

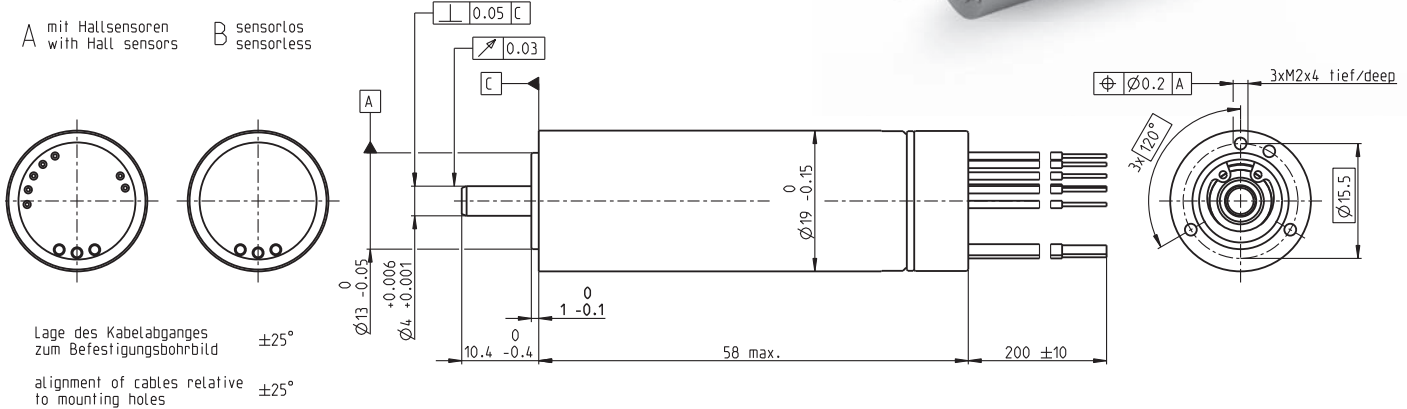
# ECX SPEED 19 L brushless

## BLDC motor Ø19 mm

Sterilizable

120/145 W 22.7 mNm 70000 rpm

**NEW**



**M 1:1**

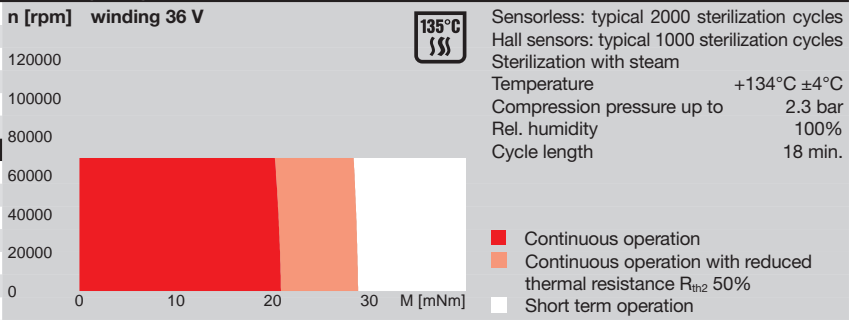
**Motor Data**

1_	Nominal voltage	V	18	24	36	48
2_	No load speed	rpm	60800	60800	57600	63400
3_	No load current	mA	426	319	194	172
4_	Nominal speed	rpm	57200	57600	54700	60500
5_	Nominal torque (max. continuous torque)	mNm	23.3	22.7	23.5	22.6
6_	Nominal current (max. continuous current)	A	8.56	6.27	4.09	3.27
7_	Stall torque	mNm	503	551	613	655
8_	Stall current	A	178	146	103	90.8
9_	Max. efficiency	%	91	91	91	92
10_	Terminal resistance	Ω	0.101	0.164	0.35	0.528
11_	Terminal inductance	mH	0.0096	0.0171	0.0428	0.0627
12_	Torque constant	mNm/A	2.82	3.76	5.95	7.21
13_	Speed constant	rpm/V	3390	2540	1600	1320
14_	Speed/torque gradient	rpm/mNm	121	111	94.2	97.1
15_	Mechanical time constant	ms	2.27	2.07	1.77	1.82
16_	Rotor inertia	gcm <sup>2</sup>	1.79	1.79	1.79	1.79

**Thermal data**

17_	Thermal resistance housing-ambient	K/W	14
18_	Thermal resistance winding-housing	K/W	0.9
19_	Thermal time constant winding	s	2.97
20_	Thermal time constant motor	s	580
21_	Ambient temperature	°C	-40...+135
22_	Max. winding temperature	°C	155

**Operating Range**



135°C  
Sensorless: typical 2000 sterilization cycles  
Hall sensors: typical 1000 sterilization cycles  
Sterilization with steam  
Temperature +134°C ±4°C  
Compression pressure up to 2.3 bar  
Rel. humidity 100%  
Cycle length 18 min.

**Mechanical data ball bearings**

23_	Max. speed	rpm	70000
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)	N	70
	(static, shaft supported)	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 [50000]

**maxon Modular System**

<b>maxon gear</b>	Stages	<b>maxon sensor</b>	<b>maxon motor control</b>
129_GPX 19 SPEED	1-2		417_ESCON Module 50/4 EC-S 417_ESCON Module 50/5 418_ESCON 50/5 418_ESCON 70/10 420_DEC Module 50/5

**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<sub>Hall</sub> 3...24 VDC
- blue GND
- yellow Hall sensor 1
- brown Hall sensor 2
- grey Hall sensor 3

Wiring diagram for Hall sensors see page 35

**Connection NTC** (Cable AWG 26)

- purple NTC
  - purple NTC
- Resistance 25°C: 10 kOhm ±1%, beta (25-85°C): 3490 K

**Configuration**

- Flange front: thread in flange/center thread
- Flange back: plastic ring/center thread
- Shaft front: length
- Electric connection: cable length/pin connection
- Temperature Sensor: NTC-Thermistor