

Technical Information

CYR51

Mechanical cleaning unit



Application

The CYR51 mechanical cleaning unit is used for automated cleaning of turbidity and UV-Vis absorption sensors in the following areas:

- Wastewater
- Drinking water
- Surface water
- Process water

Your benefits

Seamless integration and easy installation:

Integrate the mechanical cleaning with your optical sensor to meet your cleaning demands. Experience flawless performance without sensor interruption.

Keep your sensor performance at a high level:

Reduce your maintenance effort with automatic cleaning. Take advantage of durable wiper blades and brushes.

Customized package for your cleaning needs:

Meet your individual cleaning needs with our tailored solution. Choose between chemical, compressed air, and mechanical cleaning.

Retrofit your plant:

As a reliable partner, we want to support by optimizing your existing installation. Our mechanical cleaning unit can be easily upgraded on your installed base. We support you through every step, from evaluation to installation and service.

Function and system design

Product design

CYR51 is a mechanical cleaning unit for turbidity and UV-Vis absorption sensors. Sensors immersed in liquid can be cleaned directly in the basin or vessel. The CYA112 wastewater assembly and corresponding CYH112 holder are required for this.

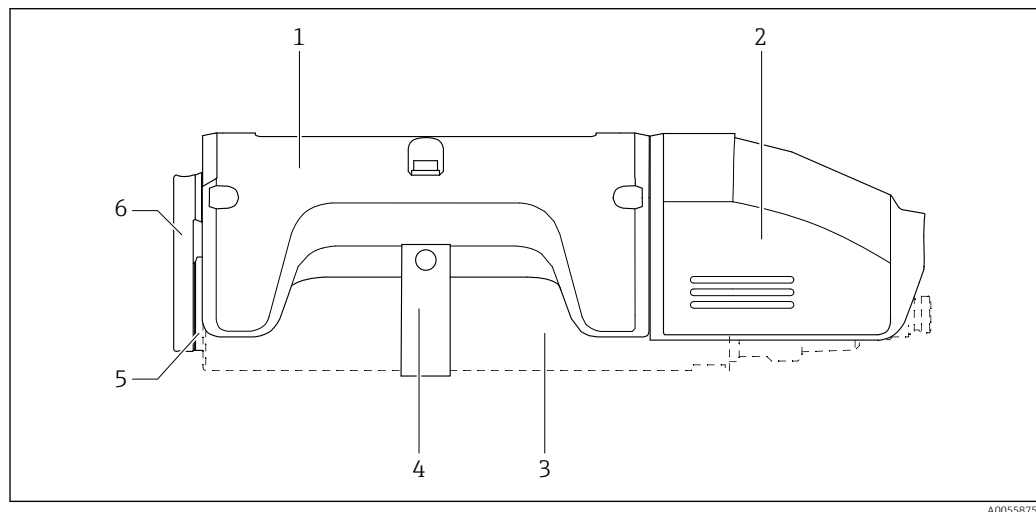
Possible liquids are:

- Wastewater
- Drinking water
- Untreated water
- Surface water
- Process water (e.g. cooling water)


Use is not permitted in salt water or water with highly corrosive substances.

CYR51 is a mechanical cleaning unit that facilitates easy and proper cleaning of optical windows. The mechanical cleaning unit is clipped onto the sensor and secured. During each cleaning cycle, the wiper arm moves over the optical windows and cleans them. Replaceable brushes or wiper blades are used depending on the order option.

