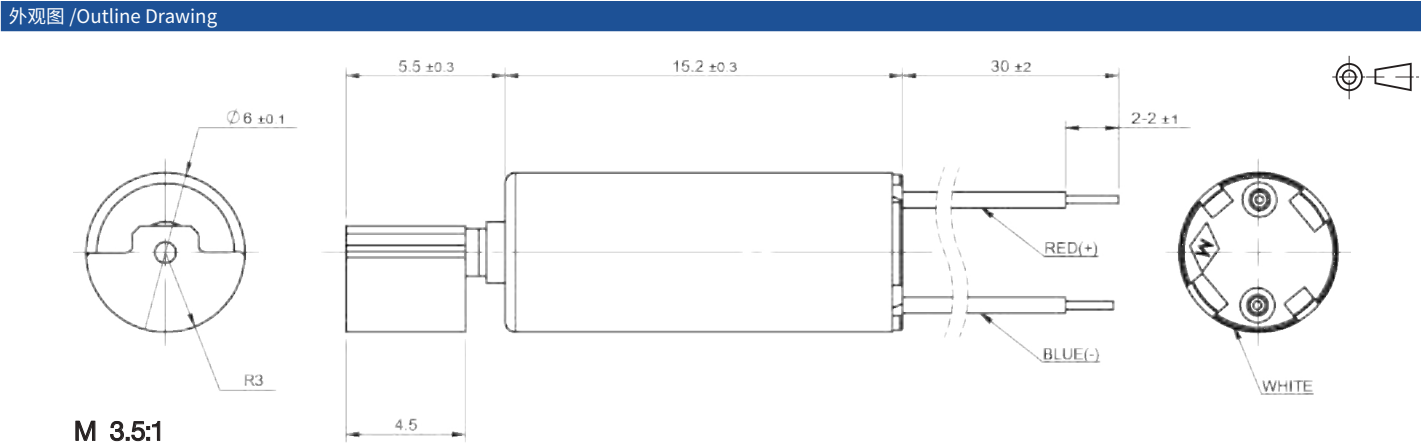
M 3.5:1

VL0615N5M $\varnothing 6\text{mm} \times 15.2\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。
Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

				47-100-3.0	02-92-1.5	21-250-3.0			
电机参数 / Motor Data									
1	电压	Voltage	V	3.0	1.5	3.0			
2	端电阻	Terminal resistance	Ω	20	6.9	2.8			
3	转速	Speed	rpm	10000	9200	25000			
4	电流	Current	mA	45	100	280			
5	启动电压	Starting voltage	V	0.6	0.8	0.8			
6	堵转电流	Stall current	mA	150	220	1000			
7	重量	Weight	g	3.4	2.8	2.6			
8	工作温度范围	Operating temperature range	°C	-10~+65	-10~+65	-10~+65			
可选配置 / Options									

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length
 偏心锤 Eccentric weight: 可定制 customizable
 胶套 Silicone sets: 可定制 customizable



VL0716N5M $\varnothing 7\text{mm} \times 16.7\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。

Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

12-105-3.0 61-130-3.0 91-140-3.7

电机参数 / Motor Data

1	电压	Voltage	V	3.0	3.0	3.7			
2	端电阻	Terminal resistance	Ω	9.7	5.6	5.4			
3	转速	Speed	rpm	10500	13000	14000			
4	电流	Current	mA	110	180	260			
5	启动电压	Starting voltage	V	0.8	0.8	0.8			
6	堵转电流	Stall current	mA	300	500	600			
7	重量	Weight	g	4	4	4			
8	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+80	-20~+80	-20~+80			

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

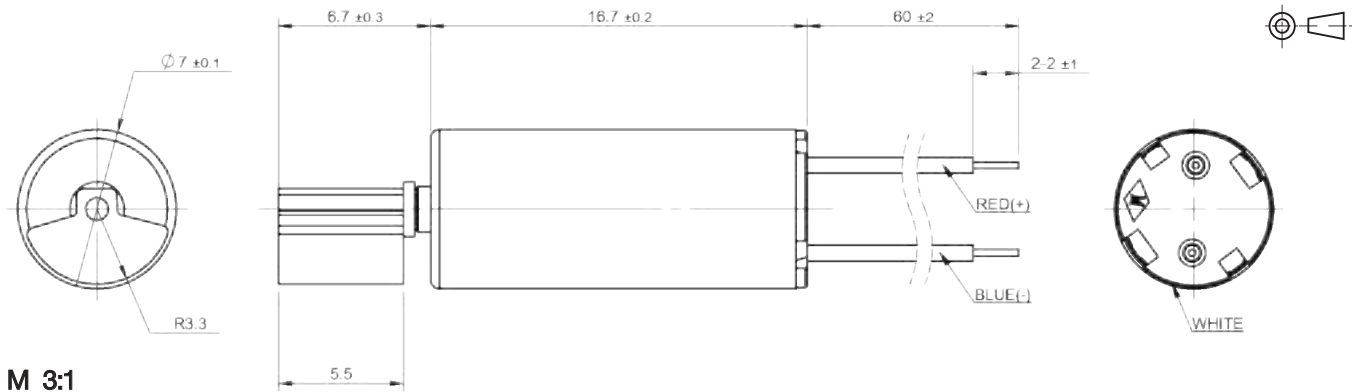
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

偏心锤 Eccentric weight: 可定制 customizable

胶套 Silicone sets: 可定制 customizable

外观图 / Outline Drawing

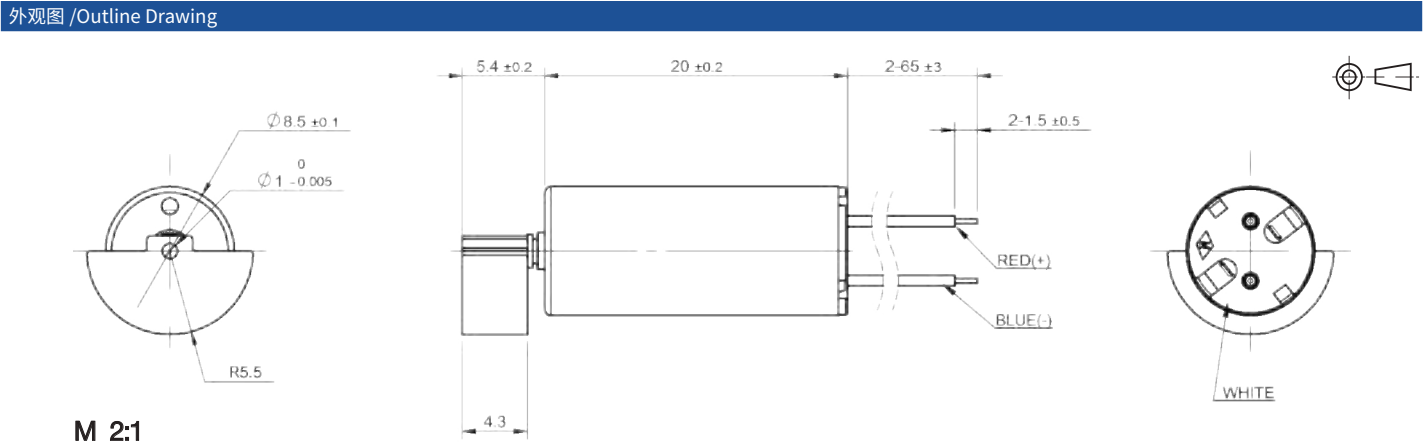


VL8.520N5M $\varnothing 8.5\text{mm} \times 20\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。
Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

				62-96-3.0	82-93-3.0	74-96-3.0			
电机参数 / Motor Data									
1	电压	Voltage	V	3.0	3.0	3.0			
2	端电阻	Terminal resistance	Ω	8.35	3.75	8.35			
3	转速	Speed	rpm	6500	10400	7300			
4	电流	Current	mA	60	85	40			
5	启动电压	Starting voltage	V	0.8	0.8	0.8			
6	堵转电流	Stall current	mA	360	800	360			
7	重量	Weight	g	8.7	6.6	6.8			
8	工作温度范围	Operating temperature range	°C	-20~+65	-20~+65	-20~+65			
可选配置 / Options									

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length
偏心锤 Eccentric weight: 可定制 customizable
胶套 Silicone sets: 可定制 customizable



M 2:1

VL1013N5M $\varnothing 10\text{mm} \times 13\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。

Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

09-89-3.0 10-73-3.7 25-41-1.3

电机参数 / Motor Data

1	电压	Voltage	V	3.0	3.7	1.3			
2	端电阻	Terminal resistance	Ω	7.7	26.4	7.1			
3	转速	Speed	rpm	8900	7200	4100			
4	电流	Current	mA	119	26	130			
5	启动电压	Starting voltage	V	0.8	0.8	0.8			
6	堵转电流	Stall current	mA	380	140	200			
7	重量	Weight	g	6.1	7.8	6.7			
8	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+65	-20~+65	-20~+65			

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

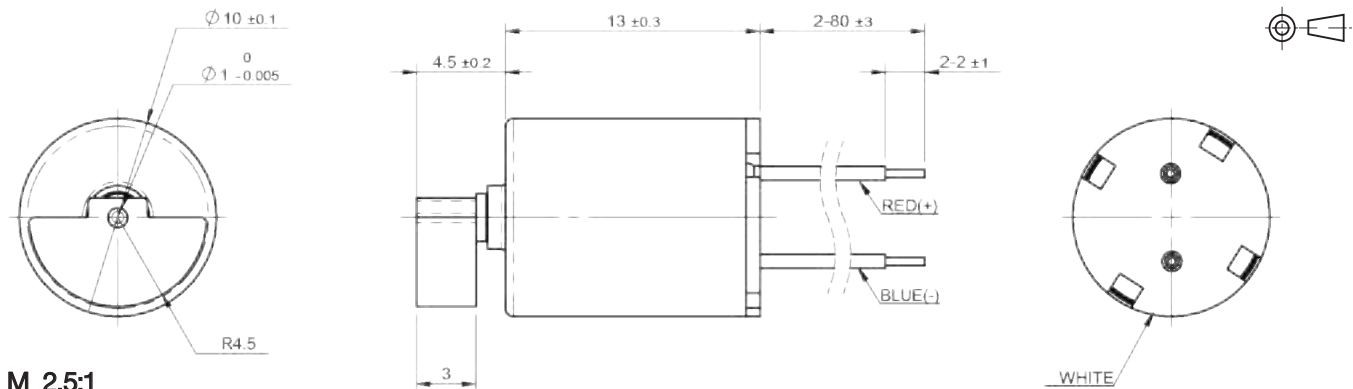
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

偏心锤 Eccentric weight: 可定制 customizable

胶套 Silicone sets: 可定制 customizable

外观图 / Outline Drawing

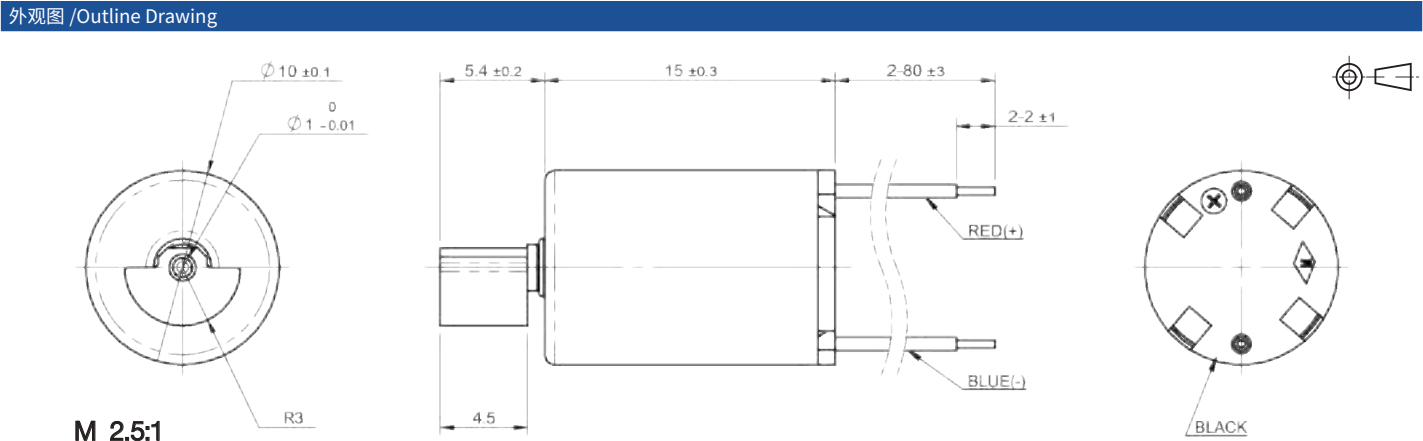


VL1015N5M $\varnothing$ 10mm*15mm, 贵金属电刷 Precious Metal Brushes

应用领域：穿戴设备、手机、平板电脑、保健器材等领域。
Applications: wearable products, mobile phones, tablet PC's, health care products, etc.

				96-129-5.0	99-66-3.0	65-70-1.3			
电机参数 / Motor Data									
1	电压	Voltage	V	5.0	3.0	1.3			
2	端电阻	Terminal resistance	Ω	10.5	8.35	3.5			
3	转速	Speed	rpm	12900	6670	7000			
4	电流	Current	mA	80	137	140			
5	启动电压	Starting voltage	V	0.8	0.8	0.8			
6	堵转电流	Stall current	mA	470	332	380			
7	重量	Weight	g	5.8	7.85	3.5			
8	工作温度范围	Operating temperature range	°C	-20~+65	-20~+65	-20~+65			
可选配置 / Options									

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
 法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
 轴 Shaft: 长度 length / 异形 shape
 电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length
 偏心锤 Eccentric weight: 可定制 customizable
 胶套 Silicone sets: 可定制 customizable



您的个人备注 Your personal notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

直流铁芯电机

DC CORE MOTOR



CONTENT 目录

直流铁芯电机 DC CORE MOTOR

贵金属电刷 PRECIOUS METAL BRUSHES

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	C1012F	φ10×12.6 mm	贵金属电刷/Precious Metal Brushes	234
2	C1015F	φ10×15 mm	贵金属电刷/Precious Metal Brushes	235
3	C1215F	φ12×15.6 mm	贵金属电刷/Precious Metal Brushes	236
4	C1220F	φ12×20.6 mm	贵金属电刷/Precious Metal Brushes	237
5	C1627F	φ15.5×26.9 mm	贵金属电刷/Precious Metal Brushes	238
6	C1718R	φ17×17.8 mm	贵金属电刷/Precious Metal Brushes	239
7	C1723R	φ17×22.8 mm	贵金属电刷/Precious Metal Brushes	240
8	C2430R	φ24.4×30.8 mm	贵金属电刷/Precious Metal Brushes	241

碳刷 GRAPHITE BRUSHES

	电机型号 Motor No.	尺寸 Dimension	换向结构 Commutation Structure	页码 Page
1	C1628R	φ16×27.6mm	碳刷/Graphite Brushes	242
2	C1636R	φ16×36.3 mm	碳刷/Graphite Brushes	243
3	C1718R	φ17×17.8 mm	碳刷/Graphite Brushes	244
4	C1723R	φ17×22.8 mm	碳刷/Graphite Brushes	245
5	C2025F	φ20.3×25 mm	碳刷/Graphite Brushes	246
6	C2032F	φ20.3×32 mm	碳刷/Graphite Brushes	247

C1012F $\varnothing 10\text{mm} \times 12.6\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域: 安防、小型电子产品、飞机类遥控玩具、个人护理产品、便携工具等领域。

Applications: security equipment, small electronic products, remote control model aircraft, personal care products, portable electric tools, etc.

