



## Technical data

- Temperature range: -40°C to 85+°C
- Protection class: IP66
- Output signals: Customized
- Output frequency: 250 Hz

## Your advantages

- 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
- No recalibration necessary
- Compatible with Thun X-Cell RT, X-Cell R and FAG variants

### Short description

NCTE sensors are a key component for improving the performance of e-Bikes or pedelecs. The so called S-BB-R bike sensor is an inner bearing sensor measuring rotational speed and direction at bottom bracket.

Also the S-BB-R is the first BSA-68 sensor bottom bracket worldwide. By request there are also variants with ISIS crank mount available.

### Technical characteristics

	S-BB-R /square
<b>Bearing seal</b>	2 x 61902 2RS
<b>Shaft surface</b>	Zinc A2B
<b>Certification according to ISO 4210: 2014-8-4.6<sup>1</sup></b>	Yes
<b>Material of sensor shell</b>	Macromelt
<b>Cup threads</b>	BS 1,375x24
<b>Material Adapter</b>	PA 6.6 Gf 30%
<b>Lifetime bearings</b>	ca. 35.000 km
<b>Protection class external/internal based on DIN- ISO 281:1993</b>	IP 66
<b>Protection class internal/internal based on DIN- ISO 281:1993</b>	IP 63
<b>Impulse transmitter 1</b>	Poled ring - 32 impulses/rotation
<b>Voltage feed</b>	Analog: +7...16 V DC, Digital: +4...16 V DC
<b>Signal output bandwidth</b>	4kHz
<b>Accuracy of signals: sine/cosine</b>	± 3,5° (± 0,8 %)

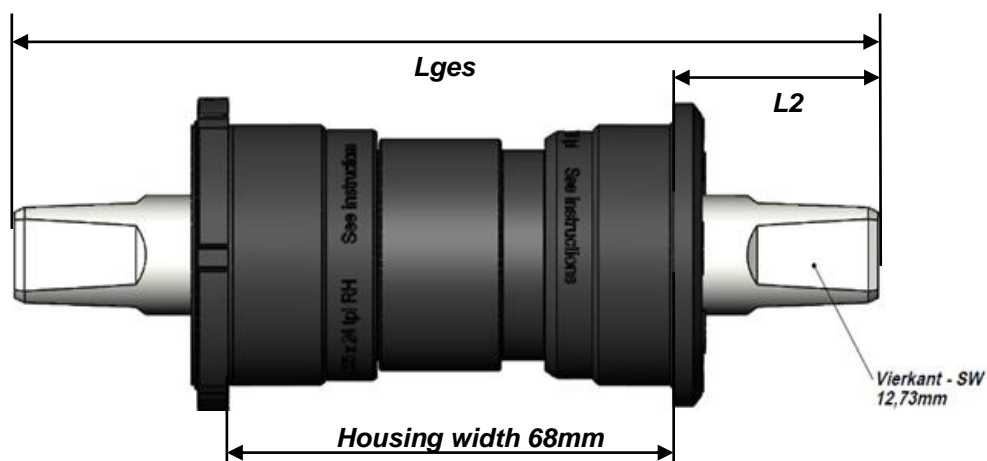


The bottom brackets should only be disassembled by NCTE; otherwise the warranty expires.

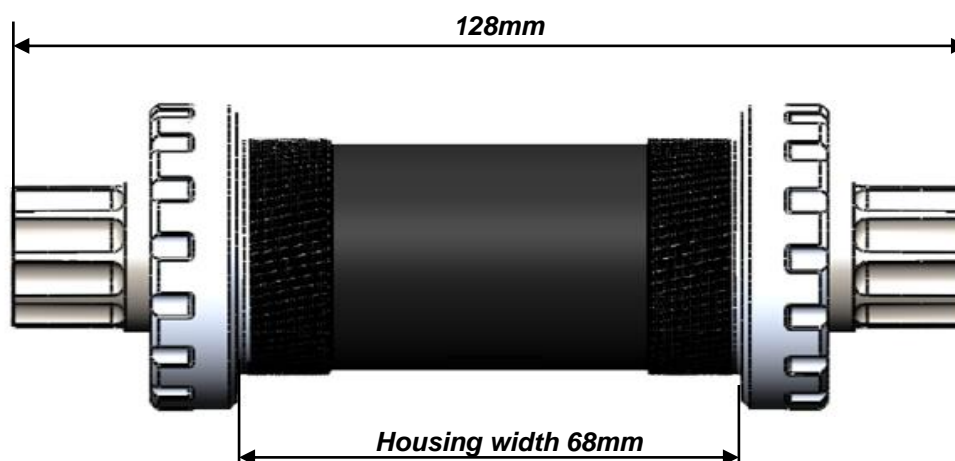
<sup>1</sup> The configuration of the test setup for product permission can be obtained on request from NCTE.

