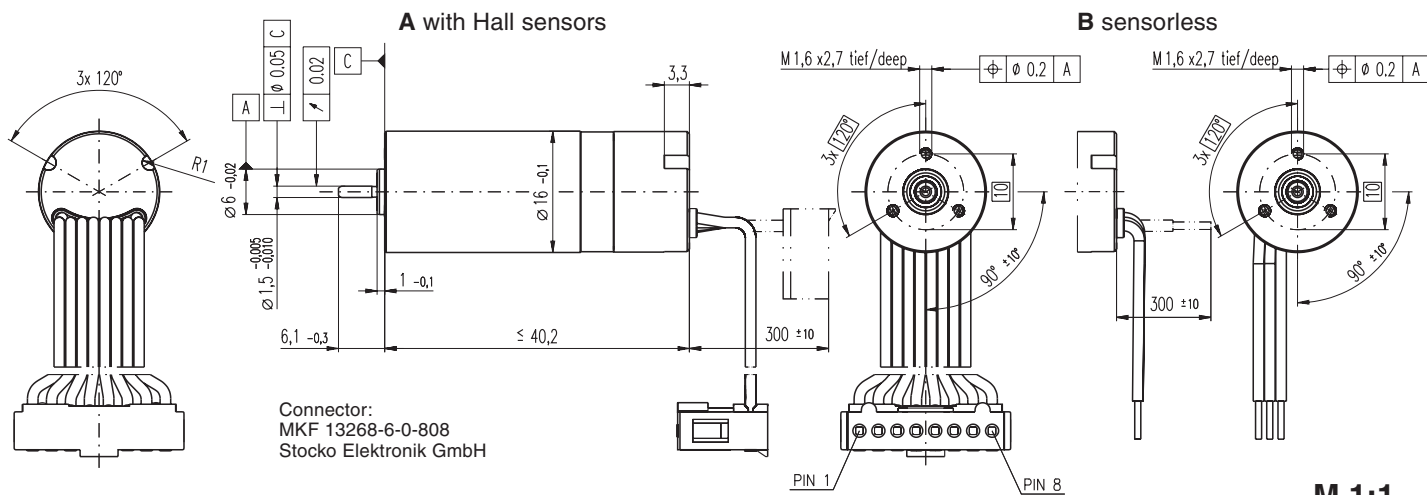


# EC 16 $\varnothing 16$ mm, brushless, 15 Watt



M 1:1

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

### Order Number

A with Hall sensors  
B sensorless

266521	236918	266519	236917
266523	236922	266522	236921

### Motor Data

Values at nominal voltage						
1	Nominal voltage	V	12.0	18.0	24.0	32.0
2	No load speed	rpm	33900	37400	39200	38400
3	No load current	mA	234	179	144	105
4	Nominal speed	rpm	28200	31700	33700	32800
5	Nominal torque (max. continuous torque)	mNm	4.96	4.76	4.89	4.77
6	Nominal current (max. continuous current)	A	1.71	1.22	0.984	0.707
7	Stall torque	mNm	31.2	33.1	36.9	34.4
8	Starting current	A	9.47	7.38	6.47	4.43
9	Max. efficiency	%	72	72	73	72
Characteristics						
10	Terminal resistance phase to phase	$\Omega$	1.27	2.44	3.71	7.22
11	Terminal inductance phase to phase	mH	0.0350	0.0648	0.105	0.194
12	Torque constant	mNm / A	3.30	4.48	5.71	7.77
13	Speed constant	rpm / V	2900	2130	1670	1230
14	Speed / torque gradient	rpm / mNm	1110	1160	1090	1140
15	Mechanical time constant	ms	8.75	9.10	8.53	8.98
16	Rotor inertia	gcm <sup>2</sup>	0.750	0.750	0.750	0.750

### Specifications

- Thermal data**
- 17 Thermal resistance housing-ambient 15.6 K / W
  - 18 Thermal resistance winding-housing 1.8 K / W
  - 19 Thermal time constant winding 1.24 s
  - 20 Thermal time constant motor 265 s
  - 21 Ambient temperature -20 ... +100°C
  - 22 Max. permissible winding temperature +125°C
- Mechanical data (preloaded ball bearings)**
- 23 Max. permissible speed 50000 rpm
  - 24 Axial play at axial load < 3.5 N 0 mm
  - > 3.5 N max. 0.14 mm preloaded
  - 25 Radial play 3 N
  - 26 Max. axial load (dynamic) 40 N
  - 27 Max. force for press fits (static) (static, shaft supported) 250 N
  - 28 Max. radial loading, 5 mm from flange 10 N
- Other specifications**
- 29 Number of pole pairs 1
  - 30 Number of phases 3
  - 31 Weight of motor 34 g

Values listed in the table are nominal.

### Connection A

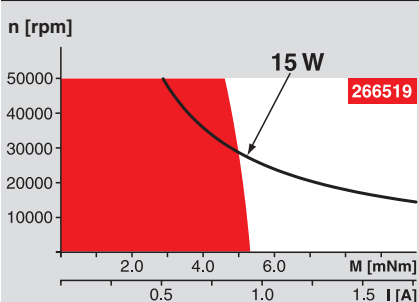
- brown Motor winding 1 Pin 1
- red Motor winding 2 Pin 2
- orange Motor winding 3 Pin 3
- yellow V<sub>Hall</sub> 4.5 ... 24 VDC Pin 4
- green GND Pin 5
- blue Hall sensor 1 Pin 6
- violet Hall sensor 2 Pin 7
- grey Hall sensor 3 Pin 8

### Connection B (Cable AWG 24)

- brown Motor winding 1
- red Motor winding 2
- orange Motor winding 3

Wiring diagram for Hall sensors see page 26

### Operating Range

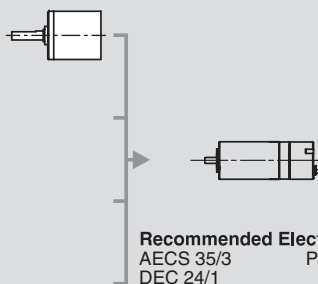


### Comments

- 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

**Planetary Gearhead**  
 $\varnothing 16$  mm  
0.1 - 0.3 Nm  
Page 215



- Recommended Electronics:**
- AECS 35/3 Page 276
  - DEC 24/1 276
  - DEC 24/3 277
  - DEC 50/5 277
  - DECV 50/5 278
  - DES 50/5 279
  - EPOS 24/1 286
  - Notes** 20

### Overview on page 16 - 21

**for type A:**  
**Encoder MR**  
128 / 256 / 512 CPT,  
Page 249