

Technical Information

Cleanfit CPA871

Flexible retractable process assembly for water, wastewater, chemical industry and heavy 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
- Primaries and metals

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.

Function and system design

Mode of operation

With the Cleanfit CPA871 retractable assembly, you can carry out pH, ORP 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.

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:

- 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.

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

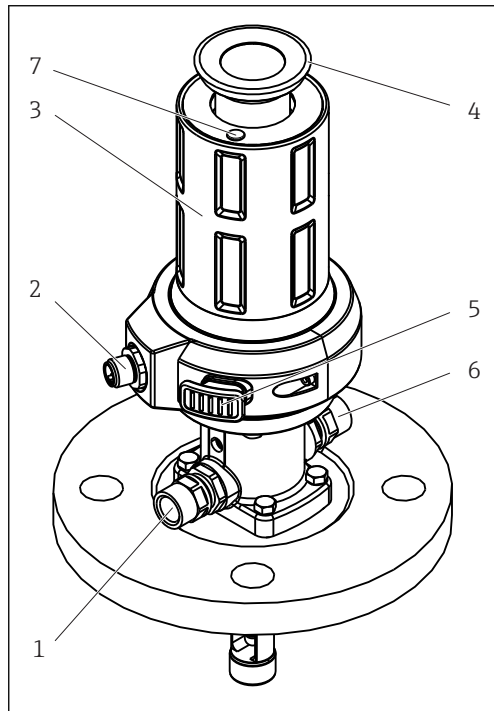
During insertion/retraction, the position of the ridges of the immersion tube in the area of the sensor head retains the pre-setting once selected. This guarantees optimum and clear positioning of the sensor in the process and during cleaning.

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).

Elements

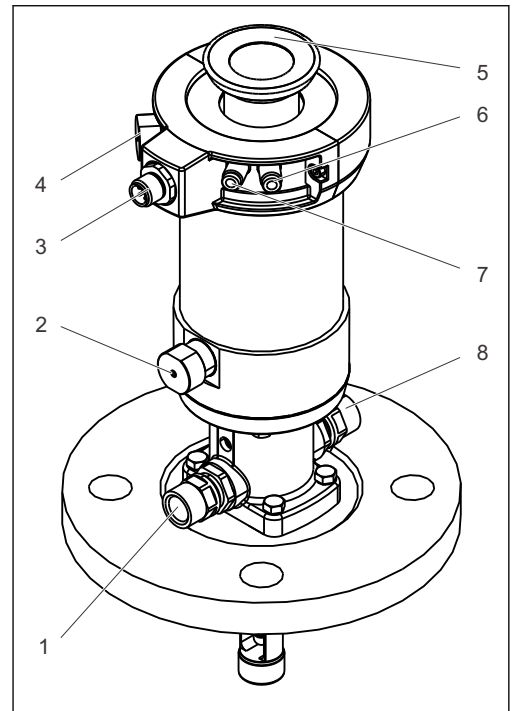
The assembly is available with a manual or pneumatic drive.



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1 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 protective cap
- 5 Unlocking button (measuring position)
- 6 Rinse connection
- 7 Unlocking button (service position)

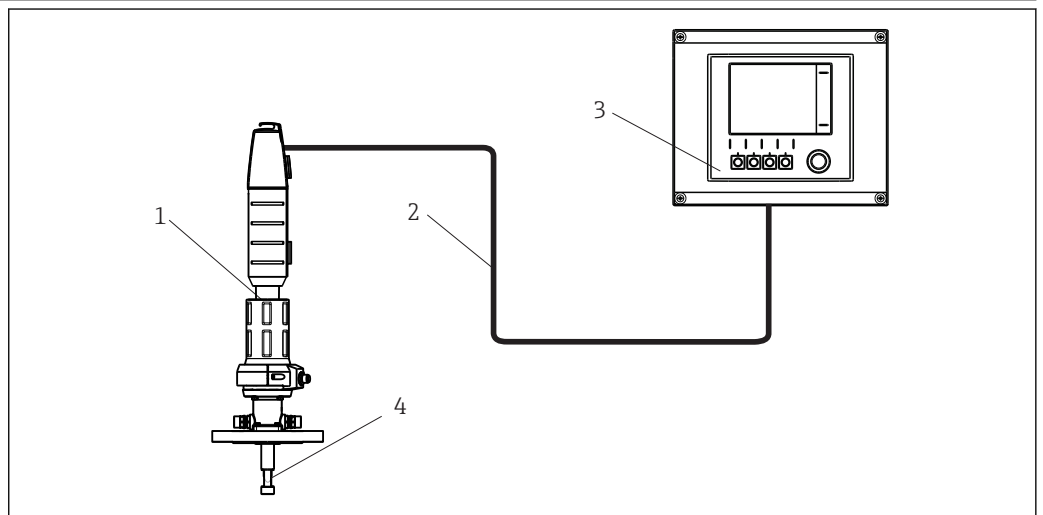


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2 Assembly with pneumatic drive (without protective cap)

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

Measuring system



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3 Measuring system (example)

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

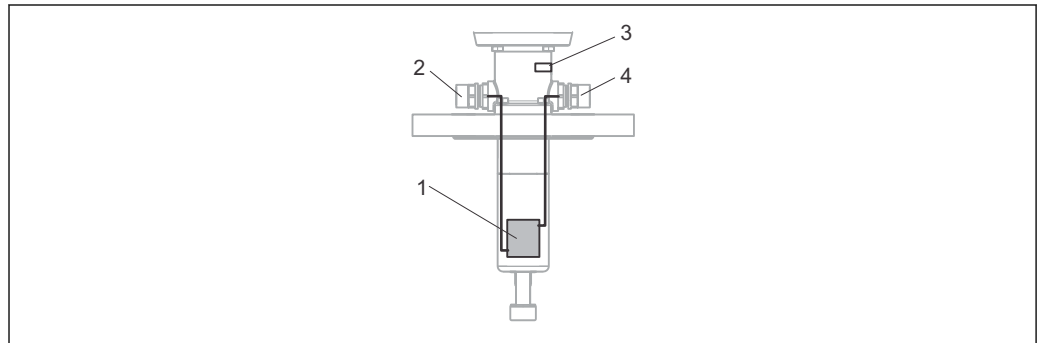
Immersion chamber

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 leakage hole is sealed with an M5 screw.

