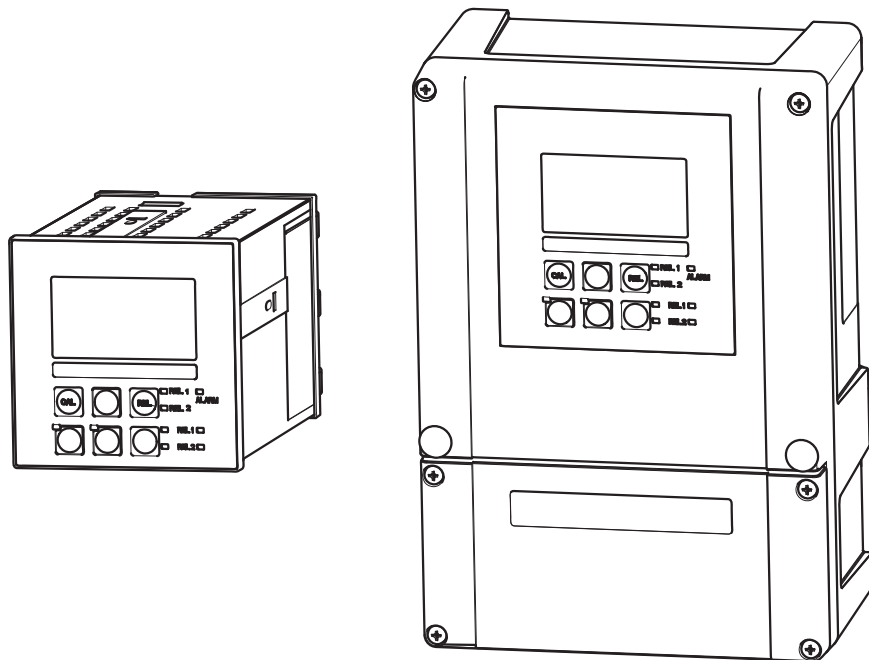


Operating Instructions

OOM223F/253F

Transmitter for Dissolved Oxygen



About this document

Safety messages

The structure, signal words and safety colors of the signs comply with the specifications of ANSI Z535.6 ("Product safety information in product manuals, instructions and other collateral materials").

Safety message structure	Meaning
 DANGER Cause (/consequences) Consequences if safety message is not heeded ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the situation will result in a fatal or serious injury.
 WARNING Cause (/consequences) Consequences if safety message is not heeded ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the situation can result in a fatal or serious injury.
 CAUTION Cause (/consequences) Consequences if safety message is not heeded ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
 NOTICE Cause/situation Consequences if safety message is not heeded ► Action/note	This symbol alerts you to situations that can result in damage to property and equipment.

Symbols



Additional information, tips



Permitted or recommended



Forbidden or not recommended

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1 Basic safety instructions

1.1 Requirements for the personnel

- ▶ Installation, commissioning, operation and maintenance of the measuring system must only be carried out by trained technical personnel.
- ▶ The technical personnel must be authorized by the plant operator to carry out the specified activities.
- ▶ The electrical connection may only be performed by an electrical technician.
- ▶ The technical personnel must have read and understood these Operating Instructions and must follow the instructions they contain.
- ▶ Measuring point faults may only be rectified by authorized and specially trained personnel.

 Repairs not described in the enclosed Operating Instructions may only be carried out directly at the manufacturer's or by the service organization.

1.2 Designated use

OOM223/253F is a transmitter for determining the oxygen concentration of a liquid medium.

The transmitter is particularly suited for use in the following areas:

- Process control in enzyme production
- Control of culture preparation
- Biotechnological production

Any other use than the one described here compromises the safety of persons and the entire measuring system and is, therefore, not permitted.

The manufacturer is not liable for damage caused by improper or non-designated use.

1.3 Workplace safety

As the user, you are responsible for complying with the following safety conditions:

- Regulations for explosion protection
- Installation instructions
- Local standards and regulations

Electromagnetic compatibility

With regard to electromagnetic compatibility, this device has been tested in accordance with the applicable European standards for industrial applications.

