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Technical Information
CYR52

Ultrasonic cleaning

Application

The CYR52 ultrasonic cleaning system is used to clean turbidity sensors in liquids that are installed in pipes.

Your benefits

- Sensor remains clean at all times
- Sensor cleaned without interrupting the process
- No contamination of the medium from cleaning

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Function and system design

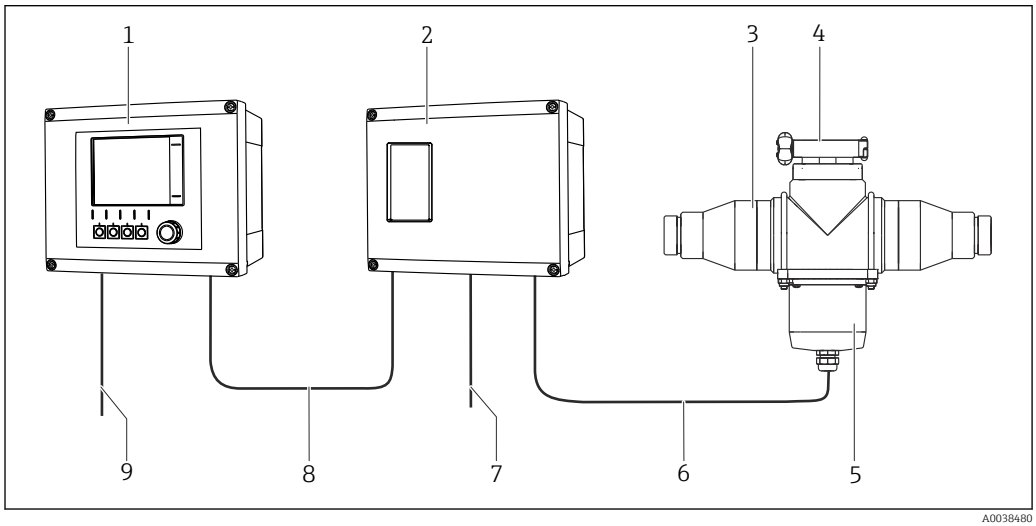
Measuring principle

In ultrasonic cleaning, the cleaning action is based on the generation of cavitation in liquid media. Contamination that has built up on the sensor is thus loosened and carried away by the flow.

The ultrasonic transducer is mounted directly on the assembly or on the piping opposite the turbidity sensor.

Measuring system

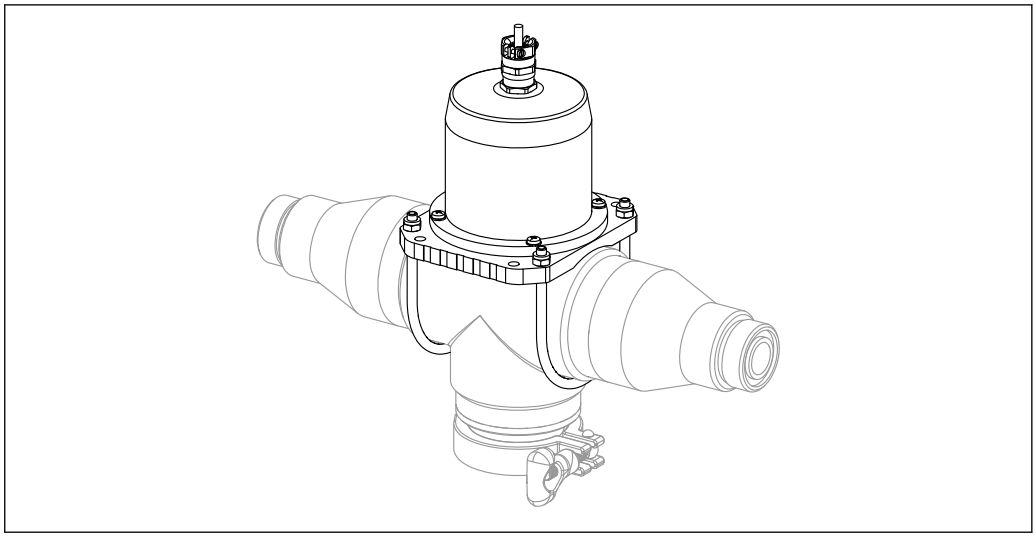
A complete measuring system comprises:
- Ultrasonic generator
- Ultrasonic transducer
- Assembly or pipe with turbidity sensor
- Liquiline CM44x transmitter



