



## Technical data

- Temperature range: -20°C to +70°C
- Protection class according EN 60653: IP64
- Integrated angle sensor for determination of rpm and direction of rotation
- Compatible for frames BSA68

## Your advantages

- Compliant with DIN EN 15194:2017
- Salt spray test 96 hours DIN EN 60068-2-52:2018 passed.
- Simple and intuitive assembly
- Completely maintenance free
- Made in Germany
- High revolution: Angle sensor with 72 pulses for an accurate speed measurement

### Short description

The S-BB-RP sensory bottom bracket with integrated sensors for detecting speed and direction of rotation. Many years of experience show that our sensors master the tough requirements and our sensors have proven their performance and robustness in the laboratory, and meet the requirements of DIN EN 15194.

We are happy to supply our SBBRP for your small, medium and large series.

## Technical characteristics

	S-BB-RP /square
<b>Bearing seal</b>	2 x 61902 2RS
<b>Shaft surface</b>	Zinc A2B
<b>Certification according to DIN ISO 15194:2017<sup>1</sup></b>	Yes
<b>Material of sensor shell</b>	Macromelt
<b>Cup threads</b>	BS 1,375x24
<b>Protection class according EN 60653</b>	IP 64 <sup>2</sup>
<b>Salt spray test according to DIN EN 60068-2-52:2018</b>	test duration 96 hours passed <sup>3</sup>
<b>Impulse transmitter</b>	Pole ring 72 pulses/rotation
<b>Voltage feed</b>	Digital: +5...16 V DC
<b>Power consumption</b>	Approx. 9mA
<b>Current limited supply voltage</b>	Max. 1A
<b>Signal output bandwidth</b>	4kHz



**Do not use any strong magnets or magnetized tools during assembly.  
The bottom brackets should only be disassembled by NCTE; otherwise the warranty expires.**

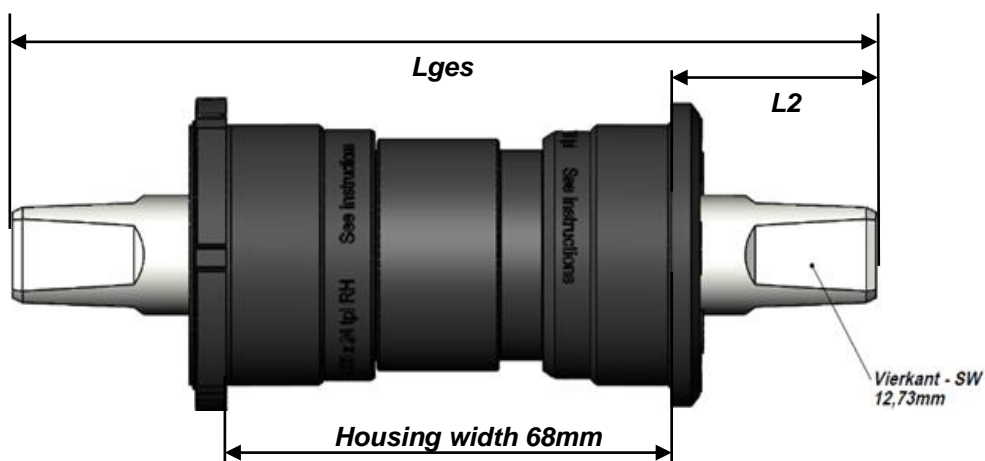
<sup>1</sup> The configuration of the test setup for product release can be obtained from NCTE on request.