The electromagnetic compatibility indicated only applies to a device that has been connected in accordance with the instructions in these Operating Instructions.

1.4 Operational safety

- ▶ Before commissioning the entire measuring point, make sure all the connections are correct. Ensure that electrical cables and hose connections are not damaged.
- ▶ Do not operate damaged products, and safeguard them to ensure that they are not operated inadvertently. Mark the damaged product as defective.
- ▶ If faults cannot be rectified, the products must be taken out of service and secured against unintentional commissioning.

1.5 Product safety

The product is designed to meet state-of-the-art safety requirements, has been tested and left the factory in a condition in which it is safe to operate. Relevant regulations and European standards have been observed.

1.6 Electrical symbols



Direct Current (DC)

A terminal at which DC is applied or through which DC flows.



Alternating Current (AC)

A terminal at which (sine-form) AC is applied or through which AC flows.



Ground connecting

A terminal which, from the user's point of view, is already grounded using a grounding system.



Protective ground terminal

A terminal which must be grounded before other connections may be set up.



Class II (isolated) device

Double insulation



Alarm relay



Input



Output



DC voltage source



Temperature sensor

2 Incoming acceptance and product identification

2.1 Incoming acceptance

- ▶ Make sure the packaging is undamaged!
- ▶ Inform the supplier about any damage to the packaging.
Keep the damaged packaging until the matter has been settled.
- ▶ Make sure the contents are undamaged!
- ▶ Inform the supplier about damage to the contents. Keep the damaged products until the matter has been settled.
- ▶ Check that the order is complete and agrees with your shipping documents.
- ▶ The packaging material used to store or to transport the product must provide shock protection and humidity protection. The original packaging offers the best protection. Also, keep to the approved ambient conditions (see "Technical data").
- ▶ If you have any questions, please contact your supplier or your local sales center.

2.2 Scope of delivery

The delivery of the field instrument includes:

- 1 transmitter OOM253F
- 1 plug-in screw terminal
- 1 cable gland Pg 7
- 1 cable gland Pg 16 reduced
- 2 cable glands Pg 13.5
- 1 Operating Instructions BA01322O/07/EN
- versions with HART communication:
1 Operating Instructions Field Communication with HART, BA00208O/07/EN
- versions with PROFIBUS communication:
1 Operating Instructions Field Communication with PROFIBUS PA/DP, BA00209O/07/EN

The delivery of the panel mounted instrument includes:

- 1 transmitter OOM223F
- 1 set of plug-in screw terminals
- 2 tensioning screws
- 1 BNC-plug (solder-free)
- 1 Operating Instructions BA01322O/07/EN
- versions with HART communication:
1 Operating Instructions Field Communication with HART, BA00208O/07/EN
- versions with PROFIBUS communication:
1 Operating Instructions Field Communication with PROFIBUS PA/DP, BA00209O/07/EN

If you have any questions, please contact your supplier or your local sales center.

2.3 Product identification

2.3.1 Nameplate

The nameplate contains the following information:

- Manufacturer data
- Order code
- Extended order code
- Serial number
- Operating conditions
- Safety icons

Compare the order code on the nameplate with your order.

2.3.2 Identifying the product

The order code and serial number of your device can be found in the following locations:

- On the nameplate
- In the delivery papers

2.4 Certificates and approvals

2.4.1 CE mark

Declaration of conformity

The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.

The manufacturer confirms successful testing of the product by affixing the **CE** symbol.

2.4.2 CSA general purpose

CSA General Purpose

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators "C" and "US":

Version	Approval
OOM253F-..2... OOM253F-..3... OOM253F-..7...	CSA Mark for Canada and USA
OOM223F-..2... OOM223F-..3... OOM223F-..7...	CSA Mark for Canada and USA

3 Installation

3.1 Quick installation guide

Proceed as follows to completely install the measuring point:

- Install the transmitter (see "Installation instructions" section).
- If the sensor is not yet installed in the measuring point, install it (see Technical Information of the sensor).
- Connect the sensor to the transmitter as illustrated in the "Electrical connection" section.
- Connect the transmitter as illustrated in the "Electrical connection" section.
- Commission the transmitter as explained in the "Commissioning" section.

