Technical Information

Flexdip CYA112

Wastewater assembly

Application

- Water treatment
- Wastewater treatment
- Plant design
- Open channels
- Basins
- Open tanks and process vats
- Fluctuating water levels

CYA112 is a modular assembly system for sensors in open basins, channels and tanks.
Suitable for sensors with various connection threads.
A float assembly is available for varying water levels.

Your benefits

- The modular system allows an optimum configuration for every measuring place
- Assembly length from 600 mm (23.6") to 3600 mm (142") in steps of 600 mm (23.6")
- Versions in stainless steel or PVC
- Quick fastener for:
  – fast installation and exchange of Memosens sensors with contactless plug-in head
  – twist-free installation of fixed–cable sensors
  – alignment of sensors
- Easy to install and to maintain

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Function and system design

Measuring system
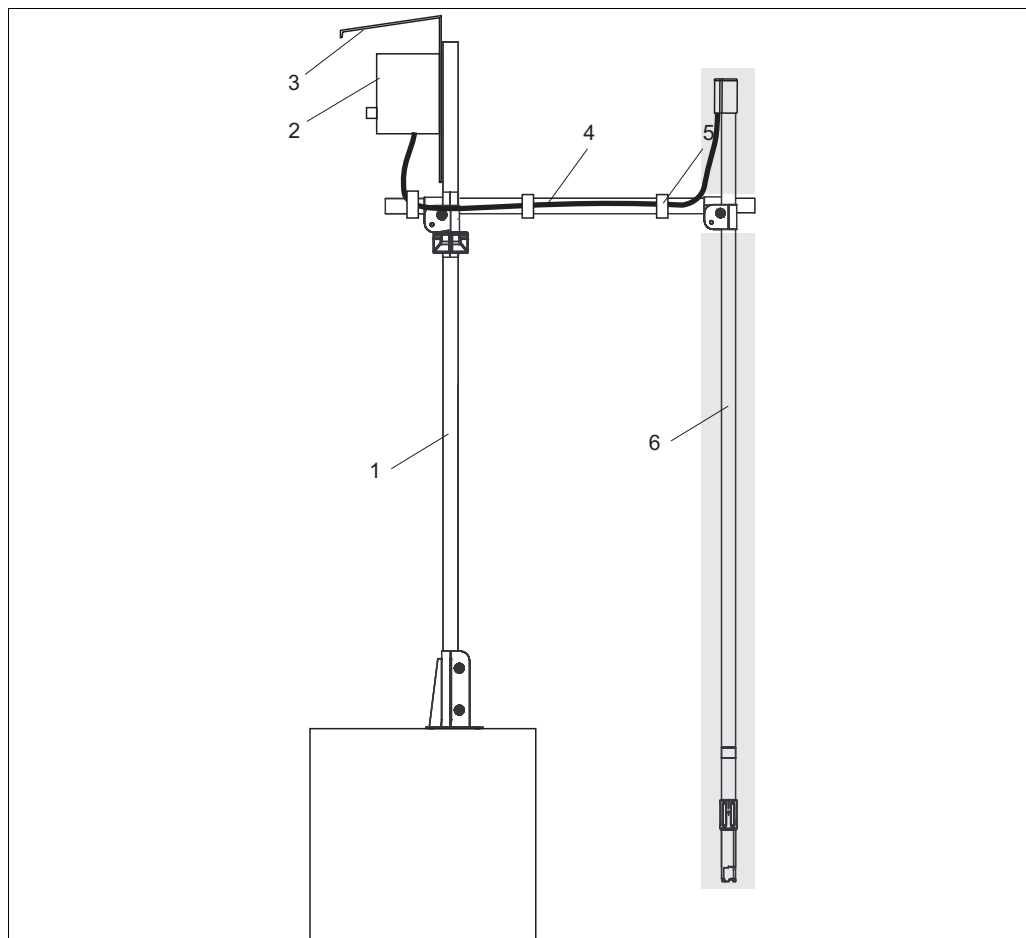
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Measuring system (example)

1	Holder system CYH112 main pipe	4	Holder system CYH112 transverse pipe
2	Transmitter	5	Hook-and-loop cable ties
3	Weather protection cover	6	Assemly CYA112 (highlighted by a grey background)

Configuration

The assembly consists of:
- Immersion pipe
- Connection angle for the sensor
- Sensor adaption
- Quick fastener
- Accessories

The assembly is available as stainless steel version and PVC version. The assembly can be installed in various ways.
- "Standard": Immersion pipe with an outer diameter of 40 mm (1.57"). It is used for fixed installation or for the pendulum holder system (the pendulum holder system is not included in the scope of delivery).
- "Chain": The immersion pipe is equipped with a multifunctional clamp ring and a suspension bracket. It is hooked into a chain (the chain is not included in the scope of delivery).
- "Floater" : PVC immersion pipe equipped with a floating body. Combined with a pendulum holder, the floater is used for varying water levels (the pendulum holder is not included in the scope of delivery).

