

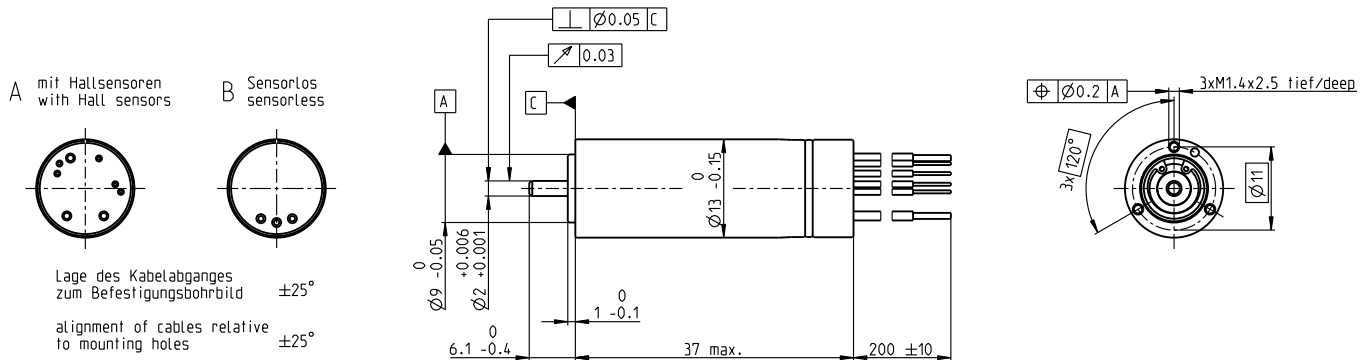
ECX SPEED 13 M $\varnothing 13$ mm, brushless, BLDC motor

High Power

Key Data: 25/29.7 W, 4.3 mNm, 70 000 rpm



ECX SPEED



M 1:1

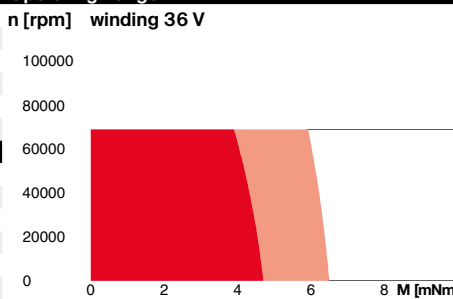
Motor Data

1_	Nominal voltage	V	18	24	36	48
2_	No load speed	rpm	66700	66700	66700	64000
3_	No load current	mA	273	205	137	95.6
4_	Nominal speed	rpm	62700	63000	63000	60400
5_	Nominal torque (max. continuous torque)	mNm	4.33	4.3	4.04	4.22
6_	Nominal current (max. continuous current)	A	1.95	1.45	0.917	0.682
7_	Stall torque	mNm	79.8	83.9	79	80.3
8_	Stall current	A	31.3	24.7	15.5	11.3
9_	Max. efficiency	%	82.6	83	82.6	82.9
10_	Terminal resistance	Ω	0.576	0.973	2.33	4.24
11_	Terminal inductance	mH	0.0178	0.0316	0.0711	0.137
12_	Torque constant	mNm/A	2.55	3.4	5.11	7.09
13_	Speed constant	rpm/V	3740	2810	1870	1350
14_	Speed/torque gradient	rpm/mNm	843	802	853	805
15_	Mechanical time constant	ms	2.15	2.05	2.18	2.06
16_	Rotor inertia	gcm ²	0.244	0.244	0.244	0.244

Thermal data

17_	Thermal resistance housing-ambient	K/W	29.5
18_	Thermal resistance winding-housing	K/W	2.53
19_	Thermal time constant winding	s	1.71
20_	Thermal time constant motor	s	558
21_	Ambient temperature	$^{\circ}$ C	-20...+100
22_	Max. winding temperature	$^{\circ}$ C	155

Operating Range



Mechanical data ball bearings

23_	Max. speed	rpm	70 000
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

29_	Number of pole pairs	1	
30_	Number of phases	3	
31_	Weight of motor	g	37.8
32_	Typical noise level [rpm]	dBA	46 [50 000]

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.

maxon Modular System

maxon gear	Stages [opt.]
337_GPX 13 SPEED	1-3
338_GPX 14 A/C	1-2 [3-4]
339_GPX 14 LN/LZ	1-2 [3-4]
340_GPX 14 HP	2-3 [4]
341_GPX 16 A/C	3-4
342_GPX 16 LN/LZ	3-4
343_GPX 16 HP	4

maxon sensor	for motor type A:	for motor type B:
449_ENX 13 EASY INT		
449_ENX 13 EASY INT Abs.		

maxon motor control

500_ESCON Module 24/2
501_ESCON 36/3 EC
501_ESCON Module 50/4 EC-S
501_ESCON Module 50/5
503_ESCON 50/5
505_DEC Module 24/2
505_DEC Module 50/5
509_EPOS4 Micro 24/5
510_EPOS4 Mod./Comp. 50/5
511_EPOS4 Comp. 24/5 3-axes
512_EPOS4 Mod./Comp. 24/1.5
515_EPOS4 50/5
516_EPOS4 Disk 60/8
520_EPOS2 P 24/5

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.