

DC-Micromotors

Precious Metal Commutation

0,8 mNm

For combination with
 Gearheads:
 15A, 15/3, 15/4, 15/5, 15/8, 16A, 16/7
 Encoders:
 IE2 – 16 ... 512

Series 1516 ... SR

	1516 T	006 SR	009 SR	012 SR	
1 Nominal voltage	U_N	6	9	12	Volt
2 Terminal resistance	R	15,2	32,5	60,0	Ω
3 Output power	$P_{2 \text{ max.}}$	0,51	0,54	0,52	W
4 Efficiency	$\eta_{\text{ max.}}$	57	58	58	%
5 No-load speed	n_0	12 800	12 800	12 900	rpm
6 No-load current (with shaft \varnothing 1,5 mm)	I_0	0,029	0,019	0,014	A
7 Stall torque	M_H	1,52	1,61	1,53	mNm
8 Friction torque	M_R	0,12	0,12	0,12	mNm
9 Speed constant	k_n	2 300	1 530	1 160	rpm/V
10 Back-EMF constant	k_E	0,434	0,655	0,865	mV/rpm
11 Torque constant	k_M	4,15	6,25	8,26	mNm/A
12 Current constant	k_I	0,241	0,160	0,121	A/mNm
13 Slope of n-M curve	$\Delta n / \Delta M$	8 420	7 950	8 430	rpm/mNm
14 Rotor inductance	L	100	230	400	μH
15 Mechanical time constant	τ_m	35	35	35	ms
16 Rotor inertia	J	0,40	0,42	0,40	gcm^2
17 Angular acceleration	$\alpha_{\text{ max.}}$	38	38	39	$\cdot 10^3 \text{ rad/s}^2$
18 Thermal resistance	$R_{\text{th } 1} / R_{\text{th } 2}$	10 / 33			K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	2,9 / 190			s
20 Operating temperature range:					
– motor		– 30 ... + 85 (optional – 55 ... + 125)			$^{\circ}\text{C}$
– rotor, max. permissible		+ 125			$^{\circ}\text{C}$
21 Shaft bearings		sintered bronze sleeves	ball bearings	ball bearings, preloaded	
22 Shaft load max.:		(standard)	(optional)	(optional)	
– 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		13			g
26 Direction of rotation		clockwise, viewed from the front face			
Recommended values - mathematically independent of each other					
27 Speed up to	$n_{e \text{ max.}}$	12 000	12 000	12 000	rpm
28 Torque up to	$M_{e \text{ max.}}$	0,8	0,8	0,8	mNm
29 Current up to (thermal limits)	$I_{e \text{ max.}}$	0,330	0,220	0,160	A

