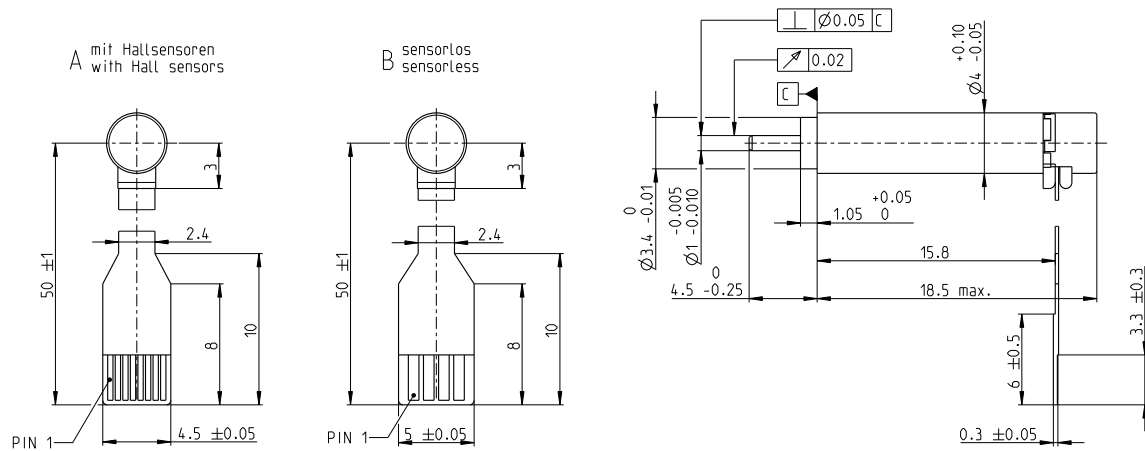


ECX SPEED 4 M Ø4 mm, brushless, BLDC motor

Key data: 0.5/1.0 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	35300	35400
3. No load current	mA	28.8	14.4
4. Nominal speed	rpm	12100	13400
5. Nominal torque	mNm	0.229	0.239
6. Nominal current (max. continuous current)	A	0.322	0.167
7. Stall torque	mNm	0.367	0.403
8. Stall current	A	0.481	0.264
9. Max. efficiency	%	58.1	59.7
10. Terminal resistance	Ω	6.23	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	102000	92900
15. Mechanical time constant	ms	1.19	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	°C	-20 ... +80
22. Max. winding temperature	°C	125

Mechanical data

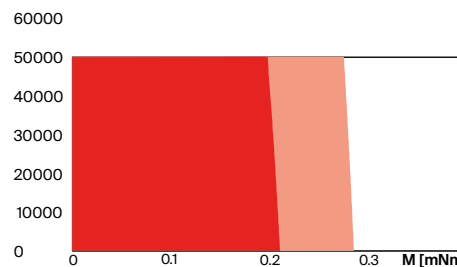
23. Max. speed	rpm	50 000
24. Max. Axial play	mm	0.06
Preload	N	-
Direction of force		-
25. Radial play		0.012
26. Max. axial load (dynamic)	N	0.1
27. Max. force for press fits (static)	N	5
(static, shaft supported)	N	10
28. Max. radial load [mm from flange]	N	0.2 [2]

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]

Operating range

n [rpm] winding 3 V



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

Modular system

Details on catalog page 44

Other specifications	Gear	Stages [opt.]	Sensor	Motor Control
29. Number of pole pairs	370_GPX 4 C	2-4	for motor type A:	564_EPOS4 Module 24/1.5
30. Number of phases			493_ENX 4 MAG	566_EPOS4 Compact 24/1.5
31. Weight of motor				
32. Typical noise level [rpm]				

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

Configuration

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

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.