

# Operating Instructions

## Flowfit COA30

Flow cell for calibrating oxygen sensors with a length of 120 to 420 mm and a diameter of 12 mm





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# 1 About this document

## 1.1 Safety information

Structure of information	Meaning
 <b>DANGER</b> <b>Causes (/consequences)</b> If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation <b>will</b> result in a fatal or serious injury.
 <b>WARNING</b> <b>Causes (/consequences)</b> If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation <b>can</b> result in a fatal or serious injury.
 <b>CAUTION</b> <b>Causes (/consequences)</b> 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.
 <b>NOTICE</b> <b>Cause/situation</b> 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

-  Additional information, tips
-  Permitted
-  Recommended
-  Forbidden or not recommended
-  Reference to device documentation
-  Reference to page
-  Reference to graphic
-  Result of a step

## 1.3 Documentation

The following manuals, which complement these Operating Instructions, can be found on the product pages on the Internet:

-  Technical Information for flow cell COA30, TI01876C

## 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 perform the stated tasks.
- 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 only be carried out directly at the manufacturer's site or by the service organization.

### 2.2 Intended use

Flowfit COA30 is a flow cell for calibrating oxygen sensors using test gases (e.g. nitrogen) and for determining the oxygen content in liquids. It enables oxygen measurement when no measuring point is installed and facilitates in-process calibration of an existing measuring point. Measuring in liquids is only permitted with the PMMA version.

- The COA30 flow cell is only suitable for indoor operation. Protect from direct sunlight and UV light.

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 Workplace safety

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

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

### 2.4 Operational safety

#### Before commissioning the entire measuring point:

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

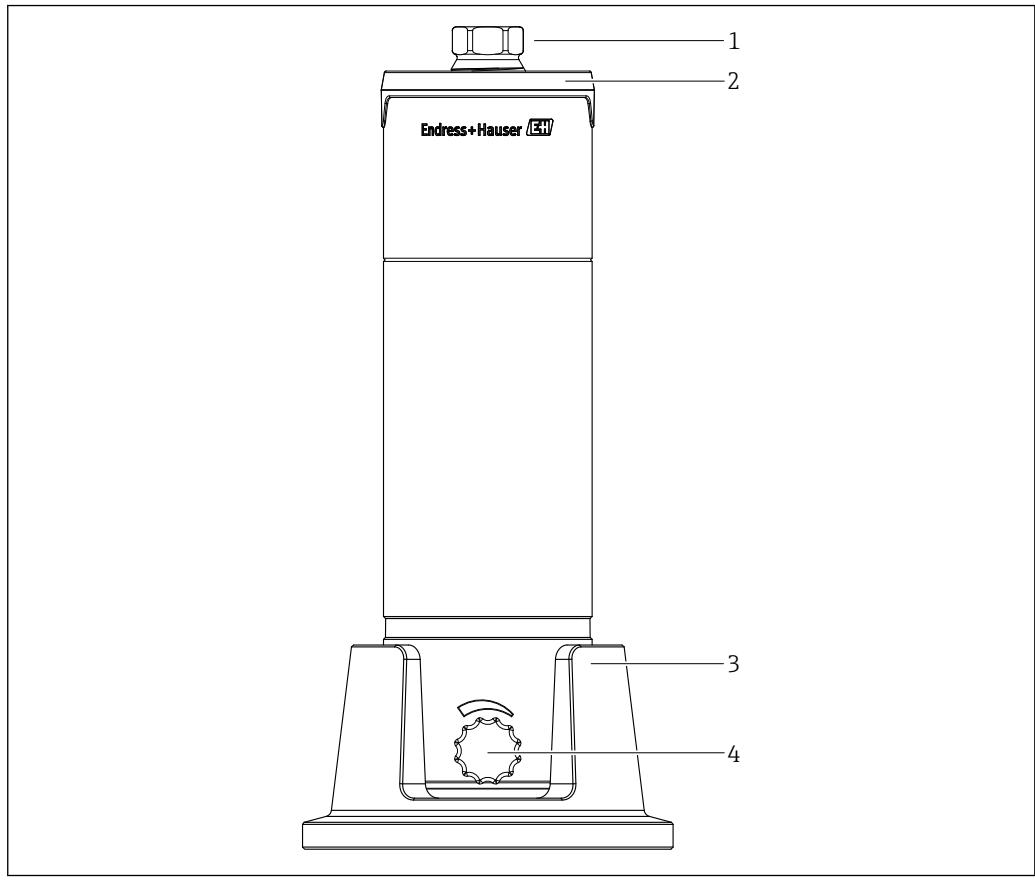
#### During operation:

