

SB1U-NG

**Sensor box with one  
Sensor and amplifier  
for signal output at :  
2.5V +/- 2Volt  
Signal output as:  
+/-10° - +/-30° - +/-80°**

### Special features

- Strong stable aluminium housing (IP65), in sea water coated finish
- Torsion free four fixing points of the 3,2mm motherboard
- Integrated 0...5VDC amplifier for signal output
- Temperature compensation beyond the sensors own compensation data
- No extra power required
- All SEIKA-Sensors can be utilised in this SB1U box
- The output signal of the SB1U is calibrated to custom 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 is programmable
- Strong mechanical design in housing
- High overload resistance
- No polarity connections mistakes
- Low-pass signal filter with optional max. Frequency filter for suppression of interference frequencies

### Description

The **SB1U** sensor box is a pressure-cast aluminium box (IP65) with integrated sensor for single axis Inclination or for Acceleration measurement.

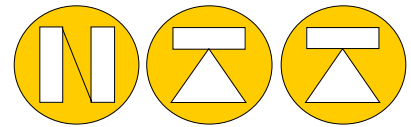
The SB1U contains an amplifier part with 0...5VDC output signal possibility, also as a separate part on the board there is a high-stable power supply for supplying the actual sensor (this can also be taken out as an ref. Voltage! ). The amplifier for the Signal output contains also a low-pass filter for upper frequencies limitation. Rise-time constant as a specific value, + an max. Current output limitation, can also be a part of the custom built unit. Supply noise suppression filter and Diode Bridge for guarantee of the Electromagnetic Compatibility are also a standard part in this unit. Sensor and amplifier are galvanic isolated from the housing.

In the **SB1U** 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 high voltage signal output gives al together a high-quality system for use under many types of difficult working conditions.

### Applications

Nordic Transducer \* Als Odde \* DK-9560 Hadsund Denmark \* Tel: +45 98581444 \* Fax: +45 98581866  
Internet: [www.ntt.dk](http://www.ntt.dk) \* e-Mail: [ntt@ntt.dk](mailto:ntt@ntt.dk) 22-01-03



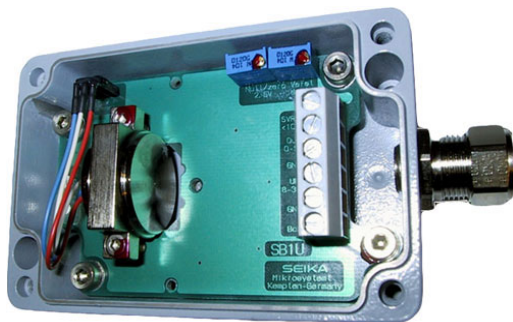
The **SB1U** is used everywhere, where inclination or acceleration measurements are wanted together with a high level DC voltage output. In particular in buildings, mining industry, radar systems, bridges, ships, in agricultural machinery and in all types of process machinery, just name it, and **SB1U** can be for very good use nearly everywhere.

## Technical Data

Termination	Max.: 2 x 1,5 mm <sup>2</sup>
Cable gland	PG7 (Metal with integrated stress relief)
Measuring ranges	In accordance with the actual SEIKA-Sensor
Protection degree	IP65
Mounting	Any direction
Working planes sensor (N. or NB3 Sensor)	3 directions of mounting
Working planes sensor (NG..Sensor)	Parallel to the base of housing
Measuring directions (B...BD..Sensor)	in X,Y,Z-co-ordinate to the housing
Supply voltage to the box	+8 ... +30 Volt
Operating current	Max. 5mA
Measuring range of the output signal	+0,5 to +4,5 Volt as standard
Maximum range of the output signal	+0,05 to +4,95 Volt
Reference initial voltage	( 5+/-0,005) Volt ( max.10mA) 20ppm/k
Output impedance	100Ω
Output signal zero	+2,5 Volt
Adjustable area's via pot.-meters	Signal-zero (2,5V), Span +/-2V from factory
Low-pass filter	Active, 5 <sup>th</sup> order, minimal ripple
Working temperature	-40 ... +85°C
<b>NG sensor temp. Drift span &amp; zero</b>	<b>-40 ... +85°C</b> <b>+/-1.5% F.S. over full range !</b>

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

## SB1U-NB3 sensor



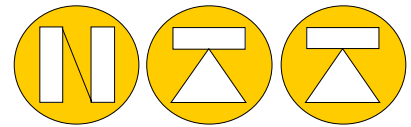
**For special jobs where a very fast response time is wanted down to 0.02 sec. the NB3 is the answer.**

