

# Operating Instructions

## Unifit CPA842

Process assembly for hygienic and sterile applications









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# 1 About this document



## 1.1 Warnings

Structure of information	Meaning
<p> <b>DANGER</b></p> <p><b>Causes (/consequences)</b> If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> <li>▶ Corrective action</li> </ul>	<p>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation <b>will</b> result in a fatal or serious injury.</p>
<p> <b>WARNING</b></p> <p><b>Causes (/consequences)</b> If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> <li>▶ Corrective action</li> </ul>	<p>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation <b>can</b> result in a fatal or serious injury.</p>
<p> <b>CAUTION</b></p> <p><b>Causes (/consequences)</b> If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> <li>▶ Corrective action</li> </ul>	<p>This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.</p>
<p> <b>NOTICE</b></p> <p><b>Cause/situation</b> If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> <li>▶ Action/note</li> </ul>	<p>This symbol alerts you to situations which may result in damage to property.</p>

## 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

## 1.3 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.

## 1.4 Documentation



Special Documentation for hygienic applications, SD02751C

## 2 Basic safety requirements

### 2.1 Requirements concerning 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 Unifit CPA842 process assembly is designed for the installation of 12 mm (0.47 in) sensors with a nominal shaft length of 120 mm (4.7 in) in vessels, bioreactors and pipelines.

Thanks to its design, it can be operated in pressurized systems (→  28).

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
- Regulations for explosion protection

### 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:**

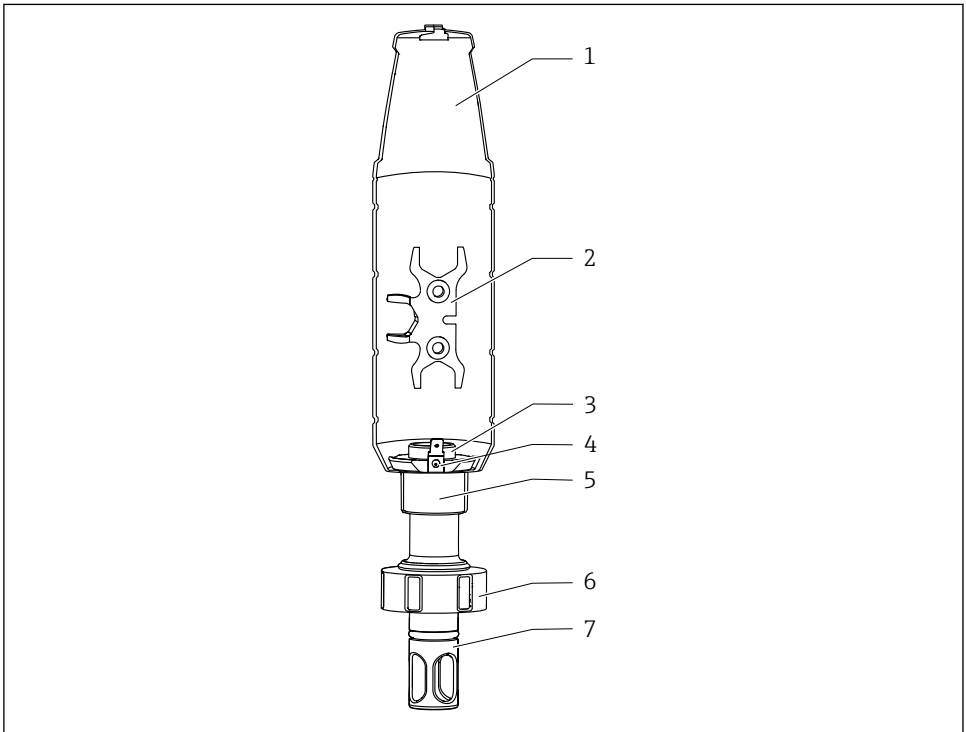
- ▶ If errors cannot be rectified, take products out of service and protect them against unintentional operation.

## 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

### 3.1 Product design



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#### 1 Description of CPA842

1 Protection cover

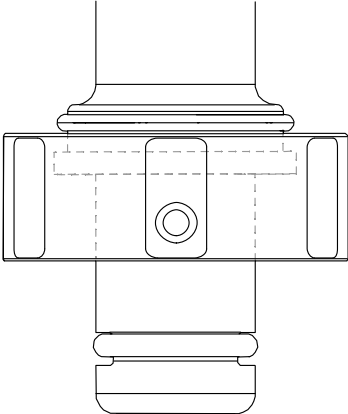
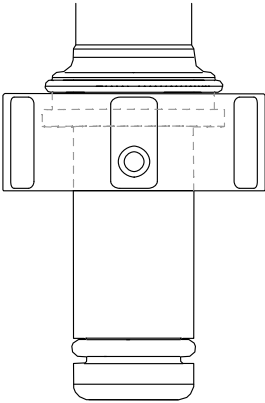
2 Auxiliary tool for mounting sensor

