Technical Information
Cleanfit CPA871

Flexible process retractable assembly for water, wastewater and chemical industry

Application

Cleanfit CPA871 is a flexible process retractable assembly for applications with standard 12 mm sensors for pH and redox.

The assembly was developed to guarantee maximum safety in:
- Water and wastewater including sea water
- Chemical industry
- Oil and gas
- Electricity and energy
- Hazardous areas

Your benefits

- Maximum operational safety: Intelligent functions ensure that the assembly is not inserted into the process without the sensor or unintentionally retracted from the process if the assembly is in measuring position.
- Suitable for demanding applications: The optional immersion chamber eliminates problems associated with media that form buildup.
- Robust assembly design: The metallic support housing ensures that the service chamber is mechanically stable.
- Flexible in adapting to your process: A wide range of process connections and materials in contact with the medium; for corrosive media and hazardous areas also.

Endress+Hauser
People for Process Automation

Function and system design

Function

With the Cleanfit CPA871 retractable assembly you can take reliable pH, redox and other measurements using appropriate sensors. You can remove, clean, sterilize or calibrate/adjust the sensors without interrupting the process.
The assembly can be installed in both vessels and pipes.

Design

The CPA871 retractable assembly has a modular design and can therefore be flexibly adapted to a wide array of applications. It is available with both a manual and a pneumatic drive.

A choice of two chamber systems is available for the assembly:
- Standard version or
- Immersion chamber version

It is possible to choose between the following strokes for the electrode guide:
- 36 mm for standard version and immersion chamber version
- 78 mm for standard version

All common process connections are available:
Clamp/flange EN1092-1/flange ASME B16.5/flange JIS B2220/dairy fitting/thread

Safety function

Locking mechanism without sensor
If the sensor is not installed, it is not possible to pneumatically or manually move the assembly from the service position to the measuring position.

Manual or pneumatic drive
The sensor can be driven both manually and pneumatically. The manual drive has a self-retaining thread to hold the sensor in any intermediate position. The manual drive can be used for process pressures up to 8 bar (116 psi). The pneumatic drive can be used for process pressures up to 16 bar (232 psi).

Limit position locking if compressed air fails
If the compressed air fails in pneumatic assemblies, the assembly remains in the position previously selected. The process pressure cannot force it out of the measuring position and into an intermediate position.

Impossible to remove sensor in the measuring position

The protection cap for covering the sensor has the following functions:
- Mechanical sensor safety
- Prevents sensor removal in the assembly measuring position

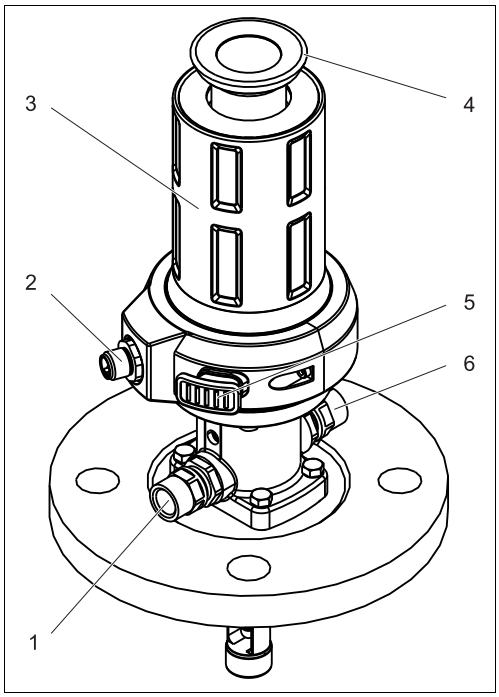
The bottom part of the protection cap is partly inserted into the drive and cannot be opened as a result.

Non-rotating sensor guide
During insertion/retraction, the position of the ridges of the immersion tube in the area of the sensor head retains the pre-setting once selected. This guarantees optimum and clear positioning of the sensor in the process and during cleaning.

Limit position detection (can be retrofitted)
In the case of assemblies with a pneumatic drive, the service and measuring position of the sensor are detected inductively and reported to connected systems (only for the measuring position in the case of the manual drive assembly).

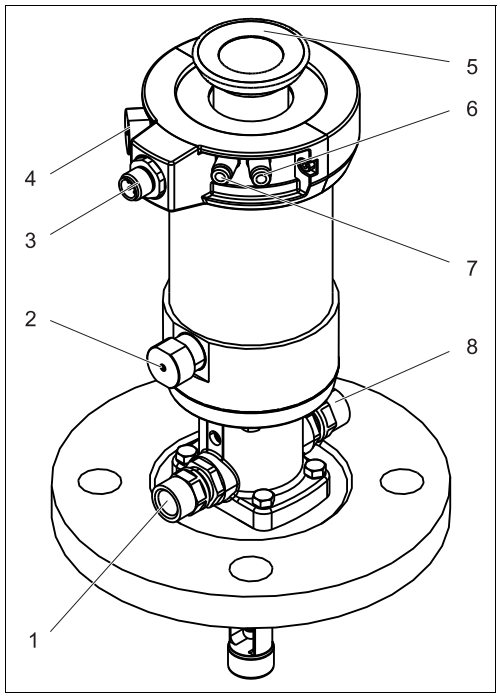
Elements

The assembly is available with a manual or pneumatic drive.



Assembly with manual drive (without protection cap)

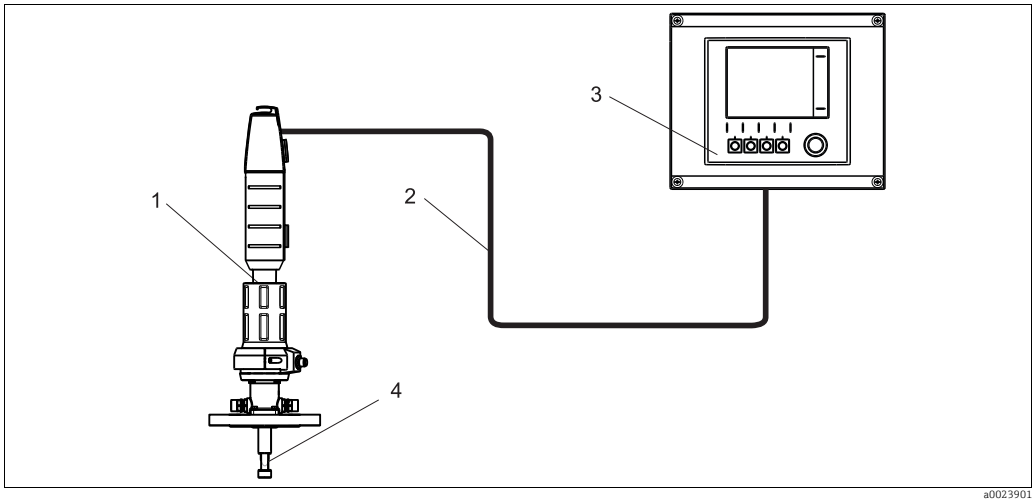
1 Rinse connection
2 Connection for limit position switch
3 Manual drive (fulcrum shaft)
4 Fastening ring for protection cap
5 Unlocking button (measuring position)
6 Rinse connection