Note!
The holder system Flexdip CYH112 (fixed installation, chain, pendulum holder) is especially designed for the assembly Flexdip CYA112.

PVC version

PVC version

The immersion pipes are available in various lengths starting at 600 mm (23.6"). They are delivered in pieces of 600 mm (23.6") and 1200 mm (47.3"). Immersion pipes up to 1200 mm (47.3"), straight or with an angle of 45°, are delivered ready-to-install. Lengths longer than 1200 mm (47.3") have to be bonded on-site. The necessary materials (glue, cleaning tissues, adhesive coupling) are included in the scope of delivery. The maximum achievable length is 2400 mm (94.5").


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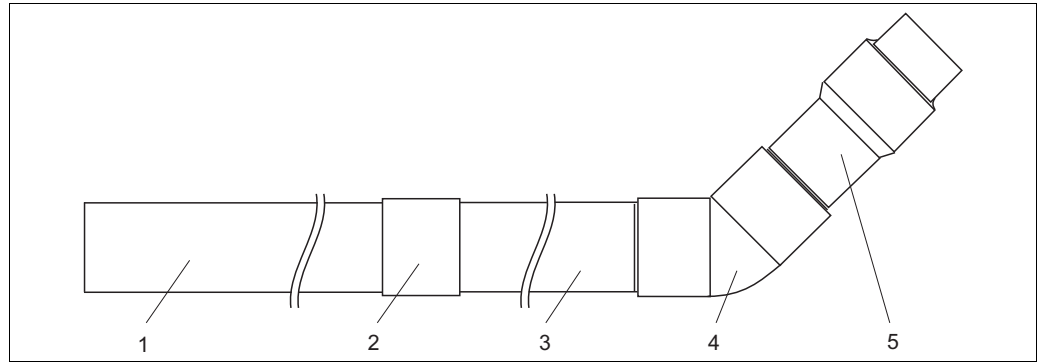
PVC pipe connection 1800 mm (70.9")

1   Immersion pipe 1200 mm (47.3")
2   Adhesive coupling
3   Immersion pipe 600 mm (23.6")
4   Adhesive coupling 45°
5   Sensor adapter G 1

In the "Standard" version the adapter on the sensor side is equipped with a G 1 thread. Sensors with other threads need an adapter (NPT ¾", G ¾, Pg 13.5).

Stainless steel version

The immersion pipes are available in various lengths starting at 600 mm (23.6"). They are delivered in pieces of 600 mm (23.6") and 1200 mm (47.3"). To screw the pipes together, each pipe has an inner thread M36 on one end and an outer thread M36 on the other end. The maximum achievable length is 3600 mm (141"). The screw joints are sealed with O-rings.
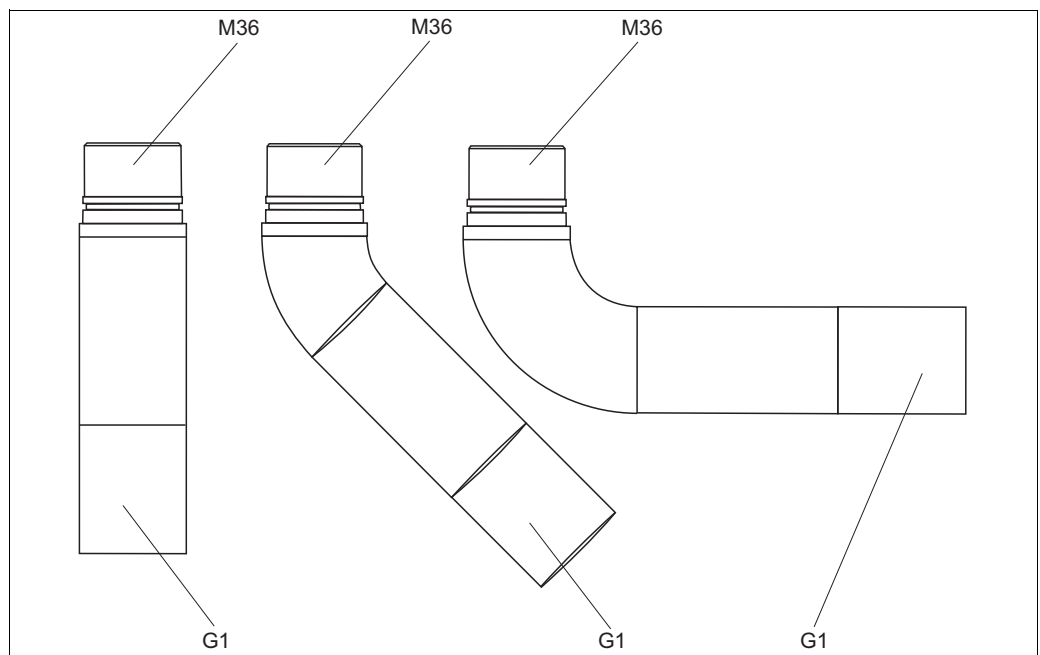The immersion pipes are mainly used for fixed installations. With lengths up to 1200 mm (47.3"), the assembly can also be used with a chain holder system.

