

Level Sensor

Main features

- Measuring ranges from 1 mWC to 250 mWC
- Output signal 4...20 mA
- Output signal 0...10 V (only PS1)
- Media temperature range -40°C to 85°C
- Highly reliable
- Degree of protection IP68
- Precision Class 0.5%, PS17 Option: 0.25%

Applications

- Level measurement in tanks, vessels, water systems
- Level measurement in rivers, lakes and reservoirs

Description

With the stainless steel and thin film technology used the level sensor PS1/PS17 is highly reliable and best suited for level measurement in tanks, rivers or other water system applications. It can also be used in oil or other liquid media. The sensor is tested for a depth of maximum 250 meters. The welded stainless steel housing will provide excellent environmental protection. The sensor is highly reliable and provided a exceptional long term stability.

The version of PS17 provides an ever slimmer and more flexible design.



Specification

PRESSURE RANGE

| | | | | | | | |
|--|-----------|-----|------|-----|-----|------------------------------------|-----|
| Measuring range* silicon technology | p [bar]** | 0,1 | 0,25 | 0,5 | | | |
| 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

| | | 2-wire | 3-wire (only PS1) |
|------------------------|----------------|-----------------------------|-------------------|
| Output signal* | | 4...20 mA | 0...10 V |
| Supply voltage | $U_s [V_{DC}]$ | 10...32 *** | 12...32 |
| Load resistor | $R_A [\Omega]$ | $R_A = (U_s - 10V) / 0,02A$ | $\geq 4.7k\Omega$ |
| Maximum supply current | $I [mA]$ | 23 | 10 |

*** > AppNote (see www.adz.de)

| ACCURACY | pressure range 1 bar to 25 bar | 0,1 bar to 0,5 bar | optional PS17, 300 mbar to 20 bar |
|----------------|---|-------------------------------|-----------------------------------|
| Accuracy @ RT | % of the range $\leq 0,50$ option $\leq 0,25$ | $\leq 1,00$ option $\leq 0,5$ | $\leq 0,25$ |
| | BFSL $\leq 0,125$ | $\leq 0,25$ | $\leq 0,125$ |
| Non-linearity | $\leq 0,15$ | $\leq 0,15$ | $\leq 0,15$ |
| Stability/year | % of the range $\leq 0,10$ | $\leq 0,10$ | $\leq 0,10$ |

ACCEPTABLE TEMPERATURE RANGES

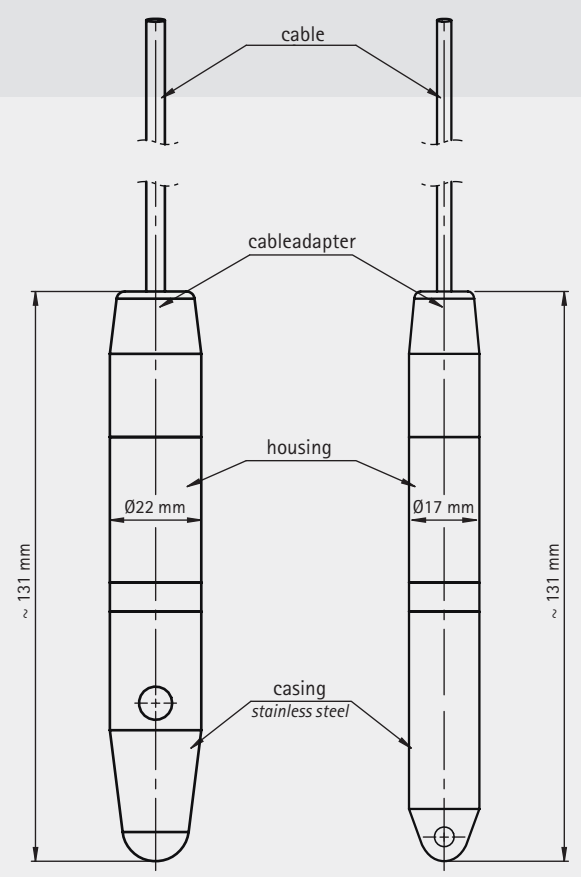
| | | | |
|-----------------------|----------------|--------------------|---|
| Measuring medium | T [°C] | -40...85 | |
| Ambience | T [°C] | -40...85 | |
| Storage | T [°C] | -40...85 | |
| Compensated range**** | T [°C] | -20...85 | |
| Mean TC offset | % of the range | $\leq 0,15 / 10 K$ | |
| Mean TC range | % of the range | $\leq 0,15 / 10 K$ | |
| Total error | % of the range | -40°C 2,00% | **** The mean TC are relevant for the compensated range only, outside the compensated range the total error statements apply. |
| | % of the range | 85°C 2,00% | |

MECHANICAL PARAMETER

| | | | |
|--------------------------|--|------------------|---|
| Wetted components | stainless steel / PS17 316L | | |
| Wetted components | silicon, NBR O-ring, aluminium, plastic PA66 | | pressure range 0,1 to 0,5 bar |
| Housing | stainless steel / PS17 316L | | |
| Cable* | PUR-cable (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 – vibration (sinusoidal) |
| Weight Level Sensor PS1 | m [g] | ~200g plus cable | |
| Weight Level Sensor PS17 | m [g] | ~150g plus cable | |
| Weight cable | m [g] | 40 pro m | |
| Approval | CE Declaration of conformity 2014/30/EU | | |

Note: Not every specification listed here applies to all configurations, thus affecting the appropriate approval.

Configurations -examples **PS1** **PS17**



* customer specific configurations available

Electrical Configuration*

| Cable |
|--|
| 2-wire red: UB+ black: out white: nc |
| 3-wire red: UB+ black: UB- white: out |

nc =
not connected

The electrical connection must be made in accordance with the respective connection diagram unless otherwise agreed upon.

* custom-made adjustments are possible

Product line

| | | | |
|--------|---|------|---|
| DS5 | Electronic Pressure Switch | SMC | Pressure Transmitter with CANopen Interface and J1939 |
| DPSX9I | Intrinsically Safe Electronic Pressure Switch for Current | SME | Pressure Transmitter in Miniature Design |
| DPSX9U | Intrinsically Safe Electronic Pressure Switch for Voltage | SMF | Pressure Transmitter with Flush Diaphragm |
| PS1/17 | Level Sensor | SMH | High Pressure Transmitter |
| PSX2 | Intrinsically Safe Level Sensor | SML | Pressure Transmitter for Industrial Application |
| SH2 | Pressure transmitter for hydrogen applications | SMO | Pressure Transmitter in Mobile Hydraulics |
| SHP | High Precision Pressure Transmitter | SMX2 | Intrinsically Safe Pressure Transmitter for Industrial Application |
| SIS | Low Pressure Transmitter in Short and Compact Design | TPSE | Multi-Function Transmitter for Pressure and Temperature – external sensor |
| SIL | Low Pressure Transmitter for Industrial Application | TPSI | Multi-Function Transmitter for Pressure and Temperature – internal sensor |
| SKE | High Temperature Pressure Transmitter with Detached Electronics | TS1 | Temperature transmitter for industrial application |
| SKL | High Temperature Pressure Transmitter with Cooling Fins | | |

