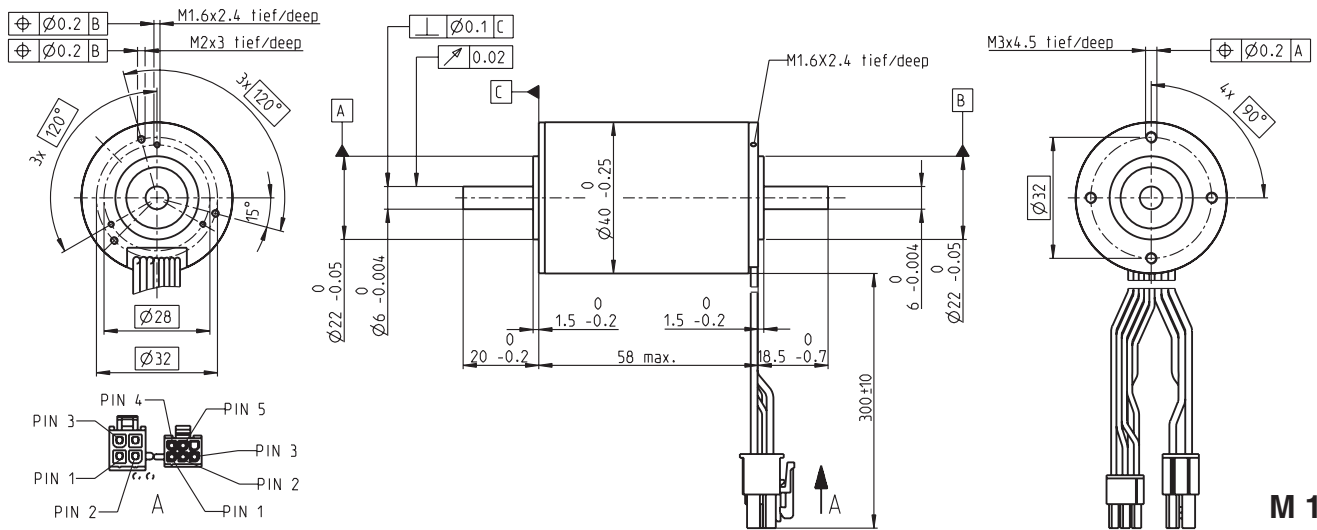


# EC-max 40 Ø40 mm, brushless, 70 Watt



M 1:2

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

## Order Number

283866	283867	283868	283869
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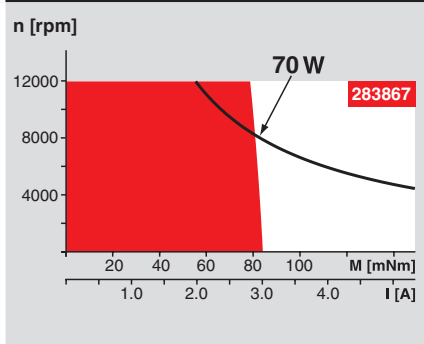
### Motor Data

Values at nominal voltage		V	12	24	36	48
1	Nominal voltage	V	12	24	36	48
2	No load speed	rpm	8040	8050	8470	9040
3	No load current	mA	554	277	197	161
4	Nominal speed	rpm	6490	6540	7040	7610
5	Nominal torque (max. continuous torque)	mNm	85.7	88.7	94.7	94.3
6	Nominal current (max. continuous current)	A	6.59	3.4	2.53	2.02
7	Stall torque	mNm	466	497	595	636
8	Starting current	A	33.3	17.8	14.9	12.7
9	Max. efficiency	%	76	77	79	79
Characteristics		Ω	0.36	1.35	2.42	3.78
10	Terminal resistance phase to phase	Ω	0.36	1.35	2.42	3.78
11	Terminal inductance phase to phase	mH	0.0464	0.186	0.379	0.592
12	Torque constant	mNm / A	14	28	40	50
13	Speed constant	rpm / V	682	341	239	191
14	Speed / torque gradient	rpm / mNm	17.6	16.5	14.4	14.4
15	Mechanical time constant	ms	9.41	8.82	7.74	7.73
16	Rotor inertia	gcm <sup>2</sup>	51.2	51.2	51.2	51.2

### Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 4.63 K / W
  - 18 Thermal resistance winding-housing 0.542 K / W
  - 19 Thermal time constant winding 3.78 s
  - 20 Thermal time constant motor 926 s
  - 21 Ambient temperature -40 ... +100°C
  - 22 Max. permissible winding temperature +155°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. permissible speed 12000 rpm
  - 24 Axial play at axial load < 10 N 0 mm
  - > 10 N 0.14 mm preloaded
  - 25 Radial play 9 N
  - 26 Max. axial load (dynamic) 211 N
  - 27 Max. force for press fits (static) (static, shaft supported) 5000 N
  - 28 Max. radial loading, 5 mm from flange 80 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 1
  - 30 Number of phases 3
  - 31 Weight of motor 460 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.            | 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 <sub>Hall</sub> 4.5 ... 24 VDC | PIN 5 |
|        | N.C.                             | PIN 6 |
- Connector Article number**
- Molex 430-25-0600
- Wiring diagram for Hall sensors see p. 27

### maxon Modular System

**Planetary Gearhead**

Ø42 mm  
3 - 15 Nm  
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**Encoder MR**  
256 - 1024 Imp.,  
3 channels  
Page 263

**Encoder HEDL 5540**  
500 Imp.,  
3 channels  
Page 269

**Brake AB 28**  
24 VDC  
0.4 Nm  
Page 317

**Recommended Electronics:**

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