

Brushless DC-Flat Motors

4 Pole Technology

3,1 mNm
9 W

Series 2610 ... B

Values at 22°C and nominal voltage		2610 T	006 B	012 B	
1	Nominal voltage	U_N	6	12	V
2	Terminal resistance, phase-phase	R	6,97	28,2	Ω
3	Efficiency, max.	η_{max}	79	79	%
4	No-load speed	n_0	6 400	6 400	min^{-1}
5	No-load current, typ. (with shaft \varnothing 1,5 mm)	I_0	0,01	0,005	A
6	Stall torque	M_H	7,543	7,453	mNm
7	Friction torque, static	C_0	0,035	0,035	mNm
8	Friction torque, dynamic	C_V	$8,85 \cdot 10^{-6}$	$8,85 \cdot 10^{-6}$	$\text{mNm}/\text{min}^{-1}$
9	Speed constant	k_n	1 085	543	min^{-1}/V
10	Back-EMF constant	k_E	0,922	1,842	$\text{mV}/\text{min}^{-1}$
11	Torque constant	k_M	8,8	17,6	mNm/A
12	Current constant	k_I	0,114	0,057	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	859	870	$\text{min}^{-1}/\text{mNm}$
14	Terminal inductance, phase-phase	L	486	1 945	μH
15	Mechanical time constant	τ_m	71	72	ms
16	Rotor inertia	J	7,9	7,9	gcm^2
17	Angular acceleration	α_{max}	9	9	$\cdot 10^3 \text{rad}/\text{s}^2$
18	Thermal resistance	R_{th1} / R_{th2}	33 / 27		K/W
19	Thermal time constant	τ_{w1} / τ_{w2}	23,6 / 222		s
20	Operating temperature range:				
	– motor		-25 ... +80		$^{\circ}\text{C}$
	– winding, max. permissible		+80		$^{\circ}\text{C}$
21	Shaft bearings		ball bearings, preloaded		
22	Shaft load max.:				
	– with shaft diameter		1,5		mm
	– radial at 3 000 min^{-1} (3 mm from mounting flange)		4		N
	– axial at 3 000 min^{-1} (push only)		3,5		N
	– axial at standstill (push only)		17,5		N
23	Shaft play:				
	– radial	\leq	0,015		mm
	– axial	$=$	0		mm
24	Housing material		plastic		
25	Mass		20,1		g
26	Direction of rotation		electronically reversible		
27	Speed up to	n_{max}	40 000		min^{-1}
28	Number of pole pairs		2		
29	Hall sensors		digital		
30	Magnet material		NdFeB		
Rated values for continuous operation					
31	Rated torque	M_N	2,87	2,85	mNm
32	Rated current (thermal limit)	I_N	0,356	0,177	A
33	Rated speed	n_N	3 430	3 410	min^{-1}

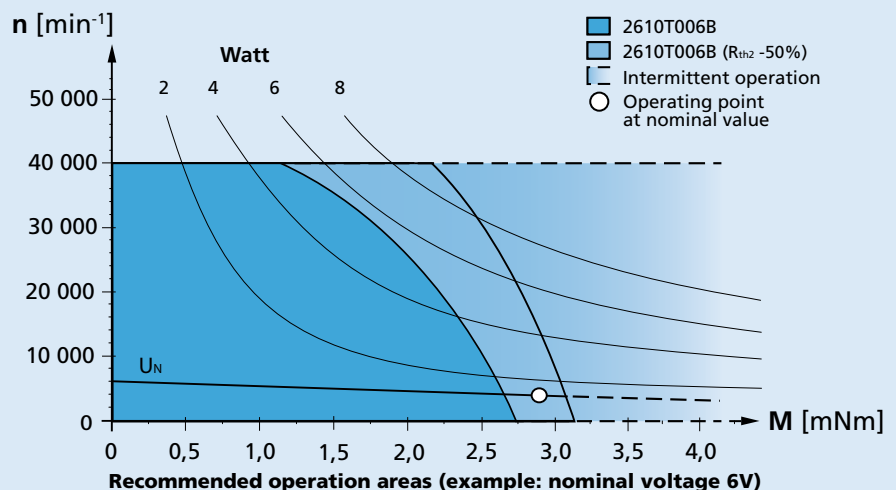
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 25%.

Note:

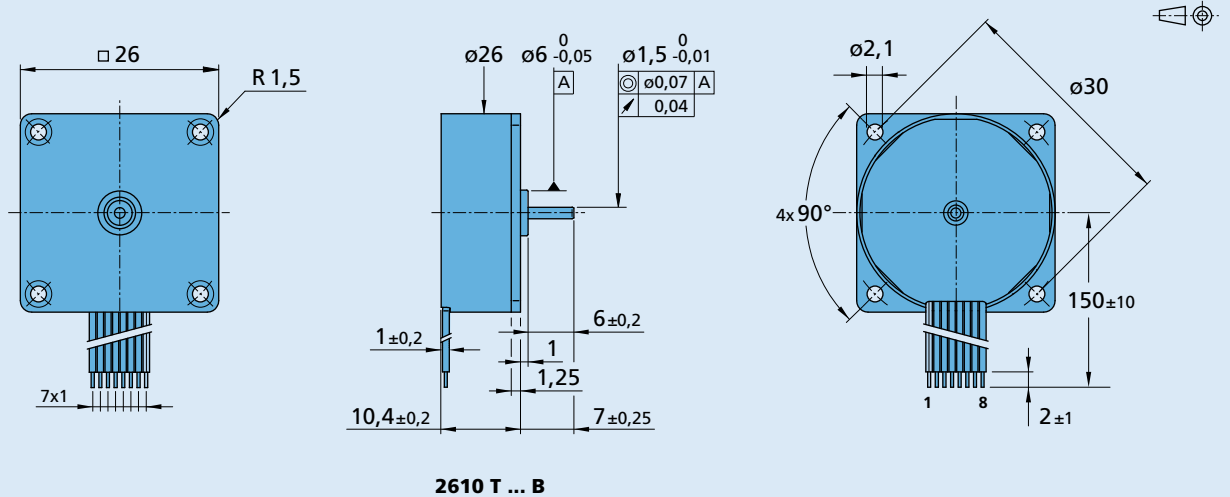
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

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: **2610T006B-Y4192**

Option	Type	Description	Connection	
Y4192	Bearing lubrication	For vacuum of 10^{-5} Pa @ 22°C	No.	Function
4082	Temperature range	Extended temperature range (-40...+85°C)	1	Phase C
			2	Phase B
			3	Phase A
			4	GND
			5	U _{DD} (+5V)
			6	Hall sensor C
			7	Hall sensor B
			8	Hall sensor A
			Standard cable	
			Insulation: PVC	
			8 conductors, AWG 28	
			pitch 1 mm, wires tinned	

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
		SC 1801 P SC 1801 S	