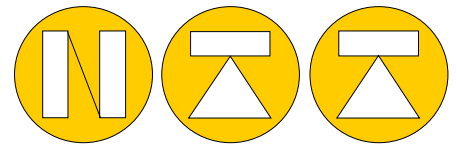


SEIKA SB2i-B



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SB2i-B1 /B2 & B3 DC Acceleration



B1 HIGH SENSITIVITY ACCELERATION
From DC to 160 Hz down at +/-0.4G X Y direction

Description

SB2i-B1, B2 & B3 is capacitive spring mass accelerometers with integrated sensor electronics. Resonant peaks are minimised by means of a special gas-dynamic damping in the primary transformer.

The SB2i accelerometer can be supplied in a variety of models from very high sensitive units with a very small working range down to +/-0.4G = 4-20mA output and a sensitivity at 20.0000mA per G

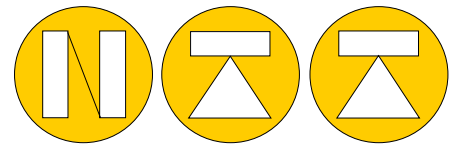
The sensor electronics requires only very low power consumption and is characterised by a high degree of long-term stability. They can be ordered with a selection of Low Pass filtering fitting to the job.

Application

The acceleration sensors **B1, B2, B3** are typically used where high overloading occurs, in applications which require high long-term stability, measurements at a very low frequency or of static signals, very short rise-times, and/or small power consumption is required.

Typical applications are:

- Measurement on vehicles, machines, buildings, Wind mills
- In process control systems as well as in safety installations
- Seismic measurements
- Inclination measurements
- Dynamic measurements
- Machine vibration measurement
- Dynamic rate determination



Technical Data

Termination	max.: 2 x 1,5 mm ²
Cable gland	PG7 Size in metric metal mode
Measuring ranges	In accordance with the actual SEIKA-Sensor
Protection degree	IP65
Mounting	Any direction
Working planes sensor (B1 - B3 Sensor)	3 directions of mounting
Measuring directions (B1 - B3 Sensor)	in X,Y,Z-co-ordinate to the housing
Supply voltage to the box	+8 ... +30 Volt
Minimum loop current	3mA
Maximum loop current	Approx.24mA
Output current loop signal	4...20mA (12mA as zero point)
Adjustable area's via pot.-meters	Signal-zero (12mA), Span
Max. Load impedance	500 Ohm (at 24 Volt loop supply)
Working temperature	-40 ... +85°C

