

Operating Instructions

Unifit CPA842

Process assembly for hygienic and sterile applications

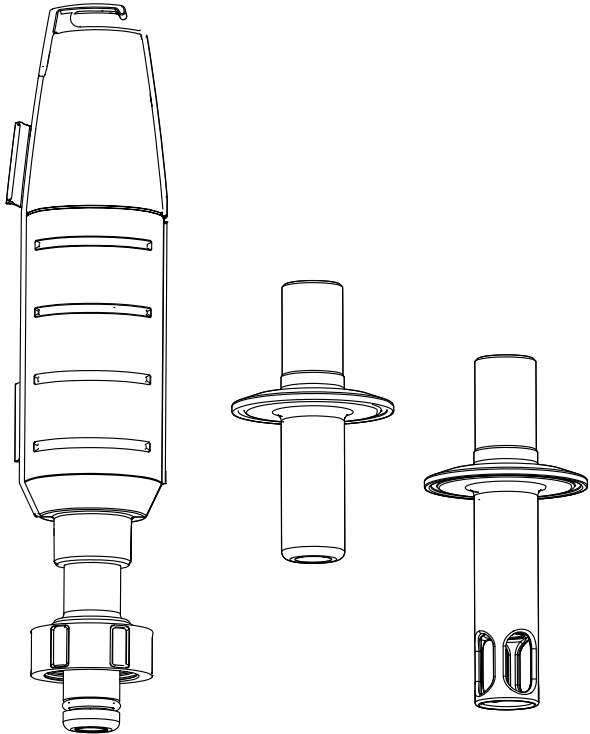






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
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1 About this document

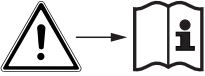
1.1 Warnings

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

1.2 Symbols

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


1.3 Symbols on the product

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 Unifit CPA842 process assembly is designed for the installation of 12 mm sensors with a shaft nominal length of 120 mm in vessels, bioreactors and pipes.

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

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. 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.

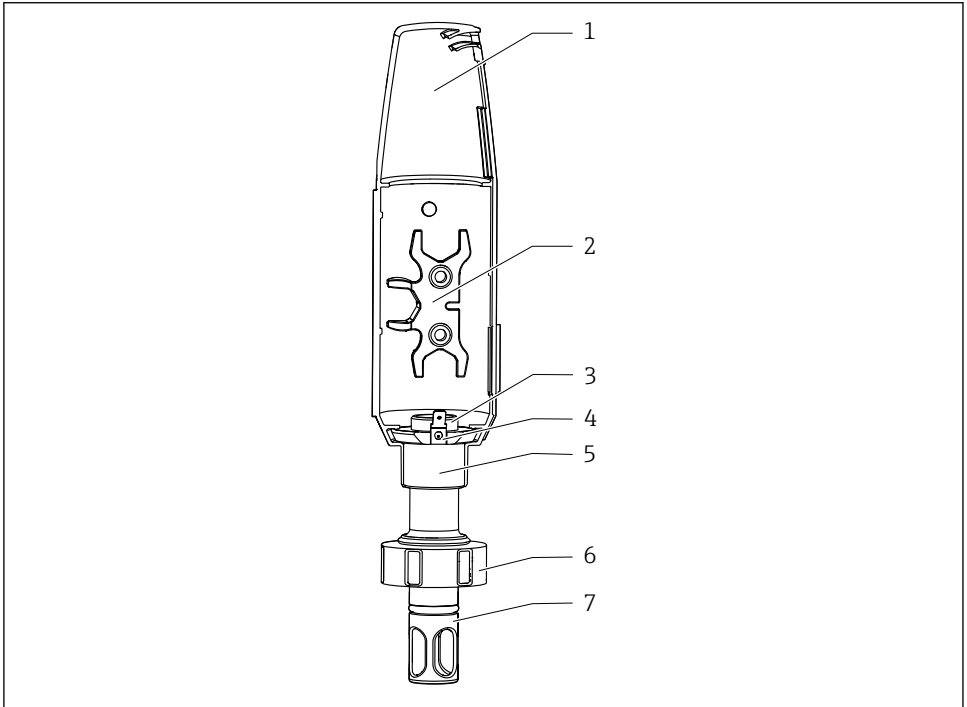
During operation:

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

2.5 Product safety

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

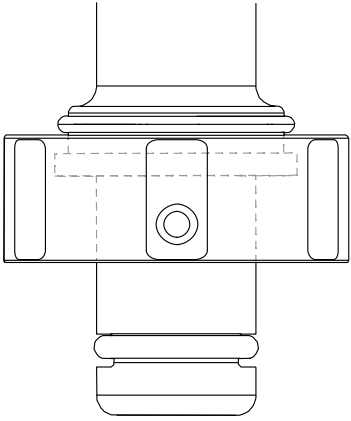
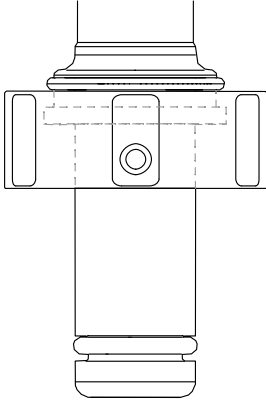
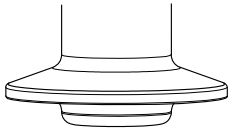


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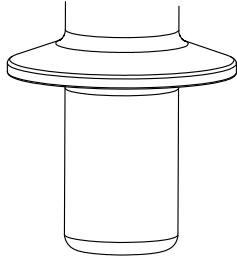
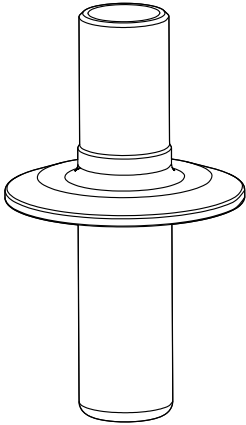
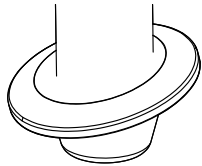
1 Description of CPA842

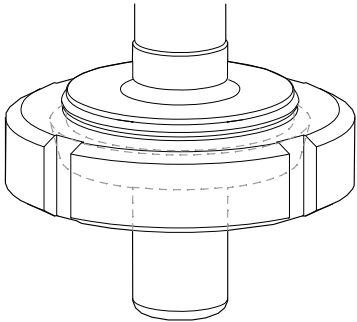
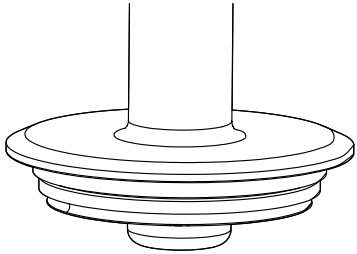
- | | | | |
|---|--|---|---|
| 1 | Protection cover | 5 | Fastening ring for PAL connection and/or protection cover |
| 2 | Auxiliary tool for mounting sensor | 6 | Union nut |
| 3 | Female thread PG13.5 for sensors with 120 mm shaft length and 12 mm diameter | 7 | Sensor protection (protective guard) |
| 4 | PAL connection for blade receptacle 6.3 mm | | |

3.1 Process connections

Process connection	
<p>DN25 standard</p>	
<p>DN25 B.Braun port</p>	
<p>Clamp 1.5" short with OD of 50.5 mm</p> <ul style="list-style-type: none"> ▪ Corresponds to NW 38 DIN 32676/ISO 2852 ▪ Compatible with NovAseptic process connections, pay attention to immersion depths ▪ The (pipe) internal diameter of the counterpiece must be greater than 28 mm (1.10 in) 	

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Process connection	
<p>Clamp 1.5" long with OD of 50.5 mm</p> <ul style="list-style-type: none">▪ Complies with ASME-BPE 2009▪ Corresponds to DN 40 DIN 32676 2001▪ Corresponds to NW 38 DIN 32676/ISO 2852▪ Compatible with NovAseptic process connections, pay attention to immersion depths▪ The (pipe) internal diameter of the counterpiece must be greater than 28 mm (1.10 in)	
<p>Clamp 2" with OD of 64 mm</p> <ul style="list-style-type: none">▪ Complies with ASME-BPE 2009▪ Corresponds to DN 50 DIN 32676 2001▪ Corresponds to NW 51-40 DIN 32676/ISO 2852▪ Compatible with NovAseptic process connections, pay attention to immersion depths	
<p>Clamp 1.5" angled at 15°</p>	

Process connection	
<p>Dairy fitting DN 50 DIN 11851 (EHEDG approval only with seal from Siersema)</p>	 <p>A technical drawing of a dairy fitting. It features a central vertical pipe with a flange-like structure. The flange has a wide, flat top surface and a narrower, raised section in the middle. A dashed line indicates a seal or gasket positioned between the flange and the pipe. The drawing is a perspective view from above.</p> <p>A0043050</p>
<p>Varivent flange N (DN 40 to 125)</p>	 <p>A technical drawing of a Varivent flange. It shows a central vertical pipe with a wide, flat flange at the bottom. The flange has a slightly raised outer edge and a recessed inner section. The drawing is a perspective view from above.</p> <p>A0034979</p>

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
 - Wetted material
 - 3.1 marking as per EN10204
 - Ambient and process conditions
 - Safety information and warnings
- ▶ Compare the information on the nameplate with the order.