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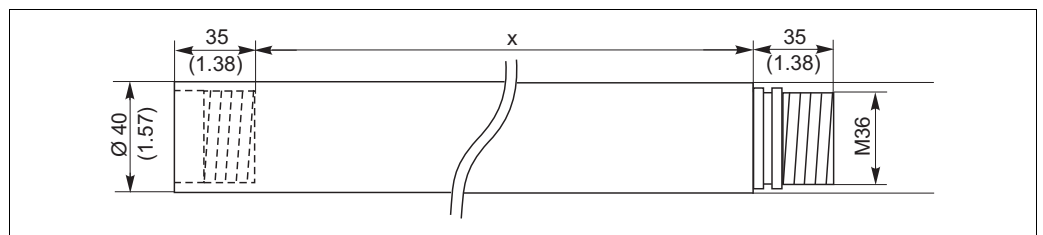
Immersion pipe as stainless steel version

x   Length = 600, 1200, 1800, 2400 or 3600 mm (23.6", 47.3", 70.9", 94.5" or 142")

At the end of the immersion pipe a connection pipe or connection knee (0°, 45° or 90°) will be screwed on.

*Connection pipes 0°, 45° or 90°*

Connection pipes or connection knees have a G 1 thread for the sensor. For large sensors, a connection knee G 1½, 45° is available. For other sensors, various adapters are available (NPT ¾", G ¾, Pg 13.5).

Floater version

Floater version

The assembly with floater is **only** available as PVC version. The immersion depth of the sensors (depending on the sensor) is approx. 600 mm (23.6"). Preferably the assembly works together with the pendulum holder Flexdip CYH112. The installation has to be done on-site.

This version is designed to compensate varying water levels.
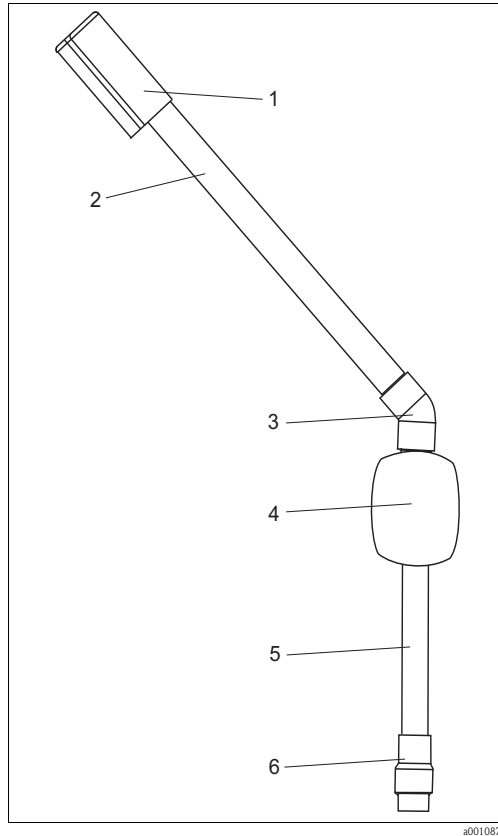
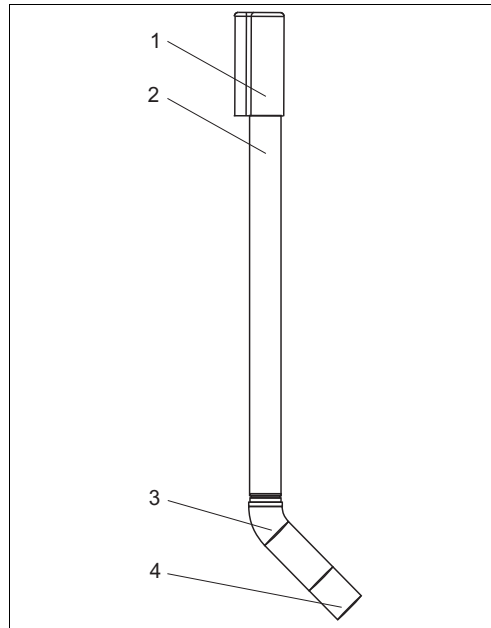| 1 | Splash protection cap |
2	Immersion pipe 600 to 2400 mm (23.6" to 94.5")
3	Adhesive coupling 45°
4	Floater
5	Immersion pipe 600 mm (23.6")
6	Sensor adapter G1

