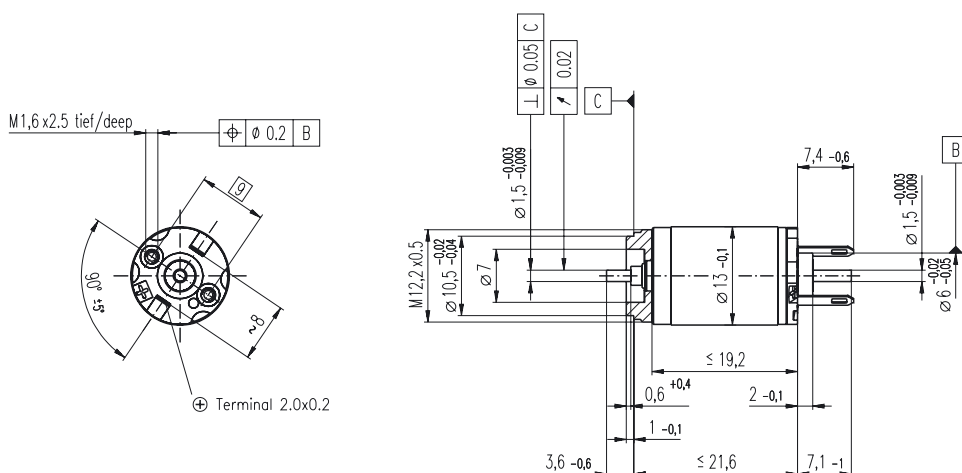


# RE 13 Ø13 mm, Precious Metal Brushes, 0.75 Watt, C€ approved



M 1:1

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

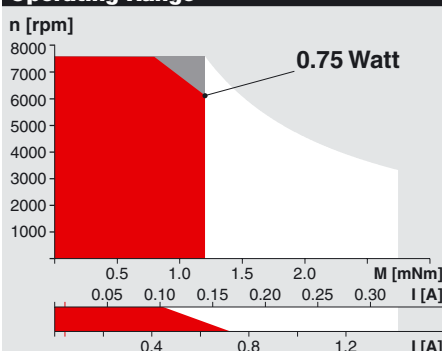
## Order Number

| Motor Data                              |                  | 118446 | 118447 | 118448 | 118449 | 118450 | 118451 | 118452 | 118453 | 118454 | 118455 | 118456 | 118457 | 118458 | 118459 | 118460 |
|-----------------------------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 Assigned power rating                 | W                | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   | 0.75   |
| 2 Nominal voltage                       | Volt             | 0.6    | 0.7    | 0.9    | 1.2    | 1.5    | 1.8    | 1.8    | 2.4    | 3.0    | 3.6    | 4.8    | 6.0    | 6.0    | 7.2    | 10.0   |
| 3 No load speed                         | rpm              | 6850   | 6670   | 6570   | 7230   | 6980   | 6840   | 5950   | 6490   | 6690   | 6480   | 6950   | 7000   | 6530   | 6650   | 7030   |
| 4 Stall torque                          | mNm              | 1.71   | 1.44   | 1.51   | 1.63   | 1.59   | 1.66   | 1.54   | 1.66   | 1.66   | 1.61   | 1.70   | 1.68   | 1.54   | 1.59   | 1.65   |
| 5 Speed / torque gradient               | rpm / mNm        | 4170   | 4880   | 4560   | 4640   | 4600   | 4310   | 4040   | 4090   | 4220   | 4190   | 4250   | 4350   | 4440   | 4380   | 4450   |
| 6 No load current                       | mA               | 88     | 72     | 56     | 47     | 36     | 29     | 25     | 21     | 17     | 14     | 11     | 9      | 8      | 7      | 5      |
| 7 Starting current                      | mA               | 2140   | 1470   | 1210   | 1080   | 812    | 690    | 557    | 489    | 404    | 318    | 269    | 214    | 184    | 161    | 127    |
| 8 Terminal resistance                   | Ohm              | 0.281  | 0.491  | 0.742  | 1.11   | 1.85   | 2.61   | 3.23   | 4.90   | 7.42   | 11.3   | 17.8   | 28.0   | 32.6   | 44.9   | 78.8   |
| 9 Max. permissible speed                | rpm              | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   | 7600   |
| 10 Max. continuous current              | mA               | 720    | 720    | 720    | 720    | 662    | 557    | 501    | 406    | 33     | 267    | 213    | 170    | 158    | 134    | 101    |
| 11 Max. continuous torque               | mNm              | 0.492  | 0.615  | 0.801  | 0.987  | 1.22   | 1.26   | 1.30   | 1.29   | 1.27   | 1.27   | 1.26   | 1.25   | 1.24   | 1.24   | 1.24   |