Turbimax CUS51D as an example

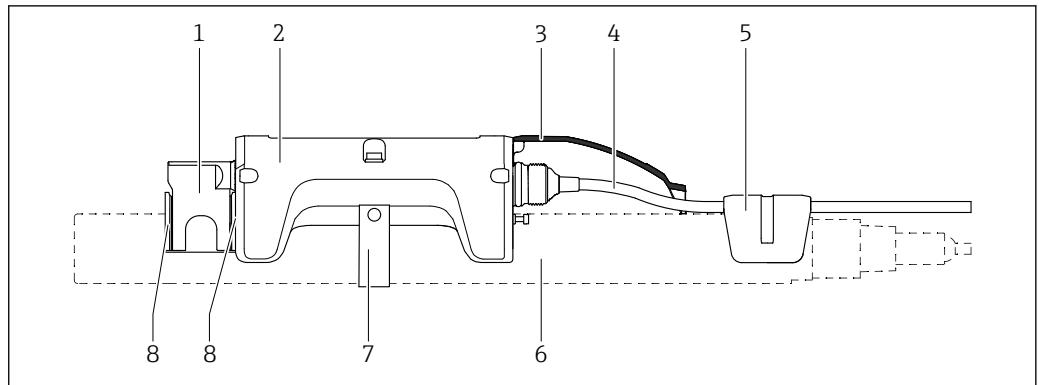


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 1 CYR52 using CUS51D as an example

- 1 Wiper unit
- 2 Dressing protection (optional for "Wastewater" order version)
- 3 CUS51D sensor
- 4 Mounting bracket with 2x O-ring + 2x screw
- 5 Wiper blade or brush
- 6 Wiper arm

Viomax CAS51D as an example



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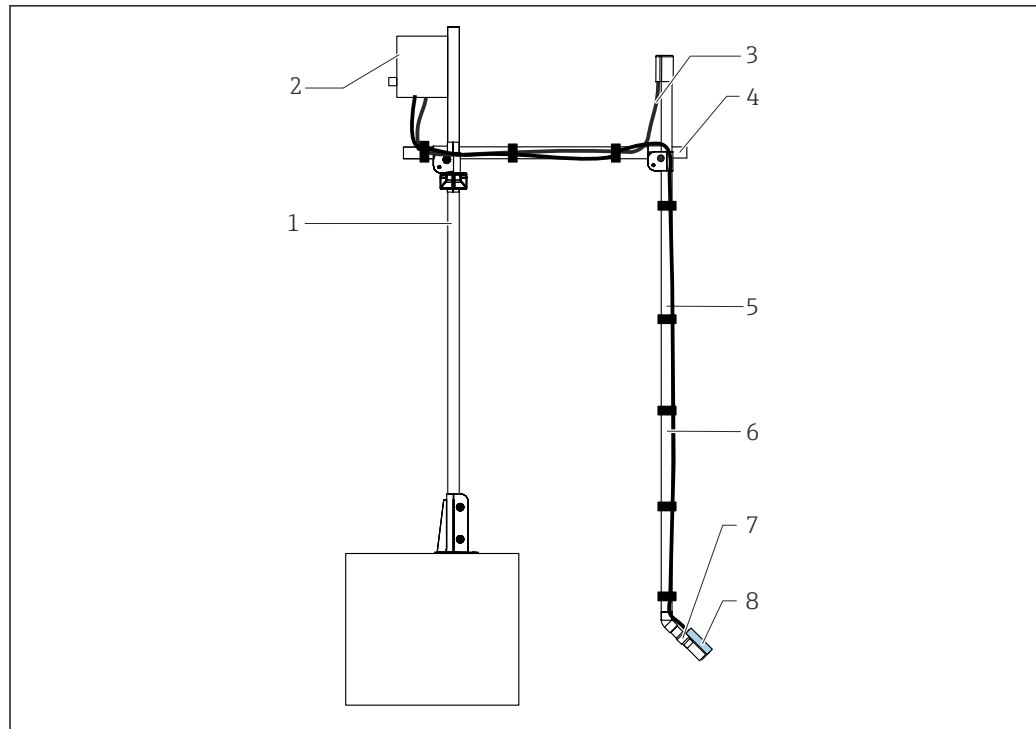
2 CYR51 using CAS51D as an example

- 1 Wiper arm
- 2 Wiper unit
- 3 Tressing protection (optional for "Wastewater" order version)
- 4 Cable for wiper
- 5 Cable clip
- 6 Sensor
- 7 Mounting bracket with 2x O-ring + 2x screw
- 8 Wiper blade or brush

Measuring system

The complete measuring system comprises at least:

- Sensor
- CYR51 mechanical cleaning unit
- Liquiline CM44x transmitter
- Flexdip CYA112 and Flexdip CYH112 assemblies



