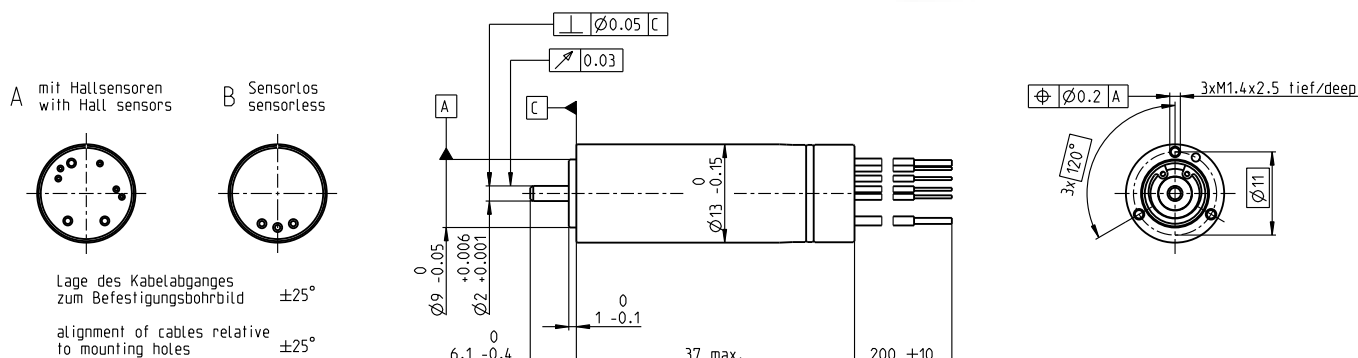


ECX SPEED 13 M Ø13 mm, brushless, BLDC motor

Key Data: 12/12.8 W, 2.7 mNm, 50 000 rpm



ECX SPEED



M 1:1

Motor Data					
1. Nominal voltage	V	18	24	36	48
2. No load speed	rpm	44700	44500	43300	43700
3. No load current	mA	206	154	98.1	74.7
4. Nominal speed	rpm	40000	40000	38600	38900
5. Nominal torque	mNm	2.73	2.74	2.63	2.58
6. Nominal current (max. continuous current)	A	0.916	0.687	0.431	0.321
7. Stall torque	mNm	28	28.4	25.5	25.2
8. Stall current	A	7.49	5.68	3.32	2.48
9. Max. efficiency	%	71	71	70	69
10. Terminal resistance	Ω	2.4	4.22	10.9	19.3
11. Terminal inductance	mH	0.0652	0.117	0.276	0.483
12. Torque constant	mNm/A	3.74	5	7.69	10.2
13. Speed constant	rpm/V	2560	1910	1240	939
14. Speed/torque gradient	rpm/mNm	1640	1610	1750	1790
15. Mechanical time constant	ms	4.2	4.12	4.48	4.56
16. Rotor inertia	gcm ²	0.244	0.244	0.244	0.244

Thermal data		Operating Range	
17. Thermal resistance housing-ambient	K/W	29.5	
18. Thermal resistance winding-housing	K/W	2.21	
19. Thermal time constant winding	s	1.31	
20. Thermal time constant motor	s	355	
21. Ambient temperature	°C	-20...+100	
22. Max. winding temperature	°C	155	

Mechanical data ball bearings			 Continuous operation Continuous operation with reduced thermal resistance R_{th2} 50% Short term operation	
23_	Max. speed	rpm		50 000
24_	Axial play	mm		0...0.28
	Preload	N		1.5
	Direction of force			pull
25_	Radial play			preloaded
26_	Max. axial load (dynamic)	N	1.5	
27_	Max. force for press fits (static)	N	50	
	(static, shaft supported)	N	1500	
28_	Max. radial load [mm from flange]	N	6 [5]	

Modular System

Details on catalog page 40

Other specifications		Modular System		Details on catalog page 40	
29. Number of pole pairs	1	363_GPX 13 SPEED	1-3	Sensor for motor type A: 481_ENX 13 EASY INT	532_ESCON Module 24/2
30. Number of phases	3	364_GPX 14 A/C	1-2 [3-4]		533_ESCON 36/3 EC
31. Weight of motor	g	31	365_GPX 14 LN/LZ	Sensor for motor type B: 481_ENX 13 EASY INT Abs.	533_ESCON Module 50/4 EC-S
32. Typical noise level [rpm]	dBA	46 [50 000]	366_GPX 14 HP		533_ESCON Module 50/5
			367_GPX 16 A/C		535_ESCON 50/5
			368_GPX 16 LN/LZ		537_DEC Module 24/2
			369_GPX 16 HP		537_DEC Module 50/5

Connection A and B, motor (Cable AWG A: 26, B: 22)
 red Motor winding 1
 black Motor winding 2
 white Motor winding 3

Connection A, sensors (Cable AWG 28)
 orange V_{CC} 5 ±0.5 V
 blue GND
 yellow Hall sensor 1
 brown Hall sensor 2
 grey Hall sensor 3

Output signals: CMOS compatible push-pull stage. No pull-up resistor required. Hall signals are generated by an EASY INT sensor. In combination with the ENX EASY INT, the orange (V_{CC}) and blue (GND) connections are not used.

Configuration

Flange front: thread holes/center thread
 Flange back: metal ring/external thread
 Shaft front: length/diameter
 Electric connection: cable length/pin connection/connector
 Appropriate connectors and connecting cables are available for the configuration of the pin connection together with the external thread: see catalog, Accessories section.

Motor Control
 532_ESCON Module 24/2
 533_ESCON 36/3 EC
 533_ESCON Module 50/4 EC-S
 533_ESCON Module 50/5
 535_ESCON 50/5
 537_DEC Module 24/2
 537_DEC Module 50/5
 541_EPOS4 Micro 24/5
 542_EPOS4 Module 24/1.5
 542_EPOS4 Module 50/5
 543_EPOS4 Compact 24/5 3-axes
 544_EPOS4 Compact 24/1.5
 545_EPOS4 Compact 50/5
 547_EPOS4 50/5
 548_EPOS4 Disk 60/8