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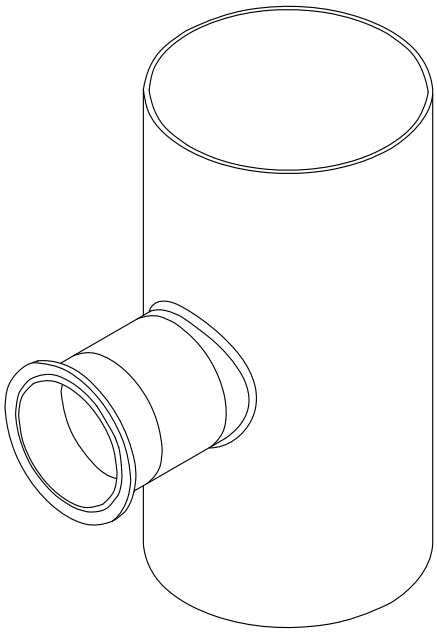
71484399
2019-03-01

Operating Instructions
Flowfit CUA262

Flow assembly for CUS52D turbidity sensor



Endress+Hauser
People for Process Automation

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1 About this document

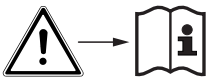
1.1 Warnings

Structure of information	Meaning
DANGER **Causes (/consequences)** If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation **will** result in a fatal or serious injury.
WARNING **Causes (/consequences)** If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation **can** result in a fatal or serious injury.
CAUTION **Causes (/consequences)** If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.
NOTICE **Cause/situation** If necessary, Consequences of non-compliance (if applicable) ▶ Action/note	This symbol alerts you to situations which may result in damage to property.

1.2 Symbols used

Symbol	Meaning
	Additional information, tips
	Permitted or recommended
	Not permitted or not recommended
	Reference to device documentation
	Reference to page
	Reference to graphic
	Result of a step

1.2.1 Symbols on the device

Symbol	Meaning
	Reference to device documentation

2 Basic safety instructions

2.1 Requirements for the personnel

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

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

2.2 Designated use

The CUA262 flow assembly is designed for the installation of the CUS52D turbidity sensor.

The main areas of application are:
- Turbidity measurement at all process stages in skids for water treatment
- Turbidity measurement in closed pipe systems (stainless steel)
- Turbidity monitoring in filter modules

The assembly is designed exclusively for use in liquid media.

Use of the device for any purpose other than that described, poses a threat to the safety of people and of the entire measuring system and is therefore not permitted.

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

2.3 Occupational safety

As the user, you are responsible for complying with the following safety conditions:
- Installation guidelines
- Local standards and regulations

2.4 Operational safety

Before commissioning the entire measuring point:

1. Verify that all connections are correct.
2. Ensure that electrical cables and hose connections are undamaged.
3. Do not operate damaged products, and protect them against unintentional operation.
4. Label damaged products as defective.

During operation:

- If faults cannot be rectified:
  products must be taken out of service and protected against unintentional operation.