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3 Example of a measuring system

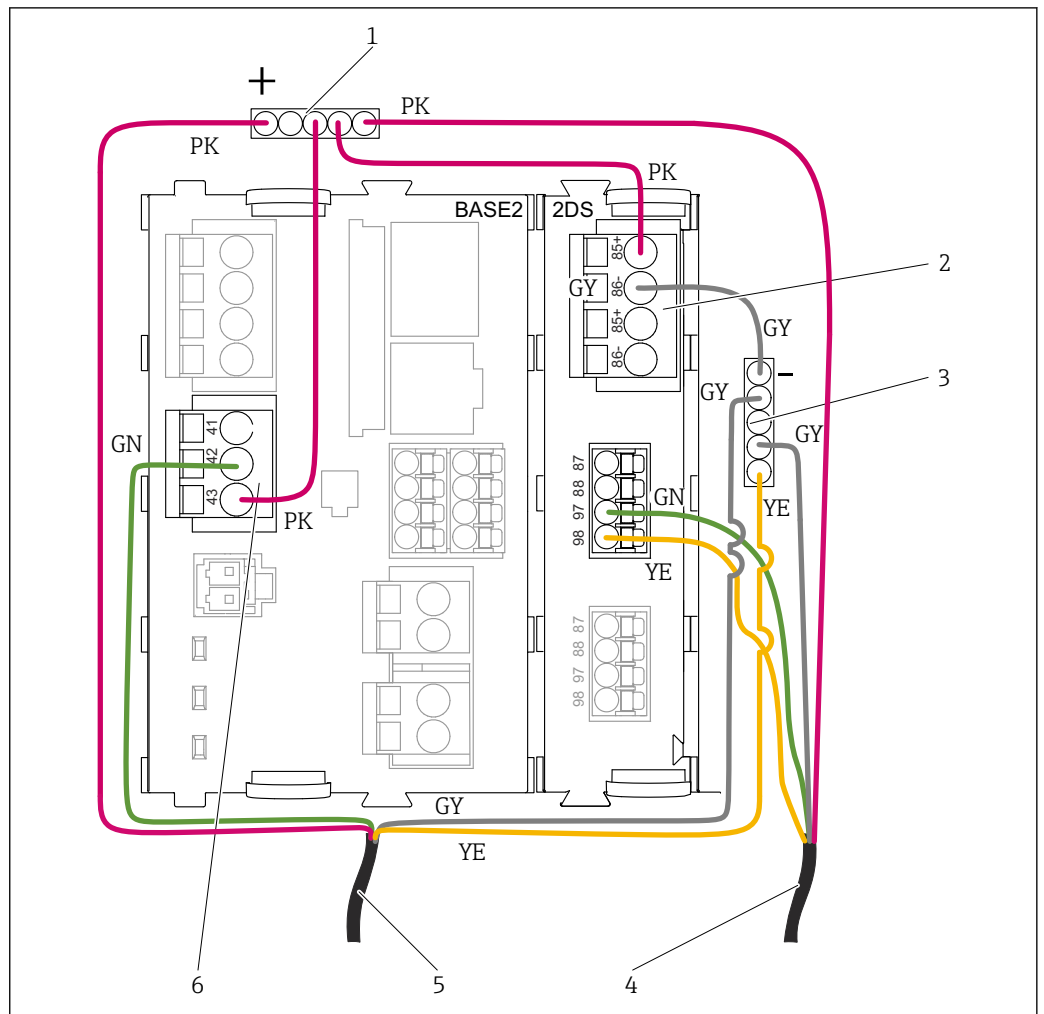
- 1 Main pipe, Flexdip CYH112 holder
- 2 Liquiline CM44x transmitter
- 3 Sensor cable
- 4 Transverse pipe, Flexdip CYH112 holder
- 5 Flexdip CYA112 wastewater assembly
- 6 Cable of mechanical cleaning unit
- 7 Sensor
- 8 Mechanical cleaning unit

Power supply

Electrical connection

The mechanical cleaning unit may only be powered by the power supply in the Liquiline transmitter. This supply point distributes the current (+ and -) to two separate, enclosed installation terminals. The mechanical cleaning unit, sensor and relay/DIO card are supplied with current via these installation terminals.

