DC-Micromotors

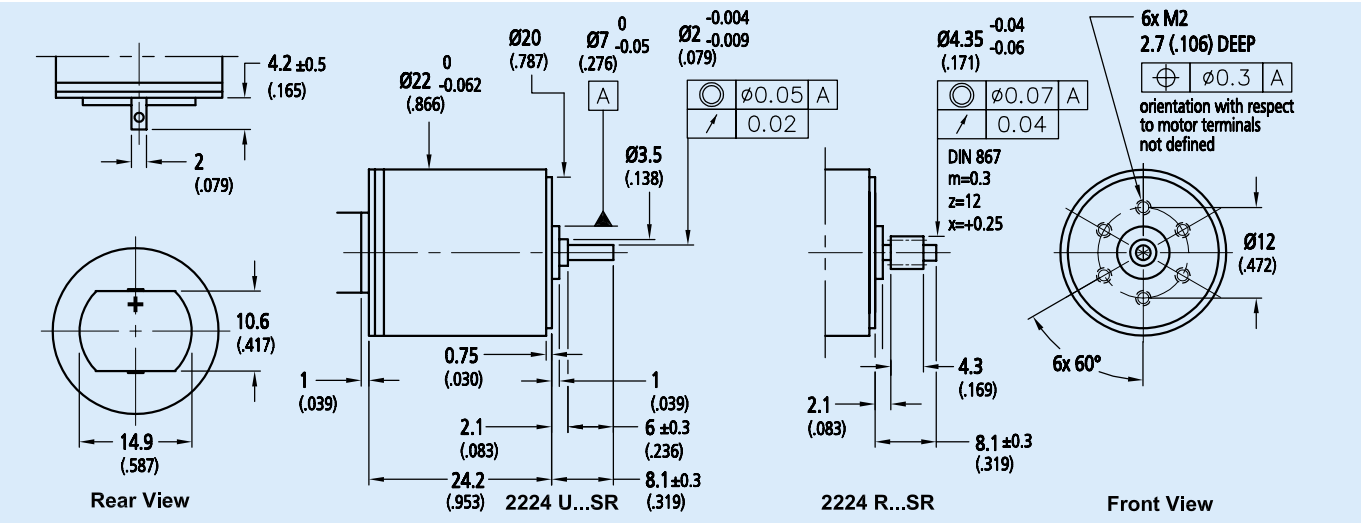
0.708 oz-in

Precious Metal Commutation

For combination with:
Gearheads: 20/1, 22E, 22/2, 22/5, 22/6, 23/1, 38/3
Encoders: IE2

Series 2224 ... SR

		2224 U		003 SR	006 SR	012 SR	018 SR	024 SR	036 SR	
1	Nominal voltage	U_N		3	6	12	18	24	36	Volt
2	Terminal resistance	R	± 12%	0.56	1.94	8.71	17.50	36.30	91.40	Ω
3	Output power	$P_{2\ max.}$		3.92	4.55	4.05	4.54	3.88	3.46	W
4	Efficiency	$\eta_{max.}$		80	82	82	82	81	80	%
5	No-load speed	n_o	± 12%	8,100	8,200	7,800	8,100	7,800	7,800	rpm
6	No-load current (with shaft ø 0.08 in)	I_o	± 50%	0.066	0.029	0.014	0.010	0.007	0.005	A
7	Stall torque	M_H		2.62	3.00	2.80	3.03	2.69	2.39	oz-in
8	Friction torque	M_R		0.033	0.028	0.028	0.030	0.028	0.031	oz-in
9	Speed constant	k_n		2,730	1,380	657	454	328	219	rpm/V
10	Back-EMF constant	k_E		0.366	0.725	1.520	2.200	3.040	4.560	mV/rpm
11	Torque constant	k_M		0.494	0.980	2.053	2.974	4.121	6.160	oz-in/A
12	Current constant	k_I		2.024	1.020	0.487	0.336	0.243	0.162	A/oz-in
13	Slope of n-M curve	Δn/ΔM		3,092	2,733	2,786	2,673	2,900	3,264	rpm/oz-in
14	Rotor inductance	L		11	45	200	450	800	1,800	µH
15	Mechanical time constant	τ_m		11	11	11	11	11	11	ms
16	Rotor inertia	J		$3.399 \cdot 10^{-5}$	$3.824 \cdot 10^{-5}$	$3.824 \cdot 10^{-5}$	$3.965 \cdot 10^{-5}$	$3.682 \cdot 10^{-5}$	$3.257 \cdot 10^{-5}$	oz-in-sec²
17	Angular acceleration	$\alpha_{max.}$		77	78	74	77	74	74	$\cdot 10^3$rad/s²
18	Thermal resistance	$R_{th\,1}$ / $R_{th\,2}$		5 / 20						°C/W
19	Thermal time constant	τ_{w1} / τ_{w2}		6.8 / 440						s
20	Operating temperature range:									
	– motor			– 30 to +85 (– 22 to +185)						°C (°F)
	– rotor, max. permissible			+125 (+257)						°C (°F)
	Note: Special operating temperature models for			–55°C to +125°C (– 67°F to +257°F) available on request.						
21	Shaft bearings			sintered bronze sleeves		ball bearings		ball bearings, preloaded		
22	Shaft load max.:			(standard)		(optional)		(optional)		
	– with shaft diameter			0.0787		0.0787		0.0787		in
	– radial at 3,000 rpm (0.12 in from bearing)			5.40		28.80		28.80		oz
	– axial at 3,000 rpm			0.72		2.88		2.88		oz
	– axial at standstill			72		36		36		oz
23	Shaft play:									
	– radial		≤	0.0012		0.0006		0.0006		in
	– axial		≤	0.0079		0.0079		0		in
24	Housing material			steel, black coated						
25	Weight			1.62						oz
26	Direction of rotation			clockwise, viewed from the front face						
Recommended values										
27	Speed up to	$n_{e\ max.}$		8,000	8,000	8,000	8,000	8,000	8,000	rpm
28	Torque up to	$M_{e\ max.}$		0.708	0.708	0.708	0.708	0.708	0.708	oz-in
29	Current up to (thermal limits)	$I_{e\ max.}$		2.200	1.200	0.570	0.400	0.280	0.180	A



For notes on technical data refer to "Technical Information". Specifications subject to change without notice. MME0104