精密直流空心杯电机
PRECISION DC CORELESS MOTOR

无刷电机
BRUSHLESS DC MOTOR

无框力矩电机
FRAMELESS TORQUE MOTOR

驱动器
CONTROLLER

精密齿轮减速电机
PRECISION GEAR MOTOR

精密伺服电机
PRECISION SERVO MOTOR

直流空心杯电机
DC CORELESS MOTOR

直流铁芯电机
DC CORE MOTOR

声波振动电机
SONIC MOTOR

全球营销网络
GLOBAL MARKETING NETWORK

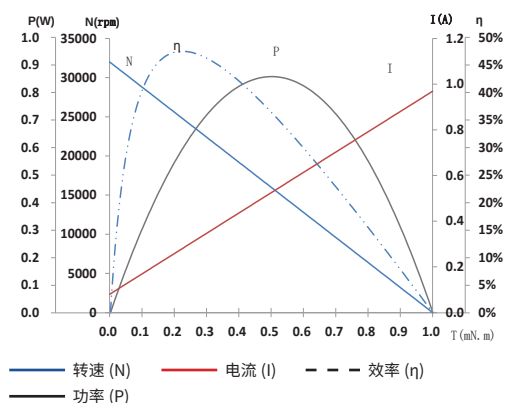
43-0045 43-0108 43-0113

电机参数 / Motor Data

1	电压	Voltage	V	4.5	2.0	3.0			
2	端电阻	Terminal resistance	Ω	3.7	16.5	11.1			
3	空载转速	No-load speed	rpm	32000	7000	12900			
4	空载电流	No-load current	mA	80	20	30			
5	堵转转矩	Stall torque	mNm	1	0.3	0.5			
6	堵转电流	Stall current	mA	969	120	288			
7	负载转矩	Load torque	mNm	0.29	0.09	0.17			
8	负载转速	Load speed	rpm	23000	4900	8400			
9	负载电流	Load current	mA	330	50	120			
10	最大输出功率	Max. output power	W	0.84	0.06	0.17			
11	最大效率	Max. efficiency	%	46.4	46.3	44.7			
12	反电势常数	Back-EMF constant	mV/rpm	0.13	0.24	0.21			
13	转矩常数	Torque constant	mNm/A	1.13	3	1.94			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	32000	23333	25800			
15	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes			
16	重量	Weight	g	3.15	3	3			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+80					

特性曲线 / Characteristics Curve

C1012F43-0045



仅供参考, 详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱: 正齿轮

Gearbox: spur gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

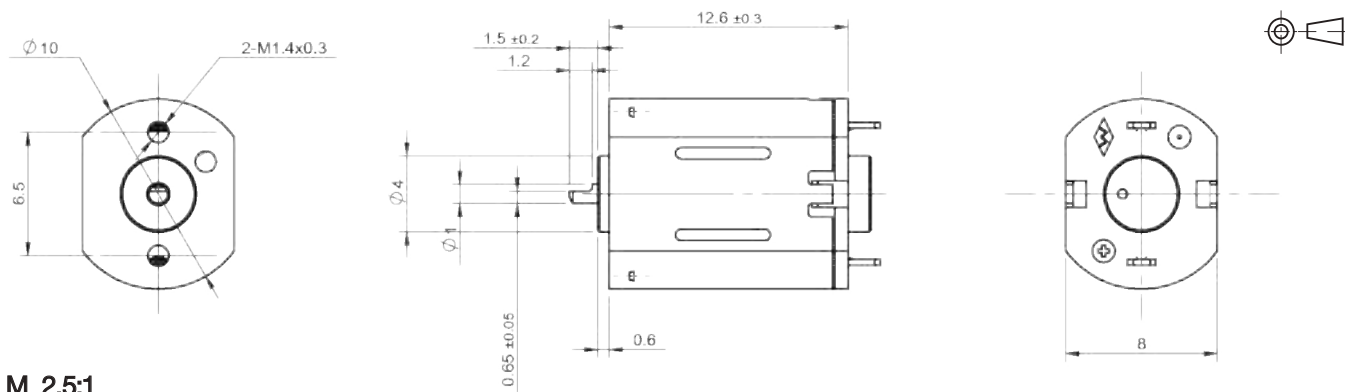
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 159 页

the main technical parameters are detailed on page 159

外观图 / Outline Drawing

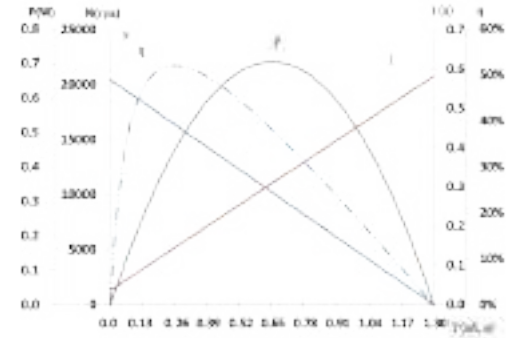


M 2.5:1

C1015F $\varnothing 10\text{mm} \times 15\text{mm}$, 贵金属电刷 Precious Metal Brushes

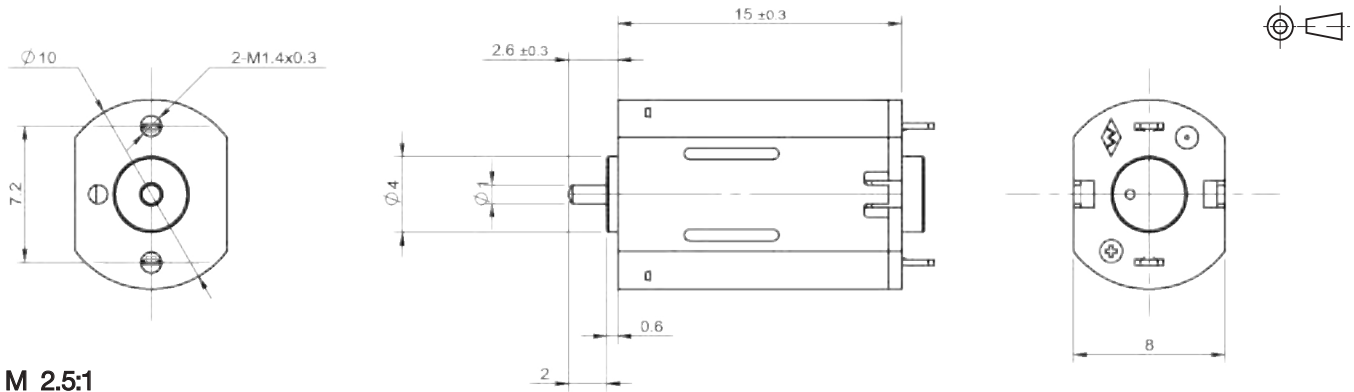
应用领域：安防、小型电子产品、飞机类遥控玩具、个人护理产品、便携工具等领域。

Applications: security equipment, small electronic products, remote control model aircraft, personal care products, portable electric tools, etc.

				33-0169	33-0107	33-0051			
电机参数 / Motor Data									
1	电压	Voltage	V	3.0	6.0	3.0			
2	端电阻	Terminal resistance	Ω	4.5	10	35			
3	空载转速	No-load speed	rpm	14700	20500	5500			
4	空载电流	No-load current	mA	50	35	15			
5	堵转转矩	Stall torque	mNm	1	1.3	0.4			
6	堵转电流	Stall current	mA	680	582	91			
7	负载转矩	Load torque	mNm	0.098	0.098	0.098			
8	负载转速	Load speed	rpm	13300	19000	4200			
9	负载电流	Load current	mA	110	75	33			
10	最大输出功率	Max. output power	W	0.38	0.7	0.06			
11	最大效率	Max. efficiency	%	45.8	51.6	42.7			
12	反电势常数	Back-EMF constant	mV/rpm	0.19	0.28	0.45			
13	转矩常数	Torque constant	mNm/A	1.56	2.38	5.25			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	15000	15769	13750			
15	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes			
16	重量	Weight	g	4	4.1	3.9			
17	工作温度范围	Operating temperature range	°C	-20~+80	特性曲线 /Characteristics Curve				
					C1015F33-0107  — 转速 (N) — 电流 (I) - - - 效率 (η) —— 功率 (P)				
					仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.				

可选配置 / Options	
齿轮箱：正齿轮	齿轮组主要技术指标详见第 159 页
Gearbox: spur gearbox	the main technical parameters are detailed on page 159
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	

外观图 / Outline Drawing



C1215F $\varnothing 12\text{mm} \times 15.6\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域: 安防、小型电子产品、飞机类遥控玩具、个人护理产品、便携工具等领域。

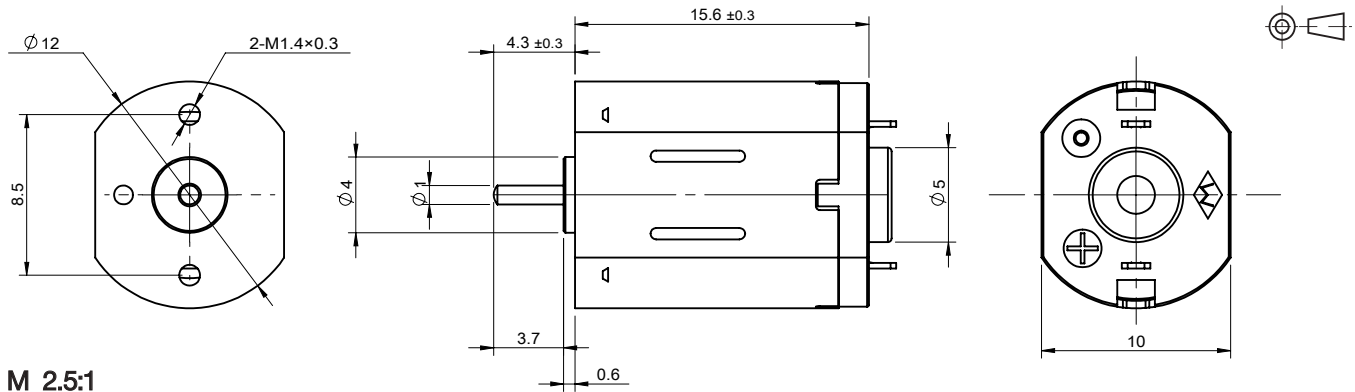
Applications: security equipment, small electronic products, remote control model aircraft, personal care products, portable electric tools, etc.

				13-0086	13-0141	13-0260				
电机参数 / Motor Data										
1	电压	Voltage	V	3.5	1.5	3.0				
2	端电阻	Terminal resistance	Ω	1.7	1.2	10.8				
3	空载转速	No-load speed	rpm	25000	11500	9600				
4	空载电流	No-load current	mA	100	110	40				
5	堵转转矩	Stall torque	mNm	1.8	1.1	0.7				
6	堵转电流	Stall current	mA	1506	1030	274				
7	负载转矩	Load torque	mNm	0.294	0.294	0.294				
8	负载转速	Load speed	rpm	20910	8500	5500				
9	负载电流	Load current	mA	330	350	140				
10	最大输出功率	Max. output power	W	1.18	0.33	0.18				
11	最大效率	Max. efficiency	%	56.5	48.8	44.8				
12	反电势常数	Back-EMF constant	mV/rpm	0.13	0.12	0.27				
13	转矩常数	Torque constant	mNm/A	1.28	1.2	2.99				
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	13912	10455	13714				
15	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes				
16	重量	Weight	g	5.4	5.4	5.1				
17	工作温度范围	Operating temperature range	°C	-20~+80	特性曲线 /Characteristics Curve					
				C1215F13-0086 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P)						
				仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.						

可选配置 / Options										
齿轮箱: 正齿轮				齿轮组主要技术指标详见第 159 页						
Gearbox: spur gearbox				the main technical parameters are detailed on page 159						

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



C1718R $\varnothing 12\text{mm} \times 20.6\text{mm}$, 贵金属电刷 Precious Metal Brushes

应用领域：安防、小型电子产品、飞机类遥控玩具、个人护理产品、便携工具等领域。

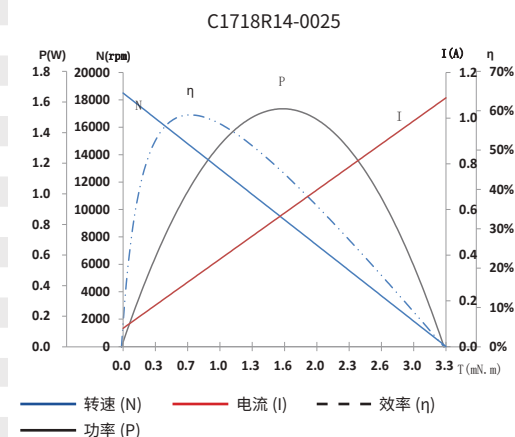
Applications: security equipment, small electronic products, remote control model aircraft, personal care products, portable electric tools, etc.