4.2.2 Certificates and approvals

ADI-free

No materials or ingredients derived from animals are used during the entire production of all the parts in contact with the process. (certified in pharmaceutical CoC)

Biological reactivity (USP Class VI) (optional)

The plastic and elastomer product components that are in contact with the medium have passed the biological reactivity tests as per USP <87> and <88> Class VI. (certified in pharmaceutical CoC)

EHEDG (optional)

The assembly has been certified in accordance with the requirements of EHEDG TYPE EL Class I (cleanability).

ASME BPE

The assembly has been developed according to the ASME BPE 2016 Standard and meets the relevant requirements that are important for an assembly.

FDA

All seals in contact with the medium comply with the relevant regulations of the U.S. Food and Drug Administration (FDA). (certified in FDA declaration of conformity and pharmaceutical CoC)

Regulation (EC) 1935/2004

The assembly meets the requirements for materials that come into contact with food.

3-A Sanitary (optional)

Meets the requirements of 3-A Sanitary Standards.



Suitable process connections and seals must be used for hygienic designs as per EHEDG, ASME BPE or 3-A.

3.1 Inspection certificate as per EN 10204 (optional)

This certificate certifies the traceability of the materials used including the pipe material. In addition, if the relevant option is selected when ordering, the delta-ferrite content and the surface roughness are checked from a metrology point of view and specified in the certificate. .

DGRL- 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.

CRN

As the assembly can be operated with a nominal pressure greater than 15 psi (approx. 1 bar), it has been registered with a CRN (Canadian Registration Number) in all Canadian provinces in accordance with CSA B51 ("Boiler, pressure vessel, and pressure piping code"; category F). The CRN can be found on the nameplate.

4.2.3 Product page

www.endress.com/cpa842

4.2.4 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. 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.

4.2.5 Manufacturer address

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

4.2.6 Scope of delivery

The delivery comprises:

- Assembly in the version ordered
 - Process seal for process connections: DN25 standard, DN25 B. and Braun port
 - Dust caps to protect PG13.5 thread
 - Operating Instructions
- ▶ If you have any queries:
Please contact your supplier or local sales center.

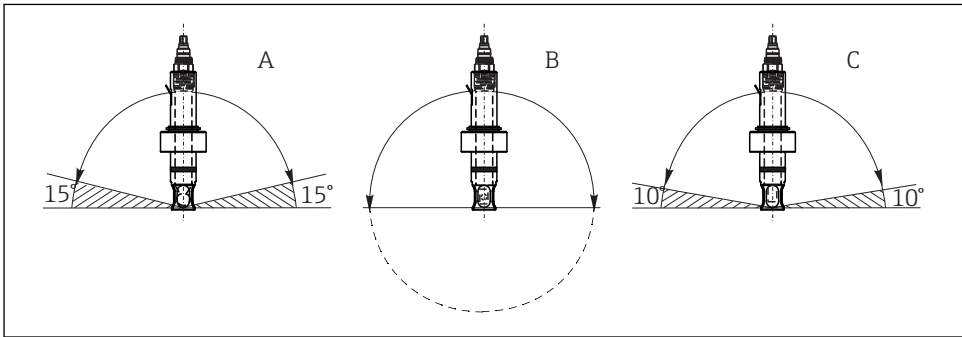
5 Installation

5.1 Installation conditions

- ▶ The assembly is designed for installation 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 versions DN 25 Standard and DN 25 B. Braun port).
- ▶ Install the assembly only if the vessel is empty and the process is unpressurized.

The assembly can be mounted at any angle from 0° to 360°. The installation conditions of the sensor used must be complied with.

