



RoHS III
COMPLIANT



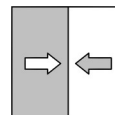
Operating manual

DA09 (ATEX)

Differential pressure measuring unit
Pressure levels PN10/PN25

Diaphragm manometer for use in
potentially explosive areas
CrNi-steel model

DA09... 0A
DA09... 1B
DA09... 1C
DA09... 2D



Masthead

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Subject to technical amendments.



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Version history

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| Rev. ST4-A 02/18 | Version 1 (first edition) |
| Rev. ST4-B 09/19 | Version 2 (new accessories) |
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| Rev. ST4-F 10/21 | Version 6 (UKCA Declaration) |
| Rev. ST4-G 02/23 | Version 7 (liquid filling for inductive contacts) |
| Rev. ST4-H 03/25 | Version 8 (Update of EU Declaration of Conformity) |

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1 Safety information

1.1 General

This operating manual contains basic instructions for the installation, operation and maintenance of the device that must be followed without fail. It must be read by the installer, the operator and the responsible specialist personnel before installing and commissioning the device.

This operating manual is an integral part of the product and therefore needs to be kept close to the instrument in a place that is accessible at all times to the responsible personnel.

The following sections, in particular instructions about the assembly, commissioning and maintenance, contain important information, non-observance of which could pose a threat to humans, animals, the environment and property.

The instrument described in these operating instructions is designed and manufactured in line with the state of the art and good engineering practice.

1.2 Personnel Qualification

The instrument may only be installed and commissioned by specialized personnel familiar with the installation, commissioning and operation of this product.

Specialized personnel are persons who can assess the work they have been assigned and recognize potential dangers by virtue of their specialized training, their skills and experience and their knowledge of the pertinent standards.

For explosion-proof models the specialized personnel must have received special training or instruction or be authorized to work with explosion-proof instruments in explosion hazard areas.

1.3 Risks due to Non-Observance of Safety Instructions

Non-observance of these safety instructions, the intended use of the device or the limit values given in the technical specifications can be hazardous or cause harm to persons, the environment or the plant itself.

The supplier of the equipment will not be liable for damage claims if this should happen.

1.4 Safety Instructions for the Operating Company and the Operator

The safety instructions governing correct operation of the instrument must be observed. The operating company must make them available to the installation, maintenance, inspection and operating personnel.

Dangers arising from electrical components, energy discharged by the medium, escaping medium and incorrect installation of the device must be eliminated. See the information in the applicable national and international regulations.

Please observe the information about certification and approvals in the Technical Data section.

The instrument must be decommissioned and secured against inadvertent re-operation if a situation arises in which it must be assumed that safe operation is no longer possible. Reasons for this assumption could be:

- evident damage to the instrument
- failure of the electrical circuits
- longer storage outside the approved temperature range.
- considerable strain due to transport

Repairs may be carried out by the manufacturer only.

A professional single conformity inspection as per DIN EN 61010, section 1, must be carried out before the instrument can be re-commissioned. This inspection must be performed at the manufacturer's location. Correct transport and storage of the instrument are required.

1.5 Unauthorised Modification

Modifications of or other technical alterations to the instrument by the customer are not permitted. This also applies to replacement parts. Only the manufacturer is authorised to make any modifications or changes.

1.6 Inadmissible Modes of Operation

The operational safety of this instrument can only be guaranteed if it is used as intended. The instrument model must be suitable for the medium used in the system. The limit values given in the technical data may not be exceeded.

The manufacturer is not liable for damage resulting from improper or incorrect use.

1.7 Safe working practices for maintenance and installation work

The safety instructions given in this operating manual, any nationally applicable regulations on accident prevention and any of the operating company's internal work, operating and safety guidelines must be observed.

The operating company is responsible for ensuring that all required maintenance, inspection and installation work is carried out by qualified specialized personnel.

1.8 Pictogram explanation



DANGER

Type and source of danger

This indicates a **direct** dangerous situation that could lead to death or **serious injury** (highest danger level).

1. Avoid danger by observing the valid safety regulations.



WARNING

Type and source of danger

This indicates a **potentially** dangerous situation that could lead to death or **serious injury** (medium danger level).

1. Avoid danger by observing the valid safety regulations.



CAUTION

Type and source of danger

This indicates a **potentially** dangerous situation that could lead to slight or serious injury, damage or **environmental pollution** (low danger level).

1. Avoid danger by observing the valid safety regulations.



NOTICE

Note / advice

This indicates useful information of advice for efficient and smooth operation.

2 Product and functional description

2.1 Delivery scope

- Diaphragm manometer DA09
- Operating Manual

2.2 Intended use

The diaphragm manometer DA09 serves to measure and display differential pressures in gaseous, fluid and aggressive media. The unit is completely made of CrNi-steel and is suitable for use in aggressive environments. If used with aggressive media, the media compatibility with the materials used must be checked (see Techn. data).

The DA09 can be delivered with a contact element. If the set limit values are exceeded, the output power circuits are opened or closed, and/or a 0/4...20 mA output signal proportional to the displayed value is issued for a capacitive rotation angle encoder.



DANGER

Installation regulations

The respective installation instructions must be observed for every application case. These should be listed in detail in the same-named section in chapter 'Assembly' for the 'use in explosive areas'.

2.3 Function diagram

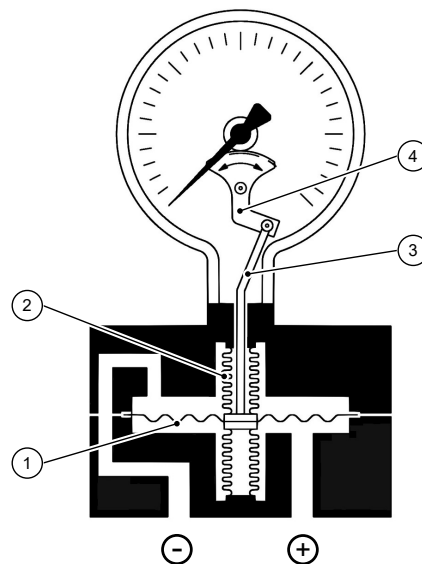


Fig. 1: Function diagram

| | |
|-----------------------|----------------|
| 1 Measuring diaphragm | 2 Bellows |
| 3 Tie rod | 4 Motion train |

2.4 Design and mode of operation

The measuring system comprises a diaphragm and two separate pressure chambers. Differential pressure between the chambers causes axial movement of the diaphragms. A tie rod transfers this movement to an indicator.

The seal between the pressure chamber and tie rod is realised with metal bellows. To compensate the static operating pressure, the measuring system is symmetrical.

2.5 Equipment versions

The illustrations are just examples. The equipment features can be combined according to the order code.

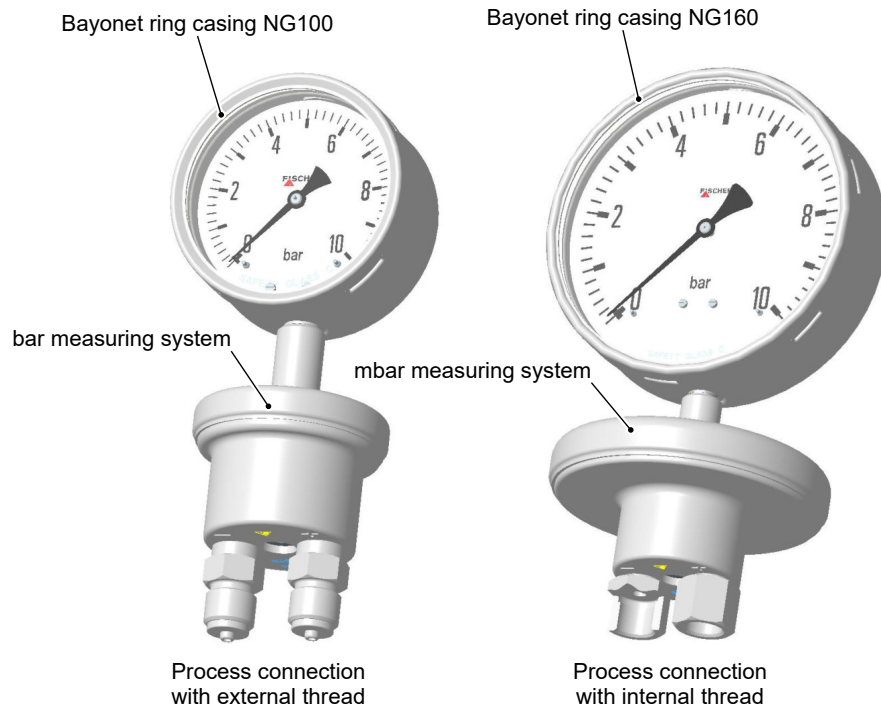


Fig. 2: Equipment versions NG100, NG160

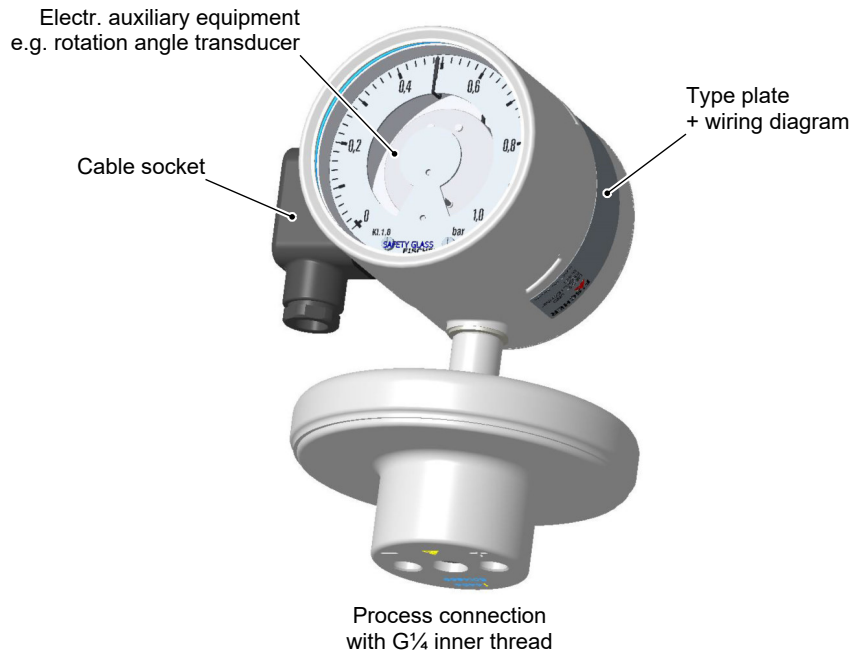


Fig. 3: Equipment versions additional equipment

2.6 Nameplate

The presented type plates serve to show an example of the information shown. The data shown is purely fictive, but does correspond to the actual conditions. For more information, please see the order code at the end of these instructions.