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

## 2.5 Product safety

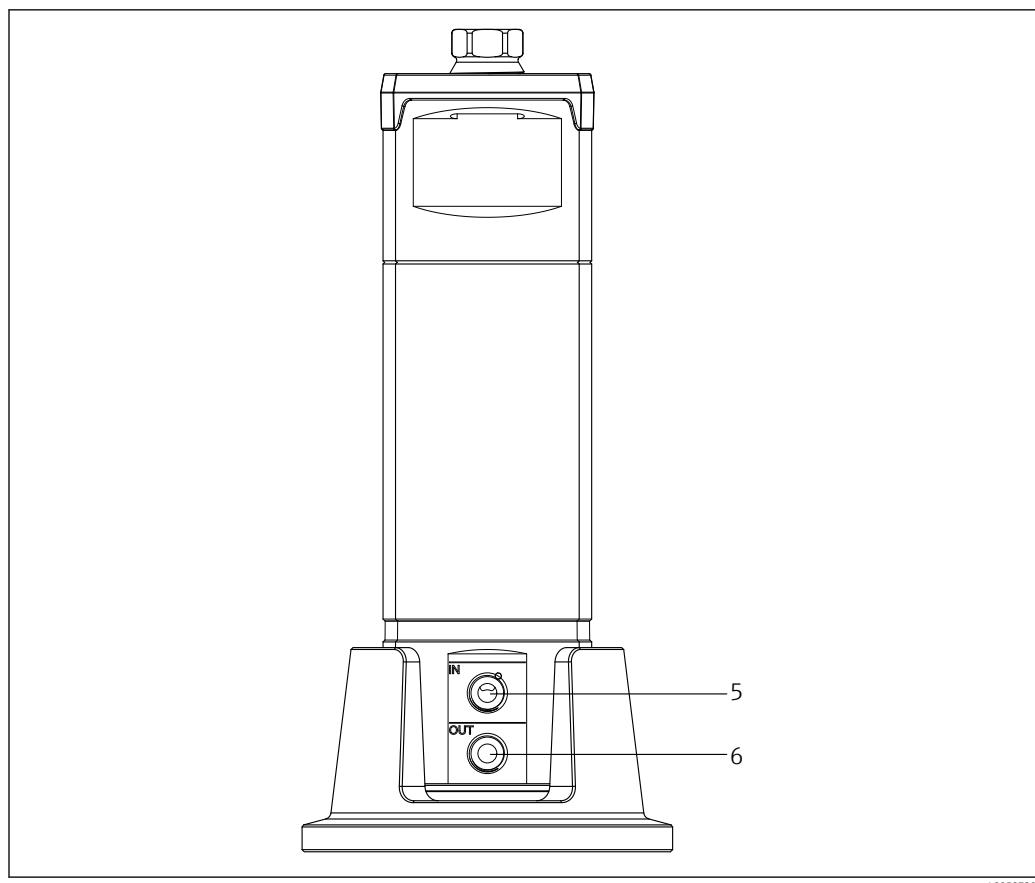
The product is designed to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate. The relevant regulations and international standards have been observed.

### 3 Product description



1 Flowfit COA30 front view

- 1 Screw plug PG 13.5
- 2 Edge protection
- 3 Stand base
- 4 Needle valve



2 Flowfit COA30 rear view

5 Inlet  
6 Outlet

## 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
- Extended order code
- Serial number
- Safety information and warnings

#### 4.2.2 Identifying the product

##### Product page

[www.endress.com/COA30](http://www.endress.com/COA30)

##### 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](http://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 will find information pertaining to your device, including the product documentation.

**Manufacturer address**

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

**4.3 Scope of delivery**

The scope of delivery includes:

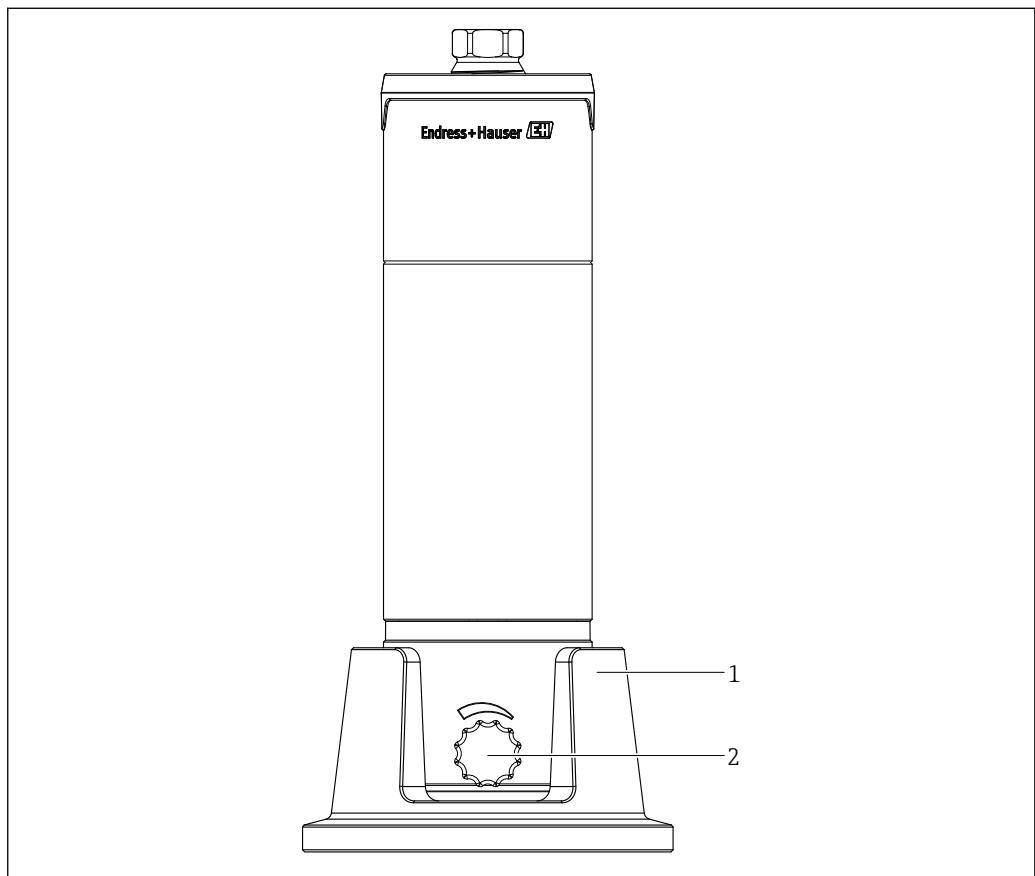
- Calibration kit in the version ordered
- Operating Instructions COA30
- Manufacturer's certificate

