

NEW

DC-Micromotor

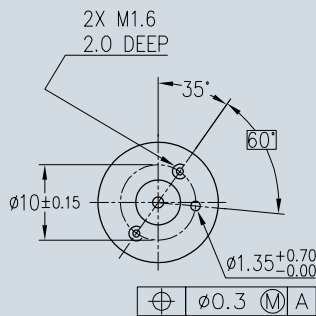
Graphite Commutation

2.2 mNm

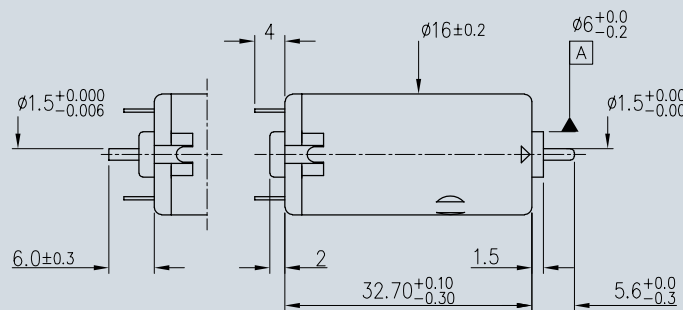
For combination with:
 Gearheads:
 MD15P, M16P
 Encoders:
 ME2-16

Series M1633U

	M1633U		03GS	06GS	12GS	24GS	
1 Nominal voltage	U_N		3	6	12	24	Volt
2 Winding resistance	R	±12%	0.90	3.45	12.85	48.58	Ω
3 Output power	$P_2 \text{ max.}$		2.10	2.03	2.59	2.28	W
4 Efficiency	$\eta \text{ max.}$		51	49	49	46	%
5 No-load speed	n_o	±12%	8,900	9,000	10,200	10,700	rpm
6 No-load current max. (shaft Ø 1.5 mm)	I_o	±50%	0.175	0.090	0.070	0.030	A
7 Stall torque	M_H		7.49	7.39	9.45	8.14	mNm
8 Friction torque	M_R		0.62	0.67	0.86	0.83	mNm
9 Speed constant	k_n		4,251	2,117	1,054	552	rpm/V
10 Back-EMF constant	k_E		0.24	0.47	0.95	1.81	mV/rpm
11 Torque constant	k_M		2.25	4.51	9.06	17.29	mNm/A
12 Current constant	k_I		0.445	0.222	0.110	0.058	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$		1,562	1,562	1,217	1,462	rpm/mNm
14 Rotor inductance	L		255	1,200	3,980	14,400	μH
15 Mechanical time constant	τ_m		29	27	22	22	ms
16 Rotor inertia	J		1.6	1.5	1.6	1.3	gcm ²
17 Angular acceleration	$\alpha \text{ max.}$		47	49	59	63	·10 ³ rad/s ²
18 Thermal resistance	$R_{th 1} / R_{th 2}$	20 / 31					°C/W
19 Thermal time constant	τ_{w1} / τ_{w2}	301 / 452					s
20 Operating temperature range:							
– motor		– 10 to + 50					°C
– rotor, max. permissible		+ 120					°C
21 Shaft bearing		sintered bronze sleeves					
22 Shaft load max.:							
– with shaft diameter (1.5 mm)							
– radial at 3,000 rpm (3 mm from bearing)		3.4					N
– axial at 3,000 rpm		1					N
– axial at standstill (shaft supported)		147					N
23 Shaft play							
– radial (4 mm from motor face)	≤	0.03					mm
– axial	≤	0.05 to 0.45					mm
24 Housing material		steel, zinc plating (chrome free)					
25 Weight		25					g
26 Direction of rotation		clockwise, viewed from the front face					
27 Speed up to	$n_e \text{ max.}$		10,000	10,000	10,000	10,000	rpm
28 Torque up to	$M_e \text{ max.}$		1.0	1.9	2.2	1.6	mNm
29 Current up to (thermal limits)	$I_e \text{ max.}$		1.242	0.616	0.347	0.165	A

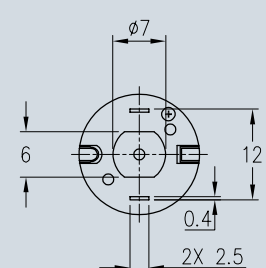


Front View



M1633U...GS050

M1633U



Rear View

