

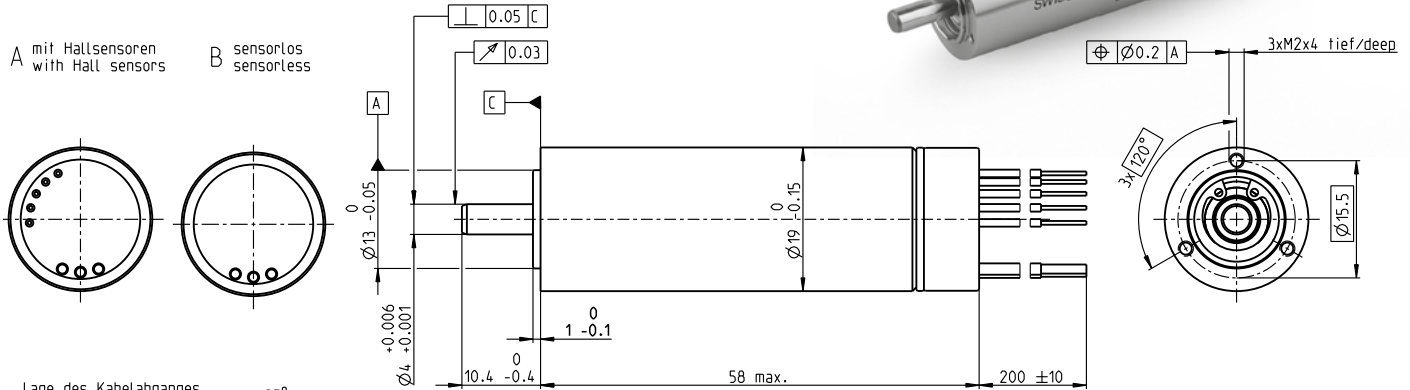
# ECX SPEED 19 L brushless

## BLDC motor Ø19 mm

Sterilizable, Ceramic Bearings

**NEW**

120/200 W 22.7 mNm 100 000 rpm



Lage des Kabelabganges zum Befestigungsbohrbild  $\pm 25^\circ$

alignment of cables relative to mounting holes  $\pm 25^\circ$

**M 1:1**

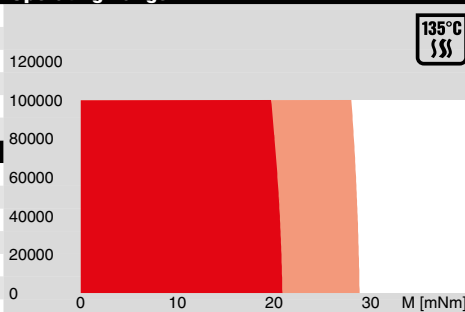
### Motor Data

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	$\Omega$	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	$^\circ\text{C}$	-40...+135
22_	Max. winding temperature	$^\circ\text{C}$	155

### Operating Range



Sensorless: typical 2000 sterilization cycles  
Hall sensors: typical 1000 sterilization cycles  
Sterilization with steam  
Temperature  $+134^\circ\text{C} \pm 4^\circ\text{C}$   
Compression pressure up to 2.3 bar  
Rel. humidity 100%  
Cycle length 18 min.

### Mechanical data ball bearings

23_	Max. speed	rpm	100 000
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)	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 commutator segments		3
31_	Weight of motor	g	108
32_	Typical noise level [rpm]	dBA	51 [50000]

### 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  $V_{\text{Hall}}$  3...24 VDC  
blue GND  
yellow Hall sensor 1  
brown Hall sensor 2  
grey Hall sensor 3

Wiring diagram for Hall sensors see page 33

### 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	maxon sensor	maxon motor control
		379_ESCON Module 50/4 EC-S
		379_ESCON Module 50/5
		379_ESCON 50/5
		379_ESCON 70/10
		382_DEC Module 50/5

### Configuration

Flange front: thread in flange/center thread  
Flange back: without/center thread  
Shaft front: length/diameter  
Electric connection: cable length/pin connection  
Temperature Sensor: NTC-Thermistor

xdrives.maxonmotor.com