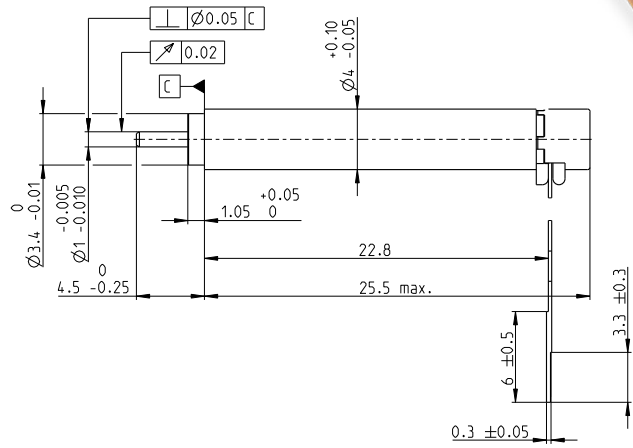
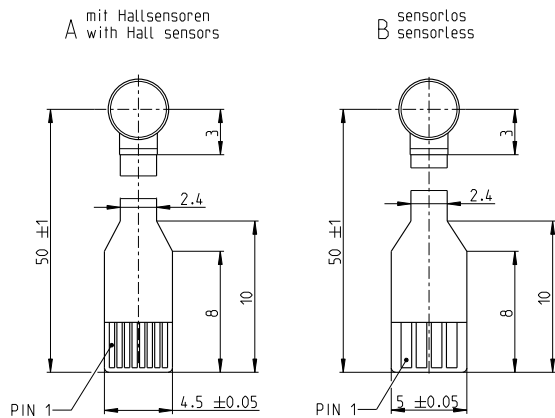


# ECX SPEED 4 L $\varnothing 4$ mm, brushless, BLDC motor

Key Data: 1.0/1.6 W, 0.34 mNm, 50 000 rpm



ECX SPEED



M 2:1

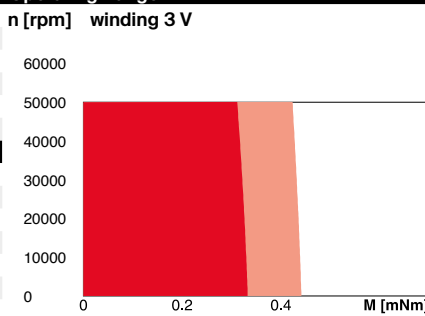
### Motor Data

1_	Nominal voltage	V	3	6
2_	No load speed	rpm	40700	30500
3_	No load current	mA	55.6	18.9
4_	Nominal speed	rpm	23000	13400
5_	Nominal torque (max. continuous torque)	mNm	0.338	0.341
6_	Nominal current (max. continuous current)	A	0.545	0.206
7_	Stall torque	mNm	0.817	0.641
8_	Stall current	A	1.22	0.36
9_	Max. efficiency	%	62.6	60
10_	Terminal resistance	$\Omega$	2.46	16.7
11_	Terminal inductance	mH	0.0458	0.323
12_	Torque constant	mNm/A	0.67	1.78
13_	Speed constant	rpm/V	14300	5360
14_	Speed/torque gradient	rpm/mNm	52300	50200
15_	Mechanical time constant	ms	0.903	0.867
16_	Rotor inertia	gcm <sup>2</sup>	0.00165	0.00165

### Thermal data

17_	Thermal resistance housing-ambient	K/W	84
18_	Thermal resistance winding-housing	K/W	16.7
19_	Thermal time constant winding	s	1.31
20_	Thermal time constant motor	s	76.4
21_	Ambient temperature	°C	-20 ... +80
22_	Max. winding temperature	°C	125

### Operating Range



■ 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) (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	1.8
32_	Typical noise level [rpm]	dBA 47 [50 000]	

### maxon Modular System

maxon gear	Stages [opt.]	maxon sensor
330_GPX 4 C	2-4	for motor type A: 442_ENX 4 MAG

### Details on catalog page 34

maxon motor control
512_EPOS4 Mod./Comp. 24/1.5

### 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