

4.1.1 Accessories for immersion installation.

In immersion condition, it is necessary to maintain the sensor by the body and not to leave the sensor suspended by the cable at the risk of damaging the sensor.

AQUALABO CONTROLE proposes a range or pole (short and long version) in order to install the sensor in open basins. It can be positioned a considerable distance from the basin edge with the bracket suspended on a chain, for example.

Please note the following when planning your set-up:

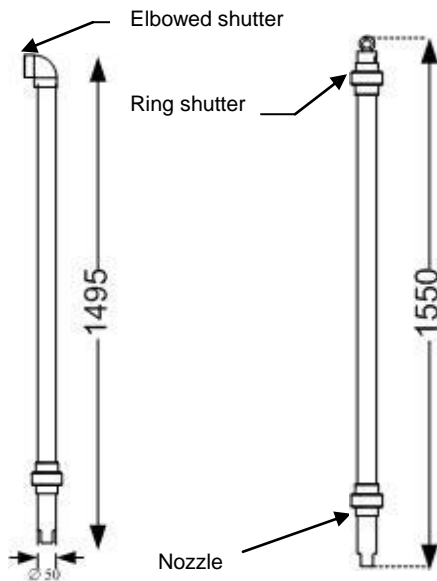
- The fitting must be easily accessible to allow the sensor or the fitting itself to be maintained and cleaned regularly
- Do not allow the fitting (and thus also the sensor) to swing against and hit the basin edge
- When working with systems involving pressure and/or temperature, ensure that the fitting and sensor meet all relevant requirements
- The system designer must check that the materials in the fitting and sensor are suitable for the measurement (chemical compatibility, for instance)

Material	PVC
Admissible temperature	0 to 60 °C
Pressure max.	5 bars

➤ Short pole

The short pole is available in 2 versions :

- **version with elbowed shutter**. The nozzle of support is included in the offer.



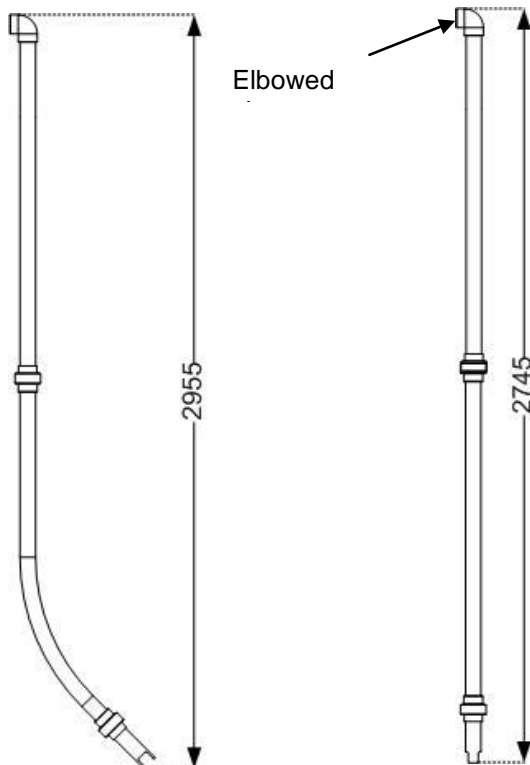
PF-ACC-C-00268	STRAIGHT SHORT POLE FOR C4E/NTU SENSOR (1495 mm, ELBOWED SHUTTER)
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- **version with shutter for mounting with chain** The nozzle of support is included in the offer.

PF-ACC-C-00271	STRAIGHT SHORT POLE FOR C4E/NTU SENSOR (1550 mm, RING SHUTTER)
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➤ Long pole

The long poles are available in elbow version, for installations in aeration basin, and straight, for applications in open channel. Every pole is equipped with an elbowed shutter and with waterproofness joints. The lower part includes a nozzle which is adapted to the sensor what assures its mechanical support.



