

Technical Information

Cleanfit CPA875

Retractable process assembly for sterile and hygienic applications for in-line measurement with standard 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

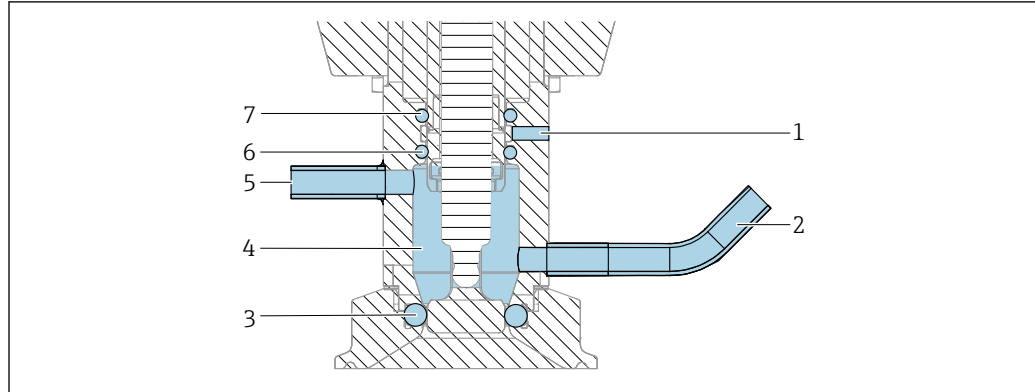
- Maximum availability with minimum maintenance
- Safe measurement and accurate measured values
- Higher product quality thanks to reliable measurement results
- Modular design ensures investment is secure
- EHEDG-certified assembly: process connection and service chamber
- Features certified to FDA and USP Class VI
- Versions with 3-A certificate available

Function and system design

Function

With the Cleanfit CPA875 retractable assembly, you can carry out pH, ORP, oxygen and other measurements reliably using suitable 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.

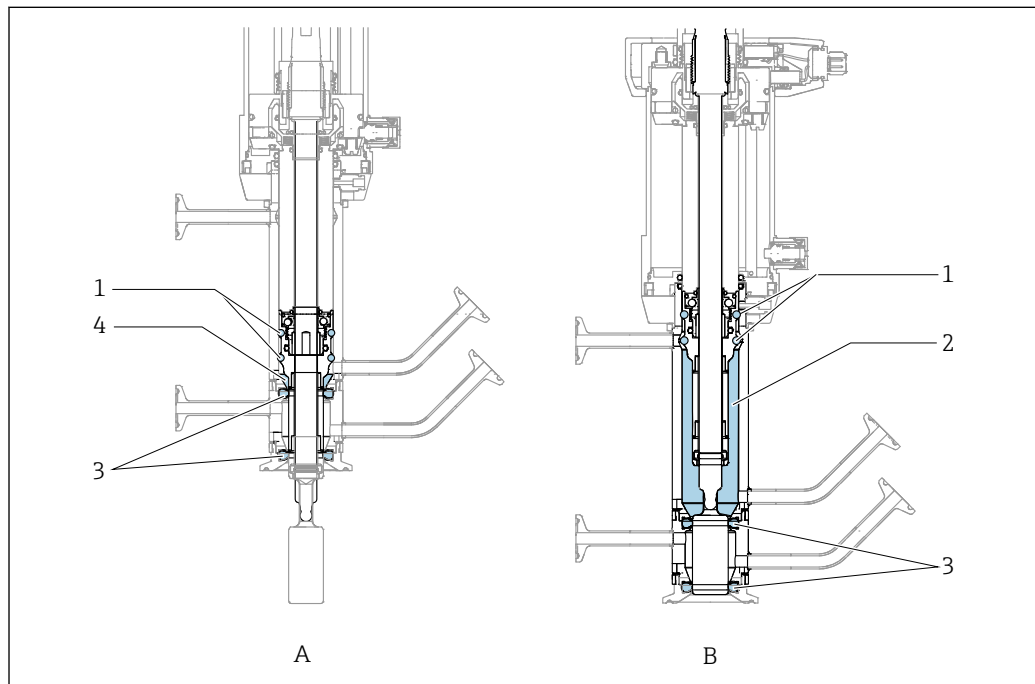


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1 Sealing system, assembly in service position

- 1 Leakage hole
- 2 Rinse chamber, inlet
- 3 Process seal, seal for DN25 with 1 x O-ring
- 4 Rinse chamber
- 5 Rinse chamber, outlet
- 6 Seal, rinse chamber (1 x O-ring)
- 7 Seal drive (1 x O-ring)

Process seal



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2 Moving sealing rings, only refers to the double chamber

- A Measuring position
- B Service position
- 1 "Moving" seals in the double chamber
- 2 Chamber volume in service position
- 3 Molded seal
- 4 Chamber volume in measuring position

Design

The 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 an "inner" service chamber and a "front" service 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 fitting / ISO228 Thread / 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).

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.

Limit position locking with manual drive

For position locking, the manual version has an unlocking button in both the measuring position and the service 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).

Cleaning**Medium drains completely out of "inner" service chamber and the "front" service chamber"**

If the assembly is mounted in 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 NA process connection).

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 (immersion tube only).

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

Both versions feature different sealing principles to meet these requirements.

- Double-chamber system with sensor cleaning in the "front" service chamber and single-chamber system for certified cleanability
- Double-chamber system with sensor cleaning in the "inner" service chamber for certified cleanability and sterility

Certified cleanability**EHEDG-certified sterilisability**

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"**

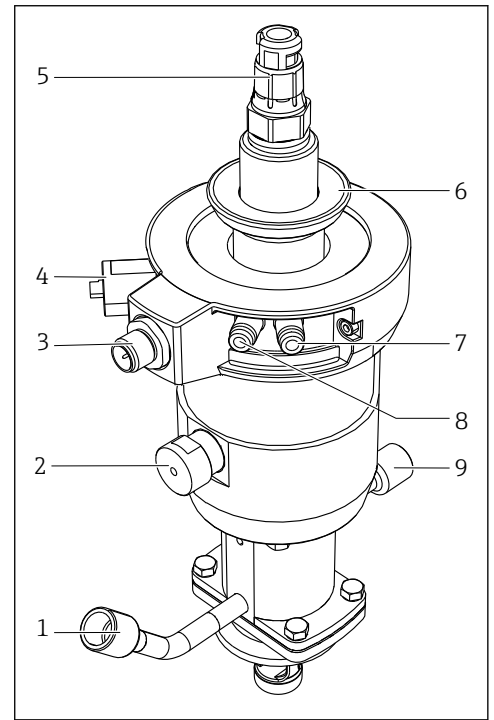
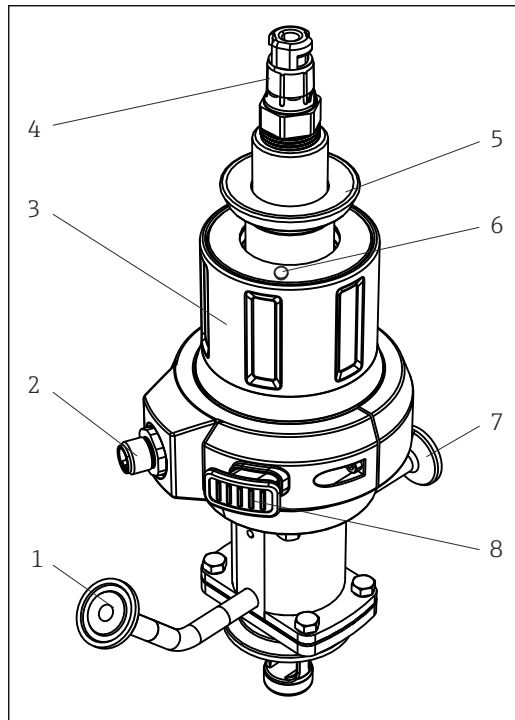
The moving seals in the "inner" service chamber of the double-chamber assembly prevent already sterilized parts from being contaminated by still non-sterilized parts of the sensor guide. This rules out the possibility of contamination of the service chamber, and ultimately the process, even with strict 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.



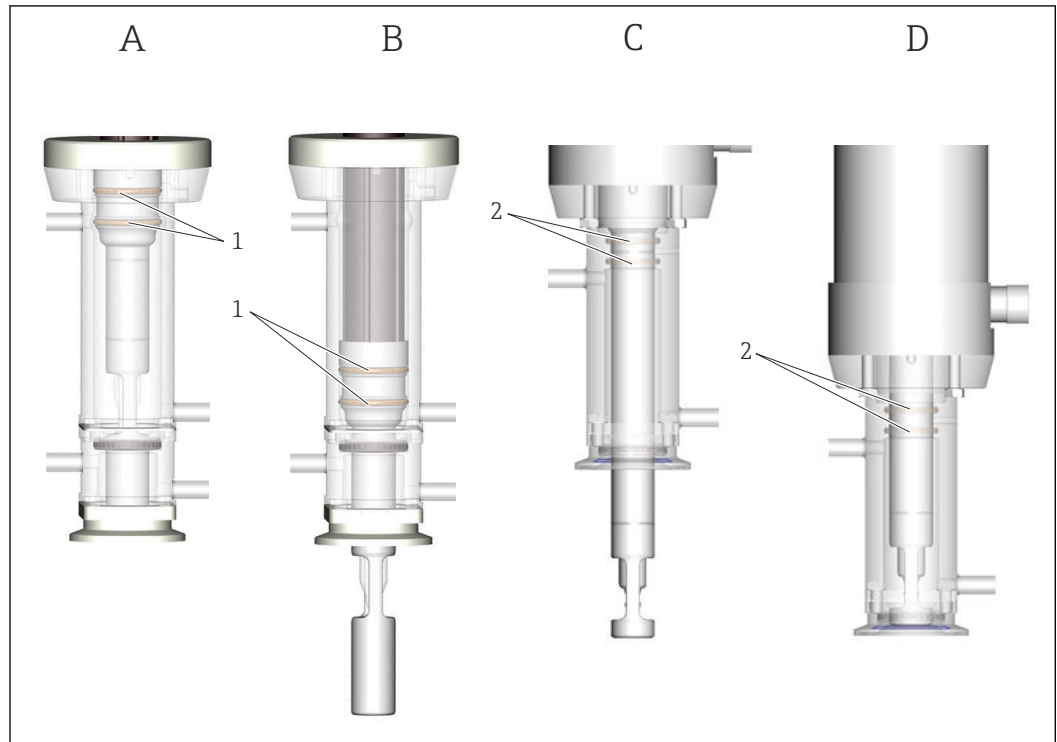
▣ 3 Assembly with manual drive (without protection cap)

