



# Technical Information

## Dipfit CPA111

Immersion and installation assembly for open and closed vessels with DN 100 flange



### Application

CPA111 is an immersion assembly for pH/ORP and temperature sensors intended for use in water and wastewater applications.

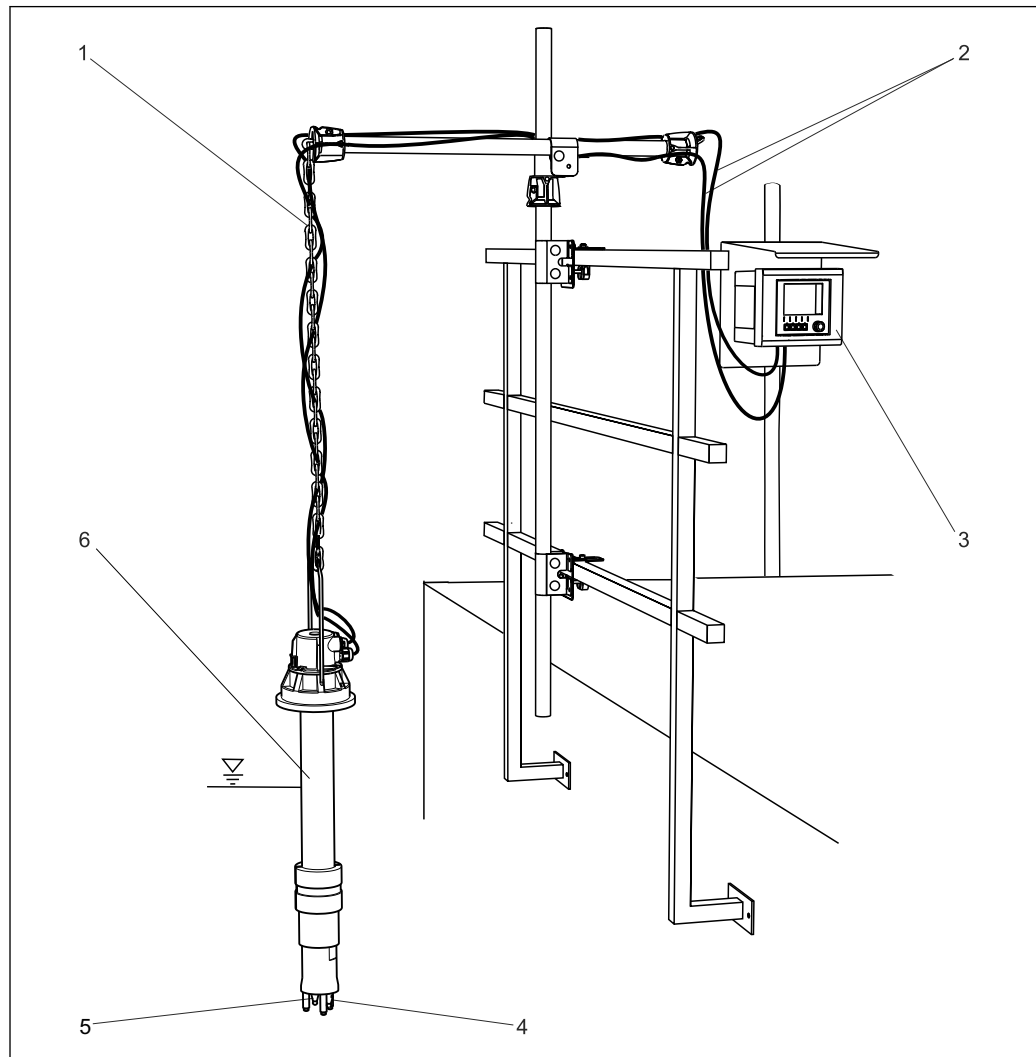
The adjustable flange means the assembly offers great flexibility and can be used universally.

