Stainless Steel Probe

Ceramic Sensor

accuracy according
to IEC 60770: 0.5 % FSO

Nominal pressure

from 0 ... 4 mH_2O up to 0 ... 250 mH_2O

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 ... 20 mA / 0 ... 10 V
others on request

Special characteristics

- diameter 27 mm
- good linearity
- good long term stability
- easy handling

Optional versions

- IS-protection
- SIL 2 (Safety Integrity Level) according to IEC 61508 / IEC 61511
- different kinds of cables and elastomeres
- customer specific versions e. g. special pressure ranges

The level transmitter is designed for continuous level measurement in water or waste water applications. Basic element is a flush mounted ceramic sensor.

Suitable for all fluids which are compatible with media wetted materials. Different cable and elastomer matierals can be offered according to the customer-specific operating conditions.

Preferred areas of use are

Water
drinking water system
ground water monitoring
storm water systems

Sewage
waste water treatment
water recycling
dumpsite

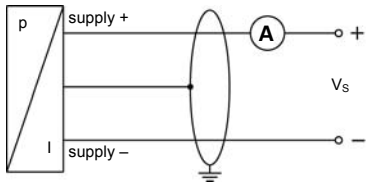
Fuel / Oil
fuel storage
tank farm
biogas plants

Input pressure range											
Nominal pressure gauge	[bar]	0.4	0.6	1	1.6	2.5	4	6	10	16	25
Level	[mH_2O]	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	2	2	2	4	4	10	10	20	40	40
Burst pressure	[bar]	4	4	4	5	5	12	12	25	50	50

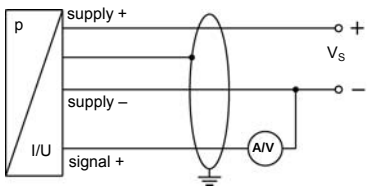
Output signal / Supply		
Standard	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}	SIL-version: V_S = 14 … 28 V_{DC}
Option IS-protection	2-wire: 4 ... 20 mA / V_S = 10 ... 28 V_{DC}	SIL-version: V_S = 14 … 28 V_{DC}
Options 3-wire	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC} 0 ... 10 V / V_S = 14 ... 30 V_{DC}	
Performance		
Accuracy	≤ ± 0.5 % FSO	
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S\ min}) / 0.02\ A]\ \Omega$ current 3-wire: R_{max} = 500 Ω voltage 3-wire: R_{min} = 10 k Ω	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ	
Response time	≤ 10 msec	
[1] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)		
Thermal effects (Offset and Span)		
Thermal error	≤ ± 0.2 % FSO / 10 K in compensated range -25 … 70 °C	
Permissible temperatures		
Permissible temperatures	medium: -10 ... 70 °C storage: -25 ... 70 °C	
Electrical protection [2]		
Short-circuit protection	permanent	
Reverse polarity protection	no damage, but also no function	
Electromagnetic protection	emission and immunity according to EN 61326	
[2] additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request		
Electrical connection		
Cable with sheath material[3]	PVC (-5 … 70 °C) grey PUR (-10 … 70 °C) black FEP[4] (-10 … 70 °C) black	
[3] shielded cable with integrated air tube for atmospheric pressure reference *[4] do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected*		
Materials (media wetted)		
Housing	stainless steel 1.4404 (316L)	
Seals	FKM EPDM	
Diaphragm	ceramics Al_2O_3 96 %	
Protection cap	POM	
Explosion protection (only for 4 … 20 mA / 2-wire)		
Approvals DX19-LMK 307	**IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X** zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T 85°C Da	
Safety technical maximum values	U_i = 28 V, I_i = 93 mA, P_i = 660 mW, C_i ≈ 0nF, L_i ≈ 0 µH, the supply connections have an inner capacity of max. 27 nF to the housing	
Ambient temperature range	in zone 0: -20 ... 60 °C with p_{atm} 0.8 bar up to 1.1 bar in zone 1: -20 ... 70 °C	
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1µH/m	
Miscellaneous		
Option SIL[5] 2 application	according to IEC 61508 / IEC 61511	
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA	
Weight	approx. 250 g (without cable)	
Ingress protection	IP 68	
CE-conformity	EMC Directive: 2014/30/EU	
ATEX Directive	2014/34/EU	
[5] only for 4...20mA / 2-wire		

Wiring diagrams

2-wire-system (current)



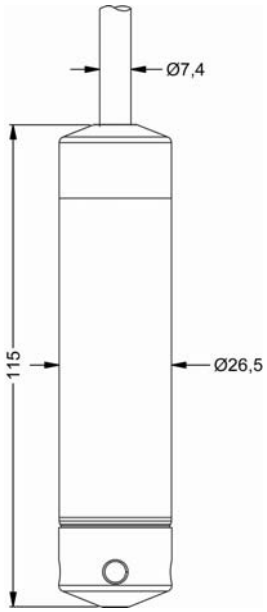
3-wire-system (current / voltage)

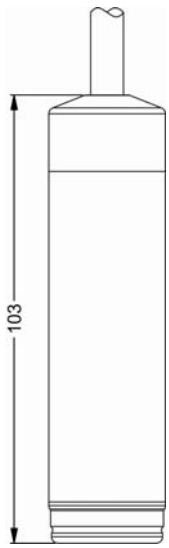


Pin configuration

Electrical connection	cable colours (IEC 60757)
Supply + Supply – Signal + (only 3-wire)	wh (white) bn (brown) gn (green)
Shield	gnye (green-yellow)

Dimensions (in mm)





protection cap removable