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

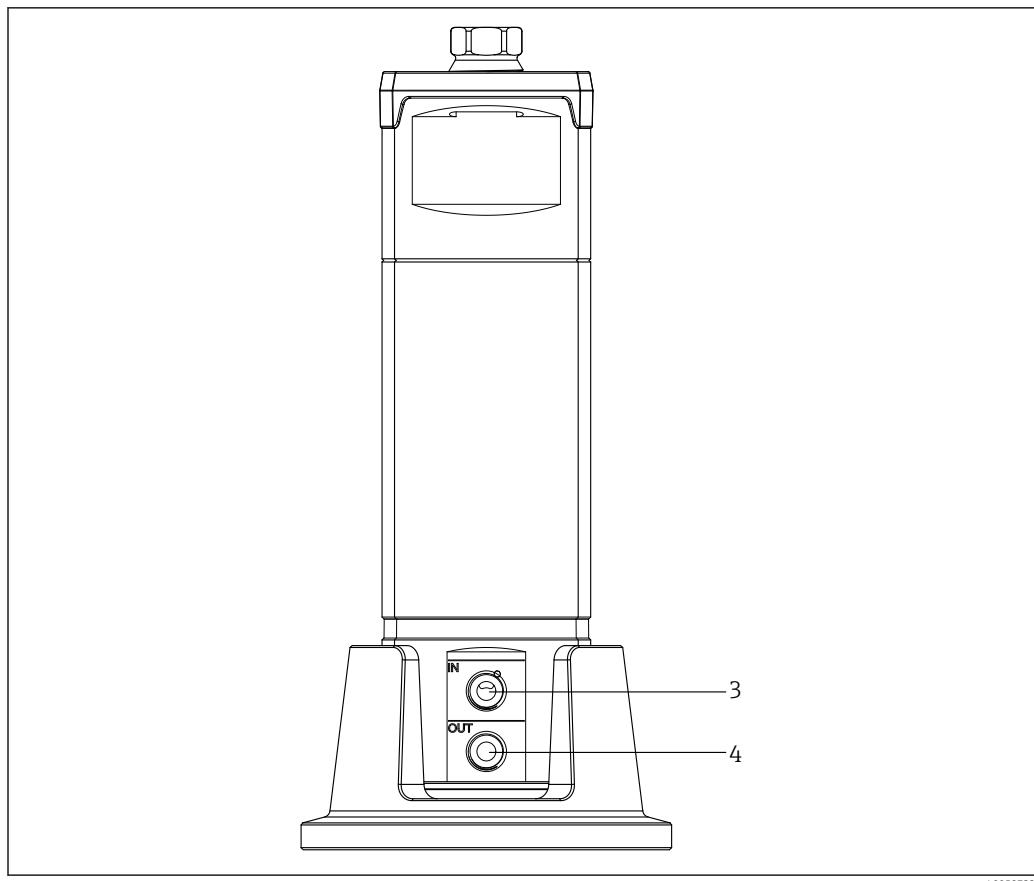
## 5 Commissioning

### 5.1 Preparing POM version

Preparing for calibration with test gases



3 Flowfit COA30 front view



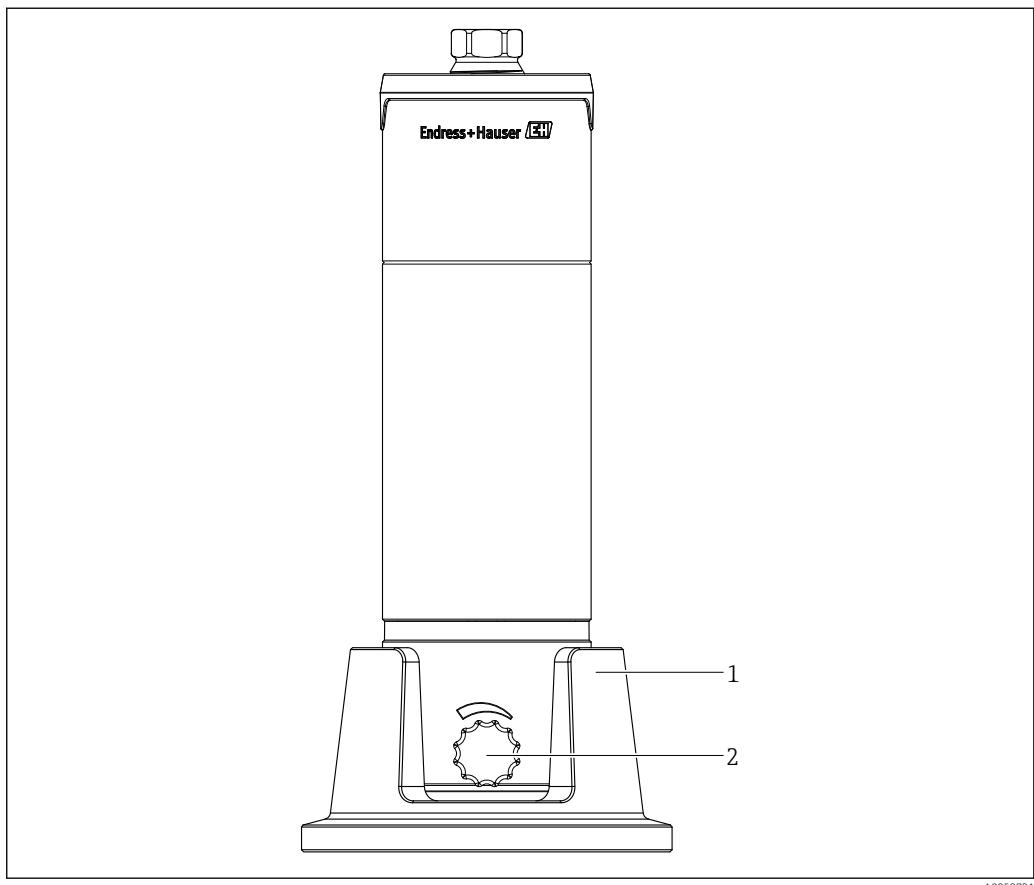
4 Flowfit COA30 rear view

Install the measuring arrangement as follows:

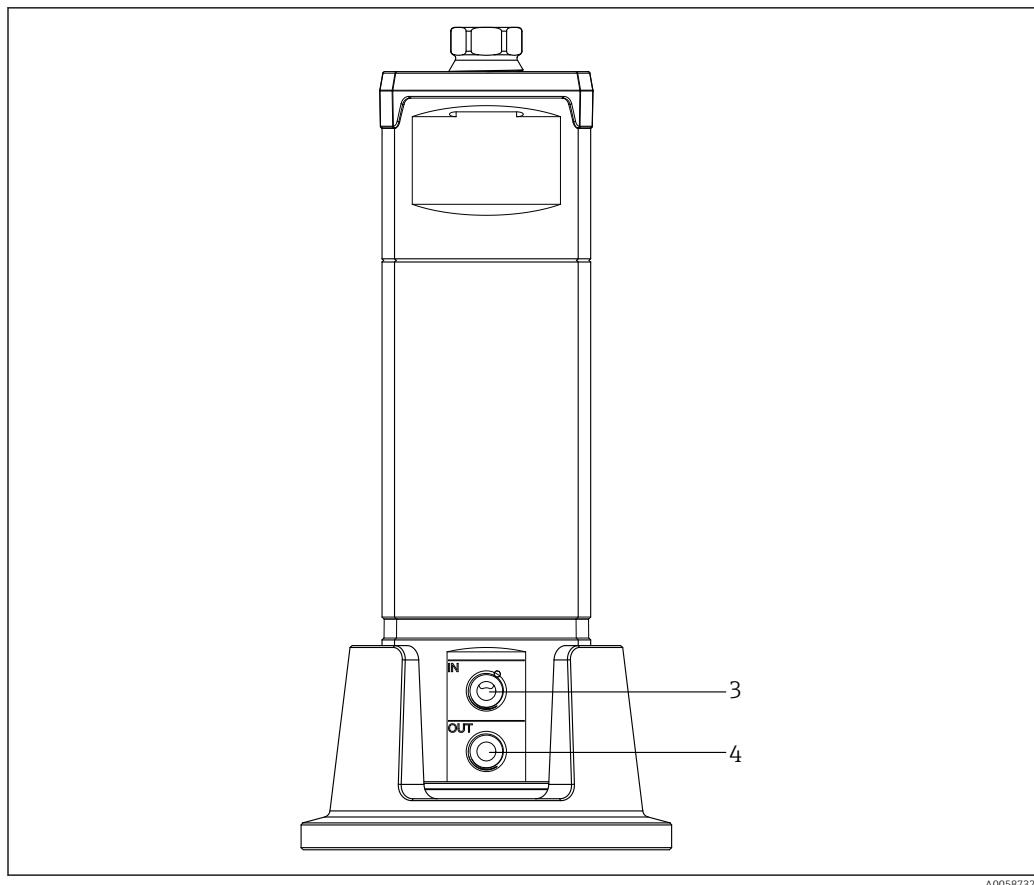
1. Place the flow cell in the fixed base (1) provided.
2. Close the needle valve (2) on the flow cell.
3. Fit the outflow hose onto outlet **OUT** (4) of the flow cell.
4. The second end of the hose must be guided into the air open.
5. Fit the medium hose onto inlet **IN** (3) of the flow cell.
6. Connect inlet **IN** to the test gas using the medium hose.
7. Screw the sensor into the flow cell.
8. Connect the sensor to the transmitter.
9. Open the test gas supply and use a pressure-reducing valve to regulate the gas pressure.
10. Open the needle valve (2) on the flow cell.

## 5.2 Preparing PMMA version

### Preparing for in-process calibration



5 Flowfit COA30 front view



6 Flowfit COA30 rear view

Install the measuring arrangement as follows:

1. Screw the sensor into the flow cell. The needle valve (2) must be completely closed.
2. Connect the sensor to the transmitter.
3. Fit the outflow hose onto the outlet **OUT** (4) of the flow cell.
4. Place the free end of the hose into a suitable drain (e.g., floor drain) or a suitable collection container (e.g., beaker).
5. Fit the media hose onto the inlet **IN** (3) of the flow cell.
6. Connect the inlet **IN** to the process media supply via the media hose.
7. Open the media supply in the process pipe.
8. Set the flow rate on the needle valve (2) in such a way that any air bubbles are removed from the system.

