

# DC-Micromotors

## Graphite Commutation

### 44 mNm

For combination with  
Gearheads:  
26A, 26/1, 30/1, 32A  
Encoders:  
IE2 – 16 ... 512, IE3 – 1024(L), 5500, 5540

### Series 2657 ... CR

	2657 W	012 CR	024 CR	048 CR	
1 Nominal voltage	$U_N$	12	24	48	Volt
2 Terminal resistance	R	0,71	2,84	12,50	$\Omega$
3 Output power	$P_{2 \text{ max.}}$	45,9	47,9	44,5	W
4 Efficiency	$\eta_{\text{ max.}}$	84	85	84	%
5 No-load speed	$n_o$	6 300	6 400	6 400	rpm
6 No-load current (with shaft $\varnothing$ 4,0 mm)	$I_o$	0,115	0,058	0,028	A
7 Stall torque	$M_H$	278	286	265	mNm
8 Friction torque	$M_R$	2	2	2	mNm
9 Speed constant	$k_n$	552	274	136	rpm/V
10 Back-EMF constant	$k_E$	1,81	3,65	7,37	mV/rpm
11 Torque constant	$k_M$	17,3	34,8	70,4	mNm/A
12 Current constant	$k_i$	0,058	0,029	0,014	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	22,7	22,4	24,2	rpm/mNm
14 Rotor inductance	L	95	380	1 550	$\mu\text{H}$
15 Mechanical time constant	$\tau_m$	3,9	3,9	3,9	ms
16 Rotor inertia	J	16	17	15	$\text{gcm}^2$
17 Angular acceleration	$\alpha_{\text{ max.}}$	170	170	170	$\cdot 10^3 \text{ rad/s}^2$
18 Thermal resistance	$R_{\text{th} 1} / R_{\text{th} 2}$	1,9 / 9			K/W
19 Thermal time constant	$\tau_{w1} / \tau_{w2}$	10 / 580			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		4,0			mm
– radial at 3 000 rpm (3 mm from bearing)		20			N
– axial at 3 000 rpm		2			N
– axial at standstill		20			N
23 Shaft play:					
– radial	$\leq$	0,015			mm
– axial	$=$	0			mm
24 Housing material		steel, black coated			
25 Weight		156			g
26 Direction of rotation		clockwise, viewed from the front face			
<b>Recommended values - mathematically independent of each other</b>					
27 Speed up to	$n_{e \text{ max.}}$	6 000	6 000	6 000	rpm
28 Torque up to	$M_{e \text{ max.}}$	44	44	44	mNm
29 Current up to (thermal limits)	$I_{e \text{ max.}}$	3,10	1,54	0,73	A

