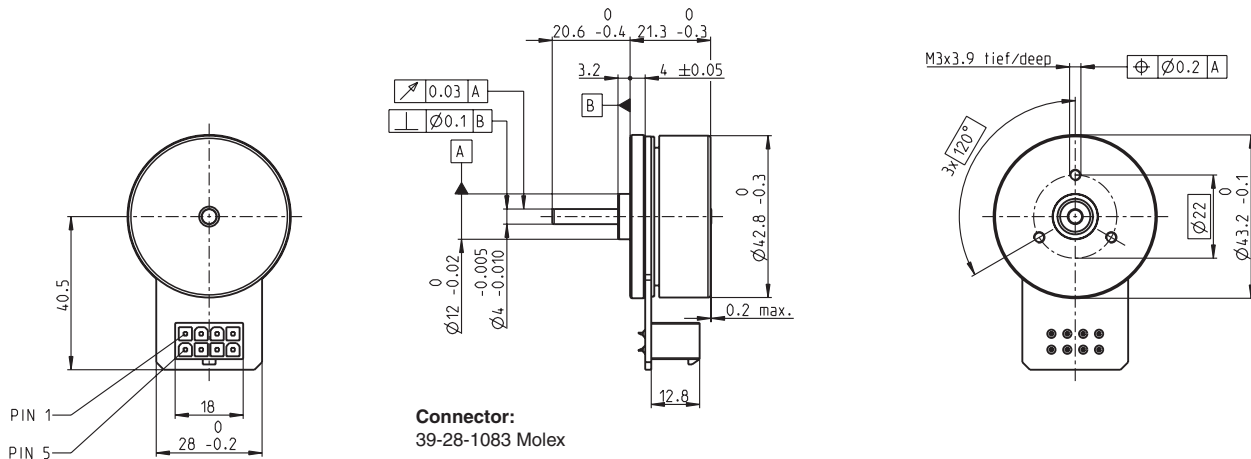


EC 45 flat $\varnothing 42.8$ mm, brushless, 50 Watt



Connector:
39-28-1083 Molex

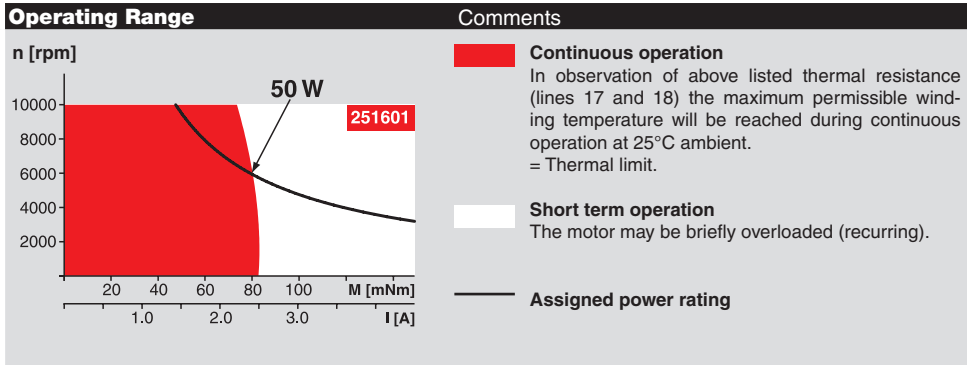
M 1:2

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

| Part Numbers | | | | |
|--------------|--|--|--|--|
| | | | | |
| | | | | |
| | | | | |

