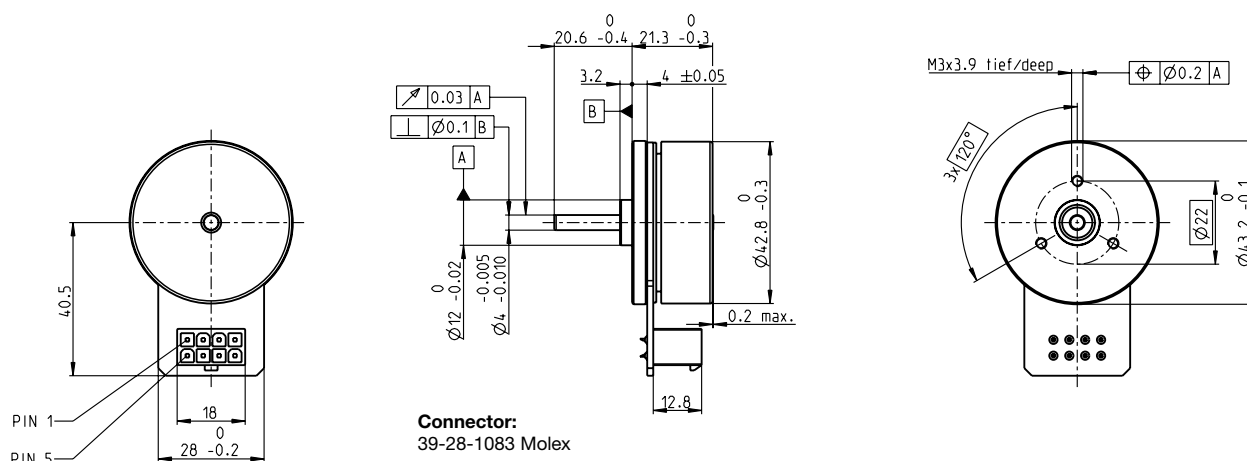


EC 45 flat Ø42.8 mm, brushless, 50 Watt



M 1:2

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

Part Numbers

[illegible]

Motor Data

Values at nominal voltage									
1	Nominal voltage	V	18	24	24	36			
2	No load speed	rpm	6720	6710	4730	3360			
3	No load current	mA	247	185	106	42.3			
4	Nominal speed	rpm	5190	5240	3480	2360			
5	Nominal torque (max. continuous torque)	mNm	97.1	83.4	69.6	90.5			
6	Nominal current (max. continuous current)	A	3.52	2.33	1.41	0.828			
7	Stall torque	mNm	975	780	402	484			
8	Stall current	A	38.8	23.3	8.47	4.81			
9	Max. efficiency	%	85	83	79	82			
Characteristics									
10	Terminal resistance phase to phase	Ω	0.464	1.03	2.83	7.48			
11	Terminal inductance phase to phase	mH	0.322	0.572	1.15	5.15			
12	Torque constant	mNm/A	25.1	33.5	47.5	101			
13	Speed constant	rpm/V	380	285	201	95			
14	Speed/torque gradient	rpm/mNm	7.02	8.77	12	7.07			
15	Mechanical time constant	ms	9.92	12.4	17	10			
16	Rotor inertia	acm ²	135	135	135	135			

Specifications

Thermal data		
17	Thermal resistance housing-ambient	4.53 K/W
18	Thermal resistance winding-housing	4.75 K/W
19	Thermal time constant winding	17.7 s
20	Thermal time constant motor	227 s
21	Ambient temperature	-40...+100°C
22	Max. winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. speed	10000 rpm
24	Axial play at axial load	0 mm
	< 4.0 N	0.14 mm
	> 4.0 N	preloaded
25	Radial play	3.8 N
26	Max. axial load (dynamic)	53 N
27	Max. force for press fits (static)	1000 N
	(static, shaft supported)	20 N
28	Max. radial load, 5 mm from flange	

Other specifications

29	Number of pole pairs	8
30	Number of phases	3
31	Weight of motor	110 g

Values listed in the table are nominal.

Connection

Connection

Pin 1	Hall sensor 1*
Pin 2	Hall sensor 2*
Pin 3	V _{Hall} 4.5...18 VDC
Pin 4	Motor winding 3
Pin 5	Hall sensor 3*
Pin 6	GND
Pin 7	Motor winding 1
Pin 8	Motor winding 2

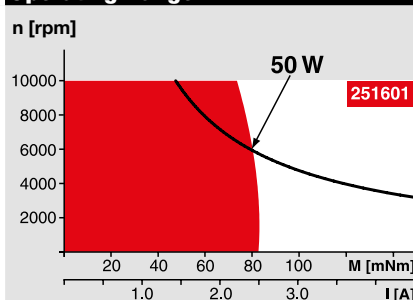
*Internal pull-up (7...13 kΩ) on pin 3

Wiring diagram for Hall sensors see p. 43

Cable

Connection cable Universal, L = 500 mm	339380
Connection cable to EPOS, L = 500 mm	354045

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.

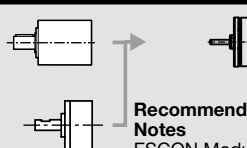
Short term operation
The motor may be briefly overloaded (recurring).

— Assigned power ratings

maxon Modular System

Planetary Gearhead
 Ø42 mm
 3 - 15 Nm
 Page 347

Spur Gearhead
 Ø45 mm
 0.5 - 2.0 Nm
 Page 349



Recommended Electronics:

Notes	Page
ESCON Module 24/2	426
ESCON 36/3 EC	427
ESCON Mod. 50/4 EC-S	427
ESCON Module 50/5	427
ESCON 50/5	428
DEC Module 24/2	430
DEC Module 50/5	430
EPOS2 24/2	434
EPOS2 Module 36/2	434
EPOS2 24/5, 50/5	435
EPOS2 P 24/5	438
EPOS4 Mod./CB 24/1.5	441
EPOS4 Module/CB 50/5	442
MAXPOS 50/5	447

Option

With Cable and Connector
(Ambient temperature -20...+100°C)

Overview on page 28–36

Encoder MILE
256 - 2048 CPT,
2 channels
Page 388