14-0025 34B-0059 14B-0091

电机参数 / Motor Data

1	电压	Voltage	V	6.0	7.4	11.0			
2	端电阻	Terminal resistance	Ω	4	3	5.1			
3	空载转速	No-load speed	rpm	18500	16000	25200			
4	空载电流	No-load current	mA	80	70	80			
5	堵转转矩	Stall torque	mNm	3.3	6.53	5.61			
6	堵转电流	Stall current	mA	1089	1670	1569			
7	负载转矩	Load torque	mNm	0.39	0.49	0.49			
8	负载转速	Load speed	rpm	16300	14800	23000			
9	负载电流	Load current	mA	200	190	210			
10	最大输出功率	Max. output power	W	1.6	2.74	3.71			
11	最大效率	Max. efficiency	%	60.6	61.1	57.2			
12	反电势常数	Back-EMF constant	mV/rpm	0.31	0.45	0.42			
13	转矩常数	Torque constant	mNm/A	3.27	4.08	3.77			
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	5612	2449	4490			
15	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes			
16	重量	Weight	g	12.6	14.5	12.8			
17	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-20~+80					

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：正齿轮

Gearbox: spur gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

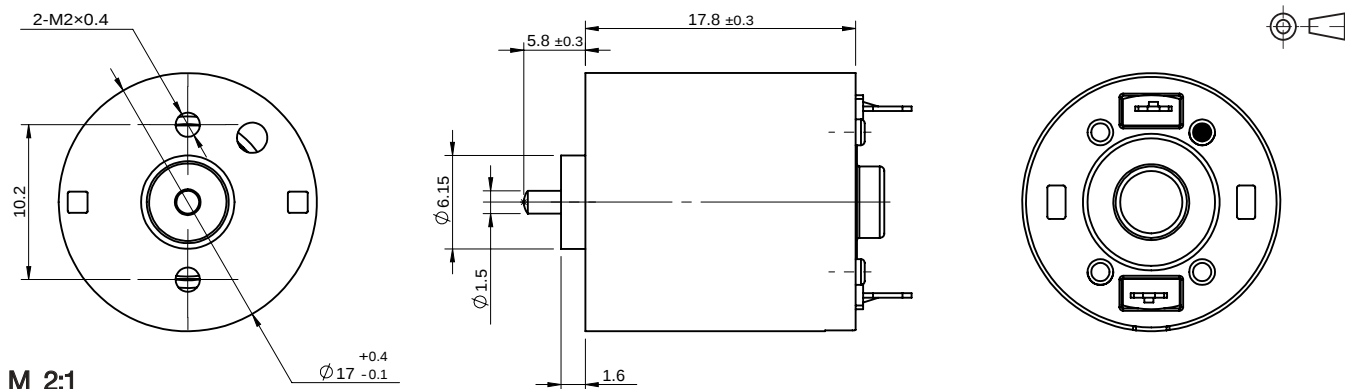
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 159 页

the main technical parameters are detailed on page 159

外观图 / Outline Drawing



C1723R $\varnothing 17\text{mm} \times 22.8\text{mm}$, 贵金属电刷 Precious Metal Brushes

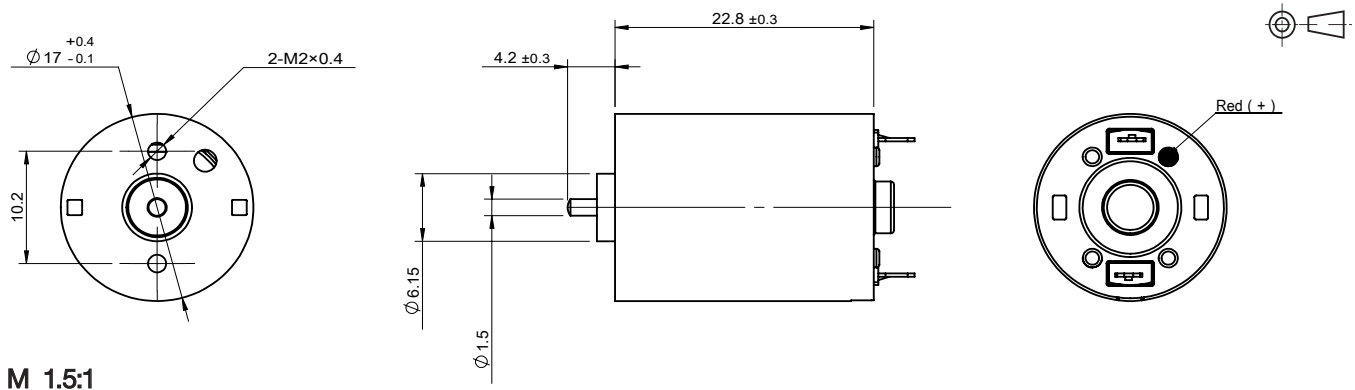
应用领域：安防、小型电子产品、飞机类遥控玩具、个人护理产品、便携工具等领域。

Applications: security equipment, small electronic products, remote control model aircraft, personal care products, portable electric tools, etc.

				14-0096	34-0095	34-0099				
电机参数 / Motor Data										
1	电压	Voltage	V	7.4	6.0	6.0				
2	端电阻	Terminal resistance	Ω	5	1.55	4.6				
3	空载转速	No-load speed	rpm	12000	19400	12400				
4	空载电流	No-load current	mA	45	95	55				
5	堵转转矩	Stall torque	mNm	5.88	7.57	4.4				
6	堵转电流	Stall current	mA	1185	3102	1013				
7	负载转矩	Load torque	mNm	0.49	0.39	0.39				
8	负载转速	Load speed	rpm	11000	18400	11300				
9	负载电流	Load current	mA	140	250	140				
10	最大输出功率	Max. output power	W	1.85	3.85	1.43				
11	最大效率	Max. efficiency	%	59.1	59.9	61.8				
12	反电势常数	Back-EMF constant	mV/rpm	0.6	0.3	0.46				
13	转矩常数	Torque constant	mNm/A	5.16	2.52	4.59				
14	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	2041	2564	2821				
15	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes				
16	重量	Weight	g	18.2	18.2	18.2				
17	工作温度范围	Operating temperature range	°C	-20~+80	特性曲线 / Characteristics Curve					

可选配置 / Options				齿轮组主要技术指标详见第 159 页 the main technical parameters are detailed on page 159
齿轮箱：正齿轮 Gearbox: spur gearbox				
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range				
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges				
轴 Shaft: 长度 length / 异形 shape				
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length				

外观图 / Outline Drawing



M 1.5:1

C1628R $\varnothing 16\text{mm} \times 27.6\text{mm}$, 碳刷 Graphite Brushes

应用领域：小型电子产品、便携工具、智能门锁等领域。
Applications: small electronic products, portable electric tools, smart door lock, etc.

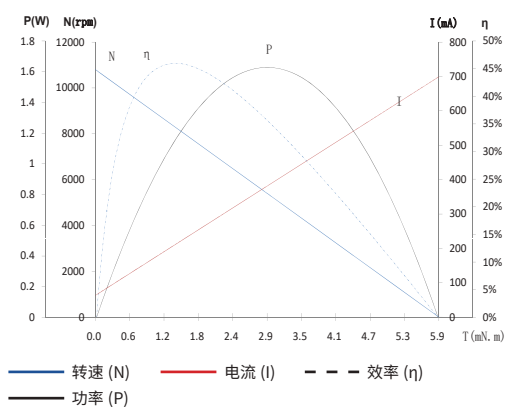
31-0108

电机参数 / Motor Data

1	电压	Voltage	V	12.0					
2	空载转速	No-load speed	rpm	10800					
3	空载电流	No-load current	mA	63					
4	堵转转矩	Stall torque	mNm	5.9					
5	堵转电流	Stall current	mA	700					
6	负载转矩	Load torque	mNm	1.96					
7	负载转速	Load speed	rpm	7200					
8	负载电流	Load current	mA	275					
9	最大输出功率	Max output power	W	1.67					
10	最大效率	Max efficiency	%	47.1					
11	转矩常数	Torque constant	mNm/A	9.26					
12	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1831					
13	重量	Weight	g	20.8					
14	压敏电阻	Varistor	Yes/No	Yes					
15	工作温度范围	Operating temperature range	°C	-20~+60					

特性曲线 / Characteristics Curve

C1628R31-0108



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：正齿轮
Gearbox: spur gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

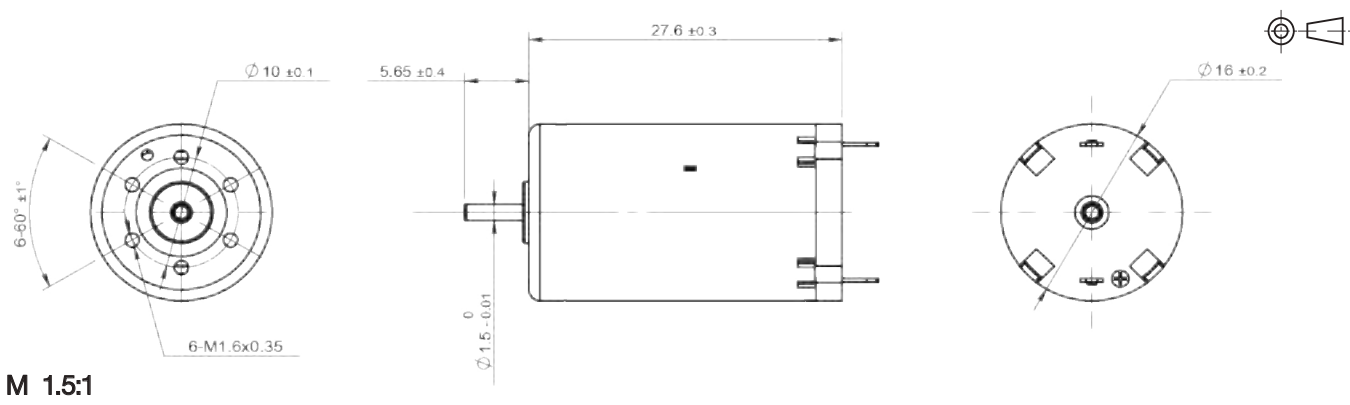
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 159 页
the main technical parameters are detailed on page 159

外观图 / Outline Drawing

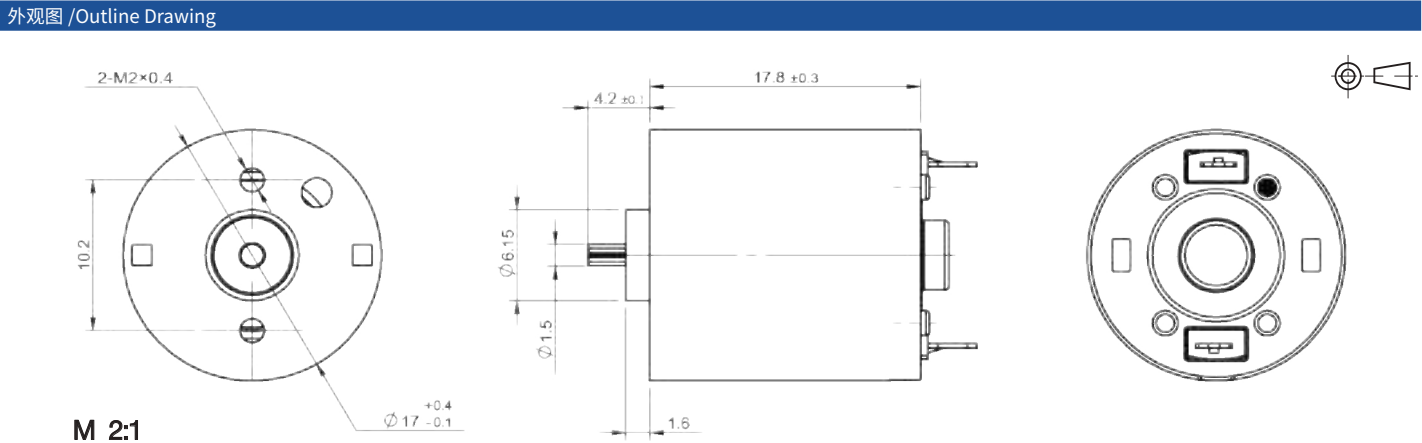


C1718R $\varnothing 17\text{mm} \times 17.8\text{mm}$, 碳刷 Graphite Brushes

应用领域：小型电子产品、便携工具、智能门锁等领域。
Applications: small electronic products, portable electric tools, smart door lock, etc.

				31B-13120	31B-0110	31B-0129				
电机参数 / Motor Data										
1	电压	Voltage	V	4.8	6.0	6.0				
2	空载转速	No-load speed	rpm	14200	8300	12700				
3	空载电流	No-load current	rpm	130	50	120				
4	堵转转矩	Stall torque	mNm	4.9	4.3	7.35				
5	堵转电流	Stall current	mA	1600	700	1900				
6	负载转矩	Load torque	mNm	0.88	0.39	0.49				
7	负载转速	Load speed	rpm	11600	7580	11900				
8	负载电流	Load current	mA	400	110	230				
9	最大输出功率	Max output power	W	1.82	0.94	2.45				
10	最大效率	Max efficiency	%	57.5	55.5	54.8				
11	转矩常数	Torque constant	mNm/A	3.33	6.62	4.13				
12	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	2898	1930	1728				
13	重量	Weight	g	12.8	12.8	13				
14	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes				
15	工作温度范围	Operating temperature range	°C	-20~+80	特性曲线 /Characteristics Curve					
					C1718R31B-13120 — 转速 (N) — 电流 (I) - - - 效率 (η) — 功率 (P) 仅供参考，详细了解请以产品规格书为准。 For reference only, please refer to the product specification.					

可选配置 / Options	
齿轮箱：正齿轮	齿轮组主要技术指标详见第 159 页
Gearbox: spur gearbox	the main technical parameters are detailed on page 159
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range	
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges	
轴 Shaft: 长度 length / 异形 shape	
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length	



C1723R $\varnothing 17\text{mm} \times 22.8\text{mm}$, 碳刷 Graphite Brushes

应用领域：小型电子产品、便携工具、智能门锁等领域。

Applications: small electronic products, portable electric tools, smart door lock, etc.

