

ALL STAINLESS PRESSURE GAUGE WITH DIAPHRAGM SEAL

CLAMP CONNECTION

TYPE PG221M-S1F



1. General remarks

1.1 Purpose of this Manual

This Operating Manual contains fundamental and essential advice to be followed for the installation, operation and servicing of the device. It must be read without fail before assembly and start-up of the device by the fitter, the operator and the specialist personnel responsible for the device.

This Operating Manual must be available at the point of use of the device at all times. The following sections about general Safety information (2) and also the following specific advice regarding the intended purposes (2.2) and through to disposal (10.3) contain important safety information which, if not followed, may result in risks for people and animals, or to property and buildings.

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1.2 Symbols



Warning!

This indicates a possibly hazardous situation where failing to follow advice may result in risks to people, animals, the environment and buildings.

1.3 Limits of liability

Failure to respect this safety information, the envisaged uses or the limit values relating to use indicated in the technical data for the device may result in risk or to injury to people, the environment or the plant. Claims for compensation for damage against the device supplier are excluded in such an eventual.

2 Safety

2.1 General sources of hazards

Pressure gauges are generally a constituent part of a control and measurement system, and their failure can result in hazardous situations.

2.2 Use in accordance with intended purpose

The devices are only to be used for the intended purpose as described by the manufacturer. The devices are used for direct display of pressure. For each use scenario, the corresponding set up regulations must be respected. The use in explosion risk areas is not permitted.

2.3 Operator's responsibility

Safety instructions for proper operation of the device must be respected.

They are to be provided by the operator for use by the respective personnel for installation, servicing, inspection and operation. Risks from electrical energy and from the released energy of the medium, from escaping media and from improper connection of the device must be limited.

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The details for this are to be found in the corresponding applicable set of regulations, such as DIN EN, UVV (accident prevention regulations).

The device must be taken out of service and secured against inadvertently being restarted, if the presumption is that risk-free operation is no longer possible (see Chapter 10. Faults).

Conversion works or other technical alterations to the device by the customer are not permitted. This also applies to installation of spare parts. Possible conversions or alterations may only be carried out by the manufacturer. The operational safety of the device is only guaranteed where it is used for its intended purpose. The specification of the device must be adapted to the medium used in the plant. The limit values indicated in the technical data must not be exceeded.

The safety information detailed in this Operating Manual, existing national regulations for accident prevention, and the operator's internal regulations regarding working, operations and safety must be respected. The operator is responsible for all specified servicing, inspection and installation works being carried out by authorized and qualified specialists.

2.4 Staff qualifications (target group assessment)

The device may only be installed and started up by specialist staff who are familiar with installation, start-up and operation of the product. Specialist staff are people who are able to assess the work assigned to them on the basis of their specialist training, their knowledge and experience and their knowledge of the relevant standards, and can identify possible risks.

3. Technical data

The detailed technical information can be found in the document:
All Stainless Pressure Gauge With Diaphragm Seal PG221M S1F – Datasheet.

4. IDENTIFICATION OF THE DEVICE

The serial number label (label) and the type designation is located at the rear of the housing. Manometer properties are encoded in the type designation.

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5. Construction and function

5.1 Description of function

The diaphragm will be loaded with the process pressure on one side and elastically deflects from its normal position. This way is proportional to the applied pressure and will be transmitted to a rotary geared movement. The movement carries a pointer and indicates the pressure on a dial with 270 angle.

5.2 Description of components

5.2.1 CLAMP connection

Connection CLAMP per DIN 32676.

5.2.2 Dial with pointer

The pressure gauge is equipped with a dial and pointer pursuant to EN 837-1.

6. Transport

6.1 Safety

The pressure gauge should be protected against the effects of knocks and impacts.

The device should only be transported in the packaging provided, to protect against glass breakage. The device should only be transported in a clean condition (free from residues of measuring media).

6.2 Transport inspection

The delivery is to be checked for completeness and damage during transport.

In the event of damage during transport, the delivery is not to be accepted, or only accepted subject to reservation of the scope of the damage being recorded and, if necessary, a complaint initiated.

6.3 Storage

The pressure gauge is to be stored in dry, clean conditions, within a temperature range of -40 to +60 °C, protected against direct exposure to sunlight and protected against impact damage.

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7. Mounting/Installation

The device is supplied and calibrated for vertical installation

7.1 Process connection

- Connection only to be undertaken by authorized and qualified specialist staff.
- Use only with the mechanical process connection provided—regarding the configuration.
- When connecting the device, the pipes must be depressurized.
- If the pressure system or tee-extension cannot support the weight of the device, then surface or wall mounting brackets or mounting flanges should be used.
- After installation of pressure gauge cut off the venting plug.



Safety notice:

Only mount using the correct open-jawed wrench, and do not twist the device itself.

7.2 Starting up

- The precondition for start-up is correct installation. All connecting lines must be laid such that no mechanical forces can act on the device. The pressure gauge should be installed where exposure to heat and vibration are minimal and where the dial can be easily read. It is important to install the device in a location with undisturbed and continuous flow of the medium.
- Before start up, the seal on the CLAMP connection must be checked.

8. Servicing

The device is maintenance-free. However, to ensure reliable operation and a long lifetime for the device, we recommend that it is checked regularly.

Residues from the pressure medium may remain inside the device after it has been removed from service. If these residues are hazardous or toxic, is the necessary precautions when handling and storing used gauges.

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Open isolating devices slowly. Opening them too fast may generate sudden pressure surges that could damage the gauge.

Calibration can be confirmed by checking the position of the zero point. To do so, close the isolating device and vent the gauge to zero pressure. The pointer must over the zero box. Unless the gauge temperature is significantly higher or lower than 20 °C a pointer not returning to zero may indicate that the gauge has been seriously damaged.

8.1 Safety

When undertaking servicing work on the device, the lines must be depressurized and the plant secured against being switched on again.

8.2 Cleaning and maintenance

Cleaning is carried out using a non-aggressive cleaning agent, respecting the protection category of the device.

9. Faults

9.1 Safety

Defective or faulty pressure gauges put the operational safety and process safety of the plant at risk, and can lead to a risk or injury to persons, the environment or the plant.

9.2 Conduct in the event of faults

All defective or faulty devices are to be taken out of service.

9.3 Fault table

Possible situations indicating a fault:

- Jerky or random movement of the pointer
- No correspondence between the measured value being displayed and actual pressure
- Bent or loose pointer

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- Cracked window
- Damage to housing
- Extended storage at temperatures above 60 °C. In these instances, replacement of the gauge is always required.

9.4 Conduct following fault rectification

See Chapter 7. Mounting/Installation

10. Demounting, disposal

10.1 Safety



Residues of measuring media in and on removed pressure gauges can constitute a risk to people, the environment and equipment. Adequate precautionary measures are to be adopted.

If necessary, the devices are to be cleaned thoroughly.

10.2 Demounting

- When undertaking servicing work the lines must be depressurized and the plant secured against being switched on again.
- Demount the pressure gauge using a suitable tool.

10.3 Disposal

Please help to protect the environment and dispose of or recycle the devices and components used in accordance with the applicable regulations.

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