

Installation Instructions

Memosens CAS41E

Combined spare parts instructions



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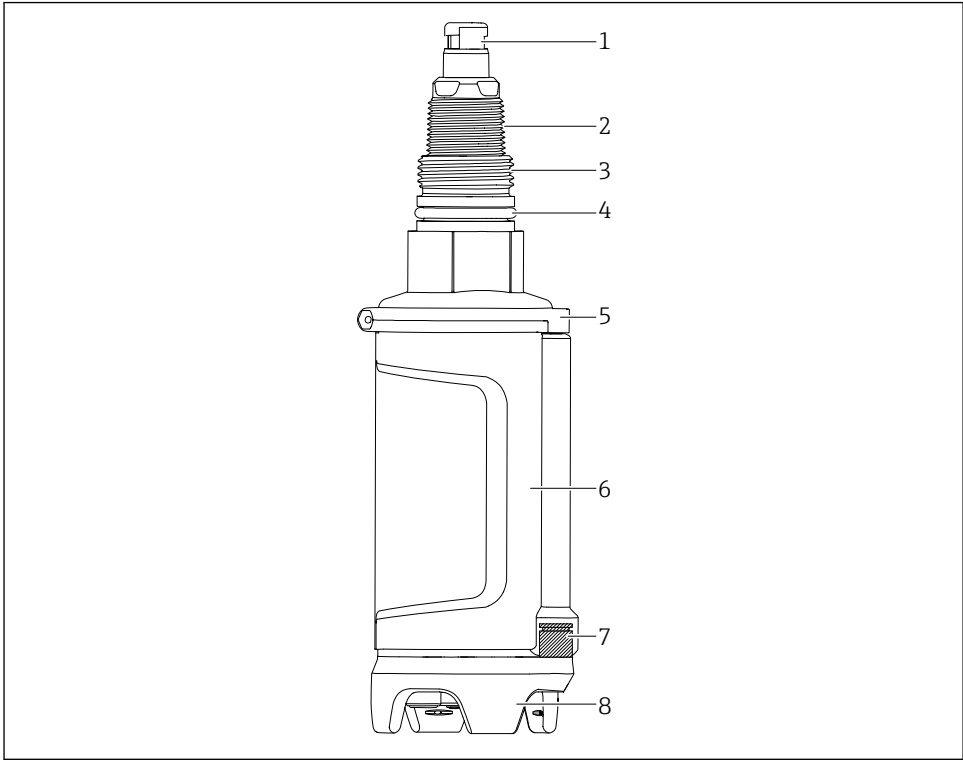
1 Overview

1.1 Spare parts kits

These installation instructions apply to the following spare parts kits:

Order code	Designation	Page
71765816	CAS41E air purge with cleaning cage	→  9
71765819	CAS41E set O-rings	→  11

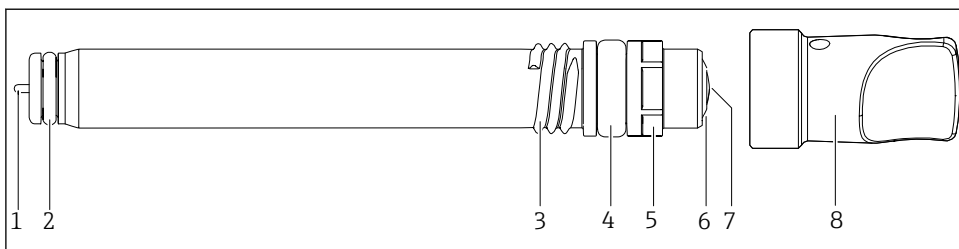
1.2 Device and component overview



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1 Device with air purge for cleaning (optional)

- 1 Memosens coupling
- 2 Threaded connection NPT 3/4"
- 3 Threaded connection G1"
- 4 O-ring
- 5 Hose holder
- 6 Hose protection
- 7 Connection for compressed air cleaning
- 8 Electrode protective cage with air cleaning



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2 Design of an electrode

- 1 Contact pin
- 2 O-ring
- 3 Threaded connection
- 4 O-ring
- 5 Hexagon socket
- 6 Color coding (see table)
- 7 Membrane (for nitrate, ammonium and potassium electrodes) or crystal (for chloride electrodes). For nitrate electrodes, the membrane is covered by a grid.
- 8 Protective cap

The electrodes are color-coded.

