

Brushless DC-Servomotors

2,6 mNm

For combination with
 Gearheads:
 16/7
 Encoders:
 IE2-1024
 Drive Electronics:
 Speed Controller, Motion Controller

Series 1628 ... B

| | 1628 T | 012 B | 024 B | |
|----------------------------------------------------------------------|-------------------------------------|---------------------------|---------------------|-----------------------------|
| 1 Nominal voltage | U_N | 12 | 24 | Volt |
| 2 Terminal resistance, phase-phase | R | 4,3 | 15,1 | Ω |
| 3 Output power ¹⁾ | $P_{2 \text{ max.}}$ | 10 | 11 | W |
| 4 Efficiency | $\eta_{\text{ max.}}$ | 68 | 68 | % |
| 5 No-load speed | n_o | 28 650 | 29 900 | rpm |
| 6 No-load current (with shaft \varnothing 1,5 mm) | I_o | 0,098 | 0,052 | A |
| 7 Stall torque | M_H | 11 | 12 | mNm |
| 8 Friction torque, static | C_o | 0,15 | 0,15 | mNm |
| 9 Friction torque, dynamic | C_v | $8,0 \cdot 10^{-6}$ | $8,0 \cdot 10^{-6}$ | mNm/rpm |
| 10 Speed constant | k_n | 2 474 | 1 287 | rpm/V |
| 11 Back-EMF constant | k_E | 0,404 | 0,777 | mV/rpm |
| 12 Torque constant | k_M | 3,86 | 7,42 | mNm/A |
| 13 Current constant | k_i | 0,259 | 0,135 | A/mNm |
| 14 Slope of n-M curve | $\Delta n / \Delta M$ | 2 737 | 2 610 | rpm/mNm |
| 15 Terminal inductance, phase-phase | L | 141 | 525 | μH |
| 16 Mechanical time constant | τ_m | 15 | 14 | ms |
| 17 Rotor inertia | J | 0,54 | 0,54 | gcm^2 |
| 18 Angular acceleration | $\alpha_{\text{ max.}}$ | 198 | 217 | $\cdot 10^3 \text{rad/s}^2$ |
| 19 Thermal resistance | $R_{\text{th} 1} / R_{\text{th} 2}$ | 7,8 / 30,1 | | K/W |
| 20 Thermal time constant | τ_{w1} / τ_{w2} | 8 / 379 | | s |
| 21 Operating temperature range | | - 30 ... +125 | | $^{\circ}\text{C}$ |
| 22 Shaft bearings | | ball bearings, preloaded | | |
| 23 Shaft load max.: | | | | |
| – radial at 3 000/20 000 rpm (4,5 mm from mounting flange) | | 17 / 10 | | N |
| – axial at 3 000/20 000 rpm (push-on only) | | 10 / 6 | | N |
| – axial at standstill (push-on only) | | 20 | | N |
| 24 Shaft play: | | | | |
| – radial | \leq | 0,015 | | mm |
| – axial | $=$ | 0 | | mm |
| 25 Housing material | | aluminium, black anodized | | |
| 26 Weight | | 31 | | g |
| 27 Direction of rotation | | electronically reversible | | |
| Recommended values - mathematically independent of each other | | | | |
| 28 Speed up to ²⁾ | $n_{e \text{ max.}}$ | 60 000 | 60 000 | rpm |
| 29 Torque up to ^{1) 2)} | $M_{e \text{ max.}}$ | 2,5 | 2,6 | mNm |
| 30 Current up to ^{1) 2)} | $I_{e \text{ max.}}$ | 0,77 | 0,41 | A |

¹⁾ at 40 000 rpm

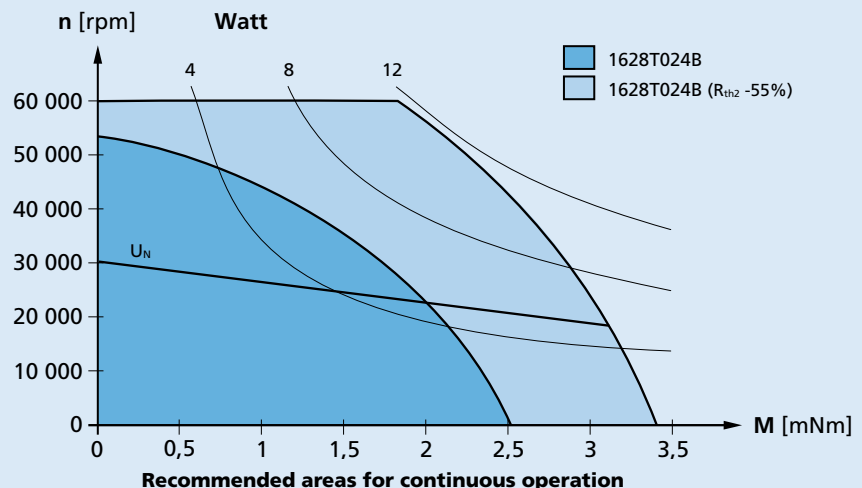
²⁾ thermal resistance $R_{\text{th} 2}$ by 55% reduced

Note:

The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in a completely insulated as well as thermally coupled condition ($R_{\text{th} 2}$ 55% reduced).

The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.

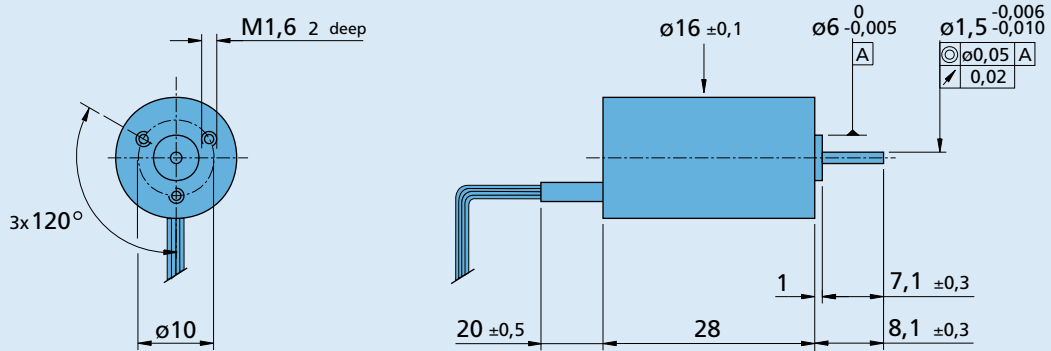


Options

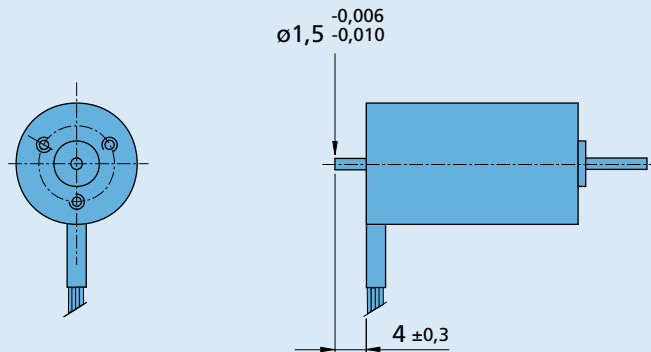
K1000:
Motors in autoclavable version.

K1155:
Motors for operation with Motion Controllers

1628 T ... B



1628 T ... B - K312 with rear end shaft



Cable and connection information

