

# DC-Motors

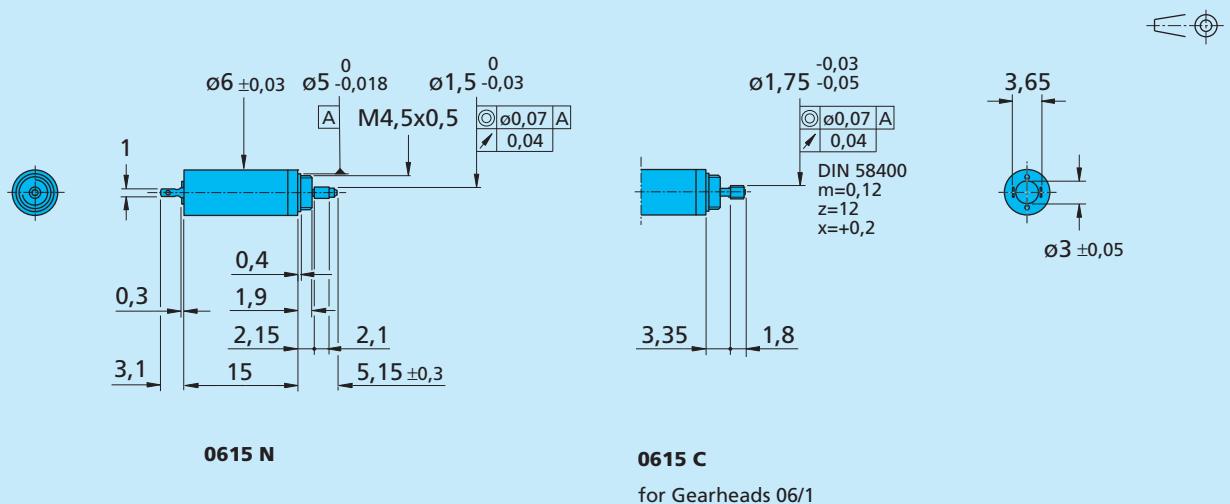
## Precious Metal Commutation

# 0,11 mNm

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

### Series 0615 ... S

	0615 N	1,5 S	003 S	4,5 S	
1 Nominal voltage	$U_N$	1,5	3,0	4,5	Volt
2 Terminal resistance	R	3,9	16,2	37,7	$\Omega$
3 Output power	$P_{2 \max}$	0,12	0,12	0,11	W
4 Efficiency	$\eta_{\max}$	52	50	50	%
5 No-load speed	$n_o$	19 100	20 200	19 500	rpm
6 No-load current (with shaft $\varnothing$ 0,8 mm)	$I_o$	0,030	0,016	0,010	A
7 Stall torque	$M_H$	0,24	0,22	0,22	mNm
8 Friction torque	$M_R$	0,02	0,02	0,02	mNm
9 Speed constant	$k_n$	13 840	7 346	4 727	rpm/V
10 Back-EMF constant	$k_E$	0,072	0,136	0,212	mV/rpm
11 Torque constant	$k_M$	0,69	1,30	2,02	mNm/A
12 Current constant	$k_i$	1,449	0,769	0,495	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	78 224	91 538	88 229	rpm/mNm
14 Rotor inductance	L	12	39	95	$\mu$ H
15 Mechanical time constant	$\tau_m$	8	10	9	ms
16 Rotor inertia	J	0,01	0,01	0,01	gcm <sup>2</sup>
17 Angular acceleration	$\alpha_{\max}$	244	221	221	$\cdot 10^3$ rad/s <sup>2</sup>
18 Thermal resistance	$R_{th1} / R_{th2}$	35 / 76			K/W
19 Thermal time constant	$\tau_{w1} / \tau_{w2}$	2,6 / 110			s
20 Operating temperature range:					
– motor		– 30 ... + 85			°C
– rotor, max. permissible		+ 85			°C
21 Shaft bearings		sintered bronze sleeves			
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 Weight		2			g
26 Direction of rotation		clockwise, viewed from the front face			
<b>Recommended values - mathematically independent of each other</b>					
27 Speed up to	$n_{e \max}$	13 000	13 000	13 000	rpm
28 Torque up to	$M_{e \max}$	0,11	0,11	0,11	mNm
29 Current up to (thermal limits)	$I_{e \max}$	0,341	0,167	0,110	A



## How to Order a 0615 ... S

Part number	Voltage	Description	Stocked items
0615N1,5S	1,5	Standard motor	yes
0615N003S	3	Standard motor	yes
0615N4,5S	4,5	Standard motor	yes
0615C1,5S	1,5	Standard motor with pinion for 06/1 gearhead	yes
0615C003S	3	Standard motor with pinion for 06/1 gearhead	yes
0615C4,5S	4,5	Standard motor with pinion for 06/1 gearhead	yes