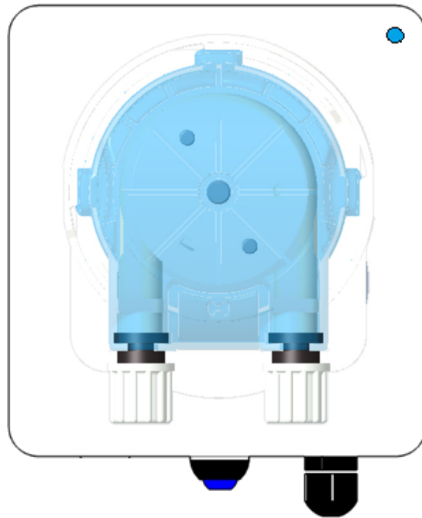


manual
pH Wireless option



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WARNINGS

The pH function allows you to measure the pH of your pool and dose acid for an automatic correction. However, pH probes are subject to wear, their response deteriorates with time, moreover they are a delicate component that can be easily damaged. Likewise, like any device, the pH measurement system can suffer a failure that causes an incorrect pH reading. For all these reasons, you must periodically carry out a MANUAL pH CHECK using approved means to ensure that the pH is within the accepted limits.

INNOWATER TRATAMIENTOS INTERGRALES DEL AGUA S.L. declines all responsibility for material and personal damage caused by an excessive or insufficient dosage of acid or due to its handling.



ATTENTION! Acid is corrosive and can seriously damage eyes and skin. Oxidants (hypochlorite) are harmful and can seriously damage the eyes, skin and respiratory tract. When reacting with other compounds they can produce very dangerous poisonous gases. Wear appropriate personal protective equipment when handling chemical containers or dosing equipment.

The device must be connected to a suitable earth conductor and protected by a 30 mA max. differential switch.

Never open the device under voltage. Danger due to 230 VAC voltage.

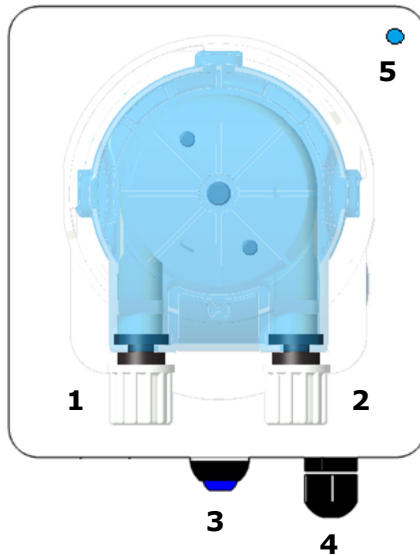
All manipulation inside the equipment must be carried out by a qualified professional staff.

DESCRIPTION

The pH function allows you to measure the pH thanks to a probe connected to the chlorinator and correct its value using the pH Wireless acid dosing pump. When the function is activated (see section 1, page 6) the pH value is shown on the main screen of the chlorinator.

The communication between the chlorinator and the pump is wireless, which allows the latter to be installed anywhere and the acid tank to be placed in a suitable place.

All control and measurement functions are carried out in the chlorinator and are configured in menu 6 pH Function. To reach this menu, press the MENU key from the chlorinator keypad and scroll with the help of the arrows to menu 6.



1. Connection for suction tube
2. Connection for injection tube
3. Priming push button
4. Main 230 VAC cable
5. Data reception blue LED indicator

INSTALLATION

pH Wireless pump.

Install the pump on the wall using the supplied bracket. Before screwing it to the pump, use the bracket to mark the locations of the holes in the wall that you will need to make. Choose a place near the injection site. You can choose the place freely and at some distance from the chlorinator since the pump does not need any wired connection to the chlorinator. Connect the power cable to a 230 VAC socket.

Installation of the pH probe

Install the saddle supplied before the chlorinator cell and as far away from it as possible. Choose a section of the pipe that does not empty when the filter pump stops because the probes deteriorate if they are not plunged in water. Screw the probe holder into the saddle, insert the probe into it and tighten its locking screw. Connect the probe cable to the BNC connector on the bottom of the chlorinator marked with a blue washer. Before using the pH function, proceed to calibrate the probe (see sections 3 and 4). The pH and redox probes require calibration before their first use and, subsequently, be calibrated from time to time. This is necessary because the sensitivity of each probe is different and also inevitably varies with time.

