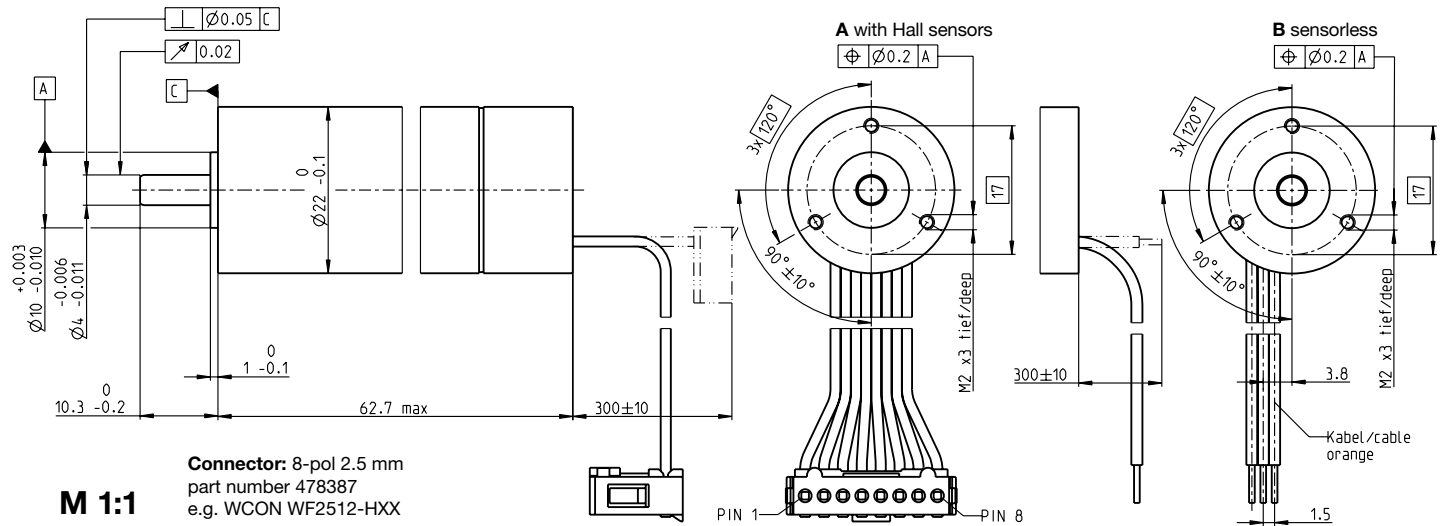


EC 22 Ø22 mm, brushless, 100 Watt



M 1:1

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

maxon EC motor

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

Part Numbers

A with Hall sensors	386673	386674	386675
B sensorless	386676	386677	386678

Motor Data

Values at nominal voltage		18	24	48
1 Nominal voltage	V	18	24	48
2 No load speed	rpm	31000	29500	32100
3 No load current	mA	373	257	149
4 Nominal speed	rpm	28200	27000	30000
5 Nominal torque (max. continuous torque)	mNm	49.3	48.5	47.6
6 Nominal current (max. continuous current)	A	9.15	6.42	3.45
7 Stall torque	mNm	644	691	857
8 Stall current	A	116	89.1	60.2
9 Max. efficiency	%	89	90	90
Characteristics		0.155	0.269	0.797
10 Terminal resistance phase to phase	Ω	0.155	0.269	0.797
11 Terminal inductance phase to phase	mH	0.0178	0.035	0.118
12 Torque constant	mNm/A	5.53	7.75	14.2
13 Speed constant	rpm/V	1730	1230	672
14 Speed/torque gradient	rpm/mNm	48.3	42.8	37.6
15 Mechanical time constant	ms	2.07	1.83	1.61
16 Rotor inertia	gcm ²	4.09	4.09	4.09

Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient: 7 K/W
 - 18 Thermal resistance winding-housing: 1 K/W
 - 19 Thermal time constant winding: 4.92 s
 - 20 Thermal time constant motor: 355 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): 40 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: 128 g

Values listed in the table are nominal.

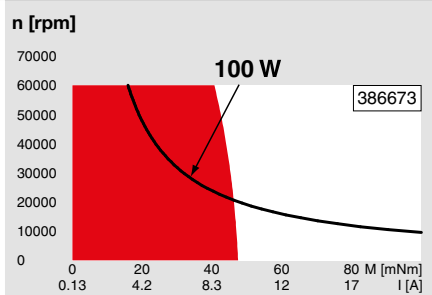
Connection A

- | | | |
|--------|------------------|-------|
| 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 |
| gray | 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

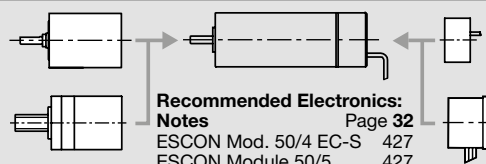
Overview on page 28-36

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 Mod. 50/4 EC-S | 427 |
| ESCON Module 50/5 | 427 |
| ESCON 50/5, 70/10 | 428 |
| DEC Module 50/5 | 430 |
| EPOS2 24/5, 50/5, 70/10 | 435 |
| EPOS2 P 24/5 | 438 |
| EPOS4 Module/CB 50/5 | 442 |
| EPOS4 Module 50/8 | 443 |
| EPOS4 Comp. 50/8 CAN | 443 |
| EPOS4 Module 50/15 | 444 |
| EPOS4 Comp. 50/15 CAN | 444 |
| MAXPOS 50/5 | 447 |

for type A:

Encoder MR
128/256/512 CPT,
Page 403

for type B:

Resolver
on request