Floater version

Pipe length (pos. 2)	Maximum stroke (level difference)
600 mm (23.6")	approx. 400 mm (16")
1200 mm (47.3")	approx. 1000 mm (39")
1800 mm (70.9")	approx. 1600 mm (63")
2400 mm (94.5")	approx. 2200 mm (86")

Quick fastener

The quick fastener is designed for
- quick and easy installation and exchange of Memosens sensors with inductive plug–in connection. When using sensors with fixed cable connection, untwisting the cables is not longer necessary.
- aligning the installed sensor
- quick fastening of G 1 to G 1 thread (other threads via adapter)
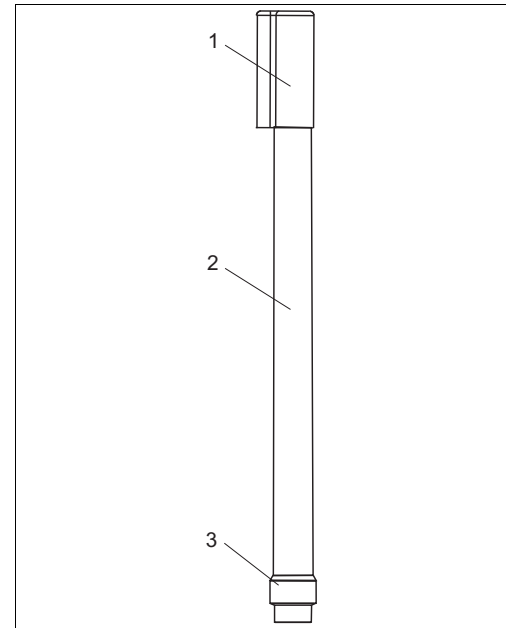- installaion between sensor and assembly

Examples

CYA112 with sensor adapter G1 (stainless steel)

1   Splash protection cap
2   Stainless steel immersion pipe, 600 mm (23.6")
3   Stainless steel connection knee ,45°
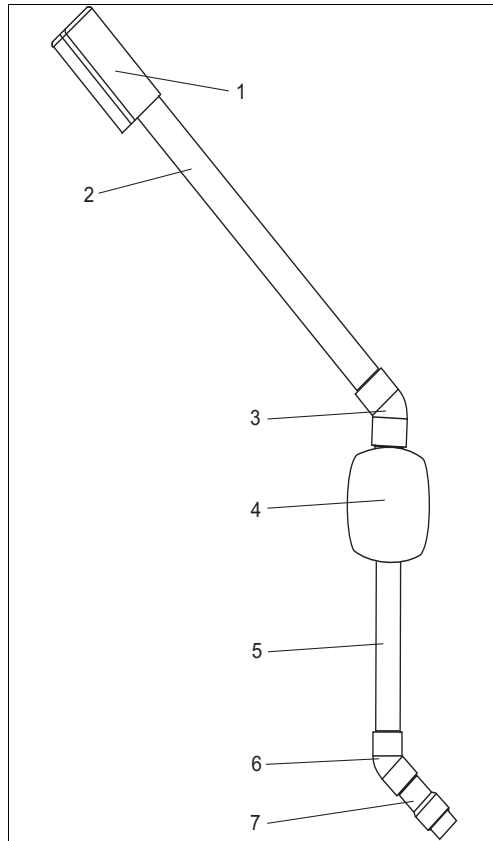*4   Sensor adapter G1*
Order code: AA21A2BA

CYA112 with sensor adapter G1 (PVC)

1   Splash protection cap
2   PVC immersion pipe 600, mm (23.6")
3   Sensor adapter G1
Order code: AA11A1AA

CYA112 with floater (PVC version only)

