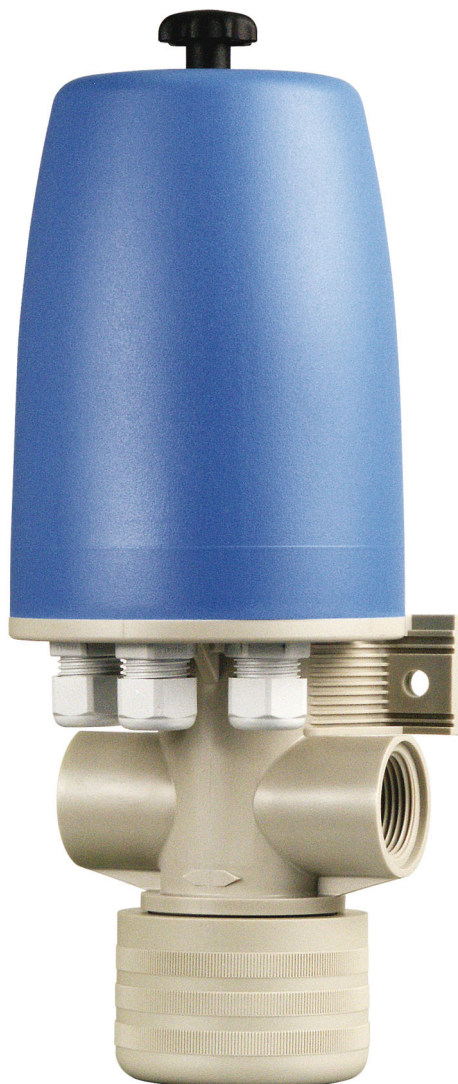## Technical Information

Flowfit CPA250

Flow assembly for pH and ORP sensors

Application

The CPA250 assembly is totally made of corrosion resistant plastic. It is designed for pipeline installation of Pg 13.5 pH or ORP sensors with installation length 120 mm (4.72 inch). Inlet and outlet of the fluid lie on one axis. Due to especially designed internal fluid deviation and siphon, the sensors are kept wet even when the flow is interrupted.

Main areas of application are:
- Water treatment
- Drinking water
- Process applications
- Cooling water cycle

Your benefits

- Mounting places for max. three analog or digital sensors with Pg 13.5 thread (pH, ORP, temperature)
- Threaded cap:
  – easy installation and removal of the sensors
  – protection of the sensor connection compartment
- Potential matching pin selectable:
  – stainless steel 1.4571 (AISI 316Ti) or titane
  – no potential matching pin for Memosens sensors
- Extension options:
  – Connection to the electrolyte vessel CPY7
  – Adaption of the Chemoclean system
- Economic flow assembly concept for in-line installation
- Easy calibration by removable calibration vessel

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Function and system design

Measuring system

A complete measuring system comprises:
- Flowfit CPA250
- pH or ORP sensor, e.g. CPS71D
- Measuring cable, e.g. CYK10
- Transmitter, e.g. Liquiline M CM42

