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Technical Information
Flowfit CUA252
Flow assembly for turbidity sensor CUS52D

Application
The CUA252 flow assembly is designed for the installation of turbidity sensor CUS52D. It can be used anywhere medium is conducted in pipelines or, following sampling, held in closed pipes.

Its main areas of application are:
- Turbidity measurement in all process steps
- Final turbidity measurement in the outlet of water works
- Turbidity measurement in the inlet of water works
- Turbidity measurement during filter inspection and filter backwashing
- Turbidity measurement in drinking water distribution networks

Your benefits
- Easy wall or pipe mounting
- Variable mounting
- Vertical installation allows self-venting
- Suitable for use in drinking water owing to PE100 material

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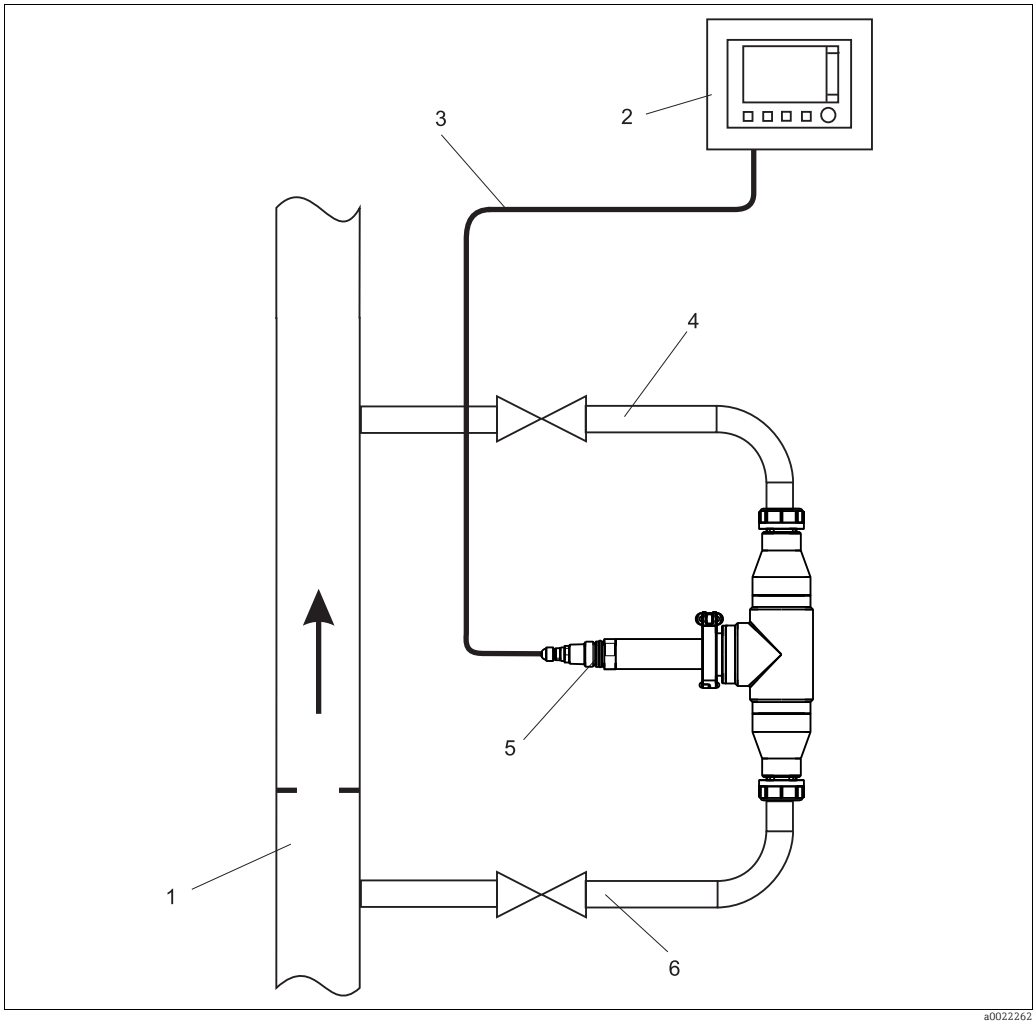
Function and system design