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

▣ 4 Assembly with pneumatic drive (without protective cap)

- 1 Rinse connection
- 2 Automatic limit position lock, process
- 3 Connection for limit position switch
- 4 Automatic limit position lock, service
- 5 Sensor head
- 6 Fastening ring for protective cap
- 7 Pneumatic connection (move to measuring position)
- 8 Pneumatic connection (move to service position)
- 9 Rinse connection

Sealing principle

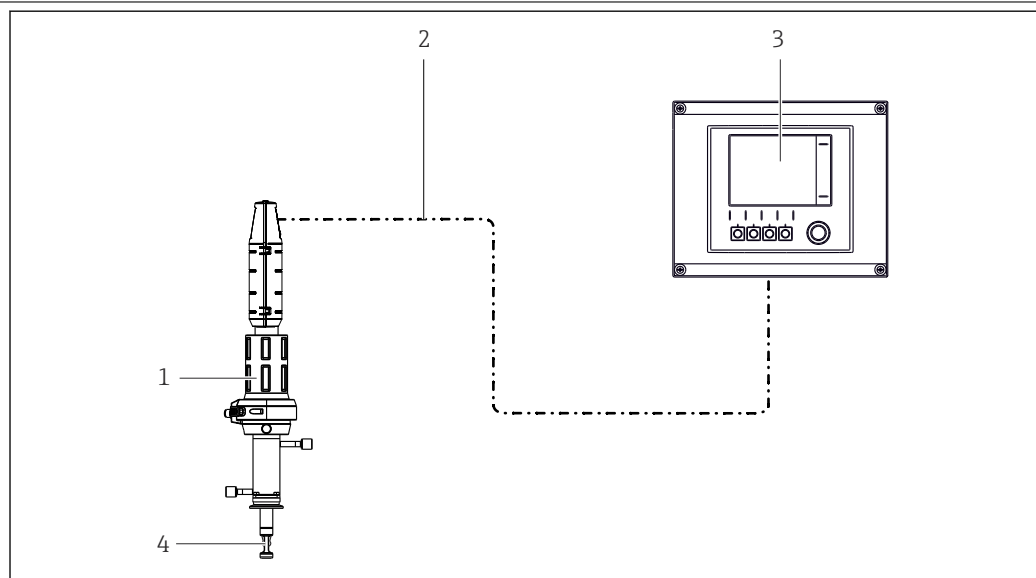


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5 Sealing principle

- 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

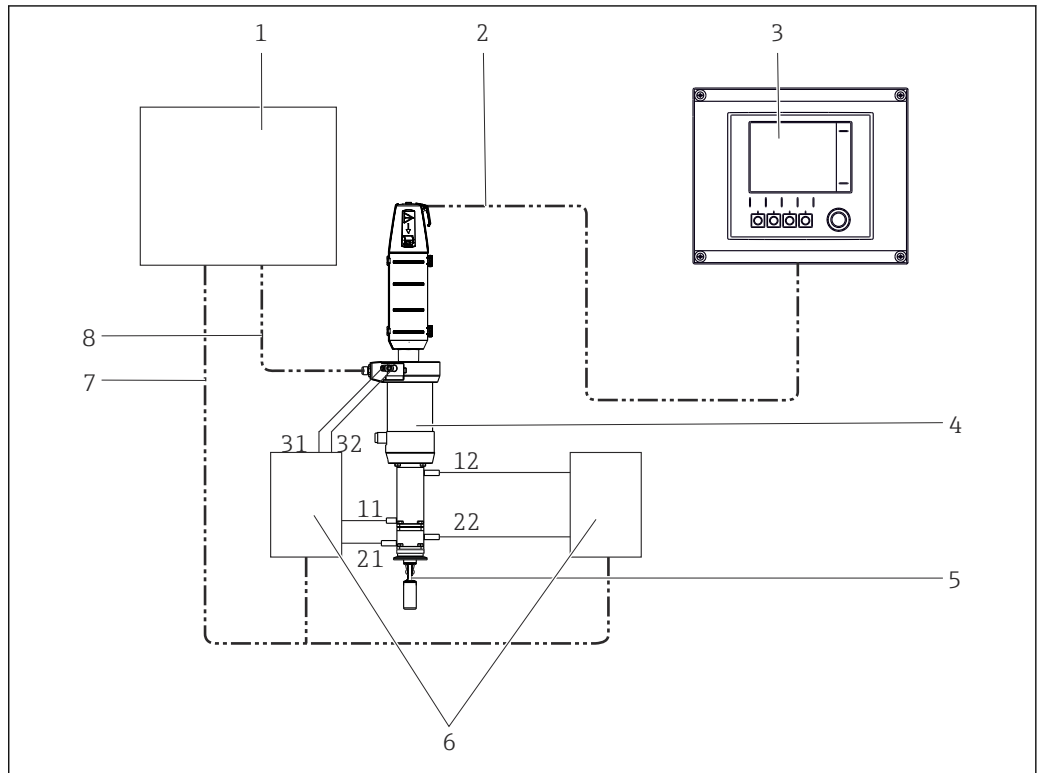


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6 Measuring system (example)

- 1 Assembly Cleanfit CPA875
- 2 Measuring cable
- 3 Transmitter Liquiline CM44x
- 4 Sensor

Measuring system with double chamber

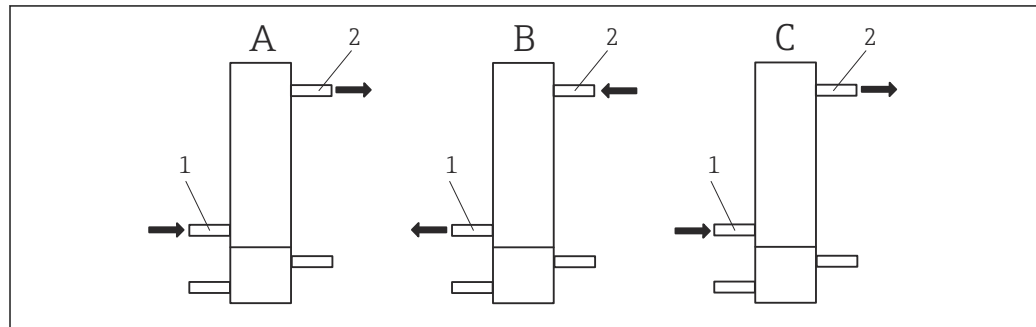


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- 7 Measuring system with pneumatic drive and double chamber (example)
- | | |
|-------------------------------|---|
| 1 Control unit | 7 Control signals (electric/pneumatic) |
| 2 Measuring cable | 8 Limit position switch relay signal |
| 3 Transmitter Liquiline CM44x | 11/12 Inlet/outlet of "inner" service chamber |
| 4 Assembly Cleanfit CPA875 | 21/22 Inlet/outlet of "front" service chamber |
| 5 Sensor | 31/32 Drive control |
| 6 Manifold | |

Assignment of rinse connections for pressure compensation

Assignment of rinse connections for double chamber



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8 Assignment of rinse inlet and outlet

A "Clean" function: connection and water/cleaner flow direction

B Aeration/de-aeration when moving from the service position to the measuring position

C Aeration/de-aeration when moving from the measuring position to the service position

1 Service chamber inlet

2 Service chamber outlet

In the "Cleaning" state (A), the inlet and outlet of the "inner" service chamber are used as follows (the internal volume of the "front" service chamber does not change, and so no pressure compensation measures are required here):

- 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).
- Air is supplied via the outlet (2).

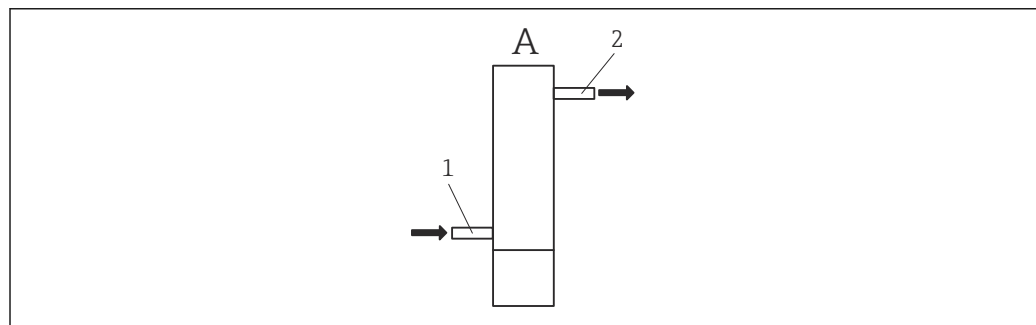
In the "Move from measuring position to service position" state (C), the pressure conditions in the service chamber must be balanced when moving. The inlet and outlet of the service chamber are assigned as follows:

- The air is supplied via the inlet (1).
- The air is removed via the outlet (2) (outlet is open).

i 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 assembly delivery.

Assignment of rinse connections for single chamber



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9 Connection and water/cleaner flow direction

A "Clean" function: connection and water/cleaner flow direction

1 Service chamber inlet

2 Service chamber outlet

In the "Cleaning" state (A), the inlet and outlet of the service chamber are used as follows (the internal volume of the service chamber does not change, and so no pressure compensation measures are required here):

- Depending on the cleaning method, cleaning agent is supplied via the inlet (1).
- These media are removed via the outlet (2).

