# Technical Information
# Dipfit CPA140

Immersion assembly with flange connection for very demanding processes for the installation of 12 mm sensors

## Sensor holder with bayonet lock

### Application

- Chemical industry, e.g. in
  - production of synthetic materials and dyes
  - production or pesticides and fertilizers
  - oil or wastewater separation
  - condensate treatment
- Power stations and incinerator plants, e.g. in
  - cooling water monitoring
  - flue gas cleaning
- Metal extraction and metal processing

### Your benefits

- Simple installation and removal of the sensor holder thanks to bayonet lock technology
- Reliable sealing even in media containing solid particles
- Suitable for use at high pressures and temperatures
- Immersion depth from 500 to 2500 mm
- Integrated potential matching pin made of Alloy C4 or tantalum
- Reduced condensation thanks to breathable GORE-TEX® filter
- 3 slots for 12 mm sensors and cleaning head
- Chemical and ultrasonic cleaning can be easily retrofitted
- Variety of flange connections (DIN, ANSI, JIS) for flexible connection to the process

Endress+Hauser

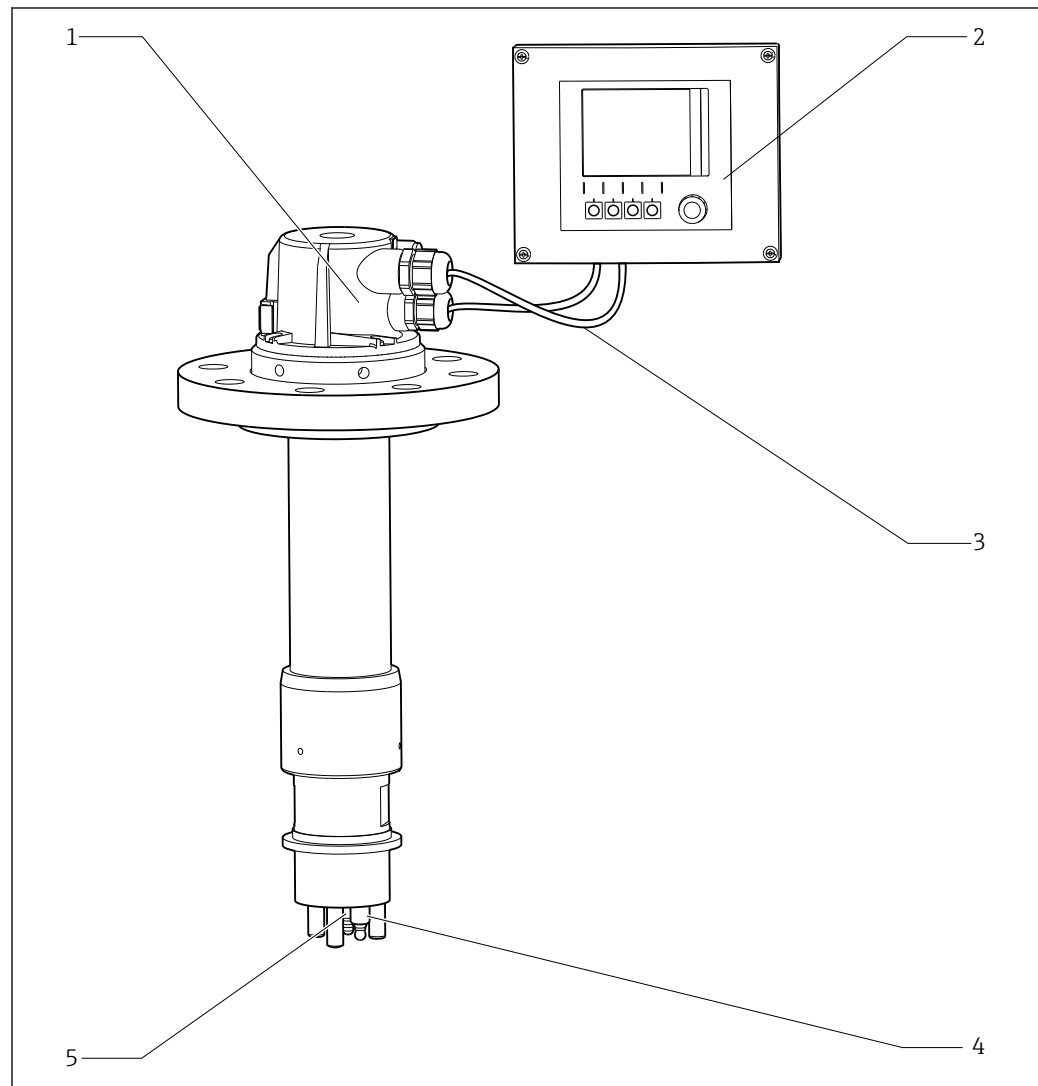People for Process Automation

