



Inclinometer for inclination measurement in the range between ± 2 to ± 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 analogue 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 levelling systems.

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. 11mm, length 18cm optional: 0,5m shielded cable Ø2,1mm 3 flexible Teflon-coated wires (125°C) | 3 highly flexible wires Øapprox. 11mm, length 18cm optional: 0,5m shielded cable Ø2,1mm 3 flexible Teflon-coated wires (125°C) |
| 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: special housing types

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).

Dimensions (in mm) and Connections