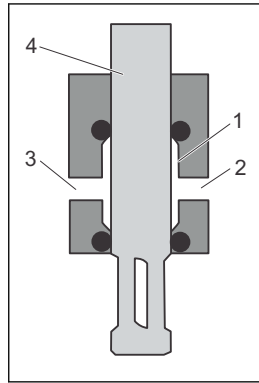


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 4 Connection of service chamber in the immersion chamber version

- 1 Service chamber
- 2 Service chamber inlet
- 3 Leakage hole
- 4 Service chamber outlet

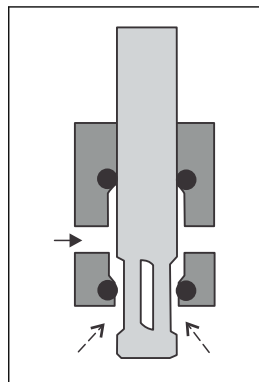
Service chamber



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

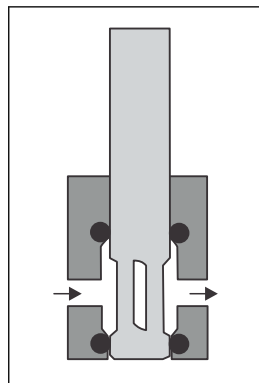
In measuring position, the service chamber is separated from the process by the process seals and sensor guide. No process medium can get into the service chamber.



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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 also means that process medium, which may contain solid particles, does not need to be removed via the service chamber.



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

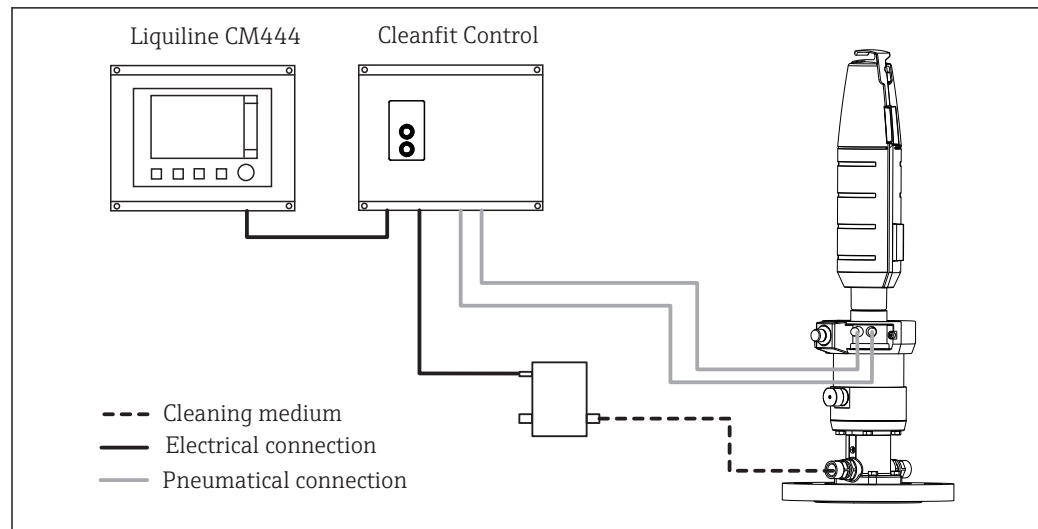
Cleanfit Control

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.

Cleanfit Control allows automatic cleaning of sensors installed in retractable assemblies. This means that sensor performance can be maintained at a high level without any interruption to the process.

It is the function of the Cleanfit Control CYC25 to integrate the actuators into the cleaning program in a safety-oriented manner. That is why the actuators, i.e. assembly, valves and pumps, are not connected directly via the relays to the Liquiline CM44x. Instead they are connected to the Cleanfit Control CYC25. The 24V DC power supply to these actuators, as well as the compressed air supply, are provided by the customer.



5 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 assembly:
 - Simple toggle switch
 - Optical display
- Push-button switch for pneumatic valve for cleaning agent, used to clean sensor

Air-Trol 500 is available as accessory.

Installation

Orientation

The assembly is designed for installation on tanks and pipes. Suitable process connections must be available for this.

NOTICE

Frost damage to the assembly

- ▶ If used outdoors, ensure that water cannot penetrate the drive.

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

Prerequisites:

- Air pressure 4 to 7 bar (58 to 102 psi)
- Compressed air quality in accordance with ISO 8573-1:2001 Quality class 3.3.3 or 3.4.3
- Solids class 3 (max. 5 µm, max. 5 mg/m³, contamination with particles)
- Water content for temperatures ≥ 15 °C: class 4 pressure condensation point 3 °C or lower
- Water content for temperatures of 5 to 15 °C: class 3 pressure condensation point -20 °C or lower
- Oil content class 3 (max. 1 mg/m³)
- Air temperature: 5 °C or higher
- No continuous air consumption
- Minimum nominal diameter of air pipes: 2 mm (0.08 ")

Connection: Push-in fitting M5, hose 4/2 mm OD/ID (adapter for 6/4 mm OD/ID enclosed)

Damage to seals due to excessive air pressure!

If the air pressure can increase to more than 7 bar (102 psi) (even short pressure surges), a pressure-reducing valve must be installed upstream.

Rinse connection

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

The sealing water pressure for manually controlled operation must not exceed 8 bar (116 psi). For pneumatically controlled operation, the limit is 16 bar (232 psi).



Seals can be damaged if the water pressure is too high.

Install an pressure-reducing valve upstream if there is a possibility that the water pressure will increase to more than 6 bar (87 psi) (including any short pressure surges).

Environment

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

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

Process

Process temperature

-10 to +140 °C (14 to 284 °F) for all materials except PVDF and conductive PVDF
 -10 to +100 / 90 °C (14 to 212 / 194 °F) for PVDF and conductive PVDF materials

Process pressure for pneumatic drive

Materials: 1.4404, Alloy C22, 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: 4 bar (58 psi) to 90 °C (194 °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.

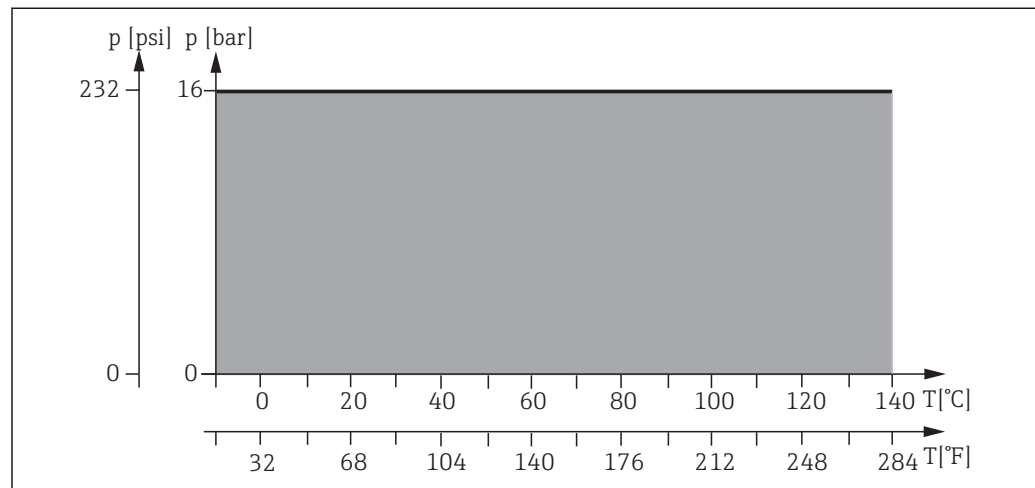
Process pressure for manual drive

Materials: 1.4404, Alloy C22, PEEK
 Basic and 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: 4 bar (58 psi) to 90 °C (194 °F)

