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Technical Information
Unifit CPA842

Process assembly for hygienic and sterile applications



Simple - Safe - Hygienic - Reliable

Application area

Unifit CPA842 is designed for permanent installation in tanks or pipelines in the following industries:
- Food and beverage industry
- Life sciences
- Chemical industry

Your benefits

- Permanently installed assembly for 12 mm (0.47 in) sensors (Pg 13.5), such as pH glass sensors, conductivity, pH-ISFET and oxygen sensors
- Hygienic design and manufacture in accordance with 3-A, EHEDG and ASME BPE requirements
- Suitable for in-place cleaning (CIP) and in-line steam sterilization (SIP)
- Flush-mounted, gap-free electrode seal (sealing ring)
- Electropolished surface Ra = 0.38 µm or 0.76 µm (stainless steel 1.4435 (AISI 316 L))
- Hygienic process connections
- Optimum corrosion resistance of the holder material, as no wear occurs in the wetted area
- Wide range of process connections for easy adaptation to existing processes
- Optional manufacturer's declaration (can be selected via the order code) for use in explosive atmospheres

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Table of contents

Function and system design 3
Function 3
Measuring system 3
Reliability 3

Installation 4
Installation instructions 4

Environment 4
Ambient temperature range 4
Storage temperature 4

Process 4
Process temperature range 4
Process pressure range 4
Flow velocity 4
Pressure-temperature ratings 4

Mechanical construction 5
Design, dimensions 5
Dimensions 6
Weight 6
Materials 6
Process connections 7
Immersion depth 9
Leakage detection 10

Certificates and approvals 11
Additional certifications and declarations 11

Ordering information 12
Product page 12
Product Configurator 12
Scope of delivery 12

