Inclinometer for inclination measurement in the range of ±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 inclinometer NB3 is a static accelerometer 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

The NB3 is 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.

Technical Specifications

Dimensions	see dimension drawing
Measuring range	±10 degrees
Display range	±20 degrees
Resolution	<0.001degrees
Linearity deviation	<0.2% F.S.
Transverse sensitivity	negligible
Settling time	approx. 0.3 seconds (shorter times optional)
Supply voltage (regulated) U_b	5V
Permissible supply voltage range	3V ... 6V

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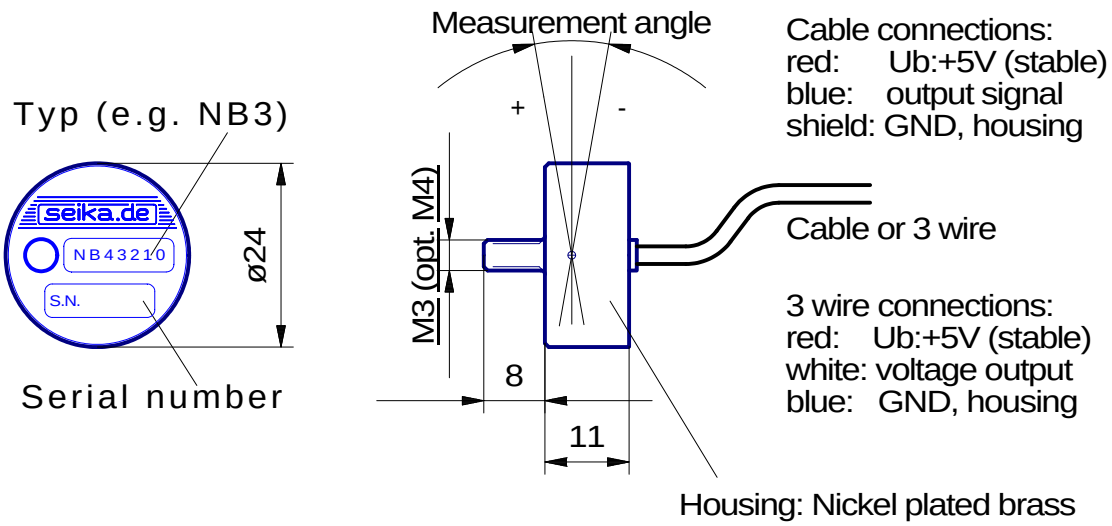
Current drawn at U_b=5V	approx. 1mA
Degree of protection	IP65
Operating temperature	-40 bis +85°C (125°C optional)
Storage temperature	-45 bis +90°C (125°C optional)
Weight without cable	approx. 25 grams
Electrical connection	3 highly flexible wires Øapprox.1mm, length 18cm optional: 0.5m shielded cable Ø2.1mm 3 flexible Teflon-coated wires
Values for analog DC output at U_{bN}=5 Volt	
Sensitivity	approx. 17mV/degree
Temperature drift of sensitivity	< $+1 \cdot 10^{-2}$%/K
Temperature drift of zero point	< ± 0.025mV/K
Zero offset at U_b=5V	2.5±0.1Volt - generally: 0.5U_b±4%
Output impedance	10 kOhm

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.
Attention! These sensors are not suited for applications subject to high mechanical shocks!