- **Elbowed pole with elbowed shutter**

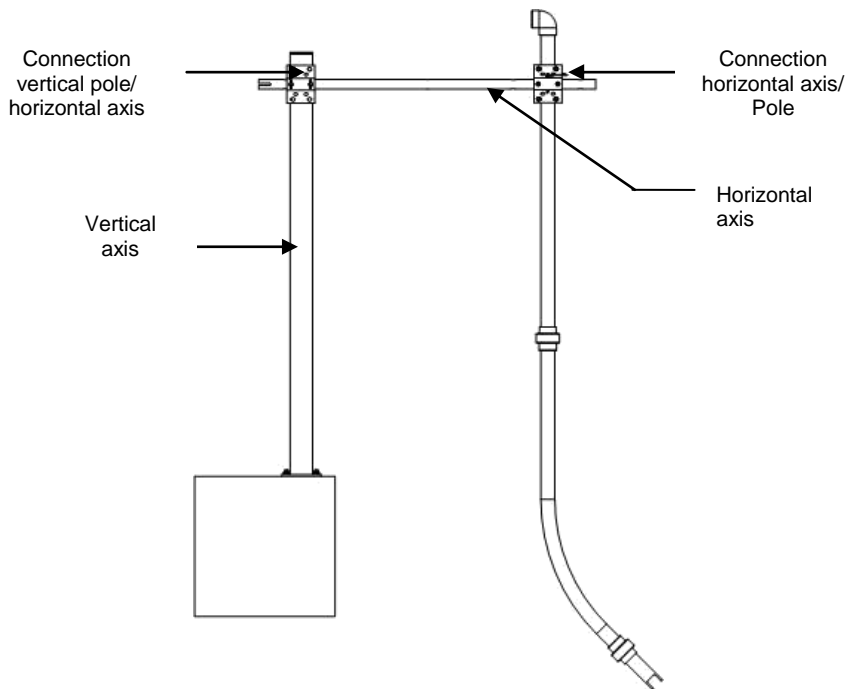
PF-ACC-C-00262	90° ELBOW LONG PERCH FOR C4E/NTU SENSOR (2955 mm, ELBOWED SHUTTER)
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- **Straight long pole with elbowed shutter**

PF-ACC-C-00265	STRAIGHT LONG POLE FOR C4E/NTU SENSOR (2745 mm, ELBOWED SHUTTER)
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➤ **Mounting accessories for pole.**

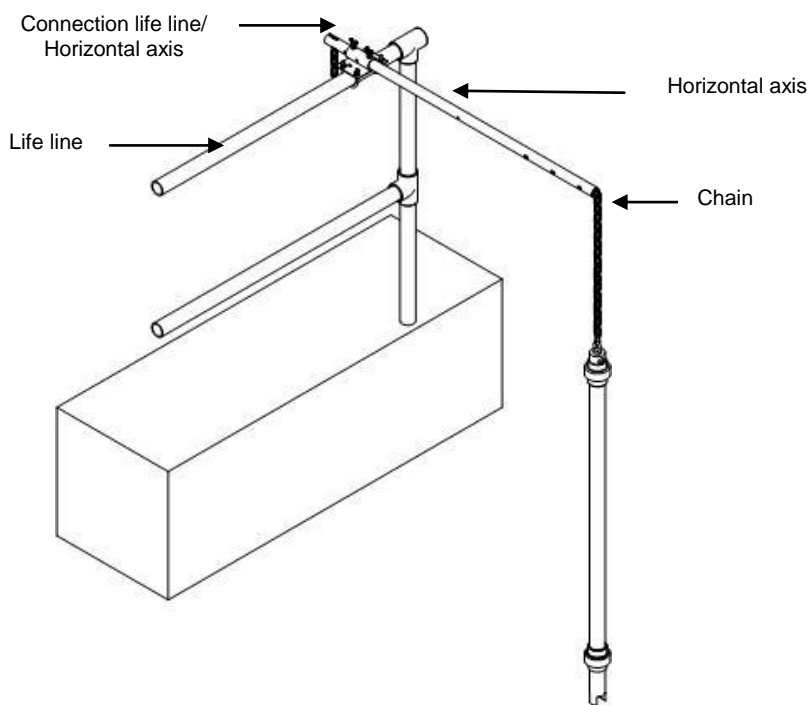
The elements of fixation for the poles are flexible and specially studied to adapt themselves to the different configurations of assembly.



