



DC BRUSHLESS MOTOR CATALOG

驱动世界向前
让生活更美好

DRIVING THE
WORLD FORWARD
MAKES LIFE MORE CONVENIENT

GUDE & BG MOTOR
博工&故德

www.china-bgmotor.com



目录 / Table Of Contents

电机型号说明	.....	1
Description Of Motor Type	.....	1
直流无刷外转子电机 4014系列	.....	2
DC Brushless External Rotor Motor 4014 Series	.....	2
直流无刷外转子电机 5060系列	.....	3
DC Brushless External Rotor Motor 5060 Series	.....	3
直流无刷外转子电机 7050系列	.....	4
DC Brushless External Rotor Motor 7050 Series	.....	4
直流无刷电机 28mm系列	.....	5
DC Brushless Motor 28mm Series	.....	5
直流无刷行星减速电机 28mm系列	.....	6
DC Brushless Planetary Gear Motor 28mm Series	.....	6
直流无刷行星减速电机 28系列	.....	7
DC Brushless Planetary Gear Motor 28 Series	.....	7
直流无刷电机 36mm系列	.....	8
DC Brushless Motor 36mm Series	.....	8
直流无刷行星减速电机 36mm系列	.....	9
DC Brushless Planetary Gear Motor 36mm Series	.....	9
直流无刷行星减速电机 36系列	.....	10
DC Brushless Planetary Gear Motor 36 Series	.....	10
直流无刷电机 42mm系列	.....	11
DC Brushless Motor 42mm Series	.....	11
直流无刷电机 42mm系列	.....	12
DC Brushless Motor 42mm Series	.....	12
直流无刷行星减速电机 42系列	.....	13
DC Brushless Planetary Gear Motor 42 Series	.....	13
直流无刷行星减速电机 42mm系列	.....	14
DC Brushless Planetary Gear Motor 42mm Series	.....	14
直流无刷行星减速电机 42mm系列	.....	15
DC Brushless Planetary Gear Motor 42mm Series	.....	15
直流无刷电机 57mm系列	.....	16
DC Brushless Motor 57mm Series	.....	16
直流无刷行星减速电机 57mm系列	.....	17
DC Brushless Planetary Gear Motor 57mm Series	.....	17
直流无刷 RV25蜗轮蜗杆减速电机 57mm系列	.....	18
DC Brushless RV25 Worm Gear Motor 57mm Series	.....	18



目录 / Table Of Contents

直流无刷 RV30蜗轮蜗杆减速电机 57mm系列	19
DC Brushless RV30 Worm Gear Motor 57mm Series	
直流无刷电机 60mm系列	20
DC Brushless Motor 60mm Series	
直流无刷行星减速电机 60mm系列	21
DC Brushless Planetary Gear Motor 60mm Series	
直流无刷 RV25蜗轮蜗杆减速电机 60mm系列	22
DC Brushless RV25 Worm Gear Motor 60mm Series	
直流无刷 RV30蜗轮蜗杆减速电机 60mm系列	23
DC Brushless RV30 Worm Gear Motor 60mm Series	
直流无刷电机 70mm系列	24
DC Brushless Motor 70mm Series	
直流无刷电机 80mm系列	25
DC Brushless Motor 80mm Series	
直流无刷电机 80mm系列	26
DC Brushless Motor 80mm Series	
直流无刷行星减速电机 80mm系列	27
DC Brushless Planetary Gear Motor 80mm Series	
直流无刷电机 86mm系列	28
DC Brushless Motor 86mm Series	
直流无刷行星减速电机 86mm系列	29
DC Brushless Planetary Gear Motor 86mm Series	
直流无刷 RV30蜗轮蜗杆减速电机 86mm系列	30
DC Brushless RV30 Worm Gear Motor 86mm Series	
直流无刷 RV40蜗轮蜗杆减速电机 86mm系列	31
DC Brushless RV40 Worm Gear Motor 86mm Series	
直流无刷 RV50蜗轮蜗杆减速电机 86mm系列	32
DC Brushless RV50 Worm Gear Motor 86mm Series	
直流无刷电机 90mm系列	33
DC Brushless Motor 90mm Series	
直流无刷电机 103mm系列	34
DC Brushless Motor 103mm Series	
直流无刷电机 110mm系列	35
DC Brushless Motor 110mm Series	
直流无刷行星减速电机 110mm系列	36
DC Brushless Planetary Gear Motor 110mm Series	



目录 / Table Of Contents

直流无刷 RV50蜗轮蜗杆减速电机 110mm系列	.....	37
DC Brushless RV50 Worm Gear Motor 110mm Series	.....	37
直流无刷 RV63蜗轮蜗杆减速电机 110mm系列	.....	38
DC Brushless RV63 Worm Gear Motor 110mm Series	.....	38
直流无刷电机 QY71系列	.....	39
DC Brushless Motor QY71 Series	.....	39
直流无刷电机 QY90 系列	.....	40
DC Brushless Motor QY90 Series	.....	40
直流无刷电机 QY100 系列	.....	41
DC Brushless Motor QY100 Series	.....	41
直流无刷电机 QY112 系列	.....	42
DC Brushless Motor QY112 Series	.....	42
直流无刷电机 QY132 系列	.....	43
DC Brushless Motor QY132 Series	.....	43
产品技术信息	.....	44-53
Product Technical Information	.....	44-53



电机型号说明 / Description Of Motor Type

直流无刷电机 / BRUSHLESS DC MOTOR

BG - **57 BLDC** - **24 30S** - **RV30** - **20K** - **M**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	公司名称 Company Name	博工电机 / BG MOTOR
②	电机外形尺寸 Motor Dimensions	28mm、36mm、42mm、57mm、60mm、70mm、80mm、86mm、90mm、110mm
③	电机种类 Motor Type	BLDC: 无刷直流电机 / BLDC MOTOR
④	电源电压 Supply Voltage	(例 / Example) 24: 24V DC
⑤	电机转速 Motor Speed	(例 / Example) 30S: 3000rpm
⑥	减速箱类型及型号 Type And Model Of Gearbox	RV : RV蜗轮蜗杆减速箱 / RV Worm Gear Reducer PG : 行星减速箱 / Planetary Gearbox
⑦	速比 Speed Ratio	K: 速比 (例 / Example) 20K (1: 20的速比)
⑧	电机附加配件 Motor Can Add Accessories	M: 电磁刹车器 / M: Electromagnetic brake BFE: 闭环反馈方式, 一般指电机增加编码器 (包括简易型霍尔编码器) / BFE: Closed loop feedback mode, generally refers to equipping the motor with an encoder (including the simple hall encoder)



直流无刷外转子电机 4014系列

DC Brushless External Rotor Motor 4014 Series



使用环境: -20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级: B-F
Insulation Class: B-F
防护等级: IP40
Protection Level: IP40
极数: 24
Number Of Poles: 24
磁性材料: 高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命: ≥3000h
Life: ≥3000h

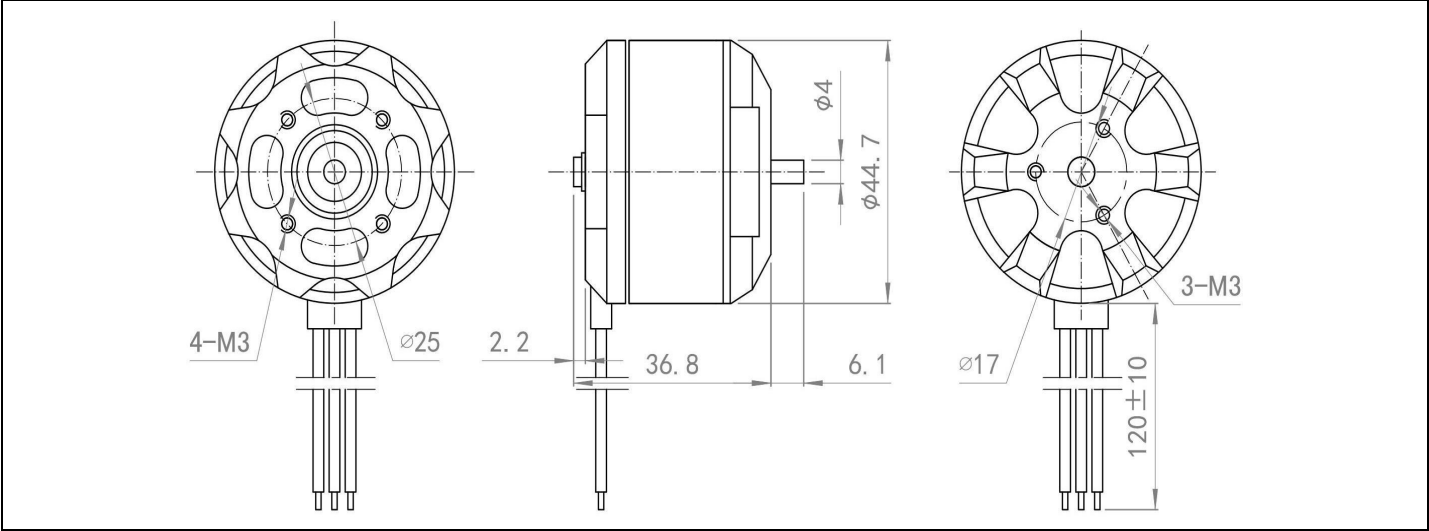
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, drive, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	KV值	No-load		Rated Load				Stall	
			Speed	Current	Power	Speed	Torque	Current	Torque	Current
	V	rpm/V	rpm	A	W	rpm	Nm	A	Nm	A
BG-4014BLDC-1852S	18	340	6120	1.1	240	5202	0.3	12.0	0.80	25
BG-4014BLDC-2264S	22.2	340	7548	1.1	280	6416	0.4	12.0	0.90	25
BG-4014BLDC-1861S	18	400	7200	1.3	300	6120	0.4	15.0	1.00	30
BG-4014BLDC-2275S	22.2	400	8880	1.3	340	7548	0.5	15.0	1.10	30

外形图 / Mechanical Dimensions





直流无刷外转子电机 5060系列

DC Brushless External Rotor Motor 5060 Series



使用环境: -20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级: B-F
Insulation Class: B-F
防护等级: IP40
Protection Level: IP40
极数: 14
Number Of Poles: 14
磁性材料: 高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命: ≥3000h
Life: ≥3000h

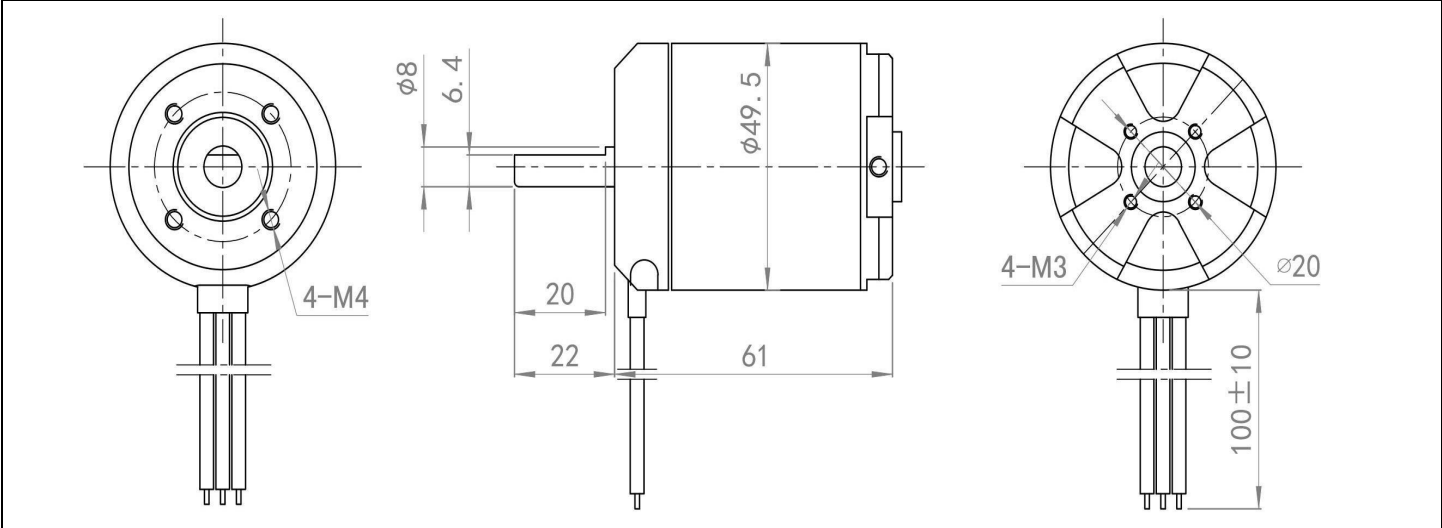
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, drive, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	KV值	No-load		Rated Load				Stall	
	V	rpm/V	Speed	Current	Power	Speed	Torque	Current	Torque	Current
			rpm	A	W	rpm	Nm	A	Nm	A
BG-5060BLDC-2480S	24	200	4800	0.8	450	4080	0.6	18.0	1.40	52
BG-5060BLDC-3661S	36	200	7200	0.9	650	6120	0.8	18.0	2.10	52
BG-5060BLDC-4881S	48	200	9600	1.1	850	8160	0.9	18.0	2.40	52
BG-5060BLDC-3685S	36	280	10080	1.6	650	8568	0.7	18.0	1.90	52

外形图 / Mechanical Dimensions





直流无刷外转子电机 7050系列

DC Brushless External Rotor Motor 7050 Series



使用环境: -20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级: B-F
Insulation Class: B-F
防护等级: IP40
Protection Level: IP40
极数: 22
Number Of Poles: 22
磁性材料: 高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命: ≥3000h
Life: ≥3000h

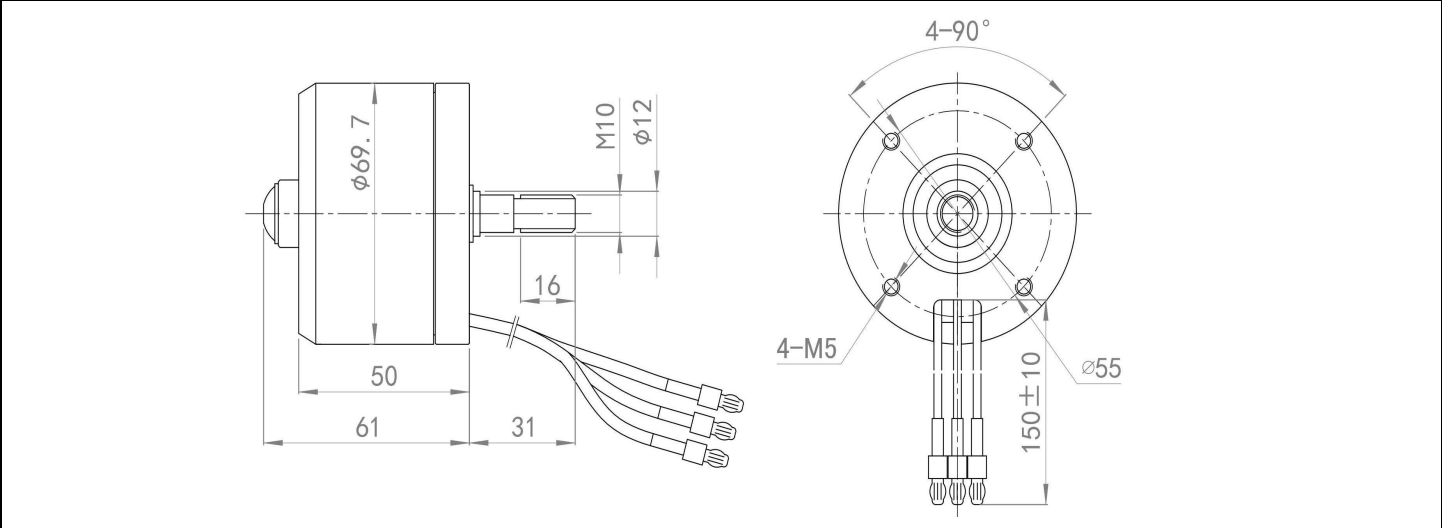
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, drive, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	KV值	No-load		Rated Load				Stall	
			Speed	Current	Power	Speed	Torque	Current	Torque	Current
	V	rpm/V	rpm	A	W	rpm	Nm	A	Nm	A
BG-7050BLDC-3627S	36	90	3240	0.9	980	2754	3.2	27.0	6.50	78
BG-7050BLDC-2440S	24	200	4800	1.9	700	4080	0.9	29.0	2.50	78
BG-7050BLDC-3661S	36	200	7200	2.4	980	6120	1.3	27.0	3.70	78
BG-7050BLDC-4881S	48	200	9600	2.8	1120	8160	1.5	23.0	4.20	68

外形图 / Mechanical Dimensions





直流无刷电机 28mm系列

DC Brushless Motor 28mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：4
Number Of Poles: 4
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥3000h
Life: ≥3000h

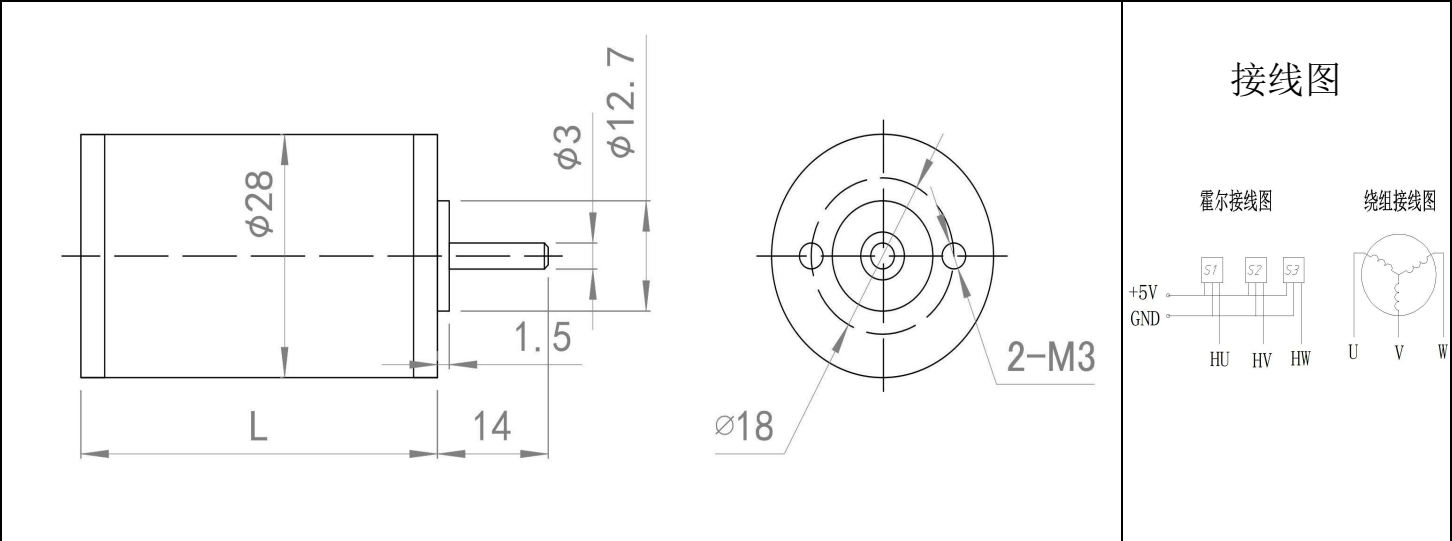
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-28BLDC-1230S	12	4000	0.20	3.7	3000	0.012	0.4	0.18	1.23	37.8
BG-28BLDC-1230S-1	12	4000	0.2	4.7	3000	0.015	0.5	0.38	1.57	40.5
BG-28BLDC-2430S	24	4000	0.60	6.3	3000	0.020	0.4	0.55	1.05	53
BG-28BLDC-2430S-1	24	4000	0.4	15	3000	0.048	0.8	0.75	2.50	78

外形图 / Mechanical Dimensions





直流无刷行星减速电机 28mm系列

DC Brushless Planetary Gear Motor 28mm Series



内齿圈材料：金属
Gear material: Metal
 轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
 最大允许径向力：≤30N
Max.Radial load: ≤30N
 最大允许轴向力：≤10N
Radial play of shaft: ≤10N
 轴向间隙：≤0.03mm
Axial play of shaft: ≤0.03mm
 额定允许负载：2N.m
Rated tolerance torque: 2N.m

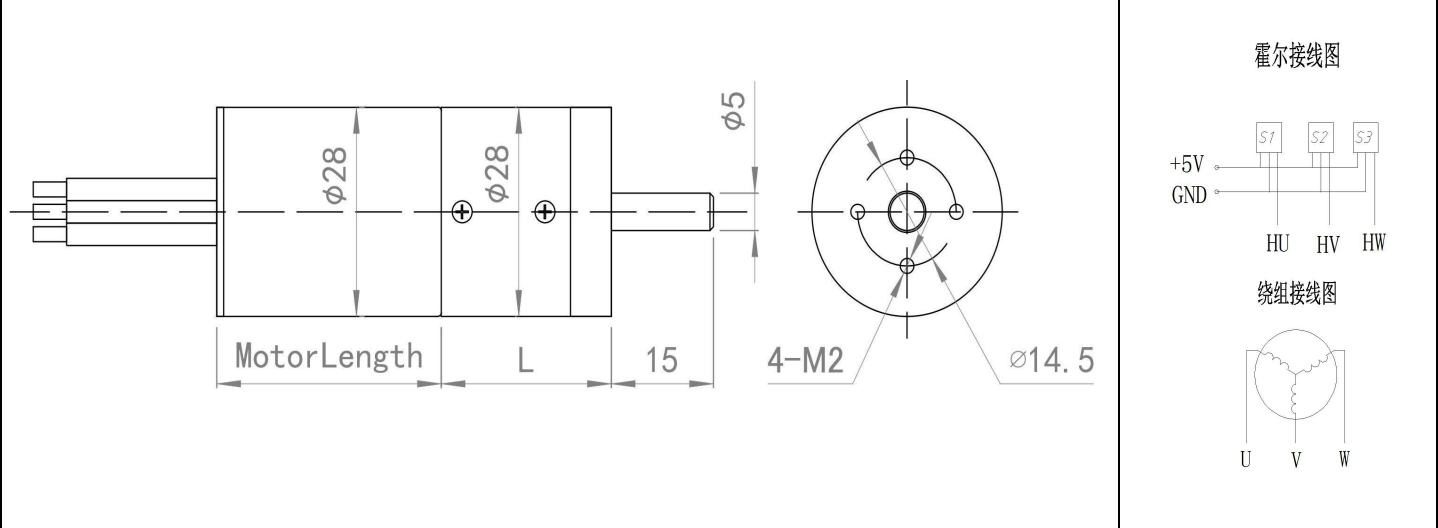
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-28BLDC-2430S	24	4000	0.60	6.3	3000	0.020	0.4	0.55	1.05	53
BG-28BLDC-2430S-1	24	4000	0.4	15	3000	0.048	0.8	0.75	2.50	78