Mounting

Sensor selection	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

Special mounting instructions	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
	Output interface terminals	NAMUR
	Limit position switches (inductive conductivity sensors)	Pepperl+Fuchs NJ1.5-6.5-15-N-Y180094

Environment

Ambient temperature range	-10 to +70 °C (+10 to +160 °F)
Storage temperature	-10 to +70 °C (+10 to +160 °F)

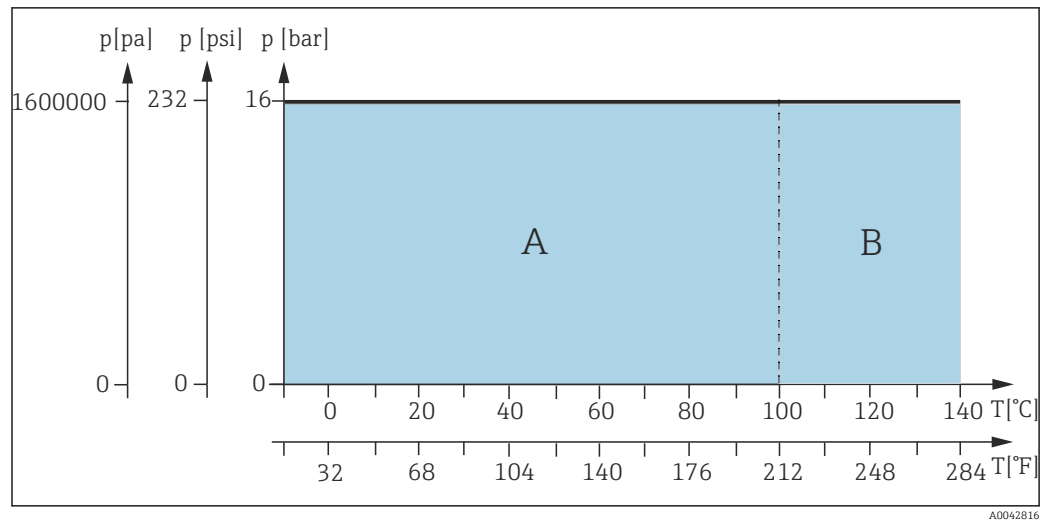
Process

Process temperature range	-10 to 140 °C (14 to 284 °F)	
Process pressure range	Pneumatic drive	16 bar (232 psi) up to 140 °C (284 °F)
	Manual drive (PP version may vary)	8 bar (116 psi) to 140 °C (284 °F)



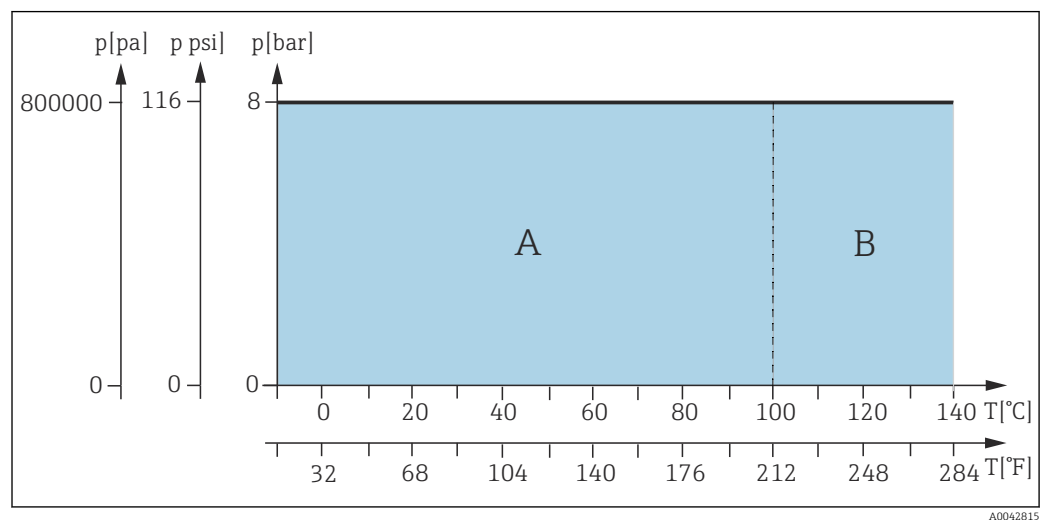
The service life of the seals is reduced if process temperatures are constantly high or if SIP is used. The other process conditions may also reduce the service life of the seals.

Pressure-temperature ratings



10 Pressure-temperature ratings for pneumatic drive

- A Dynamic range
- B Static range



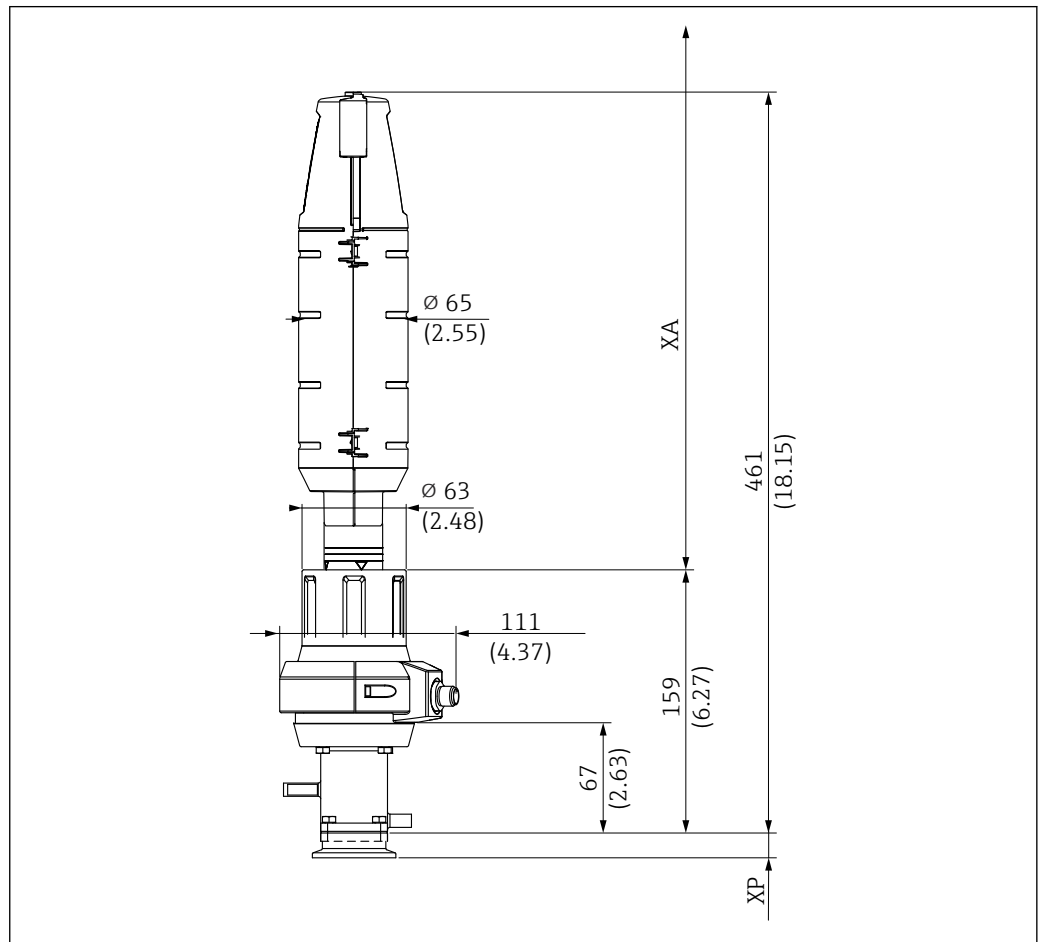
11 Pressure-temperature ratings for manual drive

- A Dynamic range
- B Static range

Mechanical construction

Design, dimensions

Short version

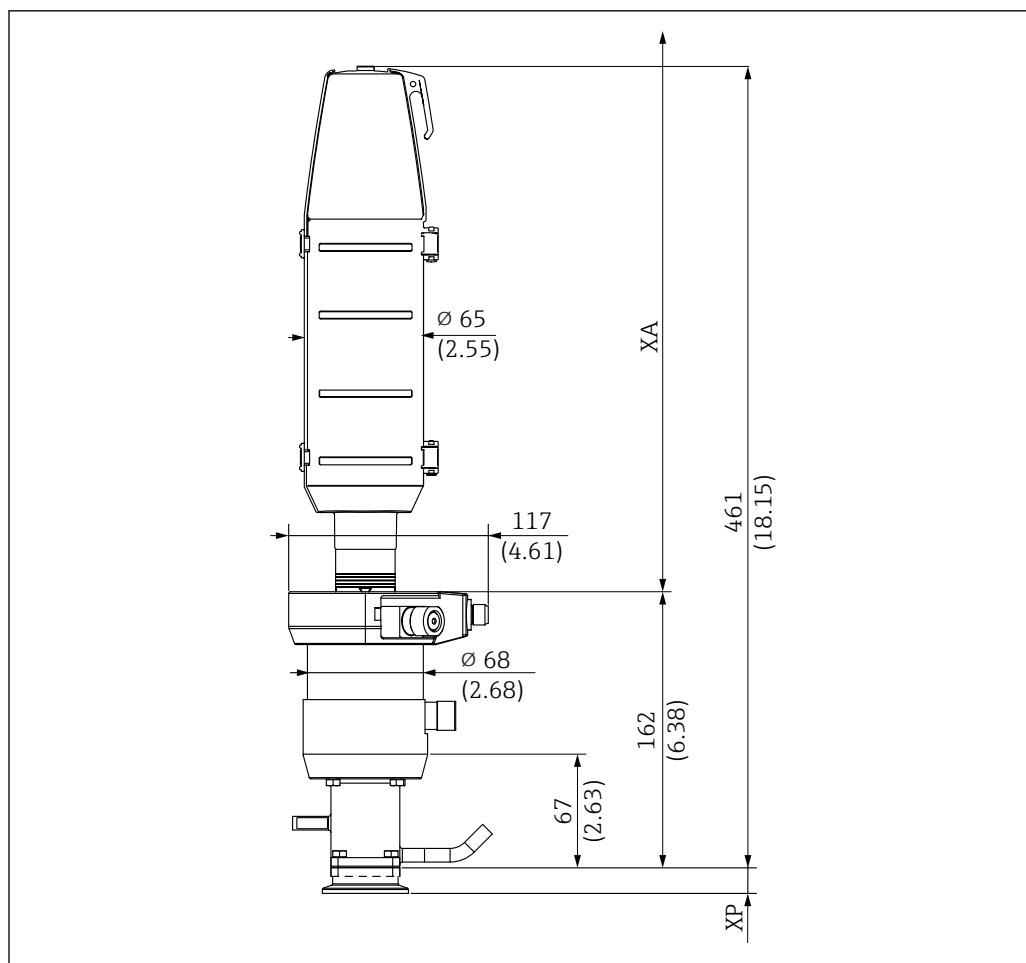


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12 Dimensions for short version (36 mm stroke) with manual drive in service position in mm (in)

