



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Operating Instructions

Flexdip CYA112

Wastewater assembly

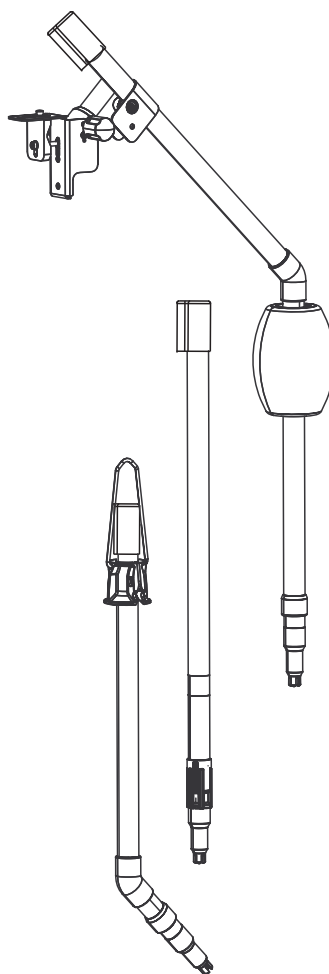


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1 Safety instructions

1.1 Designated use

CYA112 is designed as a modular assembly system for sensors in open basins, channels and tanks.

Any other use than the one described here compromises the safety of persons and the entire measuring system and is not permitted.

The manufacturer is not liable for damage caused by improper or non-designated use.

1.2 Installation, commissioning and operation

Please note the following items:

- Installation, commissioning, operation and maintenance of the measuring system must only be carried out by trained technical personnel.
Trained personnel must be authorized for the specified activities by the system operator.
- Electrical connection must only be carried out by a certified electrician.
- Technical personnel must have read and understood these Operating Instructions and must adhere to them.
- Before commissioning the entire measuring point, check all the connections. Ensure that electrical cables and hose connections are not damaged.
- Do not operate damaged products and secure them against unintentional commissioning.
Mark the damaged product as being defective.
- Measuring point faults may only be rectified by authorized and specially trained personnel.
- If faults can not be rectified, the products must be taken out of service and secured against unintentional commissioning.
- Repairs not described in these Operating Instructions may only be carried out at the manufacturer's or by the service organization.

1.3 Operational safety

The assembly has been designed and tested in accordance with the latest industry standards and left the factory in perfect functioning order.

Relevant regulations and standards have been met.

As the user, you are responsible for complying with the following safety conditions:

- Installation instructions
- Local prevailing standards and regulations.

1.4 Notes on safety icons and symbols



Warning!

This symbol alerts you to hazards that can cause serious damage to the instrument or to persons if ignored.



Caution!

This symbol alerts you to possible faults which could arise from incorrect operation. They could cause damage to the instrument if ignored.



Note!

This symbol indicates important items of information.

2 Identification

2.1 Nameplate

You can identify the type of assembly from the order code on the nameplate. Please compare this information to that of your order.



Fig. 1: Example of a nameplate

Line 1 of the order code indicates the product ID, which is an abbreviated version of the order code.
Line 2 of the order code indicates the complete order code.
Please refer to the product structure for the possible versions of the assembly and the resulting order code.

2.1.1 Product structure

Approvals				
	A	w/o		
		Immersion pipe		
	A	Standard		
	B	Chain		
	C	Floater 40 mm (1.57") only for PVC version		
		Immersion pipe, diameter, length		
	11A	PVC, 40 mm (1.57"), 600 mm (23.6")		
	11B	PVC, 40 mm (1.57"), 1200 mm (47.2")		
	11C	PVC, 40 mm (1.57"), 1800 mm (70.9")		
	11D	PVC, 40 mm (1.57"), 2400 mm (94.5")		
	21A	Stainless steel, 40 mm (1.57"), 600 mm (23.6")		
	21B	Stainless steel, 40 mm (1.57"), 1200 mm (47.2")		
	21C	Stainless steel, 40 mm (1.57"), 1800 mm (70.9")		
	21D	Stainless steel, 40 mm (1.57"), 2400 mm (94.5")		
	21E	Stainless steel, 40 mm (1.57"), 3600 mm (142")		
			Connection-angle sensor	
	1A	PVC, straight		
	1B	PVC, 45°		
	2A	Stainless steel, straight		
	2B	Stainless steel, 45°		
	2C	Stainless steel, 90°		
			Sensor adapter	
	A	G1		
	B	NPT ¾"		
	C	G¾		
	D	G1½		
	E	Pg 13.5		
CYA112-				basic order code

The following options are available (multiple selection possible):

Option code	Description
KA	Multifunctional clamp ring
IA	Quick fastener G 1

2.2 Scope of delivery

The scope of delivery comprises:

- Ordered assembly version
- Operating Instructions, English.