1 Ultrasonic cleaning with Flowfit CUA252 assembly

1 Liquiline CM44x transmitter
2 Ultrasonic generator
3 Flowfit CUA252 flow assembly
4 Clamp connection for turbidity sensor
5 Ultrasonic transducer
6 Power supply cable for ultrasonic transducer
7 Mains voltage cable for ultrasonic generator
8 Control cable
9 Mains voltage cable for transmitter

Ultrasonic transducer with Flowfit CUA252 flow assembly



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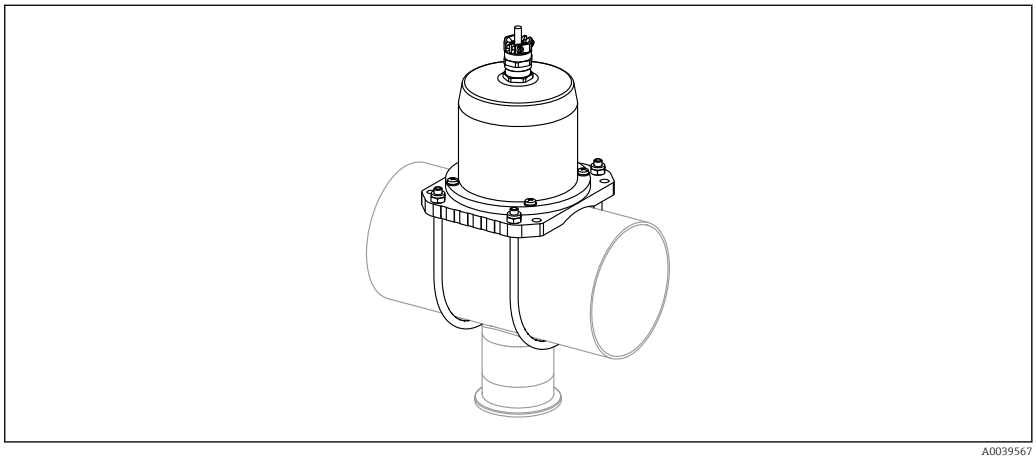
2 Ultrasonic transducer on Flowfit CUA252 assembly

Ultrasonic transducer with Flowfit CUA262 flow assembly



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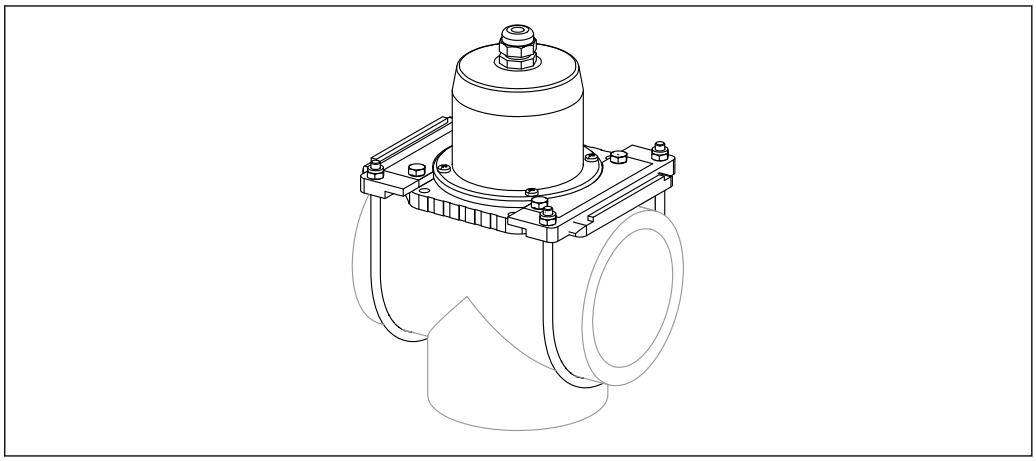
3 Ultrasonic transducer on Flowfit CUA262 assembly