Injection.

Install the injection thanks to the clamp saddle provided in the return pipe after all other equipment (pump, filter, heater, chlorinator, etc...) It should be the last element on the return line. Connect one end of the rigid opaque PVC tubing to the injector connector. Connect the other end to the injection pump outlet fitting (2) .

Suction

Connect one end of the transparent flexible tubing to the suction inlet fitting of the pump (1) and the other end of the tubing to the filter-suction stainer fitting. Submerge the suction stainer in the acid tank.

Acid container.

We strongly recommend you not to place the acid tank in the same room than the filter and the salt chlorinator. The fumes that emanate from it will quickly destroy any metallic element and electronic equipment.

OPERATING

Commissioning.

Once all the elements have been installed (pH electrode, injection/suction tubings, level probe) press the priming pump button (3) to activate the pump until the acid in the tube has reached the injection point. Next, activate the pH function in the *MAIN MENU - 6 Config. of pH* and proceed to the establishment of the set points and the calibration of the probe as detailed in the following paragraph. When activating the function, the chlorinator will permanently send a dosage signal to the pump that will depend on the measured pH and the established set points. The further the pH is from the lower set point, the higher the dosing volume and the higher the pump speed.

NOTE: The pump works alternating periods of 2 min operating and 2 min pause. During a pause period the pump will continue to receive data (flashing blue led) but will remain at rest regardless of the current calculated dosage.

Calibration of the probe

The pH probes require a calibration before their first use and be subsequently calibrated periodically. This is so because probes can have different responses and also because the response of the same probe inevitably varies with time.

The calibration consists of measuring the response of the probe by introducing it into two buffer solutions and recording this response in order to be able to calculate the pH of any other solution, in our case, the pH of the pool water.

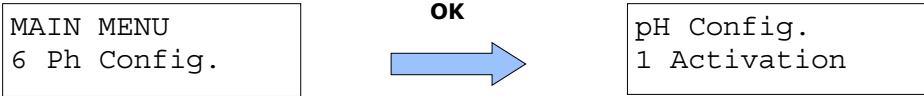
The calibration of the probe is carried out using the two supplied buffer solutions (pH4 and pH7) and entering the submenus *3 Cal pH4* and *4 Cal pH7* respectively. See points 3 and 4.

Data reception indicator (blue LED).

As soon as you have activated the pH function, the chlorinator will start sending dosing data to the pump and the blue led (5) will flash every second indicating that it is receiving data from the chlorinator. Whenever the pH function is active, the transmission/reception of data will take place even when the dosage is 0% or the pump is in a pause period. If the pump does not receive data, which can be indicated by the blue led (5) not flashing, it will stop dosing after a few seconds. The manual priming of the pump (4) continues to be enabled even if the pump does not receive data from the chlorinator. See point 6 for channel configuration.

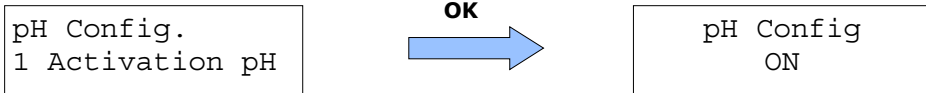
CONFIGURATION AND CALIBRATION

All functions related to the pH option are in *MENU 6 Config. pH*. To access it, press the MENU key from the chlorinator main screen and scroll with the help of the arrows to menu 6.



Press **OK** to enter the pH configuration submenu. Use the arrows to scroll through the different functions.

1. Activation of the pH functions.



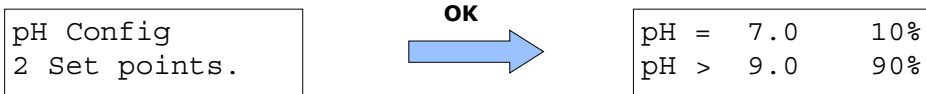
Choose **ON** or **OFF** with the help of the arrows to activate or deactivate the function. Press **OK** to accept or **MENU** to exit.

