

Brushless DC-Servomotors

4 Pole Technology

22 mNm

For combination with
 Gearheads:
 22F, 22/7, 26A
 Encoders:
 2250...BX4S + Encoder
 Drive Electronics:
 Speed Controller

Series 2250 ... BX4 S

| | 2250 S | | 024 BX4 S | |
|--|-------------------------|---------------------------|---------------------|------------------------------|
| 1 Nominal voltage | U_N | | 24 | Volt |
| 2 Terminal resistance, phase-phase | R | | 5,9 | Ω |
| 3 Output power ¹⁾ | $P_2 \text{ max.}$ | | 8,8 | W |
| 4 Efficiency | $\eta \text{ max.}$ | | 70,4 | % |
| 5 No-load speed | n_0 | | 10 500 | rpm |
| 6 No-load current (with shaft \varnothing 3,0 mm) | I_0 | | 0,105 | A |
| 7 Stall torque | M_H | | 84,7 | mNm |
| 8 Friction torque, static | C_0 | | 0,75 | mNm |
| 9 Friction torque, dynamic | C_v | | $1,4 \cdot 10^{-4}$ | mNm/rpm |
| 10 Speed constant | k_n | | 451 | rpm/V |
| 11 Back-EMF constant | k_E | | 2,218 | mV/rpm |
| 12 Torque constant | k_M | | 21,1 | mNm/A |
| 13 Current constant | k_I | | 0,047 | A/mNm |
| 14 Slope of n-M curve | $\Delta n / \Delta M$ | | 125,6 | rpm/mNm |
| 15 Terminal inductance, phase-phase | L | | 250 | μH |
| 16 Mechanical time constant | τ_m | | 6,97 | ms |
| 17 Rotor inertia | J | | 5,3 | gcm^2 |
| 18 Angular acceleration | $\alpha \text{ max.}$ | | 160 | $\cdot 10^3 \text{ rad/s}^2$ |
| 19 Thermal resistance | $R_{th 1} / R_{th 2}$ | 1,2 / 14 | | K/W |
| 20 Thermal time constant | τ_{w1} / τ_{w2} | 4,2 / 443 | | s |
| 21 Operating temperature range | | - 40 ... + 100 | | $^{\circ}\text{C}$ |
| 22 Shaft bearings | | ball bearings, preloaded | | |
| 23 Shaft load max.: | | | | |
| - radial at 3 000 rpm (4 mm from mounting flange) | | 20 | | N |
| - axial at 3 000 rpm | | 2 | | N |
| - axial at standstill | | 20 | | N |
| 24 Shaft play: | | | | |
| - radial | \leq | 0,015 | | mm |
| - axial | $=$ | 0 | | mm |
| 25 Housing material | | stainless steel | | |
| 26 Weight | | 90 | | g |
| 27 Direction of rotation | | electronically reversible | | |
| 28 Number of pole pairs | | 2 | | |
| Recommended values - mathematically independent of each other | | | | |
| 29 Speed up to | $n_e \text{ max.}$ | | 25 000 | rpm |
| 30 Torque up to ^{1) 2)} | $M_e \text{ max.}$ | | 14 / 22 | mNm |
| 31 Current up to ^{1) 2)} | $I_e \text{ max.}$ | | 0,79 / 1,20 | A |

¹⁾ at 5 000 rpm

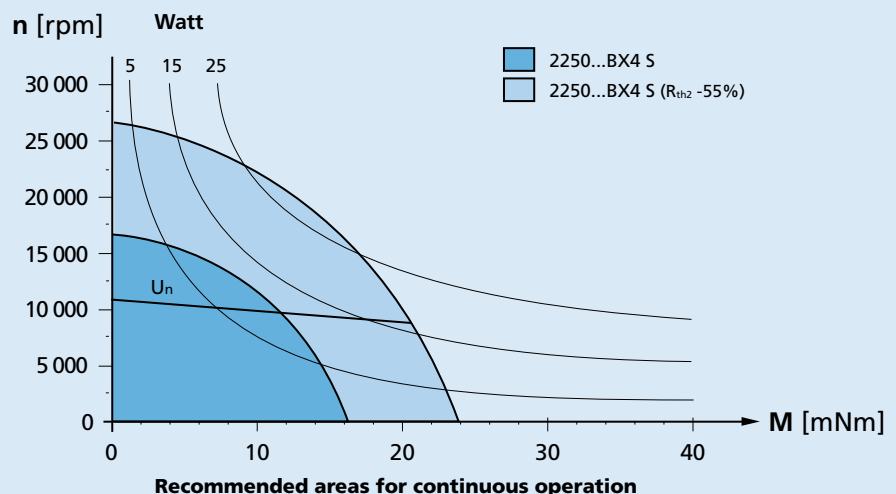
²⁾ thermal resistance $R_{th 2}$ not reduced / thermal resistance $R_{th 2}$ by 55% reduced

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.

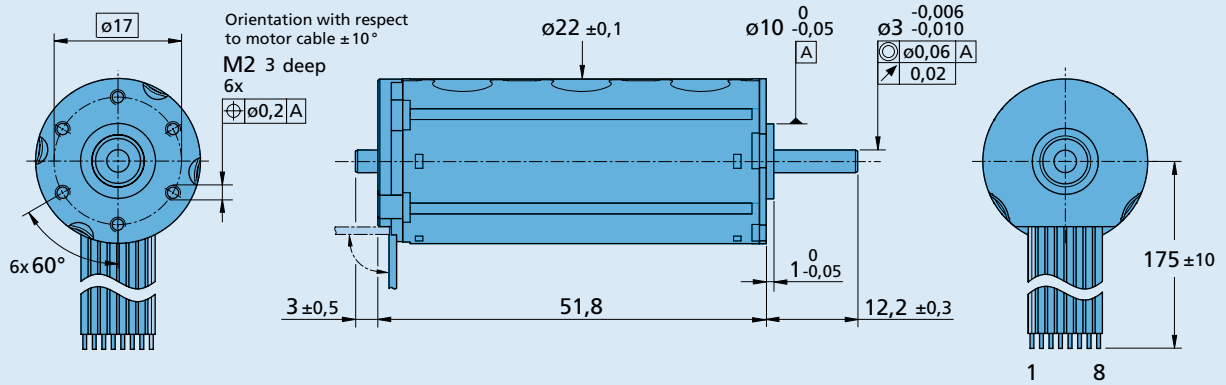
The diagram shows the motor in a completely insulated as well as thermally coupled condition ($R_{th 2}$ 55% reduced).

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.



Dimensional drawing

M 1:1

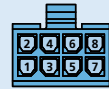


2250 S ... BX4 S

Options

- Connector variant (Option no. 3830)

Motor:
AWG 26 / PVC ribbon cable
with connector Micro-Fit



Full product description

- Examples:
2250S024 BX4S

Cable and connection information