| | | with Hall sensors | | | | |
|----------------------------------|---|-------------------|--------|--------|--------|-------|
| | | 339285 | 251601 | 339286 | 339287 | |
| Motor Data | | | | | | |
| Values at nominal voltage | | | | | | |
| 1 | Nominal voltage | V | 18 | 24 | 24 | 36 |
| 2 | No load speed | rpm | 6720 | 6710 | 4730 | 3360 |
| 3 | No load current | mA | 247 | 185 | 106 | 42.3 |
| 4 | Nominal speed | rpm | 5190 | 5240 | 3480 | 2360 |
| 5 | Nominal torque (max. continuous torque) | mNm | 97.1 | 83.4 | 69.6 | 90.5 |
| 6 | Nominal current (max. continuous current) | A | 3.52 | 2.33 | 1.41 | 0.828 |
| 7 | Stall torque | mNm | 975 | 780 | 402 | 484 |
| 8 | Starting current | A | 38.8 | 23.3 | 8.47 | 4.81 |
| 9 | Max. efficiency | % | 85 | 83 | 79 | 82 |
| Characteristics | | | | | | |
| 10 | Terminal resistance phase to phase | Ω | 0.464 | 1.03 | 2.83 | 7.48 |
| 11 | Terminal inductance phase to phase | mH | 0.322 | 0.572 | 1.15 | 5.15 |
| 12 | Torque constant | mNm/A | 25.1 | 33.5 | 47.5 | 101 |
| 13 | Speed constant | rpm/V | 380 | 285 | 201 | 95 |
| 14 | Speed/torque gradient | rpm/mNm | 7.02 | 8.77 | 12 | 7.07 |
| 15 | Mechanical time constant | ms | 9.92 | 12.4 | 17 | 10 |
| 16 | Rotor inertia | gcm ² | 135 | 135 | 135 | 135 |

| Specifications | | |
|--|--|--------------|
| Thermal data | | |
| 17 | Thermal resistance housing-ambient | 4.53 K/W |
| 18 | Thermal resistance winding-housing | 4.75 K/W |
| 19 | Thermal time constant winding | 17.7 s |
| 20 | Thermal time constant motor | 227 s |
| 21 | Ambient temperature | -40...+100°C |
| 22 | Max. winding temperature | +125°C |
| Mechanical data (preloaded ball bearings) | | |
| 23 | Max. permissible speed | 10 000 rpm |
| 24 | Axial play at axial load < 4.0 N | 0 mm |
| | > 4.0 N | 0.14 mm |
| 25 | Radial play | preloaded |
| 26 | Max. axial load (dynamic) | 3.8 N |
| 27 | Max. force for press fits (static) (static, shaft supported) | 53 N |
| 28 | Max. radial load, 8 mm from flange | 1000 N |
| | | 21 N |



| Other specifications | | |
|-----------------------------|----------------------|-------|
| 29 | Number of pole pairs | 8 |
| 30 | Number of phases | 3 |
| 31 | Weight of motor | 110 g |

Values listed in the table are nominal.

| Connection | |
|-------------------|--------------------------------|
| Pin 1 | Hall sensor 1* |
| Pin 2 | Hall sensor 2* |
| Pin 3 | V _{Hall} 4.5...18 VDC |
| Pin 4 | Motor winding 3 |
| Pin 5 | Hall sensor 3* |
| Pin 6 | GND |
| Pin 7 | Motor winding 1 |
| Pin 8 | Motor winding 2 |

*Internal pull-up (7...13 k Ω) on pin 3
Wiring diagram for Hall sensors see p. 35

| Cable | |
|--|---------------|
| Connection cable Universal, L = 500 mm | 339380 |
| Connection cable to EPOS, L = 500 mm | 354045 |

| maxon Modular System | | Overview on page 20–25 |
|--|--|--|
| Planetary Gearhead $\varnothing 42$ mm 3 - 15 Nm Page 285 | | Encoder MILE 256 - 2048 CPT, 2 channels Page 308 |
| Spur Gearhead $\varnothing 45$ mm 0.5 - 2.0 Nm Page 286 | | |
| Recommended Electronics: ESCON 36/3 EC Page 342 ESCON Mod. 50/4 EC-S 343 ESCON Module 50/5 343 ESCON 50/5 344 DEC Module 50/5 346 EPOS2 24/2 350 EPOS2 Module 36/2 350 EPOS2 24/5, 50/5 351 EPOS2 P 24/5 354 EPOS3 70/10 EtherCAT 357 MAXPOS 50/5 360 Notes 24 | | |
| Option With Cable and Connector (Ambient temperature -20...+100°C) | | |