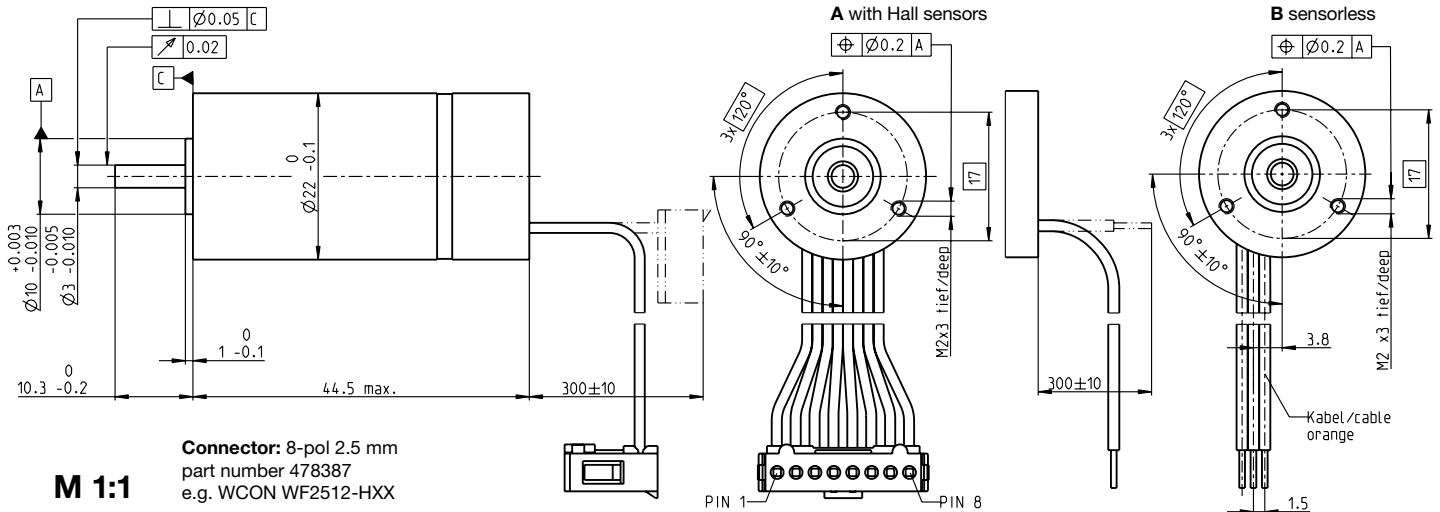


EC 22 Ø22 mm, brushless, 40 Watt



M 1:1

Connector: 8-pol 2.5 mm
part number 478387
e.g. WCON WF2512-HXX

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

Part Numbers

| | 386657 | 386658 | 386659 | 386660 |
|---------------------|--------|--------|--------|--------|
| A with Hall sensors | | | | |
| B sensorless | 386661 | 386662 | 386663 | 386664 |

Motor Data

| Values at nominal voltage | | | | | | |
|---------------------------|---|------------------|--------|--------|-------|-------|
| 1 | Nominal voltage | V | 12 | 24 | 36 | 48 |
| 2 | No load speed | rpm | 30400 | 35200 | 31600 | 34200 |
| 3 | No load current | mA | 238 | 144 | 83.3 | 69.3 |
| 4 | Nominal speed | rpm | 26600 | 31800 | 28300 | 30900 |
| 5 | Nominal torque (max. continuous torque) | mNm | 20.9 | 20.7 | 20.4 | 20.1 |
| 6 | Nominal current (max. continuous current) | A | 5.75 | 3.29 | 1.95 | 1.56 |
| 7 | Stall torque | mNm | 184 | 243 | 221 | 237 |
| 8 | Stall current | A | 49.1 | 37.4 | 20.4 | 17.7 |
| 9 | Max. efficiency | % | 87 | 88 | 88 | 88 |
| Characteristics | | | | | | |
| 10 | Terminal resistance phase to phase | Ω | 0.244 | 0.641 | 1.76 | 2.71 |
| 11 | Terminal inductance phase to phase | mH | 0.0182 | 0.0546 | 0.152 | 0.231 |
| 12 | Torque constant | mNm/A | 3.75 | 6.49 | 10.8 | 13.3 |
| 13 | Speed constant | rpm/V | 2550 | 1470 | 882 | 716 |
| 14 | Speed/torque gradient | rpm/mNm | 166 | 145 | 144 | 145 |
| 15 | Mechanical time constant | ms | 4.16 | 3.64 | 3.6 | 3.64 |
| 16 | Rotor inertia | gcm ² | 2.39 | 2.39 | 2.39 | 2.39 |