Assembly with pneumatic drive (without protective cap)

1 Rinse connection
2 Automatic limit position locking for process
3 Connection for limit position switch
4 Automatic limit position locking for service
5 Fastening ring for protection cap
6 Pneumatic connection (move to measuring position)
7 Pneumatic connection (move to service position)
8 Rinse connection

Measuring system



Measuring system (example)

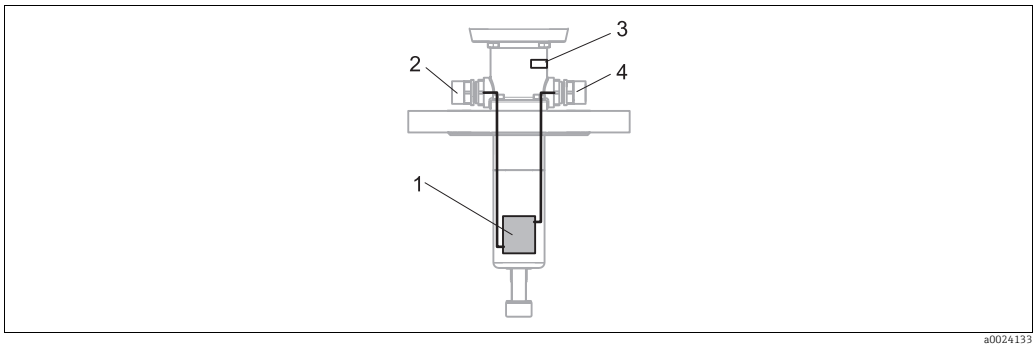
1 Cleanfit CPA871 assembly
2 Measuring cable
3 Liquiline CM44x transmitter
4 Sensor

Immersion chamber

The special immersion chamber version is the perfect solution when the sensor descends to greater immersion depths in media that cause buildup and media with a tendency to form condensation. In the process medium, the sensor guide containing the installed sensor is almost completely surrounded by the service chamber. This means that there is minimal contact with the medium. The seals are thus protected from damage when the sensor is moving from measuring to service position.

Assignment of rinse connections

In the standard version, the inlet and outlet of the service chamber can be assigned as desired.
In the immersion chamber version, the inlet and outlet of the service chamber are fixed. The outlet of the service chamber is located under the leakage borehole. The borehole is covered by a M5 screw.



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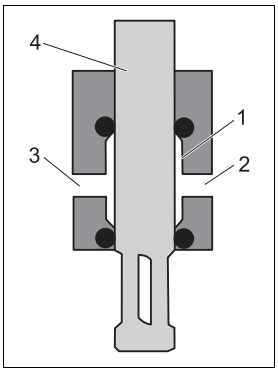
Connection of service chamber in the immersion chamber version

1 Service chamber
2 Service chamber inlet
3 Leakage borehole
4 Service chamber outlet

Service chamber



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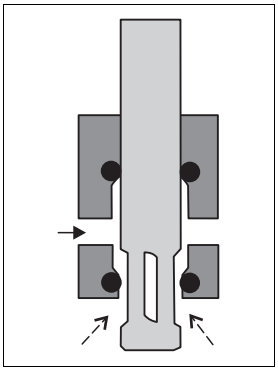
1 Service chamber
2 Service chamber outlet
3 Service chamber inlet
4 Sensor guide

In measuring position, the service chamber is separated from the process by the process seals and sensor guide.
No process medium can get into the service chamber.



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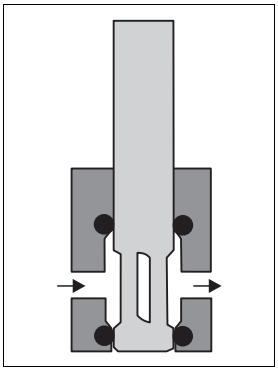
When the assembly is moving from measuring to service position (or the other way around), the service chamber is no longer separated from the process. Now process medium can get into the service chamber.
To prevent this, you can rinse the service chamber with a sealing medium via the service chamber inlet.
This sealing medium prevents process medium containing suspended solids to enter the service chamber.



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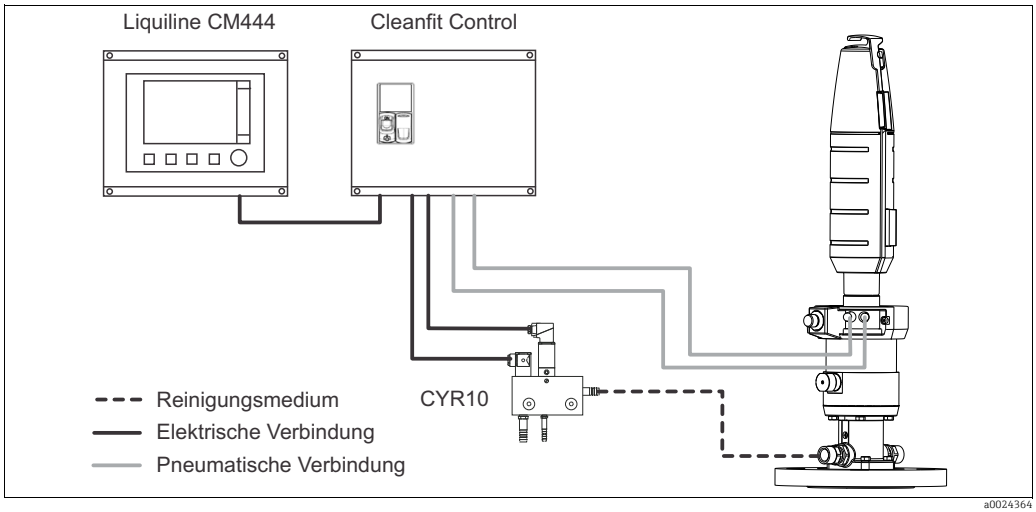
In service position, the service chamber is separated from the process.

Cleanfit Control

Integration in an automatic measuring system

Cleanfit Control converts electrical signals into pneumatic signals. Signals coming from the relays or outputs of the transmitter are used to control pneumatically-operated retractable assemblies or pumps. Pilot valves are used for this purpose.

- One pilot valve is available.
- Limit position detection of the assembly is not used.
- The electrical valves of the CYR10 are controlled by Cleanfit Control.



Control of cleaning with Cleanfit Control

Cleanfit Control is available as accessory.

Control unit Air-Trol 500

Air-Trol 500 allows you to move all pneumatically-controlled retractable assemblies manually.

- Easy installation
- Purely pneumatic functional unit
- Measuring or service mode of the assembly:
  - Easy-to-use switch
  - Optical display
- Button for pneumatic cleaning agent valve for sensor cleaning

Air-Trol 500 is available as accessory.

Topcal CPC310

Topcal CPC310 is a fully automatic measuring, cleaning and calibration system; Ex or Non-Ex.

Control unit CPG310

Control unit CPG310 converts commands from the CPM153 into pneumatic signals and sends back responses relating to assembly position, canister level as well as compressed air monitoring.

Transmitter Mycom CPM153

Transmitter CPM153 is the measuring point's control center. It processes measuring values, is the main communications system and manages control paths. The transmitter directs processes in the CPG310 via an interface and manages the responses sent back from this unit.

