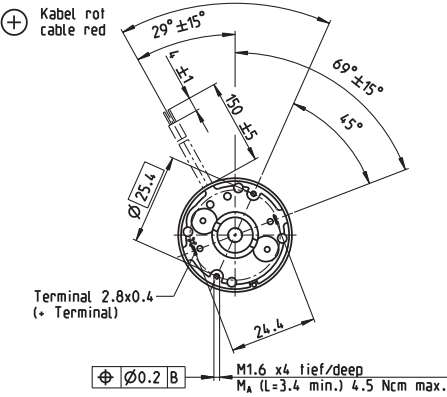


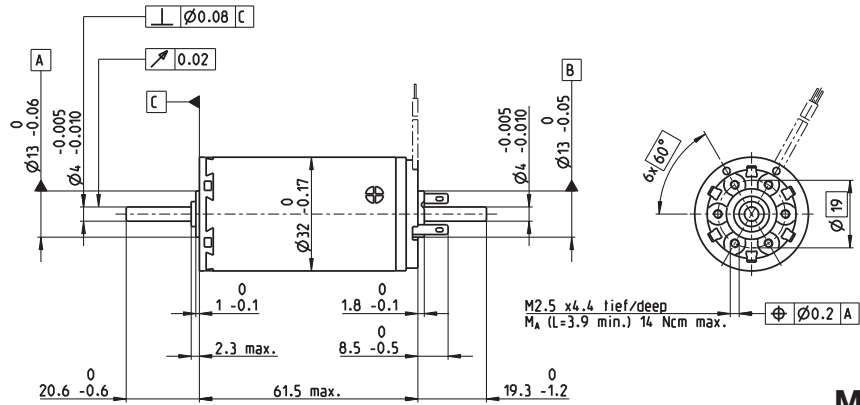
# A-max 32 Ø32 mm, Graphite Brushes, 20 Watt

High Power

Kabel AWG 22/7  
cable UL Style 1061



Verlegung der Kabel im Buerstendeckel nicht dargestellt!  
Cable routing not shown inside brush cover!



M 1:2

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

## Part Numbers

|                |        |        |        |        |        |        |        |
|----------------|--------|--------|--------|--------|--------|--------|--------|
| with terminals | 236666 | 236667 | 236668 | 236669 | 236670 | 236671 | 236672 |
| with cables    | 353236 | 353237 | 301030 | 353239 | 353240 | 353241 | 353242 |

| Motor Data                                  |                  |       |      |       |       |       |       |       |
|---------------------------------------------|------------------|-------|------|-------|-------|-------|-------|-------|
| Values at nominal voltage                   |                  |       |      |       |       |       |       |       |
| 1 Nominal voltage                           | V                | 6     | 9    | 12    | 24    | 30    | 36    | 42    |
| 2 No load speed                             | rpm              | 4880  | 5000 | 4670  | 6460  | 6160  | 5860  | 5650  |
| 3 No load current                           | mA               | 123   | 84.2 | 58.2  | 42.8  | 32.3  | 25.3  | 20.8  |
| 4 Nominal speed                             | rpm              | 3400  | 3480 | 3170  | 5060  | 4740  | 4430  | 4210  |
| 5 Nominal torque (max. continuous torque)   | mNm              | 44.5  | 43.1 | 44    | 45.5  | 45.1  | 45.4  | 45    |
| 6 Nominal current (max. continuous current) | A                | 3.96  | 2.62 | 1.87  | 1.33  | 1.01  | 0.804 | 0.659 |
| 7 Stall torque                              | mNm              | 153   | 146  | 140   | 212   | 197   | 189   | 178   |
| 8 Stall current                             | A                | 13.2  | 8.57 | 5.77  | 6.02  | 4.27  | 3.24  | 2.54  |
| 9 Max. efficiency                           | %                | 80    | 80   | 80    | 84    | 83    | 83    | 83    |
| Characteristics                             |                  |       |      |       |       |       |       |       |
| 10 Terminal resistance                      | Ω                | 0.454 | 1.05 | 2.08  | 3.99  | 7.02  | 11.1  | 16.6  |
| 11 Terminal inductance                      | mH               | 0.06  | 0.13 | 0.264 | 0.556 | 0.954 | 1.52  | 2.22  |
| 12 Torque constant                          | mNm/A            | 11.6  | 17   | 24.3  | 35.2  | 46.1  | 58.2  | 70.4  |
| 13 Speed constant                           | rpm/V            | 825   | 562  | 394   | 271   | 207   | 164   | 136   |
| 14 Speed / torque gradient                  | rpm/mNm          | 32.4  | 34.8 | 33.8  | 30.8  | 31.6  | 31.3  | 31.9  |
| 15 Mechanical time constant                 | ms               | 15    | 14.9 | 14.7  | 14.6  | 14.6  | 14.6  | 14.7  |
| 16 Rotor inertia                            | gcm <sup>2</sup> | 44.2  | 40.8 | 41.7  | 45.3  | 44.2  | 44.6  | 43.8  |