When the pH function is activated:

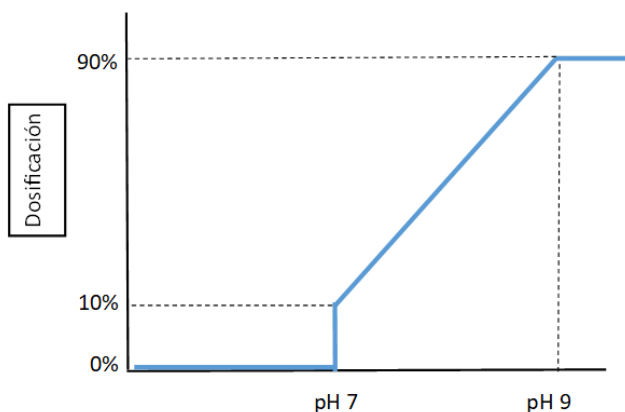
- The bottom line of the screen permanently shows the pH measurement and the acid dosage calculated based on pH value and the established set points.
- The chlorinator continuously sends control data to the pump via radio and the blue light on the pump flashes every second indicating data reception. The signal will alternate pause periods for the pump every two minutes during which it will send 0% command. See point 6 to change or check the transmission channel.

When the pH function is NOT activated, the probe is not read, the main screen does not show the pH value and the radio signal is not transmitted.

2. Set points



The acid dosage is determined at each moment by the two established set points (screen on the right). The following example shows the calculation of the dosage (blue trace) based on these points:



- When the pH is below the lower set point, the pump does not dose acid.
- When the pH is between both points, the acid dosage follows the linear function defined by both points. In the example, if the pH is 8.0, the pump will dose at 50%.
- When the pH is above the upper set point, the pump will dose the constant volume set for that point, which in the example is 90%.

You can set both set points and choose the percentage for each of them. To do this, use the **MENU** key to place the cursor on the parameter to be modified and press the arrows **<** or **>** to change its value. Press **OK** to save the data and exit the sub-menu.

The total amount of acid injected is determined by the value of the established production percentages. The more correction your pool needs, the higher these percentages should be. To compensate for the delay in the pH measurement due to the filtration circuit, you can set a slightly higher lower set point so that the acid dosing stops before reaching the desired pH. For example, to get a pH of 7.0 and avoid overdosing, set the dosing cutoff to a slightly higher value:

$$\text{pH} = 7,2 \quad 0\%$$

As each pool requires more or less acid and is more or less reactive to dosing, at the beginning at least, you may need to correct the set points several times.

3. pH4 calibration

pH Config
3 pH4 Calib



pH4 Calibration
4.34 Cal 4.00

Pressing **OK** you will enter the submenu *3 Cal pH 4* and you will find the screen shown above on the right. The value on the left of the screen shows the pH measured by the probe. The value to the right of Cal indicates the buffer solution value used. You can change this value with the arrows to adjust it to the buffer solution you are using. Please note that the pH of the solution is temperature dependent as shown on its label.

Insert the probe into the pH4 buffer solution, move it slightly and wait for a stable reading value to be reached.

Once the reading value has stabilized press the **OK** key to save the calibration or **MENU** to exit without saving the calibration. If you press **OK**, one of the following two screens will appear momentarily:

pH4 calibration
OK

pH4 calibration
ERROR

The screen on the left indicates that the entered calibration values are consistent and the calibration has been saved. The screen on the right indicates that the probe measurement is too far from the actual buffer solution value entered and that the calibration has not been saved.

4. Ph7 calibration

pH Config.
4 pH7 Calib.



pH7 calibration
7.12 Cal 7.00

Remove the probe from the pH4 buffer solution, rinse its bottom with clean water and gently shake it to remove excess water (do not rub the probe with a cloth or paper). Then go to menu *4 Calib. pH7* and repeat the above process but with the buffer solution pH7.

