Brushless DC-Servomotors

0,36 mNm

For combination with
Gearheads:
06/1
Encoder:
PA2-50, HXM3-64
Drive Electronics:
Speed Controller, Motion Controller

Series 0620 ... B

		0620 K		006 B	012 B	
1	Nominal voltage	U_N		6	12	Volt
2	Terminal resistance, phase-phase	R		9,1	59,0	Ω
3	Output power [1]	$P_{2\ max.}$		1,47	1,49	W
4	Efficiency	$\eta_{max.}$		52	50	%
5	No-load speed	n_o		46 500	35 600	rpm
6	No-load current (with shaft ø 1,0 mm)	I_o		0,062	0,020	A
7	Stall torque	M_H		0,73	0,57	mNm
8	Friction torque, static	C_o		0,023	0,023	mNm
9	Friction torque, dynamic	C_v		$1,0 \cdot 10^{-6}$	$1,0 \cdot 10^{-6}$	mNm/rpm
10	Speed constant	k_n		8 451	3 282	rpm/V
11	Back-EMF constant	k_E		0,118	0,305	mV/rpm
12	Torque constant	k_M		1,13	2,91	mNm/A
13	Current constant	k_I		0,885	0,344	A/mNm
14	Slope of n-M curve	$\Delta n/\Delta M$		68 054	66 533	rpm/mNm
15	Terminal inductance, phase-phase	L		26	187	µH
16	Mechanical time constant	τ_m		6	6	ms
17	Rotor inertia	J		0,0095	0,0095	gcm^2
18	Angular acceleration	$\alpha_{max.}$		768	601	$\cdot 10^3 rad/s^2$
19	Thermal resistance	$R_{th\,1}$ / $R_{th\,2}$	14 / 88,0			K/W
20	Thermal time constant	τ_{w1} / τ_{w2}	1 / 149			s
21	Operating temperature range:					
	– motor		– 20 ... +100			°C
	– coil, max. permissible		+125			°C
22	Shaft bearings		ball bearings, preloaded			
23	Shaft load max.:					
	– radial at 10 000/50 000 rpm (3,7 mm from mounting flange)		2,0 / 1,5			N
	– axial at 10 000/50 000 rpm (push-on only)		0,6 / 0,2			N
	– axial at standstill (push-on only)		10			N
24	Shaft play:					
	– radial	≤	0,012			mm
	– axial	=	0			mm
25	Housing material		aluminium, black anodized			
26	Weight		2,5			g
27	Direction of rotation		electronically reversible			
Recommended values - mathematically independent of each other						
28	Speed up to [2]	$n_{e\ max.}$		100 000	100 000	rpm
29	Torque up to [1] [2]	$M_{e\ max.}$		0,351	0,356	mNm
30	Current up to [1] [2]	$I_{e\ max.}$		0,367	0,144	A

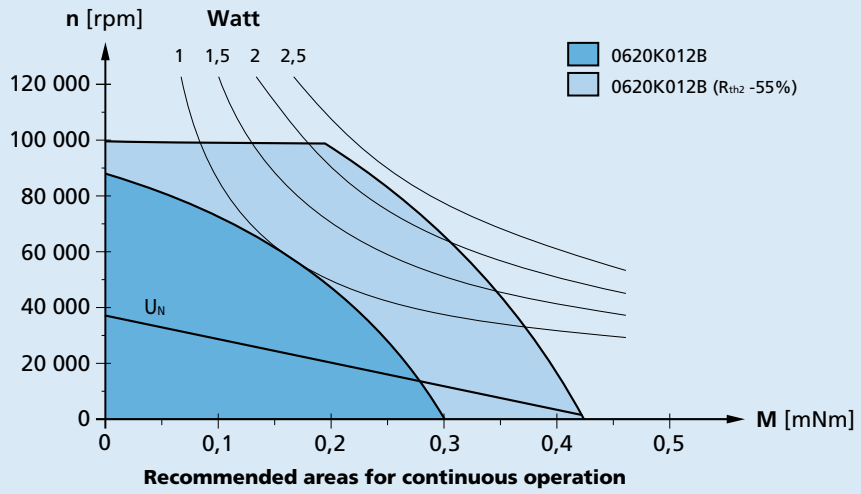
[1] at 40 000 rpm
[2] thermal resistance $R_{th\,2}$ by 55% reduced

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.

