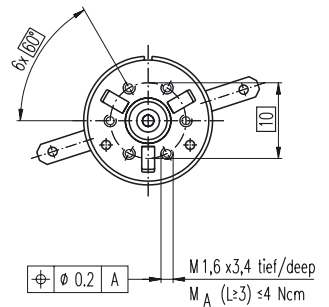
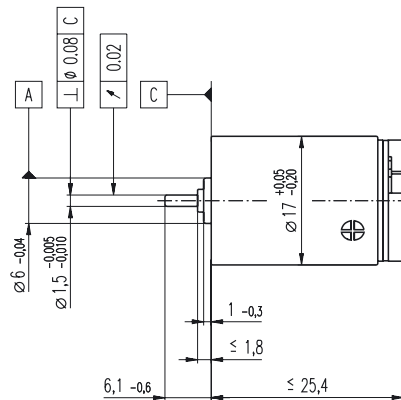
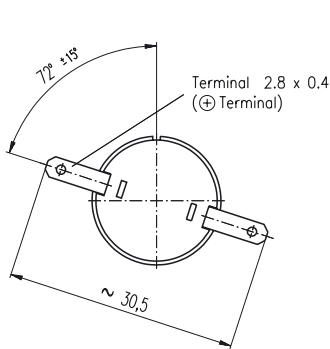


