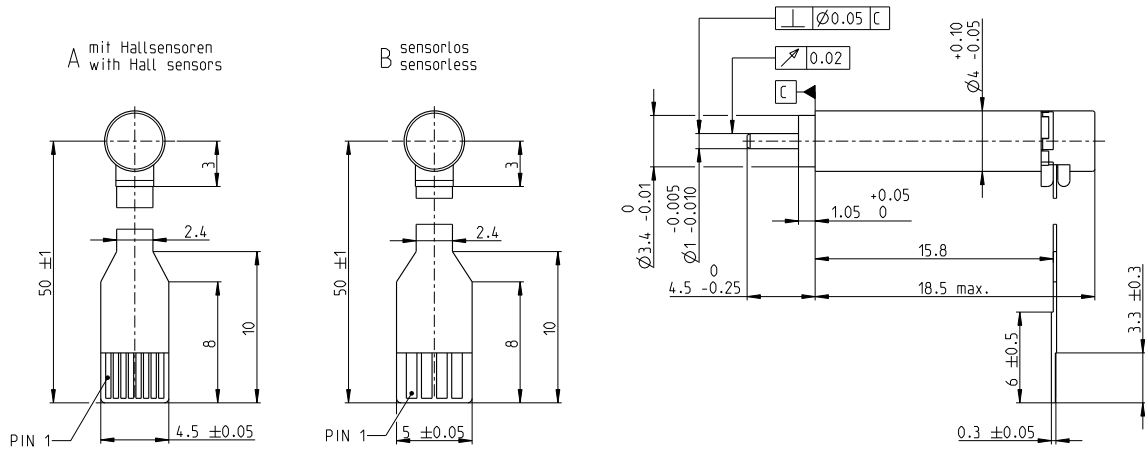


ECX SPEED 4 M $\varnothing 4$ mm, brushless, BLDC motor

Key Data: 1.5/1.0 W, 0.23 mNm, 50 000 rpm



ECX SPEED



M 2:1

Motor Data

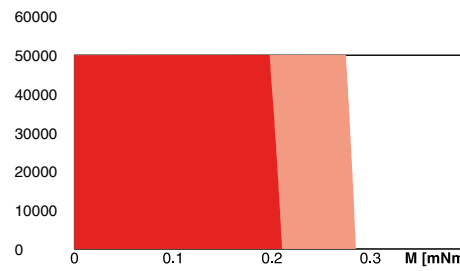
1_	Nominal voltage	V	3	6
2_	No load speed	rpm	35200	35400
3_	No load current	mA	28.8	14.4
4_	Nominal speed	rpm	11700	13400
5_	Nominal torque (max. continuous torque)	mNm	0.225	0.239
6_	Nominal current (max. continuous current)	A	0.317	0.167
7_	Stall torque	mNm	0.355	0.403
8_	Stall current	A	0.465	0.264
9_	Max. efficiency	%	57	59.3
10_	Terminal resistance	Ω	6.45	22.8
11_	Terminal inductance	mH	0.0749	0.285
12_	Torque constant	mNm/A	0.763	1.53
13_	Speed constant	rpm/V	12500	6240
14_	Speed/torque gradient	rpm/mNm	106000	92900
15_	Mechanical time constant	ms	1.23	1.08
16_	Rotor inertia	gcm ²	0.00111	0.00111

Thermal data

17_	Thermal resistance housing-ambient	K/W	96.7
18_	Thermal resistance winding-housing	K/W	15.2
19_	Thermal time constant winding	s	0.738
20_	Thermal time constant motor	s	58.5
21_	Ambient temperature	$^{\circ}$ C	-20 ... +80
22_	Max. winding temperature	$^{\circ}$ C	125

Operating Range

n [rpm] winding 3 V



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

Mechanical data

23_	Max. speed	rpm	50 000
24_	Max. Axial play	mm	0.06
	Preload	N	-
	Direction of force		-
25_	Radial play		0.012
26_	Max. axial load (dynamic)	N	0.1
27_	Max. force for press fits (static)	N	10
	(static, shaft supported)	N	10
28_	Max. radial load [mm from flange]	N	0.2 [2]

Other specifications

29_	Number of pole pairs		1
30_	Number of phases		3
31_	Weight of motor	g	1.2
32_	Typical noise level [rpm]	dBA 46 [50 000]	

maxon Modular System

maxon gear	Stages [opt.]	maxon sensor	maxon motor control
330_GPX 4 C	2-4	for motor type A: 442_ENX 4 MAG	512_EPOS4 Mod./Comp. 24/1.5

Details on catalog page 34

Connection motor with hall sensor (A)

FPC Flexprint 8-pole, pitch 0.5 mm

Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	V_{Hall} 2.5...5.5 VDC
Pin 5	GND
Pin 6	Hall sensor 1
Pin 7	Hall sensor 2
Pin 8	Hall sensor 3

Output signals: CMOS compatible push-pull stage
Output current per channel: max. 0.5 mA

Connection motor sensorless (B)

FPC flexprint 4-pole, pitch 1.0 mm:

Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3
Pin 4	N.C.

Configuration

Shaft front: length/diameter
Electrical connection: Flex cable/round cable