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Operating Instructions
Dipfit CYA10

Immersion assembly for wastewater, surface water and industrial applications

Endress+Hauser
People for Process Automation

Table of contents

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

- Additional information, tips
- Permitted
- Recommended
- Not permitted or not recommended
- Reference to device documentation
- Reference to page
- Reference to graphic
- Result of an individual step

1.2.1 Symbols on the device

- Reference to device documentation
- Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to the manufacturer for disposal under the applicable conditions.

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 Intended use

The CYA10 assembly is designed for Memosens sensors in unpressurized operation in open basins, flumes and tanks, and is also available for closed, pressure-bearing vessels as a version with a G1 1/4" flange, EN flange or ASME flange.

The assembly is designed exclusively for use in liquid media.

Any use other than that intended puts the safety of people and the measuring system at risk. Therefore, any other use is not permitted.

The manufacturer is not liable for harm caused by improper or unintended use.

2.3 Workplace safety

The operator is responsible for ensuring compliance with the following safety regulations:
- 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.

Procedure for damaged products:

1. Do not operate damaged products, and protect them against unintentional operation.
2. Label damaged products as defective.

During operation:

▶ If faults cannot be rectified,
take products out of service and protect them against unintentional operation.

2.5 Electromagnetic compatibility

Electromagnetic compatibility

- The product has been tested for electromagnetic compatibility in accordance with the applicable international standards for industrial applications.
- The electromagnetic compatibility indicated applies only to a product that has been connected in accordance with these Operating Instructions.

2.6 Product safety

2.6.1 State of the art

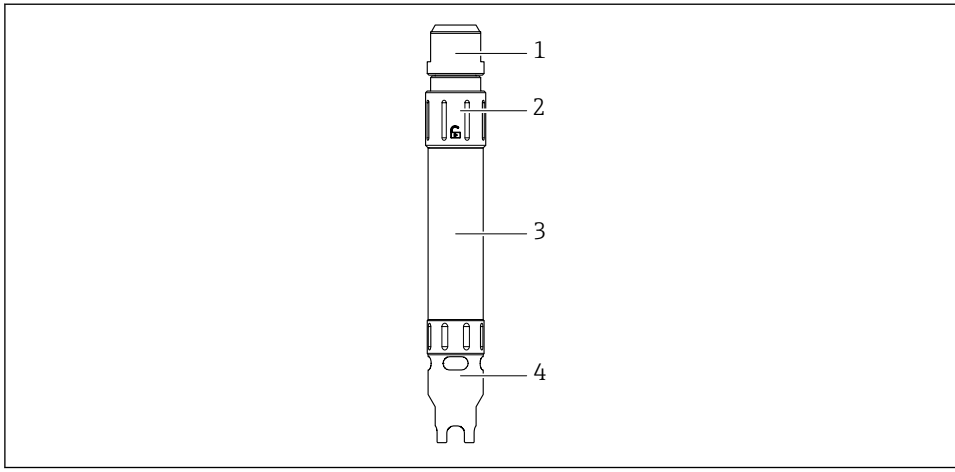
The product is designed to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate. The relevant regulations and international standards have been observed.

3 Product description

3.1 Product design

The assembly is designed for use in the water/wastewater/environmental sector:

- Tank or vessel, closed or open
- Open channels/flumes
- Water (rivers, lakes, sea)



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1 Product description of the individual parts

1 Hose gland
2 Plug cap
3 Assembly housing
4 Protective cap and cable mounting tool

4 Incoming acceptance and product identification

4.1 Incoming acceptance

On receipt of the delivery:

1. Check the packaging for damage.
   ↳ Report all damage immediately to the manufacturer.
   Do not install damaged components.
2. Check the scope of delivery using the delivery note.
3. Compare the data on the nameplate with the order specifications on the delivery note.
4. Check the technical documentation and all other necessary documents, e.g. certificates, to ensure they are complete.

If one of the conditions is not satisfied, contact the manufacturer.

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 Identifying the product

Product page

www.endress.com/cya10

Interpreting the order code

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. Page search (magnifying glass symbol): Enter valid serial number.
3. Search (magnifying glass).
   ↳ The product structure is displayed in a popup window.

4. Click the product overview.
   ↳ A new window opens. Here you fill information pertaining to your device, including the product documentation.

4.2.3 Manufacturer address

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

4.3 Scope of delivery

The scope of delivery comprises:
- Assembly
- Process connection in the version ordered
- Cable hose
- Operating instructions

▶ If you have any queries:
Please contact your supplier or local sales center.

