

Technical Information

Unifit CPA442

Process assembly

For safe installation of 12 mm sensors (Pg 13.5) in the food, beverage, pharmaceutical and chemical industry



Simple - Safe - Hygienic - Reliable

Application

- Process assembly for 12 mm sensors like pH glass sensors, pH ISFET sensors, oxygen sensors etc.
- Permanent installation in tanks and pipework
- Food
- Pharmaceuticals
- Chemicals
- Water treatment

Your benefits

- Robust assembly
- Complies with 3A standard 74-05
- Complies with the basic criteria of the European Hygienic Equipment Design Group (EHEDG):
 - In-place cleanability
 - In-line steam sterilizability
- Flush mounted, leak-tight electrode seal (molded seal)
- Electropolished surface $R_a=0.38 \mu\text{m}$ or $0.76 \mu\text{m}$ (stainless steel 1.4435 (AISI 316 L) and Alloy C22)
- Hygienic process connections, flanges and further established process connections
- Protection cover for KCl and gel sensors

Function and system design

Functionality

The process assembly CPA442 is used to install 12 mm sensors. You can install the assembly vertically or angularly in pipes or reactors.

The assembly seals the sensor against the process. It is suitable for:

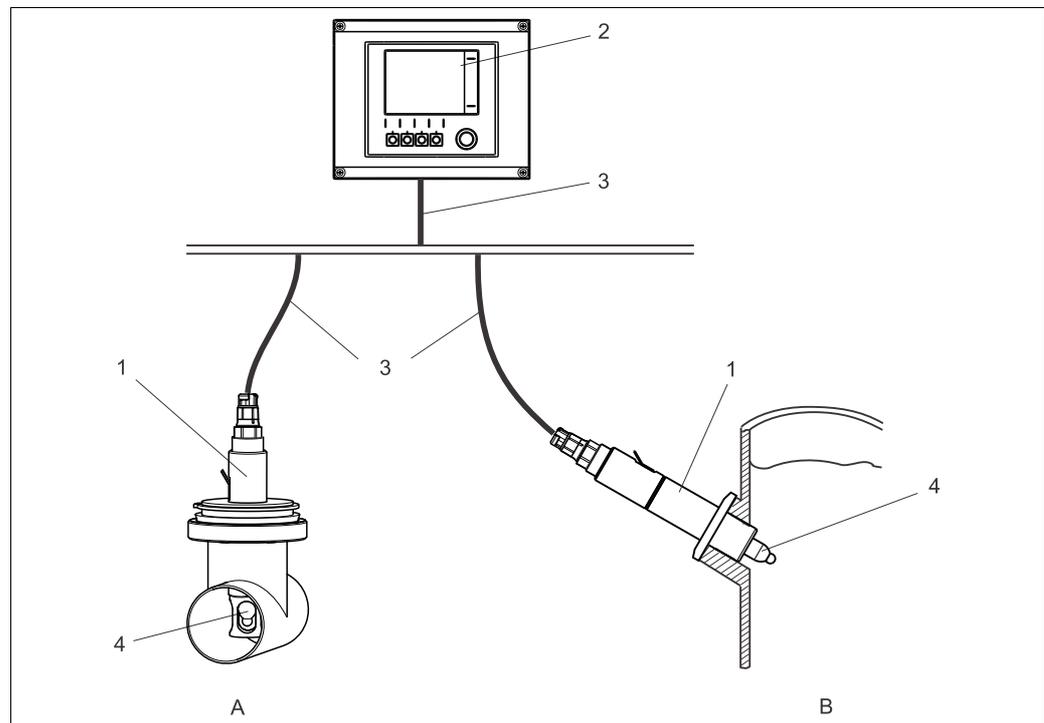
- CIP (cleaning in place)
- SIP (sterilization in place)

The stainless steel version and the Alloy C22 version are autoclavable.

Measuring system

A complete measuring system comprises:

- Unifit CPA442 assembly
- 12 mm sensor, e.g. Orbisint CPS11D or Oxymax COS22D
- Transmitter, e.g. Liquiline CM44x
- Measuring cable



Example of a measuring system

- 1 Unifit CPA442
- 2 Liquiline CM44x
- 3 Measuring cable
- 4 Orbisint CPS11D
- A Installation in pipe
- B Installation in reactor

Reliability

- The assemblies are manufactured according to the certified quality criteria of Endress+Hauser.
- The assemblies are made of high-quality materials like stainless steel 1.4435 (AISI 316 L), Alloy C22 or highly resistant plastics like PVDF or PEEK. Only these materials and the respective sealings are in contact with medium. The assemblies are manufactured from solid material (except the 15° versions S and T).
- The assemblies are inline cleanable and inline sterilizable according to the EHEDG criteria.
- Certified versions and certificates are available.

INITIALLY ISSUED: 10/4/1999 AUTHORIZATION NUMBER: 1051



THIS IS TO CERTIFY THAT

Endress + Hauser Conducta
Diesseistrasse 24, Geringen, 70839 GERMANY

is hereby authorized to continue to apply the 3-A Symbol to the models of equipment, conforming to 3-A Sanitary Standards for:

Number: 74-05, Sensors and Sensor Fittings and Connections
set forth below:

pH IsFET Sensor TopHit CPS441-xxxx1, CPS441D-xxxx1x, CPS471-xxxx1, CPS471D-xxxx1x, Conductivity sensor Indumax CLS54(D)-xxxxxxx, Conductivity measurement system Smartec CLD134-xxxxxxx, Process assembly Unifit CPA442-C/D/E/G/H/K/O/P/Q/R/S/T/U/V/E/F/xx2x, Process assembly ProFit CPA465-FA/FC/FM/FVxx, Process assembly CleanFit CPA475-xxxxxxC/D/E/Fx.

