FAULHABER

0,753 mNm
1,87 W

DC-Micromotors
Precious Metal Commutation

Series 1219 ... G

Values at 22°C and nominal voltage	1219 N		4,5 G	006 G	012 G	015 G	
Nominal voltage	U_N		4,5	6	12	15	V
Terminal resistance	R		10,7	17,6	69	131	Ω
Rotor inductance	L		150	300	1 200	1 600	µH
Efficiency, max.	$\eta_{max.}$		75	76	71	68	%
No-load current, typ.	I_0		0,0072	0,0057	0,0043	0,0035	A
No-load speed	n_0		15 300	16 100	16 000	16 100	min^{-1}
Stall torque	M_H		1,14	1,18	1,19	0,956	mNm
Rotor inertia	J		0,14	0,14	0,13	0,11	gcm²
Friction torque	M_R		0,02	0,02	0,03	0,03	mNm
Torque constant	k_M		2,76	3,51	7	8,61	mNm/A
Speed constant	k_n		3 460	2 720	1 360	1 110	min^{-1}/V
Slope of n-M curve	$\Delta n/\Delta M$		13 400	13 600	13 400	16 900	min^{-1}/mNm
Thermal resistance:							
– winding to housing	R_{th1}	16					K/W
– housing to ambient (external plastic flange)	$R_{th2\,p}$	42					K/W
– housing to ambient (external metal flange)	$R_{th2\,m}$	37					K/W
Thermal time constant:							
– winding	τ_{w1}	3,4					s
– housing (external plastic flange)	$\tau_{w2\,p}$	200					s
– housing (external metal flange)	$\tau_{w2\,m}$	170					s
Operating temperature range:							
– motor		-30 ... +85 (optional version -30 ... +125)					°C
– winding, max. permissible		+85 (optional version +125)					°C
Shaft bearings		sintered bearings					
Shaft diameter		0,8					mm
Radial shaft load max.:							
– dynamic at 3 000 min^{-1} (3,4 mm from mounting flange)		0,5					N
Axial shaft load max.:							
– dynamic at 3 000 min^{-1}		0,1					N
– static (shaft unsupported)		20					N
Shaft play, max.:							
– radial		0,03					mm
– axial		0,2					mm
Speed up to	$n_{max.}$	19 000					min^{-1}
Number of pole pairs		1					
Mass		11					g
Housing material		steel, nickel plated					
Magnet material		AlNiCo					

Rated values for continuous operation						
Rated torque	M_N	0,753	0,747	0,741	0,643	mNm
Rated current (thermal limit)	I_N	0,284	0,221	0,112	0,0792	A
Rated speed	n_N	2 500	3 170	3 330	2 500	min^{-1}

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

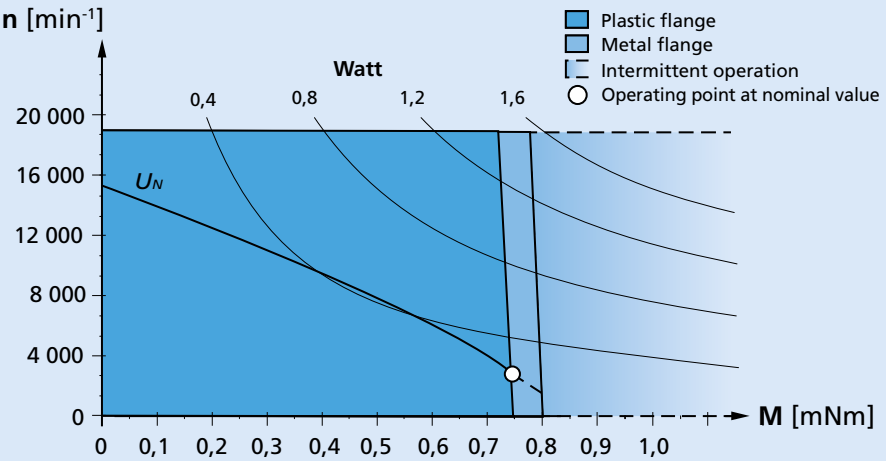
Note:

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 different conditions of thermal coupling, i.e. mounted respectively on a plastic flange and a metal flange.

The nominal voltage (U_N) curve shows, up to the thermal limit, the operating point at nominal voltage for the motor mounted on a plastic flange. Higher torque can be achieved by further reducing the thermal resistance.

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.



Recommended operation areas (example: nominal voltage 4,5V)

For notes on technical data and lifetime performance refer to “Technical Information”.

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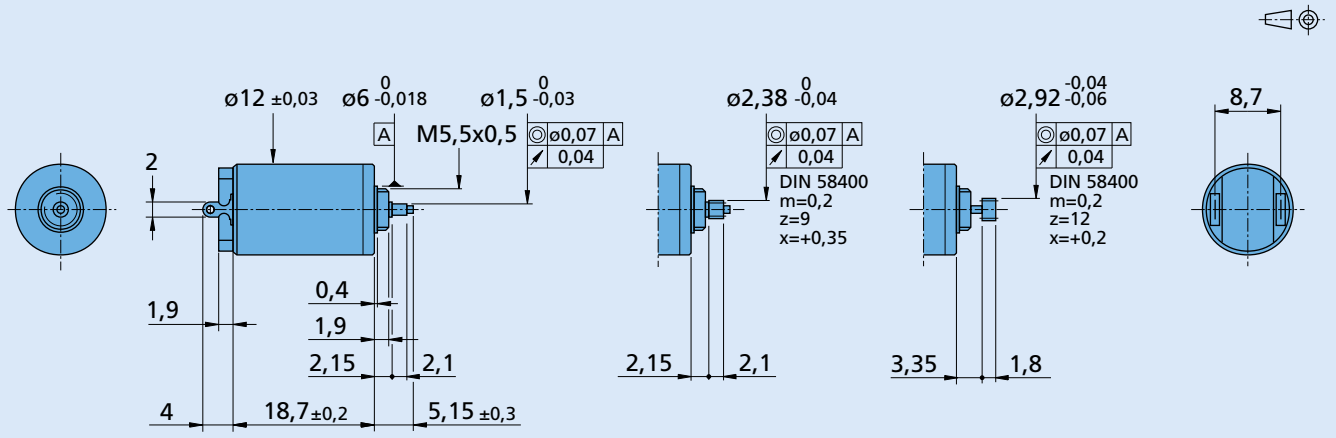
Dimensional drawing



1219 N ... G

1219 E ... G
for Gearhead 12/3

1219 M ... G
for Gearhead 10/1

Options

Example product designation: **1219N012G-K179**

Option	Type	Description
K179	Bearing lubrication	For vacuum of 10^{-5} Pa @ 22°C
K4066	Temperature range	Extended temperature range (-30…+125°C)
K380	Second shaft end	Ø 1 mm x 3 mm
K440	Bearing	Front ball bearing

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
10/1 12/3 10L ... SL 10L ... HL		SC 1801 P SC 1801 S	To view our large range of accessory parts, please refer to the "Accessories" chapter.

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