



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

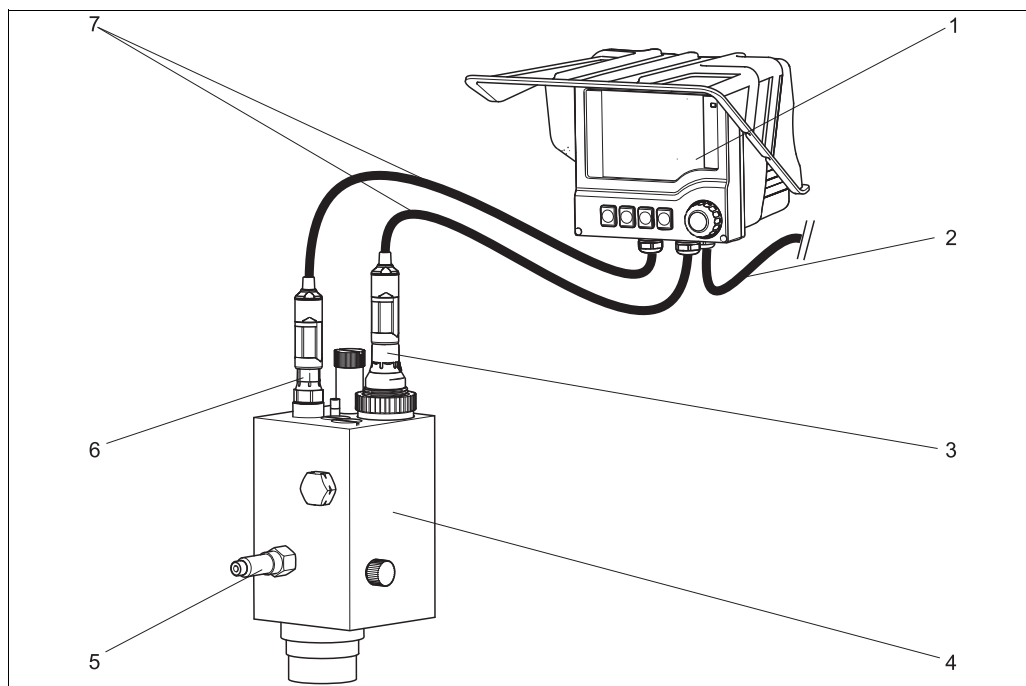



Fig. 1: Measuring system

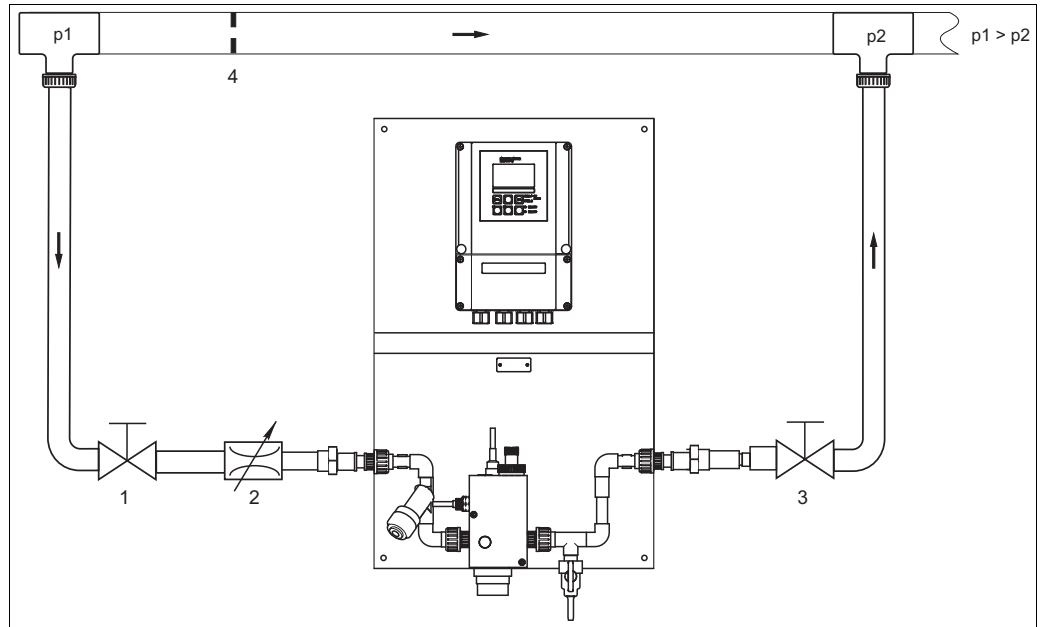
- 1 Transmitter Liquiline M CM44 with weather protection cover
- 2 Supply line of the transmitter
- 3 Chlorine sensor CCS142D
- 4 Flowfit CCA250
- 5 Assembly inlet (outlet at backside, not to be seen in figure)
- 6 pH-Sensor
- 7 Measuring cable CYK10

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).