1   Splash protection cap
2   PVC immersion pipe, 1200 mm (47.2")
3   Adhesive coupling 45°
4   Floater
5   PVC immersion pipe, 600 mm (23.6")
6   Adhesive coupling 45°
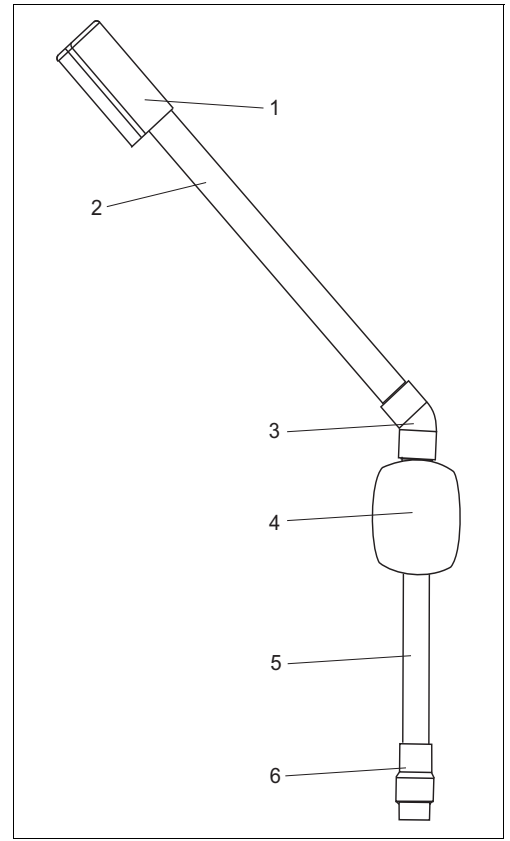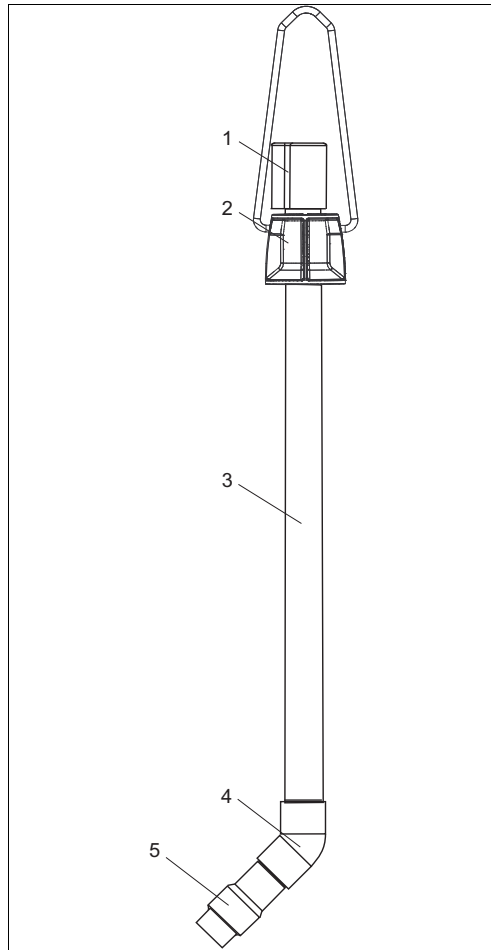*7   Sensor adapter G1*
Order code: AC11B1BA

CYA112 with floater (PVC version only)

1   Splash protection cap
2   PVC immersion pipe, 1200 mm (47.2")
3   Adhesive coupling45°
4   Floater
5   PVC immersion pipe, 600 mm (23.6")
6   Sensor adapter G1
Order code: AC11B1AA

CYA112 with chain holder system

1   Splash protection cap
2   Multifunctional clamp ring with suspension bracket
3   Immersion pipe
4   Adhesive coupling 45°
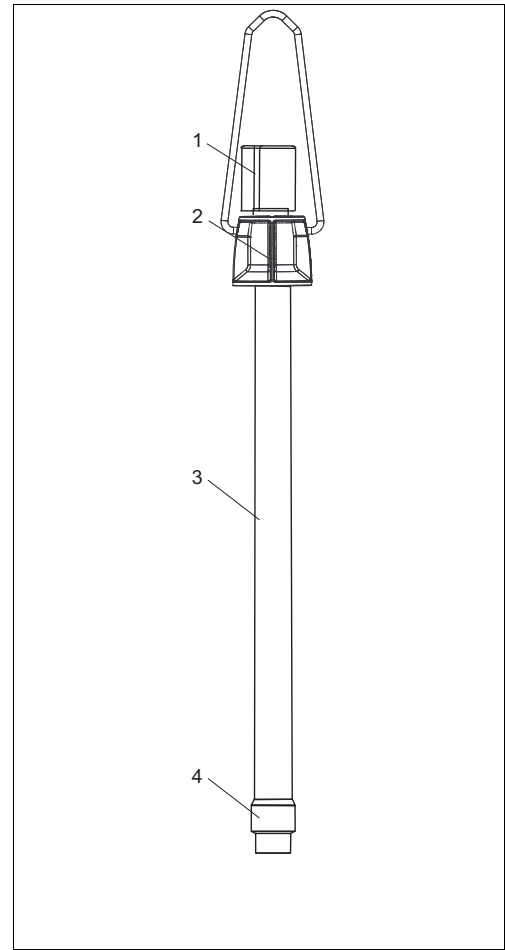*5   Sensor adapter G1*
Order code: AB11B1BA