Type Sensor mounted: B1

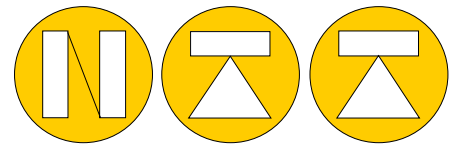
B2

B3

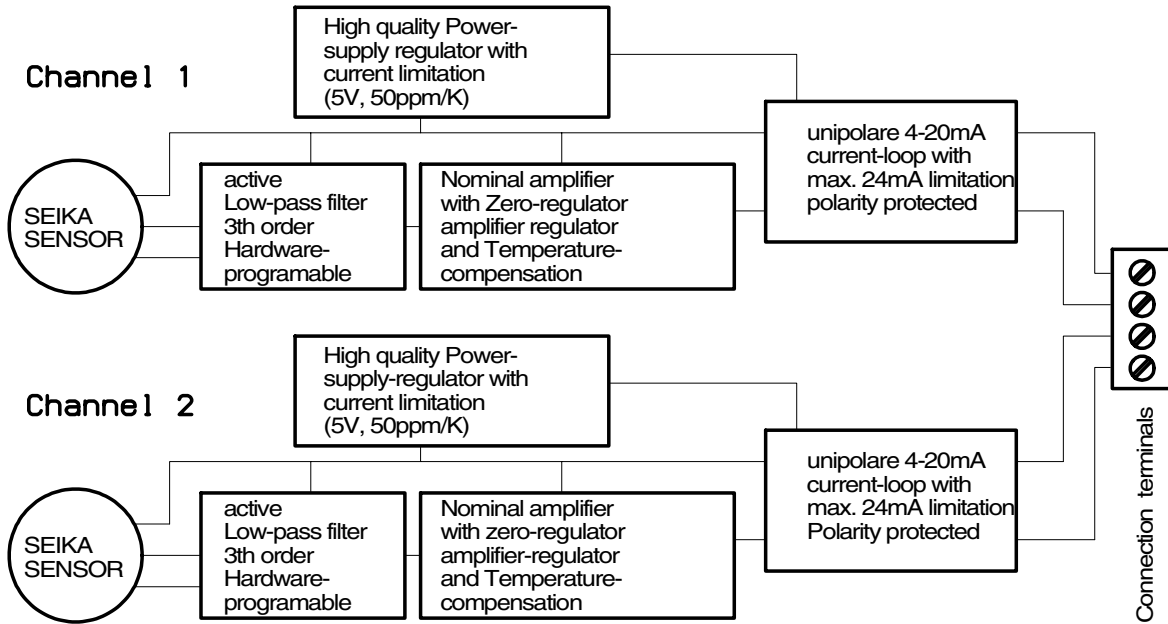
	B1	B2	B3
Measuring range	±3g (app.±30m/s ²)	±10g (app.±100m/s ²)	±50g (app.±500m/s ²)
Resolution	<10 ⁻³ g	<5*10 ⁻³ g	<2*10 ⁻² g
Frequency range	0...160Hz	0...350Hz	0...550Hz
Non-linearity		<0.2% F.S.	
Cross axis sensitivity		<1%	
Sensitivity	App.2.666mA/g	app. 0.800mA /g	app. 0.160mA/g
B1 special range down to	app. 20.000mA/g (+/-0.4G range as minimum)		
Temperature drift on			
Sensitivity		<0,05% / °C	
Temperature drift on zero		<0,05mA/°C	
Mechanical overloading			
in measuring direction		10 000 g (app. 100 000 m/s ²)	
