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 inclinometer NB 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 NB 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 levelling systems.

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Technical Specifications

Type	NB2	NB3
Dimensions	see dimension drawing	see dimension drawing
Measuring range, other measurement ranges on request	± 2 degrees	± 10 degrees
Display range	± 4 degrees	± 20 degrees
Resolution	<0.001 degrees	<0.001 degrees
Linearity deviation	<0.2% F.S.	<0.2% F.S.
Settling time	approx. 0.3 seconds (shorter times optional)	approx. 0.3 seconds (shorter times optional)
Supply voltage (regulated) U_b	5V	5V
Permissible supply voltage range	3V ... 6V	3V ... 6V
Current drawn at U_b=5V	approx. 1mA	approx. 1mA
Degree of protection	IP65	IP65
Operating temperature	-40 bis +85°C (125°C optional)	-40 bis +85°C (125°C optional)
Storage temperature	-45 bis +90°C (125°C optional)	-45 bis +90°C (125°C optional)
Weight without cable	approx. 25 grams	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 (125°C) (special lengths on request)	3 highly flexible wires Øapprox. 1mm, length 18cm optional: 0,5m shielded cable Ø2,1mm 3 flexible Teflon-coated wires (125°C) (special lengths on request)
Sensitivity	approx. 60mV/degree	approx. 18mV/degree
Temperature drift of sensitivity	approx.+0.002 degree/K	approx. +0.002 degree/K
Typical Temperature drift of zero point	± 0.025mV/K	± 0.025mV/K
Zero offset at U_b=5V	2,5±0,1 Volt	2,5±0,1 Volt
Output impedance	10 kOhm	10 kOhm

On request: PWM-output

Each individual sensor will be tested and measured up after finishing production. All deliveries with individual printed calibration data sheet (offset and sensitivity)

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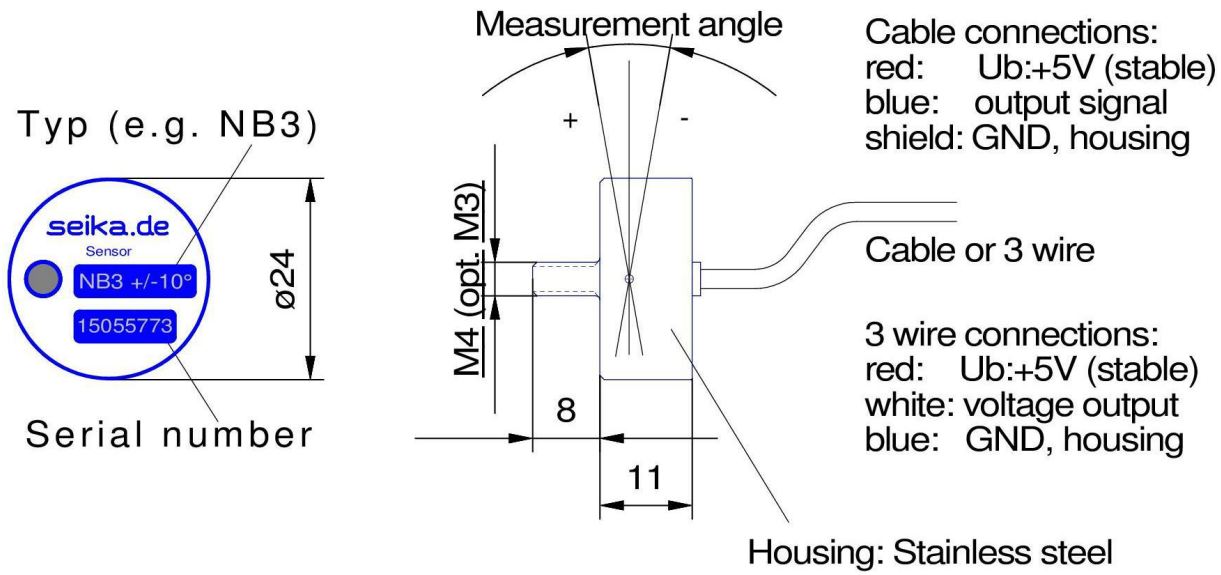
Dimensions (in mm) and Connections



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!