5 Fastening ring for PAL connection and/or protection cover

6 Union nut

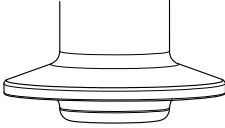
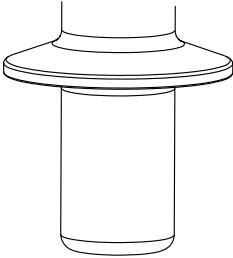
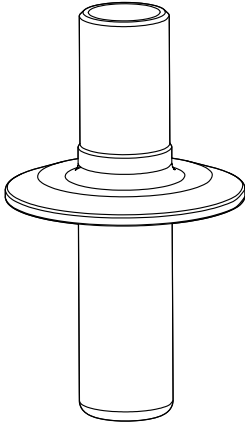
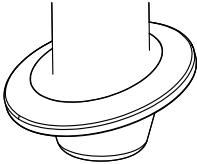
- |   |   |   |                                      |
|---|---|---|--------------------------------------|
| 3 | Female thread PG13.5 for sensors with 120 mm (4.7 in) shaft length and 12 mm (0.47 in) diameter | 7 | Sensor protection (protective guard) |
| 4 | PAL connector for flat plug sleeve 6.3 mm (0.25 in)   |   |                                      |

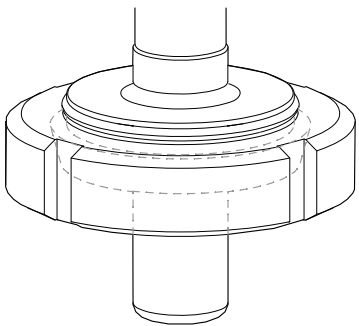
### 3.2 Process connections

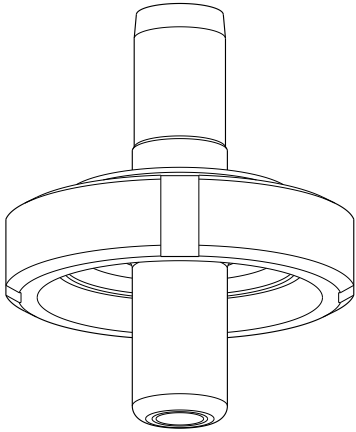
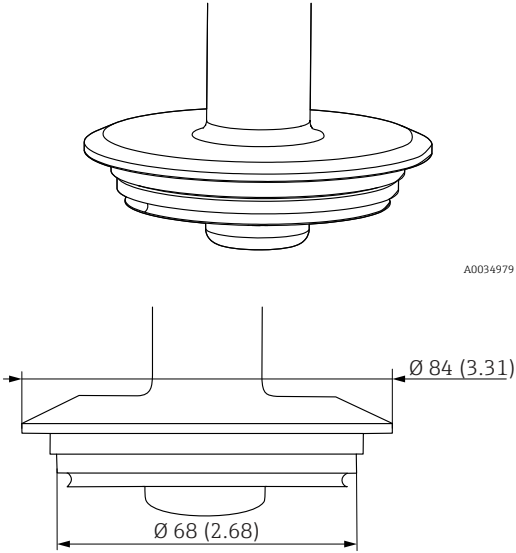
Process connection	
<p>DN25 standard</p> <ul style="list-style-type: none"> <li>▪ G1 1/4" thread on the union nut</li> <li>▪ Compatible with hook wrench, DIN 1810 flat face</li> </ul> <p><b>NOTICE</b></p> <p><b>Mounting with pipe wrench causes damage.</b></p> <ul style="list-style-type: none"> <li>▶ Use a hook wrench for mounting and removal.</li> </ul>	
<p>DN25 B.Braun port</p> <ul style="list-style-type: none"> <li>▪ B.Braun Biotech 25 mm (0.98 in) Safety Side Port</li> <li>▪ G1 1/4" thread on the union nut</li> <li>▪ Compatible with hook wrench, DIN 1810 flat face</li> </ul> <p><b>NOTICE</b></p> <p><b>Mounting with pipe wrench causes damage.</b></p> <ul style="list-style-type: none"> <li>▶ Use a hook wrench for mounting and removal.</li> </ul>	

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Process connection	
<p>Clamp 1.5" short, with outer diameter of 50.5 mm (1.99 in)</p> <ul style="list-style-type: none"> <li>▪ Corresponds to NW 38 DIN 32676/ISO 2852</li> <li>▪ Compatible with NovAseptic process connections, pay attention to immersion depths</li> <li>▪ The (pipe) internal diameter of the counterpiece must be greater than 28 mm (1.10 in).</li> </ul>	 <p style="text-align: right;">A0034698</p>
<p>Clamp 1.5" long, with outer diameter of 50.5 mm (1.99 in)</p> <ul style="list-style-type: none"> <li>▪ Complies with ASME-BPE 2024</li> <li>▪ In accordance with DN40 DIN 32676 2022</li> <li>▪ In accordance with OD 38,1 DIN 32676/ISO 2852</li> <li>▪ Compatible with NovAseptic process connections, pay attention to immersion depths</li> <li>▪ The (pipe) internal diameter of the counterpiece must be greater than 28 mm (1.10 in).</li> </ul>	 <p style="text-align: right;">A0034699</p>
<p>Clamp 2" with outer diameter of 64 mm (2.52 in)</p> <ul style="list-style-type: none"> <li>▪ Complies with ASME-BPE 2024</li> <li>▪ Complies with DN50 DIN 32676 2022</li> <li>▪ In accordance with OD 50,80 DIN 32676/ISO 2852</li> <li>▪ Compatible with NovAseptic process connections, pay attention to immersion depths</li> <li>▪ The (pipe) internal diameter of the counterpiece must &gt; 28 mm (1.1 in).</li> </ul>	 <p style="text-align: right;">A0034701</p>
<p>Clamp 1.5", angled at 15° with outer diameter of 50.5 mm (1.99 in)</p>	 <p style="text-align: right;">A0034700</p>