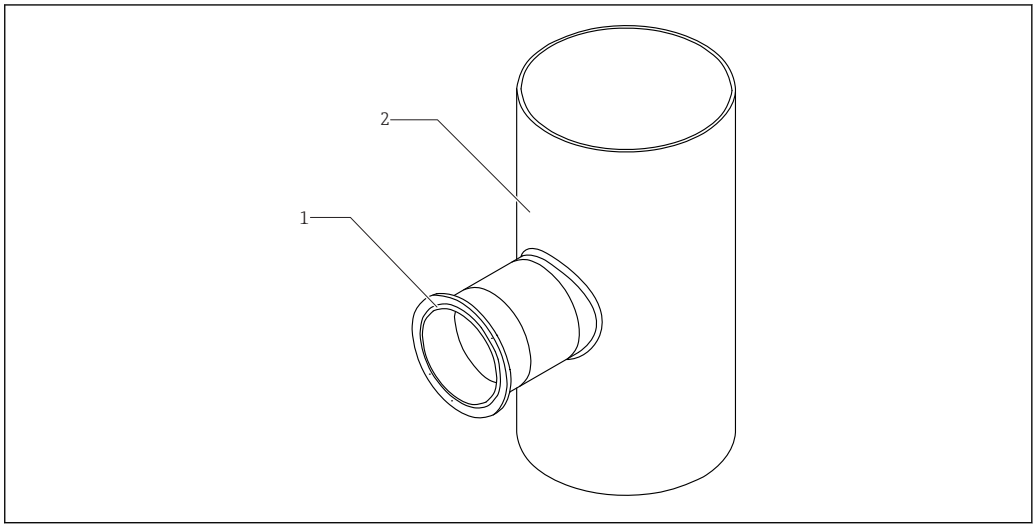
2.5 Product safety

2.5.1 State of the art

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. The relevant regulations and international standards have been observed.

3 Product description

3.1 Product design



1 CUA262 flow assembly

1 Clamp connection
2 CUA262 flow assembly

4 Incoming acceptance and product identification

4.1 Incoming acceptance

1. Verify that the packaging is undamaged.
   ↳ Notify the supplier of any damage to the packaging.
   Keep the damaged packaging until the issue has been resolved.
2. Verify that the contents are undamaged.
   ↳ Notify the supplier of any damage to the delivery contents.
   Keep the damaged goods until the issue has been resolved.
3. Check that the delivery is complete and nothing is missing.
   ↳ Compare the shipping documents with your order.
4. Pack the product for storage and transportation in such a way that it is protected against impact and moisture.
   ↳ The original packaging offers the best protection.
   Make sure to comply with the permitted ambient conditions.

If you have any questions, please contact your supplier or your local Sales Center.

4.2 Product identification

4.2.1 Nameplate

The nameplate provides you with the following information on your device:
- Manufacturer identification
- Order code
- Extended order code
- Serial number
- Ambient and process conditions
- Safety information and warnings

▶ Compare the information on the nameplate with the order.

4.2.2 Product identification

The order code and serial number of your product can be found in the following locations:
- On the nameplate
- In the delivery papers

Obtaining information on the product

1. Go to www.endress.com.
2. Call up the site search (magnifying glass).
3. Enter a valid serial number.
4. Search.
   ↳ The product structure is displayed in a popup window.
5. Click on the product image in the popup window.
   ↳ A new window (**Device Viewer**) opens. All of the information relating to your device is displayed in this window as well as the product documentation.

4.2.3 Manufacturer's address

Endress+Hauser Conducta GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

4.3 Scope of delivery

The scope of delivery comprises:
- 1 Flowfit CUA262 flow assembly, version as ordered
- 1 clamp seal and locking clamp
- 1 x Operating Instructions