Accessories 12
Installation accessories 13
Seals 13
Sensors (selection) 13

Function and system design

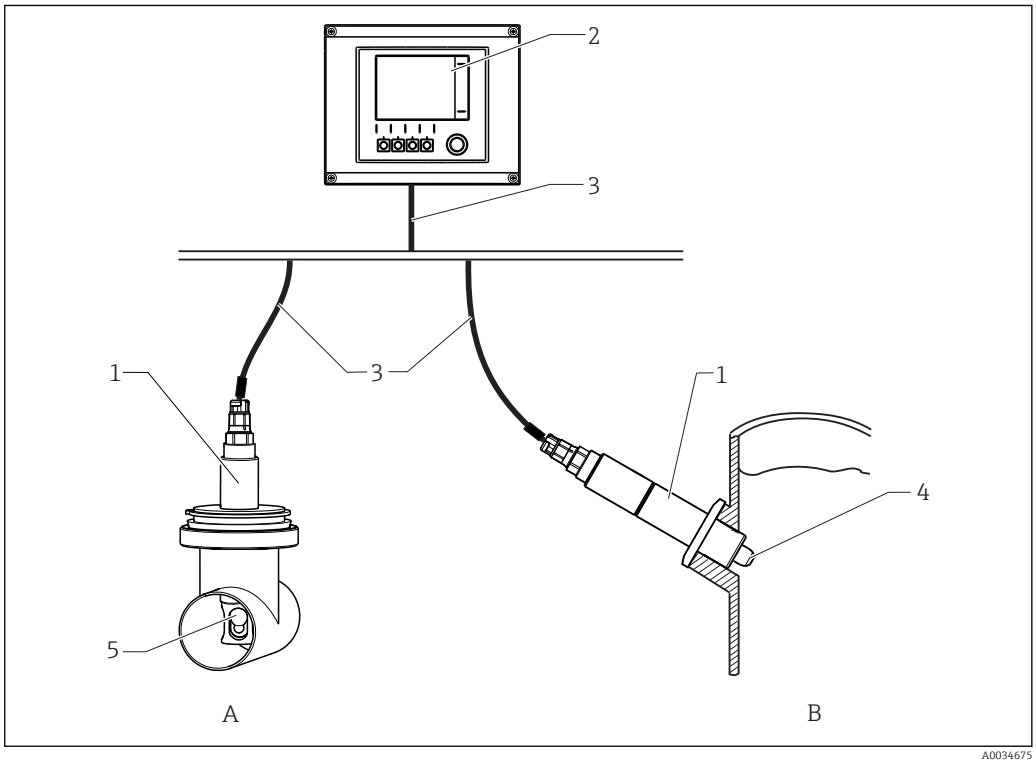
Function

The assembly is used as a stationary holder for installing 12 mm (0.47 in) sensors. It can be installed either vertically or at an angle in pipes or reactors. The assembly protects the sensor and seals it off from the process. It is suitable for:
- CIP (cleaning in place)
- SIP (sterilization in place)

The versions in stainless steel 1.4435 (AISI 316 L) and Alloy C22 are autoclavable.

Measuring system

A complete measuring system comprises:
- Unifit CPA842 assembly
- 12 mm (0.47 in) Sensor (with shaft length 120 mm (4.7 in)), e.g. pH Memosens CPS61E, conductivity Memosens CLS82E or oxygen COS81E
- Transmitter, e.g. Liquiline CM44x
- Measuring cable, e.g. CYK10



A0034675

1 Measuring system (example)

1 Unifit CPA842 assembly
2 Transmitter Liquiline CM44x
3 Measuring cable CYK10
4 Sensor COS81E
5 Sensor CPS61E
A Installation in pipe
B Installation in tank

Reliability

- The assemblies are manufactured in accordance with Endress+Hauser's certified quality criteria.
- The fixed assembly is manufactured from high-grade materials:
  - Stainless steel 1.4435 as per BN2 (AISI 316 L)
  - Only these materials and the relevant seal are in contact with the process medium.
- The assembly can be cleaned and sterilized inline in accordance with EHEDG criteria.
- Certified versions and certificates are available, depending on the version.

Installation

Installation instructions

- 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.

Environment

Ambient temperature range

−15 to 70 °C (5 to 158 °F)

Storage temperature

−15 to 70 °C (5 to 158 °F)

Process

Process temperature range

Specification of the electrodes and seals must be observed.

−15 to 140 °C (5 to 280 °F)

Process pressure range

Specification of the electrodes and seals must be observed.

16 bar (232 psi) to 140 °C (284 °F)

Flow velocity

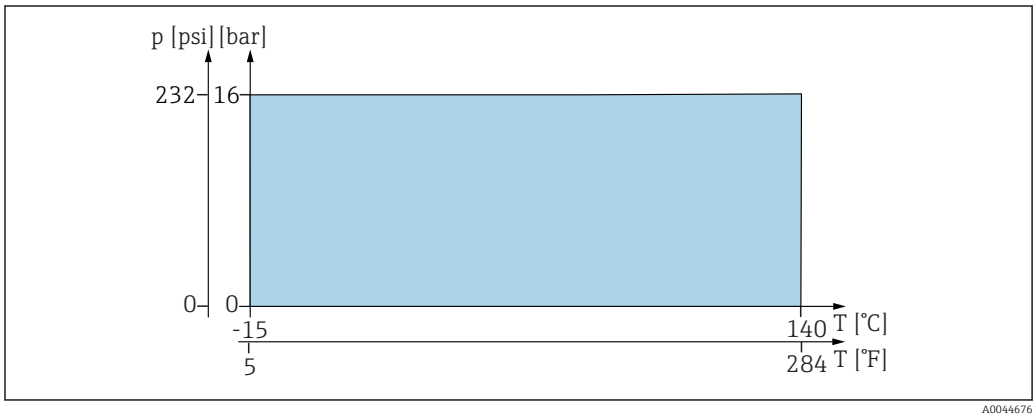
NOTICE

Excessively high flow velocities may damage or destroy the sensors.

