

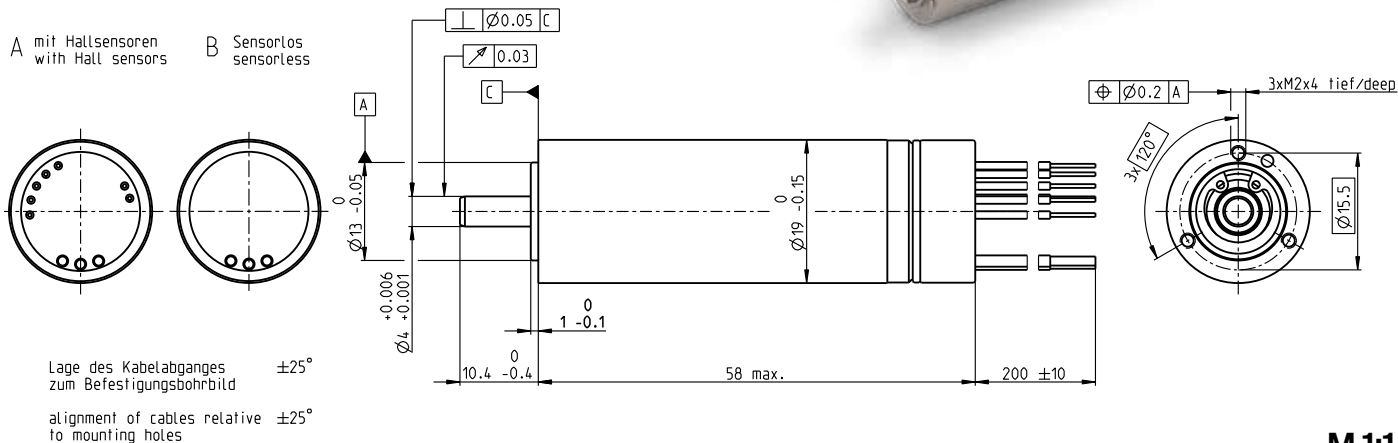
ECX SPEED 19 L $\varnothing 19$ mm, brushless, BLDC motor

High Power

Key Data: 120/133 W, 23.2 mNm, 65 000 rpm



ECX SPEED



M 1:1

Motor Data

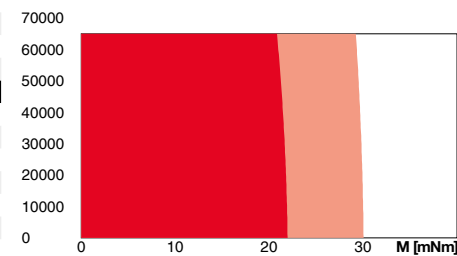
1_	Nominal voltage	V	18	24	36	48
2_	No load speed	rpm	60900	60900	57700	63500
3_	No load current	mA	351	263	160	142
4_	Nominal speed	rpm	57700	57900	54900	60800
5_	Nominal torque (max. continuous torque)	mNm	22.9	22.6	23.2	22.2
6_	Nominal current (max. continuous current)	A	8.38	6.21	4.01	3.19
7_	Stall torque	mNm	558	598	630	667
8_	Stall current	A	198	159	106	92.6
9_	Max. efficiency	%	91.9	92.1	92.5	92.4
10_	Terminal resistance	Ω	0.0908	0.151	0.34	0.518
11_	Terminal inductance	mH	0.00838	0.0149	0.0373	0.0547
12_	Torque constant	mNm/A	2.82	3.76	5.95	7.2
13_	Speed constant	rpm/V	3390	2540	1600	1330
14_	Speed/torque gradient	rpm/mNm	109	102	91.7	95.4
15_	Mechanical time constant	ms	1.88	1.75	1.58	1.64
16_	Rotor inertia	gcm ²	1.64	1.64	1.64	1.64

Thermal data

17_	Thermal resistance housing-ambient	K/W	13.6
18_	Thermal resistance winding-housing	K/W	1.32
19_	Thermal time constant winding	s	4.01
20_	Thermal time constant motor	s	563
21_	Ambient temperature	$^\circ\text{C}$	-20...+100
22_	Max. winding temperature	$^\circ\text{C}$	155

Operating Range

n [rpm] winding 36 V



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

Mechanical data ball bearings

23_	Max. speed	rpm	65 000
24_	Axial play	mm	0...0.29
	Preload	N	4
	Direction of force		pull
25_	Radial play	preloaded	
26_	Max. axial load (dynamic)	N	4
27_	Max. force for press fits (static) (static, shaft supported)	N	70
		N	5000
28_	Max. radial load [mm from flange]	N	12 [5]

Other specifications

29_	Number of pole pairs	1
30_	Number of phases	3
31_	Weight of motor	g 108
32_	Typical noise level [rpm]	dBA 51 [50 000]

Connection A and B, motor (Cable AWG 20)

red	Motor winding 1
black	Motor winding 2
white	Motor winding 3

Connection A, sensors (Cable AWG 26)

orange	V_{Hall} 3...24 VDC
blue	GND
yellow	Hall sensor 1
brown	Hall sensor 2
grey	Hall sensor 3

Wiring diagram for Hall sensors see page 57. In combination with the ENX EASY INT, the orange (V_{cc}) and blue (GND) connections are not used. Hall signals are then generated by an ENX EASY-INT sensor (no pull-up resistor required; output signals: CMOS compatible push-pull stage).

Connection NTC (Cable AWG 26)

purple	NTC
purple	NTC

Resistance 25 $^\circ\text{C}$: 10 kOhm $\pm 1\%$, beta (25–85 $^\circ\text{C}$): 3490 K

maxon Modular System

maxon gear	Stages [opt.]	maxon sensor
345_GPX 19 A/C	1–2 [3–4]	for motor type A:
346_GPX 19 LN/LZ	1–2 [3–4]	455_ENX 19 EASY INT
347_GPX 19 HP	2–3 [4]	for motor type B:
348_GPX 19 SPEED	1–2	455_ENX 19 EASY INT Abs.
349_GPX 22 A/C	3–4	
350_GPX 22 LN/LZ	3–4	
351_GPX 22 HP	4	
353_GPX 22 SPEED [3]		

Details on catalog page 34

maxon motor control
501_ESCON Module 50/4 EC-S
501_ESCON Module 50/5
502_ESCON Module 50/8 HE
503_ESCON 50/5
503_ESCON 70/10
505_DEC Module 50/5
510_EPOS4 Mod./Comp. 50/5
511_EPOS4 Mod./Comp. 50/8
515_EPOS4 50/5
515_EPOS4 70/15
516_EPOS4 Disk 60/8
517_EPOS4 Disk 60/12
520_EPOS2 P 24/5

Configuration

Flange front: thread holes/center thread
Flange back: plastic ring/external thread/with opening
Shaft front: length/diameter
Shaft rear: length
Electric connection: cable length/pin connection/connector
Temperature sensor: NTC-Thermistor (only for motor type A and only when not combined with an encoder).
Appropriate connectors and connecting cables are available for the configuration of the pin connection together with the external thread: see catalog, Accessories section.

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