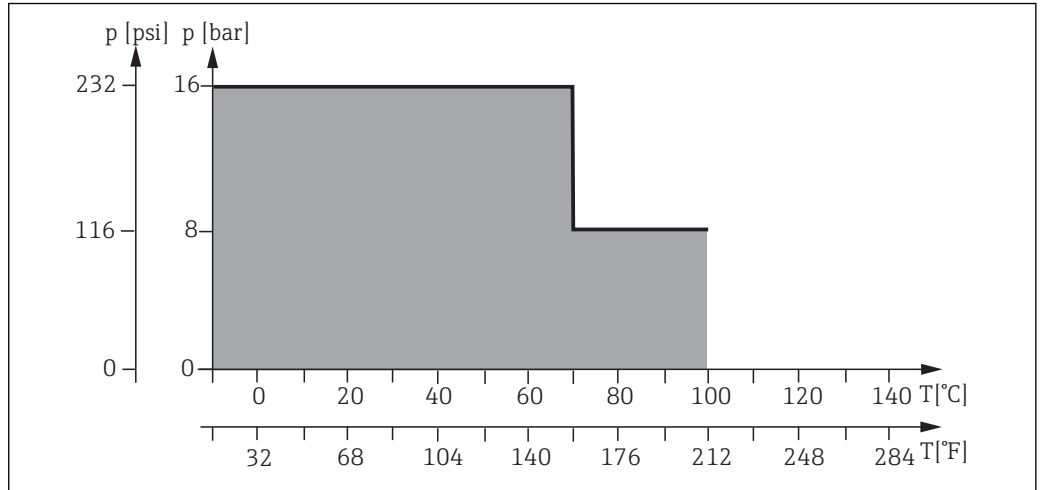


The service life of the seals is reduced if process temperatures are constantly high or if SIP is used. The other process conditions may also reduce the service life of the seals.

Pressure-temperature ratings for pneumatic drive



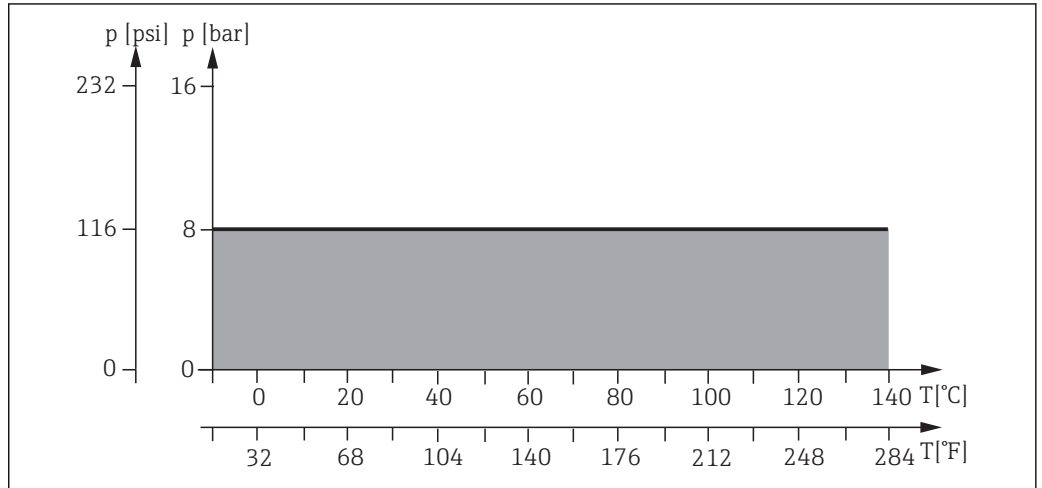
6 Pressure temperature ratings for basic and immersion chamber version for materials 1.4404, Alloy C22 and PEEK



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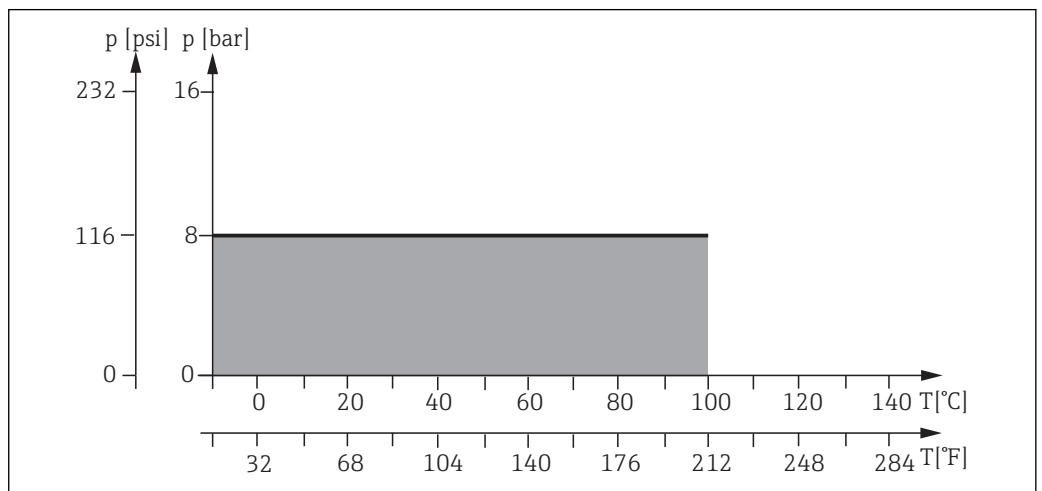
7 Pressure temperature ratings for basic version for materials PVDF and conductive PVDF

