

pH PERFECT

What Does pH Mean?

pH is the measure of how acid/alkaline the swimming pool water is. Its value ranges from 0 to 14: 0 is highly acidic, 7 is neutral and 14 is highly alkaline. The mineralogical quality of the water, the climate, water intake and the numerous pool users all cause the pH to vary continuously.

For the comfort of the pool users, the pH of the water should be maintained between 7.2 and 7.4. Below that value, the water is aggressive; and above it, larger doses of disinfectant are required to keep the water healthy and prevent the formation of algae.

How Does it Work?

pH Perfect monitors the pH with a pH probe located in the filtration system, which constantly measures the pH of the water in the pool. According to the value measured, pH Perfect adjusts the pH of the water with its dosing pump by adding acid. This maintains the water balance at the correct level without any intervention.

To prevent your pool from becoming a constant source of worry, ZODIAC supplies an automatic water treatment system designed to free you from having to do this work yourself. So enjoy your pool to the fullest, without the worry.

A Product the User Will Find Simpler and More Reliable:

With pH Perfect and as with all its products, ZODIAC has achieved yet another really simple pool maintenance breakthrough: with its dual power supply system, ZODIAC'S pH Perfect controller keeps the user constantly informed of the pH of the pool water, whether the pump's on or off.

A simple visual alarm on the control, will indicate when the corrective products runs out and you can check instantly the probe reliability if you have any doubts about it. Lastly, the intake pipe with gas emission stopper provides more safety by preventing any contact with the corrective acid.

An Essential System for Water Management

The pH Perfect system combines with other equipment to free the pool owner from the usual water treatment chores. Unless the pH is properly regulated, manual treatments are both risky and expensive, and even the automatic process controls are under-used and less effective.

Used in conjunction with a ZODIAC Salt Water Chlorinator, pH Perfect extends the service life of the Chlorinator and reduces maintenance on the cell, at the same time ensuring water that is really clear and comfortable while optimising the effectiveness of the chemicals.

So ZODIAC Pool Care, with its two perfectly compatible systems, provides fully automated pool treatment.



Benefits of a pH Perfect

Comfort That Requires No Work

- Automatic water treatment.
- Fewer chemical products.
- Simplified pool maintenance.

4 Advantages for Your Comfort and Wellbeing

- Water that is permanently clear and soft.
- No irritation to the eyes.
- No dryness of the skin.
- No unpleasant taste.

Visual Display

- Permanent water pH display.
- Visual alarm when the acid runs out.
- Probe reliability checked instantly.

Extremely Adaptable

- The set value can be adjusted as required.
- The pH Perfect works in acid or alkaline dosage mode (i.e. plus or minus pH injection).
- The calibration can be locked so as to prevent any accidental loss of settings.

Rapid Installation

For maximum simplicity:

- the unit is pre-wired for connection to the pump and the electric power supply
- easily wall-mounted by means of a clamp.

pH Perfect is supplied complete with:

- A control unit, equipped with a peristaltic pump.
- A pH measurement probe.
- The required hoses (suction and injection).
- An intake pipe with gas emission stopper equipped with a sensor.
- Buffer solutions.



