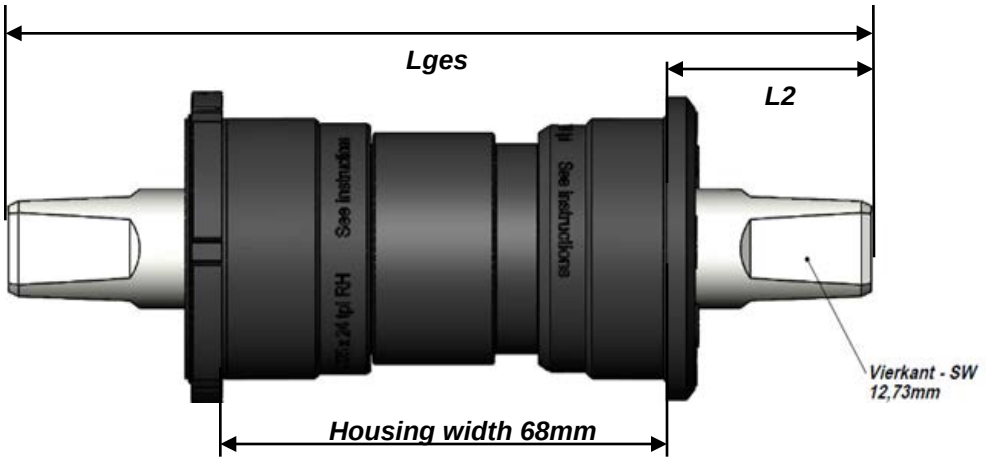
Torque sensor for e-bikes („Pedelecs“)

S-BB-RT ***Sensoric bottom bracket with torque and rotation angle***
S-BB-R ***Sensoric bottom bracket with rotation angle***

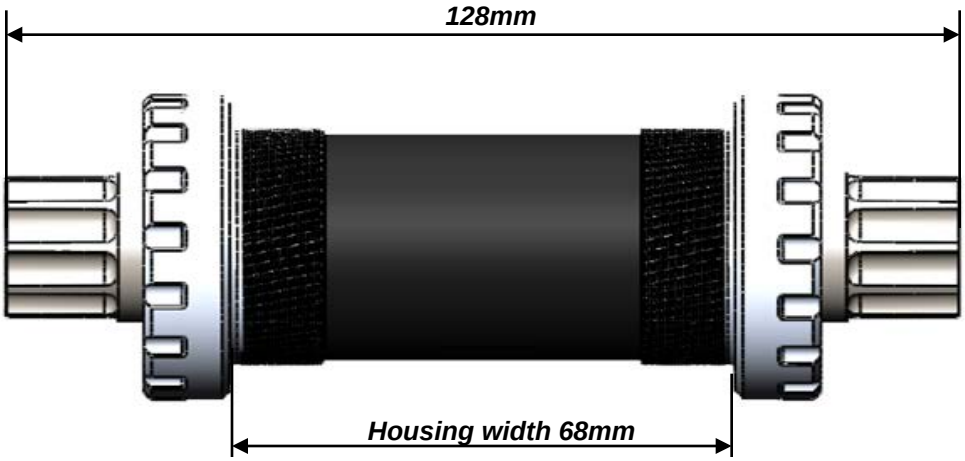
Product characteristics

- First BSA-68 sensor bottom bracket with ISIS / Octalink crank mount worldwide
- Precise measurement of torque at the bottom bracket with Formula-1-tested PCME-technology (Accuracy +/-2,5%)
- Integrated angle sensor for determination of rpm and direction of rotation
- Integrated electronics with flexible output signal according to client request
- Easy and intuitive assembly
- Completely maintenance free
- Perfect protection against environmental influences through waterproof installation in the bottom bracket
- Temperature range: -40 °C to +85 °C
- No recalibration necessary
- Compatible with Thun X-Cell RT and X-Cell R