VALID THROUGH: December 31, 2013

Timothy R. Rugh
Executive Director, 3-A Sanitary Standards, Inc.

The issuance of this authorization for the use of the 3-A Symbol is based upon the voluntary certification, by the applicant for it, that the equipment listed above complies fully with the 3-A Sanitary Standards designated. Legal responsibility for compliance is solely that of the holder of this Certificate of Authorization, and 3-A Sanitary Standards, Inc. does not warrant that the holder of an authorization at all times complies with the provisions of the said 3-A Sanitary Standards. This in no way affects the responsibility of 3-A Sanitary Standards, Inc. to take appropriate action in such cases in which evidence of nonconformance had been established.

NEXT TPV INSPECTION/REPORT DUE: December 2015

CERTIFICATE OF COMPLIANCE

EHEDG
HYGIENIC ENGINEERING & DESIGN

TPV Certification
herby declares that the product

Unifit CPA 442

From
Endress+Hauser Conducta GmbH Co. KG

has been evaluated for compliance with the Hygienic Equipment Design Criteria of the EHEDG, Document No. 8, by:

TPV Nutrition and Food Research at Zeist, Netherlands
and meets the criteria of this document as demonstrated by:

Evaluation Report No. 3-4456-01

Signed: [Signature] Date June 11, 2005
Evaluation Officer

Signed: [Signature] Date June 11, 2005
Managing Director, TPV Certification



Certificate No. 035-6289

TPV Certification BV, P.O. Box 541, 7300 AM Apeldoorn, Netherlands
©EHEDG

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Herstellererklärung / **Manufacturer Declaration**

nicht aus Materialien tierischen Ursprungs hergestellt sind.
do not derive from animal sources.

Wir bestätigen ebenfalls, dass während der gesamten Produktion aller prozessmedienberührenden Teile weder Material tierischen Ursprungs noch Bestandteile tierischen Ursprungs verwendet wurden.
We confirm also that during the entire production of all parts in contact with the process media no material with animal origin or ingredients of animal origin has been used.

Parameter	Produkt	Produktwert	Parameter	Produkt	Produktwert
pH	Sensor	CLS15	pH	Sensor	CPS41
pH	Sensor	CLS15D	pH	Sensor	CPS41D
pH	Sensor	CLS16	pH	Sensor	CPS42
pH	Sensor	CLS16D	pH	Sensor	CPS42D
pH	Sensor	CLS50	pH	Sensor	CPS71
pH	Sensor	CLS50D	pH	Sensor	CPS71D
pH	Sensor	CLS54	pH	Sensor	CPS72
pH	Sensor	CLS54D	pH	Sensor	CPS72D
pH	Smartec	CLD134	pH	Sensor	CPS70D
O ₂	Sensor	CS201	pH	Sensor	CPS70
O ₂	Sensor	CS202	pH	Sensor	CPS44
O ₂	Sensor	CS202D	pH	Sensor	CPS44D
O ₂	Sensor	CS202E	pH	Sensor	CPS471
Cl	Sensor	CS3140D	pH	Sensor	CPS471D
pH	Sensor	CP511	pH	Sensor	CPS491
pH	Sensor	CP511D	pH	Armatur	CPA402
pH	Sensor	CP512	pH	Armatur	CPA475
pH	Sensor	CP512D	pH	Armatur	CPA404

Endress+Hauser Conducta
Gesellschaft für Messtechnik mbH+Co. KG
Diesseistrasse 24, 70839 Geringen, Germany

Date: August 15, 2012

[Signature]
L.V. Frank Decker
Quality Management

[Signature]
L.A. Dr. Lotzar Klöpper
Quality Management

Endress + Hauser 
People for Process Automation

Liste Produkte mit 3.1 Zeugnis nach EN10204 **Endress+Hauser** 
People for Process Automation

Übersicht der Produkte mit 3.1 Zeugnis nach EN 10204

Parameter	Produkt/Variante	Produktwert	Parameter	Produkt/Variante	Produktwert
	Messumformer analog/digital, mit/ohne Bodenmontageoption, mit/ohne Kühlung	CM42	Lf	Sensor	CLS16
	Messumformer	CM44x	Lf	Sensor	CLS150
	Messumformer	CM4253	Lf	Sensor	CLS12
	Messumformer	CM4253	Lf	Sensor	CLS13
	Messumformer	CM4153	Lf	Sensor	CLS15
	Messumformer	CLD132	Lf	Sensor	CLS1
Lf	Sampler	CSF48	Lf	Sensor	CLS30
	Sampler	CSF44	Lf	Sensor	CLS19
	Armatur, mit Unterempfang	CSA420	Lf	Sensor	CLS9
pH	Armatur, mit Unterempfang	CPA442	Lf	Sensor	CLS53
pH	Armatur, mit Unterempfang	CPA450	Lf	Sensor	CLS54
pH	Armatur, mit Unterempfang	CPA471	Cl	Sensor	CS340
pH	Armatur, mit Unterempfang	CPA473	Cl	Sensor	CS341
Lf	Armatur, mit Unterempfang	CLA140	Cl	Sensor	CS340
Triebung	Sensor	CS131	Cl	Sensor	CS341
Triebung	Sensor	CS141	O ₂	Sensor	CS202
Triebung	Sensor	CS65	O ₂	Sensor	CS203
Triebung	Sensor	CS120	O ₂	Extrakt	CS222
Triebung	Sensor	CS101			