## Dimensions

Nr.	Complies the following inner bearing length	L2 ±0,5 mm	Lges ±1,0 mm
<b>Inner bearing with screw adapter BS 1,375 x 24</b>			
1	120K	24,40	120,00
2	120L	26,40	120,00
3	128K	28,40	128,00
4	128L	30,40	128,00



Variants with ISIS crank mount on request:



**Connection plan**



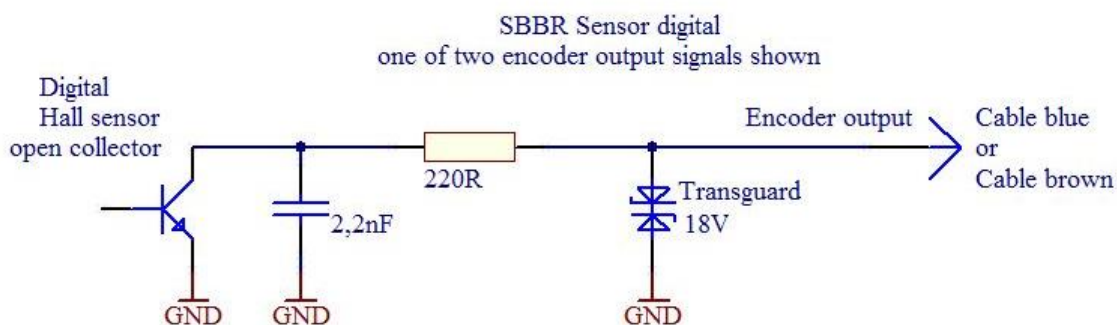
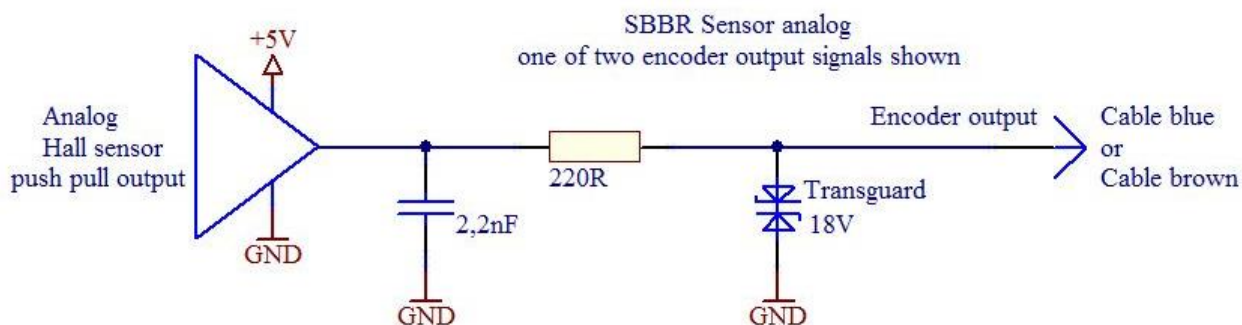
**For R bearings the gray cable is not occupied.**

<b>S-BB-R Digital</b>			
Cable color	Description	Signal	Comments
White	Supply voltage	+4 ... 16 V DC	-
Black	GND	0 V	-
Blue	Cosinus	0V / Open collector	16 CPR
Brown	Sinus	0V / Open collector	16 CPR

<b>S-BB-R Analog</b>			
Cable color	Description	Signal	Comments
White	Supply voltage	+7 ... 16 V DC	-
Black	GND	0V	-
Blue	Cosinus	Offset 2,5 V Amplitude max. 4,5 Vss	16 CPR
Brown	Sinus	Offset 2,5V Amplitude max. 4,5 Vss	16 CPR

