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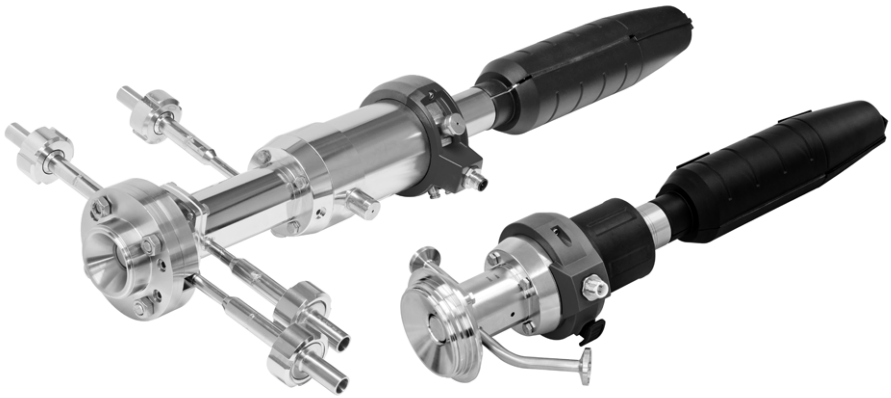
Technical Information
Cleanfit CPA875

Retractable process assembly for sterile and hygienic applications for in-line measurement with 12 mm sensors for parameters such as pH, ORP, oxygen and NIR



Application

The modular retractable assembly has been consistently developed with safety in mind:
- Safety in operation
- Safety during cleaning for hygienic processes
- Protection against contamination in sterile processes

The assembly is therefore perfectly suitable for use in the following industries:
- Food and beverages
- Biotechnology
- Life sciences
- Special chemicals

Your benefits

- Maximum availability with minimum maintenance
- Reliable measurement and correct measured values
- Higher product quality thanks to reliable measurement results
- Modular design ensures investment is secure
- EHEDG-certified assembly: process connection **and** service chamber
- Features certified to FDA and USP Class VI

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Function and system design

Function

With the Cleanfit CPA875 retractable assembly you can take reliable pH, ORP, oxygen 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 CPA875 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:
- Single-chamber system with a service chamber, or
- Double-chamber system with a service chamber and a front chamber

It is possible to choose between the following strokes for the electrode guide:
- 36 mm for flow housing, for example and
- 78 mm for installation in vessels, for example

This minimizes boundary effects both in the event of flow and in the event of measured values in cooled or heated vessels.
All common process connections are available:
Clamp / Aseptic DIN 11864 / BioControl / BioConnect / dairy coupling / thread ISO228 / Varivent

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).

Final 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.

Final 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).

Cleaning

Medium drains completely out of the service chamber and front chamber
If the assembly is mounted at an angle of up to 15° to the horizontal, the cleaning medium can drain off completely, without leaving any residue.

Special process seal without openings
Special, patented aseptic seals are used to avoid any openings that cannot be cleaned. These meet the same hygienic requirements as pipe connections used in corresponding applications (not for process connection NA).

Certified materials
All sealing materials that are in contact with the medium are FDA-certified and meet USP Class VI specifications.

Electropolished materials 1.4435 (AISI 316 L)
All metal parts that are in contact with the medium have a surface roughness of Ra <0.76 µm or optionally Ra <0.38 µm.

The Cleanfit CPA875 assembly has been developed to meet cleanability and sterility demands.

Both versions feature different sealing principles to meet these requirements.
Single chamber system for certified cleanability
Double chamber system for certified sterility

Certified cleanability

EHEDG-certified sterilizability
The assembly, including the service chamber and process connection, can be sterilized according to EHEDG specifications.

EHEDG-certified cleanability of service chamber and process seal
In connection with process seal cleaning in a defined third rest position, the assembly, along with the service chamber and process adapter, have been designed according to the EHEDG guidelines for cleanability and sterilizability and certified by the EHEDG. This certifies that residual medium is not only destroyed but is also removed completely from the service chamber and the sealing surface without leaving any residue. Therefore the service chamber and sealing surface are free from product residue and microorganisms.

Certified sterility

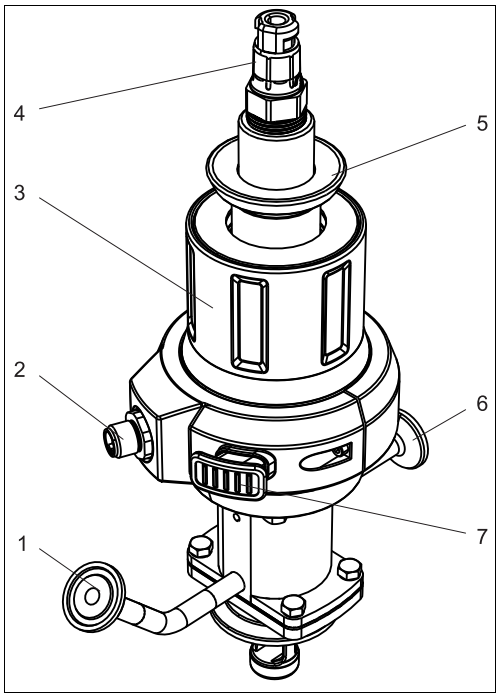
Safety in sterile processes with the CPA875 double-chamber system

Contamination-free assembly insertion/retraction thanks to dynamic sealing based on the "syringe principle"
The moving seals in the "inner" service chamber of the double-chamber assembly prevent already sterilized parts from being contaminated by still non-sterilized parts of the sensor guide. This rules out the possibility of contamination of the service chamber, and ultimately the process, even with strict sterility requirements.