If you have any questions, please contact your supplier or your local sales center.

2.3 Certificates and approvals

Explosion protection

The stainless steel version of the CYA112 assembly (CYA112-*A21*2**) is suitable for use in hazardous zones 1 and 2.

The ATEX directive 94/9/EC does not apply because the assembly has no potential ignition source. Accordingly, it is not designated according to ATEX. Potential equalization must be implemented as described in the chapter "Installation conditions".

If sensors have accessible metallic surfaces, these surfaces have to be connected to the potential match according to the corresponding operating instructions.

3 Installation

3.1 Incoming acceptance, transport, storage

- Make sure the packaging is undamaged!
Inform the supplier about any damage to the packaging.
Keep the damaged packaging until the matter has been settled.
- Make sure the contents are undamaged!
Inform the supplier about damage to the contents. Keep the damaged products until the matter has been settled.
- Check that the order is complete and agrees with your shipping documents.
- The packaging material used to store or to transport the product must provide shock protection and humidity protection. The original packaging offers the best protection. Also, keep to the approved ambient conditions (see "Technical data").
- If you have any questions, please contact your supplier or your local sales center.

3.2 Installation conditions

Install the assembly on a place with enough free space around it so the sensor cannot get damaged. When installing the assembly in a fixed position, make sure that it can be easily accessed and maintained. The immersion pipe has to protrude the holding point by at least 100 mm (3.94")

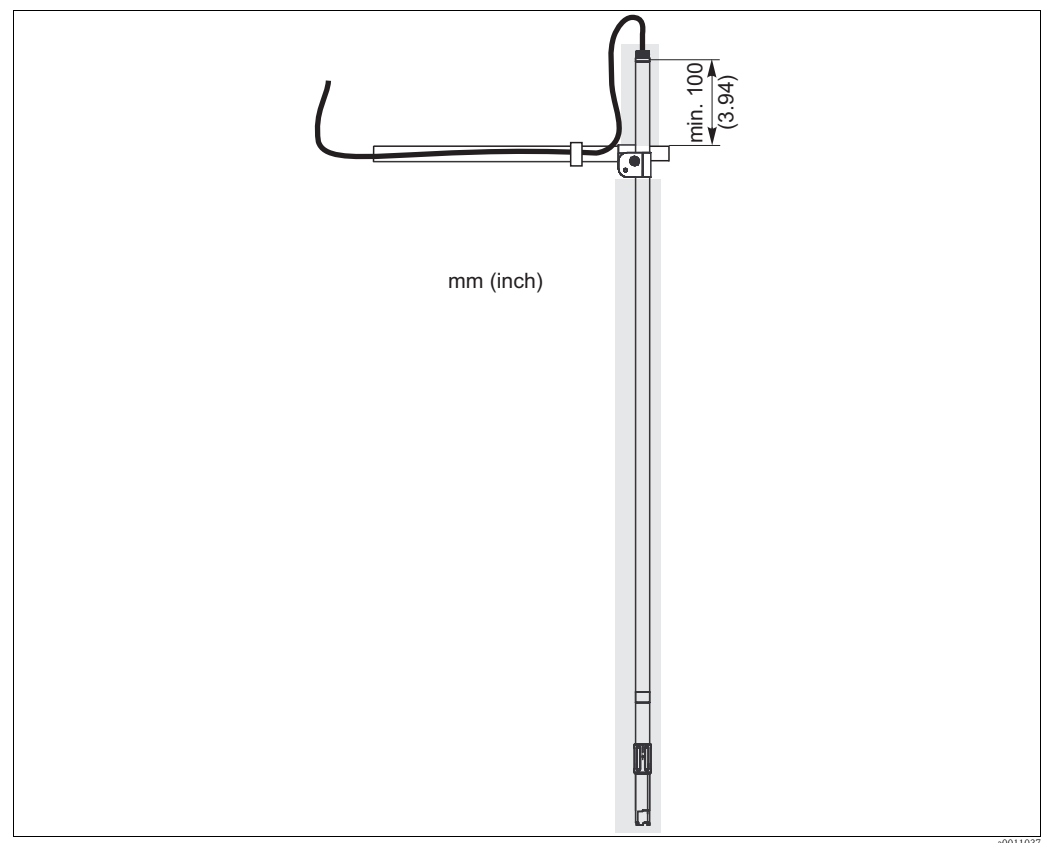


Fig. 2: Holding point

The grounding has to be done on-site. All conductive parts have to be connected to each other.