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 14	1: 19	1: 27	1: 51	1: 71	1: 100	1: 139
	减速箱长度 Gearbox length	L: mm	13.9	32.4			43.9			
BG-28BLDC-2430S-1- PG28	空载转速 NO-load speed	rpm	1000	286	211	148	78	56	40	29
	负载转速 Rated speed	rpm	750	214	158	111	59	42	30	22
	额定扭矩 Rated torque	N.m	0.17	0.54	0.73	1.04	1.83	2.00	2.00	2.00

外形图 / Mechanical Dimensions





直流无刷行星减速电机 28系列

DC Brushless Planetary Gear Motor 28 Series



内齿圈材料: 金属

Gear material: Metal

轴承类型: 高质量滚珠轴承

Bearing Type: High Quality Ball Bearing

最大允许径向力: $\leq 30N$

Max.Radial load: $\leq 30N$

最大允许轴向力: $\leq 10N$

Radial play of shaft: $\leq 10N$

轴向间隙: $\leq 0.03mm$

Axial play of shaft: $\leq 0.03mm$

额定允许负载: **2N.m**

Rated tolerance torque: 2N.m

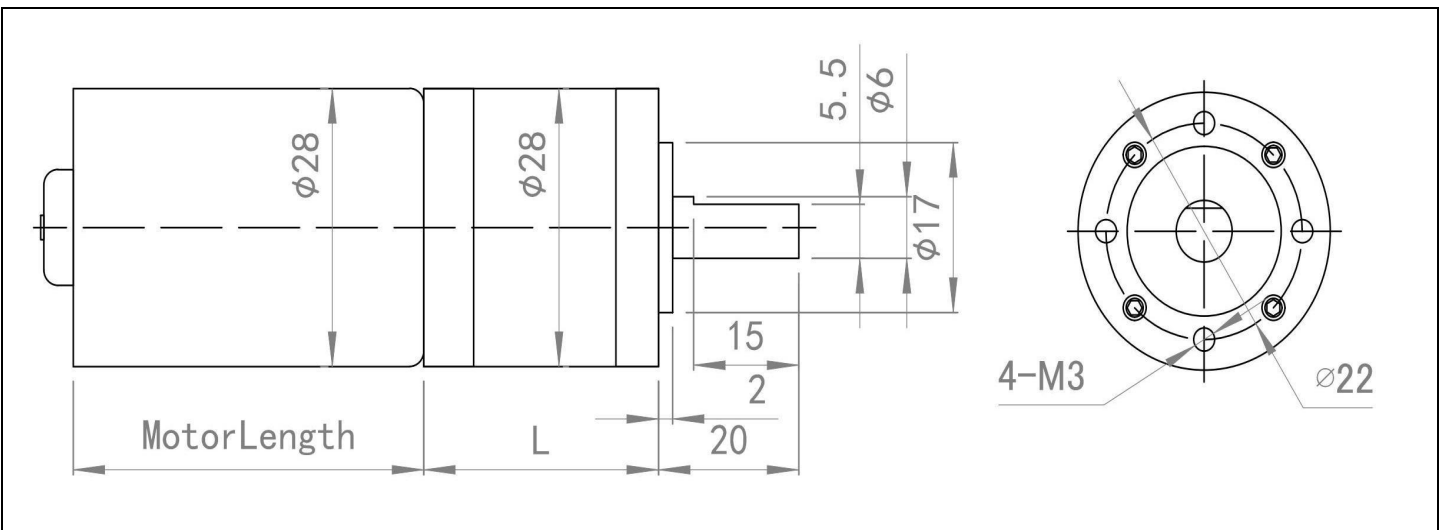
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length L:mm
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	
BG-2838BLDC-1242S	12	5000	0.14	4.3	4200	0.01	0.6	0.03	1.65	37.8
BG-2838BLDC-2444S	24	5000	0.09	4.5	4400	0.01	0.3	0.03	0.90	37.8

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 14	1: 19	1: 27	1: 51	1: 71	1: 100	1: 139
	减速箱长度 Gearbox length	L: mm	28.5	36.0			43.0			
BG-2838BLDC-1242S-PG28	空载转速 NO-load speed	rpm	1250	357	263	185	98	70	50	36
	负载转速 Rated speed	rpm	1050	300	221	156	82	59	42	30
	额定扭矩 Rated torque	N.m	0.04	0.11	0.15	0.22	0.38	0.53	0.75	1.04

外形图 / Mechanical Dimensions





直流无刷电机 36mm系列

DC Brushless Motor 36mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：4
Number Of Poles: 4
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥3000h
Life: ≥3000h

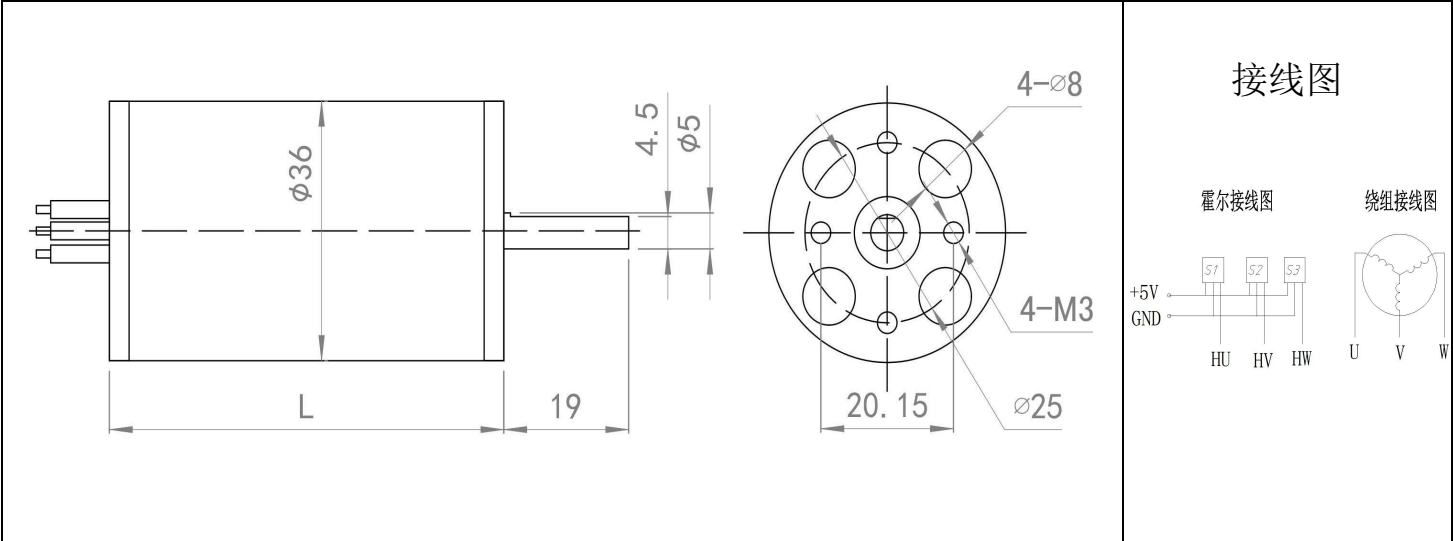
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-36BLDC-1218S	12	2400	0.10	7	1835	0.036	0.8	0.10	2.70	60
BG-36BLDC-1225S	12	3200	0.1	9.4	2500	0.036	1.0	0.1	2.70	60
BG-36BLDC-1830S	18	4000	0.10	11	3000	0.036	0.8	0.12	2.82	60
BG-36BLDC-2440S	24	5200	0.1	15	4000	0.035	0.8	0.75	2.49	60

外形图 / Mechanical Dimensions





直流无刷行星减速电机 36mm系列

DC Brushless Planetary Gear Motor 36mm Series



内齿圈材料：金属
Gear material: Metal
轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
最大允许径向力：≤50N
Max.Radial load: ≤50N
最大允许轴向力：≤20N
Radial play of shaft: ≤20N
轴向间隙：≤0.03mm
Axial play of shaft: ≤0.03mm
额定允许负载：3N.m
Rated tolerance torque: 3N.m

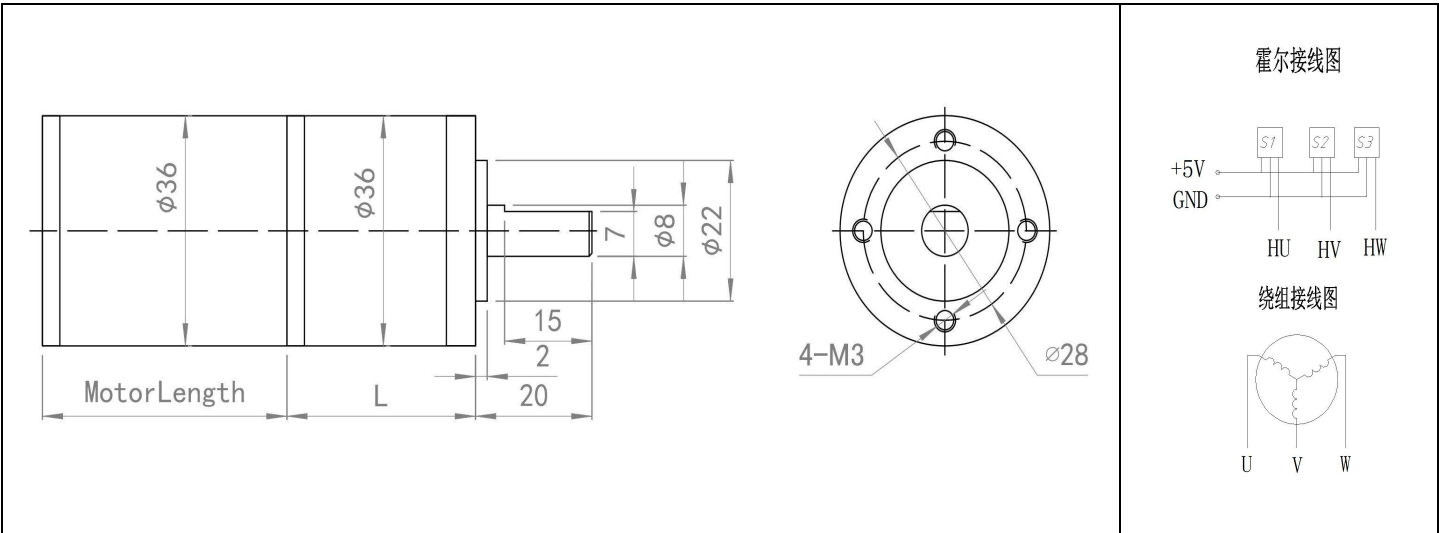
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-36BLDC-1830S	18	4000	0.10	11	3000	0.036	0.8	0.12	2.82	60
BG-36BLDC-2440S	24	5200	0.1	15	4000	0.035	0.8	0.75	2.49	60

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 14	1: 19	1: 27	1: 51	1: 71	1: 100	1: 139
	减速箱长度 Gearbox length	L: mm	24.8	32.4			41.9			
BG-36BLDC-1830S- PG36	空载转速 NO-load speed	rpm	1000	286	211	148	78	56	40	29
	负载转速 Rated speed	rpm	750	214	158	111	59	42	30	22
	额定扭矩 Rated torque	N.m	0.13	0.41	0.55	0.79	1.38	1.92	2.70	3.00

外形图 / Mechanical Dimensions





直流无刷行星减速电机 36系列

DC Brushless Planetary Gear Motor 36 Series



内齿圈材料: 金属
Gear material: Metal
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
最大允许径向力: $\leq 50\text{N}$
Max.Radial load: $\leq 50\text{N}$
最大允许轴向力: $\leq 20\text{N}$
Radial play of shaft: $\leq 20\text{N}$
轴向间隙: $\leq 0.03\text{mm}$
Axial play of shaft: $\leq 0.03\text{mm}$
额定允许负载: 3N.m
Rated tolerance torque: 3N.m

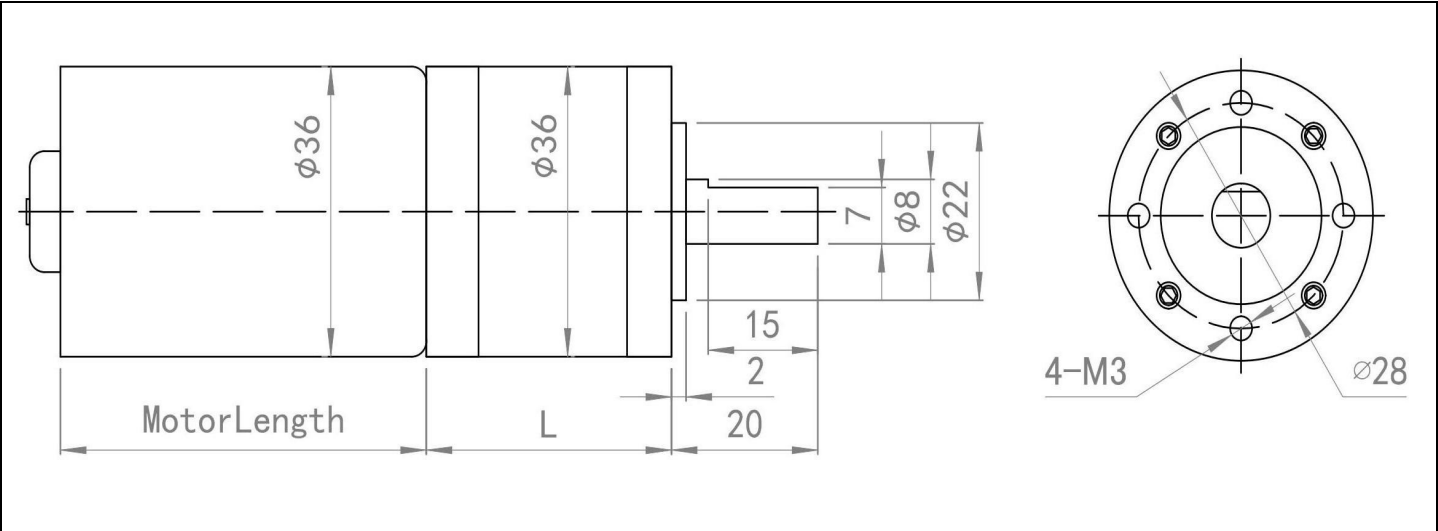
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-3650BLDC-1253S	12	6500	0.25	11	5300	0.02	1.4	0.06	4.20	50
BG-3650BLDC-2434S	24	4000	0.08	7	3400	0.02	0.4	0.06	1.26	50

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 14	1: 19	1: 27	1: 51	1: 71	1: 100	1: 139
	减速箱长度 Gearbox length	L: mm	26.0	33.5			40.5			
BG-3650BLDC-1253S-PG36	空载转速 NO-load speed	rpm	1625	464	342	241	127	92	65	47
	负载转速 Rated speed	rpm	1325	379	279	196	104	75	53	38
	额定扭矩 Rated torque	N.m	0.07	0.22	0.31	0.43	0.76	1.06	1.49	2.07

外形图 / Mechanical Dimensions





直流无刷电机 42mm系列

DC Brushless Motor 42mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：4
Number Of Poles: 4
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥3000h
Life: ≥3000h

定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load			Rated Load			Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-42BLDC-1230S	12	4000	0.10	11	3000	0.035	0.6	0.18	1.89	42
BG-42BLDC-1230S-1	12	4000	0.13	17	3000	0.054	1.2	0.38	3.60	60
BG-42BLDC-2430S	24	4000	0.20	25	3000	0.080	1.8	0.55	5.31	60
BG-42BLDC-2430S-1	24	4000	0.3	41	3000	0.130	2.5	0.75	7.59	78

外形图 / Mechanical Dimensions

接线图

霍尔接线图

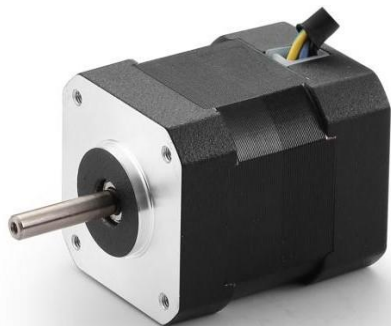
绕组接线图

5V GND HU HV HW U V W



直流无刷电机 42mm系列

DC Brushless Motor 42mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：8
Number Of Poles: 8
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

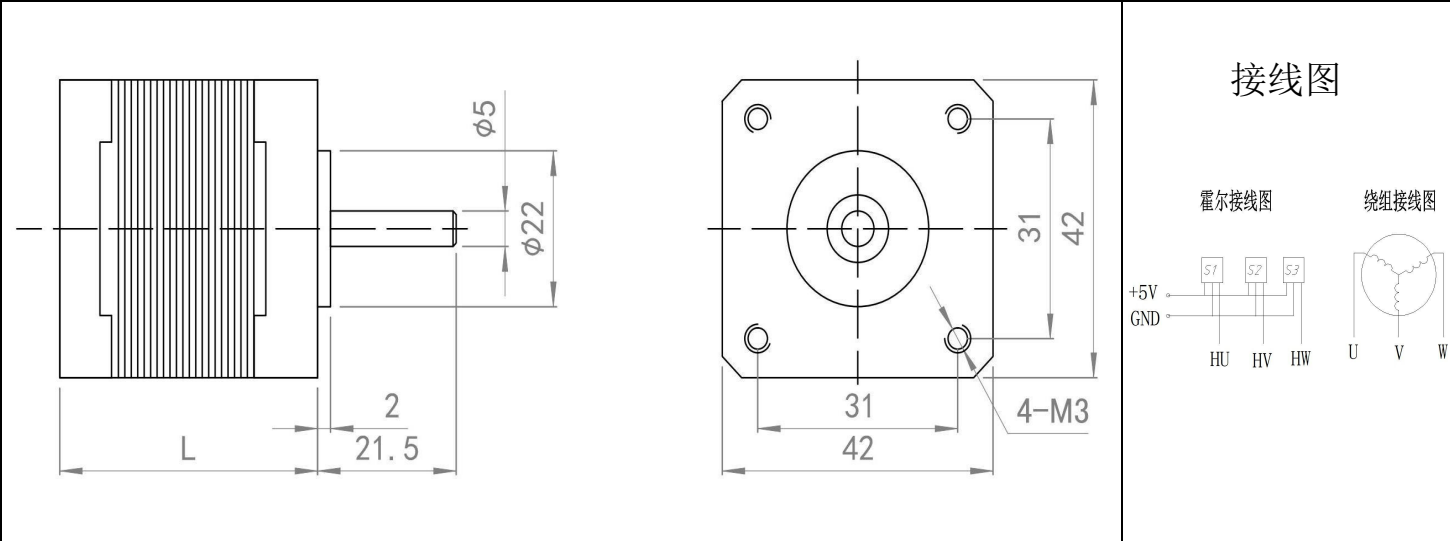
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-42BLDC-2440S	24	5200	0.20	26	4000	0.063	1.8	0.18	5.40	40
BG-42BLDC-4840S	48	5200	0.2	52	4000	0.125	1.8	0.38	5.25	60
BG-42BLDC-2440S-1	24	5200	0.60	78	4000	0.185	5.2	0.55	15.60	80
BG-42BLDC-4840S-1	48	5200	0.4	105	4000	0.250	3.3	0.75	9.90	100

外形图 / Mechanical Dimensions





直流无刷行星减速电机 42系列

DC Brushless Planetary Gear Motor 42 Series



内齿圈材料：金属
Gear material: Metal
 轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
 最大允许径向力：≤80N
Max.Radial load: ≤80N
 最大允许轴向力：≤30N
Radial play of shaft: ≤30N
 轴向间隙：≤0.03mm
Axial play of shaft: ≤0.03mm
 额定允许负载：6N.m
Rated tolerance torque: 6N.m