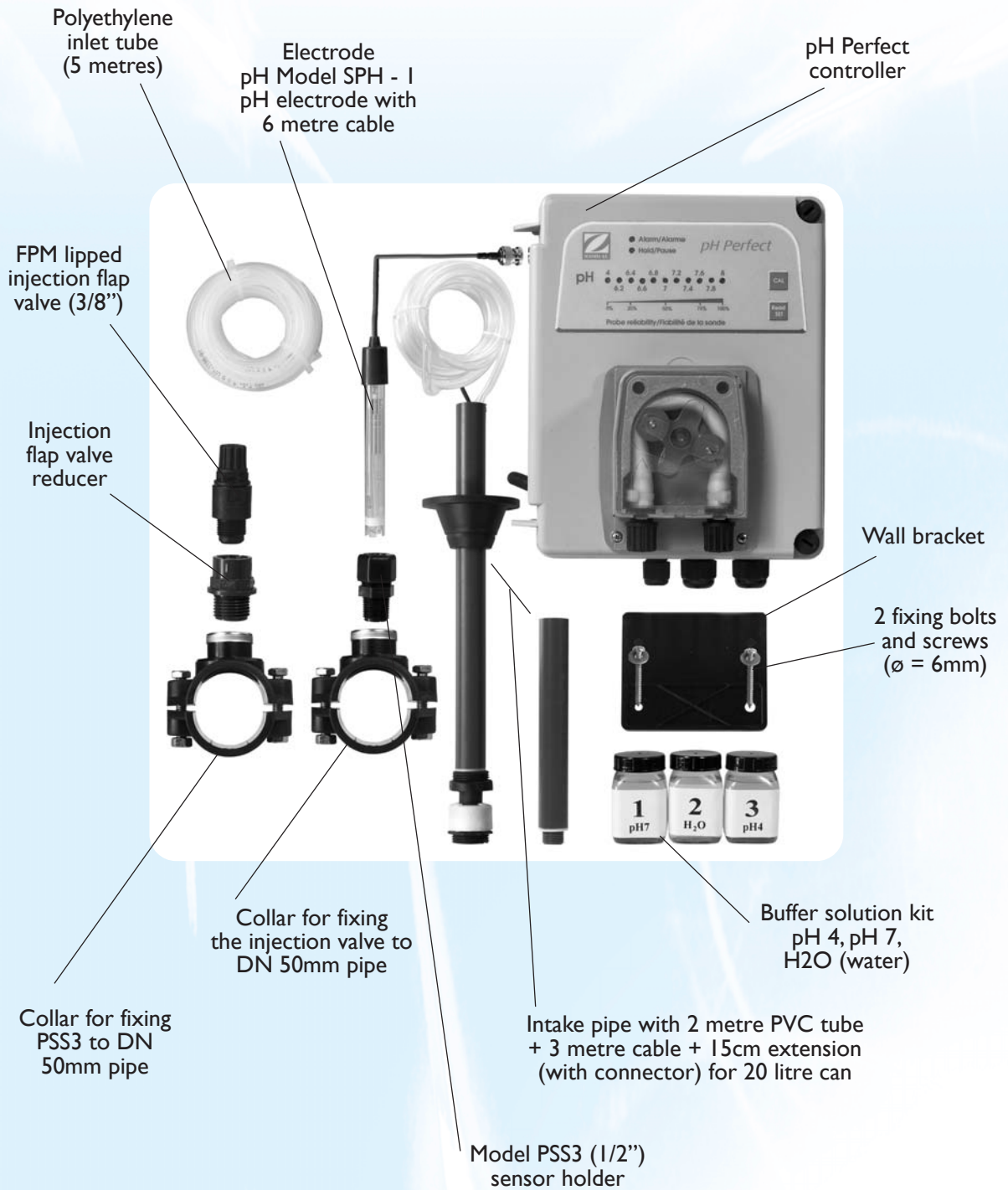
Easy To Use And Reliable

- Maintenance of the water balance is automated.
- To inject the corrective product, pH Perfect uses a peristaltic dosing pump.
- Calibration is simple and can be done in less than two minutes.
- The probe is calibrated by means of a buffer solution in order to make measurement more accurate.
- The intake pipe has a gas emission stopper for greater safety.



Identification of Parts

The pack contains the items shown and required to install your pH Perfect



Default Parameters

The pH setting of the pH Perfect is pre-calibrated in the factory with the following parameters:

- Pump at maximum flow = 1.5l/h
- pH set point = 7.4
- Dosage = ACID
- Calibration = possible (ENABLE)
- Safety against over-dosage: deactivated

Indicator Lamps and Buttons

“Alarm/Alarme” diode: informs the user of an incorrect measurement or an equipment malfunction

pH sensor connection point: this is used to connect the sensor cable to the control box

11 diode bar: displays the pH value, the value of the set point and the measurement of sensor reliability

The “Hold/Pause” diode: informs the user that the dosing pump has stopped working

Main switch: for switching on power to the controller

Connector for the PVC pipe suction tube

The “CAL” key: permits changing from operation in pH measurement mode to sensor calibration mode. The key must be depressed for 5 seconds