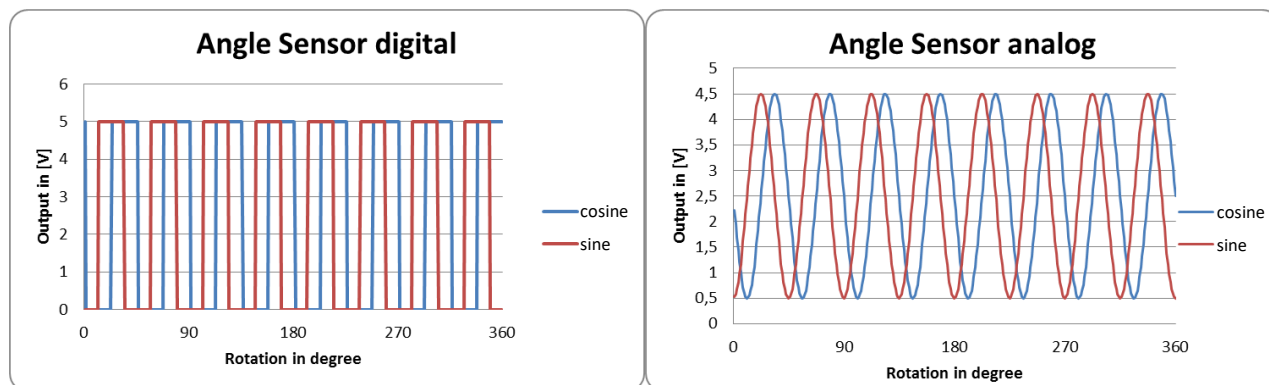
## Connection

### SBBR



## Angle sensor

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



**Order options**

S-BB-R		Price
<b>Size</b>		
120 K	Square Shaft	
120 L	Square Shaft	
128 K	Square Shaft	
128 L	Square Shaft	
<b>Angle sensor</b>		
0	Angle sensor analog	
1	Angle sensor digital	
<b>Cable in cm</b>		
110	Standard length	
XXX	Customized length	
<b>Connector</b>		
000	Without connector	
100	JST PHR6	
200	Molex 51021	
300	JST PAP 2 and 3 Pol	
400	JST PAP 5 Pol	

Please feel free to contact your NCTE sales team for additional information. Email: [sales@ncte.de](mailto:sales@ncte.de) or Phone: +49 89 66 56 19 17.

## Instruction manual

NCTE sensors are a key component for improving the performance of e-Bikes or pedelecs. The so called S-BB-R bike sensor is an inner bearing sensor measuring rotational speed and direction at bottom bracket.

Also the S-BB-R is the first BSA-68 sensor bottom bracket worldwide. By request there are also variants with ISIS crank mount available.

### General

Please read the instructions carefully before using it for the first time and only use the product for the intended purpose. Keep this manual for future reference to avoid any incorrect use. The instruction manual can also be downloaded as a PDF file under the following link: <http://www.ncte.com/service/downloads/>, or can be requested from our customer service at: [sales@NCTE.de](mailto:sales@NCTE.de).

### Manufacturer

The manufacturer of the torque sensor series S-BB-R is:

NCTE AG

Raiffeisenallee 3

82041 Oberhaching

Germany

Tel.: + 49 (0) 89 665 619-0

Fax: + 49 (0) 89 665 619-29

### EU directives and standards

The series S-BB-R is compliant with the European Union directives and the European Standards listed in this document. Further requirements are to be requested from the manufacturer.

### Span of application

The torque sensor is intended for use in bicycles with electric drive (pedelec, e-bike and electric bicycle) within the meaning of § 39 (7) of the German Road Traffic Act.

### Scope of delivery

The torque sensor system consists of a calibrated sensor with built-in signal acquisition/processing, a 1.10 m (standard length) connection cable.

### Intended Use

Use the product only as described in the instruction manual. Any other use is considered as improper and may result in property damage or even personal injury. The manufacturer assumes no liability for damage caused by improper or incorrect use.

### Handling and transportation

By handling, storage and transportation keep the sensor away from magnetic or electromagnetic fields which may exceed the maximal intensity defined from EMC (chapter technical characteristics) for instance degaussing machines.

### Precautions

Do not open the sensor housing under any circumstances.