Nominal power supply		U _{BN} = 24 Volt (se page 3)	
Permissible range of			
power supply		10-30Volt (se page 3)	
Protection degree		IP65 (Optional IP67)	
Working temperature		-40°C to +85°C (optional 125°C)	
Storage temperature		-45°C to +90°C (optional 125°C)	
Weight (Metal housing without cable)		364 Gram	
Electrical standard connection		PG7 size on metric model (PG9 as optional)	
Alternative electrical connections		IP67 connector and special cables	

At order a special Low Pass filter can be ordered

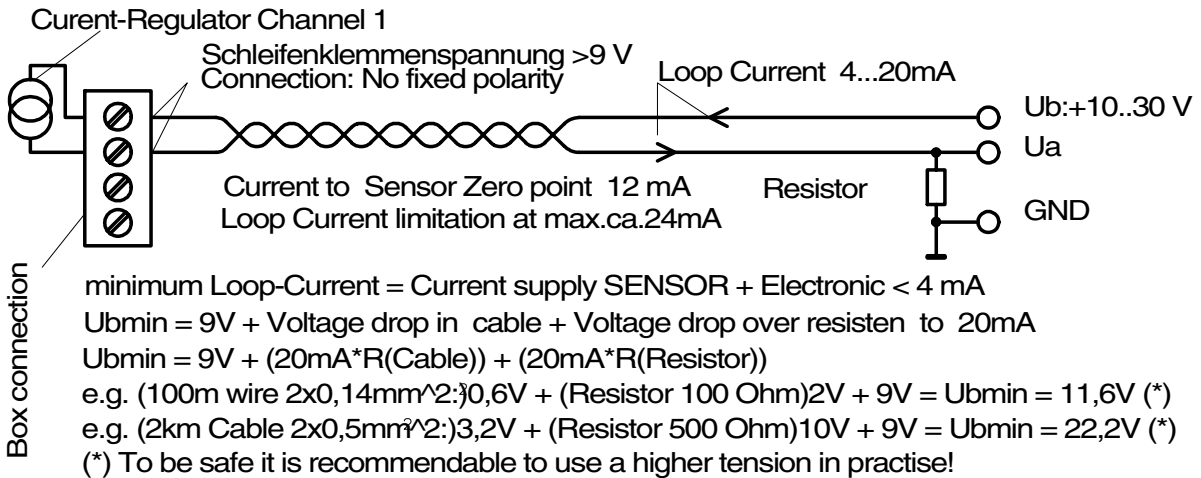
BDK sensor to be used please look at separate BDK brochure