Date: 20. Juli 2012

[Signature]
Frank Decker
Qualitätsmanagement

[Signature]
Martha Dietzer
Qualitätsmanagement

a0019558

Installation

Installation angle

A	Glass sensor:	Installation angle of at least 15° from the horizontal
B	ISFET pH sensor:	No restrictions, recommended 0 ... 180°
C	Oxygen sensor:	Installation angle of at least 10° from the horizontal

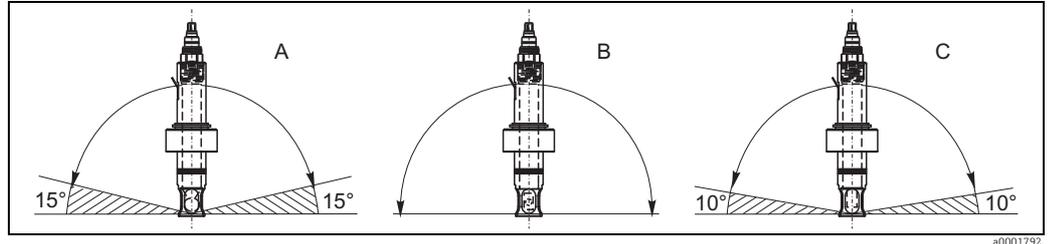


Fig. 1: Permitted installation angles depending on the sensor

Environment

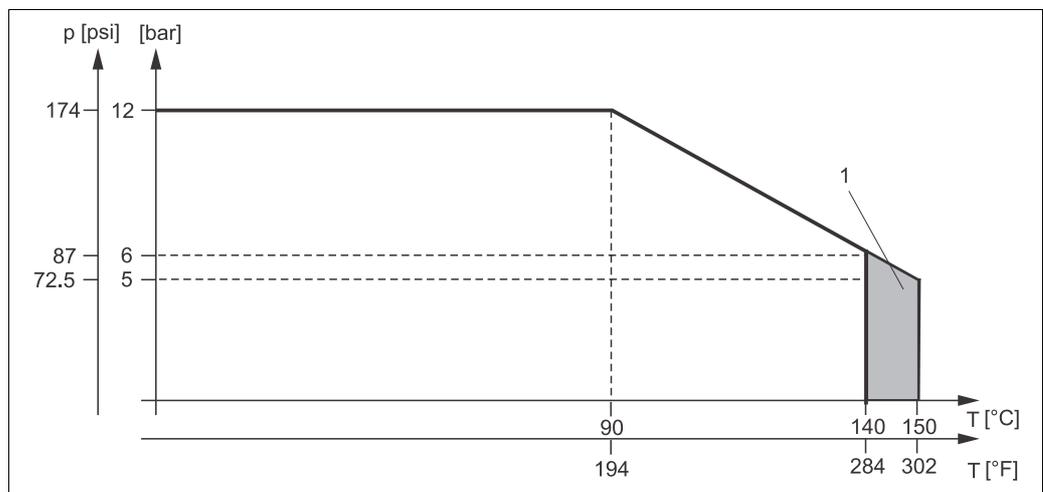
Ambient temperature -15 to 80 °C (+5 to 176 °F)

Storage temperature -15 to 60 °C (+5 to 140 °F)

Process

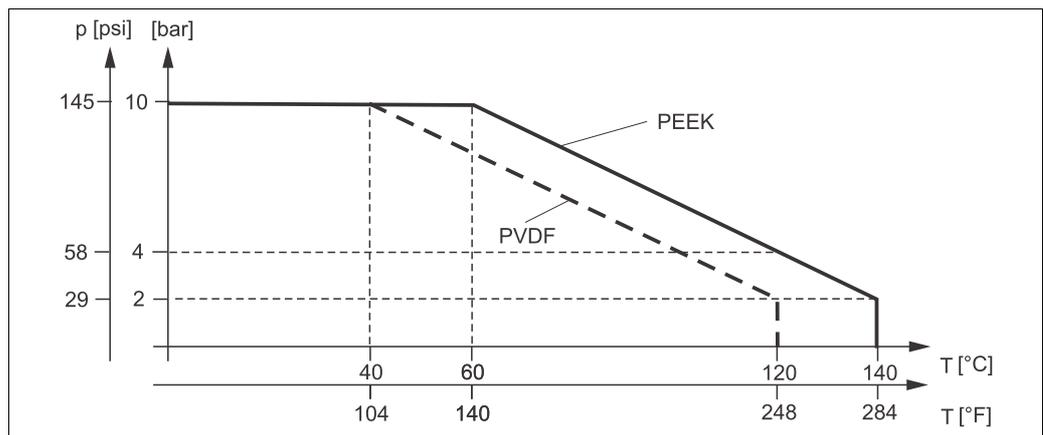
Process temperature range	Stainless steel and Alloy C22	-15 to 140 °C (+5 to 284 °F)
	PEEK	-10 to 140 °C (+14 to 284 °F)
	PVDF	-10 to 120 °C (+14 to 248 °F)
Process pressure	Stainless steel and Alloy C22	12 bar (174 psi) up to 90 °C (194 °F)
		6 bar (87 psi) up to 140 °C (284 °F)
		5 bar (72.5 psi) at 150 °C (302 °F) max. 60 minutes
	PEEK	10 bar (145 psi) up to 60 °C (140 °F)
PVDF	2 bar (29 psi) up to 140 °C (284 °F)	
	10 bar (145 psi) up to 40 °C (104 °F)	
		2 bar (29 psi) up to 120 °C (248 °F)

Pressure / temperature diagram



Pressure temperature diagram for stainless steel 1.4435 (AISI 316 L) and Alloy C22

