Level | Pressure | Flow | Temperature | Liquid Analysis | Registration | Systems Components | Services | Solutions

Technical Information

Dipfit W CPA111

Immersion and process assembly for open and closed tanks with DN 100 flange

Application

The immersion and process assembly Dipfit W CPA111 is intended for universal use in the following areas:

- Water treatment
- Wastewater treatment

It can be used at pressures up to 4 bar (58 psi).

Your benefits

- Made of environmentally compatible polypropylene material
- Simple installation and removal of sensor holder thanks to bayonet lock
- Flexible immersion depth thanks to adjustable flange; additional bayonet locking mechanism assures easy installation and removal of assembly
- Three sensor mounting positions for pH/ORP and temperature sensors in standard length of 120 mm

TI112C/07/en/06.07
50066450

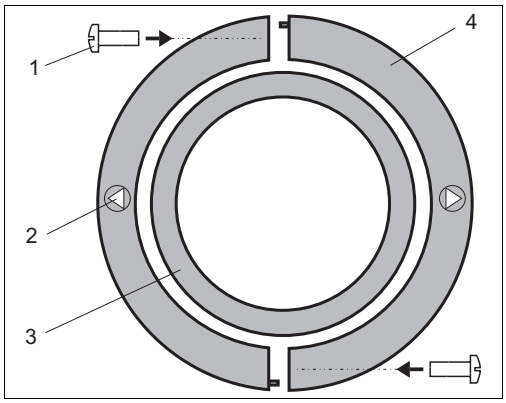
Endress+Hauser

People for Process Automation

Function and system design

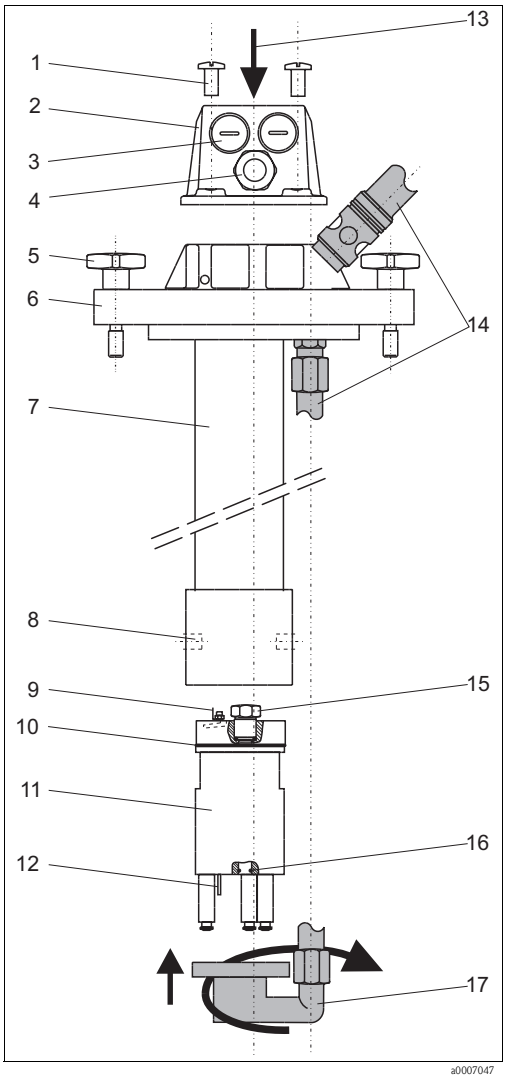
Function

The assembly can be mounted using a standard DN 100 flange (mounting version A). Additional captive star handle screws allow to attach the assembly to a mounting frame for convenient installation on basin or channel rims.
The adjustable flange (mounting version B) can be used to adapt the immersion depth to local conditions. The adapter for the adjustable flange is firmly attached in the desired position on the immersion tube. The bayonet lock integrated in the flange allows easy installation and removal of the assembly without the need to dismantle the flange.
A special DN 100 pressurized flange (mounting version C) is used to install the assembly in closed tanks with pressures of up to 4 bar (58 psi).
The suspended version of the assembly (mounting version D) can be installed in immersion tanks using the assembly holder CYH101. The assembly length is fixed to 1 m. The suspension bracket is made of stainless steel 1.4571 (AISI 316 Ti). Various immersion depths are possible when used in conjunction with a suspension chain.
The assembly for pendulum frame mounting (mounting version F) is designed for pendulous suspension from the pendulum frame by the retaining ring.