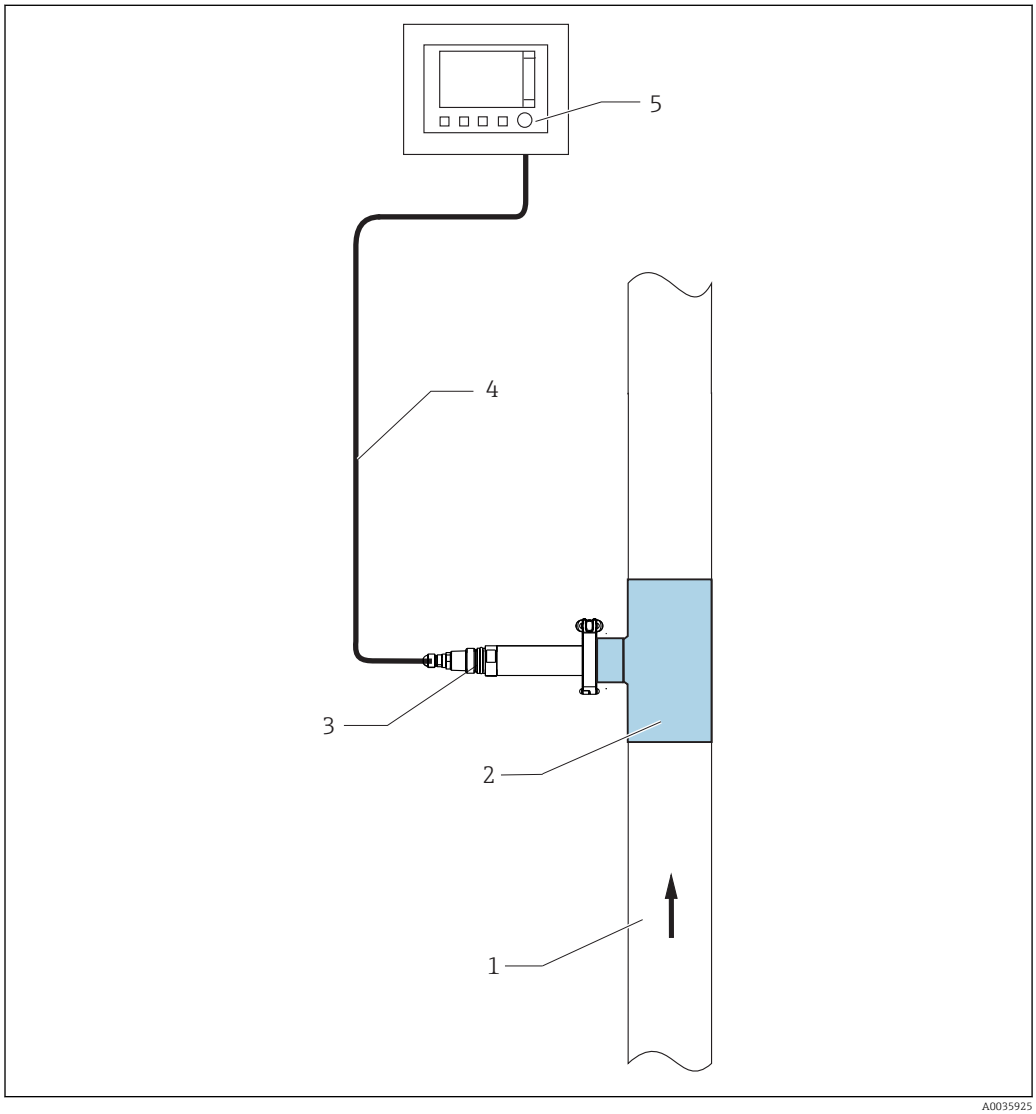
4.4 Certificates and approvals

DRGL- 2014/68/EU / PED- 2014/68/EU
The assembly has been manufactured according to good engineering practice as per Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU and is therefore not required to bear the CE label.