<sup>2</sup> In the installed state

<sup>3</sup> In the installed state

## 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

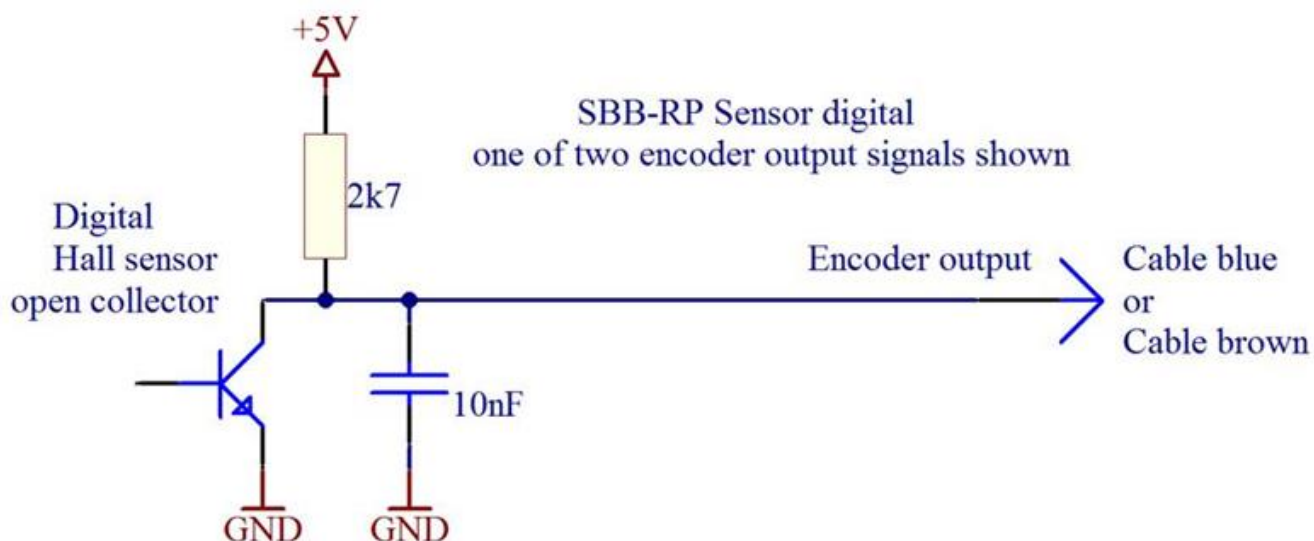


## Connection plan



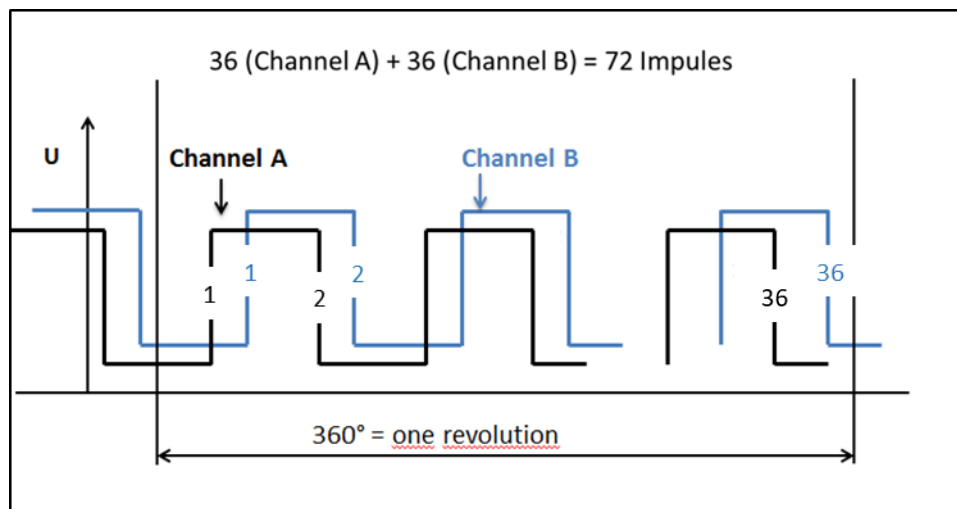
S-BB-RP Digital				
Cable color	PIN	Description	Signal	Comments
White	1/2	Supply voltage	+5 ... 16V DC	-
Black	2/2	GND	0V	-
Blue	1/3	Channel A	0V ... 5V	36 CPR
Brown	2/3	Channel B	0V ... 5V	36 CPR
Grey	3/3	Not in use		

### Connection diagram



### Angle sensor

Angle sensor with 72 poles for a precise measurement of rpm and direction of rotation.



