

Thin Profile Brushless Motors

Electronic Commutation

0,12 mNm


For combination with
Drive Electronics:
BLD 1501 H, BLD 05002 S

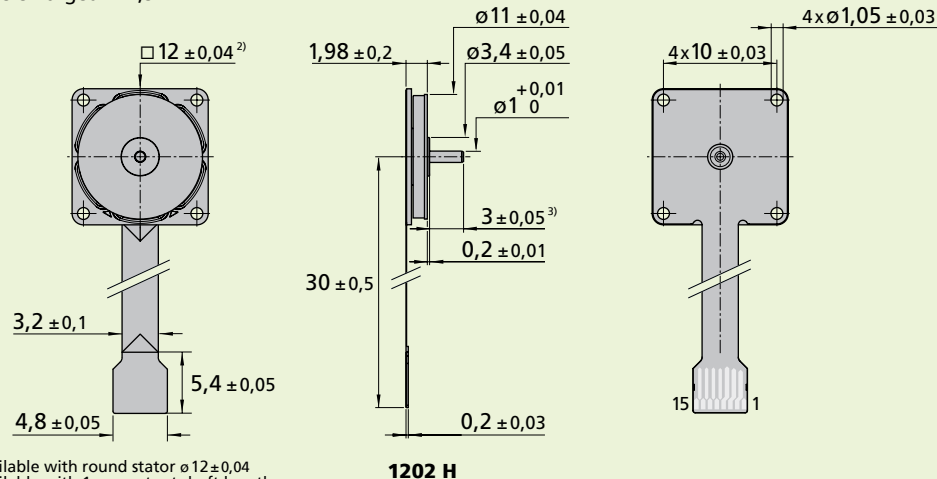
Series 1202 ... BH

	1202 H	7,5 BH	012 BH	
Nominal voltage	U_N	7,5	12	V
Terminal resistance, phase-phase	R	16	70	Ω
Output power ¹⁾	$P_{2 \text{ max.}}$	0,170	0,254	W
Efficiency	$\eta_{\text{ max.}}$	32	37	%
No-load speed	n_o	61 000	64 000	rpm
No-load current	I_o	0,089	0,026	A
Stall torque	M_H	0,444	0,260	mNm
Friction torque, static	C_o	0,001	0,001	mNm
Friction torque, dynamic	C_v	$1,5 \cdot 10^{-6}$	$1,5 \cdot 10^{-6}$	mNm/rpm
Speed constant	k_n	10 052	6 282	rpm/V
Back-EMF constant	k_E	0,099	0,159	mV/rpm
Torque constant	k_M	0,95	1,52	mNm/A
Current constant	k_i	1,053	0,658	A/mNm
Slope of n-M curve	$\Delta n/\Delta M$	169 295	289 323	rpm/mNm
Terminal inductance, phase-phase	L	26	58	μH
Mechanical time constant	τ_m	222	379	ms
Rotor inertia	J	0,125	0,125	gcm ²
Angular acceleration	$\alpha_{\text{ max.}}$	$36 \cdot 10^3$	$21 \cdot 10^3$	rad/s ²
Operating temperature range		0 ... +70		°C
Shaft bearing		ball bearing		
Shaft load max.:				
– radial at 10 000 rpm (at shaft step $\varnothing 3,4$ 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		
Hall sensor current with BLD 1501 H	I_s	2,5		mA
Hall sensor current, max.	$I_{s \text{ max.}}$	18		mA
Weight		1,1		g
Direction of rotation		electronically reversible		
Recommended values - mathematically independent of each other				
Speed up to	$n_{e \text{ max.}}$	60 000	60 000	rpm
Torque up to	$M_{e \text{ max.}}$	0,114	0,122	mNm
Thermal current up to	$I_{e \text{ max.}}$	0,120	0,080	A

¹⁾ for 7,5 BH at 56 000 rpm; for 012 BH at 40 000 rpm

Notes: Thin Profile Brushless Motors are also available without Hall sensors: Series 1202 ... BS

 Scale enlarged M 1,5:1



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