5 Installation

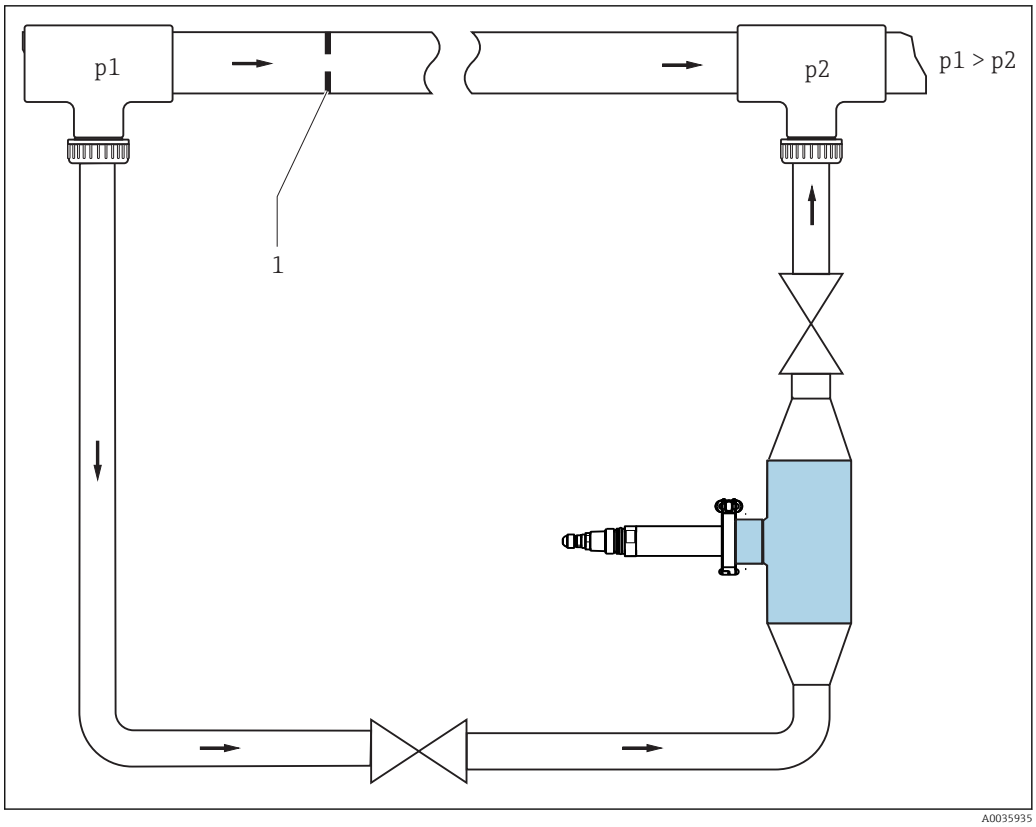
5.1 Installation conditions

5.1.1 Installation instructions



2 *Installation in the process pipe*

1 Direction of flow
2 CUA262 flow assembly
3 Turbidity sensor CUS52D
4 Measuring cable
5 Liquiline CM442 transmitter



3 Connection example with bypass and orifice plate in the main pipe (supply from below)

1 Orifice plate

To achieve flow through the assembly with a bypass, pressure p1 must be higher than pressure p2.

▶ Install the orifice plate in the main pipe → 3, 11.

The inlet and outlet connection of the flow assembly are always identical. The system is symmetrical.

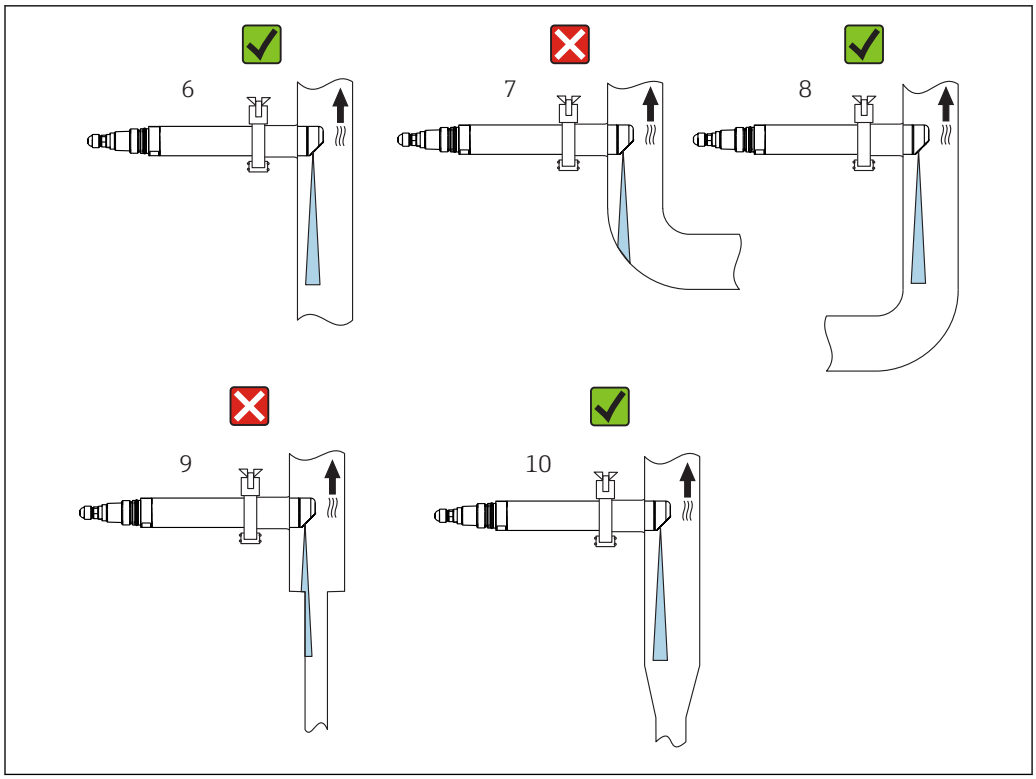
1. Install the flow assembly vertically.
2. Connect the inflow at the bottom end (upward flow in the pipe).