Electrode	Color code
Ammonium electrode	Red
Nitrate electrode	Blue
Potassium electrode	Yellow
Chloride electrode	Black

2 Intended use

- The parts from the kits must only be used as retrofit parts and spare parts for the Memosens CAS41E sensors. Any other use is not permitted!
- Only use original parts from Endress+Hauser.
- Only use original parts from the manufacturer.
- In the Device Viewer, check if the spare part is suitable for the device in question.

3 Authorized installation 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 perform the stated tasks.
- The electrical connection may only be established by an electrical technician.
- The technical personnel must have read and understood these Installation Instructions and must follow the instructions they contain.
- Measuring point faults may be repaired only by authorized and specially trained personnel.
- In the case of Ex-certified devices, the technical staff must also be trained in explosion protection.



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

4 Safety instructions

CAUTION

Risk to health due to contact with reagents (chemicals) or process solutions!

- ▶ Wear chemical-resistant protective gloves, protective goggles and protective clothing,
- ▶ Immediately rinse splashes with plenty of water and a 1% sodium bicarbonate solution (NaHCO_3 , baking soda).
- ▶ In case of eye contact, rinse the affected area with plenty of water and then seek medical advice. Show the relevant safety data sheet to the physician.
- ▶ Note the nationally applicable workplace safety regulations for the work area when handling toxic or corrosive chemicals.

CAUTION

Risk of pinching when installing the hose protection between the hose protection and the sensor's metal sheath!

- ▶ Hold the hose protection and sensor in such a way that no limbs can be pinched while installing the hose protection.
- ▶ Wear protective gloves.

CAUTION

Risk of infection when working with wastewater!

- ▶ Wear protective gloves, protective goggles and protective clothing.
- ▶ Observe applicable workplace safety regulations.
- ▶ In case of eye contact, rinse the affected area with plenty of water and then seek medical advice.

NOTICE**Irreversible damage to the sensor body due to the use of unsuitable cleaning agents!**

- ▶ The sensor body must not be cleaned with oxidizing acids. Oxidizing acids lead to corrosion (formation of rust), which stops the sensor from working properly and reduces its service life.
- ▶ Only use the cleaning agents and disinfectants approved for the sensor body in accordance with the manufacturer's specifications.

NOTICE**Material damage due to solvents!**

- ▶ Do not use any halogen-containing organic solvents or acetone. These solvents could destroy plastic components of the assembly.



The automatic cleaning function, if available, must be switched off before all maintenance work. Select **Menu → Setup → Additional functions → Cleaning → Cleaning x → Stop** for this purpose.

**Potential impact on the process**

Before decommissioning an active device, the potential impact on the overall process must be taken into account! This applies in particular when using the switching contacts, the analog signal outputs or the communication interface of the associated measuring instrument to control process variables. Coordinate service tasks with the operator!



Contact Endress+Hauser Service if you have questions: www.addresses.endress.com

5 Scope of delivery

The scope of delivery is stored in the Spare Parts Finder (SFT) as a components sheet. The QR code below enables access to the scope of delivery including an overview of devices with the item numbers of the maintenance parts. The order code, product root or serial number of the device must be entered for this purpose.



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<https://sft-p.cdn.endress.com/>

6 Use of maintenance parts

6.1 Preparation

To replace or modify the Memosens CAS41E, it must be removed from the installed assembly. The removal procedure described here is for the CYA112 assembly. Refer to the relevant Operating Instructions for installations in other assemblies.

The following video shows how to remove a sensor from the CYA112:



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 3 *Removing a sensor*

The video contains the following steps:

1. If necessary, set a **HOLD** for the sensor in the transmitter.
2. Remove the assembly with sensor from the process and rinse it thoroughly with clean water.
3. Detach the sensor from the assembly by turning the outer part of the adapter.
4. Remove the Memosens connection between the sensor and the sensor cable.

6.2 Retrofitting or replacing the air purge system with electrode protective cage

-  The air purge system can be used as a replacement part or as a retrofit. Both procedures are described below.
-  The hose bracket is pre-assembled on delivery. The two halves of the bracket are fastened together with a screw and a nut so that the hose bracket can be mounted on the sensor.

During installation, do **not** loosen the screw connection of the hose bracket as this may cause installation problems or result in the loss of the nut or screw.



