

# Brushless Flat DC-Micromotors

0,16 mNm

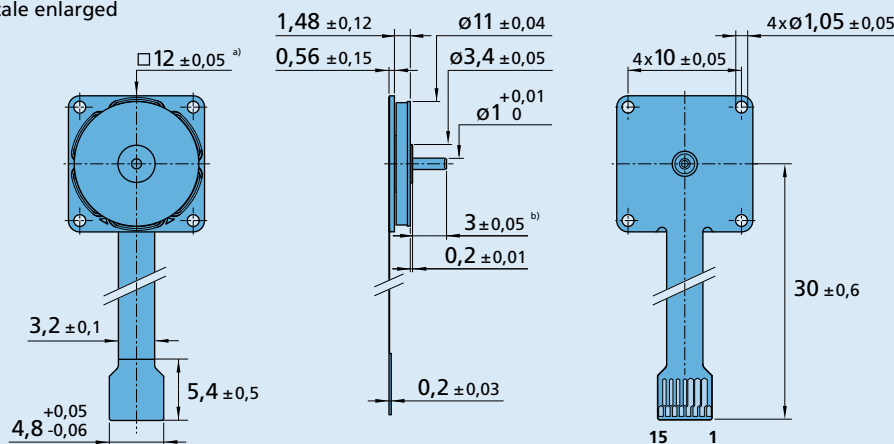
For combination with  
Drive Electronics:  
Speed controller with adapter board

## Series 1202 ... BH

	1202 H	004 BH	006 BH	
Nominal voltage	$U_N$	4	6	V
Terminal resistance, phase-phase	R	16	70	$\Omega$
Output power <sup>1)</sup>	$P_{2 \text{ max.}}$	0,652	0,492	W
Efficiency	$\eta_{\text{max.}}$	51	42	%
No-load speed	$n_0$	41 740	37 600	rpm
No-load current	$I_0$	0,028	0,015	A
Stall torque	$M_H$	0,222	0,124	mNm
Friction torque, static	$C_0$	0,003	0,003	mNm
Friction torque, dynamic	$C_v$	$0,52 \cdot 10^{-6}$	$0,52 \cdot 10^{-6}$	mNm/rpm
Speed constant	$k_n$	10 587	6 431	rpm/V
Back-EMF constant	$k_E$	0,094	0,156	mV/rpm
Torque constant	$k_M$	0,902	1,485	mNm/A
Current constant	$k_I$	1,109	0,673	A/mNm
Slope of n-M curve	$\Delta n / \Delta M$	187 793	303 121	rpm/mNm
Terminal inductance, phase-phase	L	26	58	$\mu\text{H}$
Mechanical time constant	$\tau_m$	246	397	ms
Rotor inertia	J	0,125	0,125	$\text{gcm}^2$
Angular acceleration	$\alpha_{\text{max.}}$	$18 \cdot 10^3$	$10 \cdot 10^3$	$\text{rad/s}^2$
Thermal resistance	$R_{th 1} / R_{th 2}$	0 / 94		K/W
Operating temperature range		-30 ... +85		$^{\circ}\text{C}$
Shaft bearing		ball bearing		
Shaft load max.:				
– radial at 10 000 rpm (at shaft step $\varnothing 3,4 \text{ mm}$ )		0,6		N
– axial at 10 000 rpm (axial push-on only)		1		N
– axial at standstill (axial push-on only)		1		N
Shaft play:				
– radial	$\leq$	0,011		mm
– axial	$\leq$	0,060		mm
Number of pole pairs		4		
Weight		1,1		g
Direction of rotation		electronically reversible		
<b>Recommended values - mathematically independent of each other</b>				
Speed up to	$n_{e \text{ max.}}$	40 000	40 000	rpm
Torque up to <sup>2) 3)</sup>	$M_{e \text{ max.}}$	0,16	0,12	mNm
Thermal current up to <sup>3) 4)</sup>	$I_{e \text{ max.}}$	0,199	0,095	A

<sup>1)</sup> at 40 000 rpm <sup>2)</sup> at 10 000 rpm <sup>3)</sup> thermal resistance  $R_{th 2}$  not reduced <sup>4)</sup> at standstill

Scale enlarged



<sup>a)</sup> also available with round stator  $\varnothing 12 \pm 0,05$   
<sup>b)</sup> also available with 1 mm output shaft length

1202 H ... BH

### Connection

No.	Function
1	Star point
2	Phase A
3	Phase A
4	Phase B
5	Phase B
6	Phase C
7	Phase C
8	Hall sensor In +
9	Hall sensor In -
10	analog Hall A Out +
11	analog Hall A Out -
12	analog Hall B Out +
13	analog Hall B Out -
14	analog Hall C Out +
15	analog Hall C Out -

### Connectors

15-pole; 0,3 mm pitch; e.g.: Hirose: FH23-15S-0.3SHAW (05)