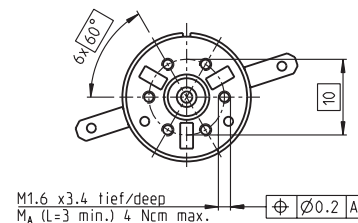# *RE*-max 17 ∅17 mm, Graphite Brushes, 4.5 Watt
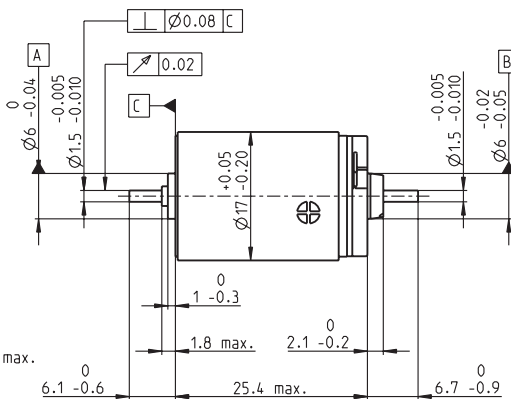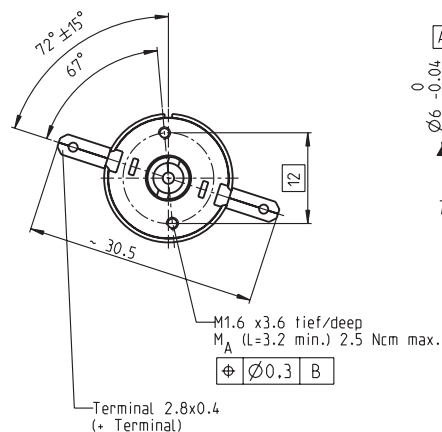
M 1:1

■ Stock program
□ Standard program
▢ Special program (on request)

Part Numbers

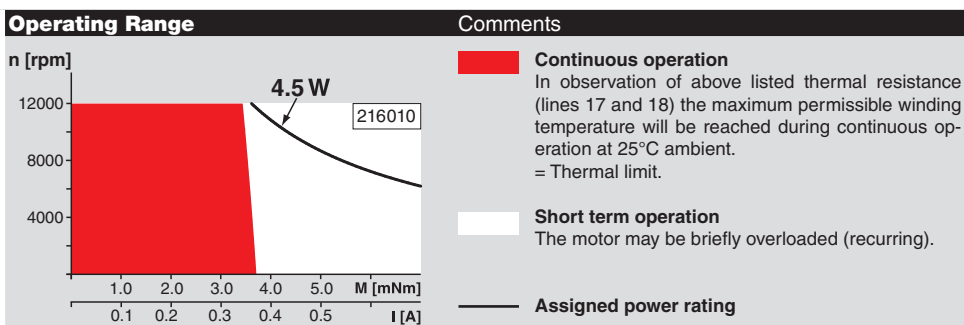|		216008	216009	269571	216010	216011	216012	216013	216014	216015	216016	216017
Motor Data												
	Values at nominal voltage											
1	Nominal voltage	V	3	4.8	9	12	15	21	24	24	30	36	48
2	No load speed	rpm	11100	10100	10500	10400	10500	11100	10800	9630	10000	10700	9350
3	No load current	mA	152	85.2	47.4	35.3	28.6	21.7	18.5	16.1	13.5	12.1	7.82
4	Nominal speed	rpm	10300	8070	7730	7650	7760	8290	8070	6800	7200	7820	6390
5	Nominal torque (max. continuous torque)	mNm	1.44	2.82	4.06	4.06	4.02	3.97	4	4.02	3.98	3.88	3.85
6	Nominal current (max. continuous current)	A	0.72	0.72	0.553	0.412	0.33	0.245	0.211	0.189	0.156	0.135	0.0883
7	Stall torque	mNm	20.7	14.3	15.8	15.6	15.6	16.1	15.9	14	14.4	14.8	12.5
8	Starting current	A	8.19	3.24	1.97	1.45	1.17	0.911	0.773	0.605	0.518	0.473	0.262
9	Max. efficiency	%	75	70	72	72	71	72	72	70	71	71	69
	Characteristics												
10	Terminal resistance	Ω	0.366	1.48	4.57	8.25	12.8	23	31.1	39.7	57.9	76.1	183
11	Terminal inductance	mH	0.0114	0.0348	0.114	0.205	0.313	0.557	0.758	0.955	1.37	1.75	4.03
12	Torque constant	mNm/A	2.53	4.42	8	10.7	13.3	17.7	20.6	23.2	27.8	31.4	47.6
13	Speed constant	rpm/V	3780	2160	1190	889	720	540	463	412	344	304	201
14	Speed / torque gradient	rpm/mNm	548	723	681	683	694	703	697	706	716	739	773
15	Mechanical time constant	ms	6.08	6.21	6.2	6.22	6.24	6.26	6.27	6.3	6.28	6.31	6.42
16	Rotor inertia	gcm²	1.06	0.82	0.869	0.868	0.859	0.849	0.859	0.852	0.838	0.816	0.793

Specifications

Thermal data
17 Thermal resistance housing-ambient   35 K/W
18 Thermal resistance winding-housing   12 K/W
19 Thermal time constant winding   9.65 s
20 Thermal time constant motor   343 s
21 Ambient temperature   -30…+85°C
22 Max. permissible winding temperature   +125°C

Mechanical data (sleeve bearings)
23 Max. permissible speed   11900 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
   (static, shaft supported)   280 N
28 Max. radial load, 5 mm from flange   1.4 N

Mechanical data (ball bearings)
23 Max. permissible speed   11900 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
   (static, shaft supported)   280 N
28 Max. radial load, 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   26 g

Values listed in the table are nominal.
Explanation of the figures on page 79.

Option
Ball bearings in place of sleeve bearings
Pigtails in place of terminals

Operating Range

n [rpm]

4.5 W

216010

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

Planetary Gearhead
∅16 mm
0.1 - 0.3 Nm
Page 254

Encoder MR
32 CPT,
2 / 3 channels
Page 316

Encoder MR
128 / 256 / 512 CPT,
2 / 3 channels
Page 317

Recommended Electronics:
ESCON 36/2 DC   Page 342
ESCON Module 50/5   343
ESCON 50/5   344
EPOS2 24/2   350
EPOS2 Module 36/2   350
EPOS3 70/10 EtherCAT   357
MAXPOS 50/5   360
Notes   22