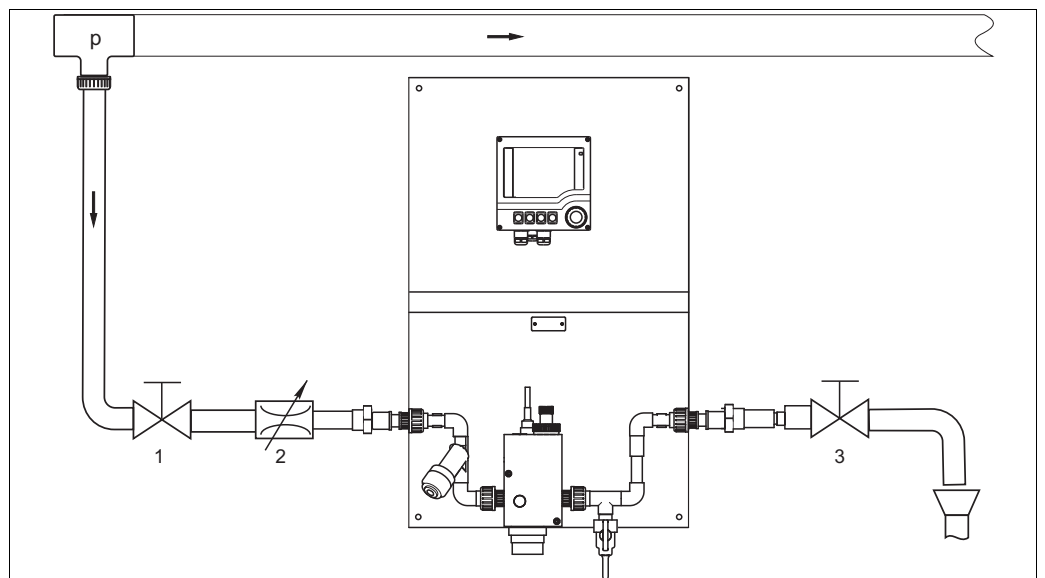
Installation example with bypass and orifice plate in the main pipe