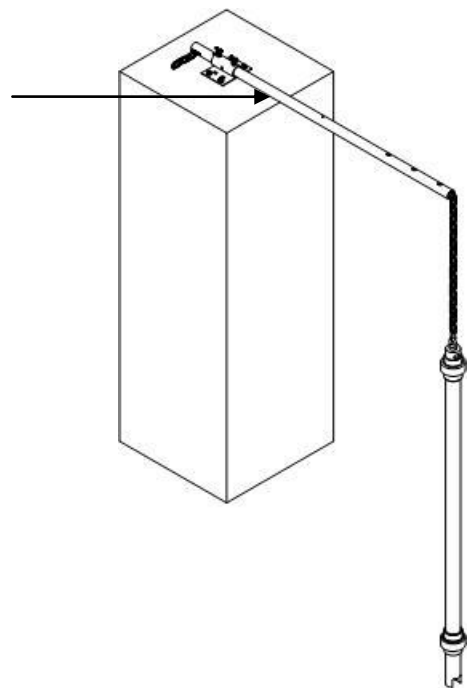
- Pole kit fixation

NC-ACC-C-00009	POLE FIXATION KIT FOR NUMERICAL SENSOR (ON LOW WALL)
NC-ACC-C-00010	POLE FIXATION KIT FOR NUMERICAL SENSOR (ON LIFE LINE)
NC-ACC-C-00011	POLE FIXATION KIT FOR NUMERICAL SENSOR (ON VERTICAL AXIS)
PF-ACC-C-00272	VERTICAL AXIS FOR NUMERICAL SENSOR POLE (TO BE FIXED ON SOIL)

Example of mounting on vertical axis



Example of mounting on life line



Example of mounting on low wall

- Accessories kit for assembly of poles with chain.

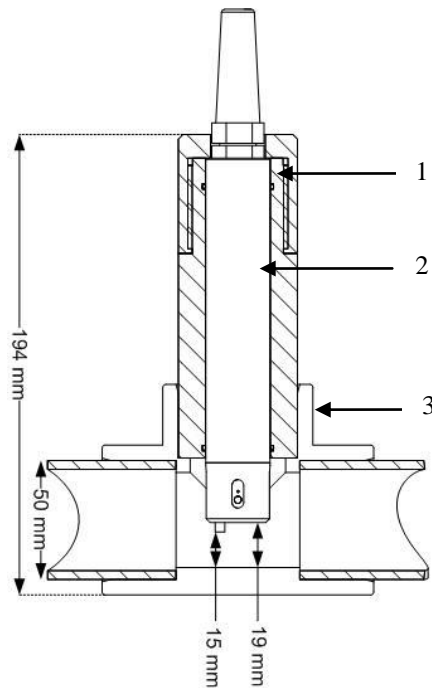
NC-ACC-C-00012	SHORT POLE FIXATION KIT FOR NUMERICAL SENSOR (ON LOW WALL)
NC-ACC-C-00013	SHORT POLE FIXATION KIT FOR NUMERICAL SENSOR (ON LIFE LINE)
	SHORT POLE FIXATION KIT FOR NUMERICAL SENSOR (ON VERTICAL AXIS)

4.1.2 Accessories for PVC pipe-mounting.

Every system of assembly is delivered with an adapter (and the appropriate joints) and one T of assembly (90 ° for C4E sensor) to stick on a 50 mm diameter pipe. Its special design type ensures the correct inflow to the sensor, thus preventing incorrect measurements.

Please note the following when planning your piping set-up:

- The fitting must be easily accessible to allow the sensor or the fitting itself to be maintained and cleaned regularly
- We recommend bypass measurements. It must be possible to remove the sensor through the use of shut-off valves
- When working with systems involving pressure and/or temperature, ensure that the fitting and sensor meet all relevant requirements
- The system designer must check that the materials in the fitting and sensor are suitable for the measurement (chemical compatibility, for instance)