Optional:
- up to two more pH/ORP sensors or single electrodes or temperature sensors
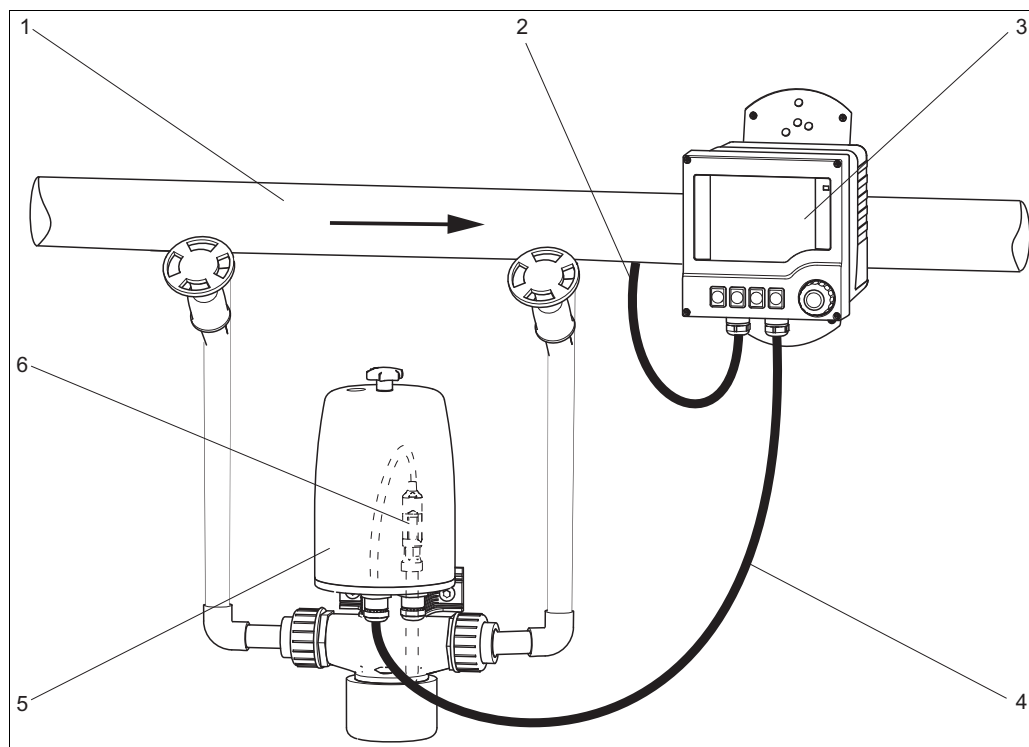- Junction box for cable extension, e.g. RM junction box

Fig. 1:   Measuring system (bypass installation)

1   Process line with bypass and valves
2   Supply line of the transmitter
3   Transmitter Liquiline M CM42
4   Measuring cable CYK10
5   Flowfit CPA250
6   pH sensor CPS71D

Installation

Installation instructions

To get a flow through the by-pass, pressure p1 has to be higher than pressure p2. Therefore, you have to install an aperture or a throttle in the main conduit ($\to$ 2).
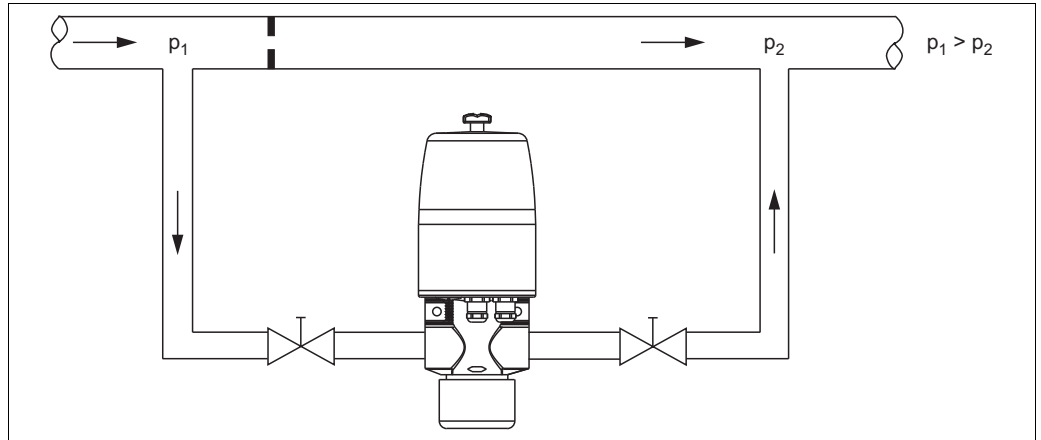