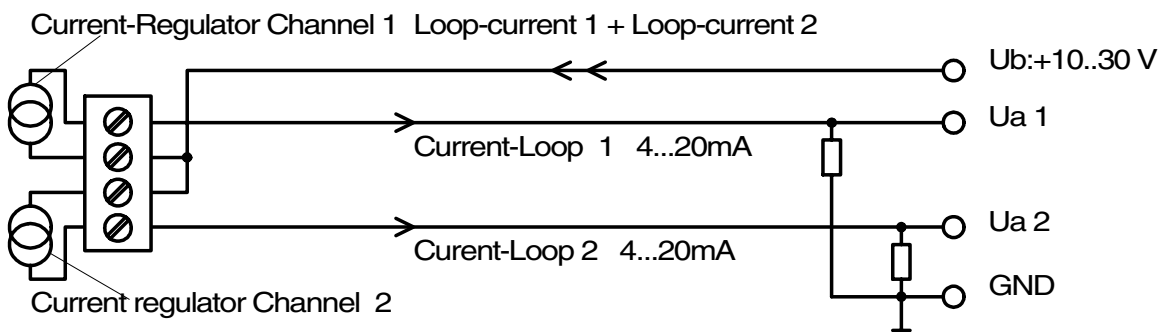
Block diagram



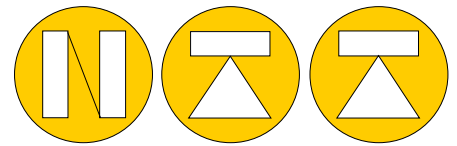
Current-Loop diagram



Two Current-loop's with 3 connections

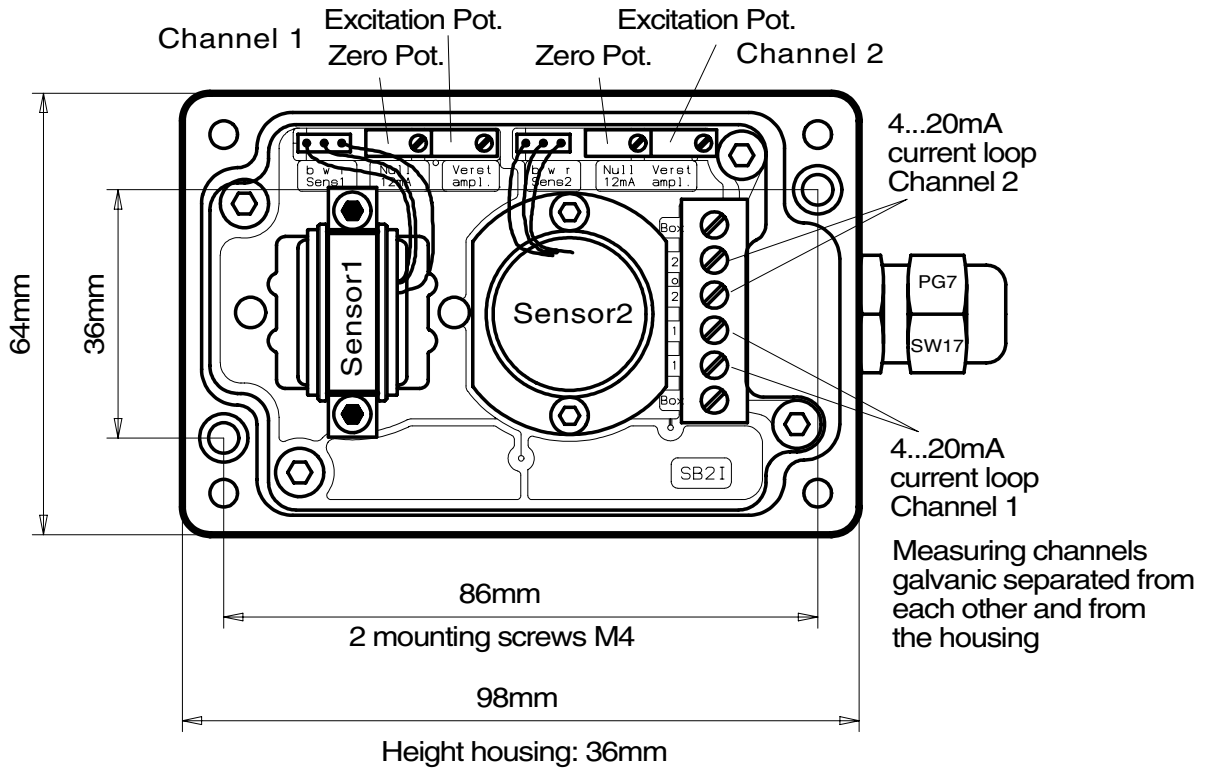


SEIKA SB2i-B

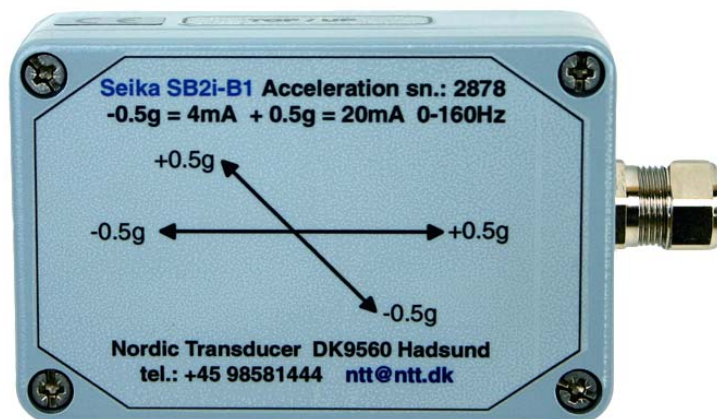


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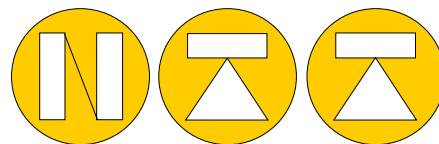
Dimensions in mm