Ultrasonic transducer with assembly of CUS31



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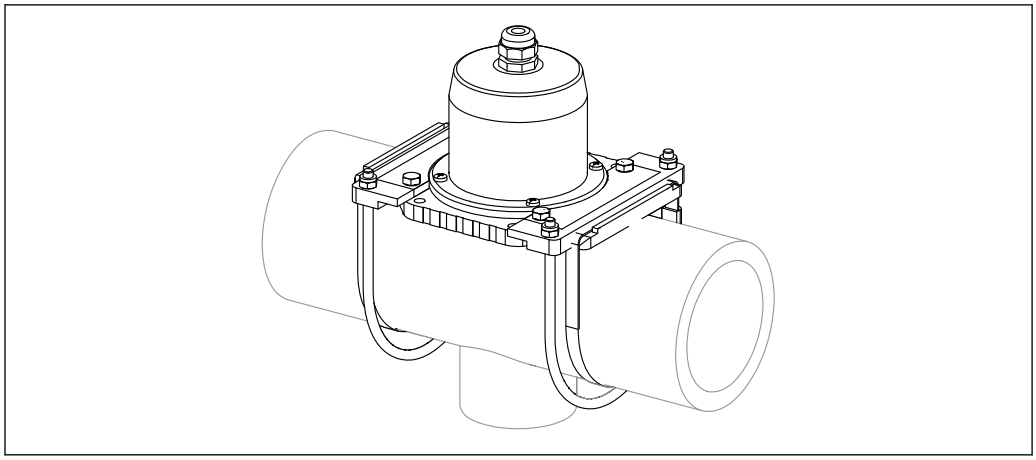
4 Ultrasonic transducer with assembly of CUS31

Ultrasonic transducer on pipe



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5 Ultrasonic transducer mounted on pipe

Output

Operating frequency

Operating frequency of the ultrasonic cleaning system: approx. 40 kHz

Power supply

Supply voltage

Depends on the order version:
- 230 VAC ± 10 %, 50/60 Hz
- 115 VAC ± 10 %, 50/60 Hz

Power consumption

Max. 50 VA

Electrical connection

WARNING

Device is live!

Incorrect connection may result in injury or death!

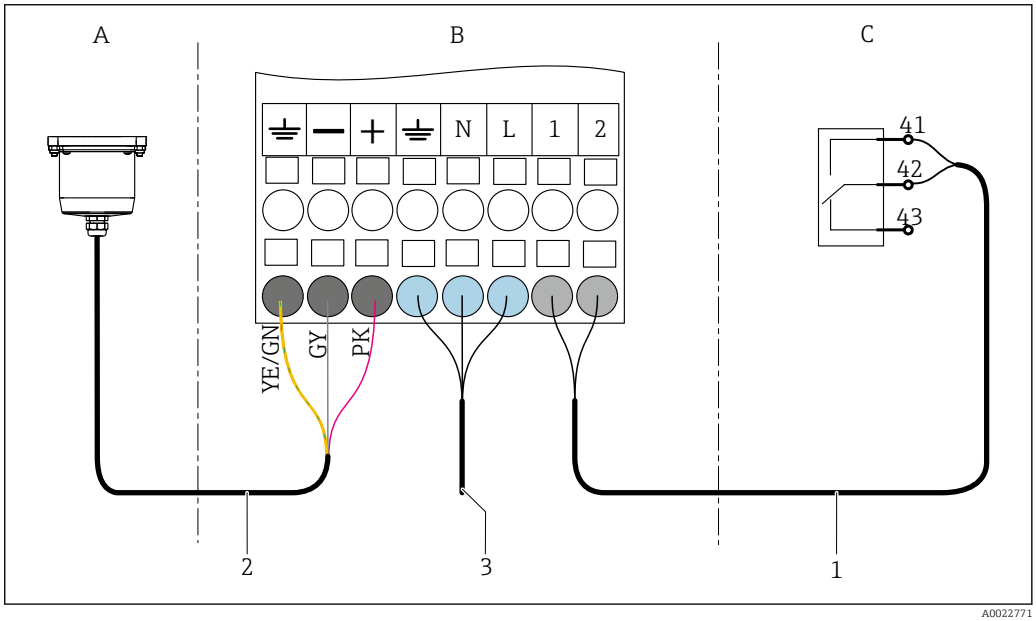
- The electrical connection may be performed only by an electrical technician.
- The electrical technician must have read and understood these Operating Instructions and must follow the instructions contained therein.
- **Prior** to commencing connection work, ensure that no voltage is present on any cable.

