

DC-Micromotors

80 mNm

Graphite Commutation

For combination with:

Gearheads:

30/1, 38/1, 38/2

Encoders:

IE2, 10/09B, 10/09BP, 5500, 5540

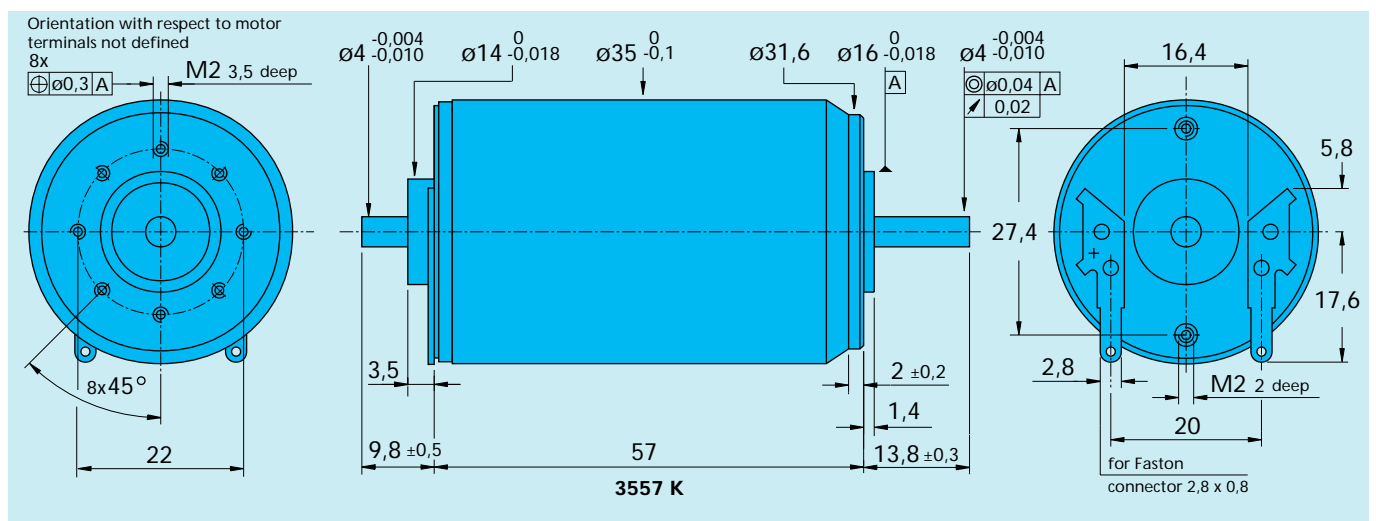
DC-Motor-Tacho Combinations:

3557 ... CR

Series 3557 ... CR

	3557 K	006 CR	009 CR	012 CR	018 CR	
1 Nominal voltage	U_N	6	9	12	18	Volt
2 Terminal resistance	R	0,16	0,32	0,5	1,34	Ω
3 Output power	$P_{2\max.}$	55,1	56,2	70,8	59,4	W
4 Efficiency	$\eta_{\max.}$	81	82	83	83	%
5 No-load speed	n_o	5 300	4 900	5 300	5 200	rpm
6 No-load current (with shaft \varnothing 4,0 mm)	I_o	0,400	0,260	0,200	0,120	A
7 Stall torque	M_H	397	433	510	436	mNm
8 Friction torque	M_R	4,3	4,3	4,3	3,9	mNm
9 Speed constant	k_n	893	578	445	291	rpm/V
10 Back-EMF constant	k_E	1,120	1,730	2,250	3,430	mV/rpm
11 Torque constant	k_M	10,70	16,50	21,40	32,80	mNm/A
12 Current constant	k_I	0,093	0,060	0,047	0,031	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	13,4	11,2	10,4	11,9	rpm/mNm
14 Rotor inductance	L	17	45	65	170	μH
15 Mechanical time constant	τ_m	7	7	7	7	ms
16 Rotor inertia	J	50	65	64	56	gcm ²
17 Angular acceleration	$\alpha_{\max.}$	79	67	79	78	$\cdot 10^3 \text{rad/s}^2$
18 Thermal resistance	R_{th1} / R_{th2}	1,5 / 8				K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	16,5 / 900				s
20 Operating temperature range:						
- motor		- 30 ... + 125				$^{\circ}C$
- rotor, max. permissible		+ 125				$^{\circ}C$
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		270				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	rpm
28 Torque up to ¹⁾	$M_e \max.$	70	80	80	80	mNm
29 Current up to (thermal limits)	$I_e \max.$	6,500	4,900	3,900	2,380	A