Avoid buckles and loops in the hose system.

Pay attention to the installation instructions (flow direction) for the sensor.

Wall effects:
Backscattering at the pipe wall results in falsified measurements in the case of turbidity values < 200 FNU. If this occurs, change the orientation.

Information on avoiding wall effects:



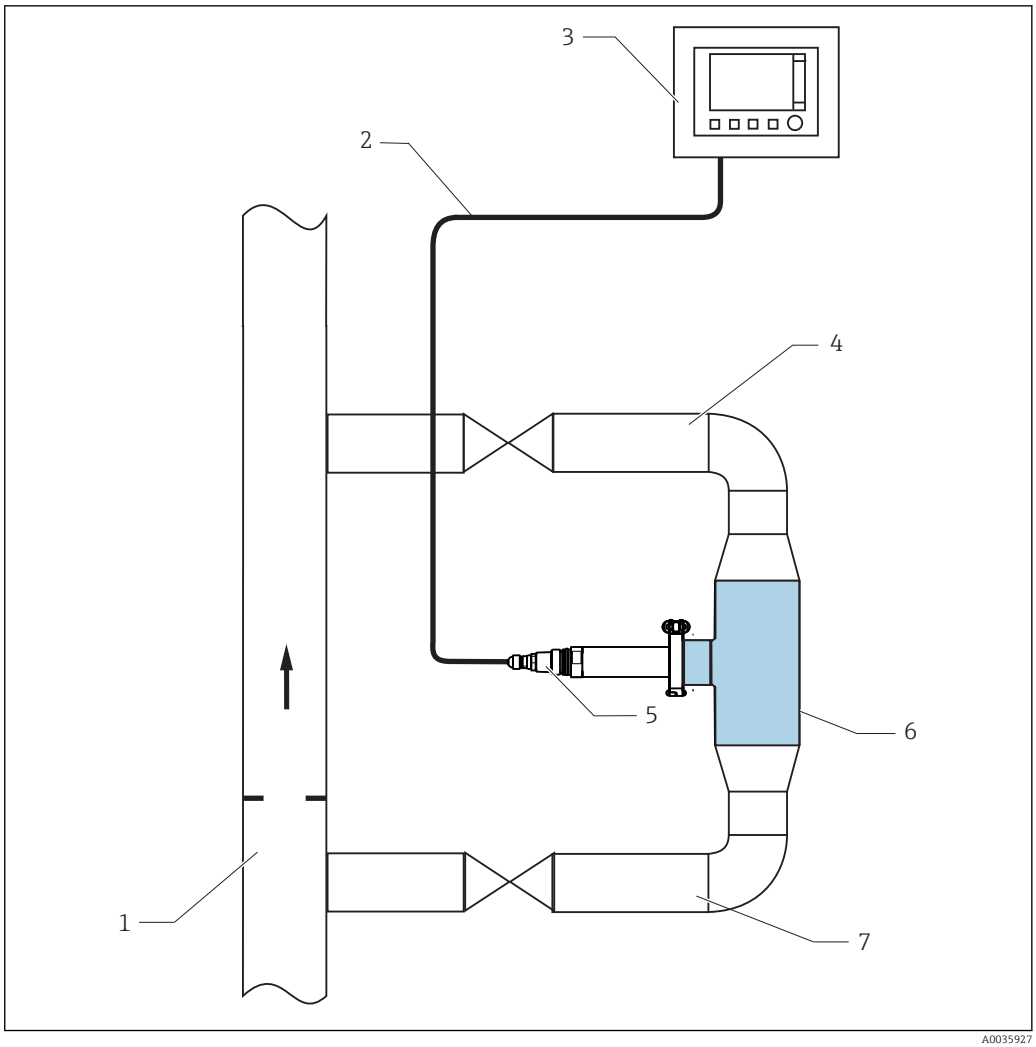
4 *Orientation for pipes and assemblies*

- Install the sensor in such a way that the light beam is not reflected (item 6).
- Avoid sudden changes in cross-section (item 9). Changes in cross-section must be gradual and located as far away as possible from the sensor (item 10).
- Do not install the sensor directly downstream from a bend (item 7). Instead position it as far away as possible from the bend (item 8).
- When using reflective materials (e.g. stainless steel), the pipe diameter must be at least 100 mm (4 in). It is recommended to adjust the installation position (orientation) onsite.
- Pipes made of stainless steel with diameter >DN 300 exhibit hardly any wall effects.