Measuring arrangement

A complete measuring system comprises:
- Flow assembly Flowfit CUA252
- Turbimax CUS52D sensor
- Transmitter, e.g. Liquiline CM442
- Measuring cable



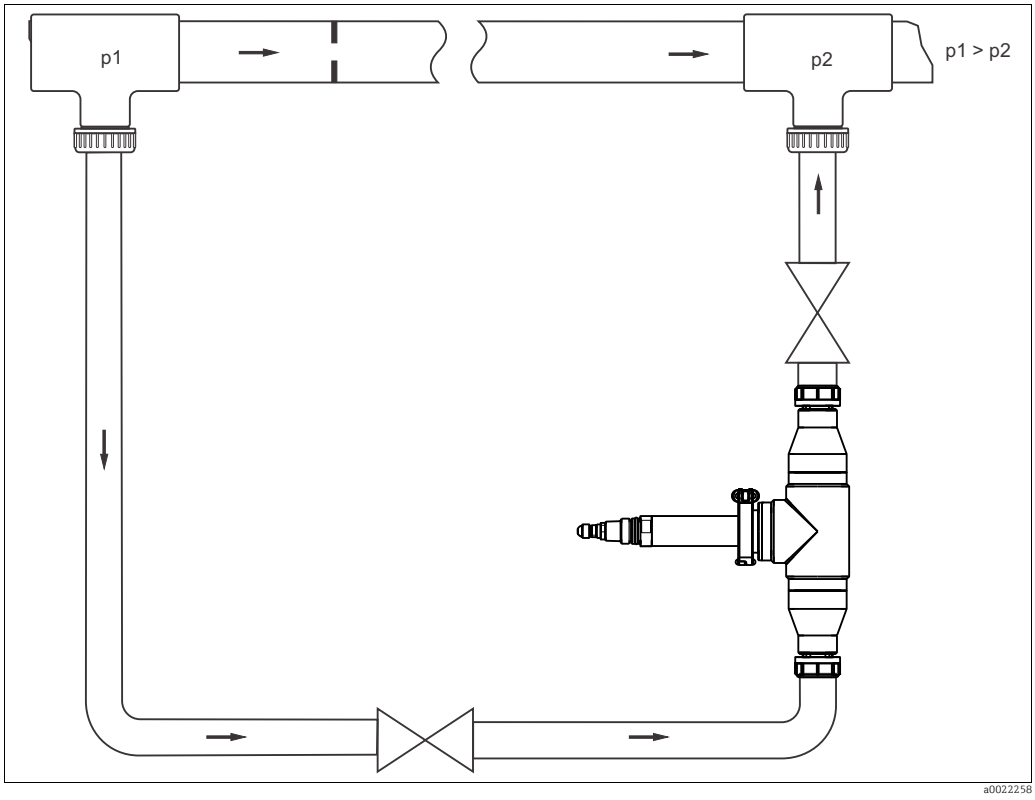
Measuring system (example)

1 Process pipe
2 Liquiline CM442 transmitter
3 Measuring cable
4 Return line with shutoff valve
5 Flow assembly CUA252 with sensor CUS52D
6 Inlet with shutoff valve

