



Professional Focus, Whole-hearted Service

Zhonggu Weike (Shenzhen) Power Technology Company Limited.

🏠 102 Block 4, Tongchuanghui, fuyong, Baoan District, Shenzhen, China

☎ Tel: +(86)189 3868 3563

✉ Email: contact@ctrl-motor.com

🌐 Web: www.ctrl-motor.com



**VACUUM HIGH & LOW
TEMPERATURE MOTORS,
SERVO/STEPPER, YOU CALL.**

HISTORY

2013-2023

2013

DDON Established

2017

National High-tech
Enterprise Certificated

The mass production and R&D capabilities of special motors have been widely recognized in applications such as manned aerospace, biomedicine, scientific research institutes, universities, etc.

2018

Quality Management System
Certificated

The core technology has been successfully used in extreme environments such as low-temperature and deep-low temperature special motors (-196°C~+85°C), vacuum high-temperature special motors (-20°C~+300°C), and radiation-proof motors (radiation resistance 10⁻⁷Gy).

2020

Become Intellectual
Property Advantage Unit

Obtained 5 invention certificates, 41 utility model certificates, 4 appearance certificates, 2 software copyrights, and 27 invention certificates are in the substantive review stage.

2022

Specialized and New
Certificated

Recognized by the national unit to focus on market segments, innovation ability, high market share, grasp the key core technology, quality and efficiency of the vanguard enterprise.

2023

Established
Shenzhen company

Provide Standard & Custom OEM motors of vacuum, high & low temperature conditions for global market.



Honors and Certifications

Ctrl-Motor has been certificated under ISO9001:2015 and GJB9001C-2017 Quality Management System Certification. The products have been certified under SGS, Moore Laboratory Reliability Certification, CE, ROHS Certification. So far, the company has obtained 6 invention certificates, 45 utility model certificates, 4 appearance certificates, 3 software copyrights, and 27 invention certificates are in the substantive review stage.

On April 29, 2021, the Micro Vacuum Module developed by the DDON technical team, the headquarter of Ctrl-Motor, successfully entered the space station aboard the Shenzhou 12 spacecraft and successfully completed the relevant scientific research tasks. The flight marked the seventh crewed Chinese spaceflight and the twelfth flight of the Shenzhou program.

中国科学院空间科学与应用总体部

感谢信

中国维科（成都）动力技术有限公司：

空间站工程空间应用系统核心舱任务于2021年4月29日成功发射，随舱上行的无容器材料科学实验系统在轨测试正常、运行良好，正在持续开展科学实验，首批实验后样品已随神舟十二号飞船返回地面，正在开展解剖分析和材料学研究。

无容器材料实验系统的成功运行，获取了高质量的科学数据，发现了重要科学现象和机理，实现了技术突破，可为新型功能材料的深过冷研究制备和热物性测量提供优越条件，引领了我国空间材料实验技术的发展。

项目的成功离不开各承研单位的艰苦攻关和通力配合，在此，向各承研单位表示由衷的钦佩和诚挚的感谢！

此致。

中国科学院空间科学与应用总体部

2022年3月25日

COOPERATION



CORE ADVANTAGES

Mass-Produced Standard Products & Customized Solution

Ctrl-Motor offers both mass-produced standard products and customized automation solutions. 82 standard products have been field-tested for over a decade, demonstrating high maturity, exceptional reliability, and strong customer repeat purchase rates.

Non-standard customization requirement, whether it's torque customization, extended temperature range specifications, custom housing materials, encoder type selection, or any other parameter requirement from product type to comprehensive solution design Ctrl-Motor ensures end-to-end delivery. We provide tailored solutions across our product range, including stepper motors, servo motors, gear reducers, and linear modules.

Ctrl-Motor is committed to delivering complete, robust solutions to global customers operating in the most demanding conditions.



1-on-1 Professional team support, Effective feedback.

Ctrl-Motor operates with a nearly 100-strong R&D team, specializing in the development, manufacturing, and application of motors engineered for extreme environments such as vacuum, high-temperature, and cryogenic conditions.

Over the past 12 years, Ctrl-Motor is highly regarded by customers for its expertise in extreme-environment motor technology. Successfully delivered tailored motor solutions for 600+ projects, enabling reliable operation in these demanding settings. Our rigorous process — from parameter specification and product selection to requirement refinement and design approval — ensures precision at every stage.



100% Independent R&D, providing production capacity guarantee.

Ctrl-Motor has its own scientific research office of over 2,000 square meters, and has also established a relatively complete laboratory with high and low temperature cycle test chambers, salt spray test chambers, dynamometers and other conventional equipment. At the same time, we also have core testing equipment with independent intellectual property rights, such as thermal vacuum motor characteristics experimental chamber, high temperature and deep low temperature motor torque frequency characteristic test chamber, etc.

We commit to delivering products that precisely fulfill customer specifications

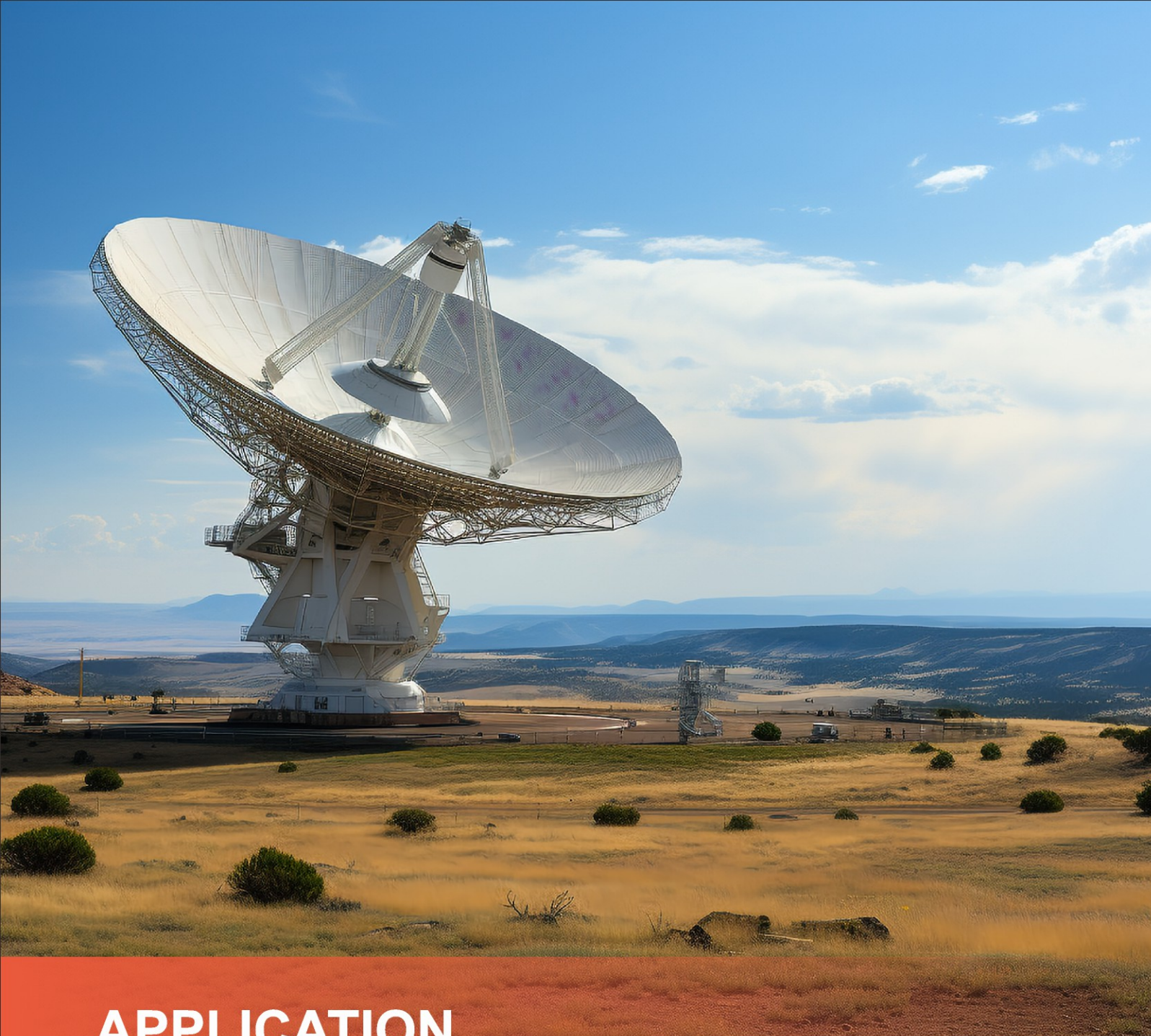


Efficient Delivery

Mass-produced standard products are generally in stock, with immediate shipment upon order placement and delivery within 3 working days. For bulk orders, lead time will be assessed individually.

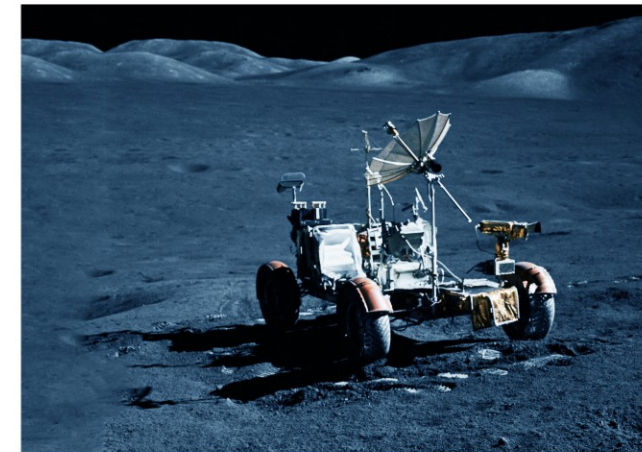
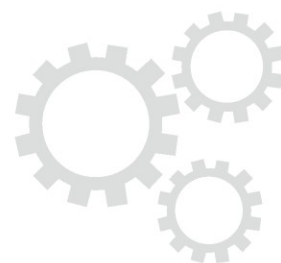
Non-standard customized products typically have a lead time of 2-4 weeks. For relatively complex requirements, lead time may longer than one month.





APPLICATION

The main products of Ctrl-Motor such as HV series vacuum stepper motors, HSS series vacuum servo motors, HS series low temperature stepper motors, HSV series low temperature servo motors, high and low temperature motor drivers, vacuum reducers, linear modules and other products have been successfully used in aerospace, satellite communication, satellite detection, automated industry, biobank, laboratory testing and some other fields.



► Satellite Detection



► Radar Communication



► Automated Industry



► Laboratory Testing



► Biobank



► Aerospace

APPLICATION CASES



Aging Test

- ▶ Suitable for any extreme environments, vacuum, high & low temperature conditions.
- ▶ Provide free consultation on solutions.
- ▶ 12 years in the field of special motors, Factory outlet.



Industrial Automation

- ▶ -40°C~+300°C.
- ▶ 12 Year Source Manufacturer.
- ▶ The vacuum degree of standard products can reach up to 10^{-5} pa.



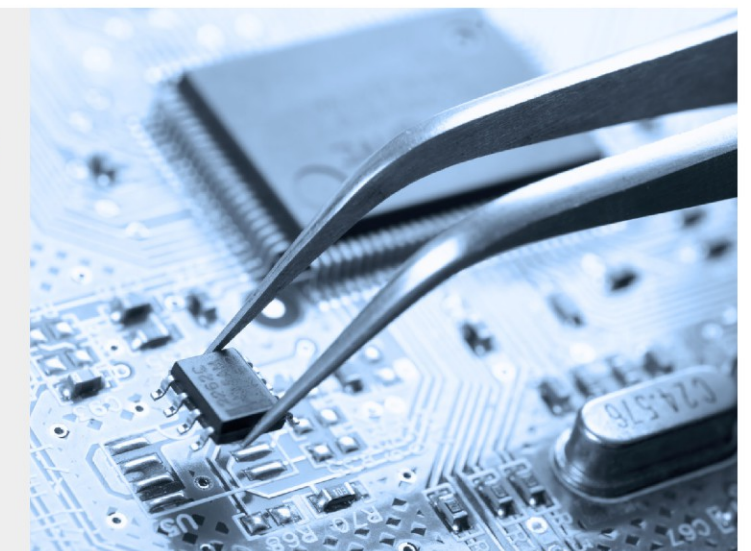
Biomedical

- ▶ Industrial grade prices.
- ▶ 12 years experience of military grade quality control.
- ▶ Stable performance in cryogenic condition of -196 °C.



Semiconductor Industry

- ▶ Military grade quality assurance.
- ▶ Stable motion and precise positioning.
- ▶ Silicon crystal, wafer, robots and other related applications.



APPLICATION CASES



Satellite Detection

- ▶ Successfully Assisted the twelfth flight of the Shenzhou program.
- ▶ 12 years source manufacturer of military grade special motor .
- ▶ Small volume, light weight, the vacuum degree of standard products can reach up to 10^{-5} pa.



Aerospace

- ▶ Special patent material provision planguarantee.
- ▶ The vacuum degree of standard products can reach up to 10^{-5} pa.
- ▶ Customized available.



Industrial Robot

- ▶ $-60^{\circ}\text{C} \sim +80^{\circ}\text{C}$.
- ▶ 100% Independent research and development.
- ▶ Meet both domestic (such as Xinjiang) and some other foreign markets low-temperature conditions.



Vehicle Inspection

- ▶ $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$.
- ▶ Industrial grade prices.
- ▶ 100,000 times of non-stop operation in high and low temperature environments.



CONTENTS



17 Stepper Motors

Wide Temperature Stepper Motor

- ❑ HK2030A-NT
- ❑ HK2851A-NT
- ❑ HK4240A-NT
- ❑ HK4248A-NT
- ❑ HK4260A-NT
- ❑ HK5756A-NT
- ❑ HK5776A-NT
- ❑ HK6084A-NT
- ❑ HK8680W-NT
- ❑ HK60102W-NT
- ❑ HK86118W-NT

Vacuum High Temperature Stepper Motor

- ❑ HS2030A-VT
- ❑ HS2851A-VT
- ❑ HS4248A-VT
- ❑ HV4249A-VT
- ❑ HV5786A-VT
- ❑ HV86128A-VT

Cryogenic Stepper Motor

- ❑ HS4248A-NTL4/VTL3/SLT
- ❑ HS5776A-NTL4/VTL3/SLT
- ❑ HS86118W-NTL4/VTL3/SLT

43 Planetary Reducer

- ❑ Planetary Reducer

33 Servo Motors

Wide Temperature Servo Motor

- ❑ HSK0401A-2R00-NT
- ❑ HSK0401A-2R0B-NT
- ❑ HSK0401D-2R00-NT
- ❑ HSK0604A-2R00-NT
- ❑ HSK0604A-2R0B-NT
- ❑ HSK0604E-2R00-NT
- ❑ HSK0807A-2R00-NT
- ❑ HSK0807A-2R0B-NT
- ❑ HSK0807E-2R00-NT
- ❑ HSK0810A-2R00-NT
- ❑ HSK0810A-2R0B-NT
- ❑ HSK1118A-2R00-NT
- ❑ HSK1118A-2R0B-NT

Vacuum High Temperature servo Motor

- ❑ HSV0401A-2R00-VT
- ❑ HSS0810A-2R00-VT
- ❑ HSS0807A-2R00-VT
- ❑ HSS0604A-2R00-VT

Cryogenic Servo Motor

- ❑ HSV0401A-2R00-NTL4/VTL3/SLT
- ❑ HSS0810A-2R00-NTL4/VTL3/SLT
- ❑ HSS0807A-2R00-NTL4/VTL3/SLT
- ❑ HSS0604A-2R00-NTL4/VTL3/SLT

45 Driver & Decoder

- ❑ Stepper Driver
- ❑ Servo Driver
- ❑ Resolver
- ❑ Decoder

Stepper Motors



Low Temperature Stepper Motor

The low-temperature stepping motor adopts high-precision and low-clearance special bearings, which have longer life, higher stability and better lubrication effect. Professional thermodynamic design, operating temperature range $-85\sim 85^{\circ}\text{C}$. The magnet is made of special materials with strong temperature resistance and weather resistance, which can meet the requirements of speed and torque while obtaining better and less noise and vibration. Compared with the traditional motor scheme, the structure of the low-temperature stepping motor is more simple and convenient, the stability is further improved.