<b>Process connection</b>	
<p>Dairy fitting DN50 DIN 11851 (EHEDG-compliant only with special seal, not included in the scope of delivery)</p>	 <p data-bbox="940 510 996 526">A0043050</p>

Process connection	
<p>Aseptic DN50 threaded DIN11864-1A (suitable for DIN 11866 Series A pipes)</p>	 <p>A0046280</p>
<p>Varivent flange N (DN40 to 125) with diameter of 68 mm (2.68 in) and 84 mm (3.31 in)</p>	 <p>A0034979</p> <p>Ø 84 (3.31)</p> <p>Ø 68 (2.68)</p> <p>A0059056</p>

## 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 Scope of delivery

The scope of delivery comprises:

- Assembly in the version ordered
  - Sensor seal (mounted)
  - Process seal (mounted) for process connections: DN25 standard and DN25 B Braun port
  - Dust caps to protect the Pg 13.5 thread
  - Operating instructions
- ▶ If you have any queries:  
Please contact your supplier or local sales center.

### 4.3 Product identification

#### 4.3.1 Nameplate

The nameplate provides you with the following information on your device:

- Manufacturer identification
  - Order code
  - Extended order code
  - Serial number
  - Wetted material
  - 3.1 marking as per EN10204
  - Ambient and process conditions
  - Safety information and warnings
  - Optional approvals
- ▶ Compare the information on the nameplate with the order.

### 4.3.2 Identifying the product

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.
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.

#### Product page

##### Manufacturer address

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

### 4.4 Certificates and approvals


relevant product page:

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Downloads**.


## 5 Mounting

### 5.1 Mounting requirements

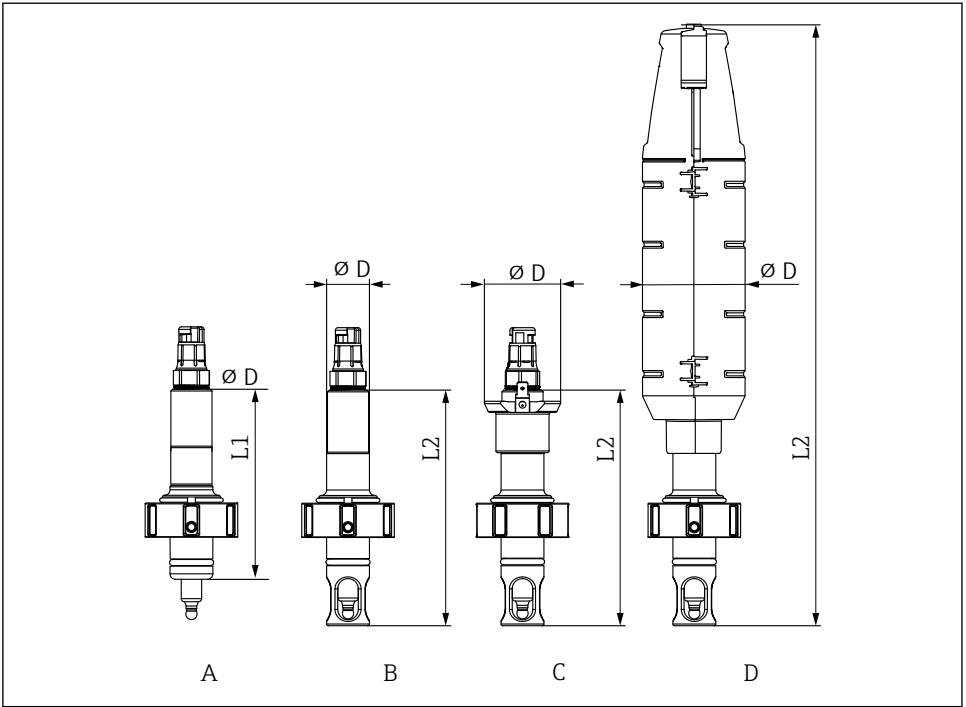
- ▶ The assembly is designed to be mounted on vessels and pipes. Suitable process connections must be available at the customer site for this purpose.
- ▶ The mounting seal, which seals the adapter from the process nozzle, must be provided by the customer (except in the versions DN25 standard and DN25 B. Braun port).
- ▶ Install the assembly only if the vessel is empty and the process is unpressurized.

 Only operate the CLS82E conductivity sensor with an assembly without sensor protection, to avoid influencing the measuring signal.

The assembly can be mounted at any angle from 0° to 360°. The installation conditions and applicable Installation angle of the sensor used must be observed.

 Pay attention to the Operating Instructions for the relevant sensor.