- (1) Adapter
- (2) C4E sensor
- (3) 50 mm pipe diameter

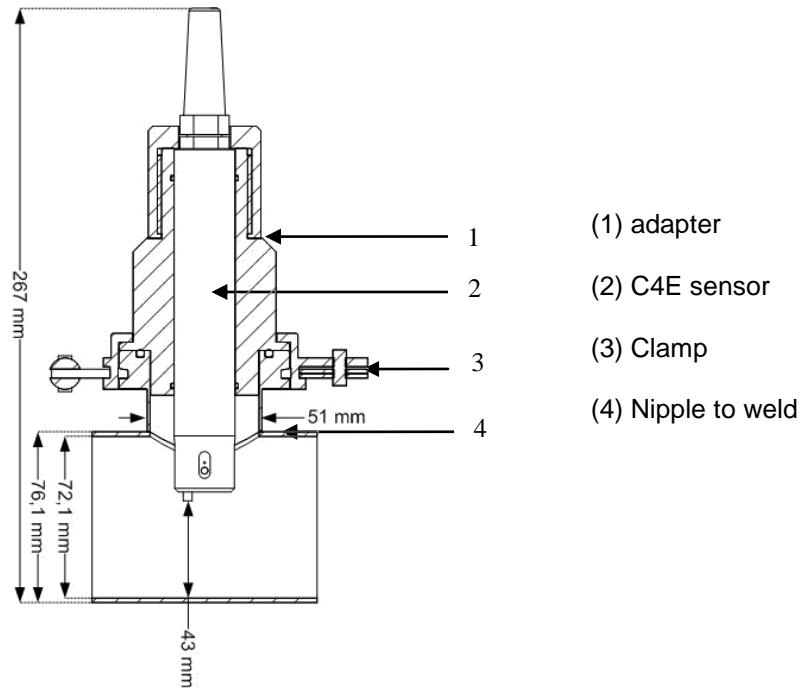
Mounting system for C4E sensor (PF-ACC-C-00226)

4.1.3 Accessories for stainless steel pipe-mounting.

The accessories of assembly for stainless pipe are proposed with an adapter and its joints with or without the systems of clamp / Nipple. The acceptable maximum pressure for the sensors is 5 bars.

The system of assembly can be delivered with or without stainless steel clamp.

The adapter is compatible with a 51 mm diameter external clamp.

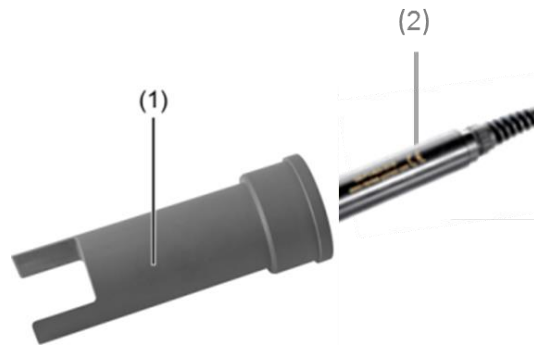


Mounting system for OPTOD sensor (PF-ACC-C-00229)

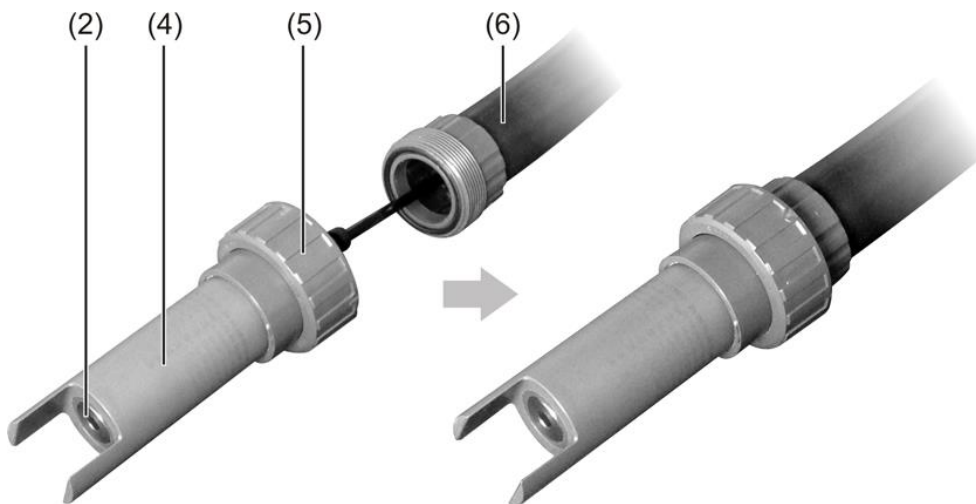
4.2 Installation of the sensor in the accessories of assembly

4.2.1 Insertion in a pole.

The sensor is mounted on the relevant fitting as described below, using a sensor holder, which can be used both for the short and long pole:

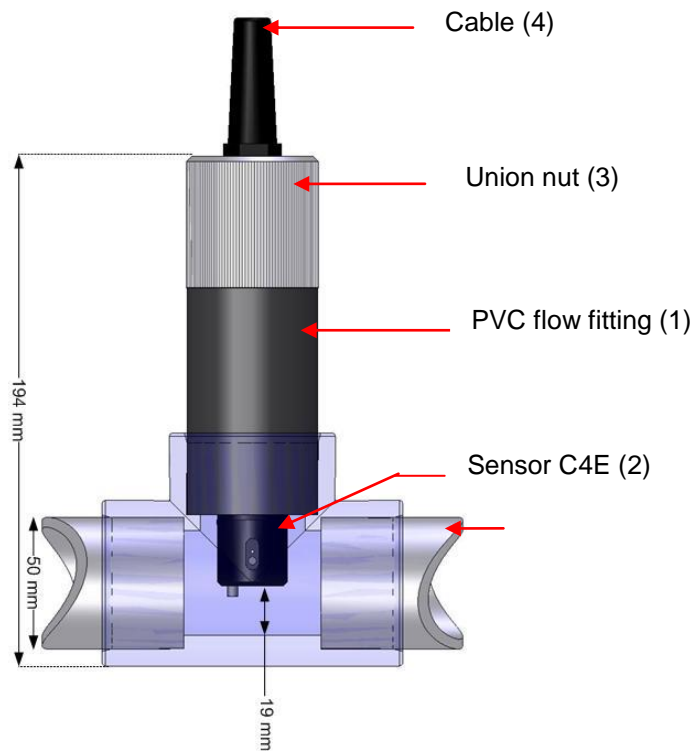


- 1 Remove the protective cap on the sensor and insert the sensor (2) into the nozzle (1) as far as the stop..
- 2 Insert the sensor cable into the fitting pipe (6) and completely feed through.



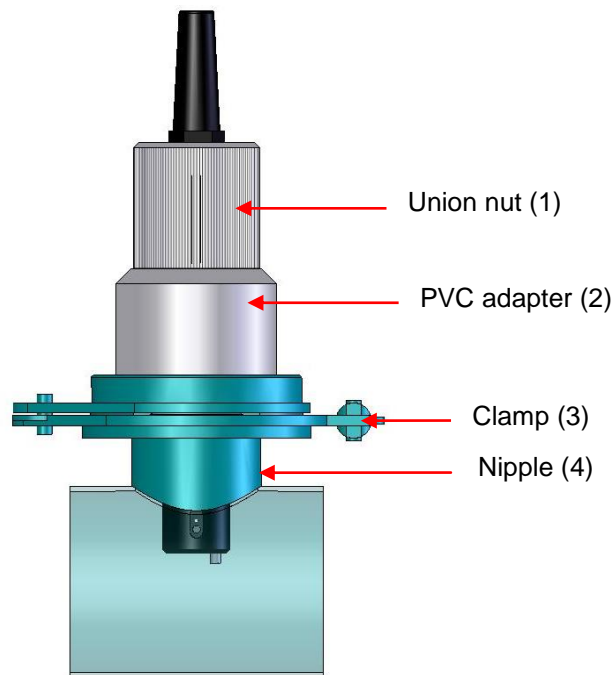
- 3 Screw the sensor holder with the union nut (5) onto the fitting pipe (6) and tighten until handtight.

4.2.2 Insertion into the PVC in-pipe mounting system.



- 1 Unscrew the union nut (3) from the PVC flow fitting (1).
- 2 Guide the sensor cable (4) through the union nut on the fitting.
- 3 Insert the sensor (2) into the fitting as far as the position shown in the middle image above.
- 4 Screw the union nut onto the fitting as far as the stop.