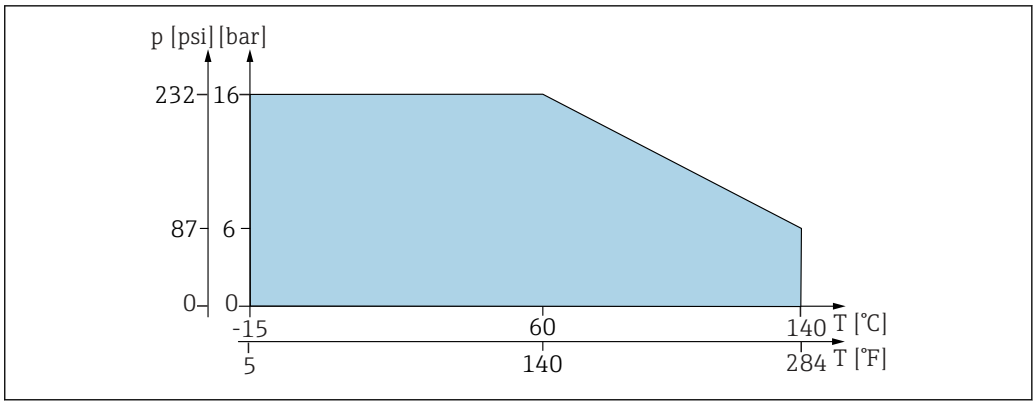
- Pay attention to the specification of the installed sensor.

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).

Pressure-temperature ratings



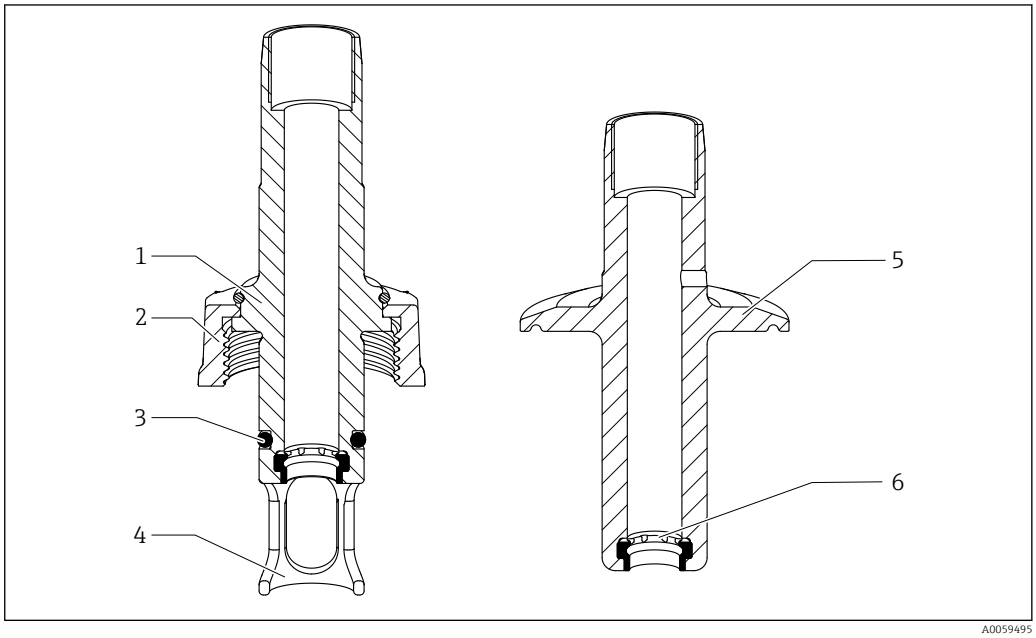
2 *Pressure-temperature ratings for EPDM, FKM or FFKM seal*