XP Height of particular process connection (see table below)

XA Necessary mounting distance for sensor replacement = 425 mm (16.73")



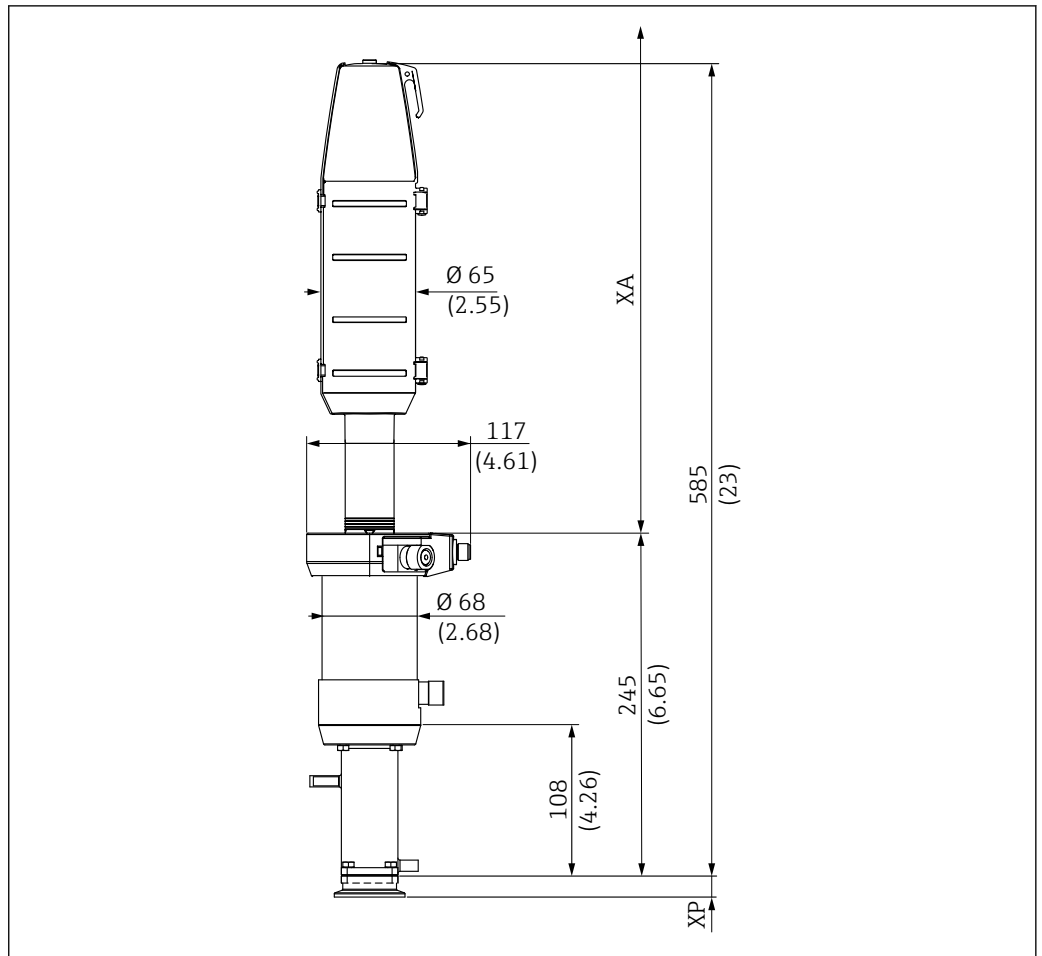
A0047413

13 Dimensions for short version (36 mm stroke) with pneumatic drive in service position in mm (in)

XP Height of particular process connection (see table below)

XA Necessary mounting distance for sensor replacement = 425 mm (16.73")

Long version

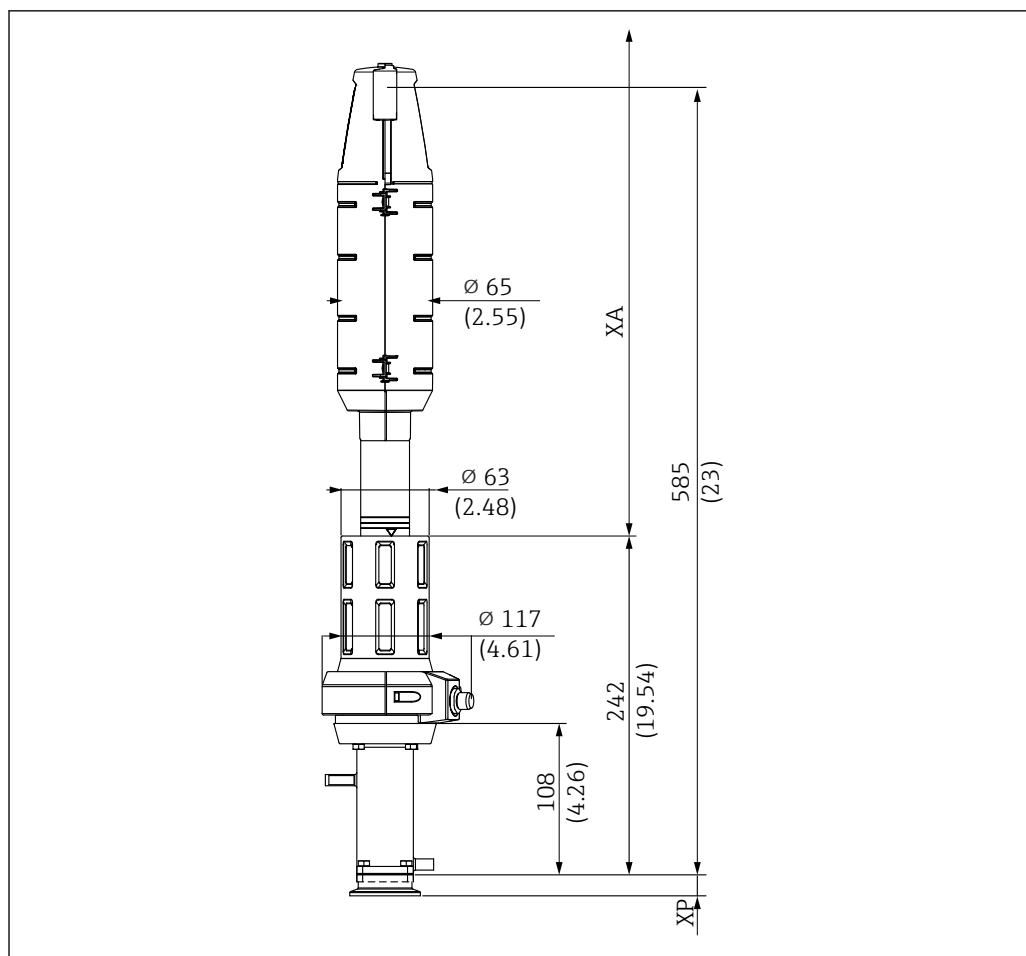


14 Dimensions for long version (78 mm stroke) with pneumatic drive in service position in mm (in)

XP Height of particular process connection (see table below)

XA Necessary mounting distance for sensor replacement

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15 Dimensions for long version (78 mm stroke) with manual drive in service position in mm (in)

XP Height of particular process connection (see table below)

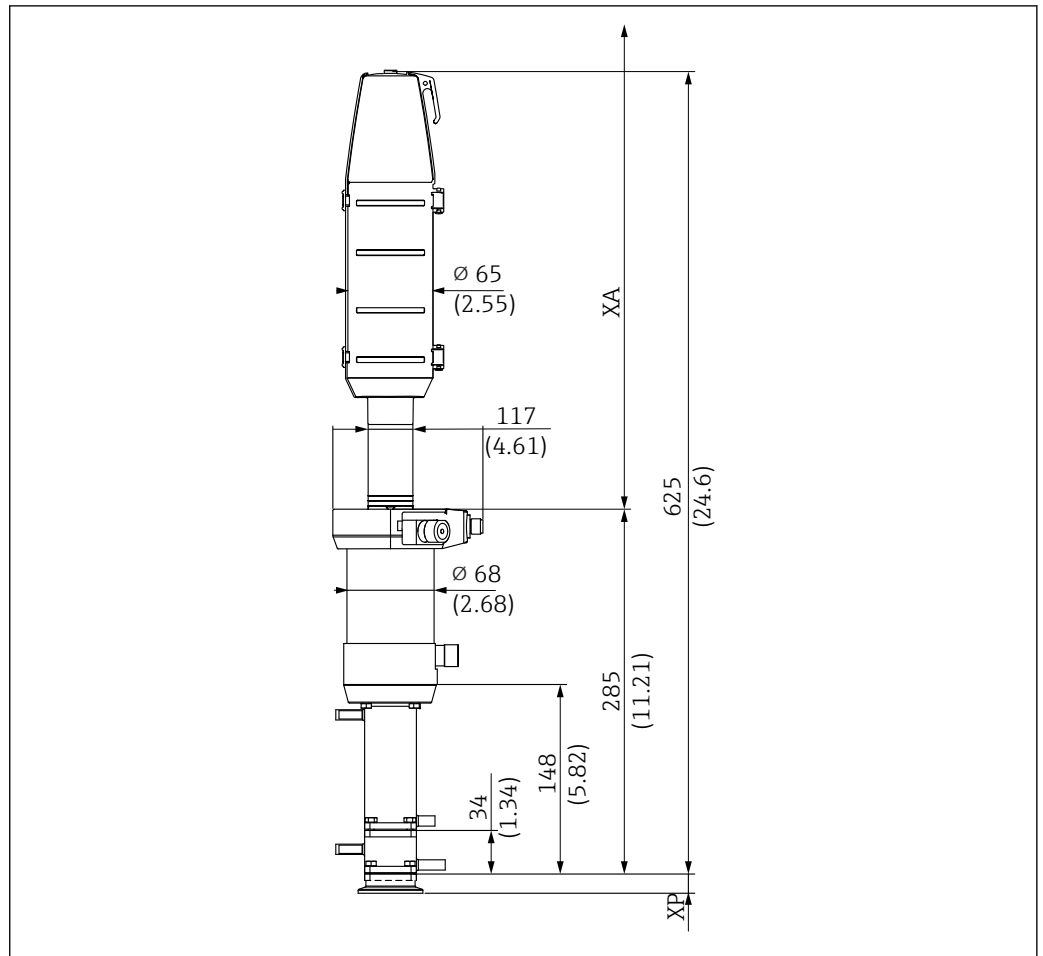
XA Necessary mounting distance for sensor replacement