Pressure-temperature ratings for manual drive



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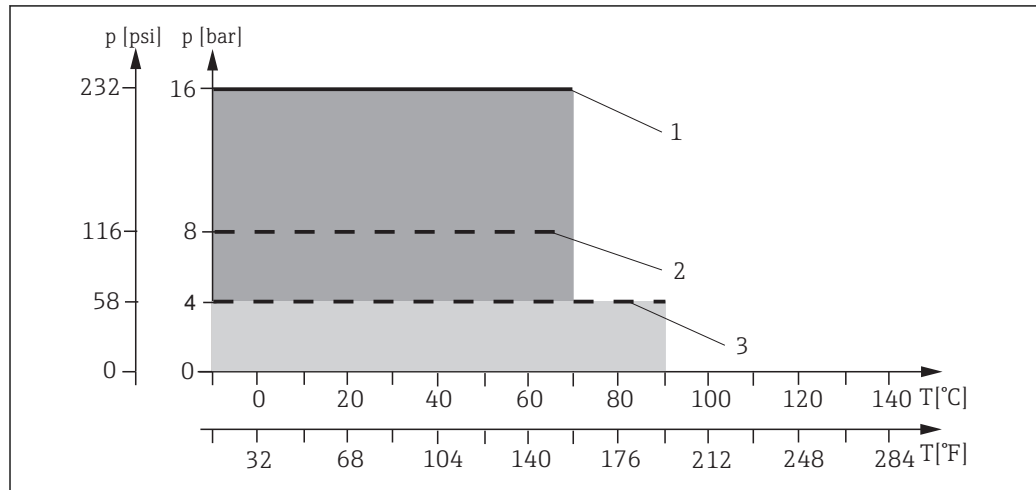
8 Pressure temperature ratings for basic and for immersion chamber version for materials 1.4404, Alloy C22 and PEEK



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

**Pressure temperature ratings
for immersion chamber
version (PVDF)**



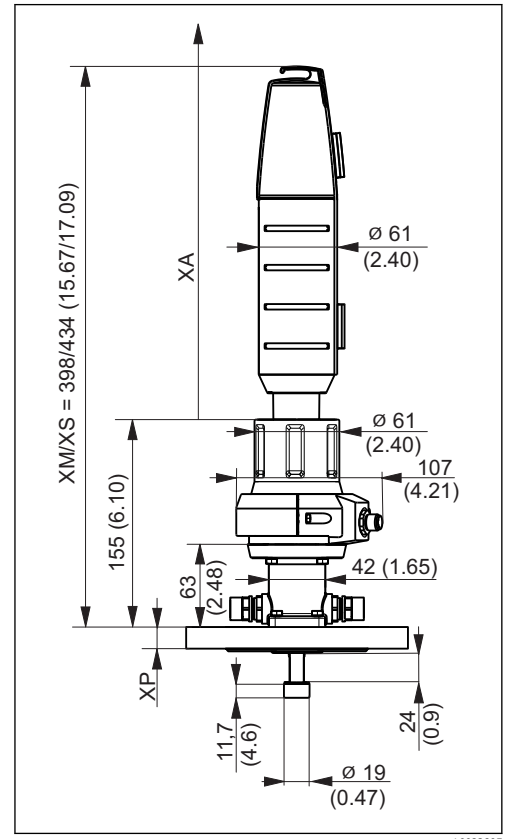
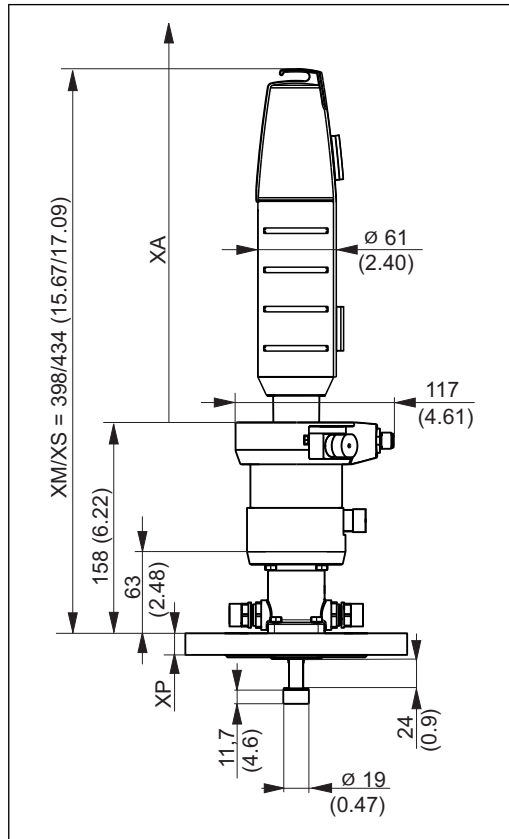
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10 Pressure temperature ratings for immersion chamber version for materials PVDF and conductive PVDF

- 1 Pneumatic drive
- 2 Manual drive
- 3 Pneumatic and manual drive

Mechanical construction

Short version



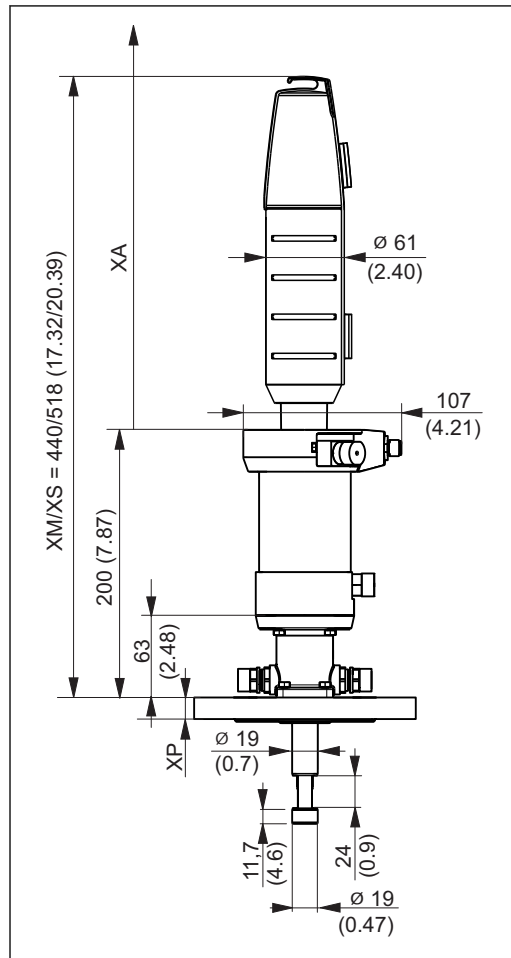
11 Pneumatic drive, short version, dimensions in mm (inch)

