

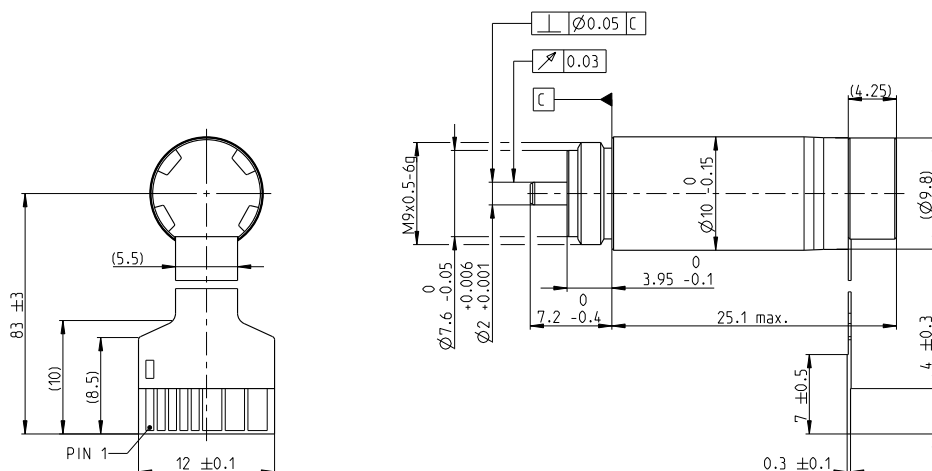
ECX SPEED 10 M Ø10 mm, brushless, BLDC motor

High Power

Key Data: 8/10.7 W, 1.8 mNm, 65 000 rpm



ECX SPEED



M 3:2

Motor data

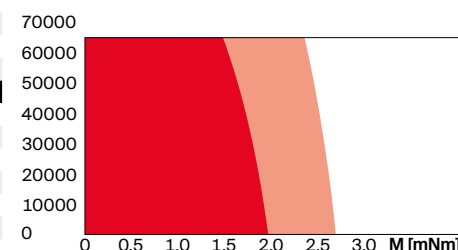
1_	Nominal voltage	V	9	18	36
2_	No load speed	rpm	59400	59500	58800
3_	No load current	mA	169	84.5	41.5
4_	Nominal speed	rpm	52300	53400	52800
5_	Nominal torque	mNm	1.83	1.85	1.83
6_	Nominal current (max. continuous current)	A	1.44	0.728	0.356
7_	Stall torque	mNm	15.6	18.5	18.4
8_	Stall current	A	11	6.5	3.19
9_	Max. efficiency	%	77	79	79
10_	Terminal resistance	Ω	0.82	2.77	11.3
11_	Terminal inductance	mH	0.00599	0.0239	0.0982
12_	Torque constant	mNm/A	1.42	2.85	5.77
13_	Speed constant	rpm/V	6700	3350	1650
14_	Speed/torque gradient	rpm/mNm	3860	3260	3230
15_	Mechanical time constant	ms	2.35	1.98	1.97
16_	Rotor inertia	gcm ²	0.0581	0.0581	0.0581

Thermal data

17_	Thermal resistance housing-ambient	K/W	39.8
18_	Thermal resistance winding-housing	K/W	4.43
19_	Thermal time constant winding	s	2.05
20_	Thermal time constant motor	s	178
21_	Ambient temperature	°C	-20 ... +100
22_	Max. winding temperature	°C	155

Operating range

n [rpm] winding 36 V



- Continuous operation
- Continuous operation with reduced thermal resistance R_{th2} 50%
- Short term operation

Mechanical data ball bearings

23_	Max. speed	rpm	65 000
24_	Axial play	mm	0 ... 0.14
	Preload	N	0.5
	Direction of force		pull
25_	Radial play		preloaded
26_	Max. axial load (dynamic)	N	0.5
27_	Max. force for press fits (static)	N	5.9
	(static, shaft supported)	N	400
28_	Max. radial load [mm from flange]	N	4.7 [5]

Other specifications

29_	Number of pole pairs	1
30_	Number of phases	3
31_	Weight of motor	g 12
32_	Typical noise level [rpm]	dBA 55 [50 000]

Modular system

Gear	Stages [opt.]	Sensor
373_GPX 10 A	1-5	496_ENX 10 MAG INT
374_GPX 12 A/C	1-4	
375_GPX 12 LN/LZ	1-4	
376_GPX 12 HP	2-4	

Details on catalog page 44

Motor Control

547_DEC Module 24/2
550_ESCON Module 24/2
551_ESCON 36/3 EC
557_ESCON2 Nano 24/2
564_EPOS4 Module 24/1.5
566_EPOS4 Compact 24/1.5

Connection flexprint cable (FPC)

Pin 1 V_{CC} 3.3...6.0 V
Pin 2 Hall sensor 3
Pin 3 Hall sensor 1
Pin 4 Hall sensor 2
Pin 5 GND
Pin 6 Motor winding 3
Pin 7 Motor winding 2
Pin 8 Motor winding 1
Output signals: CMOS compatible push-pull stage
Signal voltage, high: 3.3 V
Hall signals are generated by the MAG sensor.

Configuration

Front flange: Center thread/without thread
Shaft, front: Length/diameter

Possible matching connectors for the FPC connection:
11-pole, 1.0 mm pitch, e.g., Molex 52207-1185
Available maxon adapter connectors: 220300, 418719