For use in hazardous areas:

- The immersion pipe side of the assembly has to be conductively connected to the corresponding holder or fixing.
- When the assembly is fixed via chain or mounting bracket a separate conductor for potential match is needed beside the measuring cable.
- If sensors have accessible metallic surfaces, these surfaces have to be connected to the potential match according to the corresponding operating instructions.

3.3 Installation instructions

3.3.1 Mounting the stainless steel parts

You have to screw the pipes together finger-tight (without any gaps). The threads are lubricated and provided with an O-ring.

3.3.2 Gluing the PVC parts



Note!

PVC assemblies up to 1200 mm (47.2") in size are delivered as ready-to-install units and do not have to be glued.

Where required, cleaning cloths and glues form part of the scope of supply.

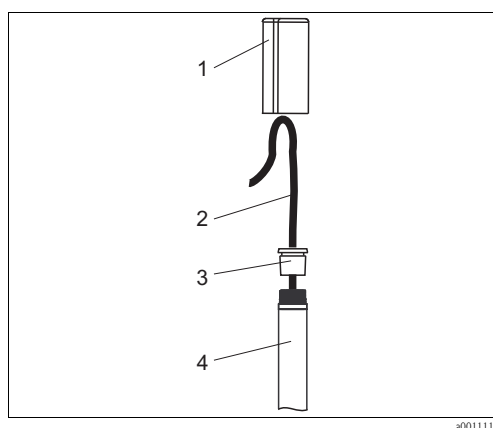
Glue the PVC parts as follows:

1. Clean the surfaces to be glued (exterior pipe end, sleeve or internal angle piece) with the cleaning cloth.
2. Allow the cleaned surfaces to dry for approx. 5 minutes.
3. Apply an even film of glue to the surfaces to be glued (sleeve first, then the pipe).
4. Join the parts within one minute (push together until the stop).
5. Remove the excess glue.
6. Allow the glued parts to harden for at least 5 minutes.

3.3.3 Mounting the sensor

Mount the sensor as follows:

1. Screw or glue the connecting bracket onto the immersion tube.
2. Where necessary, screw the sensor adapter onto the connection bracket.
3. Guide the sensor cable through the immersion tube.
4. Where necessary, connect the sensor cable to the sensor.
5. Screw the sensor into the adapter or into the connection bracket.



- | | |
|---|-----------------------|
| 1 | Splash protection cap |
| 2 | Sensor cable |
| 3 | Rubber plug |
| 4 | Immersion tube |

Fig. 3: Cable run

6. Shorten the tip of the rubber plug so that it suits the cable diameter.
7. Fit the rubber plug onto the sensor cable and press it onto the immersion tube.
8. Route the sensor cable downwards in a loop (do not bend) and fit on the splash protection cap.

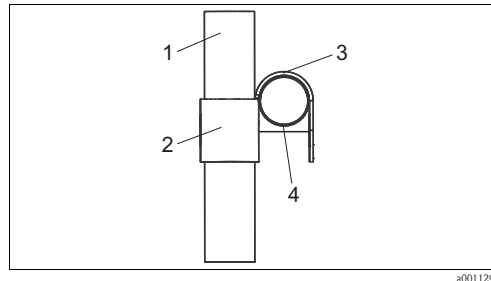
3.3.4 Fixed installation of the assembly on a transverse pipe



Note!

The cross clamp is mounted in such a way that one closed side points to the center of the basin while the other closed side points upwards.

