

Brushless Flat DC-Micromotors

penny-motor® Technology

0,2 mNm

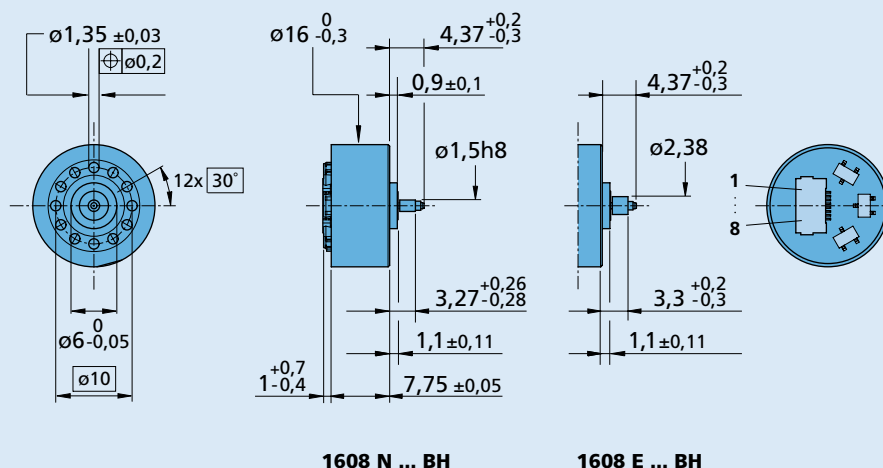
For combination with
Gearheads:
16A
Drive Electronics:
Speed controller

Series 1608 ... BH

	1608 N	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

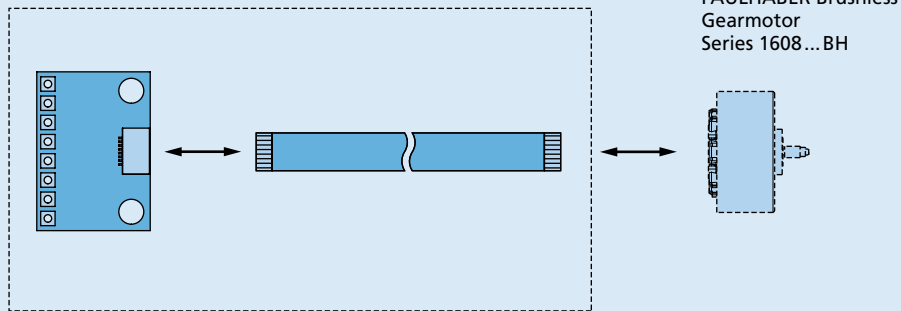
No.	Function
1	Hall sensor A
2	Hall sensor B
3	Hall sensor C
4	UDD (2.2 ... 18V DC)
5	GND
6	Phase A
7	Phase B
8	Phase C

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 