

Sensor box
With one sensor and
one signal amplifier
for 2 wire 4..20mA cur-
rent output.

Special features

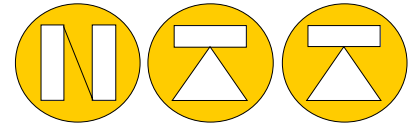
- Strong stable aluminium housing (IP65), in sea water coated finish
- Special designed aluminium housing for an extra stable fixing of sensor
- Integrated 4...20mA amplifier for 2 wire connection
- Temperature compensation beyond the sensors own compensation data
- No extra power required
- All SEIKA-Sensors can be utilised in this SB1i box
- The output signal of the SB1i can be calibrated to customer's specs. In connection with the respective sensor required
- Sensor and amplifier are galvanic separated from the housing
- Extensive EMC protected
- High stable sensor supply voltage
- 8 to 30 Volt box supply
- Dynamics parameters are programmable
- Current-loop with max. Current limitation
- High overload resistance
- Reverse polarity protected
- low-pass signal filter with optional setting of maximum frequency for suppression of interference frequencies

Description

The **SB1i** sensor box is a pressure-cast aluminium box (IP65) with integrated sensor for single axis Inclination or for Acceleration measurement.

The **SB1i** contains an amplifier section with 4-20mA-output signal that offers a 2 wire system possibility as well as a separate high-stable power supply section for supplying the actual sensor. The amplifier for the current-loop contains also a low-pass filter for upper frequency limitation. Specific response time constants and maximum current output limitation can also be a part of the custom built unit. Supply noise suppression filtering and Diode Bridge for unipolar current loop operation are also a standard part. Sensor and amplifier are galvanic isolated from the housing.

In the **SB1i** box, the **NG** type sensor can also be implemented, which means a very high degree of accuracy on the measuring of inclination and an considerably reduced temperature drift over the whole temperature range, this as the highest degree of accuracy of all **SEIKA** products.



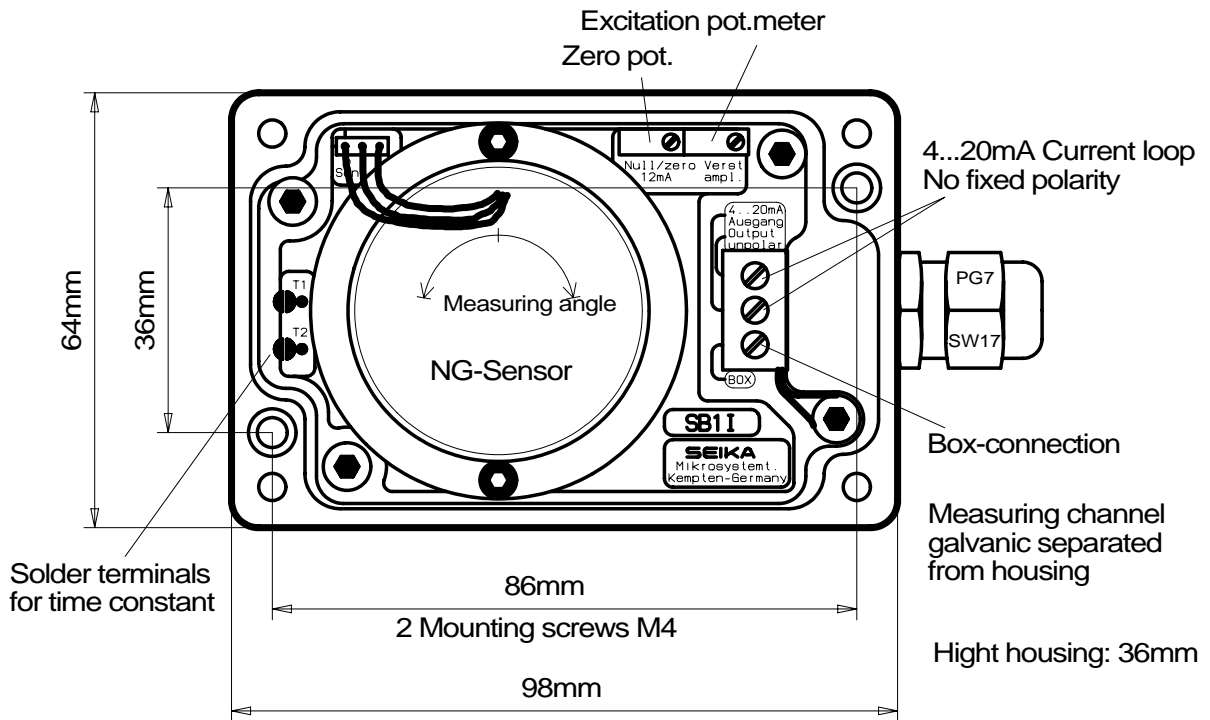
A strong metal PG cable gland and the solid and compact housing for the whole Sensor box in connection with the 2 wire current-loop output provides a high-quality system for use under many types of difficult working conditions.