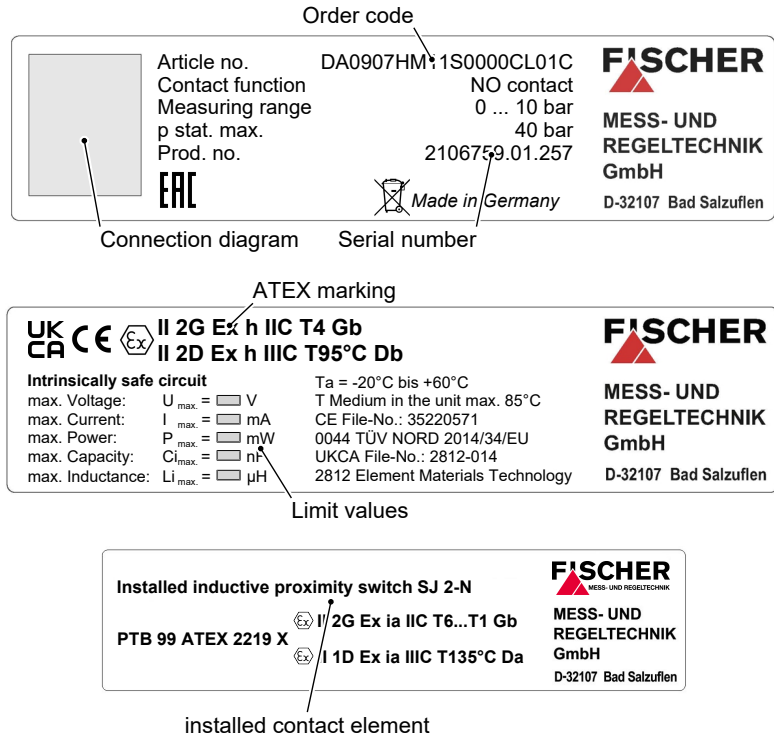


Fig. 4: Name plate

3 Assembly

3.1 General

The device can be mounted in one of the following ways:

1. Direct assembly
The unit is suitable for direct assembly to pressure lines. The unit weight depends on the design. A suitable support construction may be needed.
2. Wall mounting
The unit is equipped with a wall holder and is suitable for mounting to mounting plates and even walls.
3. Pipe assembly
The device is equipped with a special pipe assembly set and is suitable for mounting to a 2" pipe (DN50).



Wall mount



Pipe assembly

Fig. 5: Assembly types

3.2 Process connection

- By authorized and qualified specialized personnel only.
- The pipes need to be depressurized when the instrument is being connected.
- Appropriate steps must be taken to protect the device from pressure surges.
- Check that the device is suitable for the medium being measured.
- Maximum pressures must be observed (cf. Tech. data)

All supply lines are arranged so that there are no mechanical forces acting on the device.

The pressure lines must be kept as short as possible and installed without any tight bends to avoid delays.

The pressure lines must be installed at an inclination so that when fluids are measured no air pockets are created or when measuring gases, no water pockets are created. If the required inclination is not reached, water or air filters must be installed at suitable places.

The pressure lines need to be vented for fluid measuring media.

If water is used as a measuring medium, the unit must be protected against frost.

If the pressure sensing lines are already pressurised at the time of commissioning, zero-point control and adjustment cannot be performed. In such cases, the device should be only connected to the mains without the pressure sensing lines.

The process connections are marked on the unit with (+) and (-) symbols. The pressure lines are to be mounted according to this marking.

Differential pressure

- ⊕ Higher pressure
- ⊖ lower pressure

The following options are available for the process connection:

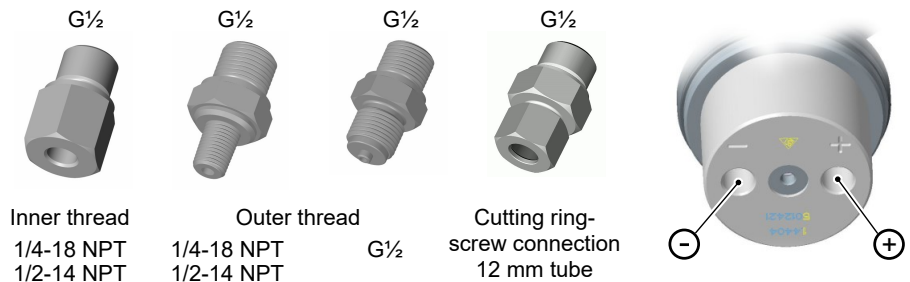


Fig. 6: Process connection

3.3 Electrical connections



⚠ DANGER

Operation in areas at risk of explosion

If operated in explosive areas, the electrical data of the unit and the valid local regulations and guidelines for the installation and operation of electrical systems in explosive areas must be observed.

The electrical connection may only be realised by authorised and qualified specialists that have undergone additional training or briefings or have a permit to work on explosion-protected units in potentially explosive systems.

Risks emanating from electrical current of voltage should be prevented by means of suitable action.

- When connecting the unit, the national and international electro-technical regulations must be observed.
- Disconnect the system from the mains, before electrically connecting the device.
- Do not connect the connector if strained.
- A CE-conform mains adapter with a slow 200 mA fuse only may be used in the power supply circuit.

Only devices with contact elements are connected to the electrical supply. For this purpose, a cable socket is mounted on the side of the device. The installed cables and wires must be tested with a reduced tensile force (25%) in compliance with Section A.3.1 of the standard EN 60079-0 and may only be used for permanent installation of operating equipment of Group II. The operator must ensure that the cables are connected with clamps accordingly.

The following data applies to the cable gland:

| | |
|------------------------------|------------------------|
| Cable gland | M20 x 1.5 |
| Cable diameter | 7 ... 13 mm |
| Max. conductor cross-section | 1.5 mm ² |
| Tightening torque | 3 Nm (clockwise tight) |
| Key width | 21 |

3.3.1 Ground connection

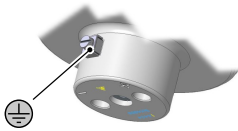


Fig. 7: Ground connection

The outer ground connection must always be connected to the protective potential equalisation or a similar local potential equalisation. The connection is suitable for connecting fine-wire conductors up to 4 mm² or single-wire conductors up to 6 mm².

3.3.2 Cable socket (blue)

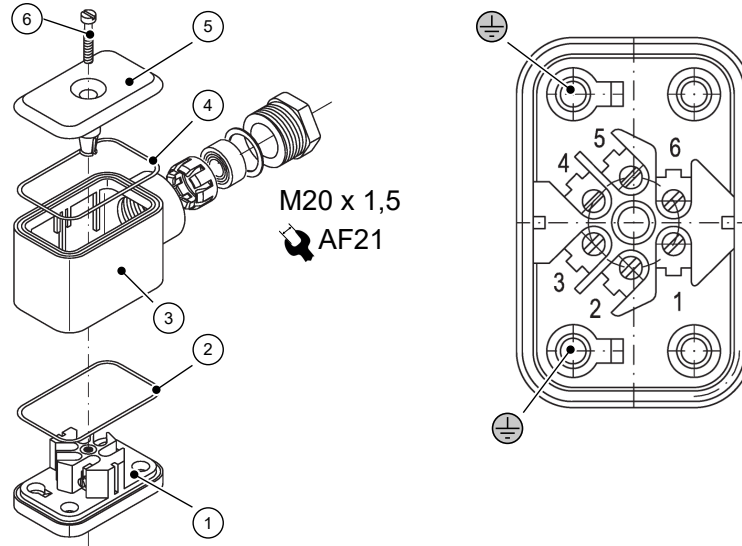


Fig. 8: Cable socket

| | | | |
|---|-------------|---|-------------------|
| 1 | Lower part | 2 | Sealing ring EPDM |
| 3 | Middle part | 4 | Sealing ring EPDM |
| 5 | Lid | 6 | Lid screw |

3.3.3 Contact elements

Contact elements are supplied in accordance with data sheet KE. This illustrates all variants, their pin assignment and the technical data.

Magnetic spring contacts

The terminal numbers always correspond to the contact number and are assigned to the target indicators from left to right. Up to three contacts can be used. There are assigned to the target indicators as follows:

- Contact 1: left target indicator
- Contact 2: right target indicator.

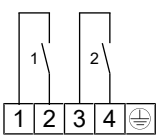


Fig. 9: Contacts

Inductive contacts

In the case of inductive contacts, the switch function is not only determined by the slot type initiator but also by the switch amplifier. Up to max two contacts can be used. There are assigned to the target indicators as follows:

- Contact 1: left target indicator
- Contact 2:right target indicator.

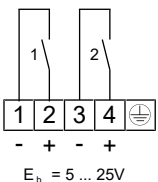


Fig. 10: Inductive contacts

3.3.4 Rotation angle transducers KINAX 3W2

The rotation angle encoder serves to record angular positions, to prepare and provide the measured values as electrical output signals 0/4 ... 20 mA for the following device. Rotation angle encoder is supplied in accordance with data sheet KE09. This contains further information about the pin assignment and the technical data.

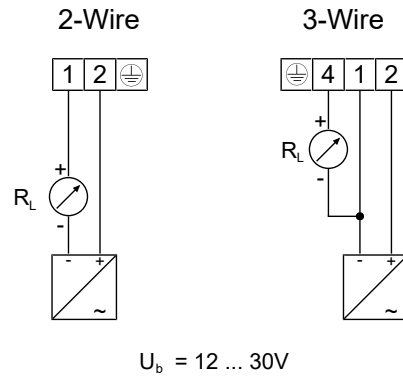



Fig. 11: Rotation angle transducers connection

3.4 Use in areas at risk of explosion

3.4.1 Differential pressure transmitter without contact element

DA09 ... 0A

 II 2G Ex h IIC T4 Gb

 II 2D Ex h IIIC T95°C Db

Explosive areas Zone 1 and 2, and 21 and 22, risk from gases and dry dust.

Allowed temperatures:

- The maximum surface temperature 95 °C was determined under the following conditions without dust accumulation and safety factor.
- Allowed ambient temperature: -20°C to +60°C.
- Allowed medium temperature in the differential measurement unit < 85°C.



WARNING

Compression heat

With gaseous mediums, the instrument temperature can increase due to compression heat. In such cases, the pressure change speed must be limited or reduced to the allow measuring substance temperature.

NOTICE! For a differential pressure change between 10% and 90% of the measuring range and a pulse frequency < 0.06 Hz, the temperature increase is <10K.

To avoid additional heating, the instruments may not be exposed to direct sunlight during operation!

The standards EN60079-0, EN 60079-31, EN ISO 80079-36 and EN ISO 80079-37 apply for the non-electrical part of the devices in terms of explosion protection. The applicable requirements of these standards are satisfied.

(a) European market (CE):

The documentation for the mechanical part were filed with the notified body NB 0044 TÜV-Nord-Cert under file number 35220571.

(b) UK market (UKCA):

The documentation for the mechanical part were filed with the notified body NB 2812 Element Material Technology under file number 2812-014.

(c) Eurasian Economic Union (EAC):

The unit does not have ATEX approval for this market. It may only be used there as an industrial unit.

3.4.2 Differential pressure transmitter with magnetic spring contacts

DA09 ... 1B

Ⓔ II 2G Ex h IIC T4 Gb

Simple electric operating equipment acc. to EN60079-11 sec: 5.7 in explosive areas Zone 1 and 2.