# RE-max 17 Ø17 mm, Graphite Brushes, 4.5 Watt



## M 1:1

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

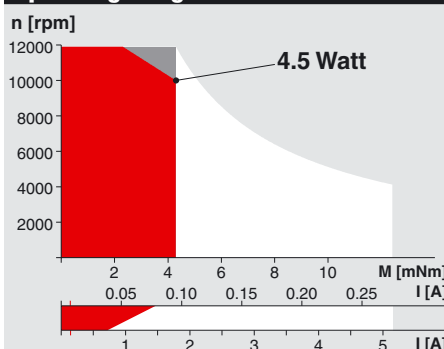
### Order Number

| Motor Data |                                      | 215998           | 215999 | 269569 | 216000 | 216001 | 216002 | 216003 | 216004 | 216005 | 216006 | 216007 |       |  |  |  |
|------------|--------------------------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--|--|--|
|            |                                      |                  |        |        |        |        |        |        |        |        |        |        |       |  |  |  |
| 1          | Assigned power rating                | W                | 4.5    | 4.5    | 4.5    | 4.5    | 4.5    | 4.5    | 4.5    | 4.5    | 4.5    | 4.5    |       |  |  |  |
| 2          | Nominal voltage                      | Volt             | 3.0    | 4.8    | 9.0    | 12.0   | 15.0   | 21.0   | 24.0   | 24.0   | 30.0   | 36.0   | 48.0  |  |  |  |
| 3          | No load speed                        | rpm              | 11900  | 10800  | 11300  | 11200  | 11300  | 11900  | 11600  | 10400  | 10800  | 11500  | 10100 |  |  |  |
| 4          | Stall torque                         | mNm              | 18.2   | 13.1   | 14.6   | 14.5   | 14.5   | 15.1   | 14.9   | 13.1   | 13.5   | 13.9   | 11.7  |  |  |  |
| 5          | Speed / torque gradient              | rpm / mNm        | 665    | 844    | 785    | 784    | 795    | 805    | 797    | 807    | 818    | 844    | 883   |  |  |  |
| 6          | No load current                      | mA               | 116    | 65     | 36     | 27     | 22     | 17     | 14     | 12     | 10     | 9      | 6     |  |  |  |
| 7          | Starting current                     | mA               | 7700   | 3170   | 1950   | 1450   | 1170   | 909    | 771    | 604    | 517    | 472    | 262   |  |  |  |
| 8          | Terminal resistance                  | Ohm              | 0.39   | 1.52   | 4.61   | 8.30   | 12.8   | 23.1   | 31.1   | 39.7   | 58.0   | 76.2   | 183   |  |  |  |
| 9          | Max. permissible speed               | rpm              | 11900  | 11900  | 11900  | 11900  | 11900  | 11900  | 11900  | 11900  | 11900  | 11900  | 11900 |  |  |  |
| 10         | Max. continuous current              | mA               | 720    | 720    | 568    | 424    | 341    | 254    | 219    | 194    | 160    | 140    | 90.2  |  |  |  |
| 11         | Max. continuous torque               | mNm              | 1.33   | 2.49   | 3.65   | 3.65   | 3.63   | 3.6    | 3.62   | 3.6    | 3.57   | 3.52   | 3.43  |  |  |  |
| 12         | Max. power output at nominal voltage | mW               | 5490   | 3630   | 4230   | 4180   | 4230   | 4160   | 4470   | 3490   | 3740   | 4100   | 3010  |  |  |  |
| 13         | Max. efficiency                      | %                | 76     | 73     | 75     | 75     | 75     | 75     | 75     | 74     | 74     | 74     | 72    |  |  |  |
| 14         | Torque constant                      | mNm / A          | 2.37   | 4.14   | 7.49   | 10.1   | 12.4   | 16.6   | 19.3   | 21.7   | 26     | 29.4   | 44.5  |  |  |  |
| 15         | Speed constant                       | rpm / V          | 4040   | 2310   | 1270   | 950    | 769    | 577    | 494    | 440    | 367    | 325    | 214   |  |  |  |
| 16         | Mechanical time constant             | ms               | 7      | 7      | 7      | 7      | 7      | 7      | 7      | 7      | 7      | 7      | 7     |  |  |  |
| 17         | Rotor inertia                        | gcm <sup>2</sup> | 1.05   | 0.816  | 0.864  | 0.864  | 0.854  | 0.844  | 0.854  | 0.848  | 0.834  | 0.811  | 0.788 |  |  |  |
| 18         | Terminal inductance                  | mH               | 0.01   | 0.03   | 0.11   | 0.21   | 0.31   | 0.56   | 0.76   | 0.96   | 1.38   | 1.75   | 4.04  |  |  |  |
| 19         | Thermal resistance housing-ambient   | K / W            | 35     | 35     | 35     | 35     | 35     | 35     | 35     | 35     | 35     | 35     | 35    |  |  |  |
| 20         | Thermal resistance rotor-housing     | K / W            | 12     | 12     | 12     | 12     | 12     | 12     | 12     | 12     | 12     | 12     | 12    |  |  |  |
| 21         | Thermal time constant winding        | s                | 10     | 7      | 8      | 8      | 8      | 8      | 8      | 8      | 7      | 7      | 7     |  |  |  |

### Specifications

- Axial play 0.05 - 0.15 mm
- Max. **sleeve bearing** loads
  - axial (dynamic) 0.8 N
  - radial (5 mm from flange) 1.4 N
  - Force for press fits (static) 35 N
- Max. **ball bearing** loads
  - axial (dynamic) 2.2 N
  - radial (5 mm from flange) 7.8 N
  - Force for press fits (static) 30 N
- Radial play **sleeve bearing** 0.012 mm
- Radial play **ball bearing** 0.025 mm
- Ambient temperature range -30 ... +85°C
- Max. rotor temperature +125°C
- Number of commutator segments 7
- Weight of motor 26 g
- 2 pole permanent magnet
- Values listed in the table are nominal. For applicable tolerances see page 43. For additional details please use the maxon selection program on the enclosed CD-ROM.

### Operating Range



### Comments

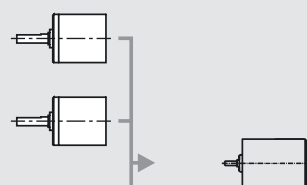
- Recommended operating range**
- Continuous operation**  
In observation of above listed thermal resistances (lines 19 and 20) the maximum permissible rotor temperature will be reached during continuous operation at 25°C ambient.  
= Thermal limit.
- Short term operation**  
The motor may be briefly overloaded (recurring).
- 216007 Motor with high resistance winding
- 215998 Motor with low resistance winding

### maxon Modular System

### Overview on page 17 - 21

**Planetary Gearhead**  
Ø16 mm  
0.1 - 0.3 Nm  
Details page 205

**Planetary Gearhead**  
Ø16 mm  
0.06 - 0.18 Nm  
Details page 206



**Recommended Electronics:**  
LSC 30/2 page 257  
Notes 17