Connecting the device

NOTICE

The device does not have a power switch

- A protected circuit breaker must be provided in the vicinity of the device at the place of installation.
- The circuit breaker must be a switch or power switch, and you must label it as the circuit breaker for the device.



6 *Connection diagram*

A Ultrasonic transducer
B Terminal block in ultrasonic generator
C Relay in transmitter
1 Control cable
2 Power supply line
3 Power connection

Post-connection check

WARNING

Connection errors

The safety of people and of the measuring point is at risk! The manufacturer does not accept any responsibility for errors that result from failure to comply with the instructions in this manual.

- Put the device into operation only if you can answer **yes** to **all** the following questions.

Device condition and specifications

- Are the device and all the cables free from damage on the outside?
- Do the mains voltage and nameplate specifications match?

Electrical connection

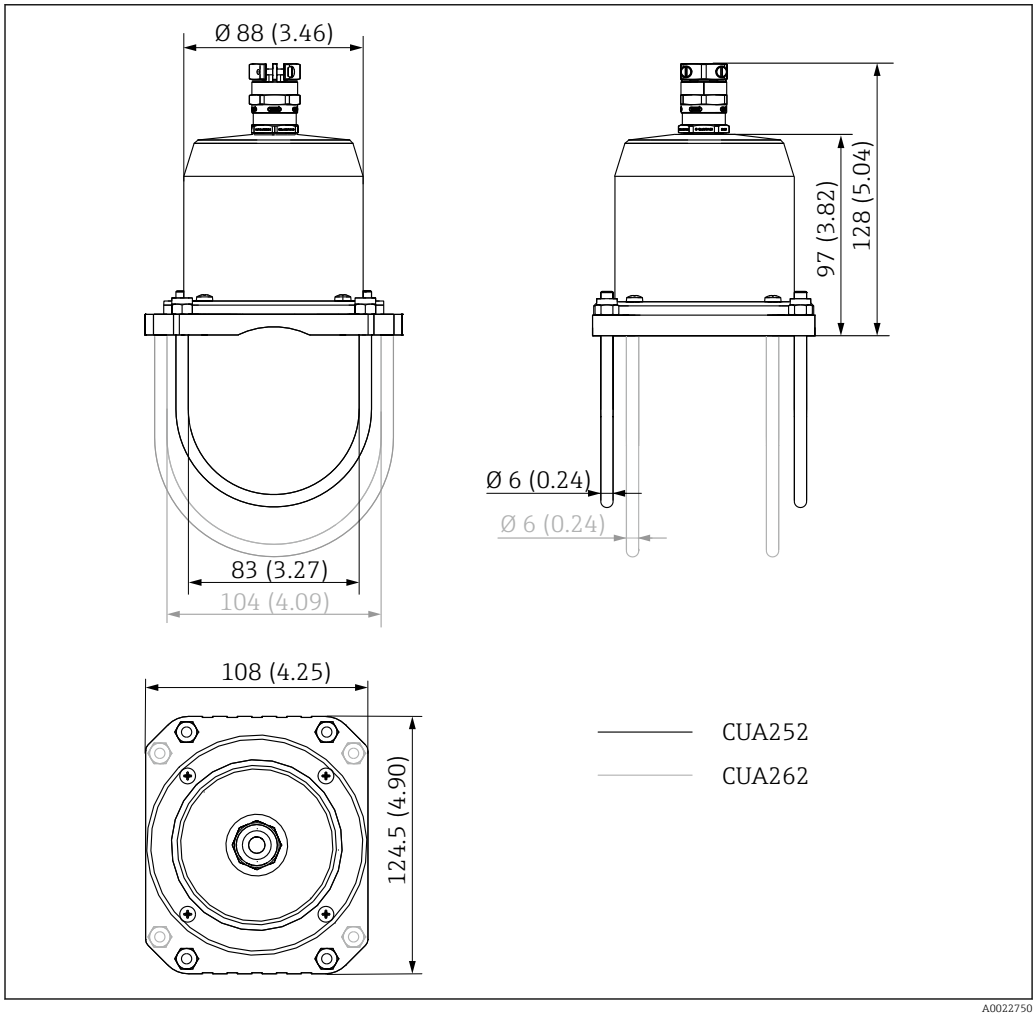
- Are the mounted cables strain relieved?
- Are the cables routed without loops and cross-overs?
- Are the cables correctly connected as per the wiring diagram?
- Are all the screw terminals connected as per the wiring diagram?