Most standard way of mounting



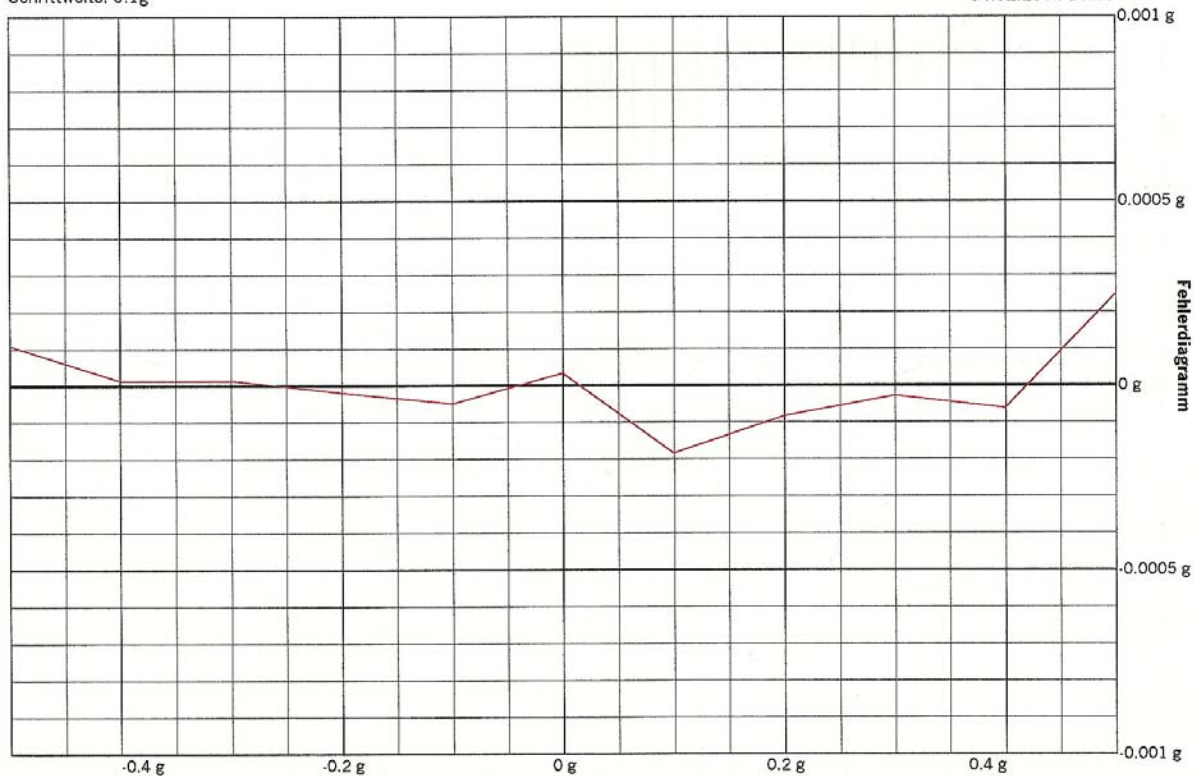
SB2i-B1-SUR-XY



Sensor (Ch01): SB2i 2878/1
 Messbereich: -0.5g bis +0.5g Mittenstrom: 11.9994 mA Empfindlichkeit: 15.997 mA/g
 Schrittweite: 0.1g

Nordic Transducer
<http://www.ntt.dk>
 tel. +45 98581444 ntt@ntt.dk

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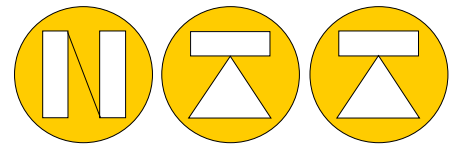


The SB2i-Bx sensor boxes can be supplied with accurate test data as shown here up to +/-1g

XB1



As option a special XB1 very strong stainless steel housing can also be supplied for the SB2i, please look at XB1 brochure for more information.



Measuring Directions

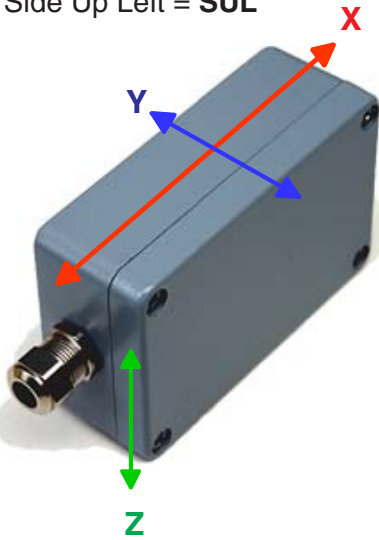
As shown here there is 5 different ways of mounting the SB2i box and each of these can be with the 2 sensors in 2 of the 3 shown directions, please notice when using Z direction the zero point will then be 1G.

The SB2i box must be fixed rigid in a level position for both X and Y axis as the zero point will be influenced by tilting, a DC accelerometer do in principle also measure inclination so it is important to level it correct.

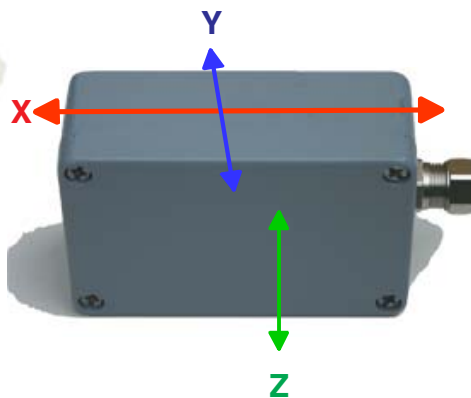
If this is a problem then BDK sensors can be implemented, but notice that these do only go down to 1 Hz, they can be situated as you wish without changing the zero point.