### Your benefits

- Environmentally compatible materials (polypropylene)
- Can be used up to 5 bar (72 psi) absolute
- Three sensor mounting positions for pH/ORP and temperature sensor or cleaning systems in standard length of 120 mm
- Flexible configuration of the immersion depth thanks to adjustable flange (optional)
- Simple installation and removal of sensor holder thanks to bayonet lock

## Function and system design

### Measuring system



1 Example of a measuring system

1 Assembly holder CYH112 (with chain)

2 Sensor cable CYK10

3 Transmitter CM442 with weather protection cover

4 Sensor CPS11D (pH)

5 Sensor CPS12D (ORP)

6 Assembly CPA111-D (with suspension bracket)

## Environment

**Ambient temperature** -10 to +80 °C (+10 to +180 °F)

## Process

**Process temperature** -10 to +80 °C (+10 to +180 °F)

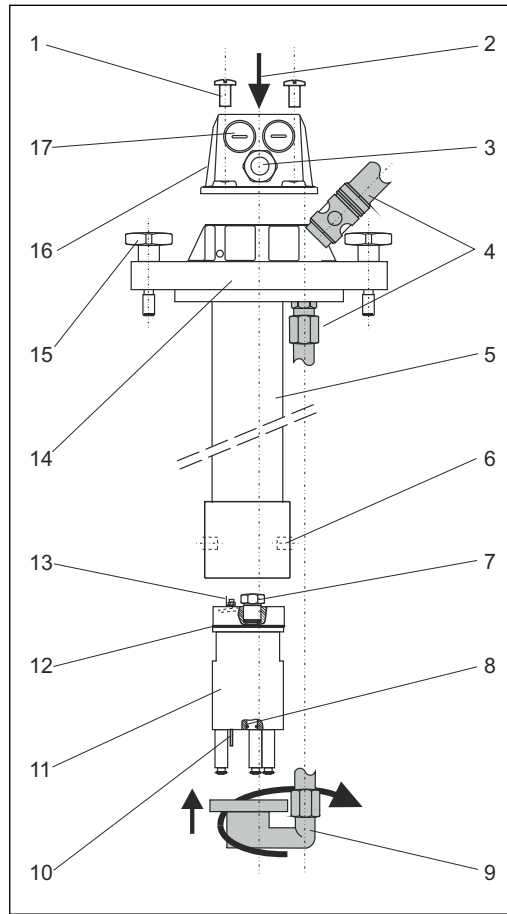
**Process pressure** CPA111-A/B/D  
CPA111-C

Unpressurized  
Max. 5 bar (72 psi) abs. at 20 °C (68 °F), unpressurized up to 80 °C (176 °F)