Mount the immersion tube as follows:



- 1 Immersion tube
- 2 Cross clamp, closed side to basin center
- 3 Cross clamp, closed side at top
- 4 Transverse pipe

Fig. 4: Mounting the cross clamp

1. Adjust the clamps on the cross clamp.
2. Slide the cross clamp over the immersion tube. Make sure that the closed side of the cross clamp is at the top (→ 4).
3. Mount the multifunctional clamp ring (funnel-shaped side facing upwards) on the immersion tube above the cross clamp. The multifunctional clamp ring acts as an anti-slip lock.
4. Attach the cross clamp, along with the immersion tube, to the transverse pipe. Make sure that the closed side of the cross clamp faces the basin (→ 4).
5. Align the assembly and the holder.
6. Tighten the clamp screws finger-tight (finger-tight corresponds to 13 Nm (9.6 lbf ft)).

3.3.5 Installation of the assembly on a chain retainer

Prerequisite:

- The immersion tube is fitted with a sensor.
- The transverse pipe is fitted with a chain.

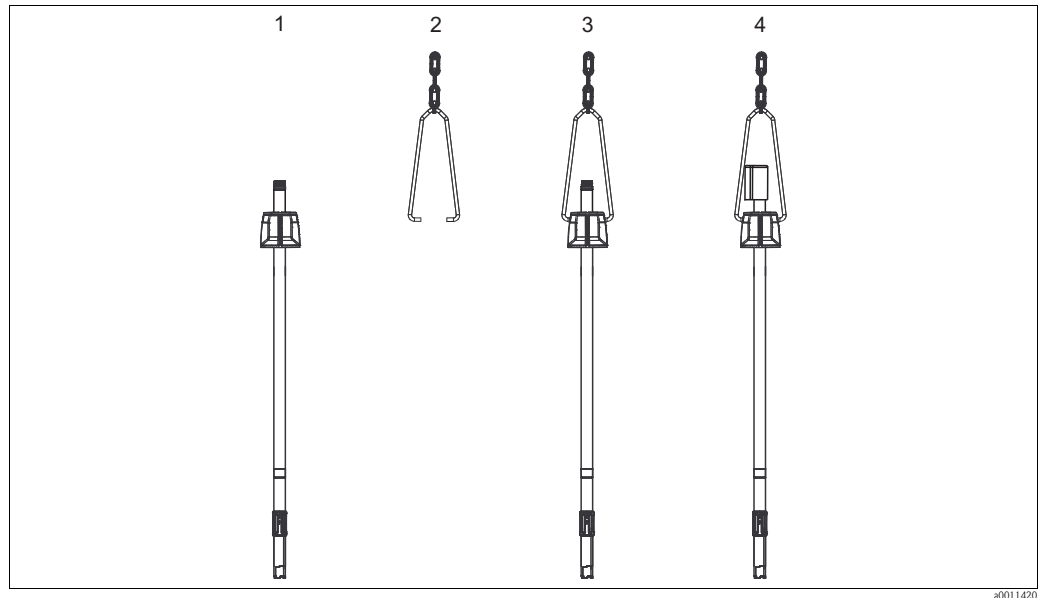


Fig. 5: Mounting the chain retainer

- 1 Mount the multifunctional clamp ring
- 2 Loop the bracket into the chain
- 3 Attach the bracket to the multifunctional clamp ring
- 4 Fit the splash protection cap

1. Insert the weights into the immersion tube.
2. Screw the multifunctional clamp ring onto the immersion tube.
3. Guide the bracket into the lowest link in the chain.
4. Attach the bracket to the multifunctional clamp ring.

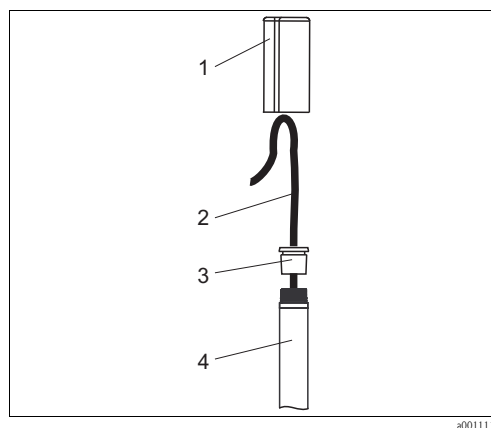


Fig. 6: Cable run

5. Fit the rubber plug onto the sensor cable and press it onto the immersion tube.
6. Route the sensor cable downwards in a loop (do not bend) and fit on the splash protection cap.
7. Secure the chain on the holder with the triangular carabiner.