Double-chamber system for safe separation between the process and service chamber
On-the-fly cleaning, recalibration and testing of the sensor in a process with sensitive medium requires the reliable and safe separation of the service chamber from the process. For this purpose the front chamber of the double chamber assembly can be exposed to sealing medium, for instance. At the same time, this chamber isolates the temperature from the process. The sensor can therefore be removed, calibrated/adjusted or simply cleaned and tested without affecting the process.

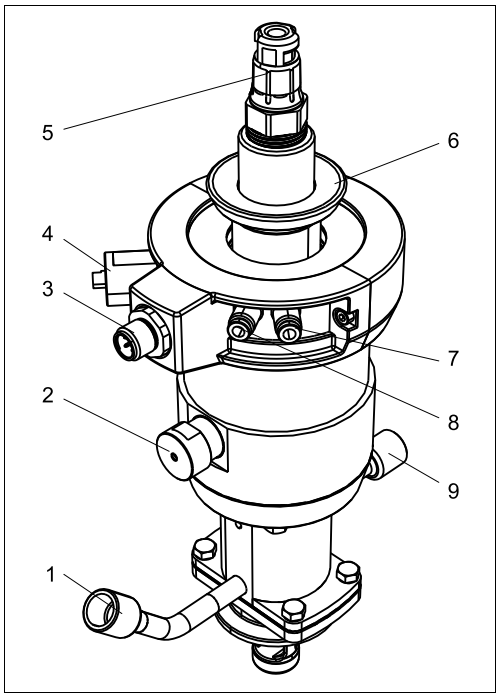
Elements

The assembly is available with a manual or pneumatic drive.



Assembly with manual drive (without protection cap)

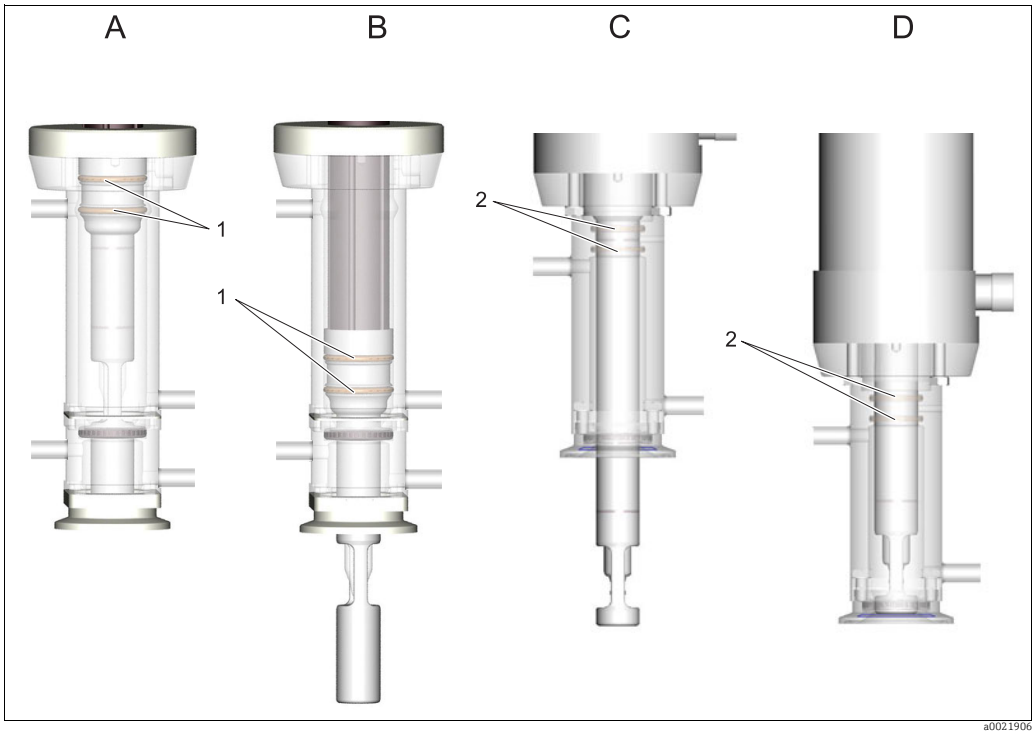
1 *Rinse connection*
2 *Connection for limit position switch*
3 *Manual drive*
4 *Sensor head*
5 *Fastening ring for protection cap*
6 *Rinse connection*
7 *Unlocking button (measuring position)*



Assembly with pneumatic drive (without protection 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 *Sensor head*
6 *Fastening ring for protection cap*
7 *Pneumatic connection (inlet)*
8 *Pneumatic connection (outlet)*
9 *Rinse connection*

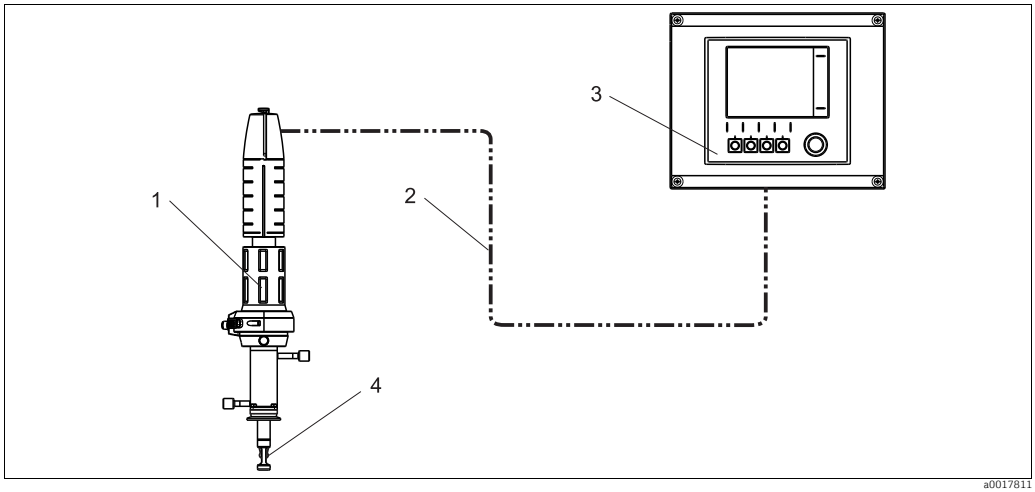
Sealing principle



Sealing principle

A Double chamber in service position
B Double chamber in measuring position
C Single chamber in measuring position
D Single chamber in service position
1 "Moving" seals in the double chamber
2 "Fixed" seals in the single chamber

