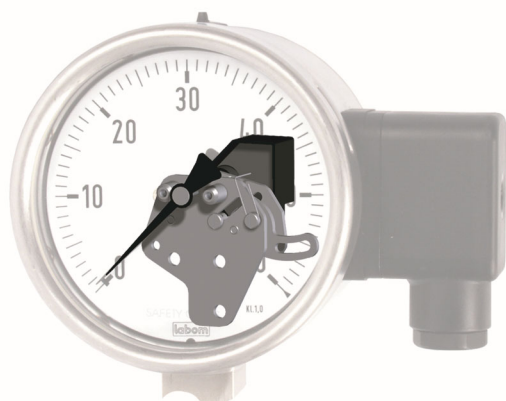


Electronical angle-of-rotation sensor 81.4

non-contact system, not subject to wear

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) in 2-wire technology
- Non-contact electronic scanning system, not subject to wear
- Electronics fully encapsulated
- Long service life
- Integrated in mechanical pressure and temperature measuring devices, also with electrical contact device, cases NS 63, NS 100 or NS 160

Options

- Approvals/Certificates
 - Explosion protection (ATEX/UKEX) for gases and dust
- As per UKCA regulations
- Zero point setting 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 devices.

Technical data

Constructional design

design:	Plastic, fully encapsulated
Degree of protection:	IP 67 per EN 60529
Measuring element:	Non-contact, electronical angle-of-rotation sensor
Measuring range:	0...360°
Connection plug:	■ Waterproof terminal box with removable cover, material: Macrolon, cable gland for cable Ø 7...13 mm ■ Circular connector M12
Weight:	approx. 70 g

Measuring accuracy

Linearity:	0.3 %
Hysteresis:	0.1 %
Repeatability:	0.2 %
Resolution:	0.1 %
Temperature influence:	0.1 %/10 K

Output

2-wire technology:

Signal:	4...20 mA (20...4 mA)
Burden R:	$R = U_B - U_{min} / 20 \text{ mA}$ $U_B = \text{supply}$ $U_{min} = \text{min. supply voltage } 12 \text{ VDC}$
Burden influence:	$\leq 0.1 \% \text{ v.E.}$

3-wire technology:

Signal:	0...20 mA und 0...10 V Further output signals upon request
Burden R:	For current output: $R_{max} = U_B - 3 \text{ V} / 20 \text{ mA}$ $U_B = \text{supply}$ For voltage output: $R \geq 500 \text{ kOhm}$
Burden influence:	$\leq 0.1 \% \text{ v.E.}$

Supply voltage

2-wire technology:

Nominal voltage:	24 V DC
Functional range:	12...30 V DC

3-wire technology:

Nominal voltage:	24 V DC
Functional range:	14...30 V DC

Temperature ranges

Ambient:	-40...85 °C
Media:	-40...100 °C
Storage:	-40...85 °C

Tests and certificates

Ex-approval:

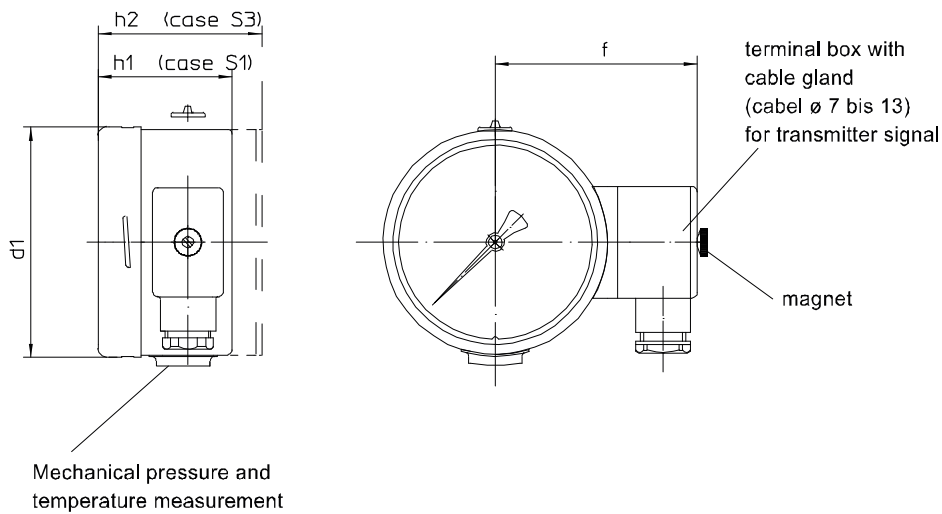
ATEX:	TÜV 08 ATEX 554749 ⊕ II 2G Ex ib IIC T6/T5/T4 Gb ⊕ II 2D Ex ib IIIC T75 °C / T95 °C / T115 °C / T120 °C Db
UKEX:	CML 21UKEX21180 ⊕ II 2G Ex ib IIC T6/T5/T4 Gb ⊕ II 2D Ex ib IIIC T75 °C / T95 °C / T115 °C / T120 °C Db

Further technical data see Ex Instruction XA_009 and Operating Instruction BA_057 .

