

Xsel

REGUL'
ÉLECTRONIQUE
Peace of mind



Xsel, Xsel pH and Redox

Electrolysis treatment of salt water
Simple, with pH or ORP regulation

Manual _____
and installation

edition
07032019

DESIGNED AND MANUFACTURED IN FRANCE SINCE 1989

Precautions for use

Security

- Make sure that the power supply voltage of the device does not exceed 240v AC, or 50Hz.
- If liquids or any object had entered the housing, disconnect the electrolyser and have it checked by a qualified technician before handing over the service.
- Prohibition of drilling the box.
- The electrical control cabinet must be found near the electrolyser and be easy to access.
- The electrolyser is not disconnected from the power source as long as it stays connected to the electrical control cabinet, even if it has been turned off.
- After turning off the power at means of the on/off switch, do not open the device before total extinction of the lights.
- Do not install the electrolyser nearby from a source of heat.
- Do not store product cans chemical near the device.

Forwarding

Keep the original carton and the packaging material; they will be very useful if one must ship the device back one day.
To ensure maximum protection, repack the device as packed at the factory.



www.regul.fr

Regul electronic designs and manufactures on site, in France, all of its products of salt electrolysis, pH regulation and water level regulation.

Advisory

Only use special pool salt in pastille (purified for salt electrolysis) according to the NF EN16401 salt standard.

The Xsel is an electrical device should not be exposed to rain or moisture.

To correct the pH, never use hydrochloric acid but pH-ready to employment.

The technical room must be correctly ventilated.

The power supply must be protected upstream by a differential circuit breaker 30 mA.

To avoid any risk of electrocution, open the box only for its installation or service intervention (to change a electronic card), after having cut the power supplies.

Warranty



- You have just bought a Régul'Electronique device, thank you for your trust.

-Unless otherwise specified particularly, the guarantee of our devices are 3 years from the date of your invoice.

The pH probes have a guarantee of one year.

Excluded from the guarantee are all wear parts (fuses, batteries, seals, valves, pump etc...)

- This warranty is limited to the suppliers of our Society. It consists of the repair, by us and in our workshops, defects in manufacturing and matter, that the customer will have to prove.

- The equipment must be returned to us Free of charge. Costs of removal, rests and transportation are excluded of the guarantee.

- In all cases, our liability is limited to replacement of defective parts without no compensation or damages and interest be claimed for material or bodily injury caused.

- The warranty ceases when our equipment is modified outside our workshops.

- The warranty does not apply to replacements or repairs that would result from normal wear and tear of material, deterioration or accident from negligence, lack of supervision or maintenance, non-conforming installation or abnormal use of the devices.

- In cases of inappropriate treatments and adjustments, our responsibility cannot be engaged, especially in case of corrosion, paint snags and defects related to excessive constraints of use, or if the equipment must, by these conditions, be brought to work at too fast rates supported.

Principle of operation

The Xsel, slaved to the filtration, treats your water continuously during the hours of its operation.

It controls the electrolysis cell that produces the chlorine necessary for the disinfection of the pond water.

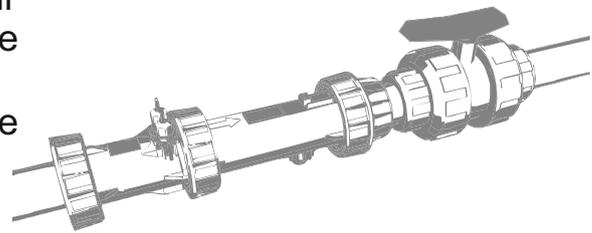
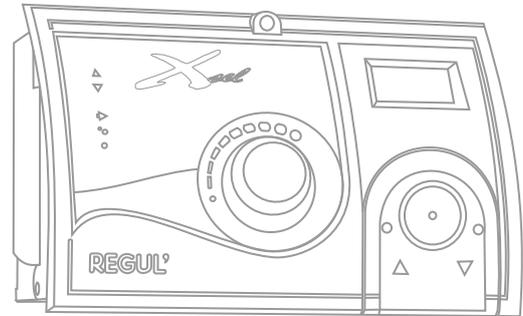
The electrolyser is equipped with an automatic cleaning function due to an inversion of polarity.