Topclean CPC30

Topclean CPC30 is a fully automatic measuring and cleaning system; Ex or Non-Ex.

Control unit CPG30

Control unit CPG 30 converts commands from the CPM153 into pneumatic signals and sends back responses relating to assembly position and compressed air and water monitoring.

Transmitter Mycom CPM153

The transmitter is the measuring point's control center. It processes measuring values, is the main communications system and manages control paths. The CPM153 directs processes in the CPG 30 via an interface and manages responses sent back from this unit.

Installation

Orientation

The assembly is designed for installation on vessels and pipes. Suitable process connections must be available for this.
The assembly is designed in such a way that there are no restrictions with regard to the orientation.

The sensor that is used can restrict the orientation.

Pneumatic connections for automatic operation

Requirements:
- Air pressure of 4 to 7 bar (58 to 102 psi)
- Compressed air quality as per ISO 8573-1:2001
  Quality class 3.3.3 or 3.4.3 (see below)
- Solids class 3 (max. 5 µm, max. 5 mg/m^3, contamination with particles)
- Water content for temperatures ≥ 15 °C: class 4 pressure dew point 3 °C or lower
- Water content for temperatures 5 to 15 °C: class 3 pressure dew point -20 °C or lower
- Oil content: class 3 (max. 1 mg/m^3)
- Air temperature: 5 °C or higher
- No continuous air consumption
- Minimum nominal diameter of the air lines: 2 mm (0.08 ")

Connection: Threaded union M5, hose 4/2 mm AD/ID (adapter to 6/4 mm AD/ID enclosed)

Seals can be damaged if the air pressure is too high
There must be a pressure-reducing valve upstream if the air pressure can increase to above 7 bar (102 psi) (including any short pressure surges).

Rinse connection

The connections of the service chamber of the CPA871 retractable assembly make it possible to clean the chamber and the sensor with water or cleaning solution with a maximum pressure of 6 bar (87 psi).

Seals can be damaged if the water pressure is too high
Install an upstream pressure-reducing valve if the water pressure can increase to above 6 bar (87 psi) (including any short pressure surges).

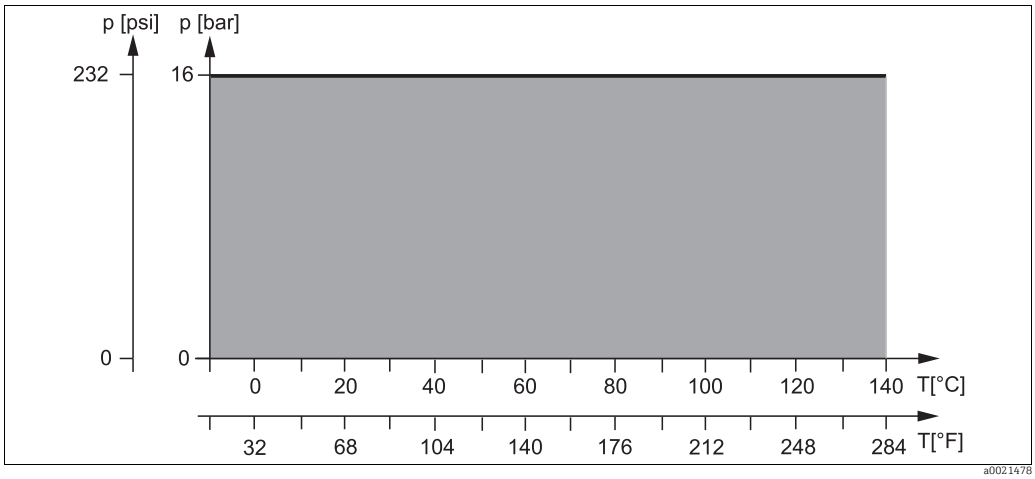
Environment

Ambient temperature range	-10 to +70 °C (+ 14 to 158 °F)
Storage temperature	-10 to +70 °C (+14 to 158 °F)

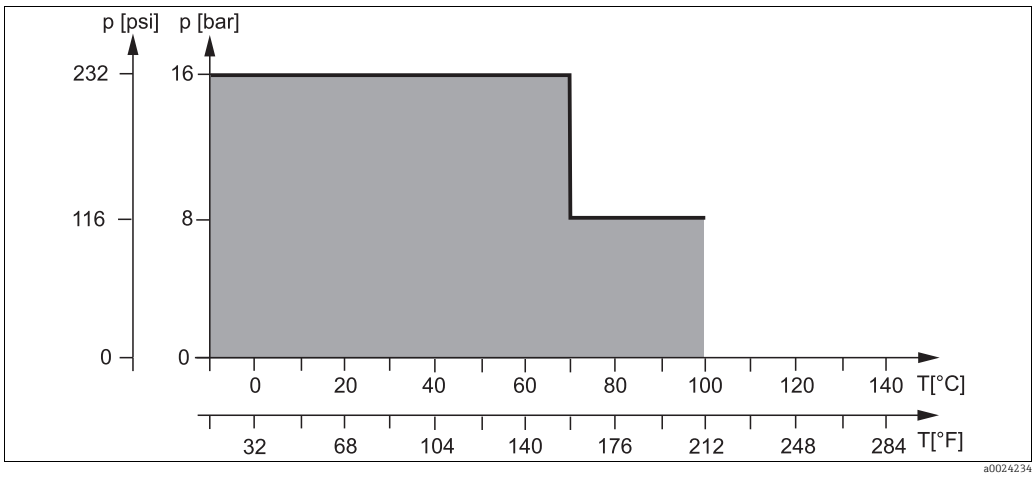
Process

Process temperature range	-10 to +140 °C (14 to 284 °F) for all materials except PVDF and conductive PVDF -10 to +100 /70 °C (14 to 212/158 °F) for material PVDF and conductive PVDF
Process pressure for pneumatic drive	Materials: SS 316L, Alloy C22, titanium, PEEK Basic and immersion chamber version: 16 bar (232 psi) up to 140 °C (284 °F) Materials: PVDF, conductive PVDF Basic version: 16 bar (232 psi) up to 100 °C (212 °F) Immersion chamber version: 16 bar (232 psi) up to 70 °C (158 °F) The service life of the seals is reduced if process temperatures are constantly high or if SIP is used. The other process conditions may also reduce the service life of the seals.
Process pressure for manual drive	Materials: SS 316L, Alloy C22, titanium, PEEK Basic version: 8 bar (116 psi) up to 140 °C (284 °F) Immersion chamber version: 8 bar (116 psi) up to 140 °C (284 °F) Materials: PVDF, conductive PVDF Basic version: 8 bar (116 psi) up to 100 °C (212 °F) Immersion chamber version: 8 bar (116 psi) up to 70 °C (158 °F) The service life of the seals is reduced if process temperatures are constantly high or if SIP is used. The other process conditions may also reduce the service life of the seals.

