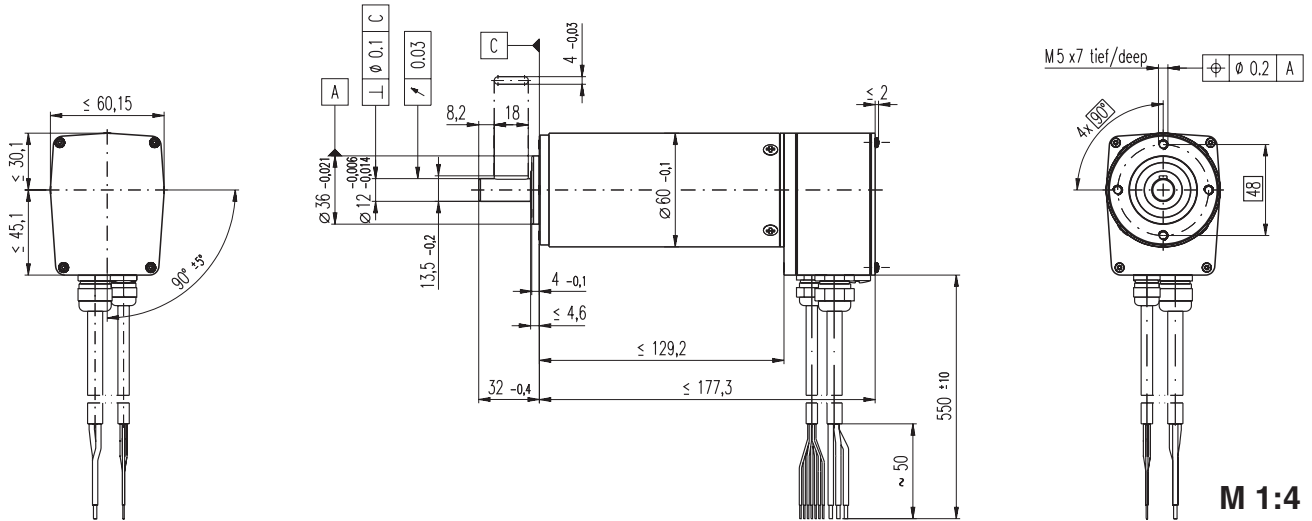


# EC 60 Ø60 mm, brushless, 400 Watt, CE approved



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

## Order Number

167132      167131

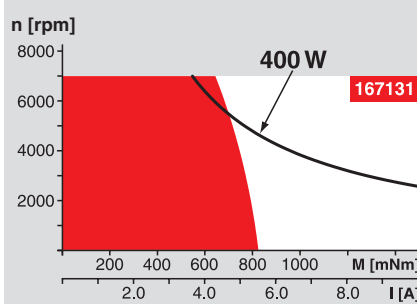
## Motor Data

Values at nominal voltage		167132	167131	
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
<b>Characteristics</b>				
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	gcm <sup>2</sup>	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 to 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<sub>Hall</sub> 4.5 ... 24 VDC
  - blue Temperatursensor (PTC)
  - pink Temperatursensor (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 page 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 16 - 21

**Planetary Gearhead**  
Ø81 mm  
20 - 120 Nm  
Page 241

**Encoder HEDL 9140**  
500 CPT,  
3 channels  
Page 259

**Resolver Res**  
Ø26 mm  
10 V  
Page 264

**Brake AB 41**  
Ø41 mm  
24 VDC, 2.0 Nm  
Page 302

**Recommended Electronics:**

DEC 50/5	Page 277
DEC 70/10	278
DES 50/5	279
DES 70/10	279
EPOS 70/10	287
MIP 50	289
MIP 100	289
<b>Notes</b>	<b>20</b>