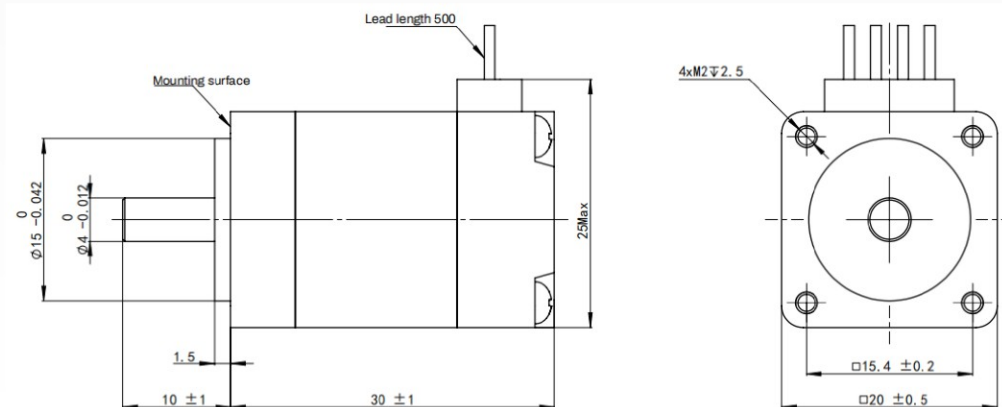
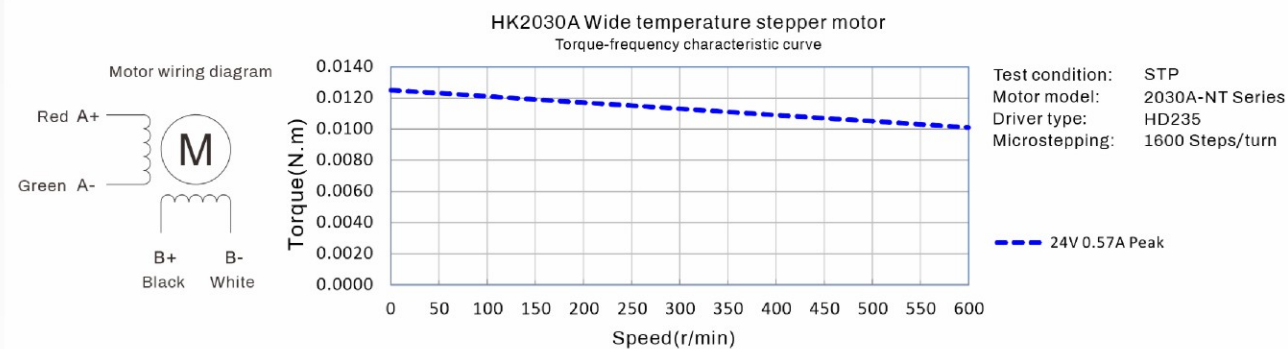
Vacuum High Temperature Stepper Motor

The surface of the vacuum and high-temperature stepper motor is made of special stainless steel material, novel design, exquisite workmanship. The high temperature can reach $+200^{\circ}\text{C}$, and the vacuum degree is better than 10^{-5}Pa . Standard designed 28mm, 42mm, 57mm, 86mm frame size two-phase four-wire hybrid stepper motors can be specially customized according to requirements in terms of radiation resistance, mold resistance, impact resistance and the shape of output axis. High cleanliness use environment is optional.

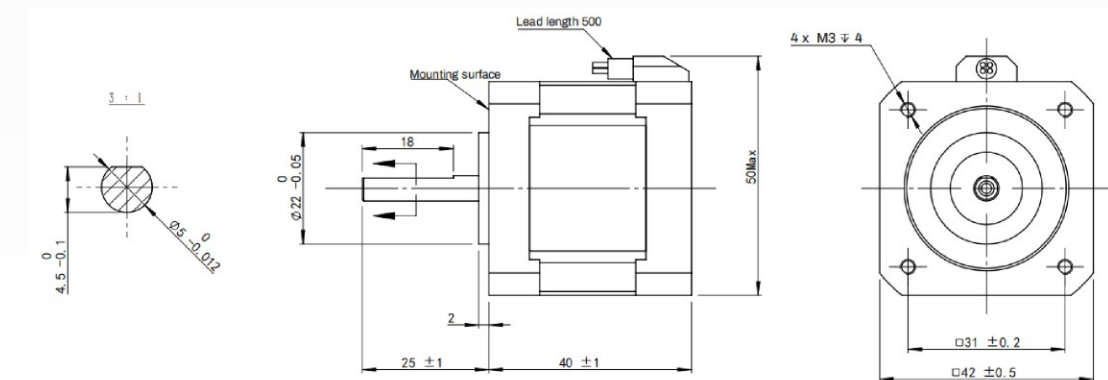
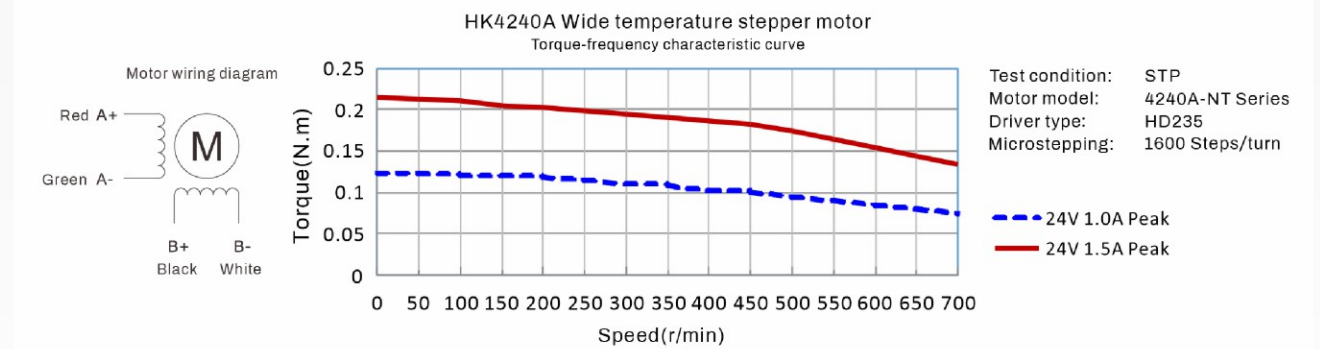
Stepper Motors

Wide Temperature Stepper Motor														
Frame Size (mm)	Options		Step Angle (°)	Maintain Torque (N.m)	Peak Value Phase Current (A)	Effective Value Phase Current (A)	Phase Resistance (Ω)	Phase Inductance (mH)	Weight (kg)	IP level	Stepper Driver			
	Stepper Motor	Type									Industrial Grade	Model		
20	HK2030A	NTL2 NTL3	1.8	0.013	0.57	0.4	11	2.6	0.08	IP40	DV422	HD235		
28	HK2851A			0.09	0.85	0.6	8.2	7.3	0.21		DV422	HD235		
42	HK4240A			0.25	1.5	1.1	1.5	2.1	0.4	IP65	DV422	HD235		
	HK4248A			0.35	1.5	1.1	1.8	2.6	0.48		DV422	HD235		
	HK4260A			0.6	1.5	1.1	2.75	4.5	0.6		DV422	HD235		
57	HK5756A			0.8	3	2.1	0.65	1.6	0.78		DV556C	HD235		
	HK5776A			1.3	3	2.1	1.0	2.7	1.3		DV556C	HD235		
60	HK6084A			2.5	4.0	2.8	1.4	4.1	1.4		DV556C	HD265		
	HK60102W			2.5	4.0	2.8	1.2	2.7	1.75		DV860C	HD265		
86	HK8680W			4.5	5	3.5	0.45	2.8	2.92		DV860C	HD265		
	HK86118W			5.5	5	3.5	0.6	4.3	4.2		DV860C	HD265		
Vacuum High Temperature Stepper Motor														
Frame Size (mm)	Options		Step Angle (°)	Maintain Torque (N.m)	Peak Value Phase Current (A)	Effective Value Phase Current (A)	Phase Resistance (Ω)	Phase Inductance (mH)	Weight (kg)	IP level	Stepper Driver			
	Stepper Motor	Type									Industrial Grade	Model		
20	HS2030A	VMT1 VMT2 VHT1 VHT2	1.8	0.01	0.4	0.57	11	2.6	0.08	IP20	DV422	HD235		
28	HS2851A			0.09	0.85	0.6	8.2	7.3	0.25		DV422	HD235		
42	HS4248A			0.35	1.5	1.1	1.8	2.6	0.58		DV422	HD235		
	HV4249A			0.15	2	1.4	1.2	0.8	0.42		DV422	HD235		
57	HV5786A			0.8	2.5	2.1	1.4	2.7	1.3		DV556C	HD235		
86	HV86128A			4	6	4.2	0.55	2.4	4.5		DV860C	HD265		
Cryogenic Stepper Motor														
Frame Size (mm)	Options		Step Angle (°)	Maintain Torque (N.m)	Peak Value Phase Current (A)	Effective Value Phase Current (A)	Phase Resistance (Ω)	Phase Inductance (mH)	Weight (kg)	IP level	Stepper Driver			
	Stepper Motor	Type									Industrial Grade	Model		
42	HS4248A	VTL3 NTL4 SLT	1.8	0.35	1.5	1.1	1.8	2.6	0.58	IP40	DV422	HD235		
57	HS5776A			1.3	3	2.1	1.0	2.7	1.5		DV556C	HD235		
86	HS86118W			5.5	5	3.5	0.6	4.3	4.6	IP54	DV860C	HD265		

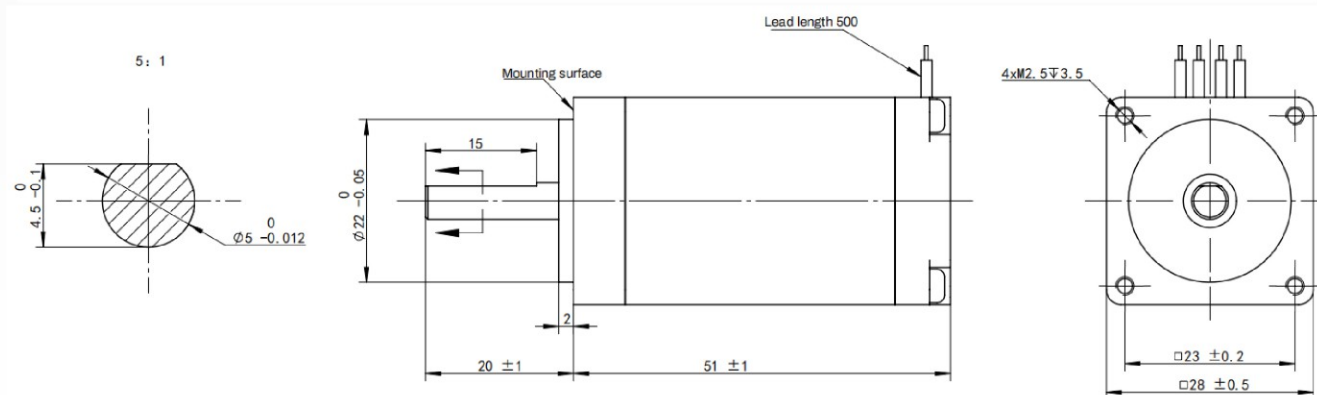
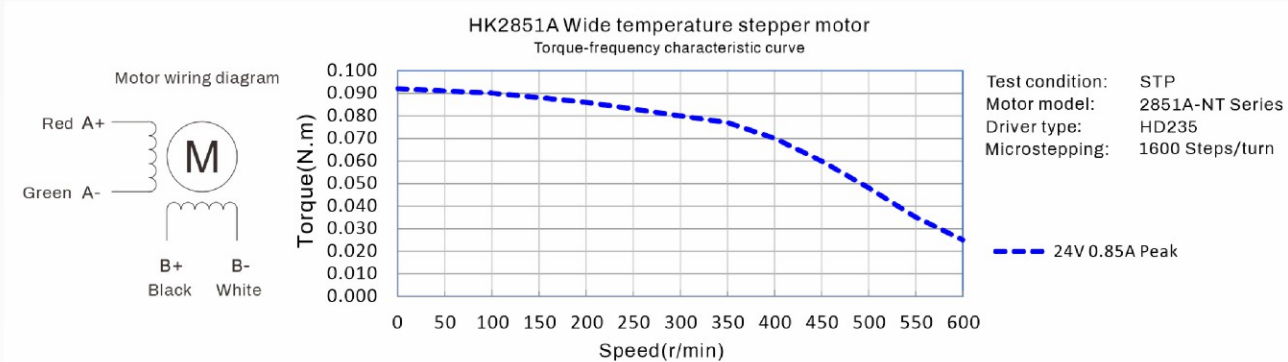
HK2030A-NT



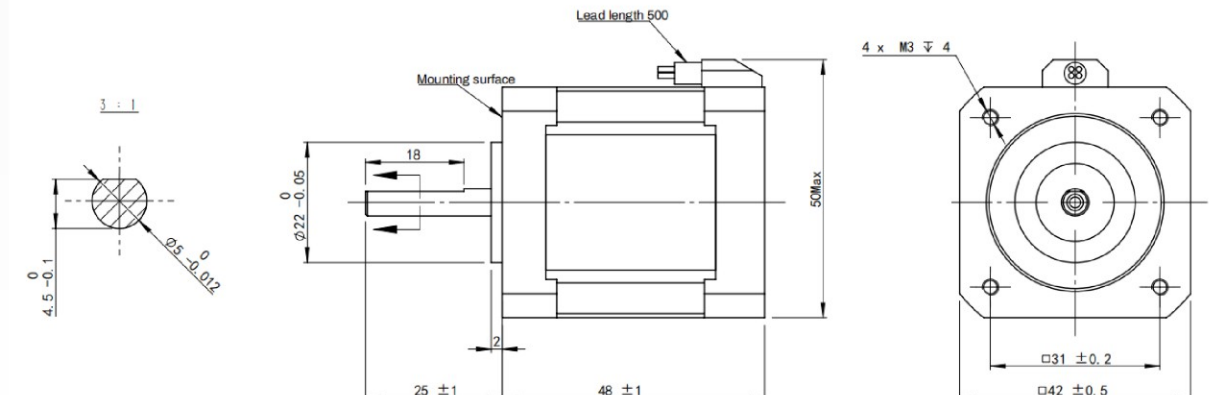
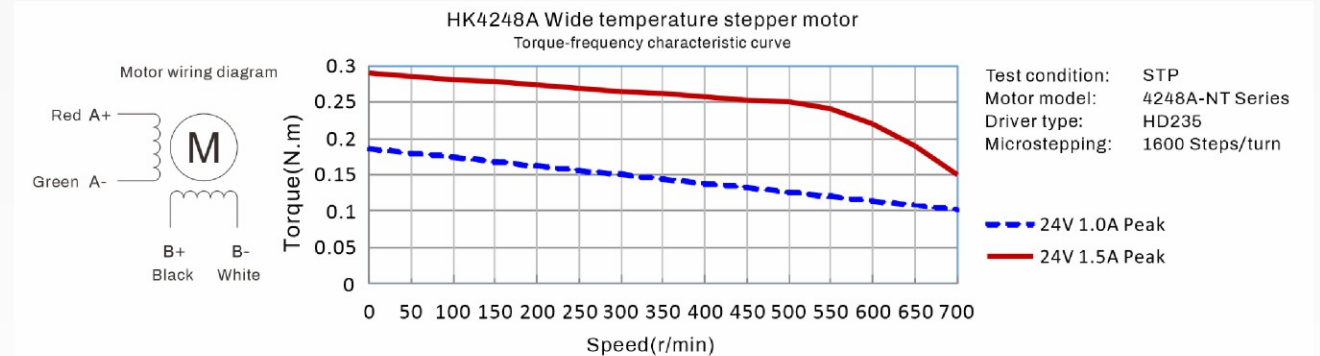
HK4240A-NT



