

DC-Micromotors

Precious Metal Commutation

0,17 mNm

For combination with
Gearheads:
06/1
Encoders:
HXM3-64, PA2-50

Series 0615 ... S

Values at 22°C and nominal voltage		0615 N	1,5 S	003 S	4,5 S	
1	Nominal voltage	U_N	1,5	3	4,5	V
2	Terminal resistance	R	3,9	16,2	37,7	Ω
3	Output power	$P_{2nom.}$	0,12	0,12	0,11	W
4	Efficiency, max.	$\eta_{max.}$	52	50	48	%
5	No-load speed	n_0	19 100	20 200	20 000	rpm
6	No-load current, typ. (with shaft \varnothing 0,8 mm)	I_0	0,03	0,016	0,012	A
7	Stall torque	M_H	0,24	0,22	0,21	mNm
8	Friction torque	M_R	0,02	0,02	0,02	mNm
9	Speed constant	k_n	13 840	7 346	4 872	rpm/V
10	Back-EMF constant	k_E	0,072	0,136	0,205	mV/rpm
11	Torque constant	k_M	0,69	1,3	1,96	mNm/A
12	Current constant	k_I	1,449	0,769	0,51	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	78 224	91 538	93 713	rpm/mNm
14	Rotor inductance	L	12	39	95	μH
15	Mechanical time constant	τ_m	8	10	10	ms
16	Rotor inertia	J	0,01	0,01	0,01	gcm ²
17	Angular acceleration	$\alpha_{max.}$	244	221	213	$\cdot 10^3 \text{rad/s}^2$
18	Thermal resistance	R_{th1} / R_{th2}	35 / 76			K/W
19	Thermal time constant	τ_{w1} / τ_{w2}	2,6 / 110			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			
22	Shaft load max.:					
	- with shaft diameter		0,8			mm
	- radial at 3 000 rpm (1,5 mm from bearing)		0,5			N
	- axial at 3 000 rpm		0,1			N
	- axial at standstill		20			N
23	Shaft play					
	- radial	\leq	0,03			mm
	- axial	\leq	0,15			mm
24	Housing material		steel, black coated			
25	Mass		2			g
26	Direction of rotation		clockwise, viewed from the front face			
27	Speed up to	$n_{max.}$	24 000			rpm
28	Number of pole pairs		1			
29	Magnet material		NdFeB			
Rated values for continuous operation						
30	Rated torque	M_N	0,17	0,16	0,15	mNm
31	Rated current (thermal limit)	I_N	0,29	0,14	0,092	A
32	Rated speed	n_N	2 500	2 500	2 500	rpm

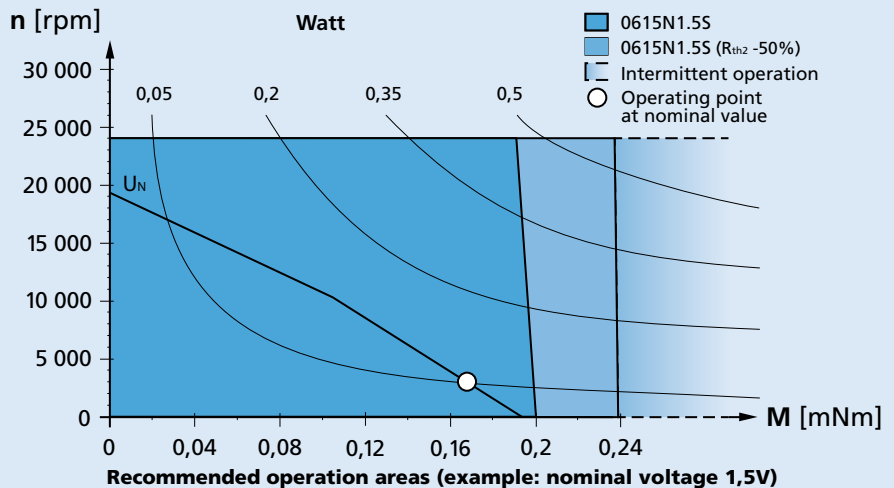
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 0%.

Note:

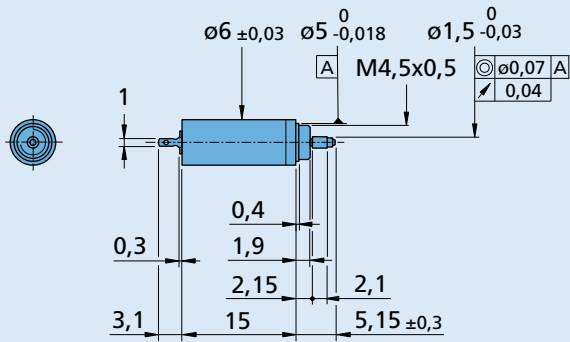
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in a completely insulated as well as thermally coupled condition (R_{th2} 50% reduced).

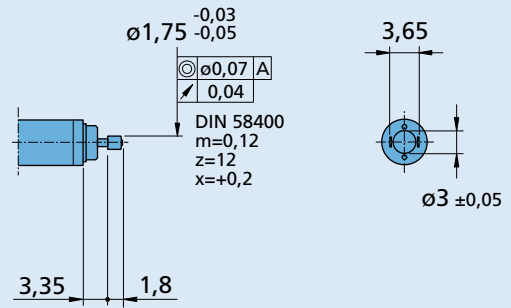
The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



Dimensional drawing



0615 N ... S



0615 C ... S
for Gearhead 06/1