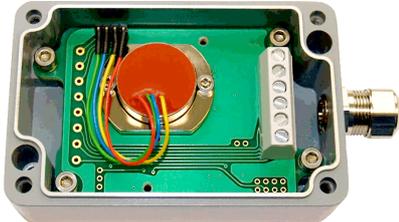


NORDIC TRANSDUCER

SB1M



**Sensor box containing one sensor
with RS485 - Modbus - Interface**

Features

- Modbus RTU Standard compatible RS485 output signal
- Each SB1M is being adjusted in a climatic chamber
- Temperature corrected linearized inclination angle and sensor temperature can be requested simultaneous
- Permanent plausibility check and automatic error detecting by the high-end microprocessor
- Operating of up to 128 sensor boxes SB1M simultaneous on one data bus, also by chain inclinometer
- Transfer rate up to 230400 Baud and cable lengths above 1 km possible
- Serial transfer parameters (bitrate, parity, stopbits) free adjustable
- Integrated inclinometer (N, NG or NB) high overload resistance
- Sensor and electronic electrically isolated from housing
- Sensor fixing in any angle in three axes possible
- Robust pressure die cast aluminium housing (IP65) with salt water proof coating
- Twist free 4-point fastening of rigid, 3.2mm thick base PCB

Description

The sensor box SB1M is a die cast aluminium housing (IP65) with an integrated inclinometer (N, NG or NB) and microprocessor for uniaxial inclination measurement. It is possible to fit the last bus unit with a RS485-cable-terminator over a solder strap.

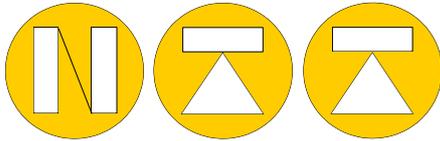
One or two cable glands (IP68) and the small sized metal housing in connection with the RS485-data bus provide the chain inclinometer use over large distances (>1km) under rough conditions.

The used interface circuits and the available addresses permit an interconnection of 128 sensor boxes on one 4-wire-bus (2 wires supply voltage and 2 wires RS485 data bus). The data bus should be designed as a long chain with short stubs to the single sensor boxes.

An integration in existing bus systems is possible because of the Modbus RTU compatible data transfer and the flexible adjustable serial interface parameter.

With suitable adapters the SB1M is able to run on RS232 and USB interfaces.

Alternatively the sensor box SB1M can work with our autonomous Display SBD1M.



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The independent PC reading implementation is possible with less C-source code lines. All request and setting possibilities are recorded in the register manual.

The sensor box will be delivered with individual calibration report.

If SB1M and display SBD1M are ordered together both units will be adjusted to each other.

Recommended sensor equipping:

- 1) Special non-sensitive against shock.
- 2) Best linearity. Special temperature insensitive.
- 3) Good linearity. Large measuring range.

MR Type	NB3	N2	NG2	N3	NG3	N4	NG4
till $\pm 10^\circ$	2)	1)	3)				
$\pm 10^\circ \dots \pm 30^\circ$				1)	3)		
$\pm 30^\circ \dots \pm 70^\circ$						1)	
$\pm 30^\circ \dots \pm 80^\circ$							3)

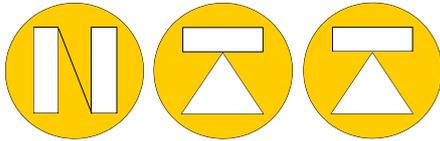
Applications

The SB1M is suitable for applications requiring precise inclination measurements under harsh circumstances and returning of a RS485-Modbus output signal for a digital processing. Areas of successful implementation include construction, mining, agricultural machinery, transportation and convey or systems, ships, operation and automation technology as well as general mechanical engineering.

Technical Specifications

Terminal clamp	6 x 1,5mm ²
Cable gland	M12x1,5 (Metall mit integrierter Zugentlastung)
Measuring range, resolution, ect.	depends on implemented SEIKA sensor
Degree of protection	IP65
Measuring planes (N- and NB-sensor)	3 main housing planes
Measuring planes (NG..sensor)	parallel to bottom of housing
Terminal resistance	100 Ohm connectable via solder strap
Operating temperature	-40°C ... +85°C
Terminal voltage	9V...16V
Current demand	approx. 45 mA