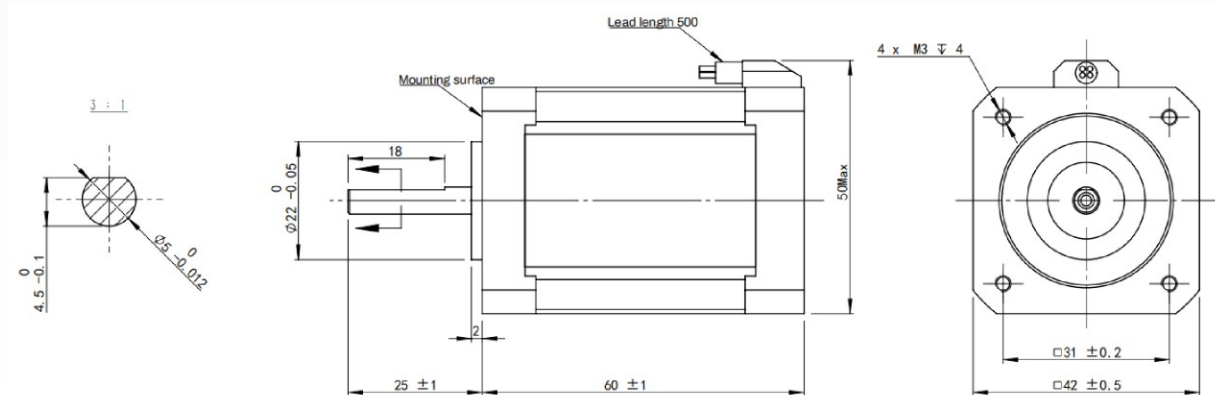
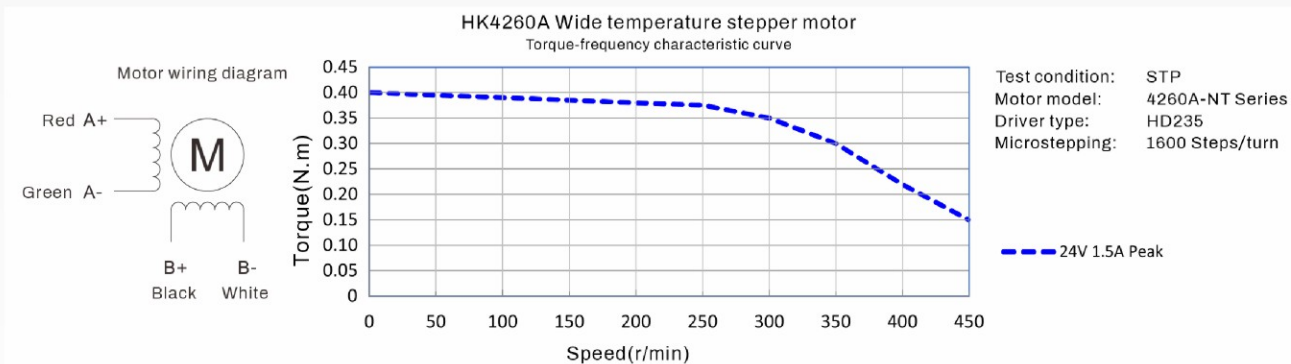
HK2851A-NT



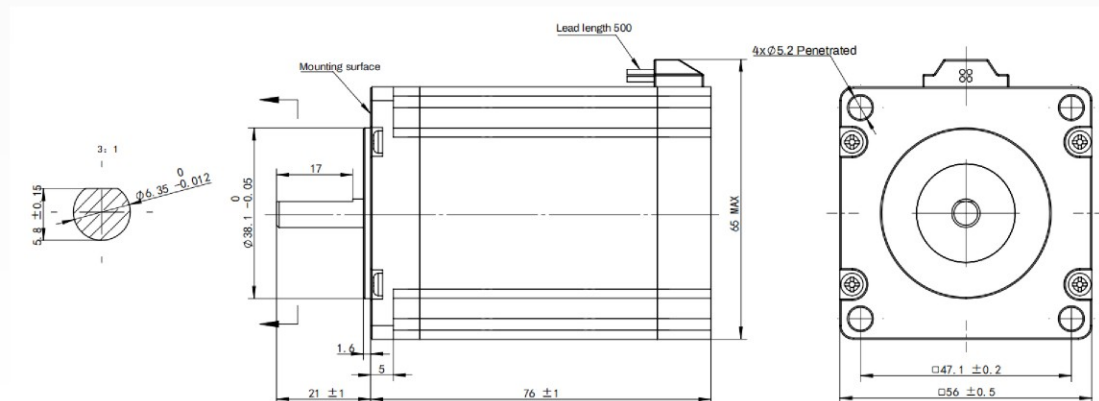
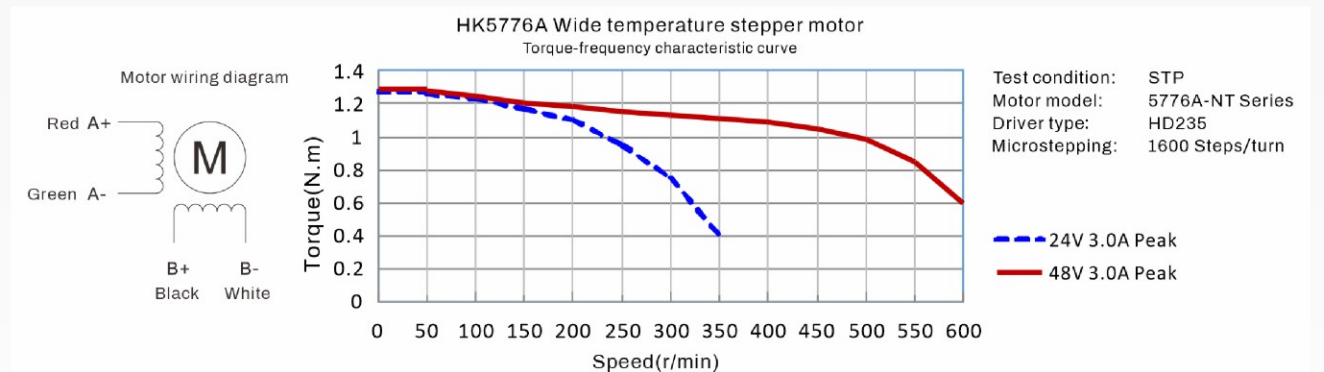
HK4248A-NT



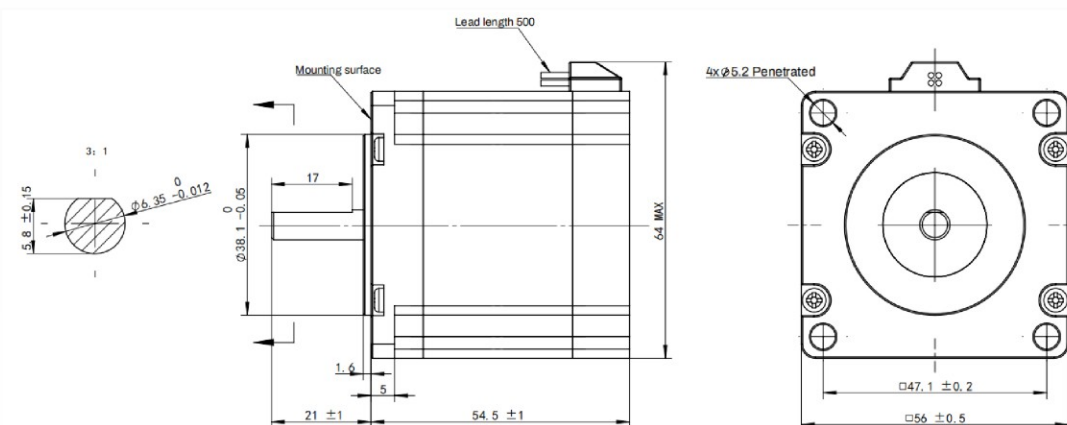
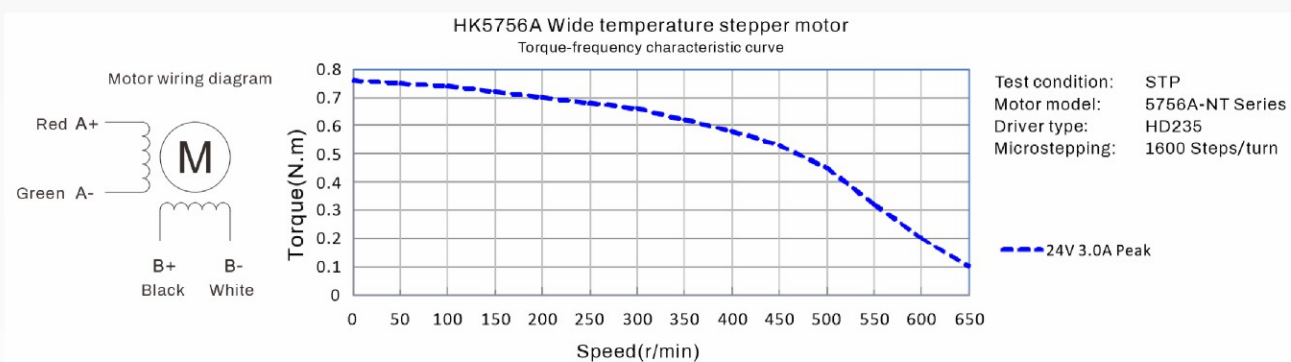
HK4260A-NT



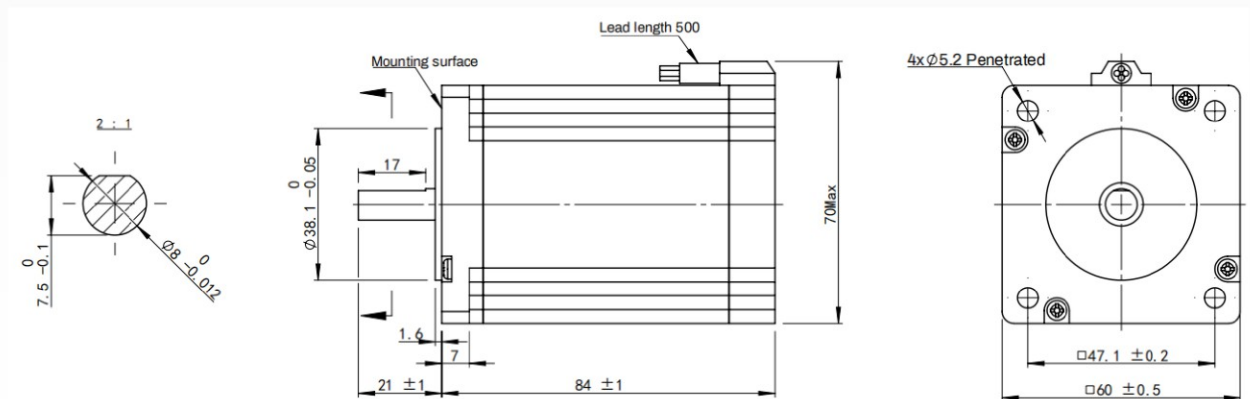
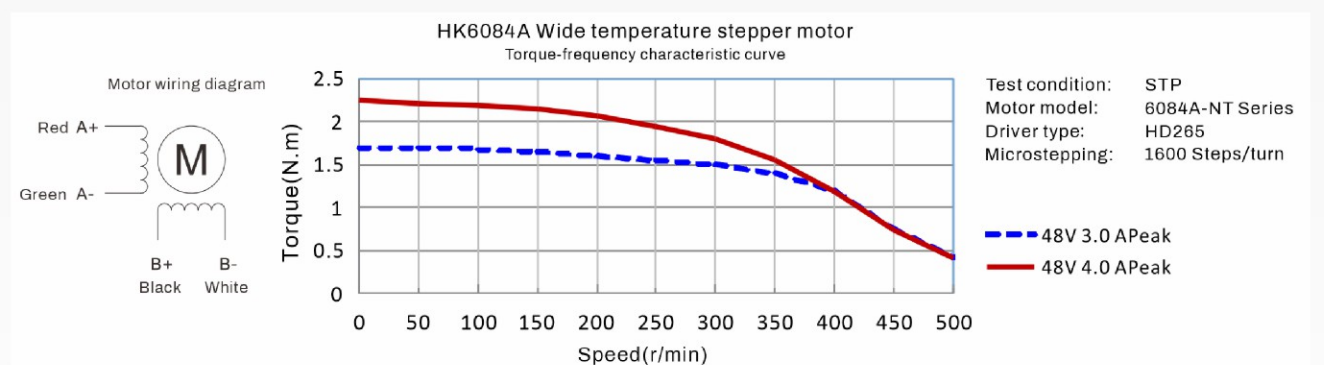
HK5776A-NT



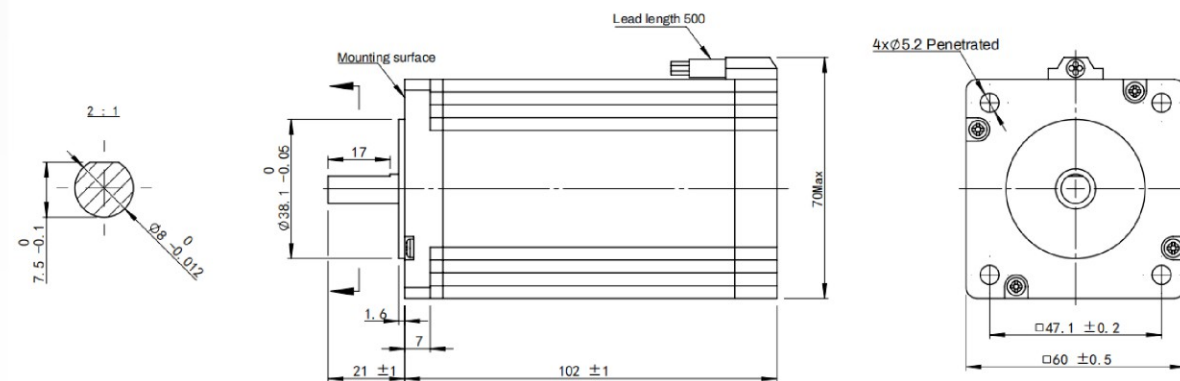
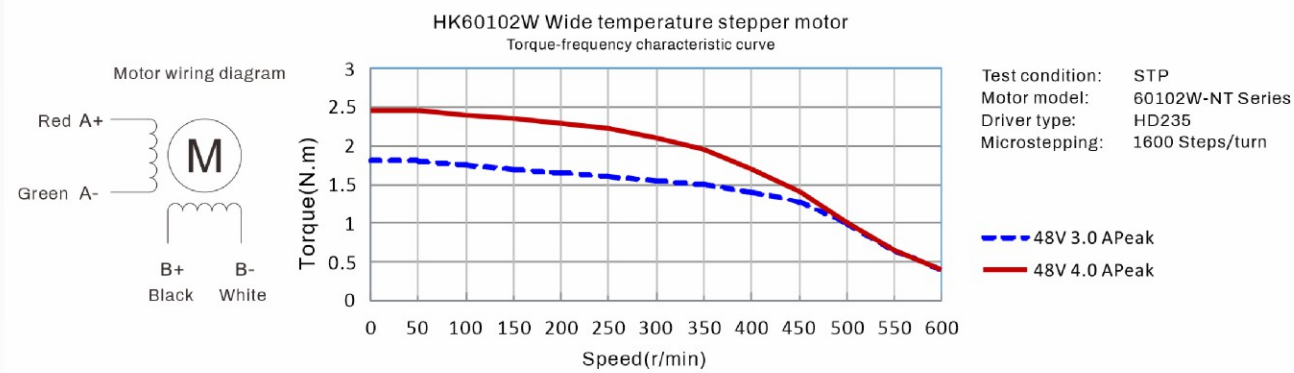
HK5756A-NT