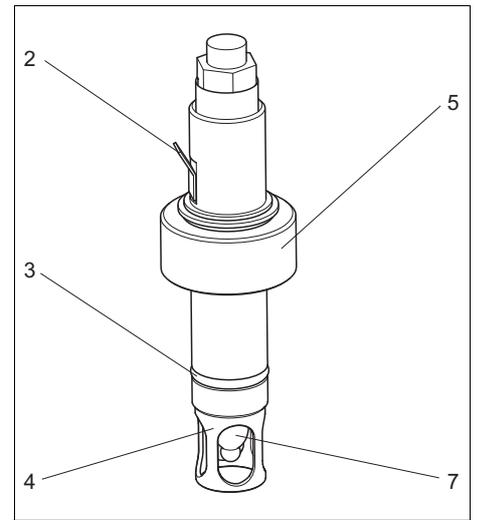
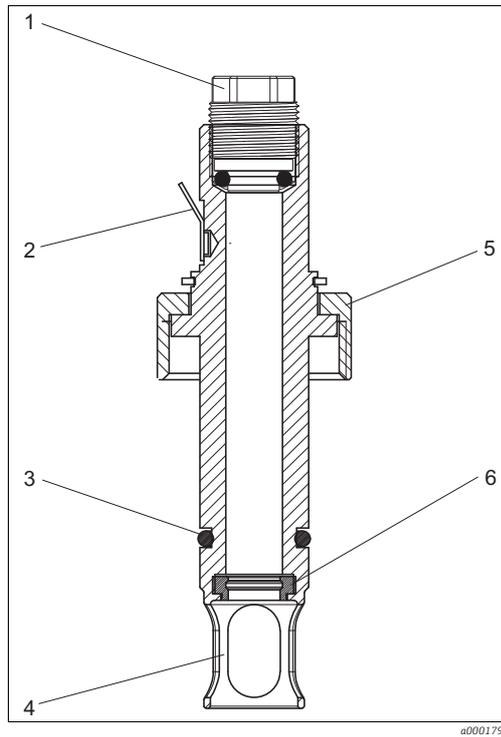
1 Short term for sterilization (max. 60 minutes)



