DC-Micromotors

Graphite Commutation

40 mNm

For combination with (overview on page 14-15)
Gearheads:
30/1, 32/3, 38/1, 38/2
Encoders:
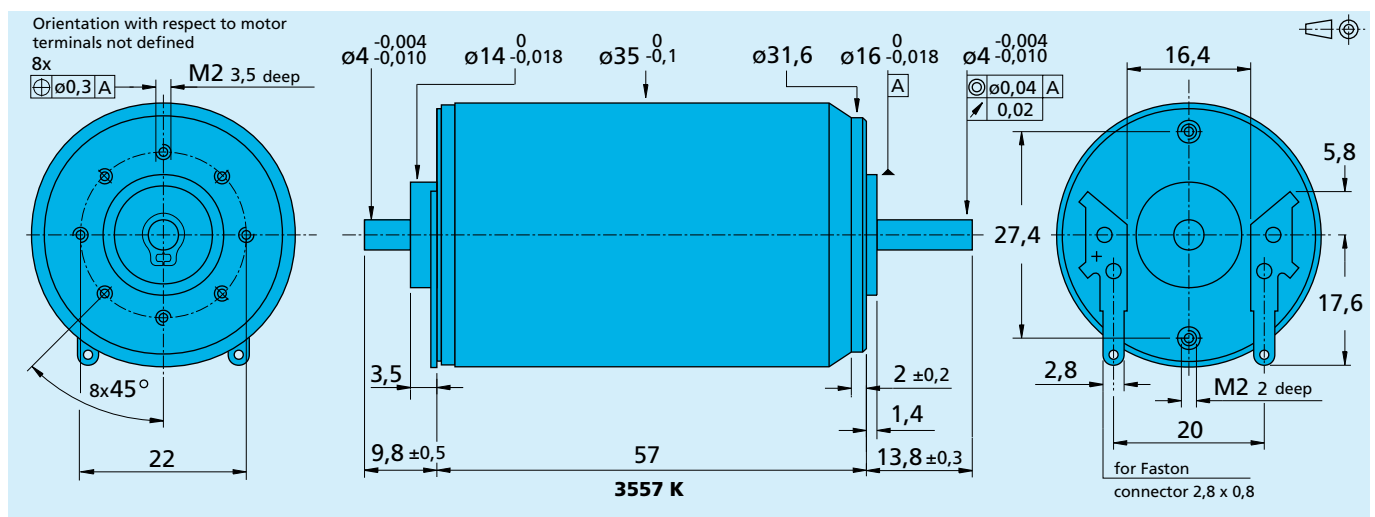5500, 5540

Series 3557 ... C

		3557 K	006 C	009 C	012 C	020 C	024 C	032 C	
1	Nominal voltage	U_N	6	9	12	20	24	32	Volt
2	Terminal resistance	R	0,6	1,3	2,4	6,6	10,5	18,0	Ω
3	Output power	$P_{2\,max.}$	14,5	15,0	14,5	14,7	13,2	13,7	W
4	Efficiency	$\eta_{max.}$	77	77	76	77	75	76	%
5	No-load speed	n_o	4 700	5 000	4 800	4 600	4 800	4 700	rpm
6	No-load current (with shaft ø 4,0 mm)	I_o	0,170	0,120	0,090	0,050	0,045	0,033	A
7	Stall torque	M_H	118	115	115	122	105	111	mNm
8	Friction torque	M_R	2,00	2,00	2,10	2,00	2,10	2,10	mNm
9	Speed constant	k_n	797	565	407	234	204	150	rpm/V
10	Back-EMF constant	k_E	1,250	1,770	2,450	4,280	4,900	6,680	mV/rpm
11	Torque constant	k_M	12,00	16,90	23,40	40,80	46,80	63,80	mNm/A
12	Current constant	k_I	0,083	0,059	0,043	0,024	0,021	0,016	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	39,8	43,5	41,7	37,7	45,7	42,3	rpm/mNm
14	Rotor inductance	L	65	130	230	650	940	1 200	µH
15	Mechanical time constant	τ_m	15	14	13	13	13	13	ms
16	Rotor inertia	J	36	31	30	33	27	29	gcm²
17	Angular acceleration	$\alpha_{max.}$	33	37	39	37	39	38	·10³rad/s²
18	Thermal resistance	$R_{th\,1}$ / $R_{th\,2}$	1,5 / 9						K/W
19	Thermal time constant	τ_{w1} / τ_{w2}	8,5 / 1000						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 3 000 rpm (3 mm from bearing)		30						N
	– axial at 3 000 rpm		5						N
	– axial at standstill		50						N
23	Shaft play:								
	– radial	≤	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 - mathematically independent of each other

27	Speed up to	$n_{e\,max.}$	5 000	5 000	5 000	5 000	5 000	5 000	rpm
28	Torque up to [1]	$M_{e\,max.}$	40	40	40	40	40	40	mNm
29	Current up to (thermal limits)	$I_{e\,max.}$	3,400	2,300	1,700	1,000	0,810	0,620	A

[1] thermal resistance $R_{th\,2}$ by 40% reduced

Orientation with respect to motor terminals not defined
8x
⌖ ø0,3 A
M2 3,5 deep
ø4 -0,004/-0,010
ø14 0/-0,018
ø35 0/-0,1
ø31,6
ø16 0/-0,018
A
ø4 -0,004/-0,010
◎ ø0,04 A
0,02
16,4
5,8
27,4
17,6
8x45°
22
3,5
9,8 ±0,5
57
3557 K
2 ±0,2
1,4
13,8 ±0,3
2,8
M2 2 deep
20
for Faston connector 2,8 x 0,8

For options on DC-Micromotors refer to page 64.
Specifications subject to change without notice.