12 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

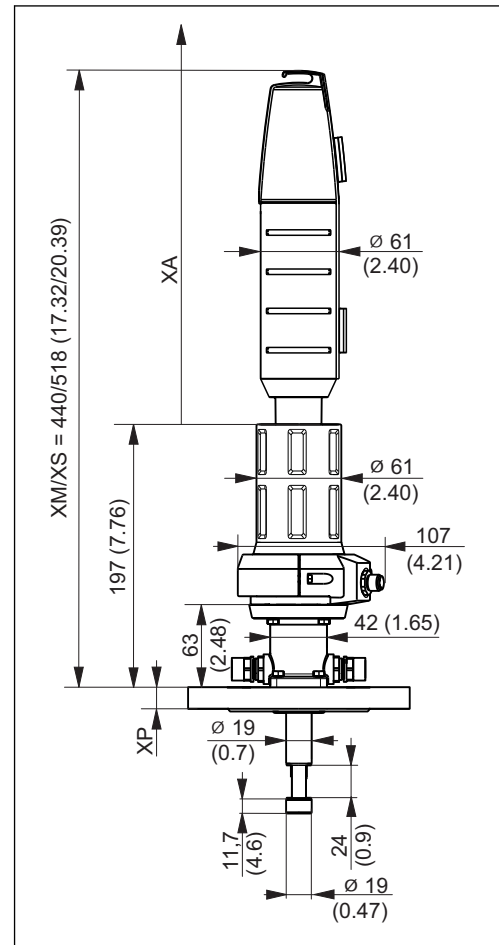
The mounting distance XA is 280 mm (11.02") for 120 mm sensors
 The mounting distance XA is 408 mm (15.94") for 225 mm sensors

Long version



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



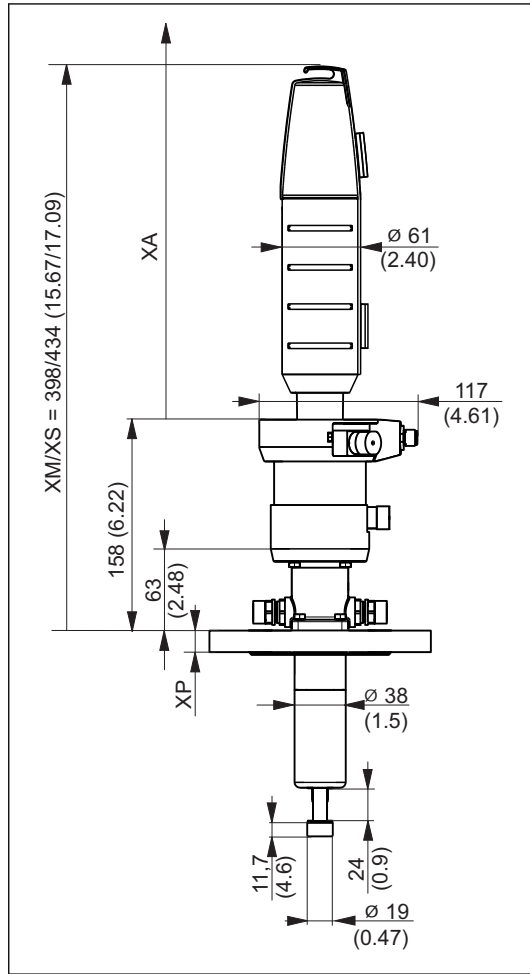
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14 Manual drive, long version, dimensions in mm (inch)

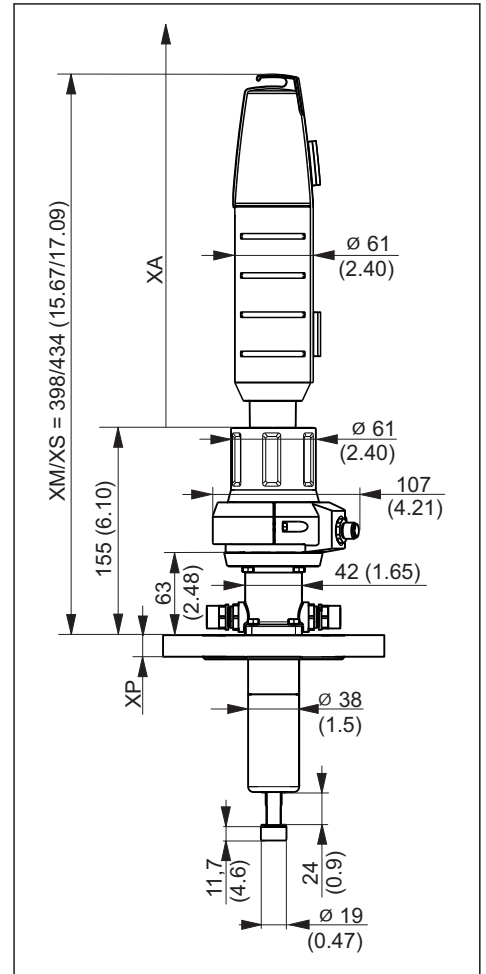
- XM* Assembly in measuring position
XS Assembly in service position
XP Height of particular process connection (see table below)
XA Necessary mounting distance for sensor replacement

The mounting distance XA is 360 mm (14.17") for 225 mm sensors

Immersion chamber version



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

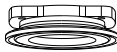



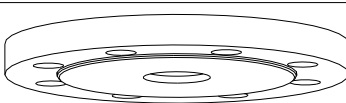

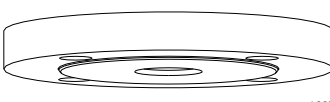

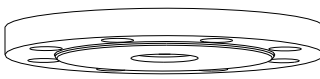
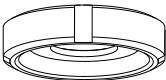




16 Immersion chamber version with manual drive, dimensions in mm (inch)

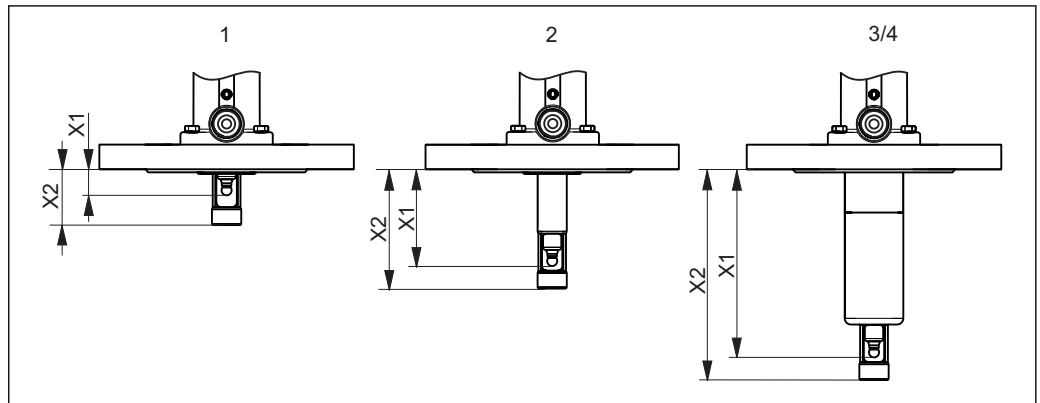
- XM Assembly in measuring position
- XS Assembly in service position
- XP Height of particular process connection (see table below)
- XA Necessary mounting distance for sensor replacement

