

# ECX SPEED 19 M brushless

## BLDC motor Ø19 mm

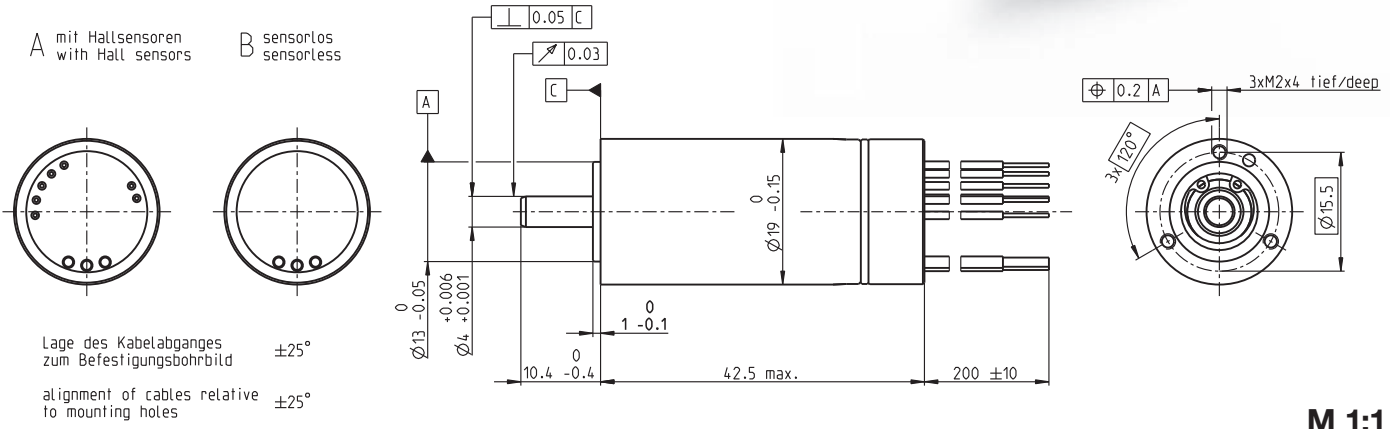
Sterilizable, Ceramic Bearings

60/94 W 10.3 mNm 100000 rpm

**NEW**



maxon X drives



**M 1:1**

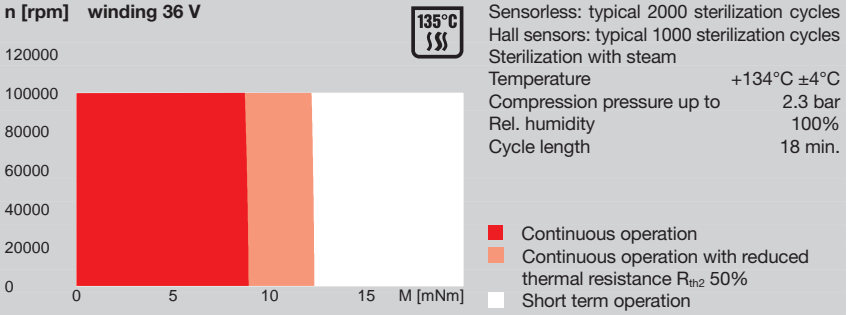
**Motor Data**

1_	Nominal voltage	V	18	24	36	48
2_	No load speed	rpm	64700	64500	64500	63300
3_	No load current	mA	307	230	153	112
4_	Nominal speed	rpm	59800	59500	59700	58600
5_	Nominal torque (max. continuous torque)	mNm	10.9	9.57	9.91	10.1
6_	Nominal current (max. continuous current)	A	4.34	2.89	1.99	1.49
7_	Stall torque	mNm	179	150	164	169
8_	Stall current	A	67.7	42.4	31	23.5
9_	Max. efficiency	%	87	86	86	87
10_	Terminal resistance	Ω	0.266	0.566	1.16	2.04
11_	Terminal inductance	mH	0.023	0.044	0.099	0.182
12_	Torque constant	mNm/A	2.64	3.53	5.3	7.2
13_	Speed constant	rpm/V	3610	2700	1800	1330
14_	Speed/torque gradient	rpm/mNm	363	433	396	376
15_	Mechanical time constant	ms	4.38	5.22	4.77	4.53
16_	Rotor inertia	gcm <sup>2</sup>	1.15	1.15	1.15	1.15

**Thermal data**

17_	Thermal resistance housing-ambient	K/W	16.9
18_	Thermal resistance winding-housing	K/W	1.1
19_	Thermal time constant winding	s	1.86
20_	Thermal time constant motor	s	700
21_	Ambient temperature	°C	-40...+135
22_	Max. winding temperature	°C	155

**Operating Range**



135°C SSS

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	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 phases	3
31_	Weight of motor	g 78
32_	Typical noise level [rpm]	dBA 48 [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 36/3 EC 417_ESCON Module 50/4 EC-S 417_ESCON Module 50/5 418_ESCON 50/5 420_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

xdrives.maxonmotor.com