

DC-Micromotors

1,3 mNm

Precious Metal Commutation

For combination with (overview on page 14-15)
 Gearheads:
 13A, 14/1, 15/3, 15/5
 Encoders:
 IE2 – 50 ... 400

Series 1319 ... SR

| | 1319 T | 006 SR | 012 SR | 024 SR | |
|----------------------------------------------------------------------|-------------------------|-----------------------------------------|--------|--------|----------------------|
| 1 Nominal voltage | U_N | 6 | 12 | 24 | Volt |
| 2 Terminal resistance | R | 8,26 | 34,6 | 119 | Ω |
| 3 Output power | $P_{2 \max}$ | 1,00 | 0,95 | 1,10 | W |
| 4 Efficiency | η_{\max} | 66 | 65 | 66 | % |
| 5 No-load speed | n_0 | 13 100 | 12 800 | 14 600 | rpm |
| 6 No-load current (with shaft \varnothing 1,5 mm) | I_0 | 0,031 | 0,015 | 0,009 | A |
| 7 Stall torque | M_H | 2,91 | 2,84 | 2,89 | mNm |
| 8 Friction torque | M_R | 0,13 | 0,13 | 0,13 | mNm |
| 9 Speed constant | k_n | 2 280 | 1 110 | 637 | rpm/V |
| 10 Back-EMF constant | k_E | 0,438 | 0,897 | 1,570 | mV/rpm |
| 11 Torque constant | k_M | 4,19 | 8,57 | 15,0 | mNm/A |
| 12 Current constant | k_i | 0,239 | 0,117 | 0,067 | A/mNm |
| 13 Slope of n-M curve | $\Delta n/\Delta M$ | 4 500 | 4 510 | 5 050 | rpm/mNm |
| 14 Rotor inductance | L | 130 | 530 | 1 600 | μH |
| 15 Mechanical time constant | τ_m | 19 | 19 | 19 | ms |
| 16 Rotor inertia | J | 0,40 | 0,40 | 0,36 | gcm^2 |
| 17 Angular acceleration | α_{\max} | 72 | 71 | 80 | $\cdot 10^3 rad/s^2$ |
| 18 Thermal resistance | $R_{th 1} / R_{th 2}$ | 8 / 35 | | | K/W |
| 19 Thermal time constant | τ_{w1} / τ_{w2} | 3,8 / 175 | | | s |
| 20 Operating temperature range: | | - 30 ... + 85 (optional - 55 ... + 125) | | | $^{\circ}C$ |
| - motor | | | | | $^{\circ}C$ |
| - rotor, max. permissible | | + 125 | | | $^{\circ}C$ |
| 21 Shaft bearings | | sintered bronze sleeves | | | |
| 22 Shaft load max.: | | | | | |
| - with shaft diameter | | 1,5 | | | mm |
| - radial at 3 000 rpm (3 mm from bearing) | | 1,2 | | | N |
| - axial at 3 000 rpm | | 0,2 | | | N |
| - axial at standstill | | 20 | | | N |
| 23 Shaft play: | | | | | |
| - radial | \leq | 0,03 | | | mm |
| - axial | \leq | 0,2 | | | mm |
| 24 Housing material | | steel, black coated | | | |
| 25 Weight | | 12 | | | g |
| 26 Direction of rotation | | clockwise, viewed from the front face | | | |
| Recommended values - mathematically independent of each other | | | | | |
| 27 Speed up to | $n_{e \max}$ | 12 000 | 12 000 | 12 000 | rpm |
| 28 Torque up to | $M_{e \max}$ | 1,3 | 1,3 | 1,3 | mNm |
| 29 Current up to (thermal limits) | $I_{e \max}$ | 0,410 | 0,200 | 0,100 | A |

