

Intrinsically Safe Level Sensor



PSX 2

Main features

- Measuring ranges from 1 mWC to 250 mWC
- Explosion-proof certificate for zone 0
II 1G Ex ia IIB T4
- Explosion-proof certificate for zone 1
II 2G Ex ia IIC T4
- Output signal 4...20 mA
- Protection class IP68

Applications

- Filling level measurement in tanks, vessels, water systems
- Application in environments that require ATEX-approved devices

Description

The explosion-proof filling level or point level sensor has excellent properties, is hermetically tight and very robust in its stainless steel housing. Appropriate protective circuits guarantee inverse-polarity protection and overvoltage resistance. The probe is of long-term stability and simple to operate.

- Options
- with steel or plastic cap
 - special coating for higher media resistance

zone 0 An area where an explosive atmosphere of a mix of air and combustible gases, vapours or sprays is permanently, over long periods or frequently prevails.

zone 1 An area where an explosive atmosphere of a mix of combustible materials in the form of gas, vapour or spray with air occurs occasionally in normal operation.

Safety Note:

When fitting, commissioning and operating this pressure transmitter, please observe relevant national safety regulations by all means.



Specification

PRESSURE RANGE							
Measuring range* silicon technology	p [bar]**	0,10	0,25	0,50			
Overload pressure	p [bar]**	0,3	0,5	1,0			
Burst pressure	p [bar]**	0,6	1,0	1,5			
Measuring range* stainless steel diaphragm	p [bar]**	1,0	1,6	2,0	2,5	4,0	6,0
Overload pressure	p [bar]**	6	6	6	6	10	20
Burst pressure	p [bar]**	9	9	9	9	15	30
Measuring range* stainless steel diaphragm	p [bar]**	10	16	20	25		
Overload pressure	p [bar]**	20	40	40	100		
Burst pressure	p [bar]**	30	60	60	150	** 1 bar is equivalent to ~ 10 mWC	
ELECTRICAL PARAMETER	signal			U _s [V _{DC}]	R _i [kΩ]	R _A [Ω]	
Output signal * and maximum acceptable burden R _A	R _A in Ohm	4...20 mA	(2-wire)	20...27	acc. to R _A = $(U_s - 16V) / 0,02 A$ min 100 ohm		
Response time * (10-90%)	t [ms]	<math>< 1</math>					
Withstand voltage	U [V _{DC}]	350	option 710				
ACCURACY	for pressure ranges of 1 bar to 25 bar			for pressure ranges of 0,1 bar to 0,5 bar			
Accuracy @RT	% of the range	≤ 0,50	option ≤ 0,25	≤ 1,00	option ≤ 0,5		
	BFSL	≤ 0,125		≤ 0,25			
Non-linearity	% of the range	≤ 0,15		≤ 0,15			
Repeatability	% of the range	≤ 0,10		≤ 0,10			
Stability/year	% of the range	≤ 0,10		≤ 0,10			
ACCEPTABLE TEMPERATURE RANGES	zone 0			zone 1			
Measuring medium	T [°C]	-20...60		-40...100			
Ambience	T [°C]	-20...60		-40...85			
Storage	T [°C]	-40...120		-40...125			
Compensated range*	T [°C]	-20...60		-20...85			
Temperature coefficient within the compensated range							
Mean TC offset	% of the range	≤ 0,15 / 10K		≤ 0,15 / 10K			
Mean TC range	% of the range	≤ 0,15 / 10K		≤ 0,15 / 10K			
Total error	% of the range	-20°C	1,00%	-40°C	1,00%		
	% of the range	60°C	1,00%	85°C	1,00%		
DIRECTIVE ATEX	zone 0			zone 1			
Type of ignition protection	II 1G Ex ia IIB T4 (cable lenght max 30 m)			II 2G Ex ia IIC T4 (cable lenght max 30 m)			
Underlying standards	EN 60079-0, EN 60079-11, EN 60079-26, EN60079-14			EN 60079-0, EN 60079-11, EN 60079-26, EN60079-14			
Maximum connected power	27 V, 125 mA, 85 W			27 V, 125 mA, 85 W			
Temperature class	T4 (Ambience -20...+60° C)			T4 (Ambience -40...+85° C)			
MECHANICAL PARAMETER							
Parts in contact with the measuring medium	stainless steel		for pressure ranges of 1 bar to 25 bar				
Parts in contact with the measuring medium	silicon		for pressure ranges of 0,1 bar to 0,5 bar				
Housing	stainless steel						
Casing	plastic / stainless steel						
Cable	depending on media (max. tensile strenght 40 N)						
Shock resistance	g	1000	acc. to IEC 68-2-32				
Vibration resistance	g	20	acc. to IEC 68-2-6 and IEC 68-2-36				
Mass with plastic casing	m [g]	150 plus cable					
Mass with steel casing	m [g]	240 plus cable					
Mass cable	m [g]	20 per m					
CE - conformity	EC Directive 94/9/EG				* others upon request		

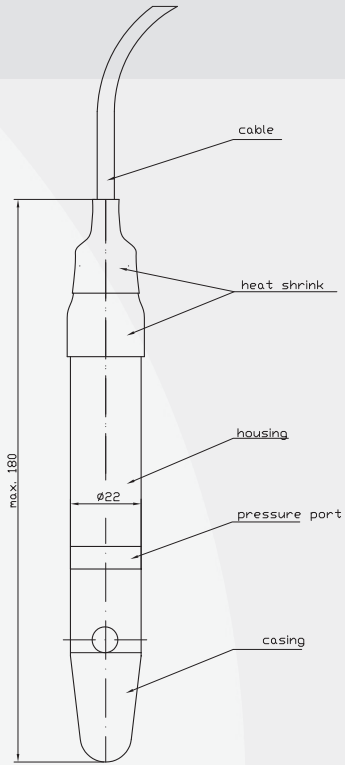
Configurations -examples-



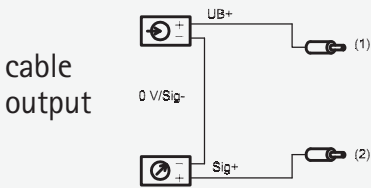
with plastic casing



with steel casing



Electrical Connections*



Legend		
	power supply	⟨1⟩ red
	consumer	⟨2⟩ black
		⟨3⟩ white

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* Custom-made adjustments acc. to pressure connections and connecting options are possible.