



Level



Pressure



Flow



Temperature



Liquid  
Analysis



Registration



Systems  
Components



Services



Solutions

## Technical Information

# Flowfit CCA250

Flow assembly for chlorine and pH/ORP sensors



### Application

The flow assembly CCA250 has been specially designed to hold the chlorine resp. chlorine dioxide sensors CCS120, CCS140, CCS141, CCS240, CCS241 or CCS142D. Additionally there are two mounting positions for sensors with Pg 13.5 thread and 120 mm (4.72 inch) installation length, e.g. pH or ORP sensors.

Main areas of application are:

- Drinking water
- Washwater
- Process applications
- Swimming pool water

### Your benefits

- Needle valve to adjust the flow and flow meter for optical control
- Inductive proximity switch in combination with Liquisys M CCM223/253: a "Flow alarm" can be activated
- Potential matching pin for pH measurement
- Cap screwed from below allows calibration of the pH and ORP sensors without sensor removal

## Function and system design

### Measuring system

A complete measuring system comprises:

- Flowfit CCA250
- Chlorine sensor, e.g. CCS142D
- Measuring cable, e.g. CYK10
- Transmitter, e.g. Liquiline M

Optional:

- up to two pH sensors, e.g. Orbisint CPS11D
- Junction box for cable extension, e.g. RM junction box