5.1.1 Dimensions

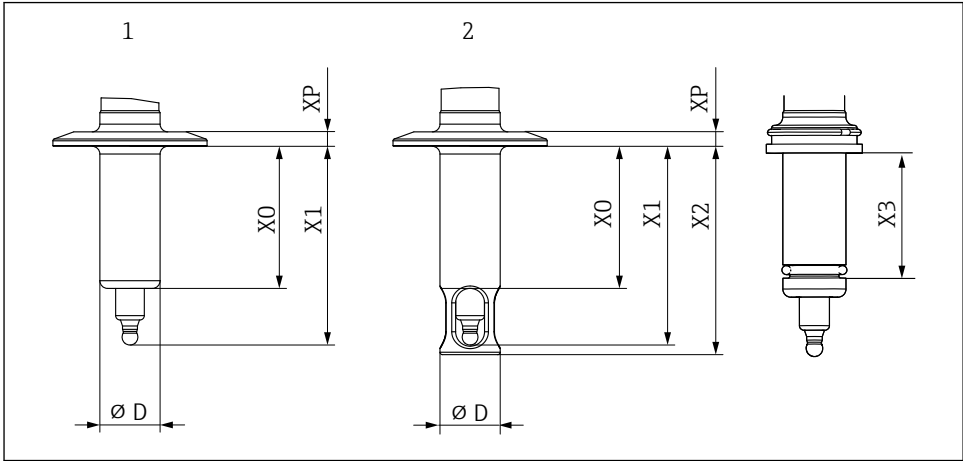


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2 Dimensions in mm (in)

	A	B	C	D
	Standard	Sensor protection	Sensor protection with PAL	Sensor protection with protection cover
	CPA842-XXXXXX1	CPA842-XXXXXX1+NB	CPA842-XXXXXX1+NANB	CPA842-XXXXXX1+NBNC
no sensor protection L1	110 (4.33)	-	-	-
with sensor protection L2	-	137.5 (5.41)	137.5 (5.41)	351 (13.81)
Diameter D	25 (1)	25 (1)	44.5 (1.75)	61 (2.40)

## 5.2 Immersion depth



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3 Immersion depth in mm (in)

Process connection	Feature 40	X0	X1	X2	D	XP	X3
DN25 standard (illustrated without union nut)	AA	37.5 (1.46)	61 (2.4)	65 (2.6)	25 (1)	11 (0.43)	29 (0.1)
DN25 B.Braun port (illustrated without union nut)	AB	57 (2.24)	80.5 (3.17)	84.5 (3.33)	25 (1)	11 (0.43)	49 (0.16)
Clamp 1.5" short	AC	6 (0.24)	29.5 (1.16)	33.5 (1.32)	25 (1)	7 (0.27)	
Clamp 1.5" long	OD	39 (1.53)	62.5 (2.46)	66.5 (2.61)	25 (1)	7 (0.27)	
Clamp 2"	AE	59 (2.23)	82.5 (3.25)	86.5 (3.4)	25 (1)	6 (0.24)	
Clamp 1.5" - angled at 15°	AF	17.8 (0.7)	41.3 (1.63)	--	25 (1)	6 (0.24)	
Dairy fitting DN50	AG	41 (1.61)	64.5 (2.53)	68.5 (2.7)	25 (1)	19.5 (0.77)	

Process connection	Feature 40	X0	X1	X2	D	XP	X3
Aseptic DN50 threaded DIN11864-1 A	AK	41 (1.61)	64.5 (2.53)	68.5 (2.7)	25 (1)	19.5 (0.77)	
Varivent N 68mm DN40-125	AH	6 (0.24)	29.5 (1.16)	45.8 (1.8)	25 (1)	16.5 (0.65)	

## 5.3 Installing the assembly

### 5.3.1 Installing the assembly in the process

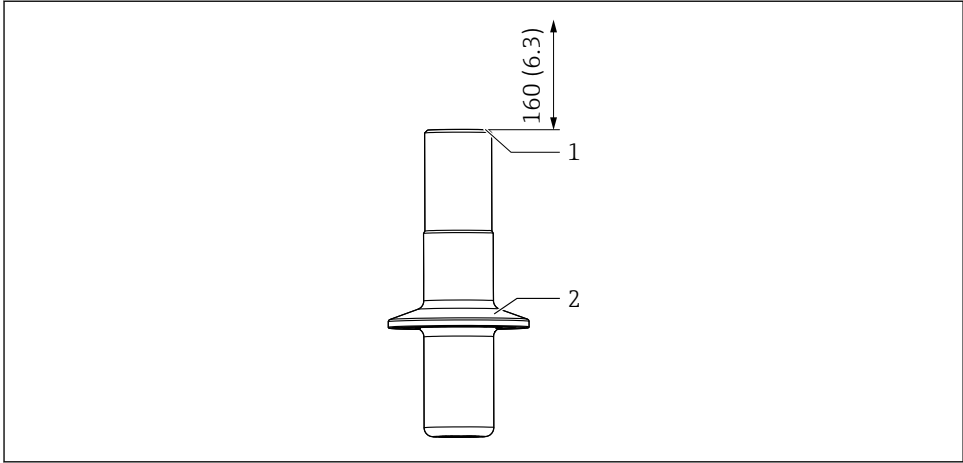


#### Escaping process medium

Risk of injury from high pressure, high temperatures or chemical hazards!

- ▶ Wear protective gloves, protective goggles and protective clothing.
- ▶ Mount the assembly only if vessels or pipes are empty and unpressurized.

1. Verify that the seal is correctly positioned between the sealing surface of the assembly and the process adapter.
2. Mount assembly via the process connection on the vessel or piping.
3. For versions DN25 standard, DN25 B.Braun port, dairy coupling DN50, aseptic DN50 threaded:  
Tighten the coupling nut by hand.
4. For clamp or Varivent versions:  
secure with suitable seal and clamp (to be provided at customer site).