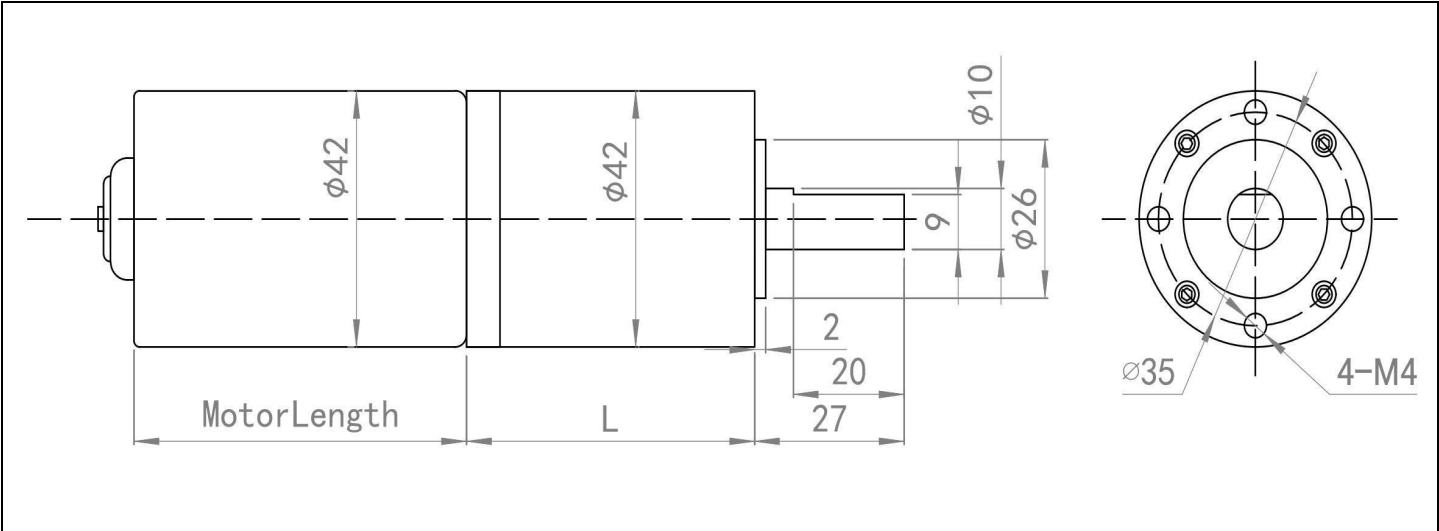
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-4260BLDC-1234S	12	4533	0.22	17	3400	0.05	1.8	0.14	5.31	60
BG-4260BLDC-2435S	24	4733	0.12	18	3550	0.05	0.9	0.15	2.81	60

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 14	1: 19	1: 27	1: 51	1: 71	1: 100	1: 139
	减速箱长度 Gearbox length	L: mm	31.5	42.0			52.0			
BG-4260BLDC-1234S-PG42	空载转速 NO-load speed	rpm	1133	324	239	168	89	64	45	33
	负载转速 Rated speed	rpm	850	243	179	126	67	48	34	24
	额定扭矩 Rated torque	N.m	0.17	0.54	0.73	1.04	1.83	2.54	3.58	4.98

外形图 / Mechanical Dimensions





直流无刷行星减速电机 42mm系列

DC Brushless Planetary Gear Motor 42mm Series



内齿圈材料: 金属
Gear material: Metal
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
最大允许径向力: $\leq 80\text{N}$
Max.Radial load: $\leq 80\text{N}$
最大允许轴向力: $\leq 30\text{N}$
Radial play of shaft: $\leq 30\text{N}$
轴向间隙: $\leq 0.03\text{mm}$
Axial play of shaft: $\leq 0.03\text{mm}$
额定允许负载: 9N.m
Rated tolerance torque: 9N.m

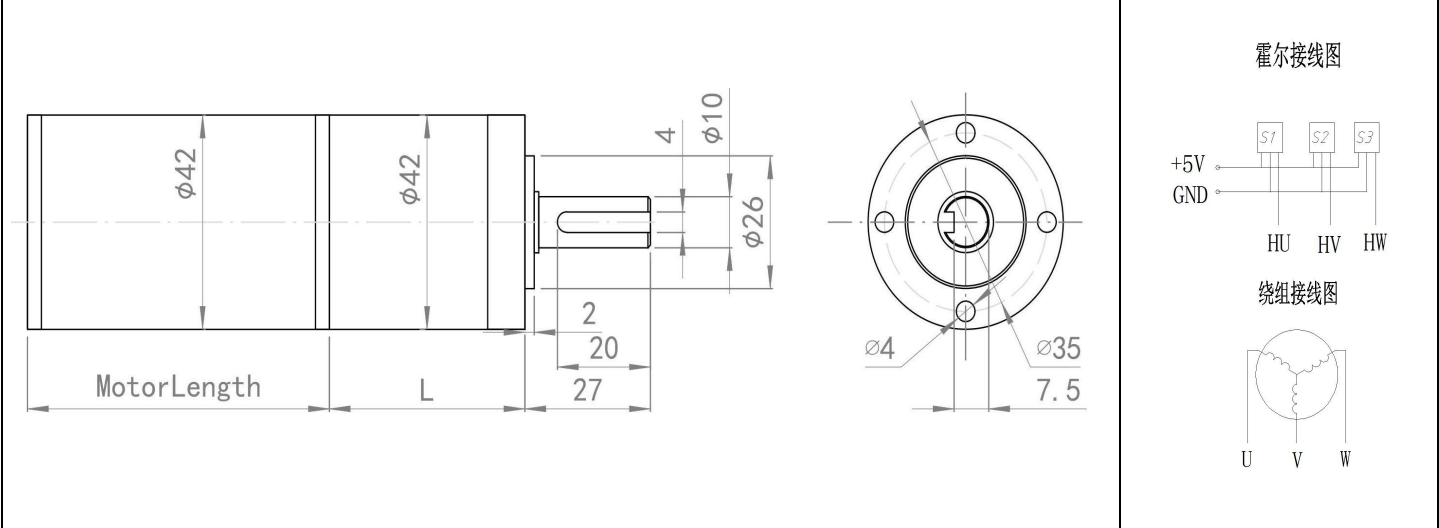
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-42BLDC-2430S	24	4000	0.20	25	3000	0.080	1.8	0.55	5.31	60
BG-42BLDC-2430S-1	24	4000	0.3	41	3000	0.130	2.5	0.75	7.59	78

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 15	1: 18	1: 36	1: 54	1: 81	1: 126	1: 216
	减速箱长度 Gearbox length	L: mm	32.5	46.3			60.1			
BG-42BLDC-2430S-1- PG42	空载转速 NO-load speed	rpm	1000	267	222	111	74	49	32	19
	负载转速 Rated speed	rpm	750	200	167	83	56	37	24	14
	额定扭矩 Rated torque	N.m	0.47	1.58	1.90	3.79	5.27	7.90	9.00	9.00

外形图 / Mechanical Dimensions





直流无刷行星减速电机 42mm系列

DC Brushless Planetary Gear Motor 42mm Series



内齿圈材料：金属
Gear material: Metal
轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
最大允许径向力：≤50N
Max.Radial load: ≤50N
最大允许轴向力：≤30N
Radial play of shaft: ≤30N
轴向间隙：≤0.03mm
Axial play of shaft: ≤0.03mm
额定允许负载：9N.m
Rated tolerance torque: 9N.m

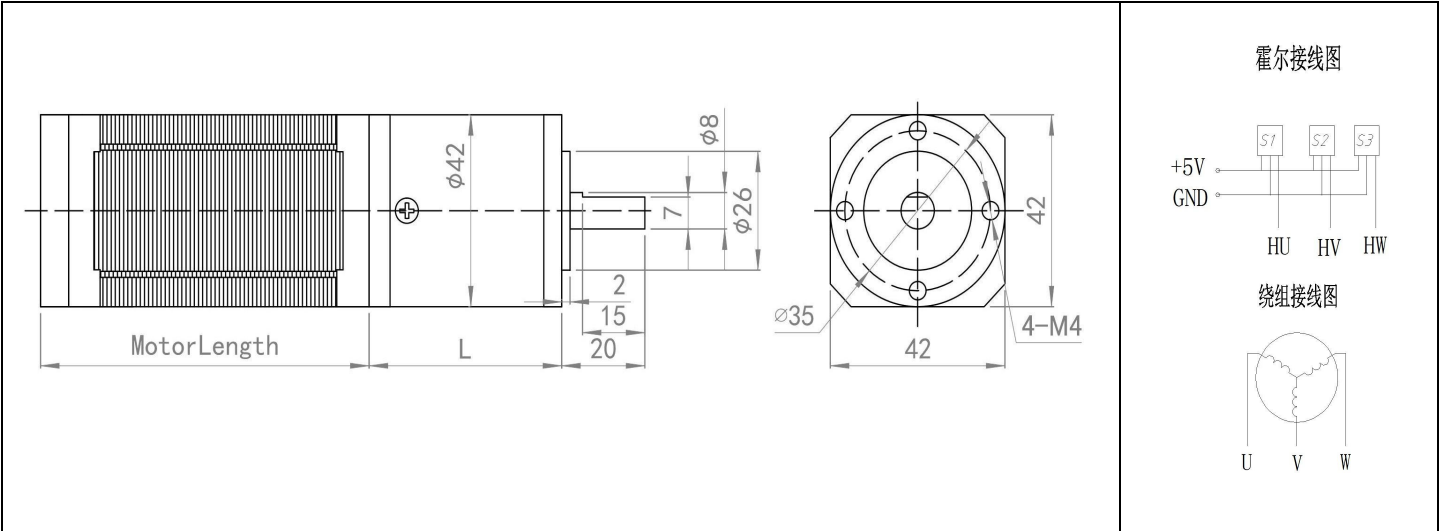
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-42BLDC-2440S-1	24	5200	0.60	78	4000	0.185	5.2	0.55	15.60	80
BG-42BLDC-4840S-1	48	5200	0.4	105	4000	0.250	3.3	0.75	9.90	100

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 14	1: 19	1: 27	1: 51	1: 71	1: 100	1: 139
	减速箱长度 Gearbox length	L: mm	26	34			41			
BG-42BLDC-4840S-1- PG42	空载转速 NO-load speed	rpm	1300	371	274	193	102	73	52	37
	负载转速 Rated speed	rpm	1000	286	211	148	78	56	40	29
	额定扭矩 Rated torque	N.m	0.90	2.84	3.85	5.47	9.00	9.00	9.00	9.00

外形图 / Mechanical Dimensions



直流无刷电机 57mm系列

DC Brushless Motor 57mm Series



使用环境: -20℃~50℃

Environmental Condition: -20°C~50°C

绝缘等级：B-F

Insulation Class: B-F

防护等级：IP40

Protection Level: IP40

极数: 4

Number Of Poles: 4

磁性材料：高性能钕铁硼磁钢

Magnetic Material: High Performance NdFeB Magnet

壽命： ≥5000h

Life: $\geq 5000\text{h}$

定制 / Customizable solutions

可提供定制电压、性能、电路等。

Can provide custom voltage, electrical performance, circuit, etc. .

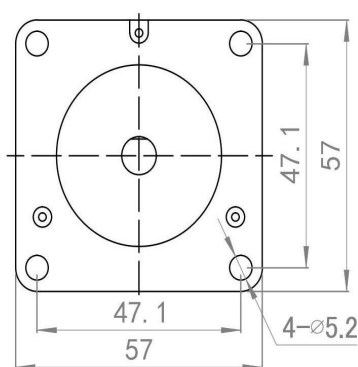
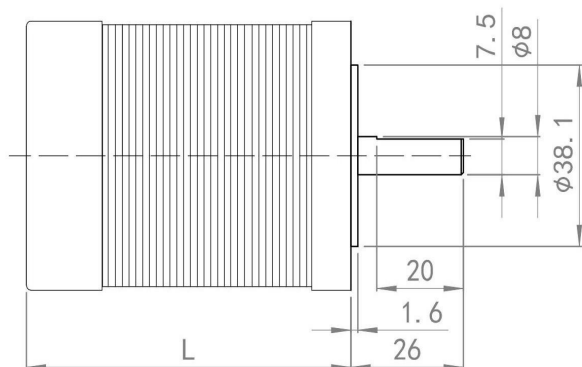
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。

And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-57BLDC-2430S	24	4000	0.41	63	3000	0.201	3.3	0.17	9.84	55
BG-57BLDC-4830S	48	4000	0.41	125	3000	0.398	3.3	0.66	9.77	75
BG-57BLDC-2430S-1	24	4000	1.22	188	3000	0.598	9.8	0.99	29.38	95
BG-57BLDC-4830S-1	48	4000	0.65	200	3000	0.637	5.2	1.32	15.63	115

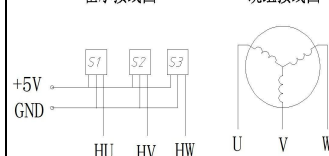
外形图 / Mechanical Dimensions



接线图

霍尔接线图

绕组接线图





直流无刷行星减速电机 57mm系列

DC Brushless Planetary Gear Motor 57mm Series



内齿圈材料: 金属

Gear material: Metal

轴承类型: 高质量滚珠轴承

Bearing Type: High Quality Ball Bearing

最大允许径向力: $\leq 250\text{N}$

Max.Radial load: $\leq 250\text{N}$

最大允许轴向力: $\leq 100\text{N}$

Radial play of shaft: $\leq 100\text{N}$

轴向间隙: $\leq 0.08\text{mm}$

Axial play of shaft: $\leq 0.08\text{mm}$

额定允许负载: 30N.m

Rated tolerance torque: 30N.m

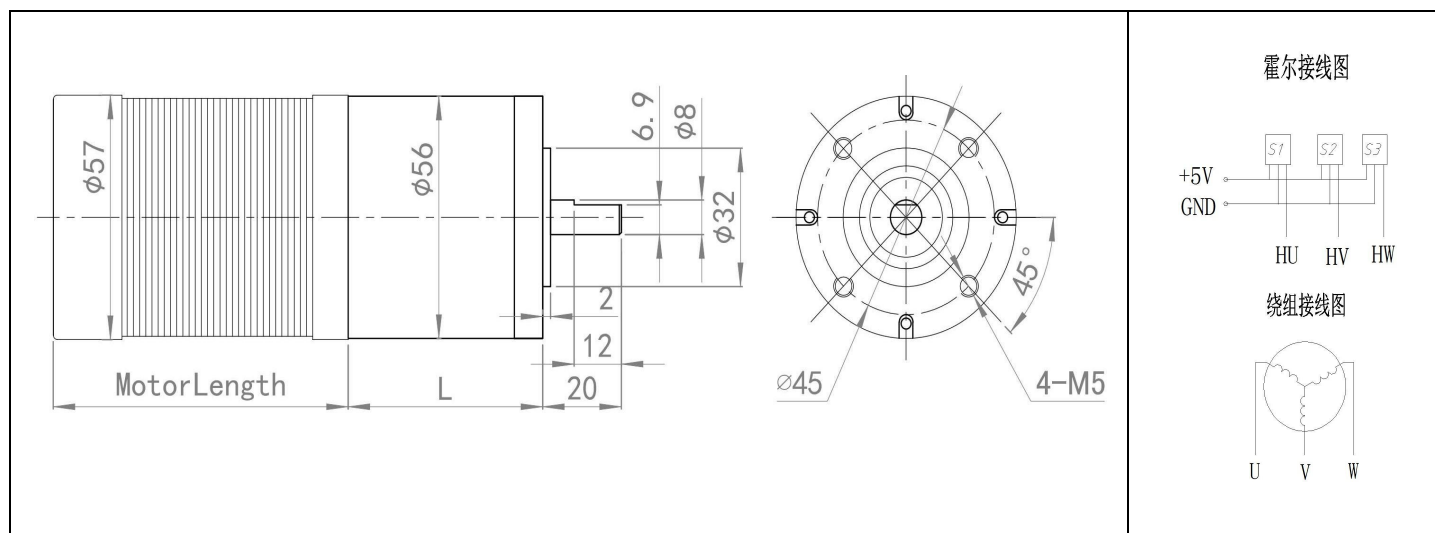
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-57BLDC-2430S-1	24	4000	1.22	188	3000	0.598	9.8	0.99	29.38	95
BG-57BLDC-4830S-1	48	4000	0.65	200	3000	0.637	5.2	1.32	15.63	115

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 3.6	1: 13	1: 15	1: 23	1: 47	1: 65	1: 96	1: 121
	减速箱长度 Gearbox length	L: mm	37.8	49.5			60.8			
BG-57BLDC-4830S-1- PG56	空载转速 NO-load speed	rpm	1111	308	267	174	85	62	42	33
	负载转速 Rated speed	rpm	833	231	200	130	64	46	31	25
	额定扭矩 Rated torque	N.m	2.06	6.70	7.74	11.86	22.44	30.00	30.00	30.00

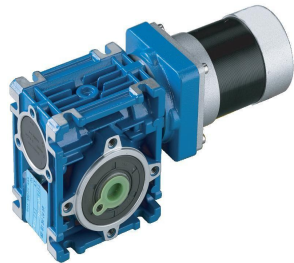
外形图 / Mechanical Dimensions





直流无刷 RV25蜗轮蜗杆减速电机 57mm系列

DC Brushless RV25 Worm Gear Motor 57mm Series



涡轮材料: 铝青铜
Turbine Material: Aluminium Bronze
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命: $\geq 3000H$
Life Span: $\geq 3000H$
减速箱重量: 0.7kg
Weight Of Gearbox: 0.7kg
环境温度: $-10^{\circ}C \sim 40^{\circ}C$
Ambient Temperature: $-10^{\circ}C \sim 40^{\circ}C$
额定允许负载: 15N.m
Rated tolerance torque: 15N.m

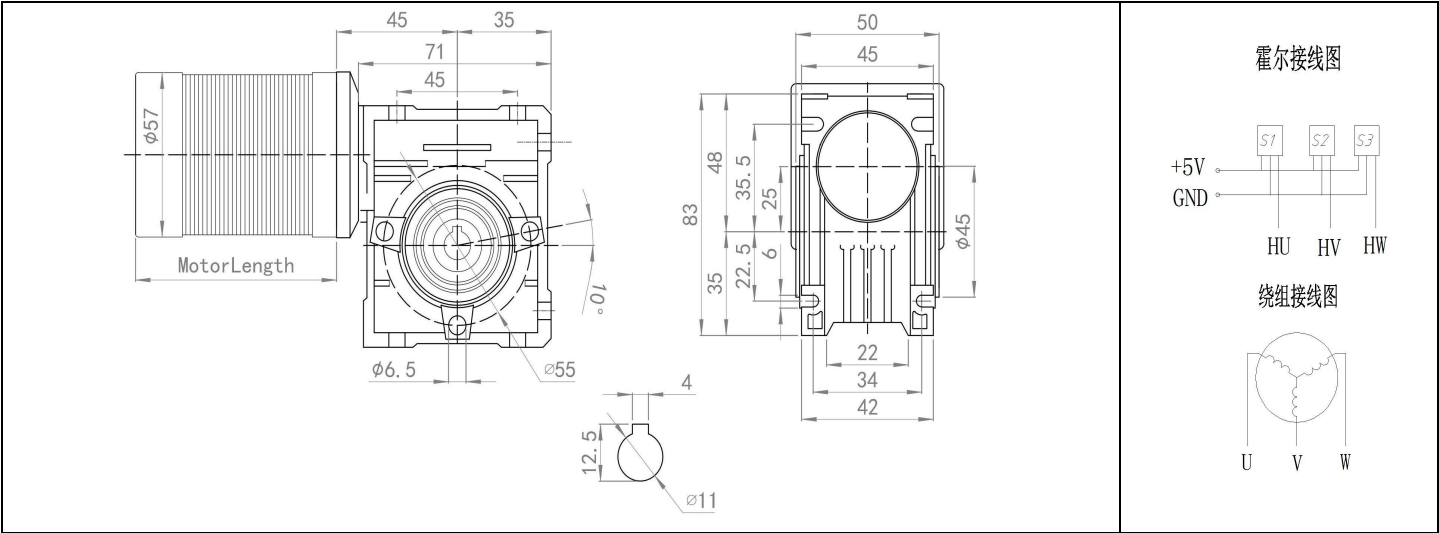
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-57BLDC-2430S-1	24	4000	1.22	188	3000	0.598	9.8	0.99	29.38	95
BG-57BLDC-4830S-1	48	4000	0.65	200	3000	0.637	5.2	1.32	15.63	115

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 25	1: 30	1: 40	1: 50	1: 60
BG-57BLDC-4830S-1- RV25	空载转速 NO-load speed	rpm	533	267	200	160	133	100	80	67
	负载转速 Rated speed	rpm	400	200	150	120	100	75	60	50
	额定扭矩 Rated torque	N.m	2.39	4.78	6.37	7.96	9.55	12.73	15.00	15.00

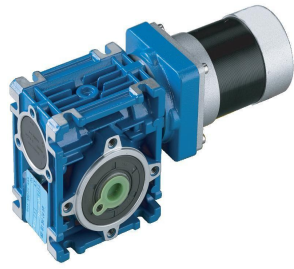
外形图 / Mechanical Dimensions





直流无刷 RV30蜗轮蜗杆减速电机 57mm系列

DC Brushless RV30 Worm Gear Motor 57mm Series



蜗轮材料: 铝青铜
Turbine Material: Aluminium Bronze
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命: $\geq 3000H$
Life Span: $\geq 3000H$
减速箱重量: 1.2kg
Weight Of Gearbox: 1.2kg
环境温度: $-10^{\circ}C \sim 40^{\circ}C$
Ambient Temperature: $-10^{\circ}C \sim 40^{\circ}C$
额定允许负载: 24N.m
Rated tolerance torque: 24N.m

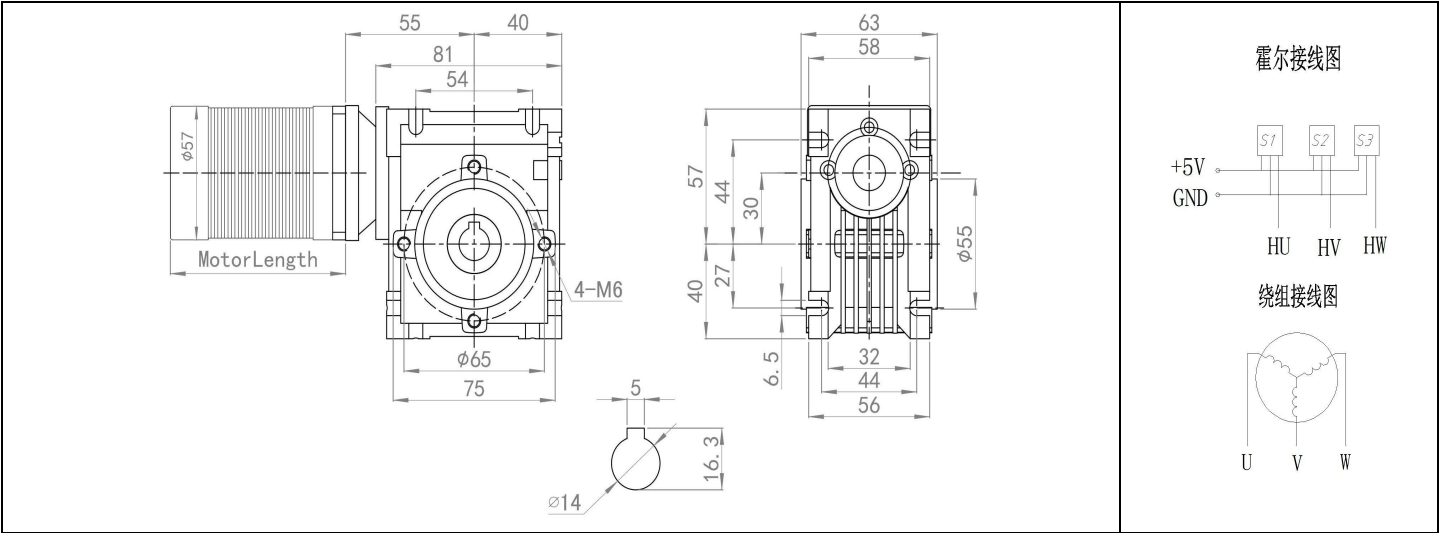
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-57BLDC-2430S-1	24	4000	1.22	188	3000	0.598	9.8	0.99	29.38	95
BG-57BLDC-4830S-1	48	4000	0.65	200	3000	0.637	5.2	1.32	15.63	115

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 25	1: 30	1: 40	1: 50	1: 60
BG-57BLDC-4830S-1- RV30	空载转速 NO-load speed	rpm	533	267	200	160	133	100	80	67
	负载转速 Rated speed	rpm	400	200	150	120	100	75	60	50
	额定扭矩 Rated torque	N.m	2.39	4.78	6.37	7.96	9.55	12.73	15.00	15.00

外形图 / Mechanical Dimensions





直流无刷电机 60mm系列

DC Brushless Motor 60mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：8
Number Of Poles: 8
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速机、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-60BLDC-4830S	48	4000	0.38	100	3000	0.32	3.0	0.96	9.00	78
BG-60BLDC-4830S-1	48	4000	0.75	200	3000	0.65	6.0	1.95	18.00	99
BG-60BLDC-4830S-2	48	4000	1.10	300	3000	0.95	8.8	2.85	26.40	120
BG-60BLDC-31030S	310	4000	0.22	400	3000	1.27	1.8	3.81	5.25	140

外形图 / Mechanical Dimensions

Side view dimensions: L (length), 25 (shaft length), 30 (total length), 2 (flange thickness), 5 (flange height), 14 (flange outer diameter), 50 (flange inner diameter).