5 Installation

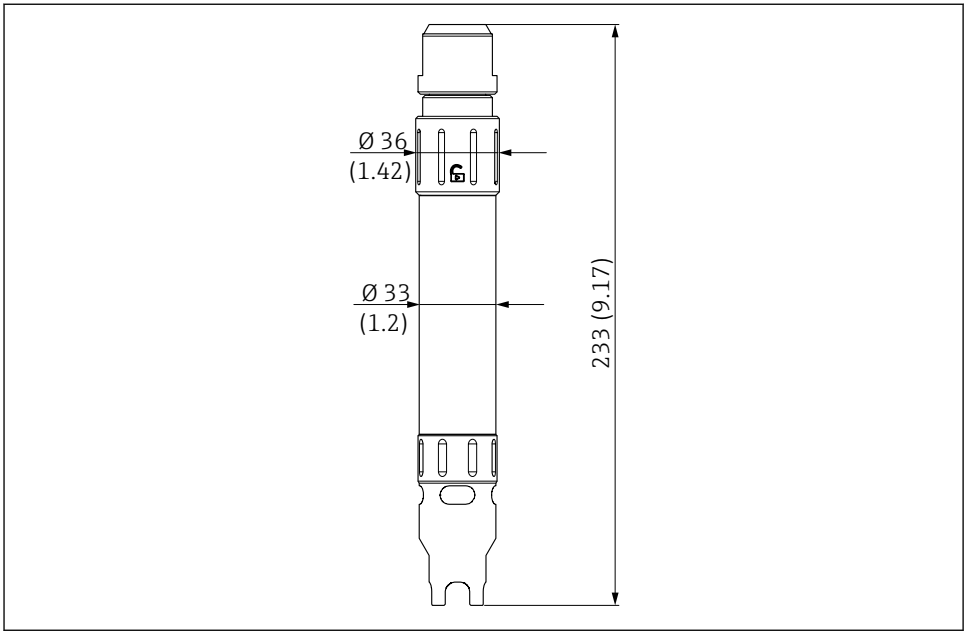
5.1 Installation requirements

5.1.1 Installation instructions

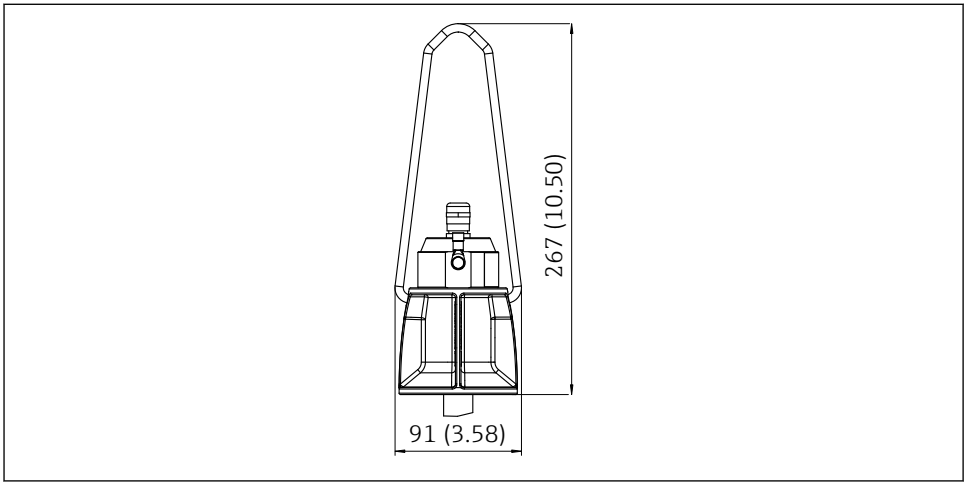
- Select the mounting location so that a sufficient distance to fixed installations is ensured. No damage to the installed sensor may occur even when the medium is moving.
- For fixed installation, select the retaining point so that the proper operation and maintenance of the assembly is guaranteed.

For use in hazardous areas:
- The assembly has a grounding contact.
- If the assembly is secured using a chain and retaining bracket, a separate conductor for potential matching must be routed alongside the measuring cable.

