

E 43 Ø43 brushless 100W 8-pole 无刷 100W 8 极

| | | | | Order number | | | |
|--|--|-------------------------|------------------------------------|---------------------------|---------|---------|---------|
| | | | | 100391 | 100392 | 100393 | 100394 |
| Motor parameters | | | | | | | |
| 1 | Nominal voltage 额定电压 | U_N | V | 12 | 24 | 36 | 48 |
| 2 | Terminal resistance, phase to phase 相间电阻 | R | Ω | 0.35 | 0.87 | 2.18 | 4.67 |
| 3 | Output power 最大输出功率 | P_{2max} | W | 101 | 101 | 101 | 101 |
| 4 | Efficiency 最大效率 | η_{max} | % | 77 | 80 | 79 | 79 |
| 5 | No-load speed 空载转速 | n_0 | rpm | 6540 | 6750 | 6750 | 6540 |
| 6 | No-load current 空载电流 | I_0 | A | 0.5 | 0.32 | 0.21 | 0.13 |
| 7 | Stall torque 堵转转矩 | M_H | mNm | 583 | 632 | 657 | 685 |
| 8 | Friction torque 摩擦转矩 | M_F | mNm | 3.67 | 3.67 | 3.67 | 3.67 |
| 9 | Friction torque coefficient 摩擦转矩系数 | C_F | mNm/rpm | 9.0E-04 | 9.0E-04 | 9.0E-04 | 9.0E-04 |
| 10 | Speed constant 速度常数 | k_n | rpm/V | 553 | 285 | 190 | 138 |
| 11 | Back-EMF constant 反电动势常数 | k_E | mV/rpm | 1.81 | 3.51 | 5.27 | 7.25 |
| 12 | Torque constant 转矩常数 | k_M | mNm/A | 17.27 | 33.56 | 50.28 | 69.20 |
| 13 | Current constant 电流常数 | k_I | A/mNm | 0.058 | 0.030 | 0.020 | 0.014 |
| 14 | Slope of n-M curve 转速-转矩曲线斜率 | $\Delta n/\Delta M$ | rpm/mNm | 11.2 | 7.4 | 8.2 | 9.3 |
| 15 | Mechanical time constant 机械时间常数 | τ_m | ms | 11 | 11 | 11 | 11 |
| 16 | Rotor inertia 转子惯量 | J | gcm ² | 96.0 | 96.0 | 96.0 | 96.0 |
| 17 | Angular acceleration 最大角加速度 | α_{max} | 10 ³ rad/s ² | 60.3 | 65.5 | 68.1 | 71.0 |
| 18 | Thermal resistance 热阻 | R_{th1} / R_{th2} | K/W | 1.2 / 4.6 | | | |
| 19 | Thermal time constant 热时间常数 | τ_{w1} / τ_{w2} | s | 25 / 1245 | | | |
| 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 | 103/66 | | | |
| | - axial at 3,000/20,000rpm (axial push-on only) | | N | 45/30 | | | |
| | - axial at standstill (axial push-on only) | | N | 135 | | | |
| 23 | Shaft play 轴间隙 | | | | | | |
| | - radial 径向 | <= | mm | 0.015 | | | |
| | - axial 轴向 | <= | mm | 0 | | | |
| 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 | 4 | | | |
| 27 | Weight 重量 | | g | 530 | | | |
| 28 | Direction of rotation 旋转方向 | | | Electronically reversible | | | |
| Operating Data for η_{max} of Customer's Specifications | | | | | | | |
| 29 | Output power 输出功率 | P_{2opt} | W | 43 | 44 | 45 | 44 |
| 30 | Efficiency 效率 | η_{opt} | % | 77 | 76 | 74 | 77 |
| 31 | Speed 转速 | n_{opt} | rpm | 5750 | 5840 | 5670 | 5710 |
| 32 | Load current 电流 | I_{opt} | A | 4.62 | 2.41 | 1.67 | 1.19 |
| 33 | Operating torque 转矩 | M_{opt} | mNm | 71.0 | 72.0 | 75.0 | 73.4 |

Recommended values - mathematically independent of each other

| | | | | | | | |
|----|-----------------------------|--------------|-----|------|------|------|------|
| 34 | max. operation speed 最高转速 | $n_{e \max}$ | rpm | 8000 | 8000 | 8000 | 8000 |
| 35 | max. operation torque 最大转矩 | $M_{e \max}$ | mNm | 120 | 120 | 120 | 120 |
| 36 | max. operation current 最大电流 | $I_{e \max}$ | A | 7.58 | 3.90 | 2.60 | 1.89 |

Recommended areas for continuous operation