Installation

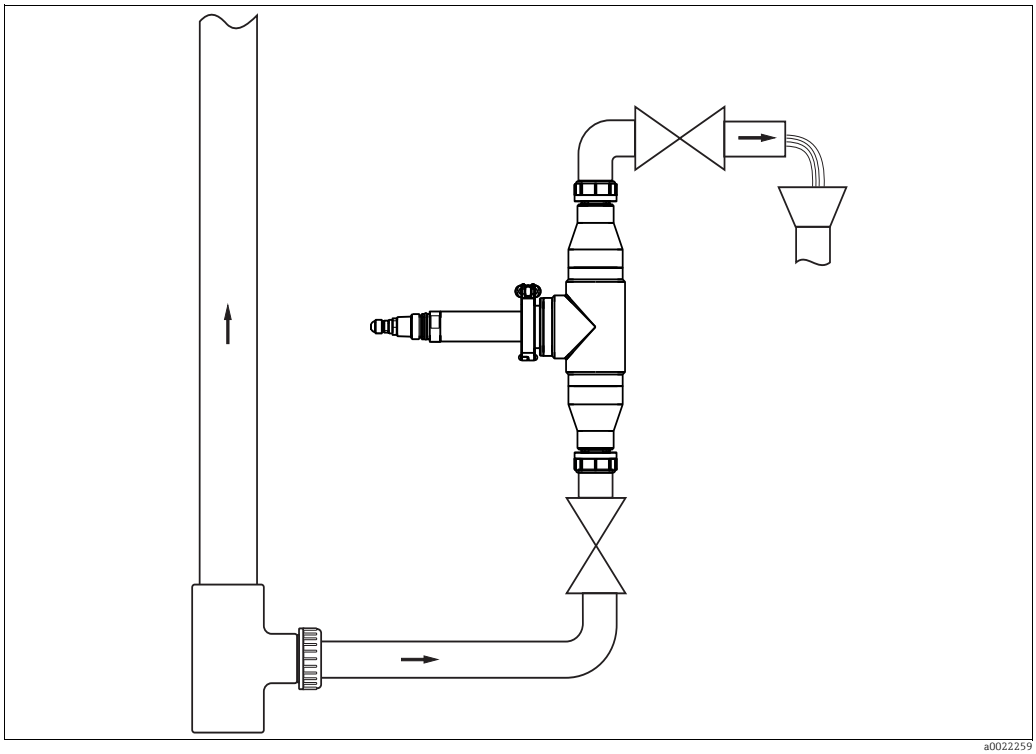
Installation instructions

To ensure that medium flows through the assembly in a bypass configuration, the pressure p1 must be greater than the pressure p2. This is achieved by installing an orifice plate in the main pipe.



Connection example with a bypass and an orifice plate in the main pipe (supply from below)

No measures to increase pressure are required for branch pipes that branch off from the main pipe.