Pressure temperature diagram for PEEK and PVDF

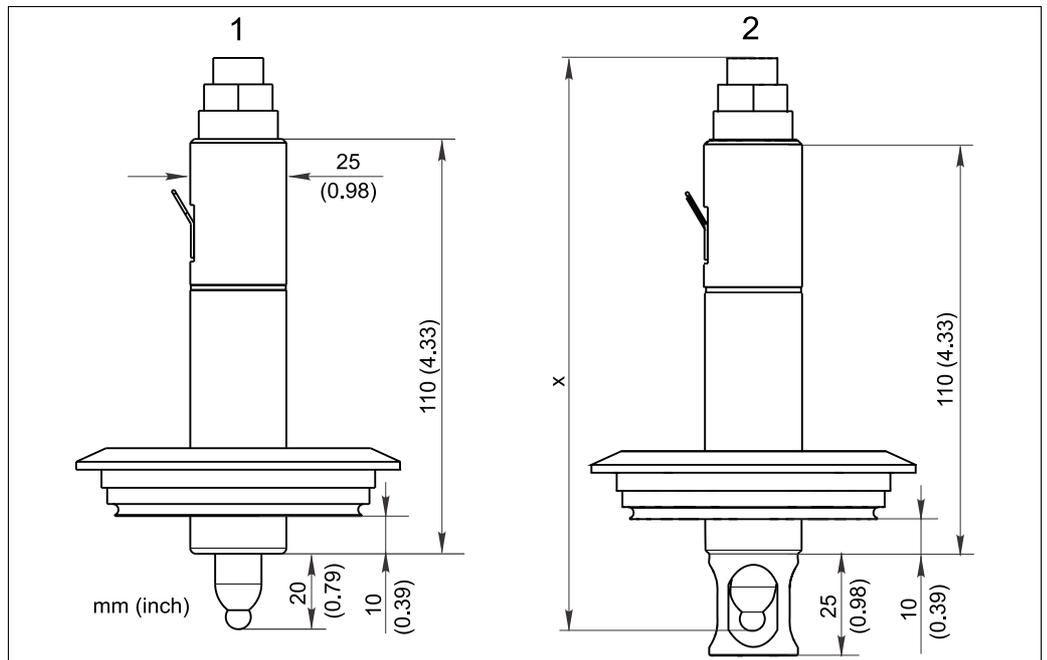
Mechanical construction

Design



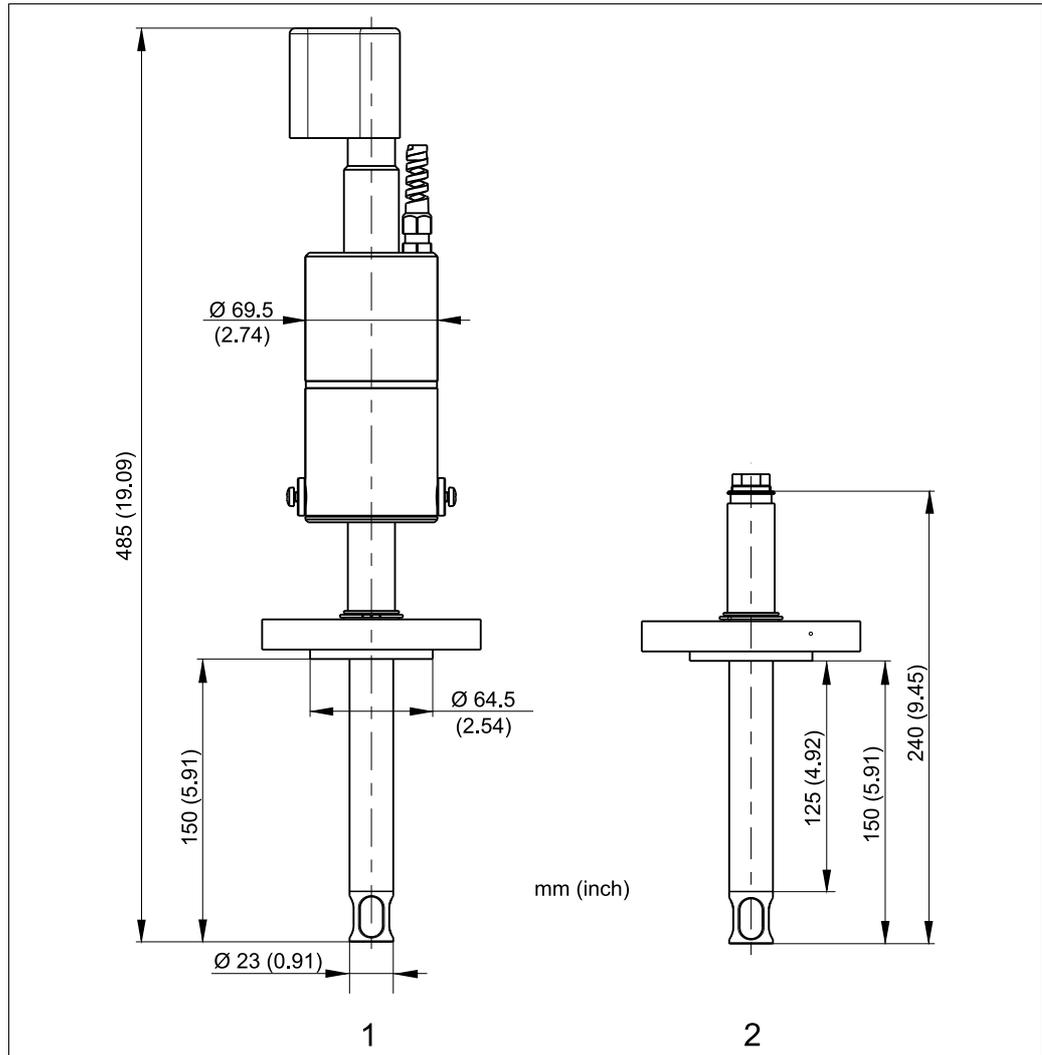
- 1 Dummy plug
- 2 PM pin (optional)
- 3 O-ring (versions A, B, M and N only)
- 4 Sensor protection guard (optional)
- 5 Process connection (here DN25 standard / 1.6")
- 6 Molded seal
- 7 Sensor (here glass sensor)

Dimensions



Dimensions (version G, Varivent)

- 1 Without sensor protection guard
- 2 With sensor protection guard
- x Sensor length without cable



Dimensions (version V, flange)

- 1 With sensor protection cover
- 2 Without sensor protection cover

Weight

Assembly with process connections A to U	0.5 to 1.4 kg (1.1 to 3.1 lbs)
Assembly with process connections V and W	approx. 2.5 kg (5.5 lbs)
Protection cover	approx. 1.0 kg (2.2 lbs)

Materials

In contact with medium

Seals: EPDM, FDA according to 21CFR 177.2600, USP Class VI
 FKM (Viton), FDA according to 21CFR 177.2600, USP Class VI
 Silicone, FDA according to 21CFR 177.2600, USP Class VI