Example:



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2 Permitted angle of installation depending on sensor

- | | | |
|---|--|--|
| A | Glass pH sensor: | Installation angle at least 15° from the horizontal |
| B | ISFET pH sensor, conductivity sensor, oxygen sensor (optical): | No restrictions, recommended 0 to 180°, where buildup can occur. |
| C | Oxygen sensor (amperometric): | Installation angle at least 10° from the horizontal |

i Only operate the CLS82D conductivity sensor with an assembly without a sensor protection in order to avoid an effect on the measuring signal.

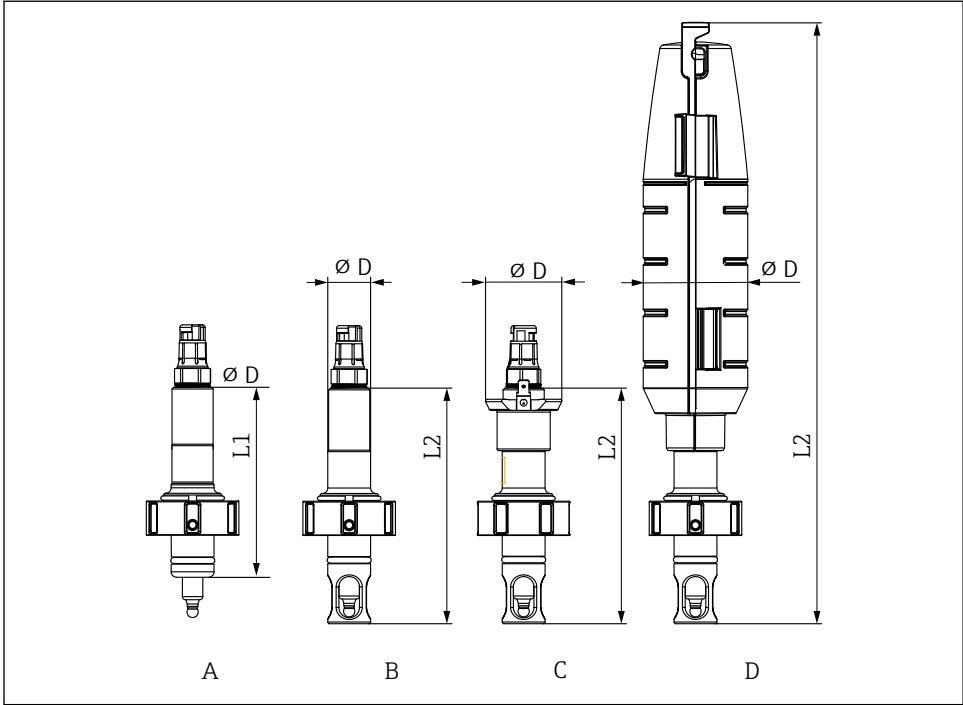
i COS81D-***U*** oxygen sensor (U-shaped spot cap)
Installation angle is limited to 0° to 180°

5.1.1 Information regarding hygiene-compliant installation according to EHEDG

Easily cleanable installation of equipment according to the criteria of the EHEDG must be free of dead legs. If a dead leg is unavoidable, it shall be kept as short as possible. Under no circumstances shall the length of a dead leg L exceed the pipe's inner diameter D minus the equipment's enveloping diameter d . The condition $L \leq D - d$ applies. Furthermore, the dead leg must be self-draining, so neither product nor process fluids are retained therein. Within tank installations, the cleaning device must be located so that it directly flushes the dead leg.

For further reference, see the recommendations concerning hygienic seals and installations in EHEDG Doc. 10 and the Position Paper: “Easy cleanable Pipe couplings and Process connections”.

5.1.2 Dimensions

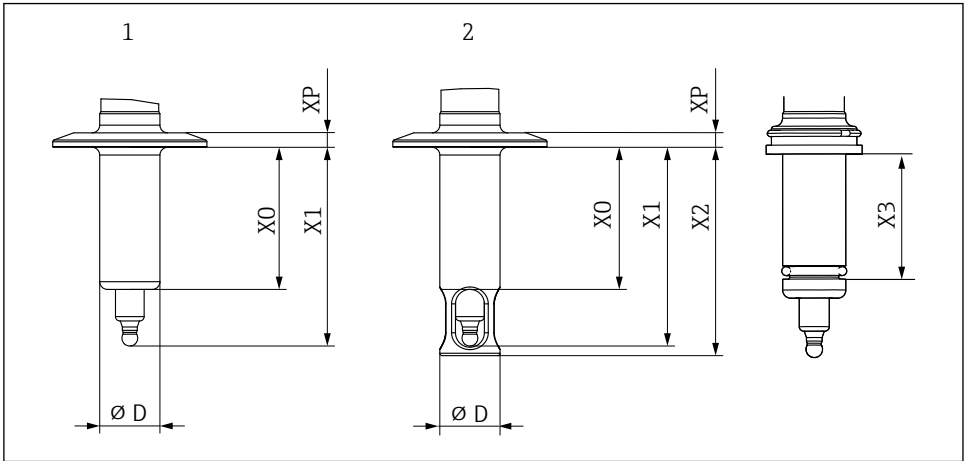


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3 Dimensions in mm (in)

