

## E 22 Ø22 brushless 40W 无刷 40W

**Order number**

100332    100333

Motor parameters under rated voltage					
1	Nominal voltage 额定电压	$U_N$	V	12	24
2	Terminal resistance, phase to phase 相间电阻	R	$\Omega$	0.254	0.836
3	Output power 最大输出功率	$P_{2max}$	W	77	79
4	Efficiency 最大效率	$\eta_{max}$	%	84	84
5	No-load speed 空载转速	$n_0$	rpm	30500	36000
6	No-load current 空载电流	$I_0$	A	0.32	0.21
7	Stall torque 堵转转矩	$M_H$	mNm	185	237
8	Friction torque 摩擦转矩	$M_F$	mNm	0.32	0.32
9	Friction torque coefficient 摩擦转矩系数	$C_F$	mNm/rpm	4.2E-05	4.2E-05
10	Speed constant 速度常数	$k_n$	rpm/V	2559	1511
11	Back-EMF constant 反电动势常数	$k_E$	mV/rpm	0.39	0.66
12	Torque constant 转矩常数	$k_M$	mNm/A	3.73	6.32
13	Current constant 电流常数	$k_i$	A/mNm	0.268	0.158
14	Slope of n-M curve 转速-转矩曲线斜率	$\Delta n/\Delta M$	rpm/mNm	174.2	199.9
15	Mechanical time constant 机械时间常数	$\tau_m$	ms	4.2	3.72
16	Rotor inertia 转子惯量	J	gcm <sup>2</sup>	2.43	2.43
17	Angular acceleration 最大角加速度	$\alpha_{max}$	10 <sup>3</sup> rad/s <sup>2</sup>	760	974
18	Thermal resistance 热阻	$R_{th1} / R_{th2}$	K/W	2 / 10	
19	Thermal time constant 热时间常数	$\tau_{w1} / \tau_{w2}$	s	5 / 281	
20	Operating temperature range 工作温度范围		°C	-30 ... +85	
21	Shaft bearings 轴承			ball bearing, preloaded	
22	Shaft load max 轴载荷				
	- radial at 3,000/20,000rpm (4.5mm from bearing)		N	30 / 15	
	- axial at 3,000/20,000rpm (axial push-on only)		N	18 / 12	
	- axial at standstill (axial push-on only)		N	75	
23	Shaft play 轴间隙				
	- radial 径向	<=	mm	0.015	
	- axial 轴向	<=	mm	0.1	
24	Magnet material 永磁材料			Sintered Nd-Fe-B	
25	Housing material 外壳材料			Aluminum, back anodized	
26	Pole pairs 极对数		p	1	
27	Weight 重量		g	90	
28	Direction of rotation 旋转方向			Electronically reversible	
Operating Data for $\eta_{max}$ of Customer's Specifications					
29	Output power 输出功率	$P_{2opt}$	W	40	40
30	Efficiency 效率	$\eta_{opt}$	%	75	71
31	Speed 转速	$n_{opt}$	rpm	25000	28500
32	Load current 电流	$I_{opt}$	A	4.44	2.36
33	Operating torque 转矩	$M_{opt}$	mNm	15.2	13.4

### Recommended values - mathematically independent of each other

34	max. operation speed 最高转速	$n_{e\ max}$	rpm	60000	60000
35	max. operation torque 最大转矩	$M_{e\ max}$	mNm	12.2	12.5
36	max. operation current 最大电流	$I_{e\ max}$	A	4.03	2.43

### Recommended areas for continuous operation

