



Dongguan Langyi Electromechanical Technology Co., Ltd

Industrial grade high precision coreless motor manufacturer

## Company introduction

Langyi is dedicated to the R&D and manufacture of high-end coreless motors. (Replace Maxon & Faulhaber).

We have a strong R&D team and the manufacturing capability. Having a professional coreless motor production line, we are sure to help you build an outstanding efficient transmission system with our technical innovation and customized services. Our micro drive solutions are widely used in aviation, tools, tattoos, medical, robotics, automation, security door lock, security door, and other fields, promoting the development of key application systems around the world.

With over 10 years' experience in the field of precision coreless motor technology, we have launched 10 mm ~ 46 mm series, with unparalleled speed torque performance, high power density brush/brushless dc coreless motor, and constantly meet all kinds of transmission in the field of industrial control requirements. We have a complete product development network, provide flexible solutions for a wide variety of industrial automation occasions.

Our advantages: full size, excellent performance, low noise, high temperature resistance, low heat, long lifetime, good stability etc.

**Accurate Selection :** We provide the industry's most complete coreless motor products, including brush motors, brushless dc motors, dc brushless drives, reducers and encoders, and choose the best power solution for your industrial equipment and application.

**Efficient & Reliable:** Our modern management ensures the consistency and efficiency of our production. At the same time, we have a strict quality control system to ensure that we provide durable, efficient high-quality motor products and the very low repair rate.

**Intimate Customization:** Whether it is a brushless dc motor solution combination or a brushed dc coreless motor with gearbox and encoder, we can develop or modify standard products to meet your specific requirements.

**Quick Cooperation :** Worrying about the design cycle? We can provide the fastest delivery time (which can be shorted to 1-2 weeks) in this area and solve any complex micro power challenges with fast, accurate and more effective solutions.

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## Bldc motors + Gearbox + Encoder

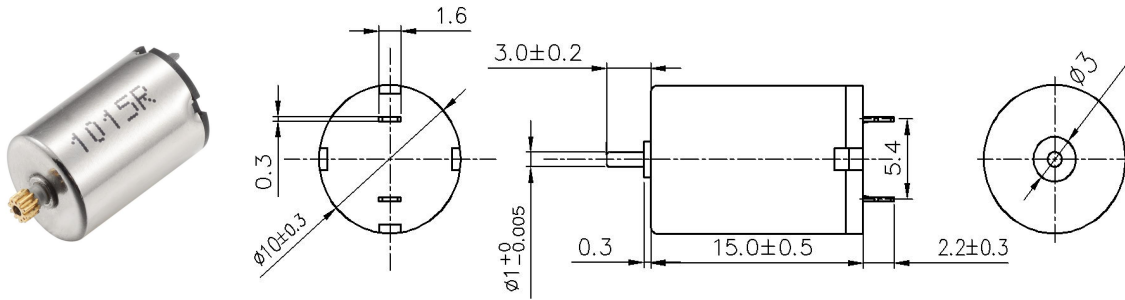
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For customized models, pls contact our sales!

# 1015R Coreless Brush Motor



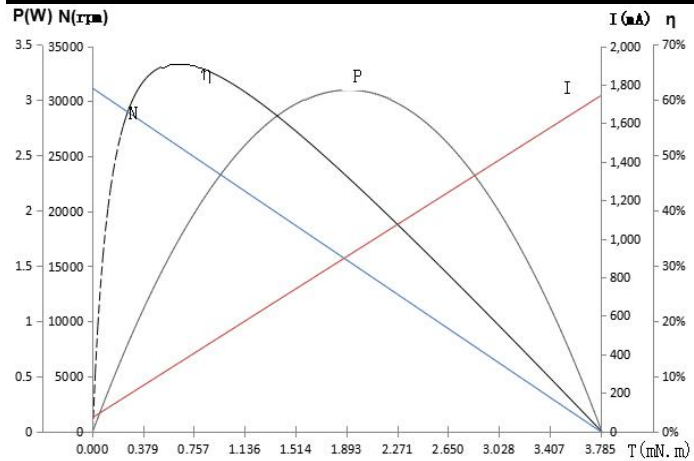
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		05A	11A	01A	09A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	5	6	7.4	12
2 空载转速 (No load speed)	rpm	27700	17500	31200	25900
3 空载电流 (No load current)	mA	85	40	70	30
4 额定转速 (Nominal speed)	rpm	23200	13200	27000	21500
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	0.5	0.5	0.5	0.5
6 额定电流 (最大连续电流) (Nominal current)	A	0.36	0.185	0.28	0.138
7 堵转转矩 (Stall torque)	mNm	3	2.0	3.8	2.9
8 堵转电流 (Stall current)	A	1.89	0.64	1.74	0.69
9 最大效率 (Max efficiency)	%	68	64	69	68
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	2.65	9.32	4.25	17.47
11 转矩常数 (Torque constant)	mNm/A	1.69	3.21	2.15	4.34
12 速度常数 (Speed constant)	rpm/V	5540	2917	4216	2158

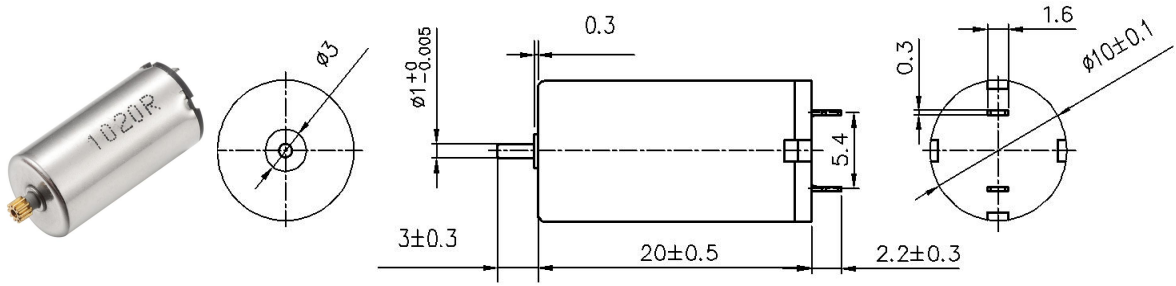
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 35000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 4.78g

## 01A电机曲线图 motor curve



1020R Coreless Brush Motor



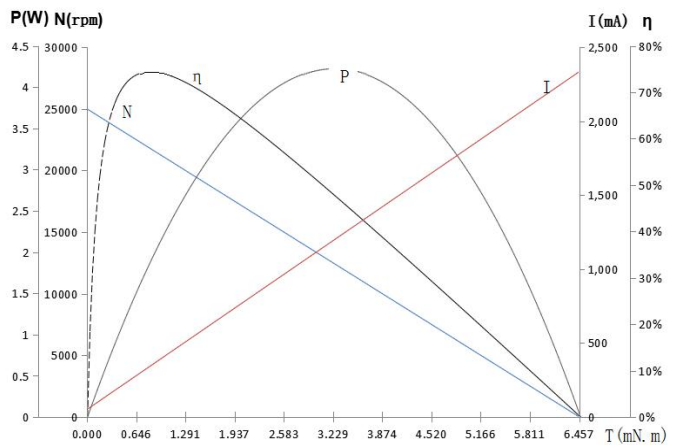
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A	03A	04A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	7.4	7.4	7.4		
2 空载转速 (No load speed)	rpm	25000	30200	34900		
3 空载电流 (No load current)	mA	50	50	80		
4 额定转速 (Nominal speed)	rpm	23070	28190	32850		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	0.5	0.5	0.5		
6 额定电流(最大连续电流) (Nominal current)	A	0.22	0.26	0.33		
7 堵转转矩 (Stall torque)	mNm	6.46	7.5	8.5		
8 堵转电流 (Stall current)	A	2.33	3.26	4.3		
9 最大效率 (Max efficiency)	%	76	79	77		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	3.17	2.27	1.72		
11 转矩常数 (Torque constant)	mNm/A	2.77	2.29	1.98		
12 速度常数 (Speed constant)	rpm/V	3378	4081	4716		

其他特性参数 Other characteristic parameters

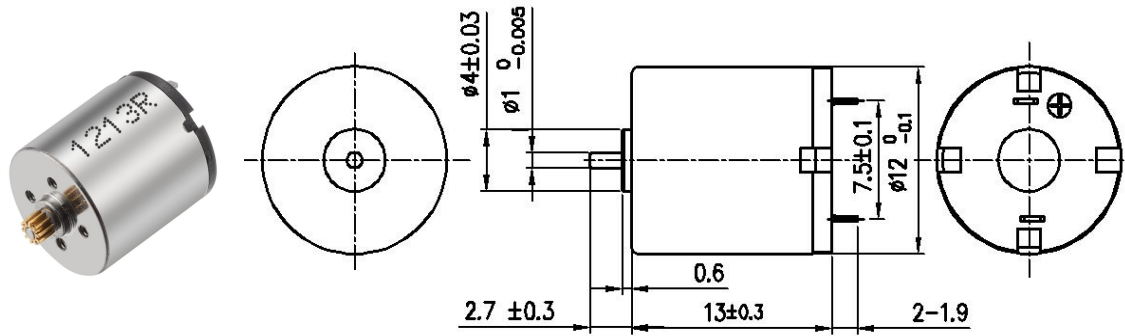
- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 35000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 6.76g

01A电机曲线图 motor curve



# 1213R Coreless Brush Motor

Coreless Brush Motors



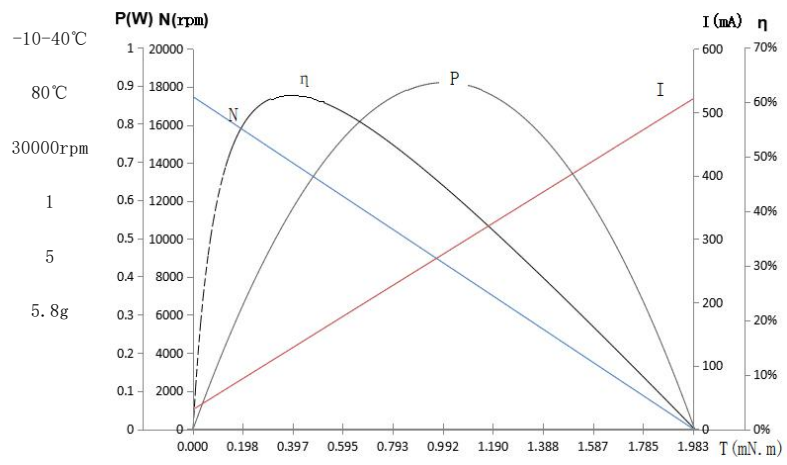
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		03A	02A	01A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	7.4	7.4	7.4		
2 空载转速 (No load speed)	rpm	17500	22000	18800		
3 空载电流 (No load current)	mA	30	40	30		
4 额定转速 (Nominal speed)	rpm	14960	18810	15040		
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	0.3	0.3	0.3		
6 额定电流 (最大连续电流) (Nominal current)	A	0.1	0.128	0.11		
7 堵转转矩 (Stall torque)	mNm	1.98	2	1.4		
8 堵转电流 (Stall current)	A	0.52	0.65	0.41		
9 最大效率 (Max efficiency)	%	65	64	58		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	14.2	11.38	18.2		
11 转矩常数 (Torque constant)	mNm/A	3.96	3.15	3.68		
12 速度常数 (Speed constant)	rpm/V	2365	2973	2541		

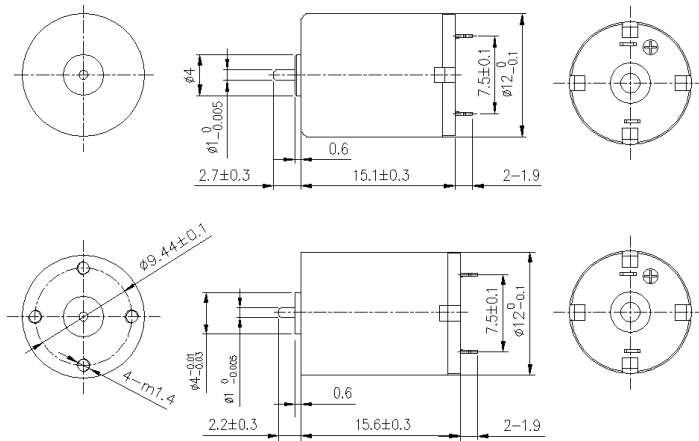
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature)  $-10-40^{\circ}\text{C}$
- 14 绕组最高允许温度 (Max permissible winding temperature)  $80^{\circ}\text{C}$
- 15 最高允许转速 (Max permissible speed)  $30000\text{rpm}$
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight)  $5.8\text{g}$

## 3A电机曲线图 motor curve



# 1215R Coreless Brush Motor



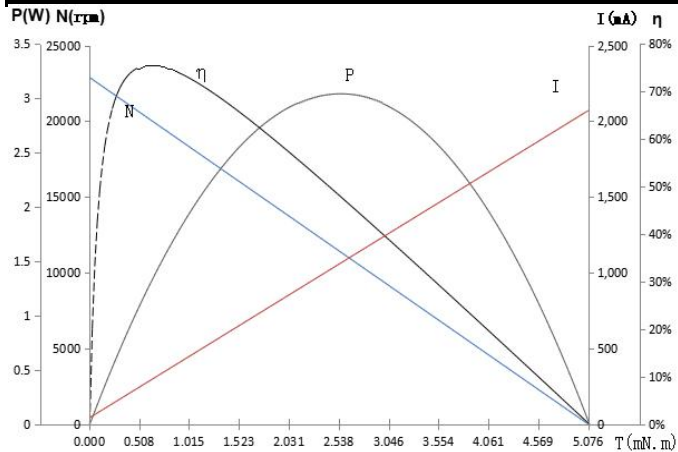
典型应用Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		06A	04A	01A	21A	18A	02A
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	4.5	4.5	6	7.4	7.4	8
2 空载转速 (No load speed)	rpm	19500	15200	22900	27460	20000	32300
3 空载电流 (No load current)	mA	40	40	40	50	30	60
4 额定转速 (Nominal speed)	rpm	15300	11400	19250	23340	16300	27850
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	0.8	0.8	0.8	0.8	0.8	0.8
6 额定电流 (最大连续电流) (Nominal current)	A	0.4	0.34	0.36	0.36	0.25	0.4
7 堵转转矩 (Stall torque)	mNm	4.04	3.2	5.1	5.3	4.48	5.7
8 堵转电流 (Stall current)	A	1.88	1.16	2.07	2.13	1.3	2.48
9 最大效率 (Max efficiency)	%	75	71	77	75	75	74
电机常数 (Motor constant)							
10 相间电阻 (Terminal resistance)	Ω	2.4	3.87	2.9	3.48	5.7	3.23
11 转距常数 (Torque constant)	mNm/A	2.16	2.77	2.45	2.52	3.46	2.32
12 速度常数 (Speed constant)	rpm/V	4333	3378	3817	3711	2703	4038

## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 35000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 6.73g

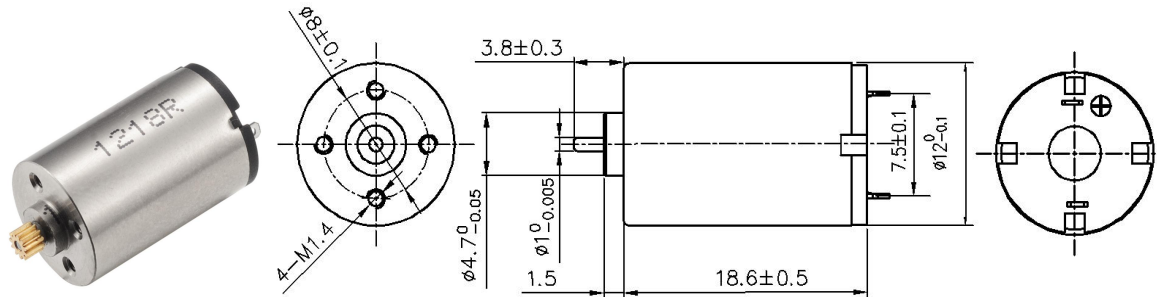
## 01A电机曲线图 motor curve





# 1218R Coreless Brush Motor

Coreless Brush Motors



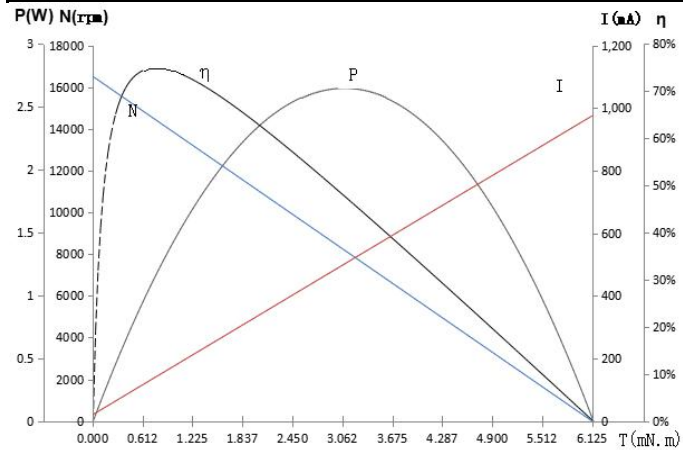
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		05A	04A	06A	02A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	7.4	7.4	11.1	11.1
2 空载转速 (No load speed)	rpm	20400	16700	15920	16520
3 空载电流 (No load current)	mA	40	20	15	20
4 额定转速 (Nominal speed)	rpm	17300	13760	13280	13860
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	1	1	1	1
6 额定电流 (最大连续电流) (Nominal current)	A	0.33	0.25	0.17	0.18
7 堵转转矩 (Stall torque)	mNm	6.5	5.7	6	6.13
8 堵转电流 (Stall current)	A	1.92	1.36	0.92	0.97
9 最大效率 (Max efficiency)	%	76	79	75	76
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	$\Omega$	3.85	5.44	12.06	11.39
11 转矩常数 (Torque constant)	mNm/A	3.39	4.15	6.53	6.29
12 速度常数 (Speed constant)	rpm/V	2757	2257	1434	1488

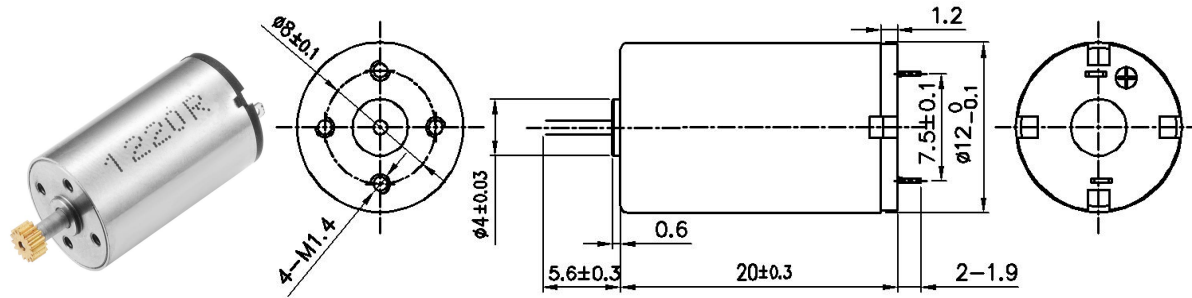
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 9.2g

## 02A电机曲线图 motor curve



## 1220R Coreless Brush Motor



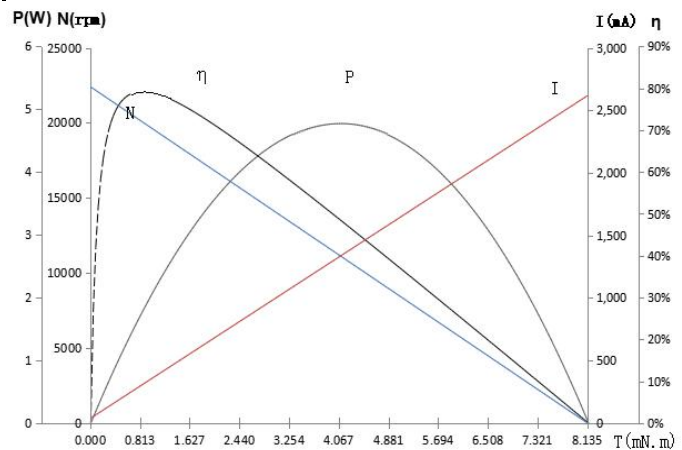
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		11A	15A	16A	17A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	7.4	12	12	12
2 空载转速 (No load speed)	rpm	22410	26910	10590	10360
3 空载电流 (No load current)	mA	35	30	10	10
4 额定转速 (Nominal speed)	rpm	19380	23390	8420	8300
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.1	1.2	0.8	1
6 额定电流(最大连续电流) (Nominal current)	A	0.38	0.31	0.83	0.1
7 堵转转矩 (Stall torque)	mNm	8.1	9.2	3.9	4.9
8 堵转电流 (Stall current)	A	2.61	2.2	0.36	0.46
9 最大效率 (Max efficiency)	%	82	80	73	75
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	2.83	5.45	32.96	26.37
11 转矩常数 (Torque constant)	mNm/A	3.09	4.17	10.61	10.84
12 速度常数 (Speed constant)	rpm/V	3028	2243	883	863

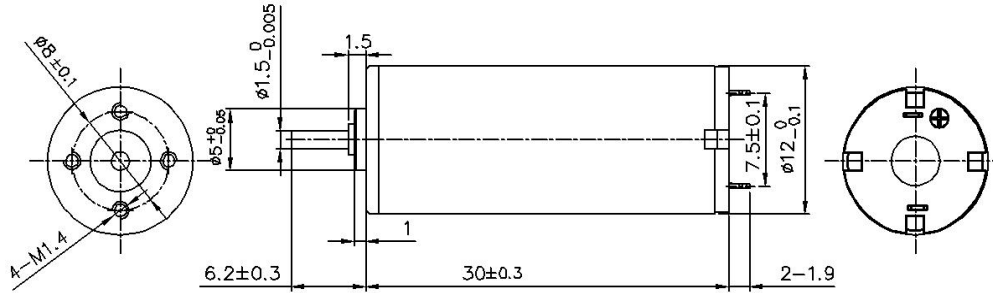
### 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 10g

### 11A电机曲线图 motor curve



# 1230R Coreless Brush Motor



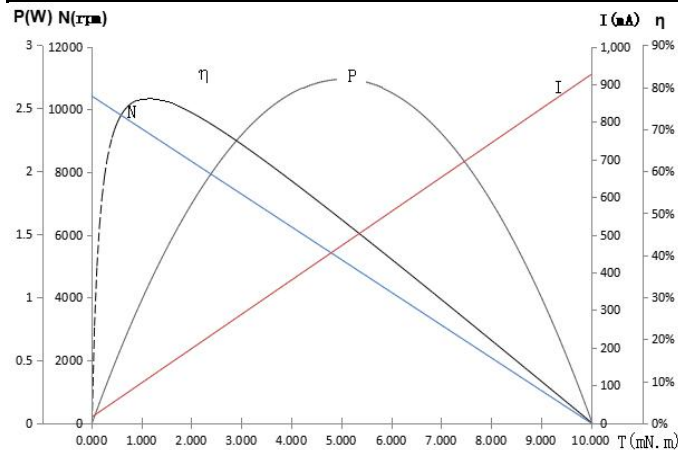
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		02A	03A	01A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	3.7	5	12		
2 空载转速 (No load speed)	rpm	10860	9970	10430		
3 空载电流 (No load current)	mA	45	35	15		
4 额定转速 (Nominal speed)	rpm	9560	8910	9180		
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	1	1.22	1.22		
6 额定电流 (最大连续电流) (Nominal current)	A	0.35	0.27	0.12		
7 堵转转矩 (Stall torque)	mNm	8	11.5	10.0		
8 堵转电流 (Stall current)	A	2.63	2.43	0.93		
9 最大效率 (Max efficiency)	%	78	85	78		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	1.41	2.06	12.97		
11 转矩常数 (Torque constant)	mNm/A	3.19	4.69	10.77		
12 速度常数 (Speed constant)	rpm/V	2935	1994	869		

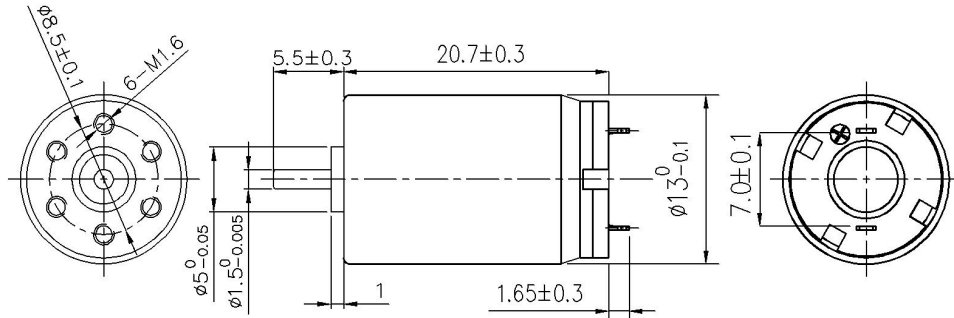
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature)  $-10-40^{\circ}\text{C}$
- 14 绕组最高允许温度 (Max permissible winding temperature)  $80^{\circ}\text{C}$
- 15 最高允许转速 (Max permissible speed)  $25000\text{rpm}$
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 15g

## 01A电机曲线图 motor curve



1320R Coreless Brush Motor



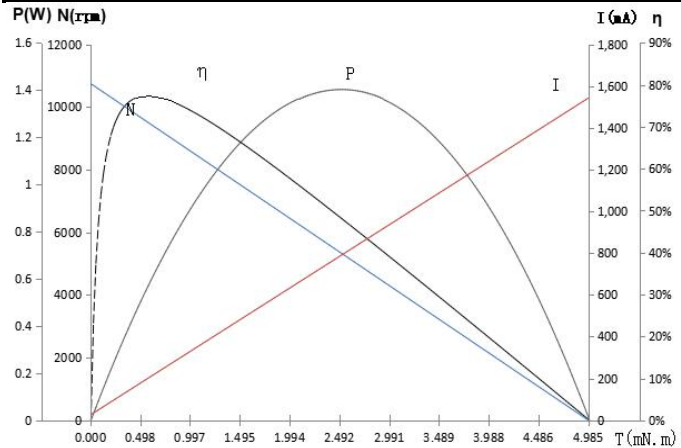
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A	04A	02A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	3.7	5	6		
2 空载转速 (No load speed)	rpm	10750	15700	12260		
3 空载电流 (No load current)	mA	25	35	40		
4 额定转速 (Nominal speed)	rpm	8150	13500	9930		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.22	1.2	1.2		
6 额定电流(最大连续电流) (Nominal current)	A	0.39	0.43	0.29		
7 堵转转矩 (Stall torque)	mNm	5.0	8.6	6.2		
8 堵转电流 (Stall current)	A	1.54	2.86	1.37		
9 最大效率 (Max efficiency)	%	78	81	72		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	2.4	1.75	4.38		
11 转矩常数 (Torque constant)	mNm/A	3.22	2.98	4.58		
12 速度常数 (Speed constant)	rpm/V	2905	3140	2043		

其他特性参数 Other characteristic parameters

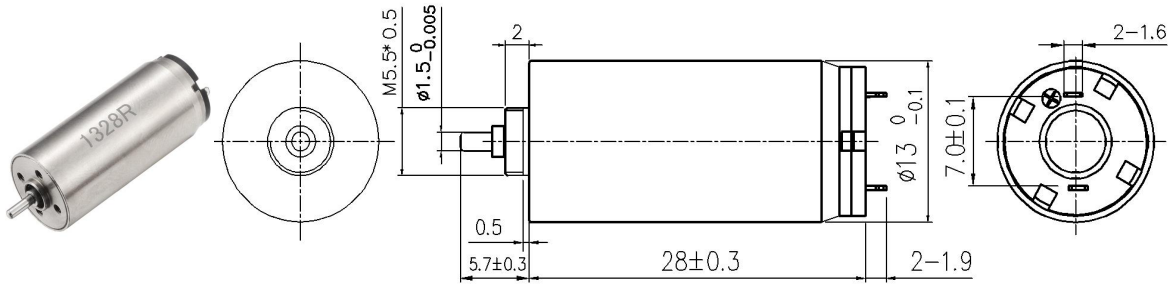
- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 25000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 16g

01A电机曲线图 motor curve



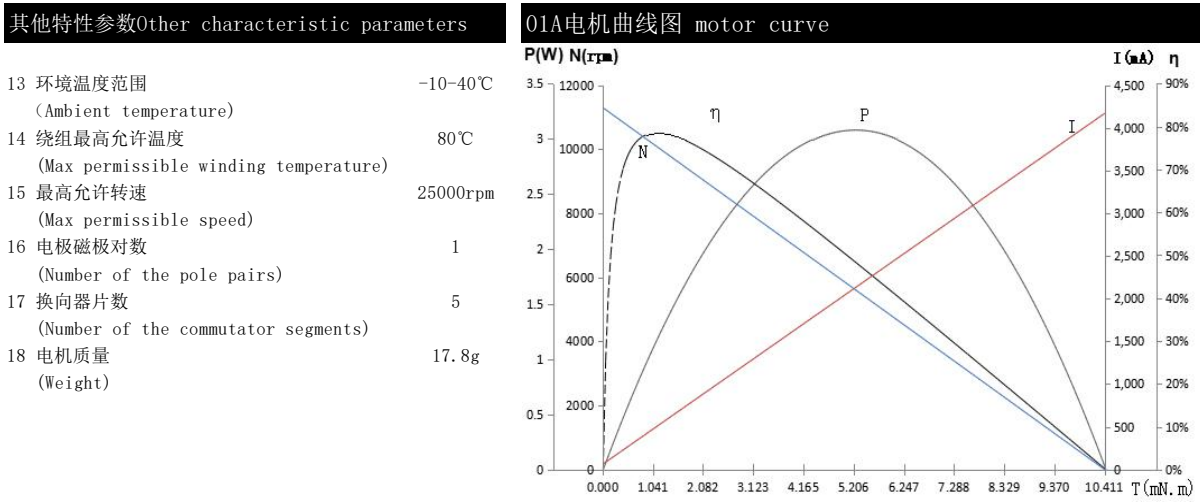
# 1328R Coreless Brush Motor

Coreless Brush Motors

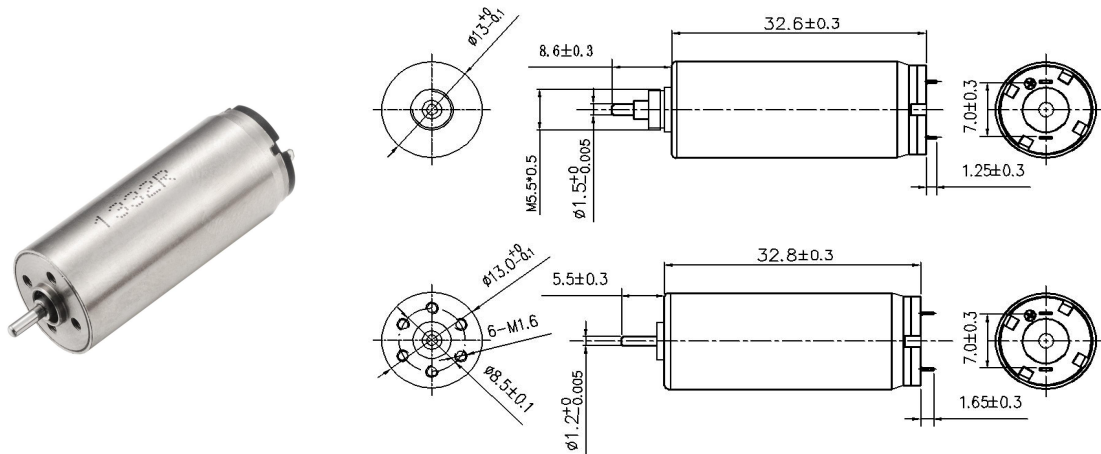


Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		01A	02A	03A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	3	3	3		
2 空载转速 (No load speed)	rpm	11300	14780	16950		
3 空载电流 (No load current)	mA	60	90	120		
4 额定转速 (Nominal speed)	rpm	9690	12520	14600		
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	1.5	1.5	1.5		
6 额定电流 (最大连续电流) (Nominal current)	A	0.65	0.85	0.98		
7 堵转转矩 (Stall torque)	mNm	10.4	9.8	10.8		
8 堵转电流 (Stall current)	A	4.17	5.17	6.52		
9 最大效率 (Max efficiency)	%	79	78	77		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	0.72	0.58	0.46		
11 转矩常数 (Torque constant)	mNm/A	2.48	1.90	1.66		
12 速度常数 (Speed constant)	rpm/V	3767	4927	5650		



1332R Coreless Brush Motor



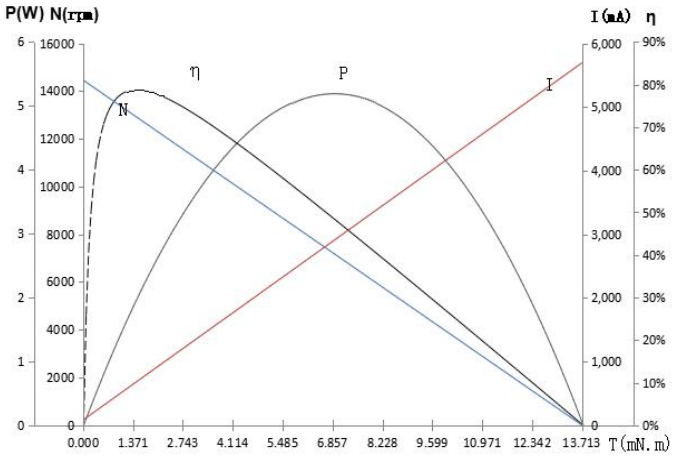
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		15A	29A	37A	24A	17A
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	3.7	3.7	3.8	5	12
2 空载转速 (No load speed)	rpm	14460	12000	16940	10000	9040
3 空载电流 (No load current)	mA	80	100	100	30	20
4 额定转速 (Nominal speed)	rpm	12800	10770	15400	8730	7910
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.5	1.5	1.5	1.5	1.5
6 额定电流(最大连续电流) (Nominal current)	A	0.69	0.64	0.82	0.35	0.15
7 堵转转矩 (Stall torque)	mNm	13.7	14.6	16.4	11.8	12
8 堵转电流 (Stall current)	A	5.69	5.1	7.76	2.5	1
9 最大效率 (Max efficiency)	%	79	72	78	81	72
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	0.65	0.73	0.49	2	12.42
11 转矩常数 (Torque constant)	mNm/A	2.39	2.89	2.10	4.68	12.42
12 速度常数 (Speed constant)	rpm/V	3908	3243	4458	2000	753

其他特性参数 Other characteristic parameters

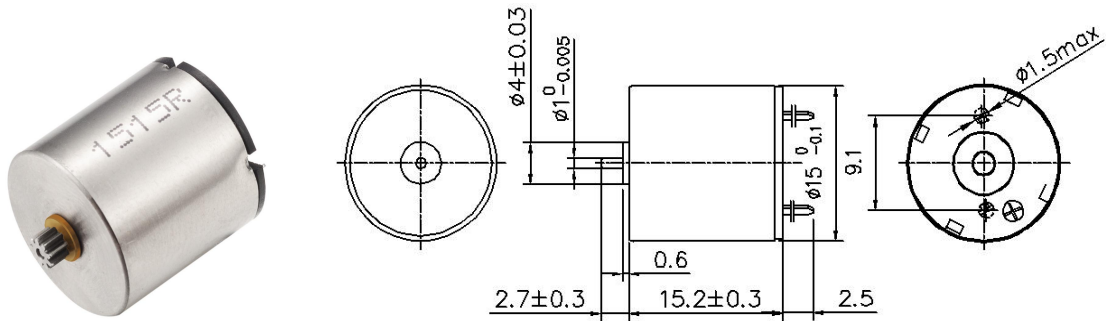
- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 25000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 20.9g

15A电机曲线图 motor curve



# 1515R Coreless Brush Motor

Coreless Brush Motors



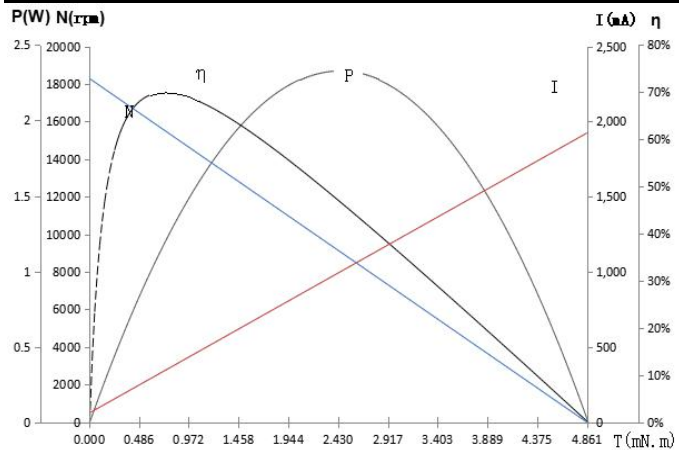
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		03A	05A	13A	06A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	5	5	7.4	12
2 空载转速 (No load speed)	rpm	18300	20500	26200	23300
3 空载电流 (No load current)	mA	60	60	65	30
4 额定转速 (Nominal speed)	rpm	16000	18400	24150	20700
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	0.6	0.6	0.6	0.6
6 额定电流(最大连续电流) (Nominal current)	A	0.28	0.32	0.25	0.14
7 堵转转矩 (Stall torque)	mNm	4.86	5.68	7.6	5.58
8 堵转电流 (Stall current)	A	1.92	2.5	2.89	1.27
9 最大效率 (Max efficiency)	%	72	74	76	70
电机常数 (Motor constant)					
10 相间电阻(Terminal resistance)	Ω	2.6	2	2.56	10.3
11 转矩常数 (Torque constant)	mNm/A	2.56	2.28	2.64	4.82
12 速度常数 (Speed constant)	rpm/V	3660	4100	3541	1942