Contact element: KE ## M ## 0B4H2

Allowed temperatures:

- The maximum surface temperature 95 °C was determined under the following conditions without dust accumulation and safety factor.
- Allowed ambient temperature: -20°C to +60°C.
- Allowed medium temperature in the differential measurement unit < 85°C.



WARNING

Compression heat

With gaseous mediums, the instrument temperature can increase due to compression heat. In such cases, the pressure change speed must be limited or reduced to the allow measuring substance temperature.

NOTICE! For a differential pressure change between 10% and 90% of the measuring range and a pulse frequency < 0.06 Hz, the temperature increase is <10K.

To avoid additional heating, the instruments may not be exposed to direct sunlight during operation!

The standards EN60079-0, EN ISO 80079-36 and EN ISO 80079-37 apply for the non-electrical part of the devices in terms of explosion protection. The applicable requirements of these standards are satisfied.

As a simple electrical operating unit, the installed electrical switch contacts fulfil the requirements of the standard EN60079-14 Par. 3.5.2. The devices are not labelled with respect to the electrical part.

(a) European market (CE):

The documentation for the mechanical part were filed with the notified body NB 0044 TÜV-Nord-Cert under file number 35220571.

(b) UK market (UKCA):

The documentation for the mechanical part were filed with the notified body NB 2812 Element Material Technology under file number 2812-014.

(c) Eurasian Economic Union (EAC):

The unit does not have ATEX approval for this market. It may only be used there as an industrial unit.

Intrinsically safe power circuits

For use in areas at risk of explosion, instruments must be connected to certified, intrinsically safe electricity circuits.

| | | |
|------------------------|-------------|-----------|
| Max. voltage | U_{max} | 30 V |
| Max. current | I_{max} | 200 mA |
| Max. power | P_{max} | 800 mW |
| Max. inner capacity | $C_{i max}$ | 60 pF |
| Max. inner inductivity | $L_{i max}$ | 4 μ H |

Recommend circuit breakers see accessories.

3.4.3 Differential pressure transmitter with inductive contacts

DA09 ... 1C

⊕ II 2G Ex h IIC T4 Gb

⊕ II 2D Ex h IIIC T95°C Db

Explosive areas Zone 1 and 2, and 21 and 22, risk from gases and dry dust.

Contact element: KE ## I ## 0C0H2

Allowed temperatures:

- The maximum surface temperature 95 °C was determined under the following conditions without dust accumulation and safety factor.
- Allowed ambient temperature: -20°C to +60°C.
- Allowed medium temperature in the differential measurement unit < 85°C.



⚠ WARNING

Compression heat

With gaseous mediums, the instrument temperature can increase due to compression heat. In such cases, the pressure change speed must be limited or reduced to the allow measuring substance temperature.

NOTICE! For a differential pressure change between 10% and 90% of the measuring range and a pulse frequency < 0.06 Hz, the temperature increase is <10K.

To avoid additional heating, the instruments may not be exposed to direct sunlight during operation!

The standards EN60079-0, EN 60079-31, EN ISO 80079-36 and EN ISO 80079-37 apply for the non-electrical part of the devices in terms of explosion protection. The applicable requirements of these standards are satisfied.

The installed inductive proximity switches of the type SJ2-N (106575) are EC type-tested with the certificate PTB 99 ATEX 2219 X. The type of the installed proximity switch is stated on the type plate. The manufacturer is Pepperl+Fuchs GmbH. For more information about proximity switches, please visit the website <https://www.pepperl-fuchs.com>.

(a) European market (CE):

The documentation for the mechanical part were filed with the notified body NB 0044 TÜV-Nord-Cert under file number 35220571.

(b) UK market (UKCA):

The documentation for the mechanical part were filed with the notified body NB 2812 Element Material Technology under file number 2812-014.

(c) Eurasian Economic Union (EAC):

The unit does not have ATEX approval for this market. It may only be used there as an industrial unit.

Intrinsically safe power circuits

For use in areas at risk of explosion, instruments must be connected to certified, intrinsically safe electricity circuits.

| | | |
|------------------------|-------------|--------|
| Max. voltage | U_{max} | 16 V |
| Max. current | I_{max} | 25 mA |
| Max. power | P_{max} | 64 mW |
| Max. inner capacity | $C_{i,max}$ | 30 nF |
| Max. inner inductivity | $L_{i,max}$ | 100 µH |

Recommend circuit breakers see accessories.

3.4.4 Differential pressure transmitter with rotation angle transducer

DA09 ... 2D

⊕ II 2G Ex h IIC T4 Gb

Explosive areas Zone 1 and 2, risk from gases.

Rotation angle transducer: KE0905#9

Allowed temperatures:

- The maximum surface temperature 95 °C was determined under the following conditions without dust accumulation and safety factor.
- Allowed ambient temperature: -20°C to +60°C.
- Allowed medium temperature in the differential measurement unit < 85°C.



WARNING

Compression heat

With gaseous mediums, the instrument temperature can increase due to compression heat. In such cases, the pressure change speed must be limited or reduced to the allow measuring substance temperature.

NOTICE! For a differential pressure change between 10% and 90% of the measuring range and a pulse frequency < 0.06 Hz, the temperature increase is <10K.

To avoid additional heating, the instruments may not be exposed to direct sunlight during operation!

The standards EN60079-0, EN ISO 80079-36 and EN ISO 80079-37 apply for the non-electrical part of the devices in terms of explosion protection. The applicable requirements of these standards are satisfied.

The installed capacitive rotation angle measuring transducer of the type KINAX 3W2 are EC type-tested with the certificate ZELM 10 ATEX 0427 X. The type of the installed rotation angle transducer is stated on the type plate. The manufacturer is Camille Bauer Metrawatt AG. For more information about the rotation angle transducer, please visit the website <http://www.camillebauer.com>.

(a) European market (CE):

The documentation for the mechanical part were filed with the notified body NB 0044 TÜV-Nord-Cert under file number 35220571.

(b) UK market (UKCA):

The documentation for the mechanical part were filed with the notified body NB 2812 Element Material Technology under file number 2812-014.

(c) Eurasian Economic Union (EAC):

The unit does not have ATEX approval for this market. It may only be used there as an industrial unit.

Intrinsically safe power circuits

For use in areas at risk of explosion, instruments must be connected to certified, intrinsically safe electricity circuits.

| | | |
|------------------------|-------------|--------|
| Max. voltage | U_{max} | 30 V |
| Max. current | I_{max} | 160 mA |
| Max. power | P_{max} | 1 mW |
| Max. inner capacity | $C_{i max}$ | 10 nF |
| Max. inner inductivity | $L_{i max}$ | 0 μH |

Recommend circuit breakers see accessories.

4 Commissioning

4.1 General

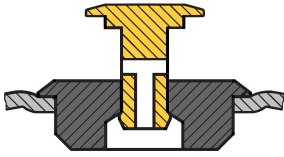


Fig. 12: Open vents

All electrical supply, operating and measuring lines, and the pressure connections must have been correctly installed before commissioning. All supply lines are arranged so that there are no mechanical forces acting on the device.

Check that all pressure connections are free of leaks before commissioning.

In models filled with fluid, the venting valve on the upper side of the bayonet casing must be opened before commissioning! To do this, remove the yellow valve plug.

4.2 Zero point correction

The pressure measuring units are set in the factory before delivery so that they do not usually need to be adjusted at the assembly site.

Any necessary zero-point correction is carried out as follows:

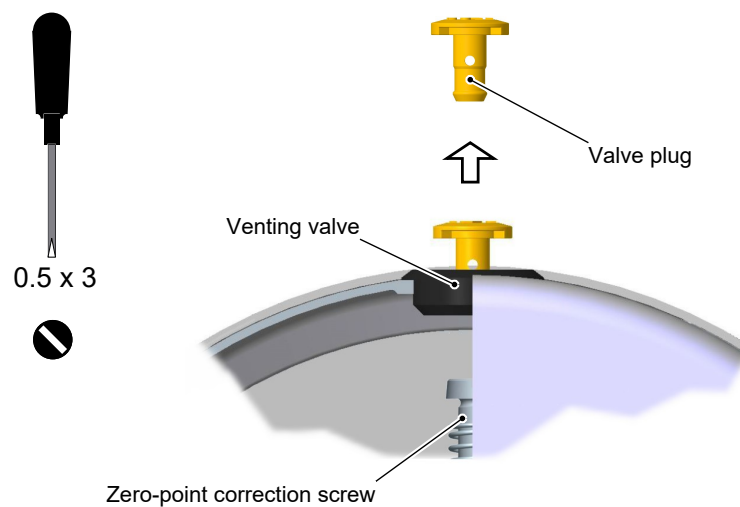


Fig. 13: Zero point correction

1. Depressurize the pressure line and/or equalise both pressure lines and exert equally with the static pressure.
2. Open the venting valve as shown in the illustration and carefully remove the entire valve plug from the casing.
3. Adjust the measurement value pointer using zero point correction screw to the scale zero point.
4. Refit the valve plug into the casing.
5. Close the venting valve.



Fig. 14: Vent closed

NOTICE! Please ensure that in models filled with fluid, the venting valve must be opened during operation.

4.3 Switch point setting

There is an adjustment lock attached to the front pane of the measuring unit on units with contact elements. This means that the contacts attached to the target indicators can be set to any point along the scale.

To facilitate switching precision and the service life of the mechanical measuring system, the switching points should lie between 10% and 90% of the measuring range.

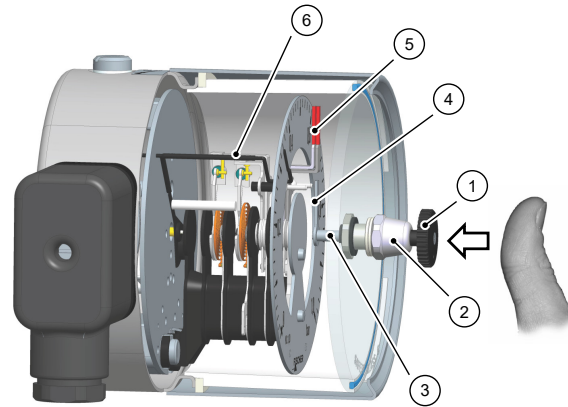


Fig. 15: Switch point setting

| | | | |
|---|-------------------|---|----------------------|
| 1 | Adjustment key | 2 | Adjusting lock |
| 3 | Axle | 4 | Drive arm |
| 5 | Set-point display | 6 | Actual value display |

Adjustment sequence:

- Press the axle inwards until the drive arm reaches behind the setting pin of the target value indicator.
- Set the target value indicator to the required switch point by turning the setting key.
- Relieve the axle.
- The switch-point setting can be secured against unintentional adjustment by removing the attachment screw and the adjustment key.

5 Servicing

5.1 Maintenance

The instrument is maintenance-free. We recommend the following regular inspection to guarantee reliable operation and a long service life:

- Check the function in combination with downstream components.
- Check the leak-tightness of the pressure connection lines.
- Check the electrical connections.