# Function and system design

**Measuring system**

A complete measuring system comprises:
- Immersion assembly Dipfit CPA140
- 1-3 pH, ORP, pH/ORP combined sensors or temperature sensors (12 mm), e.g. CPS11D, CPS12D
- 1-3 measuring cables, e.g. CYK10 or CPK9
- Transmitter, e.g. Liquiline CM442

Optional:
Extension cable, e.g. CYK11



*⊡ 1    Example of a measuring system (process and process connections are not illustrated)*

*1    Immersion assembly Dipfit CPA140, here as PVDF version*
*2    Transmitter CM442*
*3    Sensor cable CYK10*
*4    pH sensor CPS11D*
*5    ORP sensor CPS12D*

# Environment

| | |
|---|---|
| **Ambient temperature range** | -10 to +70 °C (+10 to +160 °F) |
| **Storage temperature** | -10 to +70 °C (+10 to +160 °F) |
| **Degree of protection** | IP65 |

# Process

| | | |
|---|---|---|
| **Process temperature** | PVDF version | 0 to 120 °C (32 to 250 °F) |
| | Stainless steel version | -15 to 150 °C (5 to 300 °F), for all seals except EPDM<br>-15 to 140 °C (5 to 280 °F), for EPDM seal |
| **Process pressure** | PVDF version | Max. 6 bar (87 psi), absolute |
| | Stainless steel version | Max. 10 bar (145 psi), absolute |
| **Pressure-temperature ratings** | | |
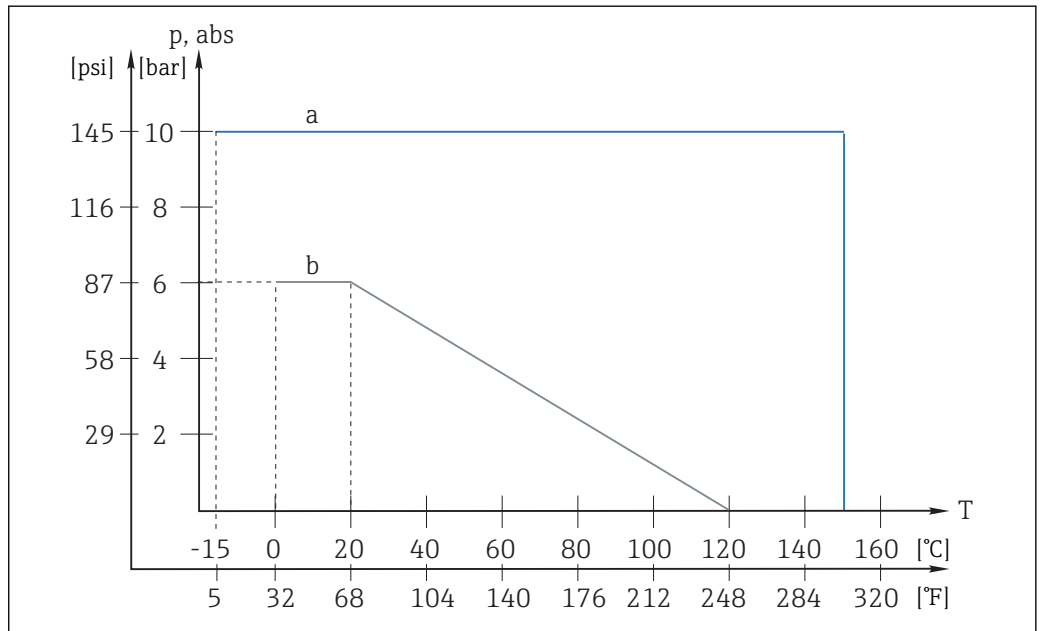