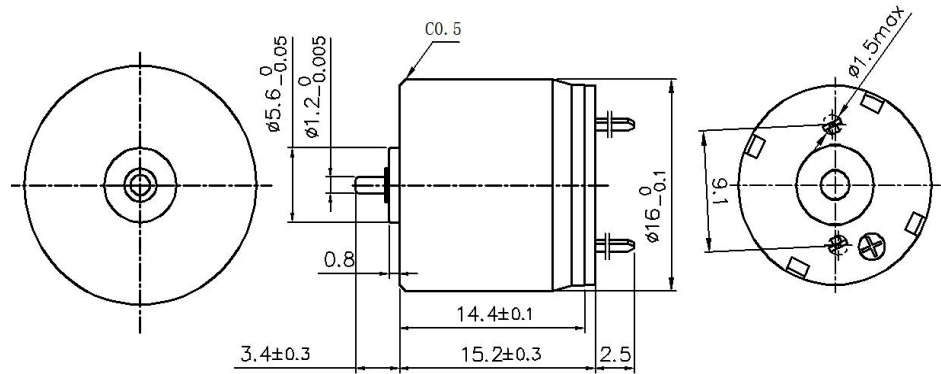
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 80℃
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 10g

## 03A电机曲线图 motor curve



1615R Coreless Brush Motor



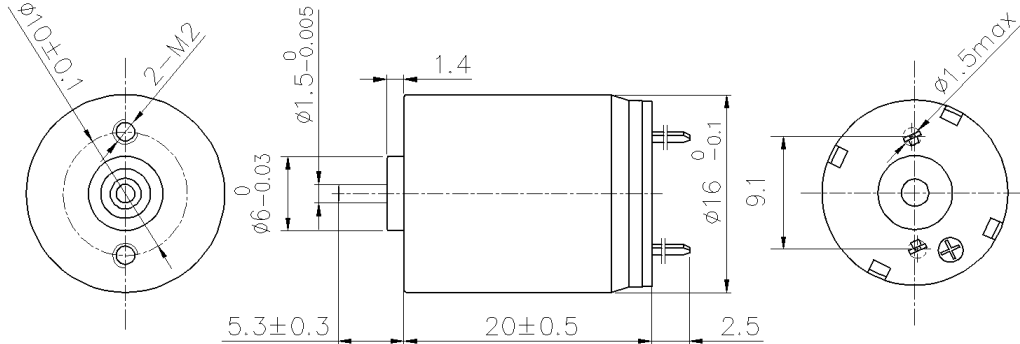
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A				
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	4.8				
2 空载转速 (No load speed)	rpm	20076				
3 空载电流 (No load current)	mA	65				
4 额定转速 (Nominal speed)	rpm	14450				
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.5				
6 额定电流(最大连续电流) (Nominal current)	A	0.7				
7 堵转转矩 (Stall torque)	mNm	5.3				
8 堵转电流 (Stall current)	A	2.39				
9 最大效率 (Max efficiency)	%	73				
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	2.01				
11 转矩常数 (Torque constant)	mNm/A	2.24				
12 速度常数 (Speed constant)	rpm/V	4183				

其他特性参数 Other characteristic parameters		01A电机曲线图 motor curve
13 环境温度范围 (Ambient temperature)	-10~40°C	<p>The graph plots Power (P) in Watts, Torque (T) in mNm, Current (I) in mA, and Efficiency (eta) against Torque (T) in mNm. The x-axis ranges from 0 to 5.304 mNm. The left y-axis shows Power (0 to 3 W) and Torque (0 to 25000 Nmm). The right y-axis shows Current (0 to 3000 mA) and Efficiency (0% to 80%). Efficiency (eta) peaks at approximately 73% at a torque of 1.5 mNm. Power (P) peaks at approximately 2.8 W at a torque of 2.652 mNm. Current (I) increases linearly from 0 to 2390 mA at 5.304 mNm. Torque (T) increases linearly from 0 to 5304 Nmm at 5.304 mNm.</p>
14 绕组最高允许温度 (Max permissible winding temperature)	80°C	
15 最高允许转速 (Max permissible speed)	30000rpm	
16 电极磁极对数 (Number of the pole pairs)	1	
17 换向器片数 (Number of the commutator segments)	5	
18 电机质量 (Weight)	15g	



## 1620R Coreless Brush Motor



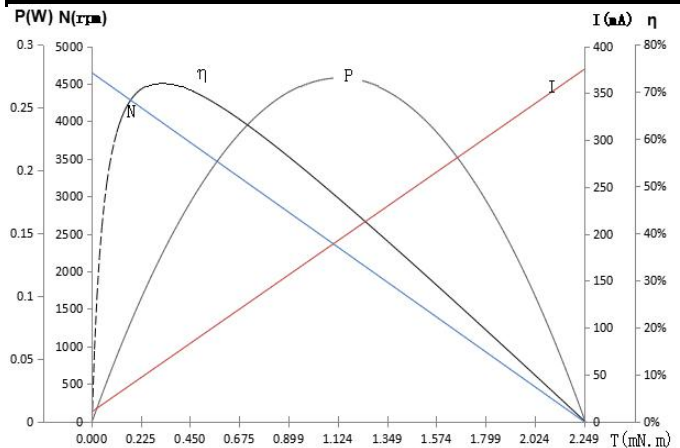
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		19A	21A	06A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	3	12	12		
2 空载转速 (No load speed)	rpm	4650	7120	12000		
3 空载电流 (No load current)	mA	10	10	20		
4 额定转速 (Nominal speed)	rpm	4231	4750	8820		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	2	2	2		
6 额定电流(最大连续电流) (Nominal current)	A	0.043	0.13	0.228		
7 堵转转矩 (Stall torque)	mNm	2.20	6	7.5		
8 堵转电流 (Stall current)	A	0.38	0.38	0.8		
9 最大效率 (Max efficiency)	%	74	72	74		
电机常数 (Motor constant)						
10 相间电阻(Terminal resistance)	$\Omega$	8.0	31.2	14.93		
11 转矩常数 (Torque constant)	mNm/A	6.04	15.77	9.36		
12 速度常数 (Speed constant)	rpm/V	1550	593	1000		

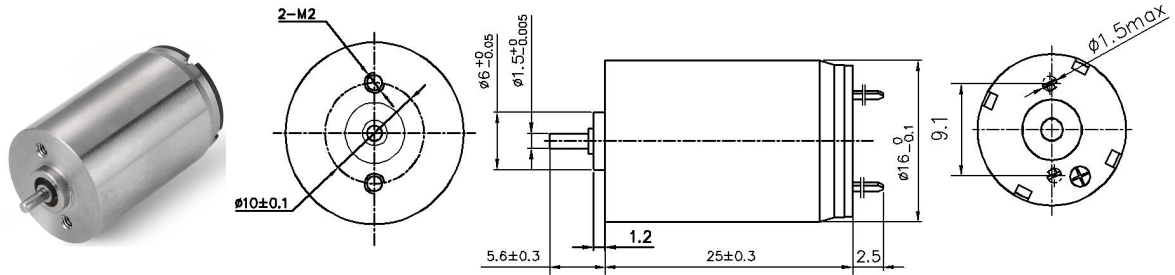
### 其他特性参数 Other characteristic parameters

13 环境温度范围 (Ambient temperature)	-10~40°C
14 绕组最高允许温度 (Max permissible winding temperature)	80°C
15 最高允许转速 (Max permissible speed)	20000rpm
16 电极磁极对数 (Number of the pole pairs)	1
17 换向器片数 (Number of the commutator segments)	5
18 电机质量 (Weight)	18g

### 19A电机曲线图 motor curve



1625R Coreless Brush Motor



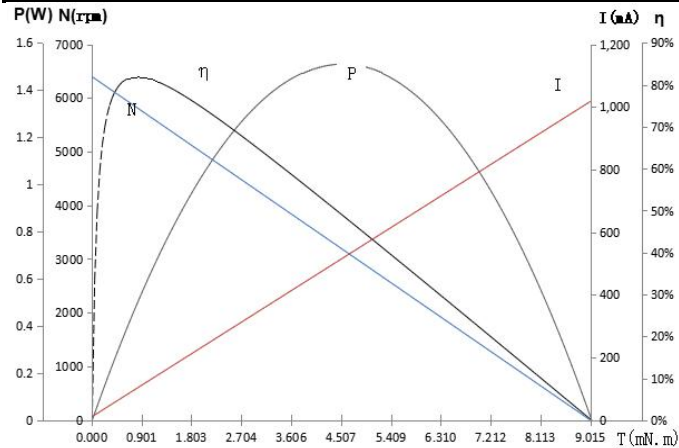
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		32A	46A	21A	01A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	4.5	5	6	12
2 空载转速 (No load speed)	rpm	7760	8260	6400	10050
3 空载电流 (No load current)	mA	25	25	10	15
4 额定转速 (Nominal speed)	rpm	6360	6880	5334	8930
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	2	2	1.5	2.1
6 额定电流(最大连续电流) (Nominal current)	A	0.39	0.372	0.176	0.2
7 堵转转矩 (Stall torque)	mNm	11.1	12.15	9	18.8
8 堵转电流 (Stall current)	A	2.03	2.13	1.02	1.66
9 最大效率 (Max efficiency)	%	79	81	79	82
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	2.22	2.35	5.9	7.23
11 转矩常数 (Torque constant)	mNm/A	5.43	5.67	8.77	11.17
12 速度常数 (Speed constant)	rpm/V	1724	1652	1067	838

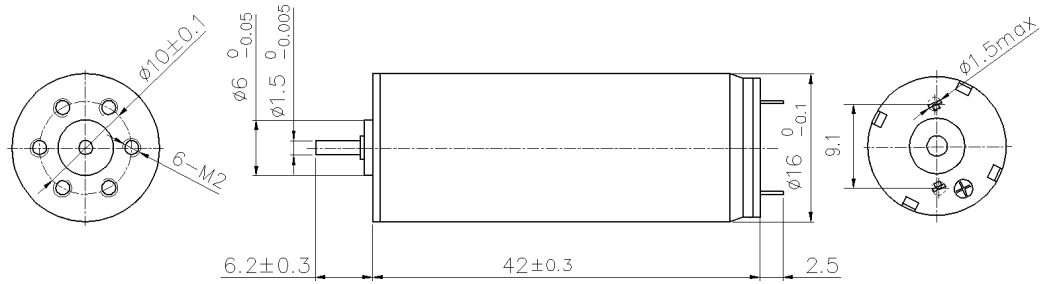
其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 24.35g

21A电机曲线图 motor curve



## 1642R Coreless Brush Motor



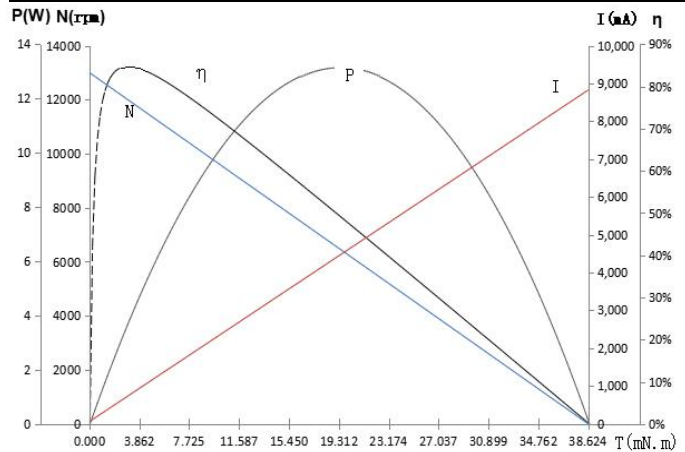
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		05A	16A	11A	08A		
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	6	12	24	24		
2 空载转速 (No load speed)	rpm	13000	10400	16570	12610		
3 空载电流 (No load current)	mA	60	20	15	10		
4 额定转速 (Nominal speed)	rpm	11980	8790	14600	11100		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	3	5	5	5		
6 额定电流(最大连续电流) (Nominal current)	A	0.72	0.48	0.38	0.29		
7 堵转转矩 (Stall torque)	mNm	38.2	32.1	42	42.2		
8 堵转电流 (Stall current)	A	8.80	2.93	3.04	2.33		
9 最大效率 (Max efficiency)	%	85	83	85	87		
电机常数 (Motor constant)							
10 相间电阻(Terminal resistance)	$\Omega$	0.68	4.09	7.89	10.29		
11 转矩常数 (Torque constant)	mNm/A	4.32	10.80	13.56	17.81		
12 速度常数 (Speed constant)	rpm/V	2167	867	690	525		

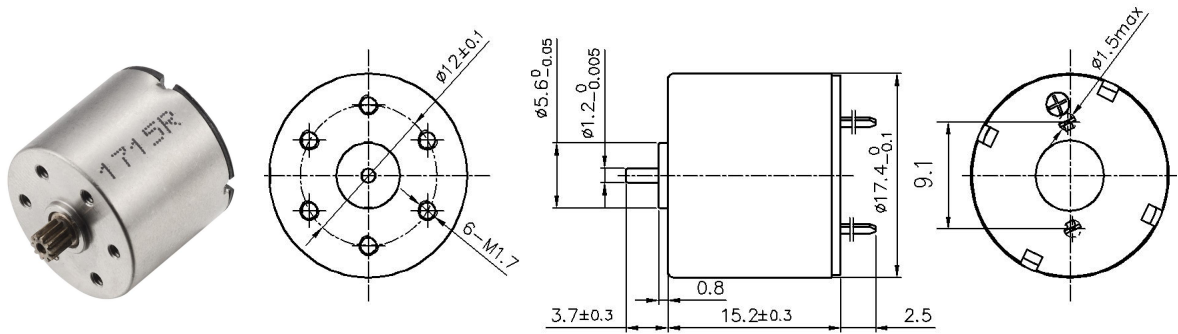
### 其他特性参数 Other characteristic parameters

13 环境温度范围 (Ambient temperature)	-10~40°C
14 绕组最高允许温度 (Max permissible winding temperature)	80°C
15 最高允许转速 (Max permissible speed)	20000rpm
16 电极磁极对数 (Number of the pole pairs)	1
17 换向器片数 (Number of the commutator segments)	5
18 电机质量 (Weight)	40g

### 05A电机曲线图 motor curve



1715R Coreless Brush Motor



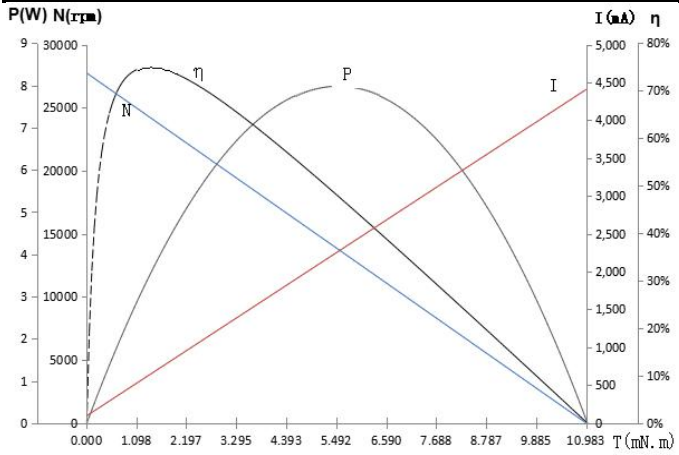
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		02A	01A	09A	04A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	5	7.4	7.4	8
2 空载转速 (No load speed)	rpm	21530	27760	28600	21880
3 空载电流 (No load current)	mA	65	90	75	60
4 额定转速 (Nominal speed)	rpm	17000	22730	24300	17140
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	2	2	2	2
6 额定电流(最大连续电流) (Nominal current)	A	1	0.9	0.9	0.63
7 堵转转矩 (Stall torque)	mNm	9.5	11.0	13.46	9.13
8 堵转电流 (Stall current)	A	4.3	4.4	5.5	2.7
9 最大效率 (Max efficiency)	%	79	72	78	73
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	1.15	1.68	1.34	2.99
11 转矩常数 (Torque constant)	mNm/A	2.17	2.49	2.42	3.42
12 速度常数 (Speed constant)	rpm/V	4306	3751	3865	2735

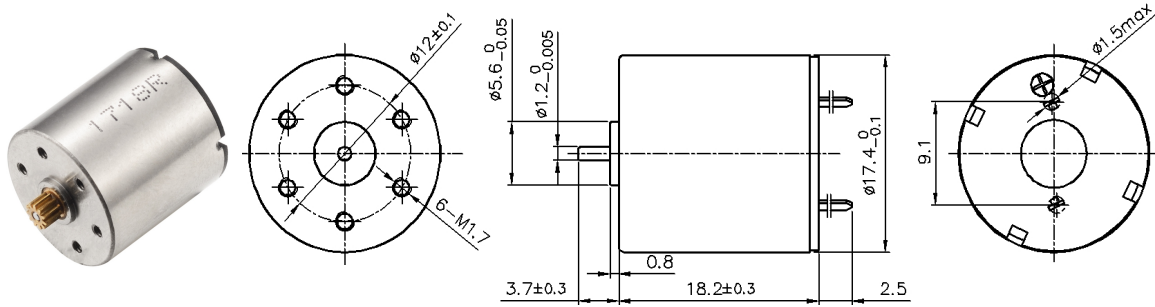
其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 16.3g

01A电机曲线图 motor curve



# 1718R Coreless Brush Motor



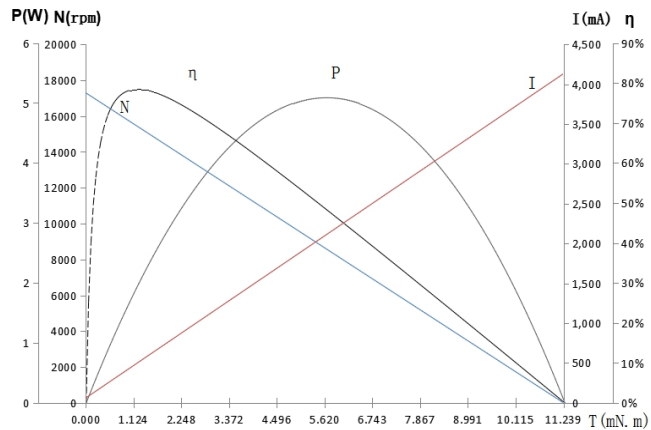
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		16B	01A	37B	97A	85B
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	5	7.4	7.4	11.1	12
2 空载转速 (No load speed)	rpm	17300	25200	20500	22200	24790
3 空载电流 (No load current)	mA	60	90	40	35	40
4 额定转速 (Nominal speed)	rpm	14870	22550	18650	19090	20950
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	1.6	2	1.5	2.5	2.5
6 额定电流 (最大连续电流) (Nominal current)	A	0.63	0.8	0.47	0.58	0.59
7 堵转转矩 (Stall torque)	mNm	11.2	19	16.6	17.7	16.3
8 堵转电流 (Stall current)	A	4.1	6.85	4.8	3.8	3.57
9 最大效率 (Max efficiency)	%	79	80	84	78	80
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	1.21	1.1	1.53	2.96	3.36
11 转矩常数 (Torque constant)	mNm/A	2.70	2.75	3.38	4.68	4.53
12 速度常数 (Speed constant)	rpm/V	3460	3405	2770	2000	2066

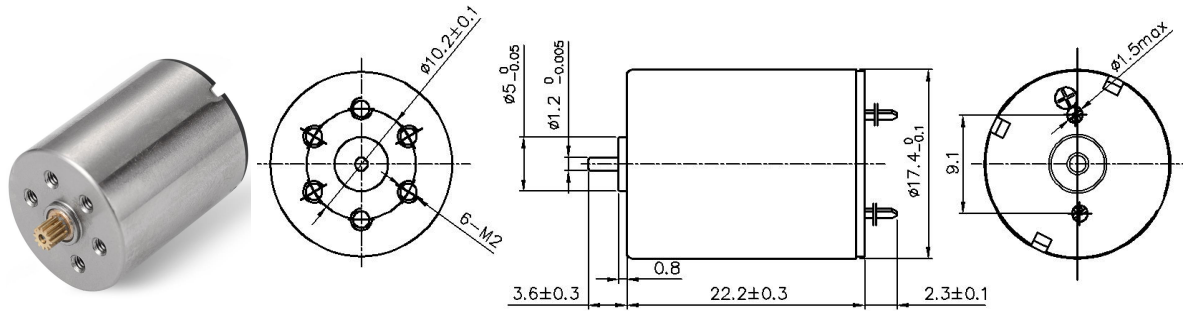
## 其他特性参数 Other characteristic parameters

## 16B电机曲线图 motor curve

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 20.3g



1722R Coreless Brush Motor



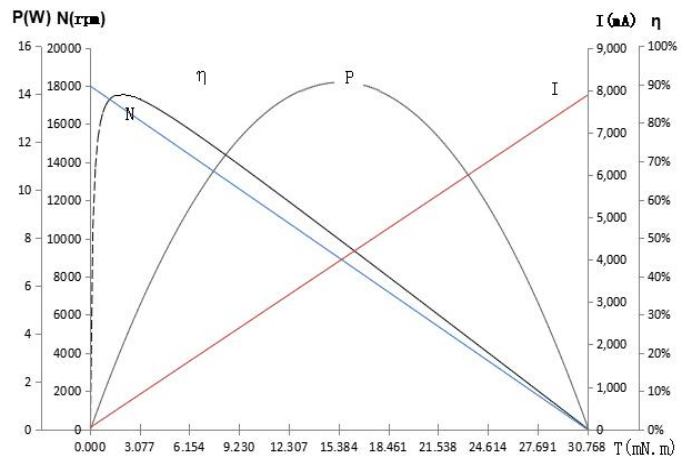
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		14A	20A	56A	60A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	7.4	7.4	7.4	12
2 空载转速 (No load speed)	rpm	18000	20060	25650	25620
3 空载电流 (No load current)	mA	60	60	100	60
4 额定转速 (Nominal speed)	rpm	16200	18150	23830	23820
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	3	2.9	2.85	2.95
6 额定电流(最大连续电流) (Nominal current)	A	0.84	0.89	1.1	0.72
7 堵转转矩 (Stall torque)	mNm	30.77	30.5	40.5	42
8 堵转电流 (Stall current)	A	7.87	8.7	14.8	9.45
9 最大效率 (Max efficiency)	%	84	83	85	85
电机常数 (Motor constant)					
10 相间电阻(Terminal resistance)	$\Omega$	0.94	0.85	0.5	1.27
11 转矩常数 (Torque constant)	mNm/A	3.85	3.45	2.70	4.38
12 速度常数 (Speed constant)	rpm/V	2432	2711	3466	2135

其他特性参数 Other characteristic parameters

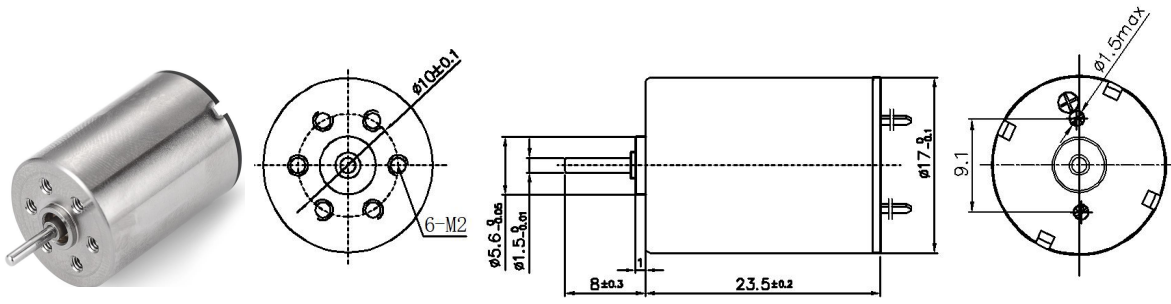
- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 80℃
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 26.2g

14A电机曲线图 motor curve



# 1723R Coreless Brush Motor

Coreless Brush Motors



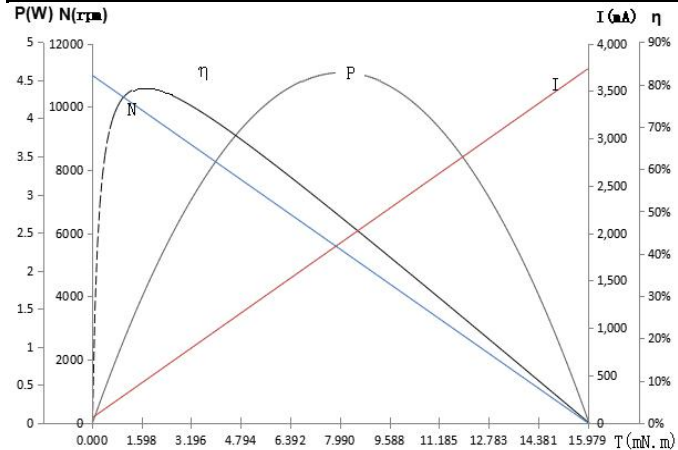
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		15A	48A	61A	30A	43A
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	5	5	8	10	10
2 空载转速 (No load speed)	rpm	11000	9450	6630	10270	9880
3 空载电流 (No load current)	mA	50	40	12	15	15
4 额定转速 (Nominal speed)	rpm	8800	7500	5250	7750	7900
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	3.2	3.06	2.37	3.5	3.4
6 额定电流 (最大连续电流) (Nominal current)	A	0.79	0.64	0.22	0.39	0.37
7 堵转转矩 (Stall torque)	mNm	16.0	14.7	11.4	14.2	17
8 堵转电流 (Stall current)	A	3.7	2.96	1	1.54	1.77
9 最大效率 (Max efficiency)	%	80	80	81	82	83
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	1.34	1.69	7.98	6.48	5.65
11 转矩常数 (Torque constant)	mNm/A	4.25	4.95	11.29	9.11	9.47
12 速度常数 (Speed constant)	rpm/V	2200	1890	829	1027	988

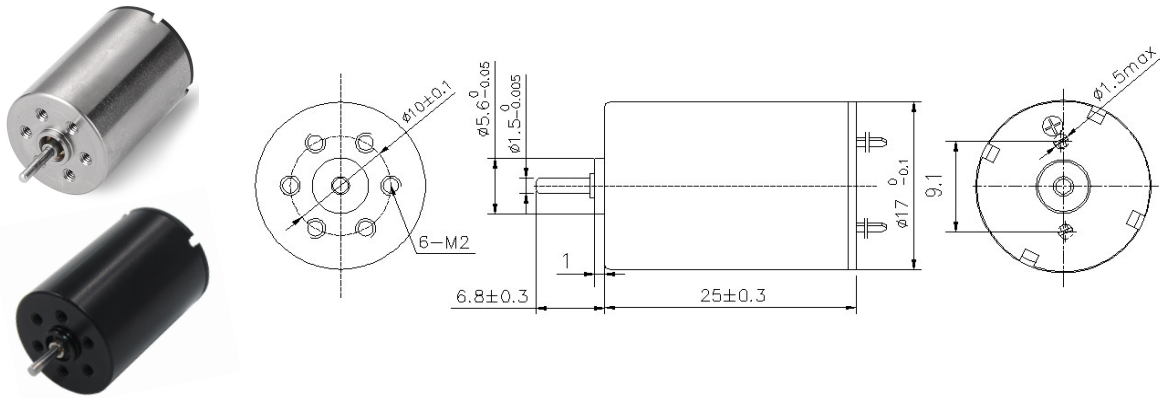
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 80℃
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 25.7g

## 15A电机曲线图 motor curve



# 1725R Coreless Brush Motor (sleeve or ball bearing)



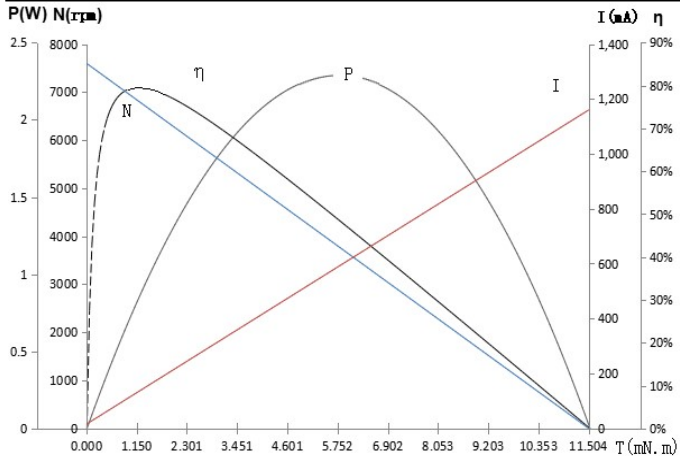
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		27A	02A	09A	36A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	8	12	12	12
2 空载转速 (No load speed)	rpm	7600	9680	7790	12390
3 空载电流 (No load current)	mA	15	20	15	20
4 额定转速 (Nominal speed)	rpm	6120	8650	6660	10900
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	2.2	2.58	2.5	2.55
6 额定电流(最大连续电流) (Nominal current)	A	0.23	0.24	0.18	0.3
7 堵转转矩 (Stall torque)	mNm	11.5	24.3	17.2	21.1
8 堵转电流 (Stall current)	A	1.2	2.1	1.2	2.3
9 最大效率 (Max efficiency)	%	80	82	80	82
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	6.9	5.78	10.12	5.21
11 转矩常数 (Torque constant)	mNm/A	9.85	11.60	14.42	9.06
12 速度常数 (Speed constant)	rpm/V	950	807	649	1033

## 其他特性参数 Other characteristic parameters

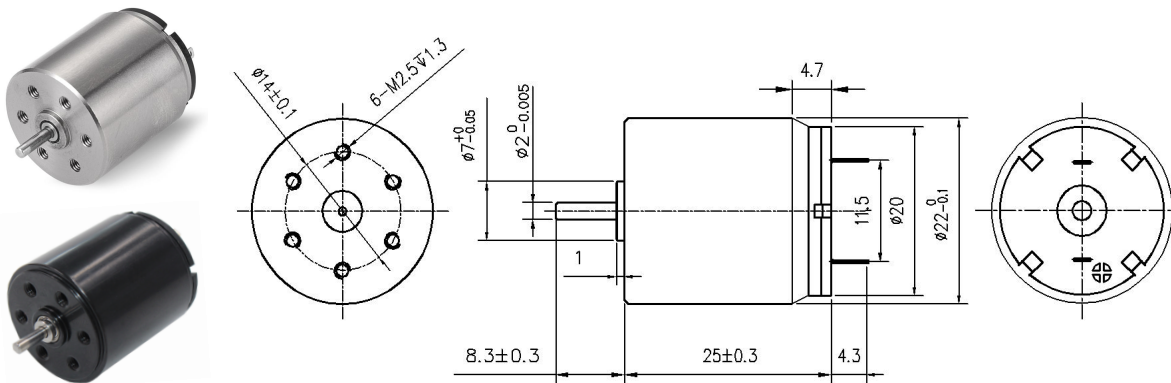
- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 80℃
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 27.2g

## 27A电机曲线图 motor curve





## 2225R Coreless Brush Motor (sleeve or ball bearing)



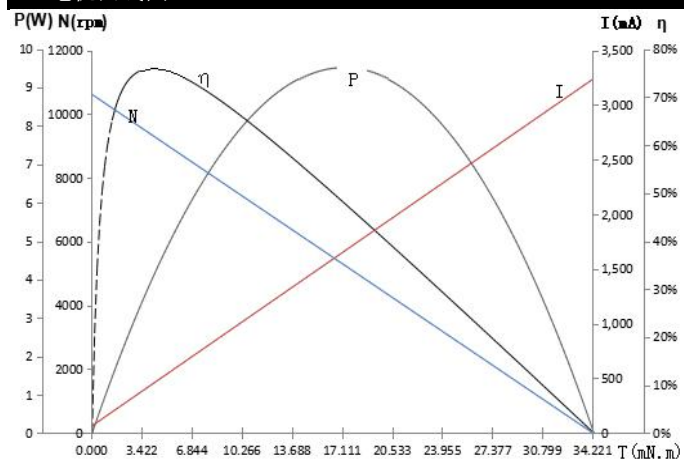
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		21A	12A	22A	01A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	7	12	12	12
2 空载转速 (No load speed)	rpm	8720	10570	6290	10630
3 空载电流 (No load current)	mA	50	60	25	60
4 额定转速 (Nominal speed)	rpm	7410	9300	5060	9808
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	5	5	5.07	5
6 额定电流 (最大连续电流) (Nominal current)	A	0.71	0.52	0.3	0.52
7 堵转转矩 (Stall torque)	mNm	33.2	41.6	25.6	34.2
8 堵转电流 (Stall current)	A	4.38	3.9	1.43	3.23
9 最大效率 (Max efficiency)	%	80	78	77	77
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	$\Omega$	1.6	3.08	8.4	3.71
11 转矩常数 (Torque constant)	mNm/A	7.51	10.63	17.86	10.57
12 速度常数 (Speed constant)	rpm/V	1246	881	524	886

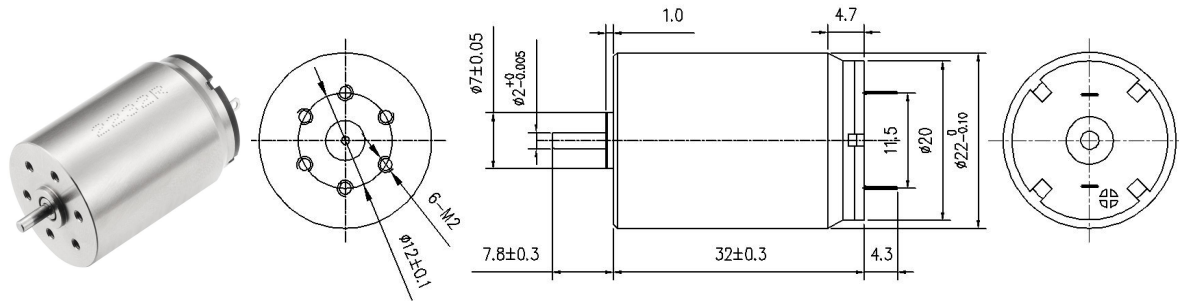
### 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 44.5g

### 01A电机曲线图 motor curve



2232R Coreless Brush Motor



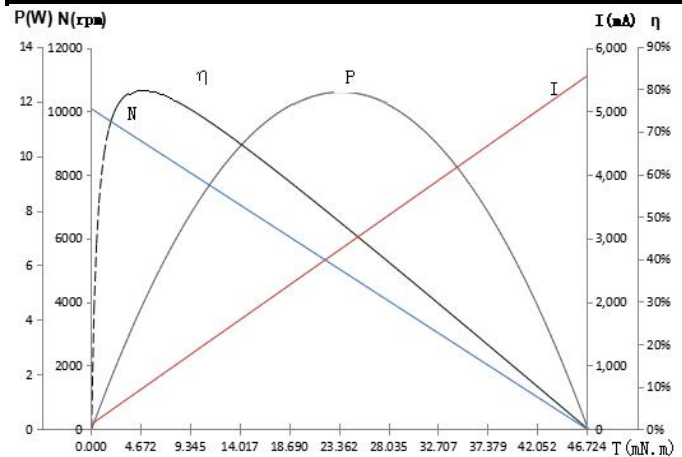
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		33A	34A	04A	35A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	9	10	12	24
2 空载转速 (No load speed)	rpm	10090	8800	9820	6570
3 空载电流 (No load current)	mA	70	60	50	15
4 额定转速 (Nominal speed)	rpm	8740	7790	8880	5740
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	6.2	7	7	7
6 额定电流(最大连续电流) (Nominal current)	A	0.79	0.7	0.65	0.22
7 堵转转矩 (Stall torque)	mNm	46.7	61	73.1	55.7
8 堵转电流 (Stall current)	A	5.5	5.6	6.3	1.6
9 最大效率 (Max efficiency)	%	79	82	83	80
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	1.62	1.77	1.9	14.88
11 转矩常数 (Torque constant)	mNm/A	8.35	10.64	11.44	34.19
12 速度常数 (Speed constant)	rpm/V	1121	880	818	274

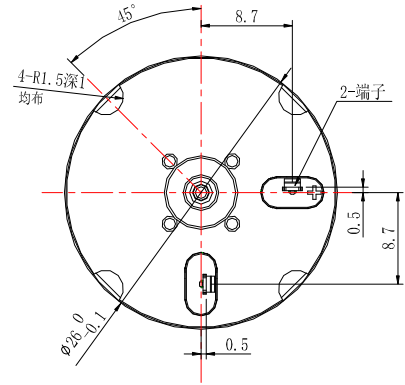
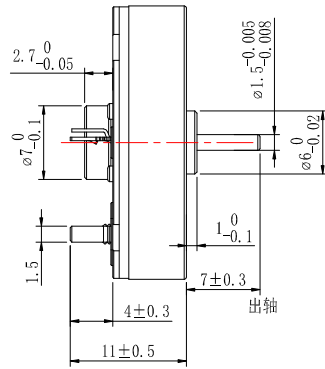
其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 80℃
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 5
- 18 电机质量 (Weight) 59.4g

