Inclinometer for inclination measurement in the ranges of ±2 and ±10 degrees

Features

- **linear output characteristics**
- **high measurement accuracy**
- **high long-term stability**
- **hysteresis free output signal**
- **minimal zero point drift**
- **integrated sensor electronics**
- **low power consumption**
- **small housing**
- **light weight**
- **different output signal options**
- **no interference by ambient electromagnetic fields**
- **minimal transverse sensitivity over whole measuring range**
- **hermetically sealed**

Description

The NB2 and NB3 inclinometers are static accelerometers preferably employed for measuring small inclinations. The sensor's primary transformer consists of a capacitive spring-mass system with gas-dynamic damping. The sensor is manufactured either with an analog DC or a pulse width modulated output. The integrated sensor electronics require only minimal power and are in conjunction with the capacitive primary transformer characterized by high accuracy and long-term stability.

Application

NB2 and NB3 sensors are suitable for applications requiring a small, light sensor for measurement of relatively small inclination angles. Typical areas of application include measuring instruments and inspection systems, vehicles, automation and safety engineering, scientific devices, medical and communications equipment as well as leveling systems.

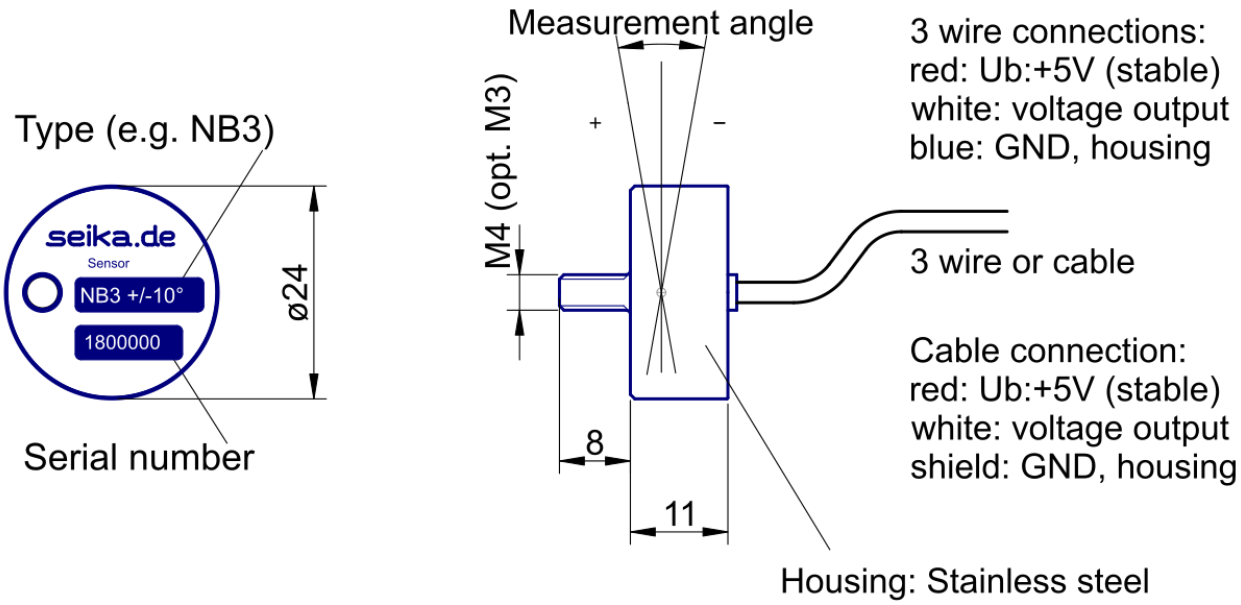
Specifications

Type	NB2	NB3
Measuring range	±2 degrees	±10 degrees
Display range	±4 degrees	±20 degrees
Values for analog DC output at U_{bN}=5 Volt		
Sensitivity	approx. 60 mV/degree	approx. 18 mV/degree

Shared specifications	
Dimensions	see dimension drawing
Resolution	<0.001 degrees
Linearity deviation	<0.2% full scale
Transverse sensitivity	negligible
Settling time	approx. 0.3 seconds (shorter times optional)
Nominal supply voltage (regulated externally)	U_{bN} = 5 Volt
Permissible supply voltage range	3V ... 6V
Degree of protection	IP65
Operating temperature	-40 to +85°C (125°C optional)
Storage temperature	-45 to +90°C (125°C optional)
Weight (with approx. 18cm wires)	approx. 26g
Electrical connection	standard: • 3 highly flexible, color-coded wires ø ~1mm, length approx. 18 cm optional: • 0.5m strong, flexible, shielded cable, 2 wires + shield, ø2,1mm or • 3 flexible, color-coded wires with Teflon insulation for extended temperature range • special lengths on request
Mechanical overload capacity in measurement axis / transverse	5000g / 100g
Output impedance	10 kOhm
Values for analog DC output at U_{bN}=5 Volt	
Zero offset	2.5±0.1 Volt - generally: 0.5U_b±4%
Current drawn	approx. 1mA
Temperature drift of sensitivity	approx. +0.045%/K
Temperature drift of zero point	approx. 0.03(10)mV/K

• Each sensor will be delivered with individual calibration dates (offset and sensitivity)
• On request: PWM-output

Dimensions (in mm) and Connections



Attention! The supply voltage must not exceed 6 Volt and the polarity must not be reversed. These sensors are not suited for applications where they are subject to high mechanical shocks.