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#### 4 Mounting

- 1 Space to allow for replacement of sensor in mm (in)
- 2 Process connection

**i** If a protection cover is used, an installation space of 160 mm (6.3 in) is required instead of 255 mm (10 in).

### 5.3.2 Installing sensor in assembly

#### **⚠ WARNING**

#### Escaping process medium

Risk of injury from high pressure, high temperatures or chemical hazards!

- ▶ Wear protective gloves, protective goggles and protective clothing.
- ▶ Mount the assembly only if vessels or pipes are empty and unpressurized.

#### **NOTICE**

#### The assembly can cause higher ambient temperatures at the sensor.

- ▶ Observe the maximum permissible temperature at the sensor head. The Operating Instructions for the particular sensor apply.
- ▶ Operate without a protection cover at ambient temperatures above 60 °C (140 °F).
- ▶ Provide for cooling if necessary, e.g. through increased convection.
- ▶ Contact the manufacturer if in doubt.

**NOTICE****Do not lubricate silicon seals, as this damages the seal.**

- ▶ Use other seal materials, e.g. EPDM, FKM or FFKM.



If, for application reasons, no grease may be used, we recommend silicone seals. These can be used without grease. Seal resistance must be observed.



To prevent the molded seal from sticking to a sensor at high temperatures, lubricate the molded seal with a hygienic grease (for EPDM, FKM and FFKM), e.g. with Klüber Paraliq GTE 703 (can be ordered as an accessory). This makes it easier to remove the sensor again. Otherwise, there is a risk that the sensor will stick to the seal and break during removal (pH glass electrodes).

1. Remove the protective cap from the sensor.
2. Verify that there is an O-ring and thrust ring on the sensor.
3. For easier installation, immerse the sensor shaft in water.
4. Screw in the sensor. Tighten by hand initially and then with a socket wrench (AF 17 or AF19 for Memosens) by approx. ¼ rotation, approx. 3 Nm.
5. Connect the transmitter's measuring cable to the sensor.
6. For KCl sensors:  
Connect KCl supply line.

In the case of sensor OUSBT66 and other sensors with a stainless steel coupling, a thin layer of grease must be applied to the thread. (e.g. with Klüber Paraliq GTE 703 grease).

## 5.4 Post-mounting check

- Assembly undamaged?
- Is the orientation correct?

# 6 Commissioning

Prior to initial commissioning, ensure that:

- all seals or O-rings are correctly seated (on the assembly and on the process connection)
- the sensor is correctly installed and connected

**Risk of injury from high pressure, high temperature or chemical hazards if process medium escapes.**

- ▶ Before subjecting the assembly to the process pressure, verify that all connections are sealed!

## 7 Maintenance

### WARNING

#### Risk of injury if medium escapes!

- ▶ Before each maintenance task, ensure that the process pipe or vessel is empty and rinsed.

### 7.1 Maintenance work

#### 7.1.1 Cleaning the assembly

### 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 appropriate cleaning agents in each case are shown in the following table.

 Pay attention to the material compatibility of the materials to be cleaned.

Type of soiling	Cleaning agent
Greases and oils	Hot water or tempered, surfactant-containing (basic) agents or water-soluble organic solvents (e.g. ethanol)
Limescale deposits, metal hydroxide buildup, lyophobic biological buildup	approx. 3% hydrochloric acid
Sulfide deposits	Mixture of 3% hydrochloric acid and thiocarbamide (commercially available)
Protein buildup	Mixture of 3% 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.

To ensure stable and reliable measurements, the assembly and the sensor must be cleaned regularly. The frequency and intensity of the cleaning process depend on the medium.

1. Light soiling:  
Remove using suitable cleaning solutions (→ ☰ 20).
2. Heavy soiling:  
Remove using a soft brush and a suitable cleaning agent.
3. Persistent dirt:  
Soak the parts in a cleaning solution. Then clean the parts with a brush.



Typical cleaning interval, e. g. for drinking water: 12 months.

- You can also clean the assembly inline (CIP).
- You can also sterilize the assembly inline (SIP) if the sensor is SIP-capable.
- The assembly can be also be autoclaved if an appropriate sensor is used.

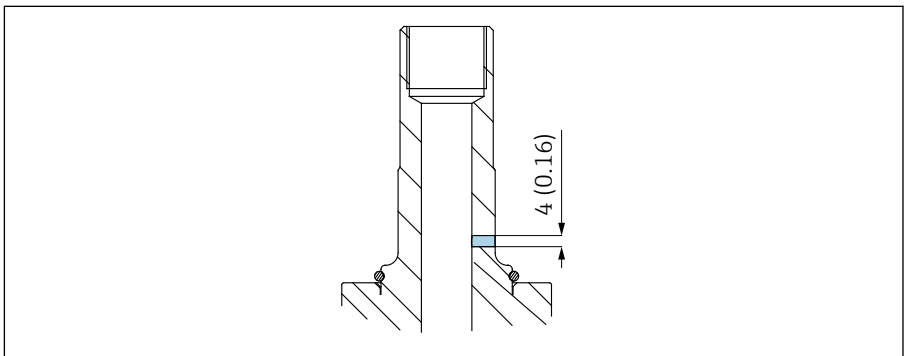
### 7.1.2 Leakage detection

Leakage detection is part of the order specification for the following variants:

- 3-A (CPA842-\*\*\*\*\*+LB)
- EHEDG (CPA842-\*\*\*\*\*+LC)

It can also be ordered separately (CPA842-\*\*\*\*\* + ND).