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 4 *Link to Components Sheet, including scope of delivery and device overview*

Retrofitting the air purge system

1. Carry out preparatory work as per Section 6.1 →  9.
2. Screw the electrode protective cage (→  1,  4, item 8) to the sensor.
3. Slide the pre-assembled hose bracket (→  1,  4, item 5) over the blue ring of the sensor body. Position the hose bracket so that the opening in the hose bracket is aligned with the quick-connect coupling in the electrode protective cage.
4. Secure the hose bracket using the screw in the hose bracket.
5. Feed a hose (OD 4 mm) through the opening in the hose bracket and insert it into the quick-connect coupling in the electrode protective cage.

 The OD 4 mm hose is not included in the scope of delivery. The length of the hose must be adapted to local conditions.

6. Place the black hose guard (→  1,  4, item 6) on the metal sheath of the sensor. Make sure the hose guard is positioned in such a way that the hose is seated correctly in the recess of the hose guard and is not pushed out.
7. Connect the second end of the hose to a compressed air supply.

 If the other end of the hose is to be connected to a hose with a larger diameter (> 4 mm OD) via an adapter, ensure that the adapter is positioned outside the process medium. This protects against leaks.

NOTICE

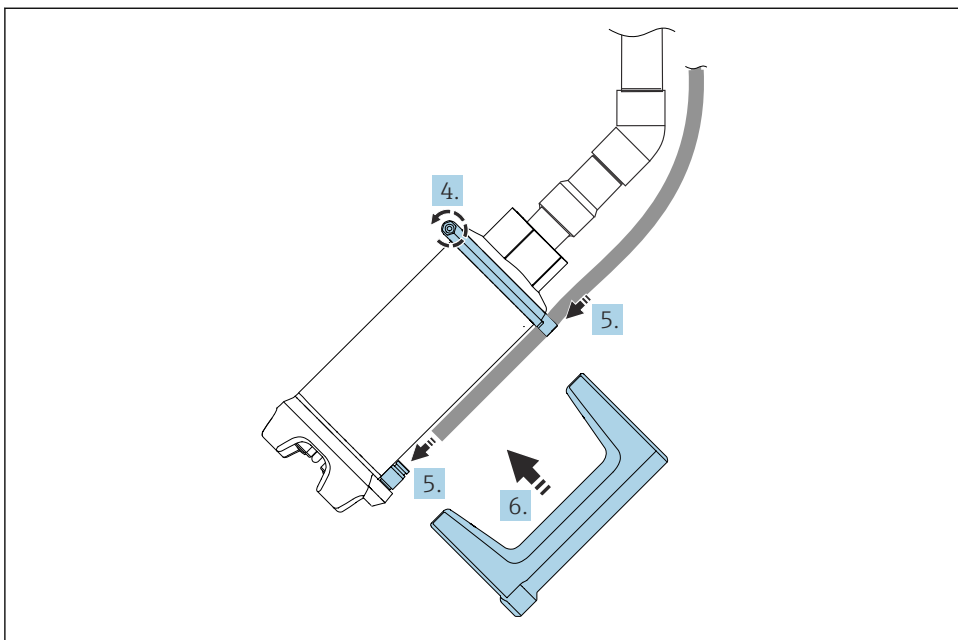
Material damage due to compressed air!

Contaminated compressed air or incorrect compressed air settings can cause damage to the sensor.

- ▶ The compressed air supply must not exceed 3.5 bar (50 psi). Optimum cleaning performance at 1.5 bar to 2 bar.
- ▶ The compressed air must be supplied through an air filter (5 µm).

 If the compressed air supply does not have a built-in control valve, a separate compressed air control valve must be installed in the system.

8. Link the sensor via **Menu → Setup → Inputs → CHx: ISE → Extended Setup → Cleaning Hold**.
9. In **Menu → Setup → Additional functions → Cleaning → Cleaning x**, set the cleaning time and cleaning interval in accordance with the degree of contamination. Then select the **Start cycle** menu item. The program starts cleaning following confirmation.
10. If necessary, set the relay (see the Operating Instructions for the CM44x transmitter BA00444C, Section 6.4.4.).



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Replacing the air purge system with electrode protective cage

1. Carry out preparatory work as per Section 6.1 → 9.
2. Carry out steps 2 - 7 of the "Retrofitting the air purge system" description in the opposite order → 10.
3. Install the new air purge system in accordance with the "Retrofitting the air purge system" description → 10.