## Option

Version	Part number	Price
SBBRP-120K	100000454	
SBBRP-120L	100000453	
SBBRP-128K	100000456	
SBBRP-128L	100000455	

All versions including digital angle sensor, 100mm connection cable and JST PAP 2 and 3 pole plug.

## Instruction manual

The sensory bottom brackets are used in all types of e-bikes, from city bikes to trekking and mountain bikes to cargo bikes. They deliver the necessary signals to the controller for a harmonious driving feeling. The so-called S-pedelecs are also equipped with our sensors.

### General

Please read this manual carefully before using it for the first time and only use the product as directed. Keep this manual for future reference to avoid any misuse. For the correct installation please proceed analogously to the installation instructions. The user and installation instructions can be downloaded as a PDF file under the following link: [http://www.ncte.de/serienprodukte\\_downloadbereich/](http://www.ncte.de/serienprodukte_downloadbereich/), or be requested from our customer service at: [sales@ncte.de](mailto:sales@ncte.de).

The explanation and operating instructions refer only to the sensor in the condition in which it was placed on the market. Subsequent parts attached by the end user and / or subsequent interventions are not taken into consideration.

### Manufacturer

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

NCTE AG  
Raiffeisenallee 3  
82041 Oberhaching  
Germany  
Tel.: + 49 (0) 89 665 619-0

### Intended use and installation

The sensor is intended for use in bicycles with electric drive (pedelec, e-bike and electric bicycle) within the meaning of section 39 (7) of the German Road Traffic Act. Only use the product in bicycle frames with a BSA thread and 68mm bearing width. Crank arms are to be mounted on the square shaft ends. The sensor measures the speed and direction of rotation. For safety reasons, the motor assist may only be activated if both speed outputs supply several correct and plausible signal sequences.

For this, the direction of rotation and the speed must be determined from both signals and checked for sensible limit values.

Any other use is considered improper and may result in property damage or even personal injury. The manufacturer assumes no liability for damage caused by improper or incorrect use.

## Possible error cases

If the sensor is blocked, contact the manufacturer immediately and stop using the product.

## Scope of Delivery

The **sensor** with integrated signal acquisition / processing in the housing and a **connection cable** according to the configuration.

## Assembly

For the correct installation please proceed analogously to the installation instructions. The user and installation instructions can be downloaded as a PDF file under the following link: [http://www.ncte.de/serienprodukte\\_downloadbereich/](http://www.ncte.de/serienprodukte_downloadbereich/), or can be requested from our customer service at: [sales@NCTE.de](mailto:sales@NCTE.de). Please note the pin assignment in the plug.

## Important technical safety instructions

1. Opening the sensor is strictly prohibited.
2. Impacts and falls should be avoided when not in use.
3. To prevent damage due to a short circuit of the connecting cable, the power supply to the sensor must be limited by a suitable fuse (approx. 1A rated current).
4. The sensor may only be operated within the permitted load limits. These can be found in the standard DIN 15194: 2017 and ISO 4210: 2018 Cycles- Safety requirements for bicycles Part 2: Requirements for city bicycles Chapter 4.13: Pedals and pedal / crank drive system
5. The polarity reversal or overvoltage on the connection cables can damage the sensor. The cable leads must be connected to the terminal strip in accordance with the connection diagram.
6. The routing outside the bicycle frame may affect the sensitivity of the sensor. NCTE recommends the laying of the connection and data line accordingly in the frame. If this laying is not possible due to technical reasons, the radiation sensitivity should be re-evaluated accordingly by the EPAC manufacturer.

## Disposal

Dispose the article and all associated components via an authorized waste disposal company. Observe the currently applicable regulations. If in doubt, ask your disposal centre for environmentally sound disposal.

## Service

Service-Contact: Tel.: +49 89 66 56 19 0 or E-Mail: [sales@ncte.de](mailto:sales@ncte.de)

## Cleaning

The sensor must not be cleaned with a high-pressure cleaner as the ball bearings could be damaged. The contact or cleaning of the sensor with solvent-containing liquids is not permitted

## Conformity with EU directives

The product meets the requirements of the European Union for CE. For more information, please contact Customer Support ([sales@ncte.de](mailto:sales@ncte.de)).