¹⁾ thermal resistance R_{th2} by 40% reduced



For notes on technical data refer to "Technical Information" in the main catalogue

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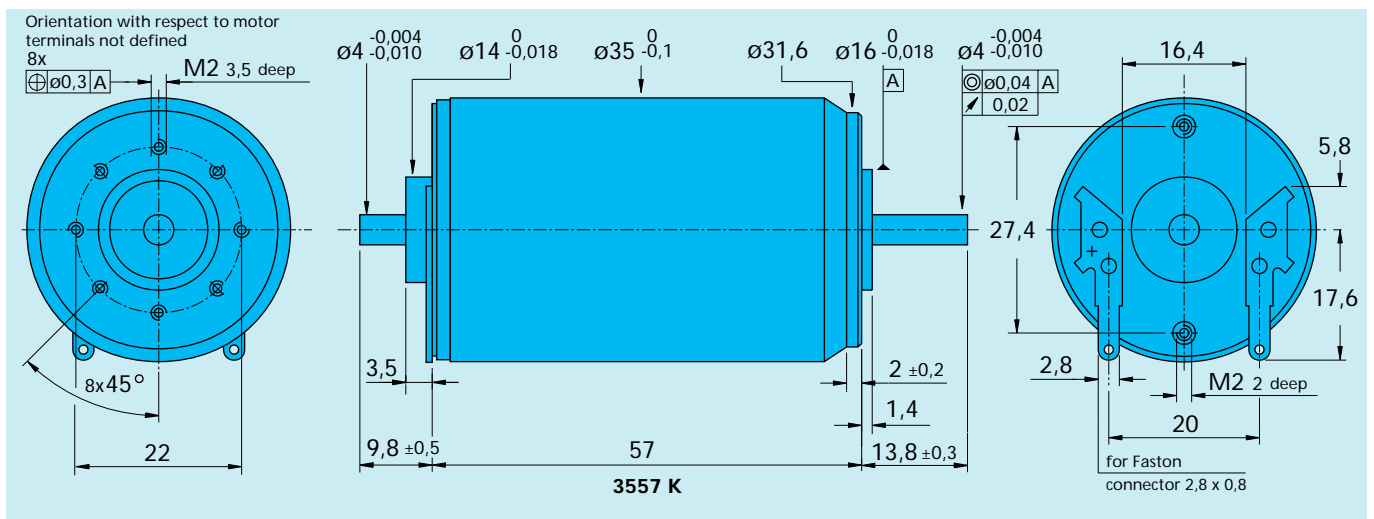
DC-Motor-Tacho Combinations:

3557 ... CR

Series 3557 ... CR

	3557 K	024 CR	032 CR	048 CR	
1 Nominal voltage	U_N	24	32	48	Volt
2 Terminal resistance	R	2,0	3,9	7,8	Ω
3 Output power	$P_{2 \max.}$	70,8	63,3	72,7	W
4 Efficiency	$\eta_{\max.}$	83	82	83	%
5 No-load speed	n_o	5 300	5 200	5 300	rpm
6 No-load current (with shaft \varnothing 4,0 mm)	I_o	0,100	0,075	0,050	A
7 Stall torque	M_H	510	465	524	mNm
8 Friction torque	M_R	4,3	4,4	4,3	mNm
9 Speed constant	k_n	223	164	111	rpm/V
10 Back-EMF constant	k_E	4,490	6,100	8,980	mV/rpm
11 Torque constant	k_M	42,90	58,20	85,80	mNm/A
12 Current constant	k_I	0,023	0,017	0,012	A/mNm
13 Slope of n-M curve	$\Delta n / \Delta M$	10,4	11,2	10,1	rpm/mNm
14 Rotor inductance	L	270	520	1 100	μH
15 Mechanical time constant	τ_m	7	7	7	ms
16 Rotor inertia	J	64	60	66	gcm^2
17 Angular acceleration	$\alpha_{\max.}$	79	78	79	$\cdot 10^3 rad/s^2$
18 Thermal resistance	$R_{th 1} / R_{th 2}$	1,5 / 8			K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	16,5 / 900			s
20 Operating temperature range:					
- motor		- 30 ... + 125			$^{\circ}C$
- rotor, max. permissible		+ 125			$^{\circ}C$
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		270			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	rpm
28 Torque up to ¹⁾	$M_e \max.$	80	80	80	mNm
29 Current up to (thermal limits)	$I_e \max.$	1,950	1,390	0,980	A

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



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