	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)	44.5 (1.75)	44.5 (1.75)	61 (2.40)

5.2 Immersion depth



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4 Immersion depth in mm (in)

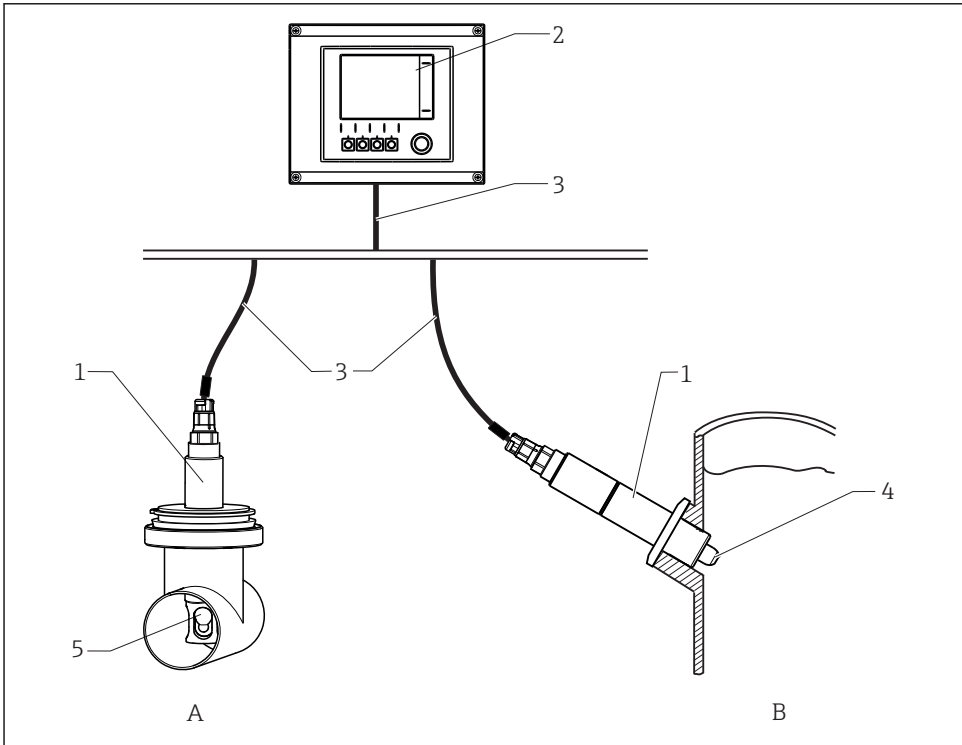
Process connection	Feature 40	X0	X1	X2	D	XP	X3
DN25 standard	AA	37.5 (1.46)	61 (2.4)	65 (2.6)	25 (1)	11 (0.43)	29 (0.1)
DN25 B.Braun port	AB	57 (2.24)	80.5 (3.17)	84.5 (3.33)	25 (1)	11 (0.43)	49 (0.16)
Clamp 1.5" short	AC	6 (0.24)	29.5 (1.16)	33.5 (1.32)	25 (1)	7 (0.27)	
Clamp 1.5" long	AD	39 (1.53)	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)	--	--	6 (0.24)	
Dairy fitting DN50	AG	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)	33.5 (1.32)	25 (1)	16.5 (0.65)	

5.3 Mounting the assembly

5.3.1 Measuring system

A complete measuring system comprises:

- Unifit CPA842 assembly
- 120 mm sensor, e.g. CPS171D, Orbisint CPS11D, CLS82D, Oxymax COS22D or COS81D with or without Memosens technology
- Transmitter, e.g. Liquiline CM44x
- measuring cable, e.g. CYK10



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5 Measuring system (example)

- 1 Unifit CPA842 assembly
- 2 Transmitter Liquiline CM44x
- 3 Measuring cable CYK10
- 4 Sensor COS81D
- 5 Sensor CPS171D
- A Installation in pipe
- B Installation in tank