## Specifications

| Thermal data                          |             |
|---------------------------------------|-------------|
| 17 Thermal resistance housing-ambient | 7.5 K/W     |
| 18 Thermal resistance winding-housing | 2.1 K/W     |
| 19 Thermal time constant winding      | 17.8 s      |
| 20 Thermal time constant motor        | 521 s       |
| 21 Ambient temperature                | -20...+85°C |
| 22 Max. winding temperature           | +125°C      |

| Mechanical data (ball bearings)                                 |                |
|-----------------------------------------------------------------|----------------|
| 23 Max. speed                                                   | 6000 rpm       |
| 24 Axial play                                                   | 0.12 - 0.22 mm |
| 25 Radial play                                                  | 0.025 mm       |
| 26 Max. axial load (dynamic)                                    | 7.6 N          |
| 27 Max. force for press fits (static) (static, shaft supported) | 110 N / 2000 N |
| 28 Max. radial load, 5 mm from flange                           | 32 N           |

| Mechanical data (sleeve bearings)                               |                |
|-----------------------------------------------------------------|----------------|
| 23 Max. speed                                                   | 6000 rpm       |
| 24 Axial play                                                   | 0.12 - 0.22 mm |
| 25 Radial play                                                  | 0.012 mm       |
| 26 Max. axial load (dynamic)                                    | 5.0 N          |
| 27 Max. force for press fits (static) (static, shaft supported) | 110 N / 2000 N |
| 28 Max. radial load, 5 mm from flange                           | 10.5 N         |

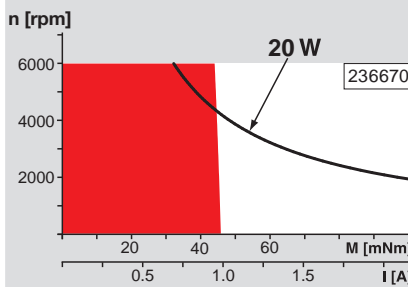
| Other specifications             |       |
|----------------------------------|-------|
| 29 Number of pole pairs          | 1     |
| 30 Number of commutator segments | 13    |
| 31 Weight of motor               | 240 g |

Values listed in the table are nominal.  
Explanation of the figures on page 151.

### Option

Sleeve bearings in place of ball bearings

## 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

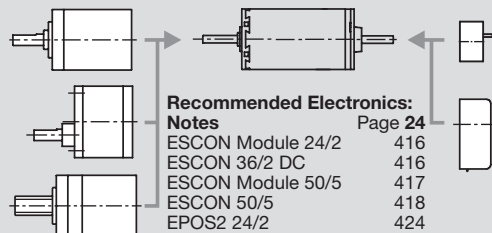
Ø32 mm  
0.75 - 6.0 Nm  
Page 338-343

### Spur Gearhead

Ø38 mm  
0.1 - 0.6 Nm  
Page 348

### Spindle Drive

Ø32 mm  
Page 370-372



### Recommended Electronics:

| Notes                  | Page 24 |
|------------------------|---------|
| ESCON Module 24/2      | 416     |
| ESCON 36/2 DC          | 416     |
| ESCON Module 50/5      | 417     |
| ESCON 50/5             | 418     |
| EPOS2 24/2             | 424     |
| EPOS2 Module 36/2      | 424     |
| EPOS2 24/5, EPOS2 50/5 | 425     |
| EPOS2 P 24/5           | 428     |
| MAXPOS 50/5            | 435     |

## Overview on page 20-27

**Encoder MR**  
256 - 1024 CPT,  
3 channels  
Page 393

**Encoder HED\_ 5540**  
500 CPT,  
3 channels  
Page 400/402