Whatever the hardness of your water, the cell is thus preserved from tartar.

Chlorine production can be adjusted any time.

On the other hand, if the roller shutter of your pool is closed the power of the device cannot be changed.

The command button has no action on the production setting.



Necessary checks

- The pH should be between 7.2 and 7.5.
- A weekly check must be done with a tester to correct the pH (and thus ensure the proper functioning of pH regulation if the device has one).
- The TAC must be at least 10 ° F or 100ppm, it must be checked monthly if necessary add a TAC booster.
- The chlorine stabilizer, combined with the salt (Aquaswim) provided by the use of slow chlorine pebbles and shock chlorine pellets or manually, should not exceed 50 mg / l.
- The salt content must be between 4 and 5g / l (ie 250Kg at start-up a swimming pool of 50m³). It must be measured before any addition to avoid the exceeding the maximum.
- Pour the contents of the salt bags directly into the pool, the Xsel should to be at rest.
- The dissolution must be completed to restart the device.
- If products need to be added manually (pH corrector) they must be dissolved in a bucket or watering can and distributed on the surface of the water, never put it directly into the skimmer, after stopping the device.

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4 - Getting started

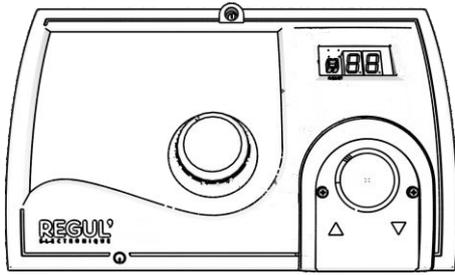
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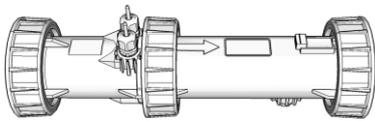
Conditions