5.3.2 Installing the assembly in the process

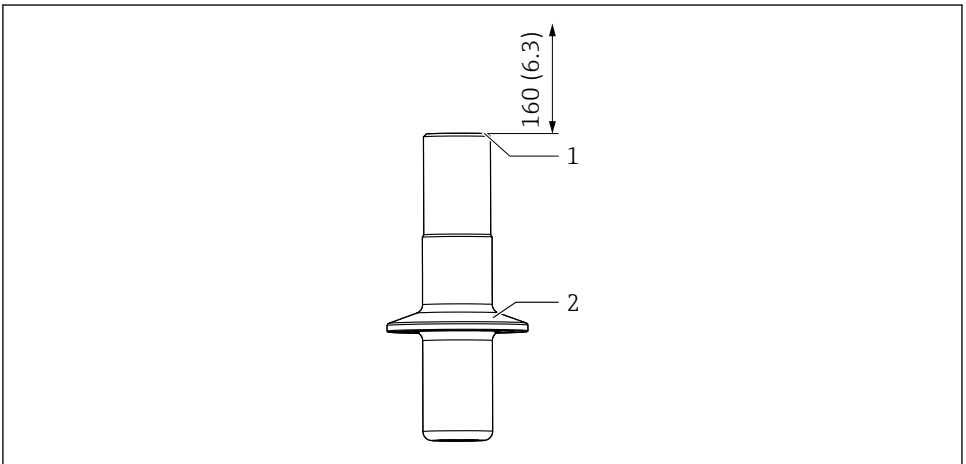
⚠ WARNING

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.

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 fitting DN50:
Tighten coupling nut.



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6 Installation

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



Additional installation space is not required if a protection cover is used.

5.3.3 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.

- ▶ The maximum temperature at the sensor head may not exceed 90 °C (194 °F).
- ▶ Operation without protection cover at ambient temperatures above 60 °C (140 °F).
- ▶ Contact the manufacturer if in doubt.

1. Remove protection cap from 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 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-installation 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

⚠ WARNING

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 tasks

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 cleaning agents used in each case are shown in the following table.



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

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. 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 (→  21).

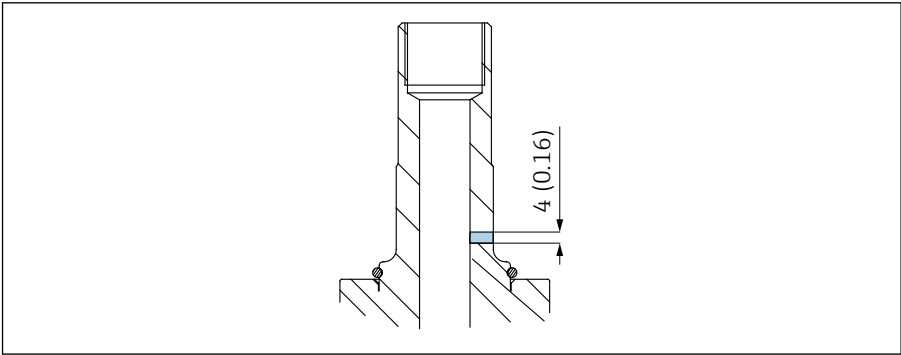
2. Heavy soiling:
Remove using a soft brush and a suitable cleaning agent.
3. Persistent dirt:
Soak the parts in a cleaning solution. Then clean the parts with a brush.

i 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 monitoring

1.



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Check leakage monitoring at regular intervals (visual inspection).

2. If medium escapes at the monitoring hole,
replace molded seal or O-ring.

i The leak monitor is an integral part of the order for versions with 3-A (CPA842-*****+LB) or can be ordered separately (CPA842-*****+ND).

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 protective goggles and safety gloves.

