

Intrinsically Safe Level Probe for applications in hazardous environments Model IL-10

WIKA Data Sheet PE 81.23



Applications

- Level measurement in hazardous environments
- Refineries
- Distilling equipment
- Painting plants
- Filling equipment for combustible gases
- Overfilling systems on tank vehicles, bore holes, waste water plants (biogases from sewage), etc.

Special Features

- Pressure ranges from 0 ... 100 mbar to 0 ... 25 bar
- Ex- protection EEx ia I/II C T6 according to ATEX
- Applicable in all hazardous environments:
Gases and vapour: Zone 0, Zone 1 and Zone 2
Dusts: Zone 20, Zone 21 and Zone 22
- Maximum tensile strength of the cable 1000N
- Ingress protection IP 68 (up to 300 m immersion depth)

Description

Hazardous environments

The intrinsically safe level probes have been specially designed to comply with the most difficult requirements of industrial applications. Due to their high grade of accuracy, reliability and excellent compatibility with most media these instruments represent an ideal solution for almost any task in hazardous environments.

The most important features are the wide ranging certifications for hazardous applications (CENELEC certificate according to ATEX). Furthermore the IL-10 has also FM (USA) and CSA (Canada) approvals.



Fig. Intrinsically Safe Level Probe IL-10

Structure

Due to a hermetically sealed, durable stainless steel case with IP 68 ingress protection the probe can be immersed to a max. depth of 300 m.

The transmitters are supplied via appropriate intrinsically safe line transformer, or via typical zener diode barrier with an input power of 10 ... 30 V.

The output signal is 4 ... 20 mA, 2-wire.

Specifications

Model IL-10

Pressure ranges	bar	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25	
Over pressure safety	bar	1	1.5	2	2	4	5	10	10	17	35	35	35	35	
Burst pressure	bar	2	2	2.4	2.4	4.8	6	12	12	20.5	42	42	42	42	
Materials															
■ Wetted part															
» Cable		PUR {FEP up to 10 bar}													
» Protection cap		Stainless steel {Hastelloy}													
■ Case		Stainless steel {Hastelloy}													
■ Internal transmission fluid		Synthetic oil													
Power supply UB	UB in VDC	10 ... 30													
Signal output and		4 ... 20 mA, 2-wire													
maximum ohmic load R _A	R _A in Ohm	R _A ≤ (UB – 10 V) / 0.02 A - (length of flying leads in m x 0.14 Ohm)													
Dielectric strength		Insulation complies with EN 50020, 6.4, 12													
Accuracy	% of span	≤ 0.25	{0.125}	1) (BFSL)											
	% of span	≤ 0.5	{0.25}	2)											
		1) Accuracy { } for pressure ranges ≥ 0.25 bar													
		2) Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement per IEC 61298-2)													
		Adjusted in vertical mounting position with lower pressure connection													
Non-linearity	% of span	≤ 0.2	(BFSL) according to IEC 61298-2												
Non-repeatability	% of span	≤ 0.1													
1-year stability	% of span	≤ 0.2	(at reference conditions)												
Permissible temperature of															
■ Medium ^{3) 4) 5)}		-10 ... +60 °C					-14 ... +140 °F								
		{-10 ... +85 °C with FEP-cable}					{-14 ... +185 °F with FEP-cable}								
■ Storage ³⁾		-10 ... +60 °C					-14 ... +140 °F								
		3) Also complies with EN 50178, Tab. 7, Operation (C) 4K4H, Storage (D) 1K4, Transport (E) 2K3													
		4) Other temperature ranges are possible, depending on the electrical connection; see EC-type examination certificate and table page 4.													
Compensated temp. range		0 ... +50 °C					32 ... +122 °F								
Temperature coefficients within compensated temp range															
■ Mean TC of zero	% of span	≤ 0.2 / 10 K (< 0.4 for pressure ranges ≤ 0.25 bar)													
■ Mean TC of range	% of span	≤ 0.2 / 10 K													
CE-conformity															
■ EMC directive		2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)													
■ ATEX-Directive ATEX of equipment intended for use in potentially explosive atmospheres		94/9/EC													
Ex-protection	ATEX	Category ⁵⁾ 1G (IIA), 1/2G, 2G (IIA), 1D, 1/2D, 2D, M1, M2													
Ignition protection type		Ex ia I/II C T4, EEx ia I/II C T5, EEx ia I/II C T6													
		5) Read the operating conditions and safety-relevant data in the EC-type examination certificate in any case (DMT 00 ATEX E 045 X)													
Ex-protection	FM, CSA	Class I, II and III													
Ignition protection type		Intrinsic safe Class I, II, III Division 1, Group A, B, C, D, E, F, G and Class I, Zone 0 AEx ia II C													
Approval German Lloyd GL		Environmental Category C, F, EMC 1													
HF-immunity	V/m	10													
BURST	KV	4													
Wiring protection															
■ Short-circuit proofness		Sig+ towards UB-													
■ Reverse polarity protection		UB+ towards UB-													
Weight															
» Cable	kg	Approx. 0.08 per m cable													

{ } Items in curved brackets are optional extras for additional price.