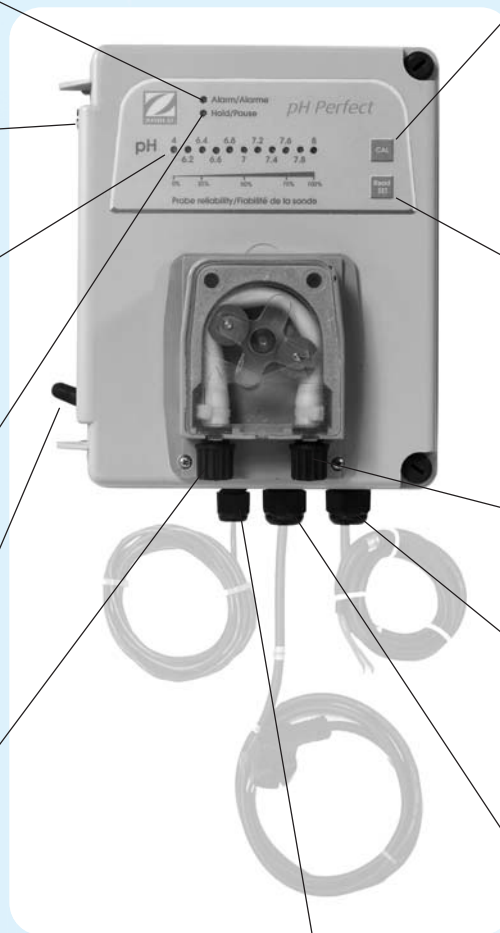
The “Read SET” key: exerting continuous pressure on this key will display the value of the pH set point on the diode bar

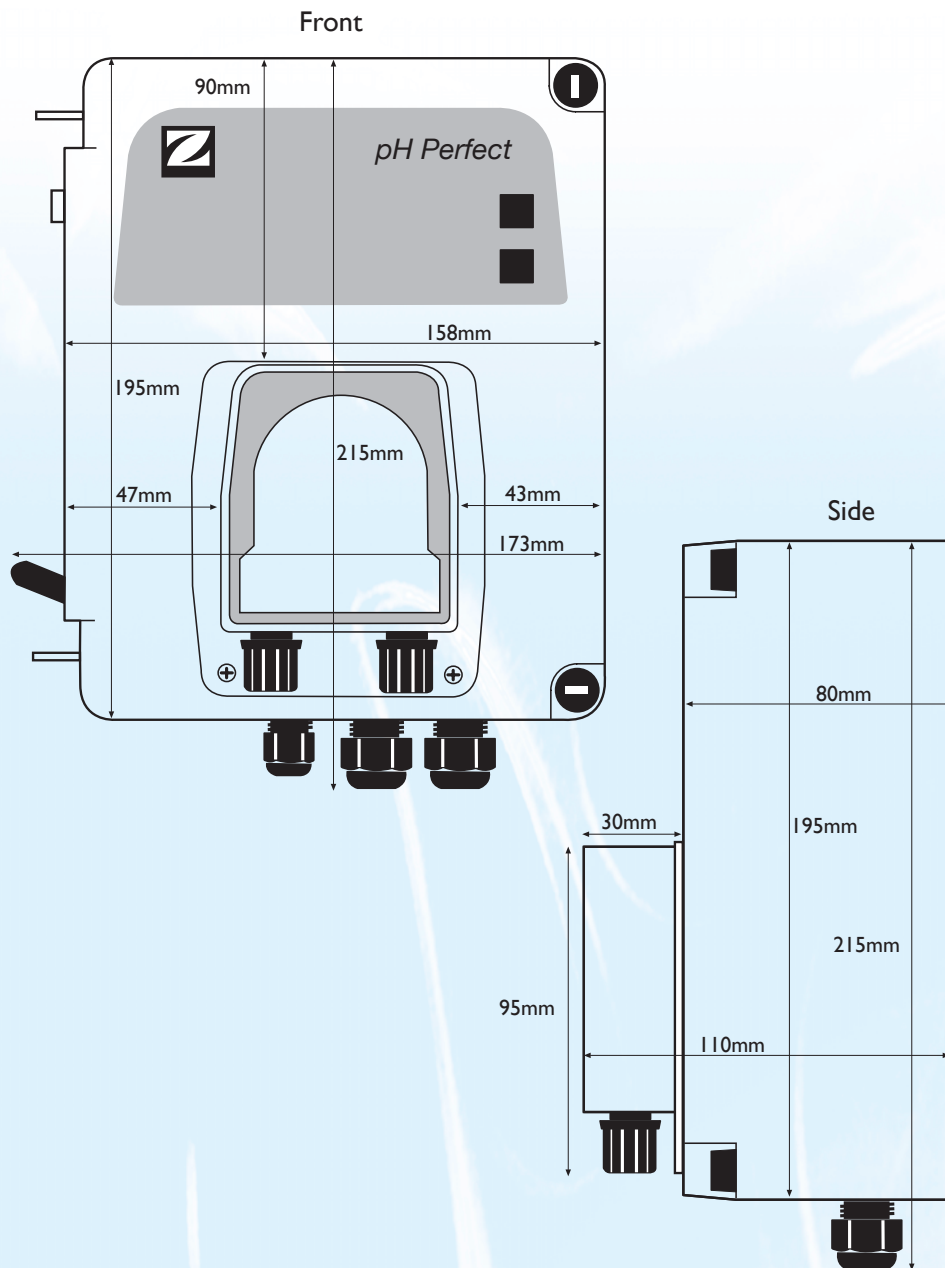
Connector for the semi-rigid polyethylene inlet pipe