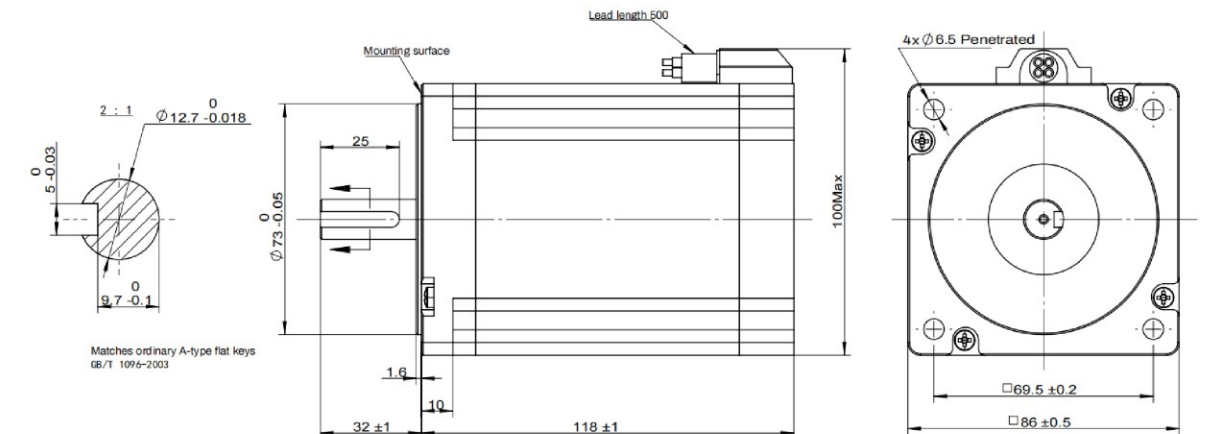
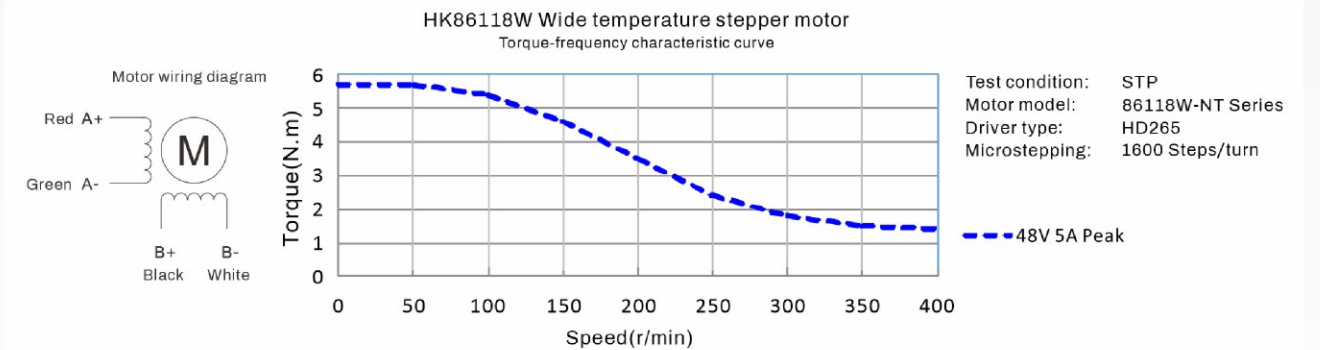
HK6084A-NT



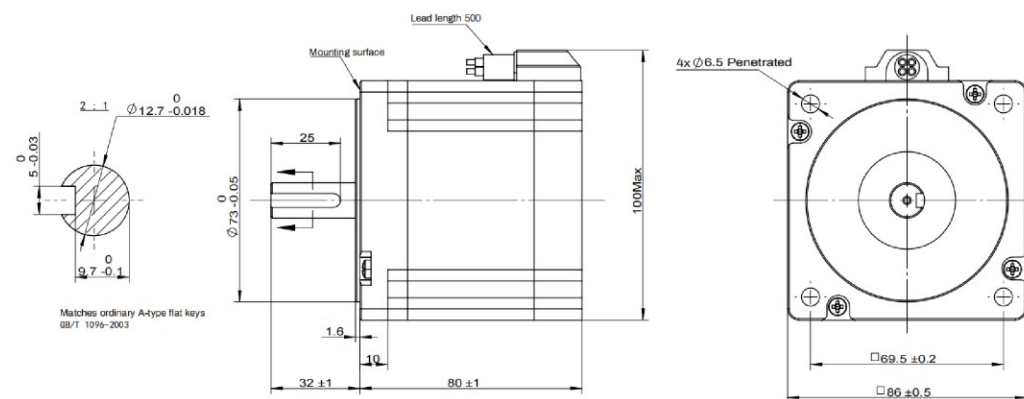
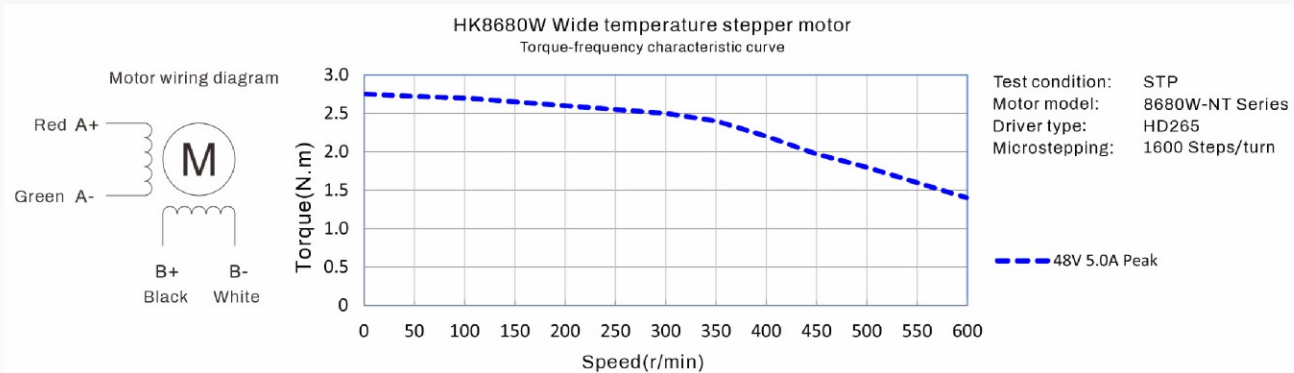
HK60102W-NT



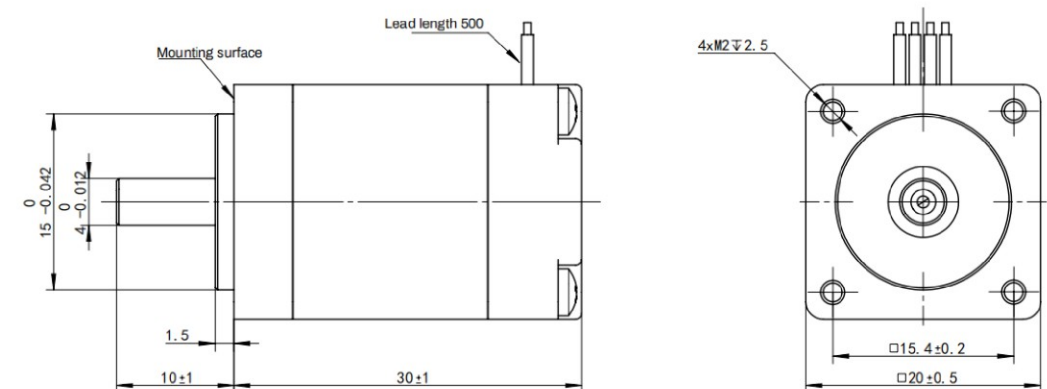
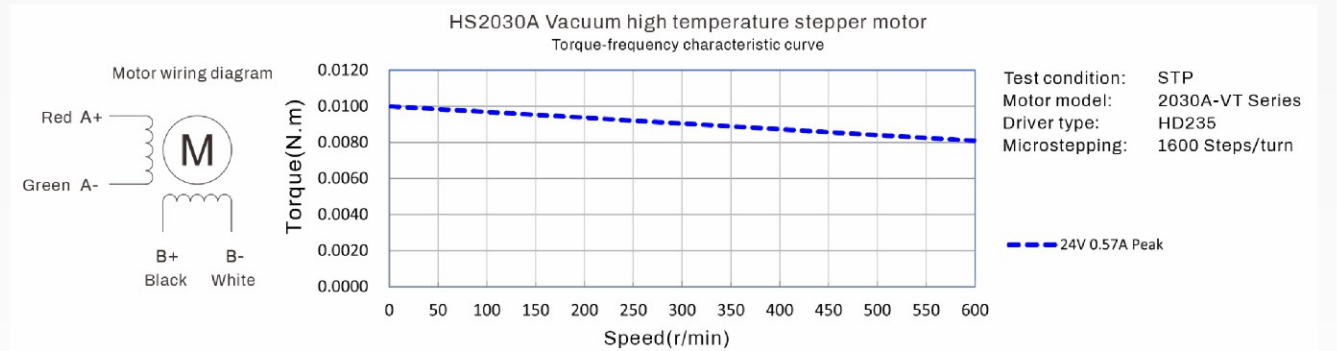
HK86118W-NT



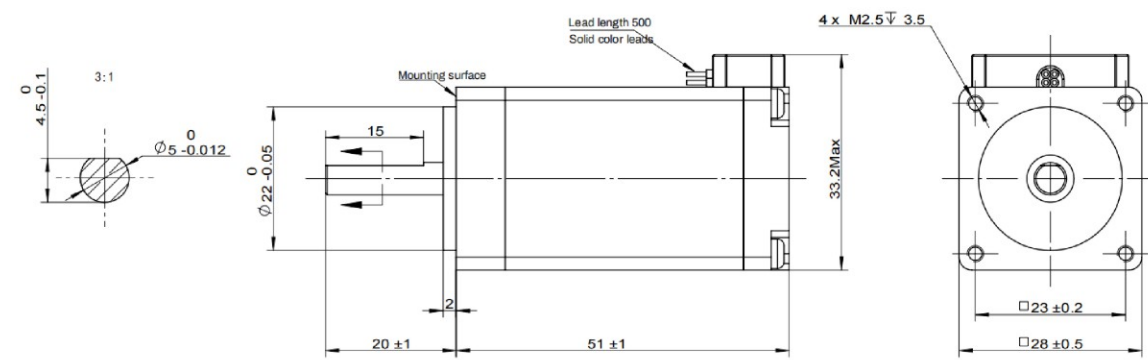
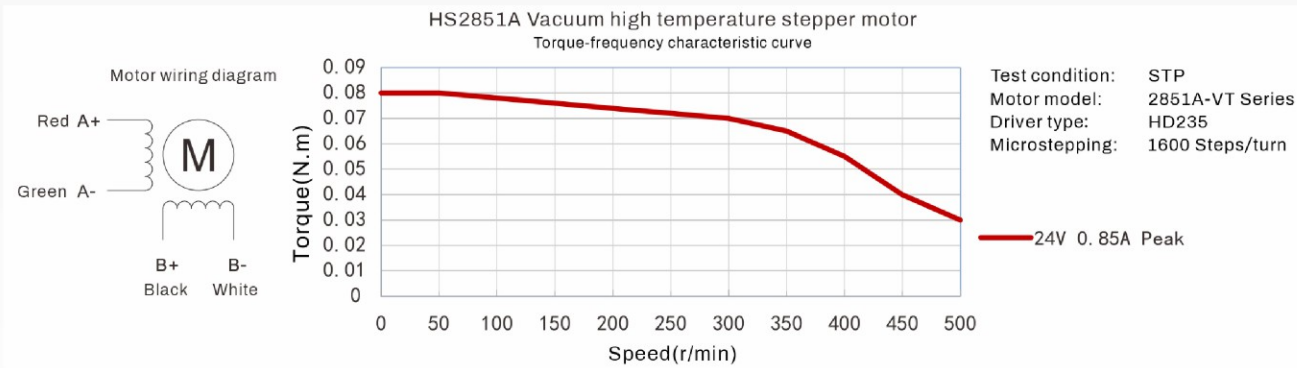
HK8680W-NT



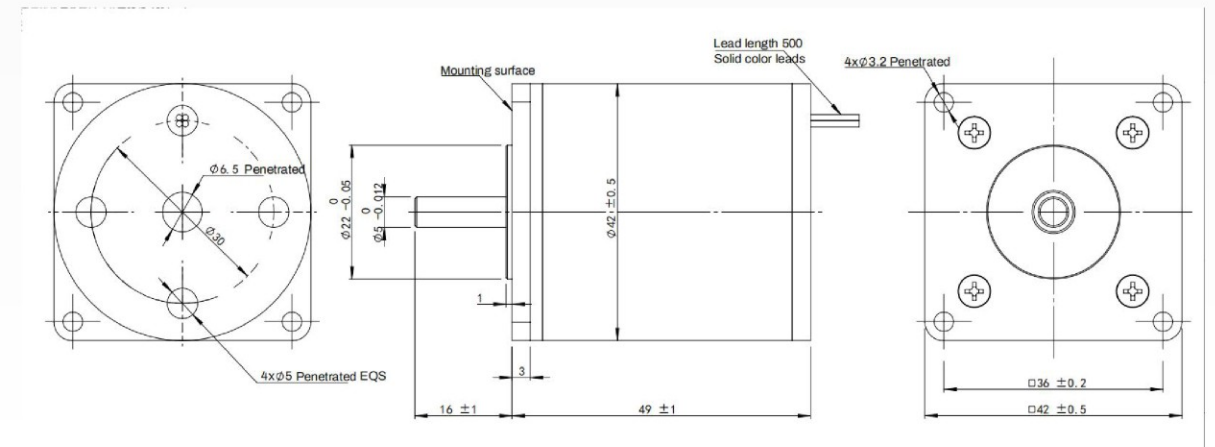
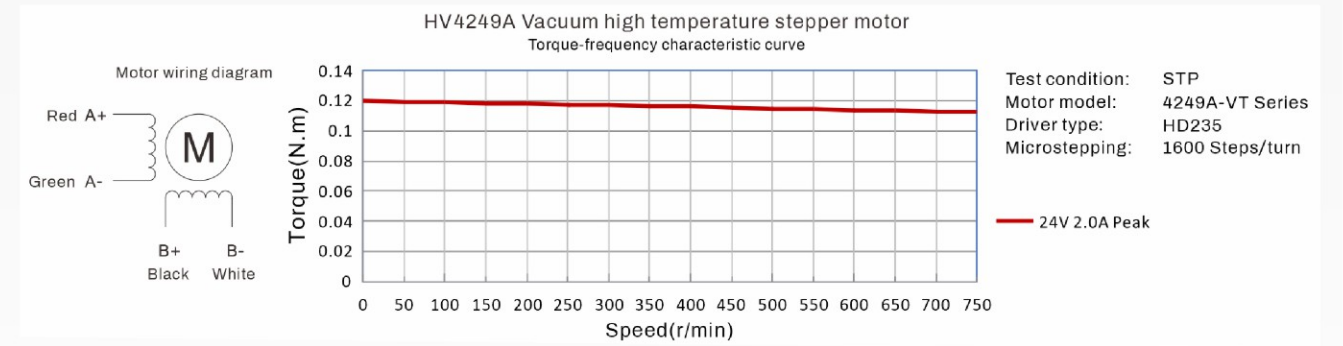
HS2030A-VT



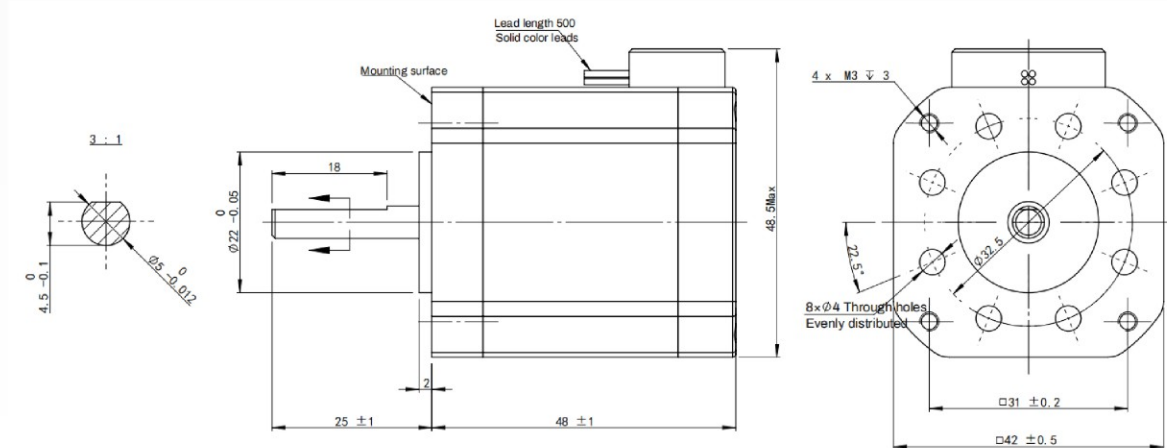
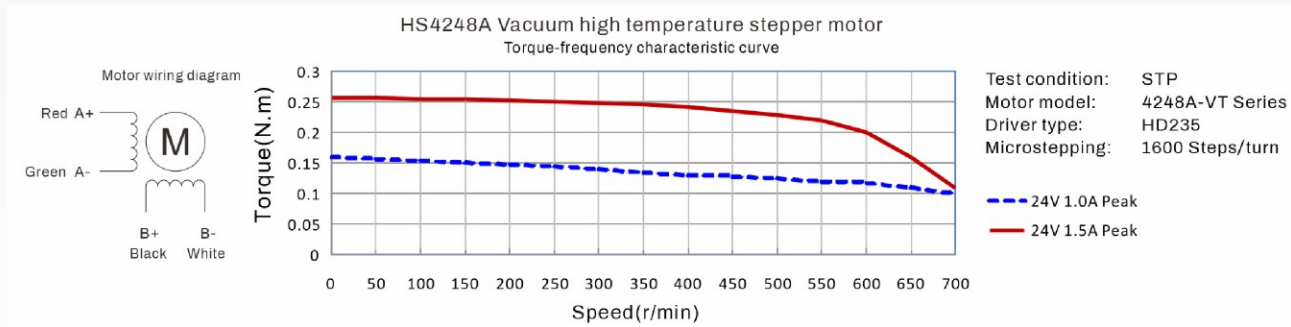
HS2851A-VT