3 Pressure-temperature diagram for silicone molded seal

Mechanical construction

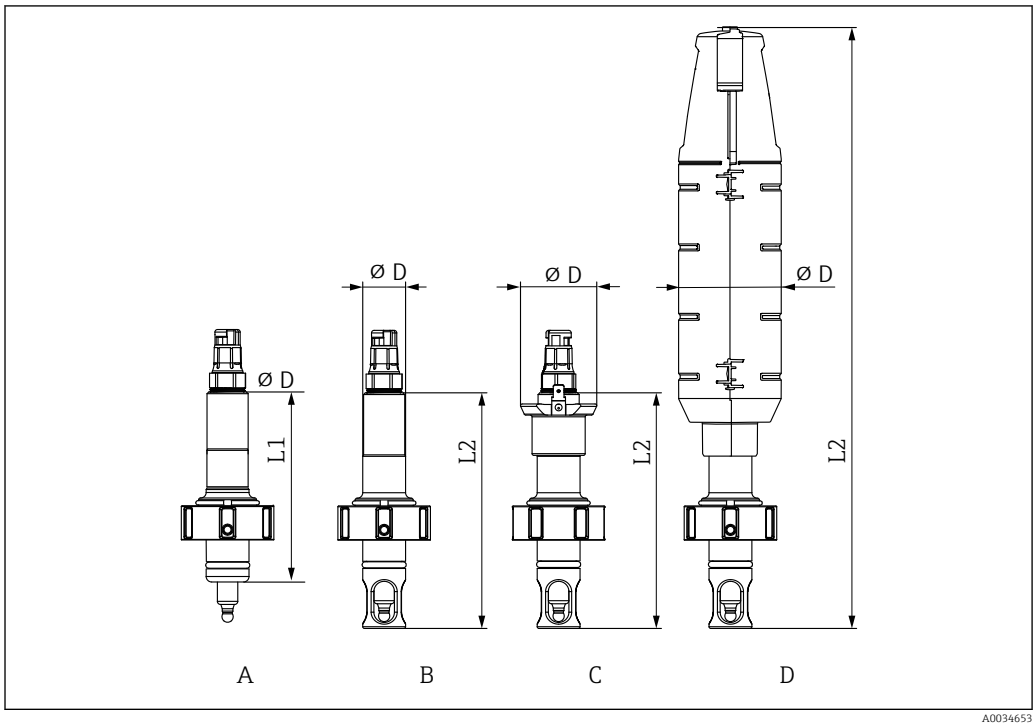
Design, dimensions



4 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

Dimensions



5 *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)

Weight

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

Protection cover: Approx. 0.2 kg (0.4 lb)

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 ≤ 0.76 µm or Ra ≤ 0.38 µm)

Lubricant for seals: Klüber Paraliq GTE703

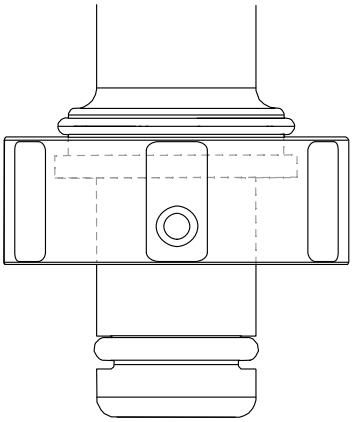
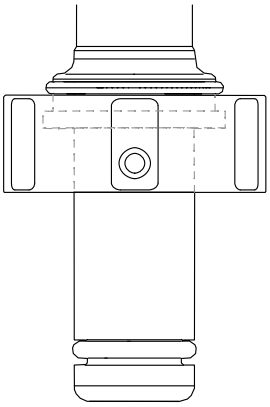
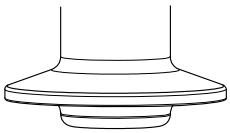
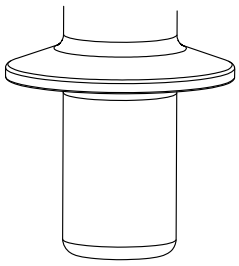
Certificates can be ordered separately.

