

DC-Micromotors

Graphite Commutation

110 mNm

For combination with
 Gearheads:
 38/1, 38/2, 44/1
 Encoders:
 IE2 – 16 ... 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	$P_{2 \text{ max.}}$		204	189	220	197	226	W
4 Efficiency	$\eta_{\text{ max.}}$		85	84	85	85	85	%
5 No-load speed	n_o		6 500	6 600	6 700	6 400	6 700	rpm
6 No-load current (with shaft \varnothing 6,0 mm)	I_o		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	μH
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	$\alpha_{\text{ max.}}$		110	110	120	110	120	$\cdot 10^3 \text{ rad/s}^2$
18 Thermal resistance	$R_{\text{th} 1} / R_{\text{th} 2}$	1,5 / 6						K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	33 / 843						s
20 Operating temperature range:								
– motor			– 30 ... +125					$^{\circ}\text{C}$
– rotor, max. permissible			+155					$^{\circ}\text{C}$
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 - mathematically independent of each other								
27 Speed up to	$n_{e \text{ max.}}$		8 000	8 000	8 000	8 000	8 000	rpm
28 Torque up to	$M_{e \text{ max.}}$		110	110	110	110	110	mNm
29 Current up to (thermal limits)	$I_{e \text{ max.}}$		7,6	4,9	3,8	2,4	1,9	A