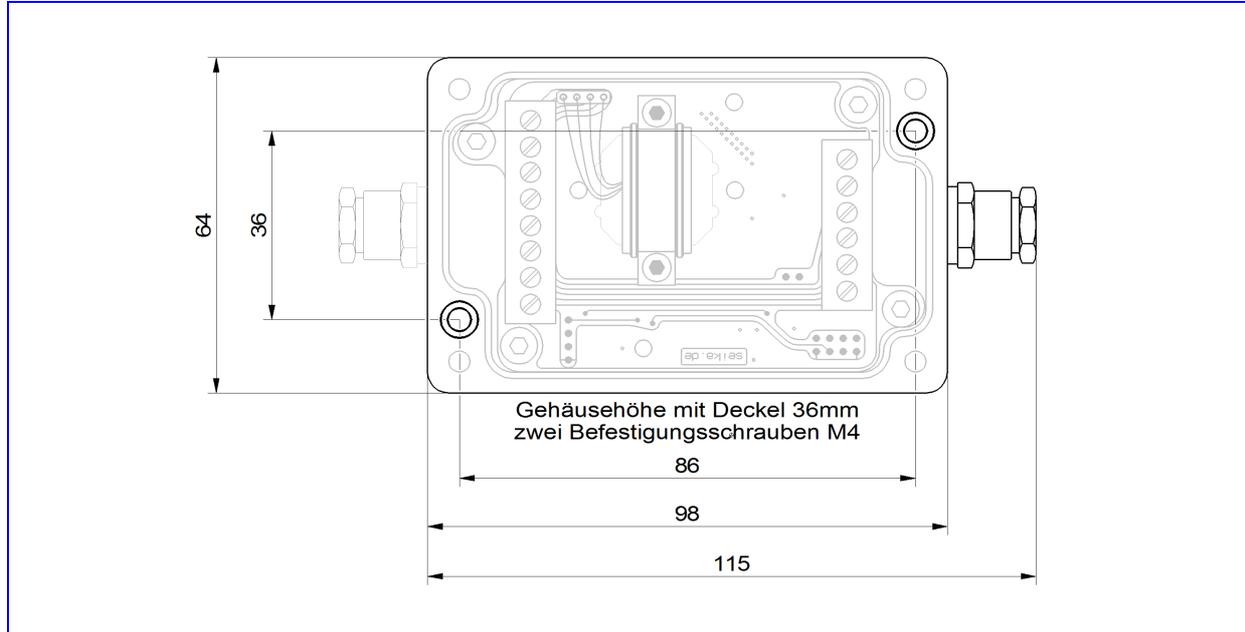
Options: special measuring ranges, silicone potting, custom wiring



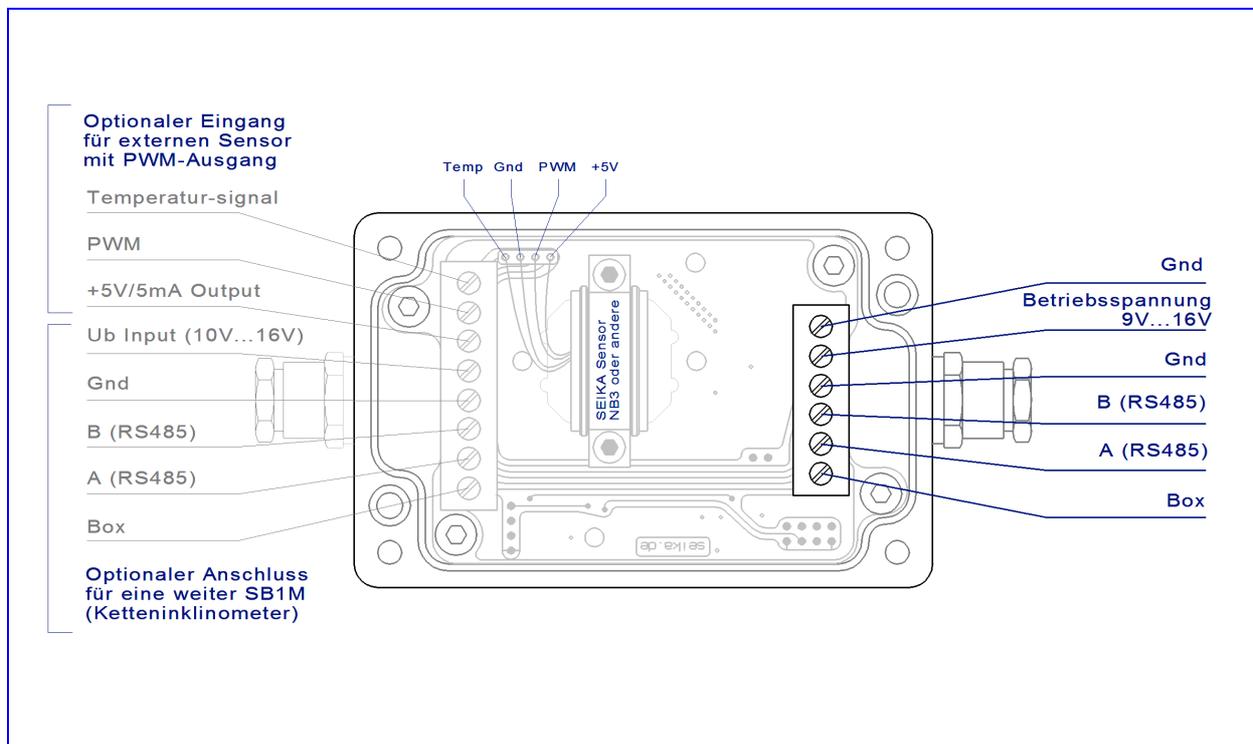
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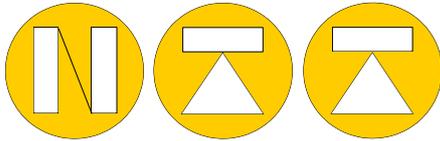
SB1M

Dimensions SB1M



Connections





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SB1M

XB1M Stainless steel box as Option !!



V4A Saltwater and corrosion proof stainless steel
Pressure max. 10 bar = 100m WS
Can be supplied with fixed cable after specification !