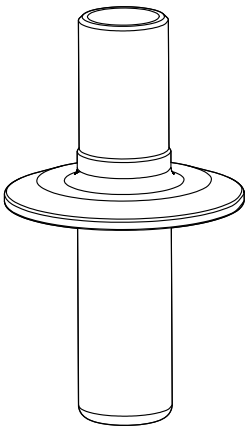
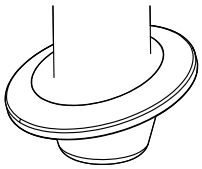
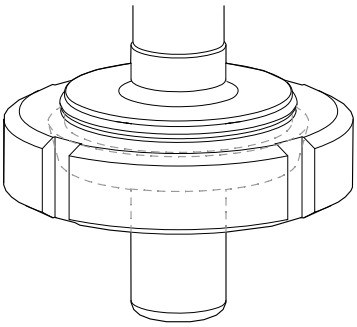
Versions with silicone seals are not lubricated and must not be lubricated.

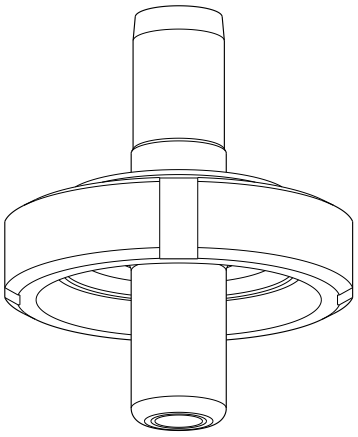
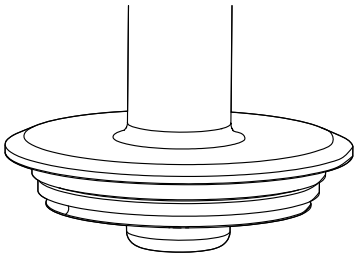
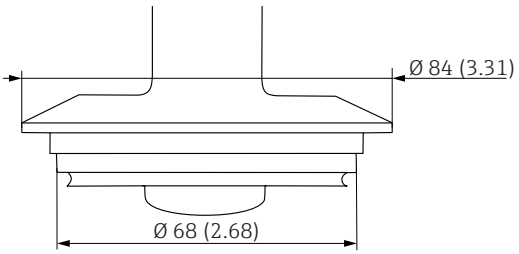
Not in contact with medium

