BWL

pH Wireless Pump

Operating Manual

innowater

WARNINGS

Before carrying out any installation or maintenance of the pH Wireless pump, disconnect it from the mains power supply.

This appliance is not intended for use by people (including children) that lack experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a responsible person.

The installation of this device should be carried out by a qualified person in accordance with the Australian wiring rules AS/NZS 3000.

The pH Wireless pump should be located in the correct pool zone and connected to supply via a power outlet that is protected by a residual current device (RCD) having a rated residual operating current not exceeding 30mA.

The power outlet should have a degree of protection suitable for the pool zone.
Ensure that equipotential bonding of all parts of the pool installation is carried out.

During the installation phase, check the following:

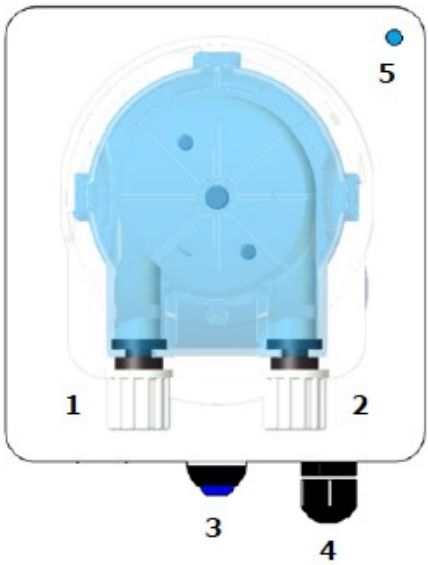
- the voltage of the power supply must coincide with the voltage indicated on the side of the appliance
- the injection point pressure must be lower than 1.5 Bar
- the peristaltic pump's protection cover must be correctly fitted
- the suction tube must be immersed in the corrective solution container with the suction tube also connected to the peristaltic pump (left side)
- the injection tube must be connected on one side to the peristaltic pump (right side) and on the other side to the pool return pipe via the injection valve

Innowater Tratamientos Integrales del Agua S.L. will not be held liable for the use of this device with inappropriate products.

DESCRIPTION

The pH wireless pump works together with your SMC chlorinator to correct the pH level of your pool by injecting corrective acid solution in the circuit. The chlorinator monitors the pH continuously by means of its pH sensor and sends a dosing signal to the wireless pump which will, in turn, inject acid in the pool when needed. The wireless link allows you to install the pump and the acid container at a certain distance from the chlorinator and, thus, to protect the chlorinator or other equipment from corrosive damage.

All control and measuring settings are configurated through the chlorinator MENU 6 "pH configuration". Please read SMC Chlorinators Operation Instructions for reference.



1. Connection for suction tube

2. Connection for injection tube

3. Priming push button

4. Mains 230 VAC cable

5. Data reception blue LED indicator

MECHANICAL AND HYDRAULIC INSTALLATION

During installation ensure that the mains cable is disconnected from the power supply.

Acids are very corrosive and can harm you eyes, skin and airways. When working with pH correctors necessary caution and preventive measures should be taken. Always wear safety googles, gloves and clothing.

Acid container. We strongly recommend to place the acid container outside the filter shed. If it is not possible, ensure an adequate ventilation is provided and place the container as far from metallic and electronic equipment as possible and NEVER underneath the pump or other device.

Wireless Pump. Install the pump on the wall in an easy to access location using the bracket provided. Before attaching the bracket to the pump, use the bracket to mark in the wall the location of the holes you will need to make for the screws. Choose a location close to the injection point. The pump can be installed at any distance from the chlorinator.

Injection. Install 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. Install the injection one way valve on the clamp saddle. Use Teflon tape to seal the thread. Connect the injection rigid tubbing (opaque) to the valve.

Connect the other end of the injection tube (opaque) to the injection fitting [2] (right side) of the peristaltic pump.

Suction. Connect the flexible suction tube (transparent) to the injection fitting [1] (left side) of the peristaltic pump.
Use a length of tube long enough to reach from the acid container to the peristaltic pump and feed the tube through the black rubber grommet in the 'anti-fume' cap. Once the cap is on the tube, fit the suction filter to the suction tube and place the suction line into the acid container. Screw the anti fume cap down into position.

ELECTRICAL INSTALATION

Power supply
Connect the 230 VAC power supply cable plug [5] into a mains power point **provided with a protective earthing conductor (PE)**

OPERATING

Priming

Once all different elements have been installed, push the priming button [3] to make the peristaltic pump turn until the acid in the tube has reached the injection point.

Reception LED indicator (blue)

As soon as you have activated the pH function in the chlorinator the Wireless pump will start receiving dosing data from the chlorinator and the blue indicator will blink every second. When the pH function is activated the chlorinator will send data continuously to the pump even if the pH is correct and no dosing is necessary. If the pump stops receiving data (no blue blinking) it will stop dosing a few seconds later. The manual priming will still be operational even when the wireless connection is interrupted.

TECHNICAL DATA

Power supply	100-240 VAC 50-60 Hz
Consumption	11 W
Pump Flow rate	1.5 l/h
Maximum pressure	1.5 bar
Dimensions (mm)	90 x 135 x 120

OPERATION, CONFIGURATION AND CALIBRATION

The settings related to pH are located in **MENU 6 "pH config."** To access it, press the **MENU** key from the main screen and scroll with the **arrows** to menu 6.

```
MAIN MENU
6 pH config.
```

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

1. pH function activation

```
pH Configuration
1 pH activation
```

First submenu is for activate/deactivate pH function. Press **OK** to enter and use **arrows** to select ON or OFF. Then press **OK** to confirm or **MENU** to exit.

