DC-Micromotors

Precious Metal Commutation

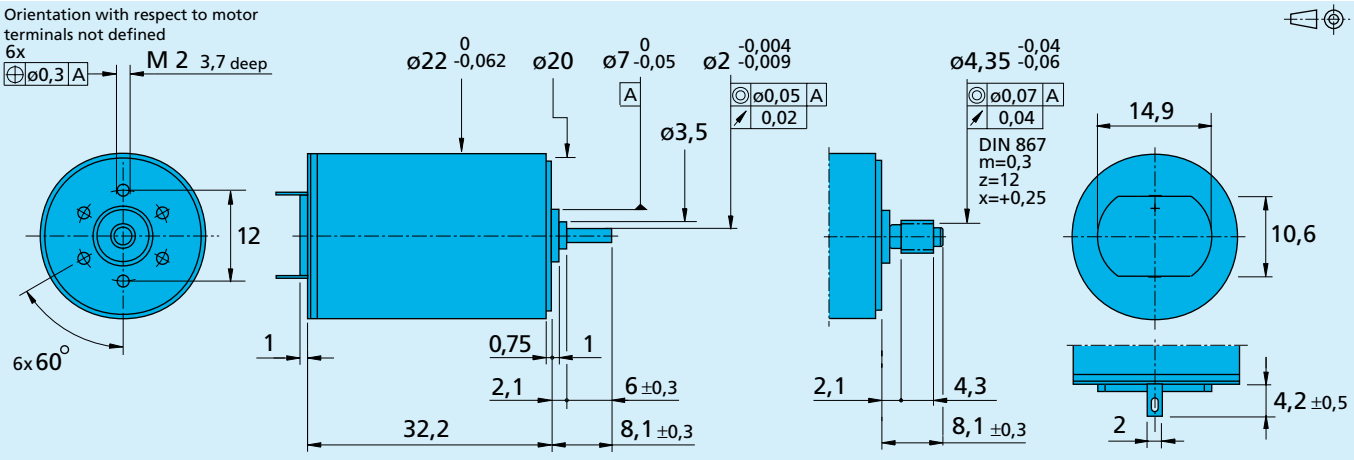
10 mNm

For combination with (overview on page 14-15)
Gearheads:
20/1, 22E, 22/2, 22/5, 22/6, 23/1, 26A, 38/3
Encoders:
IE2 – 16 ... 512

Series 2232 ... SR

		2232 U	006 SR	009 SR	012 SR	015 SR	018 SR	024 SR	
1	Nominal voltage	U_N	6	9	12	15	18	24	Volt
2	Terminal resistance	R	0,81	2,14	4,09	6,61	9,04	16,4	Ω
3	Output power	$P_{2\ max.}$	11,0	9,35	8,70	8,41	8,86	8,68	W
4	Efficiency	$\eta_{max.}$	87	86	86	85	86	86	%
5	No-load speed	n_o	7 100	7 400	7 100	7 100	7 100	7 100	rpm
6	No-load current (with shaft ø 2,0 mm)	I_o	0,0350	0,0241	0,0175	0,0139	0,0116	0,0087	A
7	Stall torque	M_H	59,2	48,3	46,8	45,2	47,6	46,7	mNm
8	Friction torque	M_R	0,28	0,28	0,28	0,28	0,28	0,28	mNm
9	Speed constant	k_n	1 190	827	595	476	397	298	rpm/V
10	Back-EMF constant	k_E	0,84	1,21	1,68	2,10	2,52	3,36	mV/rpm
11	Torque constant	k_M	8,03	11,5	16,0	20,1	24,1	32,1	mNm/A
12	Current constant	k_I	0,125	0,087	0,062	0,050	0,042	0,031	A/mNm
13	Slope of n-M curve	ΔnΔM	120	153	152	157	149	152	rpm/mNm
14	Rotor inductance	L	45	90	180	280	400	710	µH
15	Mechanical time constant	τ_m	6	6	6	6	6	6	ms
16	Rotor inertia	J	4,8	3,8	3,8	3,8	3,8	3,8	gcm²
17	Angular acceleration	$\alpha_{max.}$	120	120	120	120	120	120	$\cdot 10^3$rad/s²
18	Thermal resistance	$R_{th\,1}$ / $R_{th\,2}$	4 / 13						K/W
19	Thermal time constant	τ_{w1} / τ_{w2}	7 / 340						s
20	Operating temperature range:								
	– motor		– 30 ... + 85 (optional – 55 ... + 125)						°C
	– rotor, max. permissible		+125						°C
21	Shaft bearings		sintered bronze sleeves (standard)		ball bearings (optional)		ball bearings, preloaded (optional)		
22	Shaft load max.:								
	– with shaft diameter		2,0		2,0		2,0		mm
	– radial at 3 000 rpm (3 mm from bearing)		1,5		8		8		N
	– axial at 3 000 rpm		0,2		0,8		0,8		N
	– axial at standstill		20		10		10		N
23	Shaft play:								
	– radial	≤	0,03		0,015		0,015		mm
	– axial	≤	0,2		0,2		0		mm
24	Housing material		steel, black coated						
25	Weight		62						g
26	Direction of rotation		clockwise, viewed from the front face						
Recommended values - mathematically independent of each other									
27	Speed up to	$n_{e\ max.}$	8 000	8 000	8 000	8 000	8 000	8 000	rpm
28	Torque up to	$M_{e\ max.}$	10	10	10	10	10	10	mNm
29	Current up to (thermal limits)	$I_{e\ max.}$	1,87	1,30	0,94	0,74	0,63	0,46	A

Orientation with respect to motor terminals not defined



2232 U ... SR

2232 R ... SR
for Gearheads 22/...