Front view dimensions: 50 (flange outer diameter), 61 (flange inner diameter), 16 (flange thickness), 4-φ5.5 (flange holes).

接线图

霍尔接线图

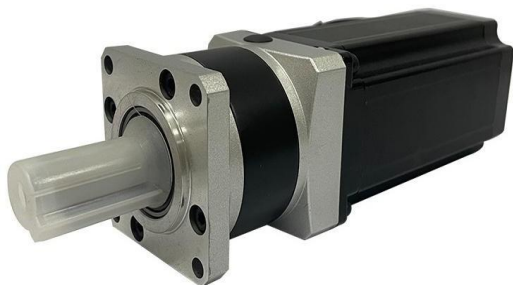
绕组接线图

5V, GND, HU, HV, HW, U, V, W



直流无刷行星减速电机 60mm系列

DC Brushless Planetary Gear Motor 60mm Series



内齿圈材料：金属
Gear material: Metal
轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
最大允许径向力：≤250N
Max.Radial load: ≤250N
最大允许轴向力：≤100N
Radial play of shaft: ≤100N
轴向间隙：≤0.08mm
Axial play of shaft: ≤0.08mm
额定允许负载：45N.m
Rated tolerance torque: 45N.m

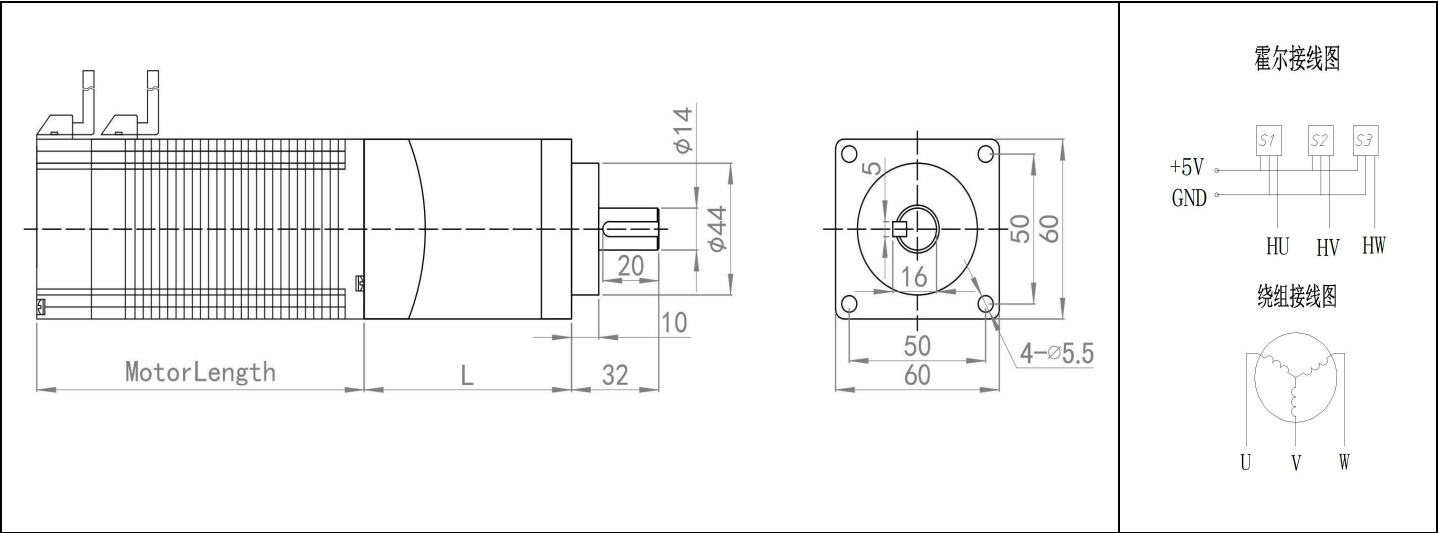
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-60BLDC-4830S-2	48	4000	1.10	300	3000	0.95	8.8	2.85	26.40	120
BG-60BLDC-31030S	310	4000	0.22	400	3000	1.27	1.8	3.81	5.25	140

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 10	1: 24	1: 36	1: 64	1: 96	1: 144	1: 216
	减速箱长度 Gearbox length	L: mm	74	88			102			
BG-60BLDC-31030S- PG80	空载转速 NO-load speed	rpm	1000	400	167	111	63	42	28	19
	负载转速 Rated speed	rpm	750	300	125	83	47	31	21	14
	额定扭矩 Rated torque	N.m	4.57	10.29	24.69	37.03	45.00	45.00	45.00	45.00

外形图 / Mechanical Dimensions





Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-60BLDC-4830S-2	48	4000	1.10	300	3000	0.95	8.8	2.85	26.40	120
BG-60BLDC-31030S	310	4000	0.22	400	3000	1.27	1.8	3.81	5.25	140

型号 Model	減速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 25	1: 30	1: 40	1: 50	1: 60
BG-60BLDC-31030S-RV25	空載轉速 NO-load speed	rpm	533	267	200	160	133	100	80	67
	負載轉速 Rated speed	rpm	400	200	150	120	100	75	60	50
	額定扭矩 Rated torque	N.m	4.76	9.53	12.70	15.00	15.00	15.00	15.00	15.00

25



直流无刷 RV30蜗轮蜗杆减速电机 60mm系列

DC Brushless RV30 Worm Gear Motor 60mm Series



蜗轮材料: 铝青铜
Turbine Material: Aluminium Bronze
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命: $\geq 3000H$
Life Span: $\geq 3000H$
减速箱重量: 1.2kg
Weight Of Gearbox: 1.2kg
环境温度: $-10^{\circ}C \sim 40^{\circ}C$
Ambient Temperature: $-10^{\circ}C \sim 40^{\circ}C$
额定允许负载: 24N.m
Rated tolerance torque: 24N.m

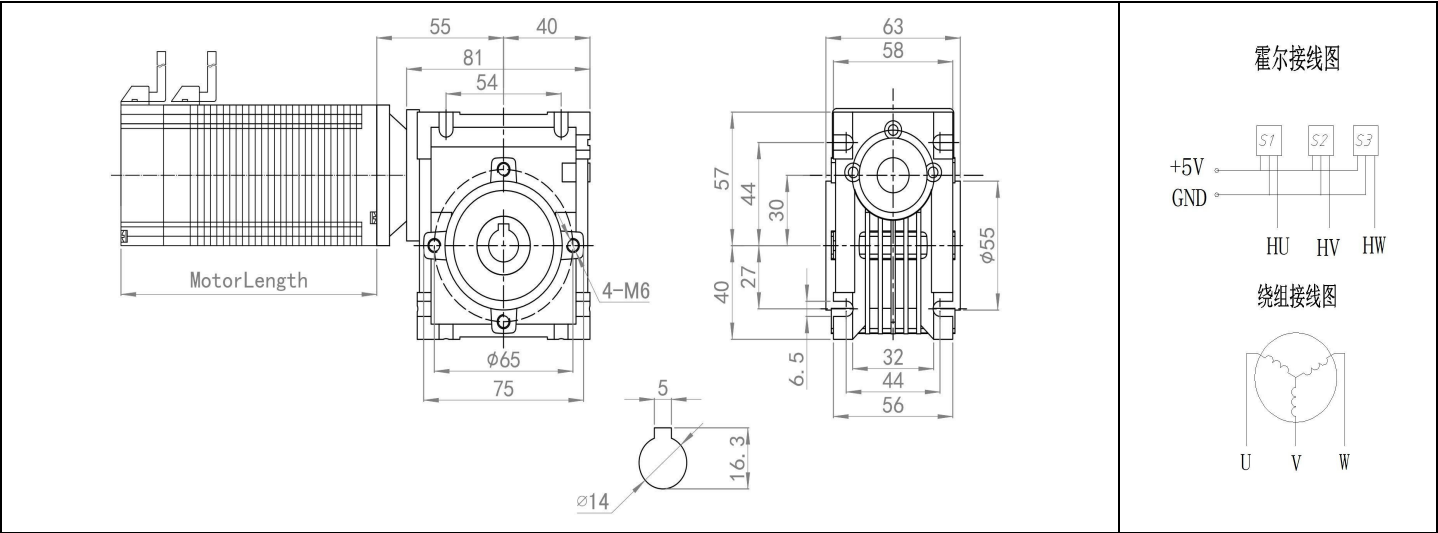
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-60BLDC-4830S-2	48	4000	1.10	300	3000	0.95	8.8	2.85	26.40	120
BG-60BLDC-31030S	310	4000	0.22	400	3000	1.27	1.8	3.81	5.25	140

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 25	1: 30	1: 40	1: 50	1: 60
BG-60BLDC-4820S- RV30	空载转速 NO-load speed	rpm	533	267	200	160	133	100	80	67
	负载转速 Rated speed	rpm	400	200	150	120	100	75	60	50
	额定扭矩 Rated torque	N.m	4.76	9.53	12.70	15.88	19.05	24.00	24.00	24.00

外形图 / Mechanical Dimensions





直流无刷电机 70mm系列

DC Brushless Motor 70mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：8
Number Of Poles: 8
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

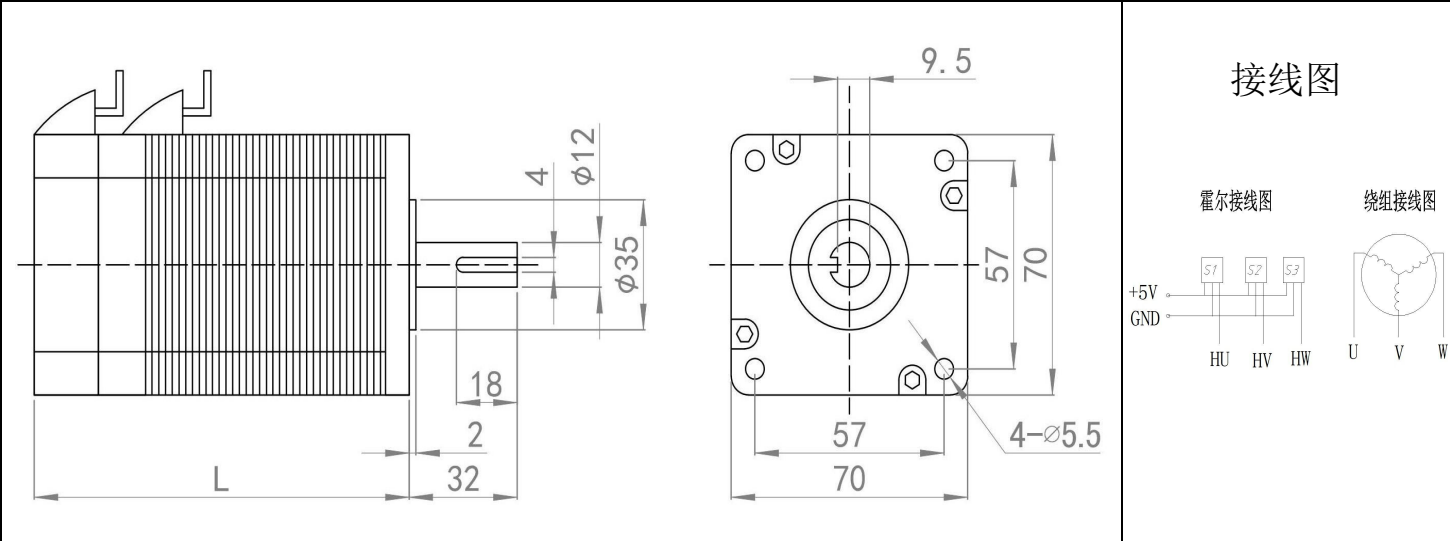
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-70BLDC-2430S	24	4000	1.09	157	3000	0.50	8.7	1.50	26.17	86
BG-70BLDC-4830S	48	4000	0.55	157	3000	0.50	4.4	1.50	13.08	86
BG-70BLDC-4830S-1	48	4000	1.09	314	3000	1.00	8.7	3.00	26.17	116
BG-70BLDC-31030S	310	4000	0.25	471	3000	1.50	2.0	4.50	6.08	136

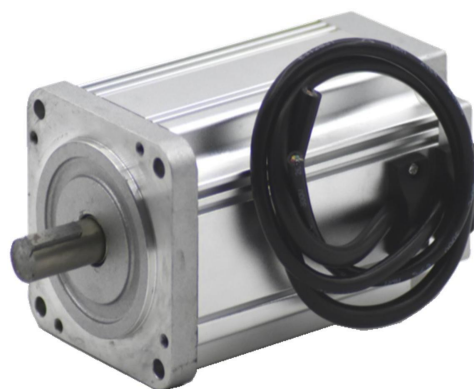
外形图 / Mechanical Dimensions





直流无刷电机 80mm系列

DC Brushless Motor 80mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：4
Number Of Poles: 4
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

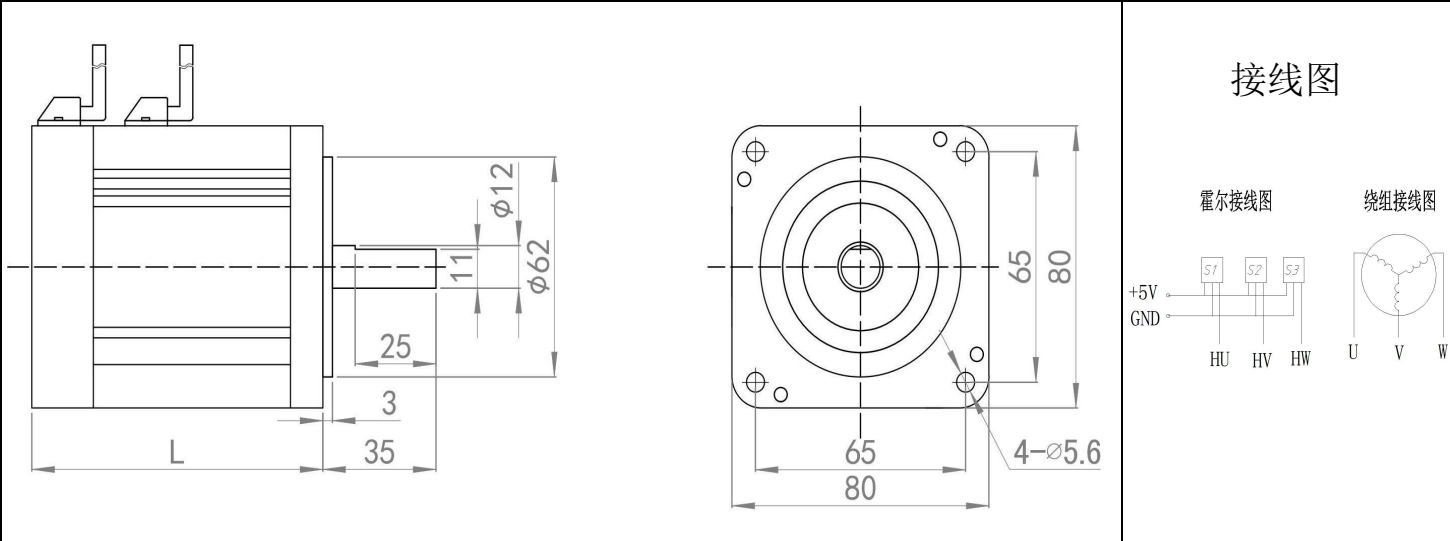
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-80BLDC-4830S	48	4000	0.41	126	3000	0.40	3.3	1.20	9.84	86
BG-80BLDC-31060S	310	8000	0.22	440	6000	0.70	1.8	2.10	5.32	106
BG-80BLDC-4830S-1	48	4000	1.30	400	3000	1.27	10.4	3.82	31.25	126
BG-80BLDC-31030S	310	4000	0.38	750	3000	2.39	3.0	7.16	9.07	130

外形图 / Mechanical Dimensions





直流无刷电机 80mm系列

DC Brushless Motor 80mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：8
Number Of Poles: 8
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-80BLDC-4830S	48	4000	0.41	126	3000	0.40	3.3	1.20	9.84	95
BG-80BLDC-31060S	310	8000	0.11	220	6000	0.35	0.9	1.05	2.66	115
BG-80BLDC-4830S-1	48	4000	1.30	400	3000	1.27	10.4	3.82	31.25	124
BG-80BLDC-2460S	24	8000	1.95	300	6000	0.48	15.6	1.43	46.88	124

外形图 / Mechanical Dimensions



直流无刷行星减速电机 80mm系列

DC Brushless Planetary Gear Motor 80mm Series



内齿圈材料：金属

Gear material: Metal

轴承类型：高质量滚珠轴承

Bearing Type: High Quality Ball Bearing

最大允许径向力：≤500N

Max.Radial load: ≤500N

最大允许轴向力：≤130N

Radial play of shaft: ≤130N

轴向间隙：≤0.1mm

Axial play of shaft: ≤0.1mm

额定允许负载：60N.m

Rated tolerance torque: 60N.m

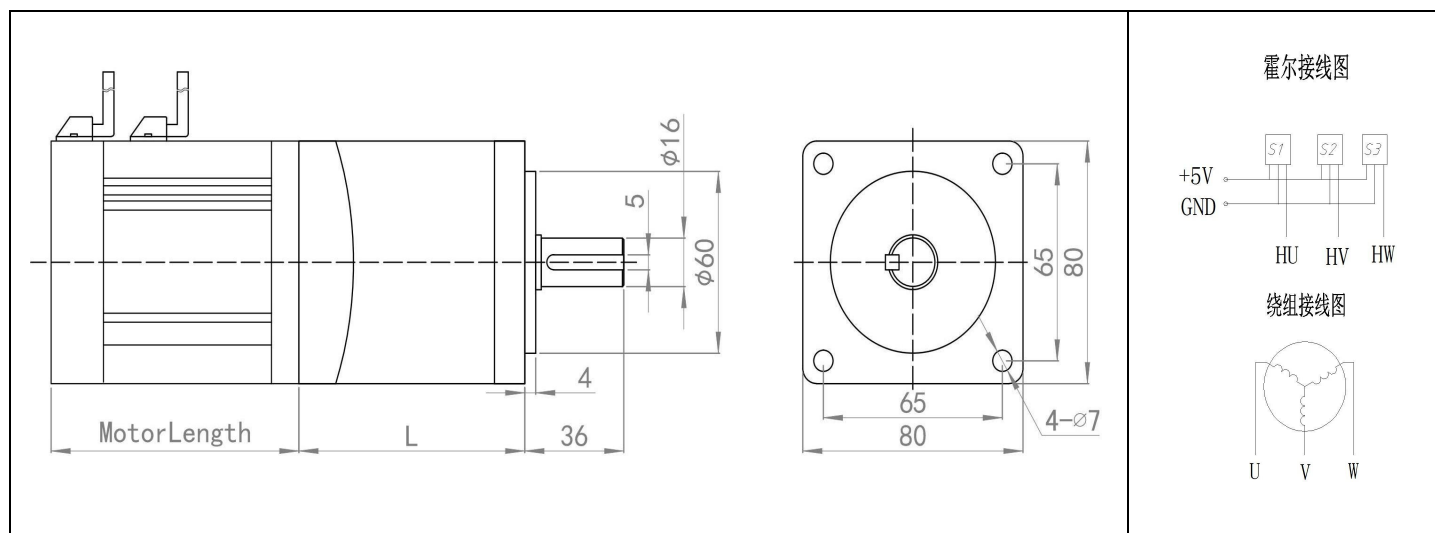
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load			Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	
	V	rpm	A	W	rpm	Nm	A	Nm	L:mm
BG-80BLDC-4830S-1	48	4000	1.30	400	3000	1.27	10.4	3.82	126
BG-80BLDC-31030S	310	4000	0.38	750	3000	2.39	3.0	7.16	130