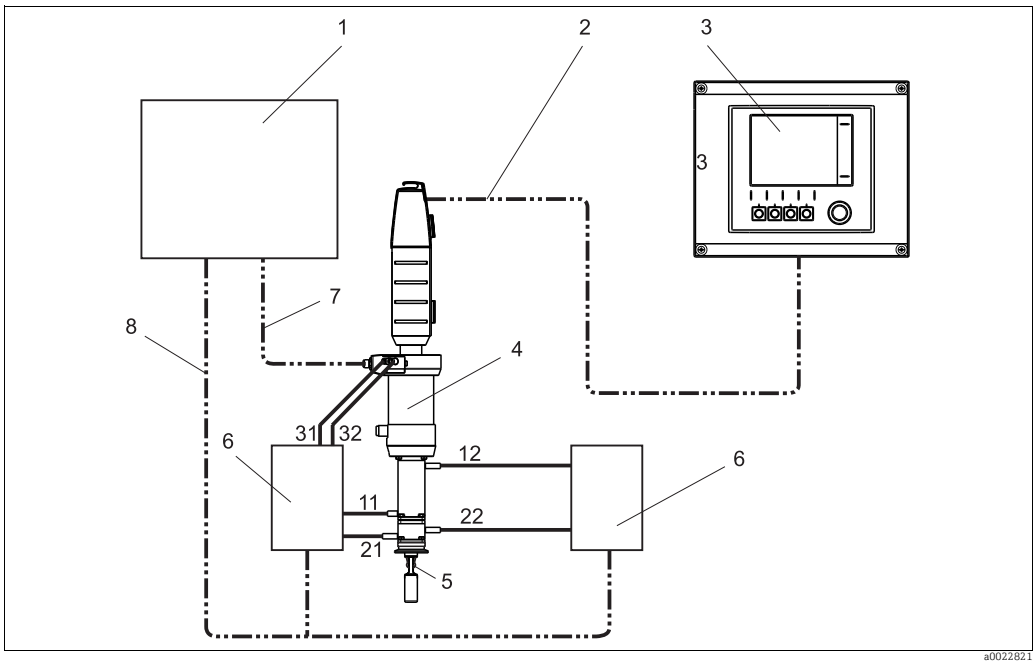
Measuring system with single chamber



Measuring system (example)

1 Cleanfit CPA875 assembly
2 Measuring cable
3 Liquiline CM44x transmitter
4 Sensor

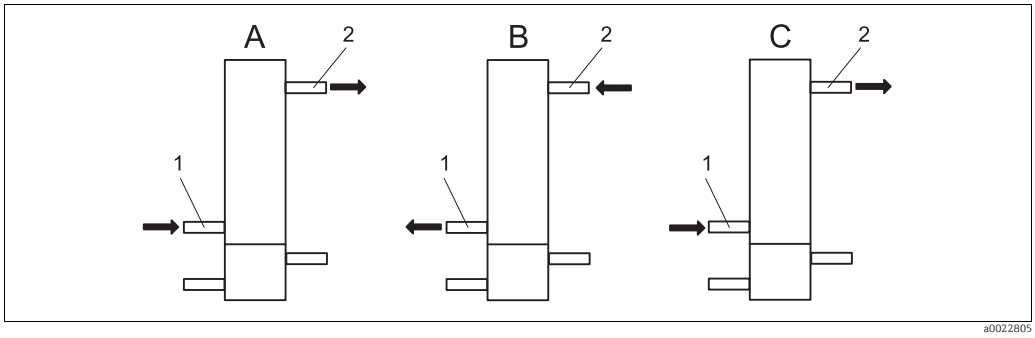
Measuring system with double chamber



Measuring system with pneumatic drive and double chamber (example)

1	*Control unit*	*7*	*Limit position switch relay signal*
2	*Measuring cable*	*8*	*Control signals (electric/pneumatic)*
3	*Liquiline CM44x transmitter*	*11/12*	*Inlet/outlet of inner service chamber*
4	*Cleanfit CPA875 assembly*	*21/22*	*Inlet/outlet of front service chamber*
5	*Sensor*	*31/32*	*Drive control*
6	*Valve manifold*		

Assignment of rinse connections



Assignment of rinse inlet and outlet

A "Cleaning" state
B "Move from service position to measuring position" state
C "Move from measuring position to service position" state
1 Service chamber inlet
2 Service chamber outlet

In the "Cleaning" state (A), the inlet and outlet of the service chamber are assigned as follows:
- Depending on the cleaning method, cleaning agent and purge gas are supplied via the inlet (1).
- These media are removed via the outlet (2).

In the "Move from service position to measuring position" state (B), the pressure conditions in the service chamber must be balanced when moving. The inlet and outlet of the service chamber are assigned as follows:
- The air is removed via the inlet (1) (inlet is open).
- The air is supplied via the outlet (2).

In the "Move from measuring position to service position" state (C), the pressure conditions in the service chamber must be balanced when moving. The inlet and outlet of the service chamber are assigned as follows:
- The air is supplied via the inlet (1).
- The air is removed via the outlet (2) (outlet is open).