3.1.1 Measuring system

A complete measuring system comprises:

- The transmitter OOM223F or OOM253F in version HX or HS
- An oxygen sensor OOS22 or OOS21 with integrated NTC temperature sensor
- A measuring cable OOK21
- An immersion, flow or retractable assembly e.g. OPA442 or OPA475

Options: extension cable OYK71, junction box VBM

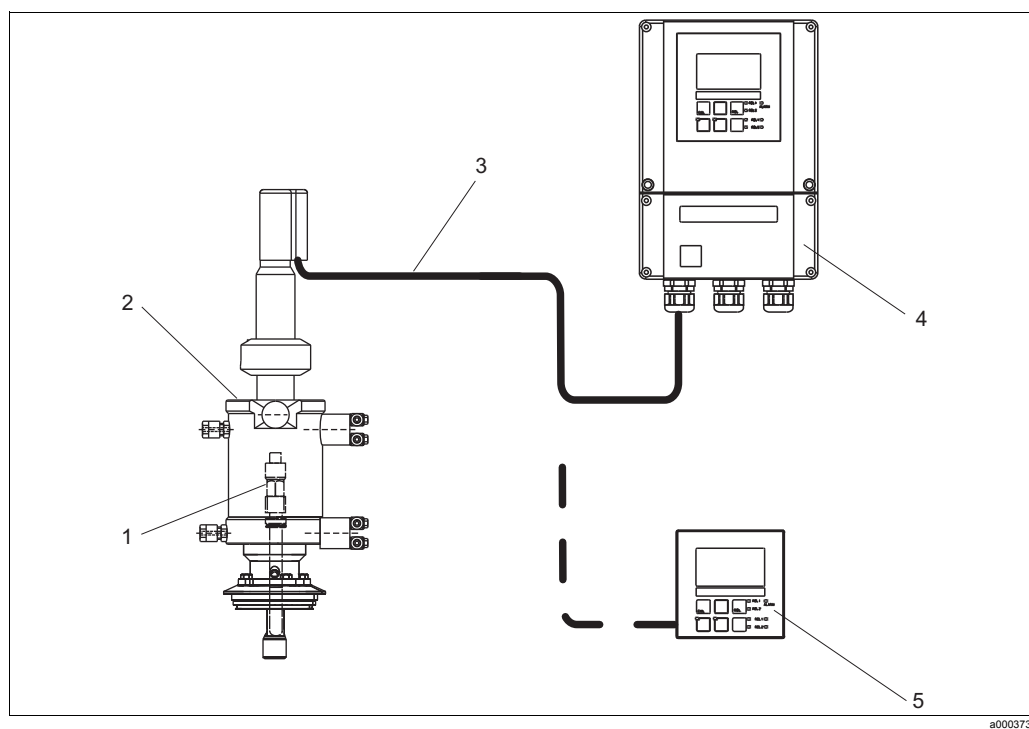


Fig. 1: Complete measuring system OOM223F/253F

- 1 Oxygen sensor OOS22
 2 Retractable assembly OPA475
 3 Measuring cable OOK21

