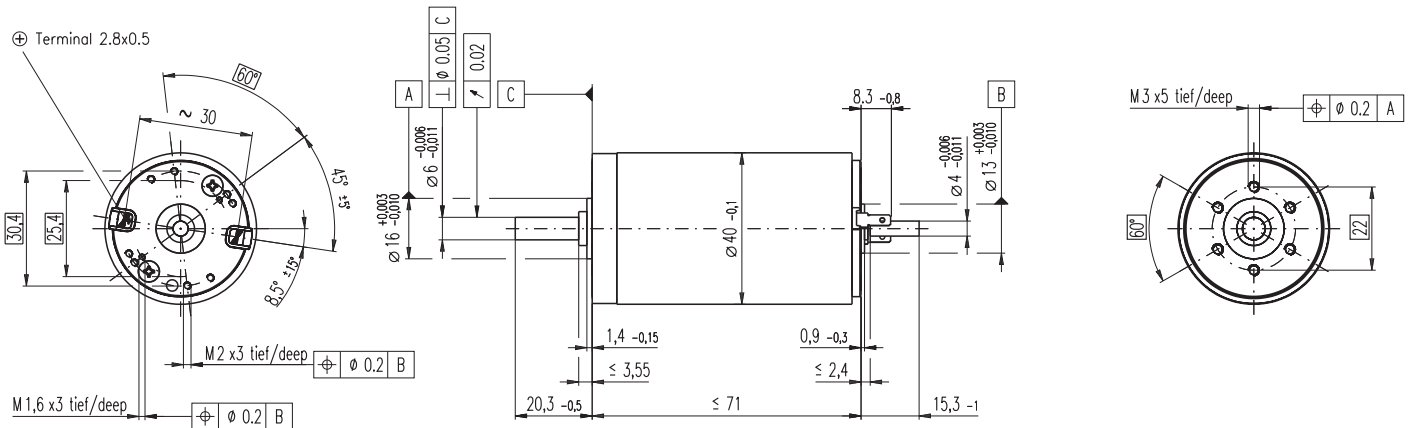


# RE 40 Ø40 mm, Graphite Brushes, 150 Watt



## M 1:2

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

### Order Number

Industrial Version

|        |        |        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 148866 | 148867 | 148877 | 218008 | 218009 | 218010 | 218011 | 218012 | 218013 | 218014 | 218015 |
| 263065 | 263066 | 263067 | 263068 | 263069 | 263070 | 263071 | 263072 | 263073 | 263074 | 263075 |

### Motor Data

| Values at nominal voltage |   |                  |        |        |       |       |       |      |      |       |       |       |       |  |  |  |  |  |  |
|---------------------------|---|------------------|--------|--------|-------|-------|-------|------|------|-------|-------|-------|-------|--|--|--|--|--|--|
| 1                         | Nominal voltage                           | V                | 12.0   | 24.0   | 48.0  | 48.0  | 48.0  | 48.0 | 48.0 | 48.0  | 48.0  | 48.0  | 48.0  |  |  |  |  |  |  |
| 2                         | No load speed                             | rpm              | 6920   | 7580   | 7580  | 6420  | 5560  | 3330 | 2690 | 2130  | 1710  | 1420  | 987   |  |  |  |  |  |  |
| 3                         | No load current                           | mA               | 241    | 137    | 68.6  | 53.7  | 43.7  | 21.9 | 16.7 | 12.5  | 9.67  | 7.77  | 5.16  |  |  |  |  |  |  |
| 4                         | Nominal speed                             | rpm              | 6370   | 6930   | 7000  | 5810  | 4920  | 2700 | 2050 | 1500  | 1080  | 774   | 339   |  |  |  |  |  |  |
| 5                         | Nominal torque (max. continuous torque)   | mNm              | 94.9   | 170    | 184   | 183   | 177   | 187  | 189  | 189   | 188   | 188   |       |  |  |  |  |  |  |
| 6                         | Nominal current (max. continuous current) | A                | 6.00   | 5.77   | 3.12  | 2.62  | 2.20  | 1.38 | 1.12 | 0.898 | 0.721 | 0.593 | 0.413 |  |  |  |  |  |  |
| 7                         | Stall torque                              | mNm              | 1680   | 2280   | 2500  | 1990  | 1580  | 995  | 796  | 641   | 512   | 415   | 289   |  |  |  |  |  |  |
| 8                         | Starting current                          | A                | 102    | 75.7   | 41.4  | 28.0  | 19.2  | 7.26 | 4.68 | 3.00  | 1.92  | 1.29  | 0.627 |  |  |  |  |  |  |
| 9                         | Max. efficiency                           | %                | 88     | 91     | 92    | 91    | 91    | 89   | 88   | 87    | 86    | 85    | 83    |  |  |  |  |  |  |
| Characteristics           |   |                  |        |        |       |       |       |      |      |       |       |       |       |  |  |  |  |  |  |
| 10                        | Terminal resistance                       | Ω                | 0.117  | 0.317  | 1.16  | 1.72  | 2.50  | 6.61 | 10.2 | 16.0  | 24.9  | 37.1  | 76.6  |  |  |  |  |  |  |
| 11                        | Terminal inductance                       | mH               | 0.0245 | 0.0823 | 0.329 | 0.460 | 0.612 | 1.70 | 2.62 | 4.14  | 6.40  | 9.31  | 19.2  |  |  |  |  |  |  |
| 12                        | Torque constant                           | mNm / A          | 16.4   | 30.2   | 60.3  | 71.3  | 82.2  | 137  | 170  | 214   | 266   | 321   | 461   |  |  |  |  |  |  |
| 13                        | Speed constant                            | rpm / V          | 581    | 317    | 158   | 134   | 116   | 69.7 | 56.2 | 44.7  | 35.9  | 29.8  | 20.7  |  |  |  |  |  |  |
| 14                        | Speed / torque gradient                   | rpm / mNm        | 4.15   | 3.33   | 3.04  | 3.23  | 3.53  | 3.36 | 3.39 | 3.35  | 3.37  | 3.44  | 3.45  |  |  |  |  |  |  |
| 15                        | Mechanical time constant                  | ms               | 6.03   | 4.81   | 4.39  | 4.36  | 4.35  | 4.31 | 4.31 | 4.31  | 4.31  | 4.32  | 4.33  |  |  |  |  |  |  |
| 16                        | Rotor inertia                             | gcm <sup>2</sup> | 139    | 138    | 138   | 129   | 118   | 123  | 121  | 123   | 122   | 120   | 120   |  |  |  |  |  |  |