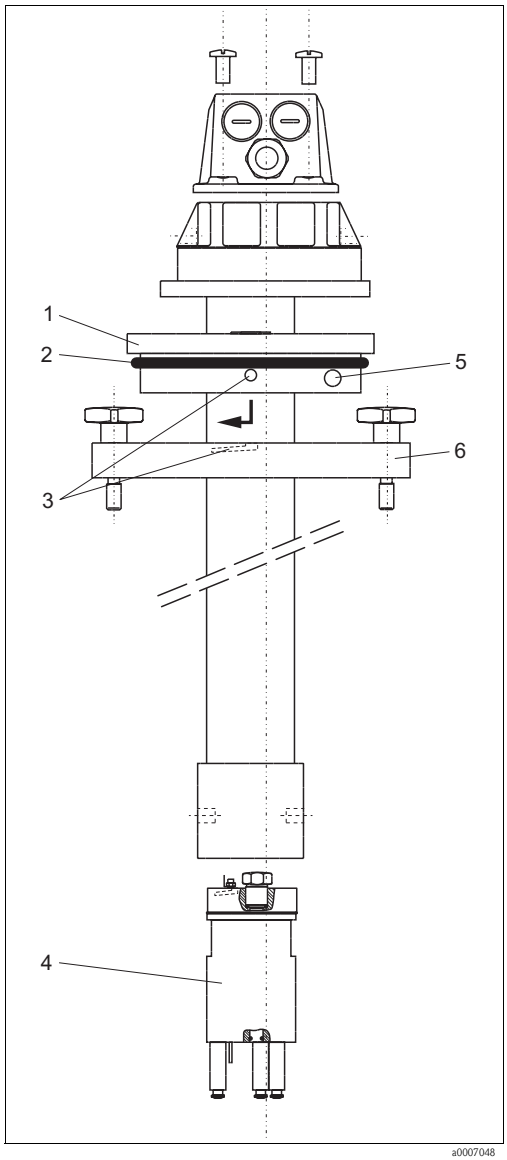
Adjustable flange adapter

1 Phillips screws
2 Marker "final position"
3 Assembly pipe
4 Half-shells



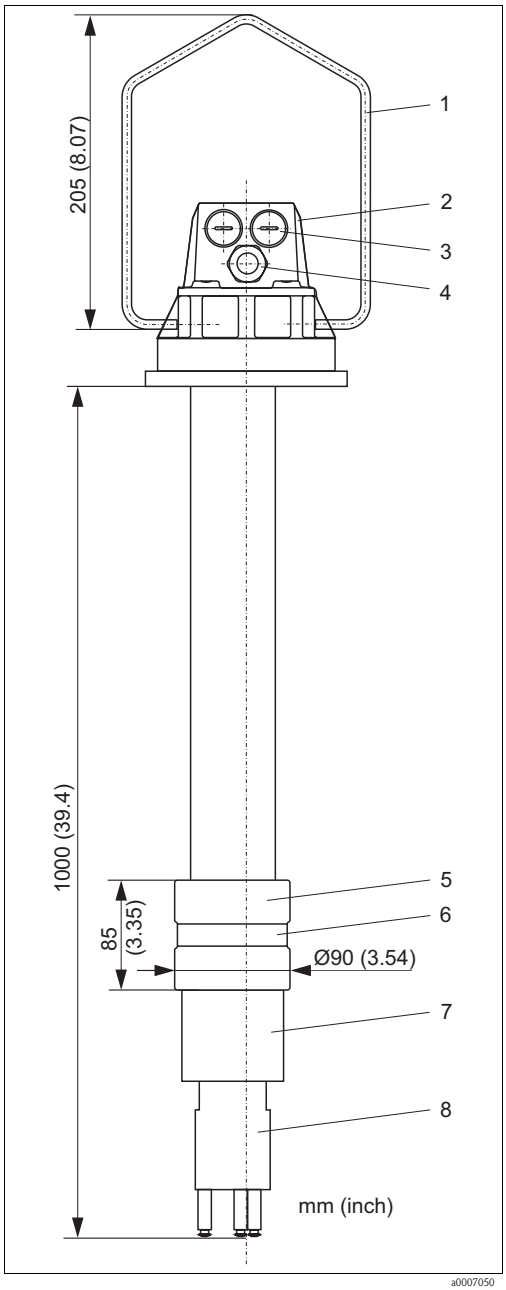
Versions A and C with flange DN 100

1 *Phillips screw (4 pieces)*
2 *Assembly head*
3 *Dummy plug Pg 16*
4 *Cable gland Pg 13.5*
5 *Star handle screws M10 (not for pressurized version)*
6 *Flange DN 100, A: standard C: pressurized flange*
7 *Assembly pipe*
8 *Bore hole for wet bucket*
9 *AMP plug for PM connection*
10 *O-ring*
11 *Electrode holder (3 mounting positions)*
12 *PM (potential matching pin) material: stainless steel 1.4571 (AISI 316 Ti)*
13 *Punch hole for electrolyte reservoir CPY7*
14 *Accessory Chemoclean CPR30*
15 *Dummy plug*
16 *O ring for sensor installation*
17 *Accessory Chemoclean CPR30*



