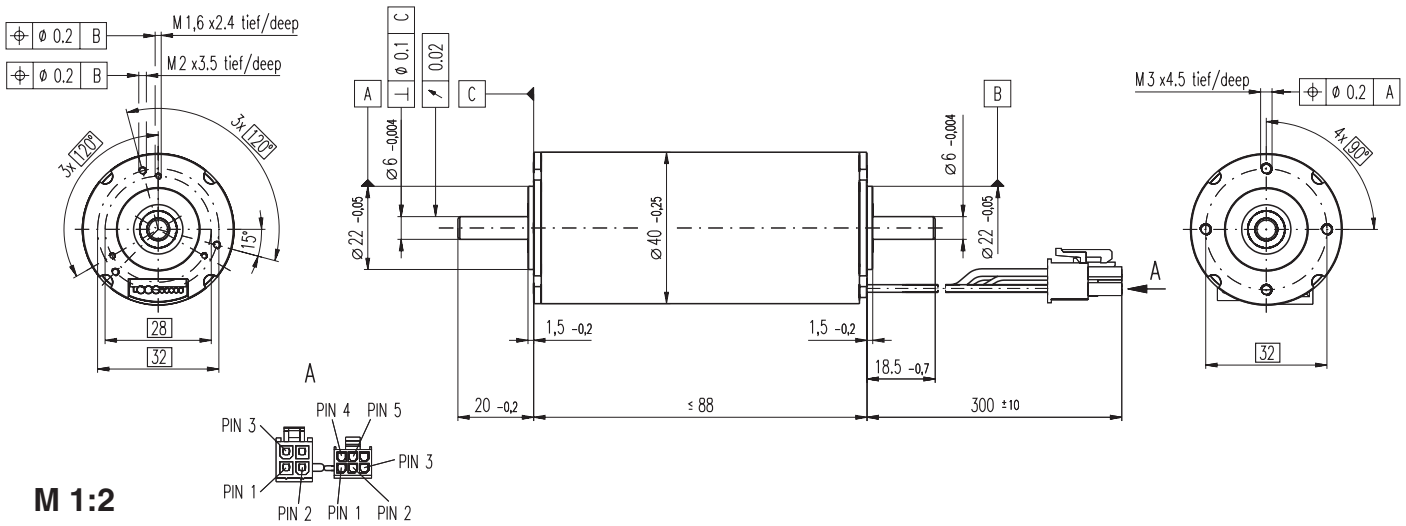
EC-max 40 ∅40 mm, brushless, 120 Watt



M 1:2

Stock program
Standard program
Special program (on request)

			Order Number							
			283870	283871	283872	283873				
Motor Data										
	Values at nominal voltage									
1	Nominal voltage	V	48.0	48.0	48.0	48.0				
2	No load speed	rpm	10100	7240	4720	3610				
3	No load current	mA	348	202	105	71.4				
4	Nominal speed	rpm	9280	6290	3770	2670				
5	Nominal torque (max. continuous torque)	mNm	164	183	203	212				
6	Nominal current (max. continuous current)	A	3.95	3.08	2.19	1.74				
7	Stall torque	mNm	2090	1490	1050	838				
8	Starting current	A	46.7	23.7	10.9	6.68				
9	Max. efficiency	%	84	83	82	81				
	Characteristics									
10	Terminal resistance phase to phase	Ω	1.03	2.02	4.40	7.19				
11	Terminal inductance phase to phase	mH	0.204	0.400	0.937	1.60				
12	Torque constant	mNm / A	44.8	62.8	96.1	126				
13	Speed constant	rpm / V	213	152	99.4	76.1				
14	Speed / torque gradient	rpm / mNm	4.89	4.90	4.55	4.35				
15	Mechanical time constant	ms	5.17	5.19	4.81	4.61				
16	Rotor inertia	gcm²	101	101	101	101				

Specifications

Thermal data

17	Thermal resistance housing-ambient	3.45 K / W
18	Thermal resistance winding-housing	0.29 K / W
19	Thermal time constant winding	3.87 s
20	Thermal time constant motor	1140 s
21	Ambient temperature	-20 ... +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
25	Radial play	preloaded
26	Max. axial load (dynamic)	9 N
27	Max. force for press fits (static)	170 N
	(static, shaft supported)	5000 N
28	Max. radial loading, 5 mm from flange	80 N

Other specifications

29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	650 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

Stecker **Artikelnummer**
Molex 39-01-2040

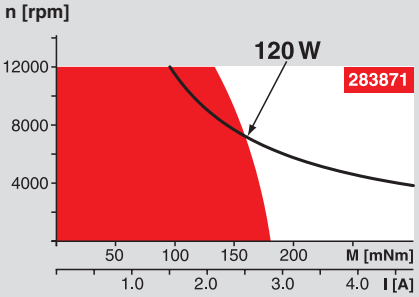
Connection Sensoren (Cable AWG 26)

yellow	Hall sensor 1	Pin 1
brown	Hall sensor 2	Pin 2
grey	Hall sensor 3	Pin 3
blue	GND	Pin 4
green	V_{Hall} 4.5 … 24 VDC	Pin 5
	N.C.	Pin 6

Stecker **Artikelnummer**
Molex 430-25-0600

Wiring diagram for Hall sensors see page 27

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.

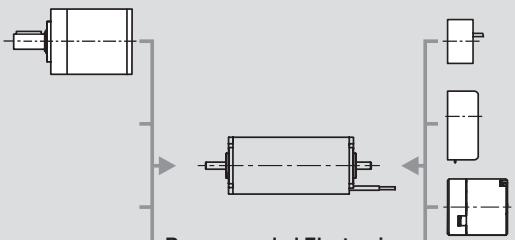
Short term operation
The motor may be briefly overloaded (recurring).

Assigned power rating

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead
∅52 mm
4 - 30 Nm
Page 248



Encoder MR
256 - 1024 CPT,
3 channels
Page 259

Encoder HEDL 5540
500 CPT,
3 channels
Page 266

Brake AB 28
∅28 mm
24 VDC, 0.4 Nm
Page 307

Recommended Electronics:

DECS 50/5	Page 284
DEC 50/5	285
DECV 50/5	286
DEC 70/10	286
DES 50/5	287
DES 70/10	287
EPOS 70/10	295
EPOS2 50/5	295
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