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 connections

Process connection		Height XP in mm (inch)
CB Clamp 2" ISO2852, ASME BPE-2012	 A0024100	16 (0.63)
CC Clamp 2½" ISO2852, ASME BPE-2012	 A0024101	16 (0.63)
FA Flange DN 40, EN1092-1	 A0024102	18 (0.71)
FB Flange DN 50, EN1092-1	 A0024103	18 (0.71)
FC Flange DN 80, EN1092-1	 A0024104	20 (0.79)
FD Flange 2" 150 lbs, ASME B16.5	 A0024105	19.1 (0.75)
FE flange 3" 150 lbs, ASME B16.5	 A0024106	23.8 (0.94)
FF 10K50, JIS B2220	 A0024107	16 (0.63)
FG 10K80, JIS B2220	 A0024108	18 (0.71)
MA Dairy fitting DN 50 DIN 11851	 A0024109	15.5 (0.61)
MB Dairy fitting DN 65 DIN 11851	 A0024110	15.5 (0.61)
HB Thread NPT 1½"	 A0024111	40.5 (1.57)

Immersion depths



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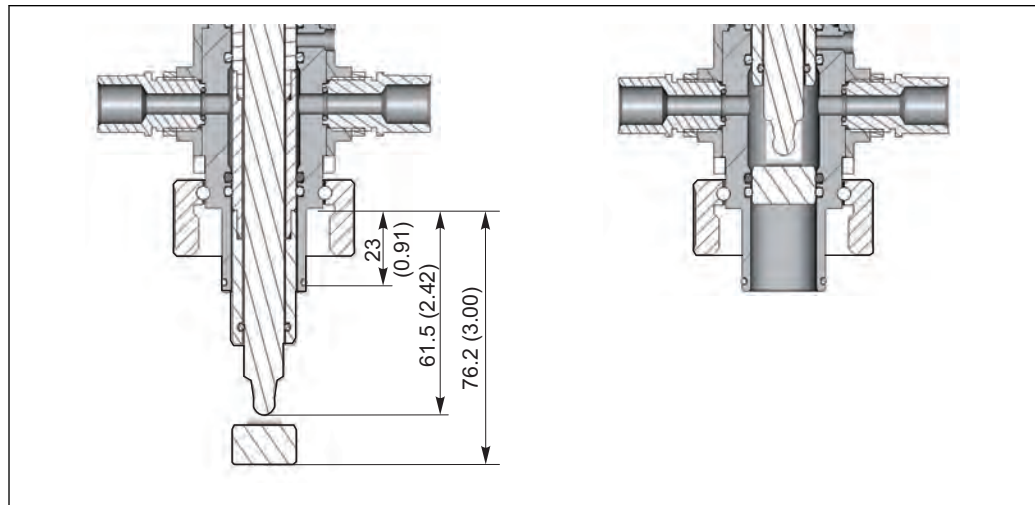
17 Immersion depths in mm (in)

- 1 Short stroke, 36 mm (1.42 in)
 2 Long stroke, 78 mm (3.07 in)
 3 Immersion version

Versions

Process connection		1	2	3	4
CB Clamp ISO2852 ASME BPE-2012 2"	X1	14.9 (0.59)	61.0 (2.40)	119.9 (4.72)	171.9 (6.76)
	X2	34.2 (1.35)	75.7 (2.98)	134.6 (5.30)	186.6 (7.35)
CC Clamp ISO2852 ASME BPE-2012 2½"	X1	14.9 (0.59)	61.0 (2.40)	119.9 (4.72)	171.9 (6.76)
	X2	34.2 (1.35)	75.7 (2.98)	134.6 (5.30)	186.6 (7.35)
FA Flange DN 40 EN1092-1	X1	14.9 (0.59)	61.0 (2.40)	119.9 (4.72)	171.9 (6.76)
	X2	34.2 (1.35)	75.7 (2.98)	134.6 (5.30)	186.6 (7.35)
FB Flange DN 50 EN1092-1	X1	14.9 (0.59)	61.0 (2.40)	119.9 (4.72)	171.9 (6.76)
	X2	34.2 (1.35)	75.7 (2.98)	134.6 (5.30)	186.6 (7.35)
FC Flange DN 80 EN1092-1	X1	12.9 (0.51)	59.0 (2.32)	117.9 (4.64)	169.9 (6.69)
	X2	32.2 (1.27)	73.7 (2.90)	132.6 (5.22)	184.6 (7.27)
FD Flange 2" 150 lbs ASME B16.5	X1	13.8 (0.54)	59.9 (2.36)	118.8 (4.68)	170.9 (6.73)
	X2	33.1 (1.30)	74.6 (2.94)	133.5 (5.26)	185.6 (7.30)
FE Flange 3" 150 lbs ASME B16.5	X1	-	-	114.1 (4.49)	166.1 (6.54)
	X2	-	-	128.8 (5.07)	180.8 (7.11)
FF Flange 10K50 JIS B2220	X1	14.4 (0.57)	61.3 (2.41)	120.2 (4.73)	172.2 (6.78)
	X2	33.7 (1.33)	76.0 (2.99)	134.9 (5.31)	186.9 (7.36)
FG Flange 10K80 JIS B2220	X1	14.4 (0.57)	60.5 (2.38)	119.4 (4.70)	171.4 (6.75)
	X2	33.7 (1.33)	75.2 (2.96)	134.1 (5.28)	186.1 (7.33)
HB Thread NPT 1½"	X1	-	63.0 (2.48)	121.9 (4.80)	173.9 (6.85)
	X2	-	77.7 (3.06)	136.6 (5.38)	188.6 (7.40)
MA Dairy fitting DN 50 DIN11851	X1	15.4 (0.61)	61.5 (2.42)	120.4 (4.74)	172.4 (6.79)
	X2	34.7 (1.37)	76.2 (3.00)	135.1 (5.32)	187.1 (6.37)
MB Dairy fitting DN 65 DIN11851	X1	15.4 (0.61)	61.5 (2.42)	120.4 (4.74)	172.4 (6.79)
	X2	34.7 (1.37)	76.2 (3.00)	135.1 (5.32)	187.1 (6.37)
NA Thread ISO228 G 1½"	X1	-	61.5 (2.42)	-	-
	X2	-	76.2 (3.00)	-	-

Immersion depths in mm (in)



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18 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) 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/FPM (Viton)/FFKM
Immersion tube, process connection, service chamber:	Stainless steel 1.4404 (AISI 316L) Ra < 0.76/PEEK/Alloy C22 Ra < 0.76/PVDF/conductive PVDF
Rinse connections:	Stainless steel 1.4404 (AISI 316L) and Alloy C22

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
	G $\frac{1}{4}$ internal
	NPT-F $\frac{1}{4}$ internal