- 4 OOM253F
 5 OOM223F

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3.2 Installation conditions

3.2.1 Field instrument

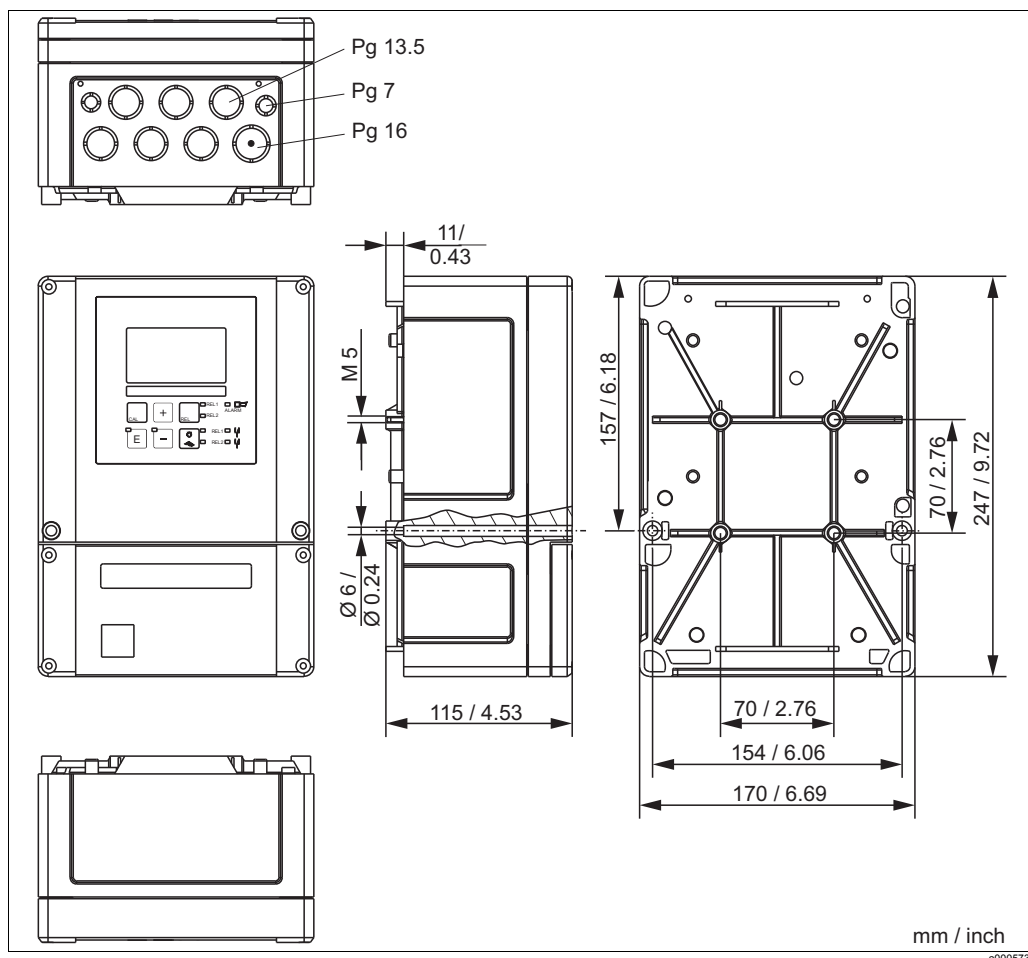


Fig. 2: Field instrument



There is a hole in the punching for the cable entry (connection of supply voltage). It serves as a pressure balance during air freight dispatching. Make sure no moisture penetrates the inside of the housing before the cable installation. The housing is completely air-tight after the cable installation.

