

Brushless DC-Servomotors

0,37 mNm

Electronic Commutation

For combination with (overview on page 14-15)

Gearheads:
06/1

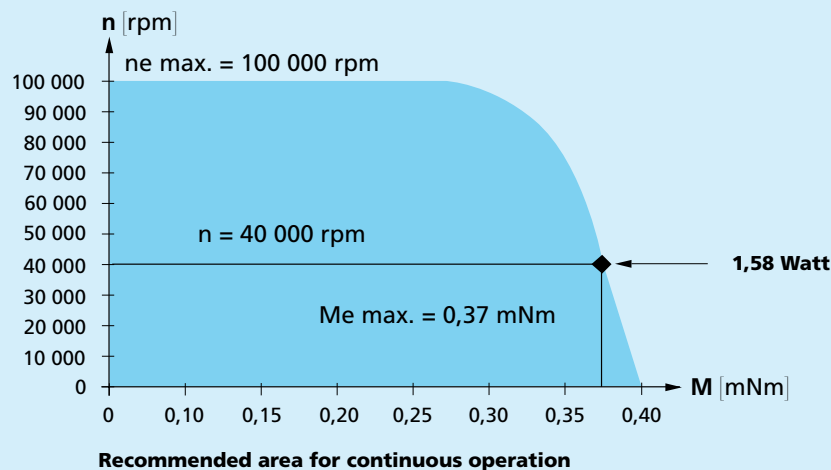
Drive Electronics:
BLD 2401

Series 0620 ... B

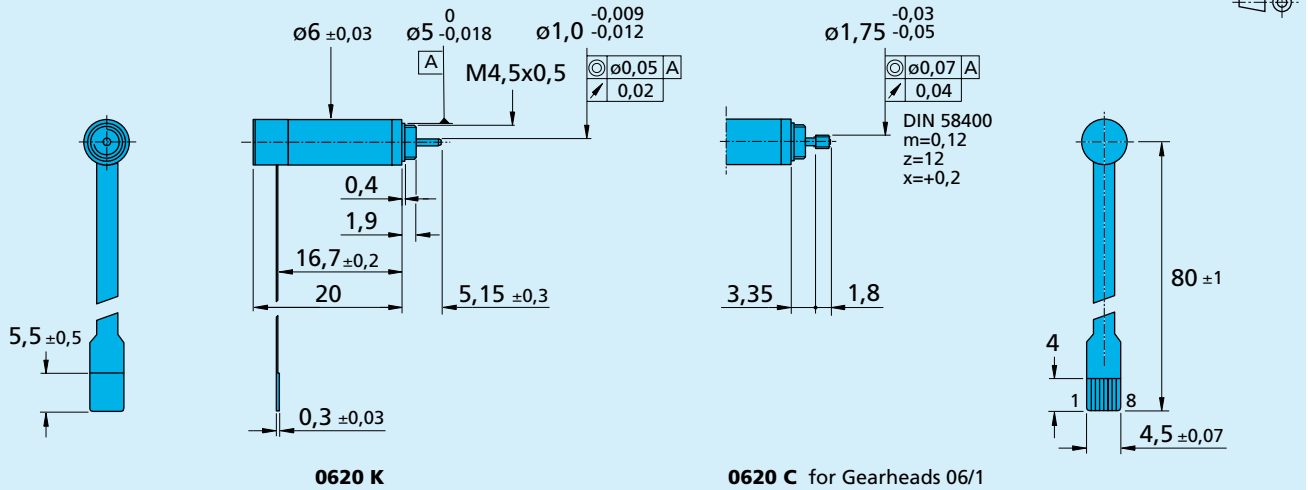
| | 0620 K | | 006 B | 012 B | |
|--|---------------------------------------|---------------------------|---------------------|---------------------|------------------------------|
| 1 Nominal voltage | U_N | | 6 | 12 | Volt |
| 2 Terminal resistance, phase-phase | R | | 9,1 | 59,0 | Ω |
| 3 Output power ¹⁾ | $P_{2 \text{ max.}}$ | | 1,56 | 1,58 | W |
| 4 Efficiency | $\eta_{\text{ max.}}$ | | 57 | 55 | % |
| 5 No-load speed | n_0 | | 47 000 | 36 400 | rpm |
| 6 No-load current (with shaft \varnothing 1,0 mm) | I_0 | | 0,047 | 0,016 | A |
| 7 Stall torque | M_H | | 0,73 | 0,58 | mNm |
| 8 Friction torque, static | C_0 | | 0,016 | 0,016 | mNm |
| 9 Friction torque, dynamic | C_v | | $8,0 \cdot 10^{-7}$ | $8,0 \cdot 10^{-7}$ | mNm/rpm |
| 10 Speed constant | k_n | | 8 421 | 3 282 | rpm/V |
| 11 Back-EMF constant | k_E | | 0,119 | 0,305 | mV/rpm |
| 12 Torque constant | k_M | | 1,13 | 2,91 | mNm/A |
| 13 Current constant | k_I | | 0,882 | 0,344 | A/mNm |
| 14 Slope of n-M curve | $\Delta n / \Delta M$ | | 67 575 | 66 533 | rpm/mNm |
| 15 Terminal inductance, phase-phase | L | | 26 | 187 | μH |
| 16 Mechanical time constant | τ_m | | 6 | 6 | ms |
| 17 Rotor inertia | J | | 0,0095 | 0,0095 | gcm^2 |
| 18 Angular acceleration | $\alpha_{\text{ max.}}$ | | 772 | 607 | $\cdot 10^3 \text{ rad/s}^2$ |
| 19 Thermal resistance | $R_{\text{th } 1} / R_{\text{th } 2}$ | 14 / 88,0 | | | K/W |
| 20 Thermal time constant | τ_{w1} / τ_{w2} | 1 / 149 | | | s |
| 21 Operating temperature range: | | | | | |
| – motor | | - 20 ... +100 | | | $^{\circ}\text{C}$ |
| – coil, max. permissible | | +125 | | | $^{\circ}\text{C}$ |
| 22 Shaft bearings | | ball bearings, preloaded | | | |
| 23 Shaft load max.: | | | | | |
| – radial at 10 000/50 000 rpm (3,7 mm from mounting flange) | | 2,0 / 1,5 | | | N |
| – axial at 10 000/50 000 rpm (push-on only) | | 0,6 / 0,2 | | | N |
| – axial at standstill (push-on only) | | 10 | | | N |
| 24 Shaft play: | | | | | |
| – radial | \leq | 0,012 | | | mm |
| – axial | $=$ | 0 | | | mm |
| 25 Housing material | | aluminium, black anodized | | | |
| 26 Weight | | 2,5 | | | g |
| 27 Direction of rotation | | electronically reversible | | | |
| Recommended values - mathematically independent of each other | | | | | |
| 28 Speed up to ²⁾ | $n_{e \text{ max.}}$ | | 100 000 | 100 000 | rpm |
| 29 Torque up to ^{1) 2)} | $M_{e \text{ max.}}$ | | 0,373 | 0,377 | mNm |
| 30 Current up to ^{1) 2)} | $I_{e \text{ max.}}$ | | 0,371 | 0,146 | A |