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 10	1: 24	1: 36	1: 64	1: 96	1: 144	1: 216
	减速箱长度 Gearbox length	L: mm	82	96			110			
BG-80BLDC-31030S- PG80	空载转速 NO-load speed	rpm	1000	400	167	111	63	42	28	19
	负载转速 Rated speed	rpm	750	300	125	83	47	31	21	14
	额定扭矩 Rated torque	N.m	8.60	19.34	46.41	60.00	60.00	60.00	60.00	60.00

外形图 / Mechanical Dimensions





直流无刷电机 86mm系列

DC Brushless Motor 86mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：4
Number Of Poles: 4
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

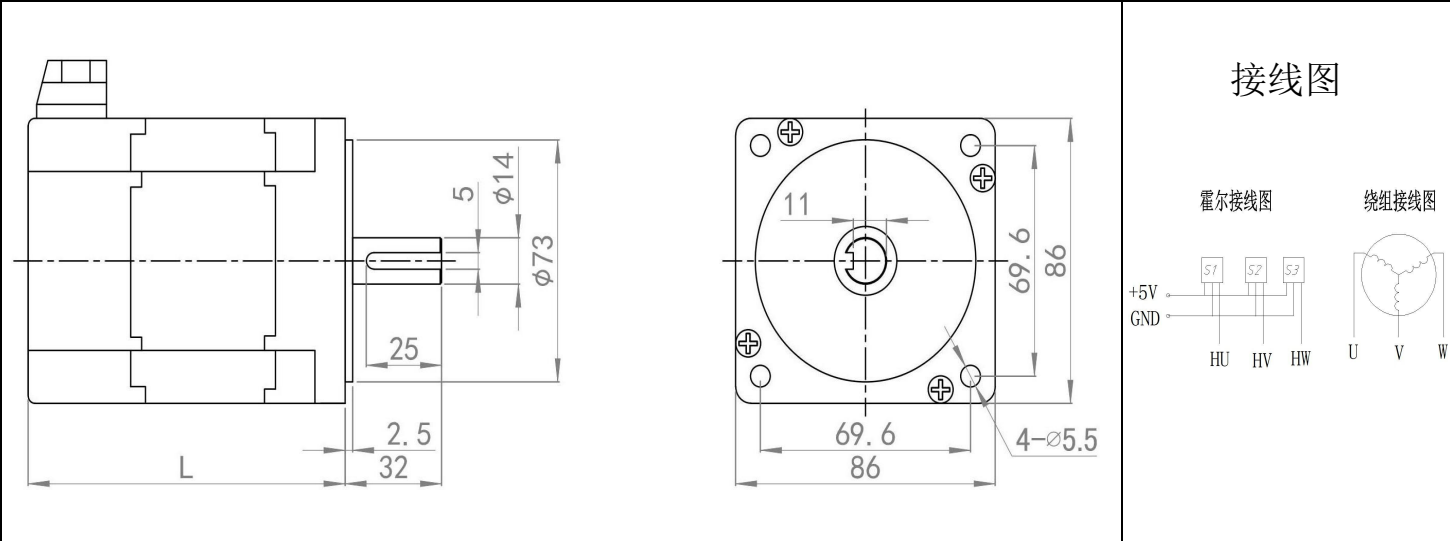
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-86BLDC-4830S	48	4000	1.02	314	3000	1.00	8.2	3.00	24.53	80
BG-86BLDC-4830S-1	48	4000	1.30	400	3000	1.27	10.4	3.82	31.25	90
BG-86BLDC-4830S-2	48	4000	2.15	659	3000	2.10	17.2	6.29	51.48	115
BG-86BLDC-31030S	310	4000	0.40	785	3000	2.50	3.2	7.50	9.50	130

外形图 / Mechanical Dimensions





直流无刷行星减速电机 86mm系列

DC Brushless Planetary Gear Motor 86mm Series



内齿圈材料：金属
Gear material: Metal
轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
最大允许径向力：≤500N
Max.Radial load: ≤500N
最大允许轴向力：≤130N
Radial play of shaft: ≤130N
轴向间隙：≤0.1mm
Axial play of shaft: ≤0.1mm
额定允许负载：80N.m
Rated tolerance torque: 80N.m

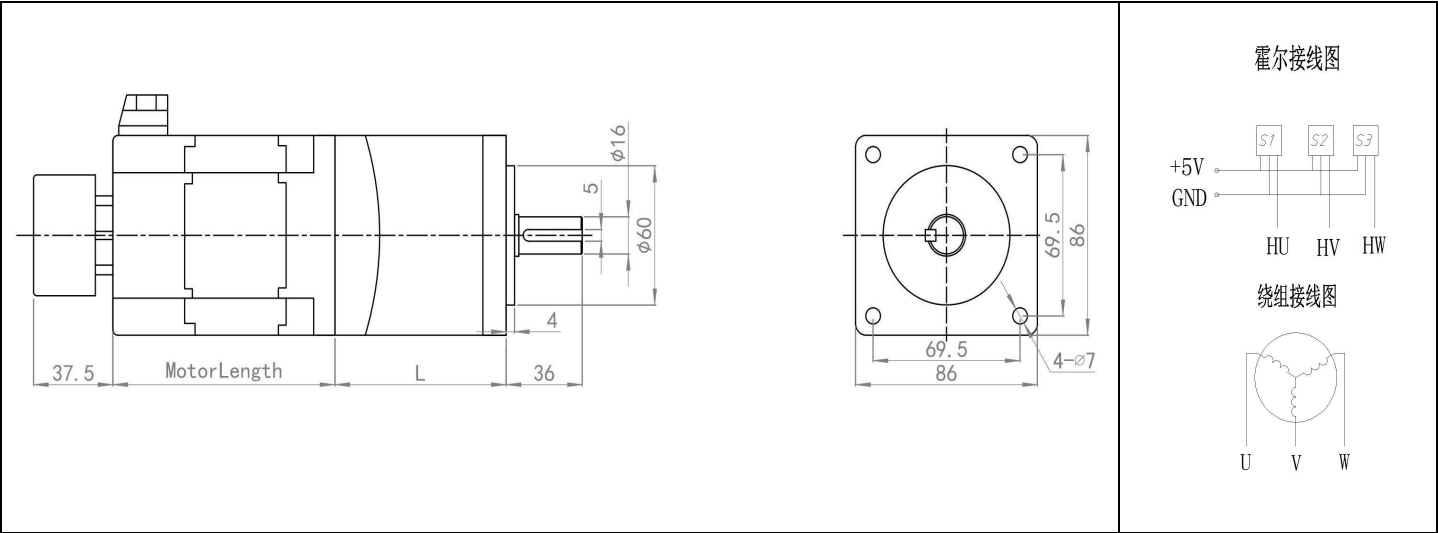
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-86BLDC-4830S-2	48	4000	4.07	1250	3000	3.98	32.6	11.94	97.66	130
BG-86BLDC-31030S	310	4000	0.40	785	3000	2.50	3.2	7.50	9.50	130

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 10	1: 24	1: 36	1: 64	1: 96	1: 144	1: 216
	减速箱长度 Gearbox length	L: mm	80	94			108			
BG-86BLDC-4830S-2- PG86	空载转速 NO-load speed	rpm	1000	400	167	111	63	42	28	19
	负载转速 Rated speed	rpm	750	300	125	83	47	31	21	14
	额定扭矩 Rated torque	N.m	14.33	32.23	77.36	80.00	80.00	80.00	80.00	80.00

外形图 / Mechanical Dimensions





直流无刷 RV30蜗轮蜗杆减速电机 86mm系列

DC Brushless RV30 Worm Gear Motor 86mm Series



蜗轮材料: 铝青铜
Turbine Material: Aluminium Bronze
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命: $\geq 3000H$
Life Span: $\geq 3000H$
减速箱重量: 1.2kg
Weight Of Gearbox: 1.2kg
环境温度: $-10^{\circ}C \sim 40^{\circ}C$
Ambient Temperature: $-10^{\circ}C \sim 40^{\circ}C$
额定允许负载: 24N.m
Rated tolerance torque: 24N.m

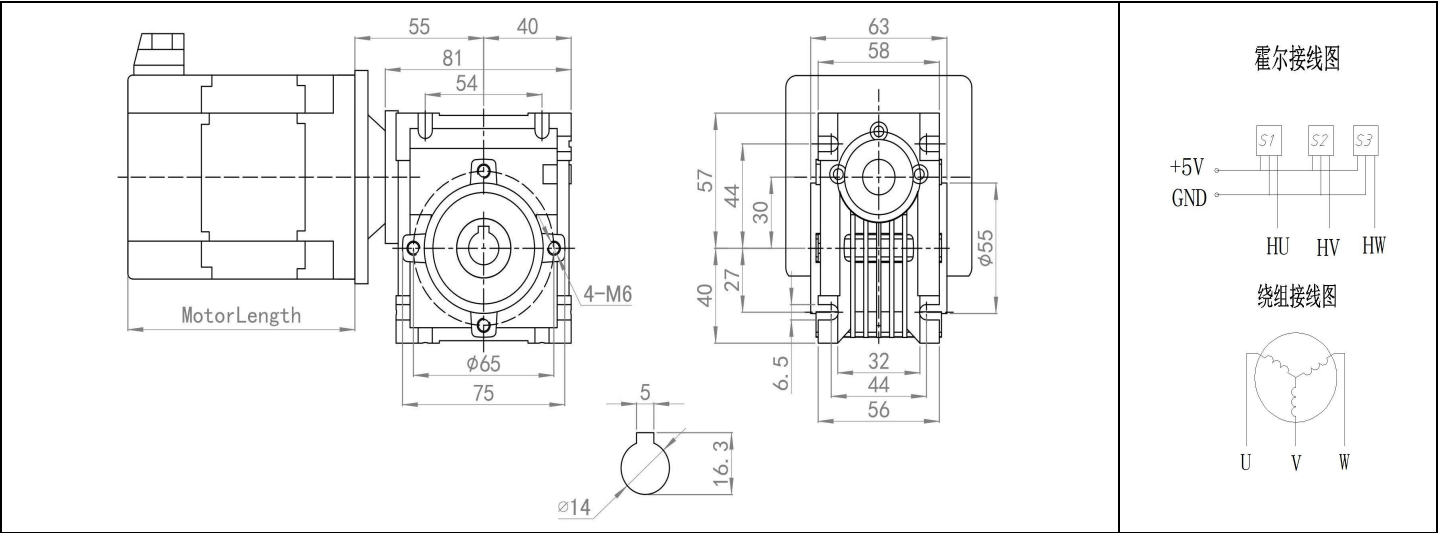
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-86BLDC-4830S-2	48	4000	2.15	659	3000	2.10	17.2	6.29	51.48	115
BG-86BLDC-31030S	310	4000	0.40	785	3000	2.50	3.2	7.50	9.50	130

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 25	1: 30	1: 40	1: 50	1: 60
BG-86BLDC-31030S- RV30	空载转速 NO-load speed	rpm	533	267	200	160	133	100	80	67
	负载转速 Rated speed	rpm	400	200	150	120	100	75	60	50
	额定扭矩 Rated torque	N.m	9.37	18.74	24.00	24.00	24.00	24.00	24.00	24.00

外形图 / Mechanical Dimensions





直流无刷 RV40蜗轮蜗杆减速电机 86mm系列

DC Brushless RV40 Worm Gear Motor 86mm Series



蜗轮材料: 铝青铜
Turbine Material: Aluminium Bronze
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命: $\geq 3000\text{H}$
Life Span: $\geq 3000\text{H}$
减速箱重量: 2.3kg
Weight Of Gearbox: 2.3kg
环境温度: $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$
Ambient Temperature: $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$
额定允许负载: 53N.m
Rated tolerance torque: 53N.m

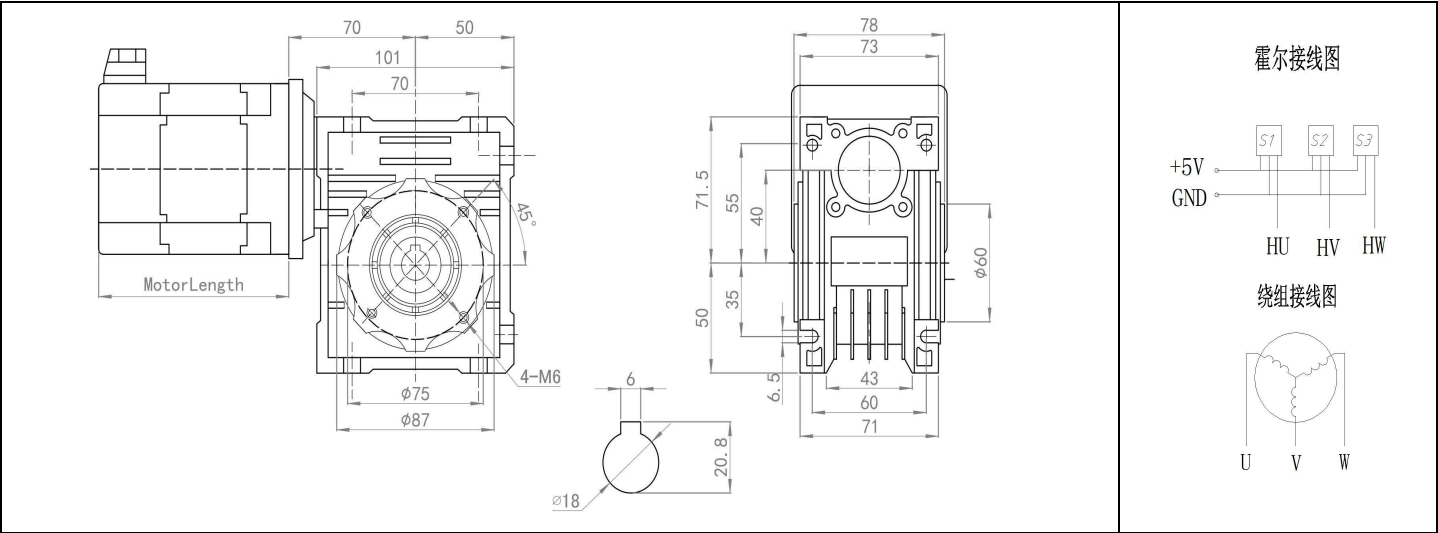
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-86BLDC-4830S-2	48	4000	2.15	659	3000	2.10	17.2	6.29	51.48	115
BG-86BLDC-31030S	310	4000	0.40	785	3000	2.50	3.2	7.50	9.50	130

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 30	1: 50	1: 60	1: 80	1: 100
BG-86BLDC-31030S- RV30	空载转速 NO-load speed	rpm	533	267	200	133	80	67	50	40
	负载转速 Rated speed	rpm	400	200	150	100	60	50	38	30
	额定扭矩 Rated torque	N.m	9.37	18.74	24.99	37.48	53.00	53.00	53.00	53.00

外形图 / Mechanical Dimensions





直流无刷 RV50蜗轮蜗杆减速电机 86mm系列

DC Brushless RV50 Worm Gear Motor 86mm Series



蜗轮材料: 铝青铜
Turbine Material: Aluminium Bronze
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命: $\geq 3000\text{H}$
Life Span: $\geq 3000\text{H}$
减速箱重量: 3.5kg
Weight Of Gearbox: 3.5kg
环境温度: $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$
Ambient Temperature: $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$
额定允许负载: 81N.m
Rated tolerance torque: 81N.m

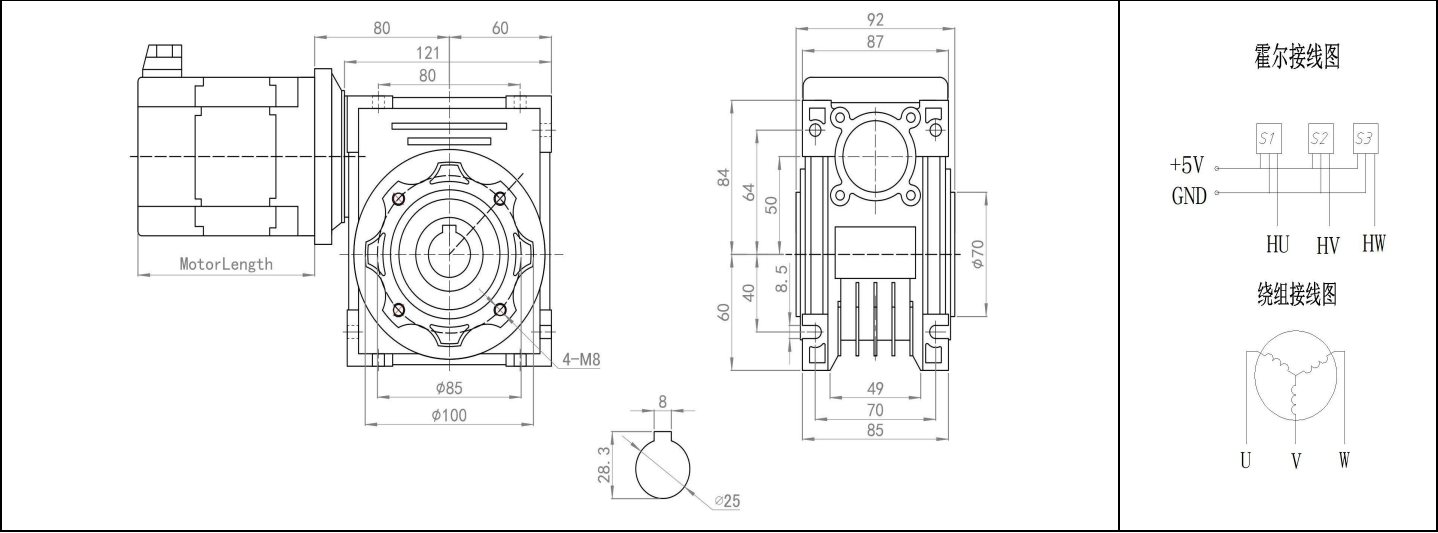
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-86BLDC-4830S-2	48	4000	2.15	659	3000	2.10	17.2	6.29	51.48	115
BG-86BLDC-31030S	310	4000	0.40	785	3000	2.50	3.2	7.50	9.50	130

减速电机技术参数 / Gear Motor Techincal Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 30	1: 50	1: 60	1: 80	1: 100
BG-86BLDC-31030S- RV30	空载转速 NO-load speed	rpm	533	267	200	133	80	67	50	40
	负载转速 Rated speed	rpm	400	200	150	100	60	50	38	30
	额定扭矩 Rated torque	N.m	9.37	18.74	24.99	37.48	62.47	74.97	81.00	81.00

外形图 / Mechanical Dimensions





直流无刷电机 90mm系列

DC Brushless Motor 90mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：8
Number Of Poles: 8
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

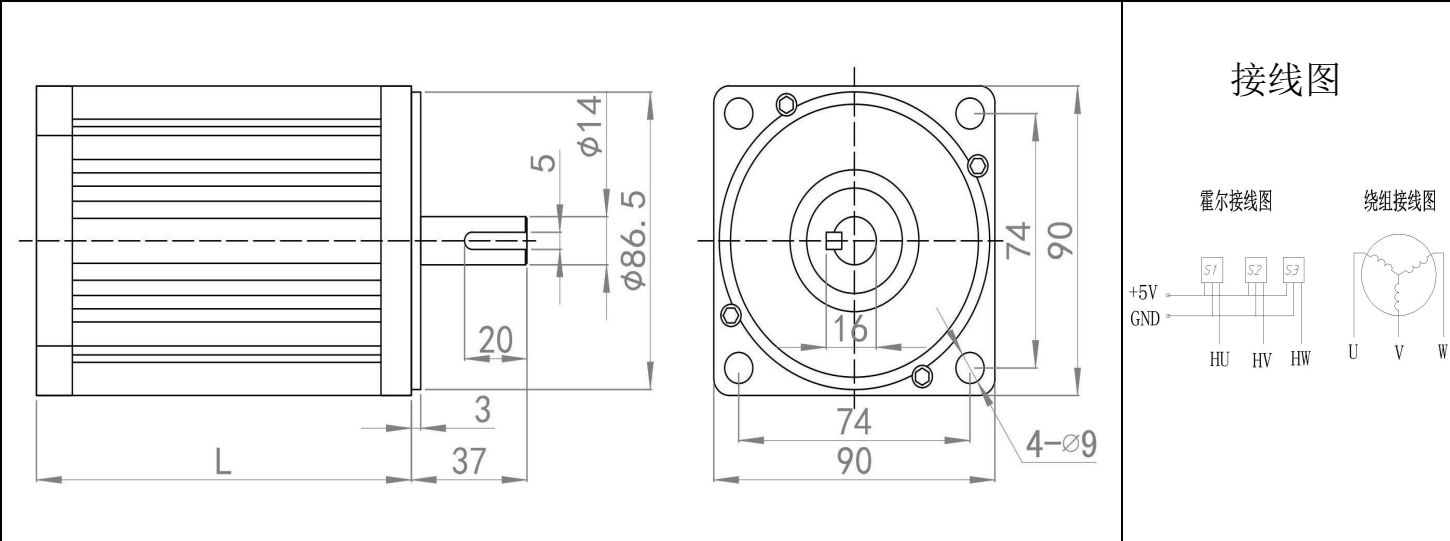
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速机、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	W	rpm	Nm	A	Nm	
BG-90BLDC-4830S	48	4000	1.02	314	3000	1.00	8.2	3.00	24.53	87
BG-90BLDC-4830S-1	48	4000	1.84	565	3000	1.80	14.7	5.40	44.14	112
BG-90BLDC-4830S-2	48	4000	2.15	659	3000	2.10	17.2	6.29	51.48	122
BG-90BLDC-31030S	310	4000	0.40	785	3000	2.50	3.2	7.50	9.50	137