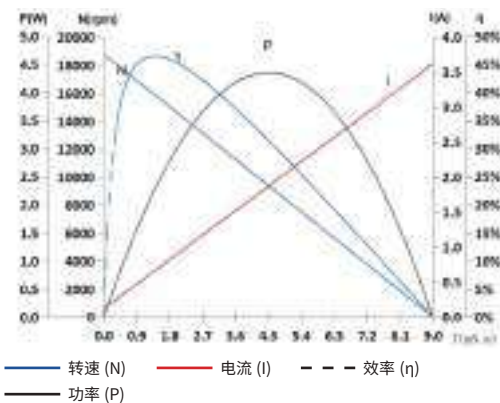
31B-0114 31B-0159 31B-0165

电机参数 / Motor Data

1	电压	Voltage	V	7.4	12.0	12.0			
2	空载转速	No-load speed	rpm	18800	18400	17200			
3	空载电流	No-load current	rpm	120	80	80			
4	堵转转矩	Stall torque	mNm	9	9.8	11.77			
5	堵转电流	Stall current	mA	3700	1900	2700			
6	负载转矩	Load torque	mNm	0.49	0.88	0.49			
7	负载转速	Load speed	rpm	17780	16700	16500			
8	负载电流	Load current	mA	310	240	180			
9	最大输出功率	Max output power	W	4.43	4.73	5.31			
10	最大效率	Max efficiency	%	46.5	57.1	47.7			
11	转矩常数	Torque constant	mNm/A	2.51	5.38	4.49			
12	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	2089	1878	1461			
13	重量	Weight	g	18.2	18.2	18.2			
14	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes			
15	工作温度范围	Operating temperature range	°C	-20~+80					

特性曲线 / Characteristics Curve

C1723R31B-0114



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：正齿轮

Gearbox: spur gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

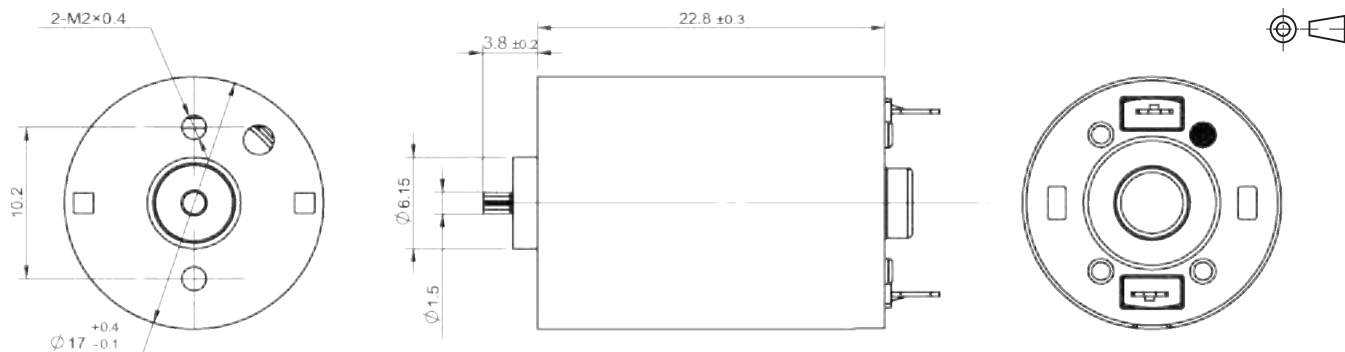
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 159 页

the main technical parameters are detailed on page 159

外观图 / Outline Drawing



M 2:1

C2025F $\varnothing 20.3\text{mm} \times 25\text{mm}$, 碳刷 Graphite Brushes

应用领域：小型电子产品、便携工具、智能门锁等领域。

Applications: small electronic products, portable electric tools, smart door lock, etc.

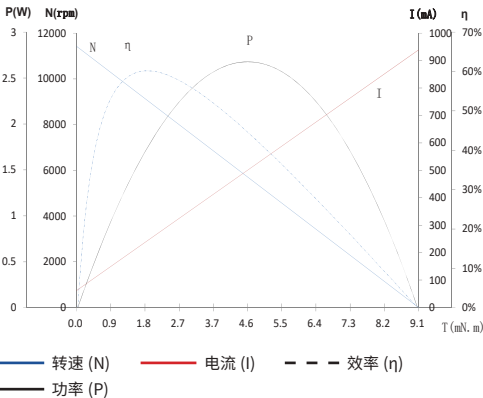
41-0175

电机参数 / Motor Data

1	电压	Voltage	V	12.0
2	空载转速	No-load speed	rpm	11420
3	空载电流	No-load current	mA	62
4	堵转转矩	Stall torque	mNm	9.1
5	堵转电流	Stall current	mA	950
6	负载转矩	Load torque	mNm	1.96
7	负载转速	Load speed	rpm	8971
8	负载电流	Load current	mA	250
9	最大输出功率	Max output power	W	2.7
10	最大效率	Max efficiency	%	60.6
11	转矩常数	Torque constant	mNm/A	10.3
12	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	1255
13	重量	Weight	g	25
14	压敏电阻	Varistor	Yes/No	Yes
15	工作温度范围	Operating temperature range	°C	0~+60

特性曲线 / Characteristics Curve

C2025F41-0175



— 转速 (N) — 电流 (I) - - - 效率 (η)

—— 功率 (P)

仅供参考，详细了解请以产品规格书为准。

For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：正齿轮

Gearbox: spur gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

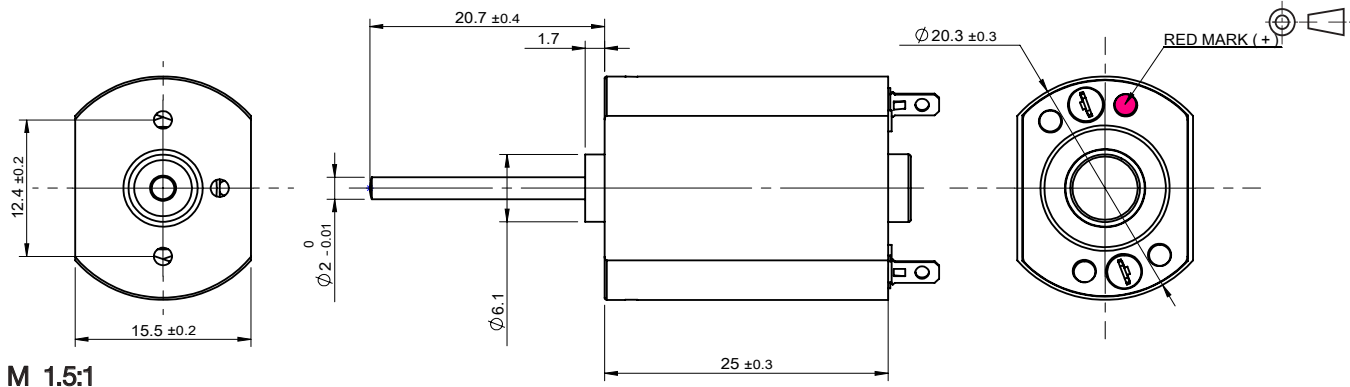
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 159 页

the main technical parameters are detailed on page 159

外观图 / Outline Drawing



C2032F $\varnothing 20.3\text{mm} \times 32\text{mm}$, 碳刷 Graphite Brushes

应用领域：小型电子产品、便携工具、智能门锁等领域。

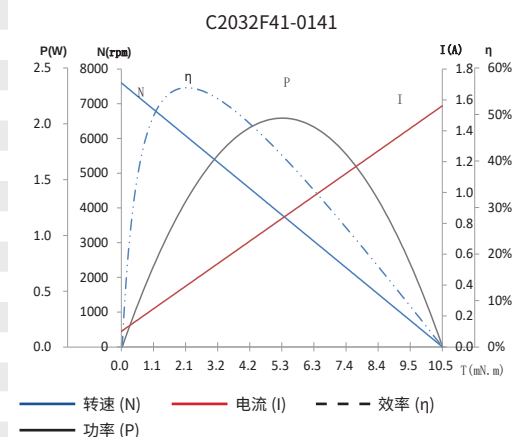
Applications: small electronic products, portable electric tools, smart door lock, etc.

41-0141 41-0142 41-0159

电机参数 / Motor Data

1	电压	Voltage	V	6.0	9.0	12.0			
2	空载转速	No-load speed	rpm	7400	8200	8700			
3	空载电流	No-load current	rpm	89	65	57			
4	堵转转矩	Stall torque	mNm	12.1	12.8	12.4			
5	堵转电流	Stall current	mA	1576	1264	1101			
6	负载转矩	Load torque	mNm	1.8	2.27	1.57			
7	负载转速	Load speed	rpm	6300	6750	7600			
8	负载电流	Load current	mA	310	277	189			
9	最大输出功率	Max output power	W	2.35	2.76	2.83			
10	最大效率	Max efficiency	%	64.9	64.5	56.9			
11	转矩常数	Torque constant	mNm/A	8.14	10.71	11.89			
12	转速 / 转矩斜率	Speed/torque gradient	rpm/mNm	611	639	701			
13	重量	Weight	g	33	33	33			
14	压敏电阻	Varistor	Yes/No	Yes	Yes	Yes			
15	工作温度范围	Operating temperature range	°C	0~+60					

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

齿轮箱：正齿轮

Gearbox: spur gearbox

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

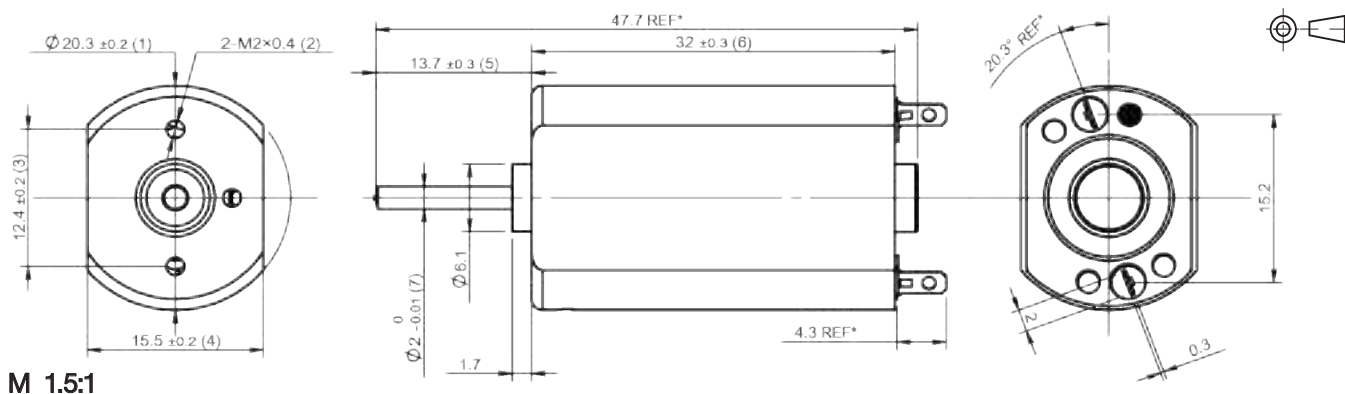
轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

齿轮组主要技术指标详见第 159 页

the main technical parameters are detailed on page 159

外观图 / Outline Drawing



您的个人备注 Your personal notes

[illegible]

Constar

声波振动电机

SONIC MOTOR



CONTENT 目录

声波振动电机 SONIC MOTOR

	电机型号 Motor No.	尺寸 Dimension	启动转矩 Starting Torque	页码 Page
1	1239ZDF	φ12.5×39 mm	11mNm / 11mNm / 11mNm	252
2	1339ZDF	φ13.5×39 mm	11mNm / 8mNm / 15mNm	253
3	1434ZDF	φ14.5×34 mm	12mNm / 12mNm / 8.5mNm	254
4	1538ZDF	φ14.9×38 mm	13mNm / 13mNm / 9mNm	255
5	1640ZDF	φ16×39.8 mm	15mNm / 15mNm / 14mNm	256
6	1640ZDT	φ16×39.8 mm	19mNm / 17mNm / 17mNm	257
7	1839ZDF	φ18.3×40.05 mm	18mNm / 22mNm / 18mNm	258
8	1840ZDT	φ18.3×40.05 mm	19mNm / 21mNm / 22mNm	259
9	1941ZDF	φ18.6*41mm	22mNm / 22mNm / 21mNm	260
10	2038ZDF	φ20.3×38.3 mm	22mNm	261
11	2040ZDF	φ20.3×40 mm	23mNm	261
12	2724ZDR	φ27×23.5 mm	40mNm / 27mNm / 54mNm	262
13	2734ZDR	φ27×33.5 mm	56mNm / 56mNm / 75mNm	263

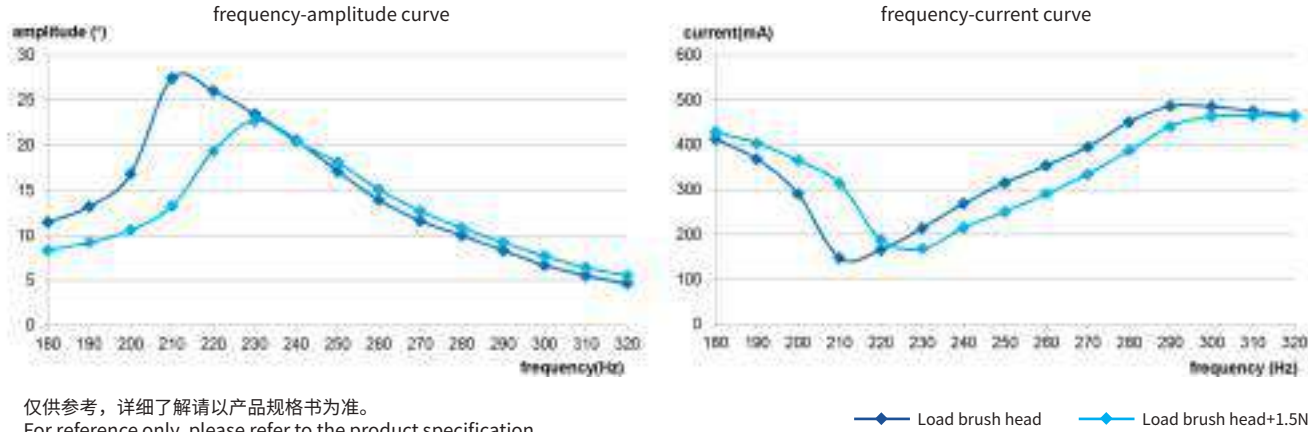
1239ZDF $\varnothing 12.5\text{mm} \times 39\text{mm}$

应用领域：电动牙刷、保健器材、清洁用具等领域。

Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-ET-L2-33-3.7	-ET-L4-3.7	-1-L8-3.7
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	3.7
2	直流电阻	Resistance	Ω	5.3	4.0	4.0
3	工作频率范围	Operating frequency range	Hz	180~350	180~350	180~350
4	空载振动频次	No-load vibration frequency	Times/minute	40800	36000	36000
5	空载振动电流	No-load current	mA	130	140	140
6	启动转矩	Starting torque	mNm	11	11	11
7	启动电流	Starting current	A	0.8	0.9	0.9
8	负载（刷头）	Rated load (Brush head)	g	3.8	3.8	3.8
9	负载振动频次	Load vibration frequency	Times/minute	30000	30000	30000
10	负载电流	Load current	mA	320	400	350
11	转子惯量	Rotor inertia	gcm^2	0.65	0.65	0.65
12	重量	Weight	g	16.8	16.7	16.7
13	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60	-10~+60	-10~+60
特性曲线 / Characteristics Curve						