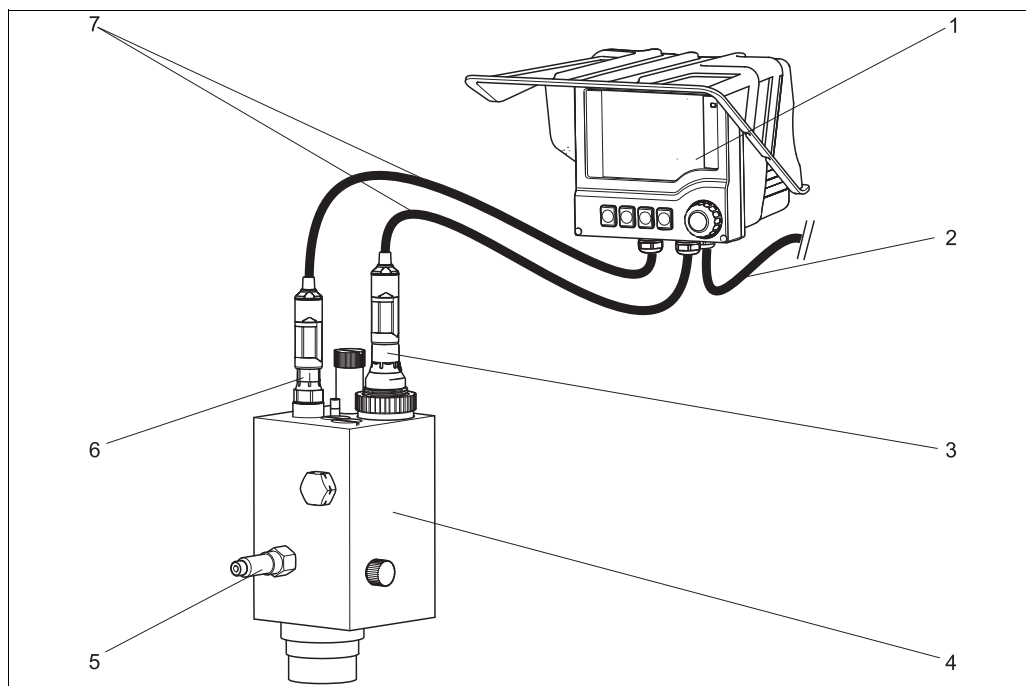



Fig. 1: Measuring system

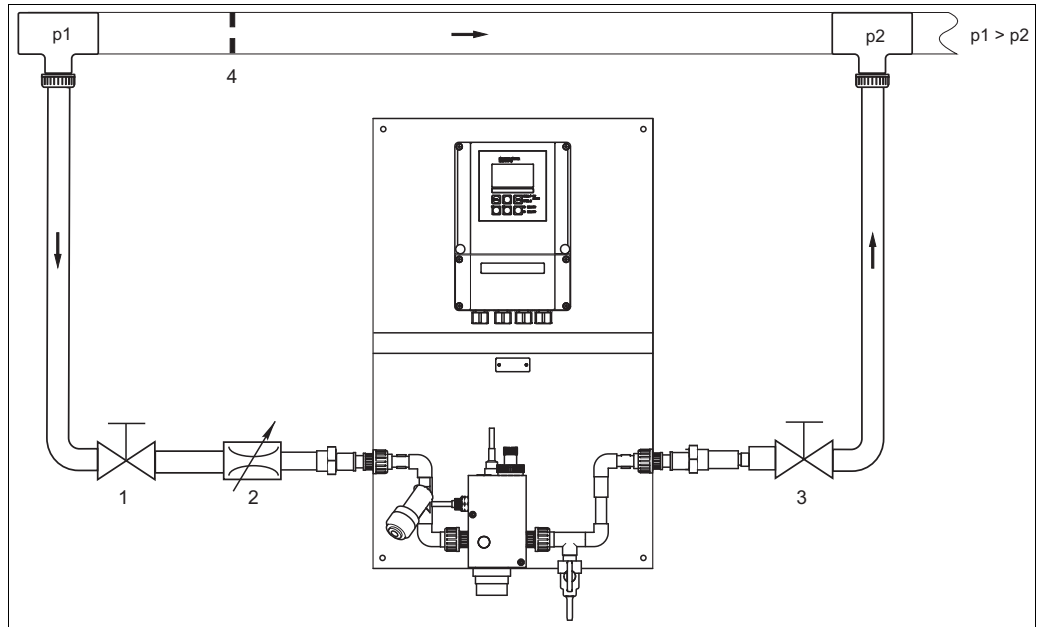
- 1 Transmitter Liquiline M CM44 with weather protection cover
- 2 Supply line of the transmitter
- 3 Chlorine sensor CCS142D
- 4 Flowfit CCA250
- 5 Assembly inlet (outlet at backside, not to be seen in figure)
- 6 pH-Sensor
- 7 Measuring cable CYK10

## Installation

### Installation instructions

#### Bypass operation

To achieve a flow through the bypass, pressure  $p_1$  has to be higher than pressure  $p_2$ . Therefore, you have to install an orifice plate or a throttle valve in the main pipe ( $\rightarrow$  , pos. 4).



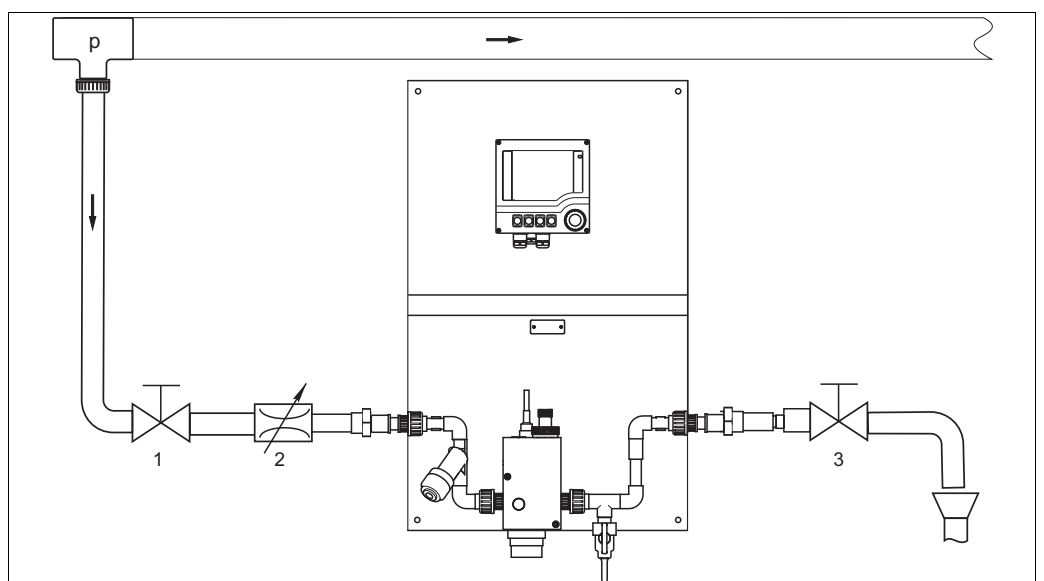
Installation example with bypass and orifice plate in the main pipe

