

NEW

DC-Micromotor

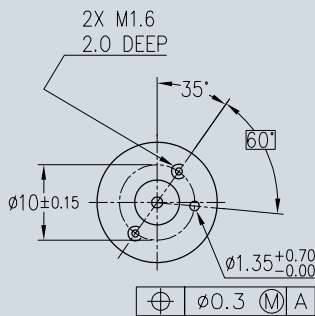
Graphite Commutation

2.5 mNm

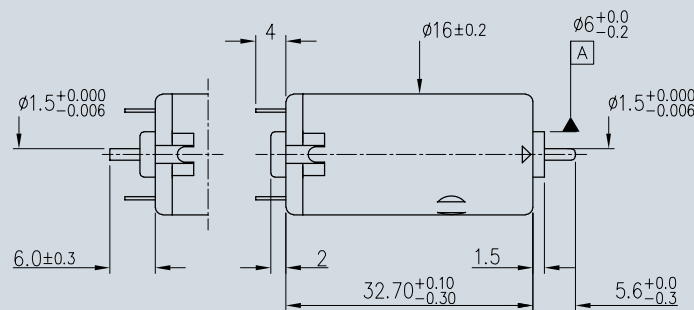
For combination with:
 Gearheads:
 MD15P, M16P
 Encoders:
 ME2-16

Series M1633U

	M1633U		03GS	06GS	12GS	24GS	
1 Nominal voltage	U_N		3	6	12	24	Volt
2 Winding resistance	R	$\pm 12\%$	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	$\pm 12\%$	8,900	9,000	10,200	10,700	rpm
6 No-load current max. (shaft \varnothing 1.5 mm)	I_o	$\pm 50\%$	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	$\cdot 10^3 \text{rad/s}^2$
18 Thermal resistance	R_{th1} / R_{th2}	20 / 31					$^\circ\text{C/W}$
19 Thermal time constant	τ_{w1} / τ_{w2}	301 / 452					s
20 Operating temperature range:							
- motor		- 10 to + 50					$^\circ\text{C}$
- rotor, max. permissible		+ 120					$^\circ\text{C}$
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)	\leq	0.03					mm
- axial	\leq	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	$n_e \text{ max.}$		15,000	15,000	15,000	15,000	rpm
28 Torque up to	$M_e \text{ max.}$		2.242	2.232	2.529	2.293	mNm
29 Current up to (thermal limits)	$I_e \text{ max.}$		1.242	0.616	0.347	0.165	A

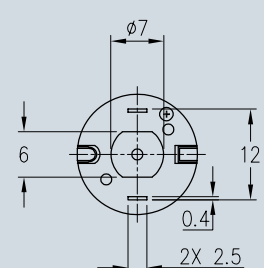


Front View



M1633U...GS050

M1633U



Rear View

How to Order a M1633U

Part number	Voltage	Description	Stocked items
M1633U03GS000	3	Standard motor	
M1633U03GS050	3	Standard motor with rear shaft	X
M1633U06GS000	6	Standard motor	
M1633U06GS050	6	Standard motor with rear shaft	X
M1633U12GS000	12	Standard motor	
M1633U12GS050	12	Standard motor with rear shaft	X
M1633U24GS000	24	Standard motor	
M1633U24GS050	24	Standard motor with rear shaft	X