Pressure-temperature ratings for pneumatic drive

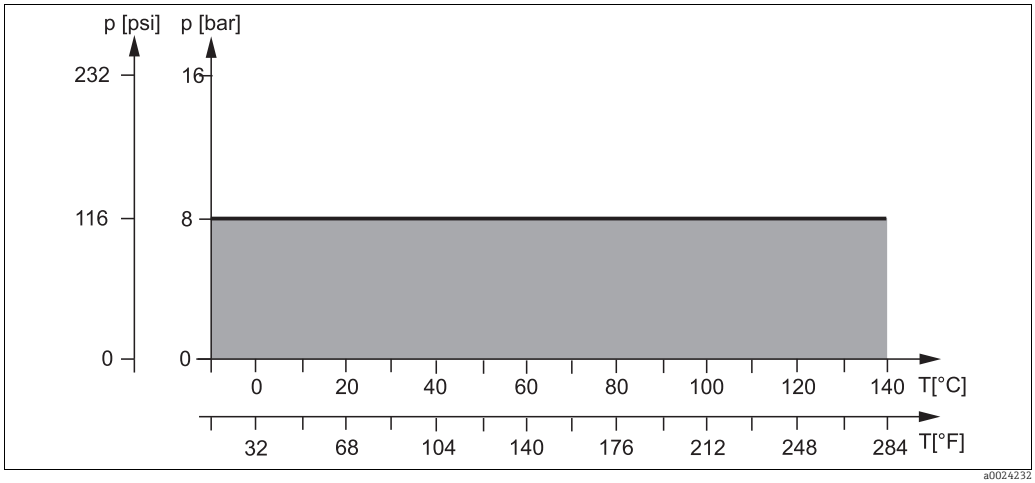


Pressure temperature ratings for basic and immersion chamber version for materials SS 316L, Alloy C22, titanium and PEEK

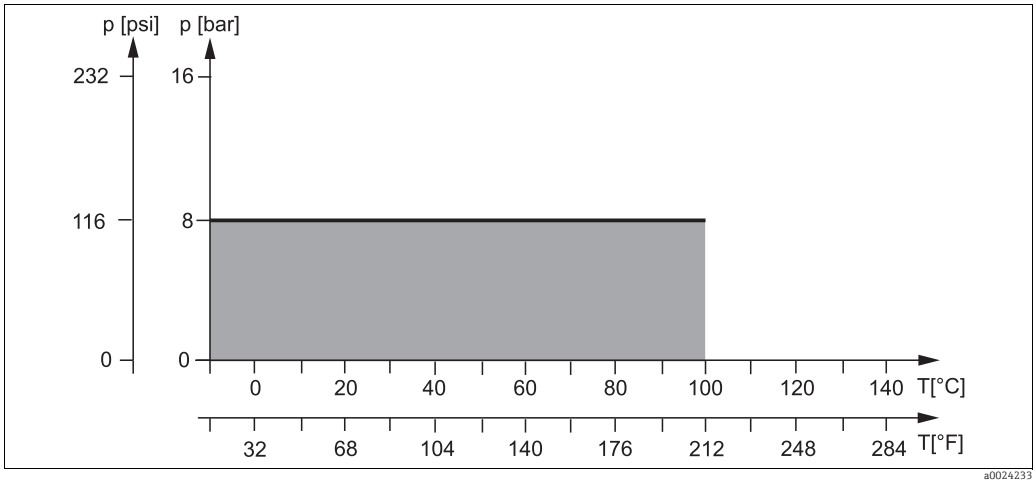


Pressure temperature ratings for basic version for materials PVDF and conductive PVDF

Pressure-temperature ratings for manual drive

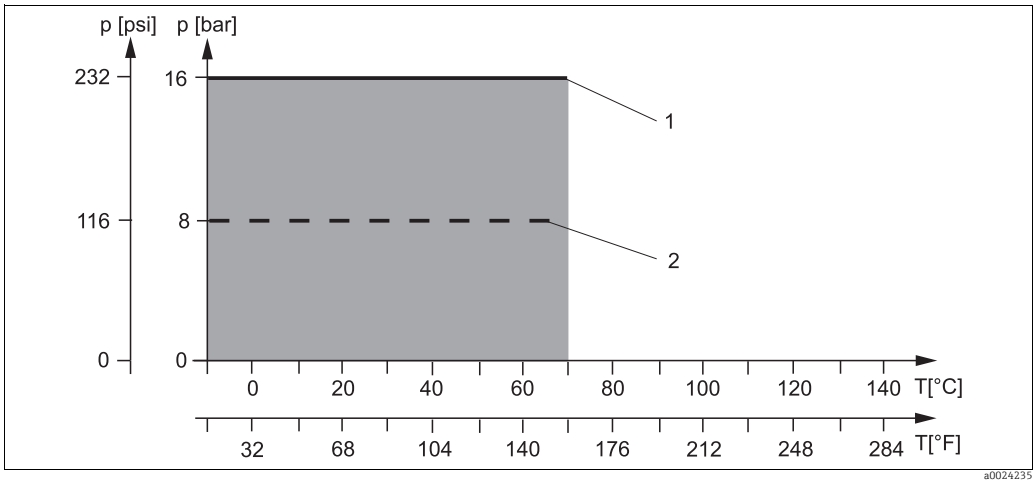


Pressure temperature ratings for basic and immersion chamber version for materials SS 316L, Alloy C22, titanium and PEEK



Pressure temperature ratings for basic version for materials PVDF and conductive PVDF

Pressure temperature ratings for immersion chamber version (PVDF)



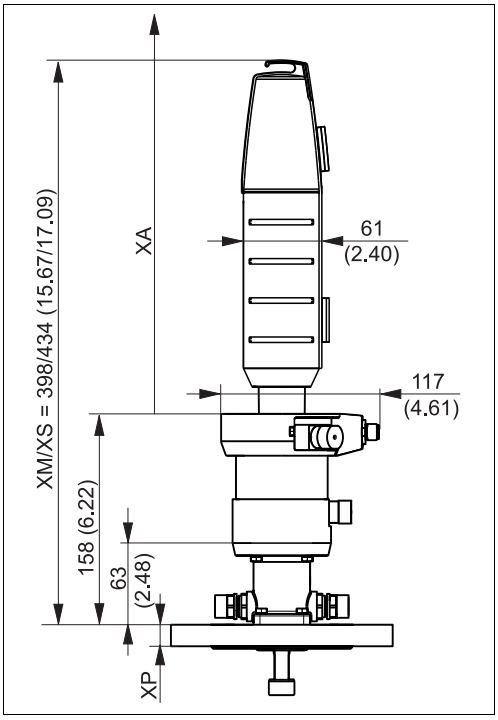
Pressure temperature ratings for immersion chamber version for materials PVDF and conductive PVDF