1239ZDF-1-L8-3.7

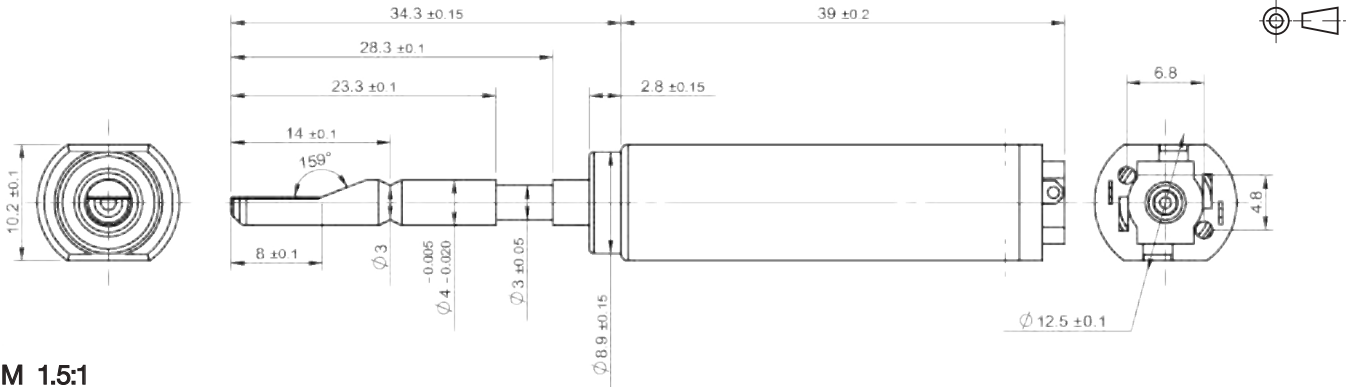


仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing

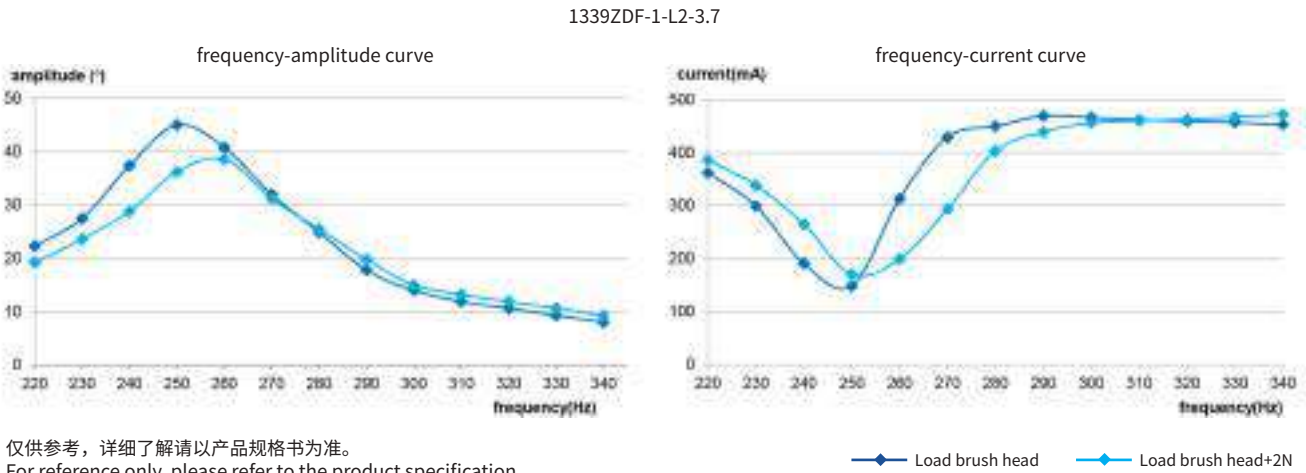


M 1:5:1

1339ZDF Ø13.5mm*39mm

应用领域：电动牙刷、保健器材、清洁用具等领域。
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

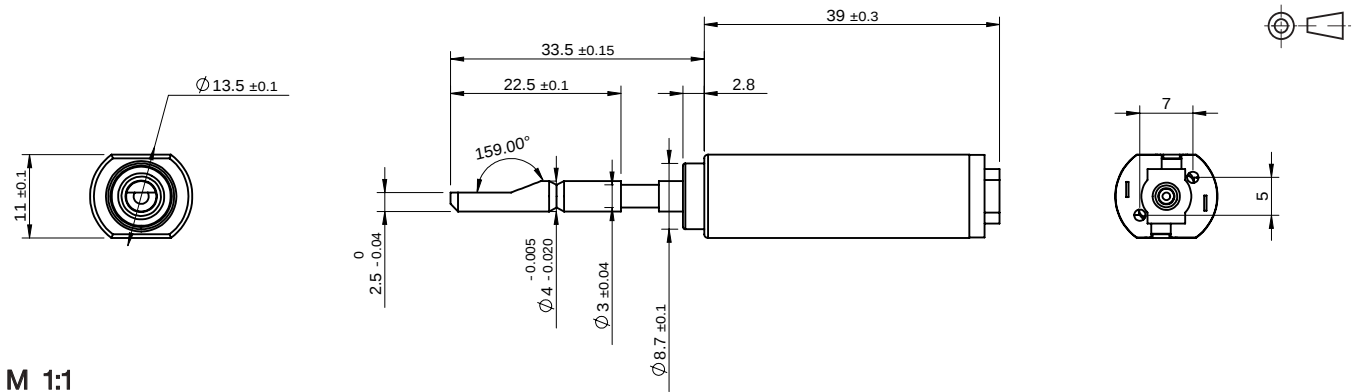
				-1-L2-3.7	-1-L3-2.5	-1-L4-5.0
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	2.5	5.0
2	直流电阻	Resistance	Ω	4.0	4.0	4.0
3	工作频率范围	Operating frequency range	Hz	220~360	220~360	220~360
4	空载振动频次	No-load vibration frequency	Times/minute	39600	39600	39600
5	空载振动电流	No-load current	mA	90	75	110
6	启动转矩	Starting torque	mNm	11	8	15
7	启动电流	Starting current	A	0.9	0.7	1.2
8	负载（刷头）	Rated load (Brush head)	g	3.8	3.8	3.8
9	负载振动频次	Load vibration frequency	Times/minute	31200	31200	31200
10	负载电流	Load current	mA	400	330	480
11	转子惯量	Rotor inertia	gcm ²	0.75	0.75	0.75
12	重量	Weight	g	19	19	19
13	工作温度范围	Operating temperature range	°C	-10~+60	-10~+60	-10~+60
特性曲线 / Characteristics Curve						



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options	
性能 Special coils:	连续运行范围内可定制 customizable in continuous operation range
法兰 Flange:	标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft:	长度 length / 异形 shape
电气连接 Electrical connection:	端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



1434ZDF $\varnothing 14.5\text{mm} \times 34\text{mm}$

应用领域：电动牙刷、保健器材、清洁用具等领域。

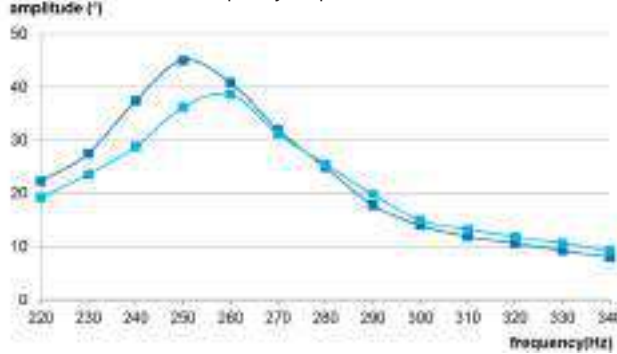
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-1-L1-3.7	-ET-L15-3.7	-1-L2-2.5
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	2.5
2	直流电阻	Resistance	Ω	3.8	3.8	3.8
3	工作频率范围	Operating frequency range	Hz	220~360	220~360	220~360
4	空载振动频次	No-load vibration frequency	Times/minute	39600	39600	39600
5	空载振动电流	No-load current	mA	90	95	80
6	启动转矩	Starting torque	mNm	12	12	8.5
7	启动电流	Starting current	A	0.9	0.9	0.7
8	负载（刷头）	Rated load (Brush head)	g	3.8	3.8	3.8
9	负载振动频次	Load vibration frequency	Times/minute	31200	31200	31200
10	负载电流	Load current	mA	400	440	340
11	转子惯量	Rotor inertia	gcm^2	1	1	1
12	重量	Weight	g	19	19	19
13	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60	-10~+60	-10~+60

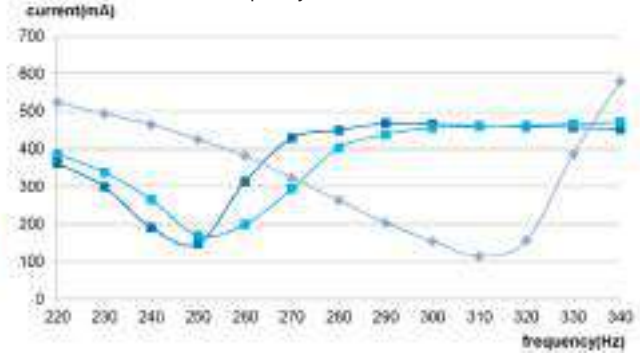
特性曲线 / Characteristics Curve

1434ZDF-1-L1-3.7

frequency-amplitude curve



frequency-current curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

◆ Load brush head ◆ Load brush head+2N ◆ No-load

可选配置 / Options

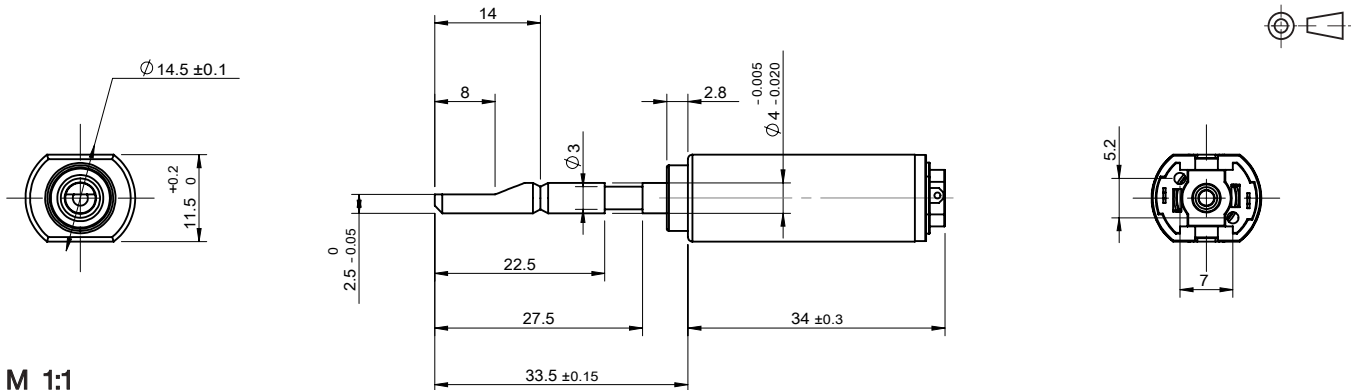
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

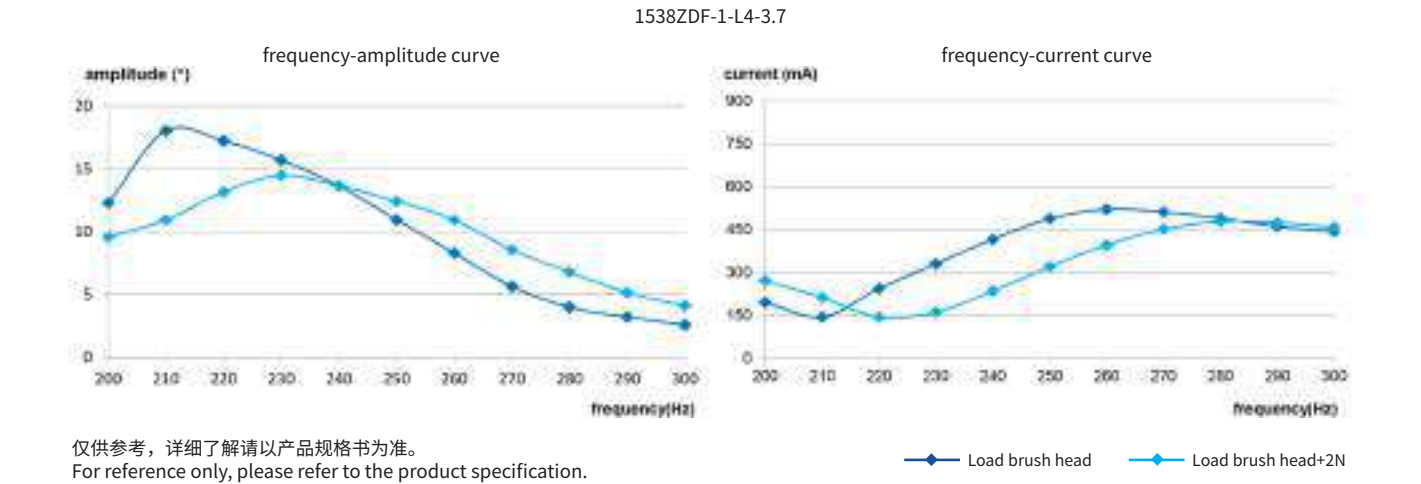
外观图 / Outline Drawing



1538ZDF $\varnothing 14.9\text{mm} \times 38\text{mm}$

应用领域：电动牙刷、保健器材、清洁用具等领域。
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-1-L4-3.7	-ET-L9-3.7	-1-L1-2.5
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	2.5
2	直流电阻	Resistance	Ω	3.8	3.8	3.8
3	工作频率范围	Operating frequency range	Hz	200~360	200~360	200~360
4	空载振动频次	No-load vibration frequency	Times/minute	40800	40800	40800
5	空载振动电流	No-load current	mA	90	95	90
6	启动转矩	Starting torque	mNm	13	13	9
7	启动电流	Starting current	A	0.9	0.9	0.7
8	负载（刷头）	Rated load (Brush head)	g	3.9	3.9	3.9
9	负载振动频次	Load vibration frequency	Times/minute	31200	31200	31200
10	负载电流	Load current	mA	350	380	320
11	转子惯量	Rotor inertia	gcm^2	1.1	1.1	1.1
12	重量	Weight	g	20	20	20
13	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60	-10~+60	-10~+60
特性曲线 / Characteristics Curve						