The drive must be controlled simultaneously with the control of the inlets and outlets of the "inner service chamber".
The controller for the inlets, outlets and the drive is installed at the place of installation. It is not included in the delivery for the assembly.

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.
The service chamber and front chamber can drain on their own with an installation position of between 0° and 15° to the horizontal.

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 OD/ID (adapter to 6/4 mm OD/ID is 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 sterile CPA875 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) or to sterilize it with steam (SIP).
The retractable assembly can be selected with a single-chamber or double-chamber system. If the double-chamber system is used, all four connections must be connected to inlet and outlet pipes.

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

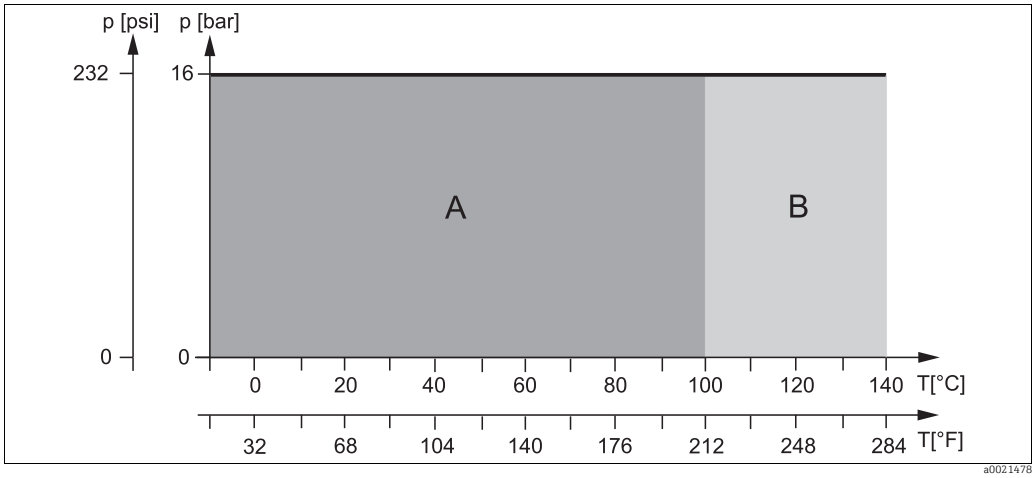
Process temperature range	-10 to +140 °C (14 to 284 °F)

Process pressure

Pneumatic drive	16 bar (232 psi) up to 140 °C (284 °F)
Manual drive	8 bar (116 psi) up to 140 °C (284 °F)

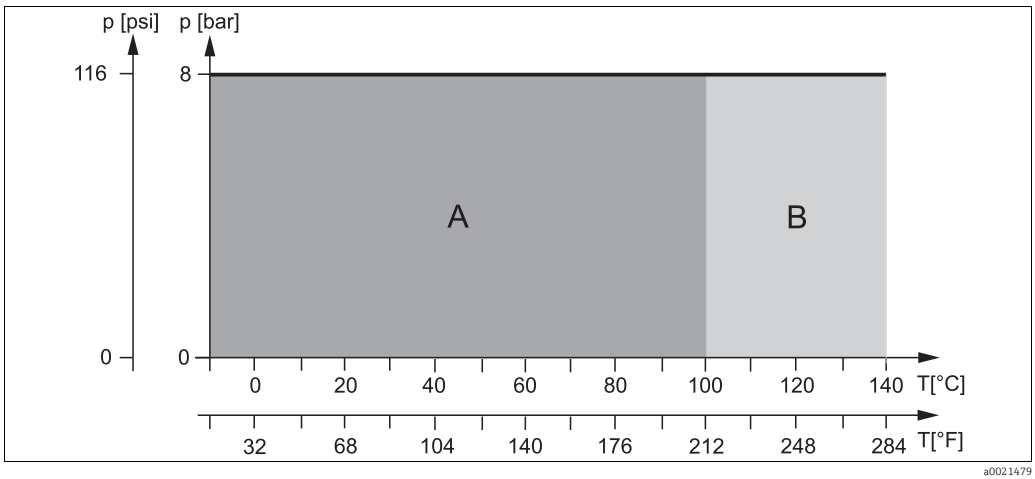
The service life of the seals is reduced if process temperatures are constantly high or if SIP is used. The other process conditions also have influence to the service life oft the seals.