- 1 Stop valve (to be provided by customer)
- 2 Pressure reducer (if  $p_1 > 4 \text{ bar (58 psi)}$ ) (to be provided by customer)
- 3 Stop valve (to be provided by customer)
- 4 Orifice plate in the main pipe (to be provided by customer)

#### Caution!

$p_2$  must not exceed the permissible operating pressure of the assembly of 4 bar (58 psi).

#### Open outlet operation



Installation example with open outlet

- 1 Stop valve (to be provided by customer)
- 2 Pressure reducer (if  $p > 4 \text{ bar (58 psi)}$ ) (to be provided by customer)
- 3 Stop valve (to be provided by customer)

Environment

Ambient temperature range	0 to 50 °C (32 to 120 °F)
Storage temperature	0 to 50 °C (32 to 120 °F)

Process

Process temperature range	0 to 45 °C (32 to 110 °F), non-freezing
Process pressure	max. medium pressure: 4 bar (58 psi) at 40 °C (104 °F)

Pressure-Temperature diagram

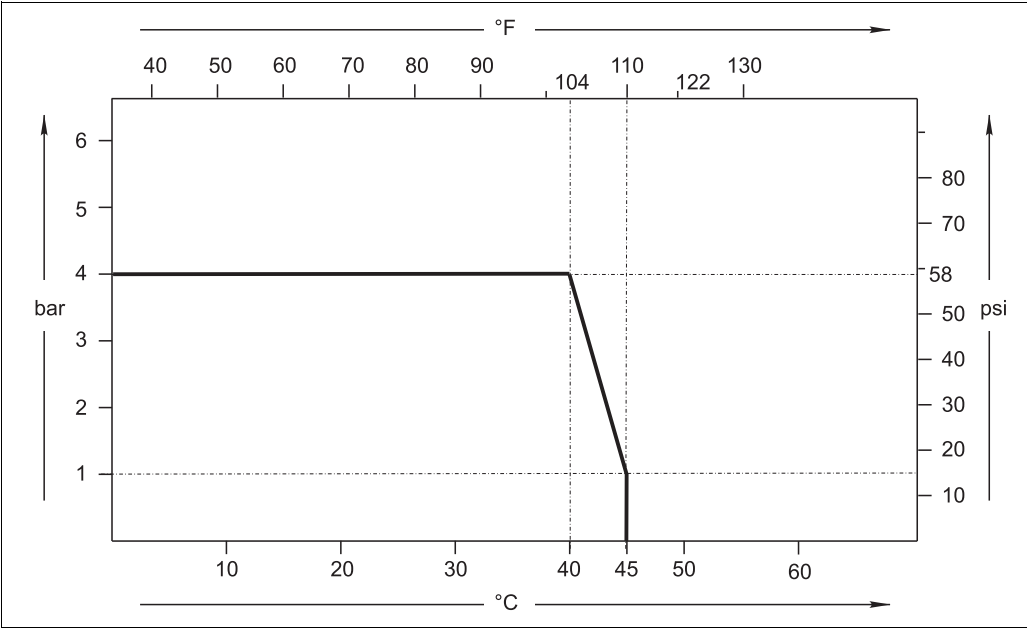


Fig. 2: Temperature-Pressure diagram

Flow	optimum 30 l/h (7.9 gal/h) 30 to 120 l/h (7.9 to 31.7 gal/h), adjustable
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# Mechanical construction