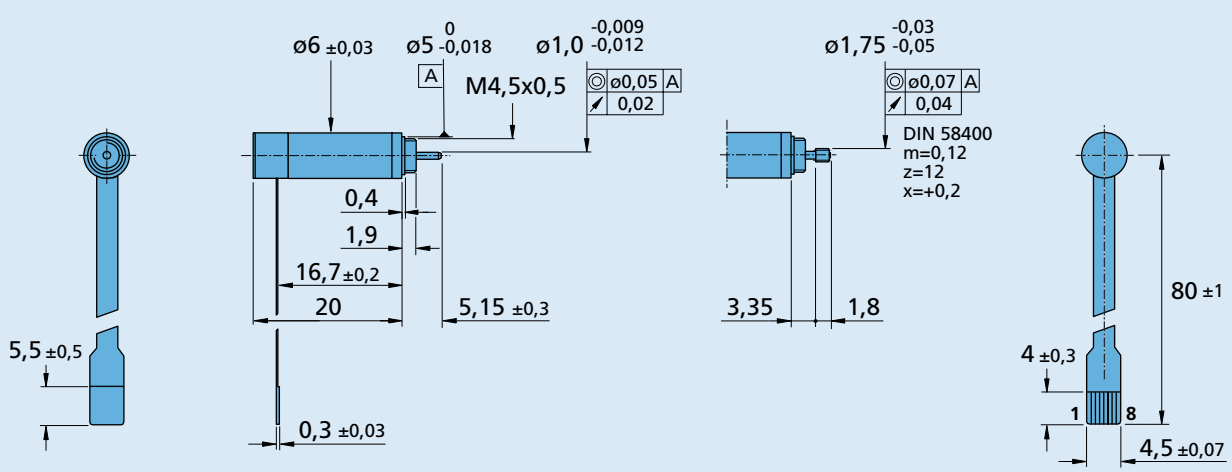
The diagram shows the motor in a completely insulated as well as thermally coupled condition ($R_{th\,2}$ 55% reduced).

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.



Options
K1855:
Motors for operation with Motion Controllers

0620 ... B



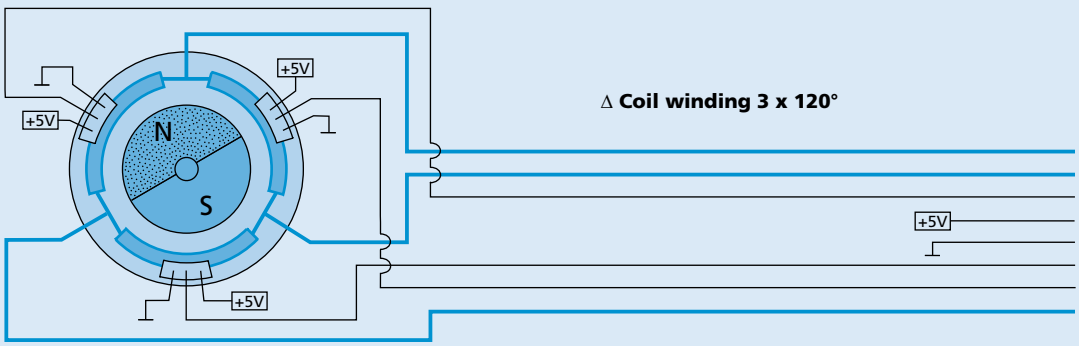
0620 K

0620 C for Gearheads 06/1

Cable and connection information

Recommended connector
Molex - ZIF Connector,
No. 52745-0896.

Flexboard
8 circuits; 0,5mm pitch,
Top Contact Style.



Δ Coil winding 3 x 120°

Connection

No.	Function
1	Phase C
2	Phase B
3	Hall sensor C
4	+5V
5	GND
6	Hall sensor A
7	Hall sensor B
8	Phase A