Pressure-temperature ratings



Pressure-temperature ratings for pneumatic drive

A Dynamic range
B Static range

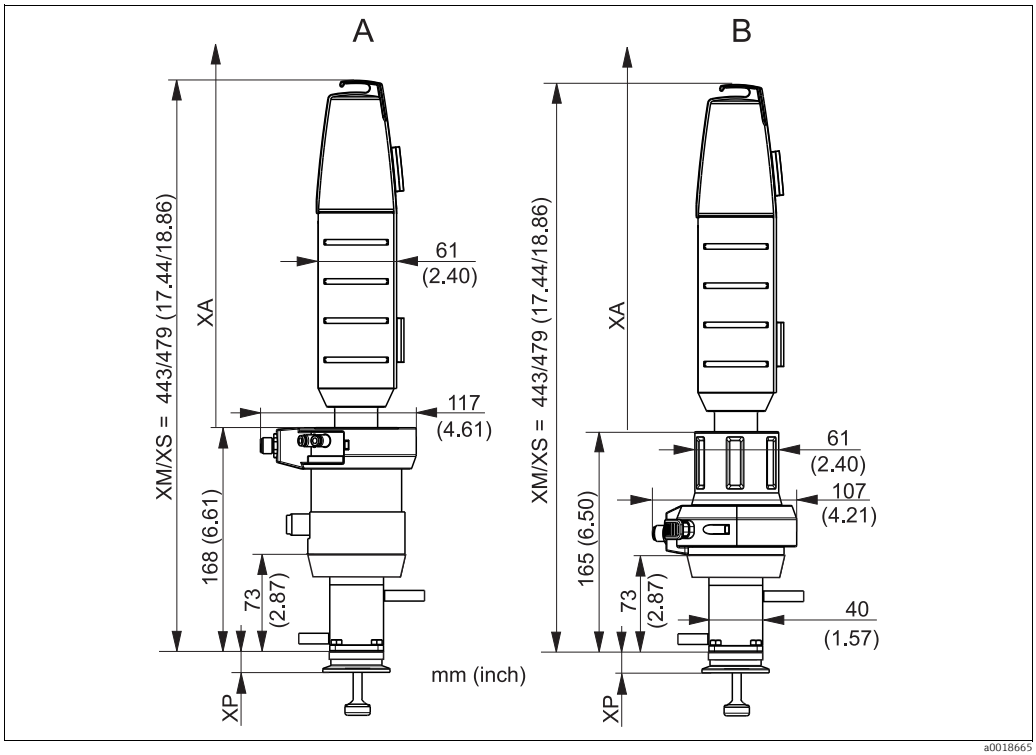


Pressure-temperature ratings for manual drive

A Dynamic range
B Static range

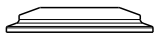
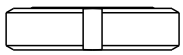
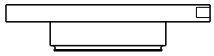
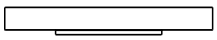
Mechanical construction

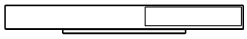
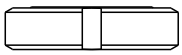
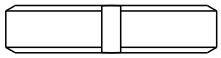
Design, dimensions

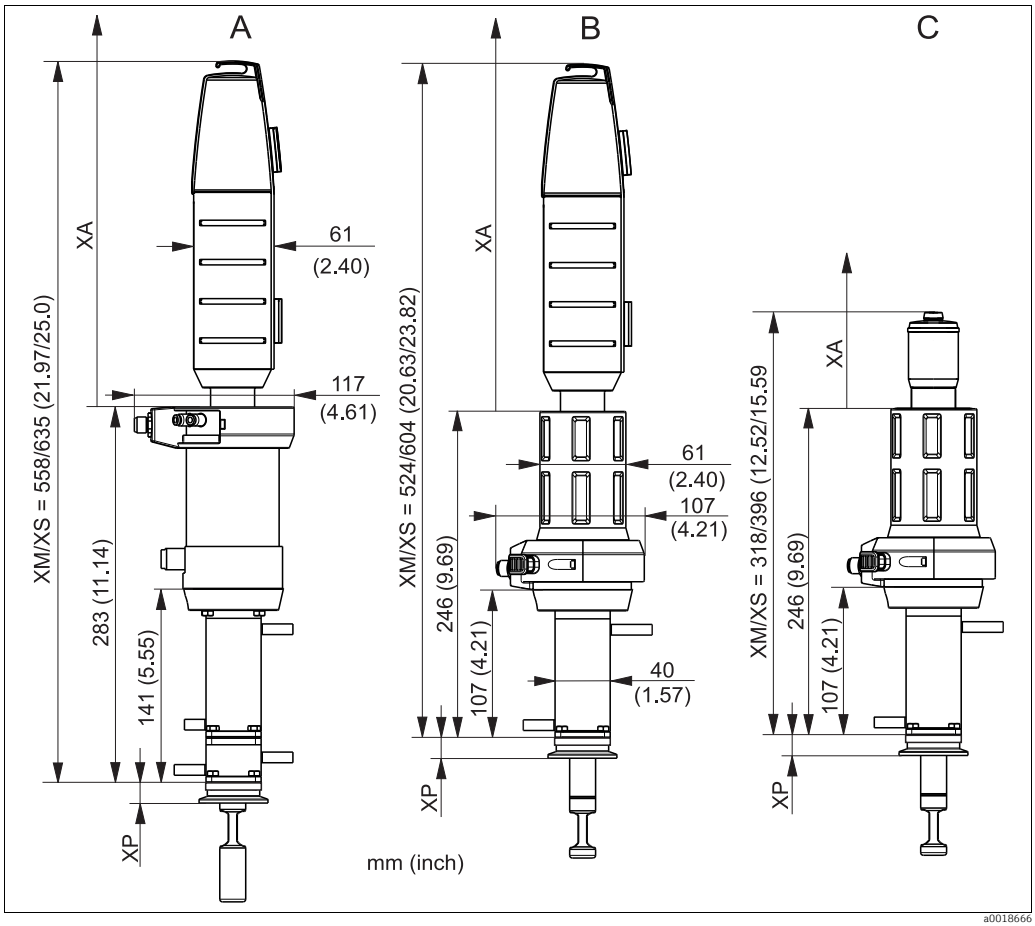


Dimensions for short version (36 mm stroke)

A Pneumatic drive
B Manual drive
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 = 425 mm (16.73")

Process connection (EHEDG)		Height XP in mm (inch)
CA Clamp ISO 2852, ASME BPE-2012, 1½"		14.9 (0.59)
CB Clamp ISO 2852, ASME BPE-2012, 2"		19.5 (0.77)
CC Clamp ISO 2852, ASME BPE-2012, 2½"		13.0 (0.51)
DA Aseptic DN 25, clampable, DIN 11864-3 A		16.0 (0.63)
DC Aseptic DN 50 screw-in DIN 11864-1 A		16.0 (0.63)
DF Aseptic DN 50 grooved flange DIN 11864-2 A		14.2 (0.56)
EA Neumo BioControl D 65		25.0 (0.98)
EB Neumo BioConnect D 50		10.5 (0.41)