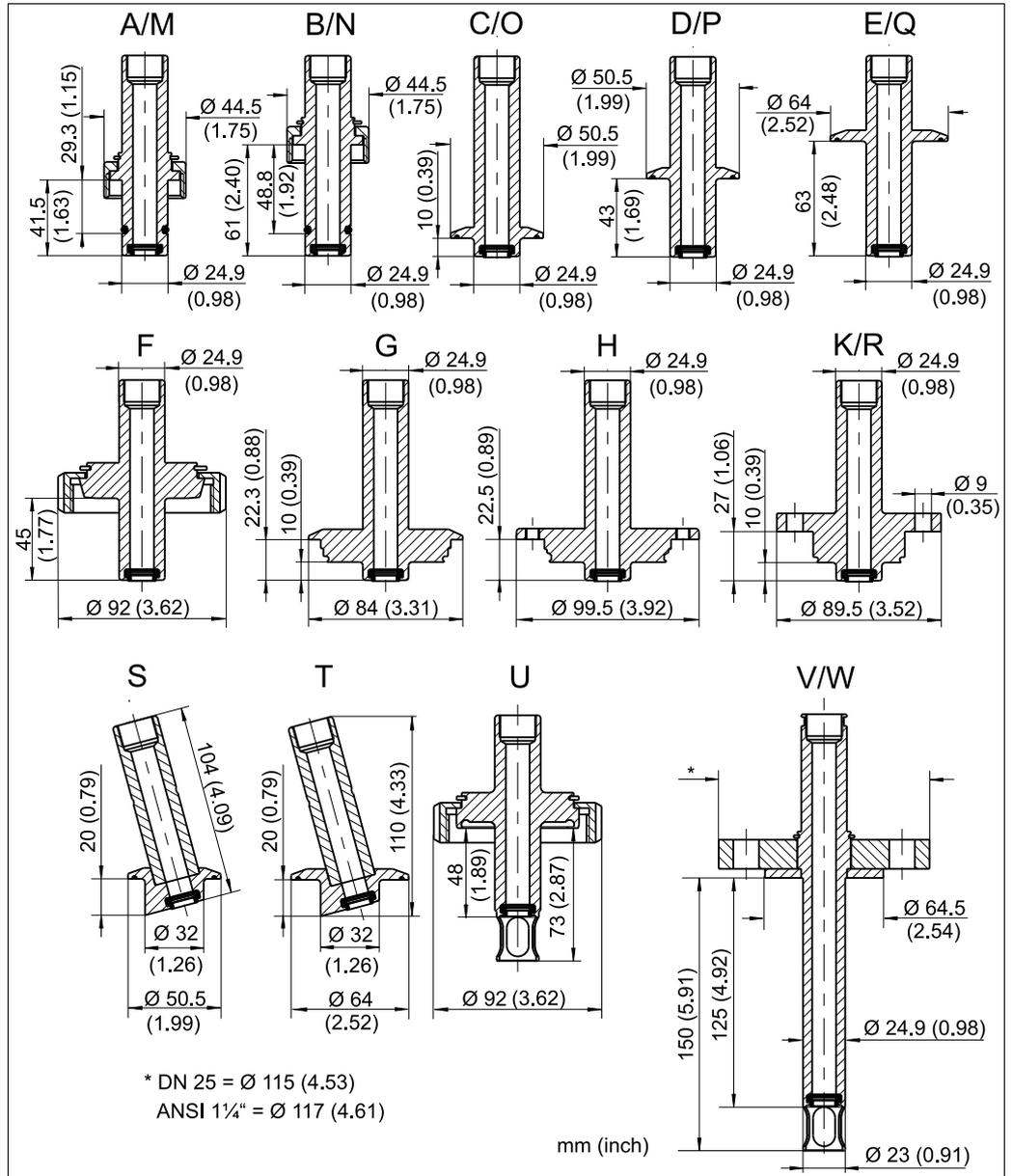
FFKM (Kalrez) on request

Assembly: Stainless steel 1.4435 (AISI 316 L)
 Alloy C22
 PVDF
 PEEK

Not in contact with medium

Union nut: Stainless steel 1.4404 (AISI 316 L)
 optional nickel-plated brass
 Protection cover: POM black

Process connections



Process connections

A	DN 25 standard / 41.5 mm (1.6") / with PM	M	DN 25 standard / 41.5 mm (1.6") / without PM
B	DN 25 B.Braun port / 61 mm (2.4") / with PM	N	DN 25 B.Braun port / 61 mm (2.4") / without PM
C	Clamp 1.5" / 10 mm (0.4") / with PM	O	Clamp 1.5" / 10 mm (0.4") / without PM
D	Clamp 1.5" / 43 mm (1.7") / with PM	P	Clamp 1.5" / 43 mm (1.7") / without PM
E	Clamp 2" / 63 mm (2.5") / with PM	Q	Clamp 2" / 63 mm (2.5") / without PM
F	Dairy fitting DN 50 DIN 11851 / 45 mm (1.8") / with PM	R	Neumo BioControl D 50 / 10 mm (0.4") / without PM
G	Varivent DN 40-125 / 10 mm (0.4") / with PM	S	Clamp 1.5" angular 15° / 20 mm (0.8") / without PM
H	APV DN 40-100 / 10 mm (0.4") / with PM	T	Clamp 2" angular 15° / 20 mm (0.8") / without PM
K	Neumo BioControl D 50 / 10 mm (0.4") / with PM	U	DIN 11864-1-A / aseptic DN 50 / without PM
		V	Flange DN 25 / 150 mm (5.9") / without PM
		W	Flange ANSI 150 lbs 1 1/4" / 150 mm (5.9") / without PM

Fitted sensors

Versions A to U: sensors (gel and KCl) with 120 mm in length

Versions V and W: sensors (gel and KCl) with 225 mm in length



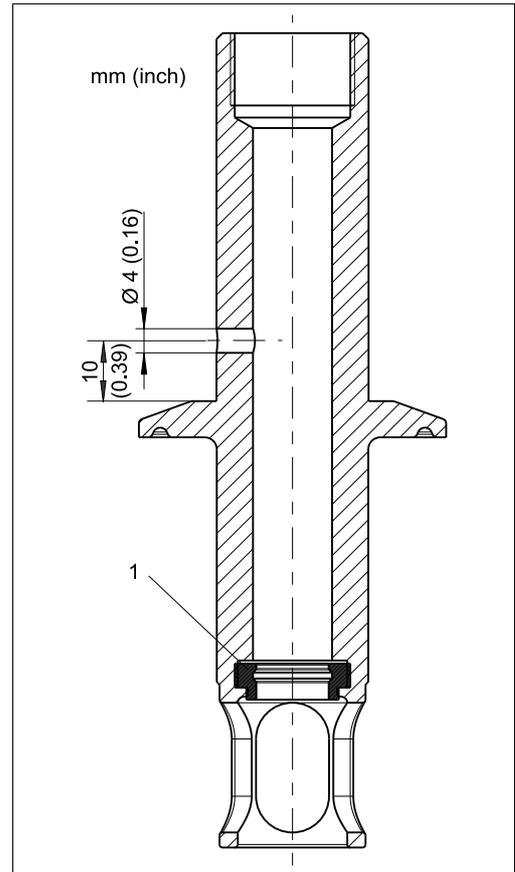
On request this assembly is available for longer sensors up to 425 mm.

**Leakage monitoring
(optional)**

Leakage monitoring (a bore hole 10 mm (0.39") above the process connection) indicates any leaks in the molded seal. In the event of a leak, small amounts of fluid escape through the monitoring hole.

The molded seal must then be replaced.

-  Leakage monitoring is mandatory for 3-A certification (consider this when ordering).



Leakage monitoring

1 Molded seal (seals to the process)

Ordering information

Scope of delivery

The scope of delivery comprises:

- Ordered assembly version
- Operating Instructions, English.