## Mechanical construction

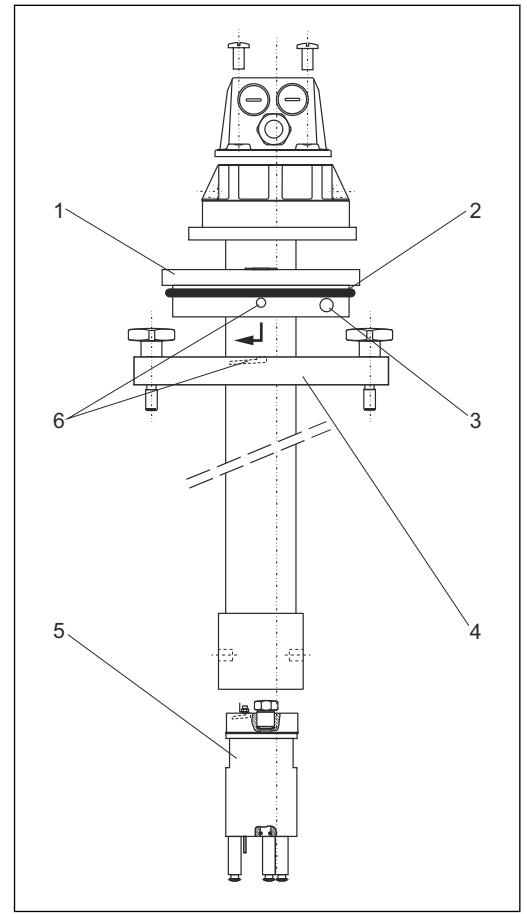
### Design

### Versions with flange



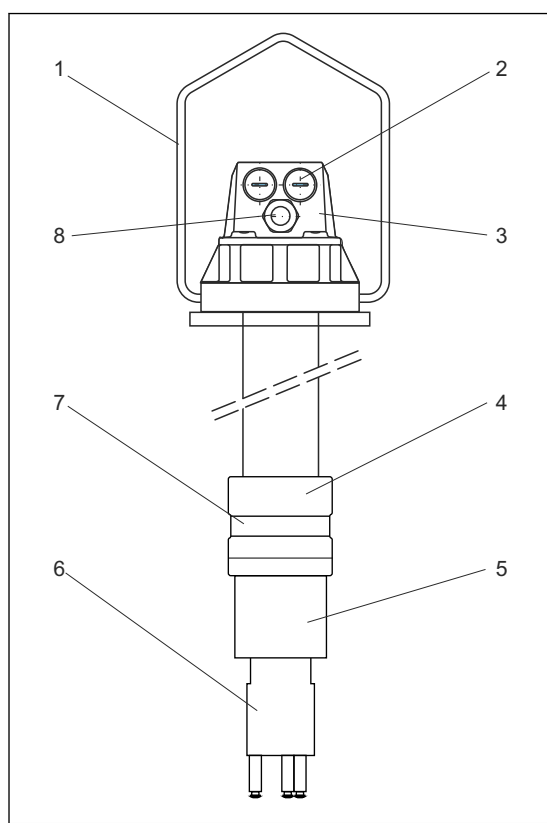
2 Version A and C with DN 100 flange

- 1 Phillips screw (4 pieces)
- 2 Punch hole for electrolyte vessel CPY7
- 3 Coupling Pg 13.5
- 4 Quick-release coupling for Chemoclean cleaning
- 5 Assembly pipe
- 6 Borehole for wetting cup
- 7 Dummy plug
- 8 O-ring for electrode installation
- 9 Accessories Chemoclean CPR30
- 10 Potential matching pin
- 11 Electrode holder (3 mounting positions)
- 12 O-ring
- 13 AMP plug for PML connection
- 14 DN 100 flange, A: Standard, C: Pressurized flange
- 15 Star handle screws M10 (not for pressurized version)
- 16 Assembly head
- 17 Dummy plug Pg 16



3 Version B with adjustable DN 100 flange

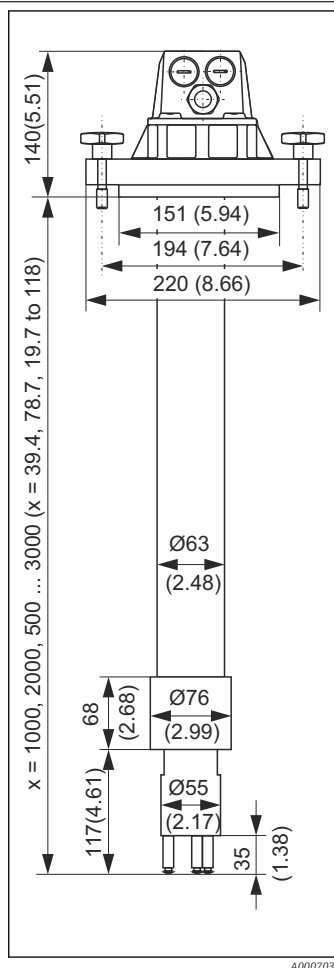
- 1 Adjustable flange adapter (2 half-shells)
- 2 O-ring for tolerance compensation
- 3 Clamping screw (2 pieces)
- 4 DN 100 flange
- 5 Sensor holder
- 6 Bayonet lock