CYA112 with chain holder system

1   Splash protection cap
2   Multifunctional clamp ring with suspension bracket
3   Immersion pipe
4   Sensor adapter G1
Order code: AB11B1AA

Installation conditions

Installation instructions

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")


Holding point

Grounding

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.

Cable routing

The sensor cable is routed inside the assembly. At the pipe exit the sensor cable is centered by a rubber plug. The mechanical protection is ensured by the splash protection cap.
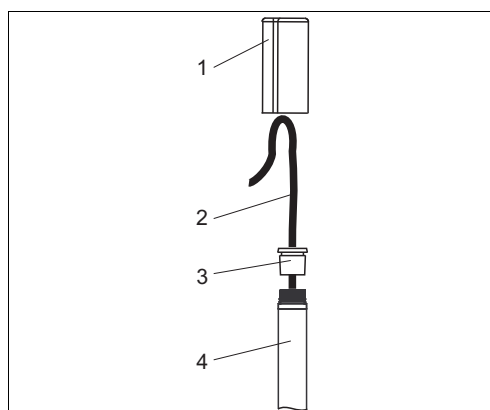
1	Splash protection cap
2	Sensor cable
3	Rubber plug
4	Assembly

Cable routing

Environment

Ambient temperature –20 to +60 °C (–4 to 140 °F)

Process conditions

Process temperature range 0 to 60 °C (32 to 140 °F)

Process pressure range unpressurized

Mechanical construction

Dimensions

Immersion pipe (PVC):	Ø 40 mm (1.57"), length: 600, 1200, 1800 and 2400 mm (23.6", 47.2", 70.9" and 94.5")
Immersion pipe (stainless steel):	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 (stainless steel) (length 1 / 2 / 3 / 4 / 5):	0.6 / 1.2 / 1.8 / 2.4 / 3.5 kg (1.3 / 2.6 / 4.0 / 5.3 / 10.8 lbs)
Immersion pipe (PVC) (length 1 / 2 / 3 / 4):	0.3 / 0.6 / 0.95 / 1.3 kg (0.7 / 1.4 / 2.1 / 2.8 lbs)
Multifunctional clamp ring:	0.15 kg (0.33 lbs)

Materials

Immersion pipe:	stainless steel* or PVC
Connection angle:	stainless steel* or PVC
Sensor adaption:	POM – GF
Quick fastener:	POM – GF
Multifunctional clamp ring:	POM – GF
Cap	PE

* The following types of stainless steel are used:

DIN	AISI	Trade name
1.4401	316	
1.4404	316 L	
1.4429	316 LN	
1.4435	316 L	
1.4436	316	
1.4438	317 L	
1.4439		F48
1.4462		Alloy 2205
1.4501		Zeron 100
1.4561	316 Ti	
1.4571	316 Ti	

Sensors

Sensors with connection thread Pg 13.5 with Ø 12 mm and length of 120 mm (e.g. pH): use sensor holder Pg 13.5

Sensors with connection thread NPT ¾" (e.g. pH and chlorine): use adapter NPT ¾"

Sensors with connection thread G ¾ (e.g. conductivity): use adapter G ¾

Sensors with connection thread G 1 (e.g. oxygen, turbidity, nitrate etc.): use adapter G 1

Sensors with connection thread G ½ (e.g. nitrate): use adapter G ½

| Sensor	Preferred assembly material *	Connection angle	Connection thread	Suitable for quick fastener
CPSx1D	PVC	0°	Pg 13.5	yes
CPF8xD	PVC	0°	NPT ¾"	yes
CPSx1	PVC	0°	Pg 13.5	yes
CPF8x	PVC	0°	NPT ¾"	yes
COS31/41	PVC	0°	G 1	yes, without SXP plug
COS51D	PVC	0°	G 1	yes
COS61	PVC, stainless steel	45°	G 1	yes, without SXP plug
CUS41	PVC, stainless steel	0°	G 1	yes
CNS70	stainless steel	45°	G 1½	no
CUS65	stainless steel, PVC	0° / 45°	G 1	no
CUS70	PVC	0°	G 1	no
CCS142D	PVC	45°	NPT ¾"	yes
CLS50	PVC, stainless steel	0°	G ¾	yes