Environment

Ambient temperature range	−10 to 60 °C (+14 to 140 °F), non-condensing
Storage temperature	−20 to 60 °C (−4 to 140 °F)
Humidity	10 to 95 %, non-condensing
Degree of protection	Ultrasonic transducer: IP 68 Ultrasonic generator: IP 66/67
Electromagnetic compatibility (EMC)	Interference emission and interference immunity as per EN 61326-1:2006, EN 61326-2-3:2006

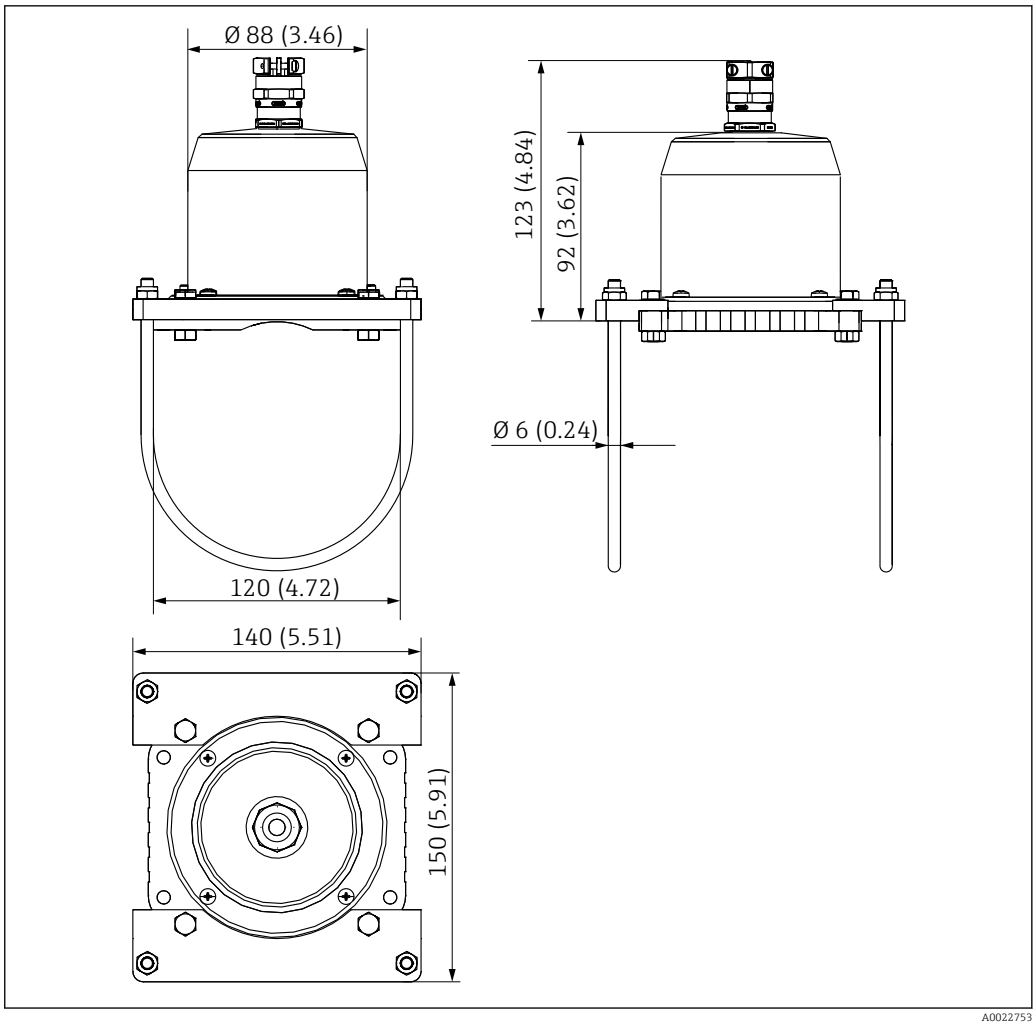
Mechanical construction

Dimensions of the ultrasonic transducer

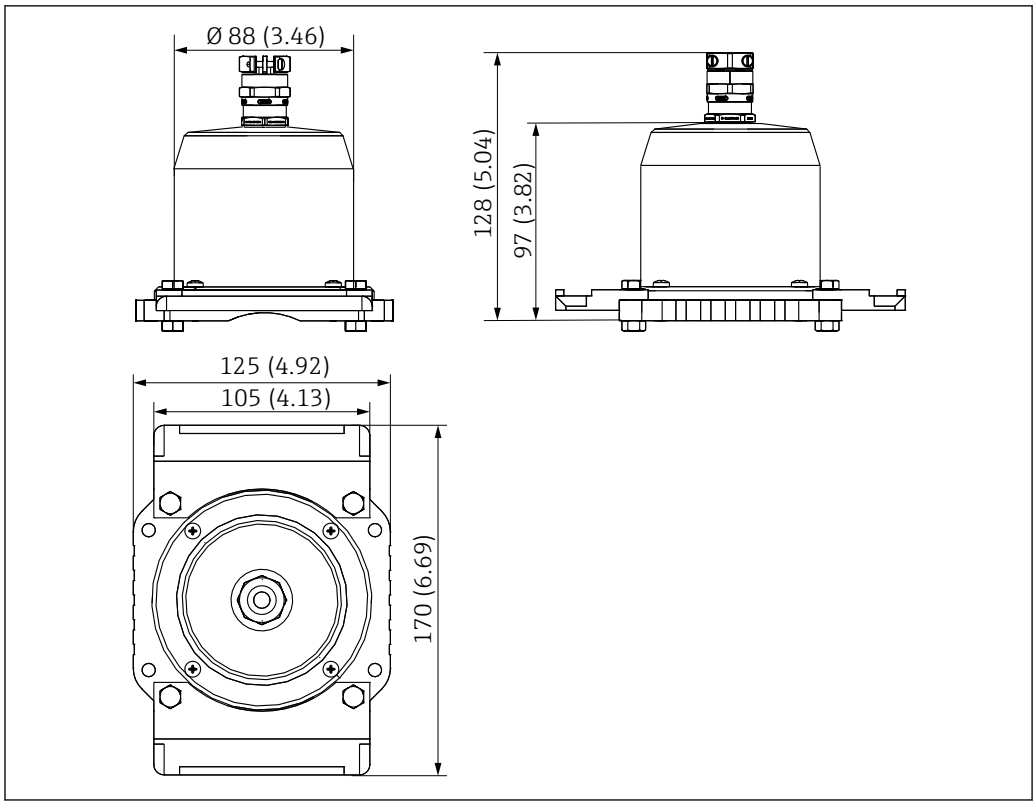


7 Dimensions for CUA252 and CUA262. Engineering unit: mm (in)

- In the case of the ultrasonic transducer, factor in a clearance of approx. 100 mm (3.9 in) above the cable gland for the power supply cable.

