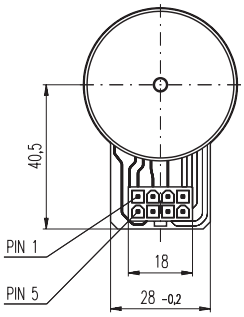
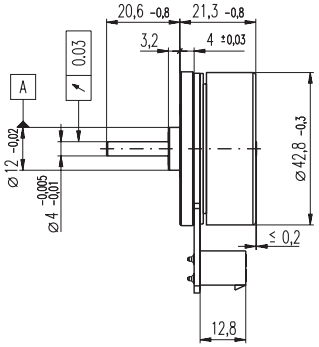
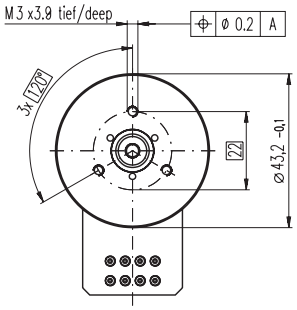
EC 45 flat ∅45 mm, brushless, 50 Watt







Connector:
39-28-1083
MOLEX

M 1:2

Stock program
Standard program
Special program (on request)

			Order Number							
	with hall sensors		339285	251601	339286	339287				
Motor Data										
	Values at nominal voltage									
1	Nominal voltage	V	18.0	24.0	24.0	36.0				
2	No load speed	rpm	6710	6700	4700	3360				
3	No load current	mA	294	201	116	46.9				
4	Nominal speed	rpm	5250	5260	3410	2320				
5	Nominal torque (max. continuous torque)	mNm	96.9	84.3	64.2	94.3				
6	Nominal current (max. continuous current)	A	3.54	2.36	1.32	0.861				
7	Stall torque	mNm	1100	822	337	488				
8	Starting current	A	43.6	24.5	7.10	4.86				
9	Max. efficiency	%	84.5	83	77	82				
	Characteristics									
10	Terminal resistance phase to phase	Ω	0.413	0.978	3.38	7.41				
11	Terminal inductance phase to phase	mH	0.322	0.573	1.15	5.15				
12	Torque constant	mNm / A	25.1	33.5	47.5	101				
13	Speed constant	rpm / V	380	285	201	95.0				
14	Speed / torque gradient	rpm / mNm	6.24	8.32	14.3	7.00				
15	Mechanical time constant	ms	8.82	11.8	20.3	9.90				
16	Rotor inertia	gcm²	135	135	135	135				

Specifications

Thermal data

17	Thermal resistance housing-ambient	4.25 K / W
18	Thermal resistance winding-housing	4.5 K / W
19	Thermal time constant winding	16.6 s
20	Thermal time constant motor	212 s
21	Ambient temperature	-40 ... +100°C
22	Max. permissible winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. permissible speed	10000 rpm
24	Axial play at axial load < 4.0 N	0 mm
	> 4.0 N	0.14 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	3.8 N
27	Max. force for press fits (static)	50 N
	(static, shaft supported)	1000 N
28	Max. radial loading, 7.5 mm from flange	5.5 N

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

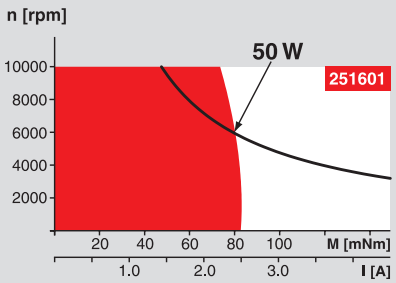
Pin 1	Hall sensor 1*
Pin 2	Hall sensor 2*
Pin 3	4.5 ... 18 VDC
Pin 4	Motor winding 3
Pin 5	Hall sensor 3*
Pin 6	GND
Pin 7	Motor winding 1
Pin 8	Motor winding 2

*internal pull-up (7 … 13 kΩ) on pin 3
Wiring diagram for Hall sensors see page 29

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).

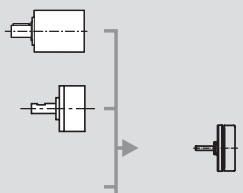
Assigned power rating

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead
∅42 mm
3 - 15 Nm
Page 244

Spur Gearhead
∅45 mm
0.5 - 2.0 Nm
Page 246



Recommended Electronics:

DECS 50/5	Page 284
DEC 24/3	285
DEC 50/5	285
DECV 50/5	286
EPOS 24/1	294
EPOS 24/5	294
EPOS P 24/5	297
Notes	**20**