The exact test cycles need to be adapted to the operating and environmental conditions. In combination with other devices, the operating instructions for the other devices also need to be observed.

5.2 Maintenance

To ensure reliable operation and a long service life, we recommend carrying out the following test on a regular basis:

- Check the reading.
- Checking the switch function in connection with the downstream components.
- Checking the pressure lines for leaks.
- Checking the electrical connections (terminal connection of the cable).

The precise test cycles and operating and ambient conditions need to be adjusted. If several components of the unit interact, all operating instructions of the other units also need to be observed.



WARNING

Dust deposits

The device must be cleaned with a damp cloth at regular intervals to prevent heat build-up. Cleaning intervals depend on the amount of local dust.

5.3 Transport

The measuring device must be protected against impacts. It should be transported in the original packaging or a suitable transport container.

5.4 Service

All defective or faulty devices should be sent directly to our repair department. Please coordinate all shipments with our sales department.



WARNING

Process media residues

Process media residues in and on dismantled devices can be a hazard to people, animals and the environment. Take adequate preventive measures. If required, the devices must be cleaned thoroughly.

Return the device in the original packaging or a suitable transport container.

5.5 Disposal

WEEE-Reg.-No. DE 31751293



Please help to protect our environment and dispose of the workpieces and packaging materials used in an environmentally friendly manner. Observe the country-specific waste treatment and disposal regulations.

The year of production can be found in the production number (serial number):

P# 23 03618.03.123

Production year 2023 —↑

Further information on disposal can be found on our website
[www.fischermesstechnik.de]

6 Technical Data

6.1 General

Please also observe the order code here.

6.2 Input variables

Measuring variable

Absolute pressure for gaseous, fluid and aggressive media.

Measuring ranges [bar, mbar]

| Measuring range | PN | Measuring range | PN |
|-----------------|--------|-------------------|--------|
| 0 ... 0.6 bar | 25 bar | -1 ... 0.6 bar | 25 bar |
| 0 ... 1 bar | 25 bar | -1 ... 1.5 bar | 25 bar |
| 0 ... 1.6 bar | 25 bar | -1 ... 3 bar | 25 bar |
| 0 ... 2.5 bar | 25 bar | -1 ... 5 bar | 25 bar |
| 0 ... 4 bar | 25 bar | | |
| 0 ... 6 bar | 25 bar | | |
| 0 ... 10 bar | 25 bar | | |
| 0 ... 16 bar | 25 bar | | |
| 0 ... 25 bar | 25 bar | | |
| | | | |
| 0 ... 25 mbar | 10 bar | -40 ... 60 mbar | 10 bar |
| 0 ... 40 mbar | 10 bar | -60 ... 100 mbar | 10 bar |
| 0 ... 60 mbar | 10 bar | -100 ... 150 mbar | 10 bar |
| 0 ... 100 mbar | 10 bar | -150 ... 250 mbar | 25 bar |
| 0 ... 160 mbar | 10 bar | | |
| 0 ... 250 mbar | 10 bar | | |
| 0 ... 400 mbar | 25 bar | | |
| 0 ... 600 mbar | 25 bar | | |

Measuring ranges [kPa, PSI]

| Measuring range | PN | Measuring range | PN |
|-----------------|--------|-----------------|--------|
| 0 ... 2.5 kPa | 10 bar | 0 ... 3 PSI | 10 bar |
| 0 ... 4 kPa | 10 bar | 0 ... 5 PSI | 25 bar |
| 0 ... 6 kPa | 10 bar | 0 ... 10 PSI | 25 bar |
| 0 ... 10 kPa | 10 bar | 0 ... 15 PSI | 25 bar |
| 0 ... 16 kPa | 10 bar | 0 ... 30 PSI | 25 bar |
| 0 ... 25 kPa | 10 bar | 0 ... 60 PSI | 25 bar |
| 0 ... 40 kPa | 25 bar | 0 ... 100 PSI | 25 bar |
| 0 ... 60 kPa | 25 bar | 0 ... 250 PSI | 25 bar |
| 0 ... 100 kPa | 25 bar | 0 ... 300 PSI | 25 bar |
| 0 ... 160 kPa | 25 bar | | |
| 0 ... 250 kPa | 25 bar | | |
| 0 ... 400 kPa | 25 bar | | |
| 0 ... 600 kPa | 25 bar | | |

Pressure load

| | |
|---------------------------------------------|-----------------------------|
| Idle load | Scale upper value |
| Alternating load | Scale upper value |
| Overload capability on one side (+) and (-) | 10 x Scale upper value ≤ PN |

6.3 Measurement accuracy

| | |
|--------------------------------------------------------------------|-----------------------------------------------|
| Accuracy class | 1.6 |
| Characteristic curve deviation | ± 1.6 % of the measuring range (FS) |
| Temperature influence (Reference + 20°C) | ± 0.8 %FS / 10K |
| Influence of static pressure for measuring ranges (MBR) < 250 mbar | ≤ 0,1 % + $\frac{0,004 \%}{\text{MBR [bar]}}$ |
| Influence of static pressure for measuring ranges (MBR) ≥ 250 mbar | ≤ $\frac{0,1 \%}{\text{bar}}$ |

6.4 Operating conditions

| | |
|---------------------------------|------------------------|
| Permissible ambient temperature | -20 ... +60 °C |
| Admissible storage temperature | -20 ... +80 °C |
| Admissible media temperature | ≤ 100 °C |
| Type of protection | IP 66 acc. to EN 60529 |

6.5 Construction design**Materials**

| | Material | Material no. |
|-----------------------------------|-----------------------------|----------------|
| Bayonet ring housing NG100, NG160 | CrNi steel | 1.4301, 1.4404 |
| Safety housing | CrNi steel | 1.4404 |
| Process connection | CrNi steel | 1.4404 |
| Motion train | CrNi steel | |
| Dial face and needle | Aluminium, painted, printed | |
| Inspection disk | Safety laminated glass | |

Parts in contact with the medium

| | Material | Material no. |
|-------------------------------------|--------------|--------------|
| Pressure chamber | CrNi steel | 1.4404 |
| Diaphragm MB ≤ 160 mbar | CrNi steel | 1.4571 |
| Diaphragm MB ≥ 250 mbar and ≤ 6 bar | NiCrCo alloy | DURATHERM® |
| Diaphragm MB ≤ 10 bar | NiCr. alloy | INCONEL® 718 |
| Bellows | NiCr. alloy | Alloy 625 |
| Seal | Metal seal | |

Process connection

| | Material | Material no. |
|--------------------------------|------------|--------------|
| Connecting piece and port | CrNi steel | 1.4404 |
| Cutting ring screw connections | CrNi steel | 1.4571 |

Electrical connection

In the case of devices with additional electronic equipment, the connection is realised using a cable socket attached to the side.



Cable socket

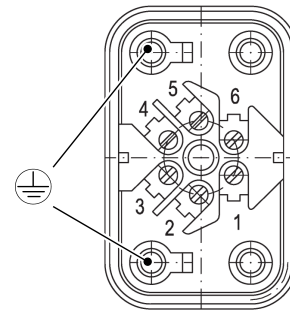


Fig. 16: Cable socket

Cable socket

| | |
|---------------------------|------------------------------------------------|
| Number of screw terminals | 6 + 2PE |
| Rated current | See data sheet KE |
| Rated voltage | 250 V |
| Conductor cross-section | up to 1.5 mm ² with wire protection |
| Cable gland | M20 x 1.5 |
| Terminal range | 7 ... 13 mm |
| Tightening torque | 3 Nm |
| Key width | 21 |

Assembly

| | |
|-------------------|-----------------------------------------------|
| Direct assembly | Mounted to the pipes |
| Wall mounting | Flanged assembly plate |
| Pipe mounting | Flanged assembly plate and attachment bracket |
| Mounting position | Vertical |
| Weight | Depending on the version 2,7 ... 7 kg |

Additional Attachments

Contact elements

Limit signal transmitters (contacts) and capacitive rotation angle transducers with an output signal proportional to the angular position can be fitted into a housing augmented by a corresponding bayonet ring connector.

A certain minimum pressure level is required to operate this kind of contact element, which is why there is a lower limit for the mbar measuring ranges. This limit depends on the model type and is stated in the section 'General'.

The measuring deviation increases by $\pm 0.5\%$ per contact when the contacts are driven and switched.

For more information and the order key, please refer to the data sheet:

- for limit switch in data sheet KE
- for rotation angle converter in the data sheet KE09

Fluid charging

Under aggravated operating conditions, such as vibrations and extreme pressure fluctuations, or in order to avoid condensation forming if used outdoors, the casing can be filled with the following fluids depending in the type of contacts installed:

| | |
|---------------------------|--------------------------------------|
| without contacts | Paraffin oil, glycerine, silicon oil |
| Low-action contacts | Paraffin oil, silicon oil |
| Magnetic spring contacts | Silicon oil |
| Inductive contacts | Paraffin oil, silicon oil |
| Rotation angle transducer | no filling possible |

Marker needle

A settable red marker can be attached to the scale to clearly show a certain pressure (limit value).

Trailing needle

The trailing needle is 'dragged' with the measured value indicator. As there is no fixed connection between the two needles, one-off maximum values are stored. The trailing needle can be reset using an adjusting dial in the window. Trailing needles cannot be used in conjunction with contacts. A certain minimum pressure level is required to move the drag indicator, which is why there is a lower limit for the mbar measuring ranges. This limit depends on the model type and is stated in the section 'General'.

Shut-off fitting

Three-spindle equalisation and shut-off valve DZ93 or four-spindle equalisation and shut-off valve DZ94.

