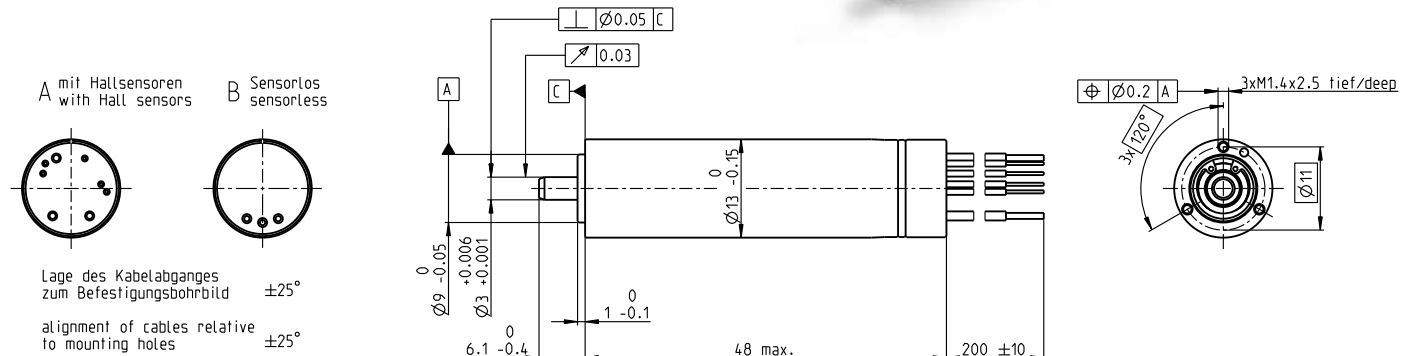


ECX SPEED 13 L Ø13 mm, brushless, BLDC motor

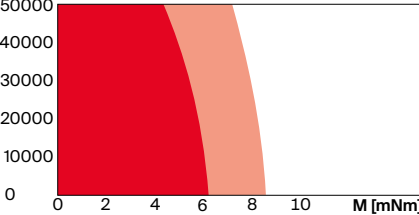
Key data: 25/25 W, 5.5 mNm, 50 000 rpm



ECX SPEED



M 1:1

Motor data								
1_	Nominal voltage	V	18	24	36	48		
2_	No load speed	rpm	41900	42800	42000	42400		
3_	No load current	mA	169	130	84.4	64.2		
4_	Nominal speed	rpm	37500	38600	37900	38200		
5_	Nominal torque	mNm	5.16	5.41	5.57	5.45		
6_	Nominal current (max. continuous current)	A	1.42	1.14	0.762	0.567		
7_	Stall torque	mNm	51.3	58.9	60.4	59.3		
8_	Stall current	A	12.7	11.1	7.47	5.55		
9_	Max. efficiency	%	79	80.1	80.5	80.3		
10_	Terminal resistance	Ω	1.42	2.16	4.82	8.64		
11_	Terminal inductance	mH	0.0453	0.0776	0.181	0.316		
12_	Torque constant	mNm/A	4.04	5.29	8.08	10.7		
13_	Speed constant	rpm/V	2360	1800	1180	894		
14_	Speed/torque gradient	rpm/mNm	830	736	705	724		
15_	Mechanical time constant	ms	3.25	2.88	2.76	2.83		
16_	Rotor inertia	gcm ²	0.374	0.374	0.374	0.374		
Thermal data			Operating range					
17_	Thermal resistance housing-ambient	K/W	19.5	n [rpm] winding 36 V				
18_	Thermal resistance winding-housing	K/W	2					
19_	Thermal time constant winding	s	2.12					
20_	Thermal time constant motor	s	328					
21_	Ambient temperature	°C	-20...+100					
22_	Max. winding temperature	°C	155					
Mechanical data ball bearings								
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]		
Other specifications			Modular system			Details on catalog page 44		
29_	Number of pole pairs		1	Gear	Stages [opt.]	Sensor	Motor Control	
30_	Number of phases		3	377_GPX 13 SPEED	1-3	for motor type A:	547_DEC Module 50/5	
31_	Weight of motor	g	401	378_GPX 14 A/C	1-2 [3-4]	513_ENX 13 EASY INT	550_ESCON Module 24/2	
32_	Typical noise level [rpm]	dBA	47 [50 000]	379_GPX 14 LN/LZ	1-2 [3-4]	for motor type B:	551_ESCON 36/3 EC	
				380_GPX 14 HP	2-3 [4]	513_ENX 13 EASY INT Abs.	551_ESCON Module 50/4 EC-S	

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

547_DEC Module 50/5
550_ESCON Module 24/2
551_ESCON 36/3 EC
551_ESCON Module 50/4 EC-S
551_ESCON Module 50/5
557_ESCON2 Nano 24/2
557_ESCON2 Micro 60/5
553_ESCON 50/5
563_EPOS4 Micro 24/5
564_EPOS4 Module 24/1.5
564_EPOS4 Module 50/5
565_EPOS4 Compact 24/5 3-axes
566_EPOS4 Compact 24/1.5
567_EPOS4 Compact 50/5
569_EPOS4 50/5
570_EPOS4 Disk 60/8