

Inclination sensor XY, YZ, XZ

X-/Y-/Z-direction, 2 axes freely selectable

Linearity: from <0.05°

Resolution: 0.01°

Measuring range: various up to max. -45°...+45°

Protection type: IP67



Description

Inclination sensors determine the orientation angle of an object concerning the gravitational field of the earth. The application types for these sensors are versatile. At cranes and excavators the inclination sensor measures the angle and extension of the boom along with the load weight and calculates if the machine is working within the manufacturer suggested safety margins.

The sensor is equipped with a measurement range of max. -45°...+45° and offers an additional higher precision and accuracy over the complete measurement range. The two directions of rotation can be freely selected. The resolution is 0.01° of F.S.

Customer specific implementations are possible as a result of the modular construction system.

Features

- Various measuring ranges within max. -45°...+45° selectable
- 2 axes freely selectable (X-,Y-,Z-direction)
- Linearity up to <0.05°
- Low sensitivity to moisture
- Favourable damping behaviour
- Easy to fit and line-up on equipment
- High zero stability
- No acceleration of gravity failure
- High temperature range
- Protection class IP67

Applications

Drilling rigs
Mobil cranes
Ship cranes
Excavators
Aerial working platforms

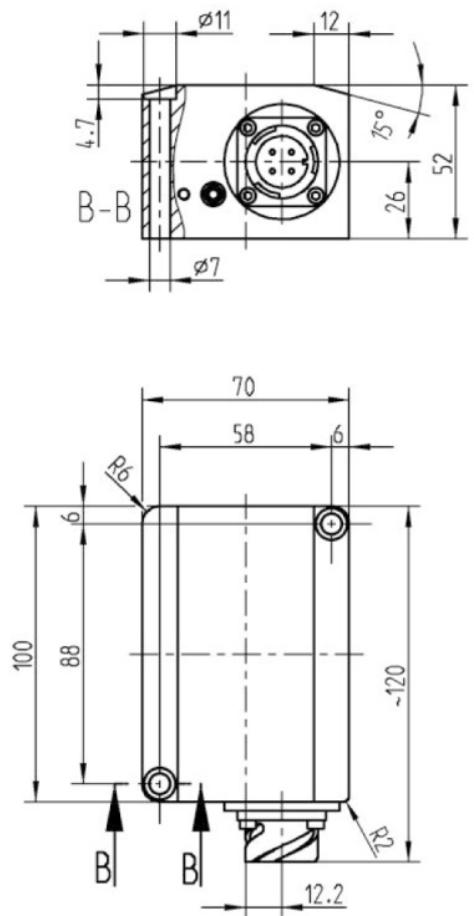
Model: N2101

Technical data

Model	N2101
Measurement range	Various measuring ranges within max. -45°...+45° selectable 2 axes freely selectable (X-, Y-, Z-direction)
Linearity	<0.05° <0.1°
- within measuring range -10°...+10° - from measuring range -10°...+10°	
Hysteresis	<0.03° <0.5°
- within measuring range -10°...+10° - from measuring range -10°...+10°	
Transverse inclination	<0.05° <0.20°
- ≤10° - ≤45°	
Resolution	<0.01°
Operating voltage	9....36 VDC
Temperature range	-40 ... +85 °C
Temperature influence	0.0016%/K
Electrical connection	Cable, MIL, M2x1 (others on request)
Output signal	2 x 4...20 mA ,3-wire (output signal limitation optional)
EMC	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
CE confirmation	yes
Salt spray test	DIN EN 60068-2-52
Protection type	IP 67
Weight	~1 kg

Dimensions

(Example with CA3102E14S-2P-B-A232)



Pin assignment CA3102E14S-2P-B-A232	
Pin	Signal
A	UB+
B	S+ (channel X)
C	0V / S-
D	S+ (channel Y)

Pinout assignment M12x1 (4...20mA)		
Pin	Colour	Signal
1	Brown	UB+
3	Blue	0V / S-
4	Black	S+ (signal 1)
2	White	S+ (signal 2)
M12x1	Shield	Shield

Pin assignment Cable outlet	
Red	UB+
Black	0V / S-
White	S+ (signal 1)
Blue	S+ (signal 2)

Dimensions in mm

Subject of technical changes