33A电机曲线图 motor curve



## 2607R Coreless Brush Motor (Ball bearing)



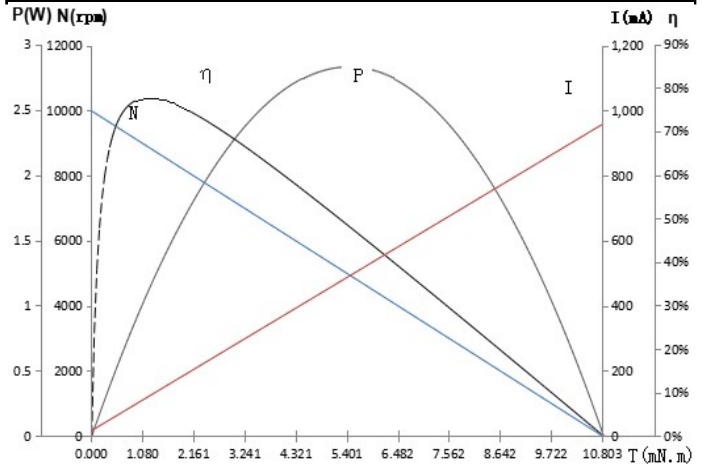
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A	04A	03A	05A		
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	12	9	6	5		
2 空载转速 (No load speed)	rpm	10000	10400	6600	11500		
3 空载电流 (No load current)	mA	15	20	10	45		
4 额定转速 (Nominal speed)	rpm	8600	8112	5940	10120		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.54	2.25	0.71	1.25		
6 额定电流(最大连续电流) (Nominal current)	A	0.15	0.29	0.08	0.33		
7 堵转转矩 (Stall torque)	mNm	10.80	10.24	7	10.3		
8 堵转电流 (Stall current)	A	0.96	1.24	0.82	2.53		
9 最大效率 (Max efficiency)	%	78	78.8	81	77		
电机常数 (Motor constant)							
10 相间电阻 (Terminal resistance)	Ω	12.53	7.26	7.3	1.98		
11 转矩常数 (Torque constant)	mNm/A	11.23	8.26	8.67	4.15		
12 速度常数 (Speed constant)	rpm/V	833	1155.5	1100	2300		

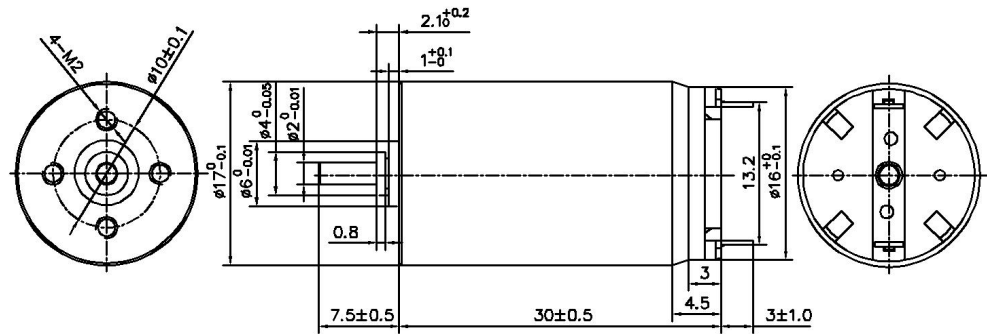
### 其他特性参数 Other characteristic parameters

13 环境温度范围 (Ambient temperature)	-10~40°C
14 绕组最高允许温度 (Max permissible winding temperature)	120°C
15 最高允许转速 (Max permissible speed)	20000rpm
16 电极磁极对数 (Number of the pole pairs)	2
17 换向器片数 (Number of the commutator segments)	6
18 电机质量 (Weight)	20.6g
19 轴承 (Ball Bearing)	滚珠轴承

### 01A电机曲线图 motor curve



1730RC Coreless Graphite Brush Motor



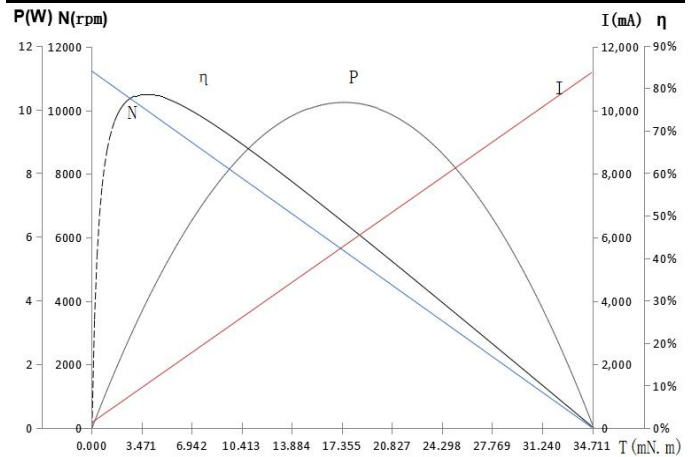
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A				
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	3.7				
2 空载转速 (No load speed)	rpm	11250				
3 空载电流 (No load current)	mA	160				
4 额定转速 (Nominal speed)	rpm	10240				
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	3.17				
6 额定电流(最大连续电流) (Nominal current)	A	1.15				
7 堵转转矩 (Stall torque)	mNm	34.7				
8 堵转电流 (Stall current)	A	11.2				
9 最大效率 (Max efficiency)	%	79				
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	0.33				
11 转矩常数 (Torque constant)	mNm/A	3.08				
12 速度常数 (Speed constant)	rpm/V	3041				

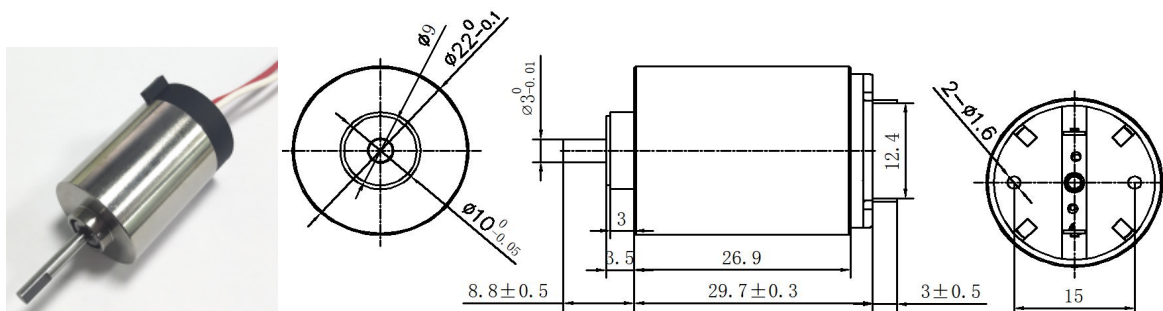
其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature)  $-10 \sim 40^\circ\text{C}$
- 14 绕组最高允许温度 (Max permissible winding temperature)  $80^\circ\text{C}$
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 7
- 18 电机质量 (Weight) 28g

A电机曲线图 motor curve



# 2230RC Coreless Graphite Brush Motor



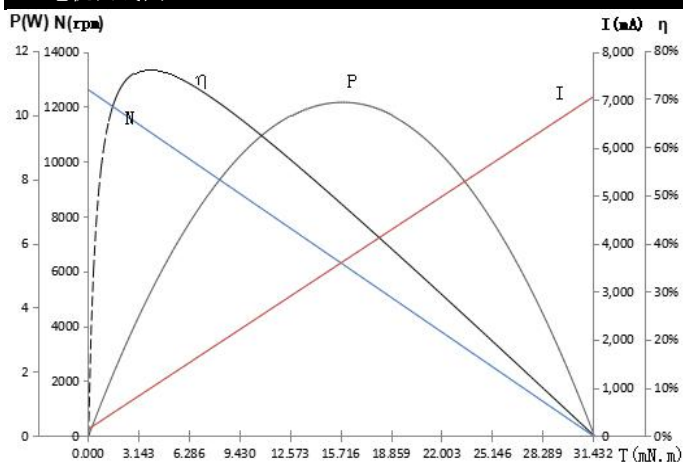
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A	02A	03A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	6	5	12		
2 空载转速 (No load speed)	rpm	12630	6550	14580		
3 空载电流 (No load current)	mA	130	90	95		
4 额定转速 (Nominal speed)	rpm	10520	5500	13630		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	5.28	5.5	5.6		
6 额定电流(最大连续电流) (Nominal current)	A	1.27	0.83	0.8		
7 堵转转矩 (Stall torque)	mNm	31.4	33.7	85.8		
8 堵转电流 (Stall current)	A	7.1	4.72	11.01		
9 最大效率 (Max efficiency)	%	77	77	83		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	0.85	1.06	1.09		
11 转矩常数 (Torque constant)	mNm/A	4.45	7.14	7.70		
12 速度常数 (Speed constant)	rpm/V	2105	1310	1215		

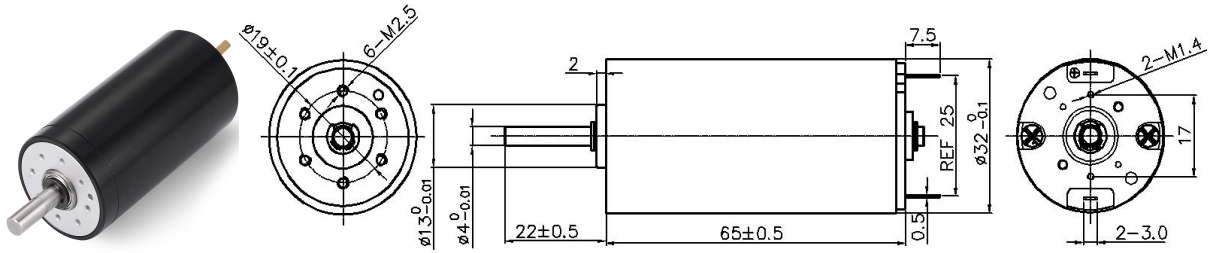
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 18000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 7
- 18 电机质量 (Weight) 58g

## 01A电机曲线图 motor curve



### 3265RC Coreless Graphite Brush Motor



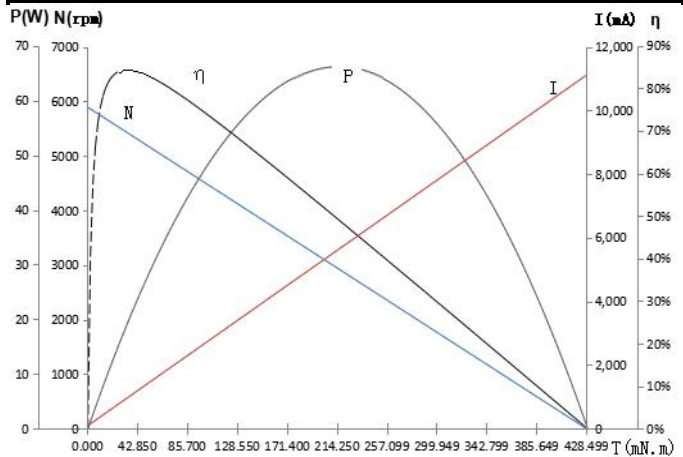
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A	02A			
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	12			
2 空载转速 (No load speed)	rpm	5900	5200			
3 空载电流 (No load current)	mA	80	140			
4 额定转速 (Nominal speed)	rpm	5486	4940			
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	30	20.7			
6 额定电流(最大连续电流) (Nominal current)	A	1.08	1.06			
7 堵转转矩 (Stall torque)	mNm	428.5	410.1			
8 堵转电流 (Stall current)	A	11.1	18.8			
9 最大效率 (Max efficiency)	%	84	85			
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	2.16	0.64			
11 转矩常数 (Torque constant)	mNm/A	38.07	21.60			
12 速度常数 (Speed constant)	rpm/V	246	433			

#### 其他特性参数 Other characteristic parameters

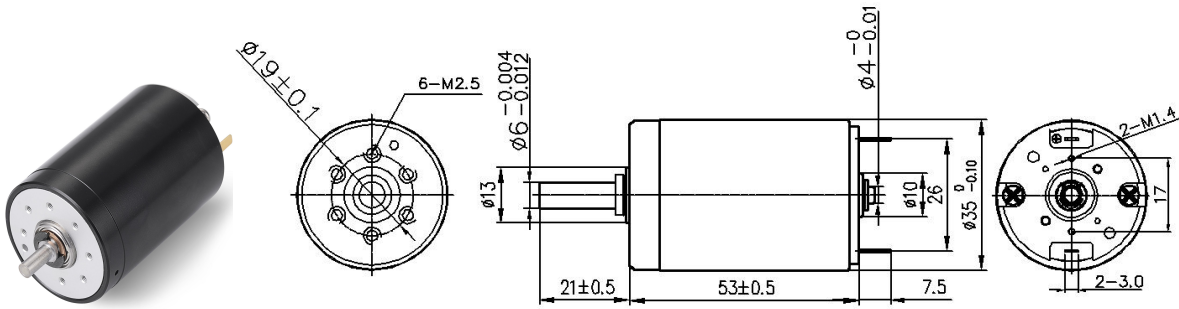
13 环境温度范围 (Ambient temperature)	-10~40℃
14 绕组最高允许温度 (Max permissible winding temperature)	80℃
15 最高允许转速 (Max permissible speed)	10000rpm
16 电极磁极对数 (Number of the pole pairs)	1
17 换向器片数 (Number of the commutator segments)	13
18 电机质量 (Weight)	225g

#### 01A电机曲线图 motor curve



# 3553RC Coreless Graphite Brush Motor

Coreless Brush Motors



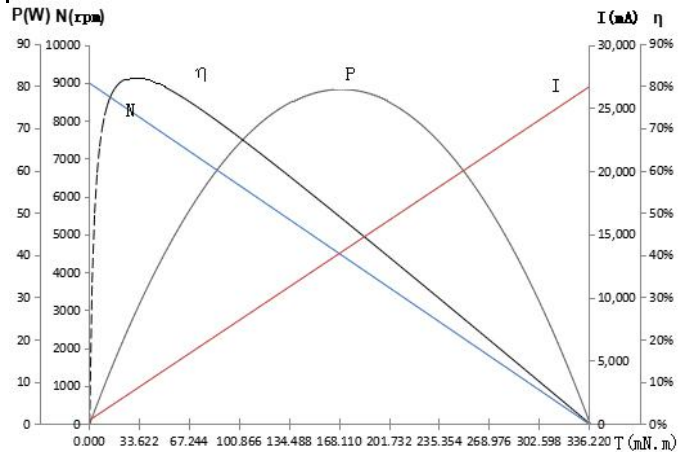
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		02A	01A	03A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	12	24	24		
2 空载转速 (No load speed)	rpm	9000	6500	7000		
3 空载电流 (No load current)	mA	260	90	90		
4 额定转速 (Nominal speed)	rpm	8410	5680	6300		
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	22	32.5	31.4		
6 额定电流 (最大连续电流) (Nominal current)	A	1.97	1.03	1.06		
7 堵转转矩 (Stall torque)	mNm	336.2	257.2	311.4		
8 堵转电流 (Stall current)	A	26.7	7.4	9.6		
9 最大效率 (Max efficiency)	%	82	78	81		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	0.45	3.25	2.5		
11 转矩常数 (Torque constant)	mNm/A	12.48	34.56	32.09		
12 速度常数 (Speed constant)	rpm/V	750	271	292		

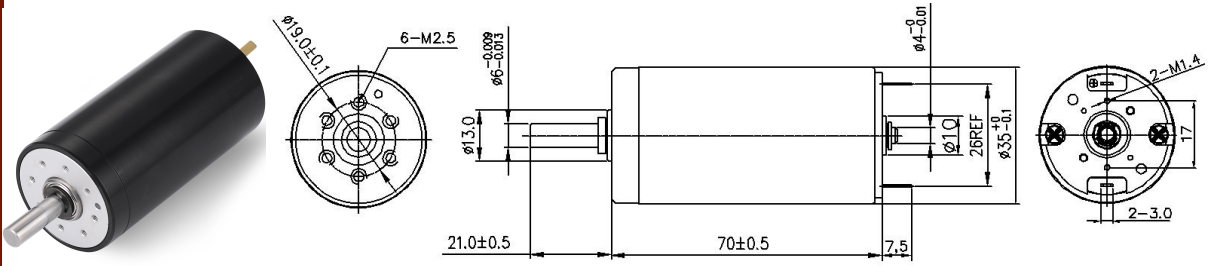
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 80℃
- 15 最高允许转速 (Max permissible speed) 10000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 13
- 18 电机质量 (Weight) 217.4g

## 02A电机曲线图 motor curve



### 3570RC Coreless Graphite Brush Motor



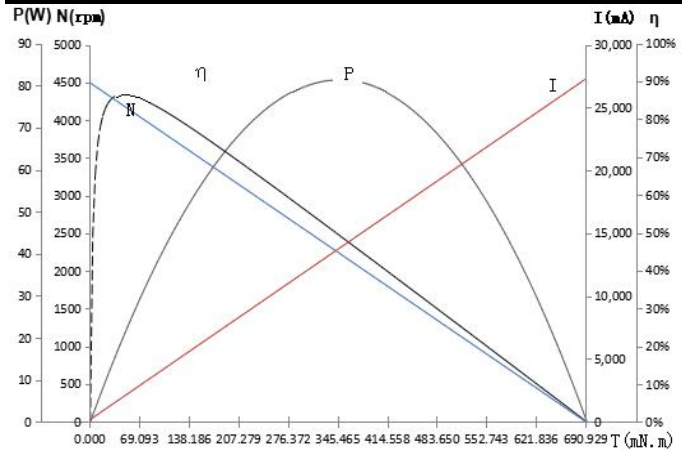
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		13A	12A	05A	08A	01A	03A
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	12	15	18	24	24	24
2 空载转速 (No load speed)	rpm	4500	7850	4100	5920	4300	5600
3 空载电流 (No load current)	mA	140	210	110	120	60	110
4 额定转速 (Nominal speed)	rpm	4270	7570	3874	5620	4082	5310
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	34.7	35.5	35.7	43.8	36.5	37.7
6 额定电流(最大连续电流) (Nominal current)	A	1.5	2.15	0.95	1.25	0.74	1
7 堵转转矩 (Stall torque)	mNm	690.9	1009.9	647.7	871.9	720	728
8 堵转电流 (Stall current)	A	27.3	55.56	15.5	22.6	13.7	18.46
9 最大效率 (Max efficiency)	%	87	88	85	86	88	86
电机常数 (Motor constant)							
10 相间电阻 (Terminal resistance)	Ω	0.44	0.27	1.16	1.06	1.75	1.3
11 转矩常数 (Torque constant)	mNm/A	24.96	17.88	41.09	37.94	52.24	40.11
12 速度常数 (Speed constant)	rpm/V	375	523	228	247	179	233

#### 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 80°C
- 15 最高允许转速 (Max permissible speed) 8000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 换向器片数 (Number of the commutator segments) 13
- 18 电机质量 (Weight) 319g

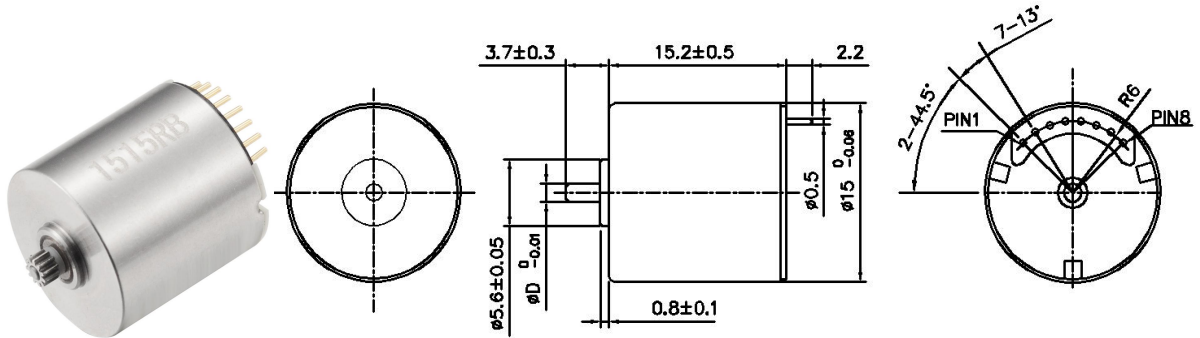
#### 13A电机曲线图 motor curve







1515RB Coreless BLDC Motor



轴径  $\phi D$ : 1.2、1.5mm 可选

Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		03A	06A	12C		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	6	7.4	7.4		
2 空载转速 (No load speed)	rpm	29560	32720	35000		
3 空载电流 (No load current)	mA	250	230	220		
4 额定转速 (Nominal speed)	rpm	22280	25500	28300		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.4	1.4	1.8		
6 额定电流(最大连续电流) (Nominal current)	A	0.9	0.85	1		
7 堵转转矩 (Stall torque)	mNm	6.0	6.3	9		
8 堵转电流 (Stall current)	A	3.40	3.13	4.7		
9 最大效率 (Max efficiency)	%	61	61	67		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	1.77	2.36	1.57		
11 转矩常数 (Torque constant)	mNm/A	1.90	2.12	1.98		
12 速度常数 (Speed constant)	rpm/V	4927	4422	4730		

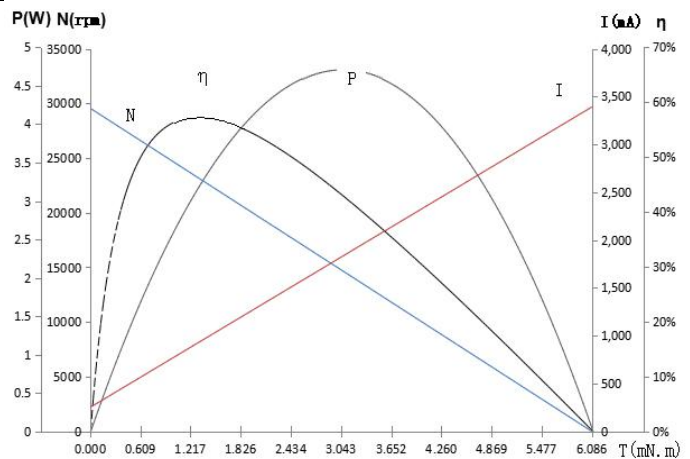
其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 40000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 15g

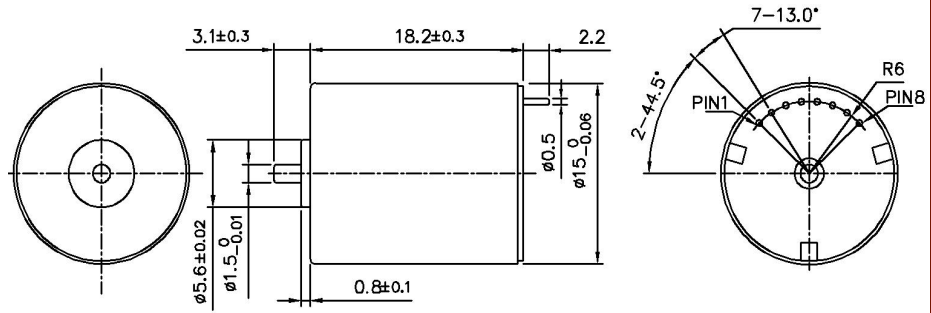
端子定义 (terminals):

- PIN1 C
- PIN2 GND
- PIN3 HB
- PIN4 HA
- PIN5 B
- PIN6 VCC
- PIN7 HC
- PIN8 A

03A电机曲线图 motor curve



# 1518RB Coreless BLDC Motor

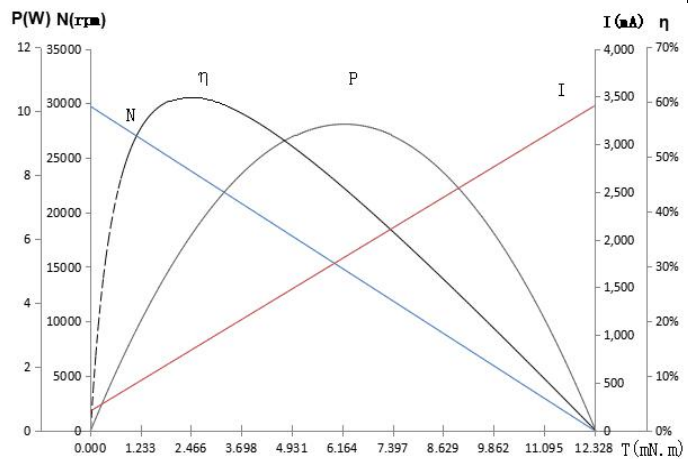


Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		01A				
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	12				
2 空载转速 (No load speed)	rpm	29740				
3 空载电流 (No load current)	mA	200				
4 额定转速 (Nominal speed)	rpm	27360				
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	1				
6 额定电流 (最大连续电流) (Nominal current)	A	0.46				
7 堵转转矩 (Stall torque)	mNm	12.3				
8 堵转电流 (Stall current)	A	3.40				
9 最大效率 (Max efficiency)	%	64				
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	3.53				
11 转矩常数 (Torque constant)	mNm/A	3.78				
12 速度常数 (Speed constant)	rpm/V	2478				

**其他特性参数 Other characteristic parameters**      **01A电机曲线图 motor curve**

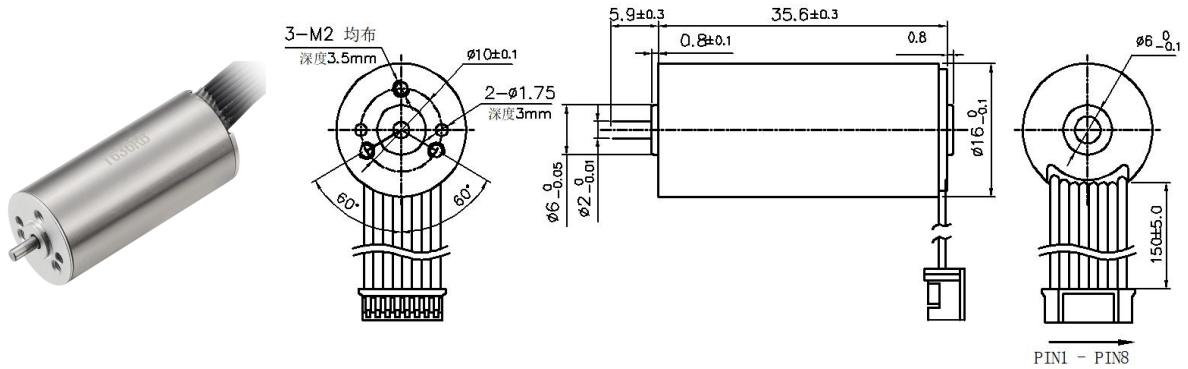
- 13 环境温度范围 (Ambient temperature)      -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature)      120℃
- 15 最高允许转速 (Max permissible speed)      30000rpm
- 16 电极磁极对数 (Number of the pole pairs)      1
- 17 相数 (Number of Phases)      3
- 18 电机质量 (Weight)      16g



端子定义 (terminals):

- PIN1      C
- PIN2      GND
- PIN3      HB
- PIN4      HA
- PIN5      B
- PIN6      VCC
- PIN7      HC
- PIN8      A

1636RB Coreless BLDC Motor



Typical Applications:舵机、智能小机器人

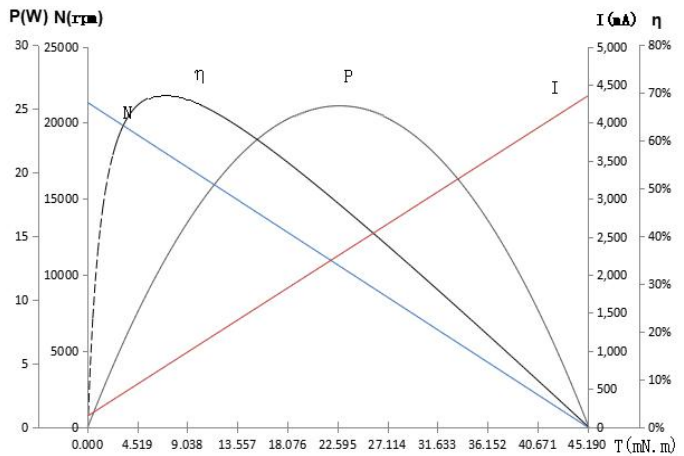
电机参数 (Motor data)		09A	08A	04A	01A	10A
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	6	7.4	12	24	24
2 空载转速 (No load speed)	rpm	11670	8700	20850	21340	13100
3 空载电流 (No load current)	mA	160	120	220	140	100
4 额定转速 (Nominal speed)	rpm	10170	6900	18060	18520	9430
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	3	3.4	6	6	8
6 额定电流(最大连续电流) (Nominal current)	A	0.77	0.48	1.3	0.72	0.535
7 堵转转矩 (Stall torque)	mNm	23.3	16.2	44.6	45.2	28.2
8 堵转电流 (Stall current)	A	4.91	2.12	8.33	4.35	1.7
9 最大效率 (Max efficiency)	%	70	70	73	69	65
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	1.22	3.49	1.44	5.52	14
11 转矩常数 (Torque constant)	mNm/A	4.81	7.96	5.39	10.53	17.15
12 速度常数 (Speed constant)	rpm/V	1945	1176	1738	889	546

其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 38.1g

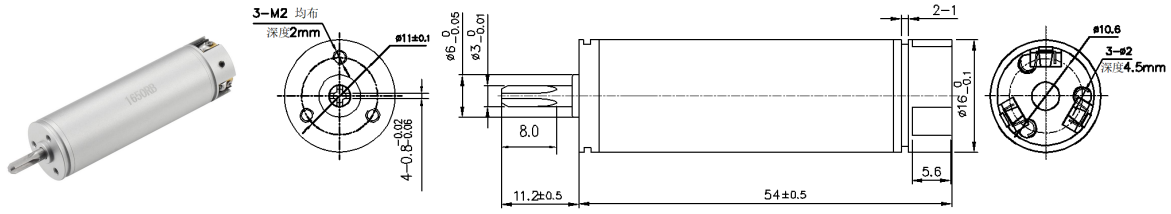
端子定义 (terminals):  
 引线规格 (cable type): P 3302/26#  
 PIN1 VCC  
 PIN2 HC  
 PIN3 HB  
 PIN4 HA  
 PIN5 GND  
 PIN6 C  
 PIN7 B  
 PIN8 A

01A电机曲线图 motor curve



# 1650RB Coreless BLDC Motor

Slotless BLDC Motors



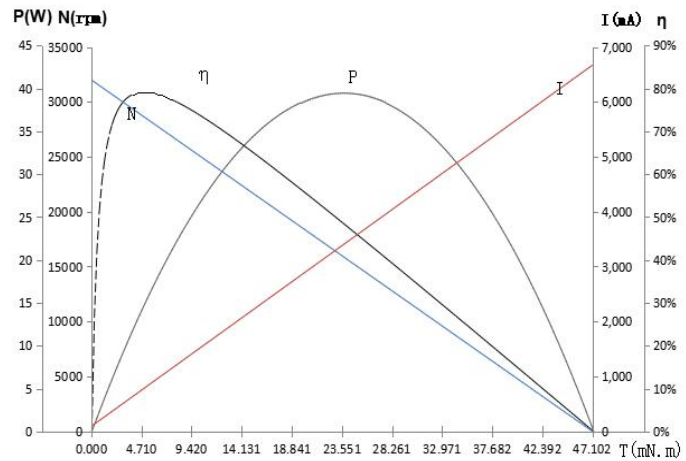
典型应用Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		22D	33D	35D	24D	18D	19C
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	12	12	16.8	24	24	24
2 空载转速 (No load speed)	rpm	29300	25000	29300	26000	31800	38300
3 空载电流 (No load current)	mA	150	130	130	90	100	130
4 额定转速 (Nominal speed)	rpm	26370	22250	26000	23000	28460	34850
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	4.04	3.9	4.5	5.3	5.3	7.5
6 额定电流(最大连续电流) (Nominal current)	A	1.1	0.97	0.95	0.68	0.83	1.38
7 堵转转矩 (Stall torque)	mNm	39.90	35.4	40.6	45	50.5	83
8 堵转电流 (Stall current)	A	10.30	7.8	5.4	5.2	7.1	14
9 最大效率 (Max efficiency)	%	83	79	78	78	86	83
电机常数 (Motor constant)							
10 相间电阻 (Terminal resistance)	Ω	1.16	1.53	2.23	4.59	3.4	1.71
11 转矩常数 (Torque constant)	mNm/A	3.83	4.49	5.37	8.64	7.06	5.86
12 速度常数 (Speed constant)	rpm/V	2442	2083	1744	1083	1325	1596

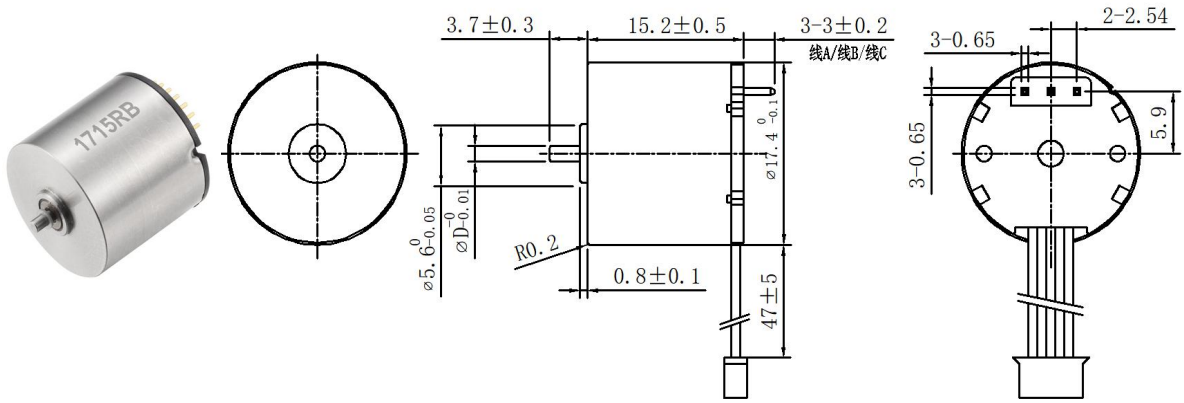
## 其他特性参数Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 50000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 44.6g

## 18D电机曲线图 motor curve



1715RB Coreless BLDC Motor



轴径  $\phi D$ : 1.2、1.5mm 可选

PIN1 - PIN5

Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		01A	04A	16B		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	6	6	6		
2 空载转速 (No load speed)	rpm	33620	28670	37500		
3 空载电流 (No load current)	mA	250	200	300		
4 额定转速 (Nominal speed)	rpm	29200	24700	33350		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1	1	1.2		
6 额定电流(最大连续电流) (Nominal current)	A	0.82	0.7	1		
7 堵转转矩 (Stall torque)	mNm	8.02	7.09	10.8		
8 堵转电流 (Stall current)	A	4.94	3.8	7.4		
9 最大效率 (Max efficiency)	%	66	64	69		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	1.21	1.6	0.81		
11 转矩常数 (Torque constant)	mNm/A	1.67	1.96	1.5		
12 速度常数 (Speed constant)	rpm/V	5603	4778	6250		

其他特性参数 Other characteristic parameters

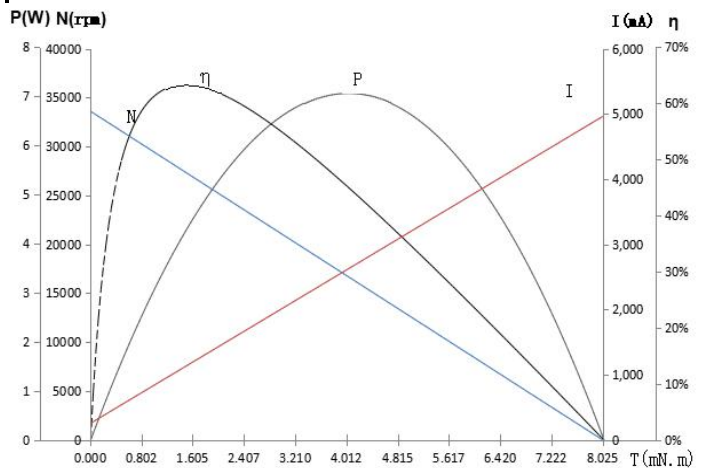
- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 35000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 16.5g

端子定义 (terminals):