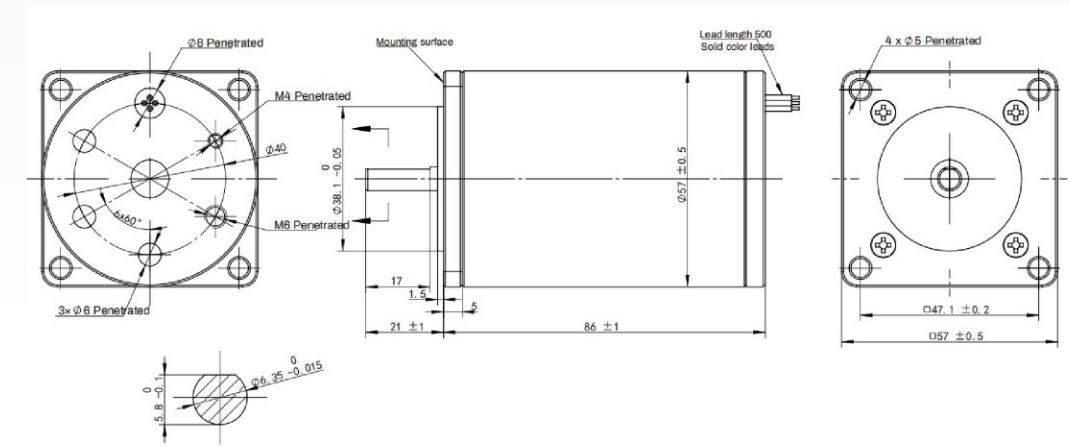
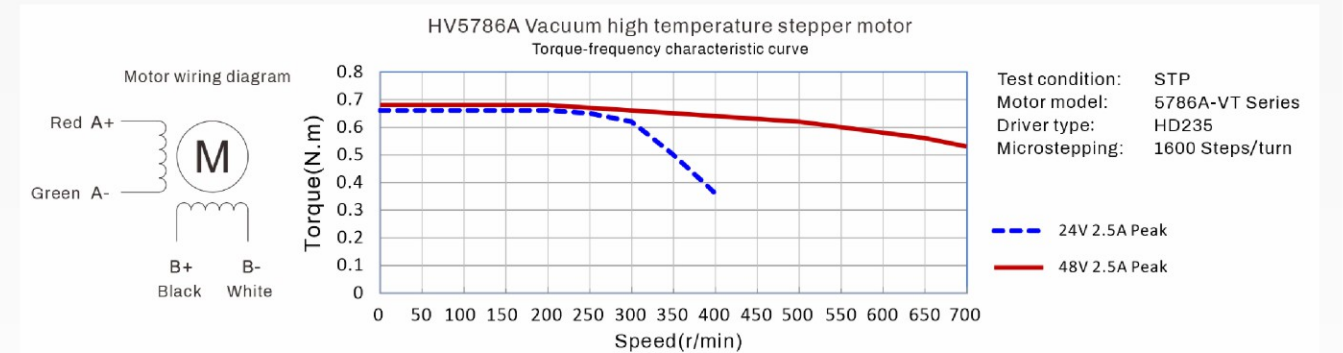
HV4249A-VT



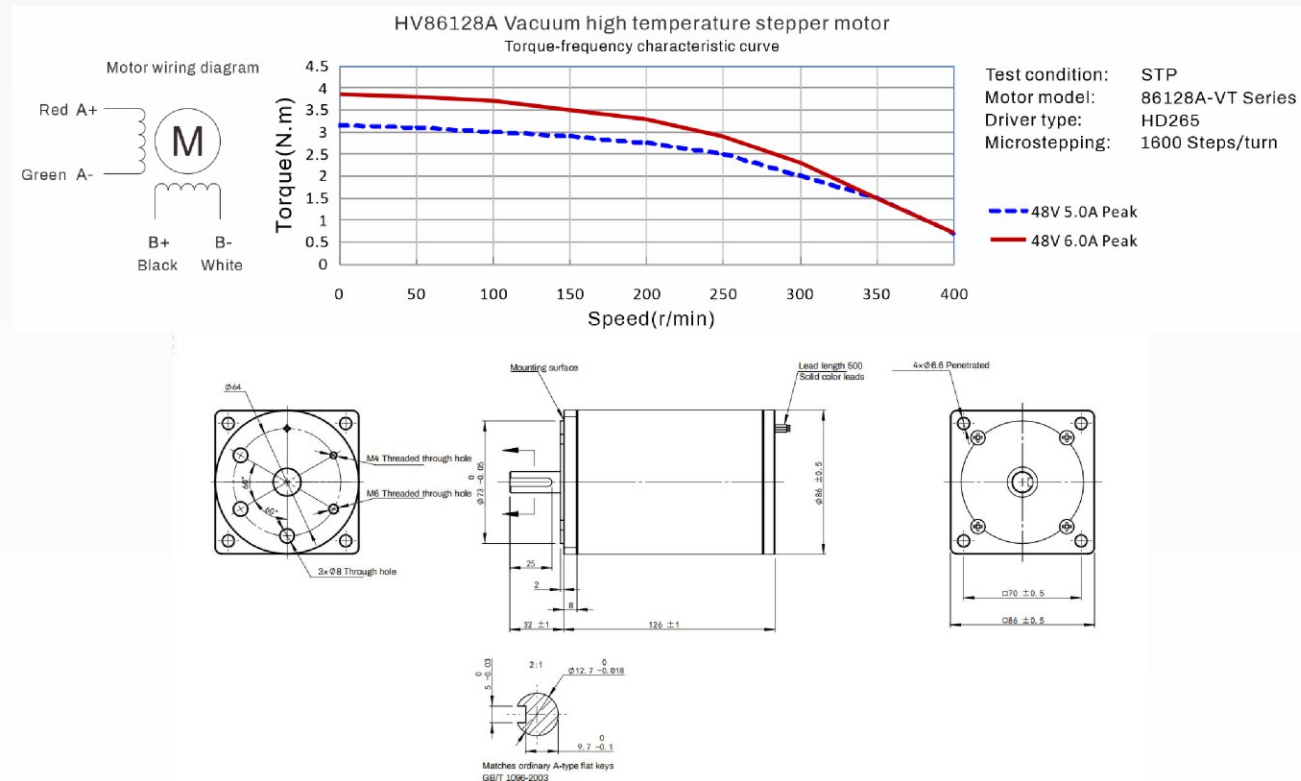
HS4248A-VT



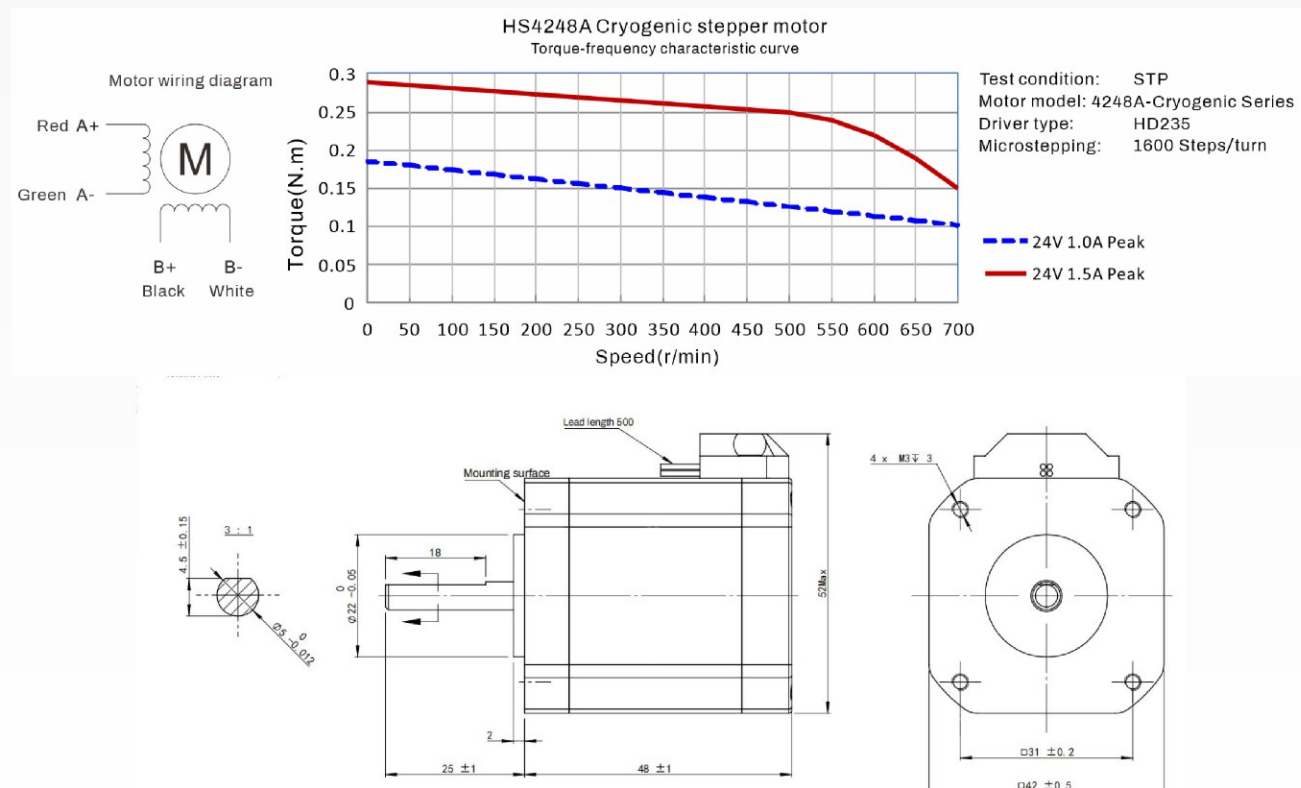
HV5786A-VT



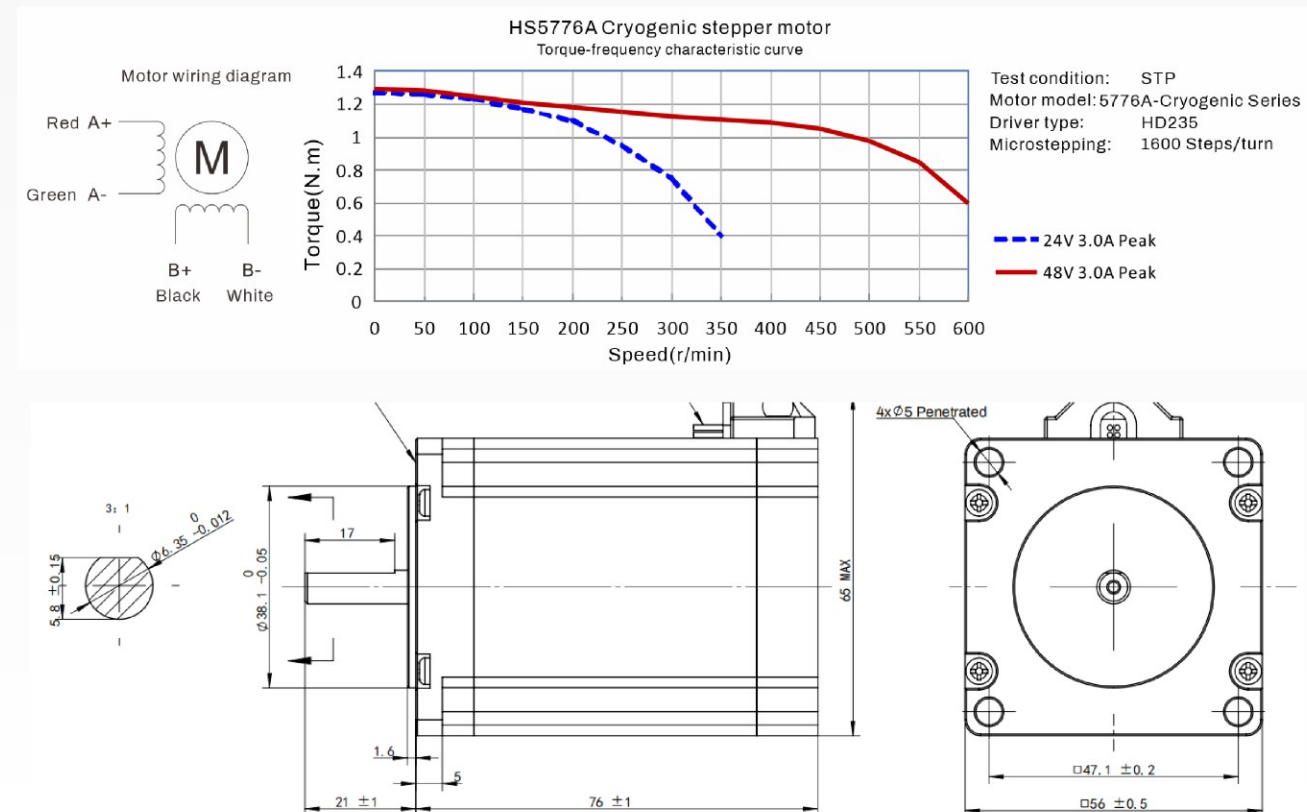
HV86128A-VT



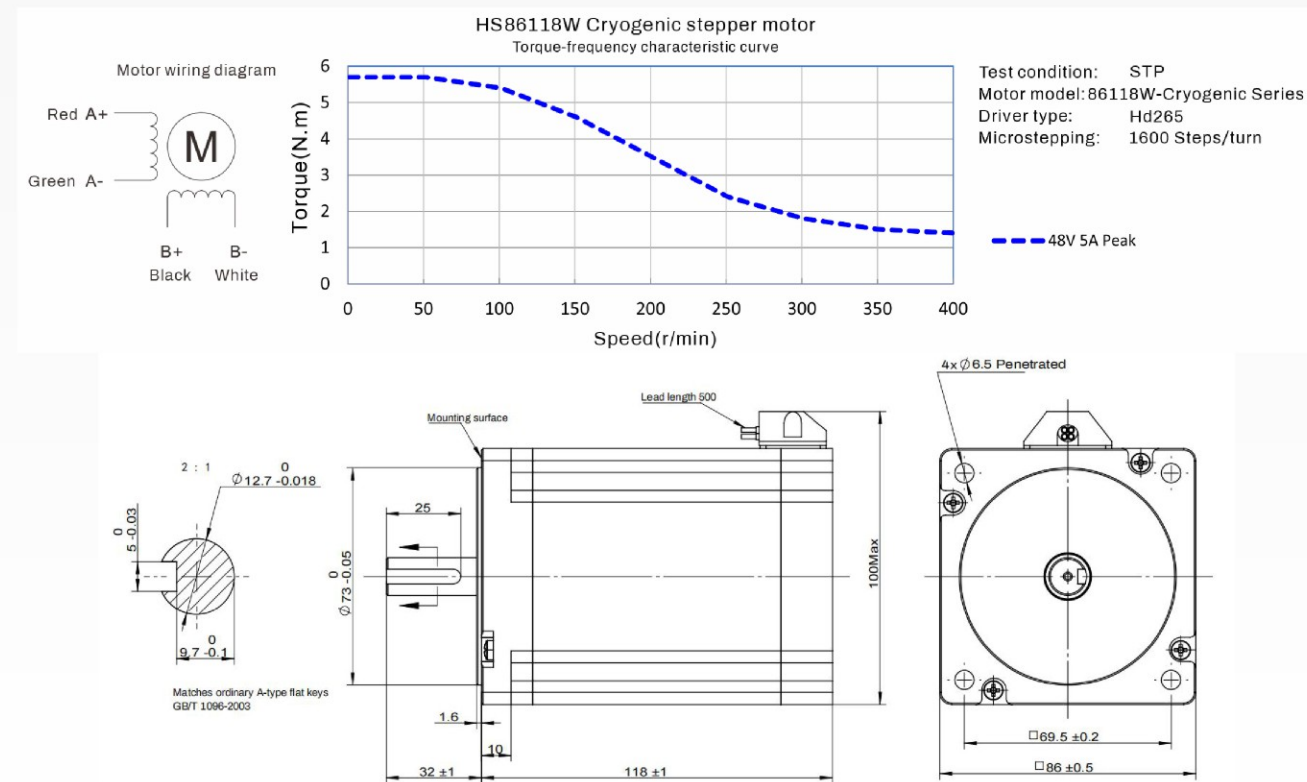
HS4248A-NTL4/VTL3/SLT



HS5776A-NTL4/VTL3/SLT



HS86118W-NTL4/VTL3/SLT



Level Table

Scope of application

- 1. HSV / HSK / HSS series special servo motor;
- 2. HSS series all stainless steel special servo motor
- 3. Non-standard customized servo motor.