Order code

Enter the following address in your browser to access the product page:

www.products.endress.com/cpa442

1. You can choose from the following options on the product page located on the right:

Product page function
:: Add to product list
:: Price & order information
:: Compare this product
:: Configure this product

2. Click "Configure this product".
3. The configurator opens in a separate window. You can now configure your device and receive the complete order code that applies for the device.
4. Afterwards, export the order code as a PDF or Excel file. To do so, click the appropriate button at the top of the page.

Possible combinations

The following table shows you all possible combinations of the assembly:

	Process connection																			
	A	B	C	D	E	F	G	H	K	M	N	O	P	Q	R	S	T	U	V	W
Material 316 L $R_a = 0.76$	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Material 316 L $R_a = 0.38$	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Material Alloy $R_a = 0.76$										x			x							
Material Alloy $R_a = 0.38$										x			x							
Material PVDF										x	x		x							
Material PEEK										x	x		x							
EHEDG	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
EHEDG, EN 10204	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
EHEDG, EN 10204, Pharma	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
3-A, EHEDG			x	x	x		x	x	x				x	x	x	x	x	x		
3-A, EHEDG, EN 10204			x	x	x		x	x	x				x	x	x	x	x	x		
Seal, EPDM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Seal, FKM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Seal, silicone	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
with protection guard	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x
without protection guard	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
without leakage detection	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
with leakage detection	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Protection cover										x	x			x						x
Brass union nut	x	x								x	x									

Other combinations on request

Product structure

i The following product structure represents the status of printing. You can create a complete and valid order code on the Internet using the configurator tool.

Process connection, immersion depth, potential matching (PM)	
A	DN 25 standard / 41.5 mm (1.6") installation depth without protection guard, with PM
B	DN 25 B. Braun port / 61 mm (2.4") installation depth without protection guard, with PM
C	Clamp; 1.5" / 10 mm (0.4") installation depth without protection guard, with PM
D	Clamp; 1.5" / 43 mm (1.7") installation depth without protection guard, with PM
E	Clamp; 2" / 63 mm (2.5") installation depth without protection guard, with PM
F	DN 50 dairy fitting / 45 mm (1.8") installation depth without protection guard, with PM
G	Varivent N = 68 mm DN 40-125 / 10 mm (0.4") installation depth without protection guard, with PM
H	APV DN 40-100 / 10 mm (0.4") installation depth without protection guard, with PM
K	Neumo BioControl D 50/ 10 mm (0.4") installation depth without protection guard, with PM
M	DN 25 standard / 42 mm (1.6") installation depth without protection guard, without PM
N	DN 25 B. Braun port / 61 mm (2.4") installation depth without protection guard, without PM
O	Clamp; 1.5" / 10 mm (0.4") installation depth without protection guard, without PM
P	Clamp; 1.5" / 43 mm (1.7") installation depth without protection guard, without PM
Q	Clamp; 2" / 63 mm (2.5") installation depth without protection guard, without PM
R	Neumo BioControl D 50/ 10 mm (0.4") installation depth without protection guard, without PM
S	Clamp; 1.5" oblique / 20 mm (0.8") installation depth without protection guard, without PM
T	Clamp; 2" oblique / 20 mm (0.8") installation depth without protection guard, without PM
U	DIN 11864-1-A aseptic DN 50 / without PM
V	Flange DN 25 / 150 mm (5.9") installation depth with protection guard, without PM
W	Flange ANSI 150 lbs, 1¼" / 150 mm (5.9") installation depth with protection guard, without PM
Material, surface roughness	
1	Stainless steel 1.4435 (AISI 316L), surface finish $R_a = 0.76 \mu\text{m}$
2	Stainless steel 1.4435 (AISI 316L), surface finish $R_a = 0.38 \mu\text{m}$ /with inspection certificate EN 10204-3.1
3	Alloy C22, surface finish $R_a = 0.76 \mu\text{m}$ /with inspection certificate EN 10204-3.1
4	Alloy C22, surface finish $R_a = 0.38 \mu\text{m}$ /with inspection certificate EN 10204-3.1
7	PVDF (polyvinylidene fluoride)
8	PEEK (polyetheretherketone)
Approval, certificates	
A	EHEDG cleanable and sterilizable
B	EHEDG cleanable and sterilizable + EN 10204-3.1
C	EHEDG cleanable and sterilizable + EN 10204-3.1 + Pharma CoC
E	3-A, EHEDG cleanable and sterilizable
F	3-A, EHEDG cleanable and sterilizable + EN 10204-3.1
Seal, wetted parts	
1	EPDM molded seal (complying with FDA requirements, USP Class VI)
2	FKM (Viton®) molded seal (complying with FDA requirements, USP Class VI)
3	Silicone molded seal (complying with FDA requirements, USP Class VI)
Sensor protection guard	
A	With integrated sensor protection guard (+ 25 mm installation depth)
B	Without sensor protection guard (+ 20 mm free installation depth required)
Version	
1	Basic version
2	With leakage detection, 3-A
Additional option	
1	Basic version
2	Protection cover 316 / POM, KCl sensor, chemical capable
3	Union nut G1¼, nickel plated brass
CPA442-	complete order code

Process connection Clamp 1.5" with OD of 50.5 mm (1.99")

- complies with ASME-BPE 2009
- complies with DN 40 DIN 32676 2001
- complies with NW 38 ISO 2852

Process connection Clamp 2" with OD of 64 mm (2.52")

- complies with ASME-BPE 2009
- complies with DN 50 DIN 32676 2001
- complies with NWsd 51-40 ISO 2852

Certificates and approvals

Hygienic certificates

FDA

All materials in contact with medium are listed at FDA.

3-A

Certified according to 3-A Standard 74-05 ("3-A Sanitary Standards for Sensor and Sensor Fittings and Connections Number 74-05").