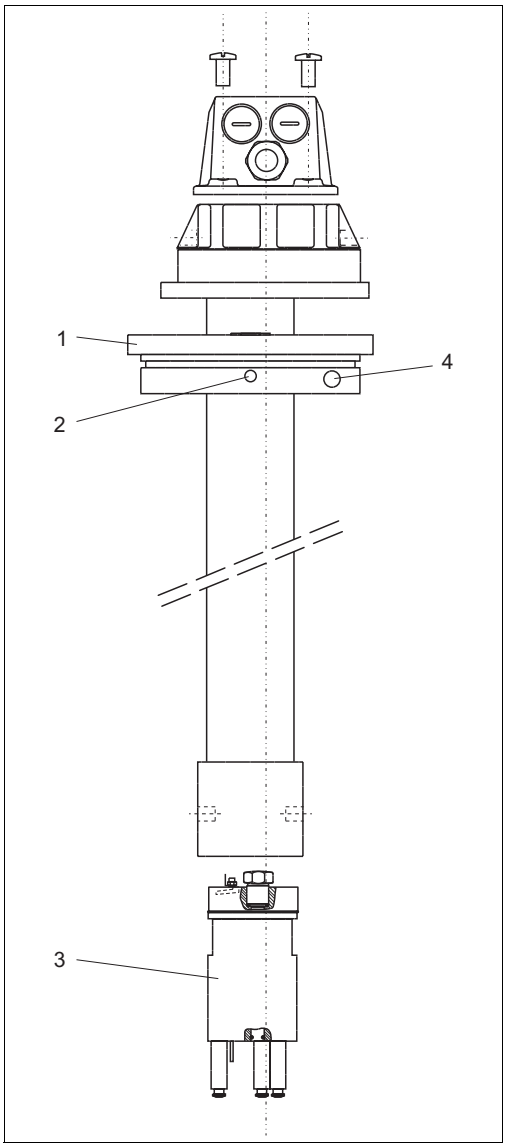
Version B with adjustable flange DN 100

1 *Adapter for adjustable flange (2 half-shells)*
2 *O-ring for tolerance compensation*
3 *Bayonet lock*
4 *Electrode holder (3 mounting positions)*
5 *Tensioning screws (2 pieces)*
6 *Flange DN 100*



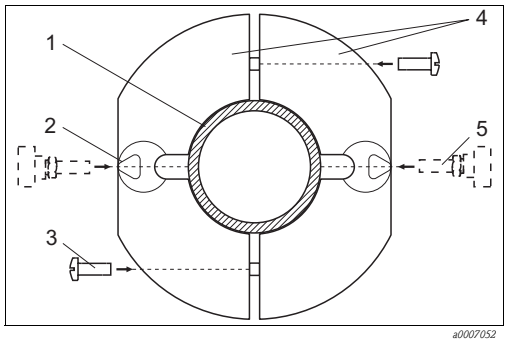
Version D with suspension bracket

1 *Suspension bracket (stainless steel 1.4571 (AISI 316 Ti))*
2 *Assembly head*
3 *Dummy plug Pg 16*
4 *Cable gland Pg 13.5*
5 *Weight (half-shells)*
6 *Cable clamp for fixing of the half-shells*
7 *Sleeve*
8 *Electrode holder (3 mounting positions)*



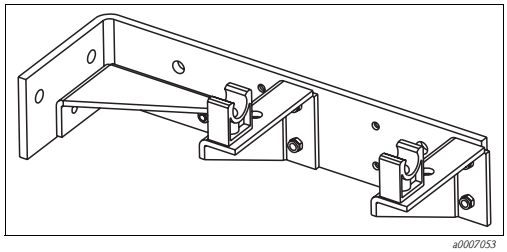
Version F for pendulum frame mounting

1 Retaining ring (half-shells)
2 Threaded hole M8 for knurled thumb screw
3 Sensor holder (3 mounting positions)
4 Tensioning screws (2 pieces) to fix the half-shells