Check the packaging to make sure it contains the following



electrolyser

cell of electrolyser



reduction 63/50



Unions



dowels and fixing screws

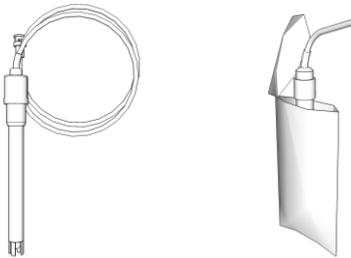


installer's manual and laminated user card

Set of cables



pH probe and sachet calibration 7.01



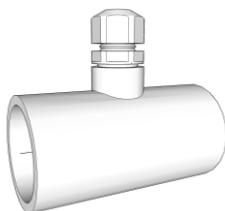
injector



suction strainer



T with pH Sonde placement



cristal tube



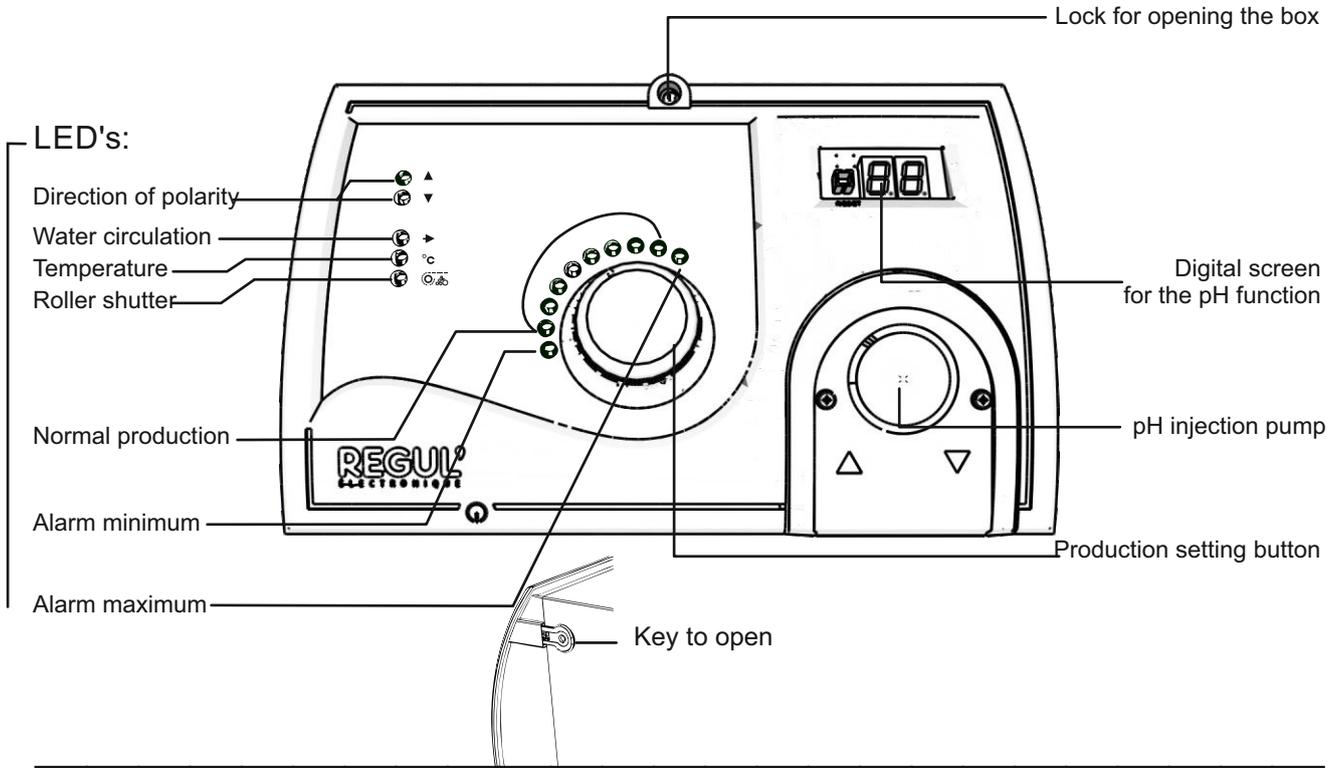
opaque tube



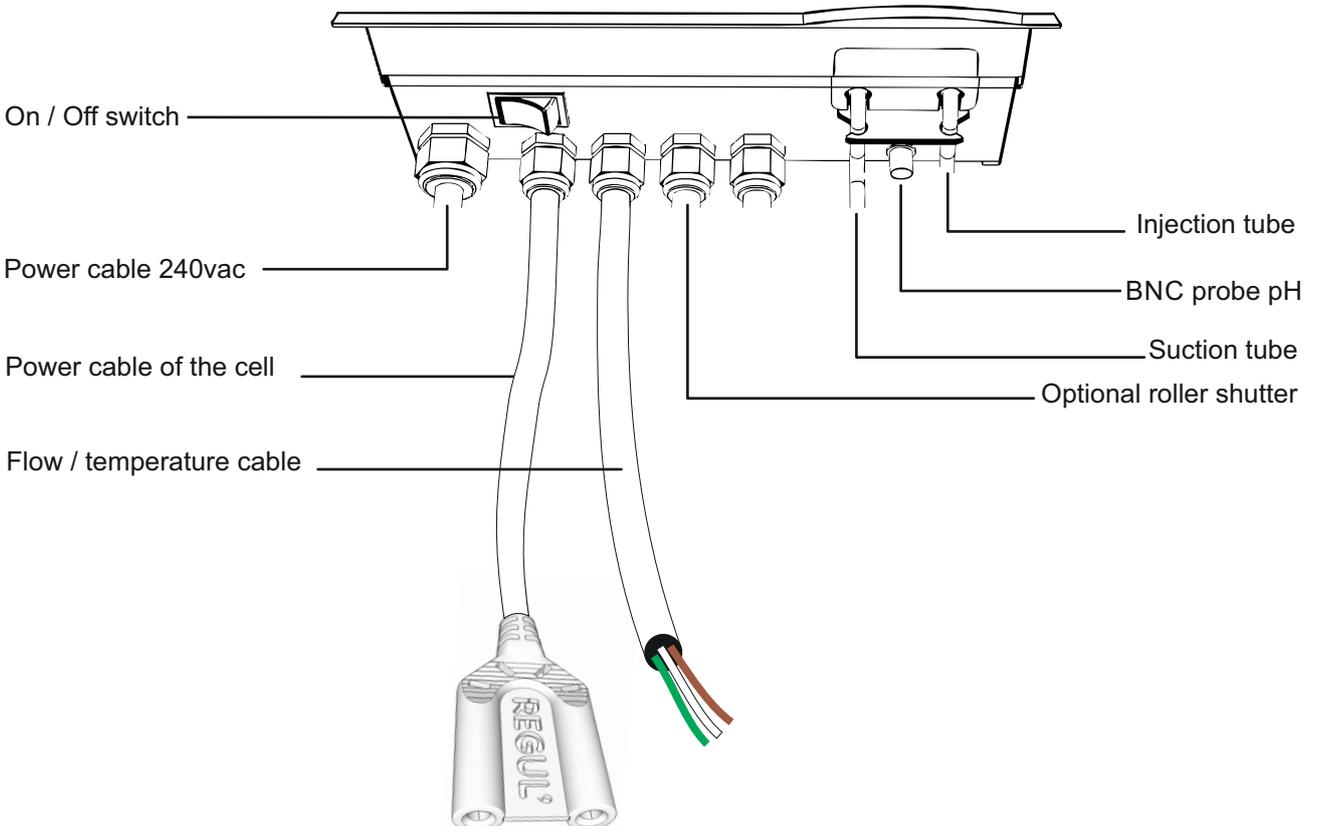
In addition of the **Xsel pH**

Commands direction

Front view



Bottom view



1- Installation of the device

Fixation

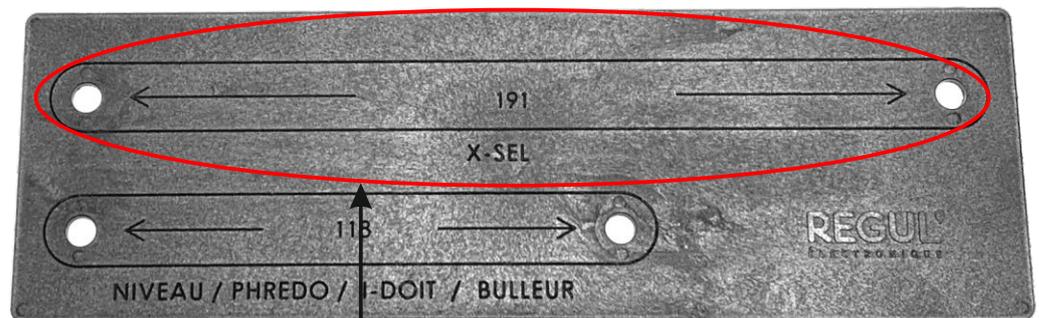
The electrolyser has an external dimension of 285 x 180 x 135mm.

In order to maintain the performance and reliability of the electrolyser, provide the necessary space between this one and the nearest obstacles.

The mounting holes of the device are spaced with 190mm, trace the location of the holes by using a level, 6mm holes for the dowels provided. For a fixing of the box on a special support, it may be necessary to use another type of ankle.

A template makes it possible to drill the necessary howls for fixing the Regul' device.

Measure with drilling template for Regul- devices



Hole spacing for the Xsel



Drilling the cabinet causes the removal of the warranty.

The necessary accessories for fixating the device on the wall are delivered



2x 4x35mm stainless steel screws



2x Tapered washers



2x dowels diam.6mm



2x shutters

Where possible, use the materials provided, which were chosen for their qualities.