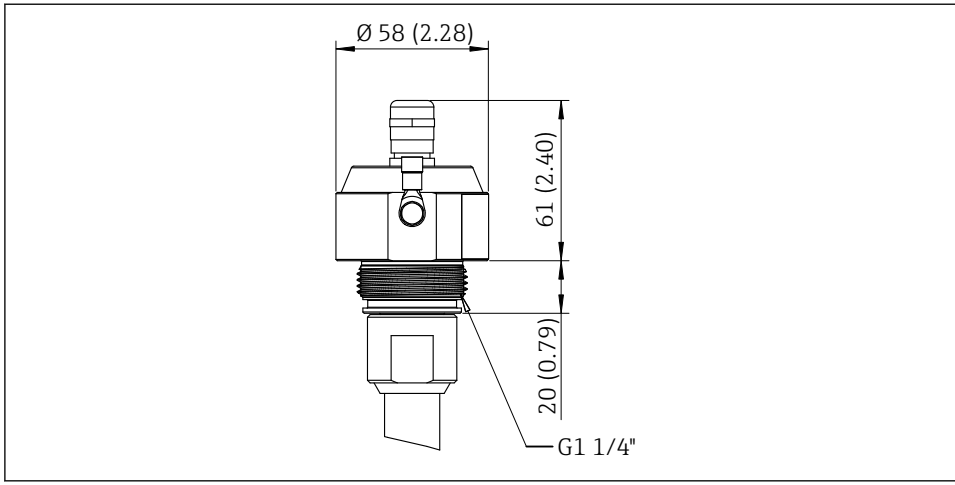
5.1.2 Dimensions



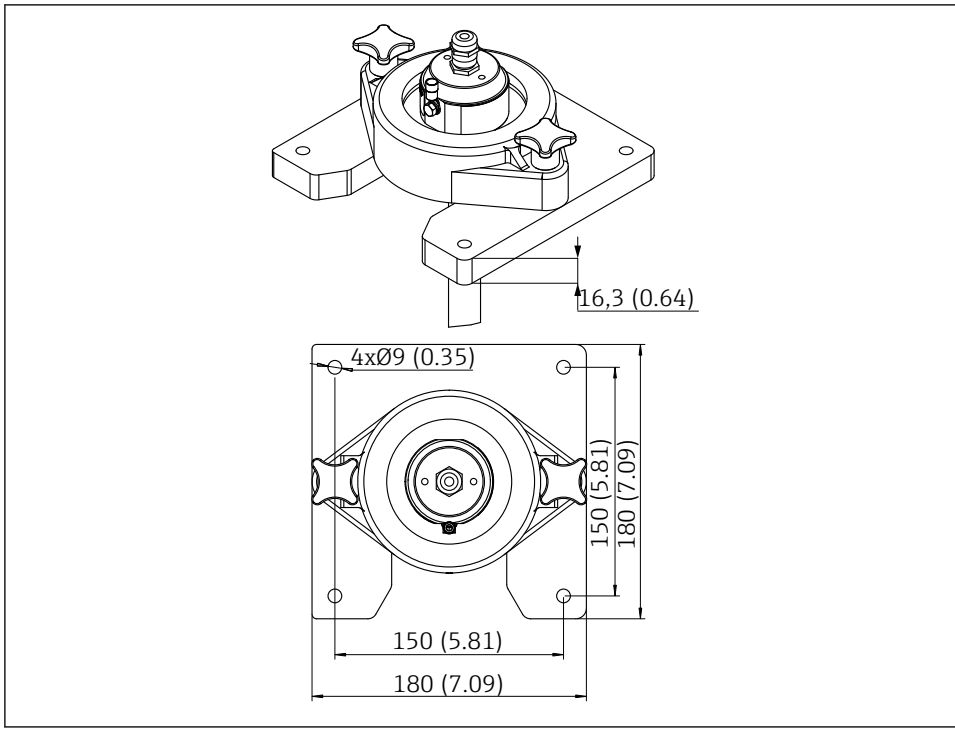
2 Dimensions, CYA10 assembly. Unit of measurement mm (in)