Connection in the transmitter without diagnostics

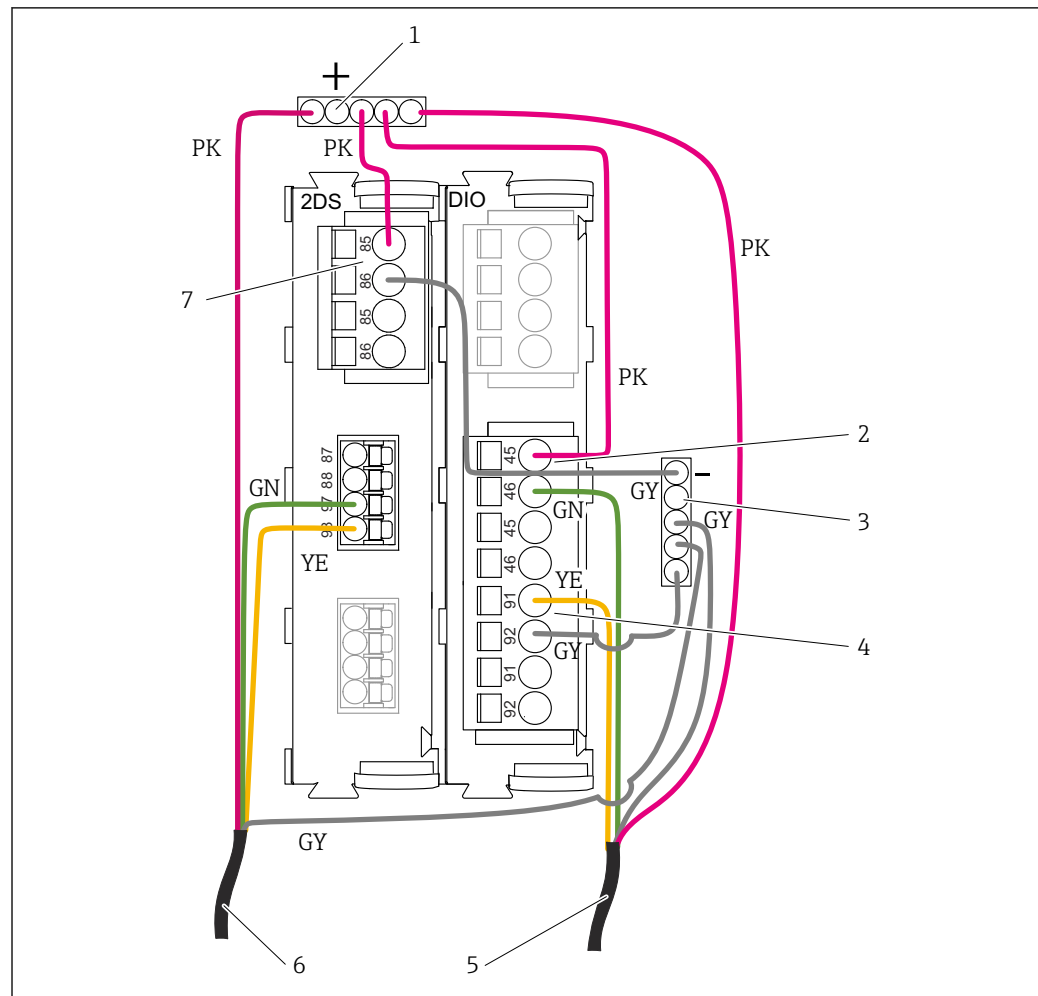


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4 Connection diagram without diagnostics

- 1 Installation terminal +
- 2 24 VDC power supply
- 3 Installation terminal -
- 4 Sensor cable
- 5 Cable of the mechanical cleaning unit
- 6 Relay for control signal

Connection in the transmitter with diagnostics



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5 Connection diagram with diagnostics

- 1 Installation terminal +
- 2 Digital output for control signal
- 3 Installation terminal -
- 4 Digital input for diagnostic feedback
- 5 Cable of the mechanical cleaning unit
- 6 Sensor cable
- 7 24 VDC power supply