| 12 Max. power output at nominal voltage | mW               | 298    | 242    | 251    | 299    | 281    | 288    | 232    | 272    | 281    | 265    | 300    | 298    | 254    | 267    | 294    |
| 13 Max. efficiency                      | %                | 64     | 61     | 62     | 63     | 63     | 63     | 63     | 64     | 64     | 63     | 64     | 64     | 62     | 63     | 63     |
| 14 Torque constant                      | mNm / A          | 0.802  | 0.980  | 1.25   | 1.51   | 1.96   | 2.41   | 2.76   | 3.39   | 4.10   | 5.08   | 6.33   | 7.84   | 8.37   | 9.89   | 13.0   |
| 15 Speed constant                       | rpm / V          | 11900  | 9740   | 7660   | 6310   | 4870   | 3970   | 3460   | 2820   | 2330   | 1880   | 1510   | 1220   | 1140   | 966    | 734    |
| 16 Mechanical time constant             | ms               | 15     | 14     | 14     | 13     | 13     | 13     | 13     | 13     | 13     | 13     | 13     | 13     | 13     | 13     | 13     |
| 17 Rotor inertia                        | gcm <sup>2</sup> | 0.343  | 0.278  | 0.286  | 0.276  | 0.274  | 0.287  | 0.302  | 0.298  | 0.289  | 0.290  | 0.286  | 0.280  | 0.276  | 0.279  | 0.275  |
| 18 Terminal inductance                  | mH               | 0.01   | 0.01   | 0.01   | 0.02   | 0.04   | 0.05   | 0.07   | 0.11   | 0.16   | 0.24   | 0.38   | 0.58   | 0.66   | 0.92   | 1.60   |
| 19 Thermal resistance housing-ambient   | K / W            | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     | 46     |
| 20 Thermal resistance rotor-housing     | K / W            | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     | 14     |
| 21 Thermal time constant winding        | s                | 6      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      |

## 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) 15 N
  - (static, shaft supported) 170 N
- Radial play **sleeve bearing** 0.014 mm
- Ambient temperature range -20 ... +65°C
- Max. rotor temperature +85°C
- Number of commutator segments 7
- Weight of motor 15 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



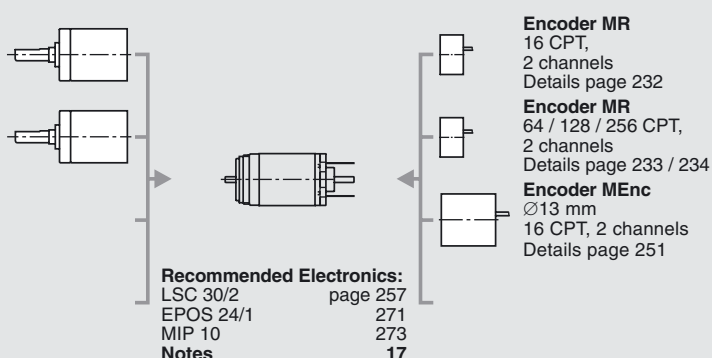
## Comments

- 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).
- 118460 Motor with high resistance winding
- 118446 Motor with low resistance winding

## maxon Modular System

**Planetary Gearhead**  
Ø13 mm  
0.2 - 0.35 Nm  
Details page 199

**Planetary Gearhead**  
Ø13 mm  
0.05 - 0.15 Nm  
Details page 200



## Overview on page 17 - 21