Connector junction: connection of the cable for direct 230V AC control on the pool pump

Connector junction: connection of the cable permanent 230V AC mains supply

Connector junction: for the cable linking the housing to the suction tube sensor





Dimensions: 215 (L) x 173 (W) x 110mm (H)
 Weight: 1.6kg (appliance, sensor, tube and pipes)
 Power Supply: 50Hz, 230V AC
 Consumption: 7W
 Pump flow rate: 1.5l/h (or 25ml/min)

Maximum back pressure: 1.5 bar
 pH scale: 6.2pH - 8.0pH
 pH check range: 0.0pH - 14.0pH
 Appliance accuracy: +/- 0.1pH
 Calibration of sensor:
 Automatic



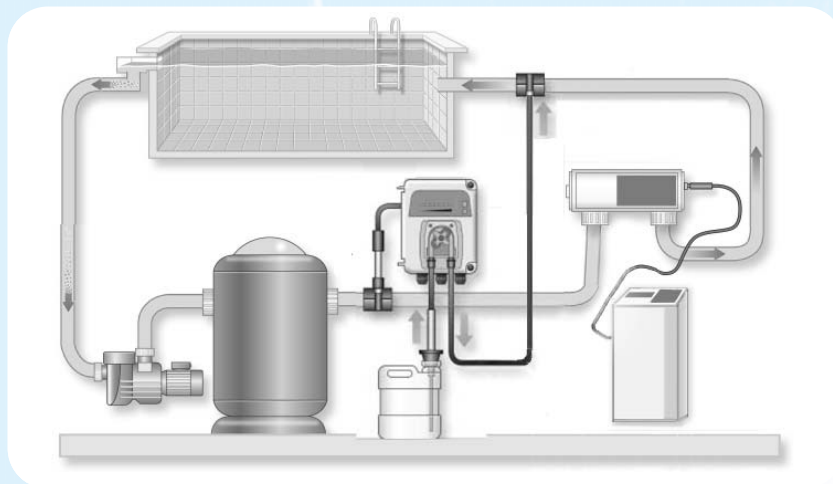
INSTALLATION

Recommendations

- *Warning, the pH Perfect must be installed by an experienced pool professional.*
- *Before doing any work inside the housing of the pH Perfect Controller, disconnect the appliance from the power supply.*
- Before installing the pH Perfect Controller, make sure that all the components requires are present and the instruction manual has been carefully read.
- Failure to comply with the instructions contained in this manual may be harmful to persons, or cause damage to the appliance.
- During installation of the pH Perfect regulator, check the following:
 - the supply voltage is as indicated on the label attached to the side of the appliance.
 - the pressure at the injection point is less than 1.5 bars.
 - the protective housing on the pump is properly clipped into position.
 - the suction tube is immersed with the intake pipe in the can of product to be injected and is connected to the pump (mark on the lid), then retighten the nut on the connector.
 - the inlet pipe will then be connected to both the pump (sign under the lid) and the inlet pipe to the pool through the injection flap valve.
- The pH sensor, together with the glass elements of which it is composed, is to be handled with care.

Installation Diagram

- Installation of the pH Perfect on the filtration circuit.



The linear distance between the sensor and the injection point should not be less than 60cm.

The injection point should be the last element on the intake before the pool.

The cable should not run in the same area as the power supply to large pumps or any electrical cable, in order to prevent electrical interference.

The maximum pressure in the pipes should not exceed 1.5 bars.

To increase the life span of the peristaltic tube, pressure should not exceed 1 bar.

