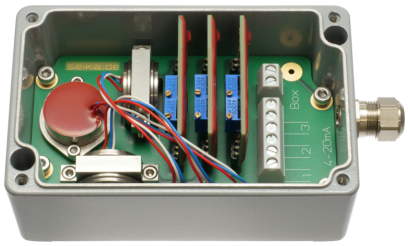


Sensorbox containing three SEIKA sensors and three signal conditioners with 4...20mA output. All three channels are galvanically separated from each other.

Features

- **robust pressure die cast aluminim housing (IP67) with saltwater proof coating**
- **twist free 4-point fastening of rigid, 3.2mm thick base PCB**
- **three integrated signal conditioners with 4...20mA, 2-wire outputs**
- **extensive temperature drift compensation of the sensitivity**
- **no separate supply voltage necessary**
- **all SEIKA sensors of the B, BDK, N and NB series can be mounted in multiple directions of operation in the housing**
- **the output signals for each sensor are calibrated to customer's specifications in the required directions of operation**
- **sensors and signal conditioners are electrically isolated from housing**
- **EMC certified**
- **the three output channels are electrically isolated from and independent of each other**
- **internal, highly stable sensor supply voltages**
- **10V ... 30V terminal voltage**
- **loop current limitation**
- **programmable dynamic response**
- **high mechanical overload resistance**
- **either connection polarity - possibility of 4-wire connection for both measuring loops**
- **low pass filter with optional choice of cut-off frequency for suppression of interference frequencies**

Description

The SBG3I is a pressure die cast aluminium sensor housing (IP67) with two integrated sensors for measuring accelerations and/or inclinations along three axis acceleration and/or two axis inclination.

As well as the sensors, the box contains three independent signal conditioners, each with a 4...20mA, 2-wire output, and three separate, highly stable voltage supply feeding off the corresponding current loop, one for each sensor. Furthermore, each signal conditioner includes an active low pass filter, whose upper cut-off frequency / settling time can be adjusted to suit the measurement task, an output stage with current limitation, a noise voltage filter and a diode bridge for unipolar connection to the current loop. Interference signals caused by unwanted ground currents are eliminated by electrically isolating each sensor and signal conditioner from each other and the housing. A special electronic temperature compensation system can significantly reduce the temperature sensitivity of the implemented sensors. Electronic temperature compensation largely compensates for the temperature drift of the implemented sensors' sensitivity. Optionally, the temperature drift of both offset and sensitivity can be reduced significantly through individual compensation.

The compact metal cable gland and compact housing size in combination with the 2-wire connections enable the use of this high quality measuring system in harsh operating conditions.

Application

The SBG3I is suitable for applications requiring precise acceleration or inclination measurements along three axis under harsh circumstances and returning of a 4...20mA output signal each. Areas of successful implementation include construction, mining, agricultural machinery, transportation and conveyor systems, ships, operation and automation technology as well as general mechanical engineering.

Specifications

Terminals	6 x 1.5mm^2 (plus 2 x 1.5mm^2 housing potential)
Cable gland	M12 x 1.5, metal cable gland with integrated strain relief, clamping range 6mm ... 7.5mm
Measuring range, Resolution, etc.	depending on implemented SEIKA sensors
Degree of protection	IP67
Mounting orientation	any (standard: wall mounting, cable on the right)
Terminal voltage	10V ... 30V
Minimum loop currents	2.1mA ... 3.5mA
Maximum loop currents	22mA ... 26mA
Output loop current	4...20mA (12mA for zero position)
Adjustable variables	zero point (12mA), amplification
Maximum load resistances	500 Ohm (for 24 Volt supply voltage)
Low pass filter	active, 3rd order, minimal ripple
Operating temperature	-40°C ... +85°C
Weight	approx. 660g

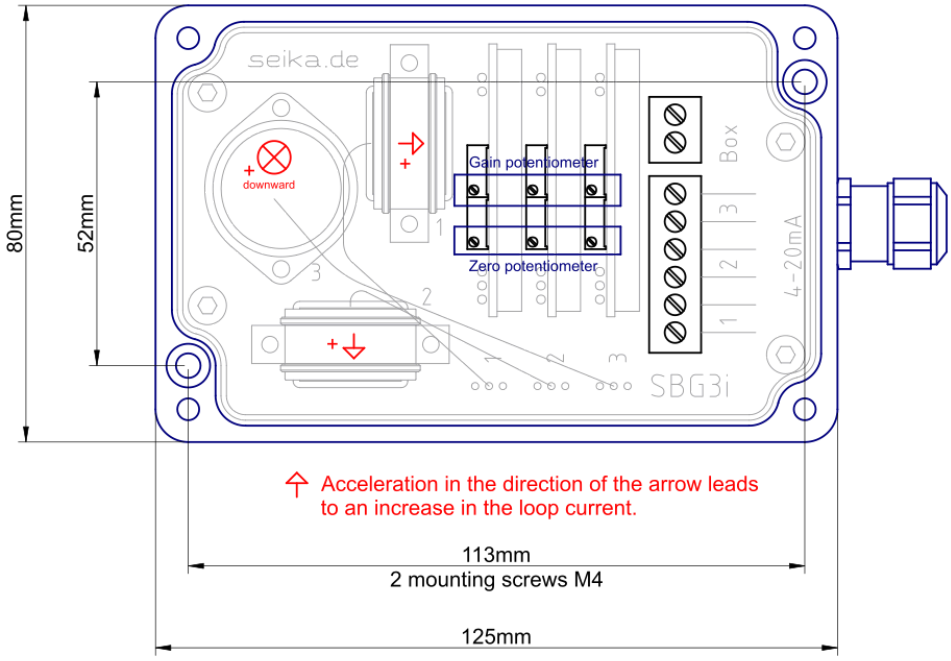
• The box is delivered with an individual calibration record that includes the precise offset and sensitivity values, the static characteristic curves and the linearity deviation curves.

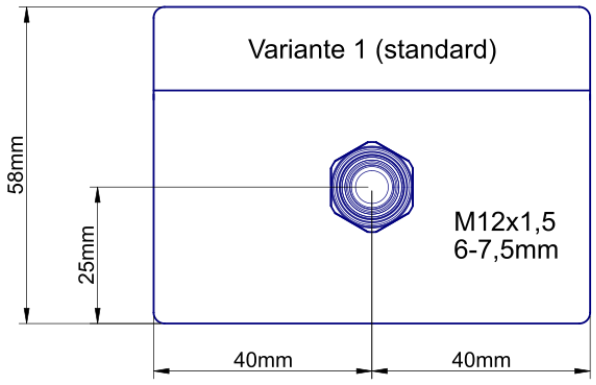
Options:

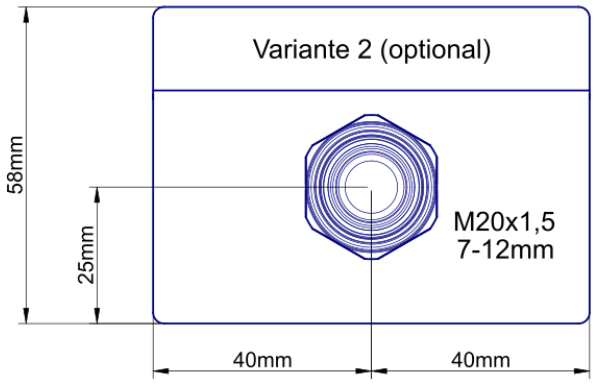
• special measuring ranges • silicon encapsulation • custom wiring

• individual temperature drift compensation of the offset and the sensitivity

Dimensions (in mm)







Connections