**Version with suspension bracket**

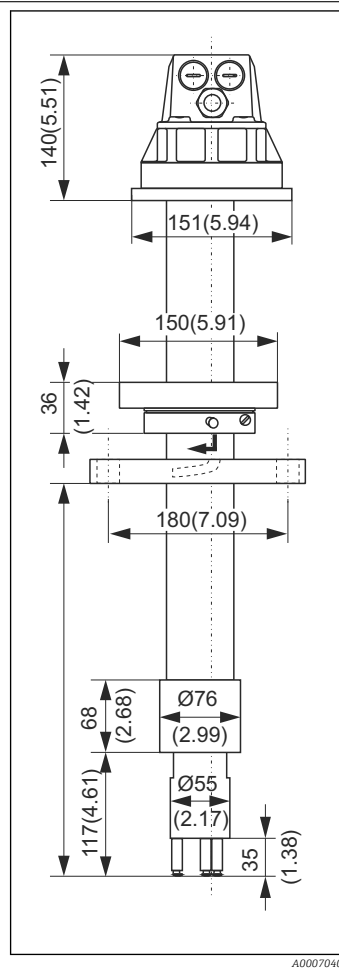
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- 1 Suspension bracket
- 2 Dummy plug Pg 16
- 3 Assembly head
- 4 Weight (half-shells)
- 5 Sleeve
- 6 Sensor holder
- 7 Cable clamp for securing the half-shells
- 8 Coupling Pg 13.5

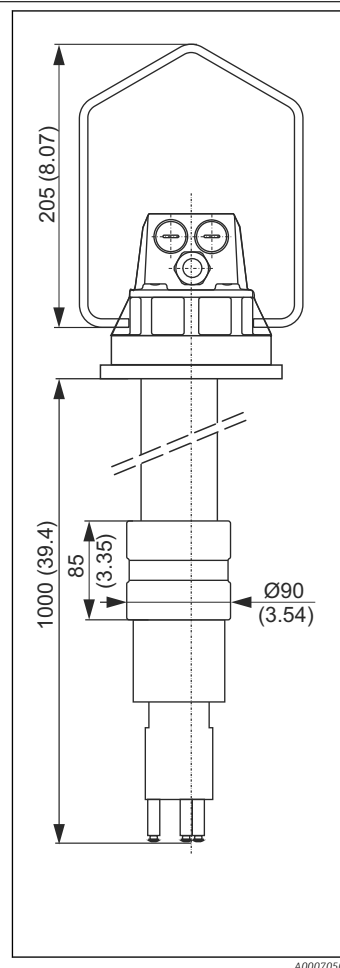
## Dimensions



4 CPA111-A or -C  
All dimensions in mm (inch)

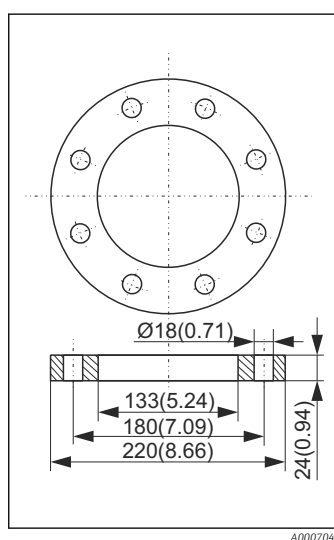


CPA111-B

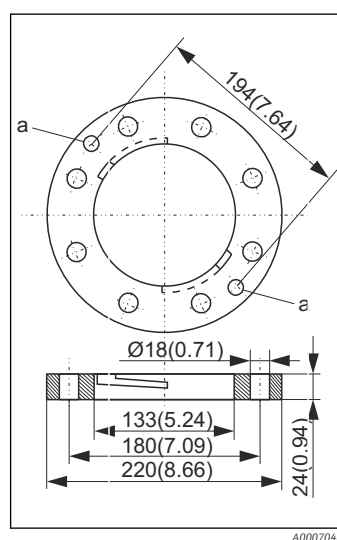


CPA111-D

*All dimensions in mm (inch)*



 7 *Pressurized flange DN 100  
for CPA111-C*



 8 Flange DN 100 for  
CPA111-A/B

*a = bore holes for cross formed screws*

*All dimensions in mm (inch)*

## Weight

Approx. 4.0 kg (8.8 lbs)