3.3.6 Installation of the assembly with a float

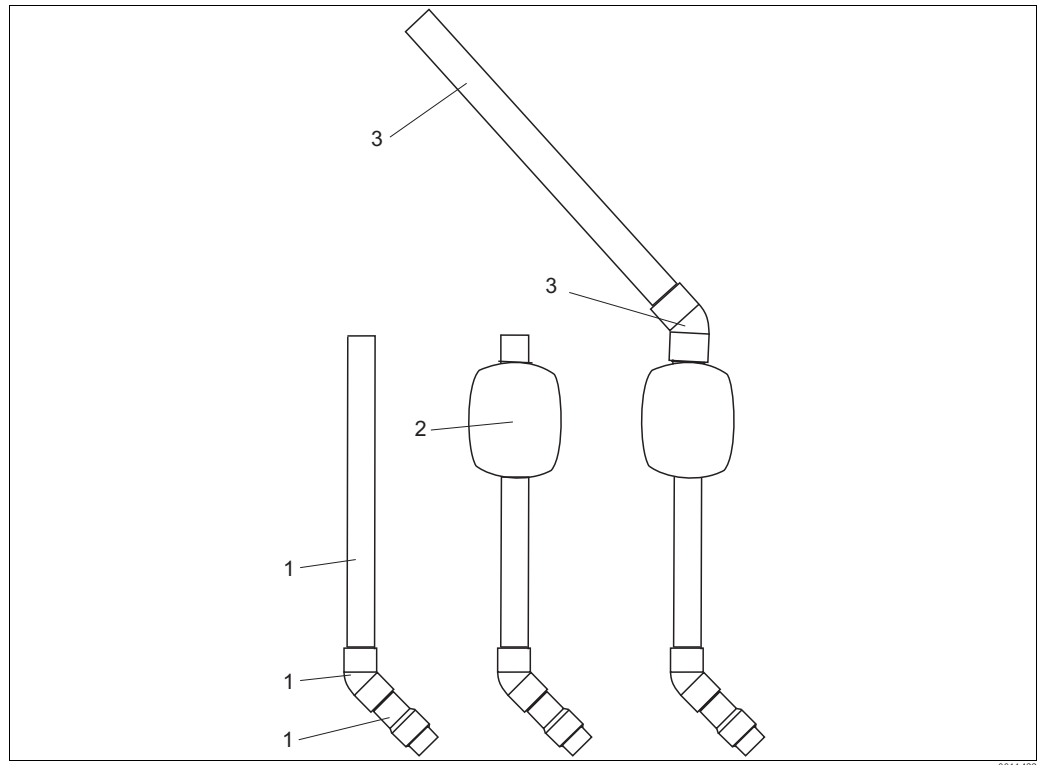


Fig. 7: Float mounting

- 1 Immersion tube with adhesive fitting and sensor adapter (finished ex works)
- 2 Float body
- 3 Second immersion tube with 45° adhesive fitting

Preparatory steps

1. Slide the float body (item 2) onto the immersion tube (item 1).
2. Glue the second immersion tube (item 3) and the adhesive fitting (item 3) onto the immersion tube (item 1).
3. Adjust the clamps on the cross clamp.
4. Slide the cross clamp over the immersion tube. Make sure that the closed side of the cross clamp is at the top.
5. Mount the multifunctional clamp ring (funnel-shaped side facing upwards) on the immersion tube above the cross clamp. The multifunctional clamp ring acts as an anti-slip lock.

Installing the sensor and mounting the assembly

1. Guide the sensor cable through the immersion tube.
2. Where necessary, connect the sensor cable to the sensor.
3. Screw the sensor into the adapter.