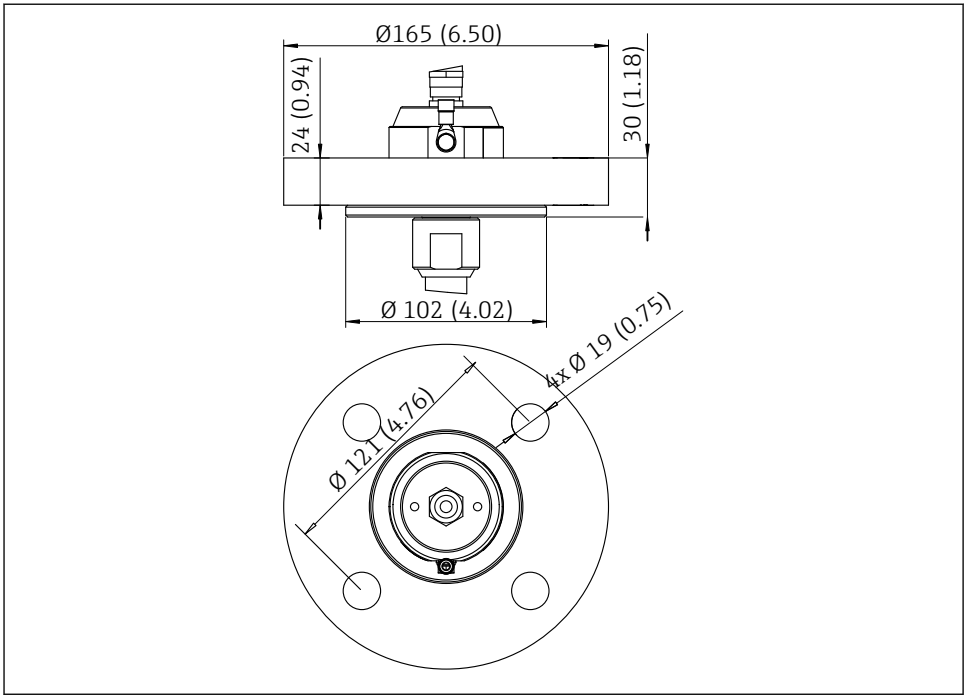
3 Dimensions, chain holder process connection. Unit of measurement mm (in)



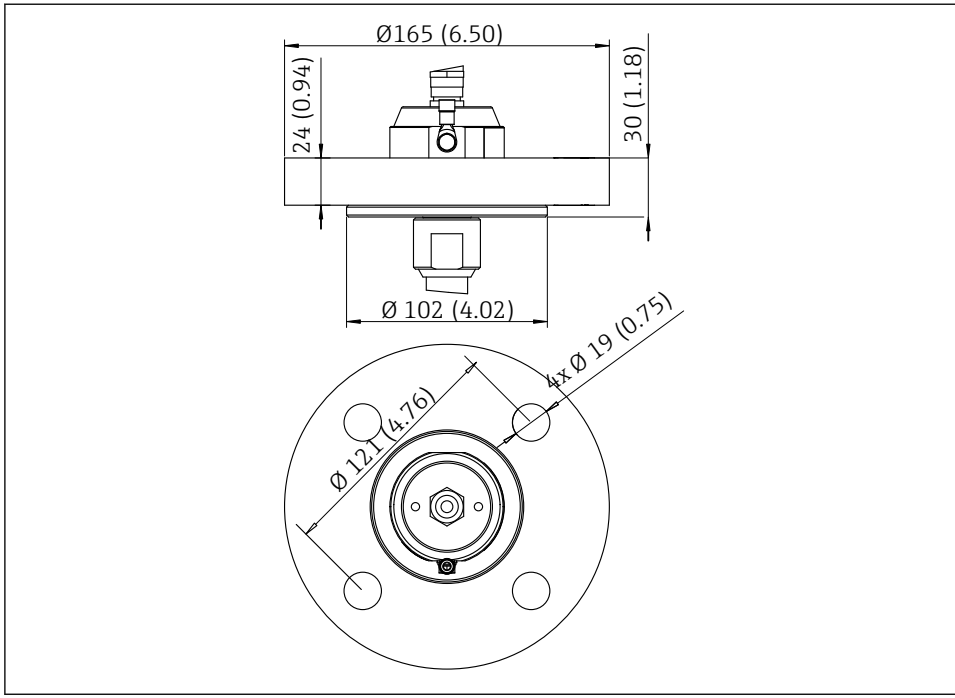
4 Dimensions, CYA10-ISO228-G1_1_4 process connection. Unit of measurement mm (in)