|                            |                                                            |                                                              |
|----------------------------|------------------------------------------------------------|--------------------------------------------------------------|
| <b>Materials</b>           | Sensor holder                                              | PP-GF 20                                                     |
|                            | Immersion tube                                             | PP                                                           |
|                            | O-ring                                                     | VITON                                                        |
|                            | <i>Only version CPA111-D:</i>                              |                                                              |
|                            | Half-shells                                                | Cast iron, PVC-coated                                        |
|                            | Cable clamp                                                | Stainless steel 1.4401 (AISI 316)                            |
| <b>Cable entries</b>       | 1 x Pg 13.5 and 2 x Pg 16                                  |                                                              |
| <b>Suitable sensors</b>    | 12 mm glass electrodes, ISFET sensors and combined sensors |                                                              |
| <b>Immersion depth</b>     | Standard                                                   | 1000 mm (39.4 inch), 2000 mm (78.8 inch)                     |
|                            | Other length                                               | 500 to 3000 mm (19.7 to 118 inch)                            |
| <b>Process connections</b> | CPA111-A                                                   | Flange DN 100, additionally with captive cross formed screws |
|                            | CPA111-B                                                   | Adjustable flange DN 100                                     |
|                            | CPA111-C                                                   | Pressurized flange DN 100                                    |
|                            | CPA111-D                                                   | Stainless steel suspension bracket (1.4571 (AISI 316 Ti))    |

## Ordering information

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product page</b>         | <a href="http://www.endress.com/cpa111">www.endress.com/cpa111</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Product Configurator</b> | <p>The navigation area is located on the right of the product page.</p> <ol style="list-style-type: none"> <li>Under "Device support" click "Configure your selected product".<br/>↳ The Configurator opens in a separate window.</li> <li>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.</li> <li>Export the order code as a PDF or Excel file. To do so, click the appropriate button at the top of the screen.</li> </ol> |
| <b>Scope of delivery</b>    | <p>The delivery comprises:</p> <ul style="list-style-type: none"> <li>■ Assembly in the version ordered</li> <li>■ Operating Instructions</li> </ul> <p> If you have any questions, please contact your supplier or your local sales center.</p>                                                                                                                                                                                                         |

## 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 office.

### Installation accessories

#### Flexdip CYH112

- Modular holder system for sensors and assemblies in open basins, channels and tanks
- For Flexdip CYA112 water and wastewater assemblies
- Can be affixed anywhere: on the ground, on the capstone, on the wall or directly onto railings.
- Stainless steel version
- Product Configurator on the product page: [www.endress.com/cyh112](http://www.endress.com/cyh112)

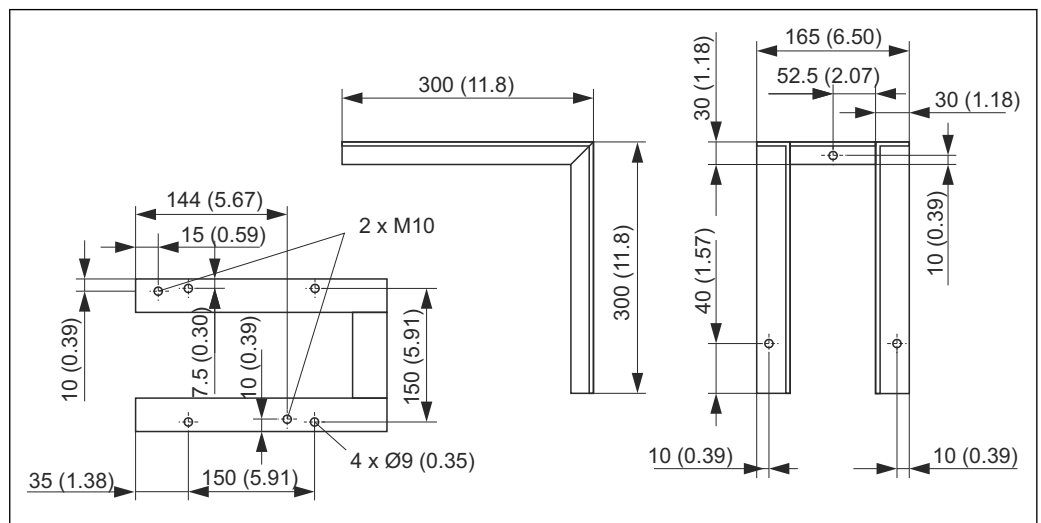


Technical Information TI00430C

#### Mounting frame

For CPA111, CPA510, CPA530 and CLA111

- Material: stainless steel 1.4301 (AISI 304)
- Order number: 50066561



A0007060

9 Mounting frame in mm (inch)

#### Adjustable flange adapter DN 100

- For CPA111 and CLA111 for variable immersion depths
- Order number: 50070514

#### Flange DN 100, unpressurized

- For CPA111 and CLA111 suitable for adjustable flange adapter
- Order number: 50066632