Fig. 2:   *Installation example with by-pass and aperture in the main conduit*

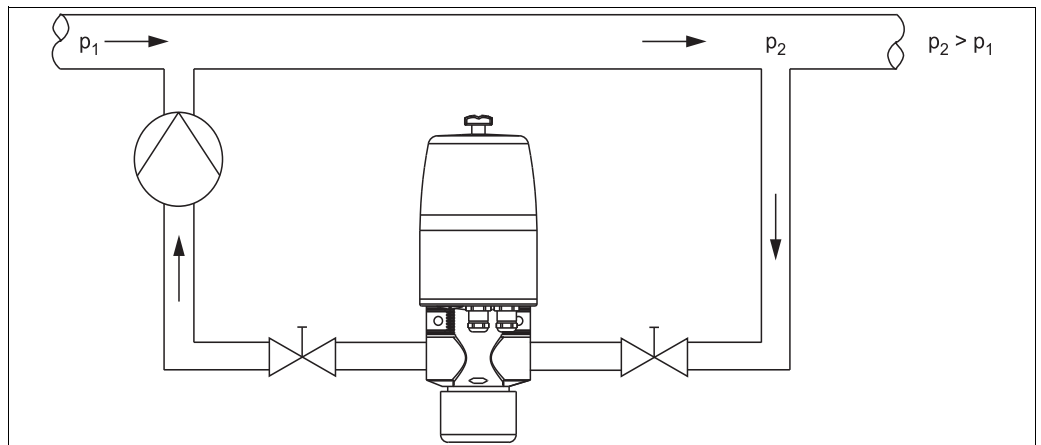Alternatively, you can install a booster pump in the bypass conduit to produce the required pressure ($\to$ 3).

Fig. 3:   *Installation example with open outlet*

In case of an open outlet installation, no pressure increasing procedure is needed (→ ▨ 4).

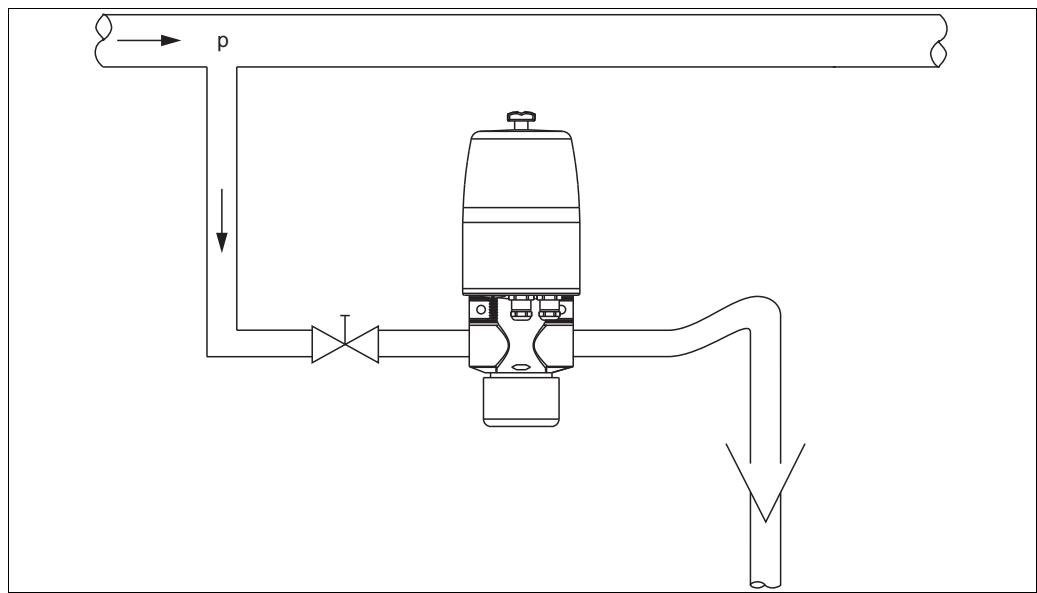*Fig. 4:   Installation example with open outlet*