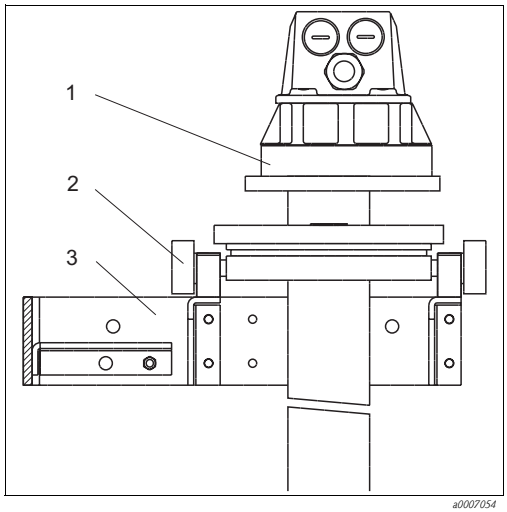


Retaining ring

1 Assembly pipe
2 Marker "final position"
3 Phillips screws
4 Half-shells
5 Knurled thumb screws



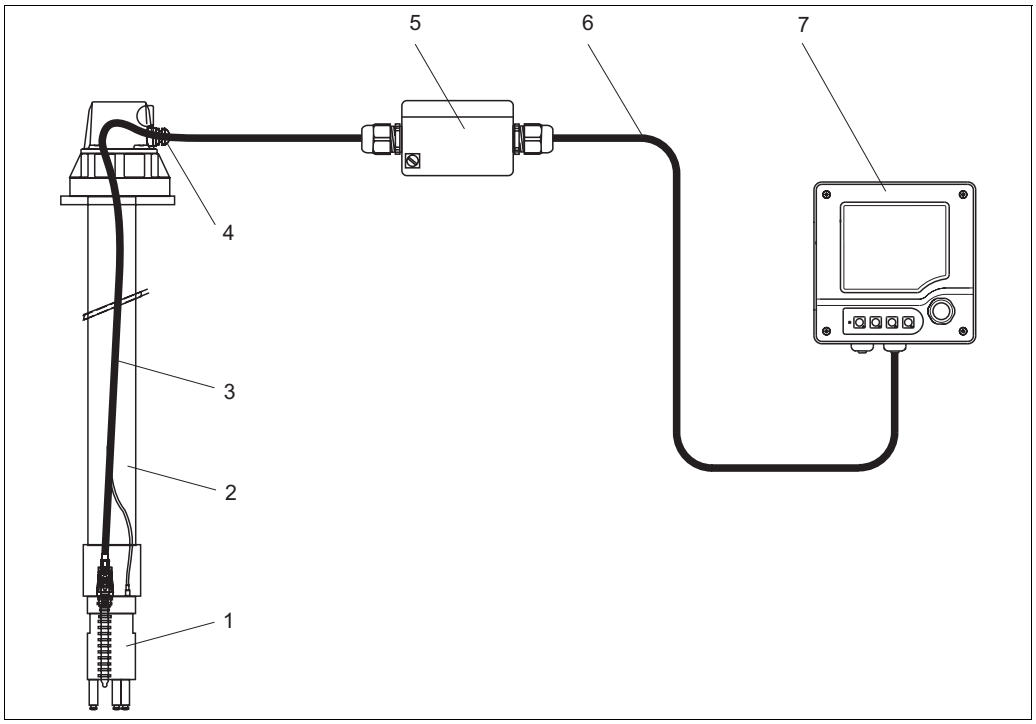
Pendulum frame



CPA111 mounted with pendulum frame

1 Assembly
2 Knurled thumb screw
3 Pendulum frame

Measuring system



Example of a complete measuring system

1	*Sensor holder (3 mounting positions)*	*5*	*Junction box VBA*
2	*Immersion assembly Dipfit W CPA111*	*6*	*Extension cable CYK71*
3	*Measuring cable CPK1, CPK7, CPK9 or CPK12*	*7*	*Transmitter Liquiline M CM42*
4	*Cable gland Pg 13.5*		

Installation

Mounting

Mounting:

Version A	Flange DN 100, with additional captive star handle screws
Version B	Adjustable flange DN 100
Version C	Pressurized flange DN 100
Version D	Suspension bracket; material: stainless steel 1.4571 (AISI 316 Ti)
Version F	For pendulum frame

Environment

Ambient temperature

-10 to 80 °C (14 to 176 °F)