Applications

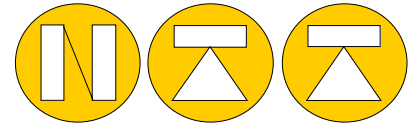
The SB1i is used everywhere, where inclination or acceleration measurements are wanted together with a 4...20mA current loop output. In particular in buildings, mining industry, radar systems, bridges, ships, in agricultural machinery and in all types of process machinery, just name it! and SB1i can most likely be used there.

Options: Special measuring ranges, test report, Silicone filled housing, custom wiring

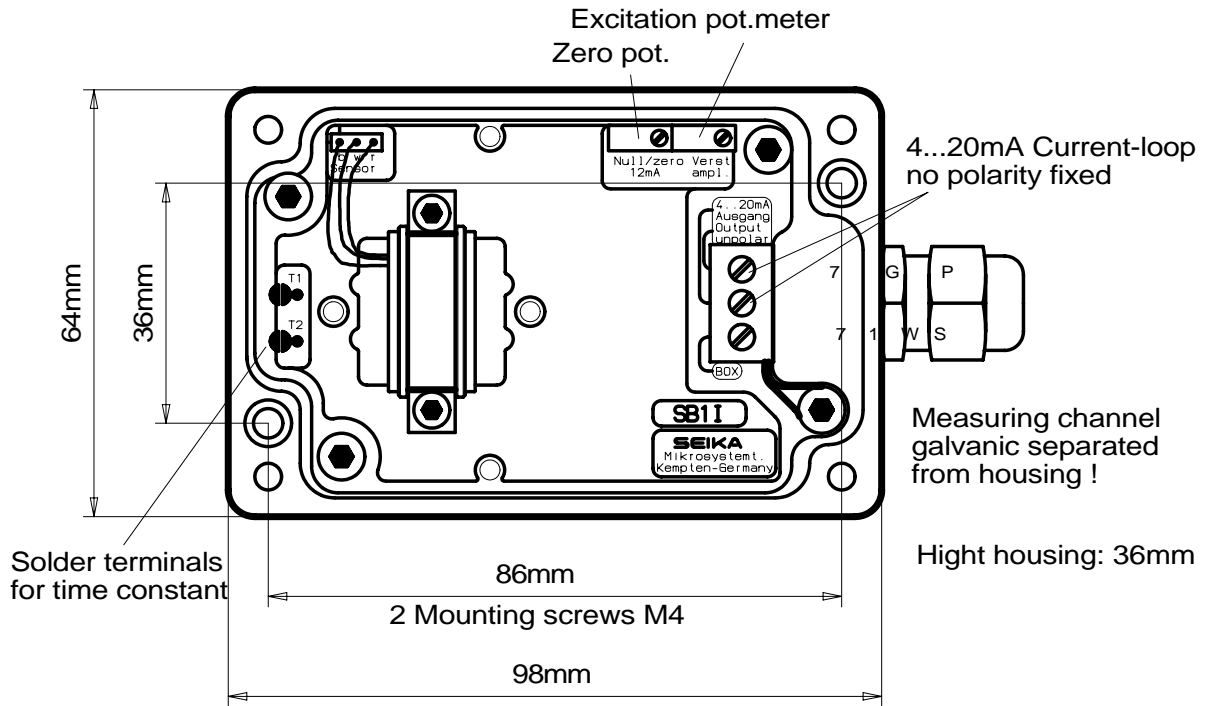
SB1i Shown with NG-Inclinometer - dimensions



SB1i with special mounting bracket and connector.

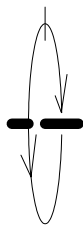


SB1I with NB3-type Inclinometer - Dimensions + +



Sensor type: N..., NB..., B..., BD..., BDK...

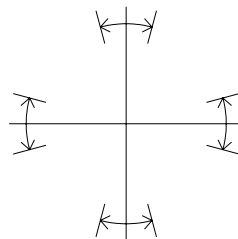
Measuring
levels and
Directions:



N-Sensor

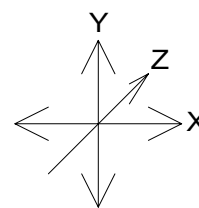
Angle-zero can be
+ , - turned in
both directions

Cable output from
the Sensor box
can be as shown
from the right or
from the left or top
of the box.



