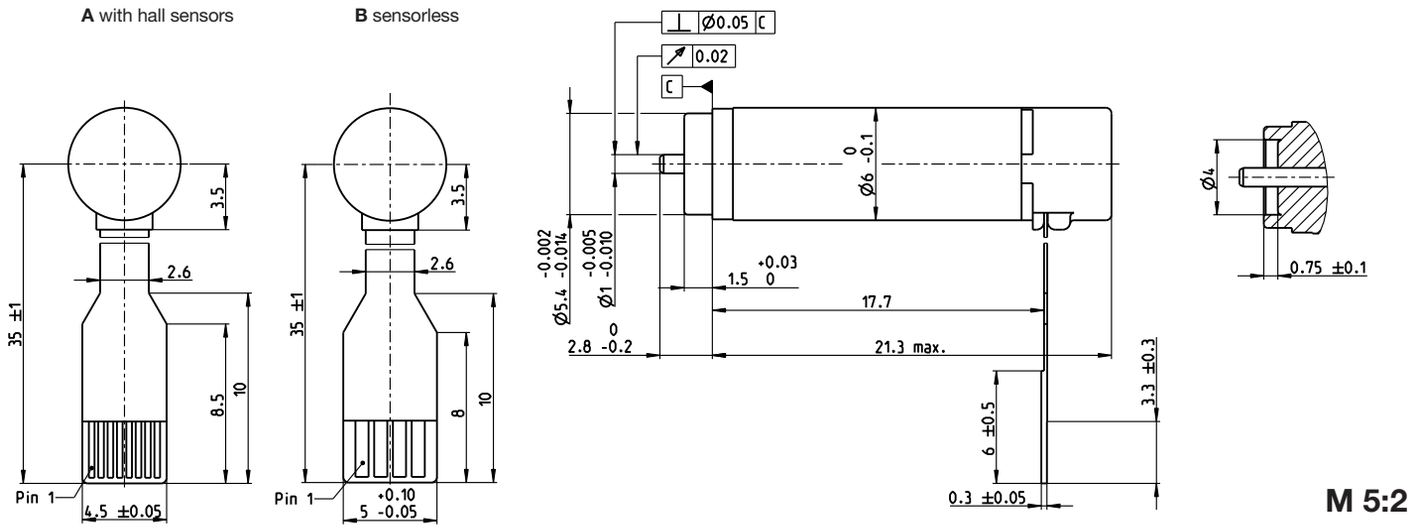
EC 6 ∅6 mm, brushless, 2 Watt



Stock program
Standard program
Special program (on request)

	Part Numbers								
A with Hall sensors	455417	**455418**	455419						
B sensorless	455420	455421	455422						

Motor Data (provisional)									
Values at nominal voltage									
1 Nominal voltage	V	3	6	12					
2 No load speed	rpm	73200	61900	62700					
3 No load current	mA	209	78.3	39.8					
4 Nominal speed	rpm	52600	45100	47000					
5 Nominal torque (max. continuous torque)	mNm	0.394	0.398	0.41					
6 Nominal current (max. continuous current)	A	1.23	0.512	0.266					
7 Stall torque	mNm	1.45	1.52	1.7					
8 Stall current	A	3.92	1.72	0.97					
9 Max. efficiency	%	61	64	65					
Characteristics									
10 Terminal resistance phase to phase	Ω	0.766	3.49	12.4					
11 Terminal inductance phase to phase	mH	0.005	0.03	0.118					
12 Torque constant	mNm/A	0.37	0.882	1.75					
13 Speed constant	rpm/V	25800	10800	5460					
14 Speed/torque gradient	rpm/mNm	53400	42800	38500					
15 Mechanical time constant	ms	3.93	3.15	2.84					
16 Rotor inertia	gcm²	0.00703	0.00703	0.00703					

Specifications

Thermal data

17	Thermal resistance housing-ambient	65.8 K/W
18	Thermal resistance winding-housing	13.2 K/W
19	Thermal time constant winding	1.34 s
20	Thermal time constant motor	70.4 s
21	Ambient temperature	-20...+100°C
22	Max. winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. speed		100000 rpm
24	Axial play at axial load	< 0.15 N	0 mm
		> 0.15 N	max. 0.06 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		0.1 N
27	Max. force for press fits (static)		10 N
28	Max. radial load, 2 mm from flange		2 N

Other specifications

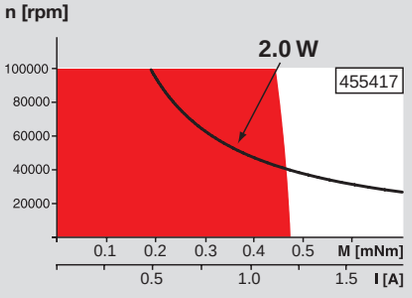
29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	3 g

Values listed in the table are nominal.

Connection	**with hall sensors**	**sensorless**
Pin 1	Motor winding 1	Motor winding 1
Pin 2	Motor winding 2	Motor winding 2
Pin 3	Motor winding 3	Motor winding 3
Pin 4	V_{Hall} 3.8...24 VDC	N.C.
Pin 5	GND	
Pin 6	Hall sensor 1	
Pin 7	Hall sensor 2	
Pin 8	Hall sensor 3	
Connector	**Part number**	**Part number**
Molex	52745-0897	52207-0460
FCI	SFV8R-2STBE1HLF	SFW4R-2STGE1LF

Pin for design with Hall sensors:
FPC, 8 pole, pitch 0.5 mm, top contact style
Wiring diagram for Hall sensors see page 35

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).

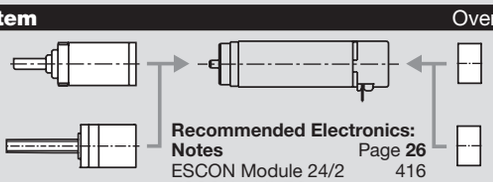
Assigned power rating

maxon Modular System

Overview on page 20–27

Planetary Gearhead
∅6 mm
0.002 - 0.03 Nm
Page 311

Spindle Drive
∅6 mm
Page 361–362



Recommended Electronics:

Notes	Page **26**
ESCON Module 24/2	416
ESCON 36/3 EC	417
ESCON Mod. 50/4 EC-S	417
DEC Module 24/2	420
EPOS2 24/2 EC	424
EPOS2 Module 36/2	424

for type B:
Encoder 6–8 MAG
64–256 CPT,
Page 384

for type B:
Encoder 6–8 OPT
128 CPT,
Page 394