Ordering example: SB2i-B1-SUR-XY

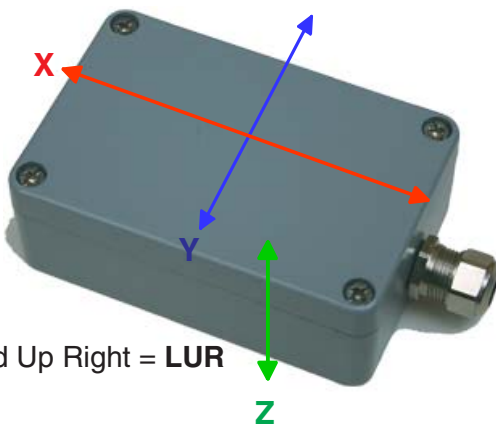
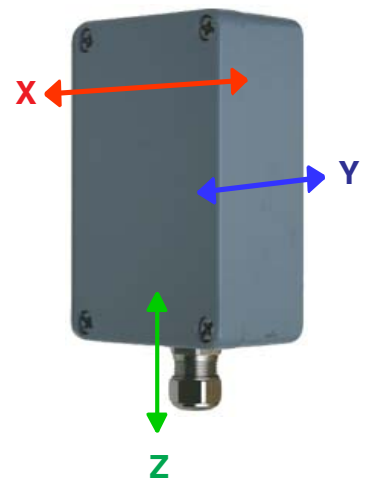
Side Up Left = **SUL**



Side Up Right = **SUR**

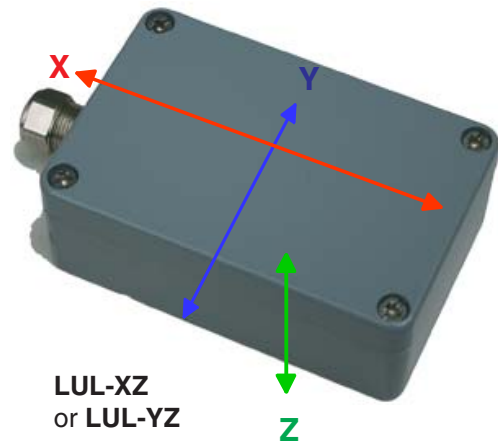


End Up = **EU**



Lid Up Right = **LUR**

Lid Up Left = **LUL**

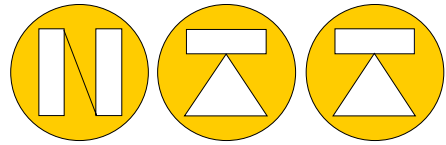


LUL-XZ
or **LUL-YZ**

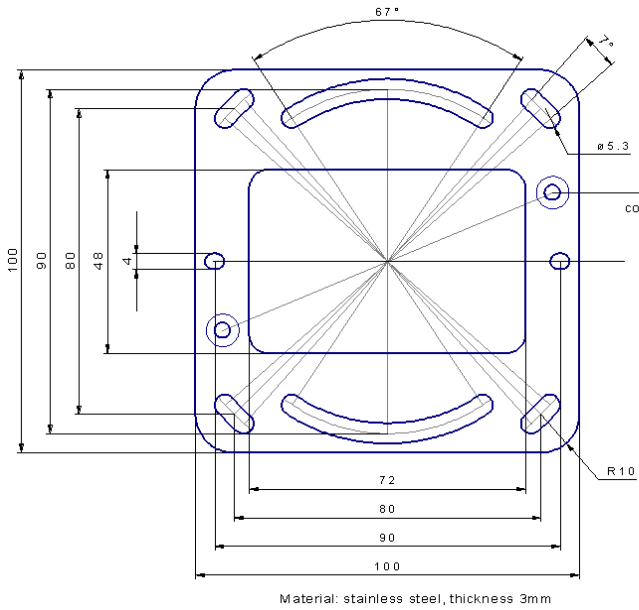
Please notice: Only possible with LID UP
LUR-XZ or **LUR-YZ**

When using Z axis, 1g will be off-set which has to be deducted from sensor range, so a B1 sensor will then only have a range of +/-2g max.