5.2 Mounting the flow assembly

5.2.1 Measuring system

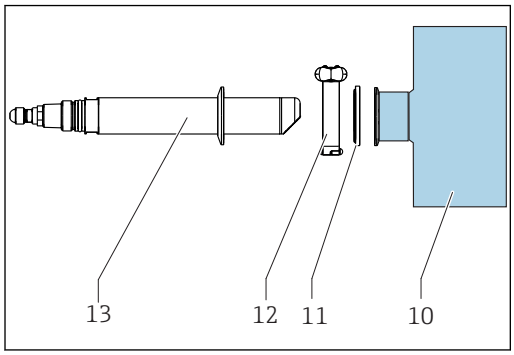
A complete measuring system comprises:
- Flow assembly Flowfit CUA262
- Sensor Turbimax CUS52D
- Transmitter, e.g. Liquiline CM442
- Measuring cable



5 *Measuring system*

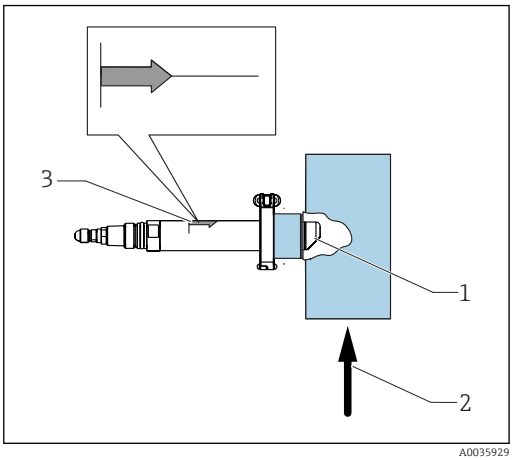
1 *Process pipe*
2 *Measuring cable*
3 *Liquiline CM442 transmitter*
4 *Return line with shut-off valve*
5 *Turbidity sensor CUS52D*
6 *CUA262 flow assembly*
7 *Inlet with shut-off valve*

5.3 Mounting the sensor



6 *Sensor installation*

10 CUA262 flow assembly
11 Clamp seal
12 Locking clamp
13 Turbidity sensor CUS52D



7 *Sensor orientation*

1 Optical windows
2 Direction of flow
3 Installation marking

Only insert turbidity sensors into the assembly with a 2" clamp.

1. Install the sensor in such a way that the optical windows of the sensor are aligned against the direction of flow (item 2).
2. Use the installation marking (item 3) on the sensor to ensure the correct sensor orientation.

5.4 Post-installation check

- After mounting, check all the connections to ensure they are secure and leak-tight.
- Make sure that the orientation is correct.
- Ensure that the hoses cannot be removed without force.
- Check all hoses for damage.

6 Commissioning

Prior to initial commissioning, ensure that:
- all seals are correctly seated (on the assembly and on the process connection).
- the sensor is correctly installed and connected.

⚠ WARNING

Medium incorrectly connected to the assembly

Medium can escape!

- ▶ Before applying pressure to an assembly, ensure that the connection has been established correctly. Otherwise, do not introduce the assembly into the process.

7 Maintenance

▶ Perform maintenance tasks at regular intervals.

We recommend setting the maintenance times in advance in an operations journal or log.

The maintenance cycle primarily depends on the following:
- The system
- The mounting conditions
- The medium in which measurement takes place

⚠ CAUTION

Escaping medium

Risk of injury to skin and eyes!

▶ Before the maintenance task, ensure that the process pipe is unpressurized, empty and rinsed.

▶ Wear protective gloves, protective goggles and protective clothing.

