

E 58 Ø58 brushless 170W 无刷 170W

				Order number		
				100362	100363	100364
Motor parameters						
1	Nominal voltage 额定电压	U_N	V	24	36	48
2	Terminal resistance, phase to phase 相间电阻	R	Ω	0.86	1.45	2.04
3	Output power 最大输出功率	P_{2max}	W	189	190	189
4	Efficiency 最大效率	η_{max}	%	74	75	76
5	No-load speed 空载转速	n_0	rpm	9120	10560	11900
6	No-load current 空载电流	I_0	A	0.55	0.45	0.39
7	Stall torque 堵转转矩	M_H	mNm	672	693	727
8	Friction torque 摩擦转矩	M_F	mNm	13.6	13.6	13.6
9	Friction torque coefficient 摩擦转矩系数	C_F	mNm/rpm	1.5E-04	1.5E-04	1.5E-04
10	Speed constant 速度常数	k_n	rpm/V	388	299	252
11	Back-EMF constant 反电动势常数	k_E	mV/rpm	2.58	3.35	3.97
12	Torque constant 转矩常数	k_M	mNm/A	24.63	31.96	37.88
13	Current constant 电流常数	k_i	A/mNm	0.041	0.031	0.026
14	Slope of n-M curve 转速-转矩曲线斜率	$\Delta n/\Delta M$	rpm/mNm	13.5	13.6	13.6
15	Mechanical time constant 机械时间常数	τ_m	ms	18	11	11
16	Rotor inertia 转子惯量	J	gcm ²	126	126	126
17	Angular acceleration 最大角加速度	α_{max}	10 ³ rad/s ²	52	54	57
18	Thermal resistance 热阻	R_{th1} / R_{th2}	K/W	2.5 / 6.3		
19	Thermal time constant 热时间常数	τ_{w1} / τ_{w2}	s	23 / 1175		
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	45.5/24		
	- axial at 3,000/20,000rpm (axial push-on only)		N	36/24		
	- axial at standstill (axial push-on only)		N	60		
23	Shaft play 轴间隙					
	- radial 径向	<=	mm	0.015		
	- axial 轴向	<=	mm	0.2		
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	1050		
28	Direction of rotation 旋转方向					
Operating Data for η_{max} of Customer's Specifications						
29	Output power 输出功率	P_{2opt}	W	78	160	172
30	Efficiency 效率	η_{opt}	%	73	74	74
31	Speed 转速	n_{opt}	rpm	7830	8600	9800
32	Load current 电流	I_{opt}	A	4.48	6.03	4.83
33	Operating torque 转矩	M_{opt}	mNm	95.6	178.0	168.0

Recommended values - mathematically independent of each other

34	max. operation speed 最高转速	$n_{e\ max}$	rpm	9000	9000	9000
35	max. operation torque 最大转矩	$M_{e\ max}$	mNm	201	201.5	200.3
36	max. operation current 最大电流	$I_{e\ max}$	A	8.77	6.77	5.68

Recommended areas for continuous operation