5 Dimensions, CYA10 oval flange process connection. Unit of measurement mm (in)



6 Dimensions, CYA10-ASME-B16.5-2 inch process connection. Unit of measurement mm (in)



7 Dimensions, CYA10-EN1092-DN50 process connection. Unit of measurement mm (in)

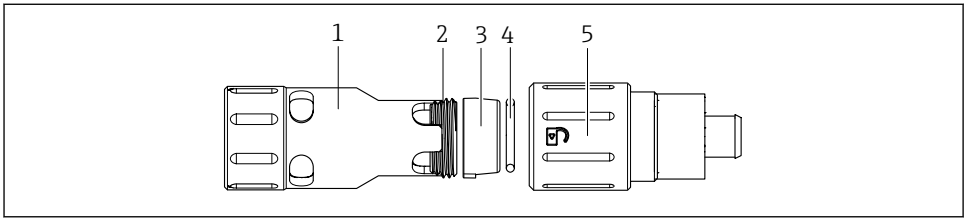
5.2 Mounting the assembly

5.2.1 Mounting the sensor cable

The assembly is designed for the digital measuring cable CYK10 with open ferrules.

Remove or fit the crown screw for the sensor cable

The protective cap also serves as a cable mounting tool. The protective cap is used to unscrew the crown screw in the plug cap in order to fit the sensor cable.



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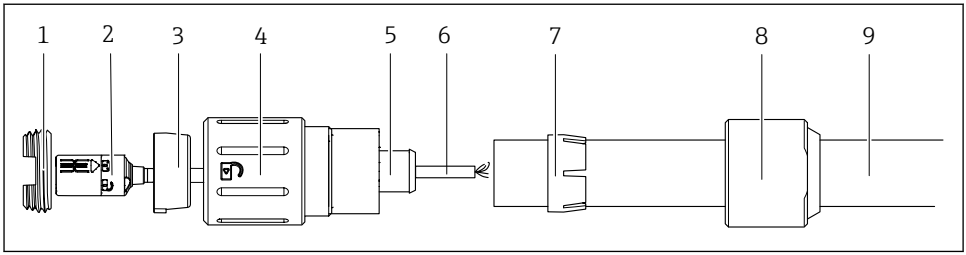
1. Unscrew the protective cap (1) from the assembly.
2. Unscrew the assembly housing.
   ↳ Inside the plug cap (5), there is a crown screw (2) with the fixing ring (3) and an O-ring (4), which hold and seal the sensor cable in the plug cap (5).
3. Use the protective cap (1) to unscrew the crown screw (2) in the plug cap (5) and remove the fixing ring (3). The O-ring (4) does not need to be removed. For this purpose, turn the protective cap (1) over and insert into the plug cap with the prongs.

Mount the sensor cable in the assembly

Prerequisite:
- The crown screw (1) and the fixing ring (3) are removed from the sensor cable plug cap.
- The O-ring (4) must be inserted into the plug cap (4).
- The hose gland (8) and the clamping ring (7) are pushed onto the hose.



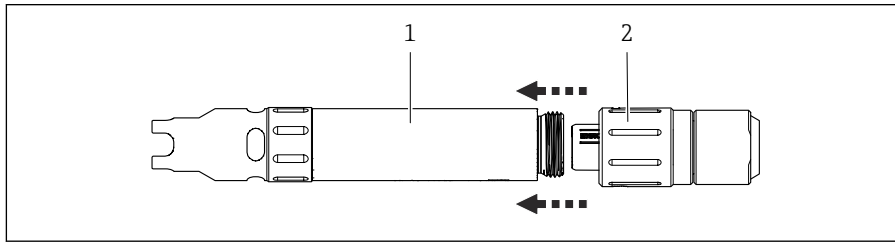
A0056230

1. Guide the sensor cable (6) with the Memosens coupling (2) through the fixing ring (3) and slide it over the lock symbols.

2. Guide the sensor cable (6) through the plug cap (4) up to the nozzle (5). The fixing ring (3) must be aligned with the groove in the plug cap (4) and pushed in. The Memosens coupling (2) remains in the plug cap (4).
3. Secure the Memosens coupling (2) with the crown screw (1) in the plug cap (4). Use the protective cap of the assembly for this purpose.
   ↳ It must be possible to move the connector of the Memosens coupling (2) easily.
4. Guide the sensor cable (6) through the hose (9), which has a clamping ring (7) and the hose gland (8) attached, to the end of the hose.
5. Now push the hose (9) onto the nozzle (5).
6. Use the clamping ring (7) to secure the hose (9) by pushing the clamping ring (7) as far as the nozzle (5).
7. Slide the hose gland (8) over the clamping ring (7) and screw it onto the plug cap (4).