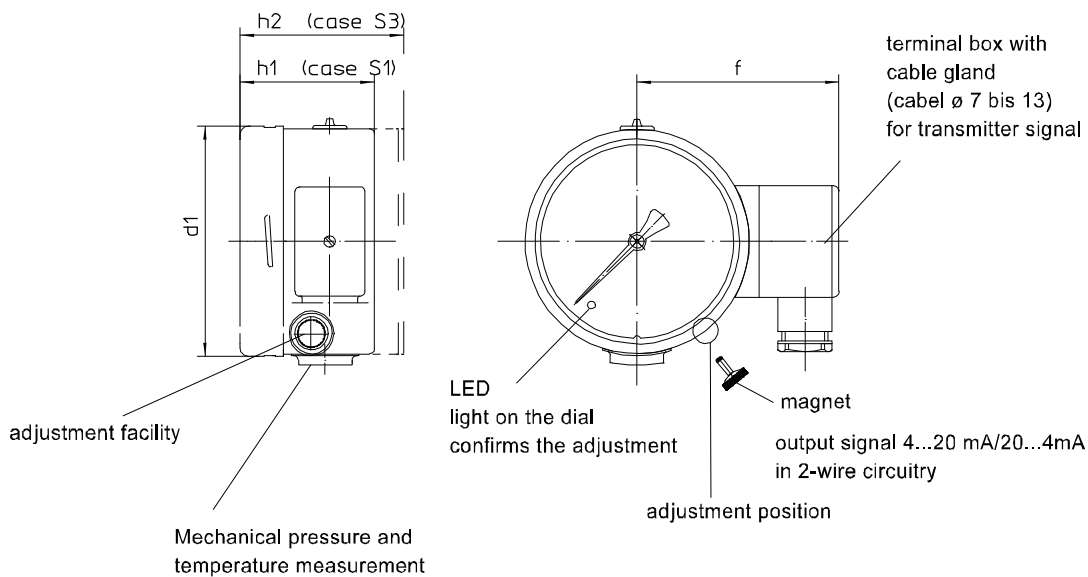
All tolerance values are based on respective full scale values. Information on other models see order details or upon request.

Dimensions

Electronical angle-of-rotation sensor integrated in a safety pattern gauge EN 837-1 S1 and EN 837-1 S3, case sizes NS 100 / NS 160

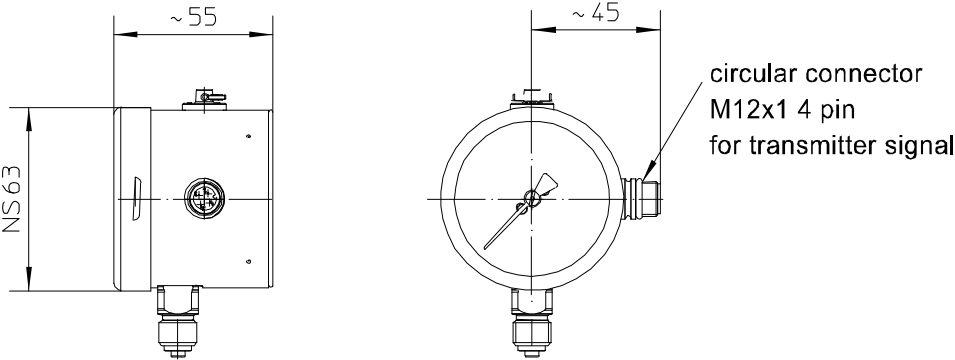


Electronical angle-of-rotation sensor with electrical zero point setting (option), integrated in a safety pattern gauge EN 837-1 S1 and EN 837-1 S3, case sizes NS 100 / NS 160



Dimensions

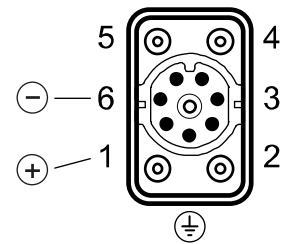
size	d1	h1	h2	f
NS 100	100	59	72	89
NS 160	160	59	82	119



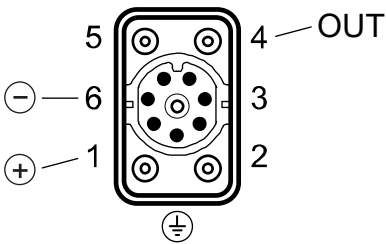
All dimensions are in mm

Connection diagram

Terminal box

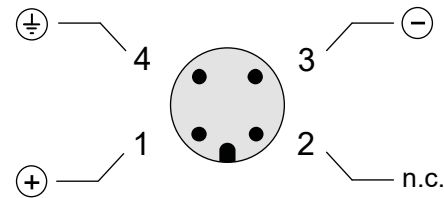


2-wire technology

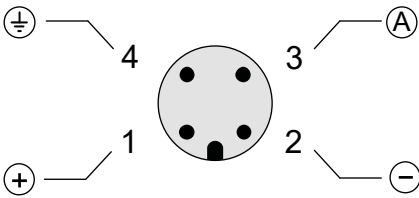


3-wire technology

Circular connector M12



2-wire technology



3-wire technology

Order details

Electronical angle-of-rotation sensor, type series PL110.

Order details PL110.			
PL110.	electronical angle-of-rotation sensor		
0	design	standard	
1		Ex protection, type of protection see above	
K1	output signal	0...20 mA, 3-wire technology ¹	
K2		4...20 mA, 2-wire technology	
K3		0...10 V, 3-wire technology ¹	
K4		20...4 mA, 2-wire technology	
Additional features (to be indicated in case of need, only):			
S72	Ex marking ^{2,3}	ATEX	 II 2G Ex ib IIC T6/T5/T4 Gb
S74			 II 2D Ex ib IIIC T75 °C / T95 °C / T115 °C / T120 °C Db
S89		UKEX	 II 2G Ex ib IIC T6/T5/T4 Gb
S90			 II 2D Ex ib IIIC T75 °C / T95 °C / T115 °C / T120 °C Db
F1	Adjustment of electrical measurement range ^{2,3}	by attaching a magnet to the case, with LED confirmation, including micro adjustment pointer for zero correction of local indication	reference point = lower range value
F2			reference point 0 bar for devices with a lower range value of -1 bar
W2660	as per UKCA regulations		

¹ possible for devices without Ex design and without zero point setting, only

² for devices in 2-wire technology

³ not possible with case size NS 63