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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 80 °C (32 to 170 °F, 6 bar (87 psi) at 20 °C (68 °F) and pressureless at 80 °C (176 °F)
Process pressure	max. 6 bar (87 psi) at 20 °C (68 °F)

Pressure–Temperature diagram
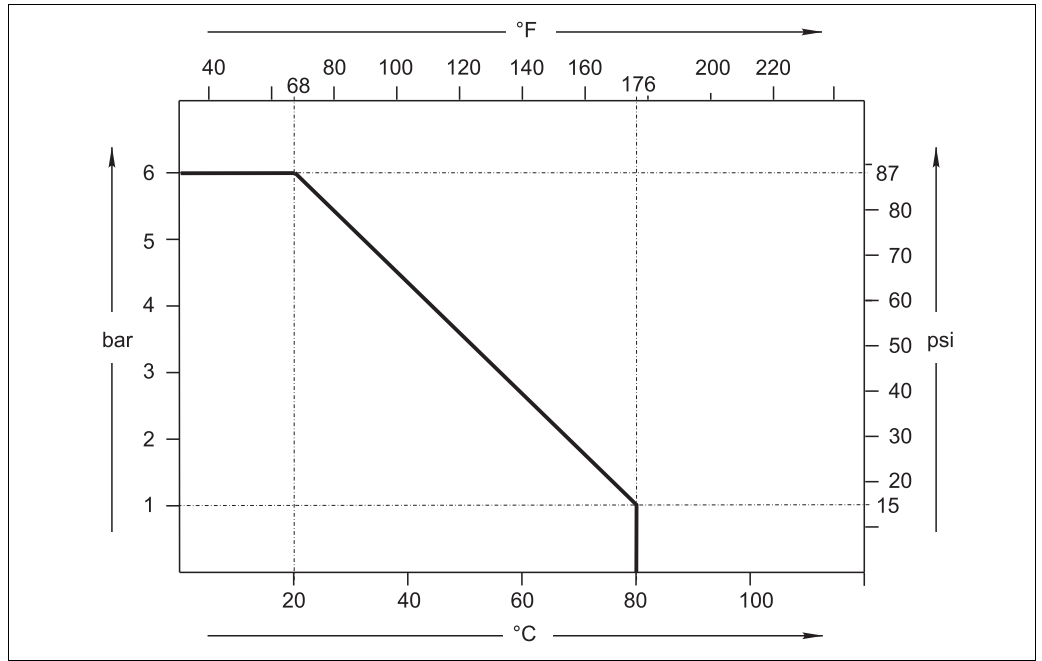

Fig. 5:   Temperature-Pressure diagram

Mechanical construction

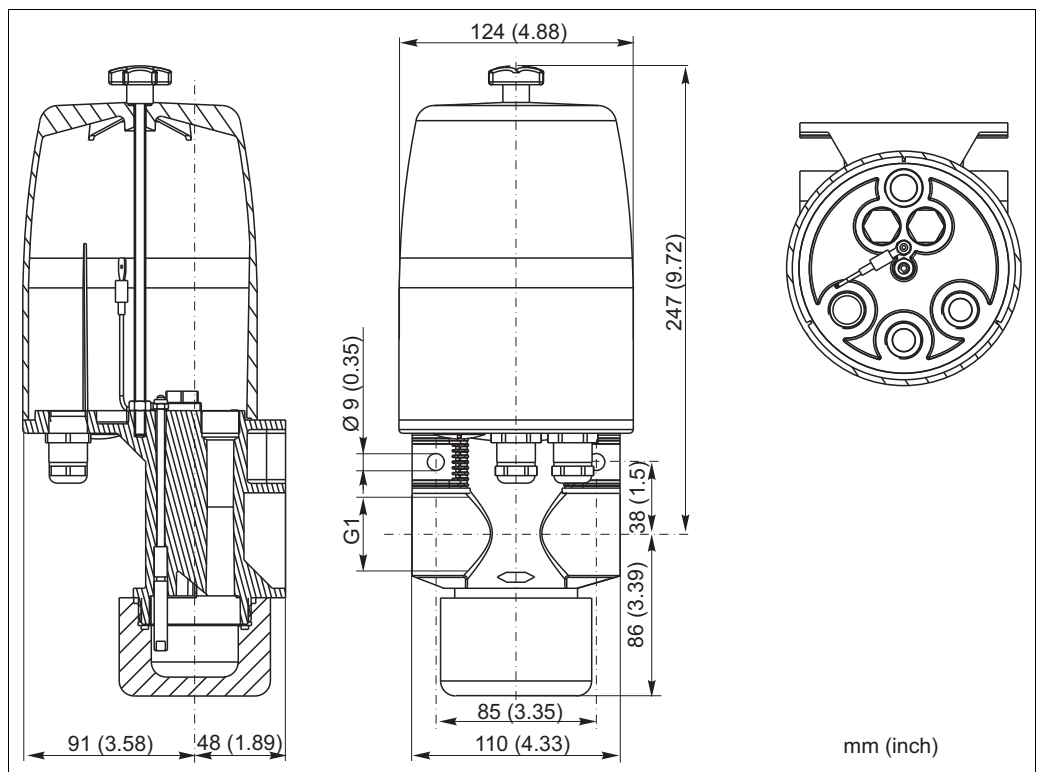**Design, dimensions**

Fig. 6:   Dimensions

Weight   0.5 to 0.8 kg (1.1 to 1.8 lbs), depending on process connection

Materials	In contact with medium: ■ Assembly body: PP-H ■ O-rings: Viton/FPM Potential matching pin: ■ CPA250-A00/01/02/03/30: titane or stainless steel ■ CPA250-A04/05: no potential matching pin
Process connection	depending on the version: G1, NPT 1"
Suitable sensors	Glass electrodes or ISFET sensors, analog or digital with Memosens technology, with Pg 13.5 thread and shaft length 120 mm (4.72 inch), with or without liquid KCl reference electrode

Ordering information

Product structure

		Design	
	A	Mounting places for 3 sensors	
		Process connection, Material, Potential matching pin (PMP)	
	00	G1, PP, PMP 1.4571 (316 Ti)	
	01	G1, PP, PMP titanium	
	02	NPT 1", PP, PMP 1.4571 (316 Ti)	
	03	NPT 1", PP, PMP titanium	
	04	NPT 1", PP, no PMP	
	05	G1, PP, no PMP	
	30	G1, PP LABS free, PMP titanium	
