

DC-Micromotors

5 mNm

Graphite Commutation

For combination with (overview on page 14-15)
 Gearheads:
 16/7, 20/1
 Encoders:
 IE2 – 16 ... 512

Series 1727 ... C

	1727 U	006 C	012 C	024 C	
1 Nominal voltage	U_N	6	12	24	Volt
2 Terminal resistance	R	3,0	13,8	57,6	Ω
3 Output power	$P_{2 \text{ max.}}$	2,37	2,25	2,25	W
4 Efficiency	$\eta_{\text{ max.}}$	70	70	70	%
5 No-load speed	n_o	7 800	7 800	7 800	rpm
6 No-load current (with shaft \varnothing 2,0 mm)	I_o	0,055	0,026	0,013	A
7 Stall torque	M_H	11,6	11,0	11,0	mNm
8 Friction torque	M_R	0,36	0,35	0,36	mNm
9 Speed constant	k_n	1 460	700	343	rpm/V
10 Back-EMF constant	k_E	0,684	1,430	2,920	mV/rpm
11 Torque constant	k_M	6,53	13,60	27,90	mNm/A
12 Current constant	k_i	0,153	0,073	0,036	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	672	709	709	rpm/mNm
14 Rotor inductance	L	80	320	1 440	μH
15 Mechanical time constant	τ_m	9	9	9	ms
16 Rotor inertia	J	1,3	1,2	1,2	gcm^2
17 Angular acceleration	$\alpha_{\text{ max.}}$	91	91	91	$\cdot 10^3 \text{ rad/s}^2$
18 Thermal resistance	$R_{\text{th } 1} / R_{\text{th } 2}$	5 / 24			K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	4,2 / 254			s
20 Operating temperature range:					
– motor		– 30 ... +100			$^{\circ}\text{C}$
– rotor, max. permissible		+125			$^{\circ}\text{C}$
21 Shaft bearings		ball bearings, preloaded			
22 Shaft load max.:					
– with shaft diameter		2,0			mm
– radial at 3 000 rpm (3 mm from bearing)		8			N
– axial at 3 000 rpm		0,8			N
– axial at standstill		10			N
23 Shaft play:					
– radial	\leq	0,015			mm
– axial	$=$	0			mm
24 Housing material		steel, black coated			
25 Weight		28			g
26 Direction of rotation		clockwise, viewed from the front face			
Recommended values - mathematically independent of each other					
27 Speed up to	$n_{e \text{ max.}}$	7 000	7 000	7 000	rpm
28 Torque up to	$M_{e \text{ max.}}$	5	5	5	mNm
29 Current up to (thermal limits)	$I_{e \text{ max.}}$	0,900	0,420	0,200	A