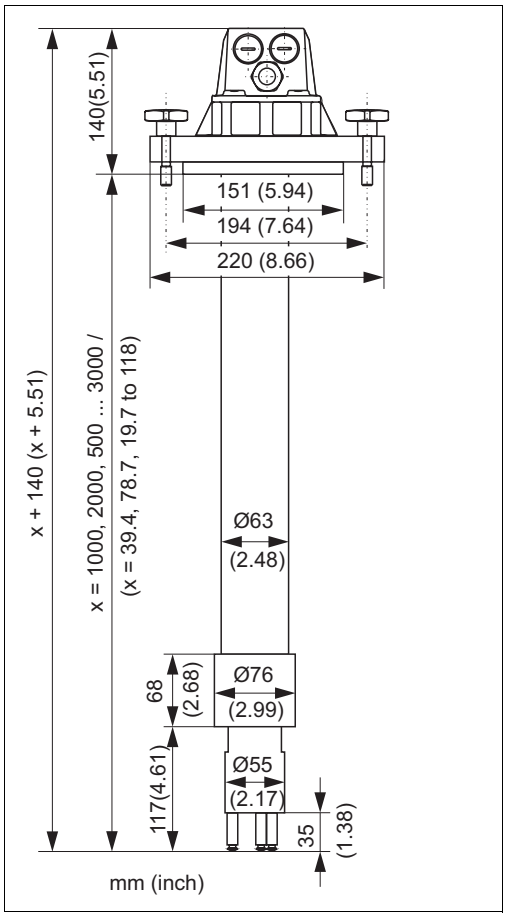
Process

Process temperature and pressure

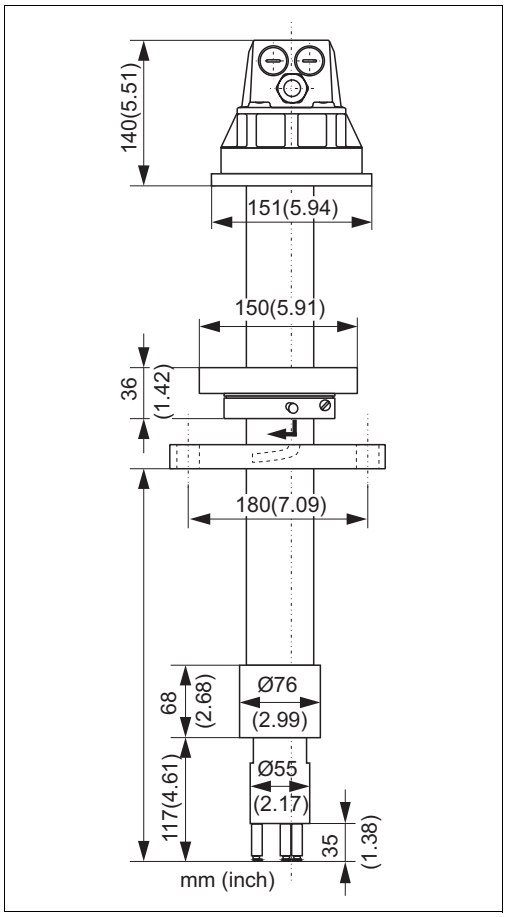
Versions A, B, D, F	unpressurized, 80 °C (176 °F)
Version C	4 bar at 20 °C (58 psi at 68 °F), unpressurized at 80 °C (176 °F)

Mechanical construction

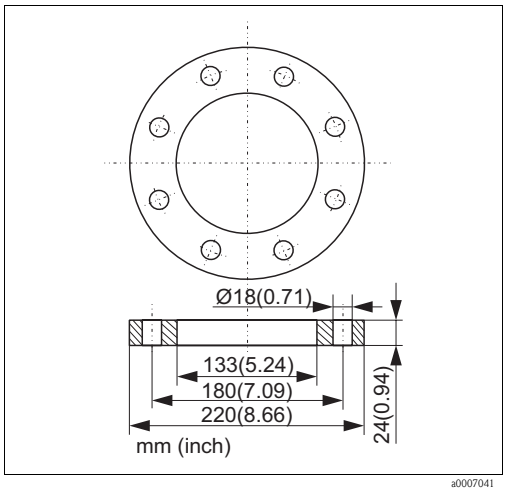
Dimensions



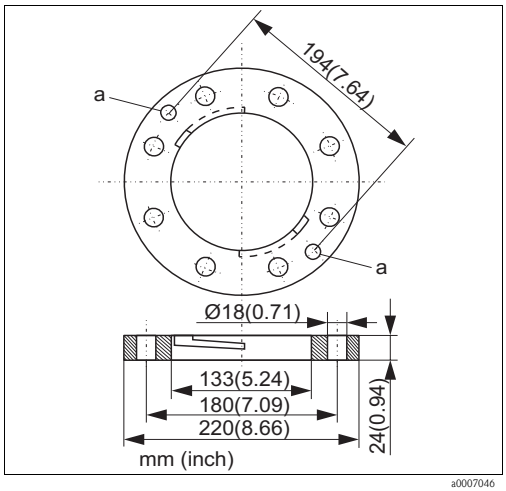
Versions A/C



Version B



Pressurized flange DN 100 for CPA111-C



Flange DN 100 for CPA111-A/B

a Through hole for star handle screws

Weight	approx. 4 kg (8.82 lbs)	
Materials	in contact with medium:	
	sensor holder	PP-GF 20
	immersion pipe	PP
	potential matching pin	stainless steel 1.4571 (AISI 316 Ti)
	O-ring	EPDM
	additionally with versions D and F:	
	half-shells	gray cast iron, PVC coated
	cable clamp	stainless steel 1.4401 (AISI 316)
Cable glands	1 x Pg 13.5; 2 x Pg 16	
Number of sensors	max. 3	
Immersion depth	standard: 1000 mm (39.4 "), 2000 mm (78.8 ") special length: 500 to 3000 mm (19.7 to 118 ")	
Required cross section	DN 100	