Process connection (EHEDG)		Height XP in mm (inch)
EF Neumo BioConnect D 65		10.5 (0.41)
MA Dairy coupling DN 50 DIN 11851 (EHEDG approval only with Siersema gasket)		14.5 (0.57)
MB Dairy coupling DN 65 DIN 11851 (EHEDG approval only with Siersema gasket)		13.8 (0.54)
VA Varivent flange N (DN 40 to 100)		19.0 (0.75)

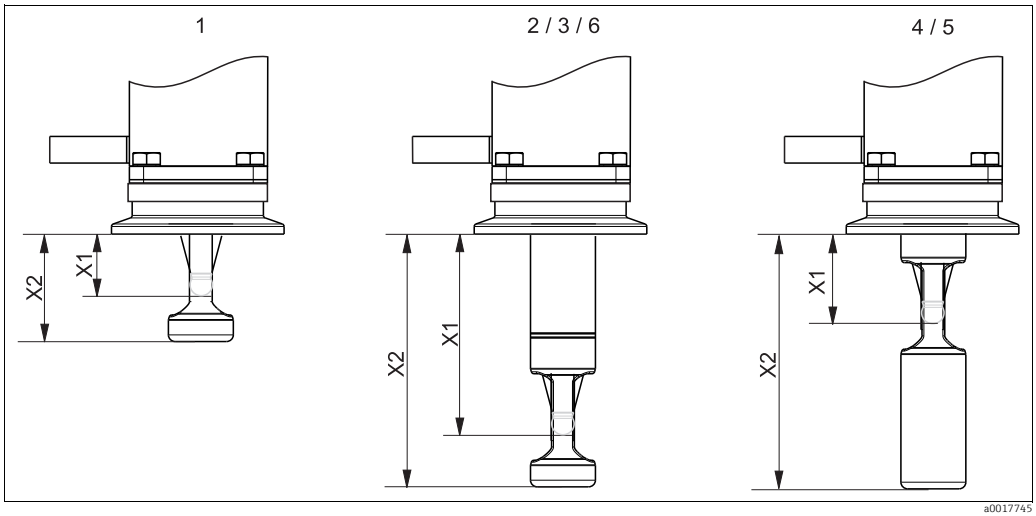


Dimensions for long version (78 mm stroke)

A Pneumatic drive
B Manual drive
C Manual drive with small protection cap
XM Assembly in measuring position
XS Assembly in service position
XP Height of particular process connection (see table)
XA Necessary mounting distance for sensor replacement

The mounting distance XA is 440 mm (17.32") for 225 mm sensors
The mounting distance XA is 610 mm (24.02") for 360 mm sensors

Immersion depths

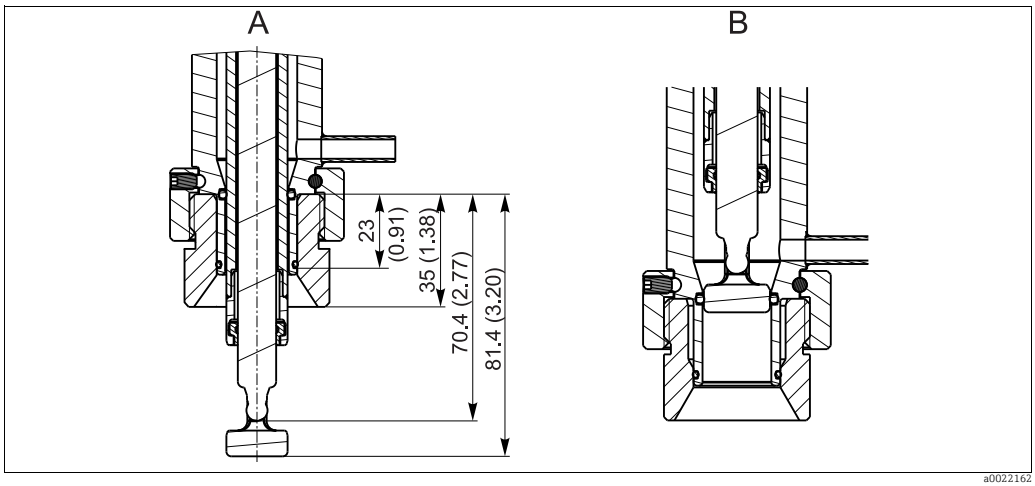


Immersion depths for different service chambers

1 Single chamber / 36 mm stroke / sensor 225 mm incl. KCl
2 Single chamber / 78 mm stroke / sensor 225 mm excl. KCl
3 Single chamber / 78 mm stroke / sensor 360 mm incl. KCl
4 Double chamber / 78 mm stroke / sensor 225 mm incl. KCl / service position, inner chamber
5 Double chamber / 78 mm stroke / sensor 360 mm excl. KCl / service position, inner chamber
6 Double chamber / 78 mm stroke / sensor 360 mm excl. KCl / service position, front chamber

Immersion depths in mm (inch)

