

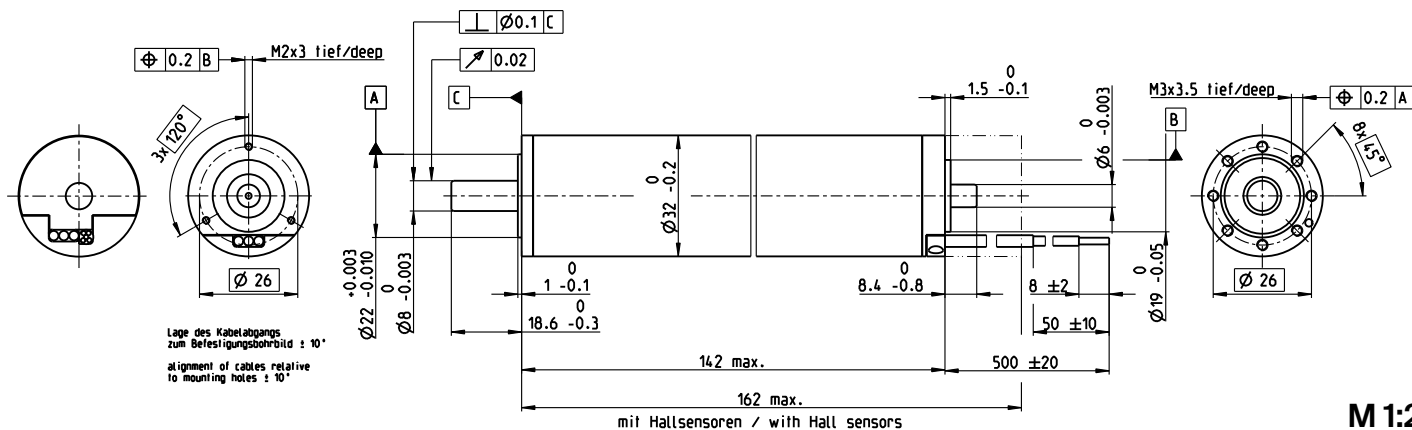
EC-4pole 32 Ø32 mm, brushless, 480 watt

Heavy Duty – for applications in oil

EC-4pole

A mit Hallensoren
with Hall sensors

B sensorlos
sensorless



M 1:2

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

Part Numbers

A with Hall sensors	397799
B sensorless	397800

Motor Data (provisional)

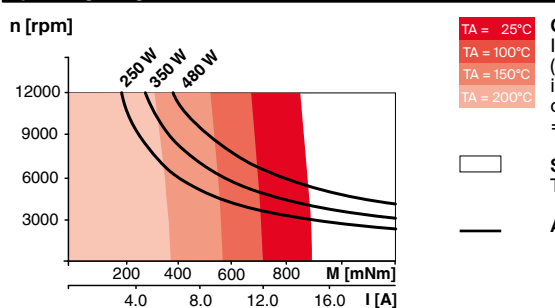
Values at nominal voltage and ambient temperature °C	25	100	150	200	
1 Nominal voltage	V	48	48	48	48
2 No load speed	rpm	6420	6630	6750	6860
3 No load current	mA	482	222	212	216
4 Nominal speed ¹⁾	rpm	4670	4420	4700	5340
5 Nominal torque (max. continuous torque) ¹⁾	mNm	804	762	596	379
6 Nominal current (max. continuous current)	A	11.4	10.9	8.75	5.78
7 Stall torque	mNm	3350	2520	2150	1860
8 Stall current	A	47.5	36.7	31.9	28.1
9 Max. efficiency	%	82	85	85	84
Characteristics					
10 Terminal resistance phase to phase	Ω	1.01	1.31	1.51	1.71
11 Terminal inductance phase to phase	mH	0.298	0.298	0.298	0.298
12 Torque constant	mNm/A	70.5	68.7	67.4	66.2
13 Speed constant	rpm/V	135	139	142	144
14 Speed / torque gradient	rpm/mNm	1.94	2.65	3.16	3.71
15 Mechanical time constant	ms	2.85	3.88	4.64	5.45
16 Rotor inertia	gcm ²	140	140	140	140

¹⁾ Values for operation in thermal equilibrium.

Specifications Operating Range Comments

Thermal data	
17 Thermal resistance housing-ambient	0.3 K/W
18 Thermal resistance winding-housing	0.53 K/W
19 Thermal time constant winding	17 s
20 Thermal time constant motor	129 s
21 Ambient temperature	-55...+200°C
22 Max. winding temperature	+240°C

Mechanical data (preloaded ball bearings)	
23 Max. speed	12 000 rpm
24 Axial play at axial load < 20 N	0 mm
> 20 N	0.14 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	16 N
27 Max. force for press fits (static) (static, shaft supported)	80 N
28 Max. radial load, 5 mm from flange	75 N



TA = 25°C 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	2
30 Number of phases	3
31 Weight of motor	860 g

Connection A, motor cable PTFE (AWG 14)

red	Motor winding 1
black	Motor winding 2
white	Motor winding 3

Connection A, sensors cable PTFE (AWG 24)

green V_{Hall} 4.5...24 V

blue GND

red Hall sensor 1

black Hall sensor 2

white Hall sensor 3

Connection B, motor cable PTFE (AWG 14)

red Motor winding 1

black Motor winding 2

white Motor winding 3

Wiring diagram for Hall sensors see p. 57

Application

- General**
- 2 - extreme temperature applications
 - 3 - vibration tested (according to MIL-STD810F/Jan2000 Fig. 514.5C-10)
 - operation in oil and high pressure (only minimal lubrication, therefore use under rated ambient conditions is not suggested)

Oil & Gas Industry
- oil, gas and geothermal wells

Notice

This motor contains leaded solder. It therefore does not fulfill the requirements for the permitted maximum concentration of hazardous substances in accordance with the EC directive 2011/65/EC (RoHS) for all applications. The motor may therefore only be used for devices that are not subject to this directive.

Reference medium: Shell Tellus oil T32
Operation in oil of different viscosity will affect the motor data.

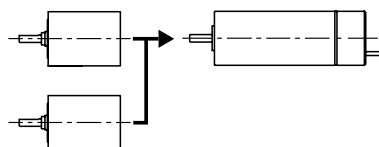
maxon Modular System

Planetary Gearhead

Ø32 mm
3.0 - 8.0 Nm
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Planetary Gearhead

Ø42 mm
10 - 50 Nm
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