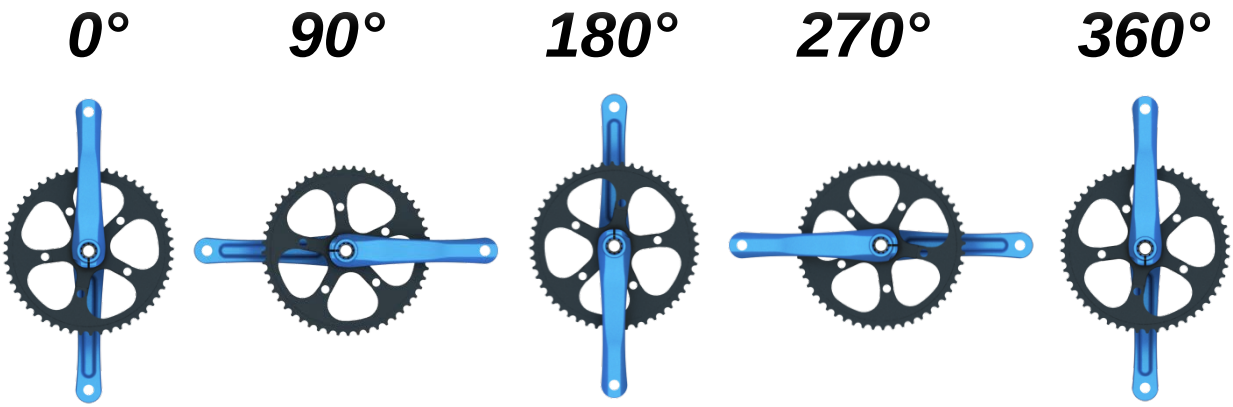
Dimensions

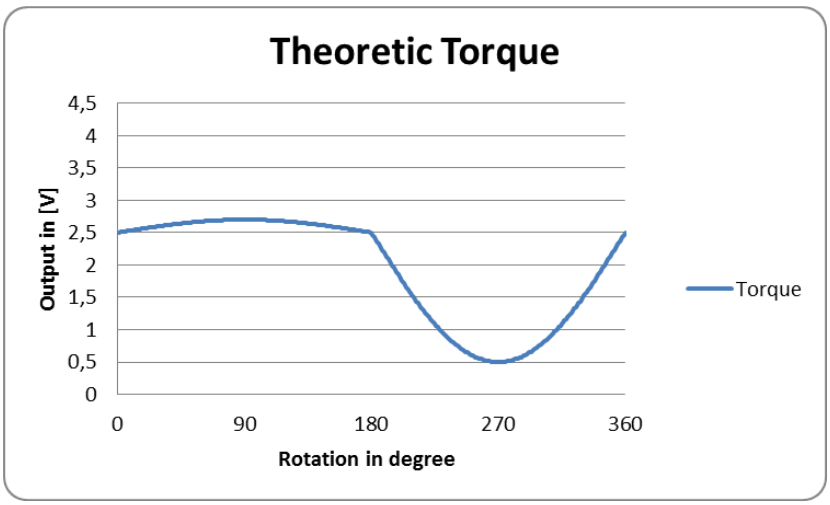


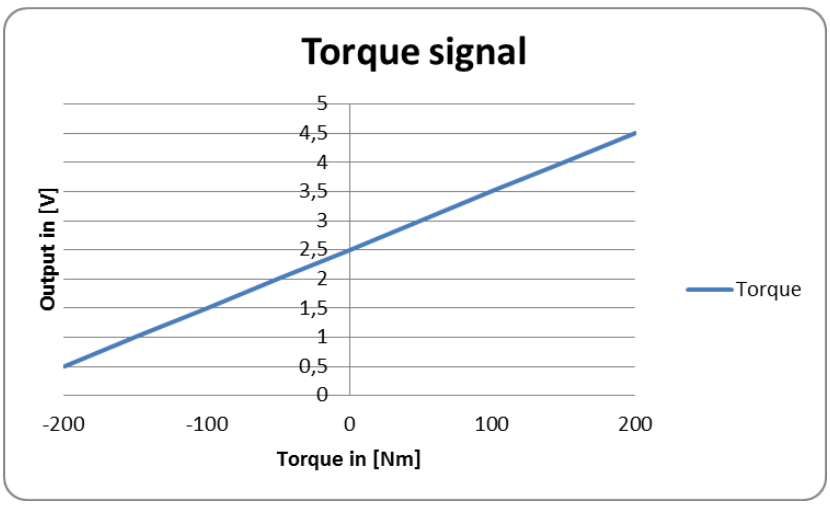
Nr.	Complies the following inner bearing length	L2 +/-0,5mm	Lges +/- 1,0mm
Inner bearing with screw adapter BS 1,375 x 24			
1	120K	24,40	120,00
2	120L	26,40	120,00
3	128K	28,40	128,00
4	128L	30,40	128,00
5	133,65K	29,40	133,65
6	133,65L	34,90	133,65
7	136L	38,20	136,00



