

# Flat DC-Micromotors

## Precious Metal Commutation

3,4 mNm  
4 W

### Series 2607 ... SR

Values at 22°C and nominal voltage		2607 T	006 SR	012 SR	024 SR	
1	Nominal voltage	$U_N$	6	12	24	V
2	Terminal resistance	$R$	8,2	36,5	128	$\Omega$
3	Output power	$P_{2nom.}$	1,08	0,97	1,1	W
4	Efficiency, max.	$\eta_{max.}$	81	80	81	%
5	No-load speed	$n_0$	6 600	5 900	6 200	min <sup>-1</sup>
6	No-load current, typ. (with shaft $\varnothing$ 1,5 mm)	$I_0$	0,007	0,004	0,002	A
7	Stall torque	$M_H$	6,26	6,21	6,77	mNm
8	Friction torque	$M_R$	0,06	0,07	0,07	mNm
9	Speed constant	$k_n$	1 111	500	261	min <sup>-1</sup> /V
10	Back-EMF constant	$k_E$	0,9	2	3,83	mV/min <sup>-1</sup>
11	Torque constant	$k_M$	8,59	19,09	36,54	mNm/A
12	Current constant	$k_I$	0,116	0,052	0,027	A/mNm
13	Slope of n-M curve	$\Delta n / \Delta M$	1 055	957	917	min <sup>-1</sup> /mNm
14	Rotor inductance	$L$	465	2 200	8 400	$\mu$ H
15	Mechanical time constant	$\tau_m$	7,5	6,8	6,5	ms
16	Rotor inertia	$J$	0,68	0,68	0,68	gcm <sup>2</sup>
17	Angular acceleration	$\alpha_{max.}$	92	92	100	$\cdot 10^3$ rad/s <sup>2</sup>
18	Thermal resistance	$R_{th1} / R_{th2}$	2,7 / 24,45			K/W
19	Thermal time constant	$\tau_{w1} / \tau_{w2}$	1,8 / 163			s
20	Operating temperature range:					
	– motor		-25 ... +80			°C
	– winding, max. permissible		+100			°C
21	Shaft bearings		sintered bearings (standard)			ball bearings, preloaded (optional version)
22	Shaft load max.:					
	– with shaft diameter		1,5			mm
	– radial at 3 000 min <sup>-1</sup> (3 mm from bearing)		1,2			N
	– axial at 3 000 min <sup>-1</sup>		0,2			N
	– axial at standstill		20			N
23	Shaft play:					
	– radial	$\leq$	0,03			mm
	– axial	$\leq$	0,2			mm
24	Housing material		plastic			
25	Mass		16,1			g
26	Direction of rotation		clockwise, viewed from the front face			
27	Speed up to	$n_{max.}$	8 000			min <sup>-1</sup>
28	Number of pole pairs		2			
29	Magnet material		NdFeB			
<b>Rated values for continuous operation</b>						
30	Rated torque	$M_N$	3,2	3,1	3,4	mNm
31	Rated current (thermal limit)	$I_N$	0,4	0,17	0,1	A
32	Rated speed	$n_N$	2 500	2 500	2 500	min <sup>-1</sup>

**Note:** Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The  $R_{th2}$  value has been reduced by 0%.

**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.