1 Pneumatic drive
2 Manual drive

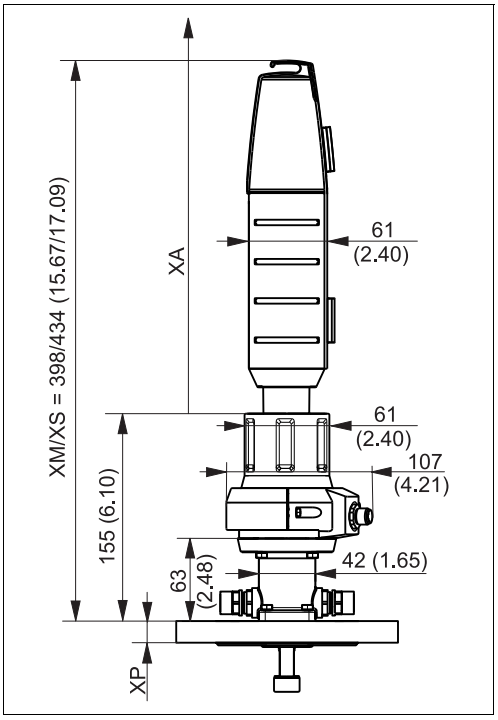
Mechanical construction

Design, dimensions

Short version



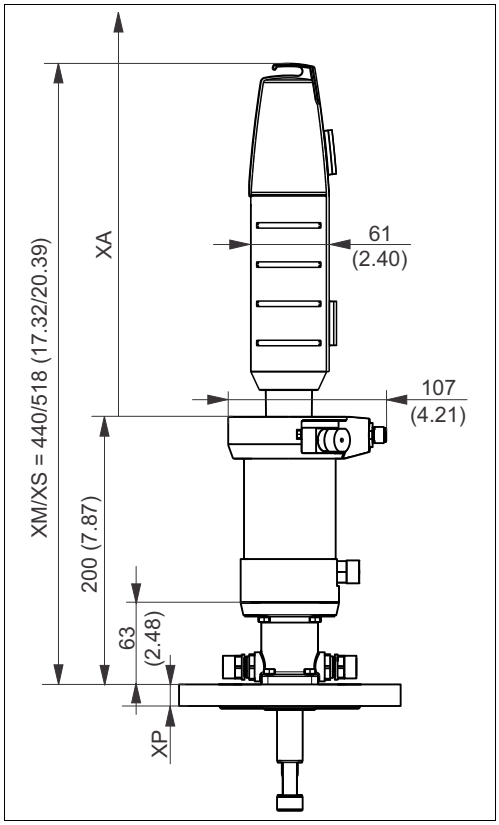
Pneumatic drive, short version, dimensions in mm (inch)



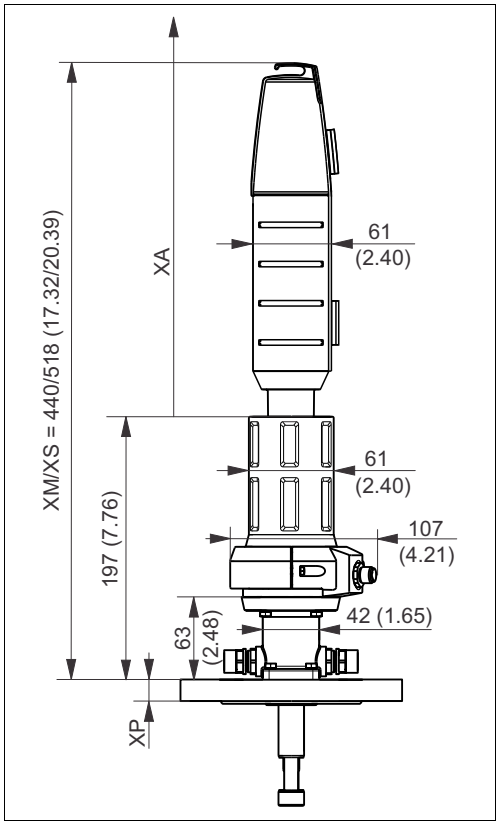
Manual drive, short version, dimensions in mm (inch)

XM Assembly in measuring position
XS Assembly in service position
XP Height of particular process connection (see table below)
XA Necessary mounting distance for sensor replacement
The mounting distance XA is 280 mm (11.02") for 120 mm sensors
The mounting distance XA is 408 mm (15.94") for 225 mm sensors

Long version



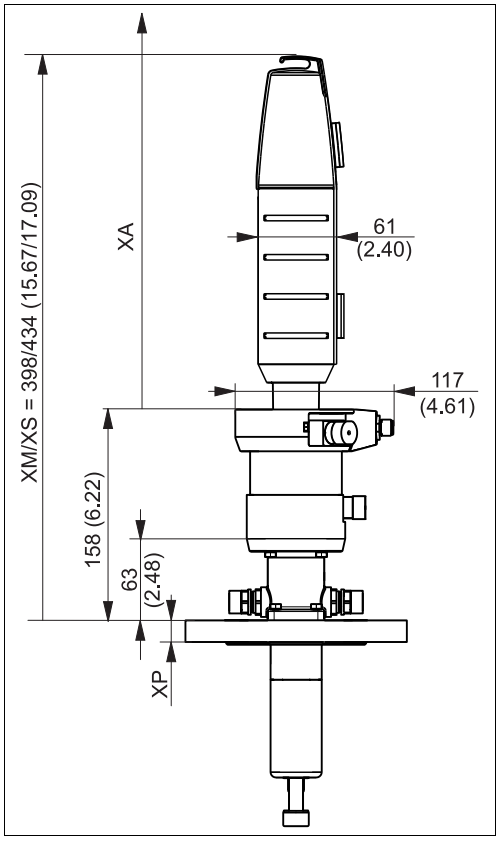
Pneumatic drive, long version, dimensions in mm (inch)



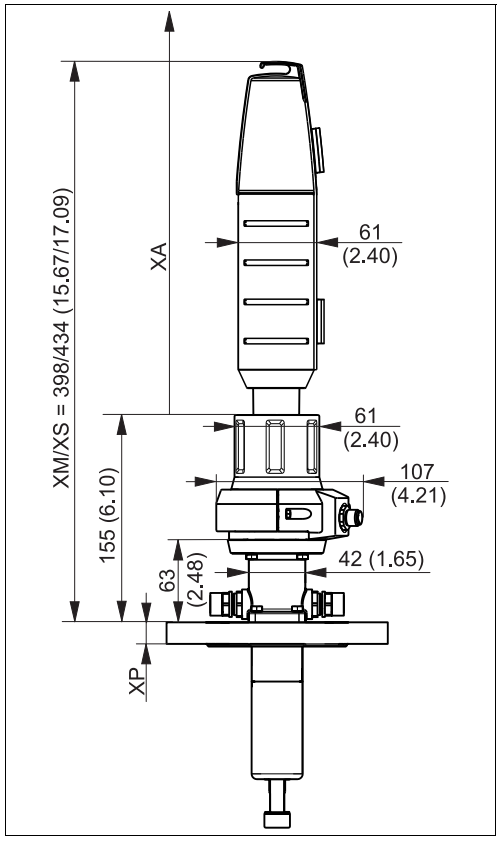
Manual drive, long version, dimensions in mm (inch)

XM Assembly in measuring position
XS Assembly in service position
XP Height of particular process connection (see table below)
XA Necessary mounting distance for sensor replacement
The mounting distance XA is 360 mm (14.17") for 225 mm sensors