### Seals

#### O-ring set for CPA111

- Material: EPDM
- Order number: 50091993

## Sensors

## Glass electrodes

**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](http://www.endress.com/cps11d) or [www.endress.com/cps11](http://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](http://www.endress.com/cps41d) or [www.endress.com/cps41](http://www.endress.com/cps41)



Technical Information TI00079C

**Ceragel CPS71D/ CPS71**

- pH electrode with double-chamber reference system and integrated bridge electrolyte
- Product Configurator on the product page: [www.endress.com/cps71d](http://www.endress.com/cps71d) or [www.endress.com/cps71](http://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](http://www.endress.com/cps91d) or [www.endress.com/cps91](http://www.endress.com/cps91)



Technical Information TI00375C

**Orbisint CPS12D/ CPS12**

- ORP sensor for process technology
- Product Configurator on the product page: [www.endress.com/cps12d](http://www.endress.com/cps12d) or [www.endress.com/cps12](http://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](http://www.endress.com/cps42d) or [www.endress.com/cps42](http://www.endress.com/cps42)



Technical Information TI00373C

**Ceragel CPS72D/ CPS72**

- ORP electrode with double-chamber reference system and integrated bridge electrolyte
- Product Configurator on the product page: [www.endress.com/cps72d](http://www.endress.com/cps72d) or [www.endress.com/cps72](http://www.endress.com/cps72)



Technical Information TI00374C

**Orbipore CPS92D/ CPS92**

- ORP electrode with open aperture for media with high dirt load
- Product Configurator on the product page: [www.endress.com/cps92d](http://www.endress.com/cps92d) or [www.endress.com/cps92](http://www.endress.com/cps92)



Technical Information TI00435C

## 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](http://www.endress.com/cps441d) or [www.endress.com/cps441](http://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](http://www.endress.com/cps471d) or [www.endress.com/cps471](http://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](http://www.endress.com/cps491d) or [www.endress.com/cps491](http://www.endress.com/cps491)



Technical Information TI00377C

**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](http://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](http://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](http://www.endress.com/cps96d)



Technical Information TI00507C

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**Extension cable**

**Memosens data cable CYK11**

- Extension cable for digital sensors with Memosens protocol
- Product Configurator on the product page: [www.endress.com/cyk11](http://www.endress.com/cyk11)

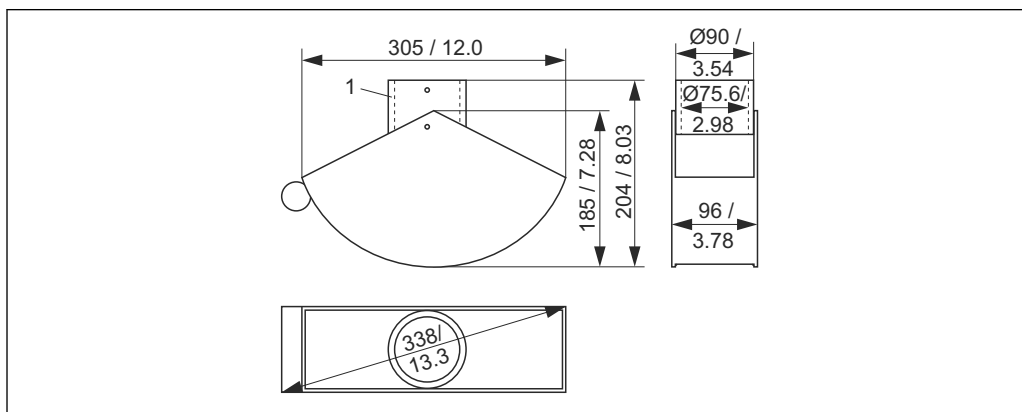


Technical Information TI00118C

## Calibration accessories

**Wetting cup for CPA111**

- Prevents the sensors from drying out if water level is too low
- For use in open vessels, tanks and channels
- Material: PP
- Order number: 50066569