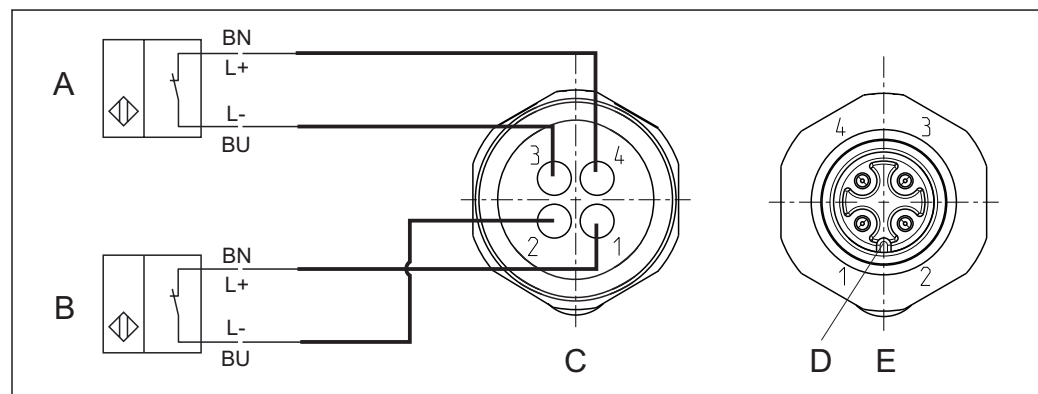
Limit position switches

With limit position detection, you can notify a system located downstream (transmitter, switching amplifier, output interface terminal) whether the assembly is in the measurement or service position (in the case of a manual drive, only the measurement position is queried).

The limit position switches must be connected to output interface terminals (can be ordered as accessories) to enable power supply.

The assembly can be ordered directly with limit position detection, or it can be retrofitted at a later stage. The cable for the limit position switches must be ordered as an accessory.

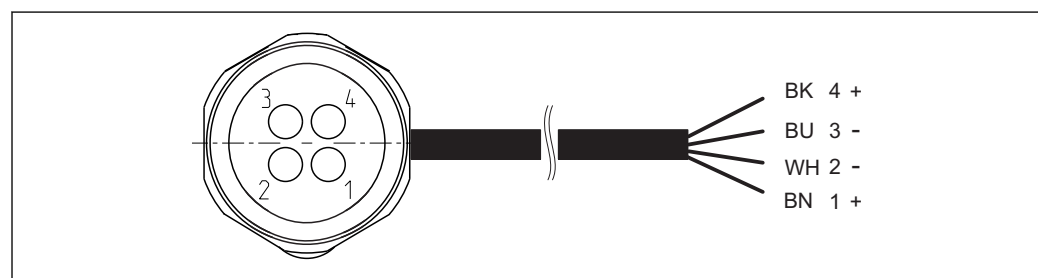
Switching element function:	NAMUR NC contact (inductive)
Switching distance:	1.5 mm (0.06 ")
Nominal voltage:	8 V
Switching frequency:	0 to 5000 Hz
Housing material:	Stainless steel



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19 Inductive limit position switches

- A Limit position switch, service position
- B Limit position switch, measuring position
- C Connector, M12, solder side (inside of assembly)
- D Coding
- E Connector, Pin side (outside of assembly)



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20 Connecting cable for limit position switch on transmitter, switching amplifier, output interface terminal etc.

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

i 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
Measurement	Active LOW (≥ 3 mA)	Active LOW (≥ 3 mA)
Service	Active HIGH (≤ 1 mA)	Active HIGH (≤ 1 mA)

Certificates and approvals

ATEX- 2014/34/EU

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.

DRGL- 2014/68/EU / PED- 2014/68/EU

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.

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

www.endress.com/cpa871

Product Configurator

On the product page there is a "Configure" button to the right of the product image **Configure**.

1. Click this button.
 - ↳ The Configurator opens in a separate window.
2. Select all the options to configure the device in line with your requirements.
 - ↳ In this way, you receive a valid and complete order code for the device.
3. Export the order code as a PDF or Excel file. To do so, click the appropriate button on the right above the selection window.

 For many products you also have the option of downloading CAD or 2D drawings of the selected product version. Click the tab for this **CAD** and select the desired file type using picklists.

Scope of delivery

The scope of delivery comprises:

- Assembly in the version ordered
- Operating Instructions

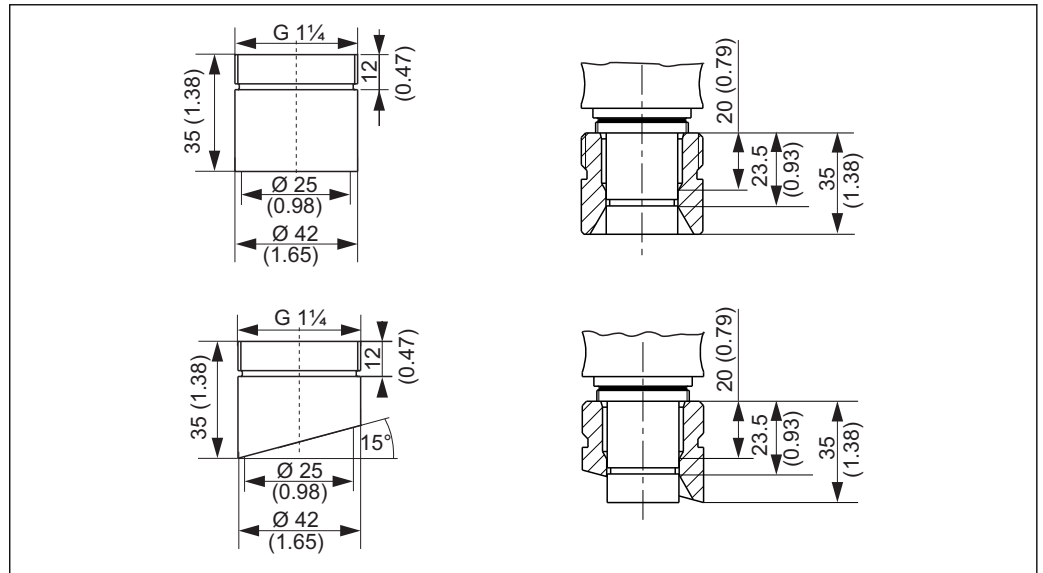
Accessories

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

- ▶ For accessories not listed here, please contact your Service or Sales Center.

