

Pressure Transmitter PCE-28

- ✓ Any range from 0...10 mbar up to 0...1000 bar
- ✓ 4 ÷ 20 mA two-wire or 0 ÷ 10 V output
- ✓ ATEX Intrinsic safety
- ✓ PED Conformity (97/23/EC)

Application

The PCE-28 pressure transmitter is applicable to the measurement of the pressure, underpressure and absolute pressure of gases, vapours and liquids.

Construction

The active sensing element is a piezoresistant silicon sensor separated from the medium by a diaphragm and by specially selected type of manometric liquid.

The electronics is placed in a casing with a degree of protection IP 65 or IP 67, depending on the type of electrical connection applied.

Calibration

Potentiometers can be used to shift the zero position and the range by up to ±10%, without altering the settings.

Installation

The transmitter is not heavy, so it can be installed directly on the installation. When the pressure of steam or other hot media is measured, a siphon or impulse line should be used. The needle valve placed upstream the transmitter simplifies installation process and enables the zero point adjustment or the transmitter replacement.

When the special process connections are required for the measurement of levels and pressures (e.g. at food and chemical industries), the transmitter is provided with an Aplisens diaphragm seal. Installing accessories and a full scope of diaphragm seals are described in detail in the further part of the catalogue.

Measurements under explosion hazard

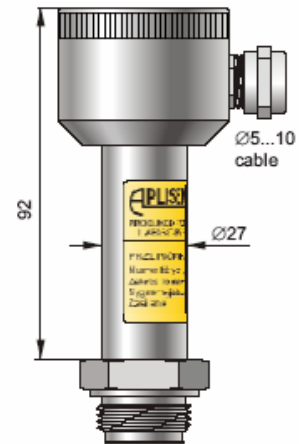
ATEX Intrinsic safety $\text{Ex II 1/2G EEx ia IIC T4/T5/T6 I M1 EEx ia I}$ version is available for taking measurements in zones under explosion hazard.

The installation of the transmitter in a zone under explosion hazard requires the use of a EEx power supply. We recommend the use of the Aplisens ZS-30EEx power supply and separator.



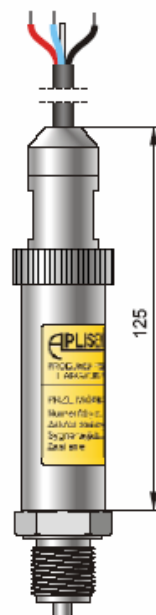
PCE-28 transmitter with PD type electrical connection

Degree of protection IP-65
Angle electrical connector DIN 43650
When the connector is removed both zero point adjustment and range setting potentiometers are accessible.



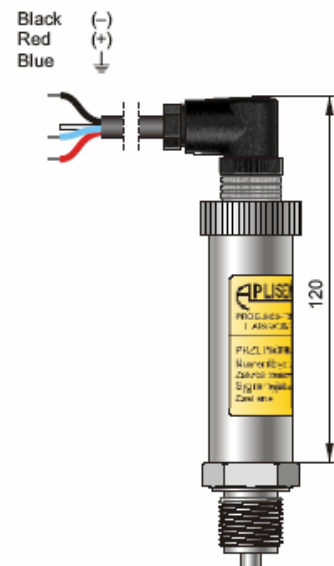
PCE-28 transmitter with PZ type electrical connection

Degree of protection IP-65
Electrical connection in a steel field casing with a packing gland M20×1.5. When the box is opened both zero point adjustment and range setting potentiometers are accessible.