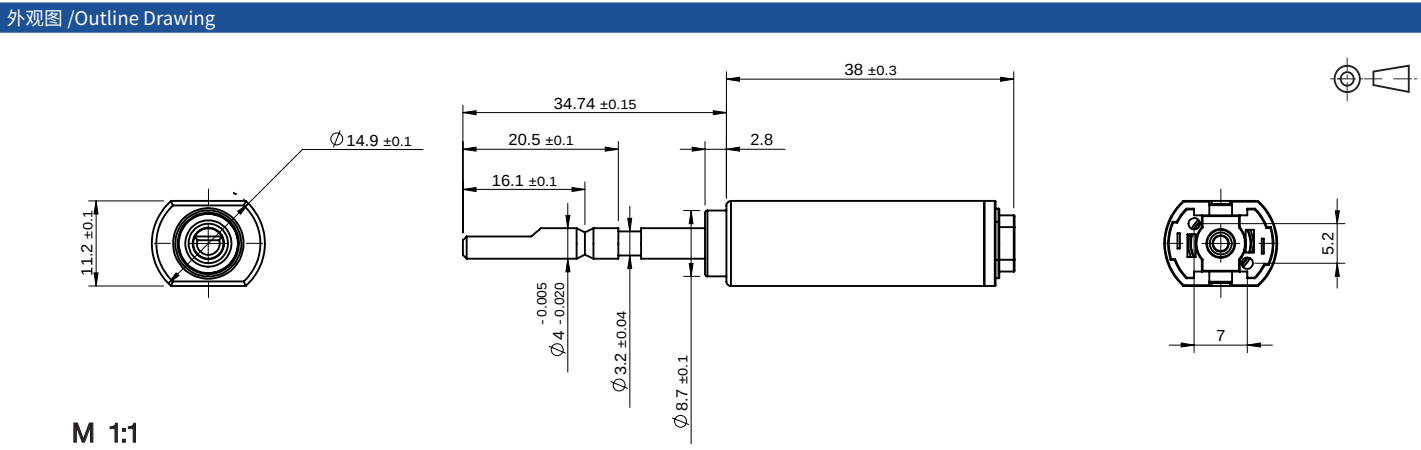
可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length



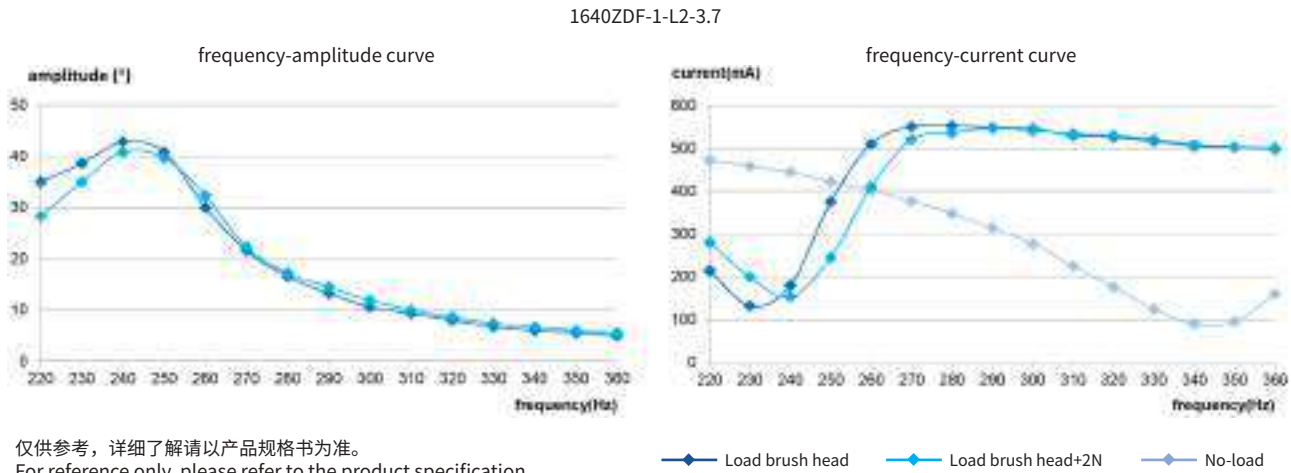
1640ZDF $\varnothing 16\text{mm} \times 39.8\text{mm}$

应用领域：电动牙刷、保健器材、清洁用具等领域。

Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-1-L2-3.7	-T-1A-L36-3.7	-ET-L4-3.7
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	3.7
2	直流电阻	Resistance	Ω	3.7	3.7	4.0
3	工作频率范围	Operating frequency range	Hz	220~360	220~360	220~360
4	空载振动频次	No-load vibration frequency	Times/minute	40800	42000	40800
5	空载振动电流	No-load current	mA	90	90	85
6	启动转矩	Starting torque	mNm	15	15	14
7	启动电流	Starting current	A	1	1	0.9
8	负载（刷头）	Rated load (Brush head)	g	3.6	3.9	3.9
9	负载振动频次	Load vibration frequency	Times/minute	36000	36000	36000
10	负载电流	Load current	mA	350	370	330
11	转子惯量	Rotor inertia	gcm^2	1.2	1.2	1.2
12	重量	Weight	g	25	25	25
13	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60	-10~+60	-10~+60

特性曲线 / Characteristics Curve



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

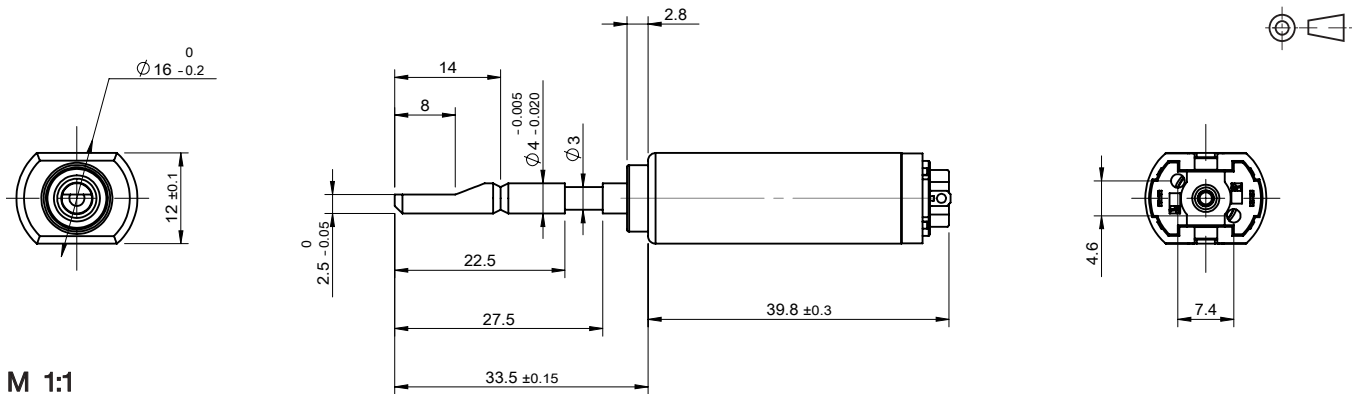
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

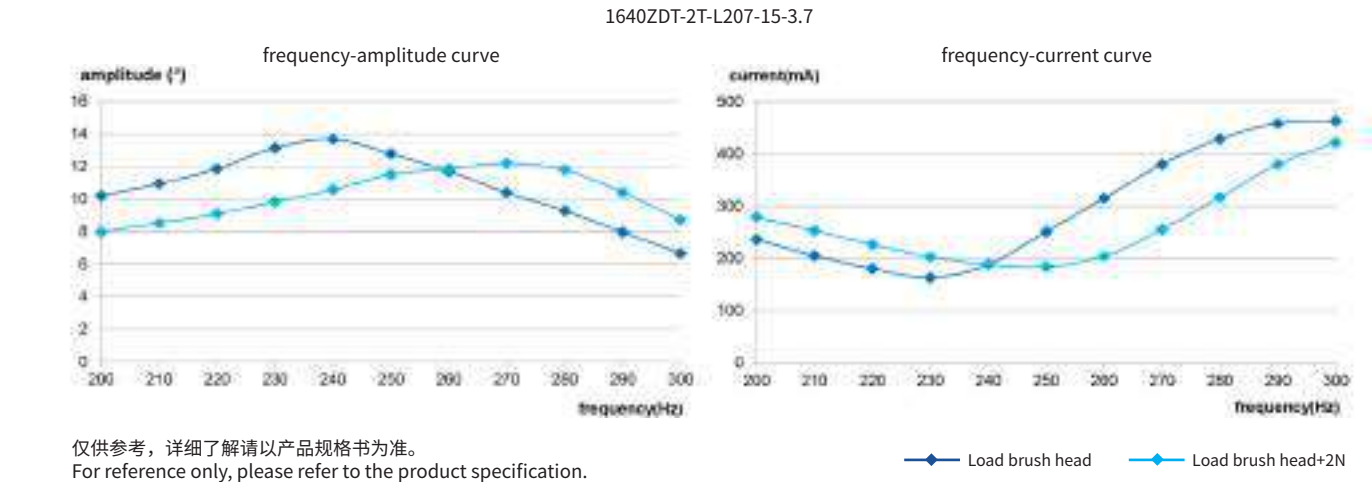
外观图 / Outline Drawing



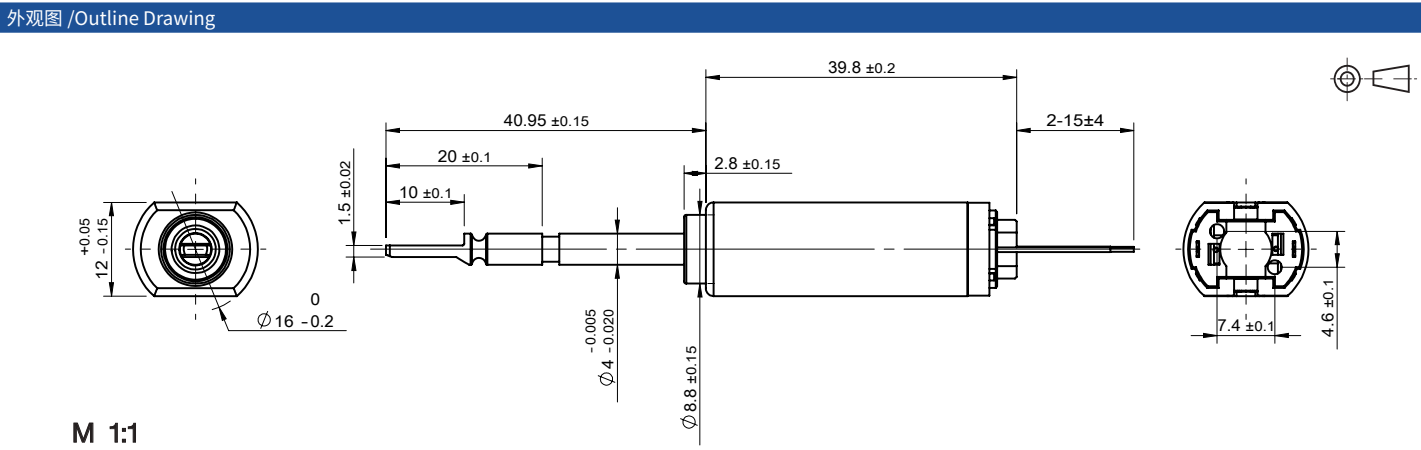
1640ZDT Ø16mm*39.8mm

应用领域：电动牙刷、保健器材、清洁用具等领域。
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-1-L196-30-3.7	-2-L197-30-3.7	-2T-L207-15-3.7
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	3.7
2	直流电阻	Resistance	Ω	3.7	4.0	4.0
3	工作频率范围	Operating frequency range	Hz	200~400	200~400	200~400
4	空载振动频次	No-load vibration frequency	Times/minute	45600	45600	48000
5	空载振动电流	No-load current	mA	90	85	85
6	启动转矩	Starting torque	mNm	19	17	17
7	启动电流	Starting current	A	0.9	0.8	0.8
8	负载（刷头）	Rated load (Brush head)	g	4.6	4.6	5.0
9	负载振动频次	Load vibration frequency	Times/minute	31200	31200	31200
10	负载电流	Load current	mA	450	380	350
11	转子惯量	Rotor inertia	gcm ²	0.35	0.27	0.27
12	重量	Weight	g	23.6	21.8	22
13	工作温度范围	Operating temperature range	°C	-10~+60	-10~+60	-10~+60
特性曲线 / Characteristics Curve						



可选配置 / Options	
性能 Special coils:	连续运行范围内可定制 customizable in continuous operation range
法兰 Flange:	标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft:	长度 length / 异形 shape
电气连接 Electrical connection:	端子或导线 connector or wire / 导线长度 lead wires length



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直流铁芯电机
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声波振动电机
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1839ZDF $\varnothing 18.3\text{mm} \times 40.05\text{mm}$