### Specifications

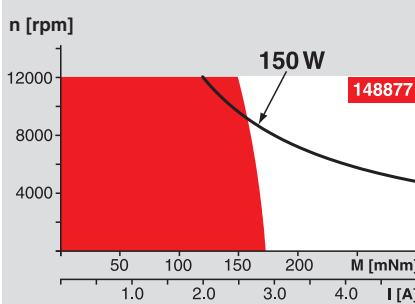
| Thermal data                   |  |                |
|--------------------------------|--|----------------|
| 17                             | Thermal resistance housing-ambient                           | 4.65 K / W     |
| 18                             | Thermal resistance winding-housing                           | 1.93 K / W     |
| 19                             | Thermal time constant winding                                | 41.6 s         |
| 20                             | Thermal time constant motor                                  | 1120 s         |
| 21                             | Ambient temperature  | -20 ... +100°C |
| 22                             | Max. permissible winding temperature                         | +155°C         |
| Mechanical data (ball bearing) |  |                |
| 23                             | Max. permissible speed                                       | 12000 rpm      |
| 24                             | Axial play   | 0.05 - 0.15 mm |
| 25                             | Radial play  | 0.025 mm       |
| 26                             | Max. axial load (dynamic)                                    | 5.6 N          |
| 27                             | Max. force for press fits (static) (static, shaft supported) | 110 N / 1200 N |
| 28                             | Max. radial loading, 5 mm from flange                        | 28 N           |

| Other specifications |                               |       |
|----------------------|-------------------------------|-------|
| 29                   | Number of pole pairs          | 1     |
| 30                   | Number of commutator segments | 13    |
| 31                   | Weight of motor               | 480 g |

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

**Option**  
Preloaded ball bearings Preload strength min. 2.4 N

### 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.

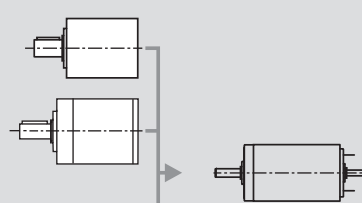
**Short term operation**  
The motor may be briefly overloaded (recurring).

— Assigned power rating

### maxon Modular System

**Planetary Gearhead**  
Ø42 mm  
3 - 15 Nm  
Page 232

**Planetary Gearhead**  
Ø52 mm  
4 - 30 Nm  
Page 235



| Recommended Electronics: |          |
|--------------------------|----------|
| ADS 50/5                 | Page 264 |
| ADS 50/10                | 265      |
| ADS_E 50/5               | 265      |
| ADS_E 50/10              | 265      |
| EPOS 24/5                | 278      |
| EPOS P 24/5              | 279      |
| EPOS 70/10               | 279      |
| MIP 50, MIP 100          | 281      |
| Notes                    | 17       |

### Overview on page 17 - 21

|  |
|--|
| <b>Encoder MR</b><br>256 - 1024 CPT,<br>3 channels<br>Page 247       |
| <b>Encoder HED_ 5540</b><br>500 CPT,<br>3 channels<br>Page 250 / 252 |
| <b>Brake AB 40</b><br>Ø40 mm,<br>24 VDC, 0.4 Nm<br>Page 289          |
| <b>Industrial Version Encoder HEDL 9140</b><br>Page 255              |
| <b>Brake AB 28</b><br>Page 288                                       |