PCE-28 transmitter with PK type electrical connection

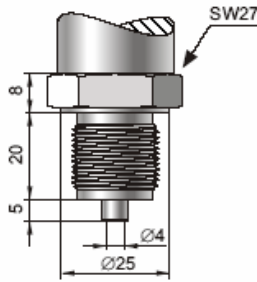
Degree of protection IP-67
The cable electrical connection, contact with the atmosphere through the capillary inside the cable. The cable length 3 m (other cable lengths available, if required)



PCE-28 transmitter with PM12 type electrical connection

Degree of protection IP-67
Electrical connection with thread M12×1, contact with the atmosphere through the capillary inside the cable. The cable length 3 m (other cable lengths available, if required)

Process connections



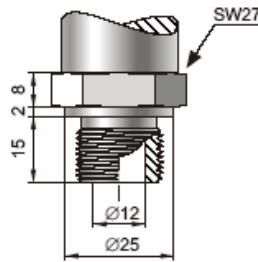
G1/2 type

G1/2", Ø4 hole
M type
M20×1.5, Ø4 hole

Wetted parts material: 316Lss

Application

Applicable to measurement the pressure of uncontaminated gases, vapours and liquids at any measurement ranges



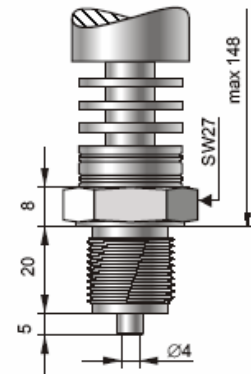
GP type

G1/2", Ø12 hole
P type
M20×1.5, Ø12 hole

Wetted parts materials:
316Lss – standard
Hastelloy C-276

Application

Applicable to measurement the pressure of viscous and contaminated media.
Max. range 0...70 bar.

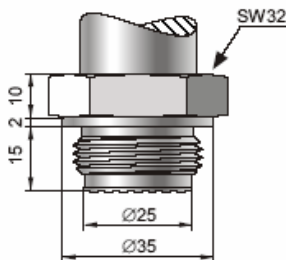


RG type G1/2" with radiator
RM type M20×1.5 with radiator

Wetted parts materials: 316Lss

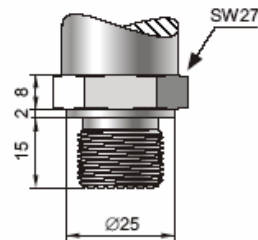
Application

Applicable to measurement the pressure of uncontaminated gases, vapours and liquids at the temperature up to 170°C, with no impulse line.
Min. range 160 mbar
Max. range 40 bar



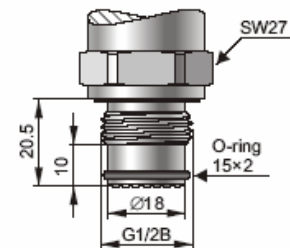
CM30×2 type

M30×2 with flush diaphragm
Wetted parts material:
316Lss – standard
Hastelloy C-276
Min. range 250 mbar
Max. range 70 bar



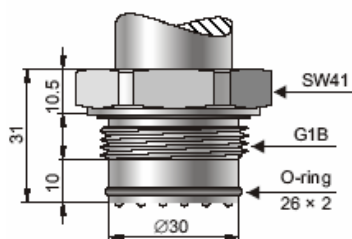
CM20×1.5 type

M20×1.5 with flush diaphragm
Wetted parts materials: 316Lss
Min. range 10 bar



CG1/2 type

G1/2" with flush diaphragm
Wetted parts materials: 316Lss
Min. range 2.5 bar
Max. range 600 bar



CG1 type

G1" with flush diaphragm
Min. range 100 mbar
Max. range 70 bar
Wetted parts materials: 316Lss
Hastelloy C-276

Application

Applicable to measurement the pressure of dusty gases, and viscous or solidifying liquids.

The transmitters with flush diaphragm are applied in food industry and pharmaceutical industry in aseptic systems. Using of Aplisens fitting sockets with a seal upstream the stub thread (see page 54) is recommended.