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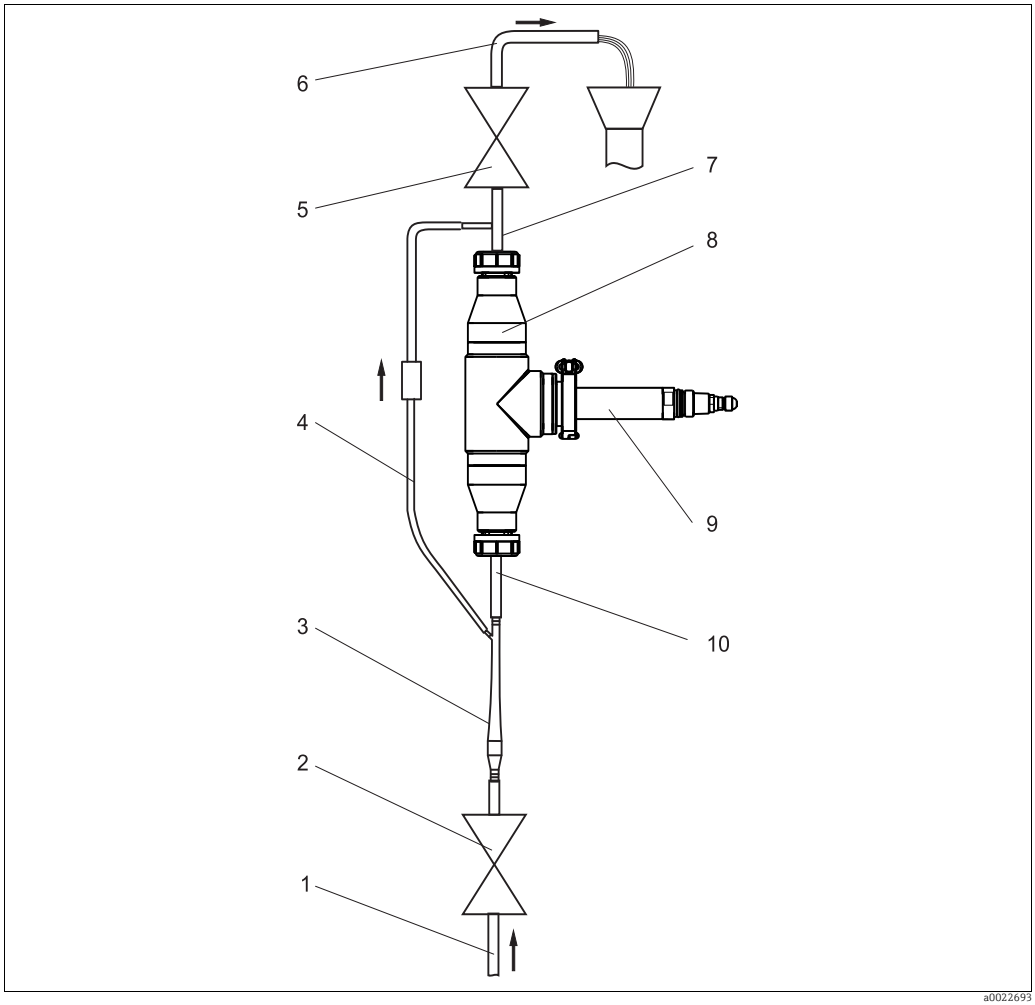
Connection example with an open outlet

The inlet and outlet connection of the flow assembly are always identical, the system is symmetrical.
Install the flow assembly vertically.
The supply must be connected at the bottom (upward flow in the pipe).
Avoid buckles and loops in the hose system.

Pay attention to the installation instructions (flow direction) for the sensor.

Many fluids tend to develop gas bubbles in a depressurized state.
Operating the flow assembly under pressure (adjustable valve after the flow assembly) prevents this behavior in many cases.