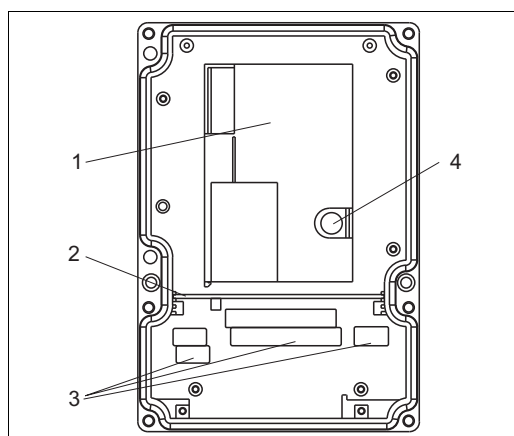


Fig. 3: View into the field housing

3.2.2 Panel-mounted instrument

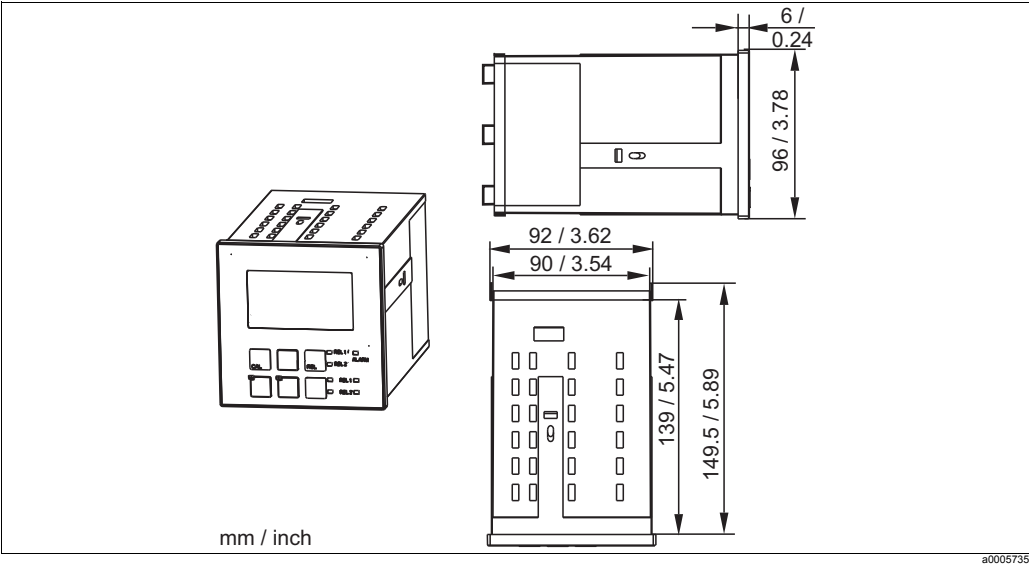


Fig. 4: Panel-mounted instrument

3.3 Installation instructions

3.3.1 Field instrument

There are several ways of securing the field housing:

- Wall mounting with fixing screws
- Post mounting to cylindrical pipes
- Post mounting to square securing masts

NOTICE

Effect of climate conditions (rain, snow, direct sun etc.)

Impaired operation to complete transmitter failure

- When installing outside, always use the weather protection cover (accessory).

Transmitter wall mounting

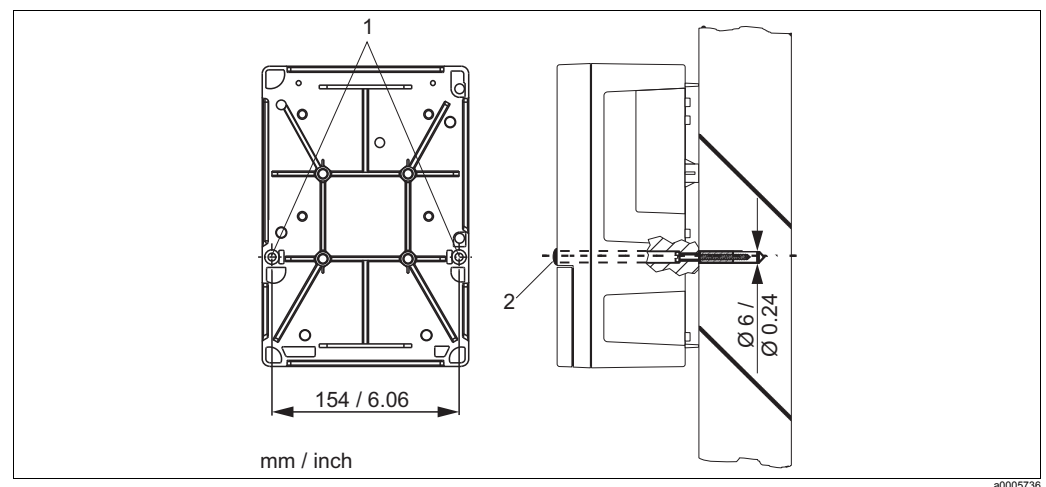


Fig. 5: Wall mounting field device

For wall mounting the transmitter, proceed as follows:

1. Drill the bores as shown in →  5.
2. Drive the two fixing screws through the securing bores (1) from the front.
3. Mount the transmitter on the wall as shown.
4. Cover the bores with plastic caps (2).