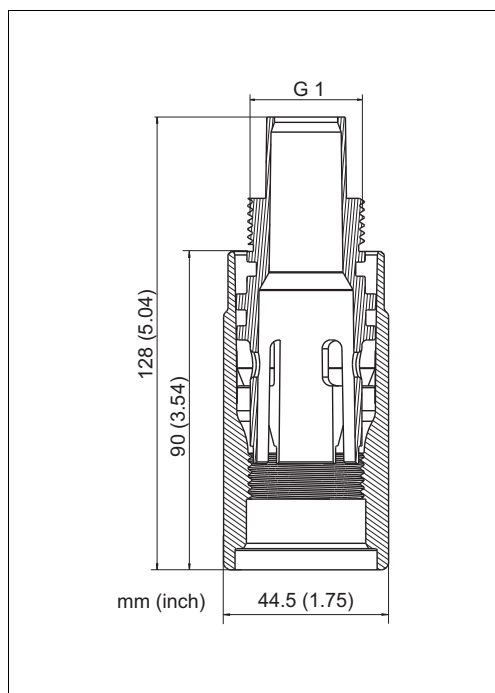* Use stainless steel for hazardous areas

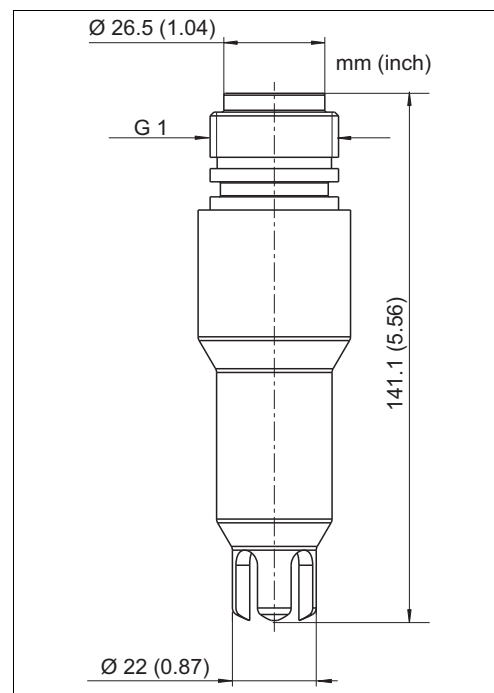**Sensor adapter**
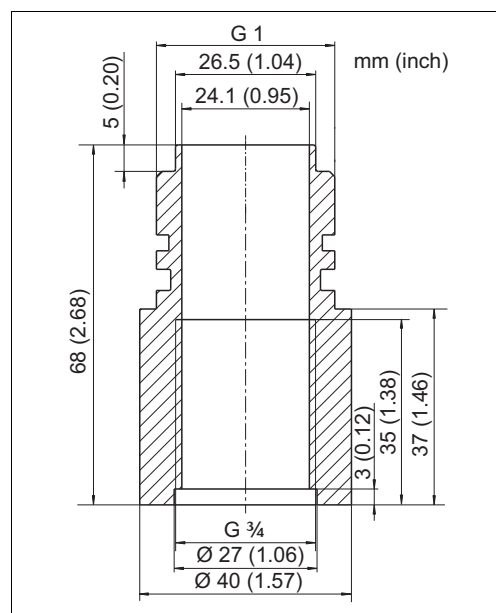
Adapter G 1 to G ¾
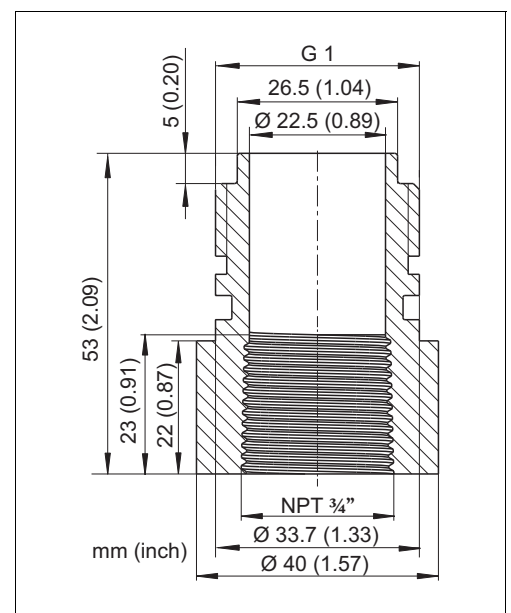
Adapter G 1 to NPT ¾

Quick fastener

Sensor holder Pg 13.5

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.