- Material 1.4404
- Functions: Shut-off, pressure compensation

6.6 Dimensional drawings

All dimensions in mm unless otherwise stated

6.6.1 Standard version

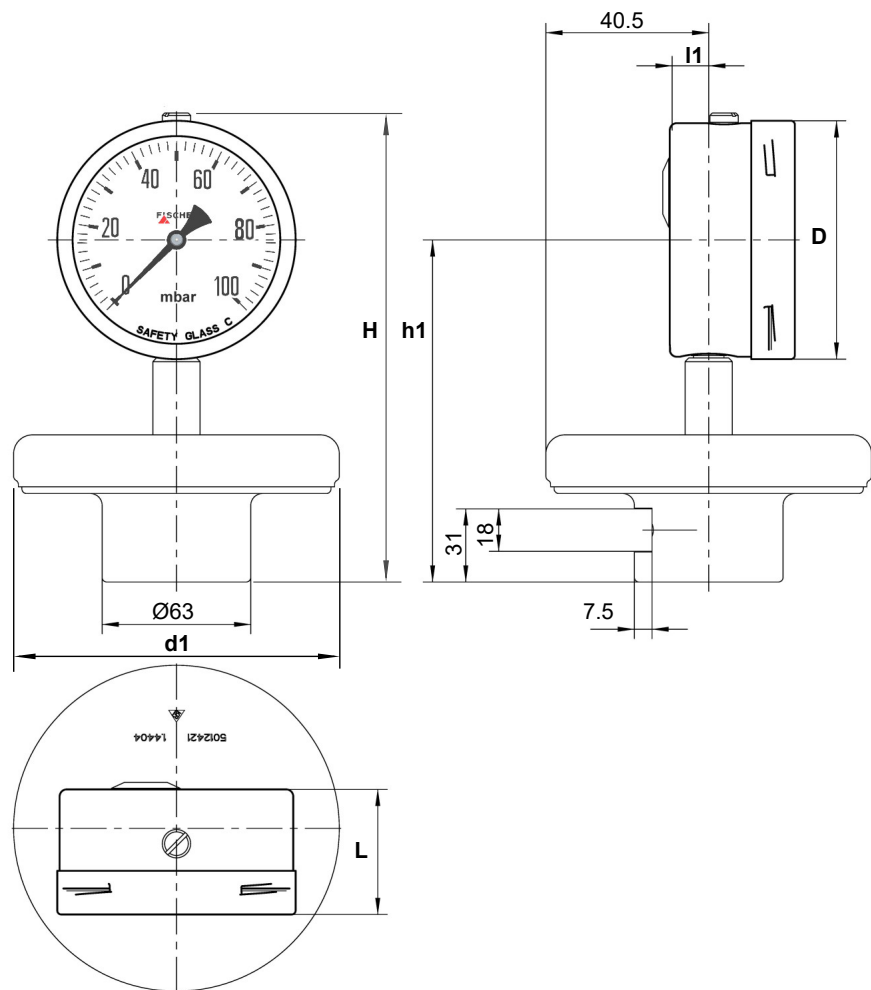


Fig. 17: Dimensional picture 25 ... 250 mbar

Measuring range 25...250 mbar

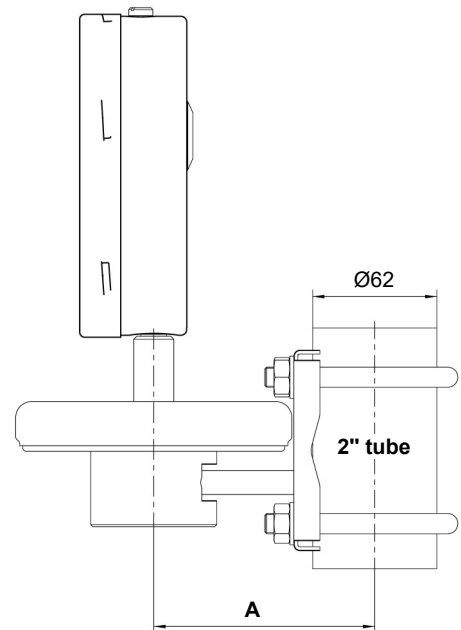
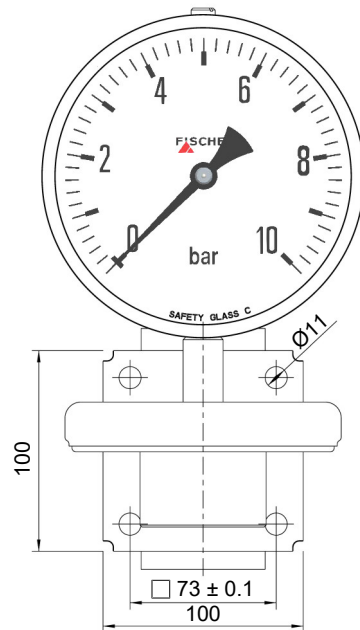
| Housing | Tol. | D | d1 | H | h1 | L | l1 |
|---------|-------|-----|-----|-----|-----|------|------|
| NG100 | ± 0.1 | 101 | 138 | 199 | 145 | 53 | 15.5 |
| NG160 | ± 0.1 | 161 | 138 | 259 | 175 | 53.5 | 16.5 |

Measuring ranges 0.4 ... 25 bar

| Housing | Tol. | D | d1 | H | h1 | L | l1 |
|---------|-------|-----|----|-----|-----|------|------|
| NG100 | ± 0.1 | 101 | 81 | 198 | 144 | 53 | 15.5 |
| NG160 | ± 0.1 | 161 | 81 | 258 | 174 | 54.5 | 16.5 |

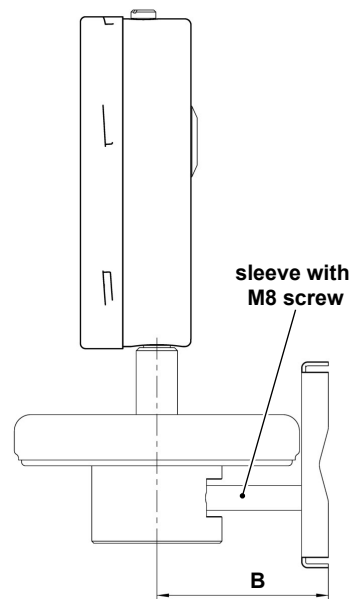
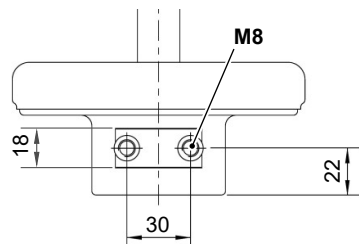
6.6.2 Tube and wall mounting

The dimensions stated apply for all housing models. The example shown is a bayonet ring housing NG160.



Tube assembly

| Measuring range | Tol. | A | B |
|-----------------|-------|-------|------|
| 25 ... 250 mbar | ± 0.1 | 110.4 | 83 |
| 0.4 ... 25 bar | ± 0.1 | 54.5 | 81.9 |



wall mounting

Fig. 18: Tube and wall mounting

6.6.3 Process connection

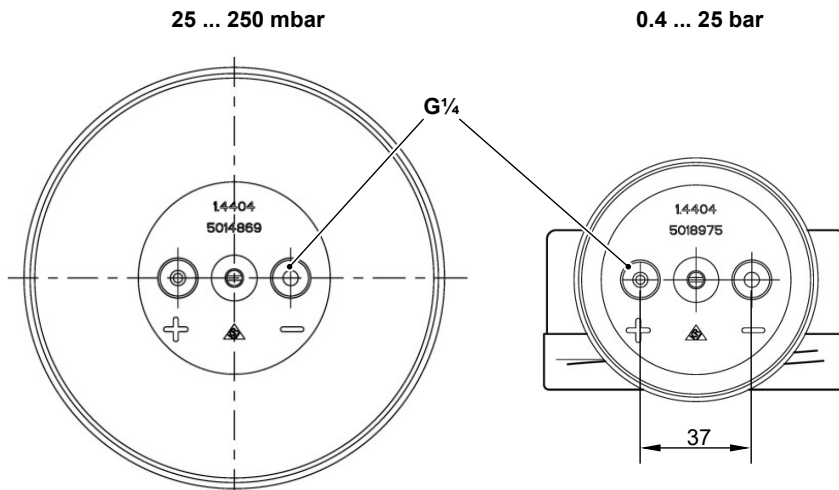


Fig. 19: Process connection

6.6.3.1 Connection port with cylindrical external thread

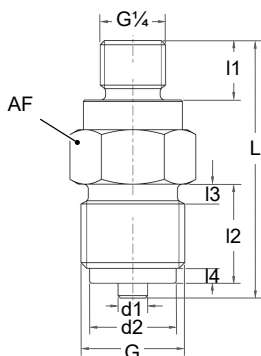


Fig. 20: Connecting port G

| G | d1 | d2 | L | I1 | I2 | I3 | I4 | SW |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----|
| Tol. | ± 0.1 | ± 0.2 | ± 0.3 | ± 0.2 | ± 0.2 | ± 0.1 | ± 0.1 | |
| G$\frac{1}{2}$ | 6 | 17.5 | 52 | 12 | 23 | 4 | 3 | 22 |
| G$\frac{1}{4}$ | 5 | 9.5 | 39 | 12 | 15 | 3 | 2 | 19 |

SW:= Key width

6.6.3.2 Connection shanks with tapered external thread

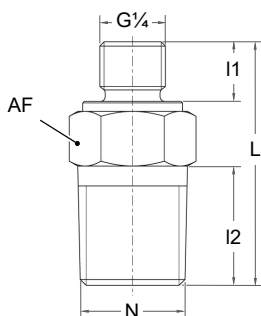


Fig. 21: Connecting port NPT

| N | L | I1 | I2 | SW |
|-------------------|-----------|-----------|-----------|----|
| Tol. | ± 0.3 | ± 0.2 | ± 0.2 | |
| 1/2-14 NPT | 49 | 12 | 24 | 22 |
| 1/4-18 NPT | 42 | 12 | 18 | 19 |

SW:= Key width

6.6.3.3 Connecting port with inner thread

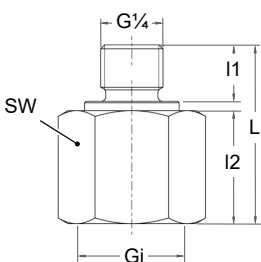


Fig. 22: Connecting port Gi

| Gi | L | I1 | I2 | SW |
|----------------------------------|-----------|-----------|-----------|----|
| Tol. | ± 0.3 | ± 0.2 | ± 0.2 | |
| G$\frac{1}{2}$ | 38 | 12 | 24 | 27 |
| 1/2-14 NPT | 38 | 12 | 24 | 27 |
| 1/4-18 NPT | 32 | 12 | 18 | 19 |

SW:= Key width

6.6.4 Additional Attachments

6.6.4.1 Safety model

The device can be supplied in a safety housing acc. to DIN 837 with an unbreakable partition wall and a rear wall that can be blown out (S3).