Immersion chamber version

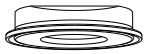
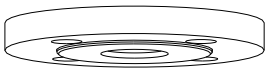
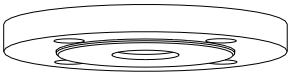
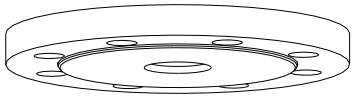
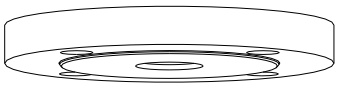
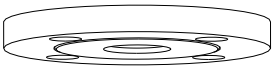
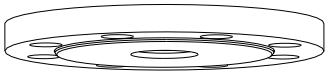
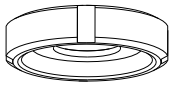
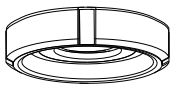


Immersion chamber version with pneumatic drive, dimensions in mm (inch)

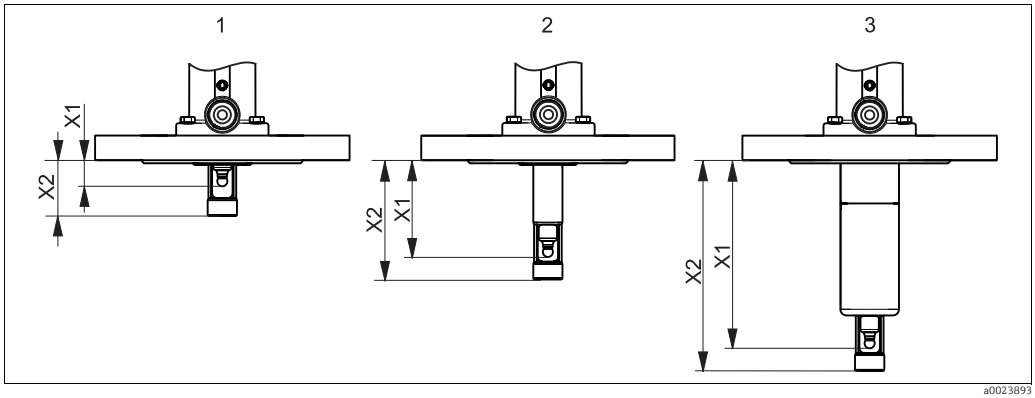


Immersion chamber version with manual drive, dimensions in mm (inch)

XM Assembly in measuring position
XS Assembly in service position
XP Height of particular process connection (see table below)
XA Necessary mounting distance for sensor replacement
The mounting distance XA is 280 mm (11.02") for 225 mm sensors
The mounting distance XA is 570 mm (22.44") for 360 mm sensors

Process connection (EHEDG)		Height XP in mm (inch)
CB Clamp 2"		16 (0.63)
CC Clamp 2½"		16 (0.63)
FA Flange DN 40, EN1092-1		18 (0.71)
FB Flange DN 50, EN1092-1		18 (0.71)
FC Flange DN 80, EN1092-1		20 (0.79)
FD Flange 2" 150 lbs, ASME B16.5		19.1 (0.75)
FE Flange 3" 150 lbs, ASME B16.5		23.8 (0.94)
FF 10K50, JIS B2220		16 (0.63)
FG 10K80, JIS B2220		18 (0.71)
MA Dairy fitting DN 50 DIN 11851		15.5 (0.61)
MB Dairy fitting DN 65 DIN 11851		15.5 (0.61)
HB Thread NPT 1½"		40.5 (1.57)

Immersion depths

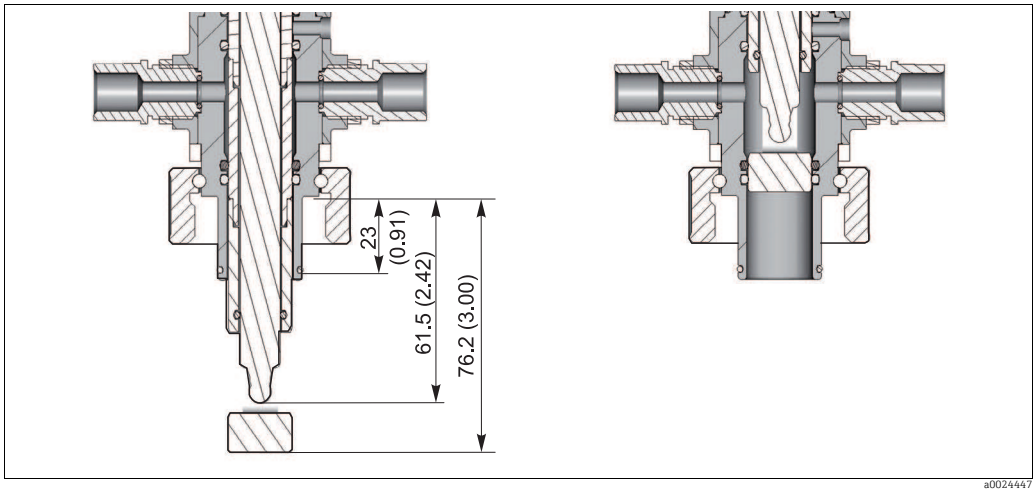


Immersion depths

1 Short stroke (36 mm)
2 Long stroke (78 mm)
3 Immersion version

Immersion depths in mm (inch)

		Versions		
Process connection		**1**	**2**	**3**
CB Clamp ISO2852 ASME BPE-2012 2"	X1 X2	14.9 (0.59) 34.2 (1.35)	61.0 (2.40) 75.7 (2.98)	119.9 (4.72) 134.6 (5.30)
CC Clamp ISO2852 ASME BPE-2012 2½"	X1 X2	14.9 (0.59) 34.2 (1.35)	61.0 (2.40) 75.7 (2.98)	119.9 (4.72) 134.6 (5.30)
FA Flange DN 40 EN1092-1	X1 X2	14.9 (0.59) 34.2 (1.35)	61.0 (2.40) 75.7 (2.98)	119.9 (4.72) 134.6 (5.30)
FB Flange DN 50 EN1092-1	X1 X2	14.9 (0.59) 34.2 (1.35)	61.0 (2.40) 75.7 (2.98)	119.9 (4.72) 134.6 (5.30)
FC Flange DN 80 EN1092-1	X1 X2	12.9 (0.51) 32.2 (1.27)	59.0 (2.32) 73.7 (2.90)	117.9 (4.64) 132.6 (5.22)
FD Flange 2" 150 lbs ASME B16.5	X1 X2	13.8 (0.54) 33.1 (1.30)	59.9 (2.36) 74.6 (2.94)	118.8 (4.68) 133.5 (5.26)
FE Flange 3" 150 lbs ASME B16.5	X1 X2	- -	- -	114.1 (4.49) 128.8 (5.07)
FF Flange 10K50 JIS B2220	X1 X2	14.4 (0.57) 33.7 (1.33)	61.3 (2.41) 76.0 (2.99)	120.2 (4.73) 134.9 (5.31)
FG Flange 10K80 JIS B2220	X1 X2	14.4 (0.57) 33.7 (1.33)	60.5 (2.38) 75.2 (2.96)	119.4 (4.70) 134.1 (5.28)
HB Thread NPT 1½"	X1 X2	- -	63.0 (2.48) 77.7 (3.06)	121.9 (4.80) 136.6 (5.38)
MA Dairy fitting DN 50 DIN11851	X1 X2	15.4 (0.61) 34.7 (1.37)	61.5 (2.42) 76.2 (3.00)	120.4 (4.74) 135.1 (5.32)
MB Dairy fitting DN 65 DIN11851	X1 X2	15.4 (0.61) 34.7 (1.37)	61.5 (2.42) 76.2 (3.00)	120.4 (4.74) 135.1 (5.32)
NA Thread ISO228 G 1¼	X1 X2	- -	61.5 (2.42) 76.2 (3.00)	- -