引线规格 (cable type): 2651/28#

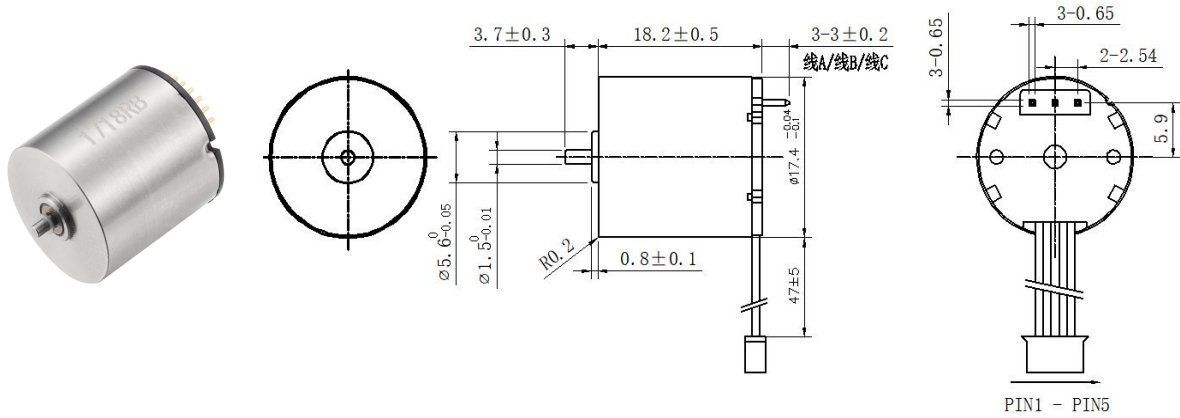
- PIN1 VCC
- PIN2 GND
- PIN3 Hall A
- PIN4 Hall B
- PIN5 Hall C

01A电机曲线图 motor curve



# 1718RB Coreless BLDC Motor

Coreless BLDC Motors



Typical Applications: 舵机、智能小机器人

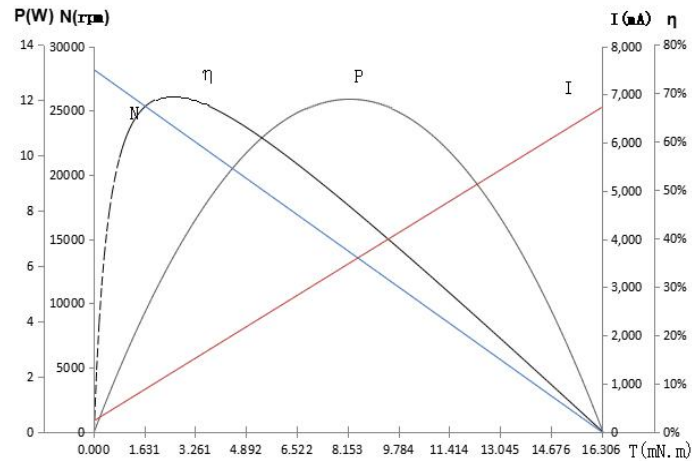
电机参数 (Motor data)		01A	14A	43A	62A		
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	7.4	7.4	12	12		
2 空载转速 (No load speed)	rpm	28200	34570	27890	29410		
3 空载电流 (No load current)	mA	220	220	120	150		
4 额定转速 (Nominal speed)	rpm	25630	32230	25500	26920		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.5	1.5	1.5	1.5		
6 额定电流(最大连续电流) (Nominal current)	A	0.82	1	0.54	0.53		
7 堵转转矩 (Stall torque)	mNm	16.30	22.2	17	17.6		
8 堵转电流 (Stall current)	A	6.70	11.1	4.37	4.7		
9 最大效率 (Max efficiency)	%	70	67	69	71		
电机常数 (Motor constant)							
10 相间电阻(Terminal resistance)	Ω	1.1	0.67	2.75	2.57		
11 转矩常数 (Torque constant)	mNm/A	2.46	2.00	4.03	3.82		
12 速度常数 (Speed constant)	rpm/V	3811	4672	2324	2451		

## 其他特性参数 Other characteristic parameters

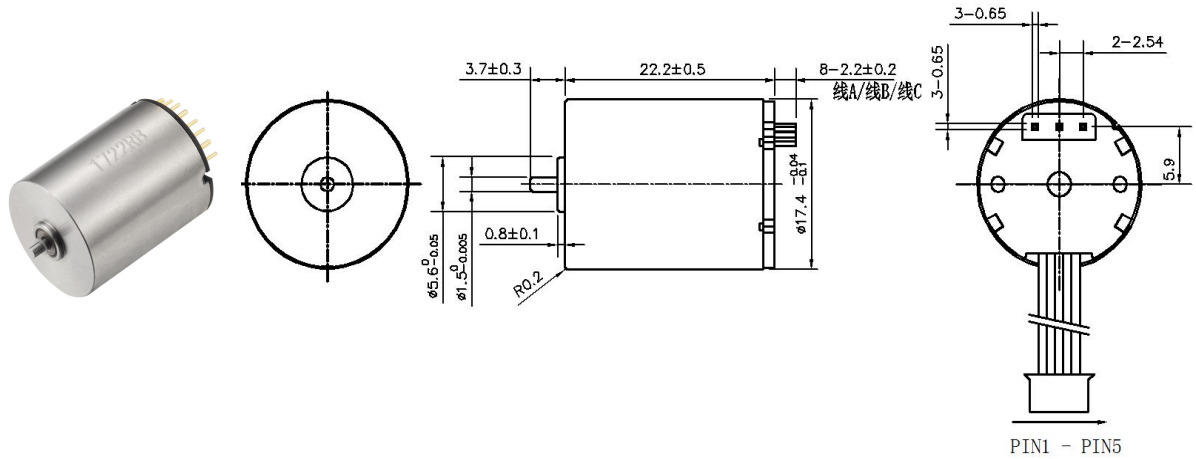
- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 35000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 20.81g

端子定义 (terminals):  
 引线规格 (cable type): 2651/28#  
 PIN1 VCC  
 PIN2 GND  
 PIN3 Hall A  
 PIN4 Hall B  
 PIN5 Hall C

## 01A电机曲线图 motor curve



1722RB Coreless BLDC Motor



Typical Applications:舵机、智能小机器人

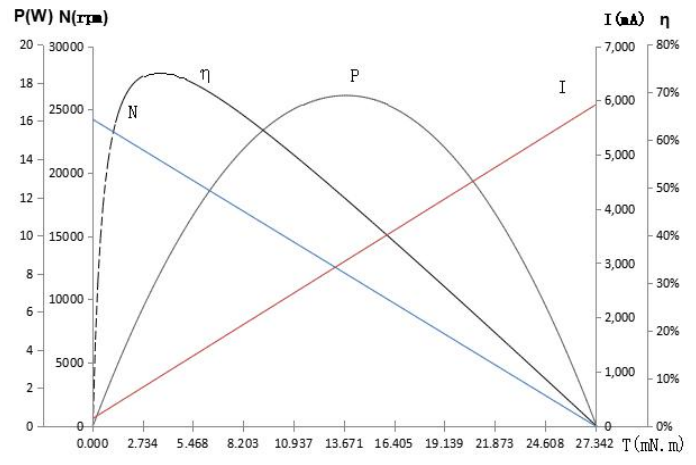
电机参数 (Motor data)		27A	07A	09A	06A		
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	5	7.4	12	24		
2 空载转速 (No load speed)	rpm	25240	25100	24230	22000		
3 空载电流 (No load current)	mA	130	200	130	130		
4 额定转速 (Nominal speed)	rpm	24200	22630	21580	19690		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	1.1	2	3	3		
6 额定电流(最大连续电流) (Nominal current)	A	0.88	0.92	0.8	0.42		
7 堵转转矩 (Stall torque)	mNm	26.40	20.3	27.3	28.6		
8 堵转电流 (Stall current)	A	14.30	7.4	5.9	2.85		
9 最大效率 (Max efficiency)	%	75	73	73	67		
电机常数 (Motor constant)							
10 相间电阻 (Terminal resistance)	Ω	0.35	1	2.03	8.4		
11 转矩常数 (Torque constant)	mNm/A	1.85	2.76	4.64	10.21		
12 速度常数 (Speed constant)	rpm/V	5048	3392	2019	917		

其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 26.3g

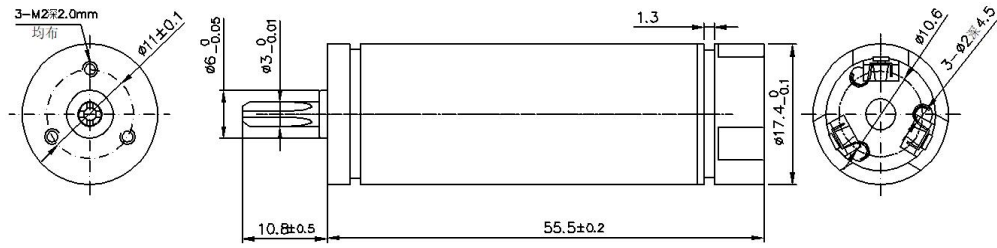
端子定义 (terminals):  
 引线规格 (cable type): 2651/28#  
 PIN1 VCC  
 PIN2 GND  
 PIN3 Hall A  
 PIN4 Hall B  
 PIN5 Hall C

09A电机曲线图 motor curve





# 1750RB Coreless BLDC Motor



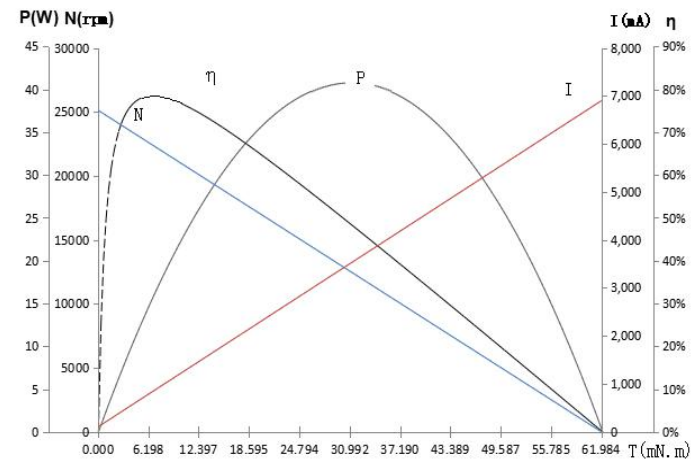
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		03C	01C	06C		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	12	24	24		
2 空载转速 (No load speed)	rpm	26020	25130	29240		
3 空载电流 (No load current)	mA	120	100	90		
4 额定转速 (Nominal speed)	rpm	23000	23160	26870		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	4.2	5	5.6		
6 额定电流(最大连续电流) (Nominal current)	A	1.05	0.64	0.79		
7 堵转转矩 (Stall torque)	mNm	37.20	64.98	68.97		
8 堵转电流 (Stall current)	A	8.57	6.9	8.89		
9 最大效率 (Max efficiency)	%	79	80	82		
电机常数 (Motor constant)						
10 相间电阻(Terminal resistance)	Ω	1.4	3.48	2.7		
11 转矩常数 (Torque constant)	mNm/A	4.32	8.94	7.68		
12 速度常数 (Speed constant)	rpm/V	2168	1047	1218		

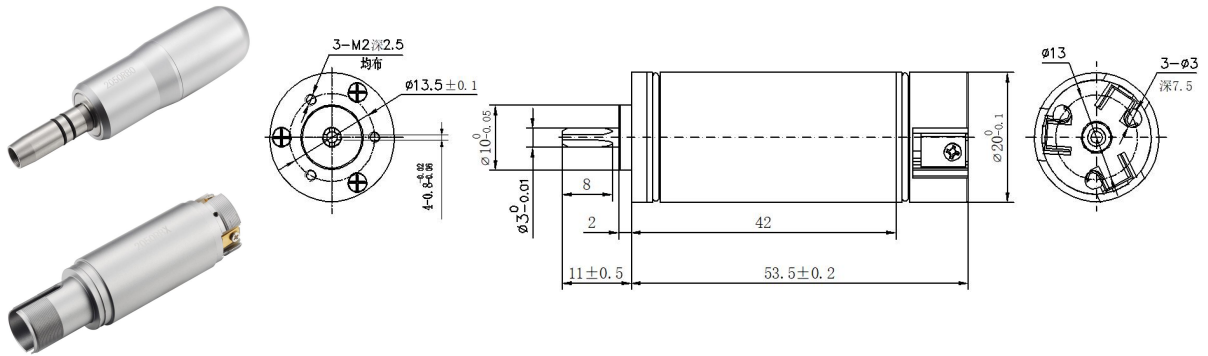
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 40000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 55.4g

## 01C电机曲线图 motor curve



2050RB Coreless BLDC Motor



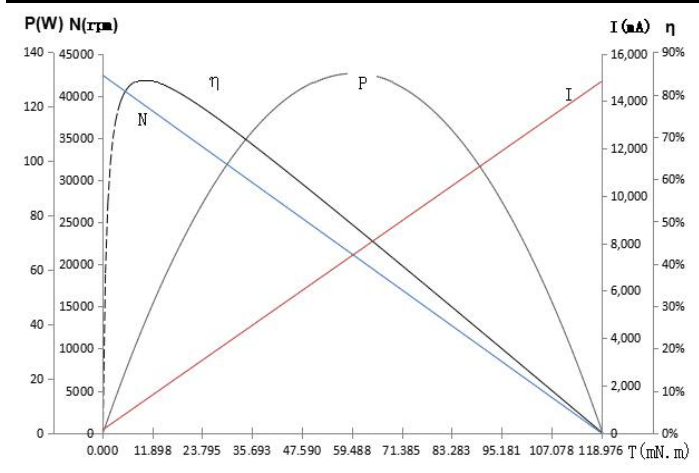
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		12C	9C			
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	36			
2 空载转速 (No load speed)	rpm	38500	42460			
3 空载电流 (No load current)	mA	140	120			
4 额定转速 (Nominal speed)	rpm	36580	40330			
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	5.53	5.99			
6 额定电流(最大连续电流) (Nominal current)	A	1.06	0.85			
7 堵转转矩 (Stall torque)	mNm	109.92	118.98			
8 堵转电流 (Stall current)	A	18.6	14.81			
9 最大效率 (Max efficiency)	%	84	84			
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	1.29	2.43			
11 转矩常数 (Torque constant)	mNm/A	5.83	7.94			
12 速度常数 (Speed constant)	rpm/V	1604	1179			

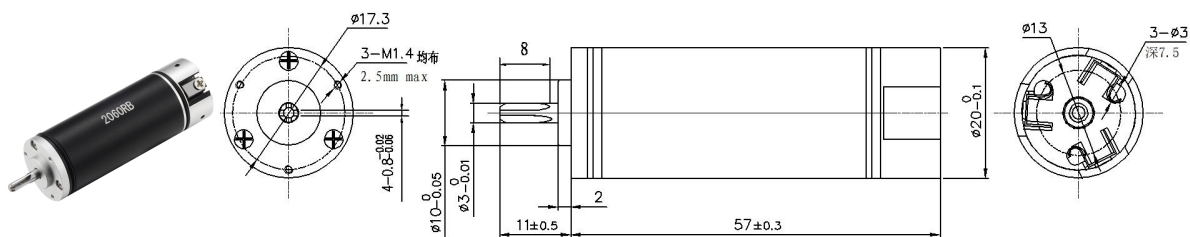
其他特性参数 Other characteristic parameters

13 环境温度范围 (Ambient temperature)	-10-40℃
14 绕组最高允许温度 (Max permissible winding temperature)	120℃
15 最高允许转速 (Max permissible speed)	50000rpm
16 电极磁极对数 (Number of the pole pairs)	1
17 相数 (Number of Phases)	3
18 电机质量 (Weight)	66g

09C电机曲线图 motor curve



## 2060RB Coreless BLDC Motor



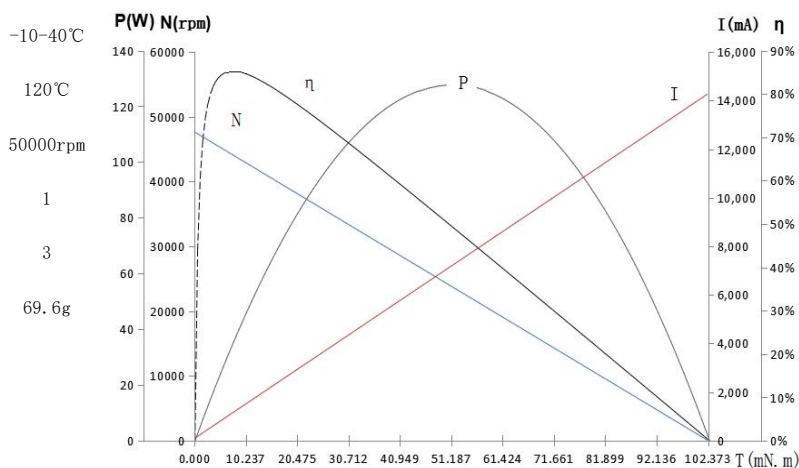
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		19A	12C	32C		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	12	36	36		
2 空载转速 (No load speed)	rpm	28000	47670	46870		
3 空载电流 (No load current)	mA	240	90	75		
4 额定转速 (Nominal speed)	rpm	26740	44560	43810		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	6.1	6.7	5.46		
6 额定电流(最大连续电流) (Nominal current)	A	1.67	1.01	0.82		
7 堵转转矩 (Stall torque)	mNm	135.44	102.37	83.54		
8 堵转电流 (Stall current)	A	33.33	14.29	11.47		
9 最大效率 (Max efficiency)	%	86	85	85		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	0.36	2.52	3.14		
11 转矩常数 (Torque constant)	mNm/A	4.01	7.07	7.19		
12 速度常数 (Speed constant)	rpm/V	2333	1324	1302		

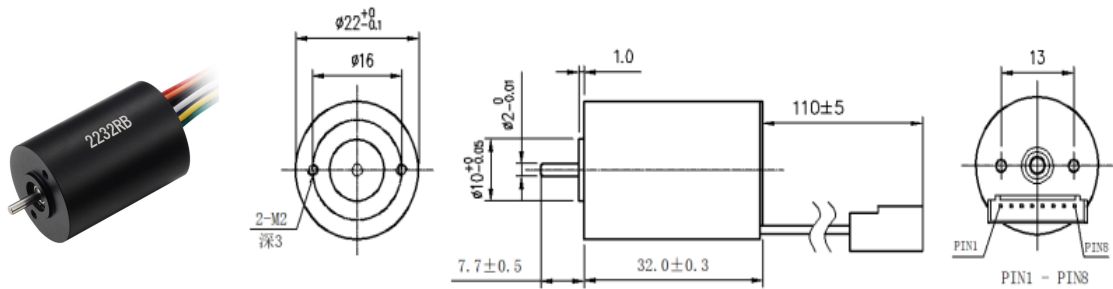
### 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 50000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 69.6g

### 12C电机曲线图 motor curve



2232RB Coreless BLDC Motor



电机主轴:  $\phi 3$

Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		05A	02A	04A	01A	
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	8.4	12	24	24	
2 空载转速 (No load speed)	rpm	20100	20900	14300	17470	
3 空载电流 (No load current)	mA	300	180	100	100	
4 额定转速 (Nominal speed)	rpm	16900	17140	11000	13500	
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	4	5	6	6	
6 额定电流(最大连续电流) (Nominal current)	A	1.26	1	0.39	0.54	
7 堵转转矩 (Stall torque)	mNm	24.79	27.61	21.29	26.28	
8 堵转电流 (Stall current)	A	6.51	5.22	1.43	2.1	
9 最大效率 (Max efficiency)	%	67	71	62	67	
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	1.29	2.3	16.8	11.41	
11 转矩常数 (Torque constant)	mNm/A	3.91	5.37	15.71	12.86	
12 速度常数 (Speed constant)	rpm/V	2393	1742	596	728	

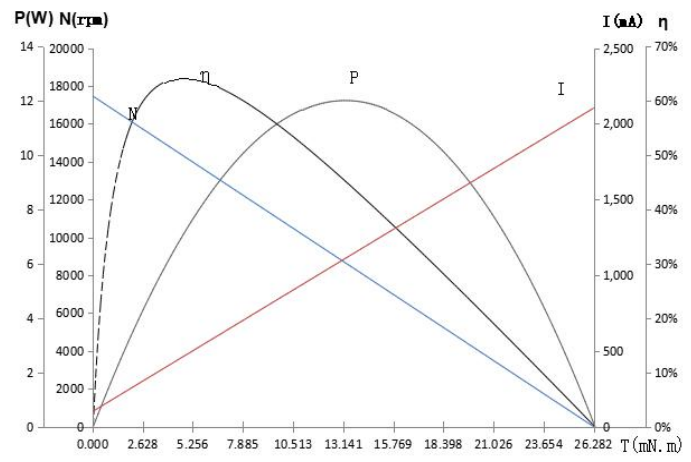
其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 25000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 48.3g

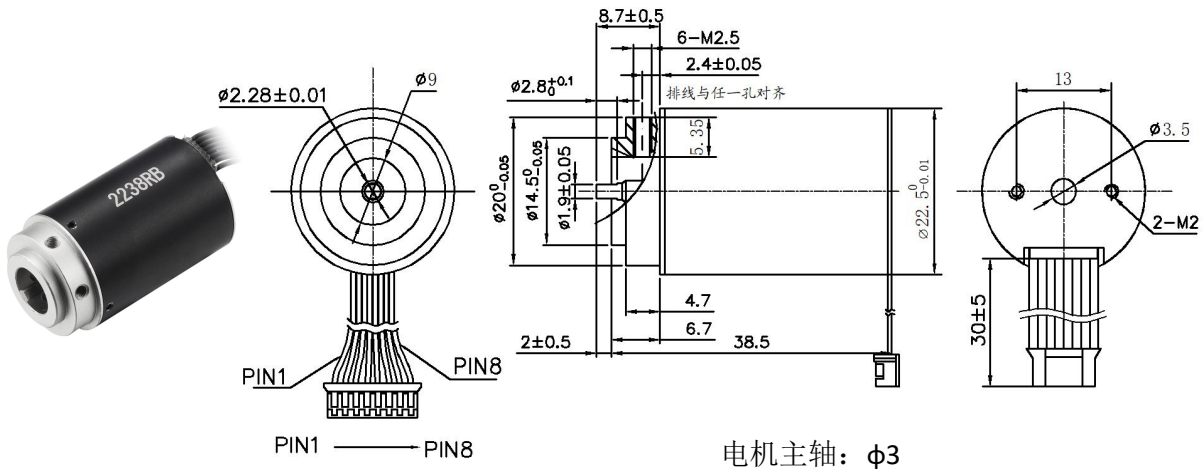
端子定义 (terminals):

- 1-MB
- 2-MC
- 3-MA
- 4-HC
- 5-HB
- 6-H
- 7-VC
- 8-GND

01A电机曲线图 motor curve



# 2238RB Coreless BLDC Motor



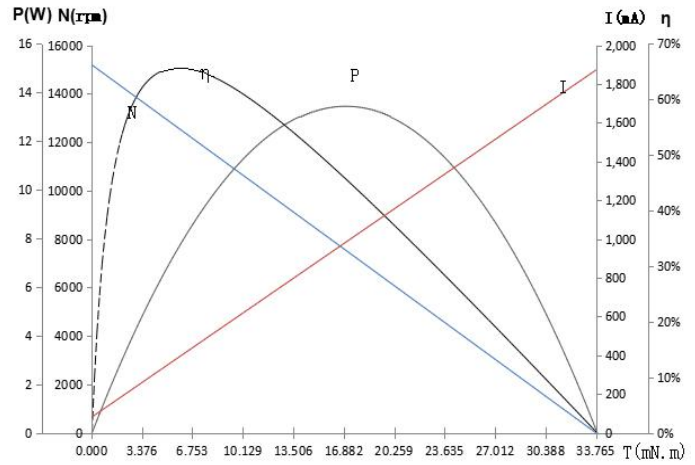
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		25B	14B	06B		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	12	12	30		
2 空载转速 (No load speed)	rpm	12500	13140	15200		
3 空载电流 (No load current)	mA	120	90	80		
4 额定转速 (Nominal speed)	rpm	10150	11030	12540		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	5	6	6		
6 额定电流(最大连续电流) (Nominal current)	A	0.65	0.79	0.41		
7 堵转转矩 (Stall torque)	mNm	26.30	37.1	33.77		
8 堵转电流 (Stall current)	A	2.99	4.35	1.87		
9 最大效率 (Max efficiency)	%	69	74	67		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	4.01	2.76	16.03		
11 转矩常数 (Torque constant)	mNm/A	8.98	8.55	18.47		
12 速度常数 (Speed constant)	rpm/V	1042	1095	507		

## 其他特性参数 Other characteristic parameters

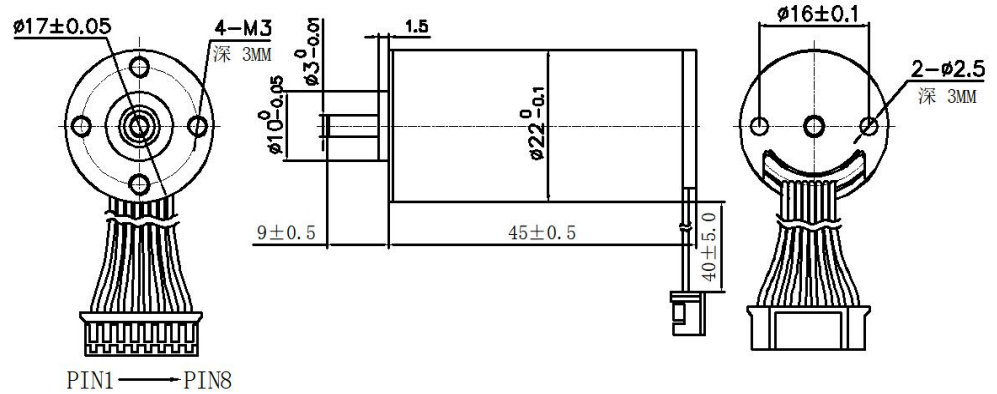
- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 53.7g

## 06B电机曲线图 motor curve



端子定义 (terminals):  
 PIN1-PIN3 电机绕组 (motor winding) 1--3  
 PIN4 GND  
 PIN5-PIN7 传感器 (sensors) 1--3  
 PIN8 Val1 2-18VDC

## 2245RB Coreless BLDC Motor



Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		03A	02B	01A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	24	30		
2 空载转速 (No load speed)	rpm	35000	90000	10500		
3 空载电流 (No load current)	mA	220	400	120		
4 额定转速 (Nominal speed)	rpm	32390	83750	8770		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	16.8	10	14.2		
6 额定电流(最大连续电流) (Nominal current)	A	2.77	4.3	0.66		
7 堵转转矩 (Stall torque)	mNm	223.1	144	85.7		
8 堵转电流 (Stall current)	A	34.3	4.3	3.3		
9 最大效率 (Max efficiency)	%	85	85	70		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	0.7	0.42	9.2		
11 转矩常数 (Torque constant)	mNm/A	6.42	2.50	26.74		
12 速度常数 (Speed constant)	rpm/V	1458	3750	350		

### 其他特性参数 Other characteristic parameters

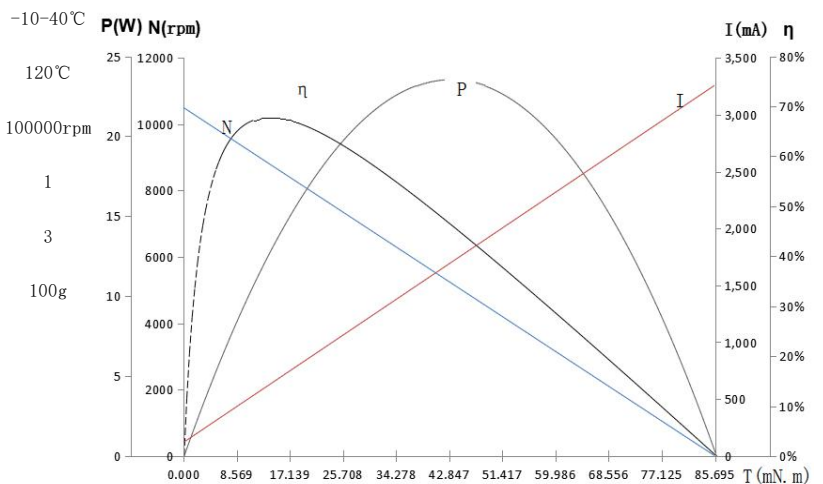
- 13 环境温度范围 (Ambient temperature)  $-10 \sim 40^\circ\text{C}$
- 14 绕组最高允许温度 (Max permissible winding temperature)  $120^\circ\text{C}$
- 15 最高允许转速 (Max permissible speed) 100000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 100g

#### 端子定义 (terminals):

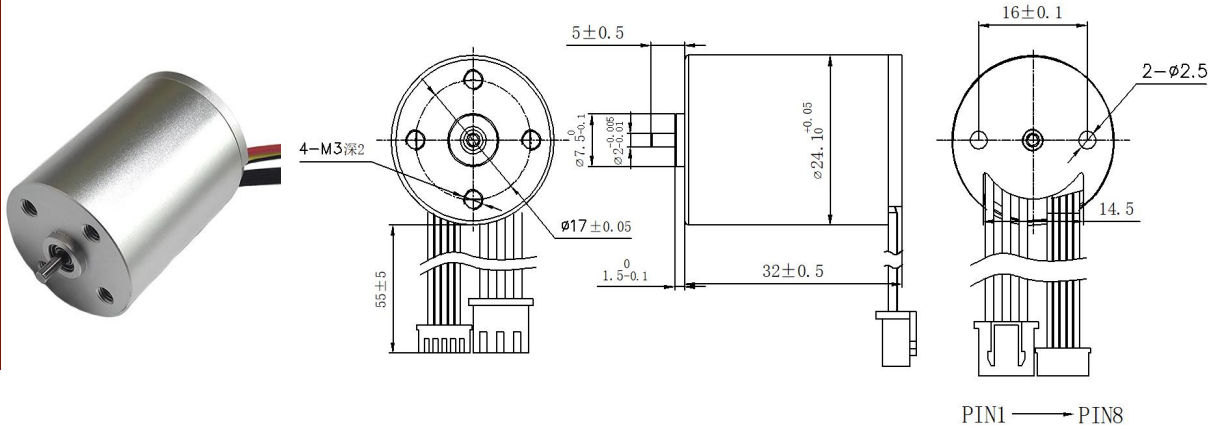
8\*#26PE引线(cable)+JST端子(terminal)

- PIN1 HC
- PIN2 HA
- PIN3 HB
- PIN4 VCC
- PIN5 GND
- PIN6 MA
- PIN7 MB
- PIN8 MC

### 01A电机曲线图 motor curve



2432RB Coreless BLDC Motor



Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		06B	03B			
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	12	24			
2 空载转速 (No load speed)	rpm	16300	16500			
3 空载电流 (No load current)	mA	320	200			
4 额定转速 (Nominal speed)	rpm	14130	14050			
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	12.7	14.2			
6 额定电流(最大连续电流) (Nominal current)	A	2.1	1.2			
7 堵转转矩 (Stall torque)	mNm	95.9	95.3			
8 堵转电流 (Stall current)	A	14.0	7.06			
9 最大效率 (Max efficiency)	%	76	73			
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	0.86	3.4			
11 转矩常数 (Torque constant)	mNm/A	6.89	13.61			
12 速度常数 (Speed constant)	rpm/V	1358	688			

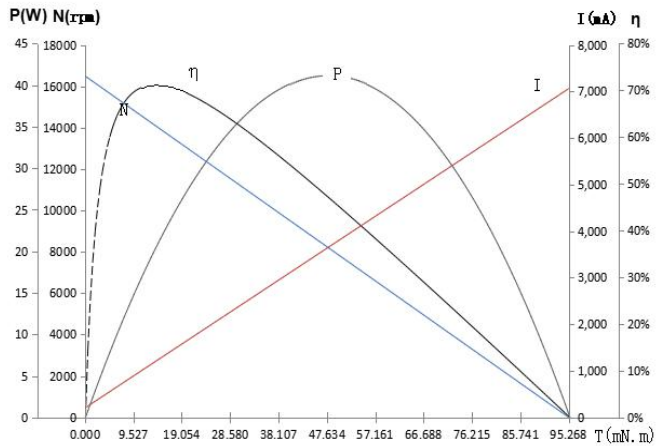
其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 25000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 62.5g

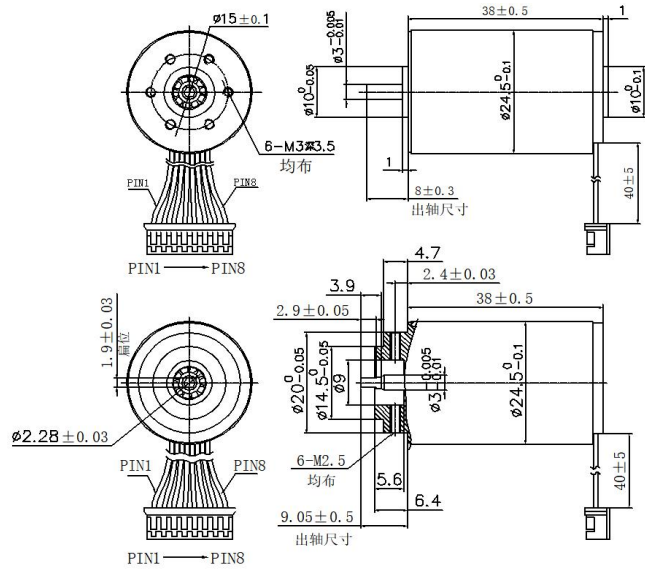
端子定义 (terminals):

- PIN 1 C
- PIN 2 B
- PIN 3 A
- PIN 4 GND
- PIN 5 VCC
- PIN 6 HB
- PIN 7 HA
- PIN 8 HC

03B电机曲线图 motor curve



# 2438RB Coreless BLDC Motor



Coreless BLDC Motors

Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		02A	01A	03A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	30	30		
2 空载转速 (No load speed)	rpm	17500	19100	20500		
3 空载电流 (No load current)	mA	150	100	150		
4 额定转速 (Nominal speed)	rpm	15750	17200	18450		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	13.4	14.8	16.1		
6 额定电流(最大连续电流) (Nominal current)	A	1.1	1	1.3		
7 堵转转矩 (Stall torque)	mNm	131.78	148.49	159.15		
8 堵转电流 (Stall current)	A	10	10	11.5		
9 最大效率 (Max efficiency)	%	83	83	84		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	2.4	3	2.6		
11 转矩常数 (Torque constant)	mNm/A	12.84	14.7	13.7		
12 速度常数 (Speed constant)	rpm/V	729	637	683		

## 其他特性参数 Other characteristic parameters

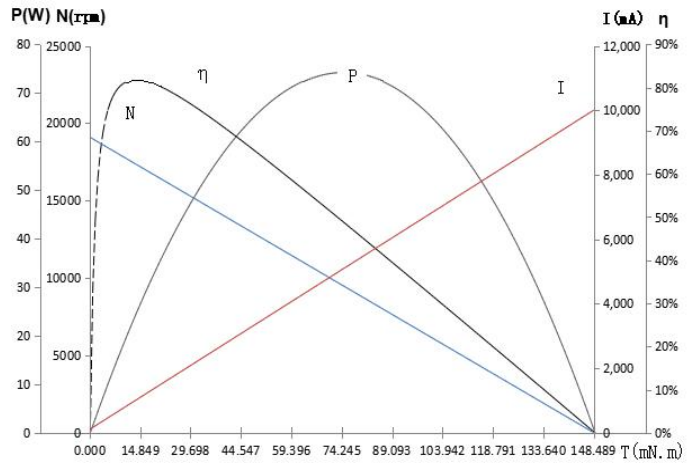
- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 77.6g

### 端子定义 (terminals):

8\*#26PE引线(cable)+JST端子(terminal)

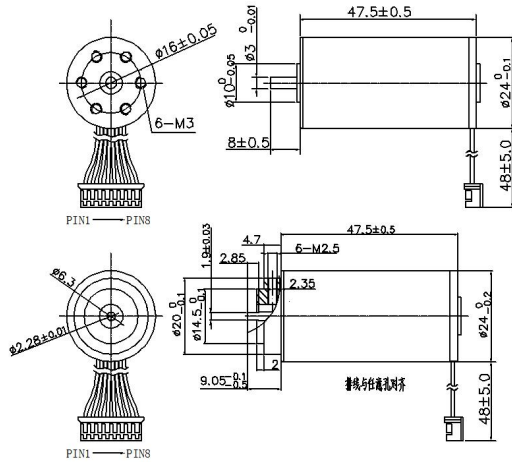
- PIN1 MC
- PIN2 MB
- PIN3 MA
- PIN4 GND-
- PIN5 HC
- PIN6 HB
- PIN7 HA
- PIN8 VCC+

## 01A电机曲线图 motor curve





2447RB Coreless BLDC Motor



Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		13A	01A	17A	26A	20A
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	30	30	30	30
2 空载转速 (No load speed)	rpm	24260	18840	19540	20800	16800
3 空载电流 (No load current)	mA	300	160	160	170	150
4 额定转速 (Nominal speed)	rpm	23520	17890	18640	19950	16040
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	7.3	13.9	12.9	12.3	10
6 额定电流 (最大连续电流) (Nominal current)	A	1.1	1.1	1.05	1.07	0.75
7 堵转转矩 (Stall torque)	mNm	240.96	275.7	283.26	306.01	240
8 堵转电流 (Stall current)	A	25.80	18.29	19.48	22.4	14
9 最大效率 (Max efficiency)	%	81	83	83	84	84
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	0.93	1.64	1.54	1.34	2.13
11 转矩常数 (Torque constant)	mNm/A	9.26	14.90	14.37	13.50	16.71
12 速度常数 (Speed constant)	rpm/V	1011	628	651	693	560