🖼 *2    Pressure-temperature ratings*

*a    Stainless steel version*
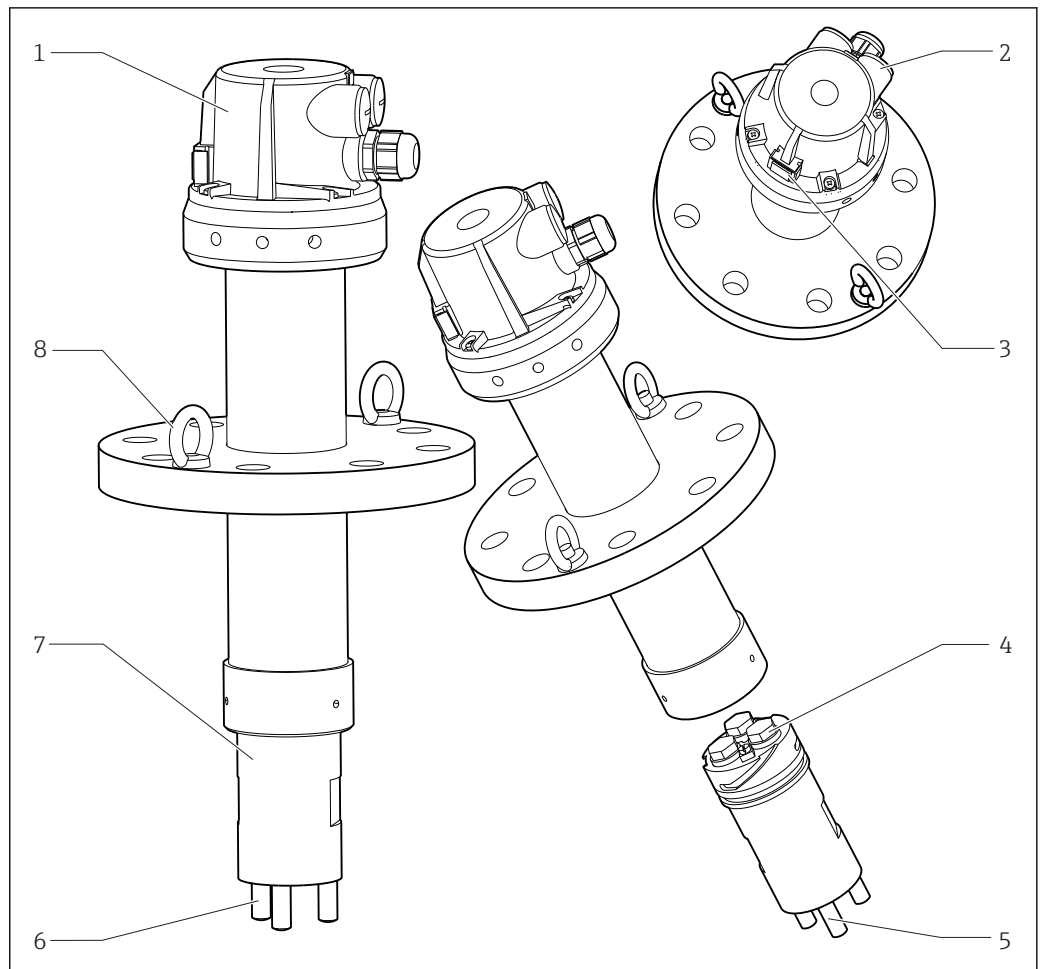*a    PVDF version*