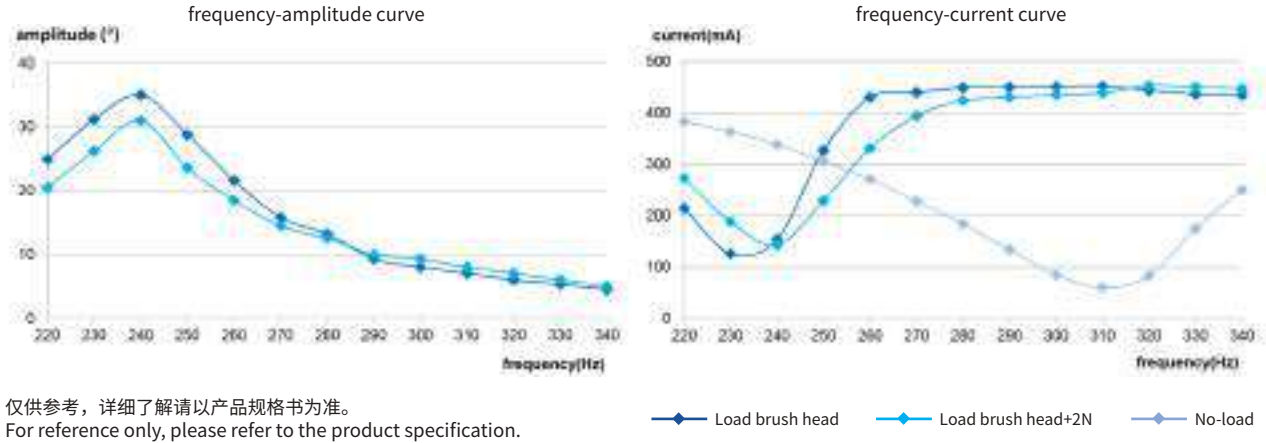
应用领域：电动牙刷、保健器材、清洁用具等领域。

Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-1-L5-3.7	-1AD-L23-30-3.7	-ET-L2-3.7
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	3.7
2	直流电阻	Resistance	Ω	3.3	3.7	3.7
3	工作频率范围	Operating frequency range	Hz	240~350	220~340	240~350
4	空载振动频次	No-load vibration frequency	Times/minute	40000	34800	40000
5	空载振动电流	No-load current	mA	90	75	80
6	启动转矩	Starting torque	mNm	18	22	18
7	启动电流	Starting current	A	1.1	1	1
8	负载（刷头）	Rated load (Brush head)	g	3.8	3.9	3.8
9	负载振动频次	Load vibration frequency	Times/minute	33600	31200	33600
10	负载电流	Load current	mA	400	460	380
11	转子惯量	Rotor inertia	gcm^2	1.7	1.8	1.6
12	重量	Weight	g	29	30	29
13	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60	-10~+60	-10~+60

特性曲线 / Characteristics Curve

1839ZDF-1-L5-3.7



可选配置 / Options

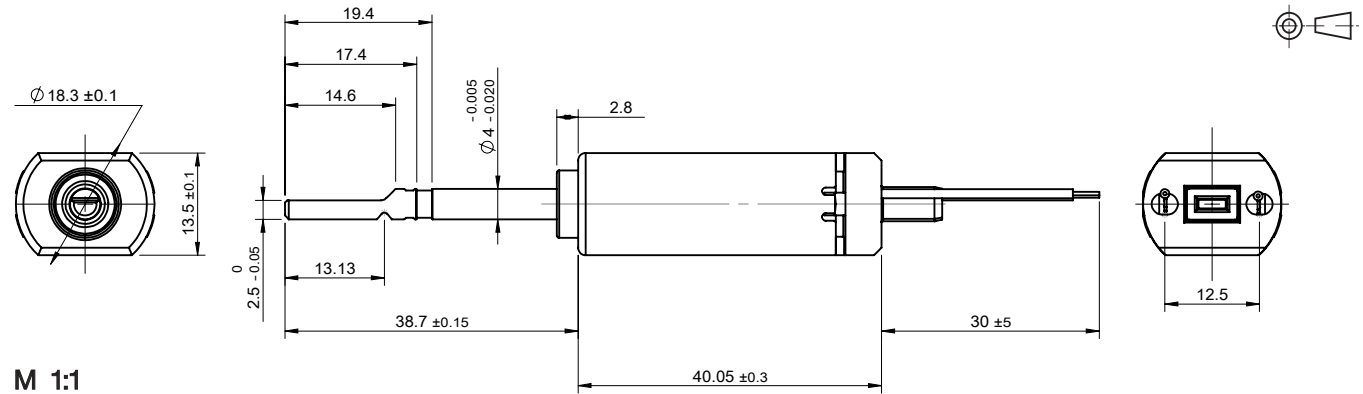
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

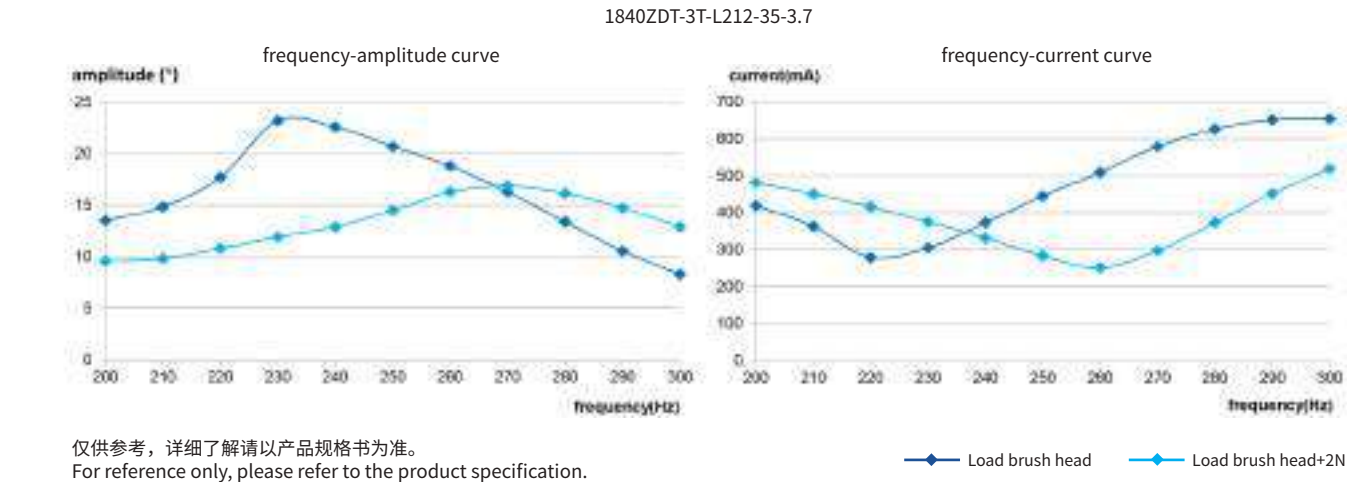
外观图 / Outline Drawing



1840ZDT $\varnothing 18.3\text{mm} \times 40.05\text{mm}$

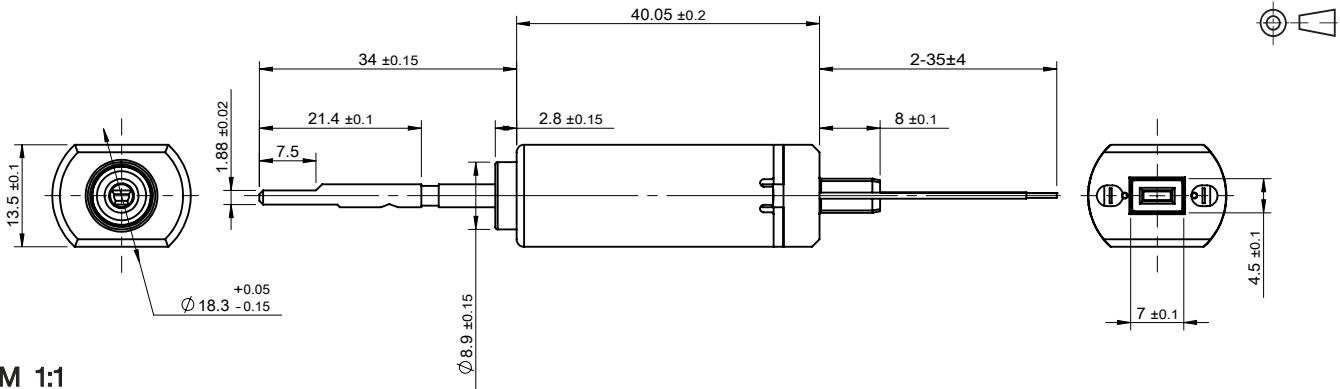
应用领域：电动牙刷、保健器材、清洁用具等领域。
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-2-L202-30-3.7	-3T-L212-35-3.7	-1-L1-30-3.7	
电机参数 / Motor Data							
1	电压	Voltage	V	3.7	3.7	3.7	
2	直流电阻	Resistance	Ω	8	5.1	3.1	
3	工作频率范围	Operating frequency range	Hz	200~400	200~400	200~400	
4	空载振动频次	No-load vibration frequency	Times/minute	45600	43200	45600	
5	空载振动电流	No-load current	mA	55	70	105	
6	启动转矩	Starting torque	mNm	19	21	22	
7	启动电流	Starting current	A	0.8	0.9	1	
8	负载（刷头）	Rated load (Brush head)	g	4.2	3.5	4.5	
9	负载振动频次	Load vibration frequency	Times/minute	33600	34800	33000	
10	负载电流	Load current	mA	240	400	480	
11	转子惯量	Rotor inertia	gcm²	0.27	0.47	0.26	
12	重量	Weight	g	25	27	27	
13	工作温度范围	Operating temperature range	°C	-10~+60	-10~+60	-10~+60	
特性曲线 /Characteristics Curve							



可选配置 / Options	
性能	Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰	Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴	Shaft: 长度 length / 异形 shape
电气连接	Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing

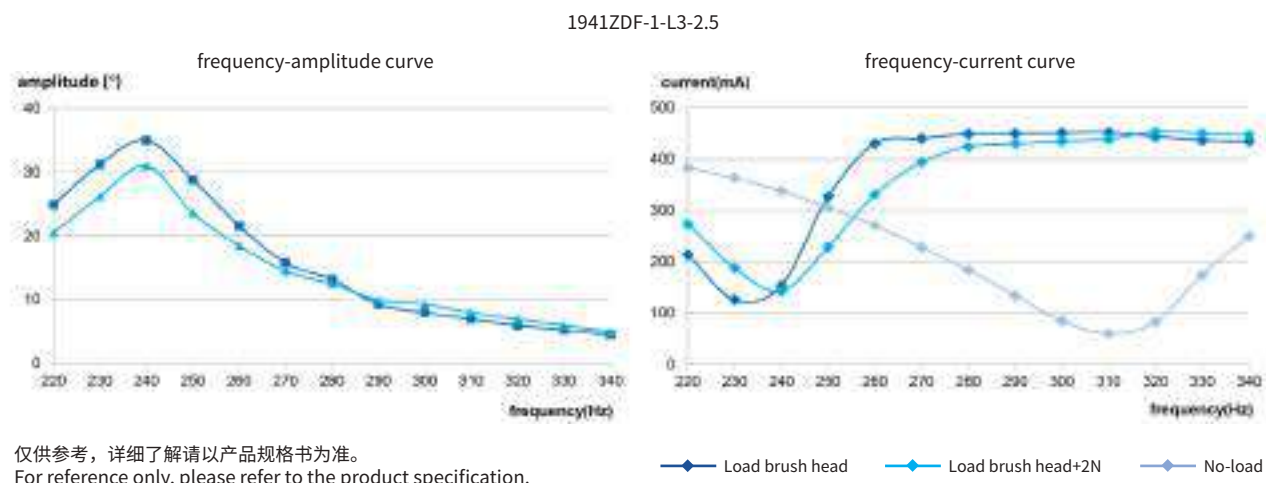


1941ZDF $\varnothing 18.6\text{mm} \times 41\text{mm}$

应用领域：电动牙刷、保健器材、清洁用具等领域。
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-1-L3-2.5	-1-L2-30-3.7	-1K-L4-30-3.7
电机参数 / Motor Data						
1	电压	Voltage	V	2.5	3.7	3.7
2	直流电阻	Resistance	Ω	3.5	3.5	3.7
3	工作频率范围	Operating frequency range	Hz	200~360	200~360	200~360
4	空载振动频次	No-load vibration frequency	Times/minute	38400	38400	38400
5	空载振动电流	No-load current	mA	80	90	95
6	启动转矩	Starting torque	mNm	22	22	21
7	启动电流	Starting current	A	1.1	1.1	1
8	负载（刷头）	Rated load (Brush head)	g	3.8	3.8	3.8
9	负载振动频次	Load vibration frequency	Times/minute	36000	36000	36000
10	负载电流	Load current	mA	360	400	420
11	转子惯量	Rotor inertia	gcm^2	1.8	1.8	1.8
12	重量	Weight	g	31	31	31
13	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60	-10~+60	-10~+60

特性曲线 / Characteristics Curve

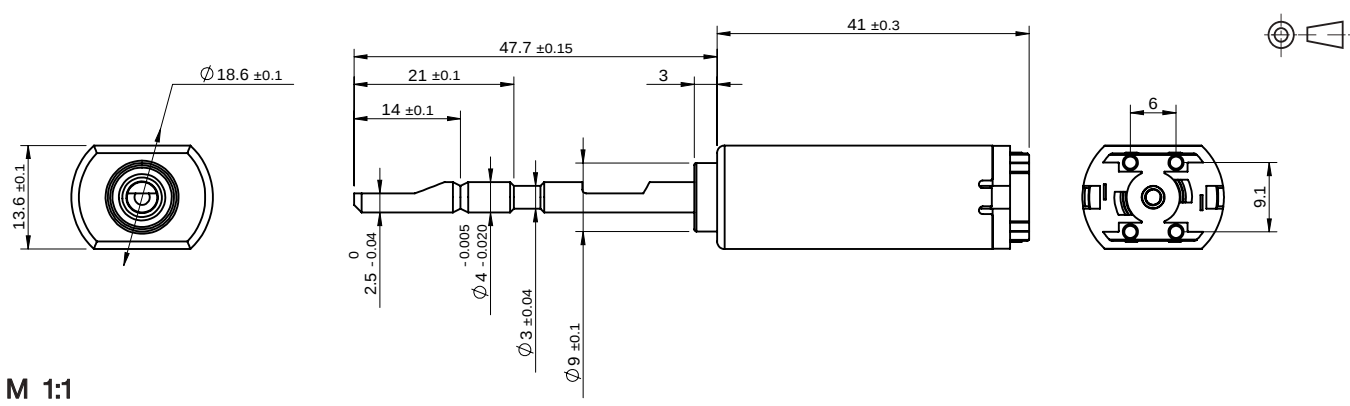


仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



2038ZDF/2040ZDF $\varnothing 20.3\text{mm} \times 38.3/40\text{mm}$

应用领域：电动牙刷、保健器材、清洁用具等领域。

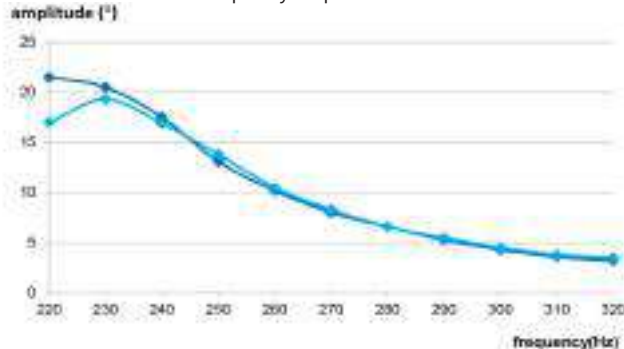
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-BW-3-L4-3.7	-ET-L4-3.7	2040ZDF-3-L1-3.7
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	3.7
2	直流电阻	Resistance	Ω	3.2	3.2	3.2
3	工作频率范围	Operating frequency range	Hz	230~330	220~320	220~320
4	空载振动频次	No-load vibration frequency	Times/minute	34800	34800	34800
5	空载振动电流	No-load current	mA	90	95	90
6	启动转矩	Starting torque	mNm	22	22	23
7	启动电流	Starting current	A	1.15	1.15	1.2
8	负载（刷头）	Rated load (Brush head)	g	4.4	4.4	4.4
9	负载振动频次	Load vibration frequency	Times/minute	31000	31000	31000
10	负载电流	Load current	mA	400	450	500
11	转子惯量	Rotor inertia	gcm^2	2.4	2.4	2.4
12	重量	Weight	g	31	31	31
13	工作温度范围	Operating temperature range	$^{\circ}\text{C}$	-10~+60	-10~+60	-10~+60

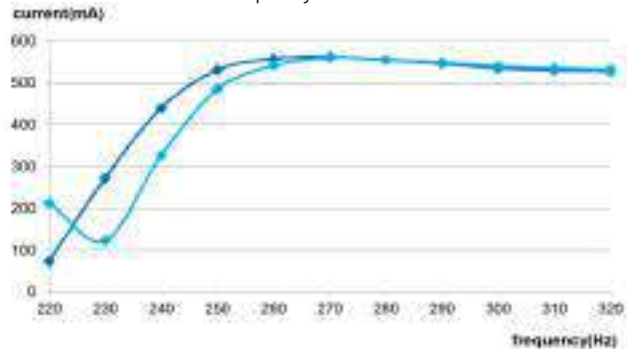
特性曲线 / Characteristics Curve

2038ZDF-BW-3-L4-3.7

frequency-amplitude curve



frequency-current curve



仅供参考，详细了解请以产品规格书为准。

For reference only, please refer to the product specification.