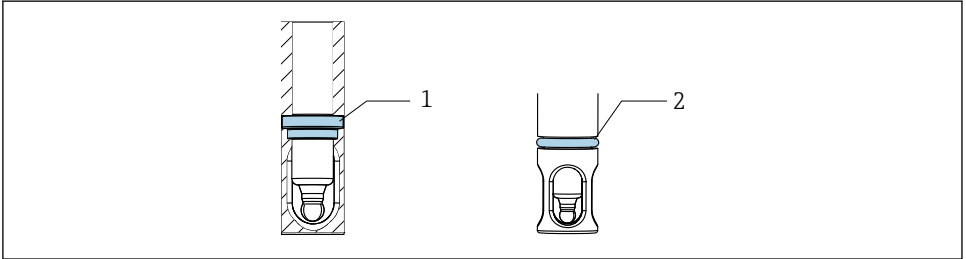
Preparation

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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7 Position of seals

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

1. Replace the seals indicated. Use O-ring picker.
2. Lubricate seals, for EPDM, FKM and FFKM use a food-grade lubricant (e. g. Klüber Paraliq GTE 703).
3. Install the sensor in the assembly.
4. Install the assembly in the process.
5. Restart the process.

 To prevent the molded seal from sticking to a sensor, it is recommended to lubricate the molded seal with a hygienic lubricant. This is particularly advisable for applications with high temperatures.

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

- EPDM, FKM and FFKM = 600 CIP/SIP cycles
- Silicone = 50 CIP/SIP cycles

8 Repair

8.1 General notes

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

Detailed information on the spare parts is available at:

www.endress.com/device-viewer

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

8.1.1 Replacing damaged parts

WARNING


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:

www.endress.com/spareparts_consumables

-  The product-specific spare parts can be ordered via the "XPC0017" spare parts ordering structure.

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 for information on the procedure and conditions for returning devices.

8.4 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.

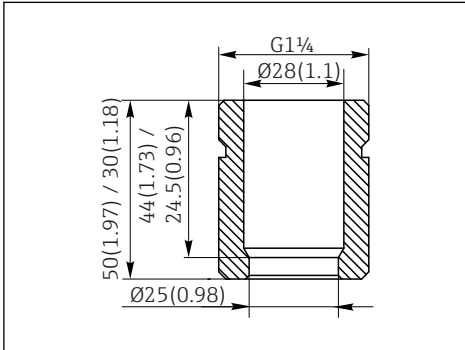
For more detailed information on the accessories, please refer to the "Spare Part Finding Tool" on the Internet:

www.endress.com/spareparts_consumables

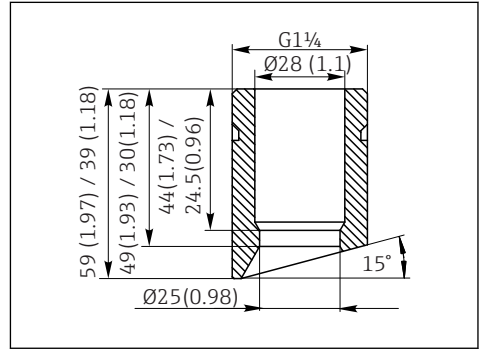


The product-specific accessory can be ordered via the order structure for spare parts "XPC0017".

9.1 Installation accessories



A0034484



A0034483

8 Welding socket, straight, in mm (in)

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

Sensor

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


Lubricant

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

9.2 Seals


- Kit, seal, wetted, EPDM
- Kit, seal, wetted, FKM
- Kit, FKM seals, DN25 G1 1/4, wetted parts
- Kit, FFKM seals, excl. G1 1/4, wetted parts
- Kit, silicone seals (O-ring)

9.3 Sensors (selection)

 Information on the area of application of other sensors can be found on the product page. To find compatible sensors, use the "Select & Size" link, for example, to the right of the product photo.

Memosens CPS171D

- pH electrode for bio-fermenters with digital Memosens technology
- Product Configurator on the product page: www.endress.com/cps171d

 Technical Information TI01254C


Orbisint CPS11D / CPS11

- pH sensor for process technology
- With dirt-repellent PTFE diaphragm
- Product Configurator on the product page: www.endress.com/cps11d or www.endress.com/cps11

 Technical Information TI00028C


Orbisint CPS12D / CPS12

- ORP sensor for process technology
- Product Configurator on the product page: www.endress.com/cps12d or www.endress.com/cps12

 Technical Information TI00367C

Ceraliquid CPS41D / CPS41

- pH electrode with ceramic junction and KCl liquid electrolyte
- Product Configurator on the product page: www.endress.com/cps41d or www.endress.com/cps41

 Technical Information TI00079C

Memosens CPS76D

- Combined pH/ORP sensor for process technology
- Hygienic and sterile applications
- With Memosens technology
- Product Configurator on the product page: www.endress.com/cps76d



Technical Information TI00506C

Memosens CPS16D

- Combined pH/ORP sensor for process technology
- With dirt-repellent PTFE diaphragm
- With Memosens technology
- Product Configurator on the product page: www.endress.com/cps16d