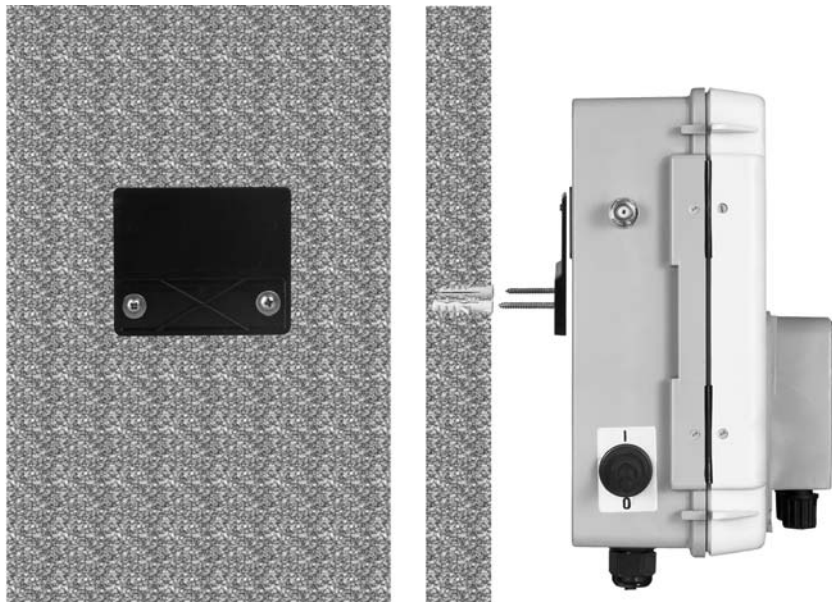
Installations having a Chlorinator, heater or any other treatment system should be situated after the pH sensor and before the acid injection point.

Installing the Control Unit

Install the pH Perfect Controller on a rigid support (a vertical wall) in a place easily accessible to the operator. Attach the wall bracket using the screws supplied and attach the pH Perfect.

Before doing any work inside the appliance make sure that the main switch is in position 0. By completely unscrewing the two screws on the right-hand side of the appliance, the pH Perfect can be opened sideways.

Connect the central cable including a plug ("power feed" label) to a permanent 230V AC mains socket. Connect the right-hand side direct control cable to the pool pump (single-phase 230V AC).



Installing the Sensor

Important: the length of pipe between the sensor and the injection point must not be less than 60cm. The sensor must be vertical, or at 45° max and always above the pipe. In no circumstances should it be positioned horizontally or below the pipe.

The sensor should be positioned in such a way as to analyze the pool water nearest to it and thus before any treatment.

Installation Instructions

Correct Positions



Incorrect Positions



OPERATING ADVICE

Calibration Procedure

Before starting the calibration procedure, stop the filtration and close the valves in order to isolate the pH sensor from the water drains.

Step 1

Fill flask with clean water.



Step 2

Undo the sensor holder and remove the sensor from the pipe.



Step 3

Rinse the sensor in flask 2 (water). Then shake gently to remove excess water.



- The sensor must be calibrated when your pH Perfect is first installed and each time your pool is restarted at the beginning of the season (with new buffer solutions).
- The procedure is to be repeated if an abnormal amount of corrective solution is consumed (pH minus or pH plus).
- The calibration procedure can only be carried out when filtration is stopped because of the dual feed.

Step 4

Immerse the sensor in flask 1 (pH 7).



Step 5

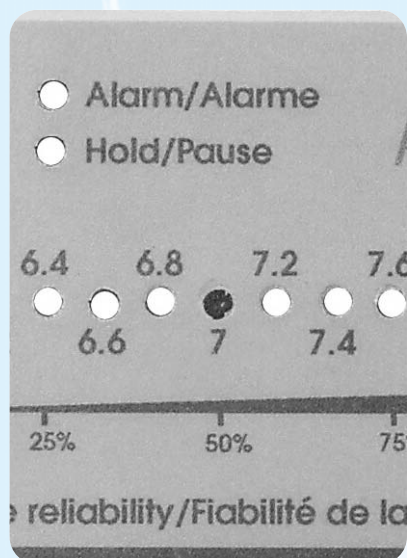
Keep the "CAL" key depressed for more than 5 seconds until the "Hold/Pause" diode lights up and the pH 7 diode flashes. Keep the sensor immersed in the buffer solution for 30 seconds.



Step 6

After 30 seconds the pH 7 diode will stop flashing indicating that the appliance has recognized the buffer solution. Keep the sensor immersed for a further 30 seconds. The appliance indicates the quality of the test*

*(e.g. 11 diodes lit = 100%, if <25%, See trouble shooting guide).



