

Brushless DC-Servomotors

2 Pole Technology

0,36 mNm
1,7 W

Series 0620 ... B

Values at 22°C and nominal voltage		0620 K	006 B	012 B	
1	Nominal voltage	U_N	6	12	V
2	Terminal resistance, phase-phase	R	8,8	60,2	Ω
3	Efficiency, max.	η_{max}	51	50	%
4	No-load speed	n_0	48 600	37 300	min^{-1}
5	No-load current, typ. (with shaft \varnothing 1 mm)	I_0	0,056	0,018	A
6	Stall torque	M_H	0,732	0,551	mNm
7	Friction torque, static	C_0	0,011	0,011	mNm
8	Friction torque, dynamic	C_V	$1,02 \cdot 10^{-6}$	$1,02 \cdot 10^{-6}$	$\text{mNm}/\text{min}^{-1}$
9	Speed constant	k_n	8 761	3 386	min^{-1}/V
10	Back-EMF constant	k_E	0,114	0,295	$\text{mV}/\text{min}^{-1}$
11	Torque constant	k_M	1,09	2,82	mNm/A
12	Current constant	k_I	0,917	0,355	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	70 730	72 289	$\text{min}^{-1}/\text{mNm}$
14	Terminal inductance, phase-phase	L	28	192	μH
15	Mechanical time constant	τ_m	7	7,2	ms
16	Rotor inertia	J	0,0095	0,0095	gcm^2
17	Angular acceleration	α_{max}	771	580	$\cdot 10^3 \text{rad}/\text{s}^2$
18	Thermal resistance	R_{th1} / R_{th2}	13,2 / 84,3		K/W
19	Thermal time constant	τ_{w1} / τ_{w2}	1,1 / 89		s
20	Operating temperature range:				
	– motor		-20 ... +100		$^{\circ}\text{C}$
	– winding, max. permissible		+125		$^{\circ}\text{C}$
21	Shaft bearings		ball bearings, preloaded		
22	Shaft load max.:				
	– with shaft diameter		1		mm
	– radial at 10 000 min^{-1} (4 mm from mounting flange)		2		N
	– axial at 10 000 min^{-1} (push only)		0,6		N
	– axial at standstill (push only)		10		N
23	Shaft play:				
	– radial	\leq	0,012		mm
	– axial	$=$	0		mm
24	Housing material		aluminium, black anodized		
25	Mass		2,5		g
26	Direction of rotation		electronically reversible		
27	Speed up to	n_{max}	100 000		min^{-1}
28	Number of pole pairs		1		
29	Hall sensors		digital		
30	Magnet material		NdFeB		
Rated values for continuous operation					
31	Rated torque	M_N	0,28	0,3	mNm
32	Rated current (thermal limit)	I_N	0,311	0,122	A
33	Rated speed	n_N	21 820	7 290	min^{-1}

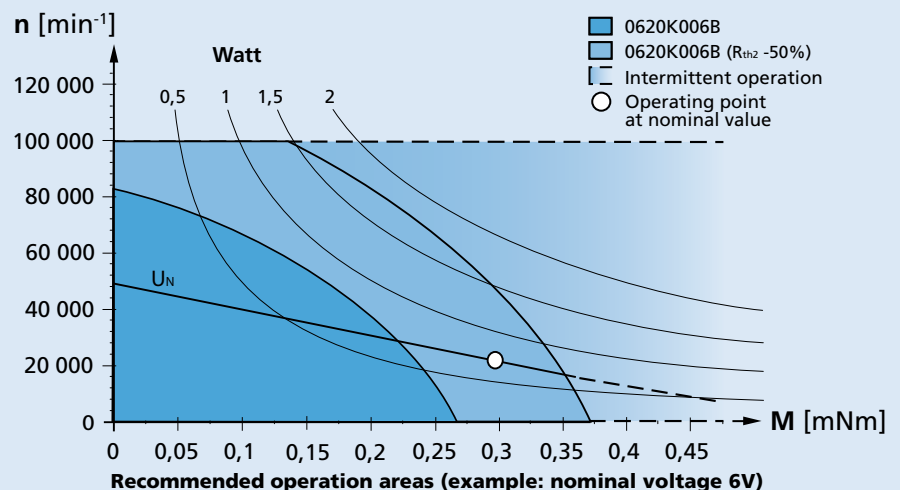
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

