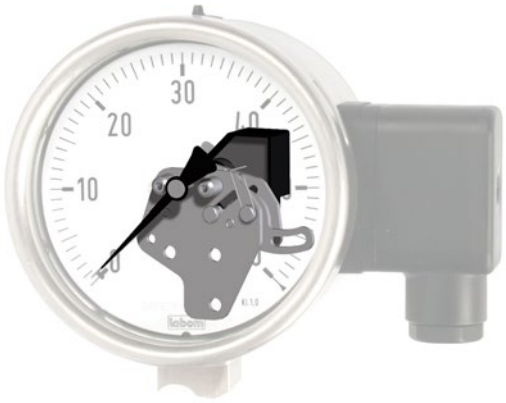
Electronical angle-of-rotation sensor 81.4

Type series PL110 .



Application area

· Chemical and petrochemical industry
· Machinery construction
· Safety-engineering systems

Features

- Electronical angle-of-rotation sensor
- Output signal 4...20 mA (20...4 mA), 2-wire
- Non-contact electronic scanning system, not subject to wear
- Electronics fully encapsulated
- Long service life
- Integrated in mechanical pressure and temperature measuring instruments, also with electrical contact device, case DN 100/DN 160

Options

- Explosion protection for gases and dust
- The electrical zero can be corrected by holding a magnet to a marked location on the case
- Output signal 0...20 mA and 0...10 V in 3-wire technology (for devices without Ex-version and without zero point setting)

Application

The electronical angle-of-rotation sensor enables the electronic transmission of pressure and temperature values. It can be integrated in mechanical pressure and temperature measuring instruments.

Technical data

Case
plastic fully encapsulated

Degree of protection (EN 60529)
IP 67

Pressure element assembly
non-contact, electronic angle-of-rotation sensor

Measuring range
0...360°

Accuracy
linearity = 0.3 %
hysteresis = 0.1 %
repeatability = 0.2 %

Resolution
0.1 %

Connection plug
waterproof terminal box with removable test cover (Macrolon), cable gland for cable from Ø 7 up to 13 mm

Temperature influence
0.1 %/10 K

Temperature range
· operating temperature -40...+85 °C
· storage temperature -40...+85 °C

2-wire output
· signal 4...20 mA (20...4 mA)
· supply
nominal voltage: 24 V DC
functional range: 12...30 VDC
· Burden R

$$R = \frac{U_B - U_{min}}{20\ mA}$$

U_B: supply
U_{min}:min. supply voltage 12 V DC

3-wire output
· signal 4...20 mA and 0...10 V
other output signals upon request
· supply
nominal range: 24 V DC
functional range: 14...30 VDC
· Burden R (for current output)

$$R = \frac{U_B - 3V}{20\ mA}$$

U_B: supply
· Burden R (for voltage output)
R ≥ 500 kΩ

Burden influence
≤ 0.1 % f.s.

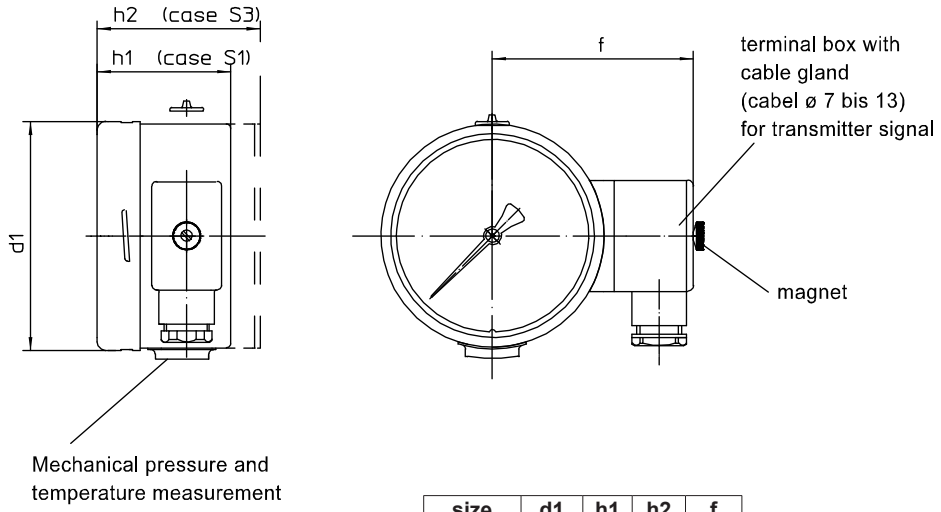
Ex-approval
for integrated angle-of-rotating sensor 81.4
Type PL 1101
TÜV 08 ATEX 554749
Ex II 2G Ex ib IIC T6/T5/T4 Gb
Ex II 2D Ex ib IIIC T75 °C / T95 °C / T115 °C / T120 °C Db
U_i ≤ 30 V DC
I_i ≤ 150 mA
P_i ≤ 1 W
The effective internal capacitances and inductances are negligibly small.

Weight
approx. 70 g

All tolerance values are based on respective full scale values.
Information on other models see order details or upon request.

