

Brushless Flat DC-Micromotors

penny-motor® Technology

0,2 mNm

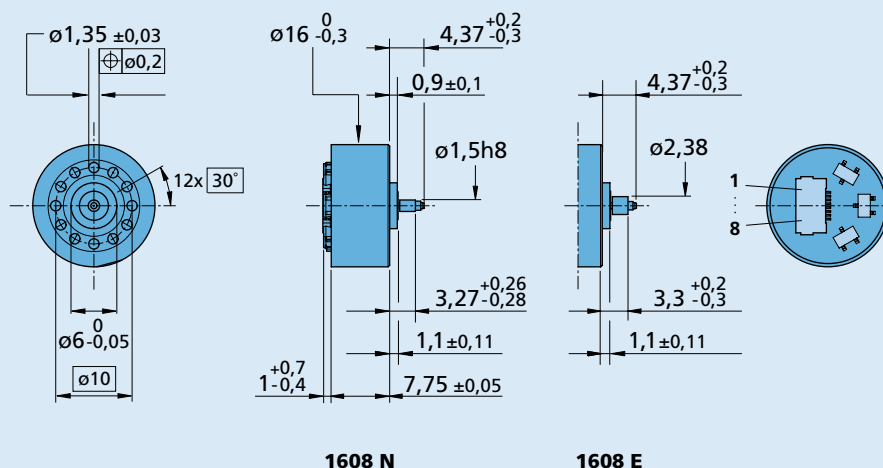
For combination with
Gearheads:
16A
Drive Electronics:
SC 1801 F

Series 1608 ... BH

| | 1608 H | 003 BH | |
|--|---------------------------------------|---------------------------|--------------------|
| Nominal voltage | U _N | 3 | V |
| Terminal resistance, phase-phase | R | 18,6 | Ω |
| Output power ¹⁾ | P _{2 max.} | 0,116 | W |
| Efficiency | η _{max.} | 38 | % |
| No-load speed | n ₀ | 17 872 | rpm |
| No-load current | I ₀ | 0,032 | A |
| Stall torque | M _H | 0,203 | mNm |
| Friction torque, static | C ₀ | 0,005 | mNm |
| Friction torque, dynamic | C _v | 2 · 10 ⁻⁶ | mNm/rpm |
| Speed constant | k _n | 7 407 | rpm/V |
| Back-EMF constant | k _E | 0,135 | mV/rpm |
| Torque constant | k _M | 1,289 | mNm/A |
| Current constant | k _I | 0,776 | A/mNm |
| Slope of n-M curve | Δn/ΔM | 106 746 | rpm/mNm |
| Terminal inductance, phase-phase | L | 21 | μH |
| Mechanical time constant | τ _m | 702 | ms |
| Rotor inertia | J | 0,628 | gcm ² |
| Angular acceleration | α _{max.} | 3 · 10 ³ | rad/s ² |
| Thermal resistance | R _{th 1} / R _{th 2} | 0 / 80 | K/W |
| Operating temperature range | | -30 ... +85 | °C |
| Shaft bearing | | sintered sleeve bearings | |
| Shaft load max.: | | | |
| – radial at 10 000 rpm (at shaft step ø3,4 mm) | | 0,5 | N |
| – axial at 10 000 rpm (axial push-on only) | | 0,1 | N |
| – axial at standstill (axial push-on only) | | 20 | N |
| Shaft play: | | | |
| – radial | ≤ | 0,05 | mm |
| – axial | ≤ | 0,12 | mm |
| Number of pole pairs | | 4 | |
| Weight | | 4,1 | g |
| Direction of rotation | | electronically reversible | |
| Recommended values - mathematically independent of each other | | | |
| Speed up to | n _{e max.} | 12 000 | rpm |
| Torque up to ^{1) 2)} | M _{e max.} | 0,205 | mNm |
| Thermal current up to ^{1) 2)} | I _{e max.} | 0,184 | A |

¹⁾ at 5000 rpm ²⁾ thermal resistance R_{th 2} not reduced

Scale enlarged



Connection

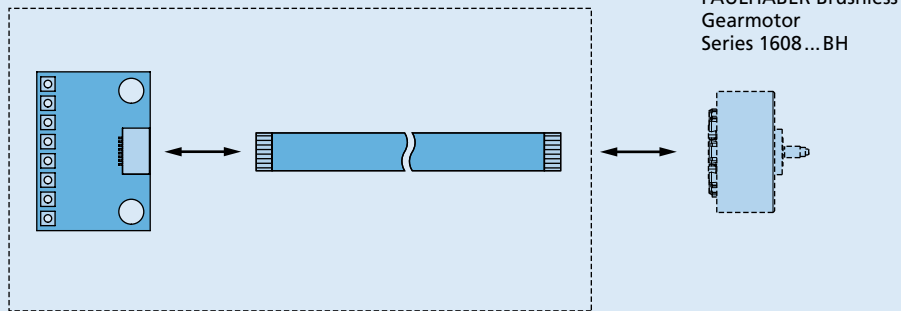
| No. | Function |
|-----|----------------------|
| 1 | Hall sensor A |
| 2 | Hall sensor B |
| 3 | Hall sensor C |
| 4 | UDD (2.2 ... 18V DC) |
| 5 | GND |
| 6 | Phase A |
| 7 | Phase B |
| 8 | Phase C |

Connectors

8-pole; 0,5 mm pitch;
thickness 0,3 mm

Accessory - optional

Adapter board with ribbon cable
Part number: 6611.00017



Note: The connector on the adapter board has contacts on both sides. The pin out of the adapter board depends on the orientation of the ribbon cable and motor connector.

Accessory - Dimensional drawing

M1:1 