Precont PK4

Pressure transmitter for general industrial applications
Operating manual BA01.19

Technical modifications reserved.

1 Safety instructions

The operating manual is part of the device and must be kept always accessible nearest its installation location.
Installation, electrical connection, commissioning, operation, dismounting and disposal of the device must be made by a qualified and authorized expert according to the information's in this Operating Manual and the relevant standards and rules.
This expert must have read and understood this Operating Manual and especially the safety notes.
Complementary the Technical Information TI has to be adhered to, that can be ordered by the manufacturer or downloaded from the homepage.
If the device is intended for use in explosion-hazardous areas, additionally the safety instructions for electrical apparatus for explosion-hazardous areas must be observed.

1.1 Operational safety

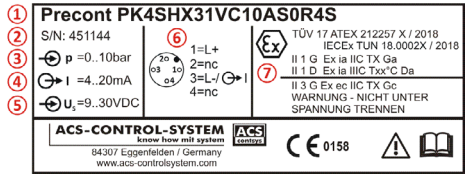
The device is safely built and tested according to state-of-the-art technology.
The device meets the legal requirements of all relevant EU directives. This is confirmed by attaching the CE mark. The associated EU-Declaration of Conformity can be ordered or downloaded from the homepage.
This measuring device meets article 4 (3) of the EU directive 2014/68/EU (pressure equipment device directive) and is designed and produced in good engineer practice.
Devices with measurement end value > 200 bar are constructed for media of fluid group 2.

1.2 Intended use

The device is an electronic pressure transmitter / pressure switch for monitoring, control and continuous measurement of pressures in gases, vapors, liquids and dusts.
The device may only be used within the permitted operation limits. Every use besides these limits as agreed can lead to serious dangers.
The materials of the device must be checked for compatibility with the respective application requirements (contacting materials, process temperature) before use. An unsuitable material can lead to damage, abnormal behavior or destruction of the device and to the resulting dangers
The sensors may not be used as sole device for prevention of dangerous conditions in machines and plants.
The operational reliability of the device is ensured only at the intended use.
An inappropriately use, disregarding the Operating Manual and the technical rules, using under-qualified personnel, making unauthorized alterations as well as damage of the device releases the manufacturer from liability for any resulting damage. This renders the manufacturer's warranty null and void.

2 Installation

2.1 Product label



① Type code
② Serial number
③ Input signal / Measuring range
④ Output signal
⑤ Power supply
⑥ Pin assignment
⑦ Ignition protection type

2.2 Installation place

The correct function of the device within the specific technical data can only be guaranteed, if the permitted process and environmental conditions at the installation place (see Technical Information TI) will not be exceeded.
The installation of the device at locations where high pressure blows can occur should be avoided.
Pressure measurement in gases: Install device above the tapping point, so that the condensate can flow into the process.
Pressure measurement in steams: Install device after a siphon and a shut-off device below the tapping point. Fill the siphon with fluid before commissioning.
Pressure measurement in liquids: Install device after a shut-off device below or at the same level as the tapping point. Install device below the lowest measuring point. Do not mount the device in the fill flow, in the suction area of a pump, in the tank outlet or at a point in the container which could be affected by pressure pulses from an agitator.
The installation of the device should be made if possible at temperature calmed places. High process temperature steps can produce short-time higher measuring signal deviations.
At high process temperatures a heat transfer to the terminal enclosure can be reduced by isolation of the medium carrying part of the plant or by the use of a temperature decoupler.

