

Inclination sensor

X/Y/Z direction, -45 ... +45°

Model N2101



WIKA data sheet FO 59.04

Applications

- Crane systems
- Mobile cranes
- Ship cranes
- Aerial platforms
- Solar collectors

Special features

- Measuring range freely selectable between -45 ... +45°
- Relative linearity error < 0.1 % of FS over the entire measuring range
- Good damping behaviour, no gravitational acceleration error
- Resistant to seawater, IP67
- 2 axes freely selectable

Description

The two directions of rotation can be selected freely (X, Y, Z direction) in this inclination sensor. They detect the orientation angle of an object in relation to the gravitational field of the earth.



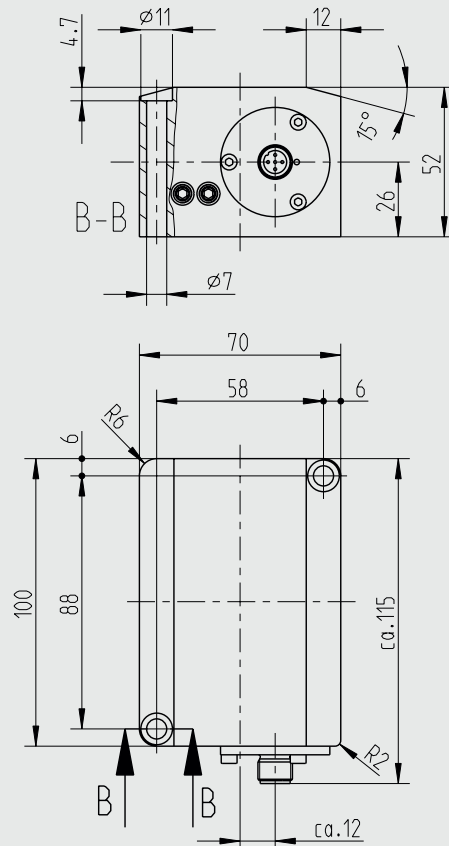
Inclination sensor, model N2101

The sensor has a measuring range of max. -45 ... +45° and offers an extraordinarily high accuracy and precision over the entire measuring range. The measured value resolution is 0.01°.

Specifications

| Model N2101 | |
|--|---|
| Measuring range | Different measuring ranges freely selectable up to max. $-45 \dots +45^\circ$ 2 axes freely selectable (X, Y, Z direction) |
| Relative linearity error d_{lin} ■ within measuring range $-10 \dots +10^\circ$ ■ from measuring range $-10 \dots +10^\circ$ | < 0.05° < 0.1° |
| Relative reversibility error v ■ within measuring range $-10 \dots +10^\circ$ ■ from measuring range $-10 \dots +10^\circ$ | < 0.03° < 0.05° |
| Resolution | < 0.01° |
| Transverse inclination error ■ $\leq 10^\circ$ ■ $\leq 45^\circ$ | < 0.05° < 0.2° |
| Service temperature $B_{T, G}$ | $-40 \dots +80^\circ\text{C}$ |
| Temperature effect on ■ the characteristic value TK_C ■ the zero signal TK_0 | 0.0016 % of FS/K 0.0016 % of FS/K |
| Electrical connection | Cable, MIL, M12 x 1 (others on request) |
| Output signal (rated characteristic value) C_{nom} | 2 x 4 ... 20 mA (3-wire) |
| Voltage supply | DC 9 ... 36 V |
| Material of the measuring body | Aluminium, resistant to seawater |
| Salt spray testing | DIN EN 60068-2-52 |
| Ingress protection (per IEC/EN 60529) | IP67 |
| EMC | 61326-1 IEC:2012, DIN EN 61000-4 Part 2, Part 3, Part 4, Part 6, Part 8, Part 9, Part 10; DIN ISO 7637 Part 2, DIN ISO 11452 Part 2, Part 4, Part 5; DIN EN 55025 Part 6.3, Part 6.4 |

Dimensions in mm



Pin assignment

| Cable assignment 2 x 4 ... 20 mA, 3-wire | |
|--|---------------|
| Cable colour | Signal |
| Red | UB+ |
| Black | 0V/S- |
| White | S+ (signal 1) |
| Blue | S+ (signal 2) |

| Circular connector M12 x 1, 2 x 4 ... 20 mA, 3-wire, 4-pin | | |
|--|----------|---------------|
| Pin | Colour | Signal |
| 1 | Brown | UB+ |
| 3 | Blue | 0V/S- |
| 4 | Black | S+ (signal 1) |
| 2 | White | S+ (signal 2) |
| M12 x 1 | Shield ⊕ | Shield ⊕ |

| MIL, pinout CA3102E14S-2P-B-A232 | |
|----------------------------------|----------------|
| Pin | Signal |
| A | UB+ |
| B | S+ (channel x) |
| C | 0V/S- |
| D | S+ (channel Y) |

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