其他特性参数 Other characteristic parameters

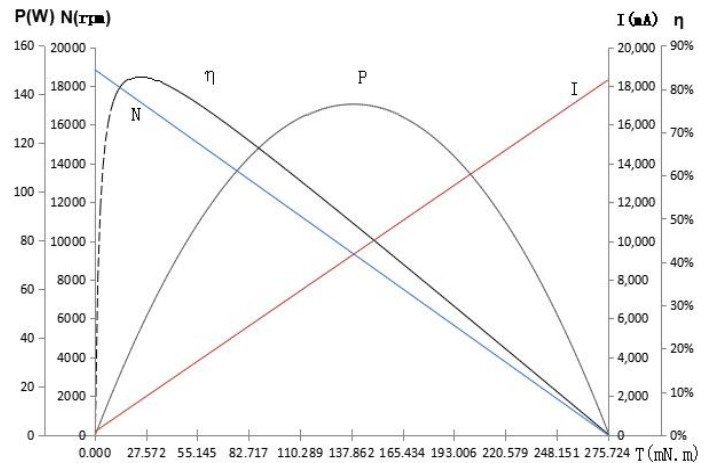
- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 97.7g

端子定义 (terminals):

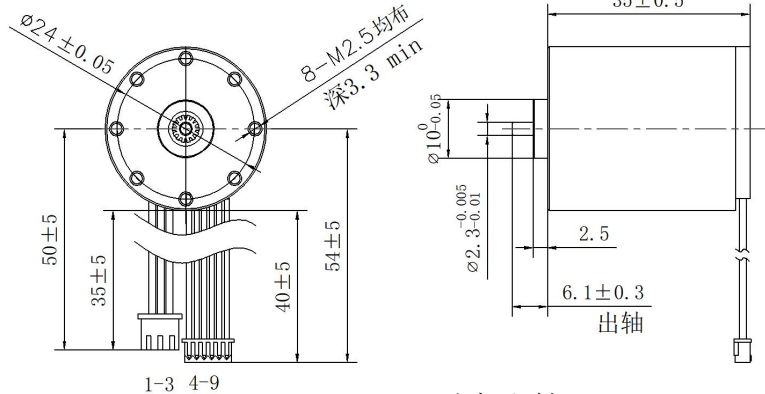
8\*#26PE 引线 (cable)+JST端子 (terminal)

- PIN1 MC
- PIN2 MB
- PIN3 MA
- PIN4 GND-
- PIN5 HC
- PIN6 HB
- PIN7 HA
- PIN8 VCC+

01A电机曲线图 motor curve



# 2835RB Coreless BLDC Motor



电机主轴: φ3

Coreless BLDC Motors

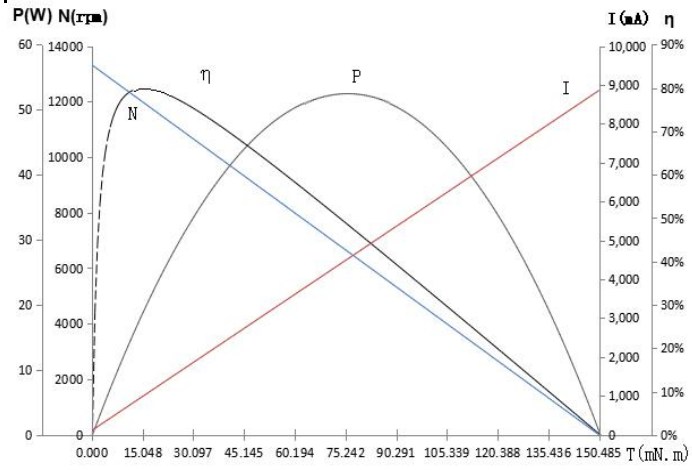
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		03A	02A	01A	09A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	12	24	24	30
2 空载转速 (No load speed)	rpm	9770	8360	13320	13210
3 空载电流 (No load current)	mA	100	80	110	110
4 额定转速 (Nominal speed)	rpm	8730	7120	11970	11270
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	10.3	14.1	15.2	20
6 额定电流(最大连续电流) (Nominal current)	A	1	0.6	1	1.03
7 堵转转矩 (Stall torque)	mNm	96.57	94.99	150.49	135.74
8 堵转电流 (Stall current)	A	6.37	3.55	8.9	6.37
9 最大效率 (Max efficiency)	%	79	73	79	79
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	1.44	6.77	2.72	4.71
11 转矩常数 (Torque constant)	mNm/A	11.50	26.87	16.86	21.25
12 速度常数 (Speed constant)	rpm/V	814	348	555	440

## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 94.3g

## 01A电机曲线图 motor curve



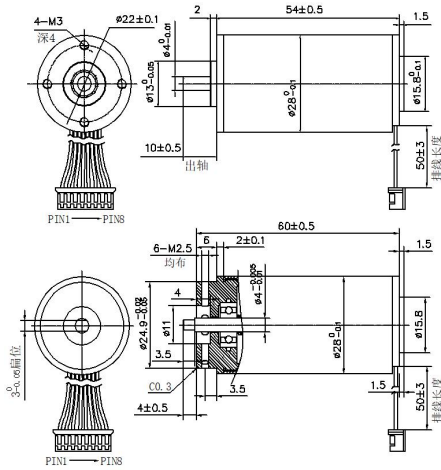
端子定义 (terminals):  
 引线规格 (cable type): AWG24铁氟龙线  
 PIN1 A 黑色 (black)  
 PIN2 B 黄色 (yellow)  
 PIN3 C 红色 (red)

引线规格 (cable type): AWG26PE排线  
 PIN4 NTC 黑色 (black)  
 PIN5 GND 黑色 (black)  
 PIN6 VCC 黑色 (black)  
 PIN7 HC 黑色 (black)  
 PIN8 HB 黑色 (black)  
 PIN9 HA 黑色 (black)

2854RB Coreless BLDC Motor



电机主轴:  $\phi 4$



Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		09A	25A	18A	14A	34A	32A
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	12	24	30	30	30	32
2 空载转速 (No load speed)	rpm	11800	15820	21580	16300	15520	17490
3 空载电流 (No load current)	mA	310	230	310	220	220	220
4 额定转速 (Nominal speed)	rpm	11320	14870	20610	15390	14660	16620
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	11.4	21.7	21.6	20.1	20.7	20.9
6 额定电流 (最大连续电流) (Nominal current)	A	1.47	1.7	1.9	1.35	1.33	1.4
7 堵转转矩 (Stall torque)	mNm	281.2	358.8	519.9	397.78	372.6	414.3
8 堵转电流 (Stall current)	A	29.3	25	39.5	22.7	20.4	23.9
9 最大效率 (Max efficiency)	%	82	83	83	82	82	83
电机常数 (Motor constant)							
10 相间电阻 (Terminal resistance)	$\Omega$	0.41	0.96	0.76	1.31	1.47	1.34
11 转矩常数 (Torque constant)	mNm/A	9.5	14	13.0	17.23	18.1	17.1
12 速度常数 (Speed constant)	rpm/V	983	659	719	543	517	547

其他特性参数 Other characteristic parameters

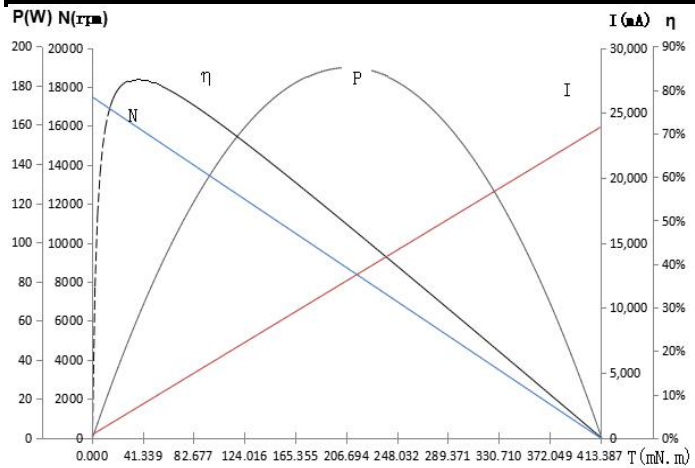
- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 154.7g

端子定义 (terminals):

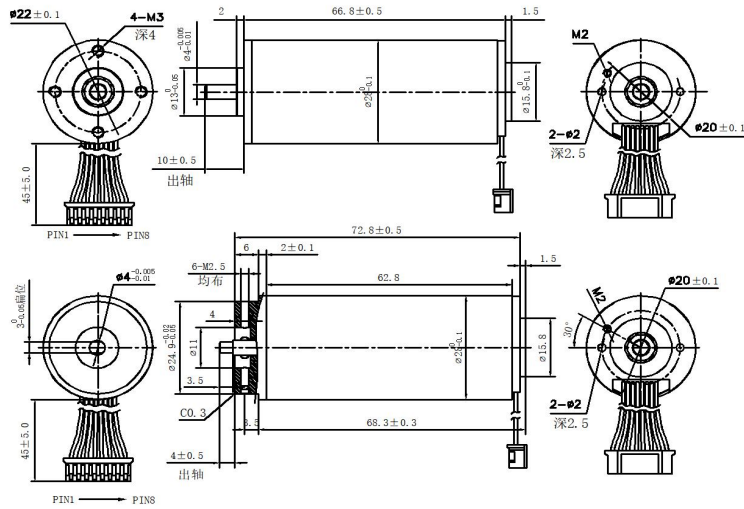
8\*#26PE 引线 (cable)+JST端子 (terminal)

- PIN1 MC
- PIN2 MB
- PIN3 MA
- PIN4 GND-
- PIN5 HC
- PIN6 HB
- PIN7 HC
- PIN8 VCC+

32A电机曲线图 motor curve



# 2880RB Coreless BLDC Motor



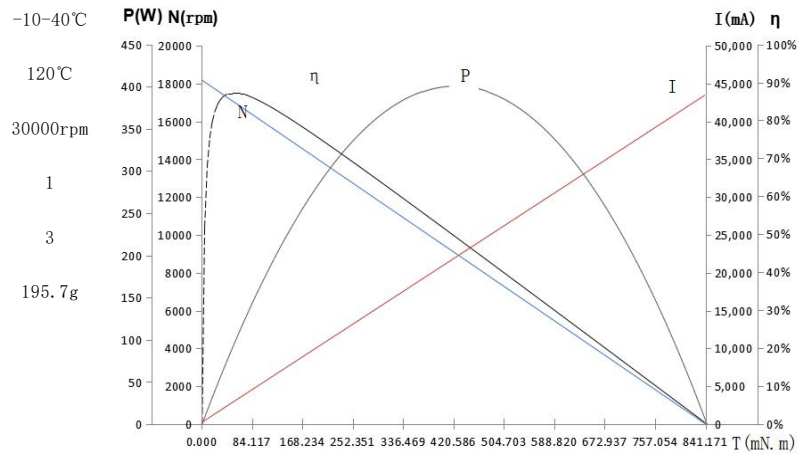
Coreless BLDC Motors

Typical Applications: 电批、打磨机

电机参数 (Motor data)		03A	01A	02A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	37	37		
2 空载转速 (No load speed)	rpm	17800	18200	19200		
3 空载电流 (No load current)	mA	400	200	230		
4 额定转速 (Nominal speed)	rpm	17000	17470	18520		
5 额定转矩 (最大连续转矩) (Nominal torque)	mNm	33.1	33.7	30.5		
6 额定电流 (最大连续电流) (Nominal current)	A	3	1.9	1.85		
7 堵转转矩 (Stall torque)	mNm	736.5	841.1	870		
8 堵转电流 (Stall current)	A	57	43.5	47.4		
9 最大效率 (Max efficiency)	%	85	87	88		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	0.42	0.85	0.78		
11 转矩常数 (Torque constant)	mNm/A	12.62	19.03	18.04		
12 速度常数 (Speed constant)	rpm/V	742	492	519		

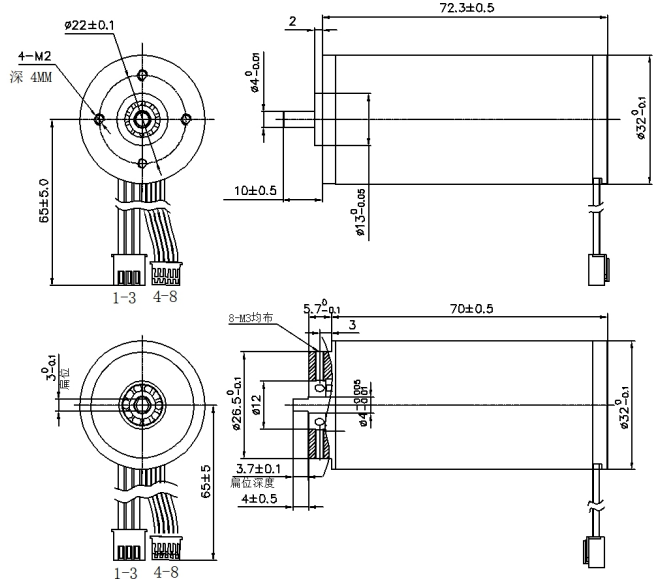
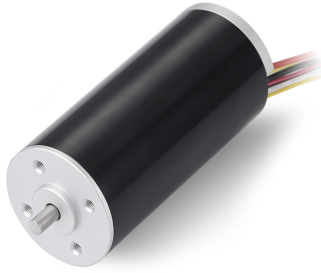
## 其他特性参数 Other characteristic parameters      01A电机曲线图 motor curve

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 30000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 195.7g



端子定义 (terminals):  
 8\*#26PE引线 (cable)+JST端子 (terminal)  
 PIN1 MC  
 PIN2 MB  
 PIN3 MA  
 PIN4 GND-  
 PIN5 HC  
 PIN6 HB  
 PIN7 HC  
 PIN8 VCC+

### 3270RB Coreless BLDC Motor



Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		10A	03A	15A	06A	02A	14A
额定电压下数值 (Values at nominal voltage)							
1 额定电压 (Nominal voltage)	V	21	21	24	36	48	48
2 空载转速 (No load speed)	rpm	16530	14580	16700	14960	18400	9600
3 空载电流 (No load current)	mA	480	450	400	250	220	100
4 额定转速 (Nominal speed)	rpm	15790	13700	15780	14000	17570	8830
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	45.86	52.5	53	53	52	50.7
6 额定电流(最大连续电流) (Nominal current)	A	4.2	4.2	4.2	2.55	3.2	1.16
7 堵转转矩 (Stall torque)	mNm	1013.23	875	968	882.2	1150	634
8 堵转电流 (Stall current)	A	84.00	63.6	70.58	38.7	46.6	13.3
9 最大效率 (Max efficiency)	%	86	85	86	85	87	84
电机常数 (Motor constant)							
10 相间电阻 (Terminal resistance)	Ω	0.25	0.32	0.34	0.93	1.03	3.61
11 转矩常数 (Torque constant)	mNm/A	11.89	13.48	13.45	22.52	24.41	46.80
12 速度常数 (Speed constant)	rpm/V	787	694	696	416	383	200

#### 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40℃
- 14 绕组最高允许温度 (Max permissible winding temperature) 120℃
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 245g

连接端子线(Connection terminal line)A:

XHP-3 XH2.5 AWG22 PE

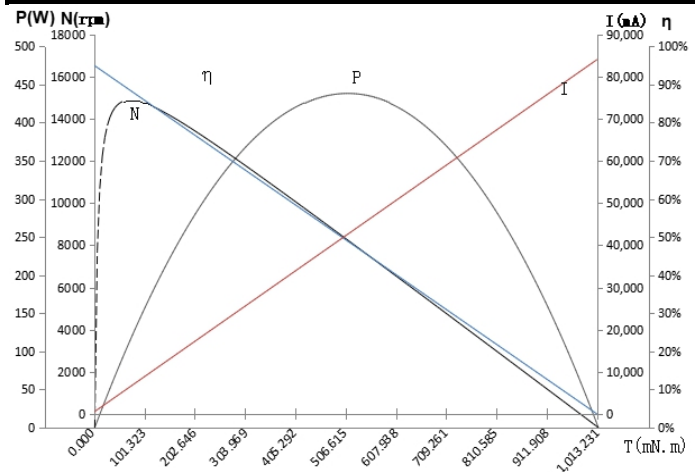
- 1、MC 黑色 (Black)
- 2、MB 黄色 (Yellow)
- 3、MA 红色 (Red)

连接端子线(Connection terminal line) B:

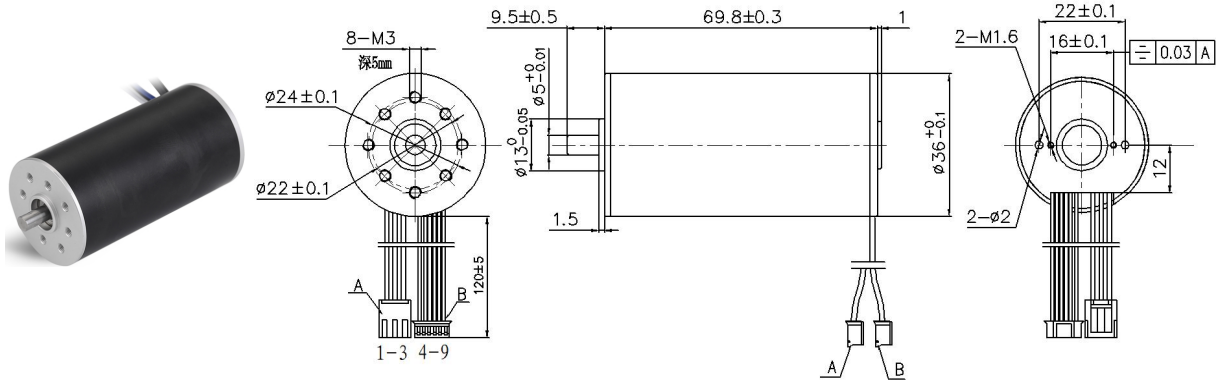
JST PHR-5P PH2.0 AWG26 PE

- 4、GND - 黄色 (Yellow)
- 5、HC 蓝色 (Blue)
- 6、HB 白色 (White)
- 7、HA 黑色 (Black)
- 8、VVC + 红色 (Red)

#### 10A电机曲线图 motor curve



# 3670RB Coreless BLDC Motor



Coreless BLDC Motors

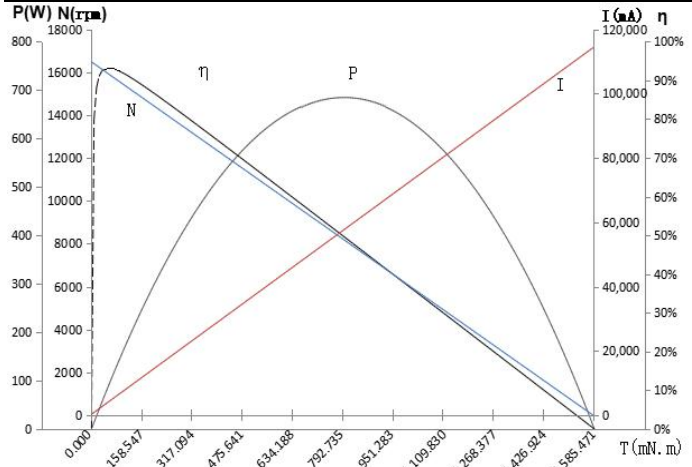
Typical Applications: 舵机、智能小机器人

电机参数 (Motor data)		05A	02A	06A	04A
额定电压下数值 (Values at nominal voltage)					
1 额定电压 (Nominal voltage)	V	15	24	24	30
2 空载转速 (No load speed)	rpm	7150	6800	16000	11680
3 空载电流 (No load current)	mA	300	160	650	320
4 额定转速 (Nominal speed)	rpm	6710	6120	15600	11210
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	54.6	67.4	37	49
6 额定电流(最大连续电流) (Nominal current)	A	3.01	2.14	3.2	2.3
7 堵转转矩 (Stall torque)	mNm	904.6	6740	1480	1217.7
8 堵转电流 (Stall current)	A	45.45	20	104.3	50
9 最大效率 (Max efficiency)	%	85	84	84	84
电机常数 (Motor constant)					
10 相间电阻 (Terminal resistance)	Ω	0.33	1.2	0.23	0.6
11 转矩常数 (Torque constant)	mNm/A	19.63	33.03	14.04	24.04
12 速度常数 (Speed constant)	rpm/V	477	283	667	389

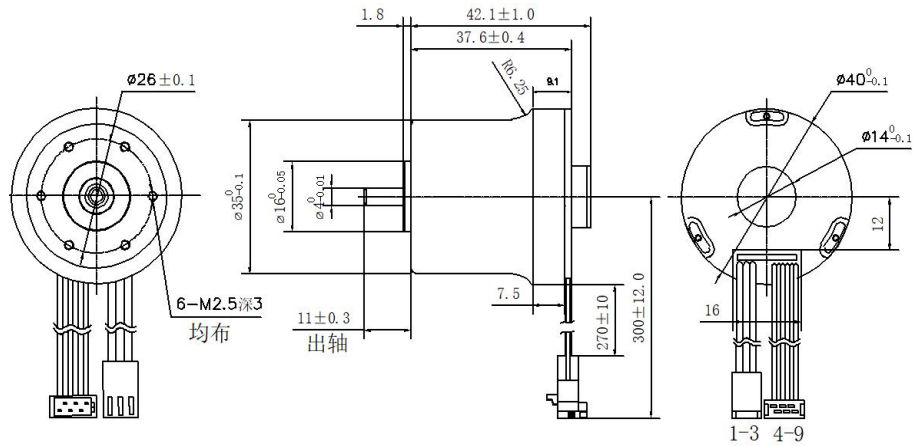
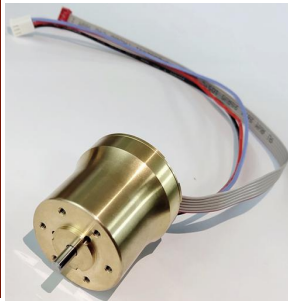
## 其他特性参数 Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
  - 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
  - 15 最高允许转速 (Max permissible speed) 20000rpm
  - 16 电极磁极对数 (Number of the pole pairs) 1
  - 17 相数 (Number of Phases) 3
  - 18 电机质量 (Weight) 225g
- 端子定义 (terminals):
- Connection A: VHR-3N PH3.96  
UL1430 AWG20 PVC
- 1-MC (white)
  - 2-MB (black)
  - 3-MA (blue)
- Connection B: JST A2001H-6P PH2.0  
UL1332 PTEF AWG24
- 4-GND (black)
  - 5-HC (black)
  - 6-HB (black)
  - 7-HA (black)
  - 8-VCC (black)
  - 9-NTC (black)

## 02A电机曲线图 motor curve



## 3838RB Coreless BLDC Motor



Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A	03A	04A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	24	24		
2 空载转速 (No load speed)	rpm	34950	38800	39540		
3 空载电流 (No load current)	mA	240	280	260		
4 额定转速 (Nominal speed)	rpm	32500	36440	36770		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	11.7	10.4	10.6		
6 额定电流(最大连续电流) (Nominal current)	A	2	2	2		
7 堵转转矩 (Stall torque)	mNm	165.85	171.23	149.7		
8 堵转电流 (Stall current)	A	25.53	29.27	26.09		
9 最大效率 (Max efficiency)	%	83	82	82		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	$\Omega$	0.94	0.82	0.92		
11 转矩常数 (Torque constant)	mNm/A	6.43	5.79	5.68		
12 速度常数 (Speed constant)	rpm/V	1456	1617	1648		

### 其他特性参数 Other characteristic parameters

13 环境温度范围 (Ambient temperature)	-10~40°C
14 绕组最高允许温度 (Max permissible winding temperature)	120°C
15 最高允许转速 (Max permissible speed)	40000rpm
16 电极磁极对数 (Number of the pole pairs)	1
17 相数 (Number of Phases)	3
18 电机质量 (Weight)	264g

连接端子线(Connection terminal lines) A:

端子(terminal type): MOLEX 22-01-3037

线(cable type): UL3266 AWG22

1-V 黑色(black)

2-U 红色(red)

3-W 蓝色(blue)

连接端子线(Connection terminal lines) B:

端子(terminal type): APM MICROMATCH 215083-6

线(cable type): UL2651 AWG28

4- HALL1 红色/灰色(red/gray)

5- GND 灰色(gray)

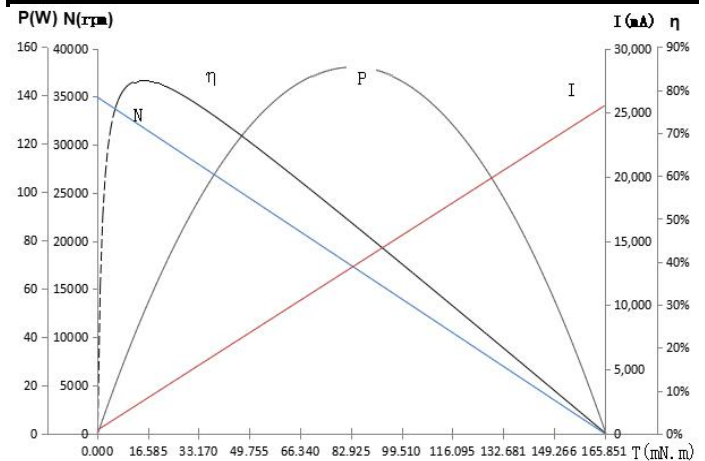
6- NTC 灰色(gray)

7- +HU 灰色(gray)

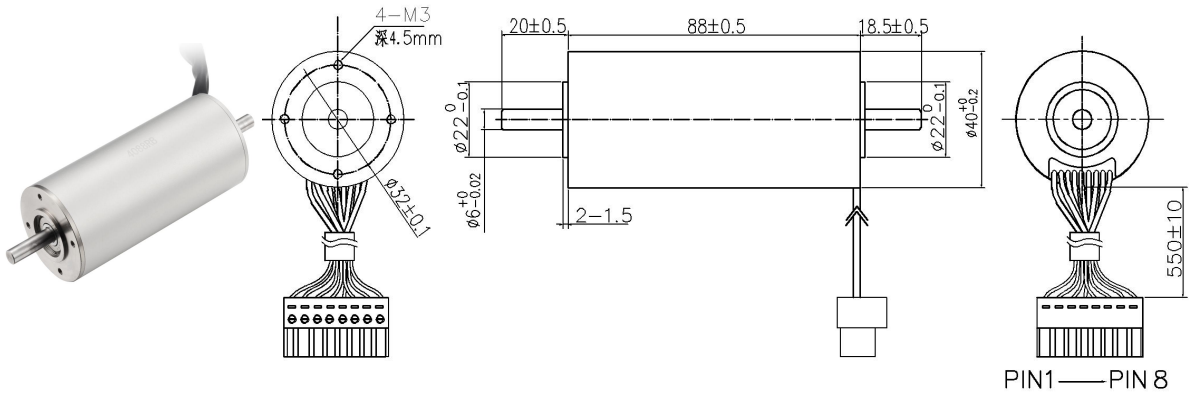
8- HALL2 灰色(gray)

9- HALL3 灰色(gray)

### 01A电机曲线图 motor curve



# 4088RB Coreless BLDC Motor



Coreless BLDC Motors

Typical Applications:舵机、智能小机器人

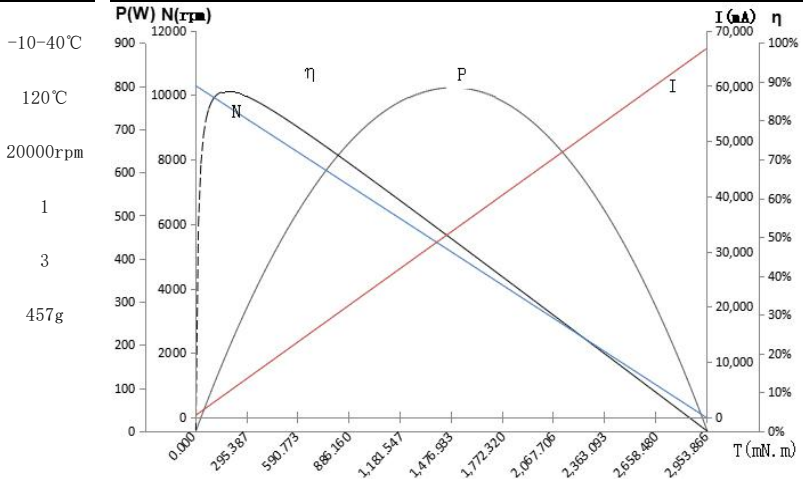
电机参数 (Motor data)		03A	04A	02A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	32	36	48		
2 空载转速 (No load speed)	rpm	10600	7850	10300		
3 空载电流 (No load current)	mA	750	300	290		
4 额定转速 (Nominal speed)	rpm	10280	7450	9990		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	81.3	114.2	89		
6 额定电流(最大连续电流) (Nominal current)	A	3.5	2.9	2.28		
7 堵转转矩 (Stall torque)	mNm	2689.8	2271.7	2957.1		
8 堵转电流 (Stall current)	A	94.00	52	66.7		
9 最大效率 (Max efficiency)	%	83	86	88		
电机常数 (Motor constant)						
10 相间电阻(Terminal resistance)	Ω	0.34	0.69	0.72		
11 转矩常数 (Torque constant)	mNm/A	28.25	42.92	43.61		
12 速度常数 (Speed constant)	rpm/V	331	218	215		

## 其他特性参数Other characteristic parameters

- 13 环境温度范围 (Ambient temperature) -10~40°C
- 14 绕组最高允许温度 (Max permissible winding temperature) 120°C
- 15 最高允许转速 (Max permissible speed) 20000rpm
- 16 电极磁极对数 (Number of the pole pairs) 1
- 17 相数 (Number of Phases) 3
- 18 电机质量 (Weight) 457g

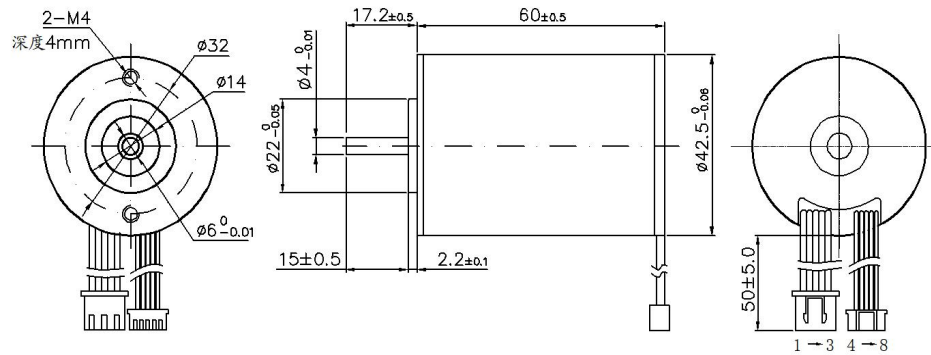
端子定义 (terminals):  
 PIN1-PIN3 电机绕组 (motor winding) 1-3  
 PIN4 GND  
 PIN5-PIN7 传感器 (sensors) 1-3  
 PIN8 VHall 2-18DC

## 02A电机曲线图 motor curve





## 4360RB Coreless BLDC Motor



Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		03A	02A	01A		
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24	24	28		
2 空载转速 (No load speed)	rpm	6800	8550	5790		
3 空载电流 (No load current)	mA	260	280	250		
4 额定转速 (Nominal speed)	rpm	6430	8070	5300		
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	37.4	35.4	40		
6 额定电流(最大连续电流) (Nominal current)	A	1.35	1.6	1.29		
7 堵转转矩 (Stall torque)	mNm	671.0	635.8	458.6		
8 堵转电流 (Stall current)	A	20.17	24	10.18		
9 最大效率 (Max efficiency)	%	80	81	74		
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	1.19	1	1.19		
11 转矩常数 (Torque constant)	mNm/A	33.03	26.27	45.26		
12 速度常数 (Speed constant)	rpm/V	283	356	207		

## 其他特性参数 Other characteristic parameters

13 环境温度范围 (Ambient temperature)	-10~40℃
14 绕组最高允许温度 (Max permissible winding temperature)	120℃
15 最高允许转速 (Max permissible speed)	20000rpm
16 电极磁极对数 (Number of the pole pairs)	1
17 相数 (Number of Phases)	3
18 电机质量 (Weight)	392.2g

端子定义 (terminals):

XHP-3 XH2.5 AWG22 PE

1 C 红色 (red)

2 B 黄色 (yellow)

3 A 黑色 (black)

JST PHR-5P PH2.0 AWG26 PE

4 GND 红色 (red)

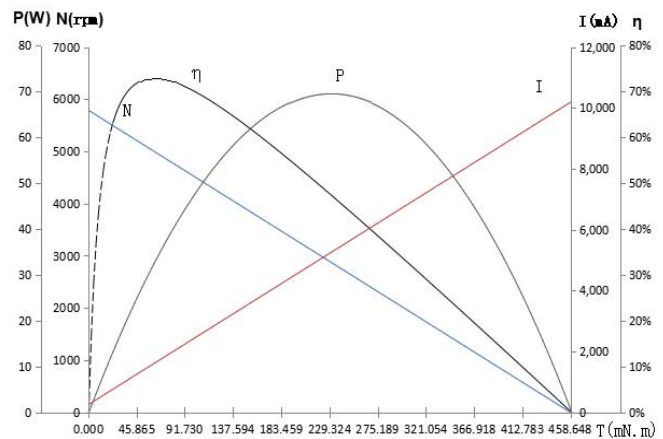
5 VCC 黑色 (black)

6 HB 白色 (red)

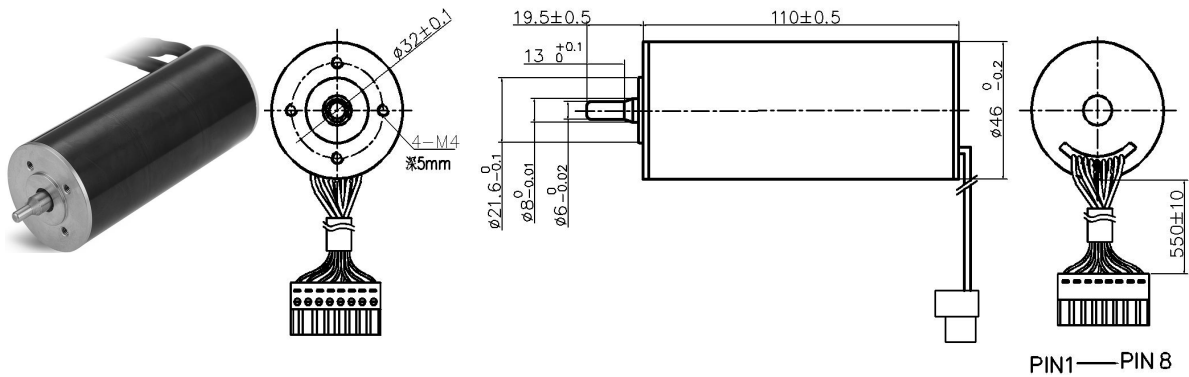
7 HA 蓝色 (blue)

8 HC 黄色 (yellow)

## 01A电机曲线图 motor curve



## 46110RB Coreless BLDC Motor



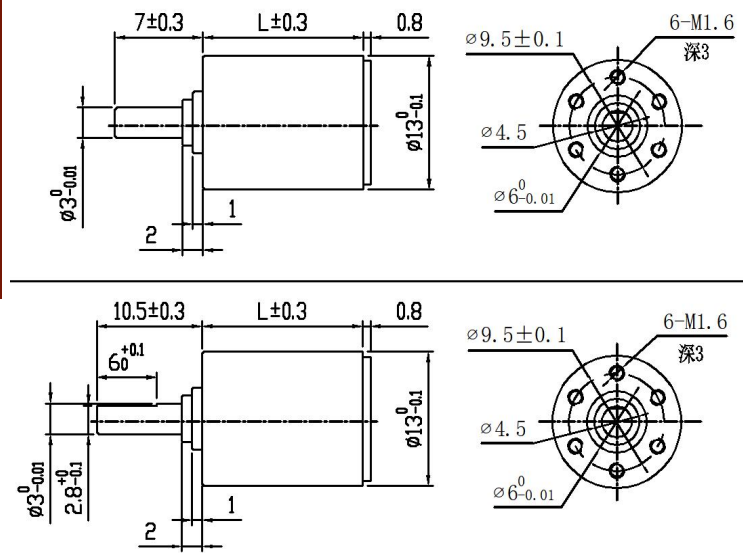
Typical Applications:舵机、智能小机器人

电机参数 (Motor data)		01A				
额定电压下数值 (Values at nominal voltage)						
1 额定电压 (Nominal voltage)	V	24				
2 空载转速 (No load speed)	rpm	9000				
3 空载电流 (No load current)	mA	900				
4 额定转速 (Nominal speed)	rpm	8592				
5 额定转矩(最大连续转矩) (Nominal torque)	mNm	250				
6 额定电流(最大连续电流) (Nominal current)	A	10.6				
7 堵转转矩 (Stall torque)	mNm	5533				
8 堵转电流 (Stall current)	A	218.18				
9 最大效率 (Max efficiency)	%	88				
电机常数 (Motor constant)						
10 相间电阻 (Terminal resistance)	Ω	0.11				
11 转矩常数 (Torque constant)	mNm/A	24.96				
12 速度常数 (Speed constant)	rpm/V	375				

