

# 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.



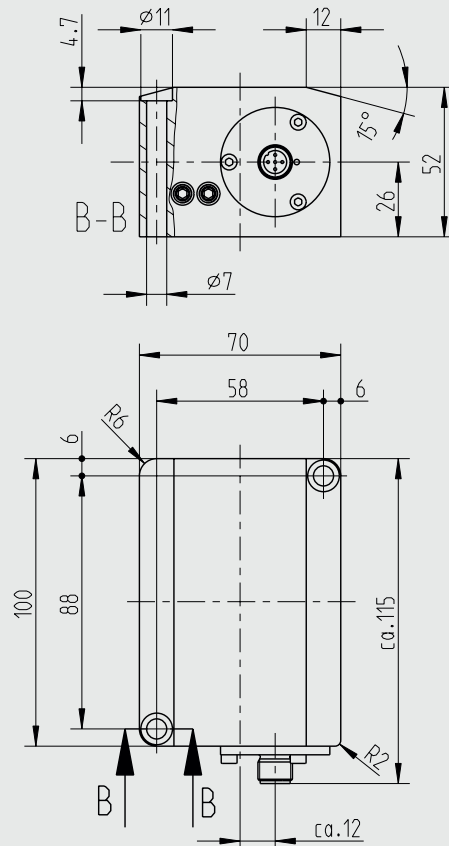
Inclination sensor, model N2101

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