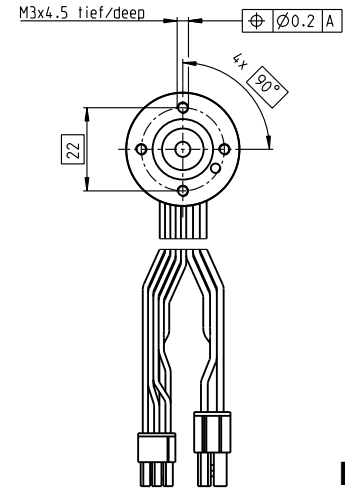
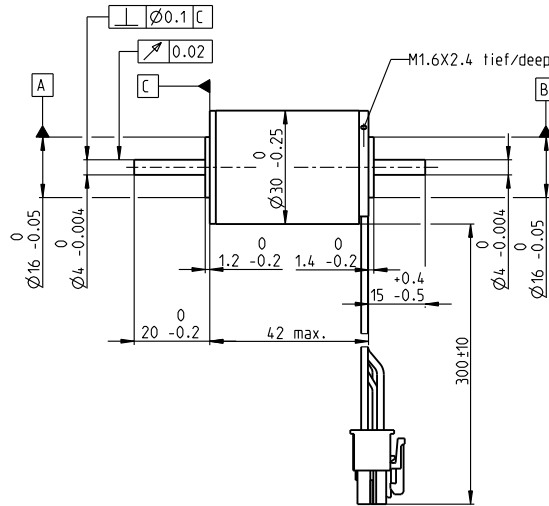
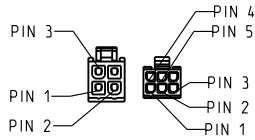
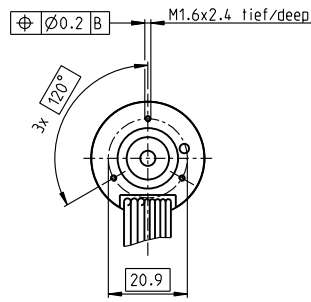


# EC-max 30 $\varnothing 30$ mm, brushless, 40 watt

EC-max



M 1:2

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

### Part Numbers

272766	272768	272769	272770
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### Motor Data

Values at nominal voltage		12	24	36	48
1 Nominal voltage	V	12	24	36	48
2 No load speed	rpm	8680	9250	9150	9250
3 No load current	mA	223	123	80.5	61.4
4 Nominal speed	rpm	6630	7220	7090	7210
5 Nominal torque (max. continuous torque)	mNm	34.9	33.8	33.3	33.4
6 Nominal current (max. continuous current)	A	2.88	1.49	0.97	0.738
7 Stall torque	mNm	153	160	154	157
8 Stall current	A	11.8	6.57	4.18	3.24
9 Max. efficiency	%	75	75	75	75
<b>Characteristics</b>					
10 Terminal resistance phase to phase	$\Omega$	1.01	3.65	8.61	14.8
11 Terminal inductance phase to phase	mH	0.088	0.31	0.713	1.24
12 Torque constant	mNm/A	12.9	24.3	36.8	48.6
13 Speed constant	rpm/V	738	393	259	197
14 Speed/torque gradient	rpm/mNm	57.8	59.1	60.6	59.9
15 Mechanical time constant	ms	6.66	6.81	6.98	6.9
16 Rotor inertia	gcm <sup>2</sup>	11	11	11	11

### Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient: 8.6 K/W
  - 18 Thermal resistance winding-housing: 1 K/W
  - 19 Thermal time constant winding: 3.25 s
  - 20 Thermal time constant motor: 777 s
  - 21 Ambient temperature: -40...+100°C
  - 22 Max. winding temperature: +155°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. speed: 15 000 rpm
  - 24 Axial play at axial load: < 6.0 N: 0 mm, > 6.0 N: 0.14 mm
  - 25 Radial play: preloaded: 5 N
  - 26 Max. axial load (dynamic): 98 N
  - 27 Max. force for press fits (static) (static, shaft supported): 2000 N
  - 28 Max. radial load, 5 mm from flange: 25 N

### Other specifications

- 29 Number of pole pairs: 1
- 30 Number of phases: 3
- 31 Weight of motor: 195 g

Values listed in the table are nominal.

### Connection motor (Cable AWG 20)

- red Motor winding 1 Pin 1
- black Motor winding 2 Pin 2
- white Motor winding 3 Pin 3
- N.C. N.C. Pin 4

### Connector Part number

Molex 39-01-2040

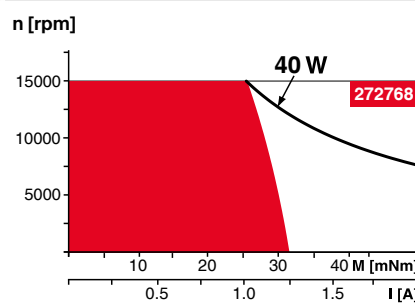
### Connection sensors (Cable AWG 26)

- yellow Hall sensor 1 Pin 1
- brown Hall sensor 2 Pin 2
- grey Hall sensor 3 Pin 3
- blue GND Pin 4
- green V<sub>Hall</sub> 3...24 VDC Pin 5
- N.C. N.C. Pin 6

### Connector Part number

Molex 430-25-0600  
Wiring diagram for Hall sensors see p. 57

### 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

Details on catalog page 42

#### Planetary Gearhead

$\varnothing 32$  mm  
0.75–4.5 Nm  
Page 393/394

#### Planetary Gearhead

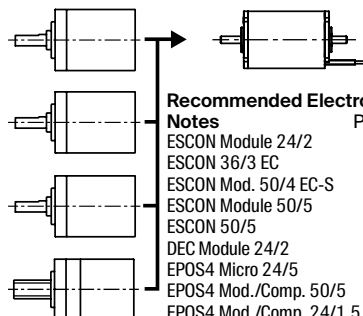
$\varnothing 32$  mm  
1.0–8.0 Nm  
Page 398/400

#### Koaxdrive

$\varnothing 32$  mm  
1.0–4.5 Nm  
Page 403

#### Screw Drive

$\varnothing 32$  mm  
Page 426–433



### Recommended Electronics:

#### Notes

- ESCON Module 24/2: 500
- ESCON 36/3 EC: 501
- ESCON Mod./50/4 EC-S: 501
- ESCON Module 50/5: 501
- ESCON 50/5: 503
- DEC Module 24/2: 505
- EPOS4 Micro 24/5: 509
- EPOS4 Mod./Comp. 50/5: 510
- EPOS4 Mod./Comp. 24/1.5: 510
- EPOS4 Comp. 24/5 3-axes: 511
- EPOS4 50/5: 515
- EPOS4 Disk 60/8: 516
- EPOS4 Disk 60/12: 517
- EPOS2 P 24/5: 520

#### Encoder MR

500/1000 CPT,  
3 channels  
Page 478

#### Encoder HEDL 5540

500 CPT,  
3 channels  
Page 490

#### Brake AB 20

24 VDC  
0.1 Nm  
Page 532