5.2.2 Installing the sensor

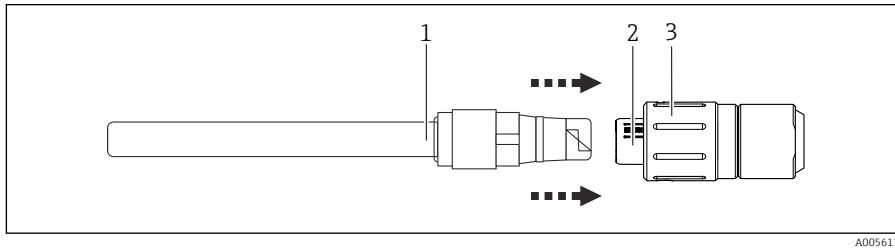
1.



A0056111

Unscrew the assembly housing (1) from the plug cap (2) in order to expose the Memosens coupling. Hold the plug cap (2) securely to ensure that the Memosens cable does not move with it.

2.



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Connect the Memosens head of the sensor (1) to the plug cap (2) using plug & play. A padlock symbol is provided for this purpose showing the direction for unlocking.

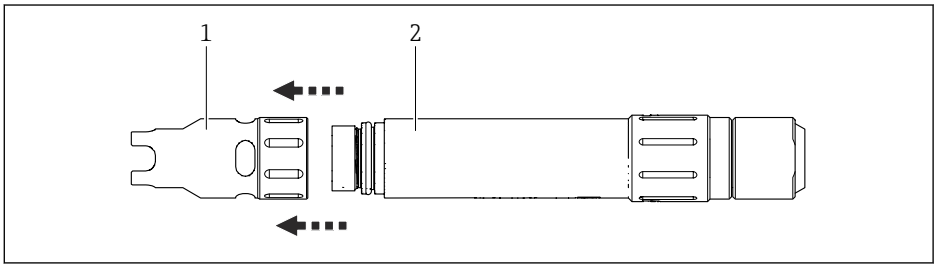
3. Guide the assembly housing over the sensor (1).
4. Screw the assembly housing into the plug cap (3).

5.2.3 Mounting the protective cap

The assembly is fitted with a protective cap which also serves as a cable mounting tool.

Remove the protective cap

▶



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Unscrew the protective cap (1) at the lower end of the assembly housing (2).

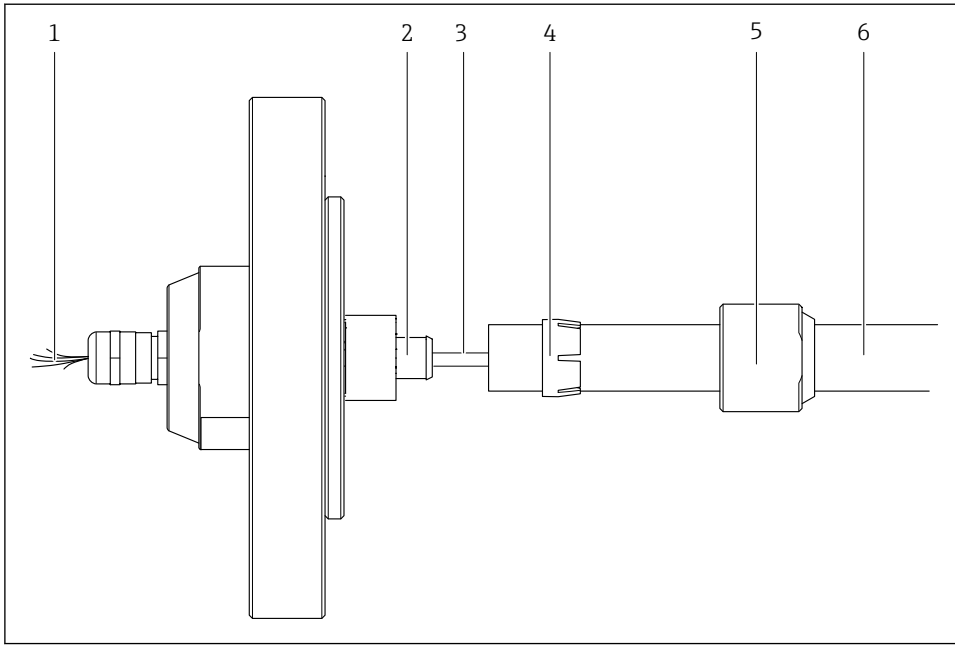
Mount the protective cap

1. Press the protective cap (1) at the lower end of the assembly housing (2) straight onto the thread.
2. Screw the protective cap (1) over the thread and hand-tighten by hand to 1.5 Nm approximately. Make sure that the protective cap (1) is positioned straight on the thread.