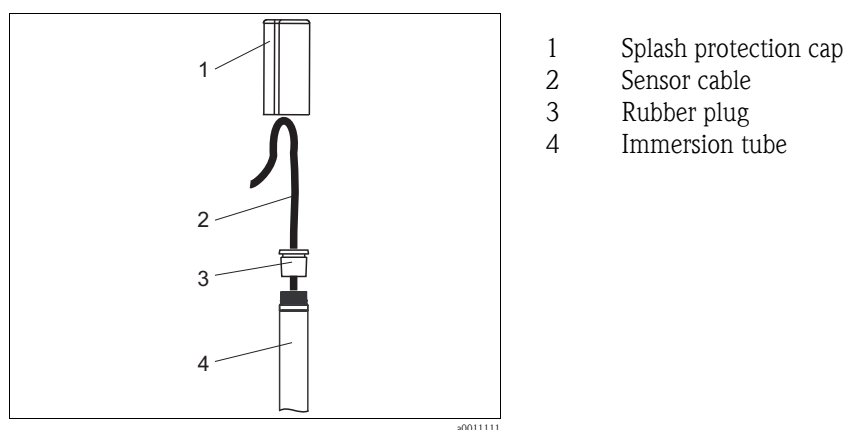


Fig. 8: Cable run

4. Shorten the tip of the rubber plug so that it suits the cable diameter.
5. Fit the rubber plug onto the sensor cable and press it onto the immersion tube.
6. Mount the float assembly on the pendulum holder.
7. Align the assembly and the holder.
8. Tighten the clamp screws finger-tight (finger-tight corresponds to 13Nm (9.6 lbf ft)).
9. Route the sensor cable downwards in a loop (do not bend) and fit on the splash protection cap.

3.3.7 Installation of the quick release fastener

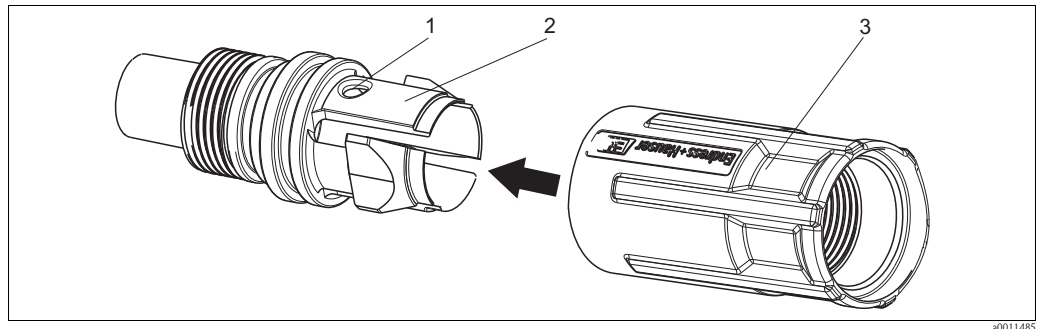


Fig. 9: Quick release fastener

- 1 Bore - makes it easier to screw the adapter tight
- 2 Adapter
- 3 Thread adapter nut

Install the quick release fastener as follows:

1. Screw the adapter (item 2) into the immersion tube connection bracket.
2. Insert a screwdriver or a similar tool through the bores (item 1) to secure the adapter.
3. Slide the thread adapter nut (item 3) over the adapter until the thread adapter nut engages with a click.
4. Guide the sensor cable through the quick release fastener and the immersion tube. The Memosens coupling is secured in the quick release fastener and cannot slip.
5. Connect the cable to the sensor.
6. Screw the sensor into the quick release adapter until the stop. In doing so, turn the thread adapter nut. Do not turn the sensor.
7. Align the sensor if necessary.

3.4 Post-installation check

- After mounting, check whether all the screws are tightened correctly.
- If mounting using a pendulum holder, ensure the assembly has sufficient clearance.

4 Operation



Warning!

There is a risk of infection when working with wastewater!

Therefore, wear protective gloves, goggles and protective clothing.