1.



A0034691

Check leakage detection at regular intervals (visual inspection).

2. If medium escapes at the monitoring hole,  
replace molded seal.

### 7.1.3 Replacing the seals

#### **⚠ CAUTION**

#### **Risk of injury due to residual medium and elevated temperatures!**

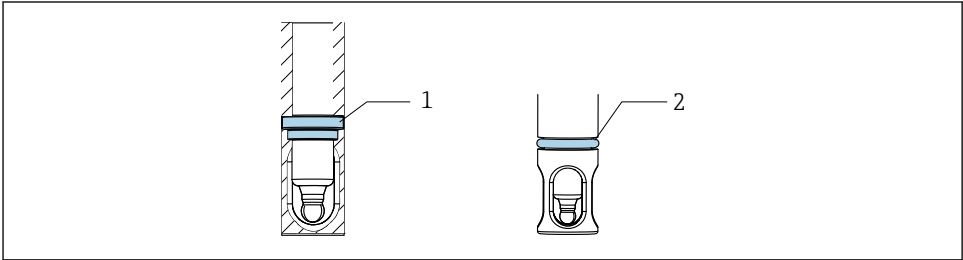
- ▶ When handling parts that are in contact with the medium, protect against residual medium and elevated temperatures.
- ▶ Wear safety goggles and safety gloves.

#### **Preparatory steps**

To replace the seals in the assembly, you must interrupt the process and remove the assembly completely.

1. Interrupt the process. Pay attention to residual medium, residual pressure and elevated temperatures.
2. Remove the sensor.
3. Completely detach the assembly from the process connection.
4. Clean the assembly.

#### **Replacing the seals**



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#### **5** Position of seals

- 1 Molded seal (EPDM, FKM, FFKM, silicone) in the assembly
- 2 O-ring (EPDM, FKM, FFKM, silicone) for process connection version (DN25 standard, DN25 B. Braun port)

1. Replace the seals indicated. Use an O-ring picker to remove the old seals.
2. For EPDM, FKM and FFKM seals, apply a thin film of grease (e.g., Klüber Paraliq GTE 703). Silicone seals must not be lubricated.
3. Install the sensor in the assembly.
4. Install the assembly in the process.

5. Restart the process.



For easier installation of the seals, demineralized water can be used.



To prevent the molded seal made of EPDM, FKM or FFKM from sticking to a sensor at high temperatures, the molded seal should be lubricated with a hygienic grease. This makes it easier to remove the sensor again. Otherwise, there is a risk that the sensor will stick to the seal and break during removal (pH glass electrodes).

Silicone seals must not be lubricated.



Operating times of seal depend on the material and the process:

- EPDM, FKM and FFKM = 600 CIP/SIP cycles
- Silicone (CPA842 - \*\*\* S1\*\* A1 ) = 100 CIP/SIP cycles

## 8 Repair

### 8.1 General notes

- ▶ Only use spare parts from Endress+Hauser from the manufacturer to guarantee the safe and stable functioning of the device.

Detailed information on the spare parts is available at:

- ▶ Following repairs, check that the device is complete, in a safe condition and functioning correctly.

#### 8.1.1 Replacing damaged parts



##### **Danger resulting from improper repair!**

- ▶ Damage to the assembly, which compromises pressure safety, must be repaired **only** by authorized and qualified personnel.
- ▶ Following each repair and maintenance task, it is essential that the assembly be checked for leaks using appropriate procedures. Following this, the assembly must again comply with the specifications in the technical data.
- ▶ Replace all other damaged components immediately.

### 8.2 Spare parts

For more detailed information on spare parts kits, please refer to the "Spare Part Finding Tool" on the Internet:



## 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.

## 8.4 Disposal

- ▶ Observe the local regulations.

# 9 Accessories

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

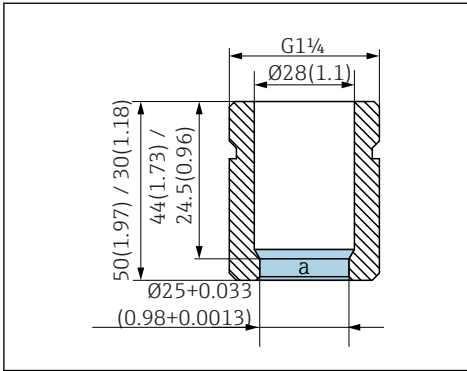
Listed accessories are technically compatible with the product in the instructions.

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.

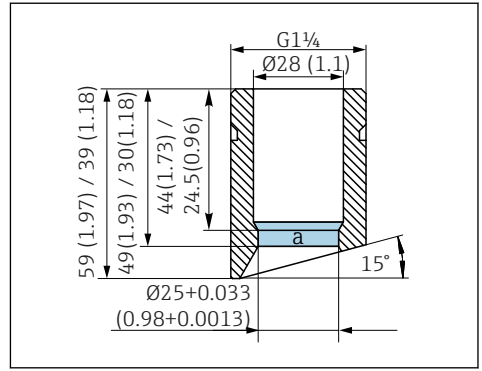
For more detailed information on the accessories, please refer to the "Spare Part Finding Tool" on the Internet:



