



P S X 2

## Intrinsically Safe Level Sensor

### Main features

- Measuring ranges from 0...100 mbar to 0...25 bar
- Explosion-proof certificate for zone 0  
II 1G Ex ia IIB T4 Ga or II 1G Ex ia IIC T4 Ga
- Explosion-proof certificate for zone 1  
II 2G Ex ia IIC T4 Gb
- 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.



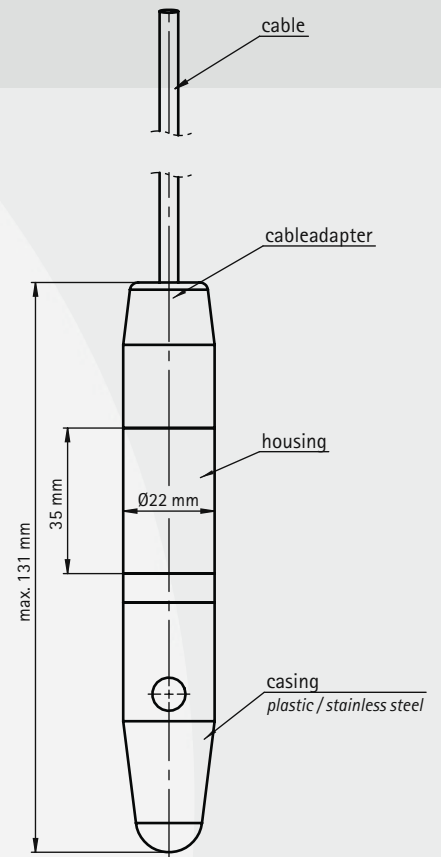
### Specification

PRESSURE RANGE							
Measuring range* silicon technology	p [bar]**	0,1	0,25	0,5			
Overload pressure	p [bar]**	0,2	0,5	1,0			
Burst pressure	p [bar]**	0,3	0,8	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							
		2-wire					
Output signal*		4...20 mA					
Supply voltage	$U_s [V_{dc}]$	20..27 V					
Load resistor	$R_A [\Omega]$	acc. to $R_A = <(U_s - 20 V)/0,02 A$					
Response time	t [ms]	≥ 4 (digital)		≥ 1 (analog)			
Maximum supply current	I [mA]	23 mA					
Isolation voltage*	U [V <sub>dc</sub> ]	500 VAC					
ACCURACY							
		pressure range 1 bar to 25 bar			pressure range 0,1 bar to 0,5 bar		
Accuracy @ RT	% of the range	≤ 0,50 ***	option ≤ 0,25		≤ 1,00 ***	option ≤ 0,5	
Non-linearity	BFSL	≤ 0,15			≤ 0,30		
Stability/year	% of the range	≤ 0,20			≤ 0,40		
		*** incl. nonlinearity, hysteresis, repeatability, zero-offset and final-offset (acc. to IEC 61298-2)					
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...100			-40...100		
Compensated range*	T [°C]	-20...60			-20...85		
Mean TC offset	% of the range	≤ 0,15 / 10 K			≤ 0,15 / 10 K		
Mean TC range	% of the range	≤ 0,15 / 10 K			≤ 0,15 / 10 K		
Total error	% of the range	-20°C	1,00%		digital: -40°C	1,00%	analog: -40°C 2,00%
	% of the range	60°C	1,00%		digital: 85°C	1,00%	analog: 85°C 2,00%
DIRECTIVE ATEX							
		zone 0			zone 1		
Type of ignition protection		II 1G Ex ia IIB T4 Ga			II 2G Ex ia IIC T4 Gb		
Underlying standards		EN 60079-0, EN 60079-11, EN 60079-26, EN 60079-14 (both zones)					
Maximum connected power		27 V, 125 mA, 0,85 W			27 V, 125 mA, 0,85 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 range of 1 to 25 bar				
Parts in contact with the measuring medium		silicon*	for pressure range of 0,1 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 DIN EN 60068-2-32 – free fall				
Vibration resistance	g	20	acc. to DIN EN 60068-2-6 and IEC 68-2-36 – vibration sinusoidal				
Mass with plastic casing	m [g]	150 plus cable					
Mass with steel casing	m [g]	240 plus cable					
Mass cable	m [g]	40 pro m					
CE - conformity		IBExU10ATEX1014 					

\* customer specific configurations available

## Configurations -example-

## PSX2



## Electrical Connections\*

Intrinsically Safe Level Sensor for zone 0 and zone 1

For wire connections the following pin assignment applies:  
Four-wire cable ventilated and unventilated

red: Loop +  
black: Loop -  
white: (clk)  
green: (dat)

Signals clk and dat must not be assigned for operation within explosion zones.

\* customer specific configurations available

# PSX2

Intrinsically Safe  
Level Sensor

## Product line

DS5	Electronic Pressure Switch	SME	Pressure Transmitter in Miniature Design
DPSX9I	Intrinsically Safe Electronic Pressure Switch for Current	SMF	Pressure Transmitter with Flush Diaphragm
DPSX9U	Intrinsically Safe Electronic Pressure Switch for Voltage	SMH	High Pressure Transmitter
PS1	Level Sensor	SML	Pressure Transmitter for Industrial Application
PSX2	Intrinsically Safe Level Sensor	SMO	Pressure Transmitter in Mobile Hydraulics
SHP	High Precision Pressure Transmitter	SMS	OEM Pressure Transmitter for Hydraulics and Pneumatics
SIS	Low Pressure Transmitter in Short and Compact Design	SMX	Intrinsically Safe Pressure Transmitter for Industrial Application
SIL	Low Pressure Transmitter for Industrial Application	SMX2	Intrinsically Safe Pressure Transmitter for Industrial Application
SKE	High Temperature Pressure Transmitter with Detached Electronics	TPSE	Multi-Function Transmitter for Pressure and Temperature – external sensor
SKL	High Temperature Pressure Transmitter with Cooling Fins	TPSI	Multi-Function Transmitter for Pressure and Temperature – internal sensor
SMC	Pressure Transmitter with CANopen Interface and J1939		



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Subject to change  
due to technical progress.  
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