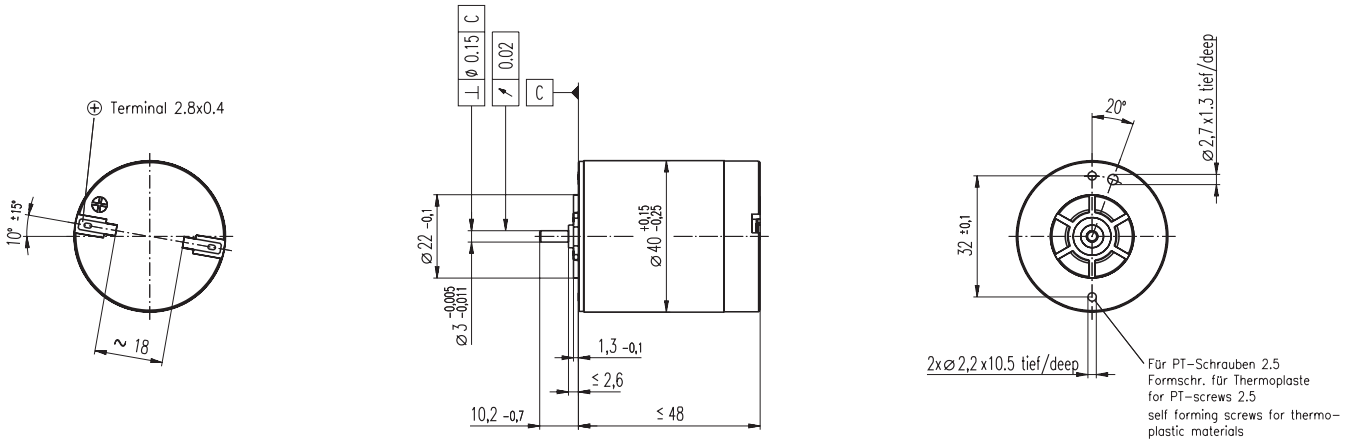
F 2140 ∅40 mm, Graphite Brushes, 6 Watt, CE approved



M 1:2

Stock program
Standard program
Special program (on request)

Order Number

2140. ... -22.116-050 (Insert winding number)

Winding number			931	932	933	934	935	936	937	939
Motor Data										
	Values at nominal voltage									
1	Nominal voltage	V	6.0	9.0	9.0	12.0	15.0	18.0	24.0	36.0
2	No load speed	rpm	3550	4320	3500	3880	3910	3710	3990	4030
3	No load current	mA	53.3	45.6	33.5	28.7	23.0	17.7	14.6	9.87
4	Nominal speed	rpm	1900	2720	1880	2270	2300	2080	2360	2380
5	Nominal torque (max. continuous torque)	mNm	11.1	11.7	12.1	12.3	12.5	12.5	12.6	12.5
6	Nominal current (max. continuous current)	A	0.815	0.672	0.560	0.466	0.377	0.298	0.240	0.160
7	Stall torque	mNm	26.3	34.4	27.9	31.2	31.6	29.5	31.9	31.1
8	Starting current	A	1.83	1.87	1.23	1.13	0.909	0.669	0.578	0.378
9	Max. efficiency	%	61	66	65	68	69	69	70	70
	Characteristics									
10	Terminal resistance	Ω	3.28	4.81	7.35	10.7	16.5	26.9	41.5	95.2
11	Terminal inductance	mH	0.341	0.558	0.853	1.27	1.99	3.21	5.02	11.2
12	Torque constant	mNm / A	14.4	18.4	22.7	27.8	34.8	44.1	55.2	82.3
13	Speed constant	rpm / V	664	519	420	344	275	216	173	116
14	Speed / torque gradient	rpm / mNm	152	136	136	132	130	132	130	134
15	Mechanical time constant	ms	37.9	34.9	34.4	33.3	32.6	32.2	31.7	31.5
16	Rotor inertia	gcm²	23.9	24.5	24.2	24.0	23.9	23.3	23.2	22.4

Specifications

Thermal data

17	Thermal resistance housing-ambient	10.4 K / W
18	Thermal resistance winding-housing	8.8 K / W
19	Thermal time constant winding	45.5 s
20	Thermal time constant motor	988 s
21	Ambient temperature	-20 ... +65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)

23	Max. permissible speed	11000 rpm
24	Axial play	0.2 - 0.3 mm
25	Radial play	0.014 mm
26	Max. axial load (dynamic)	0.5 N
27	Max. force for press fits (static)	50 N
28	Max. radial loading, 5 mm from flange	2.5 N

Mechanical data (ball bearings)

23	Max. permissible speed	11000 rpm
24	Axial play	0.2 - 0.3 mm
25	Radial play	0.025 mm
26	Max. axial load (dynamic)	1.5 N
27	Max. force for press fits (static)	50 N
28	Max. radial loading, 5 mm from flange	7.5 N

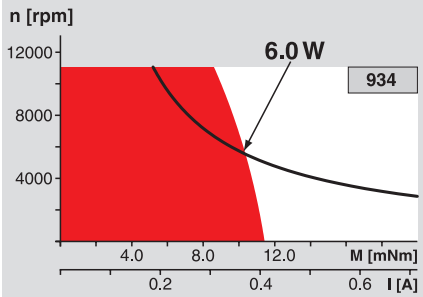
Other specifications

29	Number of pole pairs	1
30	Number of commutator segments	7
31	Weight of motor	190 g

Values listed in the table are nominal.
Explanation of the figures on page 49.

Option
Ball bearings in place of sleeve bearings

Operating Range



Comments

Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

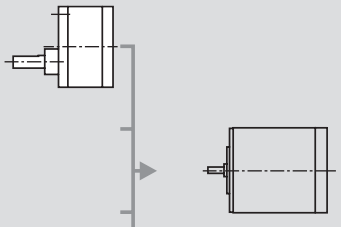
Short term operation
The motor may be briefly overloaded (recurring).

Assigned power rating

maxon Modular System

Overview on page 16 - 21

Spur Gearhead
∅38 mm
0.1 - 0.6 Nm
Page 243



Recommended Electronics:
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