外形图 / Mechanical Dimensions





直流无刷电机 103mm系列

DC Brushless Motor 103mm Series



使用环境：-20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级：B-F
Insulation Class: B-F
防护等级：IP40
Protection Level: IP40
极数：8
Number Of Poles: 8
磁性材料：高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命：≥5000h
Life: ≥5000h

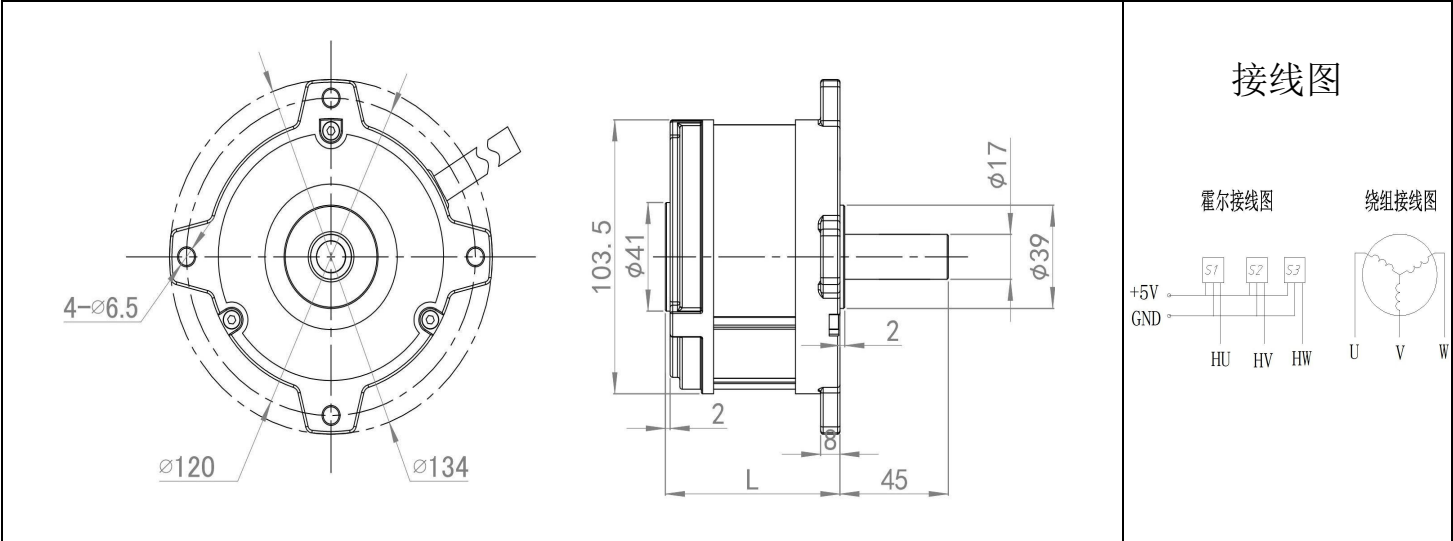
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length L:mm
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	
BG-103BLDC-2430S	24	4000	2.28	350	3000	1.11	18.2	3.34	54.69	56.5
BG-103BLDC-3627S	36	3600	2.39	550	2700	1.95	19.1	5.84	57.29	62
BG-103BLDC-4828S	48	3700	2.44	750	2800	2.56	19.5	7.67	58.59	70
BG-103BLDC-7230S	72	4700	2.17	1000	3500	2.73	17.4	8.19	52.08	72.5

外形图 / Mechanical Dimensions





直流无刷电机 110mm系列

DC Brushless Motor 110mm Series



使用环境: -20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级: B-F
Insulation Class: B-F
防护等级: IP40
Protection Level: IP40
极数: 8
Number Of Poles: 8
磁性材料: 高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命: ≥5000h
Life: ≥5000h

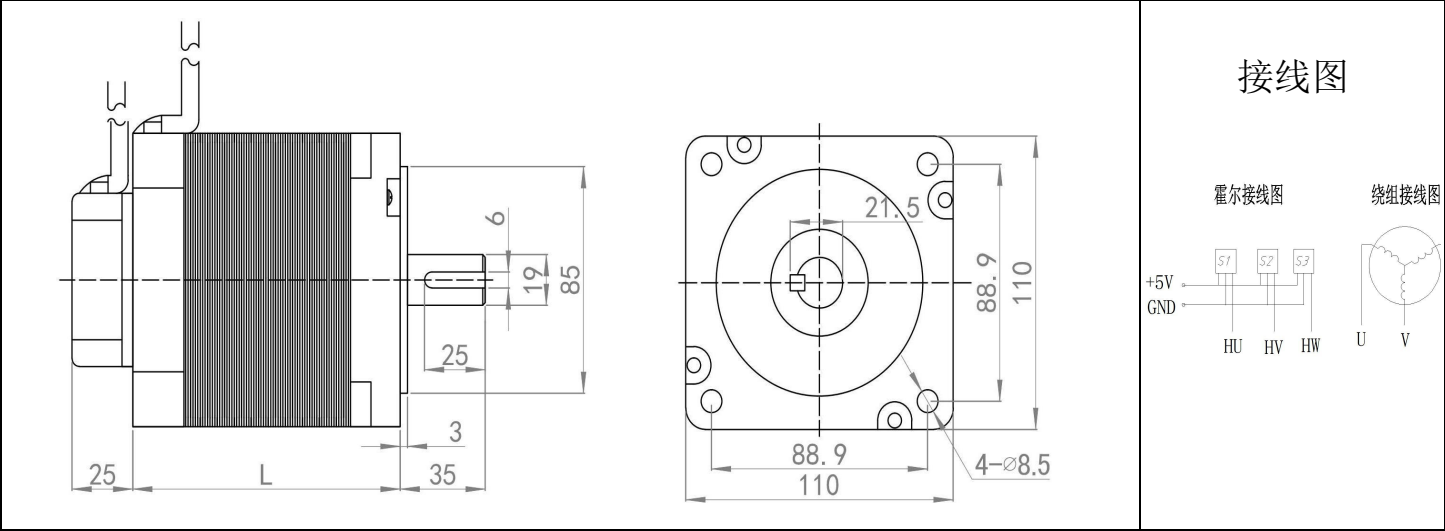
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以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速机、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length L:mm
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	
BG-110BLDC-4830S	48	4000	3.26	1000	3000	3.18	26.0	9.55	78.13	110
BG-110BLDC-31030S-1	310	4000	0.76	1500	3000	4.78	6.0	14.33	18.15	140
BG-110BLDC-31030S-2	310	4000	1.01	2000	3000	6.37	8.1	19.10	24.19	170
BG-110BLDC-31030S-3	310	4000	1.51	3000	3000	9.55	12.1	28.65	36.29	230

外形图 / Mechanical Dimensions





直流无刷行星减速电机 110mm系列

DC Brushless Planetary Gear Motor 110mm Series



内齿圈材料: 金属
Gear material: Metal
轴承类型: 高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
最大允许径向力: $\leq 700\text{N}$
Max.Radial load: $\leq 700\text{N}$
最大允许轴向力: $\leq 160\text{N}$
Radial play of shaft: $\leq 160\text{N}$
轴向间隙: $\leq 0.1\text{mm}$
Axial play of shaft: $\leq 0.1\text{mm}$
额定允许负载: 160N.m
Rated tolerance torque: 160N.m

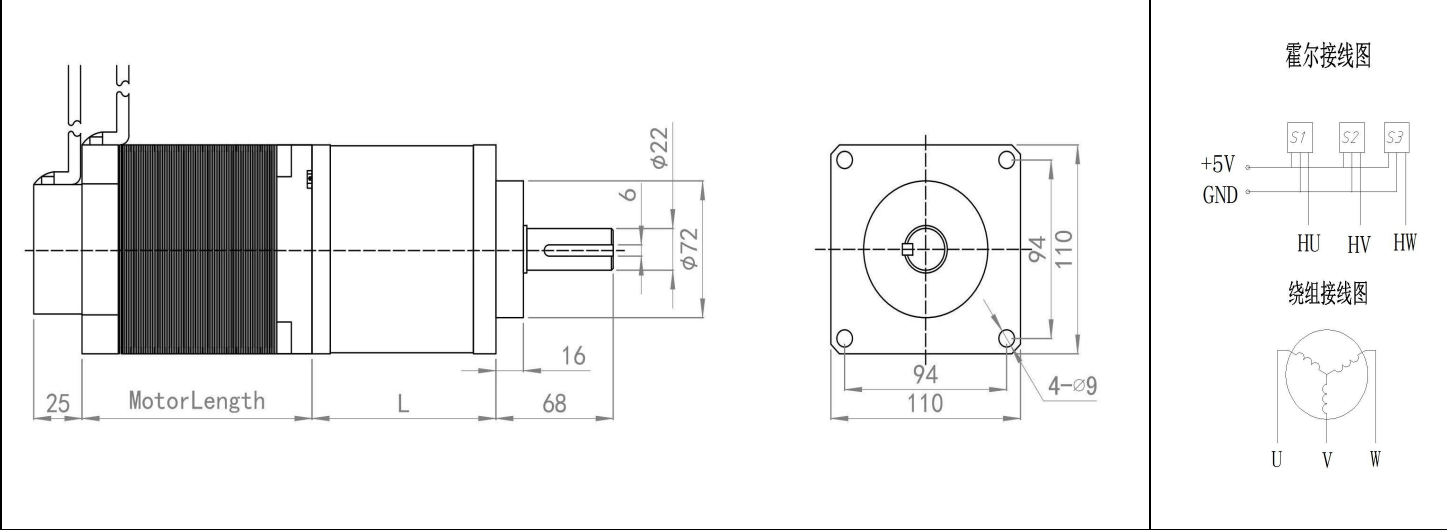
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-110BLDC-31030S-2	310	4000	1.01	2000	3000	6.37	8.1	19.10	24.19	170
BG-110BLDC-31030S-3	310	4000	1.51	3000	3000	9.55	12.1	28.65	36.29	230

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 4	1: 10	1: 24	1: 36	1: 64	1: 96	1: 144	1: 216
	减速箱长度 Gearbox length	L: mm	117	142			167			
BG-110BLDC-31030S-3- PG110	空载转速 NO-load speed	rpm	1000	400	167	111	63	42	28	19
	负载转速 Rated speed	rpm	750	300	125	83	47	31	21	14
	额定扭矩 Rated torque	N.m	34.38	77.36	160.00	160.00	160.00	160.00	160.00	160.00

外形图 / Mechanical Dimensions





直流无刷 RV50蜗轮蜗杆减速电机 110mm系列

DC Brushless RV50 Worm Gear Motor 110mm Series



涡轮材料：铝青铜
Turbine Material: Aluminium Bronze
轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命：≥3000H
Life Span: ≥3000H
减速箱重量：3.5kg
Weight Of Gearbox: 3.5kg
环境温度：-10℃~40℃
Ambient Temperature：-10℃~40℃
额定允许负载：81N.m
Rated tolerance torque: 81N.m

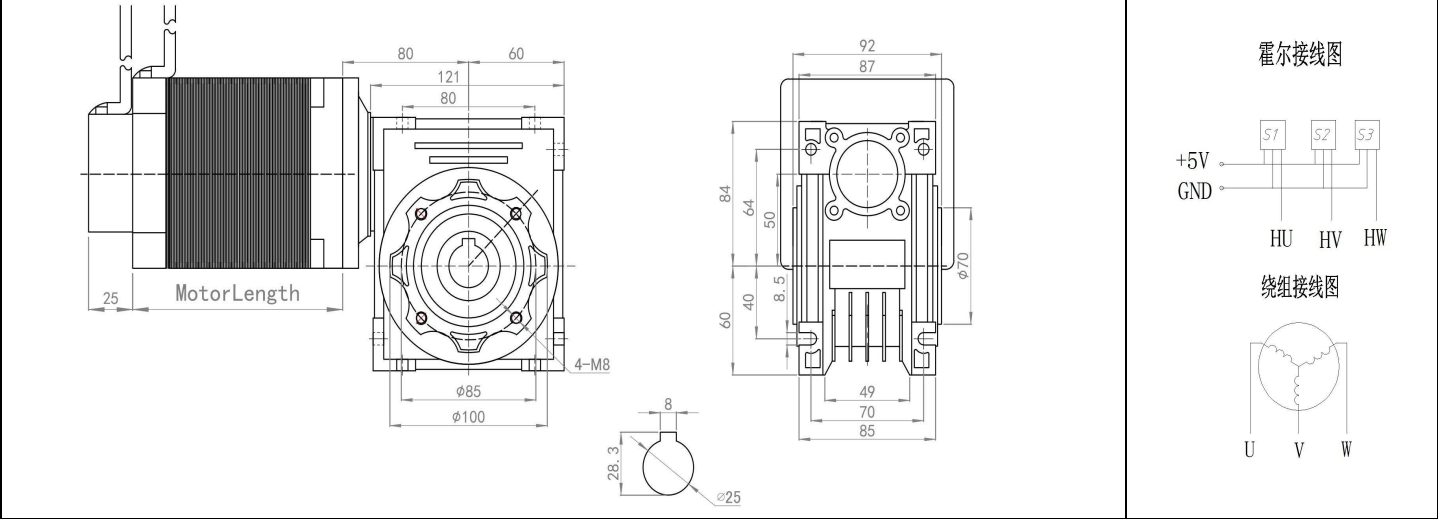
电机技术参数 / Motor Technical Data

Model	Voltage	No-load			Rated Load			Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-110BLDC-31030S-2	310	4000	1.01	2000	3000	6.37	8.1	19.10	24.19	170
BG-110BLDC-31030S-3	310	4000	1.51	3000	3000	9.55	12.1	28.65	36.29	230

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 30	1: 50	1: 60	1: 80	1: 100
BG-110BLDC-31030S-3- RV30	空载转速 NO-load speed	rpm	360	180	135	90	54	45	34	27
	负载转速 Rated speed	rpm	267	133	100	67	40	33	25	20
	额定扭矩 Rated torque	N.m	17.91	35.81	47.75	71.63	81.00	81.00	81.00	81.00

外形图 / Mechanical Dimensions





直流无刷 RV63蜗轮蜗杆减速电机 110mm系列

DC Brushless RV63 Worm Gear Motor 110mm Series



涡轮材料：铝青铜
Turbine Material: Aluminium Bronze
轴承类型：高质量滚珠轴承
Bearing Type: High Quality Ball Bearing
寿命：≥3000H
Life Span: ≥3000H
减速箱重量：6.2kg
Weight Of Gearbox: 6.2kg
环境温度：-10℃~40℃
Ambient Temperature : -10℃~40℃
额定允许负载：166N.m
Rated tolerance torque: 166N.m

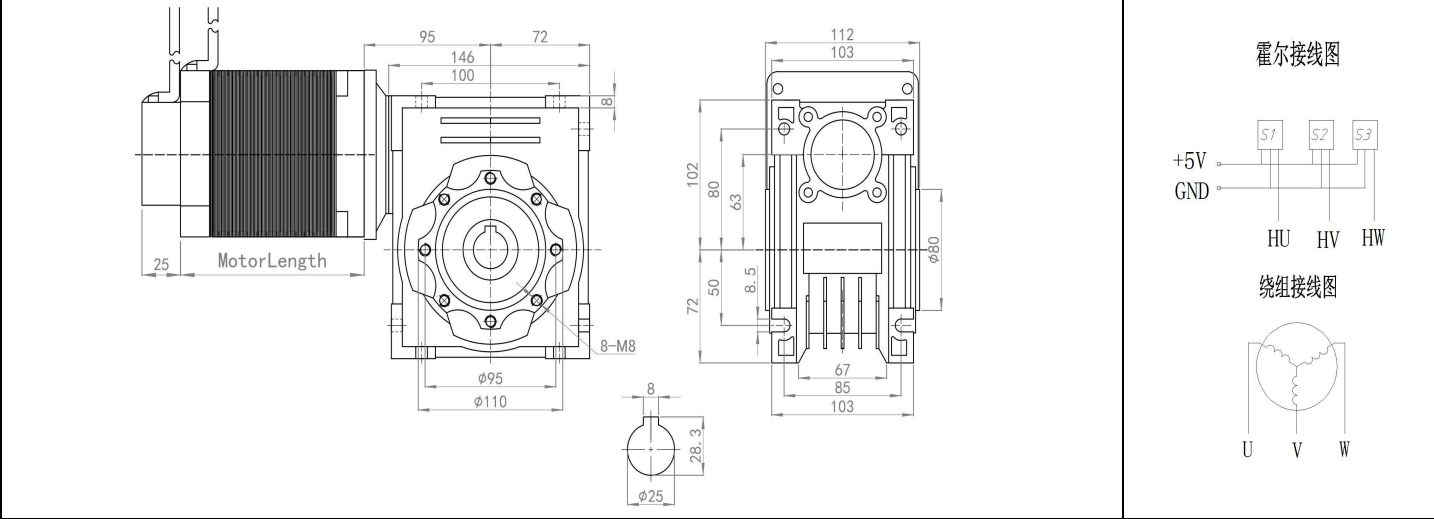
电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	W	rpm	Nm	A	Nm	A	L:mm
BG-110BLDC-31030S-2	310	4000	1.01	2000	3000	6.37	8.1	19.10	24.19	170
BG-110BLDC-31030S-3	310	4000	1.51	3000	3000	9.55	12.1	28.65	36.29	230

减速电机技术参数 / Gear Motor Technical Data

型号 Model	减速比 Reduction ratio	1: X	1: 7.5	1: 15	1: 20	1: 30	1: 50	1: 60	1: 80	1: 100
BG-110BLDC-31030S-3- RV30	空载转速 NO-load speed	rpm	360	180	135	90	54	45	34	27
	负载转速 Rated speed	rpm	267	133	100	67	40	33	25	20
	额定扭矩 Rated torque	N.m	17.91	35.81	47.75	71.63	119.38	143.25	166.00	166.00

外形图 / Mechanical Dimensions



直流无刷电机 QY71系列

DC Brushless Motor QY71 Series



使用环境: -20℃~50℃

Environmental Condition: -20°C~50°C

绝缘等级: B-F

Insulation Class: B-F

防护等级：IP40

Protection Level: IP40

极数: 8

Number Of Poles: 8

磁性材料：高性能钕铁硼磁钢

Magnetic Material: High Performance NdFeB Magnet

壽命： ≥5000h

Life: $\geq 5000\text{h}$

定制 / Customizable solutions

可提供定制电压、性能、电路等。

Can provide custom voltage, electrical performance, circuit, etc. .

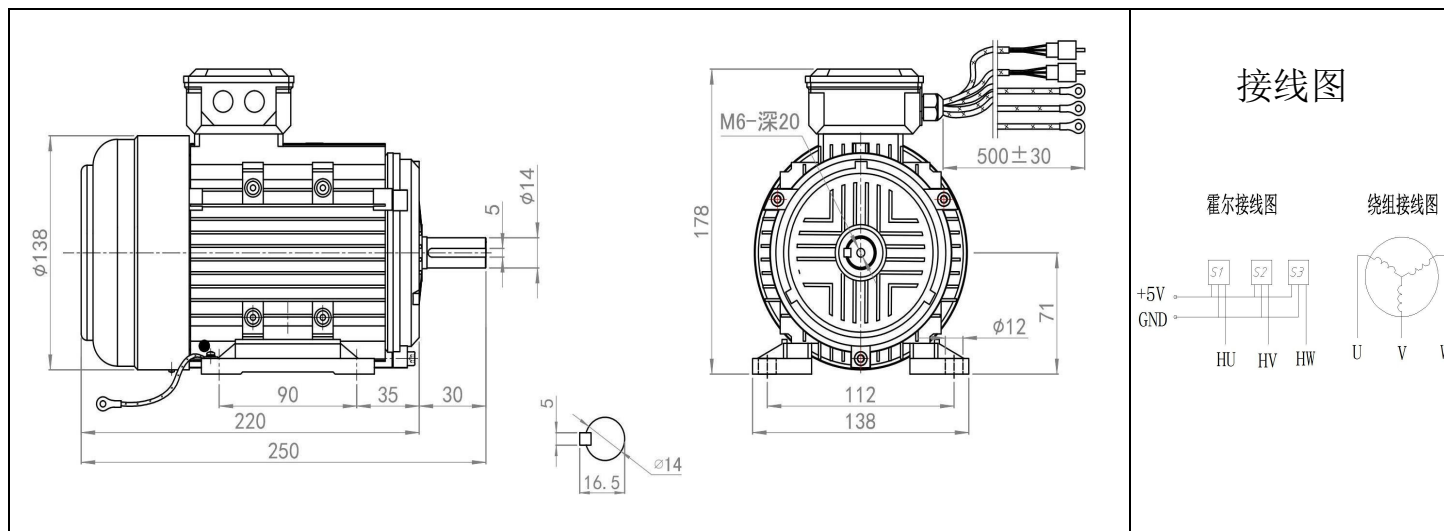
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。

And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	KW	rpm	Nm	A	Nm	A	L:mm
BG-71QYBLDC-2415S	24	2000	3.26	0.5	1500	3.18	26.0	9.55	78.13	220
BG-71QYBLDC-2430S	24	4000	6.51	1	3000	3.18	52.1	9.55	156.25	220
BG-71QYBLDC-4815S	48	2000	2.44	0.75	1500	4.78	19.5	14.33	58.59	220
BG-71QYBLDC-4830S	48	4000	4.88	1.5	3000	4.78	39.1	14.33	117.19	220

外形图 / Mechanical Dimensions



直流无刷电机 QY90 系列

DC Brushless Motor QY90 Series



使用环境: -20℃~50℃

Environmental Condition: -20°C~50°C

绝缘等级: B-F

Insulation Class: B-F

防护等级：IP40

Protection Level: IP40

极数: 8

Number Of Poles: 8

磁性材料：高性能钕铁硼磁钢

Magnetic Material: High Performance NdFeB Magnet

壽命： ≥5000h

Life: $\geq 5000\text{h}$

定制 / Customizable solutions

可提供定制电压、性能、电路等。

Can provide custom voltage, electrical performance, circuit, etc. .