A free path length XA above the drive is required to replace the sensors:

XA is 440 mm (17.32") for 225 mm sensors

XA is 610 mm (24.02") for 360 mm sensors

Double chamber



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16 Dimensions of double chamber in mm (in)

XP Height of particular process connection (see table below)







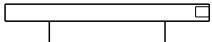
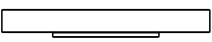
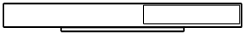
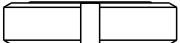
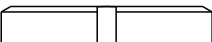


XA Necessary mounting distance for sensor replacement

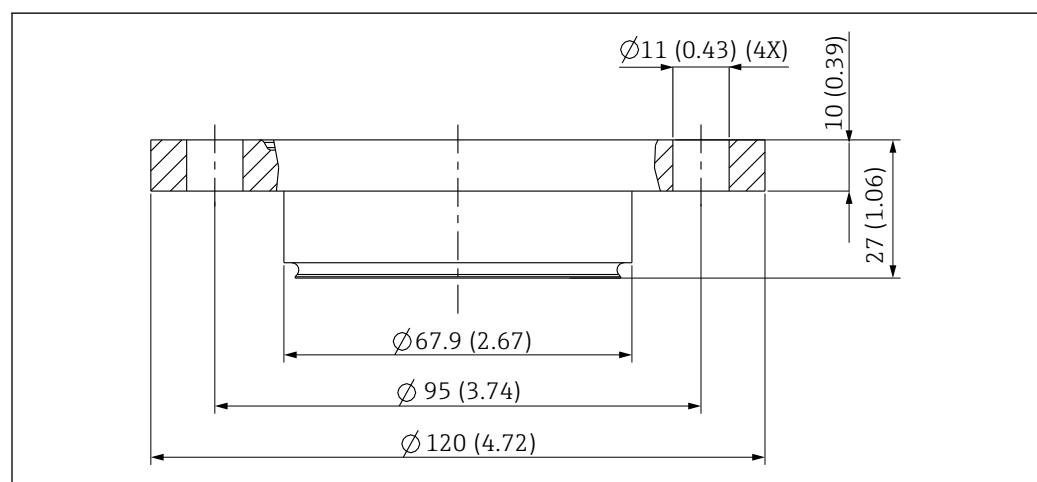
A free path length XA above the drive is required to replace the sensors:

XA is 440 mm (17.32") for 225 mm sensors

XA is 610 mm (24.02") for 360 mm sensors

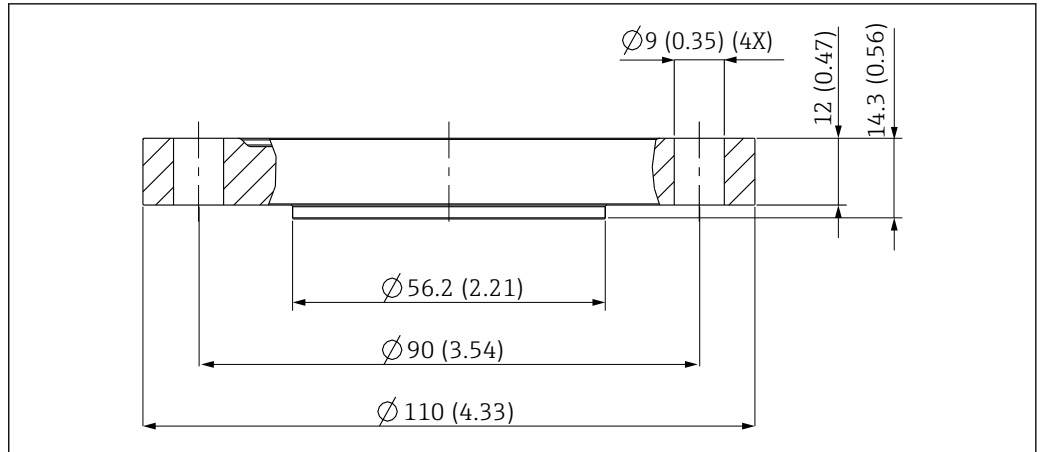
Process connection height

Process connection		Height XP in mm (in)
CA Clamp ISO 2852, ASME BPE-2012, 1½"	 A0021866	14.9 (0.59)
CB Clamp ISO 2852, ASME BPE-2012, 2"	 A0021867	19.5 (0.77)
CC Clamp ISO 2852, ASME BPE-2012, 2½"	 A0021869	13.0 (0.51)
DA Aseptic DN 25 clamp-on DIN 11864-3 A, grooved clamp (NKS)	 A0021871	16.0 (0.63)
DC Aseptic DN 50 screw-in DIN 11864-1 A	 A0021872	16.0 (0.63)
DF Aseptic DN 50 grooved flange DIN 11864-2 A	 A0021874	14.2 (0.56)
EA Neumo BioControl D 65	 A0021875	25.0 (0.98)
EB Neumo BioConnect D 50	 A0021877	10.5 (0.41)
EF Neumo BioConnect D 65	 A0021876	10.5 (0.41)
MA Dairy fitting DN 50 DIN 11851 (EHEDG approval only with seal from Siersema)	 A0021879	14.5 (0.57)
MB Dairy fitting DN 65 DIN 11851 (EHEDG approval only with seal from Siersema)	 A0021878	13.8 (0.54)
NA Thread ISO 228 G1¼	 A0043131	31.1 (1.22)
VA Varivent flange N (DN 40 to 100)	 A0021873	19.0 (0.75)



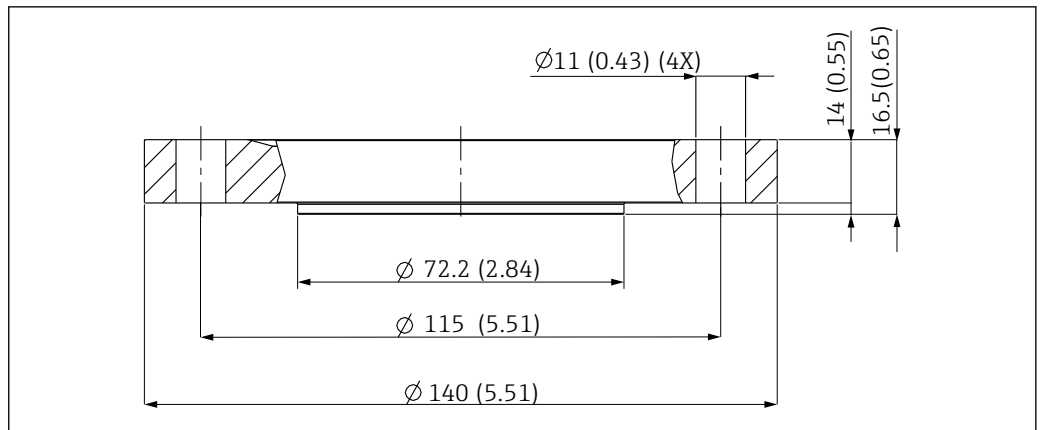
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17 Dimensions of EA Neumo BioControl D 65 in mm (in)



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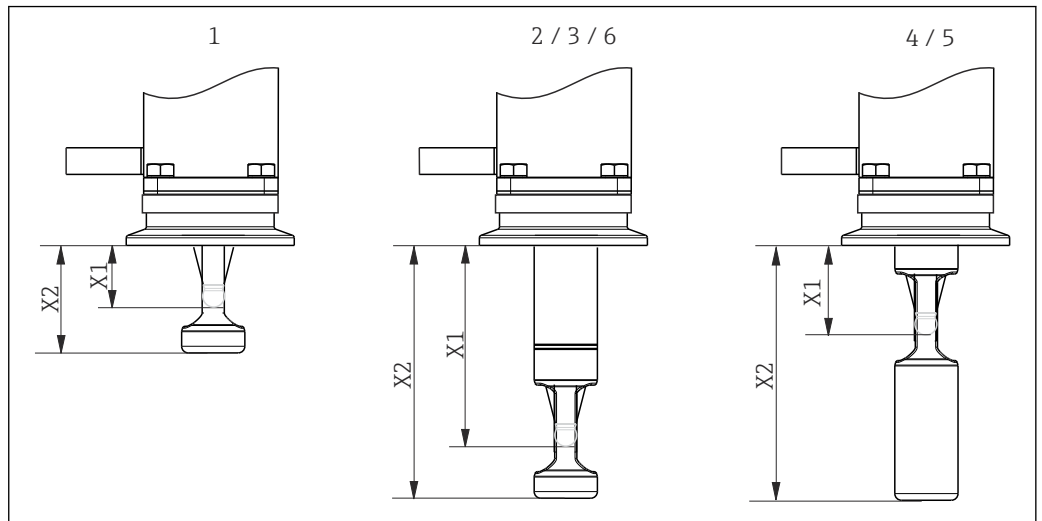
18 Dimensions of EB Neumo BioConnect D 50 in mm (in)