Connection example with bubble trap

1 Supply from below
2 Shutoff valve
3 Bubble trap
4 Bubble trap venting (included in the delivery)
5 Shutoff valve (throttle to increase pressure)
6 Outlet
7 Transition to D 12 with connection for vent line (included in the delivery)
8 CUA252 flow assembly
9 CUS52D turbidity sensor
10 Transition to D 12

The lost water resulting from the bubble trap is not suitable for feedback into the process.

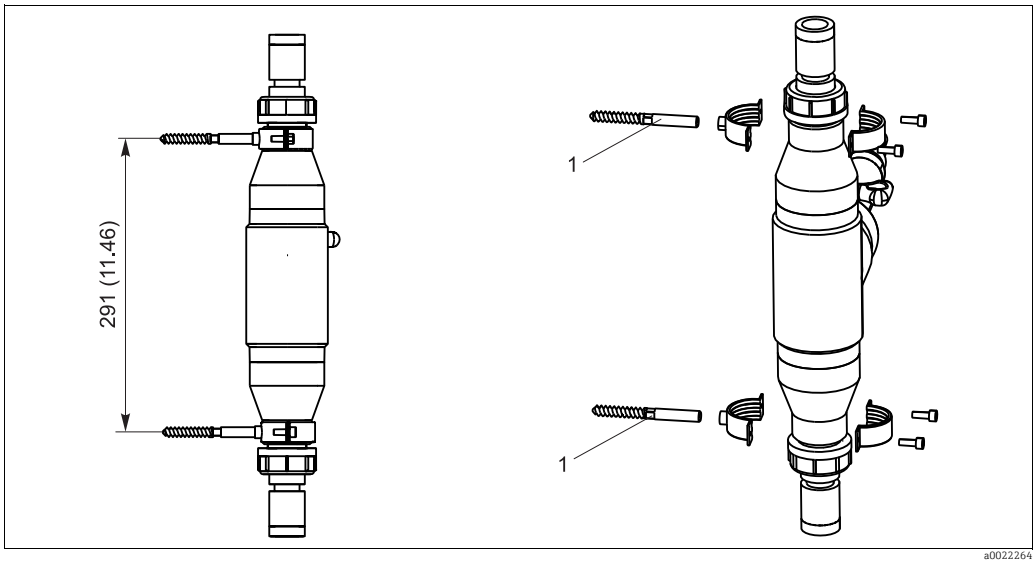
For the hose system, use PVC hoses with an internal diameter of 12 mm (3/8").
Secure the hose system with worm drive hose clips (not included in the delivery).