- 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

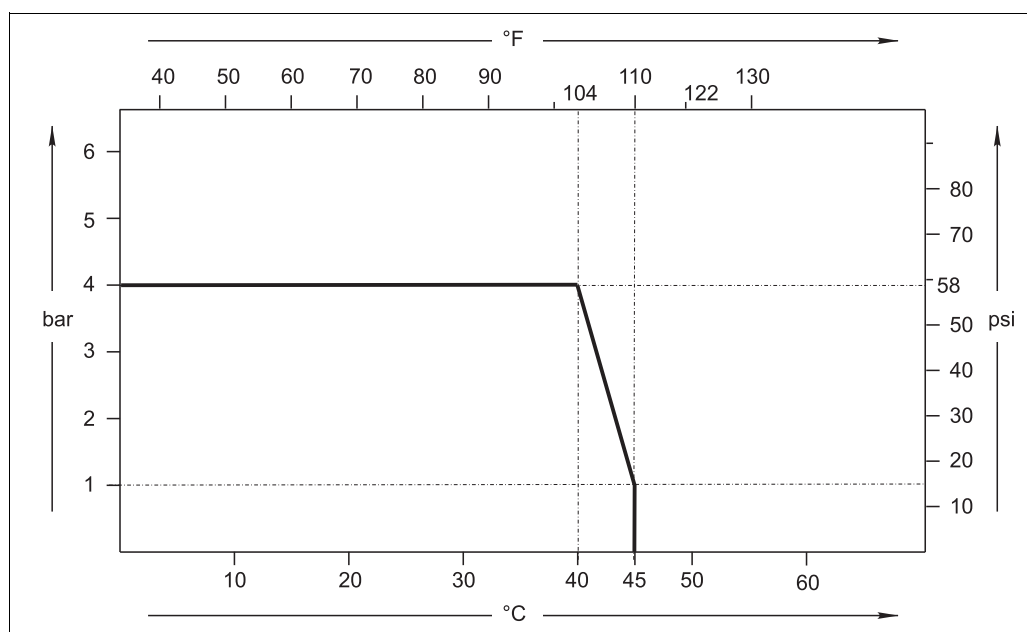


Fig. 2: Temperature-Pressure diagram

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

Mechanical construction

Design, dimensions

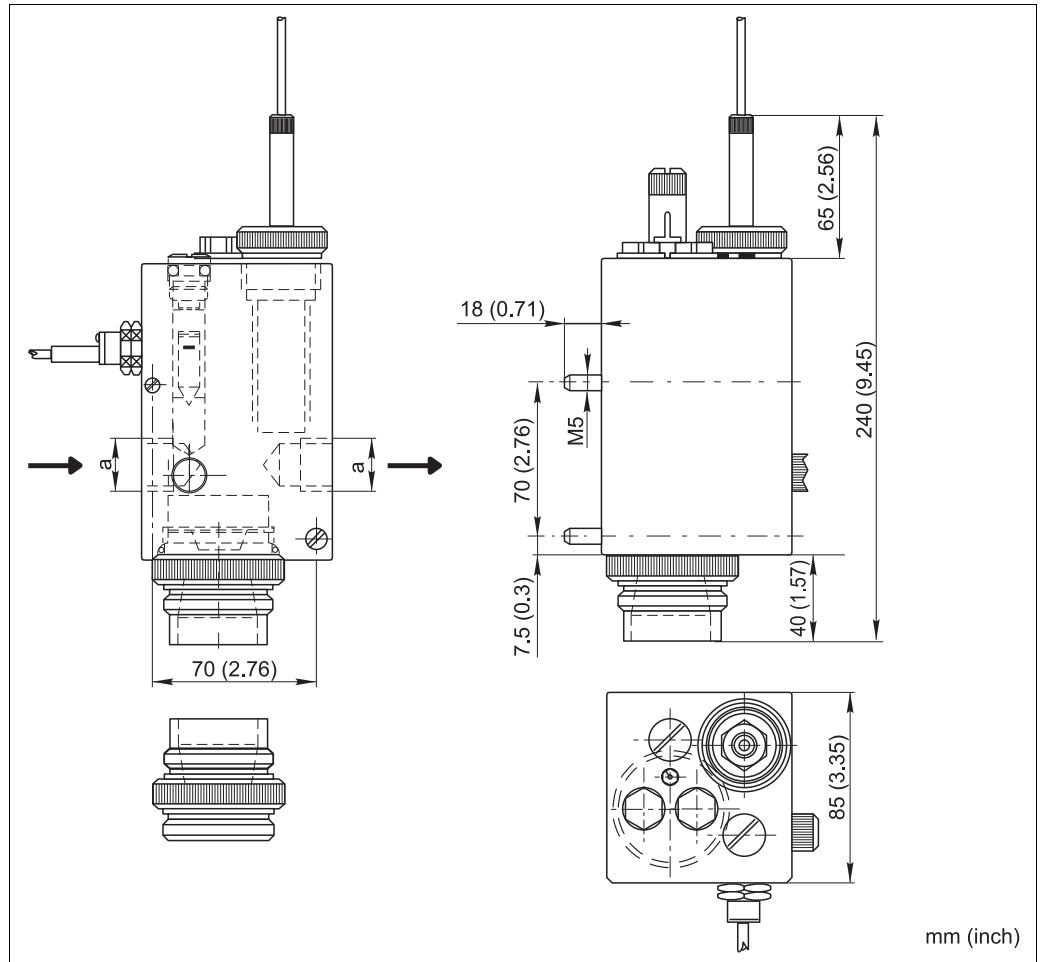


Fig. 3: Dimensions

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:

- Assembly body: PMMA
- Mounting parts: PVC, stainless steel 1.4571 (AISI 316 Ti), EPDM

Process connection G1/2, NPT 1/2" or NPT 1/4"

Suitable sensors

- Chlorine sensors: Chlorine or Chlorine dioxide sensors with Ø25 mm (0.98 inch) and shaft length up to 80 mm (3.15 inch)
- pH/ORP sensors: Glass electrodes with Pg 13.5 thread and shaft length 120 mm (4.72 inch)

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
---------	--	--	---------------------

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)

Instruments International

Endress+Hauser
Instruments International AG
Kaegenstrasse 2
4153 Reinach
Switzerland

Tel.+41 61 715 81 00
Fax+41 61 715 25 00
www.endress.com
info@ii.endress.com

Endress+Hauser 
People for Process Automation