# Mechanical construction

**Design**

**PVDF version**
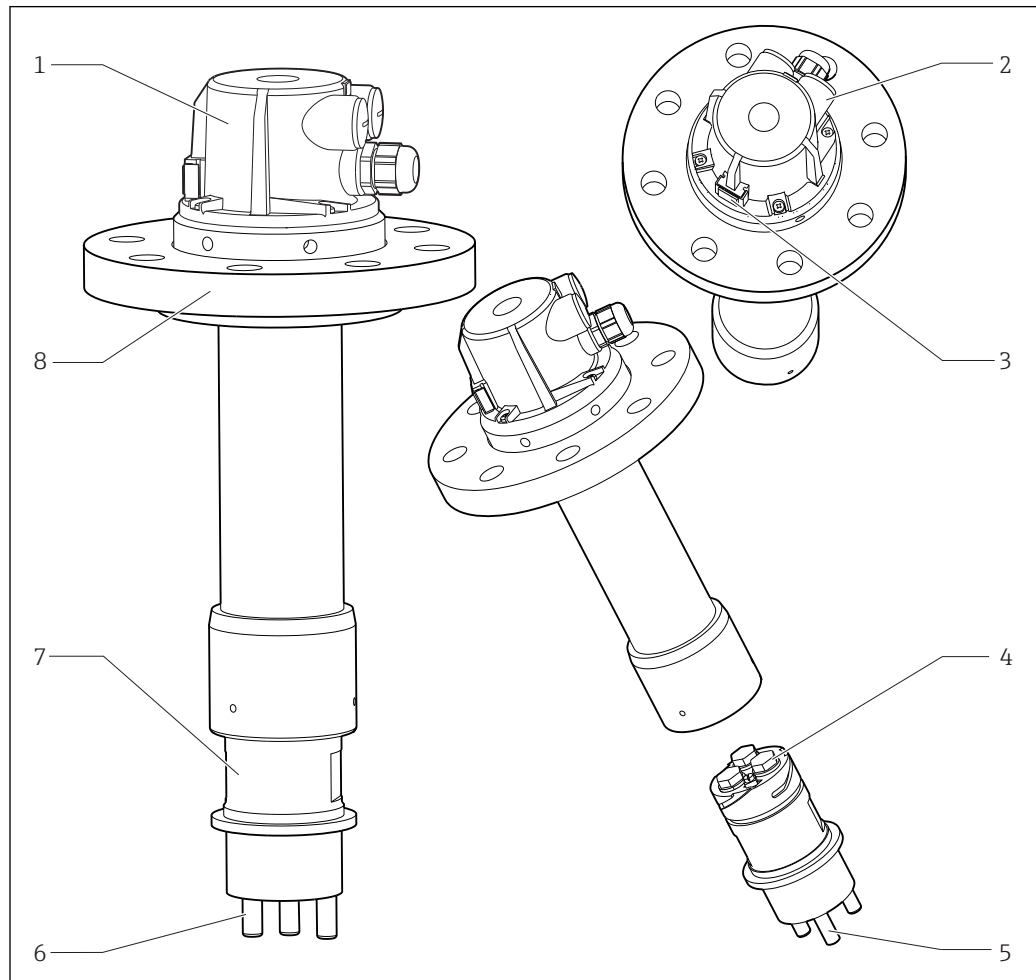


☒ *3*    *PVDF version*

*1*    *Assembly head*
*2*    *Cable gland Pg 13.5 and 2x dummy plug Pg 16*
*3*    *GORE-TEX® filter*
*4*    *3 sensor slots for 120 mm sensors*
*5*    *Potential matching pin*
*6*    *Shock-protection stud*
*7*    *Sensor holder with bayonet lock*
*8*    *Lap joint flange, depending on version*