Stainless steel screws for better resistance to humidity, conical washers indispensable for tapered head screws ensuring a perfect keeping the box on the wall, finally shutters to close the "fixing compartment" and ensure a better seal.

Drill the box, causes the loss of the warranty on the material.

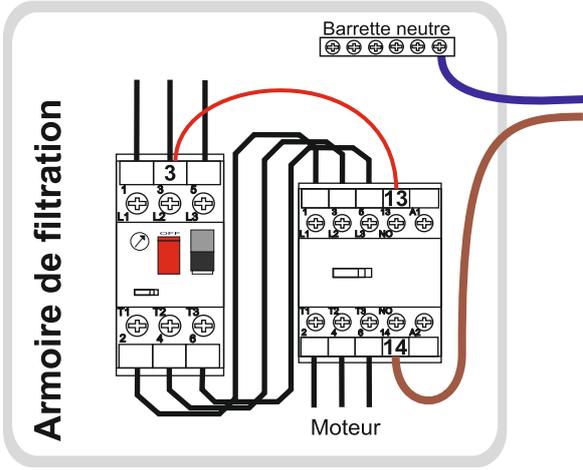
Use the mounting template of the cabinet.



The electrolyser must be secured away from any splashing water and in a room properly.

Connections of the electrolyser

The electrolyser is enslaved, it works all the time during the filtration.



For any connection of the electronics, use the flexible cable.

1- Add a wire on the input of the circuit breaker and the contactor input (on the example it is the red wire between the 3 of the circuit breaker and the 13 of the contactor). If a phase already occupies this terminal, it is necessary to add a thread, go to paragraph 2-.

2- Connect the power cable of the device in the filter cabinet.

The phase, brown wire, on terminal 14 of the contactor, auxiliary contact.

Neutral, blue wire, on the neutral bar.

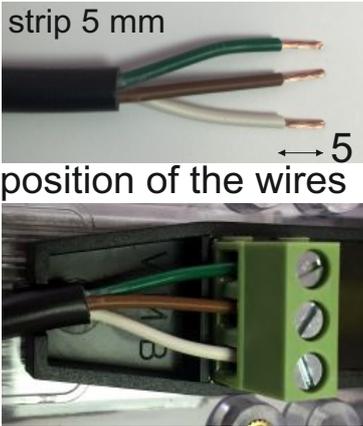
3- Plug the cable into the device on the removable power terminal block.