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19 Dimensions of EF Neumo BioConnect D 65 in mm (in)

Immersion depths



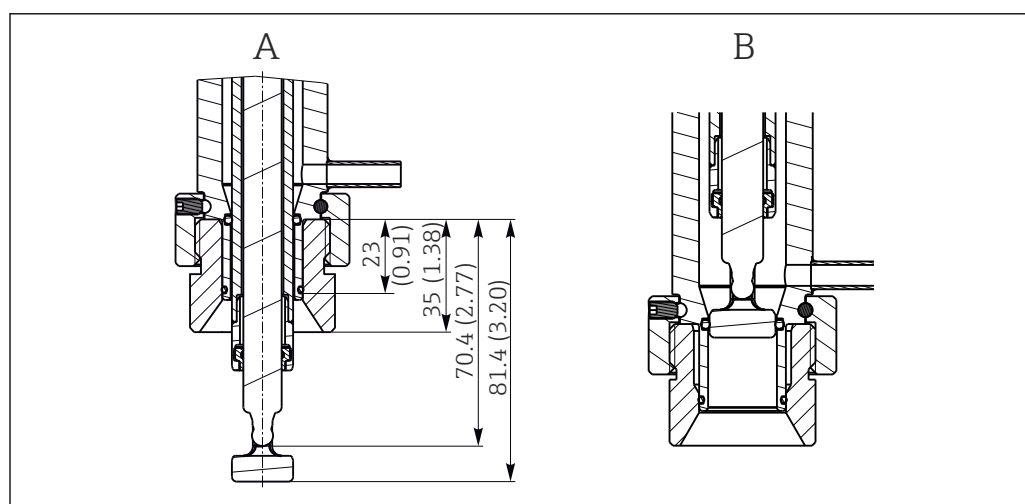
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20 Immersion depths for different service chambers

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

Immersion depths in mm (inch)

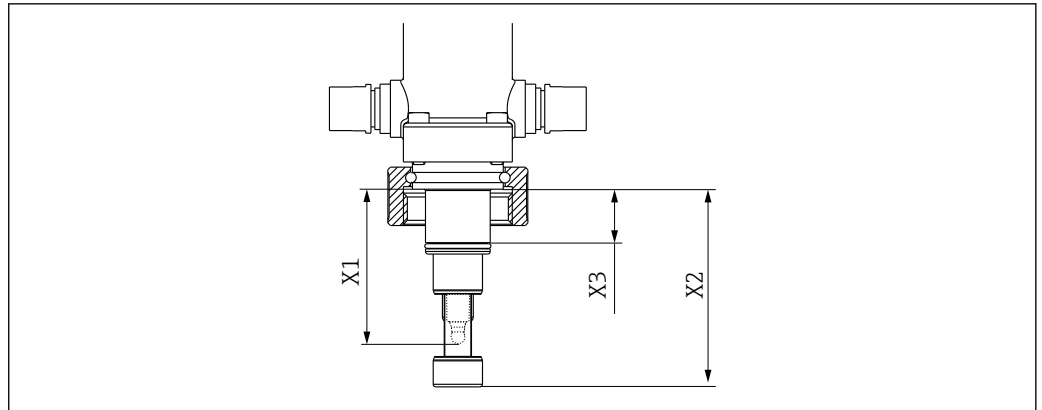
Process connection		Service chamber					
		1	2	3	4	5	6
CA Clamp ISO2852 ASME BPE-2012 1½"	X1	20.6 (0.81)	62.1 (2.44)	62.1 (2.44)	28.1 (1.11)	28.1 (1.11)	62.1 (2.44)
	X2	31.6 (1.24)	73.1 (2.88)	73.1 (2.88)	73.1 (2.88)	73.1 (2.88)	73.1 (2.88)
CB Clamp ISO2852 ASME BPE-2012 2"	X1	16.1 (0.63)	57.6 (2.27)	57.6 (2.27)	23.6 (0.93)	23.6 (0.93)	57.6 (2.27)
	X2	27.1 (1.07)	68.6 (2.70)	68.6 (2.70)	68.6 (2.70)	68.6 (2.70)	68.6 (2.70)
CC Clamp ISO2852 ASME BPE-2012 2½"	X1	22.6 (0.89)	64.1 (2.52)	64.1 (2.52)	30.1 (1.19)	30.1 (1.19)	64.1 (2.52)
	X2	33.6 (1.32)	75.1 (2.96)	75.1 (2.96)	75.1 (2.96)	75.1 (2.96)	75.1 (2.96)
DA Aseptic DN 25 clamp-on DIN11864-3 A	X1	19.6 (0.77)	61.1 (2.41)	61.1 (2.41)	27.1 (1.07)	27.1 (1.07)	61.1 (2.41)
	X2	30.6 (1.20)	72.1 (2.84)	72.1 (2.84)	72.1 (2.84)	72.1 (2.84)	72.1 (2.84)
DC Aseptic DN 50 screw-in DIN11864-1 A	X1	27.1 (1.07)	68.6 (2.70)	68.6 (2.70)	34.6 (1.36)	34.6 (1.36)	68.6 (2.70)
	X2	39.0 (1.53)	79.6 (3.13)	79.6 (3.13)	79.6 (3.13)	79.6 (3.13)	79.6 (3.13)
DF Aseptic DN 50 Grooved flange DIN11864-2 A	X1	21.4 (0.84)	62.9 (2.48)	62.9 (2.48)	28.9 (1.14)	28.9 (1.14)	62.9 (2.48)
	X2	32.4 (1.28)	73.9 (2.91)	73.9 (2.91)	73.9 (2.91)	73.9 (2.91)	73.9 (2.91)
EA Neumo Biocontrol D65	X1	27.6 (1.09)	69.1 (2.72)	69.1 (2.72)	35.1 (1.38)	35.1 (1.38)	69.1 (2.72)
	X2	38.5 (1.51)	80.1 (3.15)	80.1 (3.15)	80.1 (3.15)	80.1 (3.15)	80.1 (3.15)
EB Neumo Bioconnect D50	X1	22.6 (0.89)	64.1 (2.52)	64.1 (2.52)	30.1 (1.19)	30.1 (1.19)	64.1 (2.52)
	X2	33.6 (1.32)	75.1 (2.96)	75.1 (2.96)	75.1 (2.96)	75.1 (2.96)	75.1 (2.96)
EF Neumo Bioconnect D65	X1	20.6 (0.81)	62.1 (2.44)	62.1 (2.44)	28.1 (1.11)	28.1 (1.11)	62.1 (2.44)
	X2	31.6 (1.24)	73.1 (2.88)	73.1 (2.88)	73.1 (2.88)	73.1 (2.88)	73.1 (2.88)
MA Dairy fitting DN 50 DIN11851	X1	21.1 (0.83)	62.6 (2.46)	62.6 (2.46)	28.6 (1.13)	28.6 (1.13)	62.6 (2.46)
	X2	32.1 (1.26)	73.6 (2.90)	73.6 (2.90)	73.6 (2.90)	73.6 (2.90)	73.6 (2.90)
MB Dairy fitting DN 65 DIN11851	X1	21.8 (0.86)	63.3 (2.49)	63.3 (2.49)	29.3 (1.16)	29.3 (1.16)	63.3 (2.49)
	X2	32.8 (1.29)	74.3 (2.93)	74.3 (2.93)	74.3 (2.93)	74.3 (2.93)	74.3 (2.93)
NA thread ISO228 G 1¼	X1		70.4 (2.77)	70.4 (2.77)			
	X2		81.4 (3.20)	81.4 (3.20)			
VA Varivent flange N (DN 40 to DN 100)	X1	16.6 (0.65)	58.1 (2.29)	58.1 (2.29)	24.1 (0.95)	24.1 (0.95)	58.1 (2.29)
	X2	27.6 (1.09)	69.1 (2.72)	69.1 (2.72)	69.1 (2.72)	69.1 (2.72)	69.1 (2.72)



A0022162

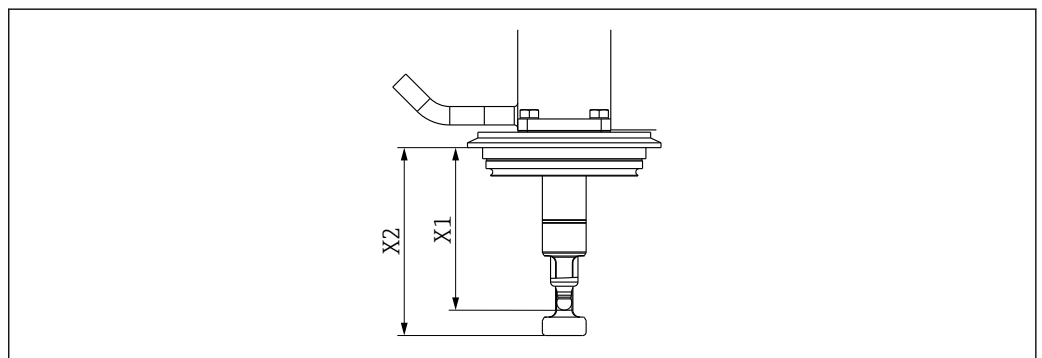
21 Immersion depth in mm (in) for process connection NA thread ISO228 G1¼ (service chamber 2 and 3) in measuring and service position, mounted on weld-in adapter G1¼"