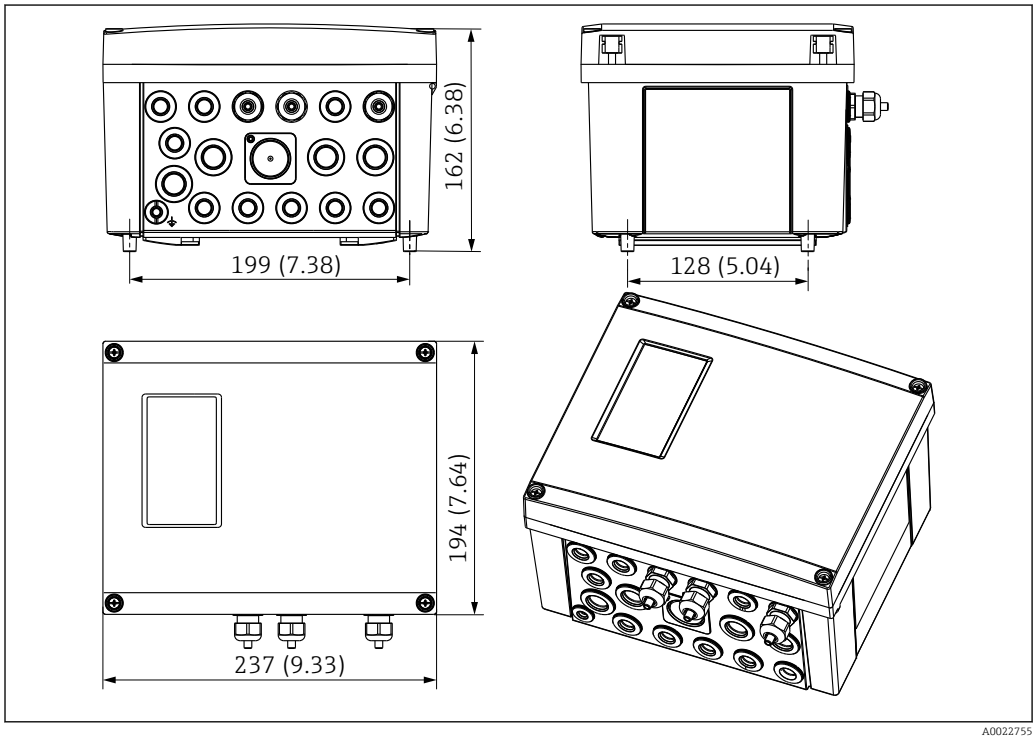


8 Dimensions for assembly of CUS31. Engineering unit: mm (in)



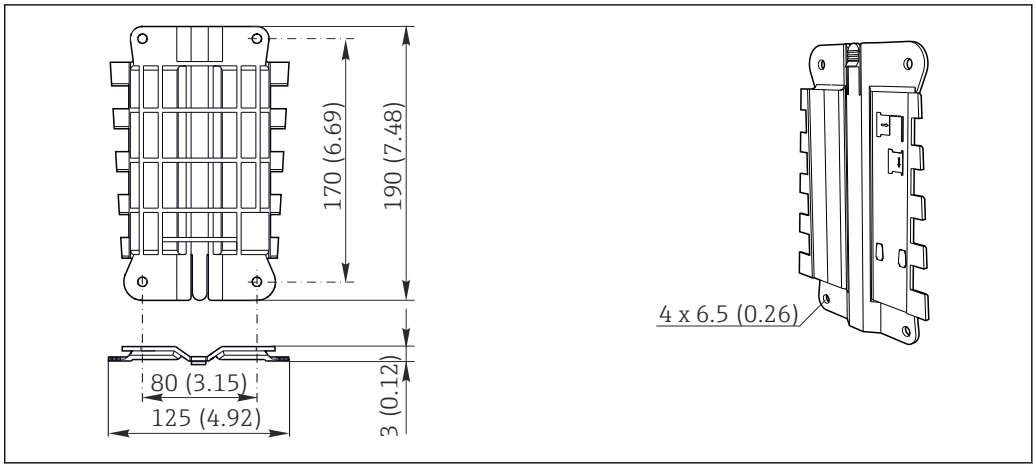
9 Dimensions for pipe mounting. Engineering unit: mm (in)

Dimensions of ultrasonic generator



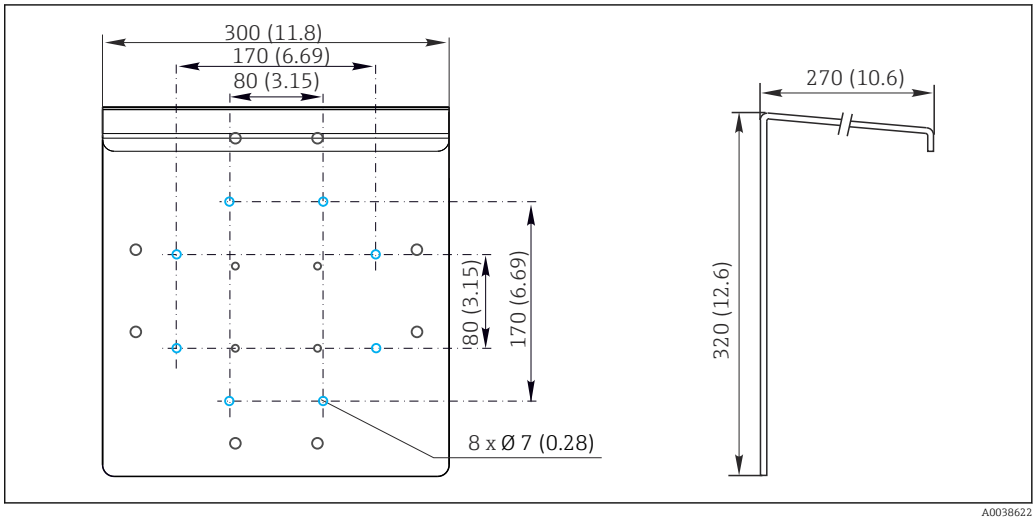
10 Engineering unit: mm (in)