Environment

Ambient temperature range -20 to 60 °C (-4 to 140 °F)

Storage temperature -20 to 70 °C (-4 to 158 °F)

Relative humidity 10 to 95 %, non-condensing

Degree of protection

- IP 68 (1.83 m (6 ft) water column over 24 hours)
- IP 66
- Type 6P

Operating height 3 000 m (9 842.5 ft) maximum

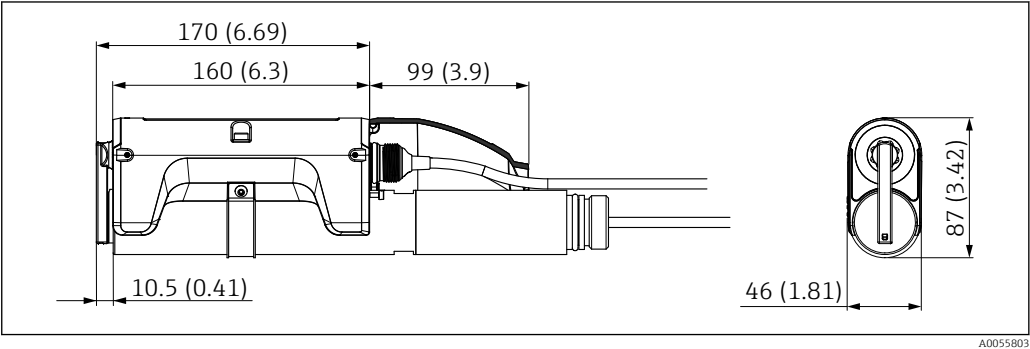
Fouling	Degree of fouling 2 (micro environment)
	Pollution degree 4 (macro environment)

Process

Process temperature range	-5 to 55 °C (23 to 131 °F)
Process pressure range	0.5 to 3 bar (7.3 to 43.5 psi) (absolute)

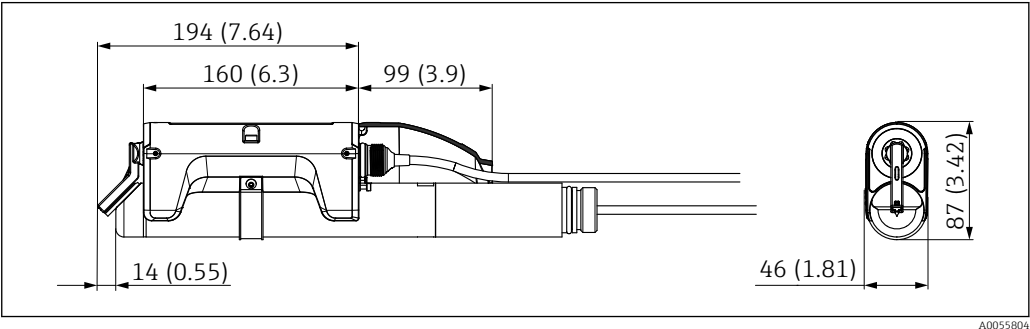
Mechanical construction

Dimensions	Dimensions of CYR51 with Turbimax CUS51D
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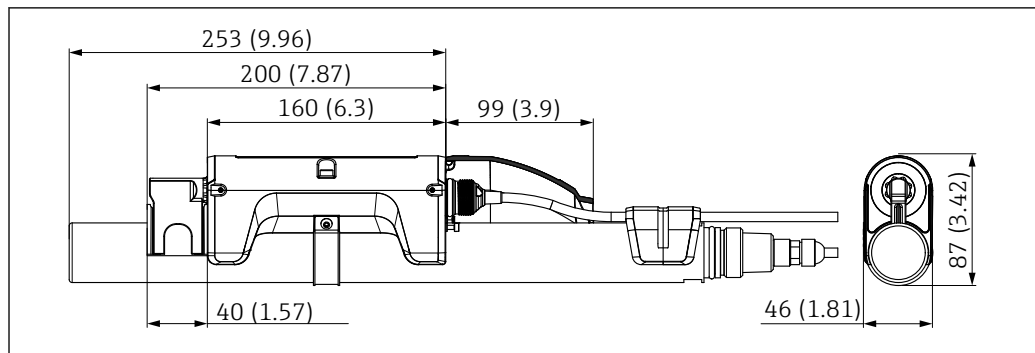
6 Dimensions. Unit: mm (in)