- A Measuring position
B Service position



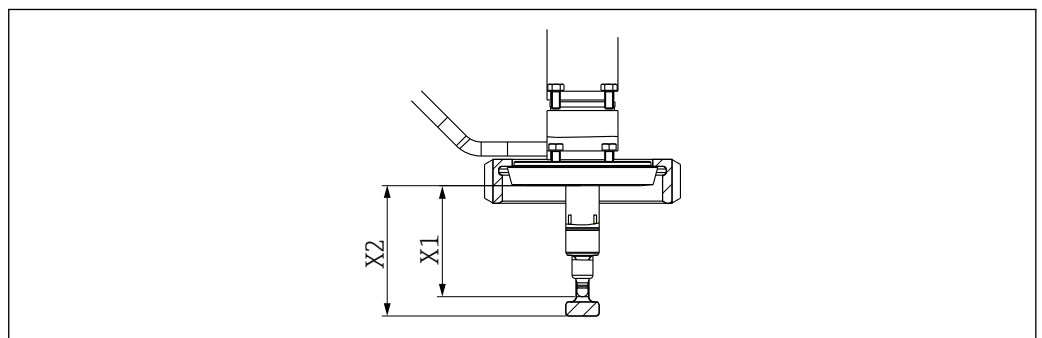
A0039342

22 Immersion depth in mm (in) for process connection NA thread ISO 228 G1 1/4



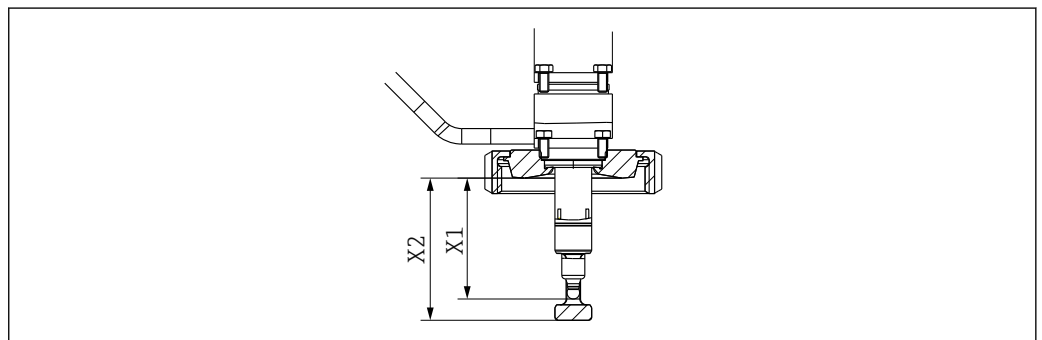
A0046162

23 Immersion depth in mm (in) for process connection VA thread



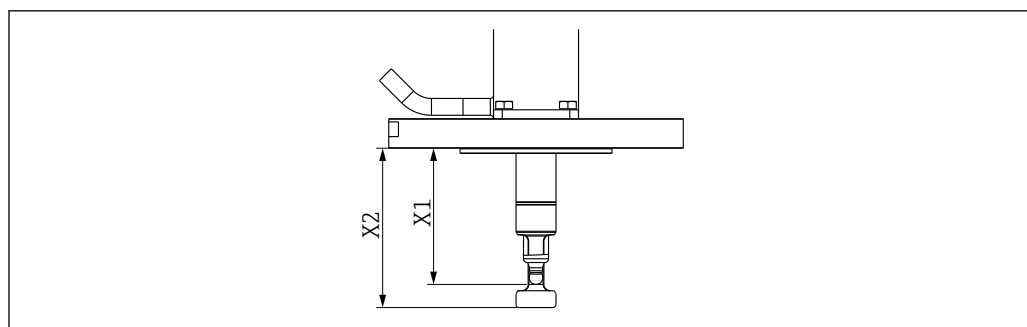
A0046161

24 Immersion depth in mm (in) for process connection MB thread



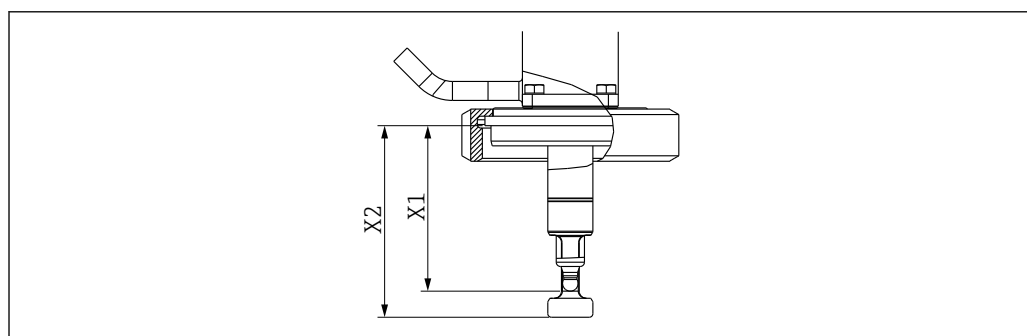
A0046160

25 Immersion depth in mm (in) for process connection MA thread



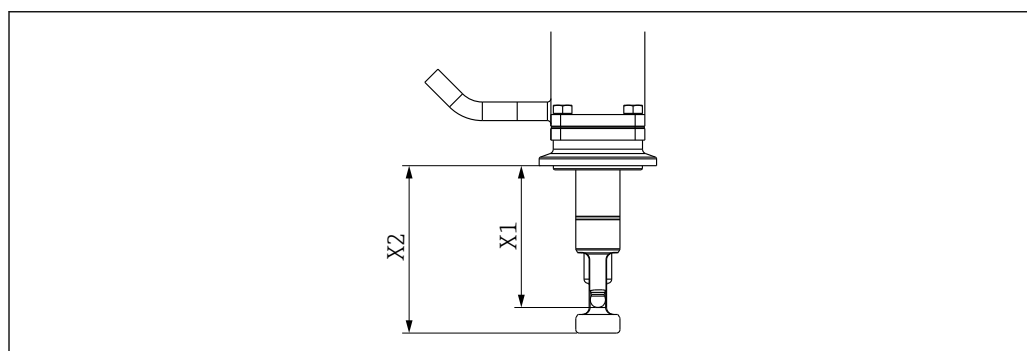
A0046159

26 Immersion depth in mm (in) for process connection EF thread



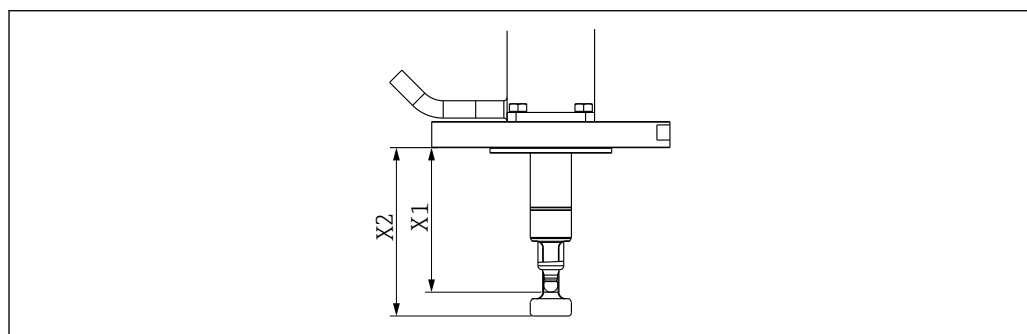
A0046156

27 Immersion depth in mm (in) for process connection DC thread



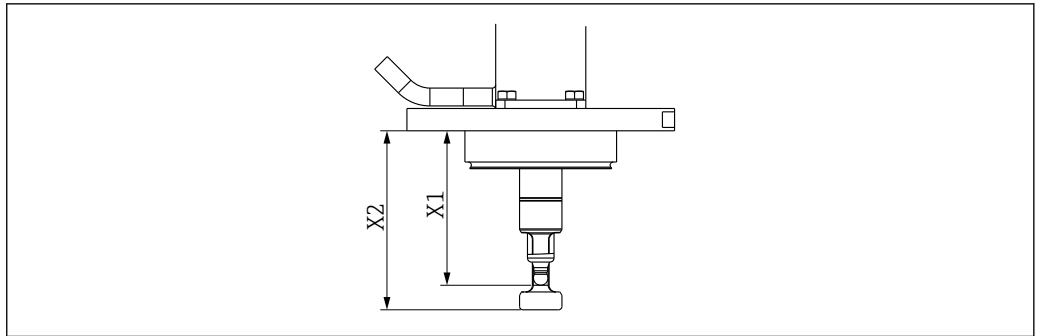
A0046155

28 Immersion depth in mm (in) for process connection DA thread



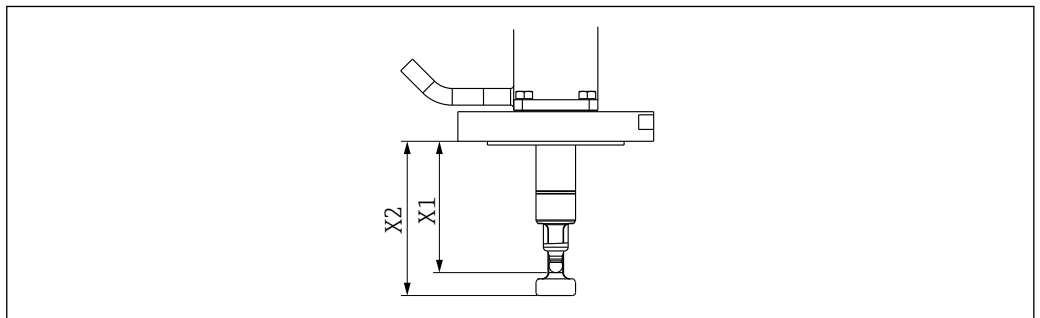
A0046158

29 Immersion depth in mm (in) for process connection EB thread



A0046157

30 Immersion depth in mm (in) for process connection EA thread



A0046166

31 Immersion depth in mm (in) for process connection DF thread

Rinse chamber volume

	Volume cm ³ (in ³) (max.)	Volume cm ³ (in ³) (min.)
Single chamber, short stroke	20.94 (1.28)	10.51 (0.64)
Single chamber, long stroke	42.97 (2.62)	20.77 (1.27)
Double chamber (front)	18.53 (1.13)	9.80 (0.6)
Double chamber (rear)	77.49 (4.72)	47.04 (2.87)
Double chamber (total)	96.02 (5.87)	56.84 (3.47)