		Service chamber					
Process connection		**1**	**2**	**3**	**4**	**5**	**6**
CA Clamp ISO2852 ASME BPE-2012 1½"	X1 X2	20.6 (0.81) 31.6 (1.24)	62.1 (2.44) 73.1 (2.88)	62.1 (2.44) 73.1 (2.88)	28.1 (1.11) 73.1 (2.88)	28.1 (1.11) 73.1 (2.88)	62.1 (2.44) 73.1 (2.88)
CB Clamp ISO2852 ASME BPE-2012 2"	X1 X2	16.1 (0.63) 27.1 (1.07)	57.6 (2.27) 68.6 (2.70)	57.6 (2.27) 68.6 (2.70)	23.6 (0.93) 68.6 (2.70)	23.6 (0.93) 68.6 (2.70)	57.6 (2.27) 68.6 (2.70)
CC Clamp ISO2852 ASME BPE-2012 2½"	X1 X2	22.6 (0.89) 33.6 (1.32)	64.1 (2.52) 75.1 (2.96)	64.1 (2.52) 75.1 (2.96)	30.1 (1.19) 75.1 (2.96)	30.1 (1.19) 75.1 (2.96)	64.1 (2.52) 75.1 (2.96)
DA Aseptic DN 25 Clampable DIN11864-3 A	X1 X2	19.6 (0.77) 30.6 (1.20)	61.1 (2.41) 72.1 (2.84)	61.1 (2.41) 72.1 (2.84)	27.1 (1.07) 72.1 (2.84)	27.1 (1.07) 72.1 (2.84)	61.1 (2.41) 72.1 (2.84)
DC Aseptic DN 50 Screw-in DIN11864-1 A	X1 X2	27.1 (1.07) 38.1 (1.50)	68.6 (2.70) 79.6 (3.13)	68.6 (2.70) 79.6 (3.13)	34.6 (1.36) 79.6 (3.13)	34.6 (1.36) 79.6 (3.13)	68.6 (2.70) 79.6 (3.13)
DF Aseptic DN 50 Grooved flange DIN 11864-2 A	X1 X2	21.4 (0.84) 32.4 (1.28)	62.9 (2.48) 73.9 (2.91)	62.9 (2.48) 73.9 (2.91)	28.9 (1.14) 73.9 (2.91)	28.9 (1.14) 73.9 (2.91)	62.9 (2.48) 73.9 (2.91)
EA Neumo Biocontrol D 65	X1 X2	27.6 (1.09) 38.6 (1.52)	69.1 (2.72) 80.1 (3.15)	69.1 (2.72) 80.1 (3.15)	35.1 (1.38) 80.1 (3.15)	35.1 (1.38) 80.1 (3.15)	69.1 (2.72) 80.1 (3.15)
EB Neumo Bioconnect D 50	X1 X2	22.6 (0.89) 33.6 (1.32)	64.1 (2.52) 75.1 (2.96)	64.1 (2.52) 75.1 (2.96)	30.1 (1.19) 75.1 (2.96)	30.1 (1.19) 75.1 (2.96)	64.1 (2.52) 75.1 (2.96)
EF Neumo Bioconnect D 65	X1 X2	20.6 (0.81) 31.6 (1.24)	62.1 (2.44) 73.1 (2.88)	62.1 (2.44) 73.1 (2.88)	28.1 (1.11) 73.1 (2.88)	28.1 (1.11) 73.1 (2.88)	62.1 (2.44) 73.1 (2.88)
MA Dairy coupling DN 50 DIN11851	X1 X2	21.1 (0.83) 32.1 (1.26)	62.6 (2.46) 73.6 (2.90)	62.6 (2.46) 73.6 (2.90)	28.6 (1.13) 73.6 (2.90)	28.6 (1.13) 73.6 (2.90)	62.6 (2.46) 73.6 (2.90)
MB Dairy coupling DN 65 DIN11851	X1 X2	21.8 (0.86) 32.8 (1.29)	63.3 (2.49) 74.3 (2.93)	63.3 (2.49) 74.3 (2.93)	29.3 (1.16) 74.3 (2.93)	29.3 (1.16) 74.3 (2.93)	63.3 (2.49) 74.3 (2.93)
NA Thread ISO228 G 1¼	X1 X2		70.4 (2.77) 81.4 (3.20)	70.4 (2.77) 81.4 (3.20)			
VA Varivent flange N (DN 40 to DN 100)	X1 X2	16.6 (0.65) 27.6 (1.09)	58.1 (2.29) 69.1 (2.72)	58.1 (2.29) 69.1 (2.72)	24.1 (0.95) 69.1 (2.72)	24.1 (0.95) 69.1 (2.72)	58.1 (2.29) 69.1 (2.72)



Immersion depth in mm (inch) for process connection NA thread ISO228 G1¼ (service chamber 2 and 3)

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-FDA (USP Class VI) / FKM-FDA (USP Class VI) / FFKM-FDA (USP Class VI)
Immersion tube:	Stainless steel 1.4435 (AISI 316L) Ra < 0.76 / Ra < 0.38 or Alloy C22 Ra < 0.76
Process connection + service chamber:	Stainless steel 1.4435 (AISI 316L) Ra < 0.76 or Alloy C22 Ra <0.76
Rinse connections:	Stainless steel 1.4435 (AISI 316L)

Not in contact with medium:

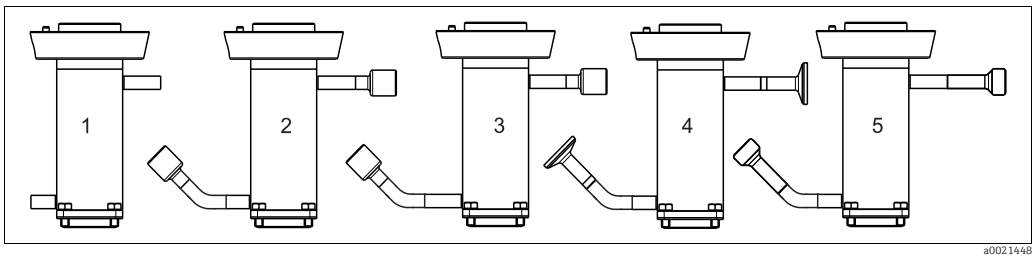
Manual drive:	Stainless steel 1.4301 (AISI 304) or 1.4404 (AISI 316L) Plastics PPS CF15, PBT, PP
Pneumatic drive:	Stainless steel 1.4301 (AISI 304) or 1.4404 (AISI 316L) Plastics PBT, PP

Sensors

Short version	Gel sensors, ISFET	225 mm
	KCl sensors	225 mm
Long version	Gel sensors, ISFET	225 mm
	Gel sensors, ISFET	360 mm
	KCl sensors	360 mm