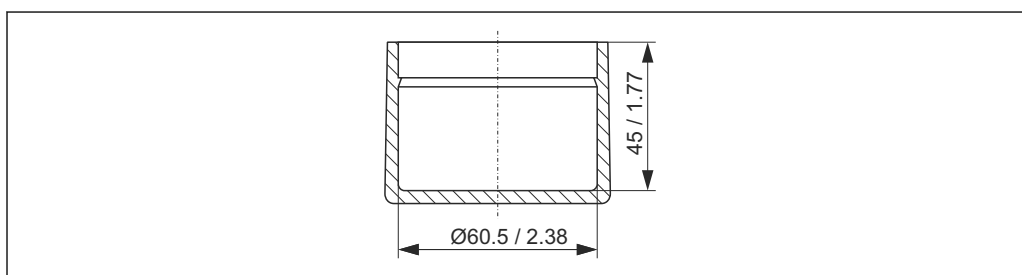


A0007058

 10 Dimensions in mm (inch)

**Calibration cap for CPA111**

- For the calibration of pH/ORP electrodes
- Temporary fastening capability to spacer bolts of the electrode holder
- Material: PP
- Order number: 50066570

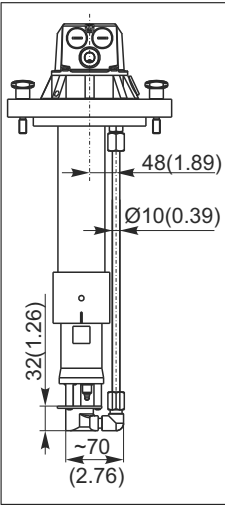


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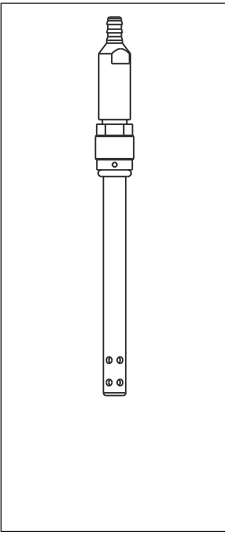
 11 Dimensions in mm (inch)

Chemoclean

Chemoclean CPR30

|                                                                                   |                                                                                                  |                                                      |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------|
|  | Automatic spray cleaning system for cleaning the sensors<br>Order according to product structure |                                                      |
|                                                                                   | <i>Materials in contact with the medium</i>                                                      |                                                      |
|                                                                                   | Spray head                                                                                       | PP-GF20                                              |
|                                                                                   | O-rings                                                                                          | EPDM / VITON                                         |
|                                                                                   | <i>Operating data</i>                                                                            |                                                      |
|                                                                                   | Process pressure                                                                                 | Max. 4 bar (58 psi) absolute, at 20 °C (68 °F)       |
|                                                                                   | Process temperature                                                                              | Max. 80 °C (176 °F) at ambient pressure              |
|                                                                                   | Cleaner pressure                                                                                 | 4 to 6 bar (58 to 87 psi) absolute, at 20 °C (68 °F) |

CPR31

|                                                                                    |                                             |                                                      |
|------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|
|  | <i>Materials in contact with the medium</i> |                                                      |
|                                                                                    | Spray head, check valve                     | PVDF                                                 |
|                                                                                    | O-rings                                     | EPDM / VITON                                         |
|                                                                                    | Hose                                        | EPDM, reinforced                                     |
|                                                                                    | <i>Operating data</i>                       |                                                      |
|                                                                                    | Process pressure                            | Max. 8 bar (116 psi) absolute, at 50 °C (122 °F)     |
|                                                                                    | Process temperature                         | Max. 120 °C (248 °F) at ambient pressure             |
|                                                                                    | Process pressure when cleaning              | Max. 3 bar (43 psi) absolute                         |
|                                                                                    | Cleaner pressure                            | 3 to 6 bar (43 to 87 psi) absolute, at 20 °C (68 °F) |
|                                                                                    | Cleaner temperature                         | Max. 30 °C (86 °F)                                   |



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