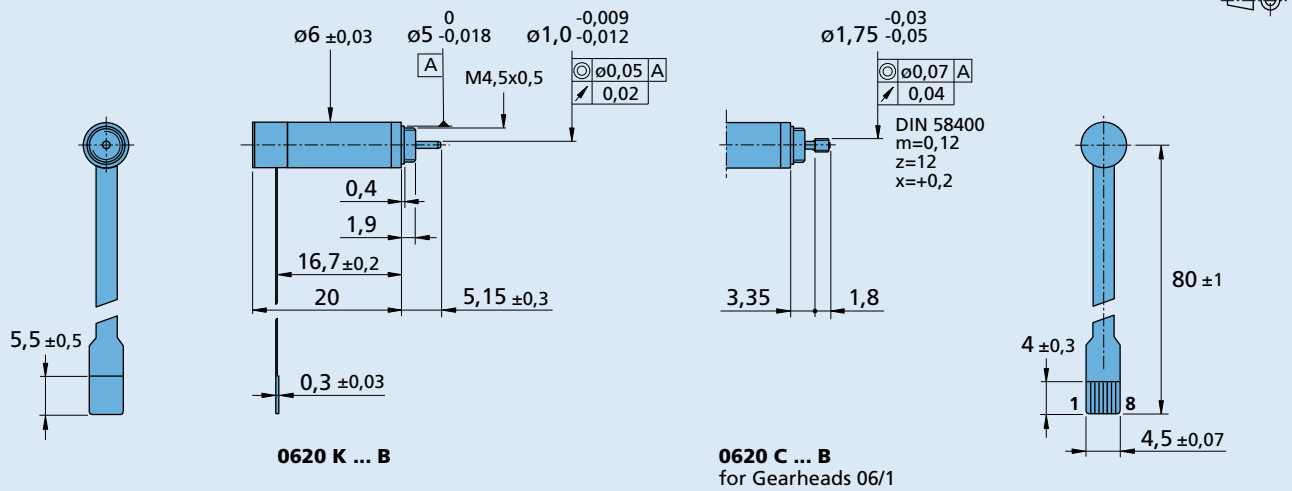
Note:

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_{th2} 50% 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.



Dimensional drawing

Option, cable and connection information

 Example product designation: **0620K006B-K2280**

Option	Type	Description
K2280	Controller combination	Analog Hall sensors for combination with Motion Controller MCBL
K2279	Controller combination	Digital Hall sensors for combination with Speed Controller SC
K179	Bearing lubrication	For vacuum of 10 ⁻⁵ Pa @ 22°C
K1719	Encoder combination	Second rear shaft for combination with Encoder PA2-50

Connection standard		Option: K2280/K2279
No.	Function	No. Function
1	Phase C	8 Phase C
2	Phase B	7 Phase B
3	Hall sensor C	6 Phase A
4	U _{DD} (+5V)	5 GND
5	GND	4 U _{DD} (+5V)
6	Hall sensor A	3 Hall sensor C
7	Hall sensor B	2 Hall sensor B
8	Phase A	1 Hall sensor A

Standard flexboard
8 poles, 0,5 mm pitch

Recommended connector
Molex - ZIF Connector,
No. 52745-0897.

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
06/1	PA2-50 HXM3-64	SC 1801 F SC 2402 P SC 2804 S MCBL 3002 P MCBL 3002 F MCBL 3003 P MC 3001 B MC 3001 P	To view our large range of accessory parts, please refer to the "Accessories" chapter.