Step 7

If “Alarm/Alarme” diode lights up, see section “Indicator light illumination”.

Rinse the sensor in flask 2, then shake gently to remove excess water.



Step 8

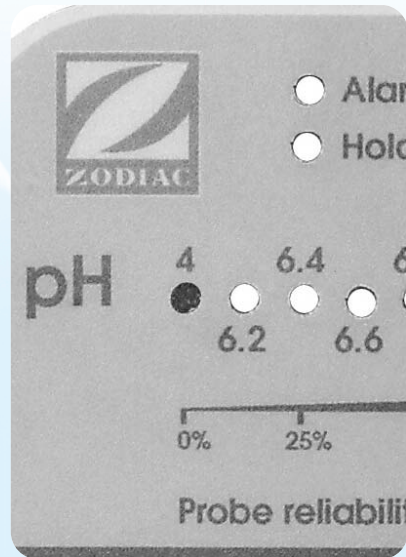
Immerse the sensor in flask 3 (pH 4).

Press the “CAL” key. Keep the sensor immersed for 30 seconds.



Step 9

After 30 seconds the pH 4 diode will stop flashing, indicating that the appliance has recognized the buffer solution. Keep the sensor immersed for a further 30 seconds. The appliance indicates the quality of the test. If the “Alarm/Alarme” diode lights up, see section “Indicator light illumination”.



Step 10

Rinse the sensor in clean water then shake gently to remove excess water and replace it in its sensor holder (it should not touch the other side of the pipe).



Step 11

To end calibration press the “CAL” key. The unit will return to measurement mode.



Normal operation will resume the next time pool filtration starts.

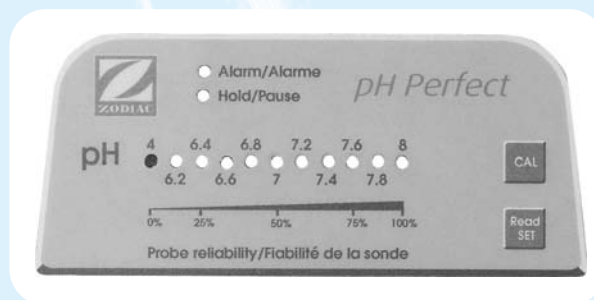
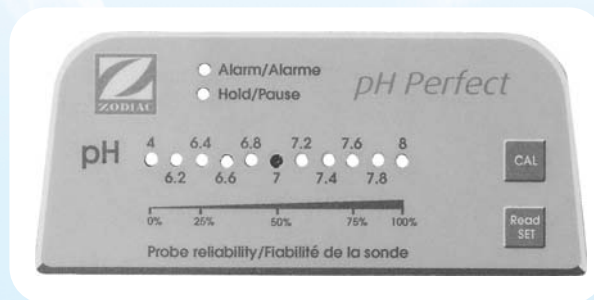
INDICATOR LIGHT ILLUMINATION

Indicator Light

When filtration has stopped the “Hold/Pause” diode is lit and the pH reading is done in the normal way.

The “Alarm/Alarme” and “Hold/Pause” Diodes Flash.

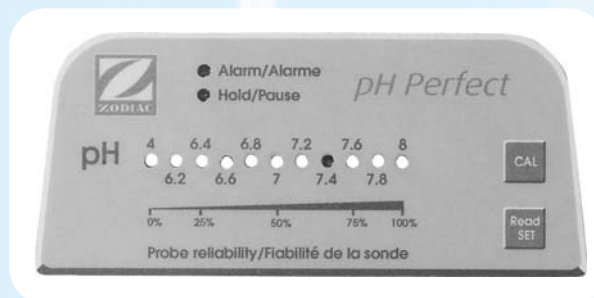
Calibration error: the solution is not recognized. Press the “CAL” key to exit calibration and replace the solution. If the problem persists, replace the sensor and recalibrate.



The “Alarm/Alarme” Diode Flashes and the “Hold/Pause” is Lit and the Pump has Stopped Dosing.

No flow in the circuit or the amount of corrective product is insufficient: to restore to normal operation, restart filtration or change the bottle of product.

Please note: All alarm situations on the appliance are signalled by the red “Alarm/Alarme” diode flashing.



The “Alarm/Alarme” Diode is Lit.

In operating phase

- Outside range (more pH 8 – red indicator lamp “8” lit): the system picks up a pH value above the pH reading range of the appliance.
- Outside range (less than pH 6.2 – red indicator lamp “6.2” lit): the system picks up a pH value below the pH reading range of the appliance.