4.1 Immersion tube tray

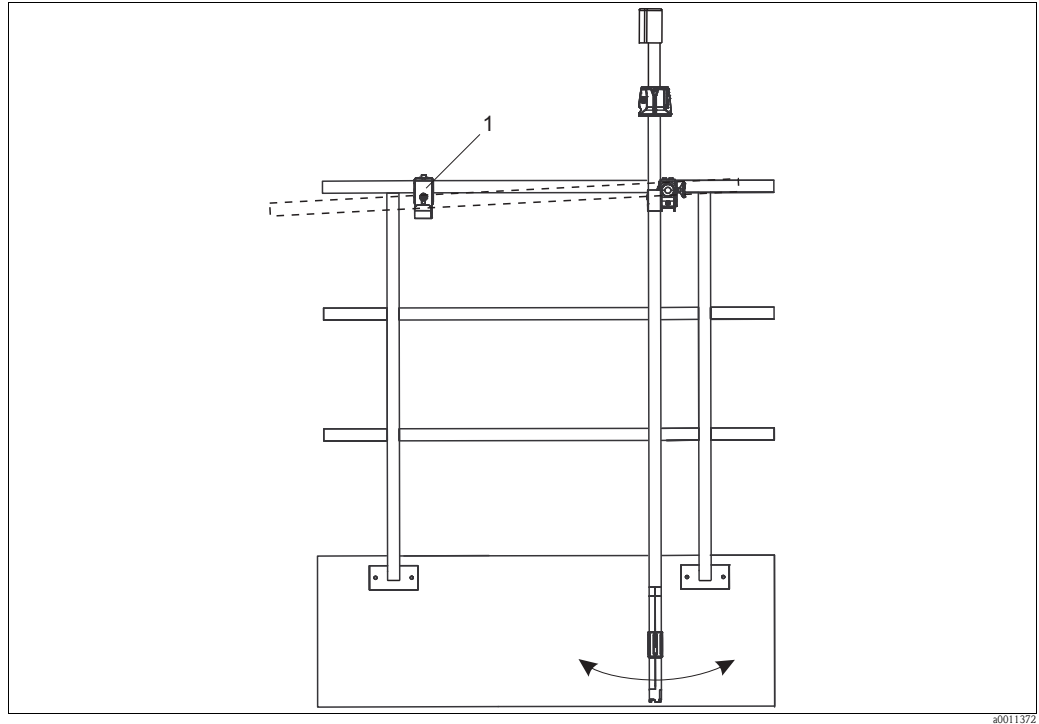


Fig. 10: Immersion tube tray for assembly service position

1 Immersion tube tray

The immersion tube tray makes it easier to perform maintenance tasks with rail mounting involving a pendulum holder and cross clamp.

5 Maintenance



Warning!

There is a risk of infection when working with wastewater!

Therefore, wear protective gloves, goggles and protective clothing.

5.1 Maintaining the clamping systems and threads

Lubricate the clamping systems and threads at regular intervals.

Proceed as follows to do so:

1. Clean the clamps and threads with soapy water.
2. Dry the clamps and threads.
3. Provide the cleaned parts with a thin film of lubricant (e.g. Syntheso Glep1).

5.2 Cleaning the quick release fastener

Preparatory steps:

1. Remove the sensor and cable.
2. Insert the removal tool (see "Accessories" section) into the thread adapter nut so that the thread adapter nut is disengaged and can be removed.

Clean the quick release fastener with soapy water.

6 Accessories

Multifunctional clamp ring

- Chain retainer in conjunction with the triangle carabiner
- Working height adjustment of the main pipe (version main pipe with transverse pipe)
- The multifunctional clamp ring acts as an anti-slip lock on transverse pipes, main pipes and assemblies.
- Material: POM – GF
- Order No. 71092049

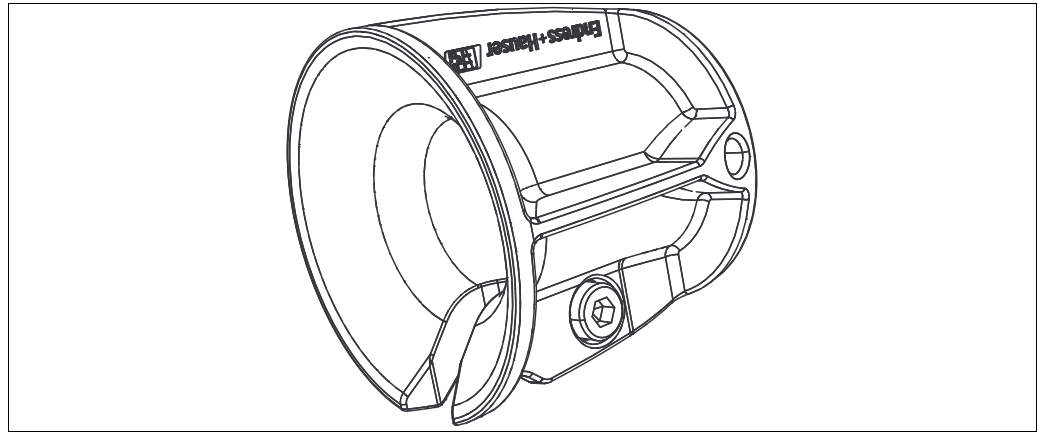


Fig. 11: Multifunctional clamp ring

Immersion pipe support

- Immersion pipe support for comfortable maintenance
- Material: stainless steel
- Order No. 71092054