5.2.4 Mounting the assembly on a process connection

Depending on the conditions, the assembly can be introduced into the process with different process connections.

Prerequisite:
- The sensor cable is mounted in the plug cap of the assembly.
- The hose for the sensor cable is not yet mounted on the process connection.



8 Installation using a sample process connection

1. Guide the hose (6) for the sensor cable through the hose gland (5) and the clamping ring (4).
2. Guide the sensor cable (3) through the hose.
3. Thread the sensor cable (3) into the nozzle (2) through the process connection. Make sure that the cable cores (1) do not bend.
4. Now push the hose (6) onto the nozzle (2) of the process connection as far as it will go.
5. Use the clamping ring (4) to secure the hose by pushing the clamping ring as far as the nozzle (2).
6. Finally, slide the hose gland (5) over the clamping ring (4) and screw it onto the process connection as far as it will go.

5.3 Post-installation check

1. Check that the assembly is undamaged.
2. After mounting, check all the connections to ensure they are secure and leak-tight.
3. Check all hoses for damage.
4. Check that the hose is positioned securely by pulling on the process connection and sensor holder.

6 Maintenance

⚠ WARNING

Rough or slippery surfaces.
Risk of injury from tripping or falling.
- ▶ Wind up the hose so that it is not kinked or tangled.
- ▶ Wear protective gloves, protective goggles and protective clothing.
- ▶ Secure the assembly against falling.
- ▶ Collect dripping liquids in a suitable container.

⚠ WARNING

Risk of toxic vapors when cleaning the assembly.
Toxic effects!
- ▶ Wear a face mask, protective gloves, protective goggles and protective clothing.

⚠ WARNING

Flying parts.
Risk of injury!
- ▶ Slowly insert and retract the assembly in or out of the process.
- ▶ Wear protective gloves, protective goggles and protective clothing.

⚠ WARNING

Materials or environments with high or low temperatures.
Risk of injury!
- ▶ Wear protective gloves, protective goggles and protective clothing.

⚠ WARNING

Toxic components in lubricants.
Contact with skin-irritating lubricants can cause irritation, redness or allergies.
- ▶ Use the grease provided in the service kit only.

⚠ WARNING

Electrostatic charge in industrial environments.
Risk of injury!
- ▶ Implement ESD safety measures with conductive protective clothing.
- ▶ Do not wipe off the assembly with a dry cloth.
- ▶ Carry out an ignition source assessment.

⚠ WARNING

Risk of injury from high pressure, high temperature or chemical hazards if process medium escapes.
- ▶ Check the connections to ensure they are sealed tightly.
- ▶ Do not carry out any work (maintenance, disassembly, sensor removal) unless the process is depressurized and secured.

⚠ WARNING

Risk of injury if medium escapes

- ▶ Before each maintenance task, ensure that the process pipe is empty and rinsed.
- ▶ The assembly may contain residual medium; rinse thoroughly before commencing work.

⚠ WARNING

Wastewater

There is a risk of infection when working with wastewater!

- ▶ Wear protective gloves, protective goggles and protective clothing.

6.1 Maintenance work

6.1.1 Checking the seals

- ▶ Check the seals on the sensor, quick fastener and assembly at regular intervals.

7 Repair

The repair and conversion concept provides for the following:
- The product has a modular design
- Spare parts are grouped into kits which include the associated kit instructions
- Only use original spare parts from the manufacturer
- Repairs are carried out by the manufacturer's Service Department or by trained users
- Certified devices can only be converted to other certified device versions by the manufacturer's Service Department or at the factory
- Observe applicable standards, national regulations, Ex documentation (XA) and certificates

1. Carry out the repair according to the kit instructions.
2. Document the repair and conversion and enter, or have entered, in the Life Cycle Management tool (W@M).

7.1 Spare parts

Device spare parts that are currently available for delivery can be found on the website:

https://portal.endress.com/webapp/SparePartFinder

▶ Quote the serial number of the device when ordering spare parts.

7.2 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:

▶ Check the website www.endress.com/support/return-material for information on the procedure and general conditions.

7.3 Disposal

▶ Observe the local regulations.

8 Accessories

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

Listed accessories are technically compatible with the product in the instructions.