Specifications

| Thermal data | | |
|---|--|--------------|
| 17 | Thermal resistance housing-ambient | 10 K/W |
| 18 | Thermal resistance winding-housing | 2 K/W |
| 19 | Thermal time constant winding | 4.85 s |
| 20 | Thermal time constant motor | 278 s |
| 21 | Ambient temperature | -20...+100°C |
| 22 | Max. winding temperature | +155°C |
| Mechanical data (preloaded ball bearings) | | |
| 23 | Max. speed | 60000 rpm |
| 24 | Axial play at axial load < 4 N | 0 mm |
| | > 4 N | max. 0.14 mm |
| 25 | Radial play | preloaded |
| 26 | Max. axial load (dynamic) | 3.5 N |
| 27 | Max. force for press fits (static) (static, shaft supported) | 45 N |
| 28 | Max. radial load, 5 mm from flange | 250 N |
| | | 16 N |

Other specifications

| | | |
|----|----------------------|------|
| 29 | Number of pole pairs | 1 |
| 30 | Number of phases | 3 |
| 31 | Weight of motor | 85 g |

Values listed in the table are nominal.

Connection A

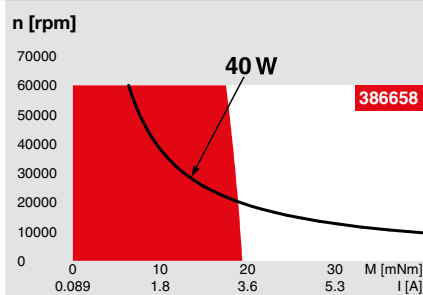
| | | |
|--------|------------------|-------|
| brown | Motor winding 1 | Pin 1 |
| red | Motor winding 2 | Pin 2 |
| orange | Motor winding 3 | Pin 3 |
| yellow | VHall 3...24 VDC | Pin 4 |
| green | GND | Pin 5 |
| blue | Hall sensor 1 | Pin 6 |
| violet | Hall sensor 2 | Pin 7 |
| grey | Hall sensor 3 | Pin 8 |

Wiring diagram for Hall sensors see p. 41

Connection B (Cable AWG 24)

| | |
|--------|-----------------|
| brown | Motor winding 1 |
| red | Motor winding 2 |
| orange | Motor winding 3 |

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

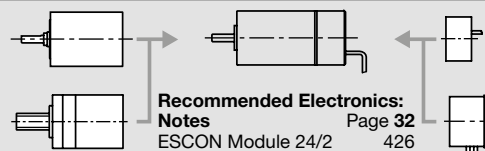
Overview on page 28-36

Planetary Gearhead

Ø22 mm
0.5 - 3.4 Nm
Page 328/329

Spindle Drive

Ø22 mm
Page 364/365



Recommended Electronics:

| Notes | Page 32 |
|-------------------------|---------|
| ESCON Module 24/2 | 426 |
| ESCON 36/3 EC | 427 |
| ESCON Mod. 50/4 EC-S | 427 |
| ESCON Module 50/5 | 427 |
| ESCON 50/5, 70/10 | 428 |
| DEC Module 24/2, 50/5 | 430 |
| EPOS2 24/2, Module 36/2 | 434 |
| EPOS2 24/5, 50/5, 70/10 | 435 |
| EPOS2 P 24/5 | 438 |
| EPOS4 Module/CB 50/5 | 442 |
| MAXPOS 50/5 | 447 |

for type A:
Encoder MR
128/256/512 CPT,
Page 403

for type B:
Resolver
on request