其他特性参数 Other characteristic parameters		01A电机曲线图 motor curve	
13 环境温度范围 (Ambient temperature)	-10~40℃		
14 绕组最高允许温度 (Max permissible winding temperature)	120℃		
15 最高允许转速 (Max permissible speed)	20000rpm		
16 电极磁极对数 (Number of the pole pairs)	1		
17 相数 (Number of Phases)	3		
18 电机质量 (Weight)	955g		
端子定义 (terminals):			
PIN1-PIN3 电机绕组 (motor winding) 1-3			
PIN4 GND			
PIN5-PIN7 传感器 (sensors) 1-3			
PIN8 VHall 2-18VDC			

## G-13L Gearbox

外形尺寸/outline size



### 标准减速比型式/Gearboxes Specificati

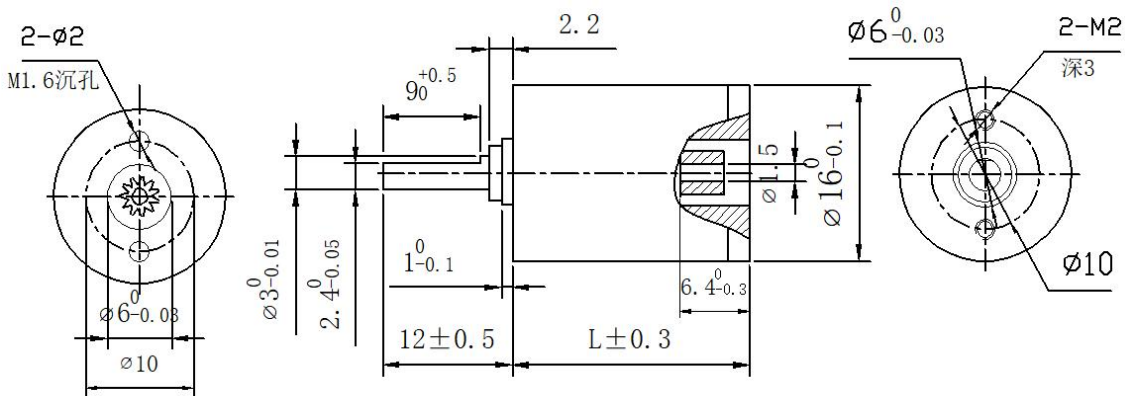
级数Stage	1	2	3	
减速比 Reduction ratio	3.75	14.06	52.73	101.65
	4.667	17.50	65.63	
		21.78	81.68	
连续输出扭矩 Nm Torque	0.2	0.2	0.3	
堵转扭矩 Nm Stall Torque	0.3	0.3	0.45	
最大效率 % Max Efficiency	90	81	73	
长度 L mm Length	12.4	16	19.6	
重量 g Weight	9.5	12.5	16	
空载回差 ° No-Load Backlash	1.5	1.5	2	

### 技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤20,000
使用温度范围 Operating temperature range	°C	-10°C ~ +60°C
不允许安装力 unallowable Installatinon Force	N	≤10
径向负载 Radial Load	N	≤8
轴向负载 Axial Load	N	≤10

# G-16L Gearbox

## 外形尺寸/outline size



## 标准减速比型式/Gearboxes Specificati

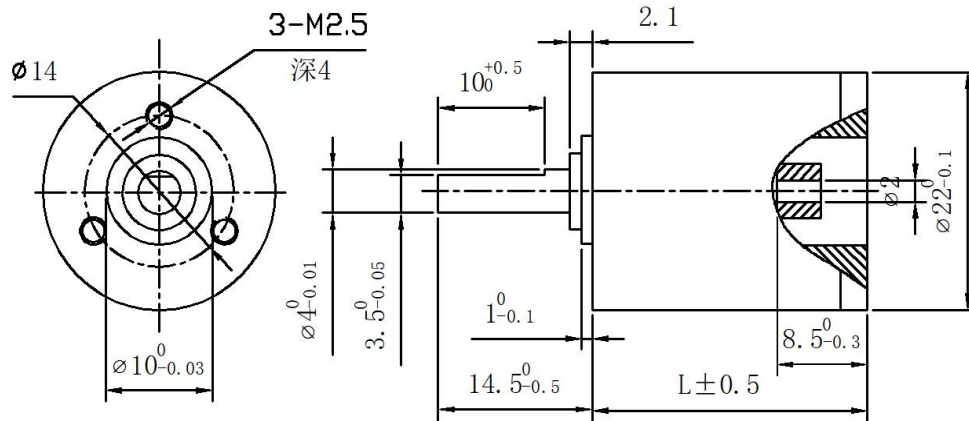
级数 Stage	1	2	3		4	
减速比 Reduction ratio	4	16	64	140.6	256	562.4
	5.2	20.8	83.2		332.8	731.12
		27.04	108.16		432.64	
连续输出扭矩 Nm Torque	0.2	0.2	0.3		0.35	
堵转扭矩 Nm Stall Torque	0.3	0.3	0.45		0.5	
最大效率 % Max Efficiency	90	81	73		65	
长度 L mm Length	14.9	19	23.1		27.6	
重量 g Weight	15	20	25		33	
空载回差 ° No-Load Backlash	1.5	1.5	2		2	

## 技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	$\leq 0.1$
轴向间隙 Axial Clearance	mm	$\leq 0.2$
推荐输入转速 Permission input speed	rpm	$\leq 20,000$
使用温度范围 Operating temperature range	°C	$-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$
不允许安装力 unallowable Installatinon Force	N	$\leq 10$
径向负载 Radial Load	N	$\leq 8$
轴向负载 Axial Load	N	$\leq 10$

## G-22L Gearbox

外形尺寸/outline size



标准减速比型式/Gearbox Specifications

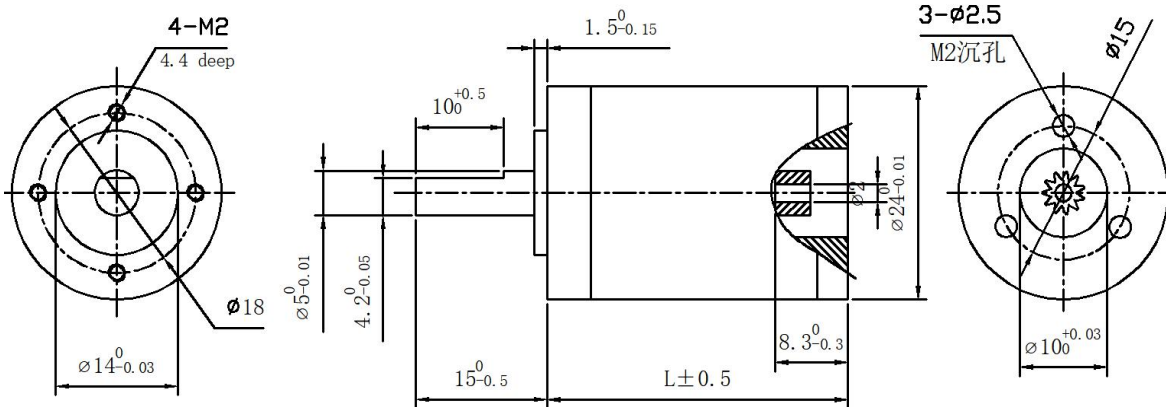
级数Stage	1	2	3		4	
减速比 Reduction ratio	4	16	64	216	256	864
	6	24	96		384	1296
		36	144		576	
连续输出扭矩Nm Torque	0.3	0.3	0.5		0.5	
堵转扭矩 Nm Stall Torque	0.5	0.5	0.8		0.8	
最大效率 % Max Efficiency	90	81	73		65	
长度 L mm Length	20.5	24.8	30.8		36.7	
重量 g Weight	30	35	46		55	
空载回差 ° No-Load Backlash	1.5	1.5	2		2	

技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	$\leq 0.1$
轴向间隙 Axial Clearance	mm	$\leq 0.2$
推荐输入转速 Permission input speed	rpm	$\leq 10,000$
使用温度范围 Operating temperature range	°C	$-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$
不允许安装力 unallowable Installatinon Force	N	$\leq 100$
径向负载 Radial Load	N	$\leq 50$
轴向负载 Axial Load	N	$\leq 50$

# G-24 Gearbox

外形尺寸/outline size



Planetary Gearboxes

## 标准减速比型式/Gearboxes Specifica

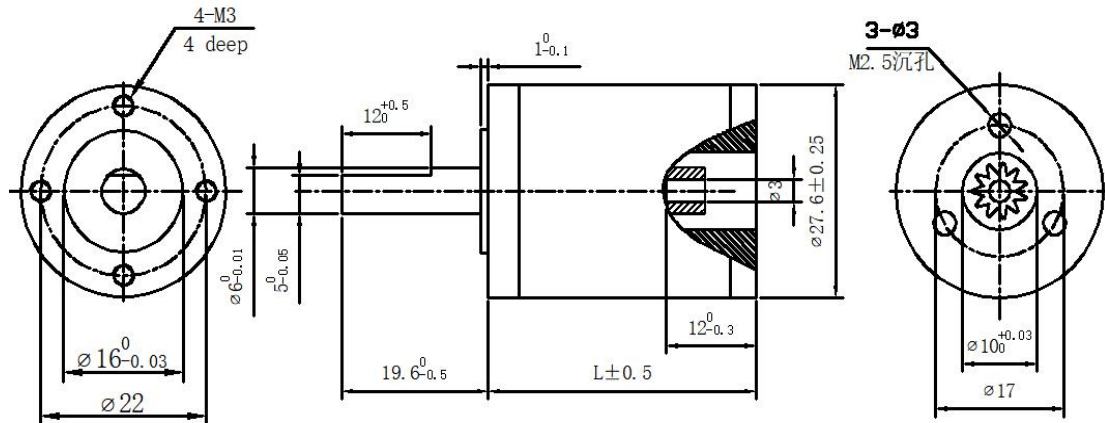
级数 Stage	1		2		3		4			5		
减速比 Reduction ratio	3.3	12.23	22.21	35.94	60.61	118.59	259.77	493.19	660.07	1036.5	1748.1	
	4.29	14.14		46.67	78.72	154.02	337.36		741.25	1346.1	2113.7	
		17.1		56.43	95.18	200.02	407.9		857.23	1627.5		
连续输出扭矩 Nm Torque	0.5	0.5		0.8		0.8			1			
堵转扭矩 Nm Stall Torque	1	1		1.5		1.5			2			
最大效率 % Max Efficiency	90	81		73		65			59			
长度 L mm Length	20.3	24.4		30.2		34.3			38.4			
重量 g Weight	35.5	41		52		59			68			
空载回差 ° No-Load Backlash	1.5	1.5		2		2			2.5			

## 技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	$\leq 0.1$
轴向间隙 Axial Clearance	mm	$\leq 0.2$
推荐输入转速 Permission input speed	rpm	$\leq 10,000$
使用温度范围 Operating temperature range	°C	-10°C ~ +60°C
不允许安装力 unallowable Installatinon Force	N	$\leq 100$
径向负载 Radial Load	N	$\leq 50$
轴向负载 Axial Load	N	$\leq 50$

## G-28 Gearbox

外形尺寸/outline size



标准减速比型式/Gearboxes Specifications

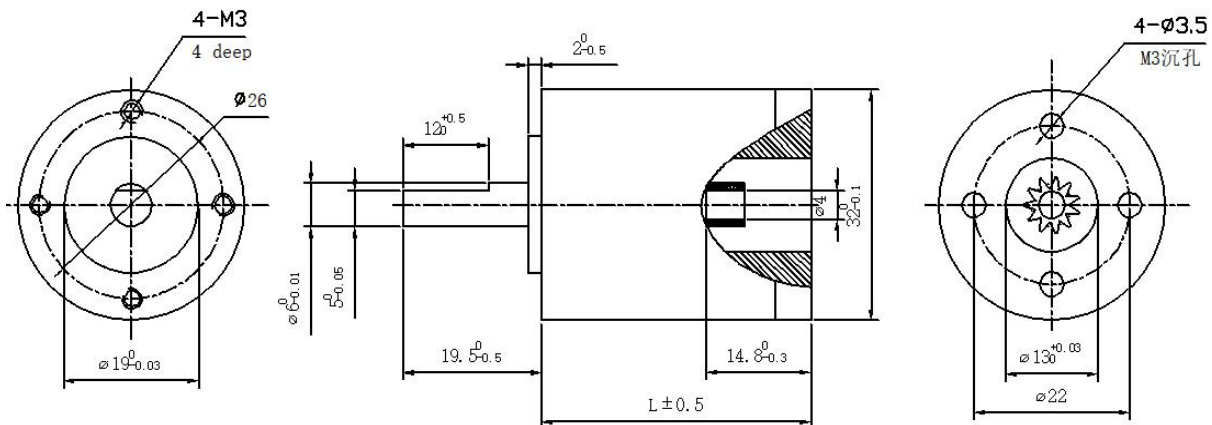
级数Stage	1		2			3			4			5		
减速比 Reduction ratio	3.57	12.76	22	45.55	64	101.2	182.22	302.29	465.52	728.86	1209.14	2286.04		
	4	16		51.02	73.6	121	204.08	338.56	556.6	816.33	1557.38	2662		
	5.5	18.4		58.67	84.64		262.86	404.8		1024	1936			
连续输出扭矩 Nm	0.5	1		3			4			4				
堵转扭矩 Nm Stall Torque	0.8	2		4			5			5				
最大效率 % Max	90	81		73			65			59				
长度 L mm Length	26.7	31.2		35.7			40.2			44.7				
重量 g Weight	50	65		85			95			110				
空载回差 ° No-Load Backlash	1.5	1.5		2			2			2.5				

## 技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤10,000
使用温度范围 Operating temperature range	℃	-10℃ ~ +60℃
不允许安装力 unallowable Installatinon Force	N	≤100
径向负载 Radial Load	N	≤50
轴向负载 Axial Load	N	≤50

# G-32 Gearbox

外形尺寸/outline size



Planetary Gearboxes

标准减速比空式/Gearboxes Specifications

级数 Stage	1		2		3		4			5		
减速比 Reduction ratio	3.11	9.68	23.04	30.11	62.01	92.16	159.42	266.24	412.16	693.79	988.89	2548.04
	4	14.93		46.46	71.68	110.59	178.23	297.66	530.84	765.21	1428.77	3174
	4.8	19.2		51.24	80.14		223	344.06		855.52	1846.41	
连续输出扭矩 Nm	1	1.5		2.5		3			5			
堵转扭矩 Nm Stall Torque	2	3		5		6			7.5			
最大效率 % Max	90	81		73		65			59			
长度 L mm Length	31.6	37.9		44.2		50.5			56.8			
重量 g Weight	125	147		169		191			213			
空载回差 ° No-Load Backlash	1.5	1.5		2		2			2.5			

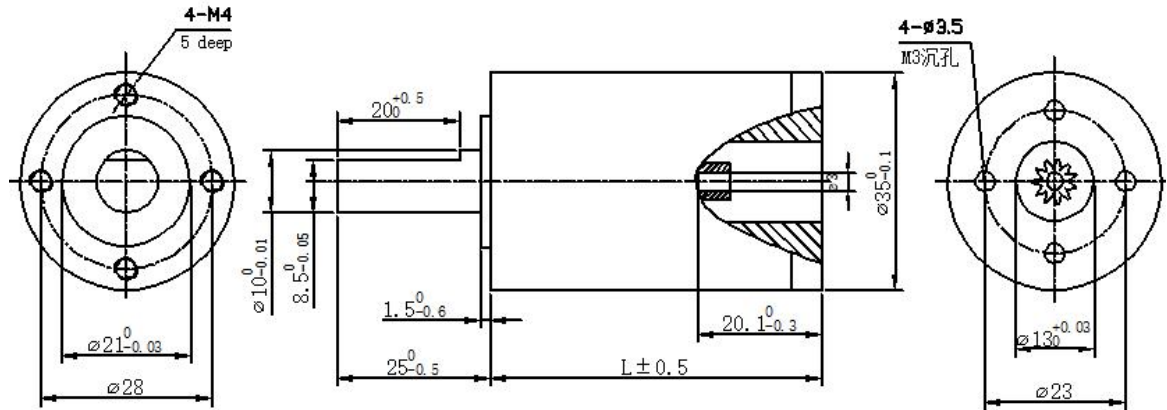
技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤10,000
使用温度范围 Operating temperature range	°C	-10°C ~ +60°C
不允许安装力 unallowable Installatinon Force	N	≤120
径向负载 Radial Load	N	≤80
轴向负载 Axial Load	N	≤100



## G-35 Gearbox

外形尺寸/outline size



## 标准减速比型式/Gearboxes Specifications

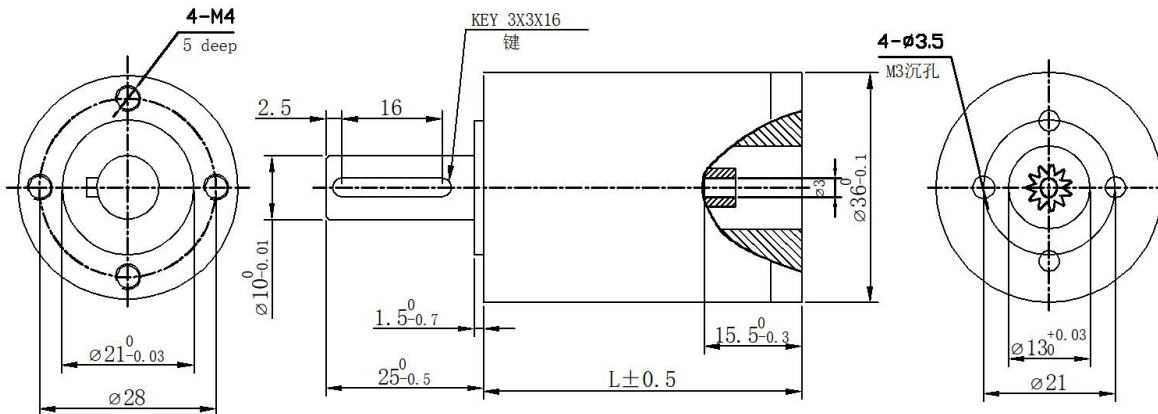
级数Stage	1		2			3			4			5		
减速比 Reduction ratio	4	12.25	21	42.88	76	144	150.06	304	456	525.22	1024	2166		
	4.75	14		56	84		196	361		686	1444	2736		
	6	16		64	90.24		256	384		784	1824			
连续输出扭矩 Nm	3	8		16			16			20				
堵转扭矩 Nm Stall Torque	5	12		25			25			30				
最大效率 % Max	90	81		73			65			59				
长度 L mm Length	40.6	47.4		54			60.6			67.2				
重量 g Weight	210	245		280			315			350				
空载回差 ° No-Load Backlash	1.5	1.5		2			2			2.5				

## 技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤10,000
使用温度范围 Operating temperature range	℃	-10℃ ~ +60℃
不允许安装力 unallowable Installatinon Force	N	≤120
径向负载 Radial Load	N	≤80
轴向负载 Axial Load	N	≤100

# G-36 Gearbox

## 外形尺寸/outline size



Planetary Gearboxes

## 标准减速比型式/Gearboxes Specifications

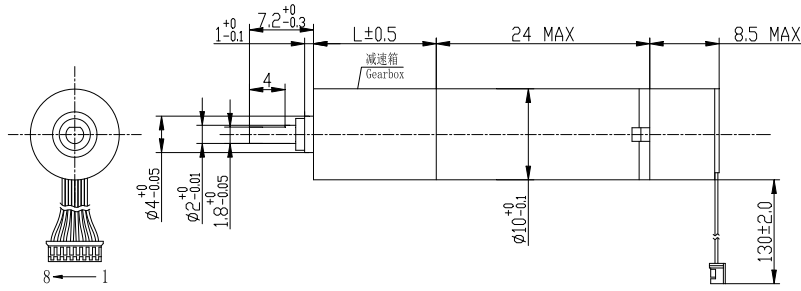
级数 Stage	1		2		3		4			5		
减速比 Reduction ratio	3.75	14.06	30.33	52.73	101.63	197.75	381.11	920.11	1148.44	2213.27	5980.72	
	4.67	17.5		65.63	141.56	246.09	474.27		1429.17	3082.77		
	6.5	21.78		81.67	169	306.25	660.59		1778.52	4293.85		
连续输出扭矩 Nm	4	8		16		16			20			
堵转扭矩 Nm Stall Torque	5	12		25		25			30			
最大效率 % Max	90	81		73		65			59			
长度 L mm Length	36	42.3		50.6		57.9			65.2			
重量 g Weight	210	245		280		315			350			
空载回差 ° No-Load Backlash	1.5	1.5		2		2			2.5			

## 技术参数 TECHNICAL PARAMETER

名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of shaft	optional	滚珠轴承 Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤10,000
使用温度范围 Operating temperature range	°C	-10°C ~ +60°C
不允许安装力 unallowable Installatinon Force	N	≤120
径向负载 Radial Load	N	≤80
轴向负载 Axial Load	N	≤100

# 1024REMG Brush Motor+ Gearbox+ Encoder

外形尺寸/outline size



Coreless Servo Motors

端子定义 Terminal Definition A:			
端子型号 Terminal model: Molex51021-0800 间距 Pitch 1.25mm			
电线型号 Cable Model: UL10064 28#AWG			
PIN1: MOTOR -	PIN3: VCC	PIN5: Incremental output A or I <sup>2</sup> C SDA	PIN7: Incremental output Z
PIN2: GND	PIN4: PWM	PIN6: Incremental output B or I <sup>2</sup> C SCL	PIN8: MOTOR +

电机参数 (Motor data)		01A	02A						
1	额定电压 Nominal voltage	V	6	4.5					
2	空载转速 No load speed	rpm	13500	16000					
3	空载电流 No load current	A	0.025	0.05					
4	额定转速 Nominal speed	rpm	11610	13760					
5	额定转矩(最大连续转矩) Nominal torque	mNm	0.575	0.711					
6	额定电流(最大连续电流) Nominal current	A	0.16	0.31					
7	堵转转矩 Stall torque	mNm	4.1	5					
8	堵转电流 Stall current	A	0.96	1.89					
9	相间电阻 Terminal resistance	Ω	6.2	2.38					
10	转矩常数 Torque constant	mNm/A	4.16	2.63					
11	速度常数 Speed constant	rpm/V	2250	3556					

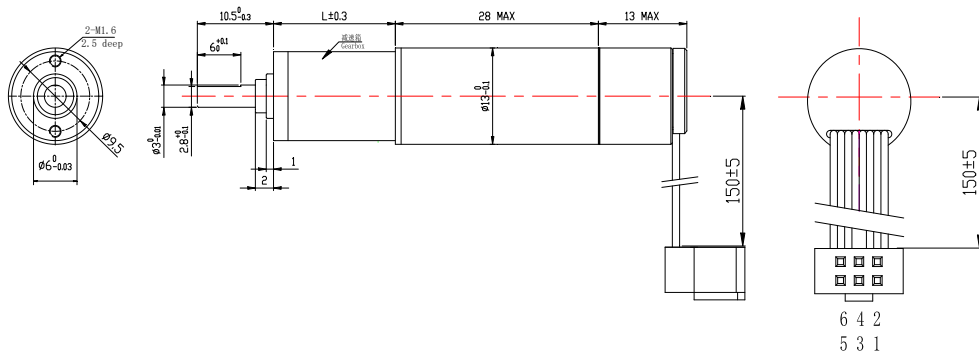
▲级数 Stage	1	2	3	4	5
减速比 Reduction ratio	4	16	64	256	1024
连续输出扭矩 Nm Rated Torque	0.01	0.025	0.1	0.15	1024
堵转扭矩 Nm Stall Torque	0.02	0.05	0.15	0.2	0.2
最大效率 % Max Efficiency	90	81	73	65	59
长度 mm Length	11	13.8	16.6	19.4	22.2
空载回差 ° No-Load Backlash	1	1.5	1.5	2	2

编码器参数 (Encoder)	
基本参数 Basic parameters:	
电源电压 Supply voltage:	DC3.3~5V
电流 Typical current :	15mA
最大机械速度 Max. Mech. Speed (min-1):	50000;
积分非线性 Integral Non-Linearity :	±1.5;
微分非线性 Differential (ABZ) Non-Linearity :	±0.02°
每转脉冲数 Number of pulses per revolution:	1~1024PPR;
单圈绝对编码 Single-turn absolute coding :	14-bit (I <sup>2</sup> C)
上电时间 Power-Up Time :	1~3ms
输出延迟 Propagation Delay:	1~5us
上升时间 R <sub>ring</sub> Time :	lus
下降时间 Falling Time :	lus
储存温度 Storage Temperature :	-55~150℃ ;
使用温度 Operating Temperature :	-40~125℃ ;

减速箱参数 Gearbox spec		
名称 Name	单位	参数 Parameters
输出端轴承 Bearing of shaft	optiona	Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤20,000
不允许安装力 unallowable Installatinon	N	≤10
径向负载 Radial Load	N	≤8
轴向负载 Axial Load	N	≤10

# 1332REMG Brush Motor+ Gearbox+ Encoder

外形尺寸/outline size



Coreless Servo Motors

端子定义 Terminal Definition A:		
端子型号 Terminal model: EN 60603-13/DIN-41651 Pitch 2.54mm 6pin		
电线型号 Cable Model: 6pin UL2651 26AWG		
PIN1: MOTOR +	PIN3: Channel A	PIN5: GND
PIN2: VCC	PIN4: Channel B	PIN6: Motor -

电机参数 (Motor data)	52A	57A	63A							
1 额定电压 Nominal voltage	V	3.7	6	12						
2 空载转速 No load speed	rpm	11000	11000	12300						
3 空载电流 No load current	A	0.045	0.02	0.05						
4 额定转速 Nominal speed	rpm	9850	9400	10393						
5 额定转矩(最大连续转矩) Nominal torque	mNm	1.5	1.52	2.07						
6 额定电流(最大连续电流) Nominal current	A	0.51	0.31	0.26						
7 堵转转矩 Stall torque	mNm	14.3	10.5	13.3						
8 堵转电流 Stall current	A	4.46	2.01	1.43						
9 相间电阻 Terminal resistance	Ω	0.83	2.99	8.37						
10 转矩常数 Torque constant	mNm/A	3.15	5.10	9.13						
11 速度常数 Speed constant	rpm/V	2973	1833	1025						

级数 Stage	1	2	3	4	5
减速比 Reduction ratio	3.94	13.68	21.3	41.92	71.56
	4.62	15.5	53.86	83.88	187.08
连续输出扭矩 Nm Rated Torque	0.2	0.2	0.3	0.3	0.35
堵转扭矩 Nm Stall Torque	0.3	0.3	0.45	0.45	0.5
最大效率 % Max Efficiency	90	81	73	65	59
长度 mm Length	13.3	16.1	18.9	25.6	24.5
空载回差 ° No-Load Backlash	1	1.5	1.5	2	2

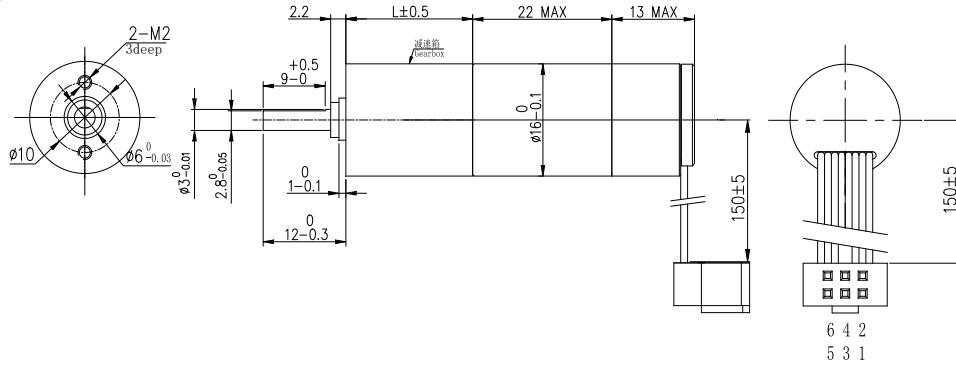
编码器参数 (Encoder)
基本参数 Basic parameters:
电源电压 Supply voltage: DC3.3~5V
电流 Typical current : 15mA
最大机械速度 Max. Mech. Speed (min-1): 50000;
积分非线性 Integral Non-Linearity : ±1.5°;
微分非线性 Differential (ABZ) Non-Linearity : ±0.02°
每转脉冲数 Number of pulses per revolution: 1~1024PPR;
单圈绝对编码 Single-turn absolute coding : 14-bit (I <sup>2</sup> C)
上电时间 Power-Up Time : 1~3ms
输出延迟 Propagation Delay: 1~5us
上升时间 R <sub>ring</sub> Time : 1us
下降时间 Falling Time : 1us
储存温度 Storage Temperature : -55~150℃ ;
使用温度 Operating Temperature : -40~125℃ ;

减速箱参数 Gearbox spec		
名称 Name	单位	参数 Parameters
输出端轴承 Bearing of shaft	Optiona	Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤20,000
不允许安装力 unallowable Installatinon	N	≤10
径向负载 Radial Load	N	≤8
轴向负载 Axial Load	N	≤10



# 1625REMG Brush Motor+ Gearbox+ Encoder

外形尺寸/outline size



Coreless Servo Motors

端子定义 Terminal Definition A:		
端子型号 Terminal model: EN 60603-13/DIN-41651 Pitch 2.54mm 6pin;		
电线型号 Cable Model: 6pin UL2651 26AWG		
PIN1: MOTOR +	PIN3: Channel A	PIN5: GND
PIN2: VCC	PIN4: Channel B	PIN6: Motor -

电机参数 (Motor data)		15A	02A										
1 额定电压 Nominal voltage	V	6	12										
2 空载转速 No load speed	rpm	8300	12000										
3 空载电流 No load current	A	0.03	0.02										
4 额定转速 Nominal speed	rpm	7055	10980										
5 额定转矩 (最大连续转矩) Nominal torque	mNm	1	1.8										
6 额定电流 (最大连续电流) Nominal current	A	0.17	0.21										
7 堵转转矩 Stall torque	mNm	6.7	21.6										
8 堵转电流 Stall current	A	0.97	2.26										
9 相间电阻 Terminal resistance	Ω	6.18	5.3										
10 转矩常数 Torque constant	mNm/A	6.77	9.36										
11 速度常数 Speed constant	rpm/V	1383	1000										

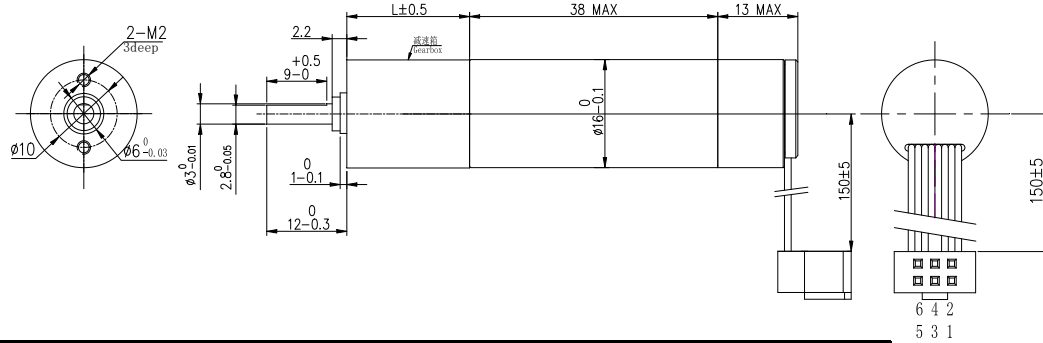
级数 Stage	1	2	3	4	5
减速比 Reduction ratio	3.79	14.4	54.42	206.21	1012.03
	4.31	16.3	70.48	267.06	1151.72
	5.08	18.1	80.2	303.92	1310.68
连续输出扭矩 Nm Rated Torque	0.2	0.2	0.3	0.3	0.35
堵转扭矩 Nm Stall Torque	0.3	0.3	0.45	0.45	0.5
最大效率 % Max Efficiency	90	81	73	65	59
长度 mm Length	14.8	18.4	22	25.6	29.2
空载回差 ° No-Load Backlash	1	1.5	1.5	2	2

编码器参数 (Encoder)
基本参数 Basic parameters:
电源电压 Supply voltage: DC3.3~5V
电流 Typical current : 15mA
最大机械速度 Max. Mech. Speed : 25000RPM
积分非线性 Integral Non-Linearity : ±1.5°
微分非线性 Differential (ABZ) Non-Linearity : ±0.02°
每转脉冲数 Number of pulses per revolution: 1~1024PPR(可选)
上电时间 Power-Up Time : 1~3ms
输出延迟 Propagation Delay: 1~5us
上升时间 Rsing Time : lus
下降时间 Falling Time : lus
储存温度 Storage Temperature : -20~60℃
使用温度 Operating Temperature : -20~80℃

减速箱参数 Gearbox spec		
名称 Name	单位	参数 Parameters
输出端轴承 Bearing of shaft	option	Ball Bearing
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤20,000
不允许安装力 unallowable Installatinon	N	≤10
径向负载 Radial Load	N	≤8
轴向负载 Axial Load	N	≤10

# 1642REMG Brush Motor+ Gearbox+ Encoder

外形尺寸/outline size



CoreLess Servo Motors

端子定义 Terminal Definition A:		
端子型号 Terminal model: EN 60603-13/DIN-41651 Pitch 2.54mm 6pin		
电线型号 Cable Model: 6pin UL2651 26AWG		
PIN1: MOTOR +	PIN3: Channel A	PIN5: GND
PIN2: VCC	PIN4: Channel B	PIN6: Motor -

电机参数 (Motor data)		25A	08A						
1 额定电压 Nominal voltage	V	18	24						
2 空载转速 No load speed	rpm	10400	13900						
3 空载电流 No load current	A	0.015	0.015						
4 额定转速 Nominal speed	rpm	9412	12854						
5 额定转矩(最大连续转矩) Nominal torque	mNm	2.2	2.7						
6 额定电流(最大连续电流) Nominal current	A	0.146	0.179						
7 堵转转矩 Stall torque	mNm	22	36						
8 堵转电流 Stall current	A	1.39	2.20						
9 相间电阻 Terminal resistance	$\Omega$	12.87	10.9						
10 转矩常数 Torque constant	mNm/A	16.20	16.16						
11 速度常数 Speed constant	rpm/V	578	579						

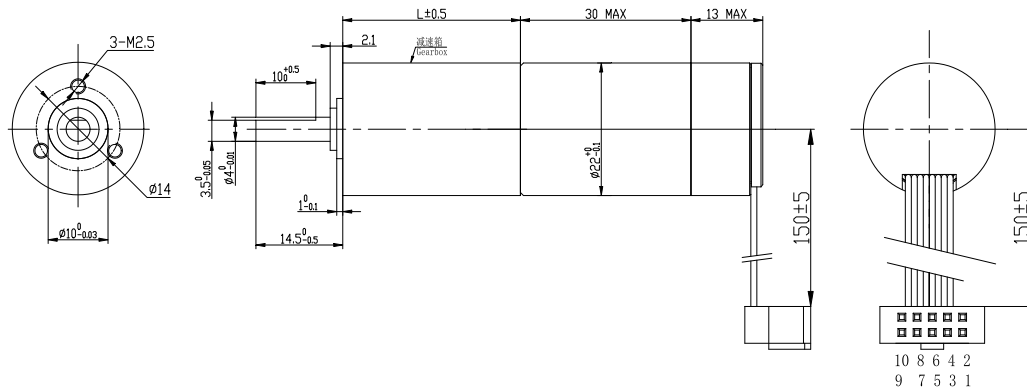
级数 Stage	1		2		3		4		5	
减速比 Reduction ratio	3.79	14.36	21.89	54.42	94.42	206.21	407.18	1012.03	1491.58	2433.66
	4.31	16.34		70.48	111.16	267.06	479.36	1151.72	1596.2	
	5.08	18.06		80.2	130.86	303.92	664.36	1310.68	2067.23	
连续输出扭矩 Nm Rated Torque	0.2	0.2		0.3		0.3		0.35		
堵转扭矩 Nm Stall Torque	0.3	0.3		0.45		0.45		0.5		
最大效率 % Max Efficiency	90	81		73		65		59		
长度 mm Length	14.8	18.4		22		25.6		29.2		
空载回差 ° No-Load Backlash	1	1.5		1.5		2		2		

编码器参数 (Encoder)	
基本参数 Basic parameters:	
电源电压 Supply voltage:	DC3.3~5V
电流 Typical current :	15mA
最大机械速度 Max. Mech. Speed :	25000RPM
积分非线性 Integral Non-Linearity :	$\pm 1.5^\circ$
微分非线性 Differential (ABZ) Non-Linearity :	$\pm 0.02^\circ$
每转脉冲数 Number of pulses per revolution:	1~1024PPR(可选)
上电时间 Power-Up Time :	1~3ms
输出延迟 Propagation Delay:	1~5us
上升时间 Rring Time :	lus
下降时间 Falling Time :	lus
储存温度 Storage Temperature :	-20~60℃
使用温度 Operating Temperature :	-20~80℃

