

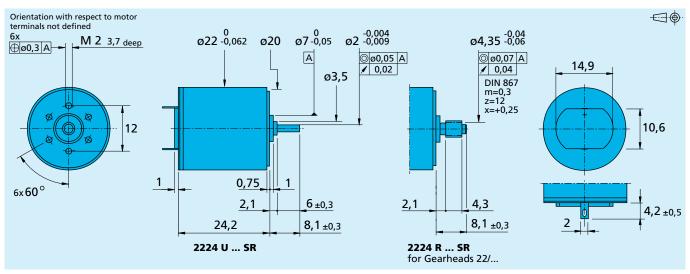
DC-Micromotors

Precious Metal Commutation

5 mNm

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

		2224 U	003 SR	006 SR	012 SR	018 SR	024 SR	036 SR	
1	Nominal voltage	Un	3	6	12	18	24	36	Volt
2	Terminal resistance	R	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	η max.	80	82	82	82	81	80	%
5	No-load speed	n₀	8 100	8 200	7 800	8 100	7 800	7 800	rpm
6		lo	0,066	0,029	0,014	0,010	0,007	0,005	Α
	Stall torque	Мн	18,5	21,2	19,8	21,4	19,0	16,9	mNm
8	Friction torque	MR	0,23	0,2	0,2	0,21	0,2	0,22	mNm
	Speed constant	k n	2 730	1 380	657	454	328	219	rpm/V
	Back-EMF constant	k e	0,366	0,725	1,520	2,200	3,040	4,560	mV/rpm
	Torque constant	kм	3,49	6,92	14,50	21,00	29,10	43,50	mNm/A
12	Current constant	k ı	0,286	0,144	0,069	0,048	0,034	0,023	A/mNm
	Slope of n-M curve	Δn/ΔM	438	387	394	379	411	462	rpm/mNm
14		L	11	45	200	450	800	1 800	μH
	Mechanical time constant	τm	11	11	11	11	11	11	ms
16	Rotor inertia	J	2,4	2,7	2,7	2,8	2,6	2,3	gcm ²
17	Angular acceleration	Ct max.	77	78	74	77	74	74	·10³rad/s²
	Thermal resistance	Rth 1 / Rth 2	5 / 20						K/W
	Thermal time constant	au w1 / $ au$ w2	6,8 / 440						S
20	Operating temperature range:								
	– motor		– 30 + 85 (optional – 55 + 125)					°C	
	– rotor, max. permissible		+125						°C
	Shaft bearings			ronze sleeves	ball bearings			ball bearings, preloaded	
22	Shaft load max.:		(standard)	(optional)	(optional)	
	– 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
	Housing material		steel, black coated						
	Weight		46						g
26	Direction of rotation clockwise, viewed from the front face								
	commended values - mathematically independent								
27	Speed up to	ne max.	8 000	8 000	8 000	8 000	8 000	8 000	rpm
									and Miller
	Torque up to Current up to (thermal limits)	Me max. le max.	5 2,200	5 1,200	5 0,570	5 0,400	5 0,280	5 0,180	mNm A



For details on technical information and lifetime performance refer to pages 28-34.