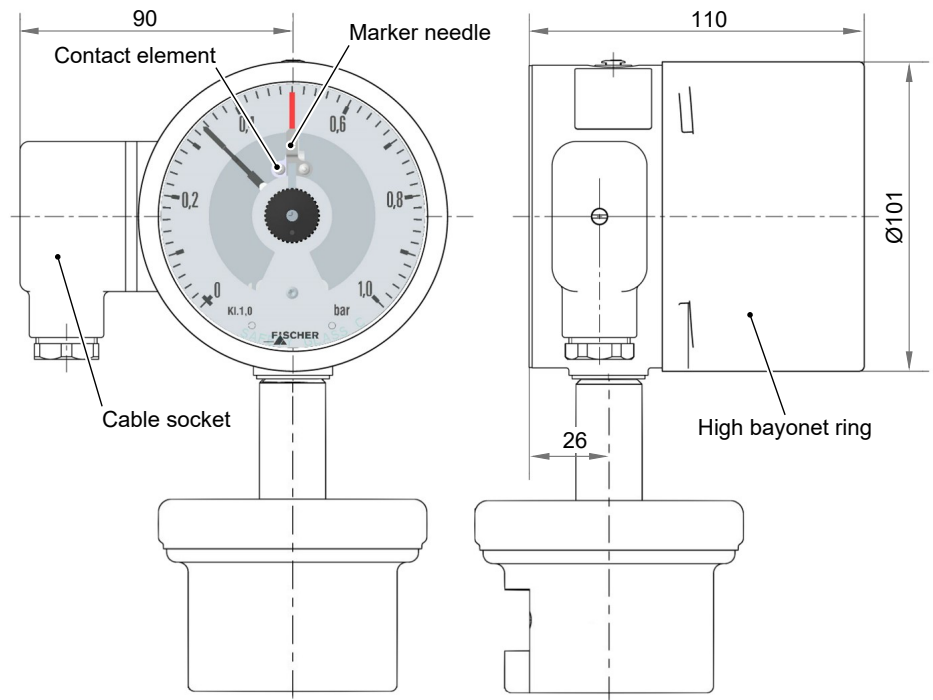


Fig. 23: Safety housing

6.6.4.2 Bayonet ring housing

Model with cable socket

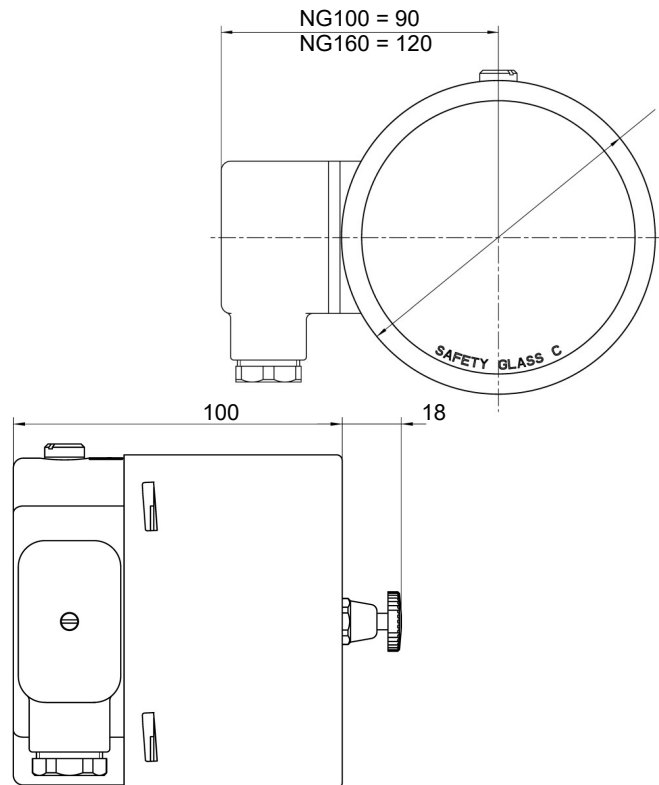
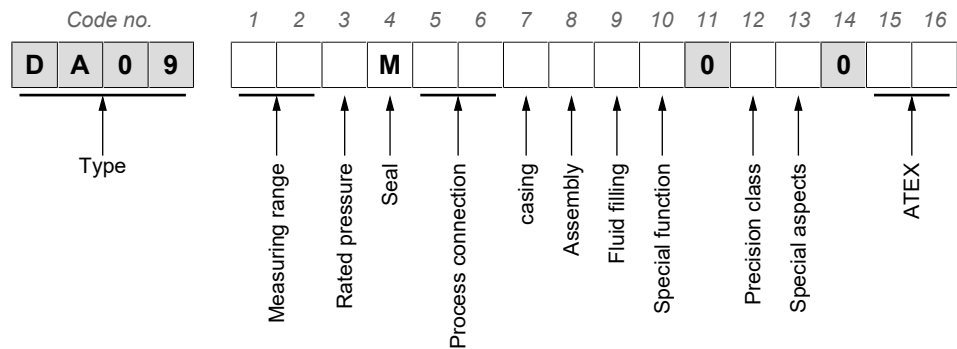


Fig. 24: Bayonet ring housing with cable socket

7 Order Codes



| [1.2] | Measuring range | PN | [1.2] | Measuring range | PN |
|-------|-------------------------------|--------|-------|-------------------|--------|
| 01 | 0 ... 0.6 bar | 25 bar | 32 | -1 ... 0.6 bar | 25 bar |
| 02 | 0 ... 1 bar | 25 bar | 33 | -1 ... 1.5 bar | 25 bar |
| 03 | 0 ... 1.6 bar | 25 bar | 34 | -1 ... 3 bar | 25 bar |
| 04 | 0 ... 2.5 bar | 25 bar | 35 | -1 ... 5 bar | 25 bar |
| 05 | 0 ... 4 bar | 25 bar | | | |
| 06 | 0 ... 6 bar | 25 bar | | | |
| 07 | 0 ... 10 bar | 25 bar | | | |
| 08 | 0 ... 16 bar | 25 bar | | | |
| 09 | 0 ... 25 bar | 25 bar | | | |
| 56 | 0 ... 25 mbar (180° scale) | 10 bar | 70 | -40 ... 60 mbar | 10 bar |
| 57 | 0 ... 40 mbar | 10 bar | 72 | -60 ... 100 mbar | 10 bar |
| 58 | 0 ... 60 mbar | 10 bar | 74 | -100 ... 150 mbar | 10 bar |
| 59 | 0 ... 100 mbar | 10 bar | 76 | -150 ... 250 mbar | 25 bar |
| 60 | 0 ... 160 mbar | 10 bar | | | |
| 82 | 0 ... 250 mbar | 10 bar | | | |
| 83 | 0 ... 400 mbar | 25 bar | | | |
| C1 | 0 ... 600 mbar | 25 bar | | | |

| [1.2] | Measuring range | PN | [1.2] | Measuring range | PN |
|-------|-------------------------------|--------|-------|-----------------|--------|
| N3 | 0 ... 2.5 kPa (180° scale) | 10 bar | H1 | 0 ... 3 PSI | 10 bar |
| N4 | 0 ... 4 kPa | 10 bar | H2 | 0 ... 5 PSI | 25 bar |
| N5 | 0 ... 6 kPa | 10 bar | H3 | 0 ... 10 PSI | 25 bar |
| E5 | 0 ... 10 kPa | 10 bar | H4 | 0 ... 15 PSI | 25 bar |
| E6 | 0 ... 16 kPa | 10 bar | H5 | 0 ... 30 PSI | 25 bar |
| E7 | 0 ... 25 kPa | 10 bar | H6 | 0 ... 60 PSI | 25 bar |
| E8 | 0 ... 40 kPa | 25 bar | H7 | 0 ... 100 PSI | 25 bar |
| F1 | 0 ... 60 kPa | 25 bar | Q1 | 0 ... 250 PSI | 25 bar |
| F2 | 0 ... 100 kPa | 25 bar | P1 | 0 ... 300 PSI | 25 bar |
| F3 | 0 ... 160 kPa | 25 bar | | | |
| F4 | 0 ... 250 kPa | 25 bar | | | |
| F5 | 0 ... 400 kPa | 25 bar | | | |
| F6 | 0 ... 600 kPa | 25 bar | | | |

| [3] Nominal pressure (PN) | |
|---------------------------|-----------------------------------------------------------------|
| E | 10 bar = 1 MPa ≈ 145 PSI MB ≤ 250 mbar = 25 kPa ≈ 3.63 PSI |
| G | 25 bar = 2.5 MPa ≈ 362 PSI MB ≥ 400 mbar = 40 kPa ≈ 5.80 PSI |

The rated pressure ranges (PN) are linked to the measuring ranges (MB) and cannot be freely combined.

| [4] Seal | |
|----------|------------|
| M | Metal seal |

| [5.6] Process connection (EN 873) | Material |
|--------------------------------------------------|----------|
| 01 Inner thread G $\frac{1}{4}$ | 1.4404 |
| 03 Inner thread G $\frac{1}{2}$ | |
| 04 Inner thread $\frac{1}{4}$ - 18 NPT | |
| 05 Inner thread $\frac{1}{2}$ - 14 NPT | |
| 11 External thread G $\frac{1}{4}$ | |
| 13 External thread G $\frac{1}{2}$ | |
| 14 External thread $\frac{1}{4}$ - 18 NPT | |
| 15 External thread $\frac{1}{2}$ - 14 NPT | |

| [7] Housing | Material |
|--------------------------------------------------|----------|
| S Bayonet ring housing Ø100 | 1.4404 |
| T Bayonet ring housing Ø160 | |
| 0 Safety housing Ø100 Acc. to EN 837 | |
| P Safety housing Ø160 Acc. to EN 837 | |

| [8] Assembly | |
|--------------|------------------------------|
| 0 | Direct connection (Standard) |
| R | Pipe mounting |
| W | Wall mounting |

| [9] Fluid charging | |
|--------------------|------------------------------------------------------------------------------------------|
| 0 | Without fluid filling |
| 3 | Without fluid filling; suitable for O ₂ measurements (free of oil and grease) |
| 1 | Glycerine Only for units without contacts |
| 4 | Paraffin oil Not for units with magnetic spring contacts |
| 5 | Silicon oil For units with and without contacts |

It is not possible to fill fluids into units with an installed capacitive position encoder.

| [10] Special function | |
|-----------------------|-------------------------------------------------------|
| 0 | Without special function |
| 1 | Adjustable marker needle |
| 2 | Resettable drag needle Measuring range ≥ 60 mbar |

| [12] Accuracy class | |
|---------------------|-----|
| C | 1.0 |
| B | 1.6 |

Standard version

| [13] Special aspects | |
|----------------------|----------------------------------|
| 0 | None |
| L | Increased load change resistance |

| [15.16] ATEX | | |
|--------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 0A | Non-electrical unit (without switch contacts) | II 2G Ex h IIC T4 Gb II 2D Ex h IIIC T95°C Db |
| 1B | Unit with magnetic spring contacts KE##M##0B4H2 Simple electrical operating equipment acc. to DIN EN 60079-11 | II 2G Ex h IIC T4 Gb |
| 1C | Unit with inductive contacts KE##I##0C0H2 | II 2G Ex h IIC T4 Gb II 2D Ex h IIIC T95°C Db |
| 2D | Unit with capacitive rotation angle transducer KE0905#9 | II 2G Ex h IIC T4 Gb |

A minimum operating pressure, that only measuring ranges from 100 mbar achieve, is required to activate a contact element.