Technical data

Any measuring range 0...10 mbar + 0...1000 bar (over pressure, under pressure);
400 mbar + 80 bar (absolute pressure)

	Measuring Range		
	100 mbar	400 mbar	0...1 bar ÷ 1000 bar
Overpressure Limit (repeated, without hysteresis)	1 bar	2.5 bar	4 × range max 1200 bar
Damaging Overpressure	2 bar	5 bar	8 × range, max. 2000 bar
Accuracy	0.3%	0.2% (0.16% – special version)	
Long term stability	0.2% / year	0.1% / year	
Thermal error	Typically 0.3% / 10°C max 0.4% / 10°C		Typically 0.2% / 10°C max 0.3% / 10°C

Hysteresis, repeatability 0.05%

Thermal compensation range -10 + 80°C

Operating temperature range (ambient temp.) -40 + 80°C

Medium temperature range -40 + 120°C – direct measurement

over 120°C – measurement with the use of impulse line, radiator or diaphragm seal.

CAUTION: the medium must not be allowed to freeze in the impulse line or close to the pipe stub of the transmitter.

Output signal 4 + 20 mA, two wire transmission
0 + 10 V

Power supply 10.5 + 36 V DC (EEx 12...28 V)

Error due to supply voltage changes 0.005% / V

Material of the wetted parts 00H17N14M2 (316Lss)

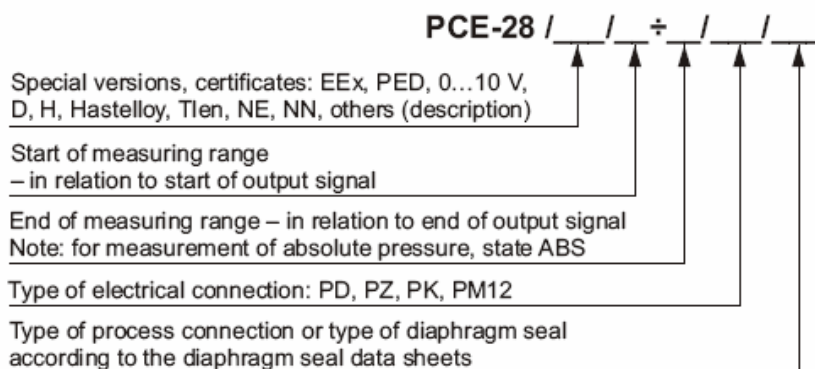
Material of the casing 0H18N9 (304ss)

Load resistance $R[\Omega] \leq \frac{U_{sup}[V] - 10.5V}{0.02A}$

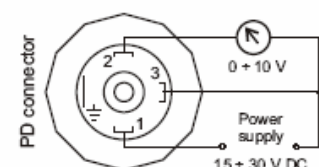
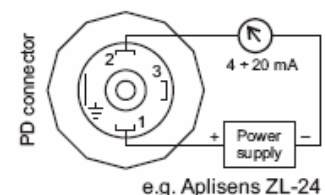
Special versions, certificates:

- ◇ accuracy ≤ 0.16% (for ranges ≥ 400 mbar)
- ◇ **EEEx** – ATEX Intrinsic safety
- ◇ **PED** – European Pressure Equipment Directive (97/23/EC)
- ◇ **D** – version with hydraulic gland for high-pressure hydraulic systems
- ◇ **H** – hydrophore version (high overload capacity, integrated circuit offering excess voltage protection)
- ◇ **Hastelloy** – wetted parts of transmitter made of Hastelloy C 276 (type P, GP, CM30×2 and CG1 process connections)
- ◇ **Tlen** – process connection designed for oxygen (only type M or G1/2 pipe stubs)
- ◇ **NE** – low power demand version (power consumption < 1.3 mA, output signal 0...10 V)
- ◇ **NN** – low-voltage version (power supply 3 V, output signal 0...2.5 V)
- ◇ **Others**

Ordering procedure



Electrical diagram



Example: PCE-28 Transmitter / range 0 + 1bar ABS, inverted output (20 + 4 mA) / electrical cable connection / G1/2" process connection

PCE-28 / 1 ÷ 0 bar ABS / PK / G1/2