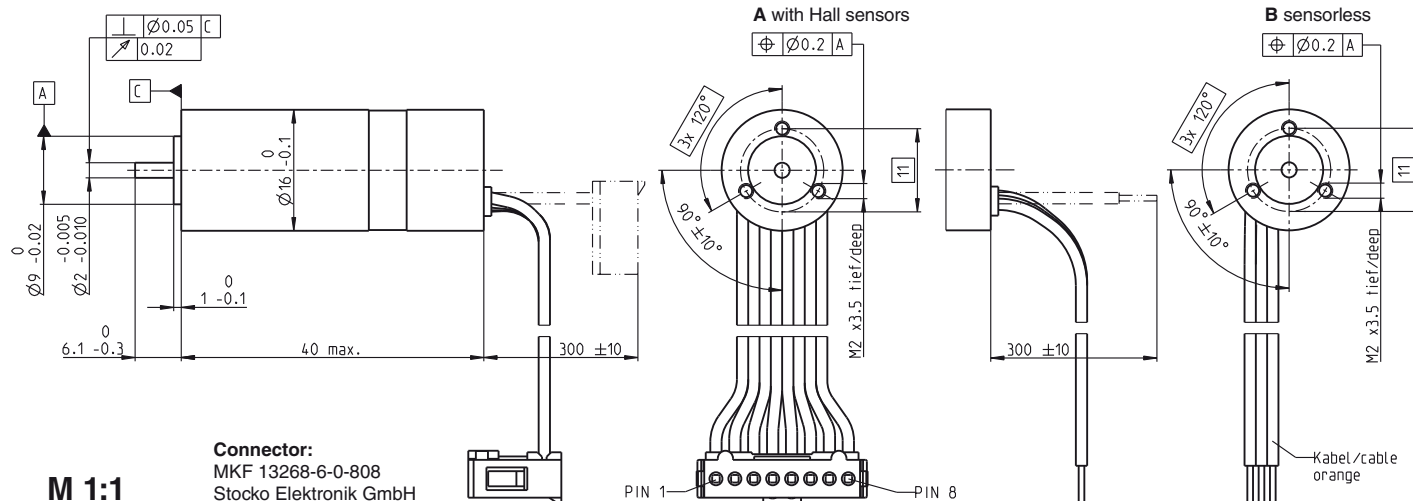


EC 16 Ø16 mm, brushless, 30 Watt



M 1:1

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

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

Article Numbers

A with Hall sensors
B sensorless

400160	405812	400161	405813	400162
404079	405817	404080	405818	404081

Motor Data

Values at nominal voltage						
1 Nominal voltage	V	12	18	24	36	48
2 No load speed	rpm	44700	42400	43000	46000	39800
3 No load current	mA	268	165	126	93.4	56.1
4 Nominal speed	rpm	39400	37300	38000	40900	34700
5 Nominal torque (max. continuous torque)	mNm	8.02	8.33	8.48	8.06	8.26
6 Nominal current (max. continuous current)	A	3.37	2.2	1.7	1.16	0.766
7 Stall torque	mNm	75.5	78	82.7	82.3	72.5
8 Starting current	A	29.8	19.4	15.6	11.1	6.35
9 Max. efficiency	%	82	83	83	83	82
Characteristics						
10 Terminal resistance phase to phase	Ω	0.403	0.928	1.53	3.24	7.56
11 Terminal inductance phase to phase	mH	0.0235	0.059	0.102	0.2	0.477
12 Torque constant	mNm/A	2.54	4.02	5.29	7.4	11.4
13 Speed constant	rpm/V	3760	2380	1810	1290	836
14 Speed/torque gradient	rpm/mNm	598	549	524	565	554
15 Mechanical time constant	ms	4.54	4.17	3.98	4.29	4.21
16 Rotor inertia	gcm ²	0.725	0.725	0.725	0.725	0.725

Specifications

Thermal data		
17 Thermal resistance housing-ambient	16.3 K/W	
18 Thermal resistance winding-housing	1.68 K/W	
19 Thermal time constant winding	1.97 s	
20 Thermal time constant motor	240 s	
21 Ambient temperature	-20...+100°C	
22 Max. permissible winding temperature	+155°C	

Mechanical data (preloaded ball bearings)		
23 Max. permissible speed	70000 rpm	
24 Axial play at axial load < 3.5 N	0 mm	
	> 3.5 N	max. 0.14 mm
25 Radial play	preloaded	
26 Max. axial load (dynamic)	3 N	
27 Max. force for press fits (static)	35 N	
	(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

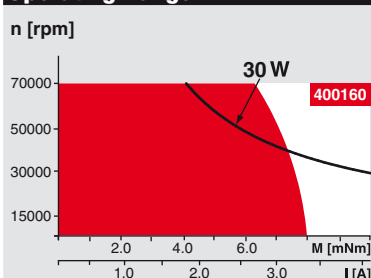
brown	Motor winding 1	Pin 1
red	Motor winding 2	Pin 2
orange	Motor winding 3	Pin 3
yellow	V _{Hall} 3...24 VDC	Pin 4
green	GND	Pin 5
blue	Hall sensor 1	Pin 6
violet	Hall sensor 2	Pin 7
grey	Hall sensor 3	Pin 8

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

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

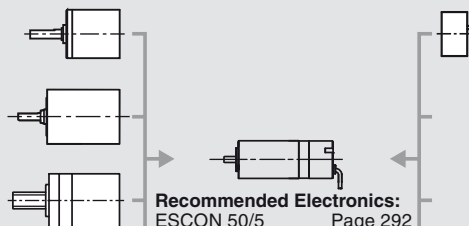
maxon Modular System

Overview on page 16 - 21

Planetary Gearhead
Ø16 mm
0.1 - 0.6 Nm
Page 217/218

Planetary Gearhead
Ø22 mm
0.5 - 1.0 Nm
Page 224

Spindle Drive
Ø16 mm
Page 251/252



Recommended Electronics:

ESCON 50/5	Page 292
DECS 50/5	297
DEC Module 24/2	298
DEC 24/3	298
DEC Module 50/5	299
DES 50/5	306
EPOS2 24/2, Module 36/2	312
EPOS2 24/5, EPOS2 50/5	313
EPOS2 P 24/5	316
EPOS3 70/10 EtherCAT	319
Notes	20

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