Scope of application

- 1. HS / HK / HV series two-phase hybrid special stepper motor;
- 2. HV series two-phase hybrid all-stainless steel special stepper motor
- 3. Non-standard customized stepper motors.

Environmental Class List				
Temperature level	Symbol	Temperature Range/°C	Maximum Allowable Temperature of Motor Casing/°C	Vacuum Degree/Pa
Wide Temperature	NTL2	-40 ~+85	+115	/
	NTL3	-60 ~+85	+115	/
Vacuum High Temperature	VMT1	-20 ~+200	+200	10 ⁻³
	VMT2	-20 ~+150	+150	10 ⁻³
	VHT1	-20 ~+200	+200	10 ⁻⁵
	VHT2	-20 ~+160	+160	10 ⁻⁵
Cryogenic	VTL3	-60 ~ +100	+130	10 ⁻¹
	NTL4	-80~ +85	+115	/
	SLT	-196~+40	+100	/

Note: When selecting customized temperature and vacuum degree, the example model: L50H120-V1 is expressed as low temperature -50°C, high temperature 120°C, and vacuum degree 10⁻¹ Pa.



Servo Motors

Standard design and manufacture of 100W, 400W, 750W, 1000W, 1800W 2.4KW power AC servo motors, using resolvers as feedback components, can work normally in conditions with vibration, external impact, and high and low temperature. The operating temperature range is -85~85°C. Customers can choose to assemble brakes, temperature sensors and aviation plug according to their needs.

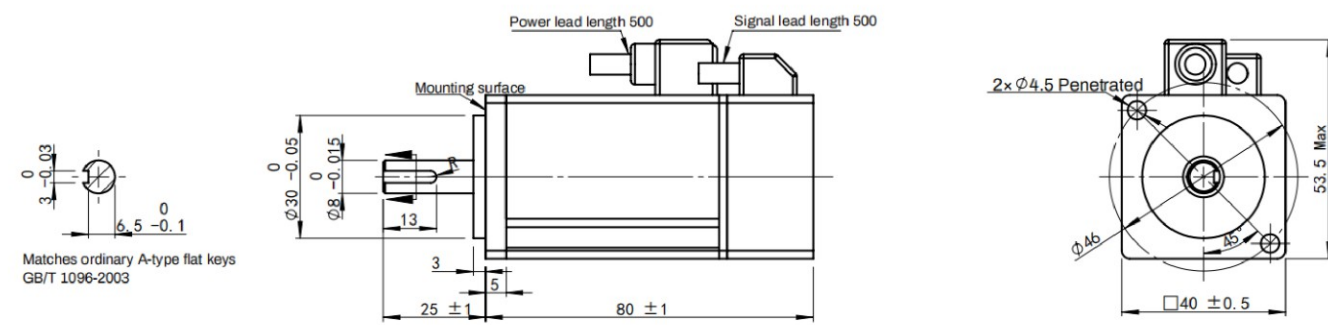
Servo Motors

Wide Temperature Servo Motor															
Frame Size (mm)	Options		Power (W)	Rated Voltage (V)	Rated Torque (N.m)	Rated Speed (r/min)	Phase Current (Arms)	Line Resistance (Ω)	Moment Inertia (kg.m ²)	Weight (kg)	Polar logarithm	IP level	Servo Driver		
	Stepper Motor	Type													
40	HSK0401A-2R00	NTL2	100	220VAC	0.32	3000	1.0	16	0.04*10 ⁻⁴	0.5	5	IP65	GSHD-003-2A-**	SV6-PA3R0S	
	HSK0401A-2R0B				0.32		1.0	16	0.04*10 ⁻⁴	0.7			GSHD-003-2A-**	SV6-PA3R0S	
	HSK0401D-2R00			24VDC	0.32		5.5	0.65	0.04*10 ⁻⁴	0.5			GSFD-010-1D-**	/	
60	HSK0604A-2R00		400	220VAC	1.27		2.8	4.6	0.56*10 ⁻⁴	1.2			GSHD-006-2A-**	SV6-PA7R0S	
	HSK0604A-2R0B				1.27		2.8	4.6	0.56*10 ⁻⁴	1.6			GSHD-006-2A-**	SV6-PA7R0S	
	HSK0604E-2R00			48VDC	1.27		13.0	0.3	0.56*10 ⁻⁴	1.2			GSFD-020-1D-**	/	
80	HSK0807A-2R00		750	220VAC	2.4		3.8	1.8	1.56*10 ⁻⁴	2.2			GSHD-008-2A-**	SV6-PA7R0S	
	HSK0807A-2R0B				2.4		3.8	1.8	1.56*10 ⁻⁴	3.0			GSHD-008-2A-**	SV6-PA7R0S	
	HSK0807E-2R00			48VDC	2.4		15.0	0.23	1.56*10 ⁻⁴	2.2			GSFD-020-1D-**	/	
	HSK0810A-2R00		1000	220VAC	3.2		5.5	0.95	2.03*10 ⁻⁴	2.6			GSHD-008-2A-**	SV6-PA7R0S	
	HSK0810A-2R0B				3.2		3.8	1.8	1.56*10 ⁻⁴	3.2			GSHD-008-2A-**	SV6-PA7R0S	
110	HSK1118A-2R00		1800		5.7		7.0	1.2	7.6*10 ⁻⁴	5.5			GSHD-020-2A-**	/	
	HSK1118A-2R0B				5.7		7.0	1.2	7.6*10 ⁻⁴	7.5			GSHD-020-2A-**	/	

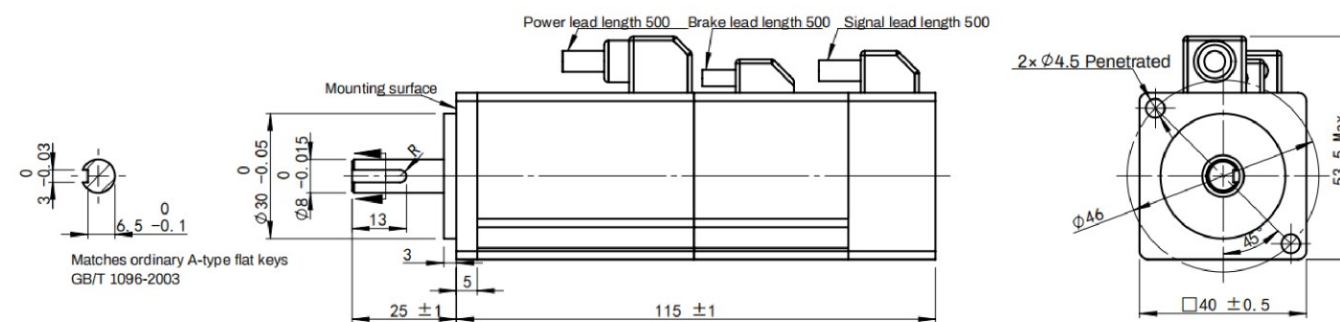
Vacuum High Temperature Motor													
Frame Size (mm)	Options		Power (W)	Rated Voltage (V)	Rated Torque (N.m)	Rated Speed (r/min)	Phase Current (Arms)	Line Resistance (Ω)	Moment Inertia (kg.m ²)	Weight (kg)	Polar logarithm	IP level	Servo Driver
	Stepper Motor	Type											
40	HSV0401A-2R00	VMT1	80	220VAC	0.25	3000	1.0	9.0	0.06*10 ⁻⁴	0.8	5	IP54	GSHD-003-2A-**-SV6-PA3R0S
60	HSS0604A-2R00	VMT2	400		1.27		3.3	4.6	0.7*10 ⁻⁴	2.1			GSHD-006-2A-**-SV6-PA7R0S
80	HSS0807A-2R00	VHT1	750		2.4		4.0	1.9	1.8*10 ⁻⁴	3.5			GSHD-008-2A-**-SV6-PA7R0S
	HSS0810A-2R00	VHT2	1000		3.2		4.5	2.2	2.1*10 ⁻⁴	3.8			GSHD-008-2A-**-SV6-PA7R0S

Cryogenic Stepper Motor													
Frame Size (mm)	Options		Power (W)	Rated Voltage (V)	Rated Torque (N.m)	Rated Speed (r/min)	Phase Current (Arms)	Line Resistance (Ω)	Moment Inertia (kg.m ²)	Weight (kg)	Polar logarithm	IP level	Servo Driver
	Stepper Motor	Type											
40	HSV0401A-2R00	VTL3 NTL4 SLT	100	220VAC	0.32	3000	1.0	9.0	0.06*10 ⁻⁴	0.8	5	IP54	GSHD-003-2A-**-SV6-PA3R0S
60	HSS0604A-2R00		400		1.27		2.8	4.6	0.7*10 ⁻⁴	2.1			GSHD-006-2A-**-SV6-PA7R0S
80	HSS0807A-2R00		750		2.4		3.5	1.9	1.8*10 ⁻⁴	3.5			GSHD-008-2A-**-SV6-PA7R0S
	HSS0810A-2R00		1000		3.2		4.0	2.2	2.1*10 ⁻⁴	3.8			GSHD-008-2A-**-SV6-PA7R0S