减速箱参数 Gearbox spec			
名称 Name	单位	参数 Parameters	
输出端轴承 Bearing of shaft	option	Ball Bearing	
径向间隙 Radial Clearance	mm	$\leq 0.1$	
轴向间隙 Axial Clearance	mm	$\leq 0.2$	
推荐输入转速 Permission input speed	rpm	$\leq 20,000$	
不允许安装力 unallowable Installatinon	N	$\leq 10$	
径向负载 Radial Load	N	$\leq 8$	
轴向负载 Axial Load	N	$\leq 10$	

# 2232REMG Brush Motor+ Gearbox+ Encoder

外形尺寸/outline size



Coreless Servo Motors

端子定义 Terminal Definition A:				
端子型号 Terminal model: EN 60603-13/DIN-41651 Pitch 2.54mm 6pin				
电线型号 Cable Model: 10pin UL2651 26AWG				
PIN1: N.C	PIN3: GND	PIN5: Channel A- or U	PIN7: Channel B- or V	PIN9: Channel Z- or W
PIN2: Vcc DC3.3~5V	PIN4: MODE	PIN6: Channel A or I <sup>2</sup> C SDA	PIN8: Channel B or I <sup>2</sup> C SCL	PIN10: Channel Z

电机参数 (Motor data)		04A	52A								
1 额定电压 Nominal voltage	V	12	12								
2 空载转速 No load speed	rpm	9600	7350								
3 空载电流 No load current	A	0.04	0.035								
4 额定转速 Nominal speed	rpm	8880	6651								
5 额定转矩 (最大连续转矩) Nominal torque	mNm	5.6	4.9								
6 额定电流 (最大连续电流) Nominal current	A	0.51	0.34								
7 堵转转矩 Stall torque	mNm	75.2	51.5								
8 堵转电流 Stall current	A	6.28	3.30								
9 相间电阻 Terminal resistance	Ω	1.91	3.63								
10 转矩常数 Torque constant	mNm/A	11.70	15.28								
11 速度常数 Speed constant	rpm/V	800	613								

级数 Stage	1	2	3			4			5			
减速比 Reduction ratio	3.57	12.76	22	45.55	64	101.2	182.22	302.29	465.52	728.86	1029.14	2286.04
	4	16		51.02	73.6	121	204.08	338.56	556.6	816.33	1557.38	2662
	5.5	18.4		58.67	84.64		262.86	404.8		1024	1936	
连续输出扭矩 Nm Rated Torque	0.3	0.3	0.5			0.5			0.75			
堵转扭矩 Nm Stall Torque	0.5	0.5	0.8			0.8			1			
最大效率 % Max Efficiency	90	81	73			65			59			
长度 mm Length	22.1	25.9	29.7			33.5			37.3			
空载回差 ° No-Load Backlash	1	1.5	1.5			2			2			

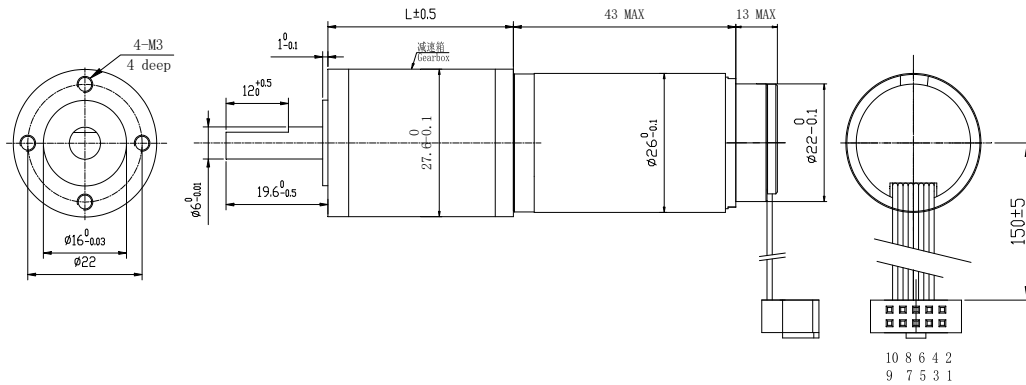
编码器参数 (Encoder)	
基本参数 Basic parameters:	
电源电压 Supply voltage:	DC3.3~5V
电流 Typical current :	15mA
最大机械速度 Max. Mech. Speed :	25000RPM
积分非线性 Integral Non-Linearity :	±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity :	±0.02°
每转脉冲数 Number of pulses per revolution:	1~1024PPR(可选)
上电时间 Power-Up Time :	16ms
输出延迟 Propagation Delay:	1~3us
上升时间 Rsing Time :	1us
下降时间 Falling Time :	1us
储存温度 Storage Temperature :	-20~60°C
使用温度 Operating Temperature :	-20~80°C

减速箱参数 Gearbox spec			
名称 Name	单位	参数 Parameters	
输出端轴承 Bearing of shaft	option	Ball Bearing	
径向间隙 Radial Clearance	mm	≤0.1	
轴向间隙 Axial Clearance	mm	≤0.2	
推荐输入转速 Permission input speed	rpm	≤20,000	
不允许安装力 unallowable Installatinon	N	≤10	
径向负载 Radial Load	N	≤8	
轴向负载 Axial Load	N	≤10	



# 2643RCEMG Brush Motor + Gearbox + Encoder

外形尺寸/outline size



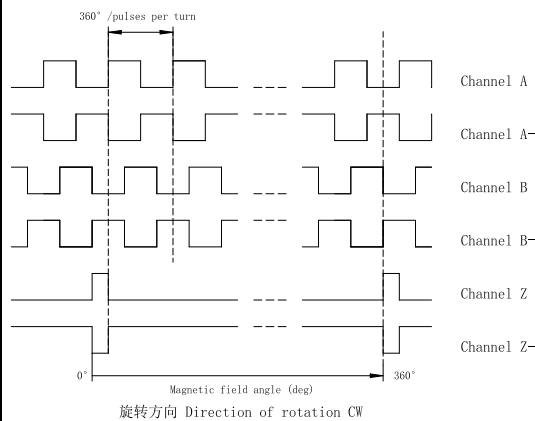
Coreless Servo Motors

级数Stage	1	2	3	4	5							
减速比 Reduction ratio	3.57	12.76	22	45.55	64	101.2	182.22	302.29	465.52	728.86	1209.14	2286.04
	4	16		51.02	73.6	121	204.08	338.56	556.6	816.33	1557.38	2662
	5.5	18.4		58.67	84.64		262.86	404.8		1024	1936	
连续输出扭矩 Nm	0.5	1	3	4	4							
堵转扭矩 Nm	0.8	2	4	5	5							
最大效率 %	90	81	73	65	59							
长度 L mm Length	26.7	31.2	35.7	40.2	44.7							
空载回差 °	1	1.5	1.5	2	2							

电机参数 (Motor data)	03A	04A
1 额定电压 Nominal voltage V	12	24
2 空载转速 No load speed rpm	8000	8000
3 空载电流 No load current A	0.06	0.06
4 额定转速 Nominal speed rpm	7520	7320
5 额定转矩(最大连续转矩) Nominal torque mNm	12.4	17.1
6 额定电流(最大连续电流) Nominal current A	0.92	0.65
7 堵转转矩 Stall torque mNm	202.4	201.2
8 堵转电流 Stall current A	14.46	7.02
9 相间电阻 Terminal resistance Ω	0.83	3.42
10 转矩常数 Torque constant mNm/A	14.04	28.08
11 速度常数 Speed constant rpm/V	667	333
12 机械时间常数 Mechanical time constant ms		
13 转子惯量 Rotor inertia g.cm <sup>2</sup>		
14 相间电感 Phase inductance mH		

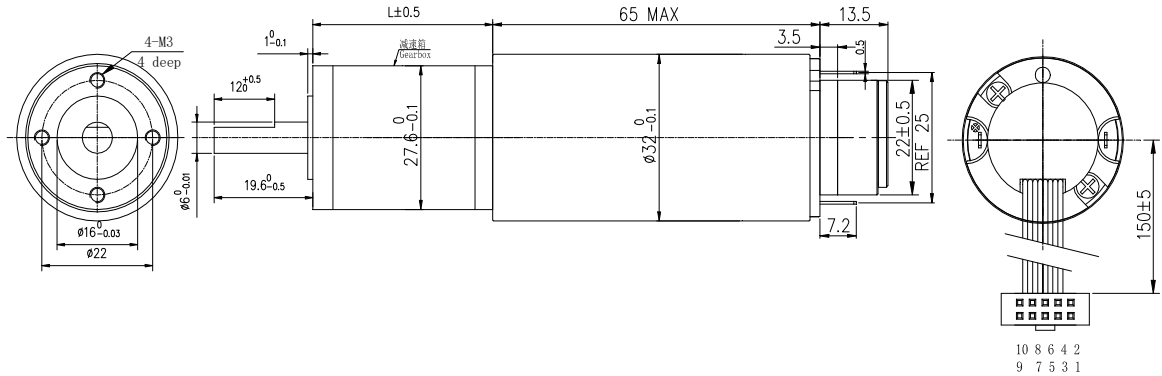
端子定义 Terminal Definition A:
接器A Connection A : EN 60603-13/DIN-41651 2.54mm10pin;
扁平电缆 Flat band cable: 10pin UL2651 26AWG;
PIN1 N.C ;
PIN2 Vcc DC3.3~5V;
PIN3 GND ;
PIN4 MODE (Vcc ABZ, GND I <sup>2</sup> C) ;
PIN5 Channel A- or U;
PIN6 Channel A or I <sup>2</sup> C SDA;
PIN7 Channel B- or V;
PIN8 Channel B or I <sup>2</sup> C SCL ;
PIN9 Channel Z- or W;
PIN10 Channel Z ;

编码器参数 (Encoder)
基本参数 Type:
电源电压 Supply voltage: DC3.3~5V
电流 Typical current : 15mA
最大机械速度 Max. Mech. Speed : 50000RPM
积分非线性 Integral Non-Linearity : ±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity : ±0.02°
每转脉冲数 Number of pulses per revolution: 1~1024PPR
单圈绝对编码 Single-turn absolute coding : 14-bit (I <sup>2</sup> C)
上电时间 Power-Up Time : 1~3ms ;
输出延迟 (Propagation Delay) : 1~5us ;
上升时间 Rsing Time : 1us
下降时间 Falling Time : 1us
储存温度 Storage Temperature : -55~150°C ;
使用温度 Operating Temperature : -40~125°C ;



## 3265RCEMG Brush Motor + Gearbox + Encoder

外形尺寸/outline size

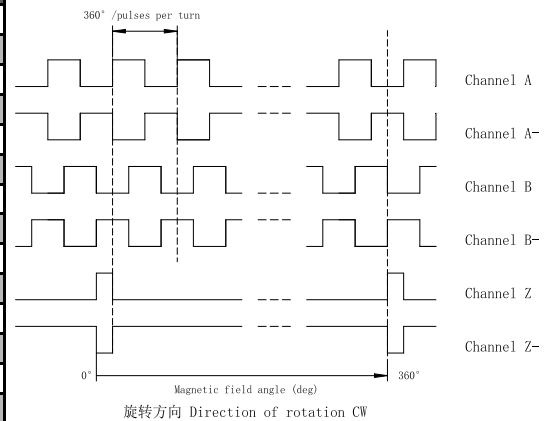


级数Stage	1		2		3		4			5		
减速比 Reduction ratio	3.57	12.76	22	45.55	64	101.2	182.22	302.29	465.52	728.86	1209.14	2286.04
	4	16		51.02	73.6	121	204.08	338.56	556.6	816.33	1557.38	2662
	5.5	18.4		58.67	84.64		262.86	404.8		1024	1936	
连续输出扭矩 Nm	0.5		1		3		4			4		
堵转扭矩 Nm	0.8		2		4		5			5		
最大效率 %	90		81		73		65			59		
长度 L mm Length	26.7		31.2		35.7		40.2			44.7		
空载回差 °	1		1.5		1.5		2			2		

电机参数 (Motor data)	03A	04A
1 额定电压 Nominal voltage V	6	24
2 空载转速 No load speed rpm	8000	8000
3 空载电流 No load current A	0.13	0.1
4 额定转速 Nominal speed rpm	7480	7440
5 额定转矩(最大连续转矩) Nominal torque mNm	27.3	37
6 额定电流(最大连续电流) Nominal current A	2	1.38
7 堵转转矩 Stall torque mNm	419.2	528.6
8 堵转电流 Stall current A	29.27	18.46
9 相间电阻 Terminal resistance Ω	0.41	1.3
10 转矩常数 Torque constant mNm/A	7.02	28.08
11 速度常数 Speed constant rpm/V	1333	333
12 机械时间常数 Mechanical time constant ms		
13 转子惯量 Rotor inertia g.cm <sup>2</sup>		
14 相间电感 Phase inductance mH		

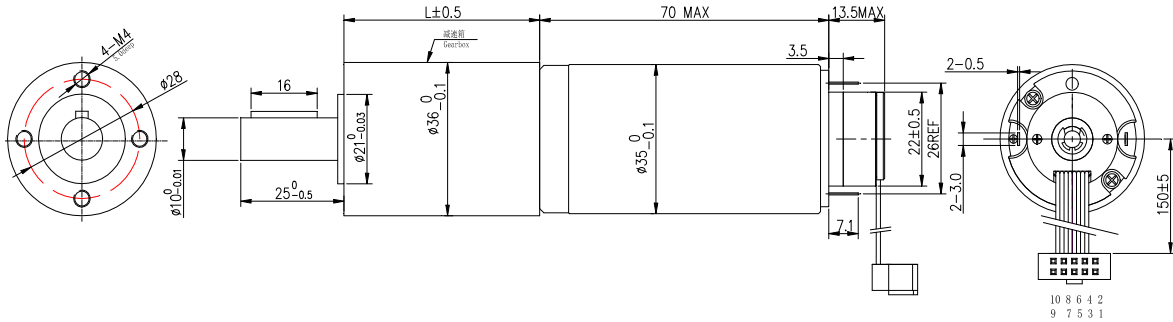
端子定义 Terminal Definition A:	
接口A Connection A	: EN 60603-13/DIN-41651 2.54mm10pin;
扁平电缆 Flat band cable	: 10pin UL2651 26AWG;
PIN1	N.C ;
PIN2	Vcc DC3.3~5V;
PIN3	GND ;
PIN4	MODE (Vcc ABZ, GND I <sup>2</sup> C) ;
PIN5	Channel A- or U;
PIN6	Channel A or I <sup>2</sup> C SDA;
PIN7	Channel B- or V;
PIN8	Channel B or I <sup>2</sup> C SCL ;
PIN9	Channel Z- or W;
PIN10	Channel Z ;

编码器参数 (Encoder)
基本参数 Type:
电源电压 Supply voltage: DC3.3~5V
电流 Typical current : 15mA
最大机械速度 Max. Mech. Speed : 50000RPM
积分非线性 Integral Non-Linearity : ±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity : ±0.02°
每转脉冲数 Number of pulses per revolution: 1~1024PPR
单圈绝对编码 Single-turn absolute coding : 14-bit (I <sup>2</sup> C)
上电时间 Power-Up Time : 1~3ms ;
输出延迟 (Propagation Delay) : 1~5us ;
上升时间 Rsing Time : 1us
下降时间 Falling Time : 1us
储存温度 Storage Temperature : -55~150°C ;
使用温度 Operating Temperature : -40~125°C ;



# 3570RCEMG Brush Motor + Gearbox + Encoder

外形尺寸/outline size

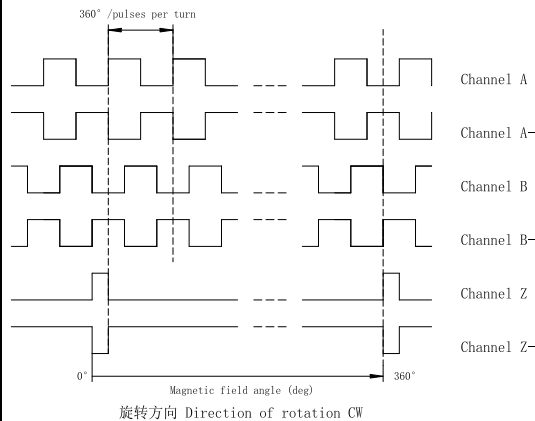


级数Stage	1	2	3			4			5		
减速比 Reduction ratio	3.75	14.06	30.33	52.73	101.63	197.75	381.11	920.11	1148.44	2213.27	5980.72
	4.67	17.5		65.63	141.56	246.09	474.27		1429.17	3082.77	
	6.5	21.78		81.67	169	306.25	660.59		1778.52	4293.85	
连续输出扭矩 Nm	4	8	16			16			20		
堵转扭矩 Nm	5	12	25			25			30		
最大效率 %	90	81	73			65			59		
长度 L mm Length	36	43.3	50.6			57.9			65.2		
空载回差 °	0.8	1	1			1.2			1.2		

电机参数 (Motor data)		21A	15A
1 额定电压 Nominal voltage	V	12	24
2 空载转速 No load speed	rpm	7000	7000
3 空载电流 No load current	A	0.26	0.22
4 额定转速 Nominal speed	rpm	6650	6650
5 额定转矩 (最大连续转矩) Nominal torque	mNm	61.3	60
6 额定电流 (最大连续电流) Nominal current	A	4	2
7 堵转转矩 Stall torque	mNm	1226	1202
8 堵转电流 Stall current	A	75	36.92
9 相间电阻 Terminal resistance	Ω	0.16	0.65
10 转矩常数 Torque constant	mNm/A	16.04	32.09
11 速度常数 Speed constant	rpm/V	583	292

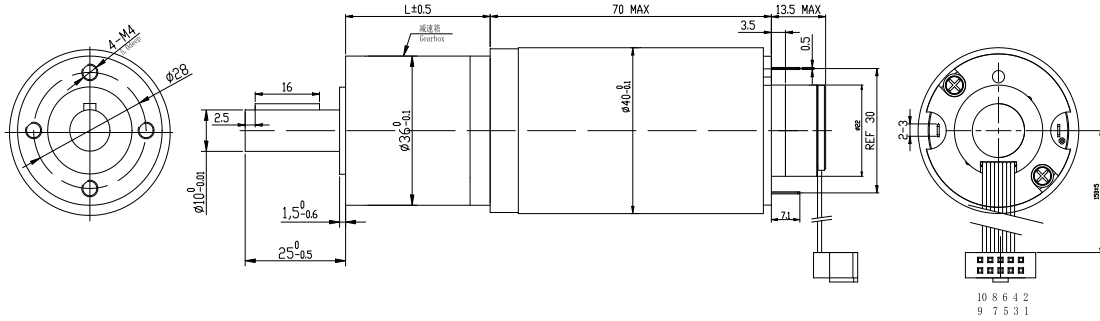
端子定义 Terminal Definition A:	
接器A Connection A	: EN 60603-13/DIN-41651 2.54mm10pin;
扁平电缆 Flat band cable	: 10pin UL2651 26AWG;
PIN1	N.C ;
PIN2	Vcc DC3.3~5V;
PIN3	GND ;
PIN4	MODE (Vcc ABZ, GND I <sup>2</sup> C) ;
PIN5	Channel A- or U;
PIN6	Channel A or I <sup>2</sup> C SDA;
PIN7	Channel B- or V;
PIN8	Channel B or I <sup>2</sup> C SCL ;
PIN9	Channel Z- or W;
PIN10	Channel Z ;

编码器参数 (Encoder)	
基本参数 Type:	
电源电压 Supply voltage	: DC3.3~5V
电流 Typical current	: 15mA
最大机械速度 Max. Mech. Speed	: 50000RPM
积分非线性 Integral Non-Linearity	: ±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity	: ±0.02°
每转脉冲数 Number of pulses per revolution	: 1~1024PPR
单圈绝对编码 Single-turn absolute coding	: 14-bit (I <sup>2</sup> C)
上电时间 Power-Up Time	: 1~3ms ;
输出延迟 (Propagation Delay)	: 1~5us ;
上升时间 Rsing Time	: lus
下降时间 Falling Time	: lus
储存温度 Storage Temperature	: -55~150°C ;
使用温度 Operating Temperature	: -40~125°C ;



# 4070RCEMG Brush Motor + Gearbox + Encoder

外形尺寸/outline size

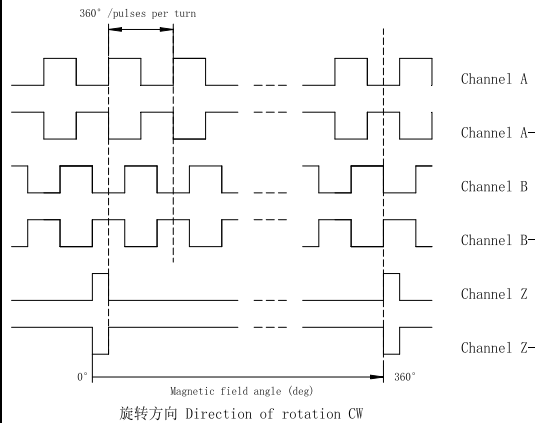


级数Stage	1		2		3		4		5			
减速比 Reduction ratio	3.75	14.06	30.33	52.73	101.63		197.75	381.11	920.11	1148.44	2213.27	5980.72
	4.67	17.5		65.63	141.56		246.09	474.27		1429.17	3082.77	
	6.5	21.78		81.67	169		306.25	660.59		1778.52	4293.85	
连续输出扭矩 Nm	4		8		16		16		20			
堵转扭矩 Nm	5		12		25		25		30			
最大效率 %	90		81		73		65		59			
长度 L mm Length	36		43.3		50.6		57.9		65.2			
空载回差 °	0.8		1		1		1.2		1.2			

电机参数 (Motor data)	06A	07A
1 额定电压 Nominal voltage V	12	24
2 空载转速 No load speed rpm	6500	6500
3 空载电流 No load current A	0.26	0.22
4 额定转速 Nominal speed rpm	6070	6175
5 额定转矩(最大连续转矩) Nominal torque mNm	45.9	60.4
6 额定电流(最大连续电流) Nominal current A	2.85	1.92
7 堵转转矩 Stall torque mNm	919.8	1201.2
8 堵转电流 Stall current A	52.17	34.29
9 相间电阻 Terminal resistance Ω	0.23	0.65
10 转矩常数 Torque constant mNm/A	17.28	34.56
11 速度常数 Speed constant rpm/V	542	271
12 机械时间常数 Mechanical time constant ms		
13 转子惯量 Rotor inertia g.cm <sup>2</sup>		
14 相间电感 Phase inductance mH		

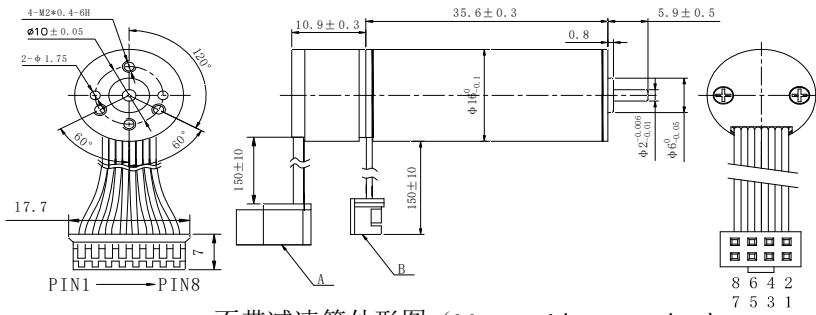
端子定义 Terminal Definition A:	
接口A Connection A	: EN 60603-13/DIN-41651 2.54mm10pin;
扁平电缆 Flat band cable	: 10pin UL2651 26AWG;
PIN1	N.C ;
PIN2	Vcc DC3.3~5V;
PIN3	GND ;
PIN4	MODE (Vcc ABZ, GND I <sup>2</sup> C) ;
PIN5	Channel A- or U;
PIN6	Channel A or I <sup>2</sup> C SDA;
PIN7	Channel B- or V;
PIN8	Channel B or I <sup>2</sup> C SCL ;
PIN9	Channel Z- or W;
PIN10	Channel Z ;

编码器参数 (Encoder)
基本参数 Type:
电源电压 Supply voltage: DC3.3~5V
电流 Typical current : 15mA
最大机械速度 Max. Mech. Speed : 50000RPM
积分非线性 Integral Non-Linearity : ±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity : ±0.02°
每转脉冲数 Number of pulses per revolution: 1~1024PPR
单圈绝对编码 Single-turn absolute coding : 14-bit (I <sup>2</sup> C)
上电时间 Power-Up Time : 1~3ms ;
输出延迟 (Propagation Delay) : 1~5us ;
上升时间 Rsing Time : 1us
下降时间 Falling Time : 1us
储存温度 Storage Temperature : -55~150°C ;
使用温度 Operating Temperature : -40~125°C ;

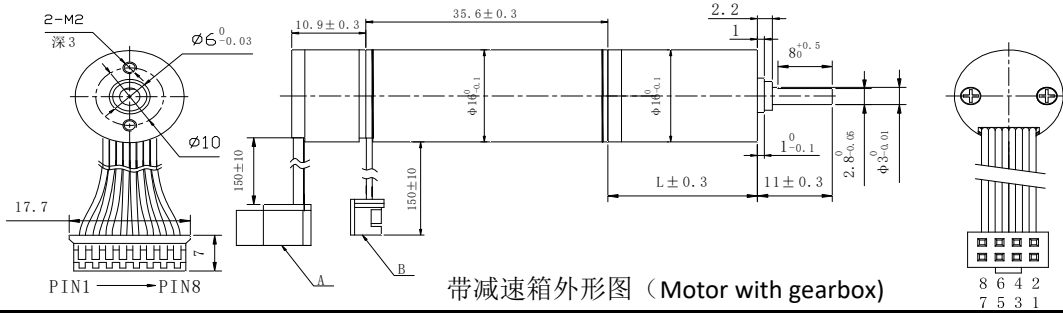


# EM1636RBG Bl dc Motor + Gearbox + Encoder

外形尺寸/outline size



不带减速箱外形图 (Motor without gearbox)



带减速箱外形图 (Motor with gearbox)

连接器A Connection A : EN 60603-13/DIN-41651 2.54mm 8pin		端子定义B (connector definition)	
扁平电缆 Flat band cable: 8pin UL2651 26AWG		8P-26PE引线+JST端子 PH2.0	
1	Vcc DC3.3~5V	PIN1	Motor winding C
2	GND	PIN2	Motor winding B
3	Channel A-	PIN3	Motor winding A
4	Channel A	PIN4	Hall GND
5	Channel B-	PIN5	Hall C
6	Channel B	PIN6	Hall B
7	Channel Z-	PIN7	Hall A
8	Channel Z	PIN8	Hall VCC DC3.3-15V

单电机参数 (Motor data)	16A	09A	08A	20A	21A	10A	06A	19A	17A		
1 额定电压 Nominal voltage V	6	6	7.4	12	12	24	24	24	24		
2 空载转速 No load speed rpm	10200	11670	8700	13900	15000	13100	14300	14800	16800		
3 空载电流 No load current A	0.12	0.16	0.12	0.06	0.13	0.08	0.09	0.08	0.1		
4 额定转速 Nominal speed rpm	8420	10170	6900	12300	12820	9430	11700	12430	13776		
5 额定转矩(最大连续转矩) Nominal torque mNm	2.5	3	3.4	3.79	5.1	8	5.7	6	6		
6 额定电流(最大连续电流) Nominal current A	0.56	0.77	0.48	0.51	0.79	0.535	0.44	0.46	0.53		
7 堵转转矩 Stall torque mNm	14.3	23.3	16.2	32.9	35.1	28.2	33.2	37.5	33		
8 堵转电流 Stall current A	2.58	4.91	2.12	4	4.65	1.7	2.11	2.45	2.45		
9 相间电阻 Terminal resistance Ω	2.32	1.22	3.49	3	2.58	14	11.35	9.8	9.79		
10 转矩常数 Torque constant mNm/A	5.51	4.81	7.96	8.08	7.49	17.15	15.71	15.18	13.37		
11 速度常数 Speed constant rpm/V	1700	1945	1176	1158	1250	546	596	617	700		

减速箱 Gearbox	1		2		3		4		5		6	
级数 Stage	1	2	3	4	5	6	7	8	9	10	11	12
减速比 Reduction ratio	3.79	14.36	21.89	54.42	94.42	206.21	407.18	1012.03	1491.58	2433.66		
	4.31	16.14		70.48	111.16	267.06	479.36	1151.72	1596.2			
	5.08	18.06		80.2	130.86	303.92	664.36	1310.68	2067.23			
连续输出扭矩 Nm	0.2	0.2	0.3	0.3	0.3	0.3	0.35					
堵转扭矩 Nm	0.3	0.3	0.45	0.45	0.45	0.45	0.5					
最大效率 %	90	81	73	65	65	65	59					
长度 L mm	14.8	18.4	22	25.6	25.6	25.6	29.2					
空载回差 °	1.5	1.5	2	2	2	2	2.5					
重量 g	15	20	25	30	30	30	35					

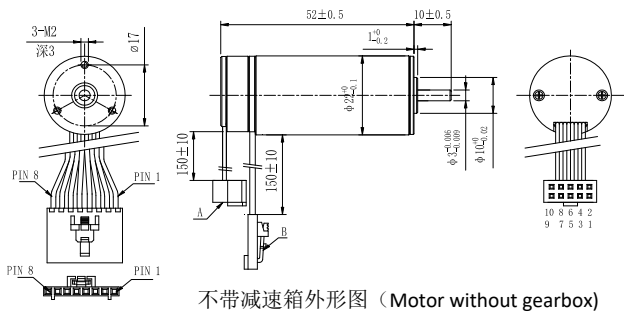
减速箱参数 Gearbox spec		
名称 Name	单位	参数 Parameters
输出端轴承 Bearing of shaft	optiona	滚珠轴承 Ball
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤25,000
不允许安装力 unallowable Installatinon Force	N	≤10
径向负载 Radial Load	N	≤8
轴向负载 Axial Load	N	≤10

编码器参数 (Encoder)	
电源电压 Supply voltage:	DC3.3~5V
电流 Typical current :	15mA
最大机械速度 Max. Mech. Speed :	25000RPM
积分非线性 Integral Non-Linearity :	±1.5°
微分非线性 Differential (ABZ) Non-Linearity :	±0.02°
每转脉冲数 Number of pulses per revolution:	1~1024PPR(可选)
上电时间 Power-Up Time :	1~3ms
输出延迟 (Propagation Delay) :	1~5us
上升时间 Rsing Time :	lus
下降时间 Falling Time :	lus

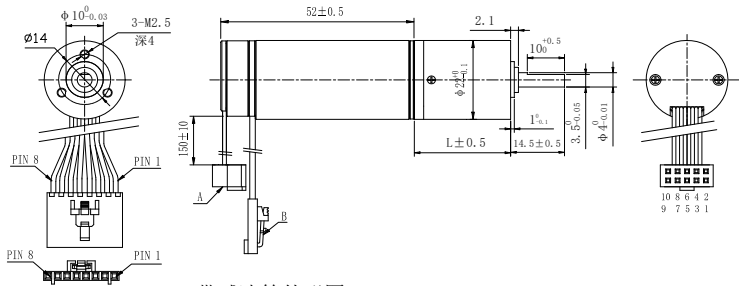
Coreless Servo Motors

# EM2245RBG Bldc Motor + Gearbox(L) + Encoder

外形尺寸/outline size



不带减速箱外形图 (Motor without gearbox)



带减速箱外形图 (Motor with gearbox)

连接器A ConnectionA :  
EN 60603-13/DIN-41651 2.54mm10pin  
扁平电缆 Flat cables:  
10pin UL2651 26AWG  
线序 Cable Sequence:  
PIN1 NC  
PIN2 Vcc DC5V  
PIN3 GND  
PIN4 NC  
PIN5 Channel A-  
PIN6 Channel A  
PIN7 Channel B-  
PIN8 Channel B  
PIN9 Channel Z-  
PIN10 Channel Z

端子定义B (connector definition) :  
端子: Molex 16-02-0103  
8P Molex 50-57-9048(胶壳)  
电缆 Cable: 3266 24#排线  
112/0.05TS+ATR405 OD=1.30MM 8P  
线序 Cable Sequence:  
PIN1 电机绕组 A (Motor winding A) 棕色 (Brown)  
PIN2 电机绕组 B (Motor winding B) 红色 (Red)  
PIN3 电机绕组 C (Motor winding C) 橙色 (Orange)  
PIN4 Hall VCC DC3.3-18V 黄色 (Yellow)  
PIN5 Hall GND 绿色 (Green)  
PIN6 Hall sensor A 蓝色 (Blue)  
PIN7 Hall sensor B 紫色 (Purple)  
PIN8 Hall sensor C 灰色 (Gray)

▲级数Stage	1	2	3	4
减速比 Reduction ratio	4 6	16 24 36	64 96 144	256 384 576 864 1296
连续输出扭矩 Nm	0.3	0.3	0.5	0.5
堵转扭矩 Nm	0.5	0.5	0.8	0.8
最大效率 %	90	81	73	64
长度 L mm	22	26.5	32.1	37.1
空载回差 °	1.5	1.5	2	2

电机参数 (Motor data)	06A	03A	04A	05A	01A
1 额定电压 Nominal voltage V	12	24	24	28	30
2 空载转速 No load speed rpm	6560	35000	22600	17300	10500
3 空载电流 No load current A	0.08	0.2	0.15	0.17	0.12
4 额定转速 Nominal speed rpm	5510	32390	20340	15137	8870
5 额定转矩 (最大连续转矩) Nominal torque mNm	7.9	16.8	15.9	16	14.2
6 额定电流 (最大连续电流) Nominal current A	0.52	2.77	1.7	1.19	0.66
7 堵转转矩 Stall torque mNm	49	223.1	159	128	85.7
8 堵转电流 Stall current A	2.83	34.30	15.69	8.3	3.3
9 相间电阻 Terminal resistance Ω	4.24	0.7	1.53	3.37	9.2
10 转矩常数 Torque constant mNm/A	17.12	6.42	9.94	15.15	26.74
11 速度常数 Speed constant rpm/V	547	1458	942	618	350

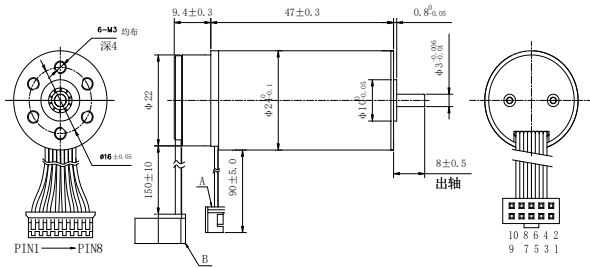
不支持带  
减速箱

编码器参数 (Encoder)	
基本参数 Type:	
电源电压 Supply voltage:	DC3.3~5V
电流 Typical current :	15mA
最大机械速度 Max. Mech. Speed :	25000RPM
积分非线性 Integral Non-Linearity :	±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity :	±0.02°
每转脉冲数 Number of pulses per revolution:	1~4096PPR(可选)
上电时间 Power-Up Time :	16ms
输出延迟 (Propagation Delay) :	1~3us
上升时间 Rsing Time :	1us
下降时间 Falling Time :	1us
储存温度 Storage Temperature :	-20~60℃
使用温度 Operating Temperature :	-20~80℃

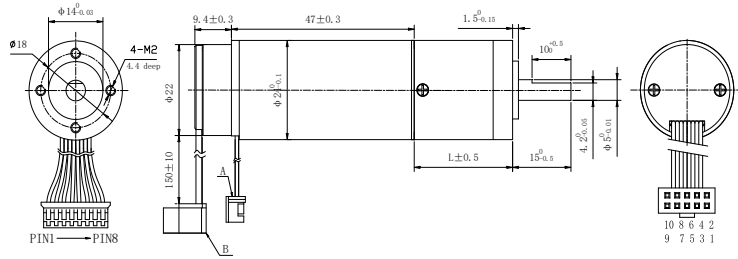
减速箱参数 Gearbox spec		
名称 Name	单位 Unit	参数 Parameters
输出端轴承 Bearing of	optional	滚珠轴承Ball
径向间隙 Radial Clearance	mm	≤0.1
轴向间隙 Axial Clearance	mm	≤0.2
推荐输入转速 Permission input speed	rpm	≤20,000
不允许安装力 unallowable Installatinon Force	N	≤100
径向负载 Radial Load	N	≤50
轴向负载 Axial Load	N	≤50

# EM2447RBG Bldc Motor + Gearbox + Encoder

## 外形尺寸/outline size



不带减速箱外形图 (Motor without gearbox)



带减速箱外形图 (Motor with gearbox)

连接器A Connection A :

EN 60603-13/DIN-41651 2.54mm10pin;

扁平电缆 Flat cables:

10pin UL2651 26AWG;

线序 Cable Sequence:

- 1、NC ;
- 2、Vcc DC5V;
- 3、GND ;
- 4、NC ;
- 5、Channel A-
- 6、Channel A
- 7、Channel B-
- 8、Channel B
- 9、Channel Z-
- 10、Channel Z

端子定义 (connector definition):