**Stainless steel version**

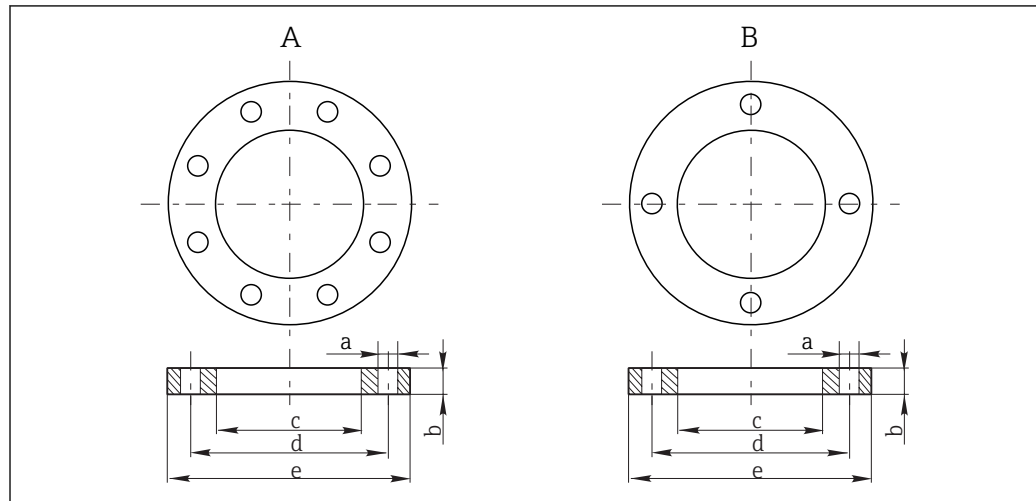

🖼 4 *Stainless steel version*

*1    Assembly head*
*2    Cable gland Pg 13.5 and 2x dummy plug Pg 16*
*3    GORE-TEX® filter*
*4    3 sensor slots for 120 mm sensors*
*5    Potential matching pin*
*6    Shock-protection stud*
*7    Sensor holder with bayonet lock*
*8    Installation aids (screw-in lifting eyes) and fixed flange, depending on the version*
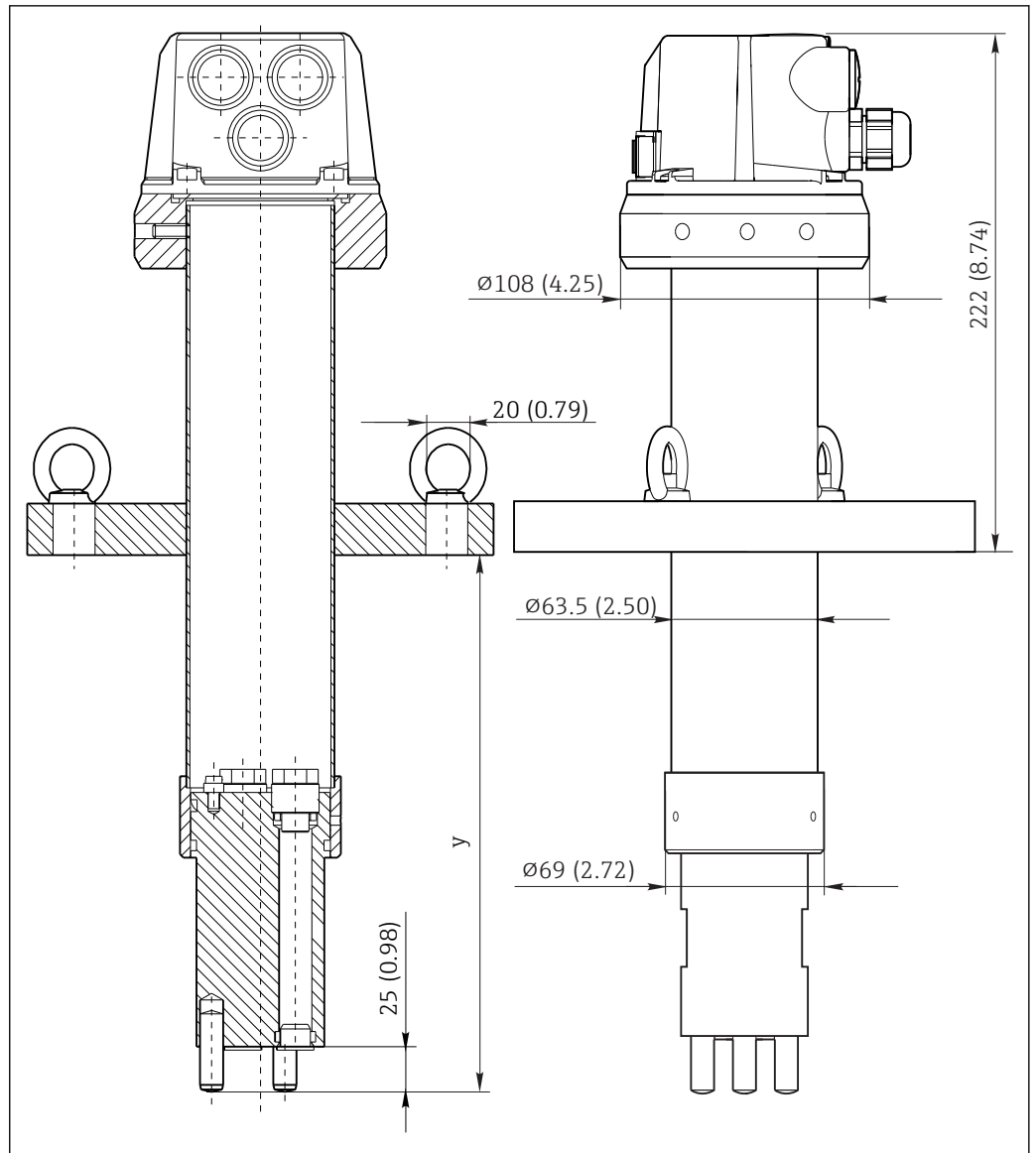
**Dimensions**



