

**E 44 Ø44 brushless 120W 4-pole 无刷 120W 4 极**

				Order number			
				100381	100382	100383	100384
<b>Motor parameters</b>							
1	Nominal voltage 额定电压	$U_N$	V	18	24	36	48
2	Terminal resistance, phase to phase 相间电阻	R	$\Omega$	0.68	1.05	2.47	3.94
3	Output power 最大输出功率	$P_{2max}$	W	126	132	132	126
4	Efficiency 最大效率	$\eta_{max}$	%	79	80	81	82
5	No-load speed 空载转速	$n_0$	rpm	8540	8630	8550	8620
6	No-load current 空载电流	$I_0$	A	0.342	0.257	0.142	0.115
7	Stall torque 堵转转矩	$M_H$	mNm	724	718	725	731
8	Friction torque 摩擦转矩	$M_F$	mNm	1.1	1.1	1.1	1.1
9	Friction torque coefficient 摩擦转矩系数	$C_F$	mNm/rpm	2.4E-04	2.4E-04	2.4E-04	2.4E-04
10	Speed constant 速度常数	$k_n$	rpm/V	481	364	240	181
11	Back-EMF constant 反电动势常数	$k_E$	mV/rpm	2.08	2.75	4.17	5.52
12	Torque constant 转矩常数	$k_M$	mNm/A	19.87	26.26	39.82	52.67
13	Current constant 电流常数	$k_I$	A/mNm	0.050	0.038	0.025	0.019
14	Slope of n-M curve 转速-转矩曲线斜率	$\Delta n / \Delta M$	rpm/mNm	16.5	14.5	14.9	13.6
15	Mechanical time constant 机械时间常数	$\tau_m$	ms	11	11	11	11
16	Rotor inertia 转子惯量	J	gcm <sup>2</sup>	34	34	34	34
17	Angular acceleration 最大角加速度	$\alpha_{max}$	10 <sup>3</sup> rad/s <sup>2</sup>	213	211	213	215
18	Thermal resistance 热阻	$R_{th1} / R_{th2}$	K/W	2.5 / 6.3			
19	Thermal time constant 热时间常数	$\tau_{w1} / \tau_{w2}$	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	108 / 73			
	- axial at 3,000/20,000rpm (axial push-on only)		N	50 / 30			
	- axial at standstill (axial push-on only)		N	130			
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	2			
27	Weight 重量		g	750			
28	Direction of rotation 旋转方向			Electronically reversible			
<b>Operating Data for <math>\eta_{max}</math> of Customer's Specifications</b>							
29	Output power 输出功率	$P_{2opt}$	W	109	120	121	121
30	Efficiency 效率	$\eta_{opt}$	%	74	77	75	78
31	Speed 转速	$n_{opt}$	rpm	6500	6800	6600	6900
32	Load current 电流	$I_{opt}$	A	8.19	6.50	4.46	3.24
33	Operating torque 转矩	$M_{opt}$	mNm	160.0	168.0	175.0	168.0

### Recommended values - mathematically independent of each other

34	max. operation speed 最高转速	$n_{e\text{-max}}$	rpm	8000	8000	8000	8000
35	max. operation torque 最大转矩	$M_{e\text{-max}}$	mNm	150	158	158	150.5
36	max. operation current 最大电流	$I_{e\text{-max}}$	A	7.70	6.13	4.04	2.91

### Recommended areas for continuous operation