¹⁾ at 40 000 rpm

²⁾ thermal resistance $R_{\text{th } 2}$ by 55% reduced



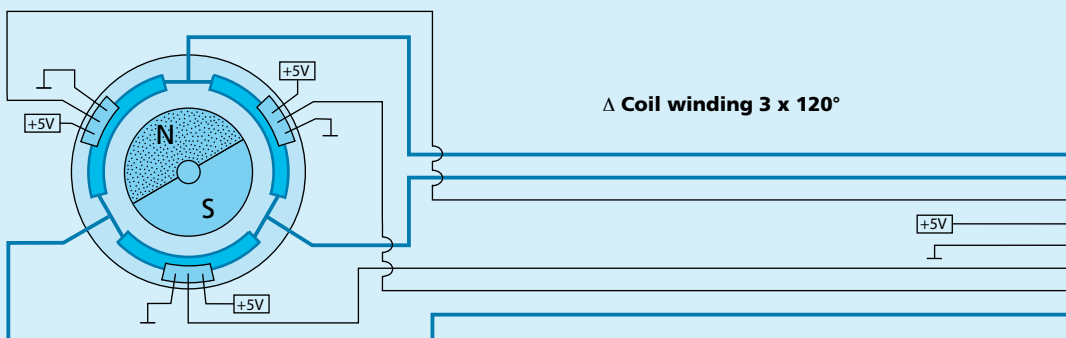
0620 ... B



Cable and connection information

Recommended connector
Molex - ZIF Connector,
No. 52745-0896.

Flexboard
8 circuits; 0,5mm pitch,
Top Contact Style.



Connection

| No. | Function |
|-----|---------------|
| 1 | Phase C |
| 2 | Phase B |
| 3 | Hall sensor C |
| 4 | +5V |
| 5 | GND |
| 6 | Hall sensor A |
| 7 | Hall sensor B |
| 8 | Phase A |