## Design, dimensions

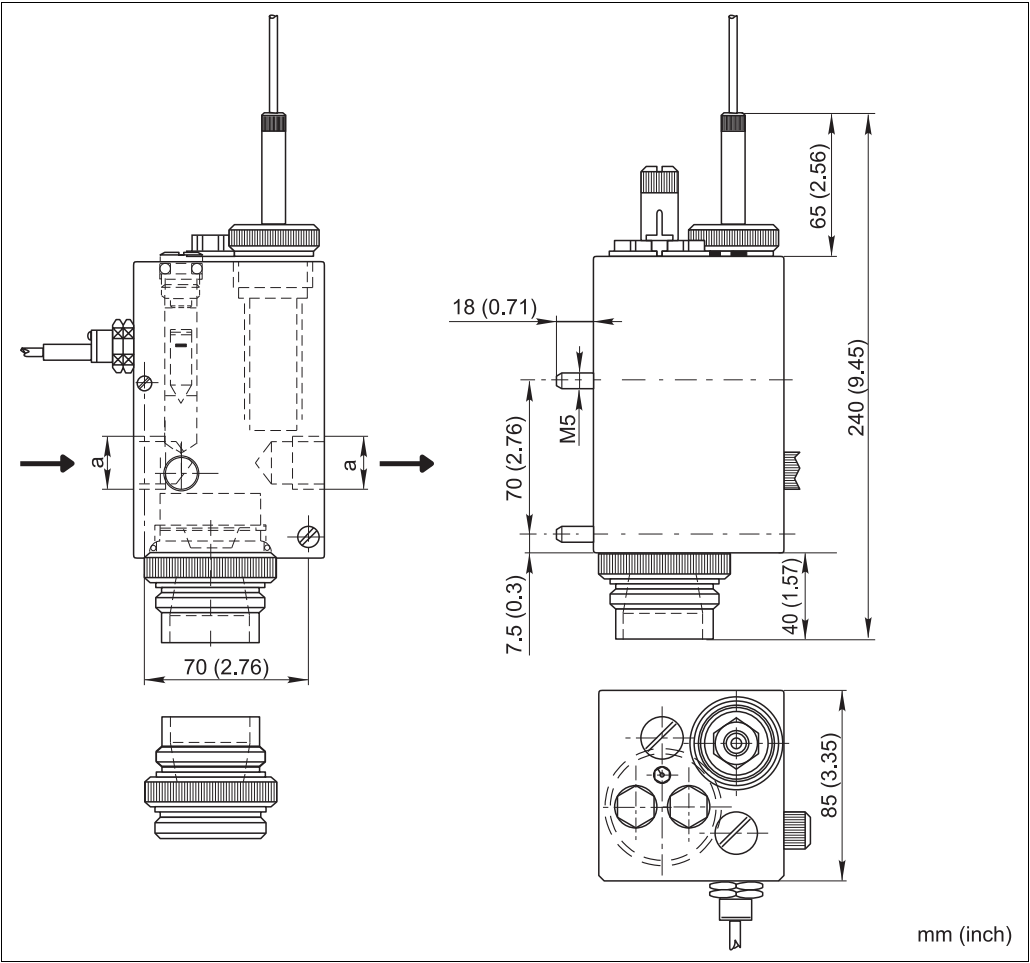


Fig. 3: Dimensions  
a depending on version: G1/2, NPT 1/2" or NPT 1/4"