Mounting plate



11 *Mounting plate. Engineering unit: mm (in)*

Weather protection cover



12 *Weather protection cover for ultrasonic generator. Engineering unit: mm (in)*

Weight

Ultrasonic transducer:	0.72 kg (1.59 lb), with 3 m (9.8 ft) cable
Ultrasonic generator:	2.2 kg (4.85 lb)

Materials

Ultrasonic transducer	
Cover:	PE
Floor:	Aluminum
Cable:	TPE-U mix; 3xLi9Y 0.75; sheath: Ø 6.6 mm (0.26 in) Minimum bending radius: 66 mm (2.6 in)66 mm (2.6 inch) when cable can move freely 33 mm (1.3 in) when cable cannot move freely

Ultrasonic generator	
Housing:	PC-FR
Housing seal:	EPDM
Cable glands:	Polyamide

Certificates and approvals

Current certificates and approvals that are available for the product can be selected via the Product Configurator at www.endress.com:

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Configuration**.

Ordering information

Scope of delivery

The scope of delivery comprises:
- 1 x ultrasonic generator
- 1 x ultrasonic transducer
- 1 x cleaning cloth
- 1 x tube of sealant
- Mounting material depending on the device version order
- 1 x Operating Instructions

Product page

www.endress.com/cyr52

Product Configurator

1. **Configure**: Click this button on the product page.
2. Select **Extended selection**.
   ↳ The Configurator opens in a separate window.
3. Configure the device according to your requirements by selecting the desired option for each feature.
   ↳ In this way, you receive a valid and complete order code for the device.
4. **Apply**: Add the configured product to the shopping cart.

For many products, you also have the option of downloading CAD or 2D drawings of the selected product version.

5. **Show details**: Open this tab for the product in the shopping cart.
   ↳ The link to the CAD drawing is displayed. If selected, the 3D display format is displayed along with the option to download various formats.

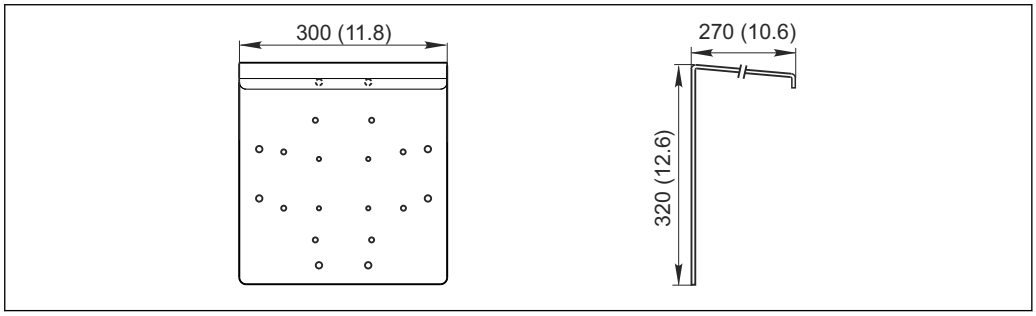
Accessories

The following are the most important accessories available at the time this documentation was issued.

▶ For accessories not listed here, please contact your Service or Sales Center.

CYY101

- Weather protection cover for field devices
- Absolutely essential for field installation
- Material: stainless steel 1.4301 (AISI 304)
- Order No. CYY101-A



13 Dimensions in mm (inch)

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