Rinse connections

The service chamber and front chamber are available with the following rinse connections:

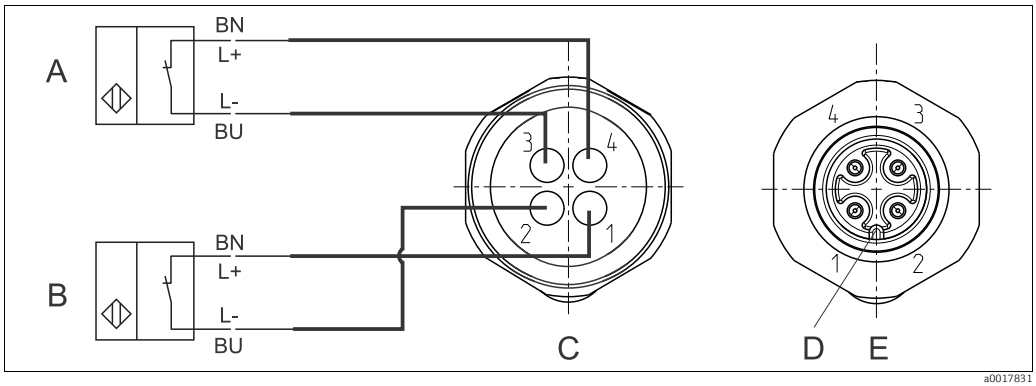


Rinse connections

1 Pipe 6/8 mm ID/OD
2 G1/4 female
3 NPT-F 1/4 female
4 Clamp DN 6 / DN 25 ISO2852
5 Bioconnect DN 6 (EHEDG)

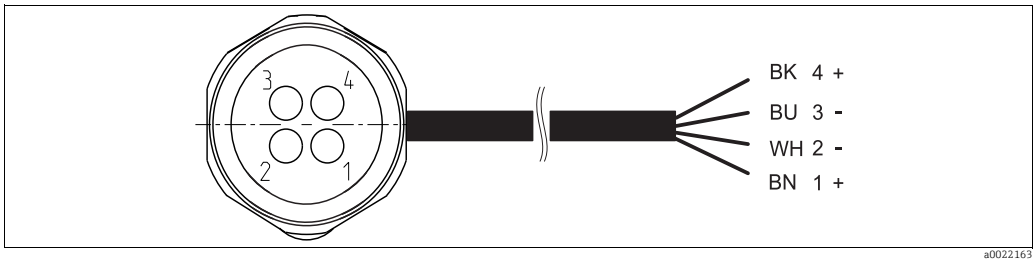
Limit position switches

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 Measure position
2 Measure position
3 Service position
4 Service position

Only pins 1 and 2 are assigned for assemblies (manual drive) with just one switch (Measure position).

Signal table for the limit position switches

Position of the assembly	Switch position "Measure"	Switch position "Service"
Measure	Active HIGH	Active HIGH
Service	Active LOW	Active LOW

Certificates and approvals

Hygiene

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

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.

EHEDG*
The single-chamber version of the assembly is certified to Class I (cleanability) *. The double-chamber version of the assembly is certified to Aseptic Class I (bacteria tightness).

ASME BPE
The Cleanfit CPA875 retractable assembly has been developed following ASME BPE Standard 2012 and meets the relevant requirements of sections GR, SD, DT, MJ, SF, SG, PM, MM and PI which are significant for a retractable assembly.

FDA
All materials in contact with the product are FDA-listed.

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

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.

EC VO 1935/2004
The assembly meets the requirements for materials that come into contact with food.

* Application for approval submitted

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?
8. Select the cleaning position.

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 tool.

Enter the following addresses in your browser to access the product page:
www.endress.com/cpa875

Product configurator

On the right-hand side of the product page, you will find the navigation area:

1. Under "Device Support", click "Configure your selected product".
   ↳ The Configurator opens in a new window.
2. Configure the device according to your requirements by selecting all options.
   ↳ This ensures that you will receive a valid and complete order code.
3. Export the order code as a PDF or Excel file. To do so, click on the relevant button at the top of the selection 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
- Dummy plug G1¼, 1.4435 (AISI 316 L), FPM - FDA
- 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, EPDM FDA seals only for process connection G1¼, wetted parts, single chamber
- Kit, FKM FDA seals only for process connection G1¼, wetted parts, single chamber
- Kit, FFKM FDA seals only for process connection G1¼, wetted parts, single chamber
- Kit, EPDM FDA seals, wetted parts, single chamber, **not** for process connection G1¼
- Kit, FKM FDA seals, wetted parts, single chamber, **not** for process connection G1¼
- Kit, FFKM FDA seals, wetted parts, single chamber, **not** for process connection G1¼
- Kit, EPDM FDA seals, wetted parts, double chamber, all process connections
- Kit, FKM FDA seals, wetted parts, double chamber, all process connections
- Kit, FFKM FDA seals, wetted parts, double chamber, all process connections
- Kit, seals not in contact with the medium
- 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

Rinse adapter

- Rinse connection adapter CPR40 for connecting 2 or 4 different media.
  Order according to product structure, see Technical Information (TI00342C/07/EN)

Hose nozzle

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

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

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

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

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

Oxygen sensors

Oxymax COS22/22D
- Sterilizable sensor for dissolved oxygen
- Optionally available with Memosens (COS22D)
- Order as per product structure (--> Online Configurator, www.products.endress.com/cos22d)
- Technical Information TI00446C/07/EN

NIR absorption sensor

OUSBT66
- NIR absorption sensor for measuring cell growth and biomass
- CIP/SIP-resistant, autoclavable
- Order as per product structure, www.products.endress.com/ousbt66
- Technical Information TI00469C/07/EN

www.addresses.endress.com

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