The inlet and outlet connection of the flow assembly are always identical, the system is symmetrical.
Install the flow assembly vertically.
The supply must be connected at the bottom (upward flow in the pipe).
Avoid buckles and loops in the hose system.

Pay attention to the installation instructions (flow direction) for the sensor.

Observe the maximum pressure and maximum temperature when operating the bubble trap.

Wall holder unit



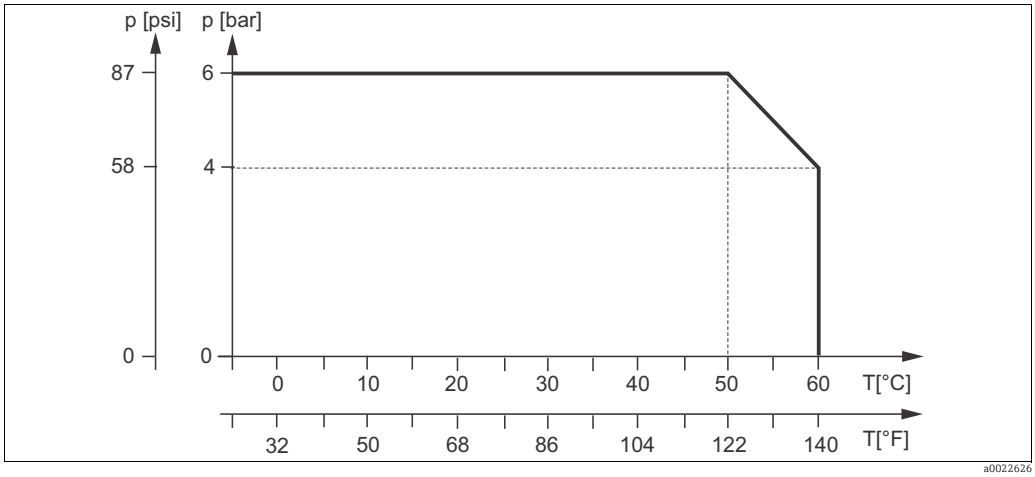
Wall holder unit

1 Hanger bolt STST 10x60 (included in the wall mounting kit)

Environment

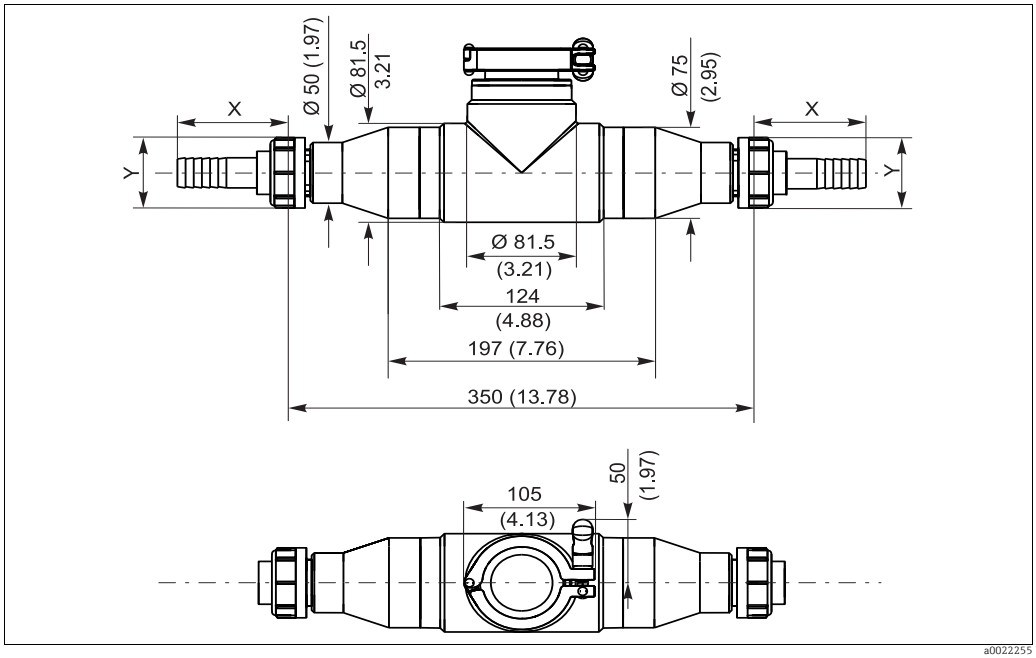
Ambient temperature range	0 to 55 °C (32 to 131 °F)
Storage temperature	0 to 60 °C (32 to 140 °F), in the original packaging

Process

Process temperature range	0 to 60 °C (32 to 140 °F)
Process pressure range	0 to 6 bar (0 to 87 psi)
Pressure-temperature ratings	 *Pressure-temperature ratings*
Flow velocity	Max. 2 m/s (6.6 ft/s) for low-viscosity media in pipe DN 50
Flow	Recommended flow: 60 l/h (15.84 gal/hr) Range: 10 to 100 l/h (2.64 to 26.4 gal/hr) when operating with lost sample (lost water)
Pressure loss	< 0.05 bar (0.7 psi) for flow rates up to 100 l/h (26.4 gal/hr)