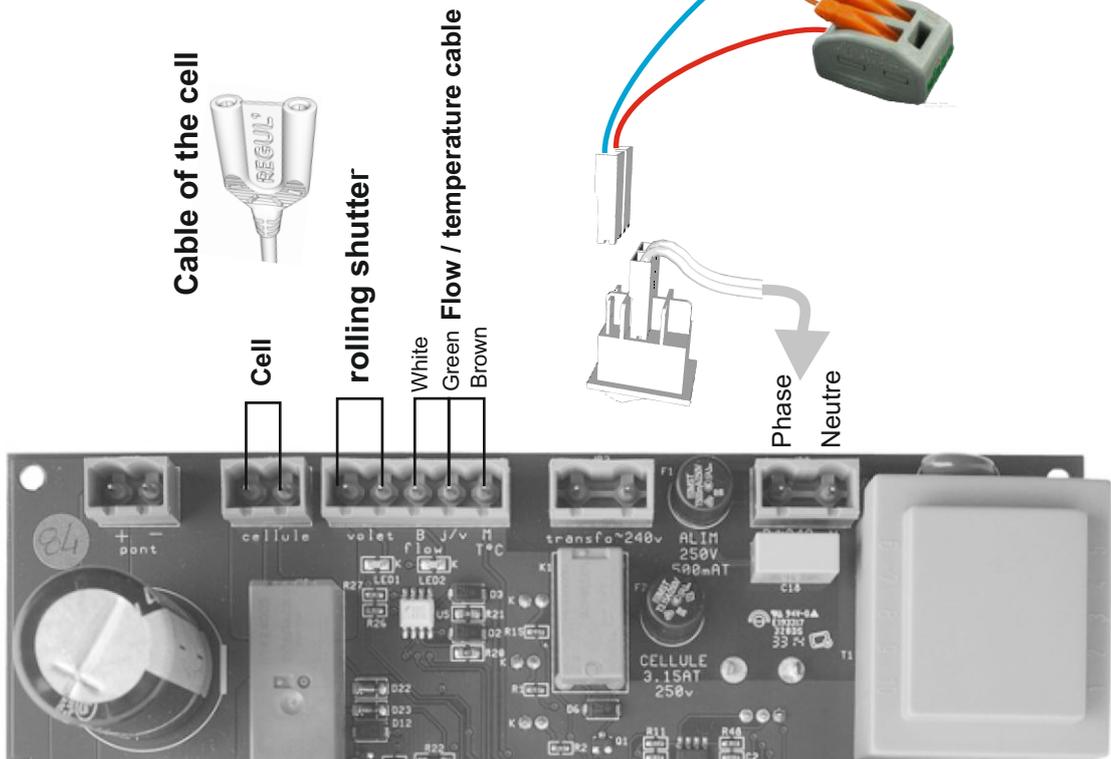
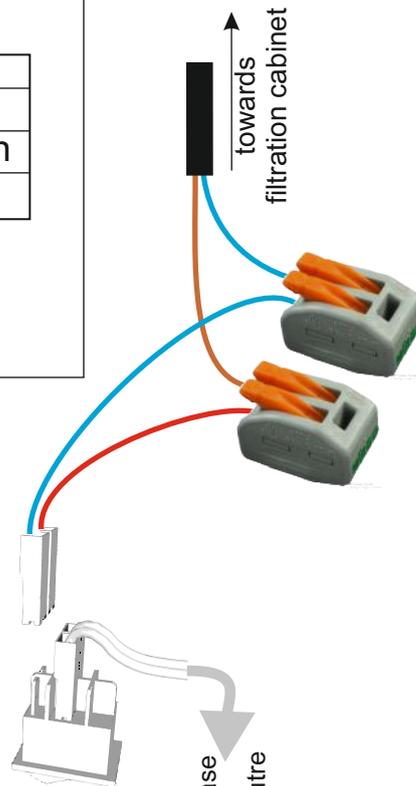
Risk of electric shock

Before working on the device, switch off the circuit.