In calibration phase

The characteristics of the sensor are outside the calibration range, the pH 4 diode is lit and the “Alarm/Alarme” diode is flashing.

The “Hold/Pause” Diode is Lit.

This indicator lamp indicates that the dosing pump is not going to start. It is either when you are in calibration phase or when the pool filtration is paused.

Note: The unit includes an optional safety against over-dosage of corrective product, in order to avoid any excessive injection in case the required pH is not reached after 3 cycles of dosage.

Operating Principle (if activated):

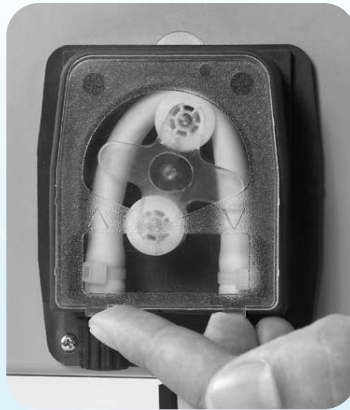
1st alarm: the “Alarm/Alarme” diode flashes after 3 cycles of dosage. The pH Perfect is still operating.
2nd alarm: the “Alarm/Alarme” diode flashes and the “Hold/Pause” diode is lit; the pH Perfect stops dosing. This second alarm is activated after the 4th closing cycle. Just press the “Read SET” key to come back to normal operation.



Changing the Pipe

Step 1

Unclip the hood by pulling the two tappets at the bottom of the plate towards you.



Step 2

Position the tablet holder at 20 past 10 by turning it clockwise.



Step 3

Free the left connector completely by holding it taut towards the outside, then turn the tablet holder clockwise to release the pipe up to the right connector.



Step 4

Position the tablet holder at 20 past 10 by turning it clockwise.



Step 5

Insert the left connector in its housing, then pass the pipe under the tablet holder guide. Turn the tablet holder clockwise at the same time as the pipe in the head of the pump up to the right connector.



Step 6

Place the hood over the pump in the direction shown by the arrows (the up arrow is on the left and the down arrow is on the right), then press the surface firmly to click fully into place.



TROUBLE SHOOTING

Problem	Possible Cause	Remedy
<p>The pH Perfect always displays pH 7.00</p>	<p>Problem on the cable and/or connector</p>	<ul style="list-style-type: none"> • make sure that the pH Perfect electrode connection has not short-circuited (between the central core of the cable and the exterior sheathing) • make sure there is no moisture and/or condensation on the sensor connection on the appliance • make sure that the 100 Ohms resistance between terminals 11 and 12 is in place
<p>The instrument always displays a high value or measurement is constantly unstable.</p>	<ul style="list-style-type: none"> • the electrode connection cable is damaged • there is an air bubble in the electrode membrane • the electrode is worn • connection cable too long or too close to an electrical cable causing interference 	<ul style="list-style-type: none"> • check the cable • put the electrode into an upright position and shake gently so that the air bubble rises back up to the top <i>NB: the electrode should be fitted in a vertical position or at an angle no greater than 45°</i> • Change the electrode • reduce the distance between the appliance and the sensor
<p>It is impossible to calibrate pH 7 (the "Alarm/Alarme" and "Hold/Pause" diodes flash)</p>	<ul style="list-style-type: none"> • buffer solution ineffective 	<ul style="list-style-type: none"> • make sure the solution used is the pH 7 • check the pH of the buffer solution with an electronic pH meter • take a new batch of pH 7 buffer solution and begin calibration again

Problem	Possible Cause	Remedy
Calibration quality of sensor pH < 25%	<ul style="list-style-type: none"> • problem with the sensor's porous element, dirt deposits • the electrode is worn 	<ul style="list-style-type: none"> • make sure that the electrode bulb is in good condition, that it has not been allowed to dry out of the water. As a last resort, clean by soaking the electrode in water for a few hours • make sure the sensor's porous element is in good condition and wash the sensor with a diluted acid-based solution • change the electrode
Impossible to calibrate pH 4 (the "Alarm/Alarme" and "Hold/Pause" diodes are flashing)	<ul style="list-style-type: none"> • buffer solution ineffective 	<ul style="list-style-type: none"> • make sure the solution used is the pH 4 solution • check the pH of the buffer solution with an electronic pH meter • take a new batch of pH 4 buffer solution and begin calibration again
Calibration quality of the pH sensor < 25%	<ul style="list-style-type: none"> • problem with the electrode bulb • the electrode is worn 	<ul style="list-style-type: none"> • make sure that the electrode bulb is in good condition, that it has not been allowed to dry out of the water. As a last resort, clean by soaking the electrode in water for a few hours • make sure the sensor's porous element is in good condition and wash the sensor with a diluted acid-based solution • change the electrode DO NOT WIPE the electrode with a cloth or paper but leave to drain after rinsing
The electrode response is slow	<ul style="list-style-type: none"> • static electricity on the electrode 	<ul style="list-style-type: none"> • during the calibration phase DO NOT WIPE the electrode with a cloth or paper but leave to drain after rinsing