Torque curve

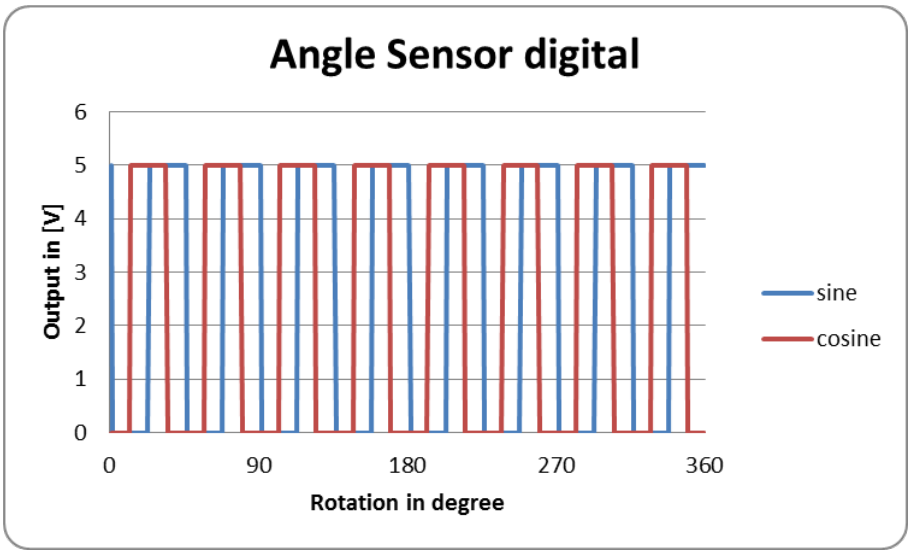


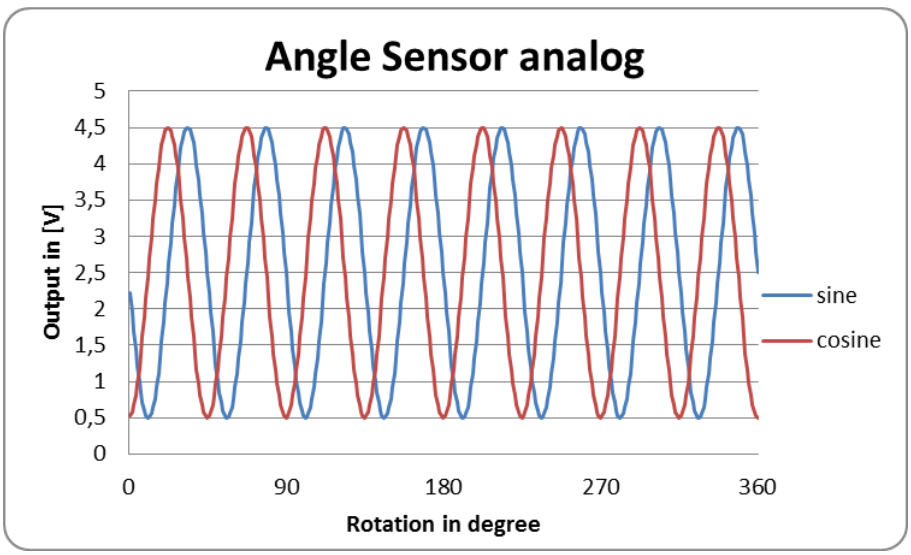




Angle sensor

Angle sensor with 16 poles for a precise measurement of rpm and direction of rotation.