Transmitter post mounting

- i** You require a post mounting kit to secure the field device to horizontal and vertical posts or pipes (max. Ø 60 mm (2.36")). The kit can be acquired as an accessory (see "Accessories" section).

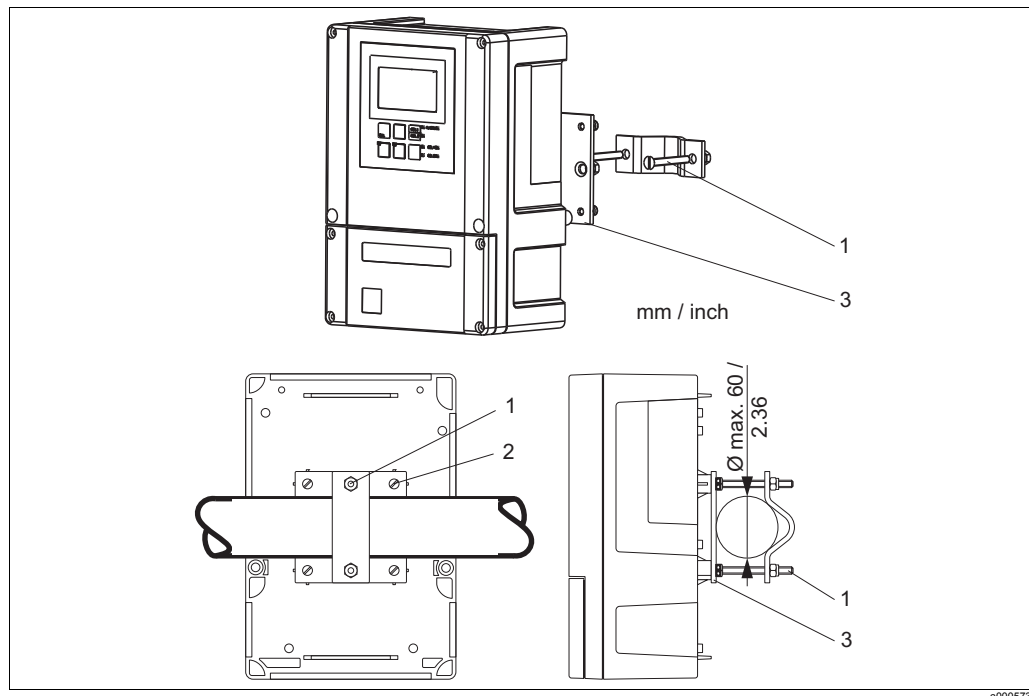


Fig. 6: Post mounting field device to cylindrical pipes

For post mounting the transmitter, proceed as follows:

1. Guide the two securing screws (1) of the mounting kit through the openings of the securing plate (3).
2. Screw the securing plate onto the transmitter using the four fixing screws (2).
3. Secure the retainer with the field device on the post or pipe using the clip.

You can also secure the field device to a square universal post in conjunction with the weather protection cover. These can be acquired as accessories, see "Accessories" section.