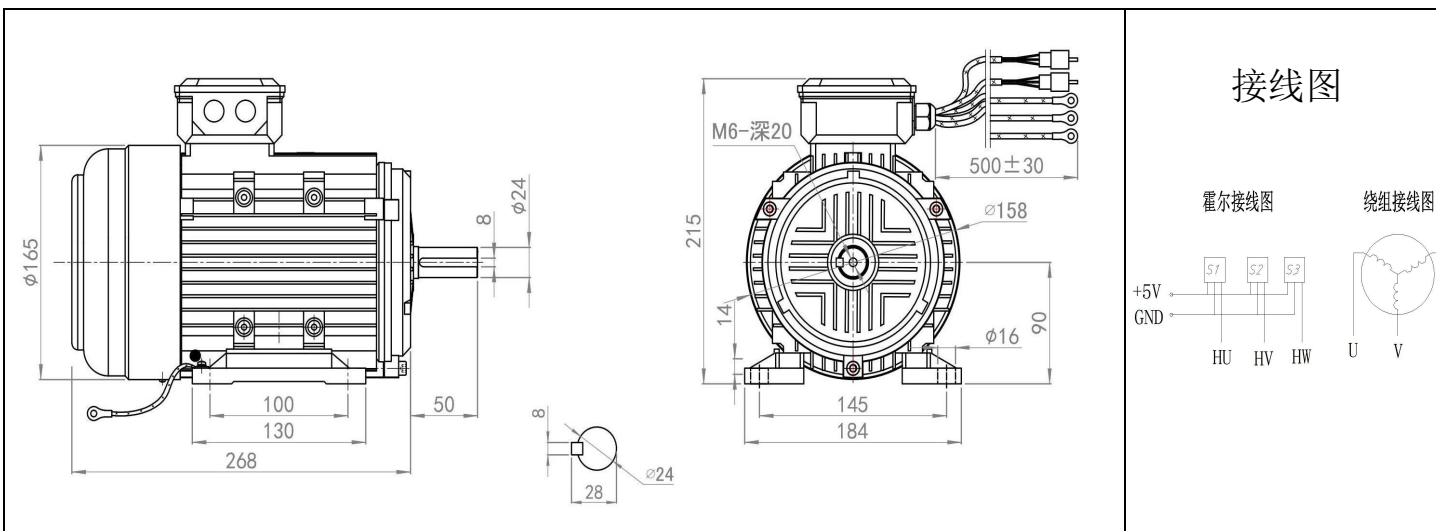
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速箱、编码器、驱动器等。

And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	KW	rpm	Nm	A	Nm	A	L:mm
BG-90QYBLDC-2415S	24	2000	7.81	1.2	1500	7.64	62.5	22.92	187.50	268
BG-90QYBLDC-2430S	24	4000	15.63	2.4	3000	7.64	125.0	22.92	375.00	268
BG-90QYBLDC-3615S	36	2000	5.21	1.2	1500	7.64	41.7	22.92	125.00	268
BG-90QYBLDC-7215S	72	2000	3.26	1.5	1500	9.55	26.0	28.65	78.13	268

外形图 / Mechanical Dimensions





直流无刷电机 QY100 系列

DC Brushless Motor QY100 Series



使用环境: -20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级: B-F
Insulation Class: B-F
防护等级: IP40
Protection Level: IP40
极数: 8
Number Of Poles: 8
磁性材料: 高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命: ≥5000h
Life: ≥5000h

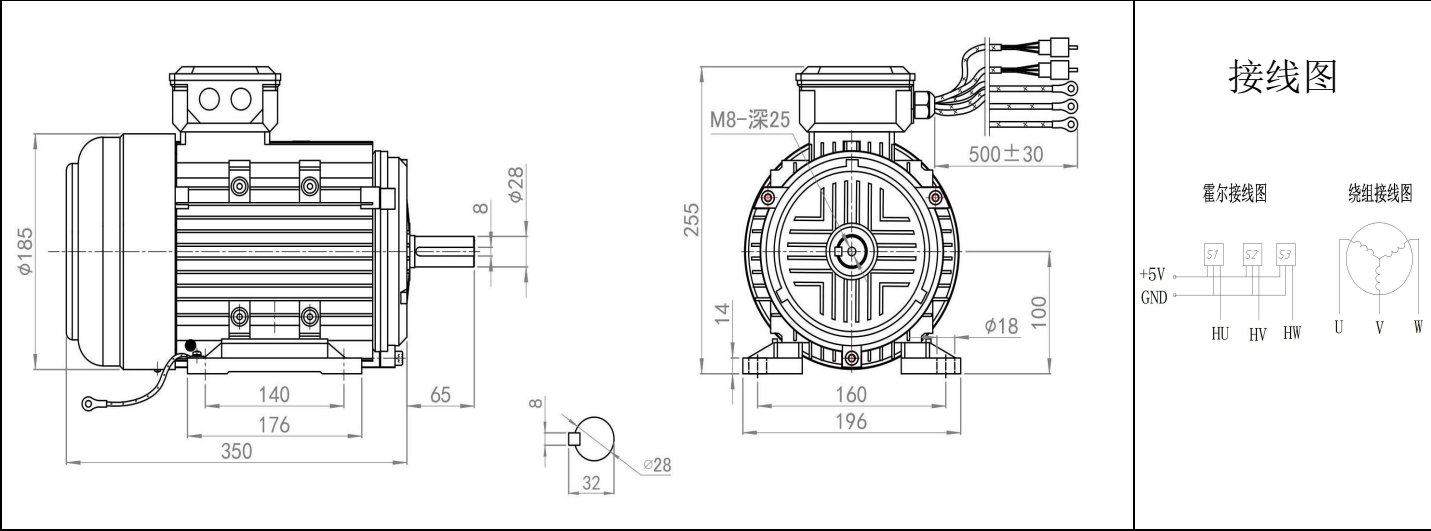
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速机、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	KW	rpm	Nm	A	Nm	A	L:mm
BG-100QYBLDC-2415S	24	2000	14.32	2.2	1500	14.01	114.6	42.02	343.75	350
BG-100QYBLDC-3615S	36	2000	10.85	2.5	1500	15.92	86.8	47.75	260.42	350
BG-100QYBLDC-4815S	48	2000	8.14	2.5	1500	15.92	65.1	47.75	195.31	350
BG-100QYBLDC-6030S	60	4000	13.02	5	3000	15.92	104.2	47.75	312.50	350

外形图 / Mechanical Dimensions





直流无刷电机 QY112 系列

DC Brushless Motor QY112 Series



使用环境: -20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级: B-F
Insulation Class: B-F
防护等级: IP40
Protection Level: IP40
极数: 8
Number Of Poles: 8
磁性材料: 高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命: ≥5000h
Life: ≥5000h

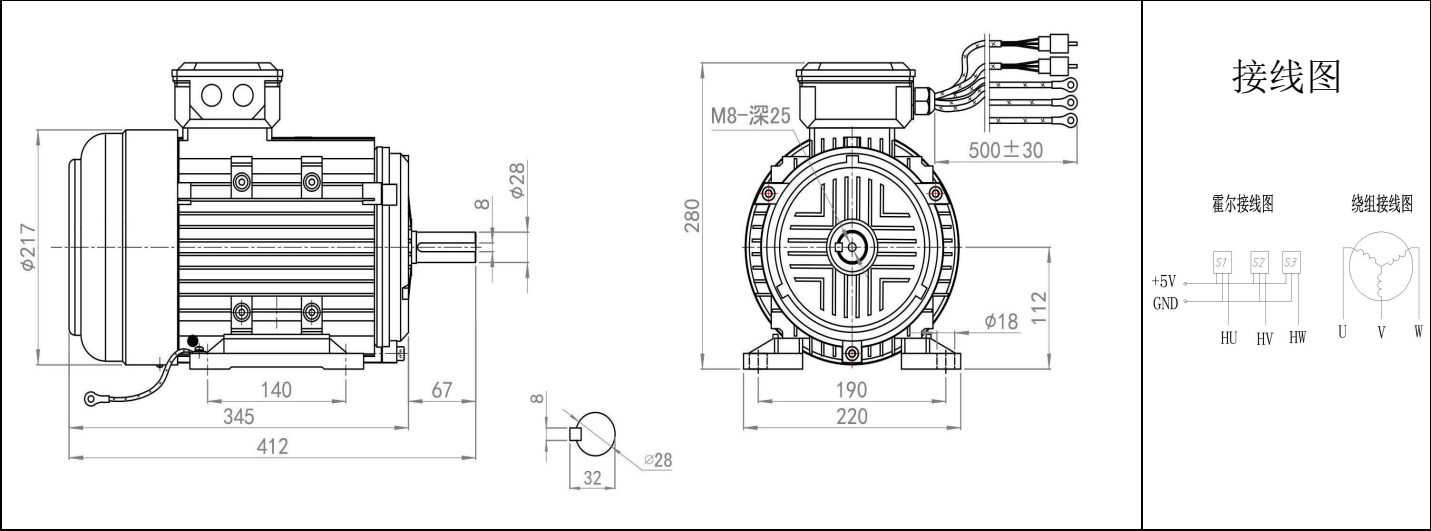
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速机、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
		V	rpm	A	KW	rpm	Nm	A	Nm	
BG-112QYBLDC-4815S	48	2000	13.02	4	1500	25.47	104.2	76.40	312.50	412
BG-112QYBLDC-6015S	48	2000	16.28	5	1500	31.83	130.2	95.50	390.63	412
BG-112QYBLDC-6030S	60	4000	15.63	6	3000	19.10	125.0	57.30	375.00	412
BG-112QYBLDC-7230S	72	4000	17.36	8	3000	25.47	138.9	76.40	416.67	412

外形图 / Mechanical Dimensions





直流无刷电机 QY132 系列

DC Brushless Motor QY132 Series



使用环境: -20℃~50℃
Environmental Condition: -20℃~50℃
绝缘等级: B-F
Insulation Class: B-F
防护等级: IP40
Protection Level: IP40
极数: 8
Number Of Poles: 8
磁性材料: 高性能钕铁硼磁钢
Magnetic Material: High Performance NdFeB Magnet
寿命: ≥5000h
Life: ≥5000h

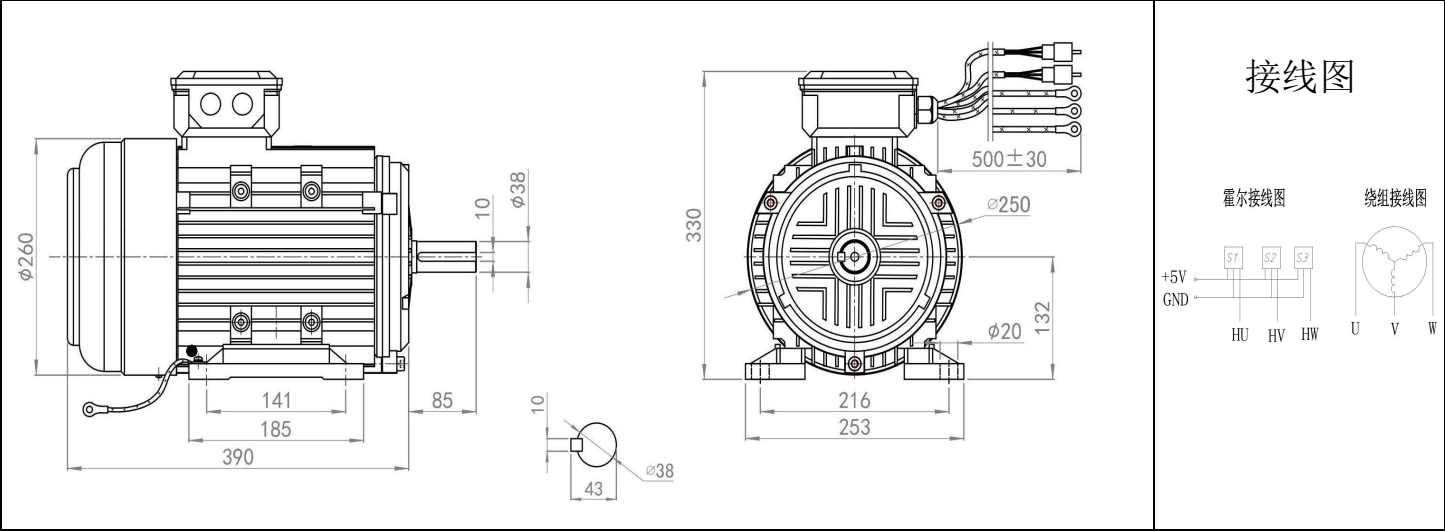
定制 / Customizable solutions

可提供定制电压、性能、电路等。
Can provide custom voltage, electrical performance, circuit, etc. .
以及出轴、安装法兰、引出线、耐高温等级、刹车配件、减速机、编码器、驱动器等。
And shaft, installation flange, lead wire, high-temperature class, brake accessories, gearbox, encoder, driver, etc.

电机技术参数 / Motor Technical Data

Model	Voltage	No-load		Rated Load				Stall		Body Length L:mm
		Speed	Current	Power	Speed	Torque	Current	Torque	Current	
	V	rpm	A	KW	rpm	Nm	A	Nm	A	
BG-132QYBLDC-4815S	48	2000	20.51	6.3	1500	40.11	164.1	120.33	492.19	390
BG-132QYBLDC-7215S	72	2000	16.28	7.5	1500	47.75	130.2	143.25	390.63	390
BG-132QYBLDC-9615S	96	2000	16.28	10	1500	63.67	130.2	191.00	390.63	390
BG-132QYBLDC-12030S	120	4000	19.53	15	3000	47.75	156.3	143.25	468.75	390

外形图 / Mechanical Dimensions





电机的选型方法 (Motor Selection Method)

- 最佳选择需要考虑到电源、控制、运转条件等因素来选择单相串励电机、有刷电机或是无刷电机。如果希望由敝公司代选的话，请确认好下述各项条件。

Power supply, control option, operational environment, etc are factors need to be considered when select the optimal motor solution, including universal motor, dc brushed motor and dc brushless motor. The following information need to be provided if clients require our company to suggest motor solution.

- 电源的条件：使用电压范围、整流电源或者电池、电流限制有无。

Power Supply: Range of voltage, rectified power supply or battery, any limitation of current flow.

- 是否需要编码器、减速机、刹车等配件？

Do you need encoder, gearbox, brake and other accessories?

- 运转情况：连续、间歇、正逆、驱动时间、加锁、短路制动。

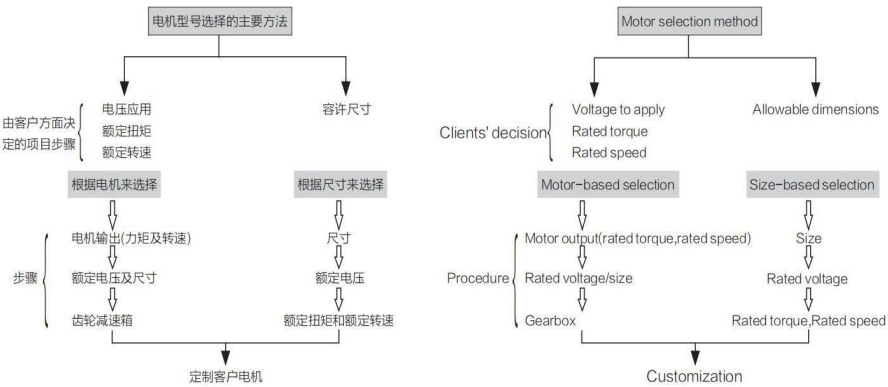
Operation Condition: Continuous, intermittent, clockwise or counter clockwise, working time, locking and short-circuit braking.

- 环境状态：温度、湿度等。

The state of the environment : The State of Environment.

- 包括齿轮箱、编码器、刹车在内的尺寸限制。

Size limits including gearbox, encoder, and brake.



直流电机技术参数说明 (DC Motor technical parameter description)

1、技术用语 (Technical words)

用 语		符 号	单 位	用 语		符 号	单 位
电压	Voltage	U	V	输入功率	Input power	P	W
电流	Current	I	A	输出功率	Output power	P	W
无负荷电流	No-load current	IO	A	最高输出功率	Maximum output power	Pmax	W
停动电流	Stall current	Is	A	效率	Efficiency	η	%
转数	Speed	N	r/m,rpm	最高效率	Maximum efficiency	ηmax	%
无负荷转数	No-load speed	NO	r/m,rpm	转矩	Torque	T	mN.m、N.m
电阻	Resistance	R	Ω	停动转矩	Stall torque	Ts	mN.m、N.m



2、空载电流 (No load current)--I₀

电机在额定电压下，空载达到稳定状态时所消耗的电流，此参数受温度影响。

The current consumed after stable under the rated voltage when there is no loaded. This parameter will be affected by different temperatures.

3、空载转速 (No load speed)--N₀

电机在额定电压下，空载达到稳定状态时获得的最高转速。

The highest speed obtained after stable under the rated voltage.

4、堵转力矩 (Stall torque)--T_s

电机在额定电压下，转速为零时输出的力矩。

Stall Torque is the torque produced by the motor whose output rotation speed is zero under the rated voltage.

$$T_s = K_t \times \left(\frac{U}{R} - I_0 \right)$$

5、起动电流 (Stall current)--I_s

在额定电压下，起动时和加锁时流过的最大电流。

Stall current is the current that the motor draws when its shaft is prevented from moving.

$$\text{起动电流 } I_s = \frac{\text{额定电压(Rated voltage)}}{\text{端子间电阻(Terminal resistance)}}$$

6、最大输出功率 (Maximum output power)--P_{max}

电机在额定电压下，能输出的最大机械功率。

The maximum output power of the motor at the rated voltage.

7、最大输出效率 (Maximum output efficiency)--η_{max}

电机输出的机械功率与消耗的电功率的最高比率。

The maximum ratio of output power of the motor to the consumption of electrical power.

8、电动势常数 (Back - EMF constant)--K_E (mV/rpm)

此常数反映了转子的感应电压和旋转速度之间的关系。

The constant corresponding to the relationship between the induced voltage in the rotor and the speed of rotation.

$$K_E = \frac{2\pi \cdot K_t}{60}$$

9、转矩常数 (Torque constant)--K_t (g.cm/A)

此常数反映了电机产生的转矩和电流消耗之间的关系。

The constant corresponding to the relationship between the torque developed by the motor and the current drawn.

10、速度常数 (Speed constant)--K_n (rpm/V)

当电机负载恒定时，加在电机上每伏电压引起的速度变化。

The speed variation per volt applied to the motor terminals at the constant load.

$$K_n = \frac{1000}{K_E}$$



11、机械时间常数 (Mechanical time constant)-- t_m (ms)

电机从静止状态加速到最终空载转速的63%所需要的时间。

The time required for the motor to reach a speed of 63% of its final no load speed, from standstill.

$$t_m = \frac{R \cdot J \cdot 100}{K_t^2}, \text{ 其中 } R: \text{静态电阻(Static resistance)}, J: \text{转子惯量(Rotor inertia)}$$

国际单位换算表 (International unit conversion table)

单位/unit	英制 / US			公制 / GB			国际标准制 / SI		
	ozf.in	lbf.in	lbf.ft	gf.cm	kgf.cm	kgf.m	mN.m	N.cm	N.m
1ozf.in	1	0.0625	0.005	72	0.072	0.0007	7.062	0.706	0.007
1lbf.in	16	1	0.083	1152.1	1.152	0.0115	113	11.3	0.113
1lbf.ft	192	12	1	13826	13.83	0.138	1356	135.6	1.356
1gf.cm	0.014	0.0009	0.00007	1	0.001	0.00001	0.098	0.01	0.0001
1kgf.cm	13.89	0.868	0.072	1000	1	0.01	98.07	9.807	0.098
1kgf.m	1389	86.8	7.233	100000	100	1	9807	980.7	9.807
1mN.m	0.142	0.009	0.0007	10.2	0.01	0.0001	1	0.1	0.001
1N.cm	1.416	0.088	0.007	102	0.102	0.001	10	1	0.01
1N.m	141.6	8.851	0.783	10197	10.2	0.102	1000	100	1

电机温升 (Motor temperature rises)

电机通流后产生电流热效应，随着时间的推移，电机表面的温度不断地上升直至稳定。稳定的条件是在3个小时内前后温差不超过2℃，此时测得电机表面的温度为此电机的最终温度。温度的单位为度(℃)。上升的温度中超过周围空气的温度(环境温度)的这一部分温度称为温升，温升的单位为开氏(K)。温升就是电机温度比周围环境温度高出的数值。

The motor will heat up when it is powered on. The temperature of the motor's surface will continue to rise until it is stable. Within 3 hours after the temperature is stable, the temperature is allowed to change within 2 degrees Celsius. The part at which temperature rises above the ambient air temperature (ambient temperature) is called the temperature rises. The unit of temperature rises is kelvin (K). The temperature rise is the value that higher than the ambient temperature.

