Inclination sensor explosion proof

with flame proof enclosure Ex d

Protection type: **Ex II 2G Ex d IIC T4 Gb, Zone 1**
IECEx Ex d IIC T4 Gb

Accuracy: **<0.1% of F.S**
Measuring range: **0...+360°**
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 -0...+360° and offers an additional higher precision and accuracy over the entire measurement range. The resolution is 0.01°.

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

Features

- Measurement range 0...+360°
- High accuracy of <0.3% over the entire measurement range
- 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

Aerial working platforms
Drilling platforms
Drilling rigs
Mobil cranes
Ship cranes
Excavators

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Technical data

Model	N111C	Optional
Measurement range	-0...+360°	custom inclination range, e.g. 0…+90°, -10°…+115° etc.
Resolution	0.01°	
Linearity 0-360°	<0.1% of F.S.	
Linearity 0-100°	≤0.1°	
Hysteresis	<0.05% of F.S.	
Temperature influence	<0.0033% / °C	
Temperature range	-40 … +80 °C	
Operating voltage	9....36 VDC	
Protection type	IP 67	
Accuracy complete	<0,3% in complete temperature range	
Tilt influence +-30 grade	<0.15° with transverse gradient <30° <0.20° with transverse gradient >30°<45°	
Output signal	4-20mA, 3-wire	redundant 2x 4-20mA
	CANopen®	other bus systems on request
Electrical connection	connector cable, 10m, open cable end	other cable length on request
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, Part , DIN ISO 11452-Part 2, Part 4, Part 5; DIN EN 55025 Part 6.3, Part 6.4
CE confirmation	yes	
Material	stainless steel1.4571	
ATEX certificate acc. to	Ex II 2G Ex d IIC T4 Gb	
IECEx certificate acc. to	Ex d IIC T4 Gb	
Certficate no.	BVS 13 ATEX E 030 X	
	IECEx BVS 13.0065X	
Accessories	fixing plate 203x155x8 mm	others on request

of F.S. = full scale value

The mechanical dimensions vary due to the given remarks and the electrical connections. Customized adjustments are possible.
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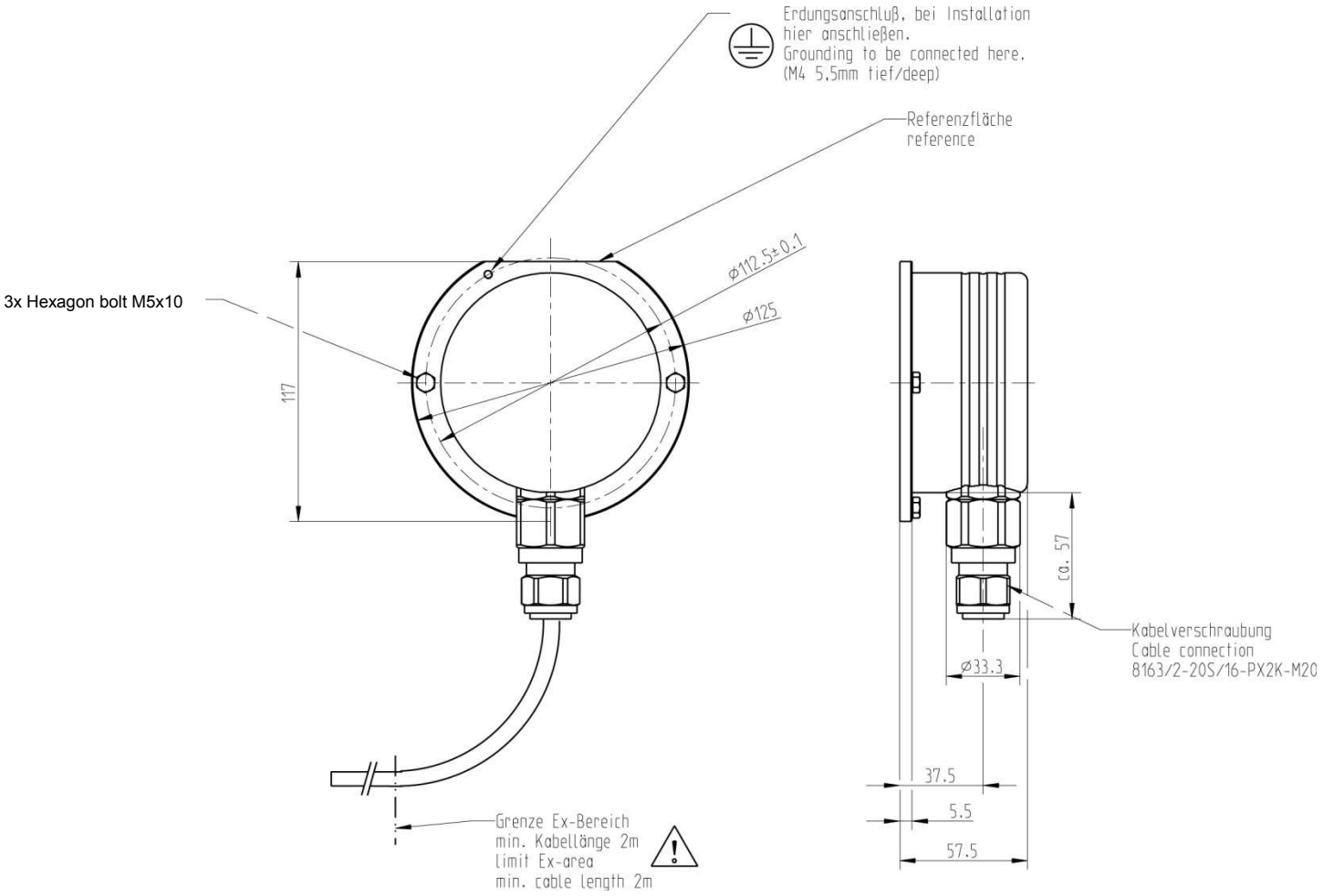
Dimensions (in mm)



Electrical connection

Pinout (4…20 mA)	
+24 VDC	1
Signal 1 4…20 mA	2
GND (0/24 VDC)	3
-	4

Pinout (redundant, 2x 4…20 mA)	
+24 VDC	1
Signal 1 4…20 mA	2
GND (0/24 VDC)	3
Signal 2 4…20 mA	4

Pinout CANopen®	
UB+ (CAN V+)	1
UB- (CAN GND)	2
Bus signal CAN-High	3
Bus signal CAN-Low	4
Screen	Screen