

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	Ω
3	Efficiency, max.	η_{max}	81	80	81	%
4	No-load speed	n_0	6 600	5 900	6 200	min ⁻¹
5	No-load current, typ. (with shaft \varnothing 1,5 mm)	I_0	0,007	0,004	0,002	A
6	Stall torque	M_H	6,26	6,21	6,77	mNm
7	Friction torque	M_R	0,06	0,07	0,07	mNm
8	Speed constant	k_n	1 111	500	261	min ⁻¹ /V
9	Back-EMF constant	k_E	0,9	2	3,83	mV/min ⁻¹
10	Torque constant	k_M	8,59	19,09	36,54	mNm/A
11	Current constant	k_I	0,116	0,052	0,027	A/mNm
12	Slope of n-M curve	$\Delta n / \Delta M$	1 055	957	917	min ⁻¹ /mNm
13	Rotor inductance	L	465	2 200	8 400	μ H
14	Mechanical time constant	τ_m	7,5	6,8	6,5	ms
15	Rotor inertia	J	0,68	0,68	0,68	gcm ²
16	Angular acceleration	α_{max}	92	92	100	$\cdot 10^3$ rad/s ²
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17	Thermal resistance	R_{th1} / R_{th2}	2,7 / 24,45			K/W
18	Thermal time constant	τ_{w1} / τ_{w2}	1,8 / 163			s
19	Operating temperature range:					
	– motor		-25 ... +80			°C
	– winding, max. permissible		+100			°C
20	Shaft bearings		sintered bearings	ball bearings, preloaded		
21	Shaft load max.:		(standard)	(optional version)		
	– with shaft diameter		1,5	1,5		mm
	– radial at 3 000 min ⁻¹ (3 mm from bearing)		1,2	5		N
	– axial at 3 000 min ⁻¹		0,2	0,5		N
	– axial at standstill		20	10		N
22	Shaft play:					
	– radial	\leq	0,03	0,015		mm
	– axial	\leq	0,2	0		mm
23	Housing material		plastic			
24	Mass		16,1			g
25	Direction of rotation		clockwise, viewed from the front face			
26	Speed up to	n_{max}	8 000			min ⁻¹
27	Number of pole pairs		2			
28	Magnet material		NdFeB			
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Rated values for continuous operation						
29	Rated torque	M_N	3,2	3,1	3,4	mNm
30	Rated current (thermal limit)	I_N	0,4	0,17	0,1	A
31	Rated speed	n_N	2 500	2 500	2 500	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 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.