Technical Information TI00503C

Memosens CPS96D

- Combined pH/ORP sensor for chemical processes
- With poison-resistant reference with ion trap
- With Memosens technology
- Product Configurator on the product page: www.endress.com/cps96d



Technical Information TI00507C

Memosens CPS77D

- Sterilizable and autoclavable ISFET sensor for pH measurement
- Product Configurator on the product page: www.endress.com/cps77d



Technical Information TI01396

Memosens COS81D

- Sterilizable, optical sensor for dissolved oxygen
- With Memosens technology
- Product Configurator on the product page: www.endress.com/cos81d



Technical Information TI01201C

Oxymax COS22D / COS22

- Sterilizable sensor for dissolved oxygen
- With Memosens technology or as an analog sensor
- Product Configurator on the product page: www.endress.com/cos22d or www.endress.com/cos22



Technical Information TI00446C

Memosens CLS82D

- Four-electrode sensor
- With Memosens technology
- Product Configurator on the product page: www.endress.com/cls82d



Technical Information TI01188C

OUSBT66

- NIR absorption sensor for the measurement of cell growth and biomass
- Sensor version suitable for pharmaceutical industry
- Product Configurator on the product page: www.endress.com/ousbt66



Compatible with versions with OPL 5 and 10 mm



Technical Information TI00469C

10 Technical data

10.1 Environment

10.1.1 Ambient temperature

-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

Pay attention to electrode specification.

-15 to 140 °C (+5 to 280 °F)

10.2.2 Process pressure

Pay attention to electrode specification.

Stainless steel

16 bar (232 psi) up to 140 °C (284 °F)

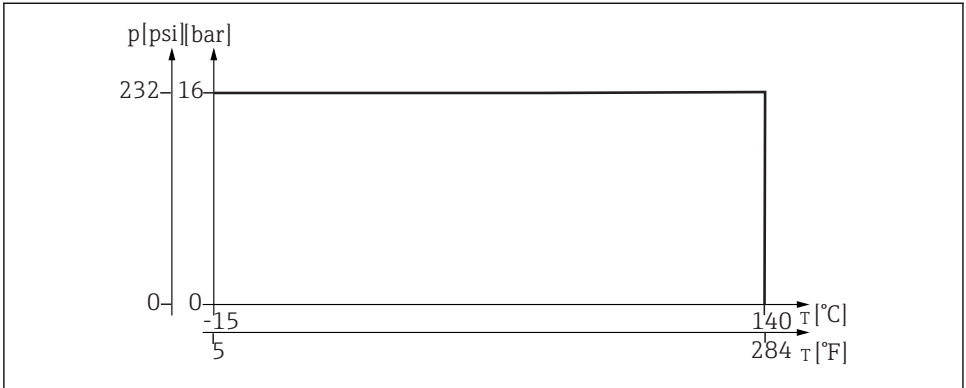
10.2.3 Flow velocity

Pay attention to electrode specification.

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

Higher flow velocities are possible at higher pressures.

10.2.4 Pressure-temperature ratings



A0034683-EN

10 Temperature values for stainless steel 1.4435 (AISI 316 L)

10.3 Mechanical construction

10.3.1 Dimensions

→ 16

10.3.2 Weight

Assembly with process connection A ... U: 0.3 to 1.4 kg (0.7 to 3.1 lbs) depending on version


Protection cover:

Approx. 0.2 kg (0.4 lbs)

10.3.3 Materials

In contact with medium

Seals:	Molded seal made of EPDM, FDA-compliant as per 21CFR 177.2600, USP Class VI
	Molded seal made of FKM, FDA-compliant as per 21CFR 177.2600, USP Class VI
	O-ring made of silicone, FDA-compliant as per 21CFR 177.2600, USP Class VI
	Molded seal FFKM, FDA-compliant as per 21CFR 177.2600, USP Class V
Assembly:	Stainless steel 1.4435 (AISI 316 L)
Lubricant for seals (not for silicone seals):	Klüber Paraliq GTE703 USP87 Class VI, FDA 21CFR 178.3570, USDA-H1, NSF51, NSF61

 Versions with silicone seals are not greased

Not in contact with medium

Mounted parts:	Stainless steel 1.4404 (AISI 316L)
Pal connection:	1.4301
Protection cover:	PP137 conductive

10.3.4 Process connections

→  8

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