Weight

Depends on version:

Pneumatic drive:

3.8 to 6 kg (8.4 to 13.2 lbs) depending on version

Manual drive:

3 to 4.5 kg (6.6 to 9.9 lbs) depending on version

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
Process connection, service chamber	Stainless steel 1.4435 (AISI 316L) 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

Rinse connections

Option	Description
Pipe 6/8mm ID/OD	Pipe DIN 11866 series A 8 x 1 hygiene class H4 Internal diameter 6 mm (0.24 in) Outer diameter 8 mm (0.31 in) Ra ≤ 0.38
G1/4 female	Female thread DIN EN ISO 228 G1/4" Pipe internal diameter 6 mm (0.24 in) Surface (excluding thread): Ra ≤ 0.38
NPT1/4 female	Female thread ASME B 1.20.1 – 1983 1/4" NPT Pipe internal diameter 6 mm (0.24 in) Surface (excluding thread): Ra ≤ 0.38
Clamp D6/D25	Clamp nozzle DIN32676 Pipe internal diameter 6 mm (0.24 in) Outer diameter, clamp 25 mm Ra ≤ 0.4
BioConnect DN6	Neumo BioConnect DN6 with male thread M16 x 1.5 with pipe connection according to DIN11866 8x1 Pipe internal diameter 6 mm (0.24 in) Pipe outer diameter 8 mm (0.31 in) Ra ≤ 0.8

Surface finish may vary depending on the manufacturing process.

Certificates and approvals

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

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

CRN (optional)

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

Pharma 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 assembly was certified in accordance with the requirements of EHEDG TYP EL Class I (cleanability). The double-chamber version with sensor cleaning in the "inner" service chamber is certified in accordance with EHEDG type EL aseptic class I (cleanability and sterility).

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 listed by the FDA.

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

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.

The assembly has been manufactured according to good engineering practice as per Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU and is therefore not required to bear the CE label.

EC VO 1935/2004

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

Order 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

www.endress.com/cpa875

Product Configurator

1. **Configure:** Click this button on the product page.
 2. Select **Extended selection**.
 - ↳ The Configurator opens in a separate window.
 3. Configure the device according to your requirements by selecting the desired option for each feature.
 - ↳ In this way, you receive a valid and complete order code for the device.
 4. **Accept:** Add the configured product to the shopping cart.
-  For many products, you also have the option of downloading CAD or 2D drawings of the selected product version.
5. **CAD:** Open this tab.
 - ↳ The drawing window is displayed. You have a choice between different views. You can download these in selectable formats.

Scope of delivery

The scope of delivery comprises:

- Ordered version of assembly
- Operating Instructions

Accessories

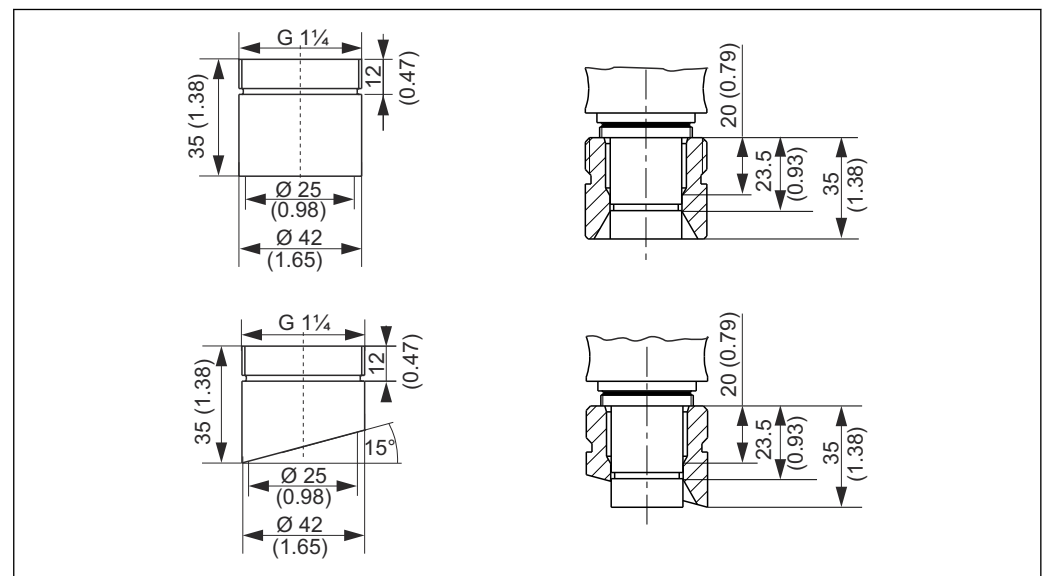
The following are the most important accessories available at the time this documentation was issued.

Listed accessories are technically compatible with the product in the instructions.

1. Application-specific restrictions of the product combination are possible.
Ensure conformity of the measuring point to the application. This is the responsibility of the operator of the measuring point.
2. Pay attention to the information in the instructions for all products, particularly the technical data.
3. For accessories not listed here, please contact your Service or Sales Center.

The following accessories can be ordered via the product structure or the XPC0001 spare part structure:

- 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



A0028744

32 Weld-in adapter (safety nozzle), dimensions in mm (in)

- 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
- Kit, Klüber Paraliq GTE 703 lubricant (60g)
- Output interface terminals, version: CPA871-620-R7
- NAMUR terminals for limit position switches
 - Operation of 8V DC feedback signals on 24V DC devices
 - Suitable for top-hat rail mounting

Device-specific accessories

Sensors

*pH sensors***Memosens CPS11E**

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



Technical Information TI01493C

Orbisint CPS11D / CPS11

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



Technical Information TI00028C

Memosens CPS31E

- pH sensor for standard applications in drinking water and swimming pool water
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps31e



Technical Information TI01574C

Memosens CPS41E

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



Technical Information TI01495C

Ceraliquid CPS41D / CPS41

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



Technical Information TI00079C

Memosens CPS61E

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



Technical Information TI01566C

Memosens CPS71E

- pH sensor for chemical process applications
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps71e



Technical Information TI01496C

Ceragel CPS71D / CPS71

- pH electrode with reference system including ion trap
- Product Configurator on the product page: www.endress.com/cps71d or www.endress.com/cps71



Technical Information TI00245C

Memosens CPS91E


- pH sensor for heavily polluted media
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps91e



Technical Information TI01497C

Orbipore CPS91D / CPS91

- pH electrode with open aperture for media with high dirt load
- Product Configurator on the product page: www.endress.com/cps91d or www.endress.com/cps91

 Technical Information TI00375C

*ORP sensors***Memosens CPS12E**

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

 Technical Information TI01494C

Orbisint CPS12D / CPS12

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

 Technical Information TI00367C

Memosens CPS42E

- ORP sensor for process technology
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps42e

 Technical Information TI01575C

Ceraliquid CPS42D / CPS42

- ORP electrode with ceramic junction and KCl liquid electrolyte
- Product Configurator on the product page: www.endress.com/cps42d or www.endress.com/cps42

 Technical Information TI00373C

Memosens CPS72E

- ORP sensor for chemical process applications
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps72e

 Technical Information TI01576C

Ceragel CPS72D / CPS72

- ORP electrode with reference system including ion trap
- Product Configurator on the product page: www.endress.com/cps72d or www.endress.com/cps72

 Technical Information TI00374C

*ISFET pH sensors***Memosens CPS47D**

- Sterilizable and autoclavable ISFET sensor for pH measurement
- Refillable KCl liquid electrolyte
- Product Configurator on the product page: www.endress.com/cps47d

 Technical Information TI01412C

Memosens CPS77D

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

 Technical Information TI01396

*Combined pH/ORP sensors***Memosens CPS16E**

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



Technical Information TI01600C

Memosens CPS16D

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



Technical Information TI00503C



The 120 mm version in the CPS16D is not suitable.

Memosens CPS76E

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



Technical Information TI01601C

Memosens CPS76D

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



Technical Information TI00506C

Memosens CPS96E

- pH/ORP sensor for heavily polluted media and suspended solids
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps96e



Technical Information TI01602C

Memosens CPS96D

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



Technical Information TI00507C

*Conductivity sensors***Memosens CLS82E**

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



Technical Information TI01529C

Memosens CLS82D

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



Technical Information TI01188C

Oxygen sensors

Oxymax COS22E

- Sterilizable sensor for dissolved oxygen
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cos22e



Technical Information TI00446C

Oxymax COS22D / COS22

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



Technical Information TI00446C

Absorption sensor

OUSBT66

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



Technical Information TI00469C

Service-specific accessories

Cleaning systems

Air-Trol 500

- Control unit for Cleanfit retractable assemblies
- Order No. 50051994



Technical Information TI00038C/07/EN

Cleanfit Control CYC25

- Converts electrical signals into pneumatic signals to control pneumatically-operated retractable assemblies or pumps in conjunction with Liquiline CM44x
- Wide range of control options
- Product Configurator on the product page: www.endress.com/cyc25



Technical Information TI01231C

Liquiline Control CDC90

- Fully automatic cleaning and calibration system for pH and ORP measuring points in all industries
- Cleaned, validated, calibrated and adjusted
- Product Configurator on the product page: www.endress.com/cdc90



Technical Information TI01340C

**Installation material for
rinse connections****Kit, water filter**

- Water filter (dirt trap) 100 µm, complete, incl. angle bracket
- Order No. 71390988

Pressure reducer kit

- Complete, incl. manometer and angle bracket
- Order No. 71390993

Hose connection set G $\frac{1}{4}$, DN 12

- 1.4404 (AISI 316L) 2 x
- Order No. 51502808

Hose connection set G $\frac{1}{4}$, DN 12

- PVDF (2 x)
- Order No. 50090491



www.addresses.endress.com
