

DC-Micromotors

Graphite Commutation

26 Watt

For combination with:
 Gearheads: 30/1, 38/1, 38/2
 Encoders: 20/21B, 03B, 10/09B, 10/09BP, 5500, 5540
 DC-Motor-Tacho Combinations: 3557 ... CS

Series 3557 ... CS

	3557 K	009 CS	012 CS	020 CS	024 CS	048 CS	
1 Nominal voltage	U_N	9	12	20	24	48	Volt
2 Terminal resistance	R	0,70	1,34	4,0	5,5	23,0	Ω
3 Output power	$P_{2 \max.}$	28,1	26,1	24,3	25,4	24,1	W
4 Efficiency	$\eta_{\max.}$	78	79	79	78	76	%
5 No-load speed	n_o	5 700	5 400	5 500	5 500	5 200	rpm
6 No-load current (with shaft \varnothing 4,0 mm)	I_o	0,190	0,125	0,070	0,065	0,040	A
7 Stall torque	M_H	188	185	169	176	177	mNm
8 Friction torque	M_R	2,80	2,60	2,40	2,70	3,50	mNm
9 Speed constant	k_n	643	456	279	233	110	rpm/V
10 Back-EMF constant	k_E	1,560	2,190	3,590	4,300	9,050	mV/rpm
11 Torque constant	k_M	14,90	20,90	34,20	41,00	86,50	mNm/A
12 Current constant	k_I	0,067	0,048	0,029	0,024	0,012	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	30,3	29,2	32,5	31,3	29,4	rpm/mNm
14 Rotor inductance	L	100	220	630	850	3 400	μ H
15 Mechanical time constant	τ_m	16	16	16	16	16	ms
16 Rotor inertia	J	50	52	47	49	52	gcm ²
17 Angular acceleration	$\alpha_{\max.}$	37	35	36	36	34	$\cdot 10^3$ rad/s ²
18 Thermal resistance	$R_{th 1} / R_{th 2}$	1,5 / 9					K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	15 / 900					s
20 Operating temperature range:							
– motor		– 30 ... +125					°C
– rotor, max. permissible		+125					°C
21 Shaft bearings		ball bearings, preloaded					
22 Shaft load max.:							
– with shaft diameter		4,0					mm
– radial at 3000 rpm (3 mm from bearing)		30					N
– axial at 3000 rpm		5					N
– axial at standstill		50					N
23 Shaft play:							
– radial	\leq	0,015					mm
– axial	$=$	0					mm
24 Housing material		steel, zinc galvanized and passivated					
25 Weight		275					g
26 Direction of rotation		clockwise, viewed from the front face					
Recommended values							
27 Speed up to	$n_e \max.$	5 000	5 000	5 000	5 000	5 000	rpm
28 Torque up to ¹⁾	$M_e \max.$	50	50	50	50	50	mNm
29 Current up to (thermal limits)	$I_e \max.$	3,150	2,260	1,300	1,100	0,540	A

¹⁾ thermal resistance $R_{th 2}$ by 40% reduced