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

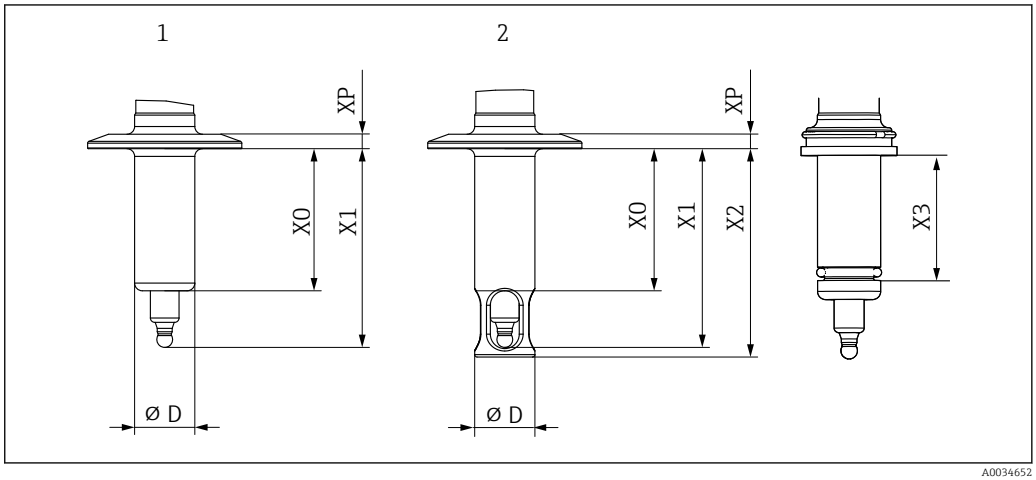
Process connections

Process connection	
DN25 standard ▪ G1 1/4" thread on the union nut ▪ Compatible with hook wrench, DIN 1810 flat face **NOTICE** **Mounting with pipe wrench causes damage.** ► Use a hook wrench for mounting and removal.	 A0042904
DN25 B.Braun port ▪ g. Braun Biotech 25 mm (0.98 in) Safety Side Port ▪ G1 1/4" thread on the union nut ▪ Compatible with hook wrench, DIN 1810 flat face **NOTICE** **Mounting with pipe wrench causes damage.** ► Use a hook wrench for mounting and removal.	 A0043028
Clamp 1.5" short, with outer diameter of 50.5 mm (1.99 in) ▪ 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).	 A0034698
Clamp 1.5" long, with outer diameter of 50.5 mm (1.99 in) ▪ Complies with ASME-BPE 2024 ▪ In accordance with DN40 DIN 32676 2022 ▪ In accordance with OD 38,1 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).	 A0034699

Process connection	
Clamp 2" with outer diameter of 64 mm (2.52 in) ▪ Complies with ASME-BPE 2024 ▪ Complies with DN50 DIN 32676 2022 ▪ In accordance with OD 50,80 DIN 32676/ISO 2852 ▪ Compatible with NovAseptic process connections, pay attention to immersion depths ▪ The (pipe) internal diameter of the counterpiece must > 28 mm (1.1 in).	 A0034701
Clamp 1.5", angled at 15° with outer diameter of 50.5 mm (1.99 in)	 A0034700
Dairy fitting DN50 DIN 11851 (EHEDG-compliant only with special seal, not included in the scope of delivery)	 A0043050

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

Immersion depth



A0034652

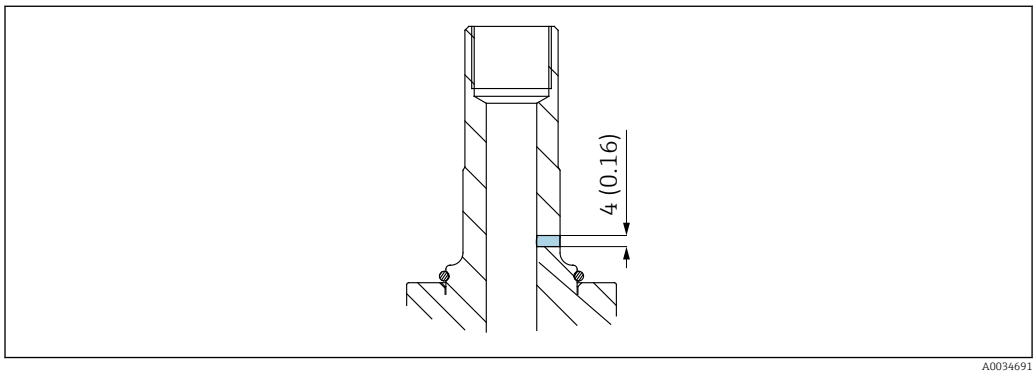
6 Immersion depth in mm (in)

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)	
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)	

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).



7 Leakage detection

Leakage detection (a bore above the process connection) indicates a possible defect in the molded seal that causes medium to escape in small quantities from the monitoring opening. The molded seal must then be replaced.

Leakage detection is part of Option 3-A and EHEDG.