CPA250-			complete order code

Special version

CPA250
■ Material: PP
■ Process connection: NPT ½"
■ Modification number: C-PA050720-41

Note!
Use the product root CPA240 to find stainless steel versions.
Request a technical special product for special material versions.

Scope of delivery

The scope of delivery comprises:
■ Flowfit assembly (ordered version)
■ 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	■ NP
	  – 2 nipples for adaption of CPA250–A* to PP pipe without thread
	  – OD 32 mm (1.26 inch)
	  – order no. 50003450
	■ NV
	  – Adapter for adaption of CPA250–A* to PVC pipe
	  – OD 32 mm (1.26 inch), order no. 50003454
	  – OD 25 mm (0.98 inch), order no. 50003456
	■ BF
	  – Wall mounting kit for CPA250–A*
	  – 2 long V4A screws, incl. screw anchors
	  – order no. 50001130

Sensors	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)
Cleaning systems	Chemoclean CPR31 / CPR3 ■ Automatic spray cleaning system for sensors ■ CPR31 is installed in one of the three sensor mounting places of the assembly ■ order no. on request **Note!** When installing CPR31 remove the metal pin and align the spray nozzles. Chemoclean ■ Injector CYR10 and program sequencer CYR20 ■ Ordering acc. to product structure, see Technical Information (TI046C/07/en)

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