7.1 Maintenance tasks

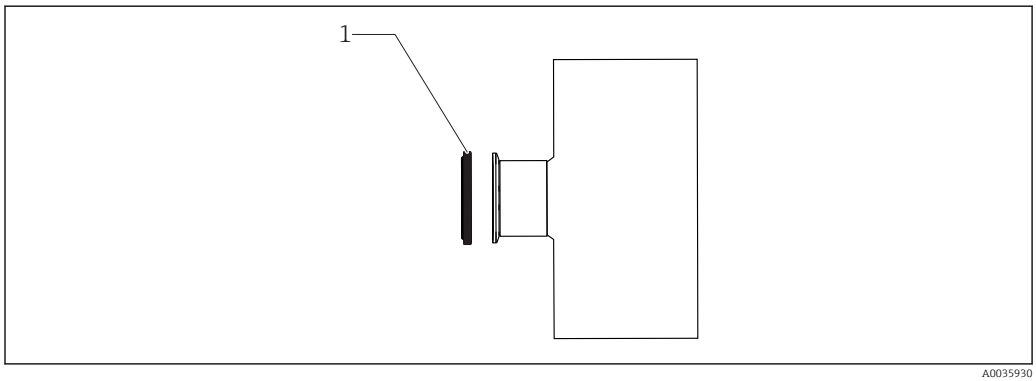
7.1.1 Cleaning the assembly

- Remove light dirt and fouling with suitable cleaning solutions. Cleaning agent
- Remove heavy soiling using a soft brush and a suitable cleaning agent.

A typical cleaning interval for drinking water, for example, is 6 months.

7.1.2 Checking and replacing the seals

1. Inspect seals at regular intervals.
2. Replace seals if necessary.



8 Position of seal

1 Clamp seal

The seals are available as a spare parts kit.

7.2 Cleaning agent

⚠ WARNING

Organic solvents containing halogens

Limited evidence of carcinogenicity! Dangerous for the environment with long-term effects!

- ▶ Do not use organic solvents that contain halogens.

⚠ WARNING

Thiocarbamide

Harmful if swallowed! Limited evidence of carcinogenicity! Possible risk of harm to the unborn child! Dangerous for the environment with long-term effects!

- ▶ Wear protective goggles, protective gloves and appropriate protective clothing.
- ▶ Avoid all contact with the eyes, mouth and skin.
- ▶ Avoid discharge into the environment.

The most common types of soiling and the cleaning agents used in each case are shown in the following table.

Type of fouling	Cleaning agent
Greases and oils	Hot water or tempered (alkaline) agents containing surfactants or water-soluble organic solvents (e. g. ethanol)
Limescale deposits, metal hydroxide buildup, lyophobic biological buildup	Approx. 1% nitric acid
Sulfide deposits	Mixture of 1% hydrochloric acid and thiocarbamide (commercially available)
Protein buildup	Mixture of 1% hydrochloric acid and pepsin (commercially available)
Fibers, suspended substances	Pressurized water, possibly surface-active agents
Light biological buildup	Pressurized water

- ▶ Choose a cleaning agent to suit the degree and type of soiling.

Stainless steel is not resistant to hydrochloric acid. Avoid applications with hydrochloric acid wherever possible.

8 Repair

8.1 Spare parts

Order number	Description
71241882	Clamp seal, DN 50, FDA, 2 pcs

8.2 Return

The product must be returned if repairs or a factory calibration are required, or if the wrong product was ordered or delivered. As an ISO-certified company and also due to legal regulations, Endress+Hauser is obliged to follow certain procedures when handling any returned products that have been in contact with medium.

To ensure the swift, safe and professional return of the device:

- Refer to the website www.endress.com/support/return-material for information on the procedure and conditions for returning devices.

8.3 Disposal

- Please observe local regulations!

9 Accessories

The following are the most important accessories available at the time this documentation was issued.

▶ For accessories not listed here, please contact your Service or Sales Center.

