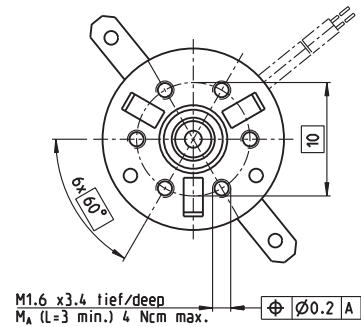
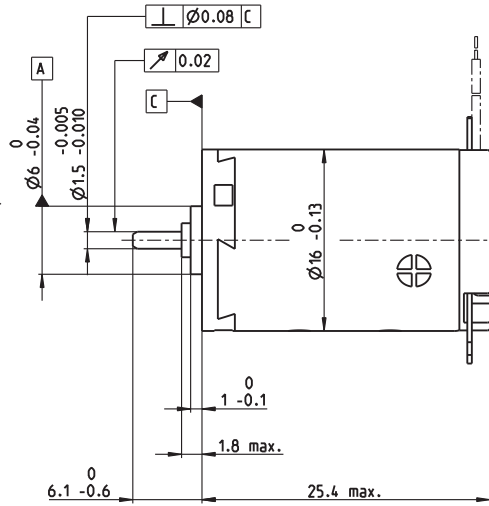
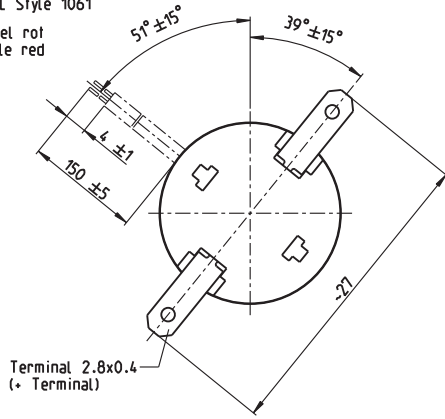


A-max 16 Ø16 mm, Precious Metal Brushes CLL, 2 Watt

Kabel AWG 26/7
cable UL Style 1061
⊕ Kabel rot
cable red



M 1.5:1

- Stock program
- Standard program
- Special program (on request)

Part Numbers

with terminals	110041	110042	110043	110044	110045	110046	110047	110048	110049	110050
with cables	139820	352815	134844	231379	220514	304672	352823	352816	260678	352817

Motor Data

Values at nominal voltage		1.5	3	6	9	12	15	18	21	24	30
1 Nominal voltage	V	1.5	3	6	9	12	15	18	21	24	30
2 No load speed	rpm	10800	12300	10100	12300	12300	13200	14100	13700	13800	11400
3 No load current	mA	61.4	38.1	13.9	12.7	9.54	8.57	7.99	6.53	5.83	3.37
4 Nominal speed	rpm	9360	8810	4530	6700	6660	7590	8480	8040	8120	5480
5 Nominal torque (max. continuous torque)	mNm	0.712	1.3	2.22	2.19	2.17	2.17	2.15	2.14	2.11	2.08
6 Nominal current (max. continuous current)	A	0.6	0.6	0.408	0.327	0.243	0.209	0.185	0.153	0.134	0.0864
7 Stall torque	mNm	4.79	4.51	4.03	4.82	4.77	5.16	5.44	5.22	5.12	4.04
8 Starting current	A	3.66	1.97	0.723	0.702	0.52	0.482	0.453	0.362	0.315	0.164
9 Max. efficiency	%	77	75	75	76	76	76	76	76	76	74
Characteristics											
10 Terminal resistance	Ω	0.41	1.52	8.3	12.8	23.1	31.1	39.7	57.9	76.2	183
11 Terminal inductance	mH	0.017	0.0519	0.306	0.467	0.831	1.13	1.42	2.05	2.61	6.01
12 Torque constant	mNm/A	1.31	2.29	5.57	6.88	9.17	10.7	12	14.4	16.3	24.7
13 Speed constant	rpm/V	7290	4170	1720	1390	1040	893	795	663	587	387
14 Speed / torque gradient	rpm/mNm	2280	2770	2560	2590	2620	2600	2630	2670	2750	2880
15 Mechanical time constant	ms	25.3	23.8	23.3	23.3	23.3	23.4	23.5	23.4	23.5	23.9
16 Rotor inertia	gcm ²	1.06	0.82	0.868	0.859	0.849	0.859	0.852	0.838	0.816	0.793

Specifications

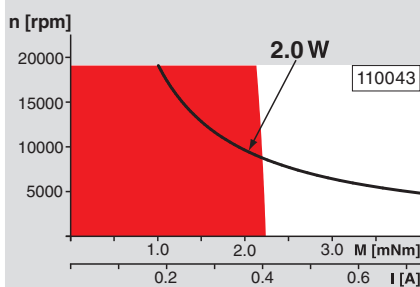
Thermal data	
17 Thermal resistance housing-ambient	29.8 K/W
18 Thermal resistance winding-housing	5.5 K/W
19 Thermal time constant winding	3.55 s
20 Thermal time constant motor	165 s
21 Ambient temperature	-30...+65°C
22 Max. permissible winding temperature	+85°C
Mechanical data (sleeve bearings)	
23 Max. permissible speed	19000 rpm
24 Axial play	0.05 - 0.15 mm
25 Radial play	0.012 mm
26 Max. axial load (dynamic)	0.8 N
27 Max. force for press fits (static)	35 N
28 Max. radial loading, 5 mm from flange	1.4 N
Mechanical data (ball bearings)	
23 Max. permissible speed	19000 rpm
24 Axial play	0.05 - 0.15 mm
25 Radial play	0.025 mm
26 Max. axial load (dynamic)	2.2 N
27 Max. force for press fits (static)	30 N
28 Max. radial loading, 5 mm from flange	7.8 N
Other specifications	
29 Number of pole pairs	1
30 Number of commutator segments	7
31 Weight of motor	21 g
CLL = Capacitor Long Life	

Values listed in the table are nominal.
Explanation of the figures on page 71.

Option

Ball bearings in place of sleeve bearings
Without CLL

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 20 - 25

Spur Gearhead

Ø16 mm
0.01 - 0.1 Nm
Page 238 - 241

Planetary Gearhead

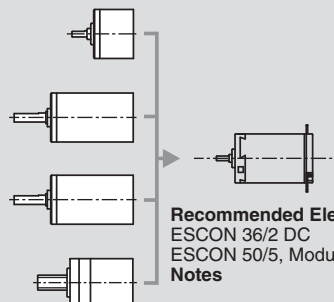
Ø16 mm
0.06 - 0.18 Nm
Page 242

Planetary Gearhead

Ø16 mm
0.1 - 0.6 Nm
Page 243/244

Spindle Drive

Ø16 mm
Page 281-283



Recommended Electronics:
ESCON 36/2 DC Page 320
ESCON 50/5, Module 50/5 321
Notes 22