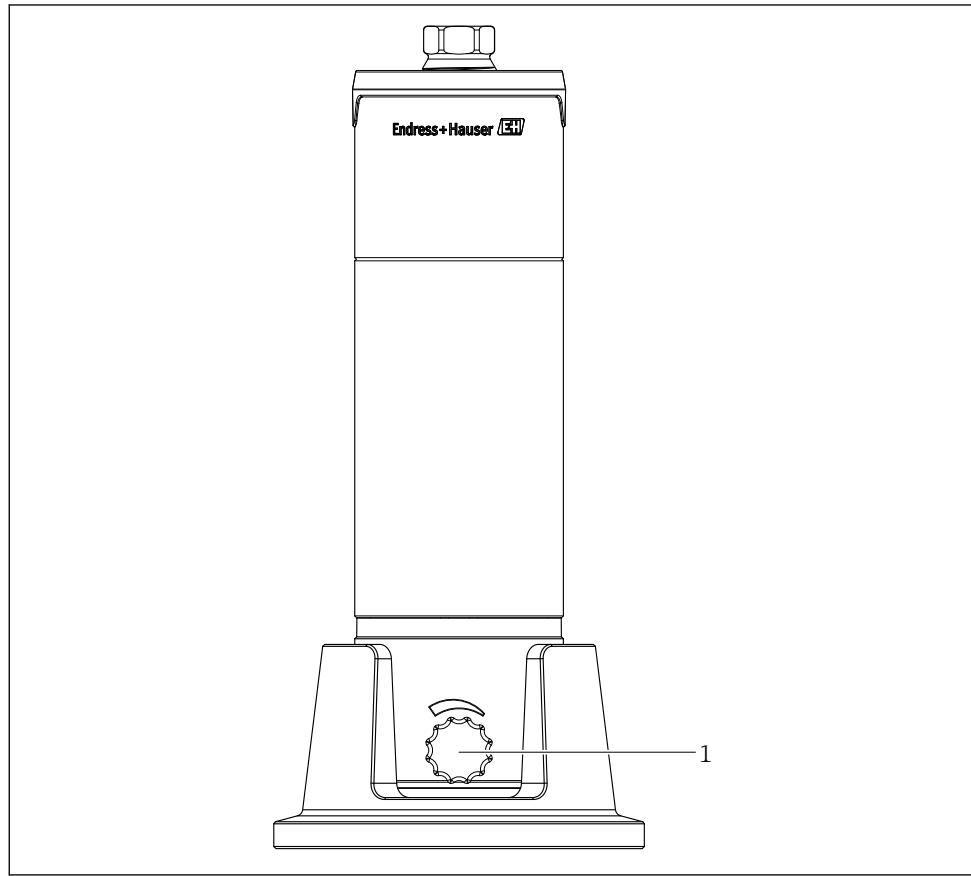
## 6 Operation

### 6.1 Operation of POM version

#### Carrying out sensor calibration

1. Open the media flow to the COA30 POM flow cell.

2.



A0058730

Fig. 7 Needle valve on Flowfit COA30

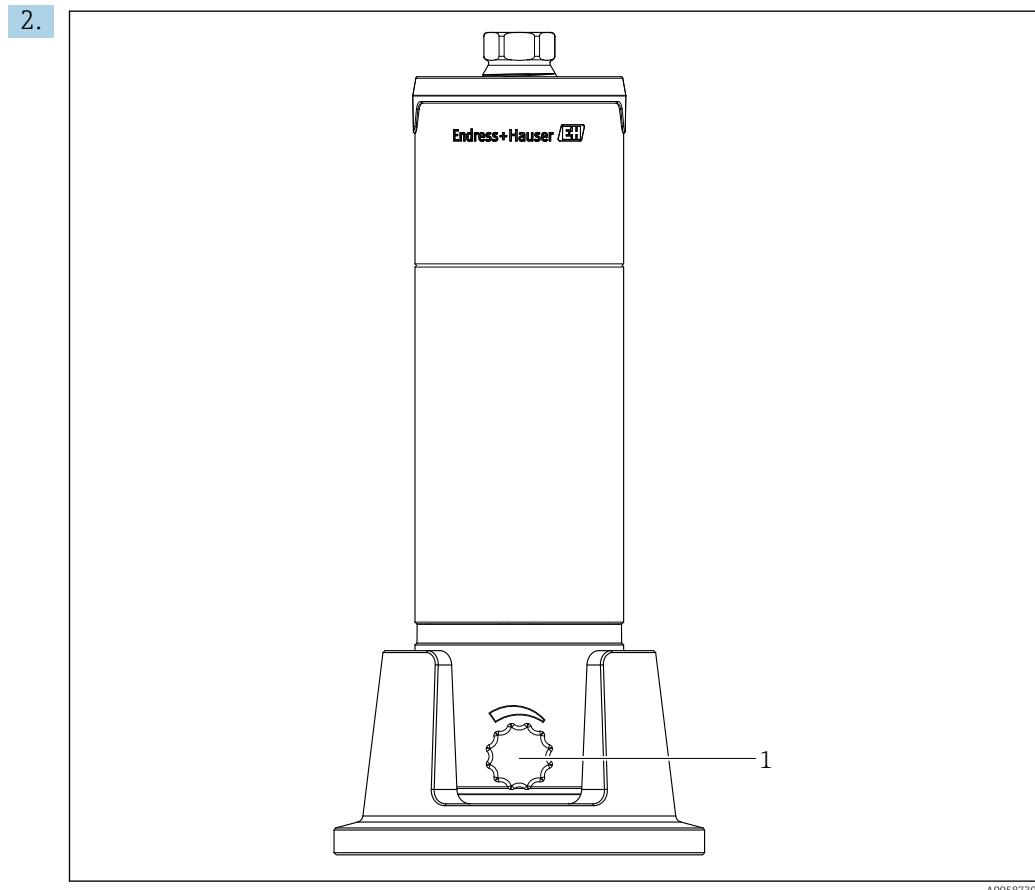
Ensure media flow using the needle valve (1). To do this, open the needle valve.