A0037380

🖼 *5  Flange dimensions, → Table*

*A  Stainless steel version*
*B  PVDF version*

|  | Stainless steel assembly version | | | PVDF assembly version | | |
|---|---|---|---|---|---|---|
|  | DN80 PN16 | ANSI 3" 150 lbs | JIS 10K 80A | DN80 PN16 | ANSI 3" 150 lbs | JIS 10K 80A |
| a [mm (in)] | 18 (0.71) | 19 (0.75) | 19 (0.75) | 18 (0.71) | 19 (0.75) | 19 (0.75) |
| b [mm (in)] | 20 (0.79) | 23.8 (0.94) | 18 (0.71) | 22 (0.87) | 22 (0.87) | 18 (0.71) |
| c [mm (in)] | 63.5 (2.50) | 63.5 (2.50) | 63.5 (2.50) | 110 (4.33) | 110 (4.33) | 110 (4.33) |
| d [mm (in)] | 160 (6.30) | 152.4 (6.00) | 150 (5.91) | 160 (6.30) | 152 (5.98) | 150 (5.91) |
| e [mm (in)] | 200 (7.87) | 190.5 (7.50) | 185 (7.28) | 200 (7.87) | 200 (7.87) | 185 (7.28) |
| Screws | M16 | M16 | M16 | M16 | M16 | M16 |
| Bore holes | 8 | 4 | 4 | 8 | 4 | 4 |

Ø108 (4.25)

20 (0.79)

222 (8.74)

Ø63.5 (2.50)

y

Ø69 (2.72)

25 (0.98)

