

# Brushless Flat DC-Micromotors

## 3,8 mNm

For combination with  
Drive Electronics:  
Speed Controller

### Series 2610 ... B

	2610 T	006 B	012 B	
1 Nominal voltage	$U_N$	6	12	Volt
2 Terminal resistance, phase-phase	R	7,0	28,2	$\Omega$
3 Output power <sup>1)</sup>	$P_2 \text{ max.}$	1,92	1,91	W
4 Efficiency	$\eta \text{ max.}$	78	78	%
5 No-load speed	$n_0$	6 200	6 200	rpm
6 No-load current	$I_0$	0,012	0,006	A
7 Stall torque	$M_H$	7,73	7,68	mNm
8 Friction torque, static	$C_0$	0,025	0,025	mNm
9 Friction torque, dynamic	$C_v$	$1,35 \cdot 10^{-5}$	$1,35 \cdot 10^{-5}$	mNm/rpm
10 Speed constant	$k_n$	1 055	528	rpm/V
11 Back-EMF constant	$k_E$	0,948	1,895	mV/rpm
12 Torque constant	$k_M$	9,05	18,1	mNm/A
13 Current constant	$k_I$	0,111	0,055	A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$	816	822	rpm/mNm
15 Terminal inductance, phase-phase	L	480	1 940	$\mu\text{H}$
16 Mechanical time constant	$\tau_m$	69	70	ms
17 Rotor inertia	J	8,1	8,1	$\text{gcm}^2$
18 Angular acceleration	$\alpha \text{ max.}$	9,5	9,5	$\cdot 10^3 \text{ rad/s}^2$
19 Thermal resistance	$R_{th 1} / R_{th 2}$	33 / 27		K/W
20 Thermal time constant	$\tau_{w1} / \tau_{w2}$	20 / 230		s
21 Operating temperature range		-25 ... +80		$^{\circ}\text{C}$
22 Shaft bearings		ball bearing, preloaded		
23 Shaft load max.:				
– radial at 3 000/7 000 rpm (3 mm from mounting flange)		4,0 / 3,5		N
– axial at 3 000/7 000 rpm (push-on only)		3,5 / 3,4		N
– axial at standstill (push-on only)		17,5		N
24 Shaft play:				
– radial	$\leq$	0,015		mm
– axial	$=$	0		mm
25 Housing material		plastic		
26 Weight		20,1		g
27 Direction of rotation		electronically reversible		
<b>Recommended values - mathematically independent of each other</b>				
28 Speed up to	$n_e \text{ max.}$	7 000	7 000	rpm
29 Torque up to <sup>1) 2)</sup>	$M_e \text{ max.}$	3,24 / 3,77	3,23 / 3,75	mNm
30 Current up to <sup>1) 2)</sup>	$I_e \text{ max.}$	0,416 / 0,481	0,207 / 0,240	A

<sup>1)</sup> at 5 000 rpm

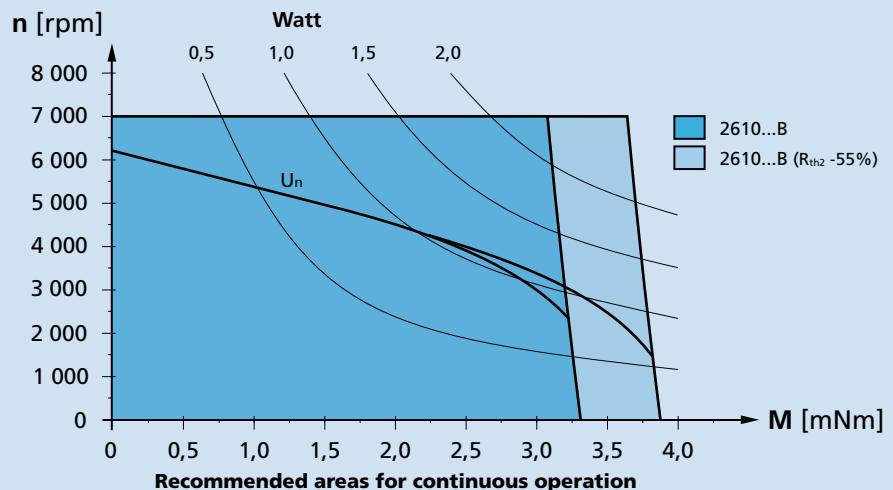
<sup>2)</sup> thermal resistance  $R_{th 2}$  not reduced / thermal resistance  $R_{th 2}$  by 55% reduced

#### 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 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.



**2610 T ... B**

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