Immersion depth in mm (inch) for process connection NA thread ISO228 G1¼

Weight

Depends on version:	
Pneumatic drive:	3.8 to 6 kg (8.4 to 13.2 lbs)
Manual drive:	3 to 4.5 kg (6.6 to 9.9 lbs)

Materials

In contact with medium:	
Seals:	EPDM/FPM (Viton)/FFKM
Immersion tube, process connection, service chamber:	Stainless steel 1.4404 (AISI 316L) Ra < 0.76/PEEK/ titanium / Alloy C22 Ra < 0.76 / PVDF / conductive PVDF
Rinse connections:	Stainless steel 1.4404 (AISI 316L)
Not in contact with medium:	
Manual drive:	Stainless steel 1.4301 (AISI 304) or 1.4404 (AISI 316L) Plastics PPS CF15, PBT, PP
Pneumatic drive:	Stainless steel 1.4301 (AISI 304) or 1.4404 (AISI 316L) Plastics PBT, PP

Sensors

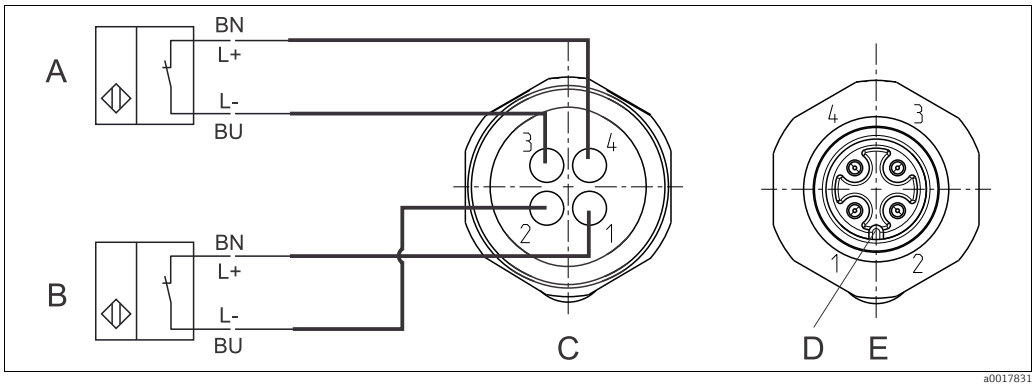
Short version	Gel sensors, ISFET	120 mm
	Gel sensors, ISFET	225 mm
	KCl sensors	225 mm
Long version	Gel sensors, ISFET	225 mm
	Gel sensors, ISFET	360 mm
Immersion chamber version	Gel sensors, ISFET	225 mm
	KCl sensors	360 mm

Rinse connections

Pipe 6/8 mm ID/OD
G¼ internal
NPT-F ¼ internal

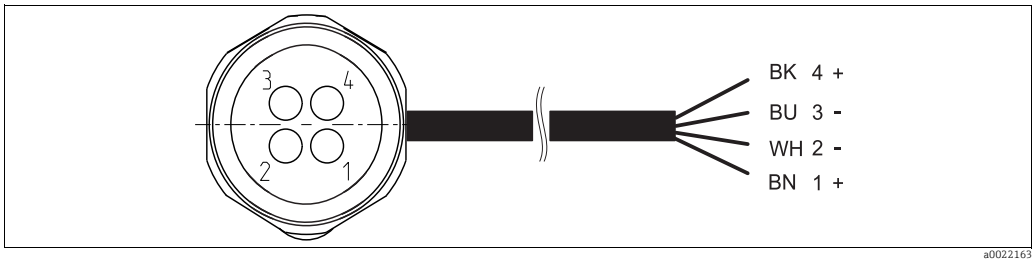
Limit position switches

Switching element function:	NAMUR NC contact (inductive)
Switching distance:	1.5 mm (0.06 ")
Nominal voltage:	8 V
Switching frequency:	0 to 5000 Hz
Housing material:	Stainless steel



Inductive limit position switches

A Limit position switch, Service position
B Limit position switch, Measure position
C Plug, M12, solder side
D Coding
E Plug, pin side



Connecting cable for limit position switch

1 "Measuring" position
2 "Measuring" position
3 "Service" position
4 "Service" position

Only pins 1 and 2 are assigned for manually activated assemblies with one switch (measuring position).

Signal table for limit position switches

Position of assembly	Limit position switch for "measuring" position	Limit position switch for "service" position
Measuring	Active HIGH	Active HIGH
Service	Active LOW	Active LOW

Certificates and approvals

Directive 94/9/EC (ATEX)
The assembly does not fall within the scope of the directive. However, if conditions for safe use are adhered to, it may be deployed in the hazardous area.

CE/PED
The CPA875 assembly has been manufactured according to good engineering practice in accordance with Article 3, Paragraph 3 of the Pressure Equipment Directive 97/23/EC and therefore is not required to bear the CE label.

Ordering information

Ordering instructions

Create the order code for the assembly as follows:

1. Is the assembly used in the hazardous or non-hazardous area?
2. Select the drive type and the limit position switches.
3. Select the type of service chamber.
4. What material should the wetted seals be made of?
5. What material should the wetted surfaces be made of?
6. Select the suitable process connection.
7. Which connections should the service chamber have?

Order the accessories as follows:

- If you wish to order the accessories together with the assembly, then use the accessory code of the product structure.
- If you only wish to order accessories, then use the order numbers from the "Accessories" section.

Product page

You can create a valid and complete order code on the Internet using the Configurator.

Enter the following address in your browser to access the product page:
www.endress.com/cpa871

Product Configurator

You can find the navigation area on the right of the product page.

1. Under "Device support", click "Configure the selected product".
   ↳ The Configurator opens in a new window.
2. Configure the device as per your requirements by selecting all the options.
   ↳ In this way, you receive a valid and complete order code.
3. Export the order code as a PDF file or Excel file. To do so, click the appropriate button at the top of the window.