5. Factory calibration

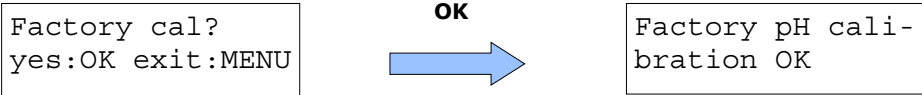
pH Config
5 Factory calib.



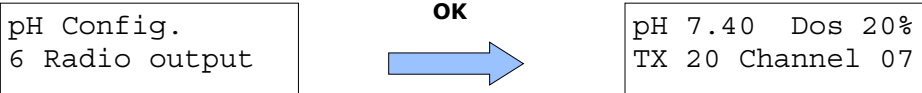
Factory calib.?
yes:OK exit:MENU

Using this function, you can reset the default value of a calibration that corresponds

approximately to the theoretical measurement of a new probe. This function can be useful in some situations to correct or diagnose troubleshoots or if you do not have buffer solutions. Press **OK** to restore factory calibration or **MENU** to exit



6. Radio output



This function allows you to view the transmission status and change the channel.

pH 7.40 Current pH value measured by the probe

Dos 20% Dosage calculated based on set points.

If the initial dosage delay is enabled and active (see point 7.) the indication DELAY will appear.

During a pause period of the pump (see point 1.) the indication PAUSE will appear.

TX 20 Command sent to the pump. Flashing of this parameter every second indicates transmission in progress.

Canal 07 Current transmission channel.

Note: The command sent to the pump can, in certain circumstances, be zero even though the calculated dosage is not zero. These circumstances are:

- Initial delay activated (See point 7.)
- Pump rest period (every two minutes)
- Dosage alarm activated and maximum time reached (see point 8.)

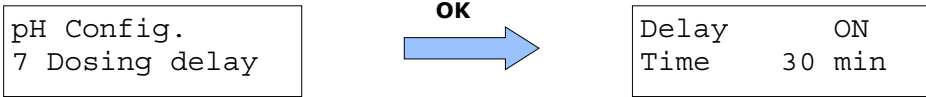
If you have interference problems with other equipment that may be installed nearby, you can choose a different channel:

- 1) In the menu *Radio output*, choose a diferente channel using the arrows.
- 2) Push the priming botón of the Wireless pump (3)
- 3) Press **OK**

The communication channel will change on the chlorinator and on the pump. The blue light on the pump will flash again indicating that it is receiving data from the chlorinator.

NOTE: If the pump priming button is not held down when you press **OK**, the pump will not change channels and will stop receiving data.

7. Initial dosage delay

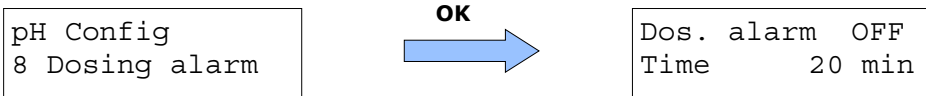


Probes take some time to generate a valid answer after being disconnected. This function allows you to set a delay period after powering up the device during which the dosage remains on standby, thus avoiding incorrect dosage. We recommend that you always activate a delay time of at least 15 min.

Place the cursor (**MENU** key) under the word *OFF* and use the arrows to activate (ON) or deactivate (OFF) the dosing delay. Place the cursor under the word *min* and use the arrows to set the desired delay time in minutes after power on. Press **OK** to save and exit.

When the delay is active, after turning on the device, in the Radio Output Menu of the pH Function (see point 6.) *DELAY* will be indicated.

8. pH dosing alarm



The pH dosing alarm allows recording the accumulated dosing time without reaching the programmed lower set point and triggering an alarm to interrupt dosing when a certain dosing time is reached. This can be useful to avoid overfeeding, indicate a lack of acid in the tank or to detect possible problems with the probe or injection.

Place the cursor (**MENU** key) under the word *OFF* and use the arrows to activate (ON) or deactivate (OFF) the alarm. Place the cursor under the word *min* and use the arrows to set the maximum dosing time in minutes. Press **OK** to save and exit.

If the function is activated and the maximum set dosing time is reached, the following screen will appear and dosing will be interrupted:

DOS. pH EXCEEDED Resume? = OK

Press **OK** to continue. The dosing counter will reset and dosing will continue normally.