1. Application-specific restrictions of the product combination are possible.
   Ensure conformity of the measuring point to the application. This is the responsibility of the operator of the measuring point.
2. Pay attention to the information in the instructions for all products, particularly the technical data.
3. For accessories not listed here, please contact your Service or Sales Center.

8.1 Device-specific accessories

Memosens data cable CYK10
- For digital sensors with Memosens technology
- Product Configurator on the product page: www.endress.com/cyk10

Technical Information TI00118C

8.2 Sensors

8.2.1 pH sensors

Memosens CPS11E
- pH sensor for standard applications in process and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps11e

Technical Information TI01493C

Memosens CPS12E
- ORP sensor for standard applications in process and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps12e

Technical Information TI01494C

Memosens CPS16E
- pH/ORP sensor for standard applications in process technology and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps16e

Technical Information TI01600C

Memosens CPS31E
- pH sensor for standard applications in drinking water and swimming pool water
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps31e

Technical Information TI01574C

8.2.2 Oxygen sensors

Memosens COS22E
- Hygienic amperometric oxygen sensor with maximum measurement stability over multiple sterilization cycles
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cos22e

Technical Information TI01619C

Memosens COS81E
- Hygienic optical oxygen sensor with maximum measurement stability over multiple sterilization cycles
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cos81e

Technical Information TI01558C

9 Technical data

9.1 Environment

9.1.1 Ambient temperature range

0 to 60 °C (32 to 140 °F)

9.1.2 Storage temperature range

-15 to +60 °C (5 to +140 °F)

9.2 Process

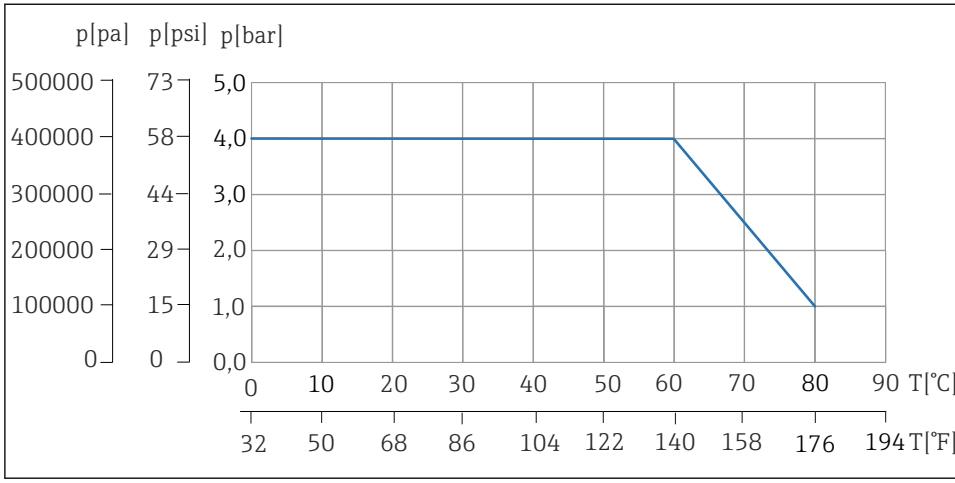
9.2.1 Process temperature range

0 to 80 °C (32 to 176 °F), non-freezing

9.2.2 Process pressure range

0 to 4 bar (0 to 58 psi) relative

Pressure/temperature ratings



9 *Pressure/temperature rating*

T *Temperature*
p *Pressure*

9.3 Mechanical construction

9.3.1 Design, dimensions

→ Section "Installation"

9.3.2 Weight

Hose length	Weight
1 m (3.28 ft)	1.5 kg (3.3 lb) approx.
3 m (9.84 ft)	2.1 kg (4.63 lb) approx.
5 m (16.40 ft)	2.8 kg (6.17 lb) approx.
10 m (32.8 ft)	4.4 kg (9.7 lb) approx.

9.3.3 Materials

	Non-hazardous area	Hazardous area
Wetted housing parts	PE-UHMW	PE-UHMW ELS*
Hose	EPDM	EPDM ELS*
O-rings	EPDM	EPDM

	Non-hazardous area	Hazardous area
Lap joint flanges	PP	PP
Oval flange parts	PP	PP
Chain holder	PA6/1.4404/A4	PA6/1.4404/A4
Cable gland	1.4305	1.4305
Clamping ring	PP	PP ELS*
Plug fuse	PBT-GF30	PBT-GF30

* ELS = Electrically conductive

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