A0037561

⊡ *6*    *Stainless steel version, dimensions in mm (in)*

*y*    *Immersion depth, → Configurator on product page*
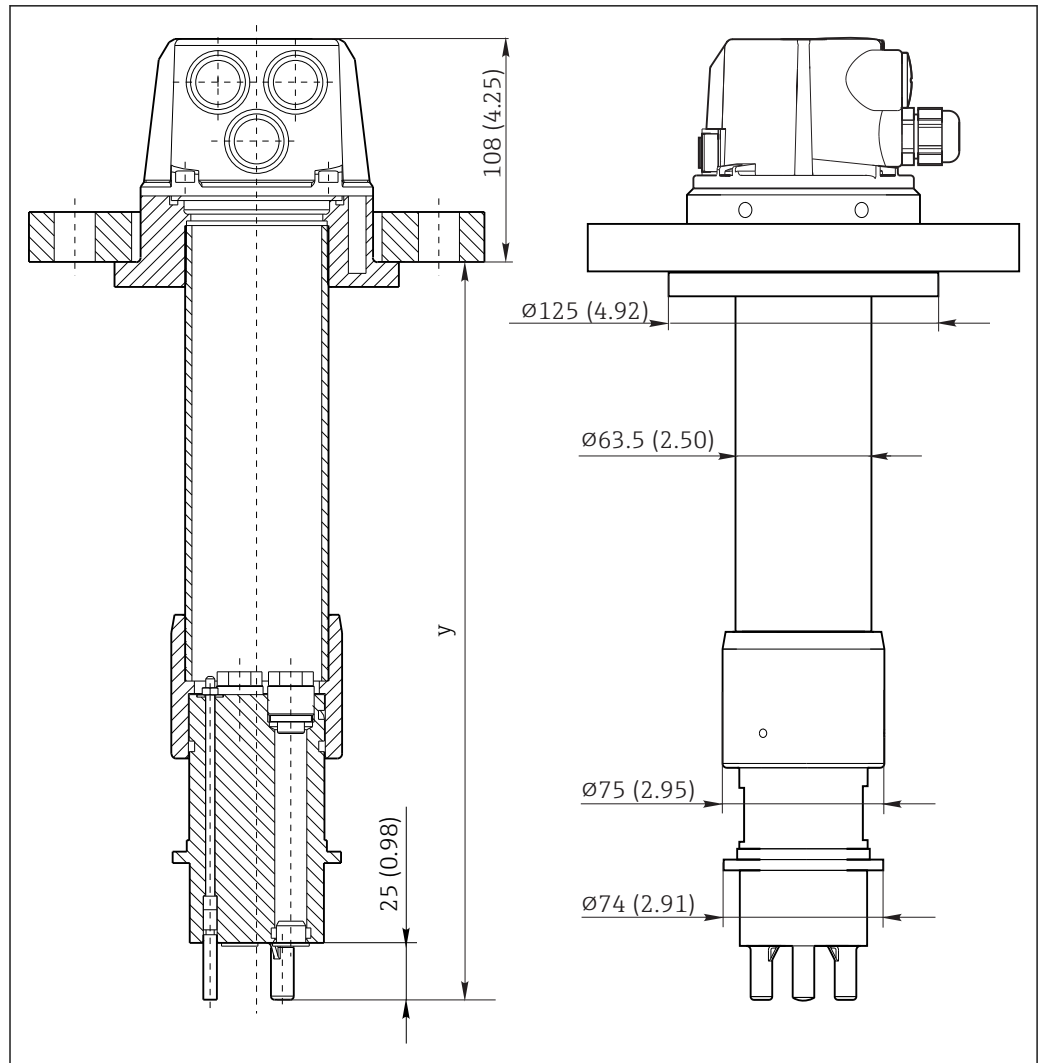
*☒ 7    PVDF version, dimensions in mm (in)*

*y      Immersion depth, → Configurator on product page*

| **Weight** | Depends on version (material, immersion depth): | |
|---|---|---|
| | PVDF | 2.5 to 3.0 kg (5.5 to 6.6 lbs) |
| | Stainless steel | 8.0 to 12.0 kg (17.6 to 26.5 lbs) |

**Materials**    *In contact with medium, depending on version*

| Immersion tube | PVDF / stainless steel 1.4404 (AISI 316L) |
|---|---|
| O-rings | EPDM / VITON / Chemraz / Fluoraz |
| Sensor holder | PVDF / stainless steel 1.4404 (AISI 316L) |
| Potential matching pin | Alloy C4 / tantalum / stainless steel 1.4401 (AISI 316) |
| Shock-protection stud | PVDF / stainless steel 1.4401 (AISI 316) |
| Dummy plug | PEEK |

