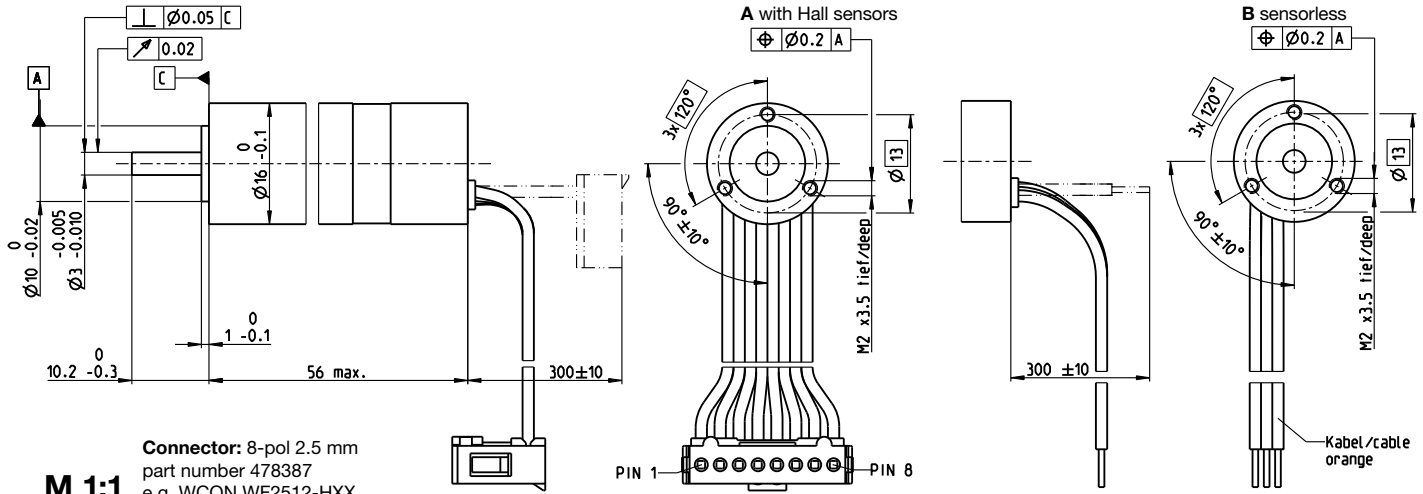


EC 16 Ø16 mm, brushless, 60 Watt

maxon EC motor



M 1:1

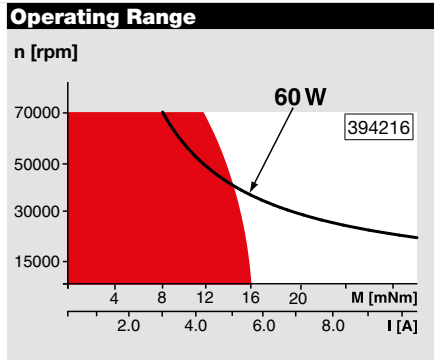
Connector: 8-pol 2.5 mm
part number 478387
e.g. WCON WF2512-HXX

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

		Part Numbers				
A with Hall sensors		394216	396916	395588	396928	405794
B sensorless		397162	397294	397292	397295	405795

Motor Data						
Values at nominal voltage						
1 Nominal voltage	V	12	18	24	32	48
2 No load speed	rpm	37100	43400	43400	43400	41700
3 No load current	mA	327	272	204	153	96.2
4 Nominal speed	rpm	32500	39200	39400	39500	37900
5 Nominal torque (max. continuous torque)	mNm	17.2	16.9	17	17	17.1
6 Nominal current (max. continuous current)	A	5.82	4.48	3.39	2.54	1.63
7 Stall torque	mNm	157	205	221	230	224
8 Stall current	A	51.4	52	42.2	32.8	20.5
9 Max. efficiency	%	85	86	87	87	87
Characteristics						
10 Terminal resistance phase to phase	Ω	0.233	0.346	0.569	0.976	2.34
11 Terminal inductance phase to phase	mH	0.02	0.033	0.059	0.104	0.254
12 Torque constant	mNm/A	3.06	3.94	5.25	7	10.9
13 Speed constant	rpm/V	3120	2420	1820	1360	873
14 Speed/torque gradient	rpm/mNm	238	213	197	190	187
15 Mechanical time constant	ms	2.66	2.39	2.21	2.13	2.09
16 Rotor inertia	gcm ²	1.07	1.07	1.07	1.07	1.07

Specifications	
Thermal data	
17 Thermal resistance housing-ambient	10.3 K/W
18 Thermal resistance winding-housing	1.2 K/W
19 Thermal time constant winding	2.53 s
20 Thermal time constant motor	299 s
21 Ambient temperature	-20...+100°C
22 Max. winding temperature	155°C
Mechanical data (preloaded ball bearings)	
23 Max. speed	70000 rpm
24 Axial play at axial load < 3.5 N	0 mm
	> 3.5 N
25 Radial play	max. 0.14 mm
26 Max. axial load (dynamic)	3 N
27 Max. force for press fits (static)	35 N
	(static, shaft supported)
28 Max. radial load, 5 mm from flange	250 N
	10 N



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	58 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
gray	Hall sensor 3	Pin 8

Wiring diagram for Hall sensors see p. 41

Connection B (Cable AWG 24)		
brown	Motor winding 1	
red	Motor winding 2	
orange	Motor winding 3	

maxon Modular System Overview on page 28-36

Planetary Gearhead Ø16 mm 0.2 - 0.6 Nm Page 321		Recommended Electronics: Notes Page 32
Planetary Gearhead Ø22 mm 0.5 - 1.0 Nm Page 325		
Planetary Gearhead Ø22 mm 0.5 - 2.0 Nm Page 328		ESCON 36/3 EC 427
Spindle Drive Ø16/22 mm Page 361-365		ESCON Mod. 50/4 EC-S 427
		ESCON Module 50/5 427
		ESCON 50/5 428
		ESCON 70/10 428
		DEC Module 50/5 430
		EPOS2 50/5 435
		EPOS2 70/10 435
		EPOS2 P 24/5 438
		EPOS4 Module/CB 50/5 442
		EPOS4 Module 50/8 443
		EPOS4 Comp. 50/8 CAN 443
		MAXPOS 50/5 447

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