

DC-Micromotors

Graphite Commutation

110 mNm

For combination with

Gearheads:
38/1, 38/2, 44/1

Encoders:
IE2 – 64 ... 512, 5500, 5540

Series 3863 ... C

	3863 H	012 C	018 C	024 C	036 C	048 C		
1 Nominal voltage	U_N	12	18	24	36	48	Volt	
2 Terminal resistance	R	0,16	0,40	0,62	1,58	2,47	Ω	
3 Output power	$P_{2\max}$	204	189	220	197	226	W	
4 Efficiency	η_{\max}	85	84	85	85	85	%	
5 No-load speed	n_0	6 500	6 600	6 700	6 400	6 700	rpm	
6 No-load current (with shaft \varnothing 6,0 mm)	I_0	0,480	0,320	0,240	0,150	0,120	A	
7 Stall torque	M_H	1 200	1 090	1 250	1 170	1 290	mNm	
8 Friction torque	M_R	8,1	8,0	8,0	7,9	8,1	mNm	
9 Speed constant	k_n	569	380	287	181	142	rpm/V	
10 Back-EMF constant	k_E	1,76	2,63	3,49	5,51	7,05	mV/rpm	
11 Torque constant	k_M	16,8	25,1	33,3	52,6	67,3	mNm/A	
12 Current constant	k_i	0,060	0,040	0,030	0,019	0,015	A/mNm	
13 Slope of n-M curve	$\Delta n/\Delta M$	5,4	6,1	5,4	5,5	5,2	rpm/mNm	
14 Rotor inductance	L	30	70	130	280	500	μ H	
15 Mechanical time constant	τ_m	6	6,5	6	6	6	ms	
16 Rotor inertia	J	110	100	110	100	110	gcm ²	
17 Angular acceleration	α_{\max}	110	110	120	110	120	$\cdot 10^3$ rad/s ²	
18 Thermal resistance	R_{th1} / R_{th2}	1,5 / 6					K/W	
19 Thermal time constant	τ_{w1} / τ_{w2}	33 / 843					s	
20 Operating temperature range:								
– motor		– 30 ... + 125					°C	
– rotor, max. permissible		+ 155					°C	
21 Shaft bearings		ball bearings, preloaded						
22 Shaft load max.:								
– with shaft diameter		6,0					mm	
– radial at 3 000 rpm (3 mm from bearing)		60					N	
– axial at 3 000 rpm		6					N	
– axial at standstill		50					N	
23 Shaft play:								
– radial	\leq	0,015					mm	
– axial	$=$	0					mm	
24 Housing material		steel, black coated						
25 Weight		400					g	
26 Direction of rotation		clockwise, viewed from the front face						
Recommended values								
27 Speed up to	$n_{e\max}$		8 000	8 000	8 000	8 000	8 000	rpm
28 Torque up to	$M_{e\max}$		110	110	110	110	110	mNm
29 Current up to (thermal limits)	$I_{e\max}$		7,6	4,9	3,8	2,4	1,9	A

