



Mini pressure switch Ex protection EEx-d, IP 66 Model PXA

WIKA data sheet PV 34.38



Applications

- Pressure monitoring and direct switching of electrical loads
- For measuring points with limited space
- For gaseous and liquid, aggressive and highly viscous or contaminated media, also in aggressive ambience
- Process industry: chemical/petro-chemical, on- and offshore, technical gases, environmental technology, machine building and general plant construction, water treatment, pharmaceutical industry
- Types of explosion protection
 - GAS Ex-d DUST Ex-tD Gr. II Cat. 1/2 GD
 - Ex-d IIC T6 and T4
 - Ex-tD A21 IP66 T85 and T135

Special features

- Case made of stainless steel
- Ingress protection IP 66
- Ambient temperature -40 ... +85 °C
- 1 switch point, high contact rating of up to 5 A / AC 220 V
- Setting ranges 1 ... 2.5 bar to 50 ... 400 bar

Description

These high-quality pressure switches have been specifically developed for applications with limited space in hazardous zones.

High quality and product manufacturing to ISO 9001:2000 ensures reliable monitoring of your plant. In production, the switches are traced by quality assurance software at every step and subsequently are 100 % tested.

All wetted parts materials are from Hastelloy® C276 or stainless steel as standard. Each switch family is available in IP 66, Ex-ia or Ex-d versions (Ex-ia see model PXS, data sheet PV 34.36).



Mini pressure switch model PXA

In order to ensure as flexible operation as possible, the pressure switches are equipped with micro switches, which make it possible to switch an electrical load of up to 5 A / AC 220 V directly. For smaller contact ratings, such as for PLC applications, hermetically sealed micro switches with gold-plated contacts can be selected as an option. By using a disc spring with a prestressed snap-action spiral tube the pressure switch model PXA is extremely reliable and guarantees optimal operating characteristics.

Standard version

Case

Stainless steel 316 (1.4401)

Ingress protection

IP 66 per EN 60529 / IEC 529

Permissible temperature

Ambient: -40 ... +85 °C

Medium:

Sensor code M: -45 ... +205 °C

Sensor code G: -30 ... +120 °C

Process connection

Stainless steel, lower mount (LM)

¼ NPT (female)

Measuring system

Disc spring with prestressed "snap-action" spiral tube

Wetted parts

Disc spring: Hastelloy® C276, welded

Process connection: Stainless steel 316 (1.4401)

Switch contacts

One SPDT (change-over) micro switch, which is hermetically sealed in air, selectable in the following variants:

| Code | Design | Electrical rating (resistive load) | |
|------|-----------------|------------------------------------|-----------|
| | | AC | DC |
| E | Silver contacts | 5 A, 220 V | 5 A, 24 V |
| J | Gold contacts | 0.5 A, 220 V | 1 A, 24 V |

Repeatability

≤ 1 % of span

Setting ranges, max. test pressure, max. switch hysteresis

| Sensor code | Setting range in bar | Settable switch point with switching direction | | Working range in bar | Max. test pressure in bar | Max. switch hysteresis |
|-------------|----------------------|--|-------------|----------------------|---------------------------|------------------------|
| | | rising | falling | | | |
| M | 1 ... 2.5 | 1.3 ... 2.5 | 1 ... 2.2 | 0 ... 10 | 16 | 0.3 bar |
| M | 1.6 ... 4 | 2.1 ... 4 | 1.6 ... 3.5 | 0 ... 10 | 16 | 0.5 bar |
| M | 2.5 ... 10 | 3.5 ... 10 | 2.5 ... 9 | 0 ... 10 | 16 | 1.0 bar |
| M | 6 ... 20 | 7.5 ... 20 | 6 ... 18.5 | 0 ... 40 | 60 | 1.5 bar |
| M | 14 ... 40 | 17 ... 40 | 14 ... 37 | 0 ... 40 | 60 | 3.0 bar |
| G | 20 ... 100 | 35 ... 100 | 20 ... 85 | 0 ... 500 | 750 | 15 bar |
| G | 40 ... 160 | 85 ... 160 | 40 ... 135 | 0 ... 500 | 750 | 25 bar |
| G | 50 ... 400 | 85 ... 400 | 50 ... 365 | 0 ... 500 | 750 | 35 bar |

Switch points

The switch points can be set to your requirements, free-of-charge.

Please specify:

Switch point, switching direction (e.g. switch point: 0.5 bar, falling)

After sliding the cover backwards, **switch point adjustment** can be made using the fine adjustment screw. The switch point is settable within the entire measuring range with **the following general rule:**

- Define the value $A = 2x$ repeatability + switch hysteresis
- If the pressure is rising, the switch point should be set between (min. + value A) up to max. of the setting range.
- If the pressure is falling, the switch point should be set between min. up to (max. - value A) of the setting range.

