

DC-Micromotors

2,5 mNm

Precious Metal Commutation

For combination with

Gearheads:

15/5, 15/5 S, 15/8, 15A, 16/7, 16A

Encoders:

IE2-1024, IE2-16

Series 1524 ... SR

	1524 T	003 SR	006 SR	009 SR	012 SR	018 SR	024 SR	
1 Nominal voltage	U_N	3	6	9	12	18	24	V
2 Terminal resistance	R	1,1	5,1	10,4	19,8	44	79,6	Ω
3 Output power	$P_{2 \max}$	1,92	1,7	1,88	1,75	1,78	1,75	W
4 Efficiency, max.	η_{\max}	77	77	77	76	77	78	%
5 No-load speed	n_0	10 800	9 700	10 100	9 900	9 900	9 900	rpm
6 No-load current (with shaft \varnothing 1,5 mm)	I_0	0,047	0,021	0,014	0,011	0,007	0,005	A
7 Stall torque	M_H	6,8	6,68	7,12	6,76	6,86	6,75	mNm
8 Friction torque	M_R	0,12	0,12	0,12	0,13	0,12	0,11	mNm
9 Speed constant	k_n	3 660	1 650	1 140	840	560	419	rpm/V
10 Back-EMF constant	k_E	0,273	0,607	0,877	1,19	1,79	2,38	mV/rpm
11 Torque constant	k_M	2,61	5,8	8,37	11,4	17,1	22,8	mNm/A
12 Current constant	k_i	0,384	0,172	0,119	0,088	0,059	0,044	A/mNm
13 Slope of n-M curve	$\Delta n / \Delta M$	1 590	1 450	1 420	1 460	1 440	1 470	rpm/mNm
14 Rotor inductance	L	17	70	150	250	560	1 000	μ H
15 Mechanical time constant	τ_m	10	10	10	10	10	10	ms
16 Rotor inertia	J	0,6	0,66	0,67	0,65	0,66	0,65	gcm ²
17 Angular acceleration	α_{\max}	110	100	110	100	100	100	$\cdot 10^3 \text{rad/s}^2$
18 Thermal resistance	R_{th1} / R_{th2}	4,5 / 31						K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	2,4 / 300						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		ball bearings		ball bearings, preloaded		
22 Shaft load max.:		(standard)		(optional version)		(optional version)		
- with shaft diameter		1,5		1,5		1,5		mm
- radial at 3 000 rpm (3 mm from bearing)		1,2		5		5		N
- axial at 3 000 rpm		0,2		0,5		0,5		N
- axial at standstill		20		10		10		N
23 Shaft play								
- radial	\leq	0,03		0,015		0,015		mm
- axial	\leq	0,2		0,2		0		mm
24 Housing material		steel, black coated						
25 Weight		21						g
26 Direction of rotation		clockwise, viewed from the front face						
Recommended values - mathematically independent of each other								
27 Speed up to	$n_{e \max}$	10 000	10 000	10 000	10 000	10 000	10 000	rpm
28 Torque up to	$M_{e \max}$	2,5	2,5	2,5	2,5	2,5	2,5	mNm
29 Current up to (thermal limits)	$I_{e \max}$	1,3	0,63	0,44	0,32	0,21	0,16	A