(for versions with leakage monitoring **and** process connections C, D, E, G, H, K, O, P, Q, R, S, T, U)

TSE/BSE

No material of animal origin is used. Origin, production and processing are free of TSE/BSE.
(deliverable via CoC certificate)

USP Class VI

Certificate (Certificate of Compliance) according to USP (United States Pharmacopeia) part <87> and part <88> class VI

The seals made of EPDM, FKM and silicone are approved.

EHEDG

Certified for cleanability and sterilizability according to EHEDG

Pharma CoC

Manufacturer's certificate according to published Endress+Hauser specification.

Material inspection certificate

3.1

Material inspection certificate according to EN 10204 - 3.1

Surface finish

Inspection certificate according to EN 10204 - 3.1

Pressure equipment directive

DGRL 97/23/EG

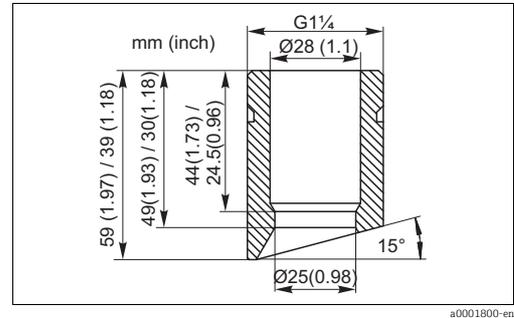
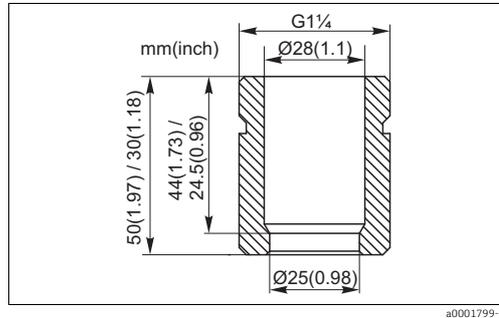
Certificate of compliance according to pressure equipment directive 97/23/EG

Accessories

Seals

- EPDM seal set for CPA442; order no. 51507170
- FKM (Viton®) seal set for CPA442; order no. 51507169
- Silicone seal set for CPA442; order no. 51507171

Welding sockets



- DN25 safety welding socket, straight, stainless steel 1.4435, L=50; order no. 51508049 only for CPA442-B***** only for CPA442-N*****
 - DN25 safety welding socket, angled, stainless steel 1.4435, L=50/60; order no. 51508050 only for CPA442-B***** only for CPA442-N*****
 - DN25 safety welding socket, straight, stainless steel 1.4435, L=30; order no. 51508051 only for CPA442-A***** only for CPA442-M*****
 - DN25 safety welding socket, angled, stainless steel 1.4435, L=30/40; order no. 51508052 only for CPA442-A***** only for CPA442-M*****
-  Already existing standard welding sockets (of CPA440 / CPA441 / CPA460) order no. 50005192 and 50028446 are also suitable for CPA442.

Dummy plug

Dummy plug for G1¼ process connection,

- Stainless steel 1.4435 (AISI 316L), FKM (Viton®) seal, G1¼ internal thread; order no. 51502800

Sensors

Orbisint CPS11/CPS11D

- pH sensor for process applications
- Optional SIL version for connection to SIL approved transmitters
- With dirt-repellent PTFE diaphragm
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps11 or www.products.endress.com/cps11d)
- Technical Information TI028C/07/EN

Orbisint CPS12/CPS12D

- ORP electrode for process applications
- With dirt-repellent PTFE diaphragm
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps12 or www.products.endress.com/cps12d)
- Technical Information TI367C/07/EN

Ceraliquid CPS41/CPS41D

- pH sensor
- With ceramics diaphragm and liquid KCl electrolyte
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps41 or www.products.endress.com/cps41d)
- Technical Information TI079C/07/EN

Ceraliquid CPS42/CPS42D

- ORP electrode
- With ceramics diaphragm and liquid KCl electrolyte
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps42 or www.products.endress.com/cps42d)
- Technical Information TI373C/07/EN

Ceragel CPS71/CPS71D

- pH sensor
- With double chamber reference system and integrated bridge electrolyte
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps71 or www.products.endress.com/cps71d)
- Technical Information TI245C/07/EN

Ceragel CPS72/CPS72D

- ORP electrode
- With double chamber reference system and integrated bridge electrolyte
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps72 or www.products.endress.com/cps72d)
- Technical Information TI374C/07/EN

Orbipore CPS91/CPS91D

- pH sensor
- With open aperture for media with high dirt load
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps91 or www.products.endress.com/cps91d)
- Technical Information TI375C/07/EN

Orbipore CPS92/CPS92D

- ORP sensor
- With open aperture for media with high dirt load
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps92 or www.products.endress.com/cps92d)
- Technical Information TI435C/07/EN

Tophit CPS471/CPS471D

- Sterilizable and autoclavable ISFET sensor for food and pharmaceuticals, process technology, water treatment and biotechnology;
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps471 or www.products.endress.com/cps471d)
- Technical Information TI283C/07/EN

Tophit CPS441/CPS441D

- Sterilizable ISFET sensor for media with low conductivity, with liquid KCl electrolyte;
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps441 or www.products.endress.com/cps441d)
- Technical Information TI352C/07/EN

Tophit CPS491/CPS491D

- ISFET sensor with open aperture for media with high dirt load;
- Ordering per product structure (--> Online configurator, www.products.endress.com/cps491 or www.products.endress.com/cps491d)
- Technical Information TI377C/07/EN

Oxymax COS22D

- Sterilizable sensor for dissolved oxygen
- Order as per product structure (--> Online configurator, www.products.endress.com/cos22d)
- Technical Information TI446C/07/EN



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