

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	$1,02 \cdot 10^{-6}$	$1,02 \cdot 10^{-6}$	mNm/min ⁻¹
9	Speed constant	k_n	8 761	3 386	min ⁻¹ /V
10	Back-EMF constant	k_E	0,114	0,295	mV/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	min ⁻¹ /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	$\cdot 10^3$ rad/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		°C
	– winding, max. permissible		+125		°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

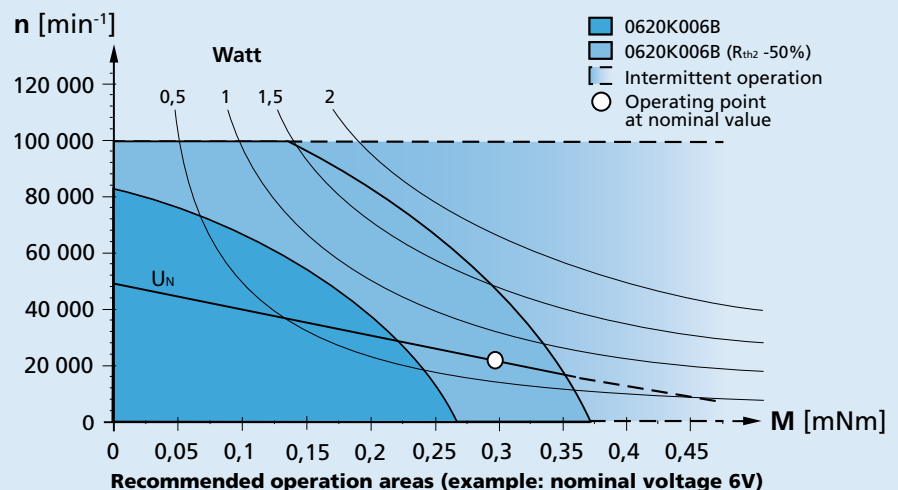
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

Note:

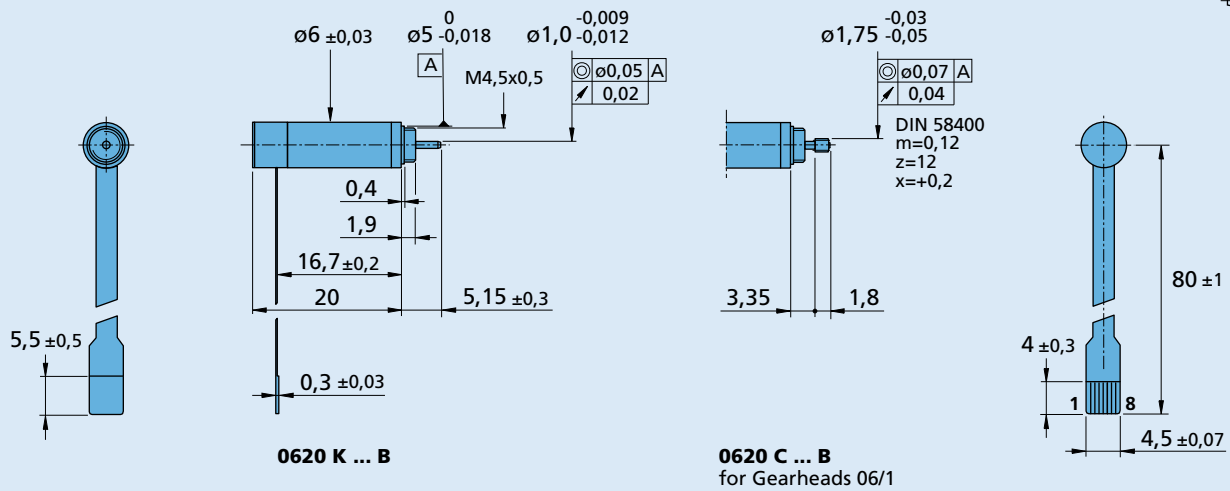
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

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	Connection standard	Option: K2280/K2279
K2280	Controller combination	Analog Hall sensors for combination with Motion Controller MCBL	No. Function	No. Function
K2279	Controller combination	Digital Hall sensors for combination with Speed Controller SC	1 Phase C	8 Phase C
K179	Bearing lubrication	For vacuum of 10 ⁻⁵ Pa @ 22°C	2 Phase B	7 Phase B
K1719	Encoder combination	Second rear shaft for combination with Encoder PA2-50	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	To view our large range of accessory parts, please refer to the "Accessories" chapter.