Mounting plates for SB box made of stainless steel



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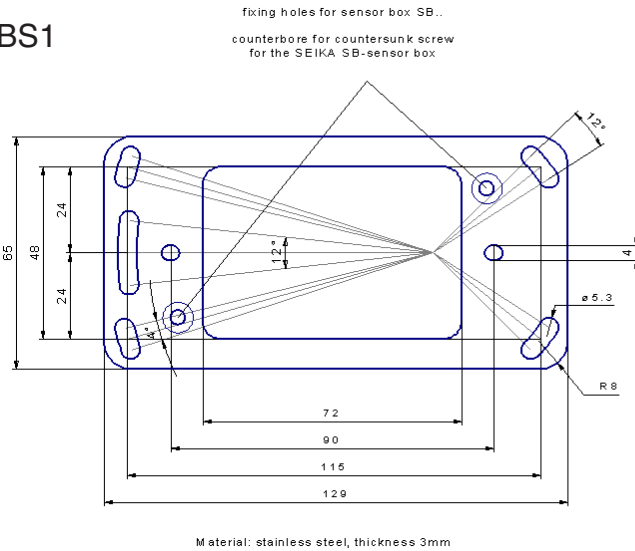


fixing holes for sensor box SB..
counterbore for countersunk screw M4 for the SEIKA SB-sensor box
reference line for dowel pins

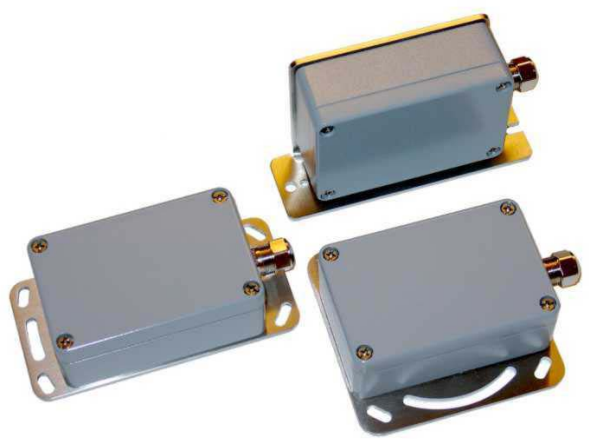
Recommended parts for mounting:
hexagon socket-type (Allen) screw M5 stainless steel DIN 912
spring washers stainless steel DIN 127
washers, stainless steel outer diameter 9...10mm DIN 433 or DIN 125

SBBS1

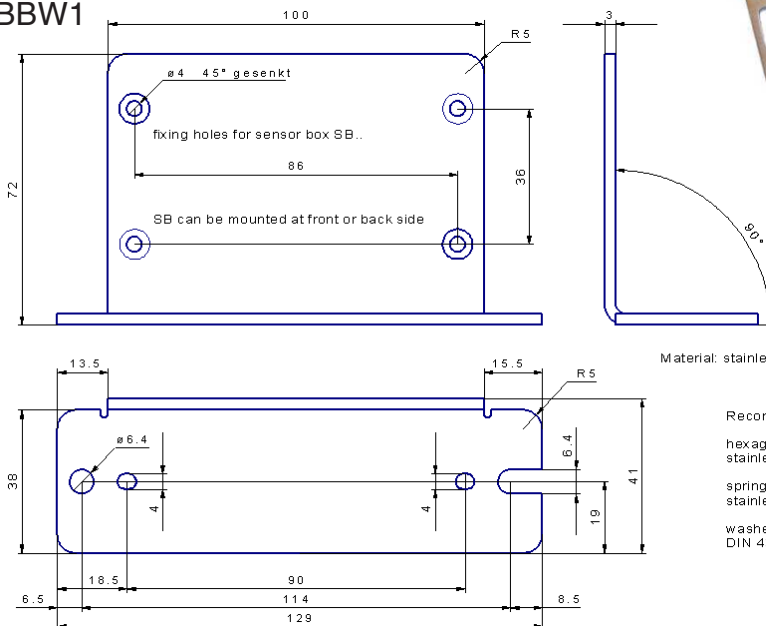
SBBS1



Recommended parts for mounting:
hexagon socket-type (Allen) screw M5, stainless steel DIN 912
spring washers stainless steel DIN 127
washers, stainless steel outer diameter 9...10mm DIN 433 or DIN 125



SBBW1



Material: stainless steel, thickness 3mm

Recommended parts for mounting:
hexagon socket-type (Allen) screw M6 stainless steel DIN 912
spring washers stainless steel DIN 127
washers, stainless steel DIN 433 or DIN 125