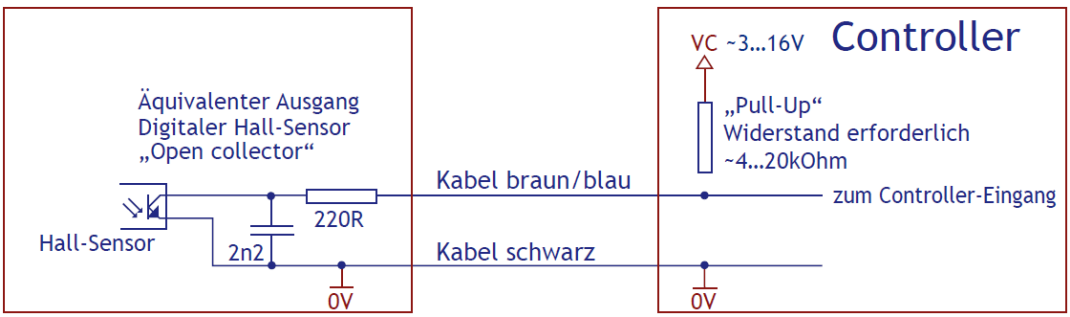
Connection diagram

Digital			
Cable color	Description	Signal	Comment
White	Supply voltage	+7….16V DC	-
Black	GND	0V	-
Blue	Cosine	0V / Open collector	16 CPR
Brown	Sine	0V / Open collector	16 CPR
Grey	Torque	Offset 2,5V is 0Nm	10 mV/Nm

Analog			
Cable color	Description	Signal	Comment
White	Supply voltage	+7….16V DC	-
Black	GND	0V	-
Blue	Cosinus	Offset 2,5V Amplitude max. 4,5 Vss	16 CPR
Brown	Sinus	Offset 2,5V Amplitude max. 4,5 Vss	16 CPR
Grey	Torque	Offset 2,5V bei 0Nm	10 mV/Nm

With R-bearing the grey cable is not occupied.

Connection scheme angle sensor digital



Specifications

	SBBR	**SBBRT**
Certification: EN 14764 (City-Trekking)	Yes	Yes
Certification: EN 14766 (MTB)	Yes	Yes
Cup threads	BS 1.375 x 24	BS 1.375 x 24
Material Adapter	PA 6.6 Gf 30 %	PA 6.6 Gf 30 %
Material of sensor shell	Macromelt	Macromelt
Ball Bearings	2 x 61902 2RS	2 x 61902 2RS
Lifetime bearings DIN-ISO 281:1993	approx. 35.000km	approx. 35.000km
Sensory system	2 x Hall-sensors	2 x Hall-sensors, PCME-sensor
Impulse transmitter 1	Poled ring - 32 impulses/rot.	Poled ring - 32 impulses/rot.
Voltage feed	Analogue: +7…16 V DC, Digital: +4…16 V DC	+7…16 V DC
Signal output: sine	Analogue or digital (open collector)	Analogue or digital (open collector)
Signal output: cosine	Analogue or digital (open collector)	Analogue or digital (open collector)
Signal output torque: attribute 1	-	Offset +2500 mV at 0 Nm
Signal output torque: attribute 2	-	Analogue: ±10 mV/Nm
Signal output torque: attribute 3	-	Bandwidth: 250 Hz at -3 dB
Accuracy of signals: sine/cosine	± 3° (± 0,8 %)	± 3° (± 0,8 %)
Accuracy of signals: torque	-	Effective range ± 200 Nm
Accuracy of signals: torque	-	± 2.5 % Of effective range

Do not use any strong magnets or magnetized tools during assembly as this may lead to changes within the spindle`s magnetic field. It causes SBBRT to permanently loose their functionality! SBBR + SBBRT should only be disassembled by NCTE; otherwise the warranty expires.

Order options

SBBRT (Torque and Rotation Signal)

SBBR (Rotation Signal)

Size	
120 K	Square Shaft
120 L	Square Shaft
128 K	Square Shaft
128 L	Square Shaft
133,65 K	Square Shaft
133,65 L	Square Shaft
136 L	Square Shaft
128 IS	ISIS Shaft
128 OL	Octalink Shaft

Angle Sensor	
0	Angle sensor analog
1	Angle sensor digital

cable length in cm	
110	Standard length
xxx	Customized length

Connector	
000	Without connector
100	JST PHR6
200	Molex 51021
300	JST PAP 2 und 3 Pol
400	JST PAP 5 Pol

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