Description	Order number
Dummy cover for clamp connection; 1 pc	71242180

Ultrasonic cleaning system CYR52
- For attachment to assemblies and pipes
- Product Configurator on the product page: www.endress.com/cyr52

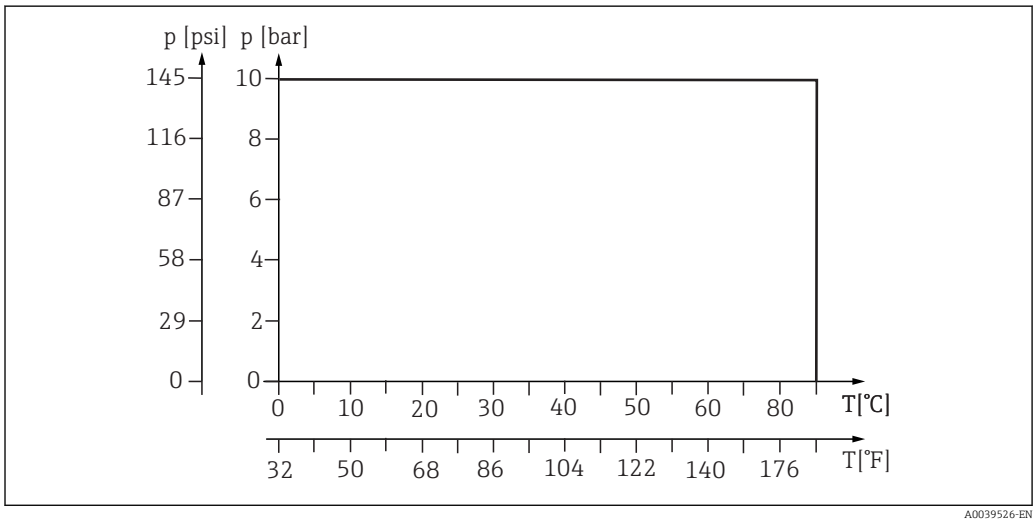
Technical Information TI01153C

10 Technical data

10.1 Environment

Ambient temperature range	0 to 60 °C (32 to 140 °F)
Storage temperature	0 to 60 °C (32 to 140 °F), in the original packaging

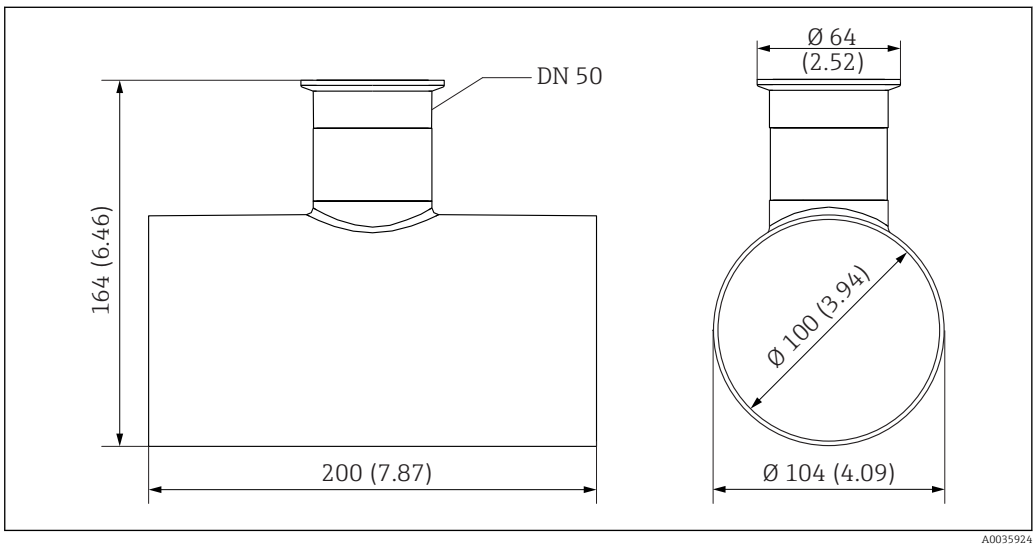
10.2 Process

Process temperature range	0 to 90 °C (32 to 194 °F)
Process pressure range	0 to 10 bar (0 to 145 psi)
Pressure/temperature ratings	

9 Pressure-temperature ratings

10.3 Mechanical construction

Dimensions



10 Dimensions. Engineering unit: mm (in)

Clamp according to DIN 32676

Weight

1.11 kg (2.45 lb)

Materials

Assembly housing:	Stainless steel 1.4404 (AISI 316 L)
Seals:	EPDM
Dummy cover:	Stainless steel 1.4404 (AISI 316 L)

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