Weight	0.5 to 0.8 kg (1.1 to 1.8 lbs), depending on process connection
Materials	In contact with medium: <ul style="list-style-type: none"><li>■ Assembly body: PMMA</li><li>■ Mounting parts: PVC, stainless steel 1.4571 (AISI 316 Ti), EPDM</li></ul>
Process connection	G1/2, NPT 1/2" or NPT 1/4"
Suitable sensors	<ul style="list-style-type: none"><li>■ Chlorine sensors: Chlorine or Chlorine dioxide sensors with Ø25 mm (0.98 inch) and shaft length up to 80 mm (3.15 inch)</li><li>■ pH/ORP sensors: Glass electrodes with Pg 13.5 thread and shaft length 120 mm (4.72 inch)</li></ul>

## Ordering information

### Product structure

Process connection, adapter		
A	G1/2, none	
B	G1/2, 2x NV 1/2"	
C	G1/2, 2x D 6/12	
D	G1/2, D 6/12 + D 16	
M	NPT 1/2", none	
Q	NPT 1/4", none	

Proximity switch		
0	none	
1	with inductive proximity switch	

CCA250-			complete order code
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### Scope of delivery

The scope of delivery comprises:

- Flowfit assembly (ordered version)
- a PML adapter
- Operating Instructions (English)

## Accessories

### Note!

In the following sections, you find the accessories available at the time of issue of this documentation. For information on accessories that are not listed here, please contact your local service.

### Accessories kits

#### For process connection G1/2 only!

NV 1/2

- 2 PVC nipples for connection to PVC pipework
- for pipes with OD 16 mm (0.63 inch)
- order no. 50003228

SV 1/2

- 2 PVC nipples
- different adapters for hose connection
  - with Ø 6/12 mm (0.24/0.47 inch) inlet and Ø 16 mm (0.63 inch) outlet
  - order no. 50003232
- identical adapters
  - for hose connection with Ø 6/12 mm (0.24/0.47 inch) inlet and outlet
  - order no. 50003230

### Sensors

CCS120

- Membrane covered amperometric sensor for total chlorine
- Measuring range 0.1 to 10 mg/l
- Ordering acc. to product structure, see Technical Information (TI388C/07/en)

CCS140

- Membrane covered amperometric sensor for free chlorine
- Measuring range 0.05 to 20 mg/l
- Ordering acc. to product structure, see Technical Information (TI058C/07/en)

CCS141

- Membrane covered amperometric trace sensor for free chlorine
- Measuring range 0.01 to 5 mg/l
- Ordering acc. to product structure, see Technical Information (TI058C/07/en)

CCS142D

- Membrane covered amperometric sensor for free chlorine
- Memosens technology
- Measuring range 0.01 to 20 mg/l
- Ordering acc. to product structure, see Technical Information (TI419C/07/en)

CCS240

- Membrane covered amperometric sensor for chlorine dioxide
- Measuring range 0.05 to 20 mg/l
- Ordering acc. to product structure, see Technical Information (TI114C/07/en)

CCS241

- Membrane covered amperometric trace sensor for chlorine dioxide
- Measuring range 0.01 to 5 mg/l
- Ordering acc. to product structure, see Technical Information (TI114C/07/en)

Orbisint CPS11/11D

- pH electrode for process applications with dirt-repellent PTFE diaphragm
- Optional Memosens technology (CPS11D)
- Ordering acc. to product structure, see Technical Information (TI028C/07/en)

Ceragel CPS71/CPS71D

- pH electrode with double junction reference system and integrated bridge electrolyte
- Optional with Memosens technology (CPS71D)
- Ordering acc. to product structure, see Technical Information (TI245C/07/en)

Ceragel CPS72/CPS72D

- Redox sensor with double junction reference system and integrated bridge electrolyte
- Optional with Memosens technology (CPS72D)
- Ordering acc. to product structure, see Technical Information (TI374C/07/de)

Ceratex CPS31

- pH electrode especially suited for swimming pools, with 3 ceramic diaphragms
- Ordering according to product structure, see Technical Information (TI030C/07/en)

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