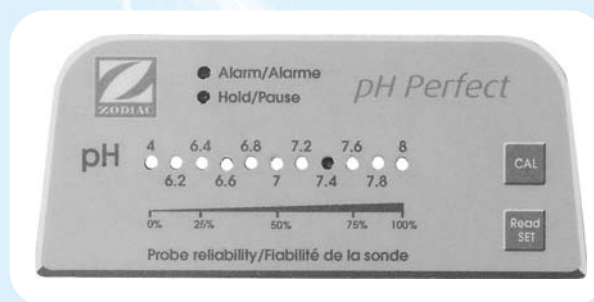
INTERNAL TECHNICAL SETTINGS

Set Point

Adjust the set point by turning the potentiometer to the desired value using a flat-head screwdriver.



Press the "Read Set" key to adjust the setting. Setting is done in steps of 0.2 pH.





Choice of Dosing Product

The choice of an acid or alkaline dose is made with the JP7 jumper link to permit pH MINUS (acid) dosing.

JP7 Status	Product
	pH MINUS (Acid)
	pH PLUS (Alkaline)



Locking the Calibration

To lock the calibration of the sensor, position the jumper link JP8 on DISABLE. The jumper link positioned on DISABLE prevents further calibration of the sensor. The "CAL" "key" no longer functions. The default setting is ENABLE which permits calibration of the sensor by pressing the "CAL" key.

JP8 Status	Calibration
	Possible (ENABLE)
	Impossible (DISABLE)

Safety against overdosage

The unit includes an optional safety setting against over-dosage of corrective product. This is to avoid any excessive injection in case the required pH is not reached after 3 cycles of dosage. Activating the safety against overdosing of the corrective product is made with the JP12 jumperlink (standard setting is deactivated).








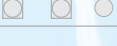
JP12 Status	Safety against over-dosage
	Deactivated
	Activated

Setting the pH pump flow rate

The pH pump flow setting is done by operating jumper links JP2 to JP6 as indicated in the table below.

The pump is then set by operating time out of a 10 minute cycle.

The default setting (the most suitable in most cases) is setting 1.

Setting	Position of jumper links	Dosage Time	Volume Injected	Stop
1	JP6  JP2	1min 15s	31,5ml	8min 45s
2	JP6  JP2	2min 30s	62,5ml	7min 30s
3	JP6  JP2	3min 45s	94ml	6min 15s
4	JP6  JP2	5min	125ml	5min
5	JP6  JP2	6min 15s	156,5ml	3min 45s
6	JP6  JP2	7min 30s	187,5ml	2min 30s
7	JP6  JP2	8min 45s	219ml	1min 15s
8	JP6  JP2	10min	250ml	0min

WARRANTY

Conditions

We have taken every care and applied all our technical experience in the production of this appliance. It has been subject to stringent quality controls.

We make regular improvements and modifications to our models, which incorporate technological advances, therefore it must be clearly understood that such improvements cannot be added to earlier models under the warranty.

If, despite all the care and expertise in the manufacture of our products, you have to call on our warranty, it will apply only to the replacement of defective parts.

Guarantee Period

pH Perfect is guaranteed for 1 year following the date of purchase, excluding replacement of worn parts.

Covered by the Guarantee

Only the electronic card and the motor are covered by the warranty period specified above, any card acknowledged to be defective will be repaired or replaced by the manufacturer with a new part or a part in good working order.

The following parts: the peristaltic pipe, sensor and non-return valve are deemed consumable parts and therefore do not benefit from the warranty period specified above.

Damage in Transit

Appliances are always transported at the user's own risk.

It is up to the user, before taking delivery of the appliance, to make sure that it is in perfect condition and, if necessary, to note any reserves on the carrier's delivery note.

We cannot be held liable in this matter.