*Not in contact with medium, depending on version*

| Assembly head | PP-GF 20 |
|---|---|
| Lap joint flange | UP-GF / stainless steel 1.4404 (AISI 316L) |
| Installation aids [1] | Stainless steel 1.4301 (AISI 304) |

1) Only for stainless steel version

| | |
|---|---|
| **Process connections** | Depending on version:<br>• None<br>• Flange DN 80 / PN 16<br>• Flange ANSI 3" / 150 lbs<br>• Flange JIS 10K 80A |
| **Cable glands** | 1 x Pg 13.5 and 2 x dummy plug Pg 16 |
| **Sensor mounting slots** | 3 x Pg 13.5 |
| **Immersion depth** | Depending on version:<br>• 500 mm (19.7 in)<br>• 1000 mm (39.4 in)<br>• 1500 mm (59.1 in)<br>• 2000 mm (78.7 in)<br>• 2500 mm (98.4 in) |

# Certificates and approvals

| | |
|---|---|
| **Pressure Equipment Directive 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. |
| **Inspection certificate** | A test certificate 3.1 in accordance with EN 10204 is supplied depending on the version (→ Product Configurator on the product page). |

# Ordering information

| | |
|---|---|
| **Product page** | www.endress.com/cpa140 |
| **Product Configurator** | On the product page there is a **Configure** button to the right of the product image.<br>1. Click this button.<br>  ↳ The Configurator opens in a separate window.<br>2. Select all the options to configure the device in line with your requirements.<br>  ↳ In this way, you receive a valid and complete order code for the device.<br>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.<br><br>ℹ For many products you also have the option of downloading CAD or 2D drawings of the selected product version. Click the **CAD** tab for this and select the desired file type using picklists. |
| **Scope of delivery** | The scope of delivery comprises:<br>• Ordered version of assembly<br>• Operating Instructions |

▸ If you have any queries:
Please contact your supplier or local sales center.

# 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.

Sensors (selection) | **Orbisint CPS11D / CPS11**
• pH sensor 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

**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

**Orbipore CPS91D**
pH electrode with open aperture for media with high dirt load

Technical Information TI00375C

**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

**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 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

**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

**Memosens COS81D**
- Sterilizable, optical sensor for dissolved oxygen
- With Memosens technology
- Product Configurator on the product page: www.endress.com/cos81d

Technical Information TI01201C

| Measuring cable | **Memosens data cable CYK10** |
| | - For digital sensors with Memosens technology |
| | - Product Configurator on the product page: www.endress.com/cyk10 |

Technical Information TI00118C

**Memosens data cable CYK11**
- Extension cable for digital sensors with Memosens protocol
- Product Configurator on the product page: www.endress.com/cyk11

Technical Information TI00118C

**Measuring cable CPK9**
- Terminated measuring cable for connecting analog sensors with TOP68 plug-in head
- Selection in accordance with product structure
- Ordering information: Endress+Hauser sales office or www.endress.com.

**Measuring cable CPK12**
- Terminated measuring cable for connecting analog ISFET sensors with TOP68 plug-in head
- Selection in accordance with product structure
- Ordering information: Endress+Hauser sales office or www.endress.com

| KCl supply vessel | Electrolyte vessel CPY7B |
| | - Storage container for KCl electrolyte, 200 ml |
| | - Product Configurator on the product page: www.endress.com/cpy7b |

Operating Instructions BA00128C

| Cleaning | **Chemoclean CPR31** |
| | - Spray system to clean pH, ORP and temperature sensors |
| | - Spray head and PVDF check valve, EPDM or VITON O-rings, EPDM hose, reinforced |
| | - Cleaner up to 6 bar (87 psi) absolute, maximum 30 °C (86 °F) |
| | - Order according to product order structure |

Operating Instructions BA00201C

Endress+Hauser

People for Process Automation

www.addresses.endress.com