Dimensions of CYR51 with Turbimax CUS52D
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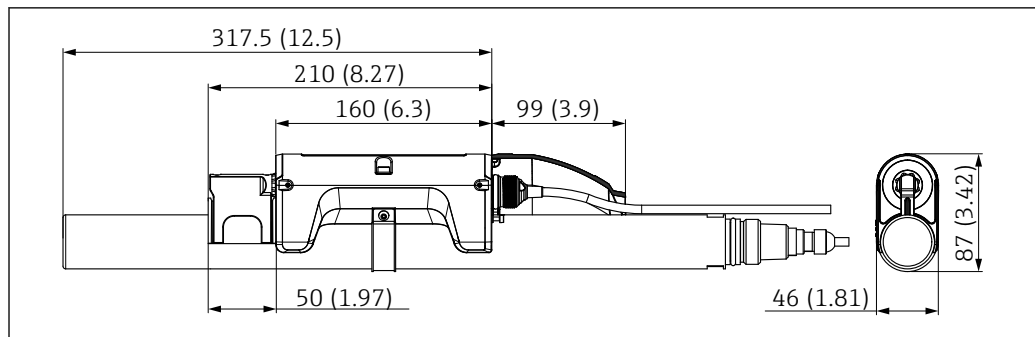
7 Dimensions. Unit: mm (in)

Dimensions of CYR51 with Viomax CAS51D



8 Dimensions with optical path length 40 mm (1.57 in). Unit: mm (in)

Dimensions of CYR51 with Memosens Wave CAS80E



9 Dimensions with optical path length 50 mm (1.97 in). Unit: mm (in)

Weight

Approx. 1 kg (2.2 lb) with a 7m (22.9ft) cable.
The weight varies depending on the order option.

Materials

Mechanical cleaning unit	
Housing:	PPS GF40
Tressing protection:	PPS GF40
Wiper shaft:	Stainless steel
Wiper blade:	Silicone
Brush	PA, nylon
Cable:	TPU, black
Cable attachment:	PBT

Hose set	
Hose:	PE
Hose adapter:	Stainless steel
Hose attachment:	PPS GF40
O-ring:	EPDM

Certificates and approvals

Current certificates and approvals for the product are available at www.endress.com on the relevant product page:

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

Device safety

- IEC 61010-1
- cCSAus General Purpose

Order information

Scope of delivery


The scope of delivery comprises:

- Mechanical cleaning unit in the version ordered
- Operating Instructions
- "Wastewater" option: with additional tressing protection
- "Drinking water with hose set" option:
 - Cable protection hose
 - Hose adapter
 - Hose clamp
 - Hose clips to secure the protective hose
- Cable clips to secure the cable to the sensor (optional)

Product page

www.endress.com/cyr51

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. **Accept:** 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. **CAD:** Open this tab.
 - ↳ The drawing window is displayed. You have a choice between different views. You can download these in selectable formats.

Accessories

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

Listed accessories are technically compatible with the product in the instructions.