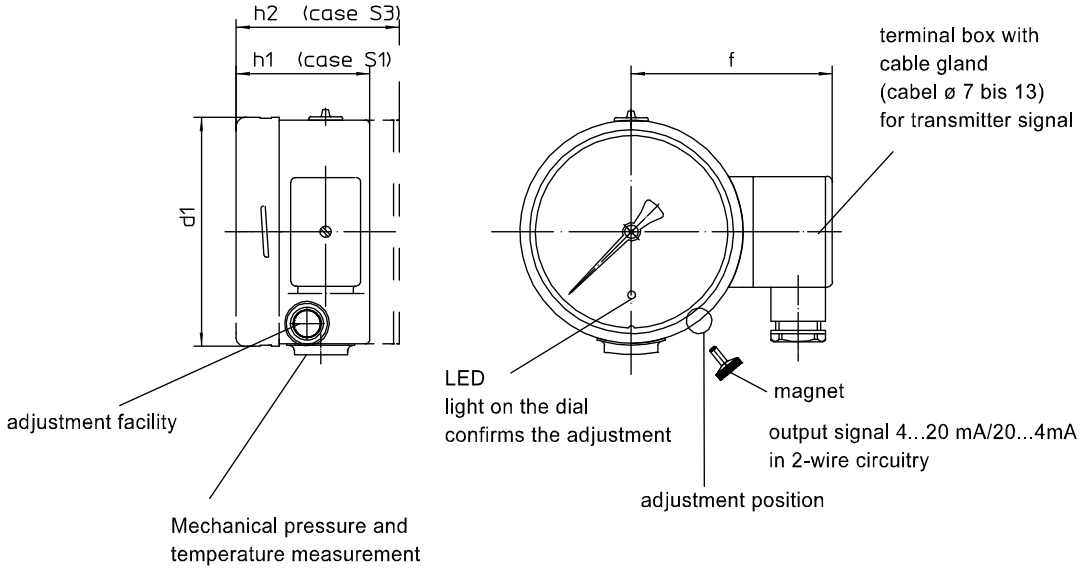
Dimensions

Electronical angle-of-rotation sensor integrated in a safety pattern gauge EN 837-1 S1 and EN 837-1 S3



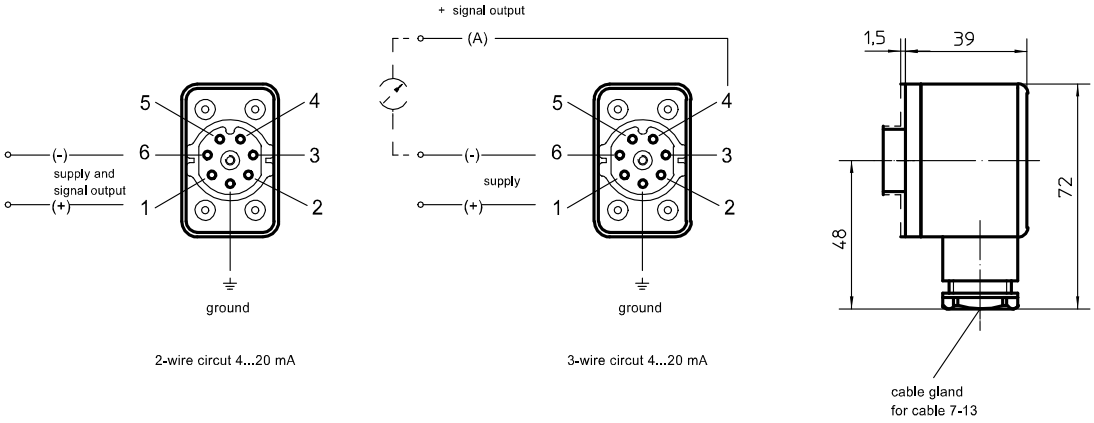
size	d1	h1	h2	f
DN 100	100	59	72	89
DN 160	160	59	82	119

Electronical angle-of-rotation sensor with electrical zero setting (option)
integrated in a safety pattern gauge EN 837-1 S1 and EN 837-1 S3



size	d1	h1	h2	f
DN 100	100	59	72	89
DN 160	160	59	82	119

Connection of diagram



Zero setting (option)

Setting the zero on the mechanical indicator
Set the mechanical zero at its operating temperature and in the depressurized state.
Open the bayonet ring on the case by turning it with a strap wrench in the anti-clockwise direction. Then remove the bayonet ring together with glass and gasket.
By turning the micro adjustment on the pointer you can zero-adjust the pointer. Anti-clockwise rotation causes a negative correction; and clockwise rotation a positive correction.
Important: The position of the pointer is altered by this mechanical adjustment. Now that the pointer has been re-positioned the electrical zero needs to be corrected.

Adjustment of electrical measurement range start and measurement range end (optional)
The electrical setting of the measurement range start is done under application of the measurement range start pressure. For the adjustment, the magnet enclosed in the cable socket, or another magnet, is brought into the offset position. After approx. 2 seconds, a light signal acknowledges in the scale the adjusted measurement range start.
For adjusting the span (measurement range end), the measurement range end pressure needs to be applied, e.g. 10.0 bar. Here too, bring a magnet into the offset position. After approx. 2 seconds, a light signal in the scale acknowledges the adjusted span. Adjustment is possible within a tolerance window of approx. ± 5 % F.S. Settings deviating from this are not taken on.

Order details

Electronical angle-of-rotation sensor		**PL110 .**				
design	· Standard	**0**				
	· Ex protection, type of protection see above	**1**				
output signal	· 0...20 mA, 3-wire technology [1]		**K1**			
	· 4...20 mA, 2-wire technology		**K2**			
	· 0...10 mA, 3-wire technology [1]		**K3**			
	· 20...4 mA, 2-wire technology		**K4**			
additional features (to be indicated in case of need, only)						
type of ex-protection	· Ⓔx II 2G Ex ib IIC T6/T5/T4 Gb			**S72**		
	· Ⓔx II 2D Ex ib IIIC T75 °C / T95 °C / T115 °C / T120 °C Db			**S74**		
electrical zero setting	· by attaching a magnet to the housing, with LED confirmation, including micro adjustment pointer for zero correction of local indication				**F1**	
Order code (example)		**PL1100**	**K2**			

[1] for devices without Ex-version and without zero point setting