额定温升：是指在设计规定的环境温度(40℃)下，电动机绕组的最高允许温升，它取决于绕组的绝缘等级。

Rated temperature rises: refers to when the environmental temperature is under 40℃, the maximum allowable temperature rise of the motor winding. It depends on the winding insulation grade.

● 计算公式 (Calculation formula): $\theta = T_2 - T_1$

θ ——温升 (Temperature rises)

T_1 ——实际冷却状态下的绕组温度 (即环境温度, 室温不允许超过40℃)

Winding temperature in actual cooling condition (that is ambient temperature, room temperature not exceeding 40℃)

T_2 ——发热状态下绕组温度 (Winding temperature in heating condition)



绝缘等级 (Insulation class)

电动机的绝缘等级是指其所用绝缘材料的耐热等级 分A、E、B、F、H、C、N、R级，一般电机绝缘等级多采用B、F、H级。

Insulation class of motor refers to the heating resistance class of insulation material including A, E, B, F, H, C, N, R. Insulation class of motor is using B, F, H mostly.

温度等级 Temperature class	A 级 Class A	E 级 Class E	B 级 Class B	F 级 Class F	H 级 Class H	C 级 Class C	N 级 Class N	R 级 Class R
最高允许温度 Max allowable temperature	105℃	120℃	130℃	155℃	180℃	200℃	220℃	240℃
绕线温升限值 Winding temperature rise limit	60K	75K	80K	105K	125K	135K	150K	170K
性能参考温度 Performance reference	80℃	95℃	100℃	120℃	145℃	155℃	170℃	190℃

电磁噪声的对策 (EMC)

在有刷电机转动的时候 由于整流器的切换会发生闪火花电流 这种闪火花可能会成为电子噪音 对控制电路造成不良影响。可以通过在电机盒上连接电容器来降低噪音。

When a DC brush motor rotates, spark current occurs due to switching of the commutator. This spark may become electric noise and effect the control circuit. Such noise can be reduced by connecting a capacitor to the DC motor.

为了降低电气异音，可在马达端子部位安装电容器和扼流圈 一般可有效消除火花电压的方法是在接近发生源的回转子部位进行安装，而这种 方法的成本绩效也较高。

In order to reduce electrical noise, capacitor and choke can be installed at the terminal parts of the motor. The way to effectively eliminate the spark is to install it on the rotor that near the source, which is very costly.

1、可在马达内部安装消除异音的元件 如安装环形变阻器 (D/V)、环形电容器、橡胶环形电阻 (RRR)、晶片电容器的方法。⇒高频率范围的异音有效果

Eliminating electrical noise inside the motor by installing Varistor (D/V), annular capacitor, rubber ring resistance (RRR) and chip capacitor that reduces the noise under high frequency.

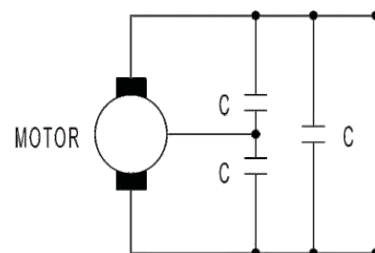
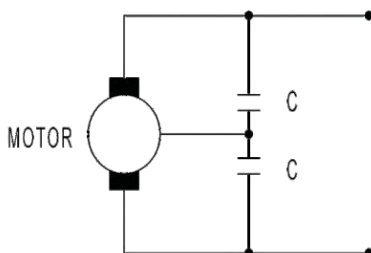
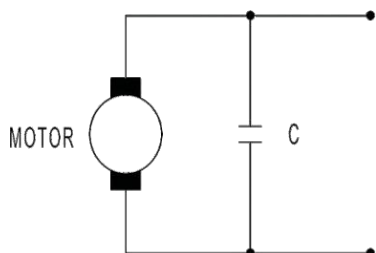
2、可在马达外部安装消除异音的元件 如外接电容器（电解类型、陶瓷类型）、扼流圈。⇒对低频率范围的异音有效果。

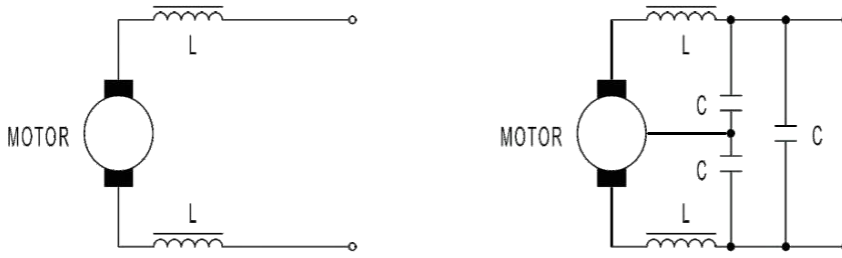
Eliminating electrical noise outside the motor by installing components like capacitor (electrolytic type, ceramic type) and choke that reduces noise under low frequency

作为降低异音的对策方法 有1或2单独使用的，以及1与2并用的方法，1与2并用时的效果较大。

Method 1 and 2 could be used separately. The combination of these two methods will be the best noise reduction solution.

配合图示说明 (Illustration):





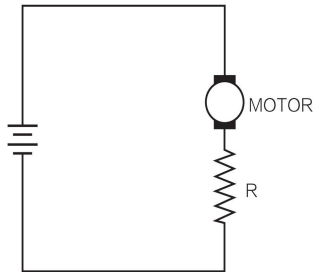
备注 (remark) : C=Capacitance,为电容; L=Inductance,为电感。

电机控制 (Motor control)

1、通过抗阻来控制 (Control by resistance)

在电源和电机间串联加进电阻 通过电阻值增加来进行电流控制 控制电机转数。该控制可以通过使用可变抗阻 改变线型电机特性。

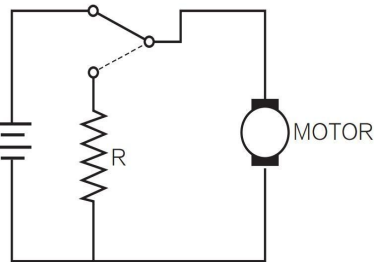
A resistor is placed between the power supply and the DC motor for restricting current by an increase in resistance to control the motor's speed in series.



2、制动动作 (短路制动) (Motor braking (Short-cirbrakecuit method))

采用电机端子间强制短路停止的方法 可以缩短电机停止时间。该控制可以产生强力的制动作用 (R=0时为最大制动)。

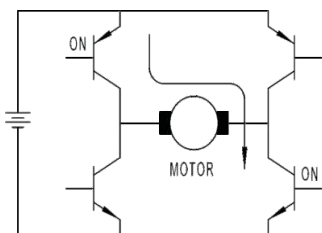
A method to force the terminals of the DC motor brake by short circuit. This method can shorten the motor's brake time and provides powerful braking control. (Maximum braking when $R = 0$)



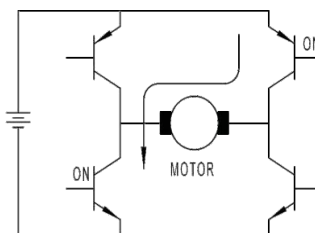
3、通过晶体三极管来进行DC直流电机的双向驱动 (Bidirectional driving of DC motors by transistors)

使用NPN、PNP 晶体三极管, 通过H桥电路的开关来进行双向驱动电机。

Bidirectional motor driving is achieved by switching the H-type bridge circuit by use of NPN and PNP transistors.



左上和右下的晶体三极管处于ON时正转
Forward run when the upper left and lower right transistors are on

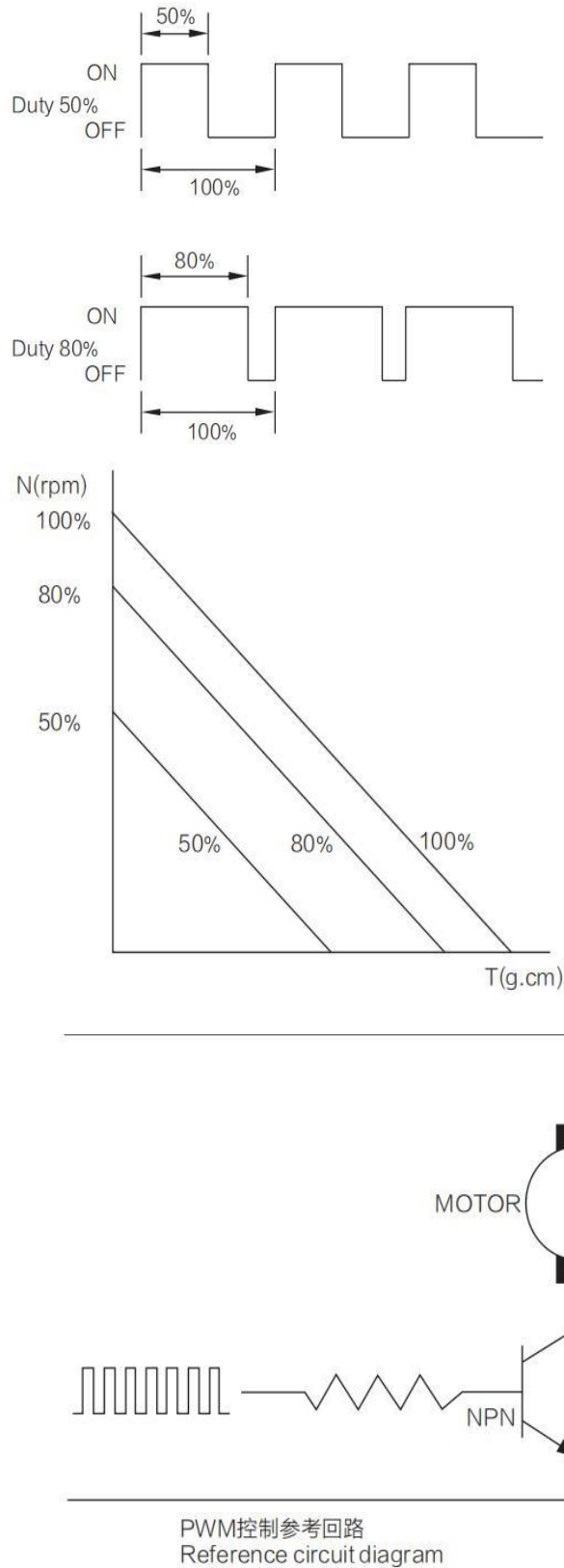


左下和右上的晶体三极管处于ON时反转
Reverse run when the lower left and upper right transistors are on



4、PWM控制 (PWM control(pulsewidth modulation method)

PWM控制的基本原理是将周期设定为固定 通过改变脉冲 “ON” 和 “OFF” 的比例来改变平均能源 控制速度。
The basic principle of control is to vary the average energy to control the speed by varying a ratio of "ON" and "OFF" of a pulse with the cycle kept constant.





产品技术信息 / Product Technical Information

电机与齿轮箱产品组合技术信息(Technical information for the combination of motor and gearbox)

齿轮减速箱 (Gearbox)



所谓齿轮减速箱，是指结构上可以让电机转数减速并增加扭矩的传动机构。转速及力矩可以通过下述计算公式计算出一个概略值。减速比按照各机种不同而分别设定。

Gearbox refers to a transmission mechanism whose structure will make the motor speed reduction and torque increase. The rotational speed and torque can be calculated roughly by the following formula. The ratio is set according to the different types.

各类齿轮箱的特点 (Characteristics of all kinds of gearboxes)

·行星齿轮箱 (Planetary gearbox)

1、可以进行高扭矩的传导

Can conduct high-torque conduction

2、效率，每级 91%

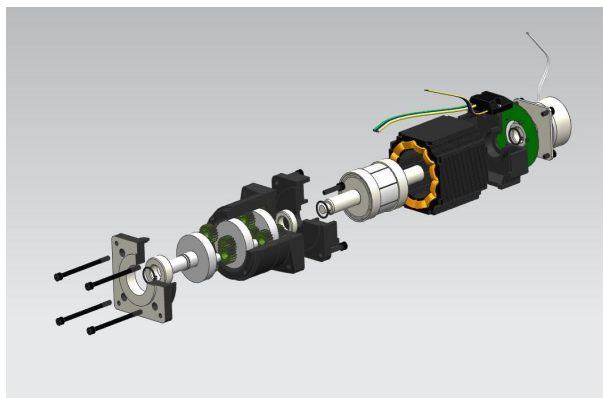
Efficiency, 91% per stage

3、输入和输出的位置:同一中心

The location of input and output: the same center

4、输入、输出的旋转方向相同

Input, output rotation in the same direction



·RV 齿轮箱 (RV gearbox)

1、低噪声平稳运转,能适合在恶劣的环境中长期连续工作

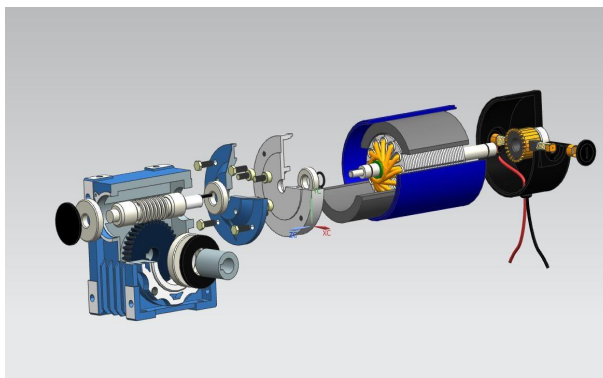
Low noise and smooth operation, suitable for long-term continuous work in harsh environment

2、速比范围大，每个机座具有从5: 1到100: 1的12种减速比
Wide speed ratio range, 12 deceleration ratios from 5:1 to 100:1 for each stand

3、充分的冷却筋条,使机体具有优良的热传导性能
the machine body has excellent heat conduction performance

4、80、100速比具有很好的自锁性能，对有制动要求的设备可以节省制动设备

80、100 speed ratio has good self-locking performance, for the equipment with brake requirements can save brake equipment





直流刹车器故障排除 Trouble shooting for DC Brake

不良原因 Defect cause	原因分析 Cause analysis	解决方案 Troubleshooting
刹车器不工作或刹车不良 Brakes don't work or work poorly	未供电源 The power is not supplied	供应电源 Supply the power
	摩擦片磨损 The lining is worn out	换新摩擦片 Replace with new lining
	电源电压不足或电压错 Insufficient power voltage	提供正确电压 Supply proper voltage
	电源供应器损坏 Power supplier damaged	电源供应器换新 Replace with new power supplier
	异物入侵 Intrusion of foreign matter	清洁零件 Clean parts
	接线脱落 Connection fallen off	重新接线 Connect again
	摩擦片卡死 lining got stuck	清洁零件 Clean parts
	刹车线圈烧毁 Braking coil burnt	刹车线圈换新 Replace with new braking coil
	间隙过大 too large clearance	调整间隙 Adjust the clearance
	摩擦片沾染油 The lining is tainted with oil	清洁摩擦片 Clean the lining
	负载过大 Over-loaded	重新设计 Re-design the load
	刹车表面歪斜 Deflection of brake Resurface	更换零件 Replace parts
	下降重量过大 Too large descending weighting	机构重新设计 Re-design the structure
	选用机型错误 Error selection of machine type	选用正确机型 Choose the right machine type
	环境温度过高 Too high ambient temperature	改善环境温度 Better ambient temperature



· 正齿轮箱 (Spur gearbox)

1、扭矩比较小，但可以进行薄型和静音设计

The torque is relatively low, but can be thin and quiet design

2、效率，每级79%

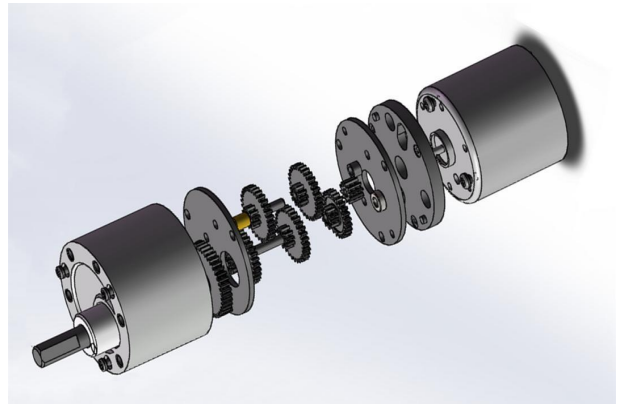
Efficiency, 79% per stage

3、输入和输出的位置在同一中心或者不同中心

The input and output of the same center or different centers

4、输入、输出的旋转方向因齿轮级不同而不同

Input, output of the rotation direction due to different gear levels



齿轮效率 (Gear efficiency)

齿轮减速箱会有一些机械性损失（齿轮的咬合和轴承摩擦等）。一般来说，每一级齿轮咬合，按照直齿轮减速机效率79%、行星齿轮减速机91%、RV齿轮减速机55%来计算效率。但是会因电机的扭矩和转数等条件而发生很大变化。所以，仅可作为参考值。并且在低扭矩状态下使用时会大幅度降低。

Gear reducer will have some mechanical losses (gear bite and bearing friction, etc.) . In general, for each stage of gear bite, according to the spur gear reducer efficiency 79% , planetary gear reducer 91% , RV gear reducer 55% to calculate efficiency. But because of the motor torque and speed and other conditions will change a lot. Therefore, it can only be used as a reference value. And in the low torque state will be greatly reduced when used.

· 齿轮减速箱传动效率举例 (An example of calculation of efficiency):

行星齿轮箱3级效率 Planetary Gearbox level 3 efficiency

效率 (η) = $0.91 \times 0.91 \times 0.91 \approx 0.753$ (75.3%)

Efficiency(η) = $0.91 \times 0.91 \times 0.91 \approx 0.753$ (75.3%)

正齿轮箱3级效率 Spur Gearbox level 3 efficiency

效率 (η) = $0.79 \times 0.79 \times 0.79 \approx 0.493$ (49.3%)

Efficiency(η) = $0.79 \times 0.79 \times 0.79 \approx 0.493$ (49.3%)

● 齿轮箱输出速度、力矩与电机速度、力矩之关系 (The relationship of speed and torque between gearbox and motor)

齿轮减速箱转速 (speed of gear motor) = 电机转速 (RPM) / 减速比 (ratio)

齿轮箱输出力矩 (gearbox output torque) = 单体电机输出力矩 (Ts) × 减速比 (gear ratio) × 齿轮传动效率 (η)

举例说明 (Example):

单体电机转速： 6000RPM ， 额定力矩 T = 0.3N.m ， 配100: 1 齿轮箱， 齿轮箱传动效率： 60%

Single Motor Speed: 6000RPM, rated torque T = 0.3N.m, with 100: 1, gearbox transmission efficiency: 60%

齿轮减速箱转速 (speed of gear motor) = 电机转速 (RPM) / 减速比 (ratio) = $6000 \text{ rpm} / 100 = 60 \text{ rpm}$

齿轮箱输出力矩 (gearbox output torque) = 单体电机输出力矩 (Ts) × 减速比 (gear ratio) × 齿轮传动效率 (η) = $0.3 \text{ N.m} \times 100 \times 60\% = 18 \text{ N.m}$



减速机故障排除 Trouble shooting for Reducer

不良原因 Defect cause	原因分析 Cause analysis	解决方案 Troubleshooting
噪音 Noise	齿轮敲击声 Gear knocking	齿轮表面受伤 Gear surfacedamaged 更换受伤齿轮组 Replace damaged gear group
	连续性杂音 Continuous noise	轴承损坏 Bearing damaged 更换损坏轴承 Replace damaged bearing(s)
	周期性杂音 Aging noise	异物附着齿轮 Foreign matter attached to gear 检查齿轮齿面 Check on the gear surface
	嘶嘶声 Hissing	油量不足 Insufficient oil 添加润滑油 Add lubricatingoil
	断续性杂音 Subsequent noise	润滑油不洁 Unclean lubricating oil 更新新润滑油 Replace with new lubricating oil
不正常运转 Vibration	固定底座振动 Fixed base vibration	安装平面歪斜 Deflection of installation plane 重新调整固定底座 Re-adjust fixed base
	出力轴振动 Output shaft vibration	轴承损坏 Bearing damaged 更换损坏轴承 Replace damaged bearing(s)
	内部齿轮零件振动 Internal gear part vibration	齿轮受伤 Gear damaged 更换受伤轴承 Replac damaged gear
	本身振动 Body vibration	齿轮组安装不良 The installation of gear group is out of condition 重新调整齿轮组 Re-adj use gear group
漏油 Oil leakage	油封漏油 Oil seal leakage	油封硬化 Oil seal hardening 更换损坏油封 Replace damaged oil seal
	本身漏油 Body leakage	箱体有砂孔 There is sand hole in zhe body 更换箱体 Replace the body with sand hole
	结合面漏油 Joint surface leakage	O-型环损坏 O-ring damaged 更换损坏O-型环 Replace damagedO-ring
过热 Overheating	油封 Oil seal	油封太紧 Over-tightened oil seal 更换太紧油封 Replace the over-tightened oil seal
	本身过热 Overheated body	过负载 Over-loaded 重新计算负载马力 Re-calculate the load horsepower
	缺润滑油 Lack of lubricating oil	油量不足 Insufficient oil 加入润滑油 Add Inbricatingoil
	备注：马达国标温升80C以内 Remarks: motor national standard temperature rise within 80C	