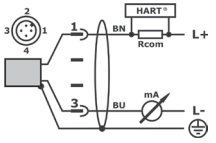
2.3 Installation notes

Do not remove packaging until just before mounting and check the device for any damage.
The protective cap, which is attached at the process connection resp. the diaphragm, must only be removed immediately before the installation. The diaphragm may not be damaged.
Pollution or damaging of the pressure compensation opening (Hole besides the electrical connection) can lead to faulty measuring results.
DANGER - Install the device only when the system is pressureless. There is a risk of fast escaping media resp. pressure blow.
DANGER - Let the system cool down sufficiently before installing the device. There is a risk of dangerous and hot media escaping.
Sealing faces and threads on the device and at the mounting point must be clean and without damage.
Parallel threads must be sealed by a suitable O-ring, flat or profile gasket. An additional sealing material such as yam, hemp or PTFE tape should not be used. Tapered threads should be wound with additional sealing material, e.g. PTFE tape for sealing.
The installation of the device into a closed off completely with process liquid filled connection can lead to destruction of the measuring diaphragm. The reduction of the volume of the liquid at screw-in leads to a very high pressure boosting, which can exceed the permitted maximum value by a multiple. Thus, before installation, the connection must be sufficiently emptied.
The tightening of the thread process connection may only be done at the hexagon by a suitable spanner at most with the maximum permitted torque strength (≤ 50Nm).

3 Electrical connection

Danger – Install the device only when power supply is off. There is a risk of electric shock.
Note – For inauguration deactivate all connected control devices, to avoid unwanted control reactions.
The device must be grounded, e.g. by the metallic process connection.
Install cable separated from power leading cables, if existing connect shield to earth.
Cable: M12 – A-coded, 1-BN = brown / 2-WH = white / 3-BU = blue / 4-BK = black

3.1 Electronic type A – Current 4…20mA HART®



Use a cable 2-core, twisted, shielded.
Observe maximum permitted supply voltage:

- Us = 9…35VDC
- Ex: Us = 9…30VDC

Observe maximum permitted load resistor of the analogue output:

- RL ≤ (Us - 9V) / 22mA

Observe a communication resistance of 250Ω for HART®.

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4 Operation

4.1 HART®

Configuration via HART®-communication device e.g. E+H Field, software e.g. PACTware™ and device driver DTM e.g. ICS Generic HART DTM
Damping 0s…<1s: The HART® communication for 20s after power-up the supply voltage.
Deactivation after 4 minutes of inactivity.
Default settings [Adjustment range):

- Address: 0 [0…15]
- Damping [s]: 0 [0…100]
- Current alarm: 3,9…20,5mA [3,9…20,5mA / 3,8mA / 22mA]
- Start value LRV: Nominal lower adjustment value = 4mA
- End value URV: Nominal upper adjustment value = 20mA

5 Maintenance

The device is free of maintenance.
Solid coatings on the diaphragm can lead to faulty measurement results. The diaphragm must be regularly cleaned. Don't use sharp resp. hard tools, pressured air or aggressive chemicals. For dismounting the device see safety information's of the chapter "Dismounting".

6 Dismounting

Use suitable protective clothing, e.g. goggles, gloves.
Danger - Dismount the device only when power supply is off. There is a risk of electric shock.
Danger - Let the device and the system cool down sufficiently fore dismounting it. There is a risk of hot surfaces as well as dangerous and hot media escaping.
Danger - Dismount the device only when the system is pressureless. There is a risk of fast escaping media resp. pressure blow.
After dismounting the diaphragm resp. the process connection as well as the electrical connection plug must be fitted with protective caps.

7 Troubleshooting / Repair

In case of malfunction check:

- Enclosure >> Damage
- Pressure compensation opening >> Pollution
- Diaphragm >> Damage / Pollution
- Process gaskets >> Damage
- Supply voltage >> Polarity / Voltage / Load / Contact
- Cable >> Damage / Short circuit / Wire break

For dismounting the device see safety information's of the chapter "Dismounting".
A repair may only be carried out by the manufacturer.

8 Return

Enclose necessary information's for return:

- An exact description of the application.
- The chemical and physical characteristics of the product.
- A short description of the occurred error.

Before returning the device, the following measures must be performed:

- Adhesive product residues e.g. caustic, toxic, radioactive etc. must be removed.
- A returning must be refrained, if it is not possible by 100% to remove the unhealthily product completely.

9 Disposal

This instrument is not subject to the WEEE directive and the respective national laws. Hence, pass the instrument directly on to a specialized recycling company and do not use the municipal collecting points.

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