Mechanical construction

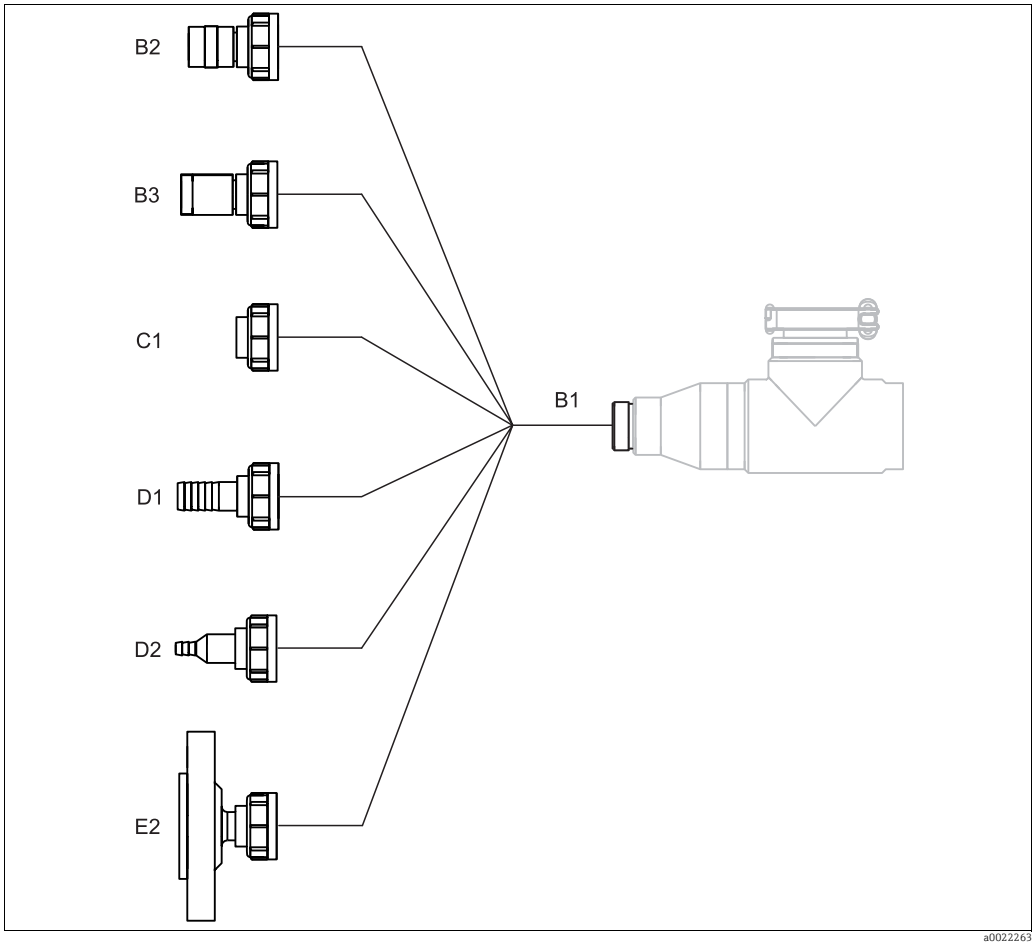
Dimensions



Dimensions in mm (inch)

Connections	**NPT ¾"**	**Rp ¾**	**Glue-in port D25**	**ANSI 2"**	**Hose D25**	**Hose D12**	**G1¼**
X mm(inch)	70 (2.76)	64 (2.52)	22 (0.87)	71 (2.80)	74 (2.91)	74 (2.91)	0
Y mm(inch)	Ø 58(2.28)	Ø 58(2.28)	Ø 58(2.28)	Ø 152(5.98)	Ø 58(2.28)	Ø 58(2.28)	Ø 58(2.28)

Process connections



Process connections

B1 External thread G1¼ (standard)
B2 Internal thread Rp ¾"
B3 Internal thread NPT ¾"
C1 Glue-in port D 25
D1 Hose D 25
D2 Hose D 12
E2 Flange ANSI 2"

Weight

1.17 kg (2.58 lbs) without process connection

Materials

Assembly housing:	PE
Seals:	EPDM
Flange:	PP-GF
Dummy cover:	Stainless steel 1.4404 (AISI 316 L)
Bubble trap:	Polycarbonate
Process connections:	PE
Bubble trap process connection:	PVC

Ordering information

Product page

You can create a valid and complete order code online using the Configurator tool:

Enter the following address in your browser to access the product page:
www.products.endress.com/cua252

Product Configurator

You can find the navigation area on the right of the product page.

1. Under "Device support", click "Configure the selected product".
   ↳ The Configurator opens in a new window.
2. Configure the device as per your requirements by selecting all the options.
   ↳ In this way, you receive a valid and complete order code.
3. Export the order code as a PDF file or Excel file. To do so, click the appropriate button at the top of the window.

Scope of delivery

The scope of delivery comprises:
- 1 Flowfit CUA252 flow assembly in the version ordered
- 1 locking clamp and clamp seal
- 2 process connections in the version ordered
- 1 Set of Operating Instructions BA01281C/07/EN

Accessories

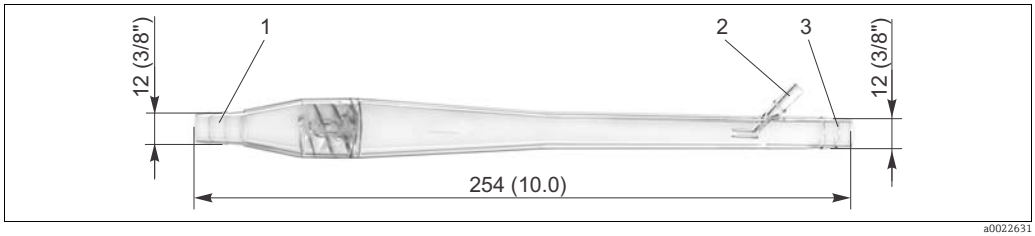
The most important accessories available at the time this document went to print are listed below. Contact your Service Department or sales center for accessories that are not listed here.