Ordering information

Scope of delivery

The scope of delivery comprises:
- Dipfit W CPA111 assembly (ordered version)
- Operating Instructions (English)

Product structure

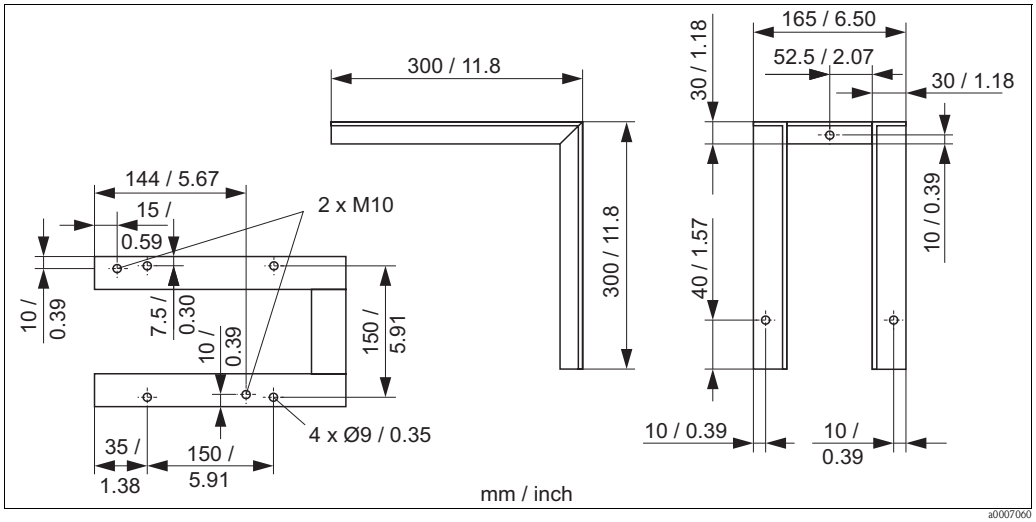
	Immersion depth				
	0	Immersion depth: 1000 mm			
	1	Immersion depth: 2000 mm			
	2	Immersion depth: as specified 500 - 3000 mm			
	3	Immersion depth: 500 mm			
	4	Immersion depth: 1500 mm			
	5	Immersion depth: 2500 mm			
	6	Immersion depth: 3000 mm			
		Assembly material			
		0	Assembly: PP; O-ring: EPDM		
		1	Assembly: silicone free, PP; O-ring: EPDM		
			Process connection		
			A	Flange DN 100, PP, pressureless	
			B	Flange DN 100, PP, adjustable	
			C	Flange DN 100; max. 4 bar	
			D	Hanging bracket; 316 Ti	
			F	For pendulum frame mounting	
CPA111-				complete order code	

Accessories

Installation material

Immersion assembly holder CYH101
- For pH, ORP, oxygen, conductivity assemblies and for oxygen and turbidity sensors;
- Ordering acc. to product structure (Technical Information TI092C/07/en)

Mounting frame for CPA111, CPA510, CPA530 and CLA111
- Material: stainless steel 1.4301 (AISI 304)
- Order number: 50066561



Dimensions of mounting frame

Pendulum frame
- For pendulous suspension of CPA111, CLA111, CPA510 and CYA611 assemblies
- Order no. 50080196

Add-on kit pendulum frame
- To mount CPA111 and CLA111 at pendulum frame
- Order number: 50087873

Adjustable flange adapter DN 100
- For CPA111 and CLA111 with variable immersion depth
- Order number: 50070514

Flange DN 100 unpressurized
- For CPA111 and CLA111 suitable for the adjustable flange adapter
- Order number: 50066632

Sensors

Glass sensors

- Orbisint CPS11/CPS11D
  pH electrode for process applications, with PTFE diaphragm, Memosens technology as option;
  Ordering acc. to product structure, see Technical Information (TI028C/07/en)
- Orbisint CPS12/CPS12D
  ORP electrode for process applications, with PTFE diaphragm, Memosens technology as option;
  Ordering acc. to product structure, see Technical Information (TI367C/07/en)
- Ceraliquid CPS41/CPS41D
  pH electrode with ceramics diaphragm and liquid KCl electrolyte, Memosens technology as option;
  Ordering acc. to product structure, see Technical Information (TI079C/07/en)
- Ceraliquid CPS42/CPS42D
  ORP electrode with ceramics diaphragm and liquid KCl electrolyte, Memosens technology as option;
  Ordering acc. to product structure, see Technical Information (TI373C/07/en)
- Ceragel CPS71/CPS71D
  pH electrode with double chamber reference system and integrated bridge electrolyte,
  Memosens technology as option;
  Ordering acc. to product structure, see Technical Information (TI245C/07/en)
- Ceragel CPS72/CPS72D
  ORP electrode with double chamber reference system and integrated bridge electrolyte, Memosens technology as option;
  Ordering acc. to product structure, see Technical Information (TI374C/07/en)
- Orbipore CPS91/CPS91D
  pH electrode with open aperture for media with high dirt load, Memosens technology as option;
  Ordering acc. to product structure, see Technical Information (TI375C/07/en)