## 9.1 Installation accessories



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A0034483

6 Welding socket, straight, in mm (in)

*a* Surface roughness  $Ra < 0.38 \mu\text{m}$

### Safety welding socket DN25 (B. Braun)

- Straight, stainless steel 1.4435, L=50
- CPA842-\*\*\*\*\*AB+PL

### Safety welding socket DN25 (B. Braun)

- Angled, stainless steel 1.4435, L=50/60
- CPA842-\*\*\*\*\*AB+PM

### Safety welding socket DN25 (standard)

- Straight, stainless steel 1.4435, L=30
- CPA842-\*\*\*\*\*AA+PI

### Safety welding socket DN25 (standard)

- Angled, stainless steel 1.4435, L=30/40
- CPA842-\*\*\*\*\*AA+PK

### Dummy plug

- Dummy plug G1 1/4 DN25 (standard), 316L, FKM-FDA  
CPA842-\*\*\*\*\*AA+PN
- Dummy plug G1 1/4 DN25 (B. Braun), 316L, FKM-FDA  
CPA842-\*\*\*\*\*AB+PO

### Protection cover

- Bend guard for sensor cable, PP conductive
- CPA842-\*\*\*\*\*+NC

### Sensor

- Sensor dummy 120mm, 316L,  $Ra=0.38$
- CPA842-\*\*\*\*\*+PQ

### Grease

- Klüber Paraliq GTE 703 grease (60g)
- CPA842-\*\*\*\*\*+R8

7 Welding socket, angled, in mm (in)

*a* Surface roughness  $Ra < 0.38 \mu\text{m}$

## 9.2 Seals

- Kit, seal, wetted, EPDM
- Kit, seal, wetted, FKM
- Kit, FFKM seal, DN25 G1 1/4
- Kit, FFKM seal, excl. G1 1/4
- Kit, silicone seal

## 9.3 Sensors (selection)

### Memosens CPS11E

- pH sensor for standard applications in process and environmental engineering
- Digital with Memosens 2.0 technology



Technical Information TI01493C

### Memosens CPS12E

- ORP sensor for standard applications in process and environmental engineering
- Digital with Memosens 2.0 technology



Technical Information TI01494C

### Memosens CPS16E

- pH/ORP sensor for standard applications in process technology and environmental engineering
- Digital with Memosens 2.0 technology



Technical Information TI01600C

### Memosens CPS41E

- pH sensor for process technology
- With ceramic junction and KCl liquid electrolyte
- Digital with Memosens 2.0 technology



Technical Information TI01495C

### Memosens CPS47E

- ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology



Technical Information TI01616C

**Memosens CPS61E**

- pH sensor for bioreactors in life sciences and for the food industry
- Digital with Memosens 2.0 technology



Technical Information TI01566C

**Memosens CPS76E**

- pH/ORP sensor for process technology
- Digital with Memosens 2.0 technology



Technical Information TI01601C

**Memosens CPS77E**

- Sterilizable and autoclavable ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology



Technical Information TI01396

**Memosens CPS97E**

- ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology



Technical Information TI01618C

**Memosens COS22E**

- Hygienic amperometric oxygen sensor with maximum measurement stability over multiple sterilization cycles
- Digital with Memosens 2.0 technology



Technical Information TI01619C

**Memosens COS81E**

- Hygienic optical oxygen sensor with maximum measurement stability over multiple sterilization cycles
- Digital with Memosens 2.0 technology



Technical Information TI01558C

**Memosens CLS82E**

- Hygienic conductivity sensor
- Digital with Memosens 2.0 technology



Technical Information TI01529C

**OUSBT66**

- NIR absorption sensor for the measurement of cell growth and biomass
- Sensor version suitable for pharmaceutical industry



For the version with shaft length 120 mm (4.7 in), compatible with versions with OPL 5 mm (0.2 in) and 10 mm (0.4 in)



Technical Information TI00469C

## 10 Technical data

### 10.1 Environment

#### 10.1.1 Ambient temperature range

-15 to 70 °C (5 to 158 °F)

#### 10.1.2 Storage temperature

-15 to 70 °C (5 to 158 °F)

### 10.2 Process

#### 10.2.1 Process temperature range

Specification of the electrodes and seals must be observed.

-15 to 140 °C (5 to 280 °F)

#### 10.2.2 Process pressure range

Specification of the electrodes and seals must be observed.

16 bar (232 psi) to 140 °C (284 °F)

#### 10.2.3 Flow velocity

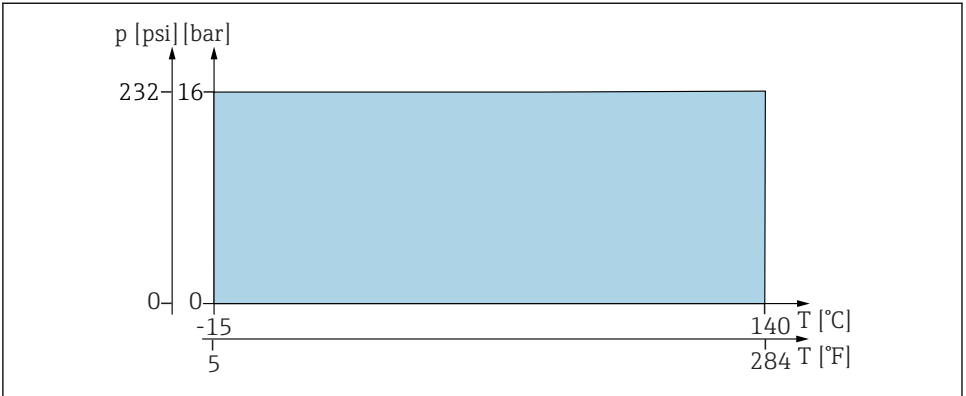
##### NOTICE

**Excessively high flow velocities may damage or destroy the sensors.**

- Pay attention to the specification of the installed sensor.

