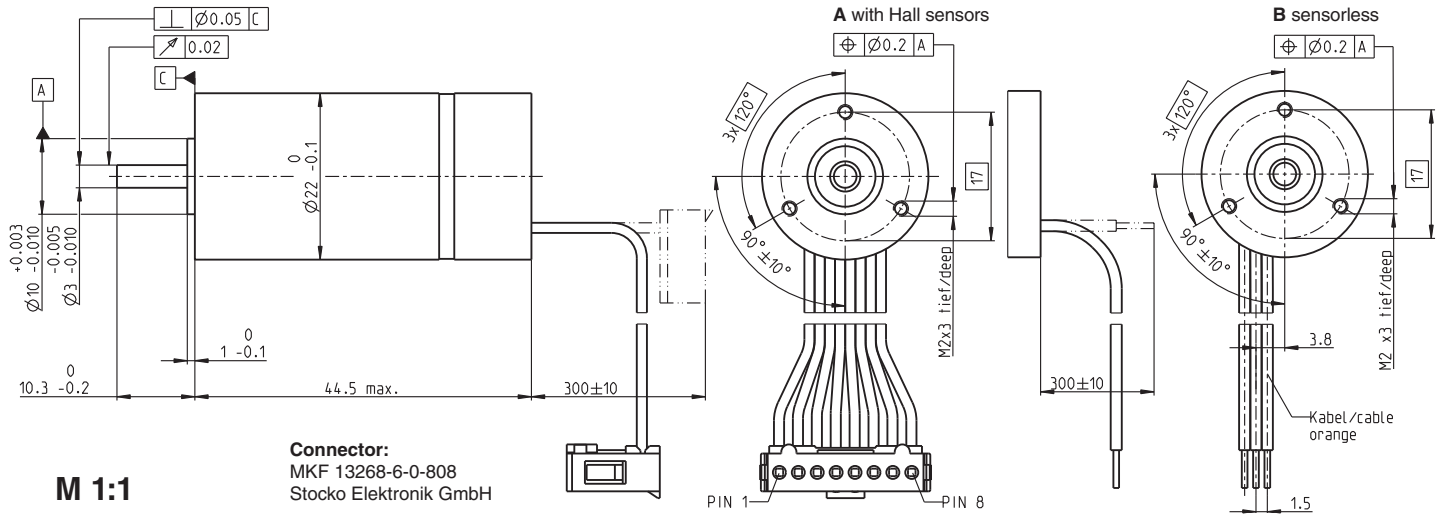


# EC 22 Ø22 mm, brushless, 40 Watt



M 1:1

Connector:  
MKF 13268-6-0-808  
Stocko Elektronik GmbH

maxon EC motor

	Order Number			
Stock program				
Standard program				
Special program (on request)				
<b>A with Hall sensors</b>	<b>386657</b>	<b>386658</b>	<b>386659</b>	<b>386660</b>
<b>B sensorless</b>	<b>386661</b>	<b>386662</b>	<b>386663</b>	<b>386664</b>

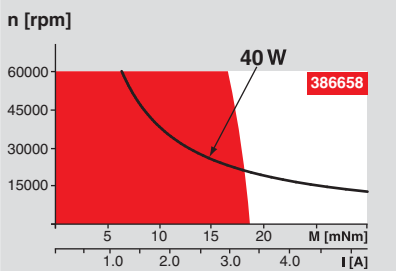
### Motor Data

Values at nominal voltage		12	24	36	48
1 Nominal voltage	V	12	24	36	48
2 No load speed	rpm	30400	35100	31600	34200
3 No load current	mA	268	166	94.3	79.5
4 Nominal speed	rpm	27000	31900	28400	31000
5 Nominal torque (max. continuous torque)	mNm	18.6	19.7	20	19.8
6 Nominal current (max. continuous current)	A	5.18	3.16	1.92	1.54
7 Stall torque	mNm	184	243	221	237
8 Starting current	A	49.1	37.4	20.4	17.7
9 Max. efficiency	%	86	87	87	87
Characteristics		0.244	0.641	1.76	2.71
10 Terminal resistance phase to phase	Ω	0.244	0.641	1.76	2.71
11 Terminal inductance phase to phase	mH	0.0182	0.0546	0.152	0.231
12 Torque constant	mNm / A	3.75	6.49	10.8	13.3
13 Speed constant	rpm / V	2550	1470	882	716
14 Speed / torque gradient	rpm / mNm	166	145	144	145
15 Mechanical time constant	ms	4.16	3.64	3.6	3.64
16 Rotor inertia	gcm <sup>2</sup>	2.39	2.39	2.39	2.39

### Specifications

Thermal data		10 K / W
17 Thermal resistance housing-ambient		10 K / W
18 Thermal resistance winding-housing		2 K / W
19 Thermal time constant winding		4.85 s
20 Thermal time constant motor		278 s
21 Ambient temperature	-20 ... +100°C	
22 Max. permissible winding temperature	+155°C	
Mechanical data (preloaded ball bearings)		
23 Max. permissible speed		60000 rpm
24 Axial play at axial load < 5 N		0 mm
	> 5 N	max. 0.14 mm
25 Radial play		preloaded
26 Max. axial load (dynamic)		4 N
27 Max. force for press fits (static)		45 N
(static, shaft supported)		250 N
28 Max. radial loading, 5 mm from flange		16 N

### 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**

### Other specifications

29 Number of pole pairs	1
30 Number of phases	3
31 Weight of motor	85 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	VHall 3 ... 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

Wiring diagram for Hall sensors see p. 27

### Connection B (Cable AWG 24)

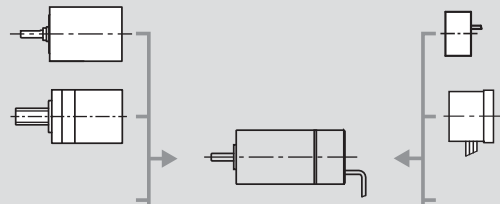
brown	Motor winding 1
red	Motor winding 2
orange	Motor winding 3

### maxon Modular System

Overview on page 16 - 21

**Planetary Gearhead**  
Ø22 mm  
0.5 - 3.4 Nm  
Page 223 / 224

**Spindle Drive**  
Ø22 mm  
Page 247 / 248



**for type A:**  
**Encoder MR**  
128 / 256 / 512 CPT,  
Page 261

**for type B:**  
**Resolver**  
on request

### Recommended Electronics:

DECS 50/5	Page 289
DEC 24/3, Module 24/2	290
DEC 50/5, Module 50/5	291
DECV 50/5	297
DES 50/5	298
EPOS2 Module 36/2	304
EPOS2 24/5, EPOS2 50/5	305
EPOS2 P 24/5	308
<b>Notes</b>	<b>20</b>