NB-Sensor

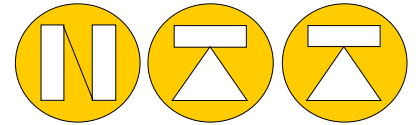
Angle-zero with
90°- steps turned
as shown
+ , - turneable
in both directions
possible



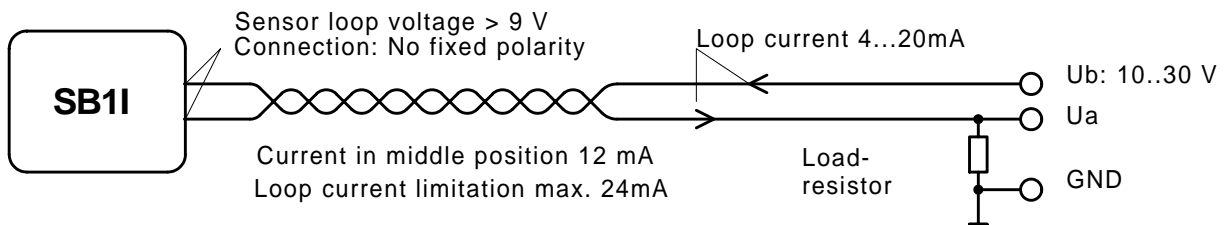
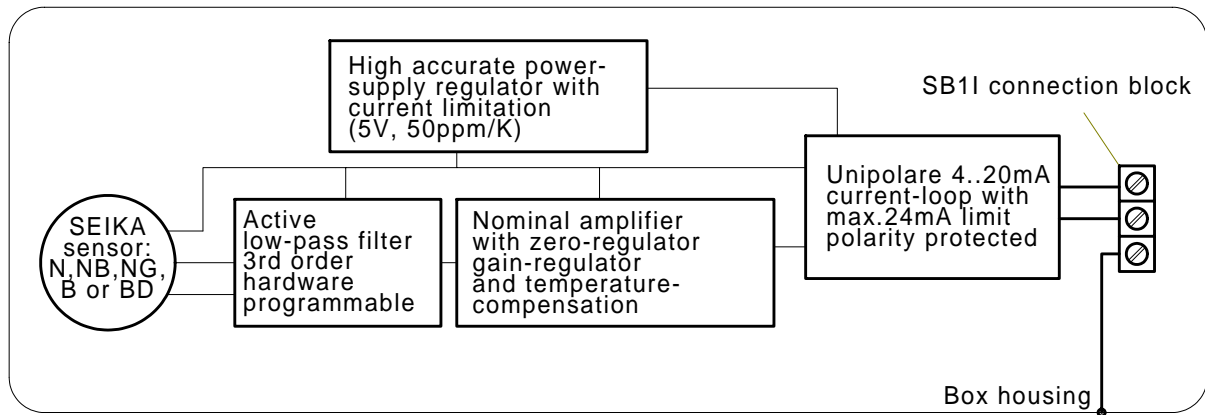
B-,BD,-BDK-Sensors

Acceleration measuring
Can direct be mounted in
X, Y, and Z-Direction with
+,- measuring direction in
X and Y direction.

There are a lot more possibilities for mounting **SEIKA** sensors in **SB1I** Sensor-box. So if you don't find your application here, please send us a sketch of how you want to have your box configured for measuring either Inclination or acceleration, and we will come with our proposal



BLOCK DIAGRAM AND CONNECTIONS



minimum loop-current = current supply SENSOR + electronics < 4mA
 $U_{bmin} = 9V + \text{voltage drop in cable} + \text{voltage drop over load-resistor to } 20mA$
 $U_{bmin} = 9V + (20mA \cdot R(\text{Cable})) + (20mA \cdot R(\text{L-resistor}))$
 e.g. (100m wire 2x0,14mm :)0,6V + (resistor 100 Ohm:)2V + 9V = $U_{bmin} = 11,6V$
 e.g. (2km Cable 2x0,5mm :)3,2V + (resistor 500 Ohm:)10V + 9V = $U_{bmin} = 22,2V$

Since the supply voltage for the SB1i are obtained from the current loop and the SB1i requires max. 3mA, an input voltage of 9 Volts min. must be present at the connection block. This is also required in order to guarantee correct operation when the highest loop current of approx. 24mA is used.



SB1i mounted with NB3 sensor



Option: XB1 Stainless Steel Housing for SB1i