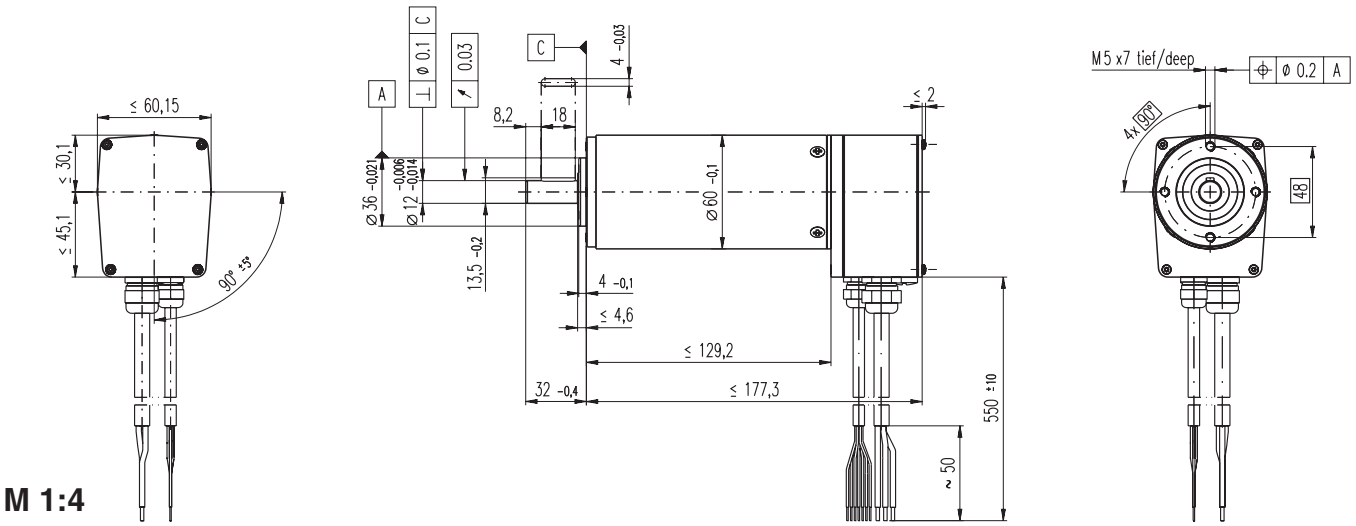
EC 60 ∅60 mm, brushless, 400 Watt, CE approved



M 1:4

Stock program
Standard program
Special program (on request)

Order Number

			167132	167131
Motor Data				
	Values at nominal voltage			
1	Nominal voltage	V	48.0	48.0
2	No load speed	rpm	5370	3100
3	No load current	mA	733	304
4	Nominal speed	rpm	4960	2680
5	Nominal torque (max. continuous torque)	mNm	747	830
6	Nominal current (max. continuous current)	A	9.38	5.85
7	Stall torque	mNm	11800	6820
8	Starting current	A	139	46.4
9	Max. efficiency	%	86	85
	Characteristics			
10	Terminal resistance phase to phase	Ω	0.345	1.03
11	Terminal inductance phase to phase	mH	0.273	0.82
12	Torque constant	mNm / A	84.9	147
13	Speed constant	rpm / V	113	65.0
14	Speed / torque gradient	rpm / mNm	0.457	0.457
15	Mechanical time constant	ms	3.98	3.98
16	Rotor inertia	gcm²	831	831

Specifications

Thermal data

17	Thermal resistance housing-ambient	1.3 K / W
18	Thermal resistance winding-housing	0.5 K / W
19	Thermal time constant winding	33.7 s
20	Thermal time constant motor	1200 s
21	Ambient temperature	-20 ... +100°C
22	Max. permissible winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. permissible speed	7000 rpm
24	Axial play at axial load < 30 N	0 mm
	> 30 N	max. 0.14 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	26 N
27	Max. force for press fits (static)	320 N
	(static, shaft supported)	8000 N
28	Max. radial loading, 5 mm from flange	240 N

Other specifications

29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	2450 g
	Protection	IP54

Values listed in the table are nominal.

Connection Motor (Cable AWG 16)

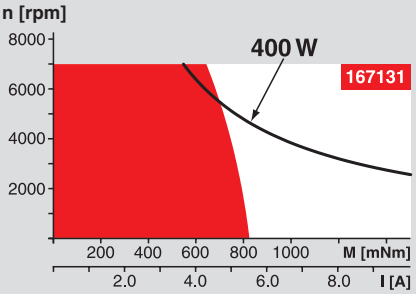
Cable 1	Motor winding 1
Cable 2	Motor winding 2
Cable 3	Motor winding 3

Connection Sensors (Cable AWG 24)

white	Hall sensor 3
brown	Hall sensor 2
green	Hall sensor 1
yellow	GND
grey	V_{Hall} 4.5 ... 24 VDC
blue	Temperature monitoring (PTC)
pink	Temperature monitoring (PTC)

Temperature monitoring
PTC resistance Micropille 110°C,
R 25°C < 0.5 kΩ, R 105°C = 1.2 ... 1.5 kΩ,
R 115°C = 7 ... 13 kΩ, R 120°C = 18 ... 35 kΩ
Wiring diagram for Hall sensors see p. 26
Option: Motor connection with plug

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.

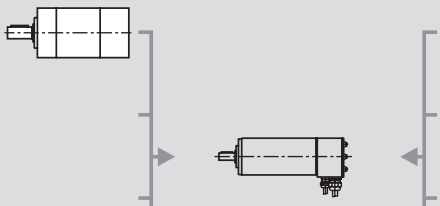
Short term operation
The motor may be briefly overloaded (recurring).

Assigned power rating

maxon Modular System

Overview on page 17 - 21

Planetary Gearhead
∅81 mm
20 - 120 Nm
Page 238



Recommended Electronics:

DEC 50/5	Page 271
DEC 70/10	271
DES 50/5	272
DES 70/10	272
EPOS 70/10	279
MIP 50	281
MIP 100	281
Notes	**17**

Encoder HEDL 9140
500 CPT,
3 channels
Page 255

Resolver Res
∅26 mm
10 V
Page 260

Brake AB 41
∅41 mm
24 VDC, 2.0 Nm
Page 290