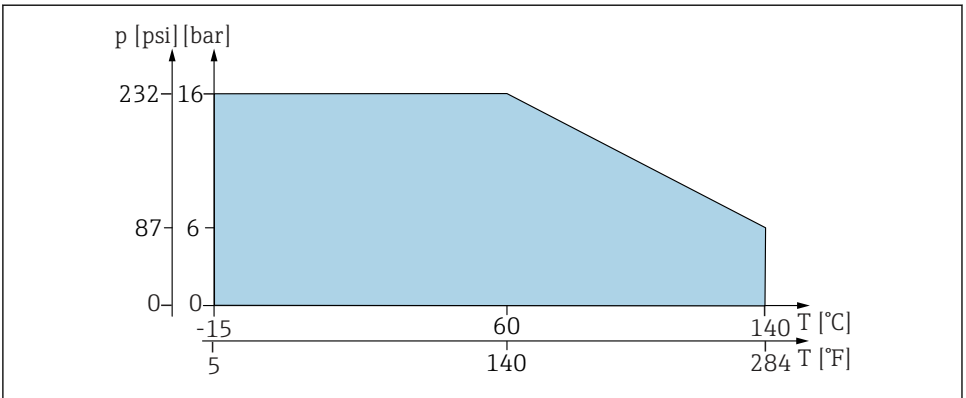
To avoid cavitation, flow velocities in the process should be < 7.5 m/s (24.6 ft/s) at 1 bar (14.5 psi) and 20 °C (68 °F).

### 10.2.4 Pressure-temperature ratings



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8 Pressure-temperature ratings for EPDM, FKM or FFKM seal

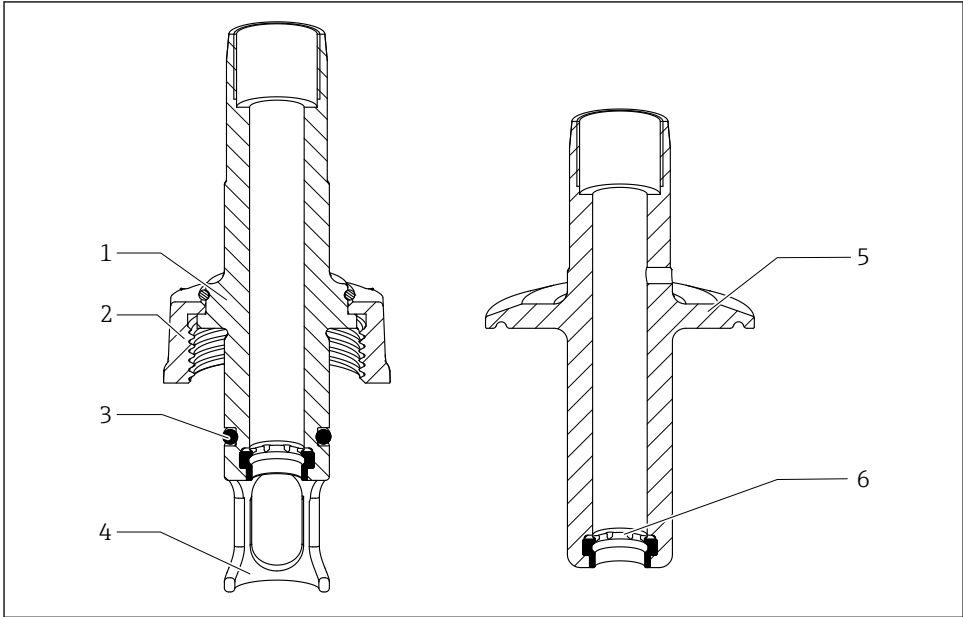


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9 Pressure-temperature diagram for silicone molded seal

## 10.3 Mechanical construction

### 10.3.1 Design, dimensions



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#### 10 Design

- 1 Process connection G1 1/4" DN25
- 2 Union nut G1 1/4"
- 3 O-ring
- 4 Sensor protection
- 5 Process connection
- 6 Molded seal

### 10.3.2 Dimensions

→ 15

### 10.3.3 Weight

Assembly with process connection AA ... 0.3 to 1.4 kg (0.7 to 3.1 lb)

AK:

Protection cover:

Approx. 0.2 kg (0.4 lb)

### 10.3.4 Materials

#### *In contact with medium*

Seals:	Form seal made of EPDM Molded seal made of FKM Form seal made of silicone Molded seal made of FFKM
Assembly:	Stainless steel 1.4435 (AISI 316 L) (versions available with surface roughness $Ra \leq 0.76 \mu\text{m}$ or $Ra \leq 0.38 \mu\text{m}$ )
Lubricant for seals	Klüber Paraliq GTE703



Certificates can be ordered separately.



Versions with silicone seals are not lubricated and must not be lubricated.

#### *Not in contact with medium*

Mounted parts:	stainless steel 1.4308 (AISI 304H) or 1.4404 (AISI 316L)
Pal connection:	1.4301 (AISI 304)
Protection cover:	PP conductive

### 10.3.5 Process connections

→ 8

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