



**Sensor box containing one sensor and one signal conditioner with 0...5V output**

## Features

- robust pressure die cast aluminium housing (IP67)
- robust pressure die cast aluminium housing (IP67) with saltwater proof coating
- twist free 4-point fastening of rigid, 3.2mm thick base PCB
- integrated signal conditioner with 0 ... 5V output
- temperature drift compensation
- 9V ... 30V supply voltage
- all SEIKA sensors fit the housing and can be installed in different directions of operation
- output signal calibrated to customer's specifications
- sensor and signal conditioner electrically isolated from housing
- EMC certified
- highly stable sensor supply voltage
- programmable dynamic response
- either connection polarity
- high overload resistance
- low pass filter with optional choice of cut-off frequency for suppression of interference frequencies

## Description

The SB1U is a pressure die cast aluminium sensor housing (IP67) with an integrated sensor for measuring uniaxial acceleration or inclination.

As well as the sensor, the box contains a signal conditioner with 0 ... 5V output and a separate, highly stable supply voltage that can be used externally as a reference point. Furthermore, the signal conditioner includes an active low pass filter, whose upper cut-off frequency / settling time can be adjusted to suit the measurement task, and a noise voltage filter to guarantee the EMC. Interference signals caused by unwanted ground currents are eliminated by electrically isolating sensor and signal conditioner from the housing.

Unlike the SB2..., the SB1U can accommodate larger inclinometers, such as the NG.. series, that have a higher measuring accuracy. A special electronic temperature compensation system can significantly reduce the temperature sensitivity of the implemented sensor.

The compact PG metal cable gland and small housing size in combination with the max.5-wire connection enable the use of this high quality measuring system in harsh operating conditions.

## Application

The SB1U is suitable for applications requiring precise inclination or acceleration measurements under harsh circumstances and returning of a 0 ... 5V output signal. Areas of successful implementation include construction, mining, agricultural machinery, transportation and conveyor systems, ships, operation and automation technology as well as general mechanical engineering.

**Technical Specifications**

Terminals	6 x 1.5 mm <sup>2</sup>
Cable fixing	M12 x 1.5 cable gland, clamping range 6mm ... 7.5mm
Measuring range, Resolution, etc.	dependent on implemented SEIKA sensor
Degree of protection	IP67
Mounting orientation	Any
Measuring planes (N.. sensor)	3 main housing planes
Measuring plane (NG.. sensor)	parallel to bottom of housing
Measuring directions (B., BD.. sensor)	X,Y,Z coordinates of housing
Supply voltage	9V ... 30V
Operating current	approx. 5mA
Normalized output voltage range	0.5V ... 4.5V
Output zero point	2.5 Volt
Maximum output voltage range	0.05V ... 4.95V
Output resistance	100 Ohm
Capacitive output loading capacity	any, taking dynamic requirements into account
Output reference voltage	(5 ±0.005) Volt (max.0.5mA) 20ppm/K
Adjustable variables	zero point (2.5V), amplification
Low pass filter	active, 5th order, minimal ripple
Operating temperature	-40°C ... +85°C

Options: special measuring ranges, calibration record, silicon encapsulation, custom wiring

**Dimensions (in mm) and Connections**