3. The sensor calibration is completed once the calibration value is stable.

### 6.2 Operation of PMMA version

#### Carrying out sensor calibration

1. Open the media flow to the COA30 PMMA flow cell.



■ 8      *Needle valve on Flowfit COA30*

Set the media flow with the needle valve (1) in such a way that any air bubbles are removed from the system.

3. Wait until a stable measured value is displayed.
4. Save the measured value and/or adjust the online measuring point accordingly.
5. Disconnect the hose from the media supply and connect it to a water source.
6. Clean the flow cell with water.

## 7 Maintenance

### 7.1 Cleaning the device

#### **POM**

Clean the exterior of the COA30 flow cell using commercially available cleaning agents.

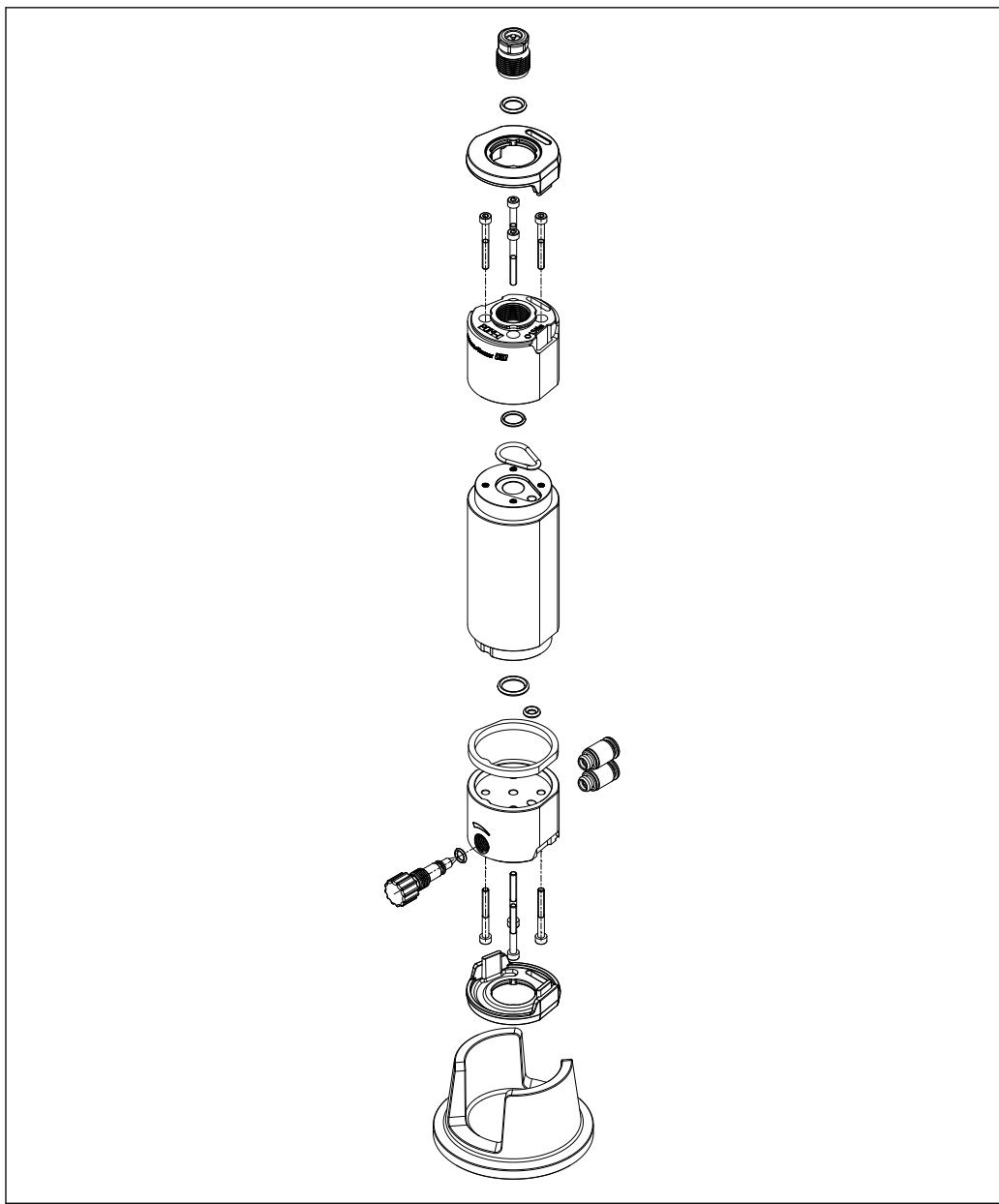
#### **PMMA**

The COA30 PMMA flow cell is resistant to the following cleaning agents and can be cleaned with them:

- Sodium hydroxide (NaOH) up to 2% max. at 25°C
- Nitric acid (HNO<sub>3</sub>) up to 0.5% max. at 25°C
- Phosphoric acid (H<sub>3</sub>PO<sub>4</sub>) up to 2% max. at 25 °C

### 7.2 Replacing sealing rings

The sealing rings must be replaced once a year to ensure correct functionality and safety.



9 *Exploded drawing with sealing rings*

## 8 Repair

### 8.1 General information

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 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).

### 8.2 Spare parts

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

[www.endress.com/device-viewer](http://www.endress.com/device-viewer)

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