2. Setpoints

```
pH Configuration
1 Setpoints
```

```
pH < 7.0    10%
pH > 9.0    90%
```

The calculation of the dosage is made by establishing two setpoints and the relative volume of dosage that is required for each of these points.

- When the pH value is below the lower setpoint, the pump will not dose acid.

- When pH is between both points, the chlorinator will send a proportional signal defined by both points. For example, in the case of the figure, if pH is at 8, the pump will dose al 50%.

- When pH is above the higher setpoint, the pump will dose to the fixed volume defined for the higher point. In the case of the figure, 90%.

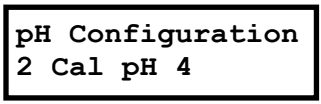
You can set both points and choose the percentage of dosage for each of them. To do it, place the cursor under the parameter you want to modify with **MENU** and use **arrows** to change the value. Press **OK** to save the data and exit the submenu.

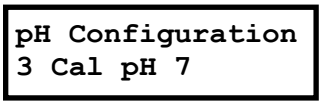
By choosing the setpoints you will be defining at the same time the required dosing volume and the response delay after dosing, both of them depending on the size of your pool. For example, if your pool has a high volume of water you should establish high percentages of dosing. The response time in the pH measurement of your pool can be considered when setting the lower setpoint, stopping the dosage before reaching the desired pH value. For example, to obtain a pH = 7.0 and avoid overdosing, set the dosage stop in a higher value:

pH < 7,2 0%

Each pool needs more or less acid, as they are more or less reactive to the dosage; so, at the beginning at least, you may need to correct the setpoints several times.

3. pH probe Calibration



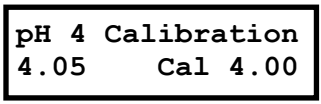


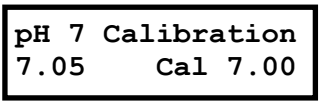
pH probes require a calibration before their first use and then they need to be calibrated periodically. This is because different probes have different responses and the response of the same probe inevitably varies over time.

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

The calibration of the probe is carried out using the two buffer solutions supplied (pH4 and pH7) and entering the submenus "**2 Cal pH4**" and "**3 Cal pH7**" respectively.

Enter the sub-menu 2 Cal pH4 by pressing **OK**, it will show the following screen:





The value on the left indicates the current pH value measured by the probe.
The value on the right indicates the buffer solution we are using. You can adjust this value using the arrows to adapt it to the temperature and the sample used.

Insert the probe in the 4 pH buffer calibration, remove it slightly and wait for a stable reading value to be reached.

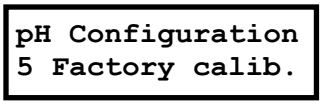
Once the reading value has stabilized press **OK** to save calibration and exit.

Then, remove probe from the pH4 buffer solution, rinse its bottom with clean water and shake gently to remove an excess of water.

Repeat the process above with the pH7 buffer solution and submenu "**3 Cal pH 7"**.

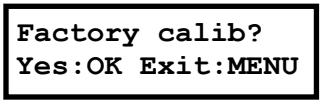
Note: During calibration, if value measured by the probe, differs in more than 2 units from the theoretical of the buffer solution (pH4 and pH7), data calibration won´t be saved and it will go back to factory values. For example, if the reading value is 6,05 while calibrating with pH4 solution.

4. Factory calibration



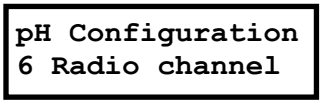
In submenu **5 Factory calib**, gives you the possibility to reset general calibration parameters to default values that correspond, approximately, with those of a regular brand new probe. This can be useful if you have saved successive calibrations or do not have the buffer solutions for a proper calibration.

Press **OK** to enter the sub menu **5 Factory calib,** it will show the following screen.



Press **OK** to confirm or **MENU** to exit.

5. Radio channel

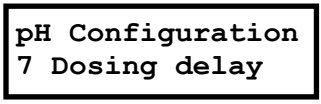


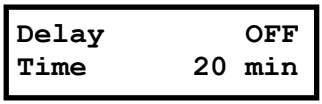
This function allows you to view transmission status and change the transmission channel.

pH 7.40	pH reading value
Reg 20%	Calculated dosage regulation
TX 30	Command sent to the pump. When transmission is taking place this parameter flashes every second
Canal 07	Current transmission channel

If you have interference problems with other equipment that may be installed in the vicinity you can choose a different channel:
1) In Radio channel menu, choose a different channel with the **arrows**
2) Press and hold the **prime button** (3) on the pump
3) Press **OK**
The communication channel will change at the chlorinator and at the pump. The blue pilot of the pump will flash again indicating that it is receiving data from the chlorinator.
NOTE: If the pump button does not stay pressed when **OK** is pressed, the pump will not change the channel and will no longer receive data.

6. Dosing delay





The probes take a certain time to generate a valid response after being disconnected. This function allows you to set a delay after turning on the device during which the dosage remains on hold, thus avoiding an incorrect dosage. We recommend to always activate a delay time of at least 15 min. When dosing is on hold, after turning on the instrument, the main display will show dashes instead of pH value: pH --.--.
Place the cursor (**MENU**) 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 delay time in minutes. Press **OK** to save and exit.

7. Dosing alarm

pH Configuration 8 Dosing alarm	Dosing Alarm OFF Max. Dos. 20 min

The pH dosing alarm allows to stop the dosage after a certain time of continuous dosing without reaching the lower set point. It will stop dosage and show an alarm. This can be useful to avoid an excessive dosage or to detect problems in the probe or in the injection point (e.g. injection fitting broken).
Move 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.