Certificates and approvals

Current certificates and approvals for the product are available at www.endress.com on the relevant product page:

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

Additional certifications and declarations

The following test certificates, attestations and declarations (e.g. certificates of conformity) are available for the product depending on the selected version:

- Manufacturer's declaration for use in explosive atmospheres
- Inspection certificate
- ASME BPE CoC
- Compliance with requirements derived from cGMP
- EU Food Contact Materials REG (EC) 1935/2004
- FDA 21 CFR
- CN Food Contact Materials GB 4806
- Surface roughness test
- 3-A Certificate
- EHEDG Certificate
- CRN
- Manufacturer's declaration on Pressure Equipment Directive (PED)
- 3.1 Inspection certificate as per EN 10204
- TSE statement

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

Ordering information

Product page

www.endress.com/cpa842

Product Configurator

1. **Configure**: Click this button on the product page.
2. Select **Extended selection**.
   ↳ The Configurator opens in a separate window.
3. Configure the device according to your requirements by selecting the desired option for each feature.
   ↳ In this way, you receive a valid and complete order code for the device.
4. **Accept**: Add the configured product to the shopping cart.

For many products, you also have the option of downloading CAD or 2D drawings of the selected product version.

5. **CAD**: Open this tab.
   ↳ The drawing window is displayed. You have a choice between different views. You can download these in selectable formats.

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

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.

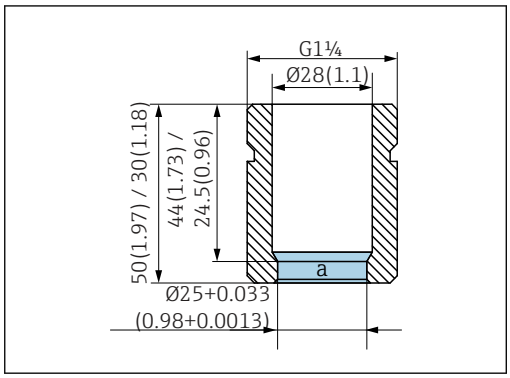
1. Application-specific restrictions of the product combination are possible.
   Ensure conformity of the measuring point to the application. This is the responsibility of the operator of the measuring point.
2. Pay attention to the information in the instructions for all products, particularly the technical 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:

www.endress.com/spareparts_consumables

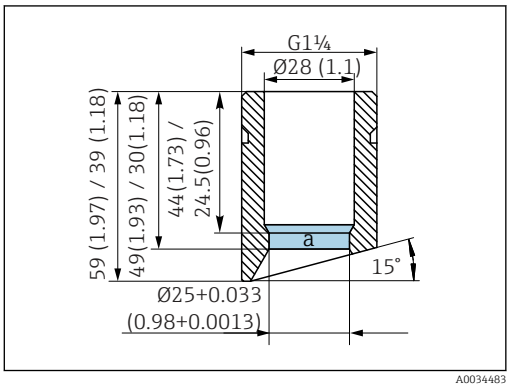
The product-specific accessories can be ordered via the order structure for CPA842 and the spare parts order structure "XPC0017".

Installation accessories



8 *Welding socket, straight, in mm (in)*

a Surface roughness Ra < 0.38 µm



9 *Welding socket, angled, in mm (in)*

a Surface roughness Ra < 0.38 µm

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

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

Sensors (selection)

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

Technical Information TI01493C

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

Technical Information TI01494C

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

Technical Information TI01600C

Memosens CPS41E
- pH sensor for process technology
- With ceramic junction and KCl liquid electrolyte
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps41e

Technical Information TI01495C

Memosens CPS47E
- ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps47e

Technical Information TI01616C

Memosens CPS61E
- pH sensor for bioreactors in life sciences and for the food industry
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps61e

Technical Information TI01566C

Memosens CPS76E
- pH/ORP sensor for process technology
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps76e

Technical Information TI01601C

Memosens CPS77E
- Sterilizable and autoclavable ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps77e

Technical Information TI01396

Memosens CPS97E
- ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps97e

Technical Information TI01618C

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

Technical Information TI01619C

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

Technical Information TI01558C

Memosens CLS82E
- Hygienic conductivity sensor
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cls82e

Technical Information TI01529C

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

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



www.addresses.endress.com

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