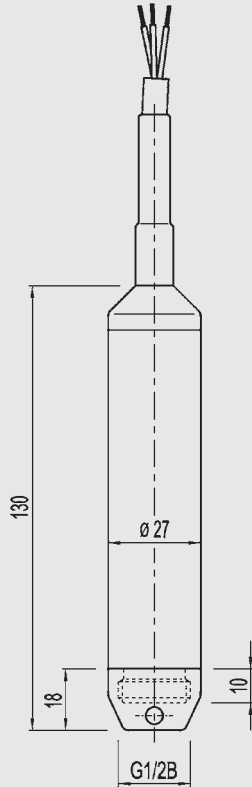
Dimensions in mm

Ingress Protection IP 68 per IEC 60529.

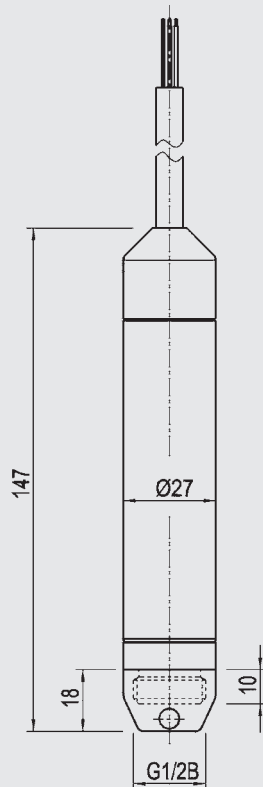
Permissible temperature ranges depending on electrical connections; see table page 4.

Electrical connections

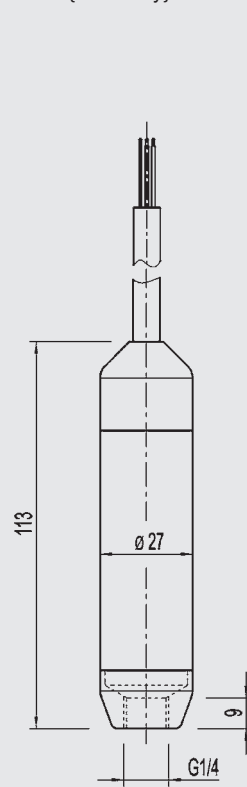
Vented PUR-cable,
max tensile strength of 1000 N
(immersion depth up to 300 m)



FEP-cable
max tensile strength of 500 N
(immersion depth up to 100 m)



FEP-cable
max tensile strength of 500 N
(immersion depth up to 100 m),
{Hastelloy}



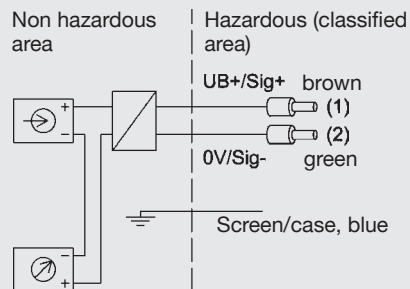
When mounting, no additional strain relief is required.

For installation and safety instructions see the operating instructions for this product.

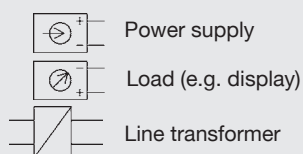
Wiring details

2-wire

Flying leads
conductor cross section 0.25 mm²,
AWG 24 with end splices,
conductor outer diameter 7.5 mm



Legend:



Permissible temperature ranges depending on electrical connections

Electrical connections	Category	Ambience-/ Medium temperature range	
PUR-cable	1 G (IIA), 2 G (IIA), M1, 1 D, 2 D	-10 ... +60 °C	14 ... +140 °F
FEP-cable	1 G (IIA)	-30 ... +60 °C	-22 ... +140 °F
	2 G (IIA), M1	-30 ... +105 °C	-22 ... +221 °F
	1 D, 2 D	-30 ... +80 °C	-22 ... +176 °F

Further information

You can obtain further information (data sheets, instructions, etc.) via our internet address www.wika.de

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
Modifications may take place and materials specified may be replaced by others without prior notice.



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