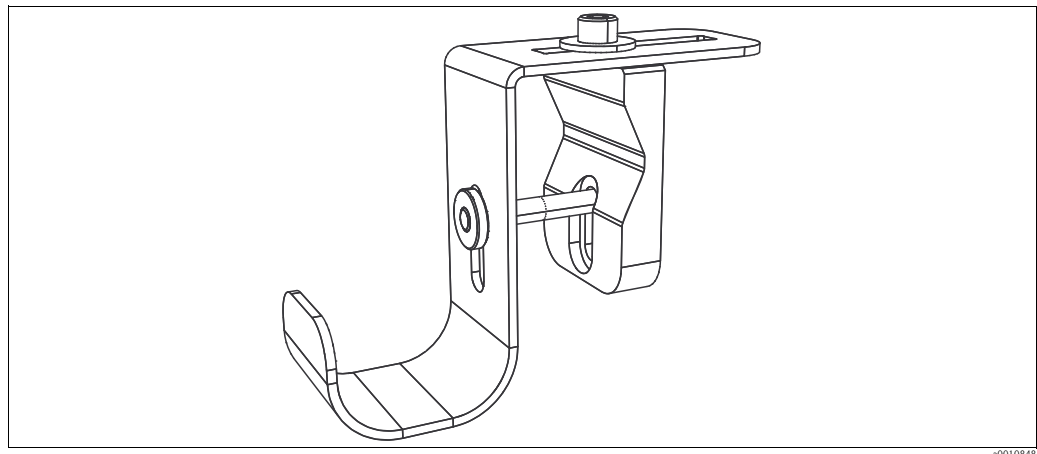


Fig. 12: Immersion pipe support

Triangle carabiner

- Used to fix the chain (together with multifunctional clamp ring)
- Material: stainless steel
- Order No. 71092052

Hook-and-loop cable ties

- To fix the cables
- Material: PE / PA (polyethylene / polyamide)
- Order No. 71092051

Mounting tool

- Tool to remove the quick fastener
- Material: PVC
- Order No. 71083913

Quick fastener

- For the quick and easy installation and exchange of sensors
- Material: POM - GF
- Order No. 71093377

Sensor adapter NPT 3/4"

- Sensor adapter G 1 to NPT 3/4"
- Material: POM - GF
- Order No. 71093382

Sensor adapter G 3/4

- Sensor adapter G 1 to G 3/4
- Material: POM - GF
- Order No. 71093383

Sensor adapter Pg 13.5

- Sensor adapter G 1 to Pg 13.5
- Material: POM - GF
- Order No. 71093384

7 Technical Data

7.1 Environment

Air temperature	-20 to +60 °C (-4 to +140 °F)
-----------------	-------------------------------

7.2 Process conditions

Process temperature range	-20 to +60 °C (-4 to +140 °F)
Process pressure range	unpressureized

7.3 Mechanical construction

Dimensions	Immersion pipe (PVC): Immersion pipe (stainless steel):	Ø 40 mm (1.57") length: 600, 1200, 1800 and 2400 mm (23.6", 47.2", 70.9" and 94.5") Ø 40 mm (1.57") length: 600, 1200, 1800, 2400 and 3600 mm (23.6", 47.2", 70.9", 94.5" and 142")
Weight	Immersion pipe (PVC): (length 1 / 2 / 3 / 4) Immersion pipe (stainless steel): length 1 / 2 / 3 / 4 / 5) Multifunctional clamp ring:	0.3 / 0.6 / 0.95 / 1.3 kg (0.7 / 1.4 / 2.1 / 2.8 lbs) 0.6 / 1.2 / 1.8 / 2.4 / 3.5 kg (1.3 / 2.6 / 4.0 / 5.3 / 7.7 lbs) 0.15 kg (0.33 lbs)
Materials	Immersion pipe: Connection bracket: Sensor adapter: Quick release fastener: Multifunctional clamp ring: Cap for end of pipe:	stainless steel or PVC stainless steel or PVC POM - GF POM - GF POM - GF PE

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