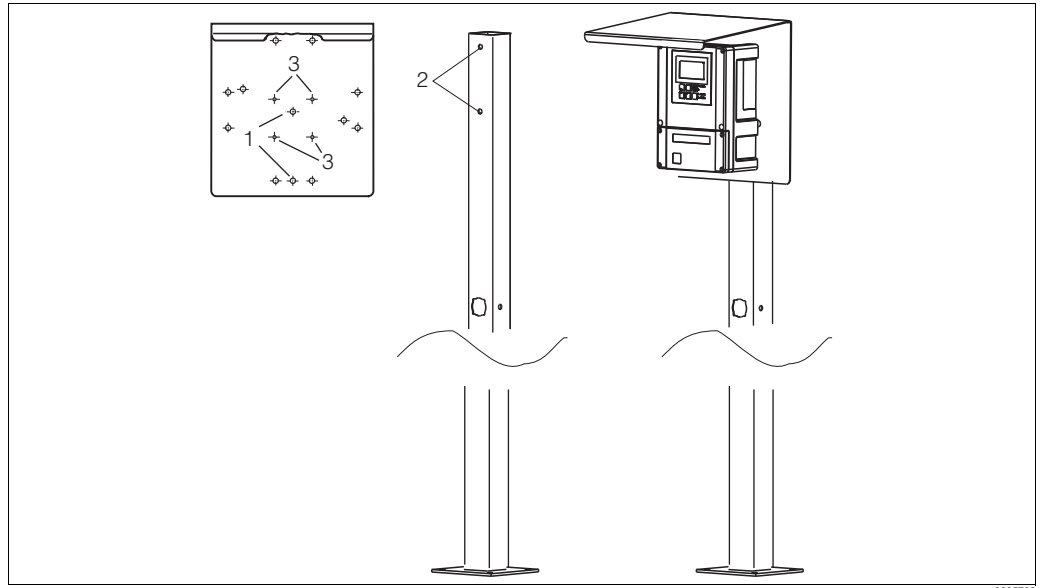


Fig. 7: Mounting field device with universal posts and weather protection cover

For mounting the weather protection cover, proceed as follows:

1. Screw the weather protection cover with 2 screws (bores 1) to the upright post (bores 2).
2. Secure the field device to the weather protection cover. To do so, use the bores (3).

3.3.2 Panel-mounted instrument

The panel-mounted instrument is secured with the clamping screws supplied (see →  8).

The necessary installation depth is approx. 165 mm (6.50").

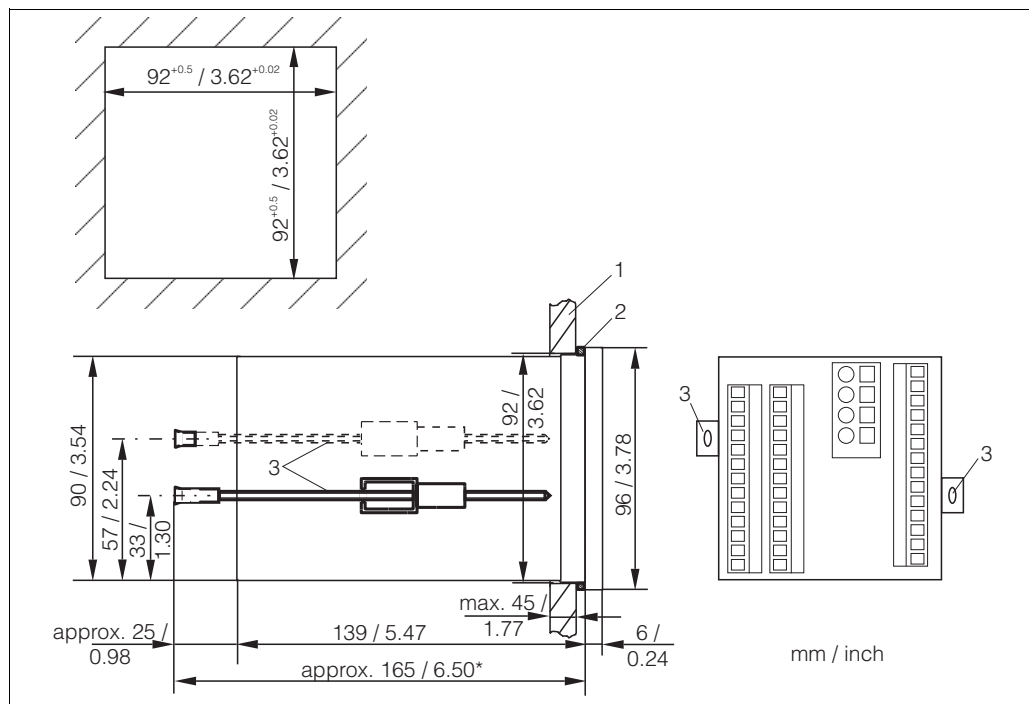


Fig. 8: Securing the panel-mounted instrument

- 1 Wall of the cabinet
- 2 Seal
- 3 Clamping screws
- * Required installation depth

3.4 Post-installation check

- After installation, check the transmitter for damage.
- Check whether the transmitter is protected against moisture and direct sunlight (e.g. by the weather protection cover).

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