6.3 Replacing the O-ring set

This spare parts kit provides O-rings as replacements for sporadic maintenance work. It is not necessary to replace the O-rings regularly.

If the O-ring (→  1,  4, item 4) is damaged during commissioning or maintenance, or if it degrades for any other reason, it can be replaced with an O-ring with ID 49.21, W 3.53, OD 56.27 made of EPDM.

Replace O-ring (→ 1, 4, item 4)

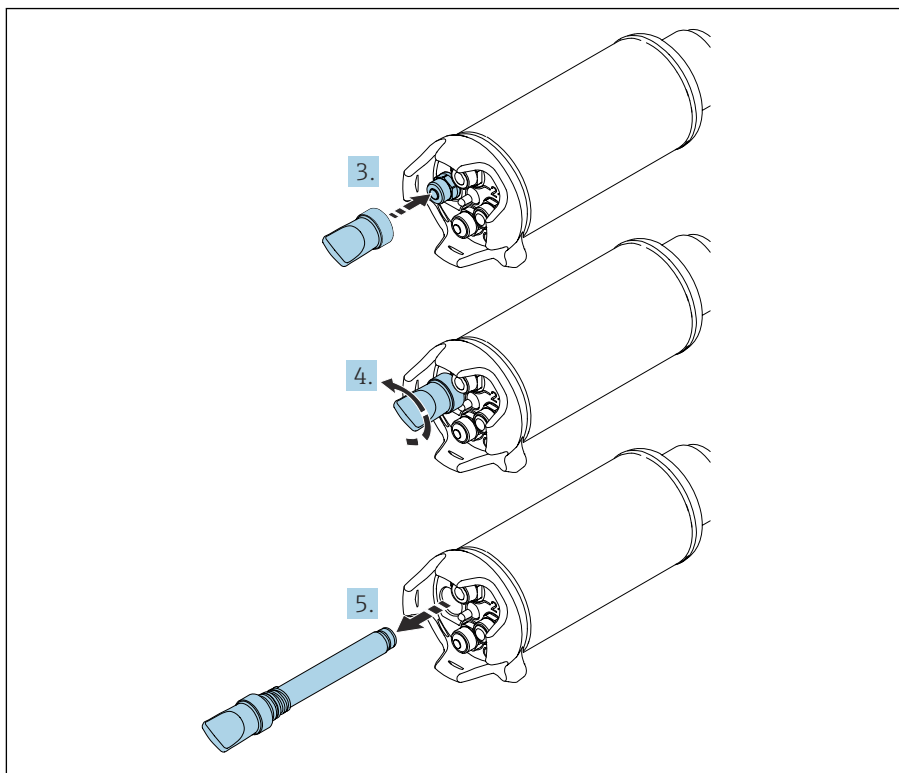
1. Carry out preparatory work as per Section 6.1 →  9.
2. Remove the damaged O-ring (→  1,  4, item 4).
3. Grease the new O-ring and insert it in the same position.

The supplied O-ring (ID 9.5, W 3.0, OD 15.5, EPDM) replaces the O-ring (→  2,  5, item 2) if necessary; this O-ring is located near the contact pin (→  2,  5, item 1). It is not necessary to remove the sensor from the CYA112 assembly.

Replace the O-ring (→ 2, 5, item 2)

1. If necessary, set a **HOLD** for the sensor in the transmitter.
2. Remove the assembly with sensor from the process and rinse it thoroughly with clean water.

3.



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Attach the protective cap to a half-cell. The protective cap functions as a hexagon socket wrench.

4. Unscrew the half-cell from the thread using the protective cap.
5. Pull the half-cell out of the housing.
6. Remove the remaining half-cells in the same way.
7. Remove the O-ring (→  2,  5, item 2).
8. Grease the new O-ring and insert it in the same position.
9. Replace the ISE half-cell.



If corrosion has occurred on the contact pin due to a damaged O-ring, clean it with fine-grit sandpaper.

7 Additional documentation

Detailed information on the devices shown here can be found in the Operating Instructions for each device and in the other documentation, available at:

- Product page: <https://www.endress.com/>
- Spare parts finder: <https://sft-p.cdn.endress.com/>
- Device Viewer: www.endress.com/device-viewer
- Smartphone/tablet: Endress+Hauser Operations app

8 Disposal



If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to the manufacturer for disposal under the applicable conditions.



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