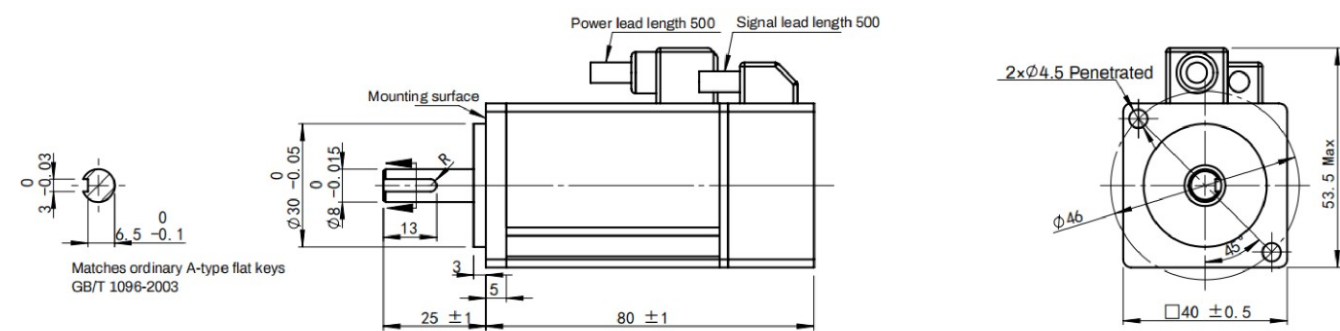
HSK0401A-2R00-NT



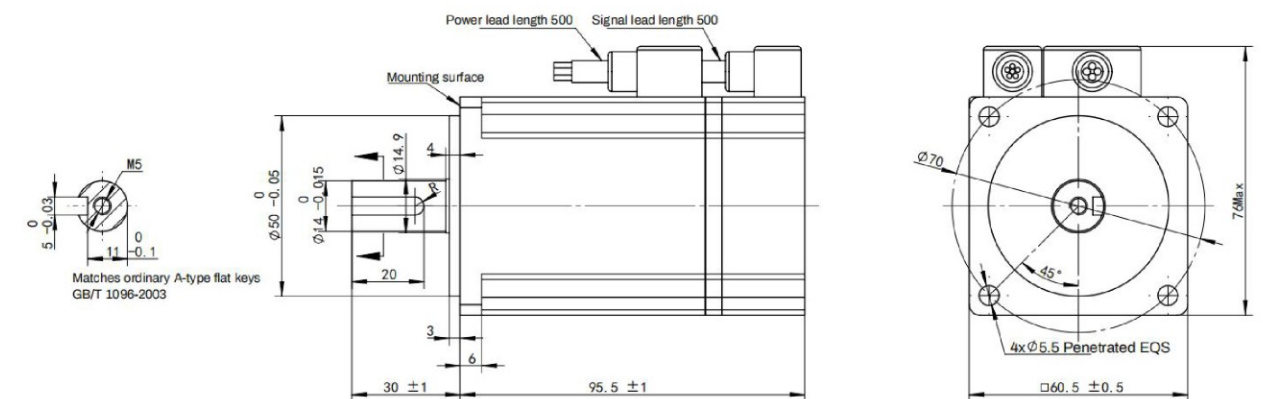
HSK0401A-2R0B-NT



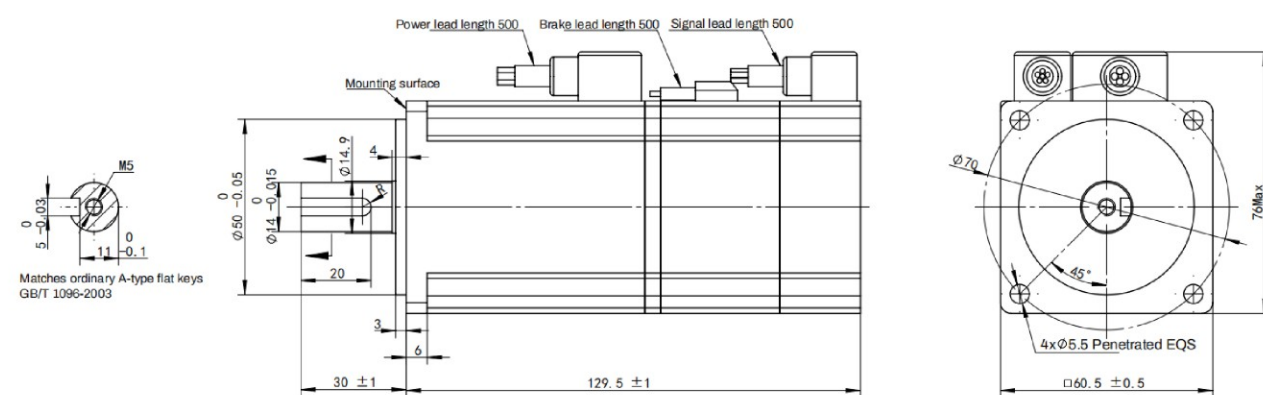
HSK0401D-2R00-NT



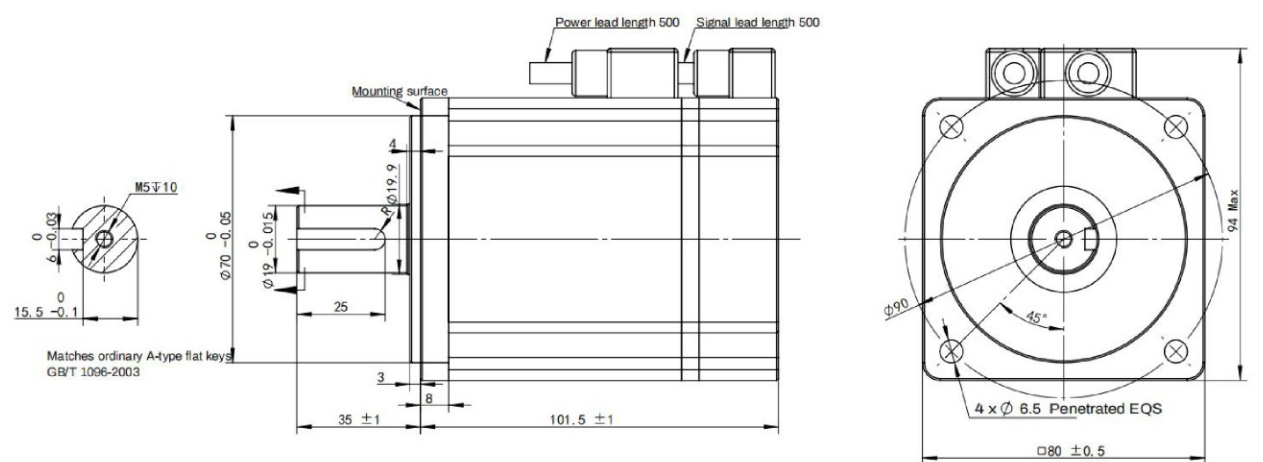
HSK0604A-2R00-NT



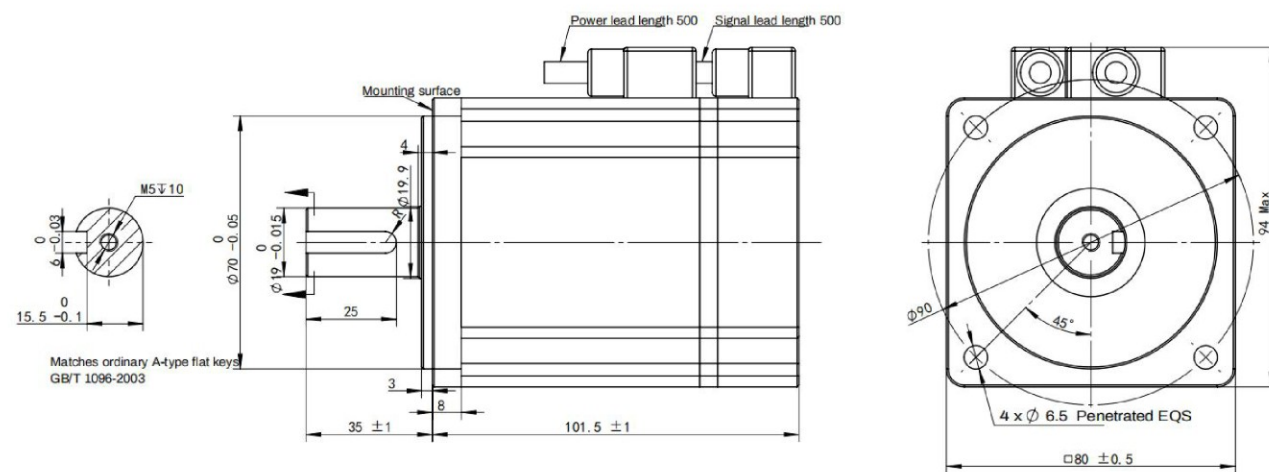
HSK0604A-2R0B-NT



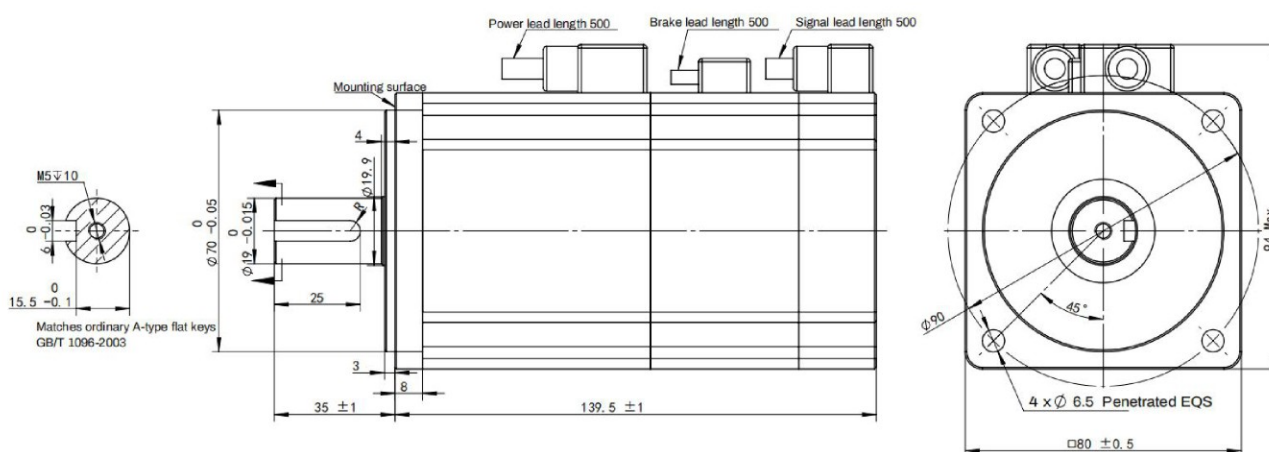
HSK0604E-2R00-NT



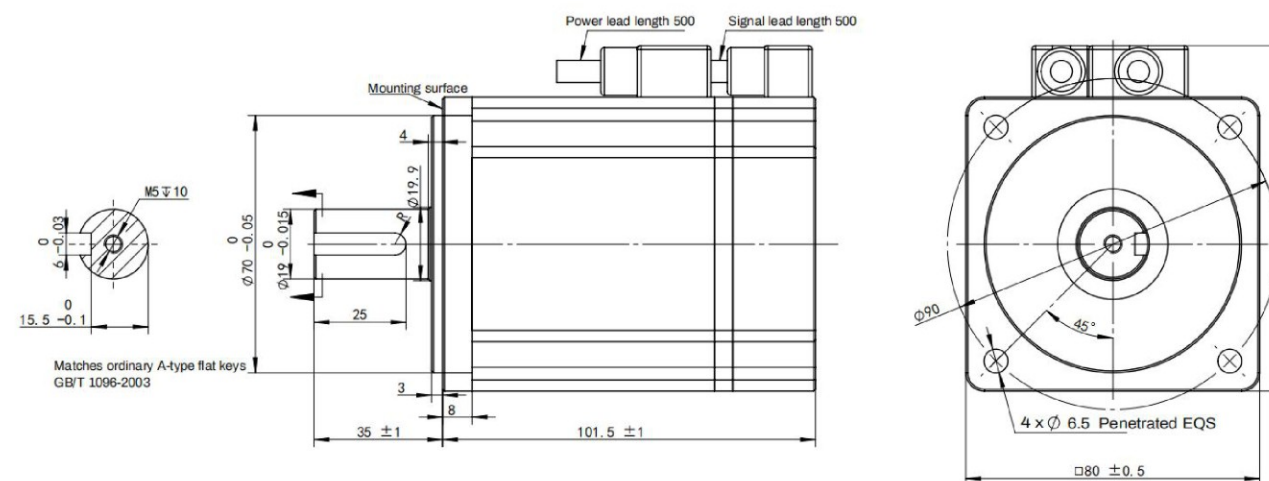
HSK0807A-2R00-NT



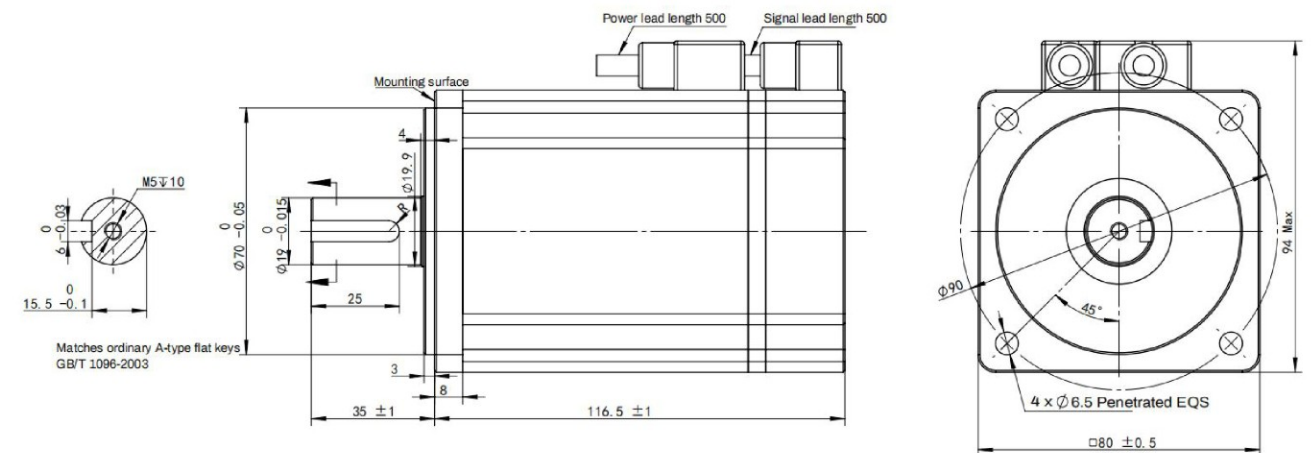
HSK0807A-2R0B-NT



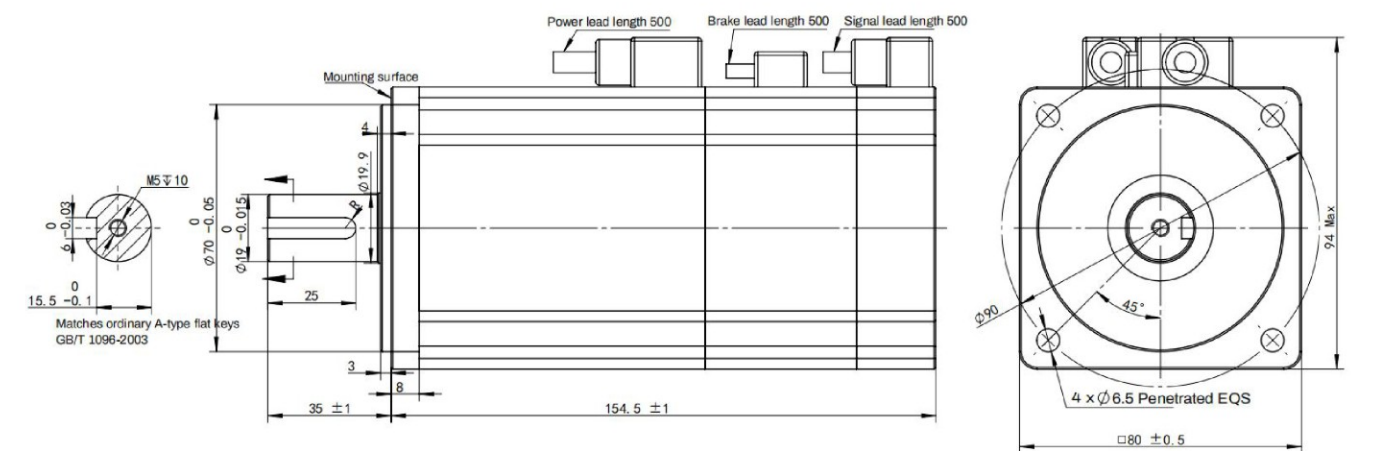
HSK0807E-2R00-NT



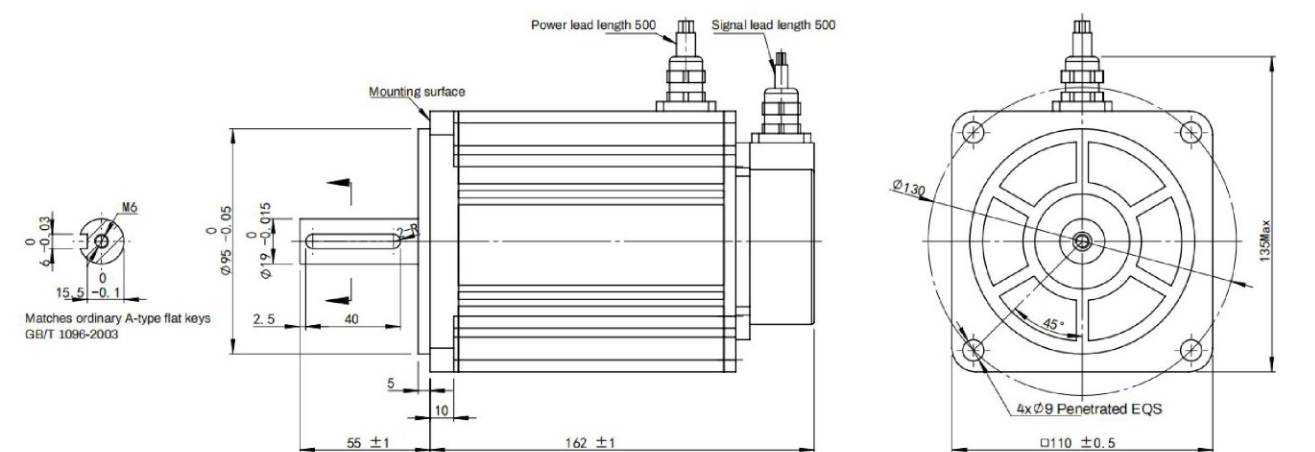
HSK0810A-2R00-NT



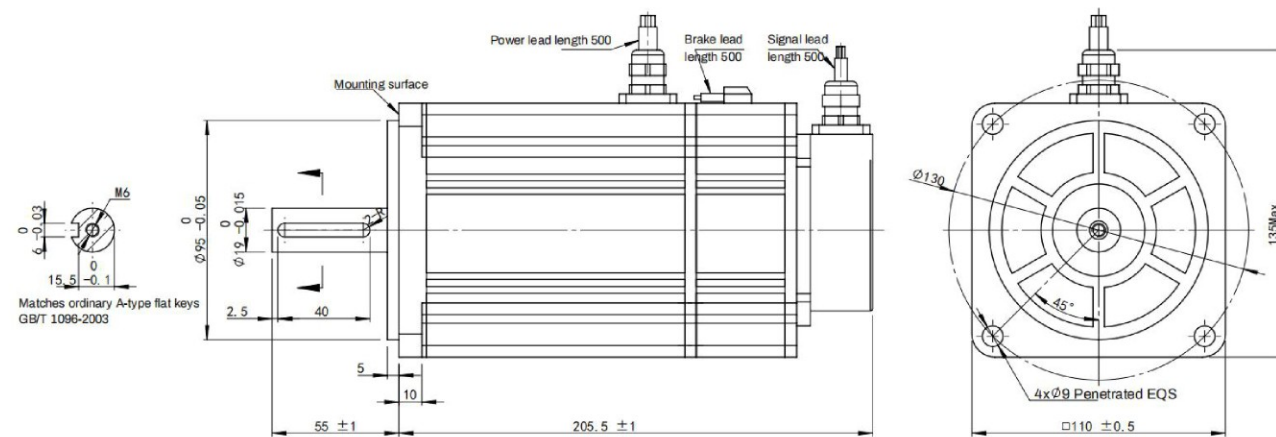
HSK0810A-2R0B-NT



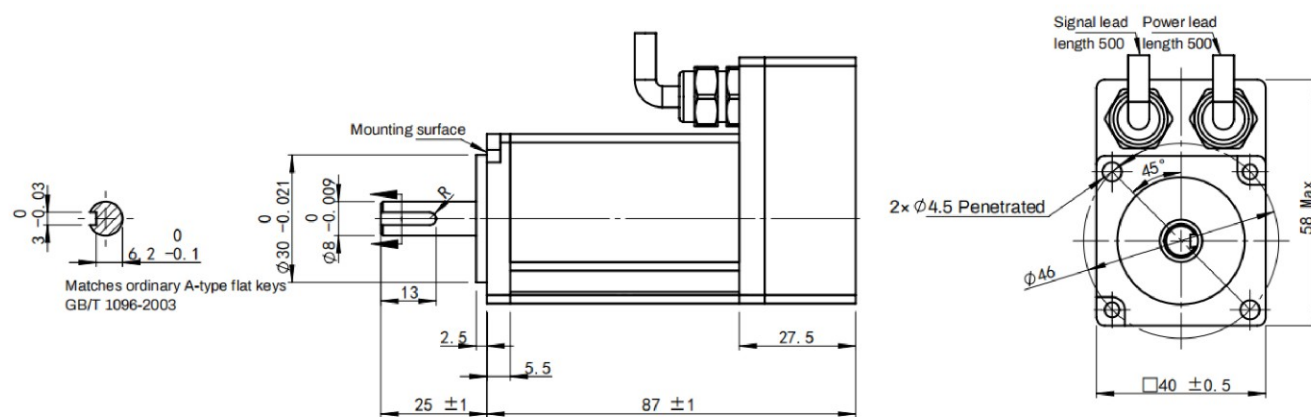
HSK1118A-2R00-NT



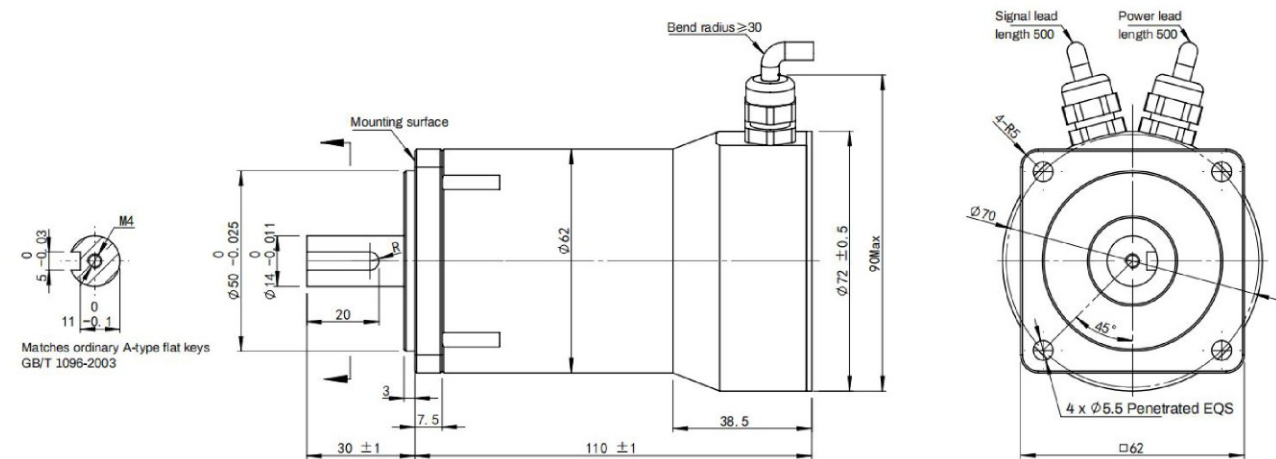
HSK1118A-2R0B-NT



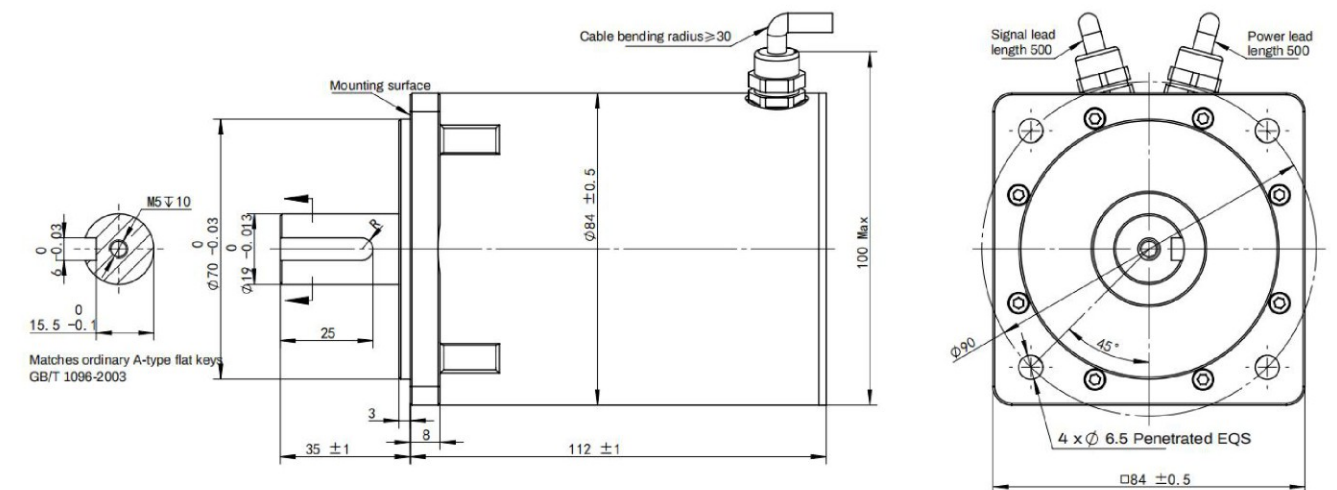
HSV0401A-2R00-VT



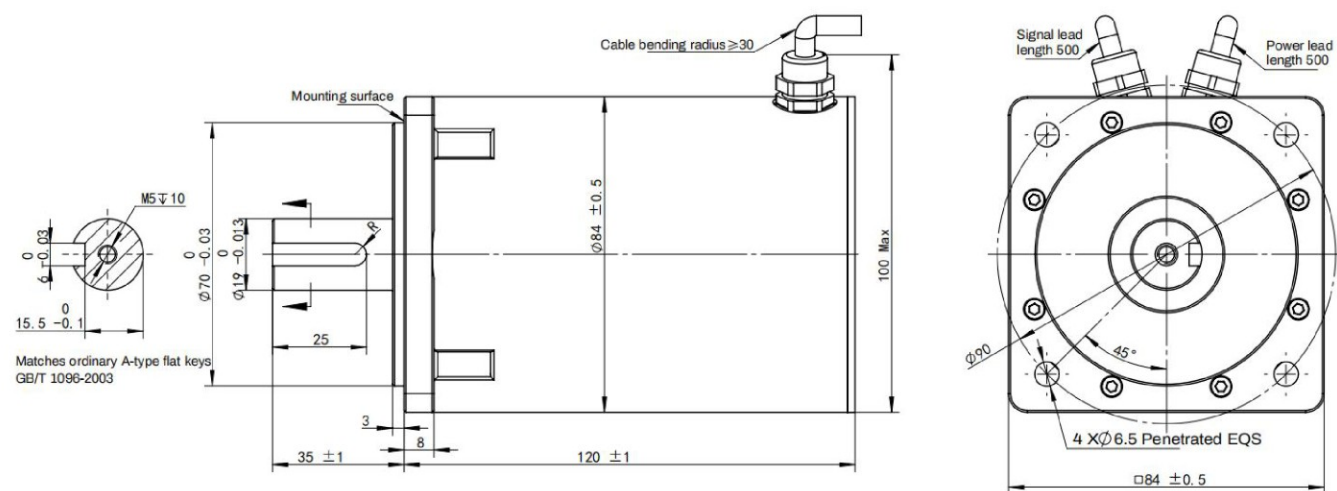
HSS0604A-2R00-VT



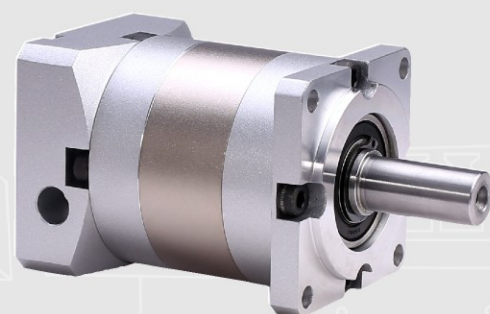
HSS0807A-2R00-VT



HSS0810A-2R00-VT



Planetary Reducer



Standard design and manufacture of 42mm, 60mm, 90mm and 120mm frame size planetary reducers, with low operating temperature of -196°C and high operating temperature of 200°C, vacuum degree of 10⁻⁵ Pa. The model is defined as follows:

Number	Order model							Rated Input Speed (r/min)	Maximum Input Speed (r/min)	Maximum Radial Force (N)	Maximum Axial Force (N)	Full Load Efficiency (%)	Temperature Level (°C)	Vacuum Degree (Pa)
	Model	Frame Size	Number Segments	Reduction Ratio	Interface	Flange Type	Level Code							
1	GP (Coaxial)	42	L1	4、5、8	B (Step by step) C (Servo)	F (Square flange) Y (Round flange)	NTL2 NTL3 VMT1 VMT2 VHT1 VHT2 VTL3 NTL4	3000	4500	185	150	≥94	NTL2 (-40~85) NTL3 (-60~85) VMT1(-20~200) VMT2(-20~150) VHT1(-20~200) VHT2(-20~160) VTL3 (-60~100) NTL4(-80~85)	NTL2 (/) NTL3 (/) VMT1(10 ⁻³) VMT2(10 ⁻³) VHT1(10 ⁻⁵) VHT2(10 ⁻⁵) VTL3 (10 ⁻¹) NTL4(/)
2			L2	16、20、25、32、40								≥92		
3			L3	64、80、100、125、 160、200								≥90		
4		60	L1	4、5、7、10				≥94						
5			L2	16、20、25、35、40、 50、70				≥92						
6			L3	64、80、100、125、 140、175、200				≥90						
7		90	L1	4、5、7、10				3000	3500	1020	850	≥94		
8			L2	16、20、25、35、40、 50、70								≥92		
9			L3	64、80、100、125、 140、175、200								≥90		
10		120	L1	4、5、7、10	C (Servo)	F (Square flange)		3000	4800	2230	1550	≥94		
11			L2	16、20、25、35、40、 50、70								≥92		
12			L3	64、80、100、125、 140、175、200								≥90		
13	GZ (Corner)	42	L1	4、5、7、8、10	B (Step by step) C (Servo)	F (Square flange) Y (Round flange)	NTL2 NTL3 VMT1 VMT2 VHT1 VHT2 VTL3 NTL4	3000	/	185	150	≥94	NTL2 (-40~85) NTL3 (-60~85) VMT1(-20~200) VMT2(-20~150) VHT1(-20~200) VHT2(-20~160) VTL3 (-60~100) NTL4(-80~85)	NTL2 (/) NTL3 (/) VMT1(10 ⁻³) VMT2(10 ⁻³) VHT1(10 ⁻⁵) VHT2(10 ⁻⁵) VTL3 (10 ⁻¹) NTL4(/)
14			L2	12、16、20、25、32、 40、64								≥92		
15			L3	60、80、100、120、 160、200								≥90		
16		60	L1	4、5、7、10				3000	/	889	850	≥94		
17			L2	16、20、25、35、40、 50、70								≥92		
18			L3	64、80、100、125、 140、175、200								≥90		
19		90	L1	4、5、7、10				3000	/	1020	850	≥95		
20			L2	12、15、16、20、25、 28、35、40、50、70								≥92		

42 Box Frame Size	Reduction Ratio (i)	4	5	8	16	20	25	40 (二段)	64 (三段)	80	100	160	...
	Gp Rated Output Torque (nm)	9	9	7	12	12	10.5	10.5	15.5	15.5	15.5	15.5	...
	Rated Output Torque Of Gz (nm)	18	16	9	18	18	16	16	18	25	25	25	...
60 Box Frame Size	Reduction Ratio (i)	4	5	7	10	16	20	50	64	80	125	200	...
	Gp Rated Output Torque (nm)	27	27	19.5	8.5	30	30	33	37.5	37.5	41	37.5	...
	Rated Output Torque Of Gz (nm)	27	27	19.5	8.5	30	30	33	37.5	37.5	41	37.5	...
90 Box Frame Size	Reduction Ratio (i)	4	5	7	10	20	25	35	40	50	64	80	...
	Gp Rated Output Torque (nm)	86	94.5	64	39.5	96	105.5	105.5	96	105.5	120	120	...
	Rated Output Torque Of Gz (nm)	86	94.5	64	39.5	96	105.5	105.5	96	105.5	...	...	...
120 Box Frame Size	Reduction Ratio (i)	4	5	7	10	16	25	40	50	64	70	125	...
	Gp Rated Output Torque (nm)	222	235	158	93	250	264	250	265	310	177	329	...

Driver & Decoder

Stepper Driver