7.1 Accessories

| Order no. | Planned measures |
|-------------|-----------------------------------------------------------------|
| DZ93 00HE## | Three-spindle compensating and shut-off valve |
| DZ94 00HE## | Four-spindle equalisation and shut-off valve with venting valve |

For more details, please see data sheet DZ93-94 at www.fischermesstechnik.de.

| Order no. | Designation | Type |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 05003090 | Galvanically isolated supply isolating amplifier for ATEX applications. <ul style="list-style-type: none"> 24 V DC, 1 channel Input: 4 ... 20 mA Output: 4 ... 20 mA The device can be mounted in Zone 2 / Cl.1, Div. 2 and can receive signals from Zones 0, 1 and 2, as well as 20, 21 and 22 including Mining / Class I/II/III, Div. 1, Size A-G. SIL2/SIL3 according to IEC 61508 | 9106B1A |
| 05003091 | Pulse isolator for the transmission of signals from NAMUR sensors and mechanical switches from the ATEX area to the safe area. <ul style="list-style-type: none"> 24 V DC, 1 channel Switching input (NAMUR) Relay output The device can be used in safe areas and in zone 2 / div. 2 and can accept signals from zone 0, 1, 2, 20, 21, 22 as well as M1 / class I/II/III, div. 1, size A-G. SIL2 according to IEC 61508 | 9202B2A |

| Order no. | Designation | Type |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 05003092 | <p>Pulse isolator for the transmission of signals from NAMUR sensors and mechanical switches from the ATEX area to the safe area.</p> <ul style="list-style-type: none">• 24 V DC, 2 channel Switching input(NAMUR) Relay output• The device can be used in safe areas and in zone 2 / div. 2 and can accept signals from zone 0, 1, 2, 20, 21, 22 as well as M1 / class I/II/III, div. 1, size A-G.• SIL2 according to IEC 61508 | 9202B2B |
| 05003093 | <p>Display / Programming front Communication interface for setting the operating parameters for supply isolating amplifiers and pulse isolators.</p> <ul style="list-style-type: none">• The device may only be used in safe areas.• Allows saving the configuration of a device type and loading it into other devices of the same type.• Display for process data and status visualization. | 4501 |

8 Attachments

8.1 EU declarations of conformity



(Translation) **CE**

EU Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge**
(without contact device)

Type designation **DA09 ... 0A**

it is hereby declared that it corresponds with the basic requirements specified in the following designated directives:

| | |
|---------------|---------------------------------------------------------------|
| 2014/34/EU | ATEX Directive |
| 2011/65/EU | RoHS Directive |
| (EU) 2015/863 | Delegated Directive amending Annex II to Directive 2011/65/EU |

The products were tested in compliance with the following standards.

Explosive atmospheres (ATEX)

| | |
|-----------------------------------|-------------------------------------------------------------------------|
| DIN EN IEC 60079-0:2019-09 | <i>Explosive atmospheres - Part 0: Equipment - General requirements</i> |
| EN IEC 60079-0:2018 | |

Correction 1
IEC 60079-0:2017/COR1:2020

DIN EN 60079-31:2014-12
EN 60079-31:2014

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

DIN EN ISO 80079-36:2016-12
EN ISO 80079-36:2016

Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements

DIN EN ISO 80079-37:2016-12
EN ISO 80079-37:2016

Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"

RoHS Directive (RoHS 3)

DIN EN IEC 63000:2019-05
EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

The dossier is retained under file no. **35220571** at the notified body **NB0044** :

TÜV NORD CERT GmbH
Langemarckstraße 20
45141 Essen

Also they were subjected to the conformity assessment procedure „**Internal production control**“.

Sole responsibility for the issue of this declaration of conformity in relation to fulfilment of the fundamental requirements and the production of the technical documents is with the manufacturer.

| | |
|---------------------|--------------------------------------------|
| Manufacturer | FISCHER Mess- und Regeltechnik GmbH |
| | Bielefelder Str. 37a |
| | 32107 Bad Salzuflen, Germany |
| | Tel. +49 (0)5222 974 0 |

The devices bear the following marking:

CE Ⓜ II 2G Ex h IIC T4 Gb
 Ⓜ II 2D Ex h IIIC T95°C Db

Bad Salzuflen
06 Mar 2025

T. Malischewski
Managing Director

09010291 • CE_EN_DA09_0A • Rev. ST4-B • 03/25

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Fig. 25: CE_EN_DA09_0A



(Translation)

EU Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge**
(with snap action contacts KE ## M ## 0B4H2)

Type designation **DA09 ... 1B**

it is hereby declared that it corresponds with the basic requirements specified in the following designated directives:

| | |
|---------------|---------------------------------------------------------------|
| 2014/35/EU | Low Voltage Directive |
| 2014/34/EU | ATEX Directive |
| 2011/65/EU | RoHS Directive |
| (EU) 2015/863 | Delegated Directive amending Annex II to Directive 2011/65/EU |

The products were tested in compliance with the following standards.

Low Voltage Directive (LVD)

| | |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| DIN EN 61010-1:2020-03 EN 61010-1:2010 + A1:2019 + A1:2019/ AC:2019 | Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|

Explosive atmospheres (ATEX)

| | |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DIN EN IEC 60079-0:2019-09 EN IEC 60079-0:2018 Correction 1 IEC 60079-0:2017/COR1:2020 | Explosive atmospheres - Part 0: Equipment - General requirements |
| DIN EN ISO 80079-36:2016-12 EN ISO 80079-36:2016 | Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements |
| DIN EN ISO 80079-37:2016-12 EN ISO 80079-37:2016 | Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k" |

The build-in contact device as an 'standard electrical equipment' meets the requirements of paragraph 3.5.2 of the following standard

| | |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| DIN EN 60079-14:2014-10 EN 60079-14:2014 | Explosive atmospheres - Part 14: Electrical installations design, selection and erection |
| DIN EN 60079-14 Corrigendum 1:2016-06 EN 60079-14:2014/AC:2016 | Corrigendum to DIN EN 60079-14 |

RoHS Richtlinie (RoHS 3)

| | |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| DIN EN IEC 63000:2019-05 EN IEC 63000:2018 | Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

The dossier is retained under file no. **35220571** at the notified body **NB0044** :

TÜV NORD CERT GmbH
Langemarckstraße 20

45141 Essen

Also they were subjected to the conformity assessment procedure „Internal production control“.

09010292 • CE_EN_DA09_1B • Rev. ST4-B • 03/25



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Fig. 26: CE_EN_DA09_1B_Page_1

Sole responsibility for the issue of this declaration of conformity in relation to fulfilment of the fundamental requirements and the production of the technical documents is with the manufacturer.

Manufacturer**FISCHER Mess- und Regeltechnik GmbH**

Bielefelder Str. 37a

32107 Bad Salzufflen, Germany

Tel. +49 (0)5222 974 0

The devices bear the following marking:

  II 2G Ex h IIC T4 Gb

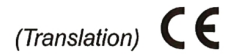
Bad Salzufflen
06 Mar 2025



T. Malischewski
Managing Director



Fig. 27: CE_EN_DA09_1B_Page_2



EU Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge**
(with inductive contacts KE ## 1 ## OCOH2)

Type designation **DA09 ... 1C**

it is hereby declared that it corresponds with the basic requirements specified in the following designated directives:

| | |
|---------------|---------------------------------------------------------------|
| 2014/34/EU | ATEX Directive |
| 2011/65/EU | RoHS Directive |
| (EU) 2015/863 | Delegated Directive amending Annex II to Directive 2011/65/EU |

The products were tested in compliance with the following standards.

Explosive atmospheres (ATEX)

| | |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>DIN EN IEC 60079-0:2019-09</i> <i>EN IEC 60079-0:2018</i> Correction1 <i>IEC 60079-0:2017/COR1:2020</i> | <i>Explosive atmospheres - Part 0: Equipment - General requirements</i> |
| <i>DIN EN 60079-31:2014-12</i> <i>EN 60079-31:2014</i> | <i>Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"</i> |
| <i>DIN EN ISO 80079-36:2016-12</i> <i>EN ISO 80079-36:2016</i> | <i>Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements</i> |
| <i>DIN EN ISO 80079-37:2016-12</i> <i>EN ISO 80079-37:2016</i> | <i>Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"</i> |

RoHS Directive (RoHS 3)

| | |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>DIN EN IEC 63000:2019-05</i> <i>EN IEC 63000:2018</i> | <i>Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances</i> |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|

The dossier is retained under file no. **35220571** at the notified body **NB0044** :

TÜV NORD CERT GmbH
Langemarckstraße 20
45141 Essen

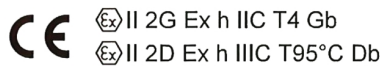
The built-in inductive proximity switches are EC type certified: **PTB 99 ATEX 2219 X**

Also they were subjected to the conformity assessment procedure „**Internal production control**“.

Sole responsibility for the issue of this declaration of conformity in relation to fulfilment of the fundamental requirements and the production of the technical documents is with the manufacturer.

Manufacturer **FISCHER Mess- und Regeltechnik GmbH**
Bielefelder Str. 37a
32107 Bad Salzufflen, Germany
Tel. +49 (0)5222 974 0

The devices bear the following marking:



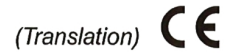
Bad Salzufflen
06 Mar 2025



T. Malischewski
Managing Director



Fig. 28: CE_EN_DA09_1C_Page_1



EU Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge**
(with transmitter for angular position KE0905#9)

Type designation **DA09 ... 2D**

it is hereby declared that it corresponds with the basic requirements specified in the following designated directives:

- | | |
|---------------|---------------------------------------------------------------|
| 2014/30/EU | EMC Directive |
| 2014/34/EU | ATEX Directive |
| 2011/65/EU | RoHS Directive |
| (EU) 2015/863 | Delegated Directive amending Annex II to Directive 2011/65/EU |

The products were tested in compliance with the following standards.

Electromagnetic compatibility (EMC)

- DIN EN IEC 61000-6-2:2019-11
- EN IEC 61000-6-2:2019
- DIN EN 61000-6-3:2022-06
- EN IEC 61000-6-3:2021

- Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
- Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for equipment in residential environments

Explosive atmospheres (ATEX)

- DIN EN IEC 60079-0:2019-09
- EN IEC 60079-0:2018
- Correction 1
- IEC 60079-0:2017/COR1:2020
- DIN EN ISO 80079-36:2016-12
- EN ISO 80079-36:2016
- DIN EN ISO 80079-37:2016-12
- EN ISO 80079-37:2016

- Explosive atmospheres - Part 0: Equipment - General requirements
- Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements
- Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"

RoHS Directive (RoHS 3)

- DIN EN IEC 63000:2019-05
- EN IEC 63000:2018

- Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

The dossier is retained under file no. **35220571** at the notified body **NB0044** :

TÜV NORD CERT GmbH
Langemarckstraße 20
45141 Essen

The build-in transmitter for angular position is EC type certified: **ZELM 10 ATEX 0427 X**

Furthermore, the product has been subjected to the conformity assessment procedure "**Internal production control**".



Fig. 29: CE_EN_DA09_2D_Page_1

Sole responsibility for the issue of this declaration of conformity in relation to fulfilment of the fundamental requirements and the production of the technical documents is with the manufacturer.

Manufacturer**FISCHER Mess- und Regeltechnik GmbH**

Bielefelder Str. 37a
32107 Bad Salzufen, Germany
Tel. +49 (0)5222 974 0

The devices bear the following marking:

CE  II 2G Ex h IIC T4 Gb



Bad Salzufen
06 Mar 2025

T. Malischewski
Managing Director



8.2 UKCA Declarations of Conformity



UKCA Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge
(without contact device)**

Type designation **DA09 ... 0A**

is hereby declared to comply with the essential requirements, specified in the following UK regulations:

| Statutory regulation No. | Description |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2016 No. 1107 | <i>The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016</i> |
| 2022 No. 1647 | <i>The Hazardous Substances and Packaging (Legislative Functions and Amendment) (EU Exit) Regulations 2020</i> |
| 2021 No. 422 | <i>The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (Amendment) Regulations 2021</i> |

The products have been tested according to the following standards.

