

FAG Torque Sensor Inner Bearing

Reliable sensor technology – universal power measurement

Give your e-bikers a positive ride feel using the FAG torque sensor bottom bracket from Schaeffler. The FAG torque sensor inner bearing is a versatile device for measuring power in pedelecs and e-bikes. Over a crank movement of 180 degrees, the sensor inner bearing continuously determines the torque with optimum accuracy. Over a cadence of 360 degrees, the cadence signal is continuously measured. . Pedelec riding is much more comfortable with the BBRTS - a product from the SCHAFFLER VELOSOLUTIONS range of innovative solutions for bikes. There are various electric and mechanical designs. The torque sensor inner bearing is available with an analog or digital interface as well as a wide range of shaft lengths and plug designs.

Advantages

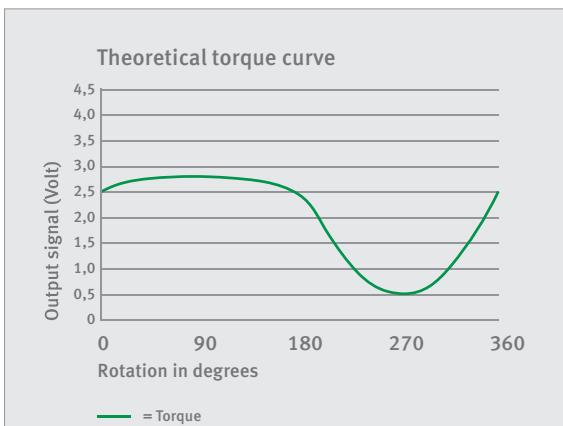
- A comfortable ride in any situation through direct detection of rider intentions and matching of motor power
- Reliable and maintenance-free throughout the operating life
- Simple integration in standard pedelec frames, no need for post-calibration
- Versatile possibilities for combination in electric pedelec and e-bike control systems

Features

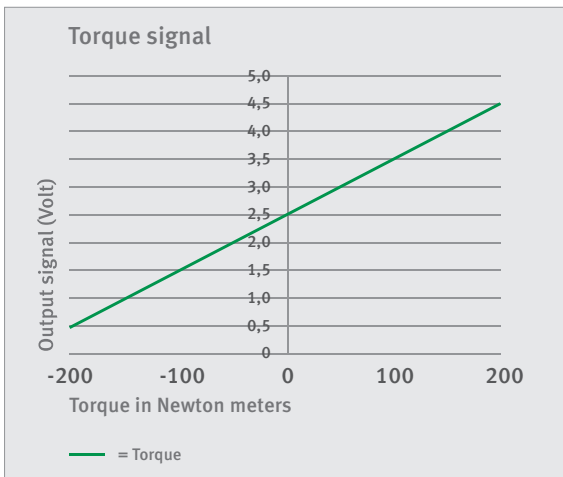
- Precise torque measurement over 180 degree crank position and cadence detection over 360 degrees with up to 64 pulses
- High corrosion resistance of surfaces and protection classes for the inner bearing
- Compact design, standard BSA and square section crank connection
- Compatible with digital and analog interfaces to the pedelec control system



SCHAEFFLER VELOSOLUTIONS



Torque - theoretical curve



Torque signal

Technical Data

BBRTS – FAG TORQUE SENSOR INNER BEARING	
Shaft and spindle length	116 mm - 132 mm
Shaft surface	Zinc plated
Crank mounting	ISO6695:2015
Ball bearings	Sealed deep groove ball bearings
Certification	DIN EN ISO 4210-2:2015 (terrain, city)
Housing width	68 mm
Thread dimension	BSA 1, 375 x 24
Material for bearing cups	Glass fiber reinforced plastic
Bearing cup finish	Black
Sealing integrity outside/inside	IP 66 (EN 60529)
Sealing integrity inside/inside	IP 63 (EN 60529)
Measurement principle for speed	Magnetic
Measurement principle for torque	Inverse magnetostriction
Torque specifications	
Measurement range	-200 to + 200 Nm
Voltage output	0,5 to 4,5 V
Voltage at 0 Nm	2,5V
Sensitivity /resolution	10mV/Nm

Variants of speed detection

Encoder cadence – 32 pulses	
Encoder cadence	32 pulses
Signal output - digital	Open Collector with pull-up 37kOhm to +5V
Voltage supply	Digital: +4...16 VDC
Encoder cadence – 32 pulses	
Encoder cadence	32 pulses
Signal output - analog	Push-pull output
Voltage supply	Analog: +7...16 VDC

Further information

Plug variants	Incl. Julet
Cable lengths	From 100 mm
Mass	approx. 290 g

Customer-specific solutions available by agreement.