Standard design and manufacturing of two-phase stepper drivers, suitable for 28mm, 42mm, 57mm, 60mm, and 86mm frame size stepper motors. The operating temperature is -40°C~85°C. The driver parameters are shown below.



Model	Control mode	working voltage	Peak driving current (A)	Max subdivision	Frame number	Operating temperature (°C)
HD235	pulse inputs	12V~48V	3.0	256	28、42、57	-40~85
HD265			6.0	256	57、60、86	-40~85
HD235R	485 bus MODBUS-RTU		3.0	256	28、42、57	-40~85
HD265R			6.0	256	57、60、86	-40~85

Independent Production, Full Process Controllable

- ➔ From the chip to the casing, 100% domestically produced, the components and parts are completely independent and controllable.
- ➔ From design to production, 100% domestically produced, the intellectual property rights are completely independent and controllable.

Reliable Product Quality

- ➔ Specifically designed for harsh, extreme conditions.
- ➔ Fully compliant with GJB related standards.
- ➔ Provides a variety of integrated packaging specifications to meet different environments and applications.

Excellent Performance

- ➔ The power density of the servo drive is close to the physical limit, it can drive a high-power motor with a small size and weight, making the electronic control system smaller and lighter.
- ➔ Highly open and visual debugging tools can simply obtain the best motion control effect.
- ➔ Highly rigid, high response.
- ➔ Extremely high torque control accuracy.
- ➔ Supports almost all types of sensors on the market, including resolver, incremental encoders, Hall sensors, SSI protocol absolute encoders, and compatible with SCI protocol absolute encoders.
- ➔ Double feedback full-closed loop, supports any two feedback combinations to form a fully closed loop, or even only one type can be used for control, the other one is output to the host computer through the bus or encoder output interface.
- ➔ Up to dozens of arbitrarily configured IO ports, analog input, digital input, digital output, can be configured as limit, control, feedback and other functions.
- ➔ Rich communication interfaces, RS232, RS422, Canopen.
- ➔ Up to 95% power efficiency.

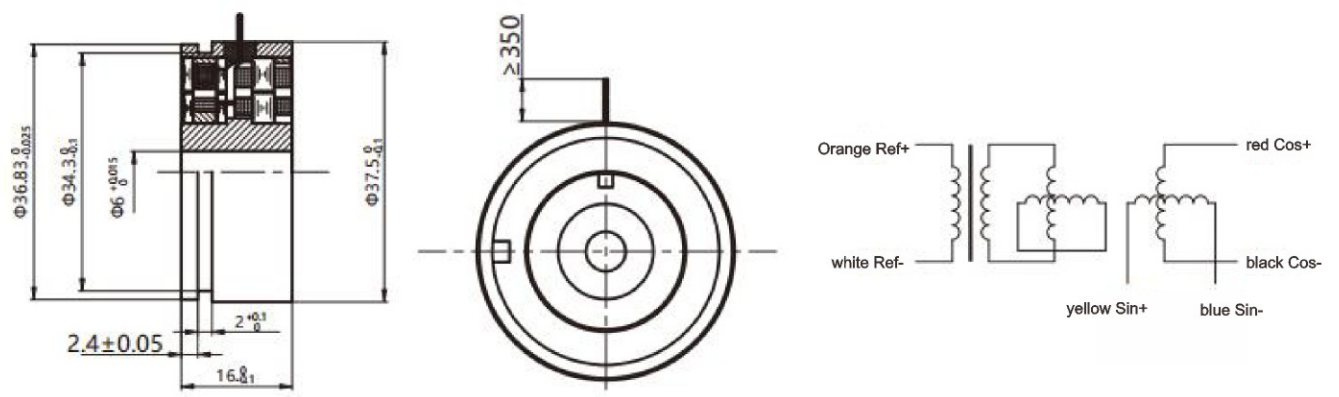
M	S	L	3N		5R	60V	64A	N	A
Aerospace: StarG Aviation : WindB Medical : HearR Industrial GearA	S:Single power supply	L Series DC driver	1N	single phase	xS:xSqure xcm Square	MAX 60VDC power supply	MAX output current 64A	N:nucleu ses-type T:tower - type P:Plate type A:Aerial insertion-type C:customized	A:Multiple sensors R:Resolver I:Photoelectric encoder H:Hall Sensor S:Absolute value encoder
	2N		two- phase						
	D:Dual power supply		3N	Three phase	xR:xRect xcm Long sided rectangle				
			5N	Five phases					

Resolver



It is an electromagnetic sensor, also known as a synchronous resolver, used to measure the angular displacement and angular velocity of a rotating object. It consists of a stator and a rotor. The stator winding serves as the primary side of the transformer and receives the excitation voltage. The excitation frequency is usually 2K~20K. The rotor winding serves as the secondary side of the transformer, and the induced voltage is obtained through electronic coupling. The voltage amplitude of the resolver output winding has a sine and cosine function relationship with the rotor angle.

Pole pair number	Excitation voltage	Excitation frequency	Impedance	Transformation ratio	accuracy	phase shift	Residual voltage	temperature range
Iantipode	5V ~ 7V	10KHZ	(185 ± 30) Ω	0.5±10%	≤ ±15'	≤15°	20mV	NT series VT series



Decoder



Parameter Table		
Excitation motor	5V~7V	typical 6V
Excitation frequency	2K~20K	typical 10K
Excitation current	200mA	
Applicable transformer ratio	0.2~2.0	default 0.5
Resolution ratio	10、12、14、16 位	
Output signal	ABZ Single ended/differential	RS485/RS232
Supply Voltage	12、24V	

Ordering model				
Product series	Resolution ratio	Encoder output mode	Communicate	Ambient temperature
HFT Resolver decoder	10 digits	S:single - ended	485 232	NT series VT series
	12 digits			
	14 digits	D: difference		
	16 digits			