Connection accessories

Description	Order number
Dummy cover for clamp connection, 1 pc	71242180
Adapter, internal thread, RP ¾", material: PE; 1 pc	71242172
Adapter, internal thread, NPT ¾", material: PE; 1 pc	71242173
Adapter, welded connection, D 25, material: PE; 1 pc	71242174
Adapter, hose connection nipple, D 25, material: PE; 1 pc	71242175
Adapter, hose connection nipple, D 12, material: PE; 1 pc	71242176
Adapter, flange ANSI 2", 1 pc	71242177

Air trap

Bubble trap
- For sensor CUS52D
- Process pressure: up to 3 bar (43.5 psi)
- Process temperature: 0 to 50 °C (32 to 122 °F)
- Adapter to D 12 with connection for vent line (top connection on CUA252), is included in the delivery.
- Orifice plates for the following volume flow rates:
  - < 60 l/h (15.8 gal/hr)
  - 60 to 100 l/h (15.8 to 26.4 gal/hr)
  - > 100 l/h (26.4 gal/hr)
- The vent line is fitted with a PVC hose, hose check valve and a Luer lock adapter.
- Order number, suitable for assembly CUA252: 71242170
- Order number, suitable for assembly S of CUS31: 71247364

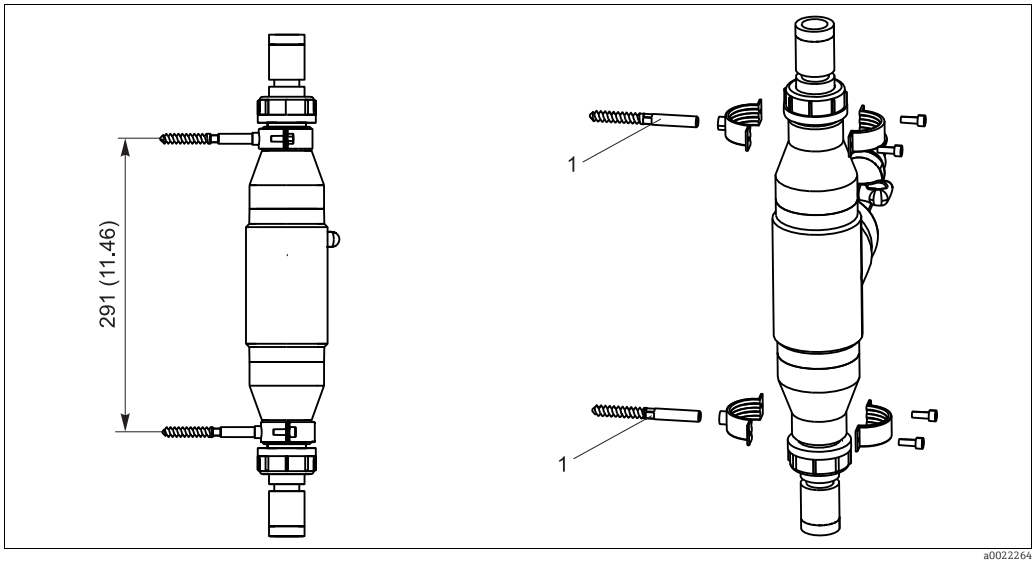


Air trap, dimensions in mm (inch)

1 Medium inlet (excluding hose system)
2 Air bubble outlet (hose system included in the delivery)
3 Medium outlet (excluding hose system)

Wall mounting kit

Wall mounting kit for CUA252
- Order number: 71242171



Wall mounting kit

1 Hanger bolt STST 10x60 mm (forms part of the delivery)

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