Scope of delivery

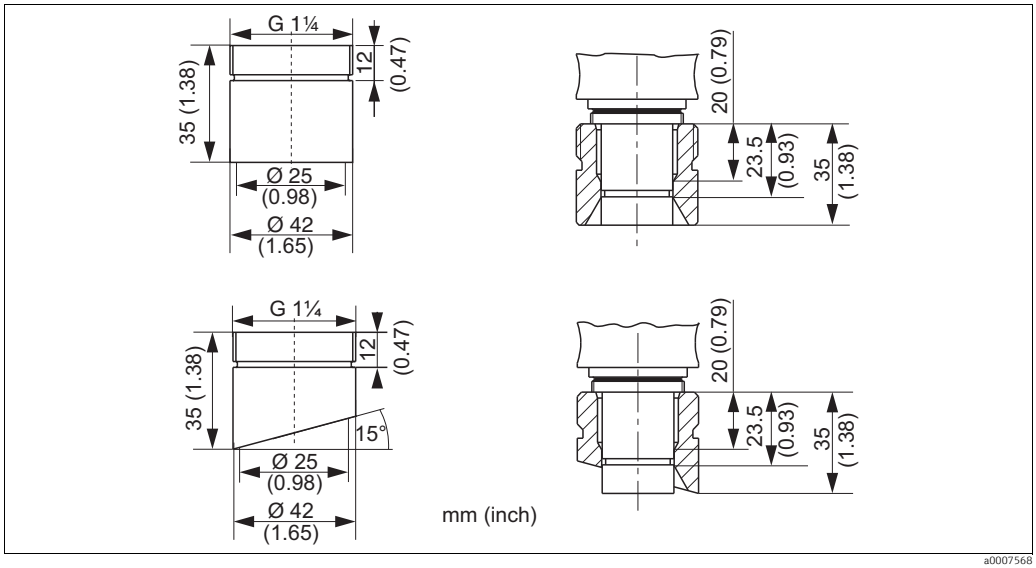
The scope of delivery comprises:
- Ordered version of the assembly
- Operating Instructions in English

Accessories

The most important accessories available at the time this document went to print are listed below. Please contact your sales center for accessories that are not listed here.

The following accessories can be ordered via the product structure (see ordering information):

- Weld-in adapter G1¼, straight, 35 mm, 1.4435 (AISI 316 L), safety nozzle
- Weld-in adapter G1¼, angled, 35 mm, 1.4435 (AISI 316 L), safety nozzle



Welding neck (safety nozzle)

- Dummy plug G1¼, 1.4435 (AISI 316 L), FPM - FDA
- Sensor dummy 120 mm, 1.4435 (AISI 316 L), Ra = 0.38 µm
- Sensor dummy 225 mm, 1.4435 (AISI 316 L), Ra = 0.38 µm
- Sensor dummy 360 mm, 1.4435 (AISI 316 L), Ra = 0.38 µm
- Kit, seals not in contact with the medium
- Kit, FKM seals only for process connection G1¼, wetted parts
- Kit, FKM seals only for immersion chamber version, wetted parts
- Kit, EPDM seals, wetted parts
- Kit, FKM seals, wetted parts
- Kit, FFKM seals, basis, wetted parts
- Cable, plug-in, limit switch, M12, 5 m
- Cable, plug-in, limit switch, M12, 10 m
- Tool in case for installation/removal

Water filter and pressure reducer

Filter set CPC310, CVC400
- Water filter (dirt trap) 100 µm, complete, incl. angle bracket
- Order No. 71031661

Pressure reducer kit
- Complete, incl. manometer and angle bracket
- Order No. 51505755

Hose nozzle

Hose connection nipples for rinse connections G ¼, DN 12
- PVDF, 2 pieces;
- Order No. 50090491

Hose connection nipples for rinse connections G ¼, DN 12
- 1.4404 (AISI 316L), 2 pieces;
- Order No. 51502808

Cleaning systems

Topcal CPC310
- Fully automatic measuring, cleaning and calibration system; Ex or Non-Ex
- Cleaning and calibration under process conditions, automatic sensor monitoring
- Order as per product structure (--> Online Configurator, www.products.endress.com/cpc310)
- Technical Information TI00404C/07/EN

Topclean CPC30
- Fully automatic measuring and cleaning system; Ex or Non-Ex
- Cleaning under process conditions, automatic sensor monitoring
- Order as per product structure (--> Online Configurator, www.products.endress.com/cpc30)
- Technical Information TI00235C/07/EN

Air-Trol 500
- Control unit for Cleanfit retractable assemblies
- Order No. 50051994
- Technical Information TI00038C/07/EN

Cleanfit Control
- Converts electrical signals into pneumatic signals to control pneumatically-operated retractable assemblies or pumps in conjunction with Liquiline CM44x
- Wide range of control options
- Order No. CTSP-MC1CR1 (as per TSP modification 71248395)

pH/ORP sensors

Glass electrodes

Orbisint CPS11/CPS11D
- pH electrode for process engineering
- Optional SIL version for connection to SIL transmitter
- With dirt-repellent PTFE diaphragm
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps11 or www.products.endress.com/cps11d)
- Technical Information TI00028C/07/EN

Orbisint CPS12/CPS12D
- ORP electrode for process engineering
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps12 or www.products.endress.com/cps12d)
- With dirt-repellent PTFE diaphragm
- Technical Information TI00367C/07/EN

Memosens CPS16D*
- Combination of pH and ORP electrode with Memosens technology
- For standard applications in process technology and environmental engineering
- Resistent to poisoning reference with ion trap
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps16d)
- Technical Information TI00503C/07/EN

Ceraliquid CPS41/CPS41D
- pH electrode with ceramics diaphragm and liquid KCl electrolyte,
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps41 or www.products.endress.com/cps41d)
- Technical Information TI00079C/07/EN

Ceraliquid CPS42/CPS42D
- ORP electrode with ceramics diaphragm and liquid KCl electrolyte,
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps42 or www.products.endress.com/cps42d)
- Technical Information TI00373C/07/EN

Ceragel CPS71/CPS71D
- pH electrode with double chamber reference system and integrated bridge electrolyte,
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps71 or www.products.endress.com/cps71d)
- Technical Information TI00245C/07/EN

Ceragel CPS72/CPS72D
- ORP electrode with double chamber reference system and integrated bridge electrolyte,
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps72 or www.products.endress.com/cps72d)
- Technical Information TI00374C/07/EN

Memosens CPS76D*
- Combination of pH and ORP electrode with Memosens technology
- For process technology, hygienic and sterile applications
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps76d)
- Technical Information TI00506C/07/EN

Orbipore CPS91/CPS91D
- pH electrode with open aperture diaphragm for media with high dirt load,
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps91 or www.products.endress.com/cps91d)
- Technical Information TI00375C/07/EN

Orbipore CPS92/CPS92D
- ORP electrode with open aperture diaphragm for media with high dirt load,
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps92 or www.products.endress.com/cps92d)
- Technical Information TI00435C/07/EN

Memosens CPS76D*
- Combination of pH and ORP electrode with Memosens technology
- With open aperture junction for very contaminated media and suspended solids
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps76d)
- Technical Information TI00506C/07/EN

* not 120 mm sensor

ISFET sensors

Tophit CPS471/CPS471D
- Sterilizable and autoclavable ISFET sensor for food and pharmaceutical industry, process engineering,
- Water treatment and biotechnology;
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps471 or www.products.endress.com/cps471d)
- Technical Information TI00283C/07/EN

Tophit CPS441/CPS441D
- Sterilizable ISFET sensor for media with low conductivity, with
- Liquid KCl electrolyte;
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps441 or www.products.endress.com/cps441d)
- Technical Information TI00352C/07/EN

Tophit CPS491/CPS491D
- ISFET sensor with open aperture for media with high dirt load;
- Order as per product structure (--> Online Configurator, www.products.endress.com/cps491 or www.products.endress.com/cps491d)
- Technical Information TI00377C/07/EN

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