

DC-Micromotors

Precious Metal Commutation

0,72 mNm

For combination with
Gearheads:
10/1, 12/3

Series 1219 ... G

Values at 22°C and nominal voltage	1219 N	4,5 G	006 G	012 G	015 G	
1 Nominal voltage	U_N	4,5	6	12	15	V
2 Terminal resistance	R	10,7	17,6	69	131	Ω
3 Output power	$P_{2nom.}$	0,46	0,49	0,5	0,41	W
4 Efficiency, max.	$\eta_{max.}$	74	73	72	70	%
5 No-load speed	n_0	15 300	16 000	16 000	16 200	rpm
6 No-load current, typ. (with shaft \varnothing 0,8 mm)	I_0	0,008	0,007	0,004	0,003	A
7 Stall torque	M_H	1,14	1,17	1,19	0,96	mNm
8 Friction torque	M_R	0,02	0,02	0,03	0,03	mNm
9 Speed constant	k_n	3 460	2 721	1 364	1 109	rpm/V
10 Back-EMF constant	k_E	0,289	0,368	0,733	0,902	mV/rpm
11 Torque constant	k_M	2,76	3,51	7	8,61	mNm/A
12 Current constant	k_I	0,362	0,285	0,143	0,116	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	13 413	13 642	13 447	16 875	rpm/mNm
14 Rotor inductance	L	150	300	1 200	1 600	μH
15 Mechanical time constant	τ_m	20	20	18	19	ms
16 Rotor inertia	J	0,14	0,14	0,13	0,11	gcm ²
17 Angular acceleration	$\alpha_{max.}$	81	84	92	87	$\cdot 10^3 \text{rad/s}^2$
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18 Thermal resistance	R_{th1} / R_{th2}	17 / 48				K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	3,5 / 386				s
20 Operating temperature range:						
– motor		-30 ... +85 (optional version -30 ... +125)				°C
– winding, max. permissible		+85 (optional version +125)				°C
21 Shaft bearings		sintered bearings	ball bearings			
22 Shaft load max.:		(standard)	(optional version)			
– with shaft diameter		0,8	1			mm
– radial at 3 000 rpm (1,5 mm from bearing)		0,5	5			N
– axial at 3 000 rpm		0,1	0,5			N
– axial at standstill		20	5			N
23 Shaft play						
– radial	\leq	0,03	0,02			mm
– axial	\leq	0,2	0,2			mm
24 Housing material		steel, nickel plated				
25 Mass		11				g
26 Direction of rotation		clockwise, viewed from the front face				
27 Speed up to	$n_{max.}$	19 000				rpm
28 Number of pole pairs		1				
29 Magnet material		AlNiCo				
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Rated values for continuous operation						
30 Rated torque	M_N	0,72	0,71	0,7	0,62	mNm
31 Rated current (thermal limit)	I_N	0,27	0,21	0,11	0,077	A
32 Rated speed	n_N	3 120	3 870	4 040	2 770	rpm

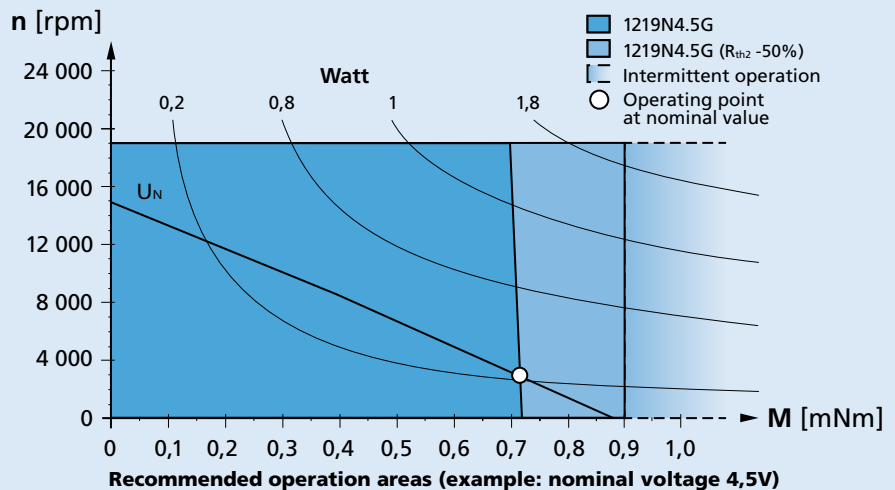
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 0%.

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.



Dimensional drawing