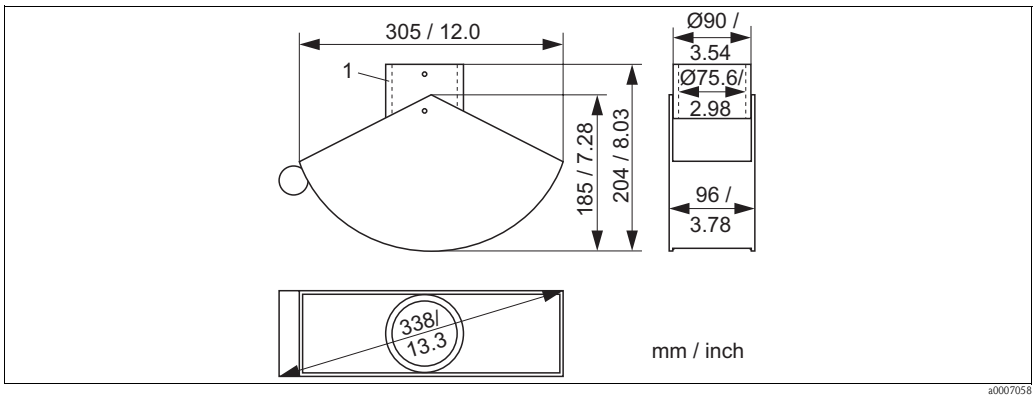
ISFET sensors

- Tophit CPS471
  Sterilizable and autoclavable ISFET sensor for food and pharmaceuticals, process technology, water treatment and biotechnology;
  Ordering acc. to product structure, see Technical Information (TI283C/07/en)
- Tophit CPS441
  Sterilizable ISFET sensor for media with low conductivity, with liquid KCl electrolyte;
  Ordering acc. to product structure, see Technical Information (TI352C/07/en)
- Tophit CPS491
  ISFET sensor with open aperture for media with high dirt load;
  Ordering acc. to product structure, see Technical Information (TI377C/07/en)

Calibration accessories

Wet bucket for CPA111

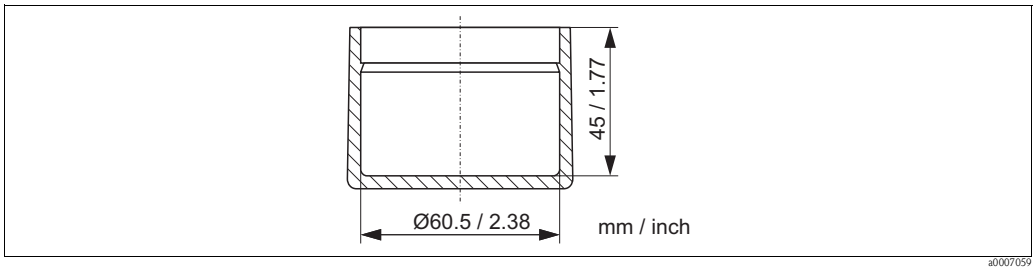
- To prevent drying out of electrodes at too low water levels
- Can be used in open containers, tanks or channels
- Material: PP
- Order no.: 50066569



Dimensions of wet bucket

1 Dinstance pipe

Calibration cap for CPA111
- Designed for calibration of pH/ORP sensors
- Short-time mounting possibility at the distance bolts of the sensor holder
- Material: PP
- Order no.: 50066570



Dimensions of the calibration cap; max. filling volume 70 ml (2.37 fl. oz)

High-quality buffer solutions of Endress+Hauser
The secondary buffer solutions have been referenced to primary reference material of the PTB (German Federal Physico-technical Institute) and to standard reference material of NIST (National Institute of Standards and Technology) according to DIN 19266 by a DKD (German Calibration Service) accredited laboratory.