Ordering information

Scope of delivery

The scope of delivery comprises:
- Ordered assembly version
- Operating Instructions, English.

Order information

Per measuring point (assembly) you have to select a order code.

Select the assembly order code as follows:

1. Select between
    - fixed immersion pipe (standard)
    - free hanging (chain)
    - or varying water levels (floater)

2. Select material and length of the immersion pipe.
    - For fixed installations (heavy mechanically force) is stainless steel the first choice.
    - For chain installation PVC version is used up to a length of 1200 mm (47.3") or stainless steel version with 600 mm (23.6") is used.
    - For the floater version (varying water levels or the measuring point is deep into the basin) only PVC is used. The immersion depth is approx. 600 mm (23.6"").

3. Select the orientation of the sensor in the medium.
    - Straight connection angle are predominantly used for pH measurement.
    - 45° angle are used for desolved oxygen measurement.
    - 90° angle are used for turbidity measurement at outlets with low water levels.

4. Select the thread.

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

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.
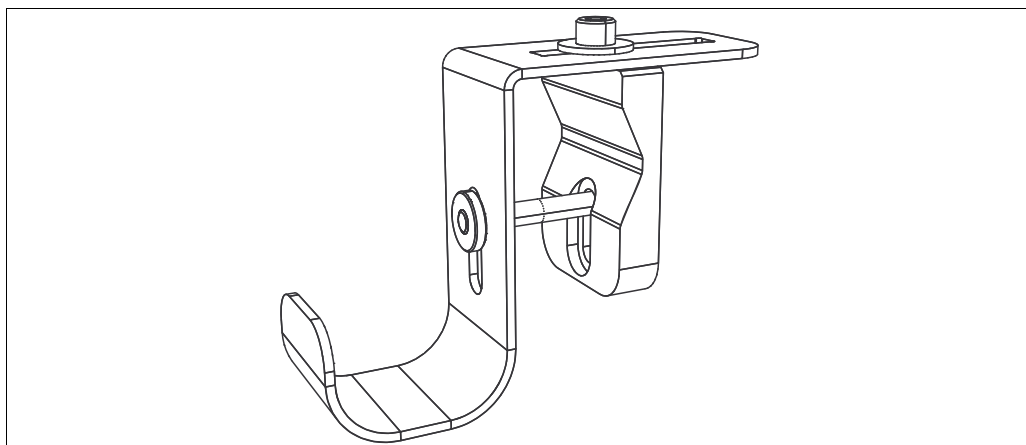- Material: POM – GF
- Order No. 71092049
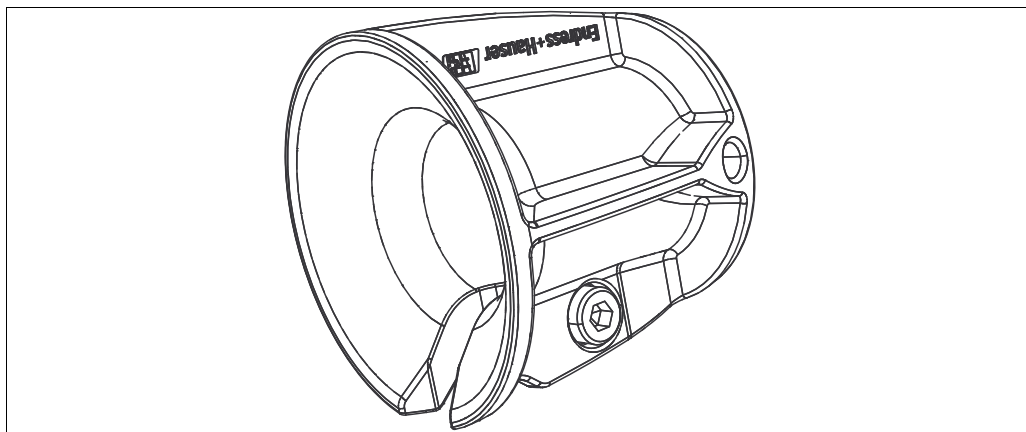
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Multifunctional clamp ring

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

a0010848

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 ¾"
- Sensor adapter G 1 to NPT ¾"
- Material: POM – GF
- Order No. 71093382

Sensor adapter G ¾
- Sensor adapter G 1 to G ¾
- 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

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