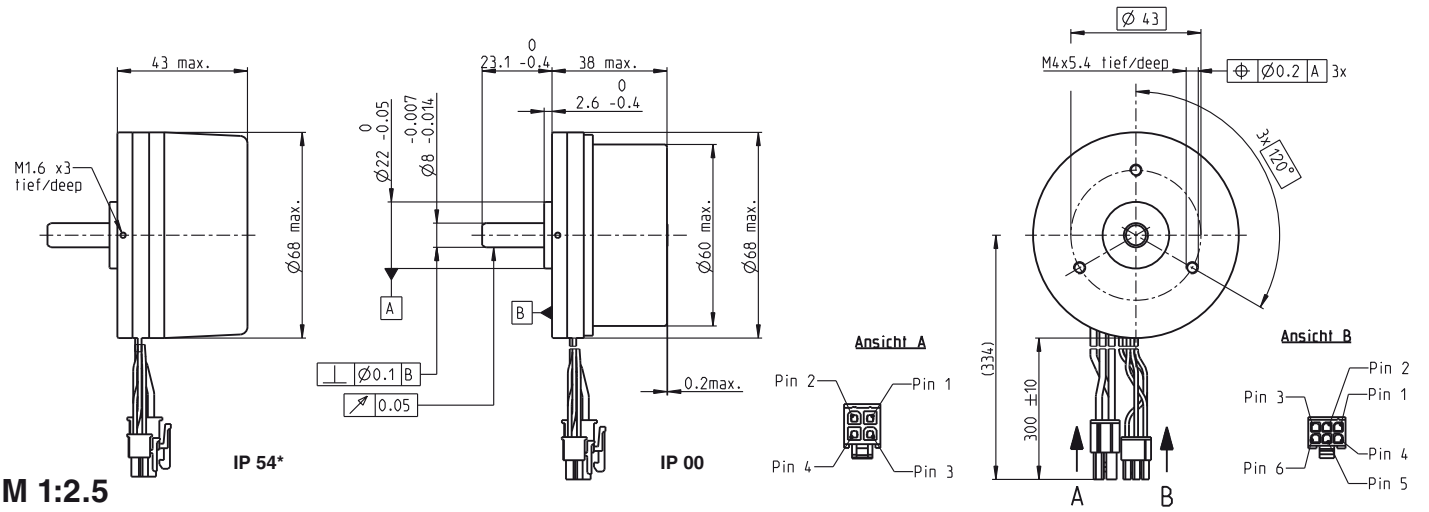
EC 60 flat ∅60 mm, brushless, 100 Watt

NEW



M 1:2.5

Stock program
Standard program
Special program (on request)

Article Numbers

IP 54* (with cover)	412819		408057		412821	
IP 00 (without cover)		412823		411678		412825

Motor Data (provisional)

	Values at nominal voltage							
1	Nominal voltage	V	12	12	24	24	48	48
2	No load speed	rpm	3710	3710	4250	4250	3970	3970
3	No load current	mA	671	671	419	419	187	187
4	Nominal speed	rpm	3290	3190	3850	3740	3580	3500
5	Nominal torque (max. continuous torque)	mNm	216	267	221	284	255	317
6	Nominal current (max. continuous current)	A	7.37	8.88	4.33	5.39	2.28	2.77
7	Stall torque	mNm	2820	2820	3740	3740	4190	4190
8	Starting current	A	93.5	93.5	78.2	78.2	43.8	43.8
9	Max. efficiency	%	84	84	86	86	88	88
	Characteristics							
10	Terminal resistance phase to phase	Ω	0.128	0.128	0.307	0.307	1.1	1.1
11	Terminal inductance phase to phase	mH	0.0615	0.0615	0.188	0.188	0.864	0.864
12	Torque constant	mNm/A	30.5	30.5	53.4	53.4	114	114
13	Speed constant	rpm/V	313	313	179	179	83.4	83.4
14	Speed/torque gradient	rpm/mNm	1.32	1.32	1.03	1.03	0.798	0.798
15	Mechanical time constant	ms	16.7	16.7	13	13	10.1	10.1
16	Rotor inertia	gcm²	1210	1210	1210	1210	1210	1210

Specifications

Thermal data

17	Thermal resistance housing-ambient	4.31 (2.41) K/W
18	Thermal resistance winding-housing	3.8 K/W
19	Thermal time constant winding	40 s
20	Thermal time constant motor	155 (86.9) s
21	Ambient temperature	-40…+100°C
22	Max. permissible winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. permissible speed		6000 rpm
24	Axial play at axial load	< 15.0 N	0 mm
		> 15.0 N	0.14 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		12 N
27	Max. force for press fits (static)		170 N
	(static, shaft supported)		6000 N
28	Max. radial loading, 7.5 mm from flange		100 N

Other specifications

29	Number of pole pairs	7
30	Number of phases	3
31	Weight of motor	470 g

Values listed in the table are nominal.

Connection motor (Cable AWG 16)

red	Motor winding 1	Pin 1
black	Motor winding 2	Pin 2
white	Motor winding 3	Pin 3
	N.C.	Pin 4

Connector	**Article number**
Molex	39-01-2040

Connection Sensors (Cable AWG 26)

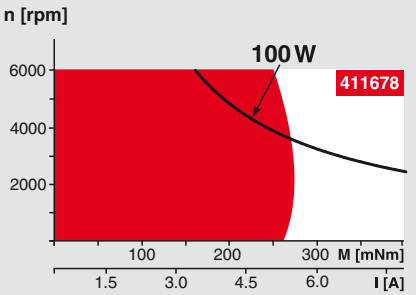
grey	Hall sensor 1	Pin 1
grey	Hall sensor 2	Pin 2
grey	Hall sensor 3	Pin 3
grey	GND	Pin 4
blue	V_{Hall} 4.5…18 VDC	Pin 5
	N.C.	Pin 6

Connector	**Article number**
Molex	430-25-0600

Wiring diagram for Hall sensors see p. 29

* Protection class only when installed with flange-side seal.

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
∅52 mm
4 - 30 Nm
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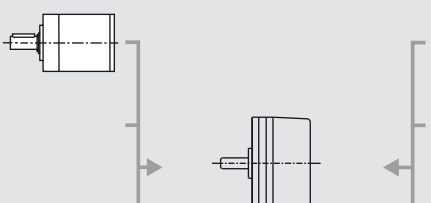

Encoder MILE
512 - 2048 CPT,
2 channels
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Recommended Electronics:

ESCON 50/5	Page 292
DEC Module 50/5	299
DEC 70/10	305
EPOS2 24/5	313
EPOS2 50/5	313
EPOS2 70/10	313
EPOS2 P 24/5	316
EPOS3 70/10 EtherCAT	319
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