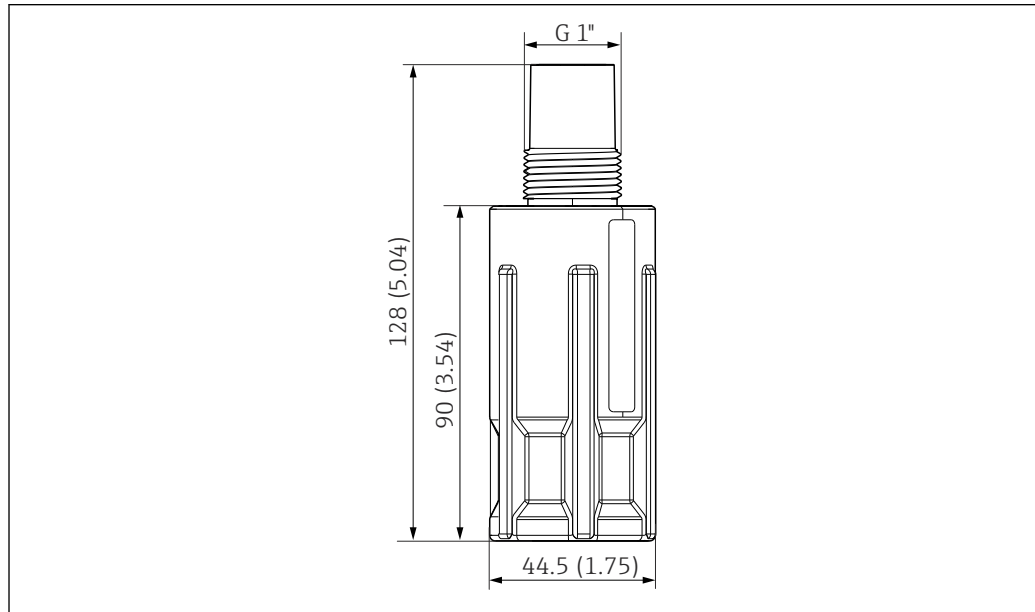
1. Application-specific restrictions of the product combination are possible.
Ensure conformity of the measuring point to the application. This is the responsibility of the operator of the measuring point.
2. Pay attention to the information in the instructions for all products, particularly the technical data.
3. For accessories not listed here, please contact your Service or Sales Center.

Device-specific accessories

Complete quick fastener

Quick fastener

- For quick and easy installation and replacement of sensors
- Material: POM - GF
- Including mounting tool 71093438
- Order code: 71093377

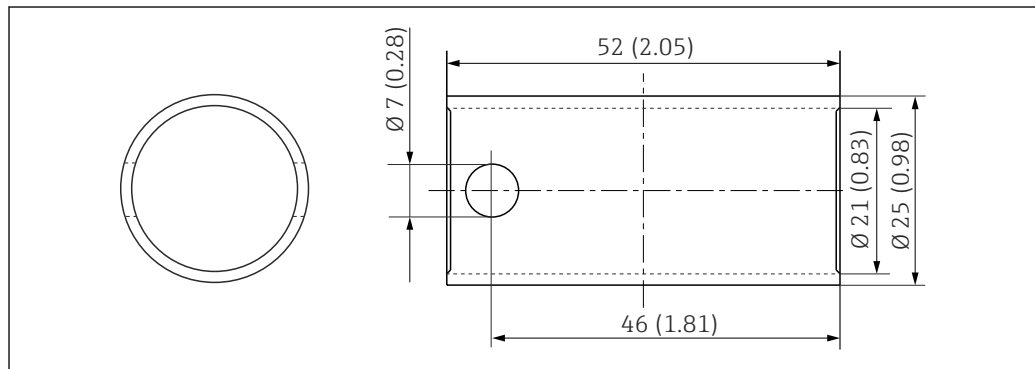


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10 Quick fastener. Unit: mm (in)

Mounting tool

- Tool to remove the quick fastener
- Material: stainless steel V4A
- Order code: 71093438



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11 Mounting tool. Unit: mm (in)

Brush and wiper blade

Material:

- Brush: PA, nylon
- Wiper blade: Silicone



The product-specific accessory can be ordered via the order structure for spare parts "XPC0031".

Cable attachment

Cable clips can be ordered to secure cables on the assembly

- Material: PPS GF40
- Quantity: 5 pcs



The product-specific accessory can be ordered via the order structure for spare parts "XPC0031".

Cable protection hose set

The cable protection hose separates the cable of the mechanical cleaning unit from the medium in drinking water applications.

- Cable protection hose 7 m (23 ft) or 15 m (49.2 ft): PE
- Hose clamp: stainless steel
- Hose adapter: stainless steel
- O-ring: EPDM
- 5 hose clips: PPS GF40



The product-specific accessory can be ordered via the order structure for spare parts "XPC0031".



www.addresses.endress.com