—◆— Load brush head —◆— Load brush head+2N

可选配置 / Options

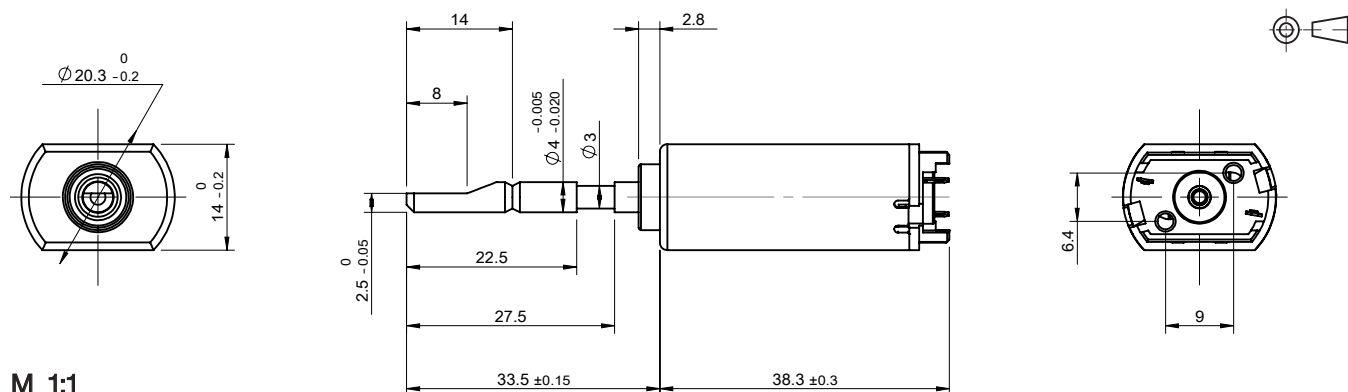
性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range

法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges

轴 Shaft: 长度 length / 异形 shape

电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

外观图 / Outline Drawing



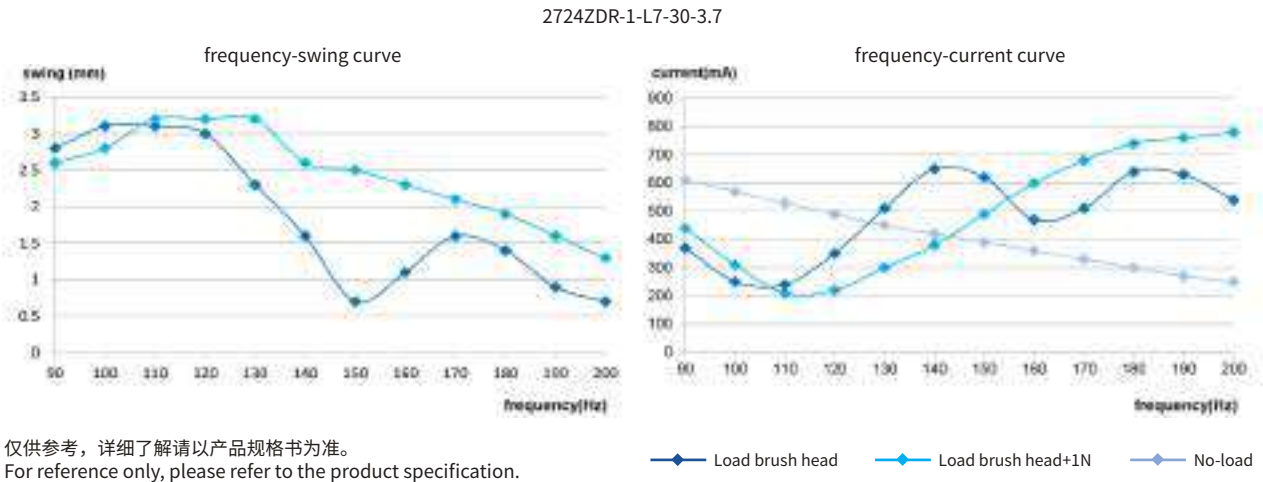
M 1:1

2724ZDR $\varnothing 27\text{mm} \times 23.5\text{mm}$

应用领域：洗脸刷、脸部按摩仪、保健器材、清洁用具等。
Applications: facial brushes, facial massagers, health care products, cleaning equipment, etc.

				-1-L7-30-3.7	-1-L14-50-2.5	-1-L19-35-5.0	
电机参数 / Motor Data							
1	电压	Voltage	V	3.7	2.5	5.0	
2	直流电阻	Resistance	Ω	2.2	2.2	2.2	
3	工作频率范围	Operating frequency range	Hz	100~220	100~220	100~220	
4	空载振动频次	No-load vibration frequency	Times/minute	26400	26400	26400	
5	空载振动电流	No-load current	mA	150	135	180	
6	启动转矩	Starting torque	mNm	40	27	54	
7	启动电流	Starting current	A	1.7	1.15	2.3	
8	负载（刷头）	Rated load (Brush head)	g	10/31	10/31	10/31	
9	负载振动频次	Load vibration frequency	Times/minute	20400	20400	20400	
10	负载电流	Load current	mA	450	410	500	
11	转子惯量	Rotor inertia	gcm²	1.35	1.35	1.35	
12	重量	Weight	g	49	49	49	
13	工作温度范围	Operating temperature range	°C	-10~+60	-10~+60	-10~+60	
特性曲线 /Characteristics Curve							

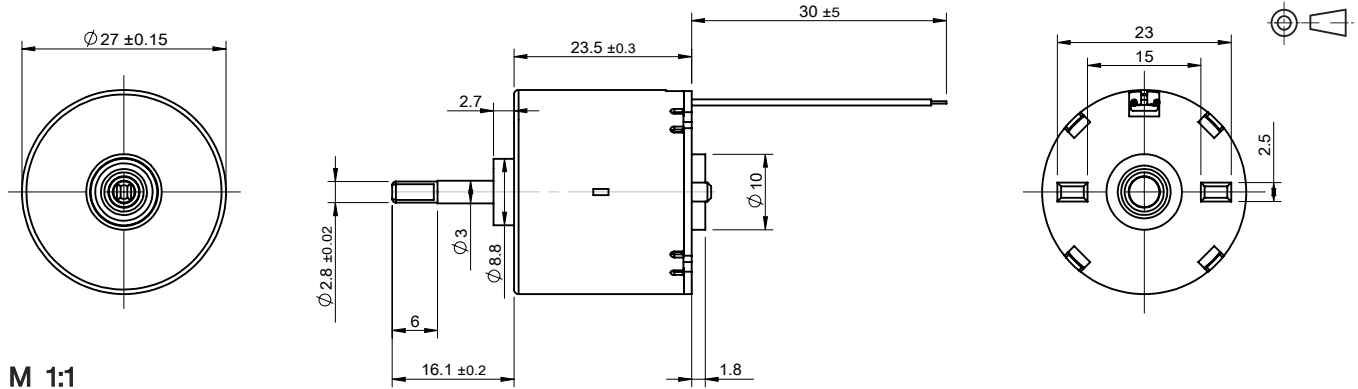
特性曲线 / Characteristics Curve



可选配置 / Options

性能 Special coils: 连续运行范围内可定制 customizable in continuous operation range
法兰 Flange: 标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft: 长度 length / 异形 shape
电气连接 Electrical connection: 端子或导线 connector or wire / 导线长度 lead wires length

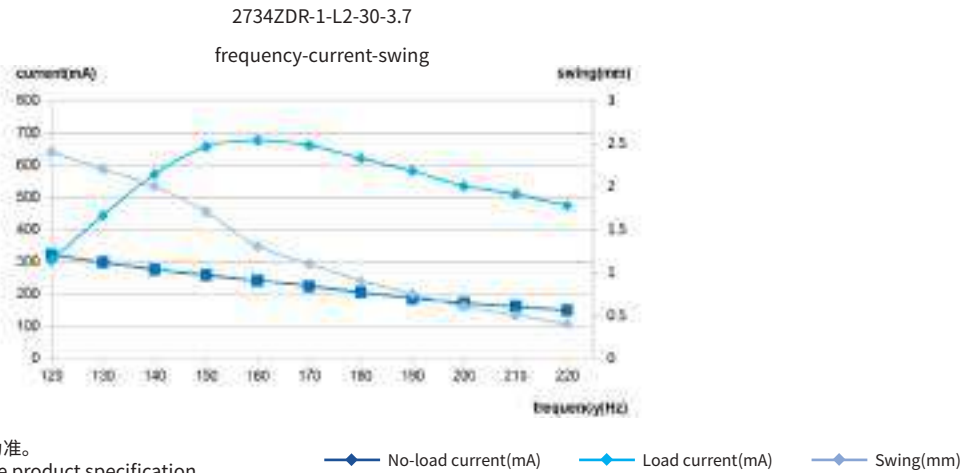
外观图 / Outline Drawing



2734ZDR Ø27mm*33.5mm

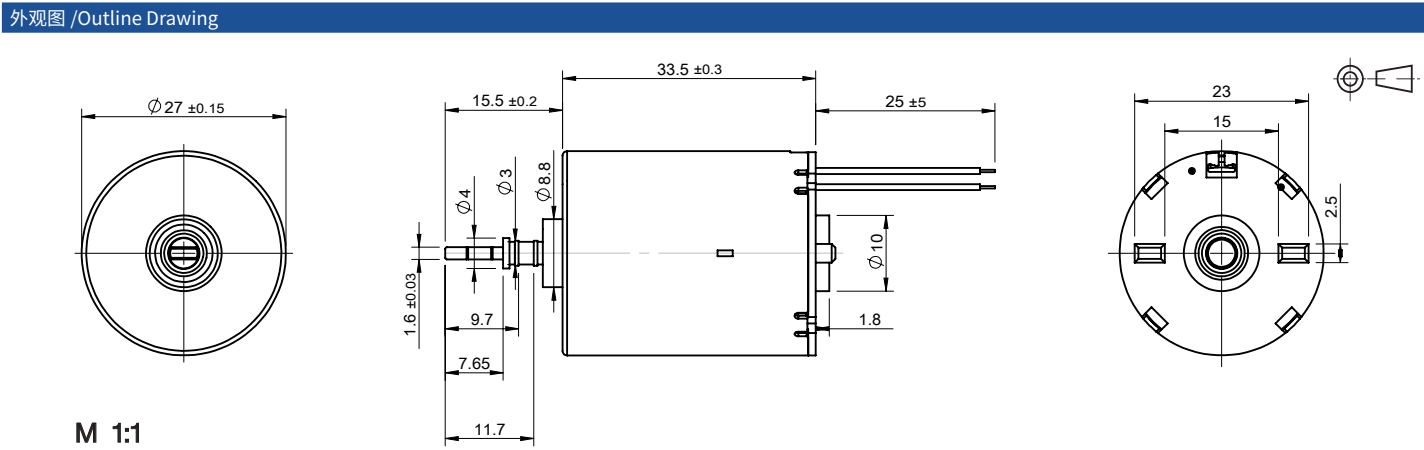
应用领域：电动牙刷、保健器材、清洁用具等领域。
Applications: electric toothbrush, health care equipment, cleaning equipment, etc.

				-1-L2-30-3.7	-2-L13-30-3.7	-1-L3-25-5.0
电机参数 / Motor Data						
1	电压	Voltage	V	3.7	3.7	5.0
2	直流电阻	Resistance	Ω	3	2.5	3
3	工作频率范围	Operating frequency range	Hz	100~240	100~240	100~240
4	空载振动频次	No-load vibration frequency	Times/minute	30000	30000	30000
5	空载振动电流	No-load current	mA	150	220	150
6	启动转矩	Starting torque	mNm	56	56	75
7	启动电流	Starting current	A	1.23	1.48	1.67
8	负载（刷头）	Rated load (Brush head)	g	13.8/41	13.8/41	13.8/41
9	负载振动频次	Load vibration frequency	Times/minute	20400	20400	20400
10	负载电流	Load current	mA	580	630	670
11	转子惯量	Rotor inertia	gcm ²	2.4	2.4	2.4
12	重量	Weight	g	76	76	76
13	工作温度范围	Operating temperature range	°C	-10~+60	-10~+60	-10~+60
特性曲线 / Characteristics Curve						



仅供参考，详细了解请以产品规格书为准。
For reference only, please refer to the product specification.

可选配置 / Options	
性能 Special coils:	连续运行范围内可定制 customizable in continuous operation range
法兰 Flange:	标准前后法兰 standard front and rear flanges / 定制法兰 custom flanges
轴 Shaft:	长度 length / 异形 shape
电气连接 Electrical connection:	端子或导线 connector or wire / 导线长度 lead wires length



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