**The fast response can be combined with a customer filtering at order!**

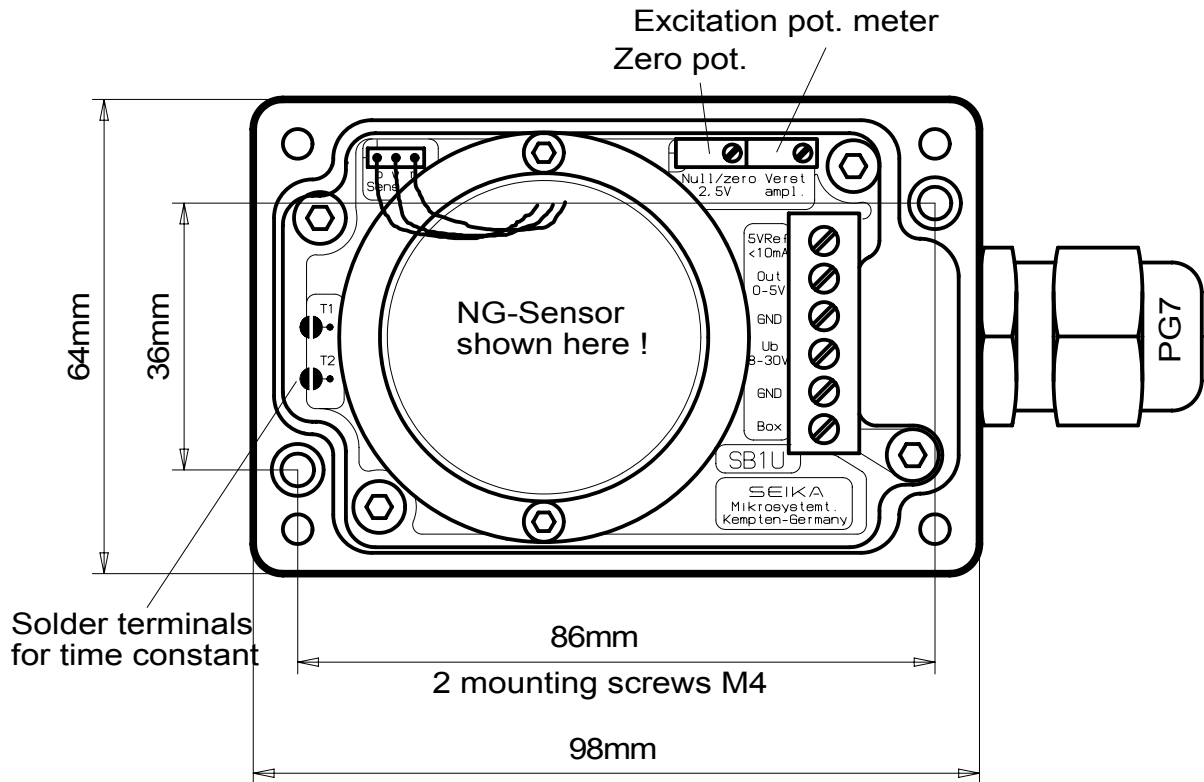
**NB3 range is +/-10° with possibility of up to +/-20° 0.5% non-linearity from 10° to 20°**

**For more information please look at NB3 data sheet.**

NB3 Type sensor Data (when used)	NB3
Measuring range	±10 degrees
Expanded working range usable!	±20 degrees (max. Non-linearity <0.5%)
Noise-signal relationship	<±0,003 degree
Max. Non-linearity	<0,2% from measuring range
Transverse Sensitivity	Practical near zero
Rise-time constant	Approx.. 0,3 sec. (Shorter times as optional min. 0.02 sec.)



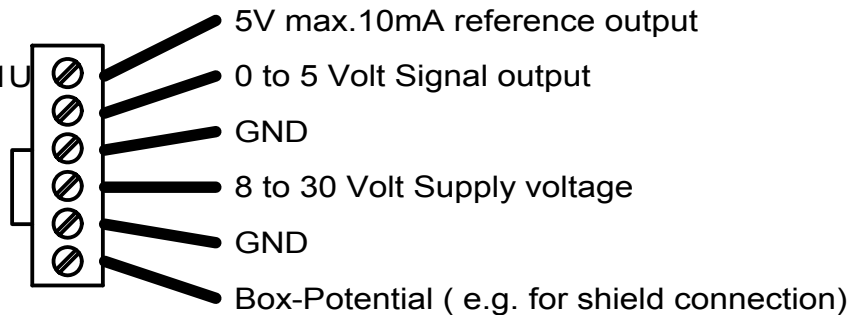
Dimensions and pin assignments



Measuring channels galvanic separated from housing

Hight housing: 36mm

All SEIKA Sensors can be used in the SB1U



**Caution! The supply voltage (8 to 30V) must NOT be wrong connected to any output signal.**

**Pin assignments are the same for NB3 sensor!**

NG Type sensor used in SB1U	NG2	NG3	NG4
Measuring range	±10 degrees	±30 degrees	±80 degrees
Typical Noise-signal relationship	<± 0,003degrees	<± 0,008 degrees	<±0,016 degrees
Dimensions	See drawing		
Max. Non-linearity	0,1% F.S.!		
Transverse Sensitivity	1% at 45° tilt		