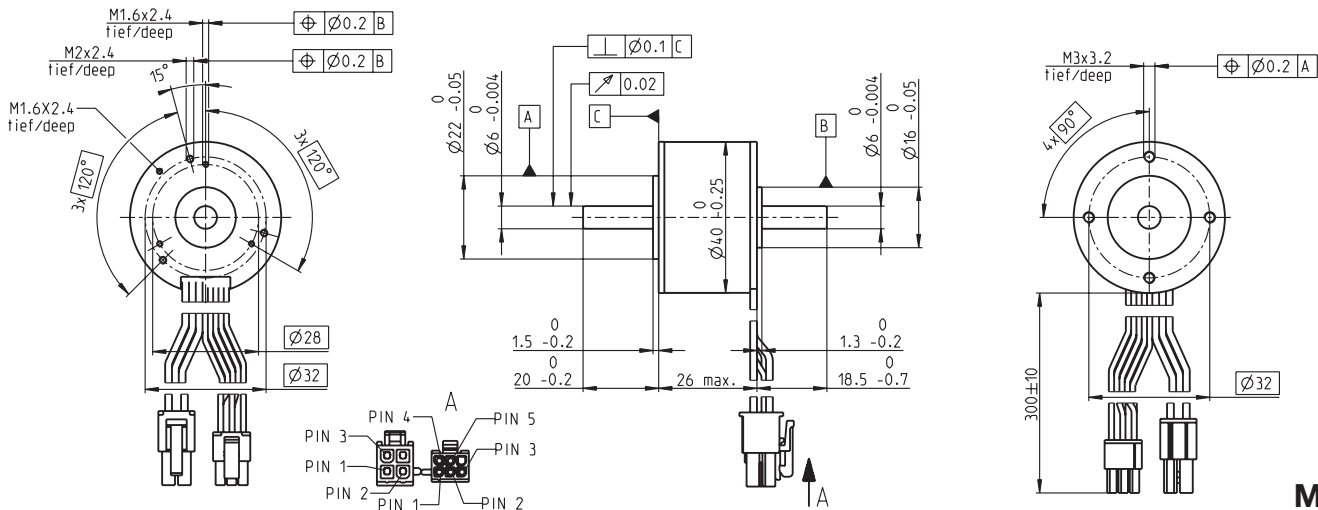


EC-i 40 Ø40 mm, brushless, 50 Watt



M 1:2

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

Part Numbers

| | | | | | | | | | |
|-------------------|--------|--------|--|--|--|--|--|--|--|
| | | | | | | | | | |
| with Hall sensors | 449463 | 449464 | | | | | | | |

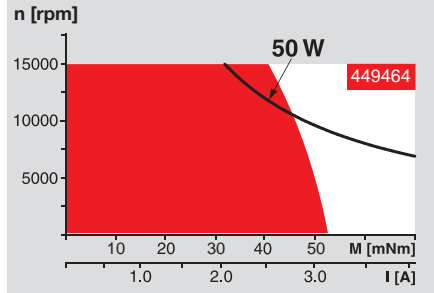
Motor Data

| Values at nominal voltage | | | | |
|---|------------------|-------|-------|--|
| 1 Nominal voltage | V | 12 | 24 | |
| 2 No load speed | rpm | 12400 | 13200 | |
| 3 No load current | mA | 522 | 285 | |
| 4 Nominal speed | rpm | 9660 | 10300 | |
| 5 Nominal torque (max. continuous torque) | mNm | 43.3 | 52.8 | |
| 6 Nominal current (max. continuous current) | A | 4.53 | 2.8 | |
| 7 Stall torque | mNm | 473 | 810 | |
| 8 Stall current | A | 52.9 | 47.9 | |
| 9 Max. efficiency | % | 81 | 85 | |
| Characteristics | | | | |
| 10 Terminal resistance phase to phase | Ω | 0.227 | 0.501 | |
| 11 Terminal inductance phase to phase | mH | 0.109 | 0.39 | |
| 12 Torque constant | mNm/A | 8.95 | 16.9 | |
| 13 Speed constant | rpm/V | 1070 | 565 | |
| 14 Speed/torque gradient | rpm/mNm | 27.1 | 16.7 | |
| 15 Mechanical time constant | ms | 2.98 | 1.84 | |
| 16 Rotor inertia | gcm ² | 10.5 | 10.5 | |

Specifications

| Thermal data | |
|---|--------------|
| 17 Thermal resistance housing-ambient | 9.66 K/W |
| 18 Thermal resistance winding-housing | 2.57 K/W |
| 19 Thermal time constant winding | 17.5 s |
| 20 Thermal time constant motor | 821 s |
| 21 Ambient temperature | -40...+100°C |
| 22 Max. winding temperature | +155°C |
| Mechanical data (preloaded ball bearings) | |
| 23 Max. speed | 15000 rpm |
| 24 Axial play at axial load < 9.0 N | 0 mm |
| 24 Axial play at axial load > 9.0 N | 0.15 mm |
| 25 Radial play | preloaded |
| 26 Max. axial load (dynamic) | 5 N |
| 27 Max. force for press fits (static) (static, shaft supported) | 87 N |
| 27 Max. force for press fits (static) (static, shaft supported) | 2000 N |
| 28 Max. radial load, 5 mm from flange | 15 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**

Other specifications

| | |
|-------------------------|-------|
| 29 Number of pole pairs | 7 |
| 30 Number of phases | 3 |
| 31 Weight of motor | 170 g |

Values listed in the table are nominal.

- Connection** (Cable AWG 20)
 red Motor winding 1 Pin 1
 black Motor winding 2 Pin 2
 white Motor winding 3 Pin 3
 N.C. Pin 4
- Connector Article number**
 Molex 39-01-2040
- Connection** (Cable AWG 26)
 yellow Hall sensor 1 Pin 1
 brown Hall sensor 2 Pin 2
 grey Hall sensor 3 Pin 3
 blue GND Pin 4
 green V_{Hall} 4.5...24 VDC Pin 5
 N.C. Pin 6
- Connector Article number**
 Molex 430-25-0600
 Wiring diagram for Hall sensors see p. 37

maxon Modular System

Overview on page 20–27

| | | |
|--|--|---|
| <p>Planetary Gearhead Ø32 mm 1.0 - 6.0 Nm Page 343</p> <p>Planetary Gearhead Ø42 mm 3 - 15 Nm Page 350</p> <p>Spindle Drive Ø32 mm Page 370–372</p> | <p>Recommended Electronics: Notes Page 26</p> <p>ESCON 36/3 EC 417 ESCON Mod. 50/4 EC-S 417 ESCON Module 50/5 417 ESCON 50/5 418 DEC Module 50/5 420 EPOS2 Module 36/2 424 EPOS2 24/5 425 EPOS4 Module 50/8 431 EPOS4 Comp. 50/8 CAN 431 MAXPOS 50/5 435</p> | <p>Encoder 16 EASY 128 - 1024 CPT, 3 channels Page 382</p> <p>Encoder 16 EASY Absolute 4096 steps Page 383</p> <p>Encoder 2RMHF 3000 - 5000 CTP, 3 channels Page 397</p> <p>Encoder HEDL 5540 500 CPT, 3 channels Page 404</p> <p>Encoder AEDL 5810 1024 - 5000 CPT, 3 channels Page 407</p> |
|--|--|---|