4.2.3 Insertion into the Stainless steel in-pipe mounting system.

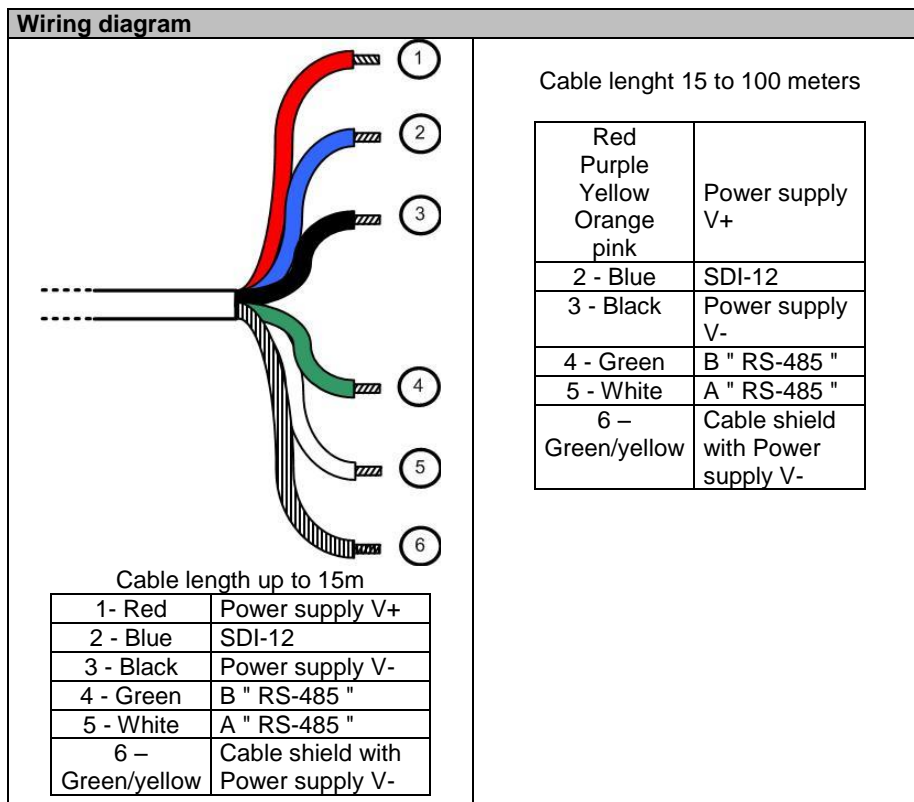


- 1 After welding the clamp (3) on the stainless steel pipe, remove the clamp from the system and remove the PVC adapter (2).
- 2 Unscrew the union nut (1) from the adapter.
- 3 Guide the sensor cable through the union nut on the adapter.
- 4 Reposition the adapter in the nipple (4), and re-screw the union nut.

4.3 Electrical connections.

The sensor could deliver within version bare wire on 3, 7, 15 m or on other length (up to 100 m).

Power supply	
Power requirements	5 to 12 volts for cable 0-15 m 7 to 12 volts for cable >15 m Max. 13.2 V
Consumption	Standby 25 μ A Average RS485 (1 measure/ seconde) : 6,3 mA Average SDI12 (1 measure/ seconde) : 9,2 mA Current pulse : 500 mA Protection against the inversions of polarity



5. Startup and maintenance.

5.1 Initial startup

Once the sensor is connected to your terminal, the sensor is settled in its accessory of assembly and the parameterization has been carried out on the display unit, the sensor is ready for initial startup.

➤ Note :

For measurement, you must eliminate bubbles trapped under the membrane.

During the introduction of the sensor in measurement environment, wait for sensor's temperature stabilization before measure processing.

➤ Started :

Remove the black cap of protection (by holding the sensor head downward and by unscrewing the hood towards the right).

5.2 Calibration

The calibration of the conductivity sensor is a 2-step process:

- Step 1 (offset): Expose the sensor to the air to perform the first stage of the Calibration process. The value for this first calibration standard is set to 0 0 $\mu\text{S/cm}$.

- step 2 (gain): the sensor is placed in a buffer solution of known conductivity which depends of the range using.

Example of standard solutions

Measurement range	Concentration of standard solution
0.0-200.0 $\mu\text{S/cm}$	84 $\mu\text{S/cm}$
0 -2,000 $\mu\text{S/cm}$	1,413 $\mu\text{S/cm}$
0.00 - 20.00 mS/cm	12,880 $\mu\text{S/cm}$
0.0 – 200.0 mS/cm	111.8 mS/cm

5.3 Maintenance:

The C4E sensor uses a 4–electrode conductivity measuring principle, and care must be taken to maintain these 4 electrodes in optimal working condition. After each use, rinse the sensor before storing it.

To clean the electrodes (made from graphite and platinum), insert and retract an abrasive strip through the slot in the sensor, under a stream of running water.



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