Example:

Setting range: 0 ... 1 bar with one switch contact

Repeatability: 1 % of 1 bar = 10 mbar

Switch hysteresis = 15 mbar (see table setting ranges)

Value $A = 2 \times 10 \text{ mbar} + 15 \text{ mbar} = 35 \text{ mbar}$

If the pressure is rising, the switch point should be set between 35 mbar up to 1 bar.

If the pressure is falling, the switch point should be set between 0 up to 965 mbar.

For optimal performance we suggest the switch point lies between 25 % and 75 % of the setting range.

Electrical connection

1/2 NPT male, multi-core cable, length 1.5 m, 0.5 mm², protective conductor connection using internal and external screw, max. earth cable cross-section 4 mm²

Pressure switch certified per:

- Pressure equipment directive 97/23/EC (PED, annex 1, category IV, safety accessories, module B + D)
- Low voltage directive 73/23 EEC and 93/68 EEC

Dielectric strength

Safety class I (EN 61298-2: 1997-06)

Mounting

Direct mounting in any direction

Weight

approx. 0.6 kg

Options

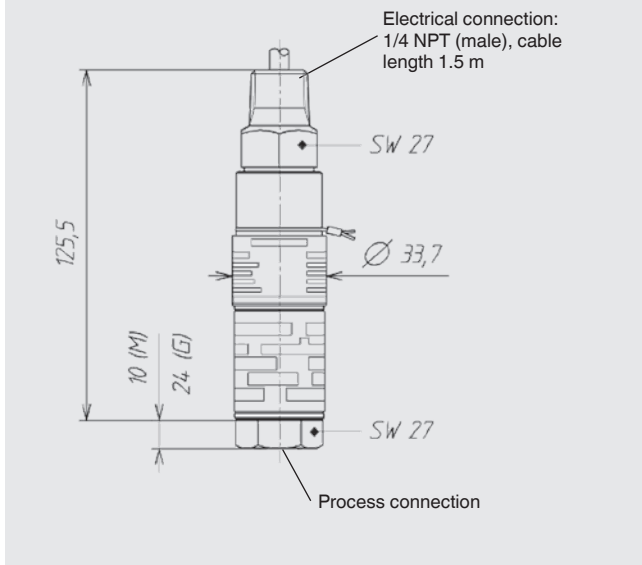
- Other process connection, also with adapter
- Electrical connection via terminal box with 3 connections 1/2 NPT female, ingress protection IP 65, permissible temperature -40 ... +60 °C
- Electrical connection 1/2 NPT, 3/4 NPT or M20 x 1.5 (female)
- 2" pipe-mounting kit
- Other cable lengths (3 or 5 m)
- External connection to earth, max. 4 mm²
- Version for off-shore or tropicalised application
- Version for applications to NACE
- Version for ammonia applications
- Oil and grease free version for oxygen applications
- Accessories:
 - Pressure gauge valves model 910.11, see data sheet AC 09.02
 - Barstock valves model 910.81, see data sheet AC 09.18

Approvals and certificates

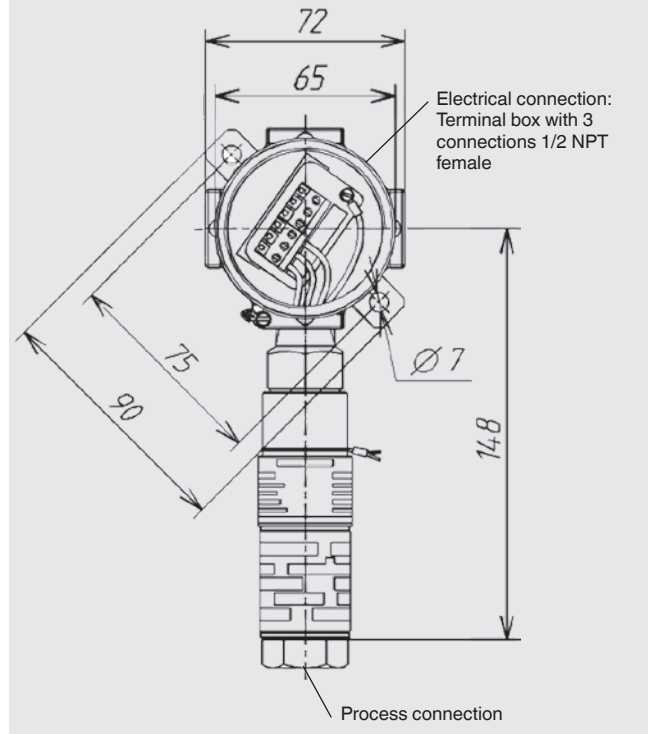
- GOST-R certificate
- Test certificate *CA* (confirmation of the switching accuracy)
- Test report *CP* (3-time listing of the switch point, requires switch point specification)
- Material certificate 3.1 per EN 10204

Dimensions in mm

Standard version



Option terminal box



Ordering information

Model / Sensor code / Switch contacts with version / Setting range / Process connection / Electrical connection / Switch point / Switching direction / Options

Example: PXA4 - M - E - 2.5/10 bar - 1/4"NPT-F - 1/2"NPT-M

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