	pH value					
	A	pH 2.00 (accuracy ± 0.02 pH)				
	C	pH 4.00 (accuracy ± 0.02 pH)				
	E	pH 7.00 (accuracy ± 0.02 pH)				
	G	pH 9.00 (accuracy ± 0.02 pH)				
	I	pH 9.20 (accuracy ± 0.02 pH)				
	K	pH 10.00 (accuracy ± 0.05 pH)				
	M	pH 12.00 (accuracy ± 0.05 pH)				
		Quantity				
		01	20 x 18 ml (0.68 fl.oz) only buffer solutions pH 4.00 and 7.00			
		02	250 ml (8.45 fl.oz)			
		10	1000 ml (0.26 US gal)			
		50	5000 ml (1.32 US gal) canister for Topcal S			
			Certificates			
			A	buffer analysis certificate		
				Version		
				1	standard	
CPY20-						complete order code

Technical buffer solutions for ORP electrodes
- +220 mV, pH 7.0, 100 ml (3.4 fl.oz.); order no. CPY3-0
- +468 mV, pH 0.1, 100 ml (3.4 fl.oz.); order no. CPY3-1

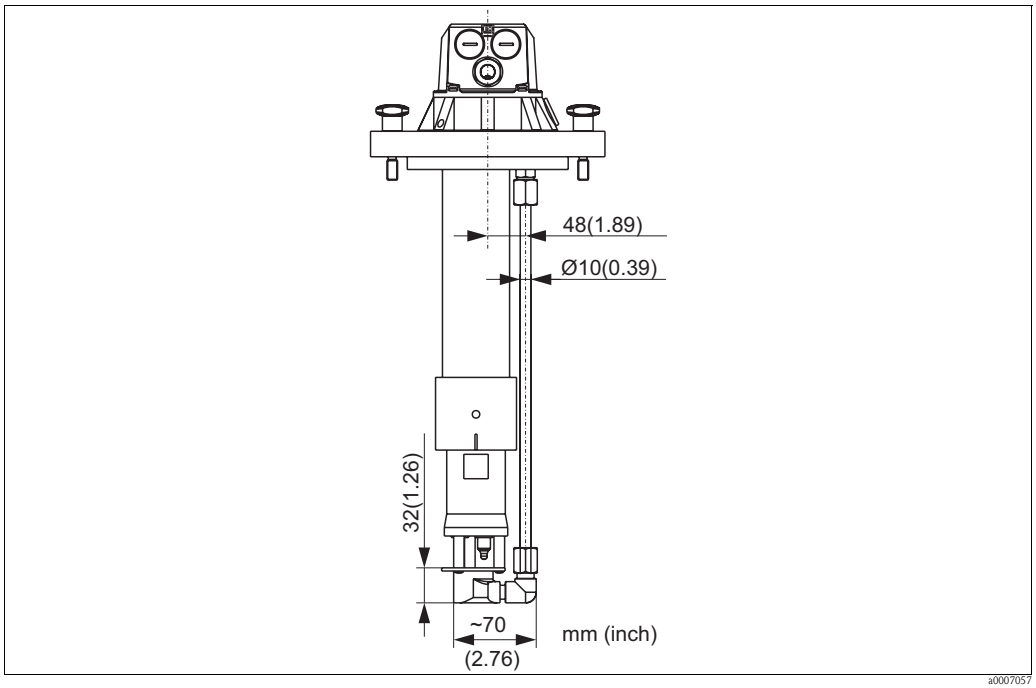
Transmitter

- Liquiline M CM42
  Modular two-wire transmitter, stainless steel or plastic, field or panel instrument, various Ex approvals (ATEX, FM, CSA, Nepsi, TIIS), HART, PROFIBUS or FOUNDATION Fieldbus available
  Ordering acc. to product structure, see Technical Information (TI381C/07/en)
- Liquisys M CPM223/253
  Transmitter for pH and ORP, field or panel-mounted housing, HART or PROFIBUS available
  Ordering acc. to product structure, see Technical Information (TI194C/07/en)
- Mycom S CPM153
  Transmitter for pH and ORP, one or two channel version, Ex or non-Ex, HART or PROFIBUS available
  Ordering acc. to product structure, see Technical Information (TI233C/07/en)

Cleaning system

Chemoclean CPR30

- Automatic cleaning system for sensors



CPA111 with Chemoclean CPR30

- Ordering according to product structure

	Design, material			
	0	CPA111, PP		
		Immersion depth		
		0	1000 mm	
		1	2000 mm	
		2	special length 500 ... 3000 mm	
			Version	
			0	standard
CPR30-				complete order code

Chemoclean CPR31

- Automatic cleaning system for sensors
- CPR31 will be installed at one of three mounting position instead of a sensor
- Ordering according to product structure

	Spray head			
	2	PVDF		
		Seal		
		1	EPDM	
		2	Viton	
			Equipment	
			10	Basic version
			20	Spray head silicone free
CPR31-				**complete order code**

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People for Process Automation

TI112C/07/en/06.07
50066450
Printed in Germany / FM+SGML 6.0 / DT