Explosive atmospheres (ATEX):

| | |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN IEC 60079-0:2018-07-09</i> | <i>Explosive atmospheres. Equipment. General requirements</i> |
| <i>BS EN 60079-31:2014-07-31</i> | <i>Explosive atmospheres. Equipment dust ignition protection by enclosure "t"</i> |
| <i>BS EN ISO 80079-36:2016-04-30</i> | <i>Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Basic method and requirements</i> |
| <i>BS EN ISO 80079-37:2016-04-30</i> | <i>Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"</i> |

Restriction of Hazardous Substances (RoHS):

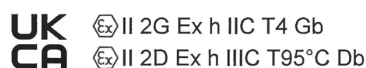
| | |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN IEC 63000:2018-12-10</i> | <i>Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances</i> |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|

The documents are kept under file number **2812-014** at the notified body **NB-No. 2812**.

Element Materials Technology

Unit 1 Pendle Place
Skelmersdale, WN8 9PN, United Kingdom

The devices bear the following marking:



The sole responsibility for drawing up this declaration of conformity in relation to the fulfilment of the essential requirements and the preparation of the technical documentation lies with the manufacturer.

Manufacturer **FISCHER Mess- und Regeltechnik GmbH**
Bielefelder Str. 37a
32107 Bad Salzufflen, Germany
Tel. +49 (0)5222 974 0



G. Gödde
Managing director

Bad Salzufflen
04 Okt 2021

09010600 • UKCA_EN_DA09_0A • Rev. ST4-A • 09/21

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Fig. 31: UKCA_EN_DA09_0A



(Translation) UK
CA

UKCA Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge**
(with snap action contacts KE ## M ## 0B4H2)

Type designation **DA09 ... 1B**

is hereby declared to comply with the essential requirements, specified in the following UK regulations:

| Statutory regulation No. | Description |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2016 No. 1107 | <i>The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016</i> |
| 2016 No. 1101 | <i>The Electrical Equipment (Safety) Regulations 2016</i> |
| 2022 No. 1647 | <i>The Hazardous Substances and Packaging (Legislative Functions and Amendment) (EU Exit) Regulations 2020</i> |
| 2021 No. 422 | <i>The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (Amendment) Regulations 2021</i> |

The products have been tested according to the following standards.

Explosive atmospheres (ATEX):

| | |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN IEC 60079-0:2018-07-09</i> | <i>Explosive atmospheres. Equipment. General requirements</i> |
| <i>BS EN ISO 80079-36:2016-04-30</i> | <i>Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Basic method and requirements</i> |
| <i>BS EN ISO 80079-37:2016-04-30</i> | <i>Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"</i> |

The installed electrical switching contacts fulfil the requirements of the following standard as 'simple electrical equipment' according to paragraph 3.5.2.

| | |
|----------------------------------|----------------------------------------------------------------------------------------|
| <i>BS EN 60079-14:2014-06-30</i> | <i>Explosive atmospheres. Electrical installations design, selection and erection.</i> |
|----------------------------------|----------------------------------------------------------------------------------------|

Low Voltage Directive (LVD):

| | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN 61010-1+A1:2017-03-31</i> | <i>Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements</i> |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------|

Restriction of Hazardous Substances (RoHS):

| | |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN IEC 63000:2018-12-10</i> | <i>Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances</i> |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|

The documents are kept under file number **2812-014** at the notified body **NB-No. 2812**.

Element Materials Technology

Unit 1 Pendle Place
Skelmersdale, WN8 9PN, United Kingdom

The devices bear the following marking:



Ex II 2G Ex h IIC T4 Gb

09010602 • UKCA_EN_DA09_1B • Rev. ST4-A • 09/21



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Fig. 32: UKCA_EN_DA09_1B_Page_1

The sole responsibility for drawing up this declaration of conformity in relation to the fulfilment of the essential requirements and the preparation of the technical documentation lies with the manufacturer.

Manufacturer**FISCHER Mess- und Regeltechnik GmbH**

Bielefelder Str. 37a
32107 Bad Salzuflen, Germany

Tel. +49 (0)5222 974 0



Bad Salzuflen
04 Okt 2021

G. Gödde
Managing director





(Translation) **UK
CA**

UKCA Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge**
(with inductive contacts KE ## 1 ## OCOH2)

Type designation **DA09 ... 1C**

is hereby declared to comply with the essential requirements, specified in the following UK regulations:

| Statutory regulation No. | Description |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 2016 No. 1107 | The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 |
| 2016 No. 1091 | The Electromagnetic Compatibility Regulations 2016 |
| 2022 No. 1647 | The Hazardous Substances and Packaging (Legislative Functions and Amendment) (EU Exit) Regulations 2020 |
| 2021 No. 422 | The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (Amendment) Regulations 2021 |

The products have been tested according to the following standards.

Explosive atmospheres (ATEX):

| | |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BS EN IEC 60079-0:2018-07-09 | Explosive atmospheres. Equipment. General requirements |
| BS EN 60079-31:2014-07-31 | Explosive atmospheres. Equipment dust ignition protection by enclosure "t" |
| BS EN ISO 80079-36:2016-04-30 | Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Basic method and requirements |
| BS EN ISO 80079-37:2016-04-30 | Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k" |

The built-in inductive proximity switches are EC type tested: **PTB 99 ATEX 2219 X**.

Electromagnetic compatibility (EMC):

| | |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------|
| BS EN IEC 61000-6-2:2019-02-25 | Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments |
| BS EN IEC 61000-6-3:2021-03-30 | Electromagnetic compatibility (EMC). Generic standards. Emission standard for equipment in residential environments |

Restriction of Hazardous Substances (RoHS):



| | |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| BS EN IEC 63000:2018-12-10 | Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

The documents are kept under file number **2812-014** at the notified body **NB-No. 2812**.

Element Materials Technology

Unit 1 Pendle Place
Skelmersdale, WN8 9PN, United Kingdom

The devices bear the following marking:

**UK
CA**  II 2G Ex h IIC T4 Gb
 II 2D Ex h IIIC T95°C Db

09010604 • UKCA_EN_DA09_1C • Rev. ST4-A • 09/21



1 / 2

Fig. 34: UKCA_EN_DA09_1C_Page_1

The sole responsibility for drawing up this declaration of conformity in relation to the fulfilment of the essential requirements and the preparation of the technical documentation lies with the manufacturer.

Manufacturer**FISCHER Mess- und Regeltechnik GmbH**

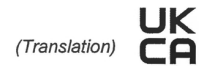
Bielefelder Str. 37a
32107 Bad Salzuflen, Germany
Tel. +49 (0)5222 974 0



Bad Salzuflen
04 Okt 2021

G. Gödde
Managing director





UKCA Declaration of Conformity

For the product described as follows

Product designation **Differential Pressure Gauge**
(with transmitter for angular position KE0905#9)

Type designation **DA09 ... 2D**

is hereby declared to comply with the essential requirements, specified in the following UK regulations:

| Statutory regulation No. | Description |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2016 No. 1107 | <i>The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016</i> |
| 2016 No. 1091 | <i>The Electromagnetic Compatibility Regulations 2016</i> |
| 2022 No. 1647 | <i>The Hazardous Substances and Packaging (Legislative Functions and Amendment) (EU Exit) Regulations 2020</i> |
| 2021 No. 422 | <i>The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (Amendment) Regulations 2021</i> |

The products have been tested according to the following standards.

Explosive atmospheres (ATEX):

| | |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN IEC 60079-0:2018-07-09</i> | <i>Explosive atmospheres. Equipment. General requirements</i> |
| <i>BS EN ISO 80079-36:2016-04-30</i> | <i>Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Basic method and requirements</i> |
| <i>BS EN ISO 80079-37:2016-04-30</i> | <i>Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"</i> |

The built-in angle of rotation transducer is EC type-tested: **ZELM 10 ATEX 0427 X**.

Electromagnetic compatibility (EMC):

| | |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN IEC 61000-6-2:2019-02-25</i> | <i>Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments</i> |
| <i>BS EN IEC 61000-6-3:2021-03-30</i> | <i>Electromagnetic compatibility (EMC). Generic standards. Emission standard for equipment in residential environments</i> |

Restriction of Hazardous Substances (RoHS):

| | |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>BS EN IEC 63000:2018-12-10</i> | <i>Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances</i> |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|

The documents are kept under file number **2812-014** at the notified body **NB-No. 2812**.

Element Materials Technology

Unit 1 Pendle Place
Skelmersdale, WN8 9PN, United Kingdom

The devices bear the following marking:



The sole responsibility for drawing up this declaration of conformity in relation to the fulfilment of the essential requirements and the preparation of the technical documentation lies with the manufacturer.

Manufacturer**FISCHER Mess- und Regeltechnik GmbH**Bielefelder Str. 37a
32107 Bad Salzuflen, Germany

Tel. +49 (0)5222 974 0

**Bad Salzuflen**
04 Okt 2021G. Gödde
Managing director

8.3 EAC Declaration

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ



Заявитель Общество с ограниченной ответственностью «МАТИС-М»

Место нахождения: Российская Федерация, Москва, 117261, улица Вавилова, дом 70, строение 3, Комната Правления. Адрес места осуществления деятельности: Российская Федерация, Москва, 109029, Сибирский проезд, дом 2, строение 9. Основной государственный регистрационный номер: 1037739575125, номер телефона: +74957252309, адрес электронной почты: info@matis-m.ru,

в лице Генерального директора Шарова Александра Анатольевича

заявляет, что Измерительные устройства: Манометры для измерения дифференциального давления, серии DS, DA

Изготовитель FISCHER Mess- und Regeltechnik GmbH. Место нахождения и адрес места осуществления деятельности: Германия, Bielefelder Str. 37a D-32107 Bad Salzuflen Germany, координаты системы ГЛОНАСС (52.056894, 8.725524)

Продукция изготовлена в соответствии с Директивой 2014/35/EU

Код ТН ВЭД ЕАЭС 9026 20 400 0 Серийный выпуск

соответствует требованиям

ТР ТС 004/2011 О безопасности низковольтного оборудования

Декларация о соответствии принята на основании

Протокол испытаний № АЛС-011-0163 от 27.01.2022 года, выданного испытательной лабораторией Общества с ограниченной ответственностью «АТМОСФЕРА», аттестат аккредитации РОСС RU.32468.04ЛЕГ0.002

Схема декларирования 1д

Дополнительная информация

Условия и сроки хранения стандартные при нормальных значениях климатических факторов внешней среды, срок службы (годности) указан в эксплуатационной документации. Договор на выполнение функций иностранного изготовителя № 2016-09-29/01 от 29.09.2016.

Декларация о соответствии действительна с даты регистрации по 27.01.2027 включительно



 М. П. Шаров Александр Анатольевич
 (подпись) (Ф.И.О. заявителя)

Регистрационный номер декларации о соответствии: ЕАЭС N RU Д-DE.РА01.В.43065/22

Дата регистрации декларации о соответствии: 28.01.2022

Notes

Notes



FISCHER Mess- und Regeltechnik GmbH

Bielefelder Str. 37a
D-32107 Bad Salzuflen

Tel. +49 5222 974-0

Fax +49 5222 7170

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info@fischermesstechnik.de