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



21 Weld-in adapter (safety nozzle), dimensions in mm (inch)

- 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 for non-wetted parts
- Kit, FKM seals, G1¼, wetted parts
- Kit, FKM seals, immersion chamber version, wetted parts
- Kit, seal, wetted, EPDM
- Kit, seal, wetted, FKM
- Kit, seal, FFKM, basic, wetted
- Cable, plug-in, limit switch, M12, 5 m
- Cable, plug-in, limit switch, M12, 10 m
- Tool in case for installation/removal
- Output interface terminals, version: CPA871-620-R7

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 set G¼, DN 12

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

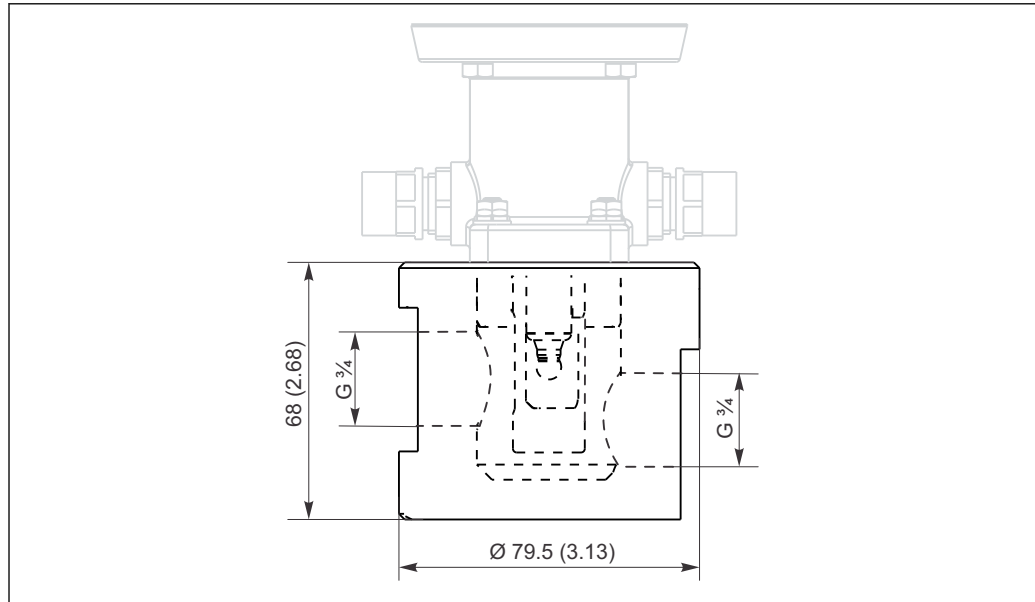
Hose connection set G¼, DN 12

- PVDF (2 x)
- Order No. 50090491

Flow vessels

Flow vessel in different materials

- Coupling: 2 x G $\frac{3}{4}$ internal thread
- Material: stainless steel 1.4404 (AISI 316 L), order no. TSP 71268971
- Material: PVDF, order no. TSP 71268972
- Material: PEEK, order no. TSP 71268973
- Flow vessel DN25/PN16 with G1 1/4 internal thread, order no. 51502926

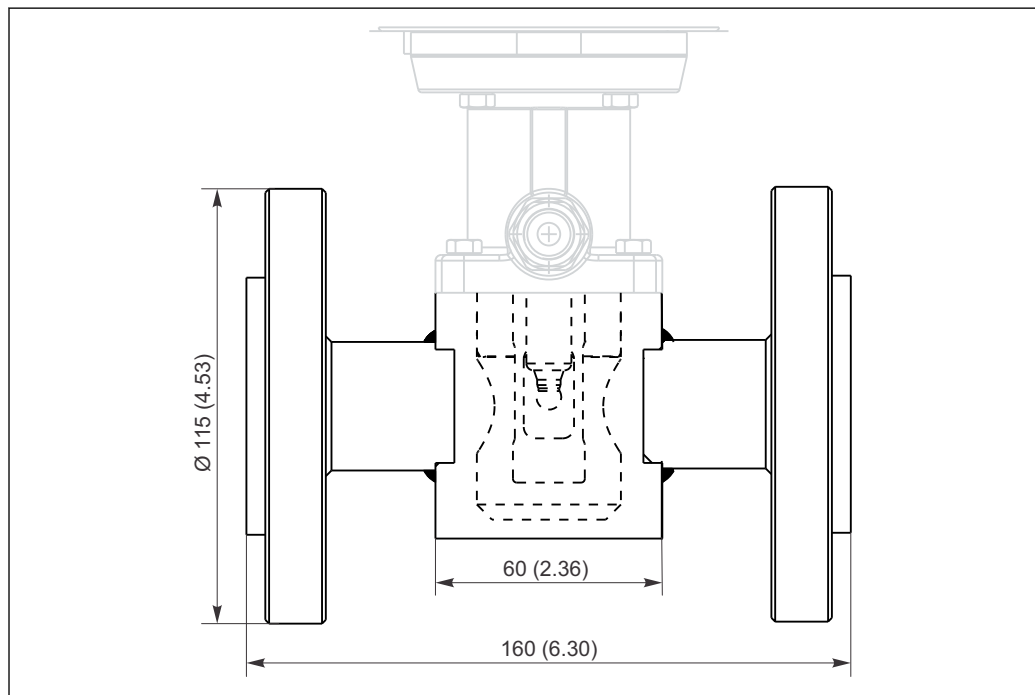


A0026651

22 Dimensions in mm (in)

Flow vessel made of stainless steel

- Flange DN25 PN16
- Material: stainless steel 1.4404 (AISI 316 L)
- Order no. TSP 71276097




A0026652

23 Dimensions in mm (inch)

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


Sensors**pH sensors****Orbisint CPS11D / CPS11**

- pH electrode for process technology
- Optional SIL version for connecting to SIL transmitter
- With dirt-repellent PTFE diaphragm
- Product Configurator on the product page: www.endress.com/cps11d or www.endress.com/cps11

 Technical Information TI00028C

Memosens CPS31D

- pH electrode with gel-filled reference system with ceramic diaphragm
- Product Configurator on the product page: www.endress.com/cps31d

 Technical Information TI00030C

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

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

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**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

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

CerageI 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

pH ISFET sensors**Tophit CPS441D / CPS441**

- Sterilizable ISFET sensor for low-conductivity media
- Liquid KCl electrolyte
- Product Configurator on the product page: www.endress.com/cps441d or www.endress.com/cps441



Technical Information TI00352C

Tophit CPS471D / CPS471

- Sterilizable and autoclavable ISFET sensor for food and pharmaceuticals, process engineering
- Water treatment and biotechnology
- Product Configurator on the product page: www.endress.com/cps471d or www.endress.com/cps471



Technical Information TI00283C

Tophit CPS491D / CPS491

- ISFET sensor with open aperture for media with high dirt load
- Product Configurator on the product page: www.endress.com/cps491d or www.endress.com/cps491



Technical Information TI00377C

pH and ORP combined sensors**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

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 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 sensor**Memosens CLS82D**

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



Technical Information TI01188C

Oxygen sensor

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

www.addresses.endress.com
