

DC-Micromotors

Precious Metal Commutation

3,2 mNm

For combination with
Gearheads:
13A, 14/1, 15/5, 15/5 S
Encoders:
IE2-400

Series 1331 ... SR

	1331 T	006 SR	012 SR	024 SR	
1 Nominal voltage	U_N	6	12	24	V
2 Terminal resistance	R	2,83	13,7	52,9	Ω
3 Output power	$P_{2 \max}$	3,11	2,57	2,66	W
4 Efficiency, max.	η_{\max}	81	80	80	%
5 No-load speed	n_0	10 600	9 900	10 400	rpm
6 No-load current (with shaft \varnothing 1,5 mm)	I_0	0,022	0,0105	0,0055	A
7 Stall torque	M_H	11,2	9,9	9,76	mNm
8 Friction torque	M_R	0,12	0,12	0,12	mNm
9 Speed constant	k_n	1 790	835	439	rpm/V
10 Back-EMF constant	k_E	0,56	1,2	2,28	mV/rpm
11 Torque constant	k_M	5,35	11,4	21,8	mNm/A
12 Current constant	k_I	0,187	0,087	0,046	A/mNm
13 Slope of n-M curve	$\Delta n / \Delta M$	946	1 000	1 070	rpm/mNm
14 Rotor inductance	L	70	310	1 100	μH
15 Mechanical time constant	τ_m	7	7	7	ms
16 Rotor inertia	J	0,71	0,67	0,63	gcm ²
17 Angular acceleration	α_{\max}	160	150	160	$\cdot 10^3 \text{rad/s}^2$
18 Thermal resistance	$R_{th 1} / R_{th 2}$	6 / 25			K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	5 / 190			s
20 Operating temperature range:					
– motor		-30 ... +85 (optional version -55 ... +125)			$^{\circ}C$
– rotor, max. permissible		+125			$^{\circ}C$
21 Shaft bearings		sintered bearings			
22 Shaft load max.:					
– with shaft diameter		1,5			mm
– radial at 3 000 rpm (3 mm from bearing)		1,2			N
– axial at 3 000 rpm		0,2			N
– axial at standstill		20			N
23 Shaft play					
– radial	\leq	0,03			mm
– axial	\leq	0,2			mm
24 Housing material		steel, black coated			
25 Weight		19			g
26 Direction of rotation		clockwise, viewed from the front face			
Recommended values - mathematically independent of each other					
27 Speed up to	$n_{e \max}$	12 000	12 000	12 000	rpm
28 Torque up to	$M_{e \max}$	3,2	3,2	3,2	mNm
29 Current up to (thermal limits)	$I_{e \max}$	0,81	0,37	0,19	A