JST端子PH2.0-8P 26PE引线

- PIN1 MC
- PIN2 MB
- PIN3 MA
- PIN4 GND-
- PIN5 HC
- PIN6 HB
- PIN7 HA
- PIN8 VCC+

级数Stage	1	2	3	4	5
减速比 Reduction ratio	3.3	10.89 17.1	35.94 60.61	118.59 259.77 493.19	660.07 1036.5 1748.1
	4.29	12.23 22.21	46.67 78.72	154.02 337.36	741.25 1346.1 2113.7
	5.18	14.14	56.43 95.18	200.02 407.9	857.23 1627.5
连续输出扭矩 Nm	0.5	0.5	0.8	0.8	1
堵转扭矩 Nm	1	1	1.5	1.5	2
最大效率 %	90	81	73	65	59
长度 L mm	20.3	24.4	30.2	34.3	38.4
空载回差 °	1.5	1.5	2	2	2.5

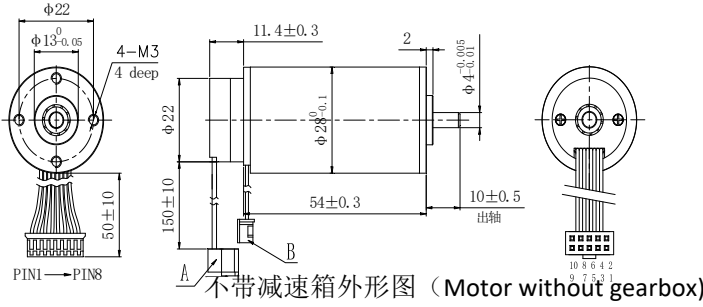
电机参数 (Motor data)	13A	02A	05A	01A	17A	26A	20A	22A
1 额定电压 Nominal voltage V	24	24	24	30	30	30	30	30
2 空载转速 No load speed rpm	24260	7280	12500	18840	19540	20800	16800	11700
3 空载电流 No load current A	0.3	80	0.12	0.16	0.16	0.17	0.15	0.09
4 额定转速 Nominal speed rpm	23520	6333	11000	17890	18640	19950	16040	10296
5 额定转矩(最大连续转矩) Nominal torque mNm	7.3	15.3	25.8	13.9	12.9	12.3	10	21.1
6 额定电流(最大连续电流) Nominal current A	1.1	0.56	1.51	1.1	1.05	1.07	0.75	0.94
7 堵转转矩 Stall torque mNm	240.96	118	214.7	275.7	283.26	306.01	240	176.2
8 堵转电流 Stall current A	25.8	3.75	11.71	18.29	19.48	22.4	14	7.19
9 相间电阻 Terminal resistance Ω	0.93	6.4	2.05	1.64	1.54	1.34	2.13	4.17
10 转矩常数 Torque constant mNm/A	9.26	30.85	17.97	14.90	14.37	13.50	16.71	24.00
11 速度常数 Speed constant rpm/V	1011	303	521	628	651	693	560	390

编码器参数 (Encoder)	
基本参数 Type:	
电源电压 Supply voltage:	DC3.3~5V
电流 Typical current :	15mA
最大机械速度 Max. Mech. Speed :	25000RPM
积分非线性 Integral Non-Linearity :	±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity :	±0.02°
每转脉冲数 Number of pulses per revolution:	1~4096PPR(可选)
上电时间 Power-Up Time :	16ms
输出延迟 (Propagation Delay) :	1~3us
上升时间 Rsing Time :	lus
下降时间 Falling Time :	lus
储存温度 Storage Temperature :	-20~60°C
使用温度 Operating Temperature :	-20~80°C

减速箱参数 Gearbox spec		
名称 Name		参数 Parameters
输出端轴承 Bearing of shaft		滚珠轴承Ball Bearing
径向间隙 Radial Clearance		≤0.1
轴向间隙 Axial Clearance		≤0.2
推荐输入转速 Permission input speed		≤25,000
不允许安装力 unallowable Installatinon Force		≤100
径向负载 Radial Load		≤50
轴向负载 Axial Load		≤50

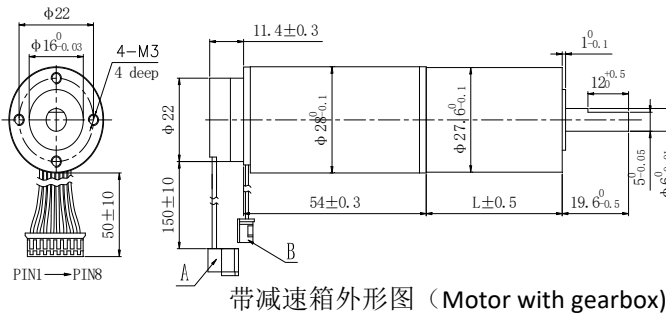
# EM2854RBG Bldc Motor + Gearbox + Encoder

外形尺寸/outline size



连接器A ConnectionA :  
EN 60603-13/DIN-41651 2.54mm10pin  
扁平电缆 Flat cables:  
10pin UL2651 26AWG;  
线序 Cable Sequence:

- 1、 NC ;                    6、 Channel A
- 2、 Vcc DC5V;            7、 Channel B-
- 3、 GND ;                 8、 Channel B
- 4、 NC ;                    9、 Channel Z-
- 5、 Channel A-            10、 Channel Z



端子定义 (connector definition):  
JST端子PH2.0-8P 26PE引线

- PIN1 MC
- PIN2 MB
- PIN3 MA
- PIN4 GND-
- PIN5 HC
- PIN6 HB
- PIN7 HA
- PIN8 VCC+

级数Stage	1	2	3	4	5
减速比 Reduction ratio	3.57	12.76	45.55	182.2	728.86
	4	16	51.02	204.1	816.23
	5.5	18.4	58.67	262.9	1024
连续输出扭矩 Nm	0.5	1	3	4	4
堵转扭矩 Nm	0.8	2	4	5	5
最大效率 %	90	81	73	65	59
长度 L mm	26.7	31.2	35.7	40.2	44.7
空载回差 °	1.5	1.5	2	2	2.5

电机参数 (Motor data)	09A	25A	18A	18A	14A	34A	32A	38A
1 额定电压 Nominal voltage V	12	24	24	30	30	30	30	30
2 空载转速 No load speed rpm	11800	15820	7800	21580	16300	15520	17490	19000
3 空载电流 No load current A	0.3	0.23	0.12	0.31	0.22	0.22	0.22	0.28
4 额定转速 Nominal speed rpm	11320	14870	6700	20610	15390	14660	16620	17000
5 额定转矩 (最大连续转矩) Nominal torque mNm	11.4	21.7	25	21.6	20.1	20.7	20.9	52
6 额定电流 (最大连续电流) Nominal current A	1.47	1.7	0.95	1.9	1.35	1.33	1.4	3.75
7 堵转转矩 Stall torque mNm	281.2	358.8	180.4	519.9	397.78	372.6	414.3	497.1
8 堵转电流 Stall current A	29.3	25	6.14	39.5	22.7	20.4	23.9	32.97
9 相间电阻 Terminal resistance Ω	0.41	0.96	3.91	0.76	1.31	1.47	1.34	0.91
10 转矩常数 Torque constant mNm/A	9.52	14.20	28.80	13.01	17.23	18.09	16.05	14.78
11 速度常数 Speed constant rpm/V	983	659	325	719	543	517	583	633

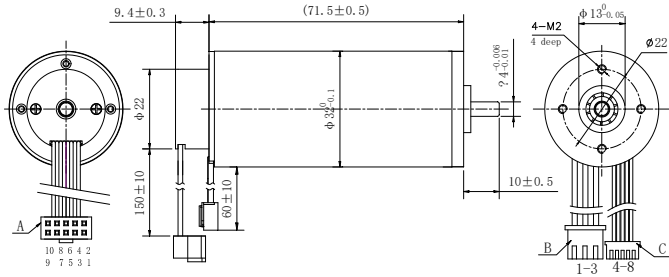
编码器参数 (Encoder)
基本参数 Type:
电源电压 Supply voltage: DC3.3~5V
电流 Typical current : 15mA
最大机械速度 Max. Mech. Speed : 25000RPM
积分非线性 Integral Non-Linearity : ±0.5°~1.0°
微分非线性 Differential (ABZ) Non-Linearity : ±0.02°
每转脉冲数 Number of pulses per revolution: 1~4096PPR(可选)
上电时间 Power-Up Time : 16ms
输出延迟 (Propagation Delay) : 1~3us
上升时间 Rsing Time : 1us
下降时间 Falling Time : 1us
储存温度 Storage Temperature : -20~60°C
使用温度 Operating Temperature : -20~80°C

减速箱参数 Gearbox spec	
名称 Name	参数 Parameters
输出端轴承 Bearing of shaft	滚珠轴承Ball Bearing
径向间隙 Radial Clearance	≤0.1
轴向间隙 Axial Clearance	≤0.2
推荐输入转速 Permission input speed	≤20,000
不允许安装力 unallowable Installatinon Force	≤100
径向负载 Radial Load	≤50
轴向负载 Axial Load	≤50



# EM3270RBG Bldc Motor + Gearbox + Encoder

外形尺寸/outline size



不带减速箱外形图 (Motor without gearbox)

连接器A Connection A :

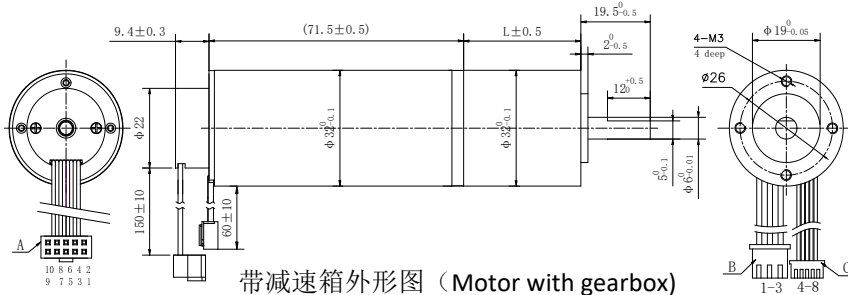
EN 60603-13/DIN-41651 2.54mm10pin

扁平电缆 Flat cables:

10pin UL2651 26AWG

线序 Cable Sequence:

- 1、NC ; 6、Channel A
- 2、Vcc DC5V; 7、Channel B-
- 3、GND ; 8、Channel B
- 4、NC ; 9、Channel Z-
- 5、Channel A- 10、Channel Z



带减速箱外形图 (Motor with gearbox)

连接端子线B:

XHP-3 XH2.5 AWG22 PE

1、MC 黑色 (Black)

2、MB 黄色 (Yellow)

3、MA 红色 (Red)

连接端子线 C:

JST PHR-5P PH2.0 AWG26 PE

4、GND - 黄色 (Yellow)

5、HC 蓝色 (Blue)

6、HB 白色 (White)

7、HA 黑色 (Black)

8、VVC + 红色 (Red)

级数Stage	1	2	3	4	5
减速比 Reduction ratio	3.11	9.68 23.04	30.1 62.01 92.16	159.42 266.24 412.16	693.79 988.89 2548.04
	4	14.93	46.46 71.68 110.56	178.23 297.66 530.84	765.21 1428.77 3174
	4.8	19.2	51.24 80.14	223 344.06	855.52 1846.41
连续输出扭矩 Nm	1	1.5	2.5	3	5
堵转扭矩 Nm	2	3	5	6	7.5
最大效率 %	90	81	73	65	59
长度 L mm	26.6	32.9	39.2	45.5	51.8
空载回差 °	1.5	1.5	2	2	2.5

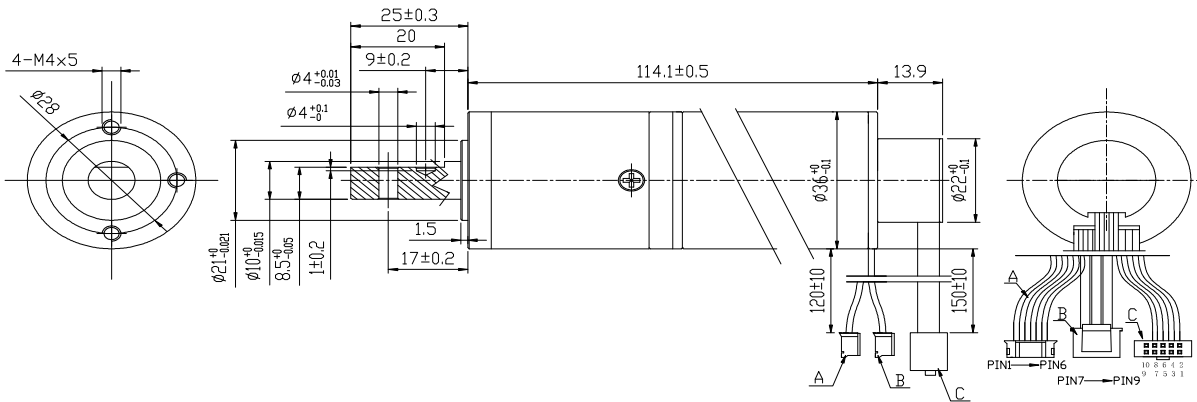
电机参数 (Motor data)	10A	03A	15A	16A	06A	06A	02A	14A
1 额定电压 Nominal voltage V	21	21	24	24	30	36	48	48
2 空载转速 No load speed rpm	16530	14580	16700	15000	17300	14960	18400	9600
3 空载电流 No load current A	0.48	0.45	0.4	0.35	0.25	0.25	0.22	0.1
4 额定转速 Nominal speed rpm	15790	13700	15780	13200	14960	14000	17570	8830
5 额定转矩(最大连续转矩) Nominal torque mNm	45.86	52.5	53	110	91.9	53	52	50.7
6 额定电流(最大连续电流) Nominal current A	4.2	4.2	4.2	7.51	5.67	2.55	3.2	1.16
7 堵转转矩 Stall torque mNm	1013.23	875	968	916.8	766	882.2	1150	634
8 堵转电流 Stall current A	84	63.6	70.58	60	45.45	38.7	46.6	13.3
9 相间电阻 Terminal resistance Ω	0.25	0.32	0.34	0.4	0.66	0.93	1.03	3.61
10 转矩常数 Torque constant mNm/A	11.89	13.48	13.45	14.97	16.23	22.52	24.41	46.80
11 速度常数 Speed constant rpm/V	787	694	696	625	577	416	383	200

编码器参数 (Encoder)
基本参数 Type:
电源电压 Supply voltage: DC3.3~5V
电流 Typical current : 15mA
最大机械速度 Max. Mech. Speed : 25000RPM
积分非线性 Integral Non-Linearity : ±0.5~1.0°
微分非线性 Differential (ABZ) Non-Linearity : ±0.02°
每转脉冲数 Number of pulses per revolution: 1~4096PPR(可选)
上电时间 Power-Up Time : 16ms
输出延迟 (Propagation Delay) : 1~3us
上升时间 Rsing Time : 1us
下降时间 Falling Time : 1us
储存温度 Storage Temperature : -20~60°C
使用温度 Operating Temperature : -20~80°C

减速箱参数 Gearbox spec		
名称 Name		参数 Parameters
输出端轴承 Bearing of shaft		滚珠轴承Ball Bearing
径向间隙 Radial Clearance		≤0.1
轴向间隙 Axial Clearance		≤0.2
推荐输入转速 Permission input speed		≤20,000
不允许安装力 unallowable Installatinon Force		≤100
径向负载 Radial Load		≤80
轴向负载 Axial Load		≤120

# EM3670RBG Bldc Motor + Gearbox + Encoder

外形尺寸/outline size

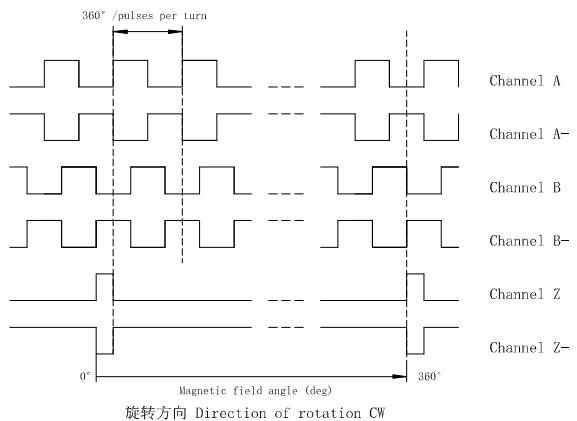


级数Stage	1		2		3		4			5		
减速比 Reduction ratio	3.75	14.06	30.33	52.73	101.63		197.75	266.24	412.16	693.79	988.89	2548.04
	4.67	17.5		65.63	141.56		178.23	297.66	530.84	765.21	1428.77	3174
	6.5	21.78		81.67	169		223	344.06		855.52	1846.41	
连续输出扭矩 Nm	1	1.5		2.5			3			5		
堵转扭矩 Nm	2	3		5			6			7.5		
最大效率 %	90	81		73			65			59		
长度 L mm Length	31.6	37.9		44.2			50.5			56.8		
空载回差 °	1.5	1.5		2			2			2.5		

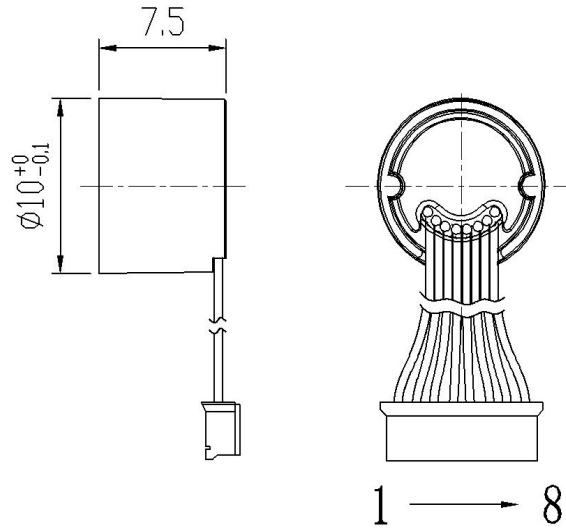
电机参数 (Motor data)		04A	14A
1 额定电压 Nominal voltage	V	24	36
2 空载转速 No load speed	rpm	10000	10000
3 空载电流 No load current	A	300	
4 额定转速 Nominal speed	rpm		
5 额定转矩(最大连续转矩) Nominal torque	mNm		
6 额定电流(最大连续电流) Nominal current	A		
7 堵转转矩 Stall torque	mNm		
8 堵转电流 Stall current	A		
9 相间电阻 Terminal resistance	Ω	0.6	
10 转距常数 Torque constant	mNm/A	22.46	33.69
11 速度常数 Speed constant	rpm/V	417	278
12 机械时间常数 Mechanical time constant	ms		
13 转子惯量 Rotor inertia	g.cm <sup>2</sup>		
14 相间电感 Phase inductance	mH		

端子定义 Terminal Definition A:	
8*#26PE引线+JST端子	
PIN1 NTC	Connection B:
PIN2 VCC	VHR-3N PH3.96
PIN3 HA	UL1430 AWG20 PVC
PIN4 HB	PIN7 MA
PIN5 HC	PIN8 MB
PIN6 GND	PIN9 MC
连接器 Connection C : EN 60603-13/DIN-41651 2.54mm10pin;	
扁平电缆 Flat band cable: 线序 Sequence	
1 Motor +	6 Channel A
2 Vcc DC5V	7 Channel B-
3 GND	8 Channel B
4 Motor -	9 Channel Z-
5 Channel A-	10 Channel Z

编码器参数 (Encoder)	
基本参数 Type:	
电源电压 Supply voltage: DC3.3~5V	
电流 Typical current : 15mA	
最大机械速度 Max. Mech. Speed : 25000RPM	
积分非线性 Integral Non-Linearity : ±0.5~1.0°	
微分非线性 Differential (ABZ) Non-Linearity : ±0.01°	
每转脉冲数 Number of pulses per revolution: 1~4096PPR	
单圈绝对编码 Single-turn absolute coding : 18-bit (SPI)	
上电时间 Power-Up Time : 16ms	
输出延迟 (Propagation Delay) : 1~3us	
上升时间 Rring Time : 1us	
下降时间 Falling Time : 1us	
储存温度 Storage Temperature : -20~45°C	
使用温度 Operating Temperature : -20~80°C	



14bit I<sup>2</sup>C/Incremental (indifferentia)



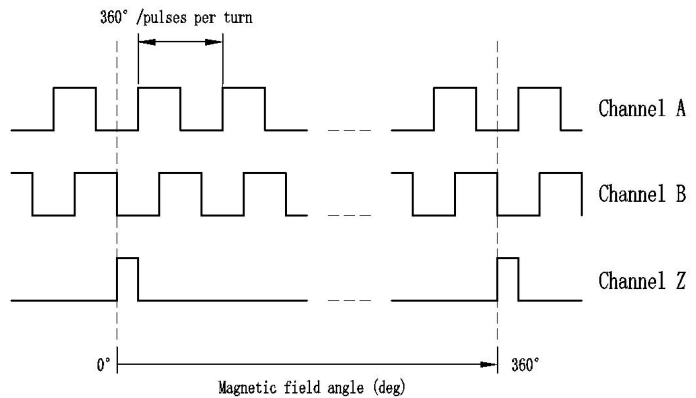
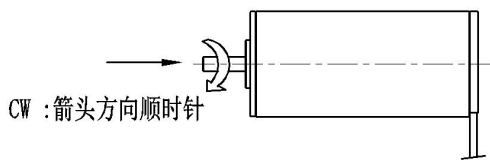
基本参数 Basic parameters:

- 电源电压 Supply voltage: DC3.3~5V ;
- 电流 Typical current : 15mA ;
- 最大机械速度 Max. Mech. Speed : 5000RPM;
- 积分非线性 Integral Non-Linearity :  $\pm 1.5^\circ$  ;
- 微分非线性 Differential (ABZ) Non-Linearity :  $\pm 0.02^\circ$  ;
- 每转脉冲数 Number of pulses per revolution: 1~1024PPR ;
- 单圈绝对编码 Single-turn absolute coding : 14-bit (I<sup>2</sup>C) ;
- 上电时间 Power-Up Time : 1~3ms ;
- 输出延迟 (Propagation Delay) : 1~5us ;
- 上升时间 Rsing Time : 1us ;
- 下降时间 Falling Time : 1us ;
- 储存温度 Storage Temperature : -55~150°C ;
- 使用温度 Operating Temperature : -40~125°C ;

线缆:

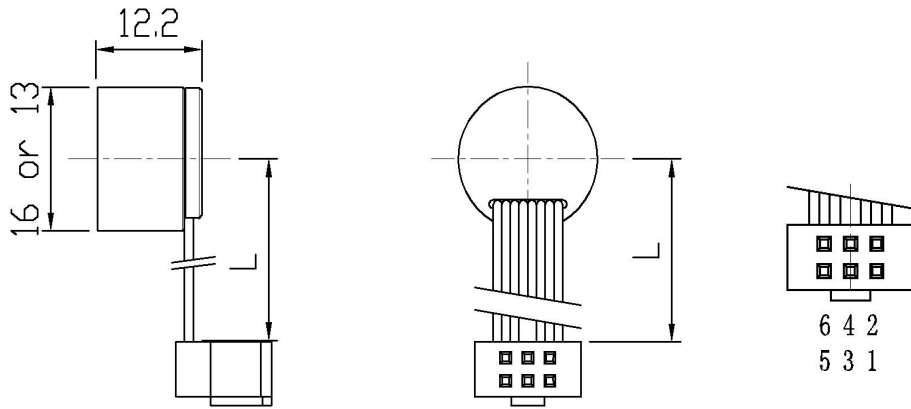
- 端子型号: Molex51021-0800 间距 1.25mm;
- 电线型号: UL10064 28#AWG;
- 端子引线定义:

  - 1、 MOTO- ;
  - 2、 GND ;
  - 3、 VCC(DC3.3V~5V);
  - 4、 PWM;
  - 5、 Channel A or I<sup>2</sup>C SDA;
  - 6、 Channel B or I<sup>2</sup>C SCL;
  - 7、 Channel Z;
  - 8、 MOTO+ .



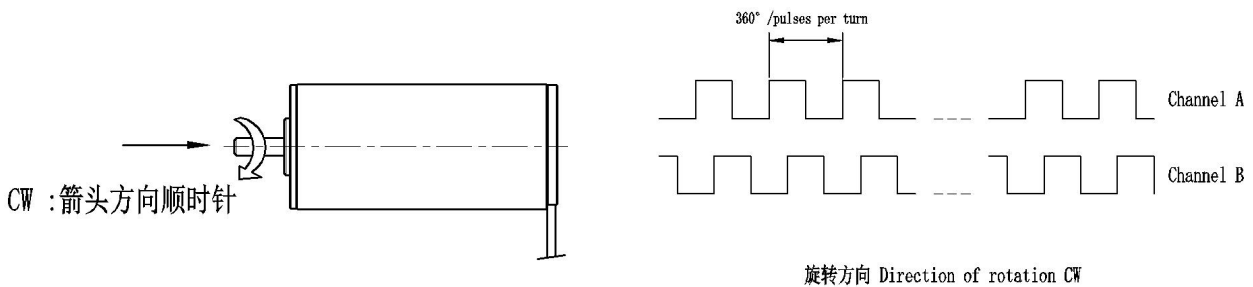
旋转方向 Direction of rotation CW

14bit I<sup>2</sup>C/Incremental (indifferentia) 有刷(13/16)

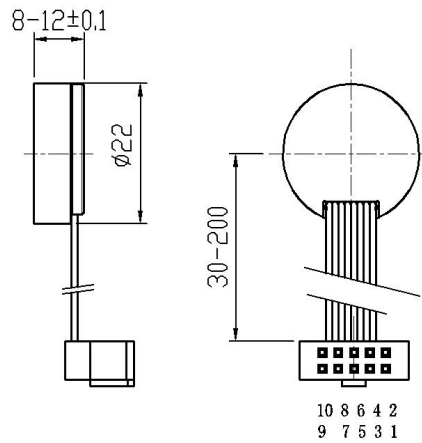
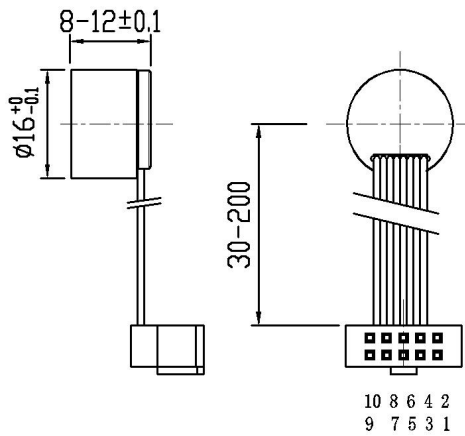


基本参数 Basic parameters:  
 电源电压 Supply voltage: DC3.3~5V ;  
 电流 Typical current : 15mA ;  
 最大机械速度 Max. Mech. Speed : 5000RPM;  
 积分非线性 Integral Non-Linearity : ±1.5° ;  
 微分非线性 Differential (ABZ) Non-Linearity : ±0.02° ;  
 每转脉冲数 Number of pulses per revolution: 1~1024PPR ;  
 单圈绝对编码 Single-turn absolute coding : 14-bit (I<sup>2</sup>C) ;  
 上电时间 Power-Up Time : 1~3ms ;  
 输出延迟 (Propagation Delay) : 1~5us ;  
 上升时间 Rring Time : 1us ;  
 下降时间 Falling Time : 1us ;  
 储存温度 Storage Temperature : -55~150°C ;  
 使用温度 Operating Temperature : -40~125°C ;

连接器:  
 EN 60603-13/DIN-41651 2.54mm6pin;  
 扁平电缆 flat band cable:  
 6pin UL2651 26AWG;  
 线序:  
 1、MOTO+;  
 2、VCC (DC3.3V~5V);  
 3、Channel A or I<sup>2</sup>C SDA;  
 4、Channel B or I<sup>2</sup>C SCL;  
 5、编码器GND;  
 6、MOTO- ;



18bit SPI/Incremental (High resolution) 有刷、无刷 (16mm及以上)

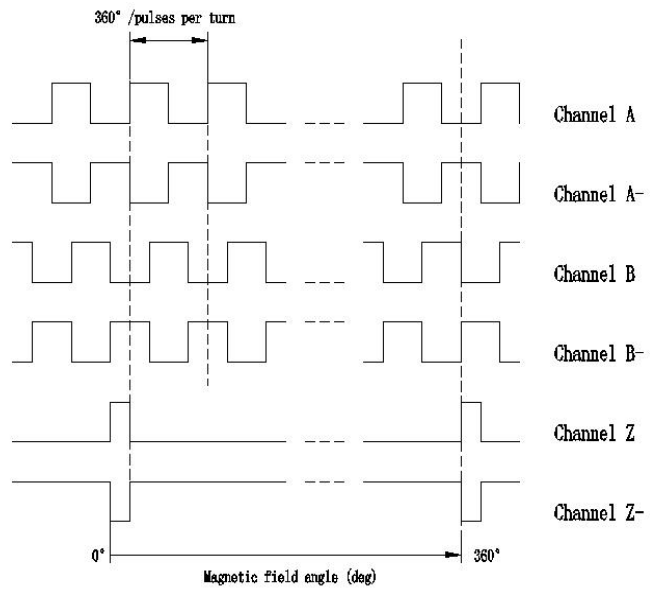
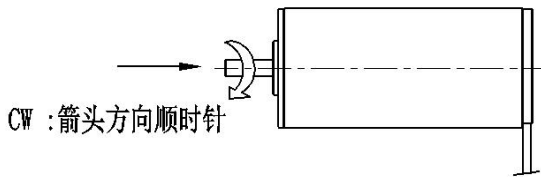


基本参数 Basic parameters:  
 电源电压 Supply voltage: DC3.3~5V ;  
 电流 Typical current : 15mA ;  
 最大机械速度 Max. Mech. Speed : 25000RPM;  
 积分非线性 Integral Non-Linearity :  $\pm 0.5 \sim 1.0^\circ$  ;  
 微分非线性 Differential (ABZ) Non-Linearity :  $\pm 0.01^\circ$  ;  
 每转脉冲数 Number of pulses per revolution:  $1 \sim 4096$ PPR ;  
 单圈绝对编码 Single-turn absolute coding : 18-bit (SPI) ;  
 上电时间 Power-Up Time : 16ms ;  
 输出延迟 (Propagation Delay) :  $1 \sim 3$ us ;  
 上升时间 R<sub>ring</sub> Time : 1us ;  
 下降时间 Falling Time : 1us ;  
 储存温度 Storage Temperature :  $-55 \sim 150^\circ\text{C}$  ;  
 使用温度 Operating Temperature :  $-40 \sim 125^\circ\text{C}$  ;

连接器A ConnectionA : EN 60603-13/DIN-41651 2.54mm10pin;  
 扁平电缆 Flat band cable: 10pin UL2651 26AWG;  
 线序 Sequence:

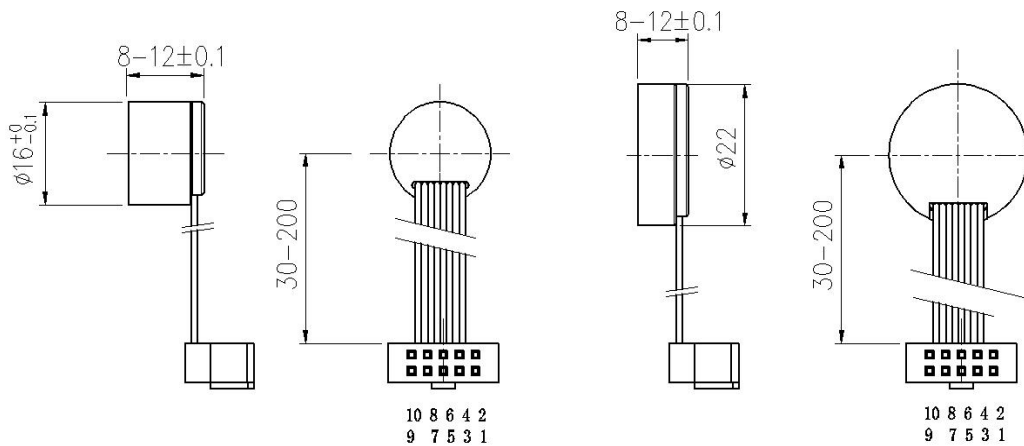
- |                |             |
|----------------|-------------|
| 增量式:           | 绝对式 SPI:    |
| 1、Moto + ;     | 1、Moto + ;  |
| 2、Vcc DC5V;    | 2、Vcc DC5V; |
| 3、GND ;        | 3、GND ;     |
| 4、Moto - ;     | 4、Moto - ;  |
| 5、Channel A-;  | 5、SCK;      |
| 6、Channel A ;  | 6、CSn ;     |
| 7、Channel B- ; | 7、MOSI ;    |
| 8、Channel B ;  | 8、MISO ;    |
| 9、Channel Z-;  | 9、NC;       |
| 10、Channel Z . | 10、NC.      |

增量式、绝对式 SPI 可选其一



旋转方向 Direction of rotation CW

14bit I<sup>2</sup>C/Incremental 有刷、无刷（16mm及以上）

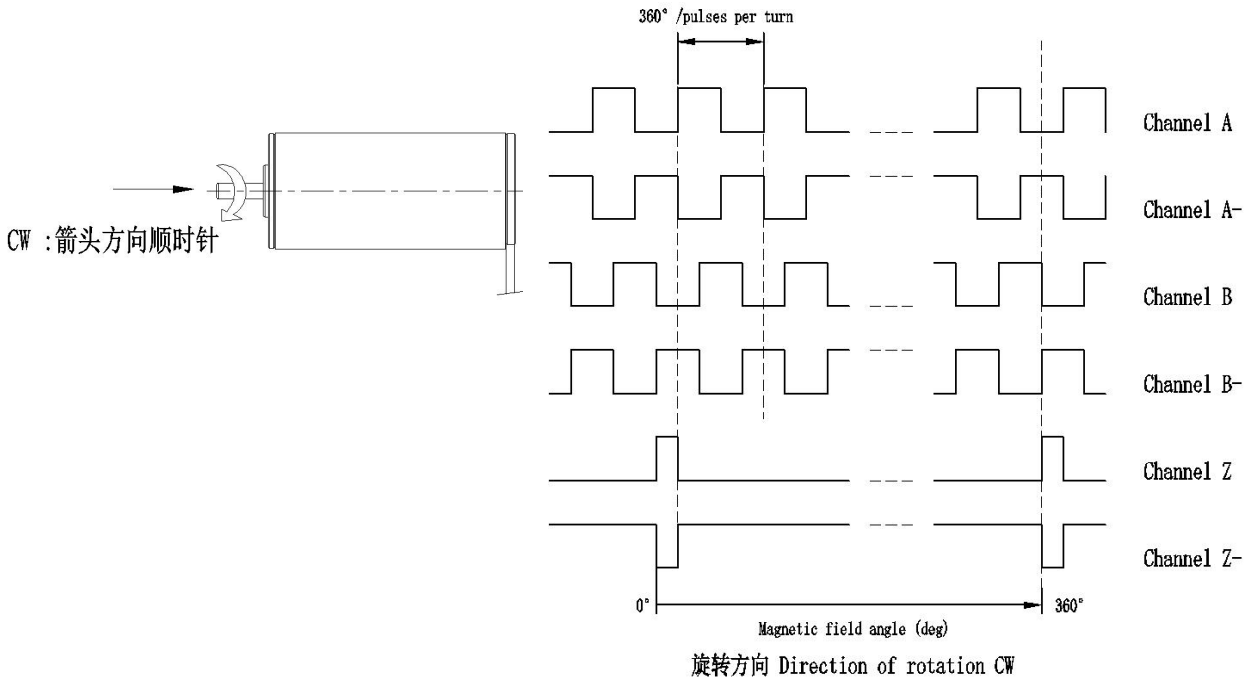


Encoders

基本参数 Basic parameters:

电源电压 Supply voltage: DC3.3~5V ;  
 电流 Typical current : 15mA ;  
 最大机械速度 Max. Mech. Speed : 50000RPM;  
 积分非线性 Integral Non-Linearity : ±1.5° ;  
 微分非线性 Differential (ABZ) Non-Linearity : ±0.02° ;  
 每转脉冲数 Number of pulses per revolution: 1~1024PPR ;  
 单圈绝对编码 Single-turn absolute coding : 14-bit (I<sup>2</sup>C) ;  
 上电时间 Power-Up Time : 1~3ms ;  
 输出延迟 (Propagation Delay) : 1~5us ;  
 上升时间 Rsing Time : lus ;  
 下降时间 Falling Time : lus ;  
 储存温度 Storage Temperature : -55~150°C ;  
 使用温度 Operating Temperature : -40~125°C ;

接器A ConnectionA : EN 60603-13/DIN-41651 2.54mm10pin;  
 扁平电缆 Flat band cable: 10pin UL2651 26AWG;  
 线序 Sequence:  
 1、N.C ;  
 2、Vcc DC3.3~5V;  
 3、GND ;  
 4、MODE (Vcc ABZ, GND I<sup>2</sup>C) ; ;  
 5、Channel A- or U;  
 6、Channel A or I<sup>2</sup>C SDA;  
 7、Channel B- or V;  
 8、Channel B or I<sup>2</sup>C SCL ;  
 9、Channel Z- or W;  
 10、Channel Z ;





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