### 8.3 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](http://www.endress.com/support/return-material) for information on the procedure and conditions for returning devices.

### 8.4 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.

## 9 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.

## 10 Technical data

### 10.1 Environment

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Ambient temperature	<b>POM</b> -15 to 50 °C (5 to 122 °F)
	<b>PMMA</b> -5 to 40 °C (23 to 104 °F)

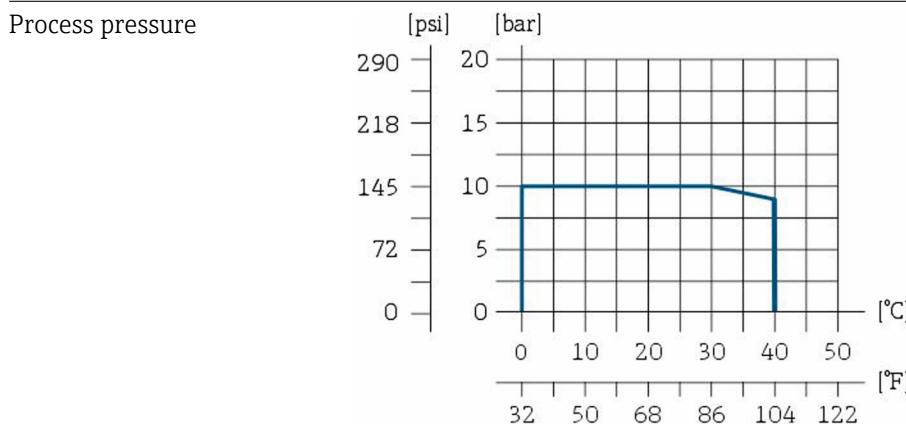
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Relative humidity	0 to 95 %, non-condensating
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### 10.2 Process

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Process temperature	<b>POM</b> 0 to 50 °C (32 to 122 °F)
	<b>PMMA</b> 0 to 40 °C (32 to 104 °F)



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10 Process pressure range

### 10.3 Mechanical construction

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Dimensions	L x W x H	206 x 80 x 57 mm (8.1" x 3.2" x 2.2")
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Weight	<b>POM</b> Approx. 600 g (21.2 oz)
	<b>PMMA</b> Approx. 550 g (19.4 oz)

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Materials	Flow assembly: POM-C, PMMA Sealing rings: EPDM Adapter: POM-C
Process connection	<i>POM</i> Inlet: 4 mm outer diameter hose Outlet: 4 mm outer diameter hose  <i>PMMA</i> Inlet: 8 mm outer diameter hose Outlet: 8 mm outer diameter hose





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[www.addresses.endress.com](http://www.addresses.endress.com)

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