Connecting the Flow cable on the cell



	or	
V	green	black
M	brown	brown
B	white	blue

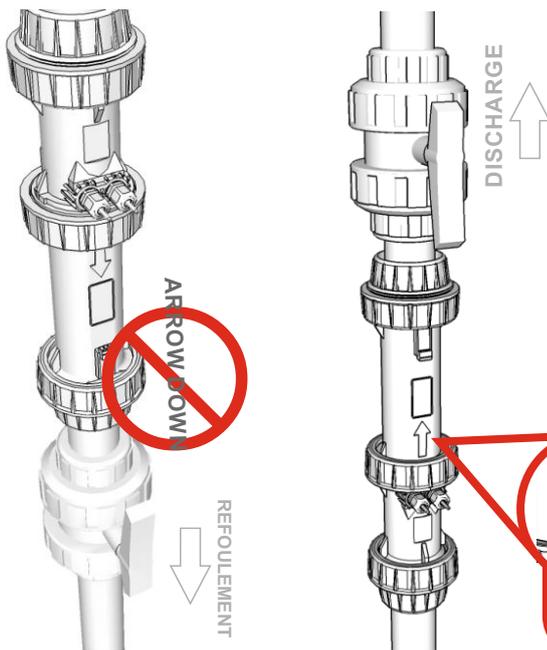


The electrolysis cell

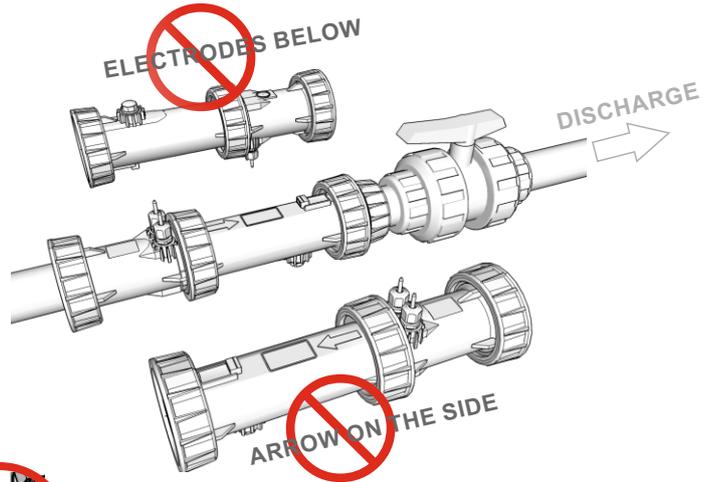
It must imperatively be placed after the filter and after any system of heating.

Position

Vertical piping



Horizontal piping



 The electrolysis cell has a mechanism of operation. Water must always be cross in the direction indicated by the arrow.

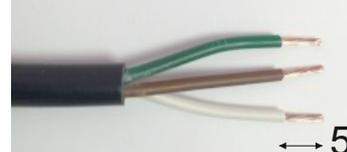
Installing the Installation

- 1 - Paste 63/50 reductions in the screws union (if piping in 50).
- 2 - Screw the 2 union screws on the cell (shake by hand).
- 3 - Stick the assembly on the pipe.

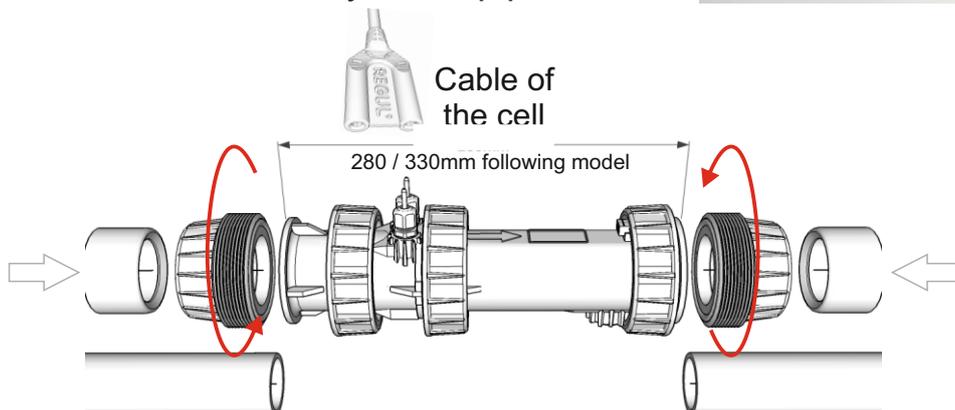
Connecting the Flow cable

strip 5 mm

position of the wires



	OU	
V	green	black
M	brown	brown
B	white	blue



2 - Installation

The pH probe for the Xsel pH or ORP probe for the Xsel redox

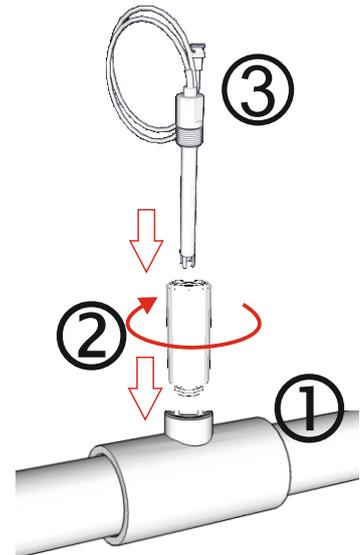
Xsel pH incorporates pH regulation.
Xsel redox incorporates ORP regulation.

The probes should be placed between the filter assembly and the electrolysis cell.

Installation of the probe

**The probe must always be positioned vertically
As shown in the drawing**

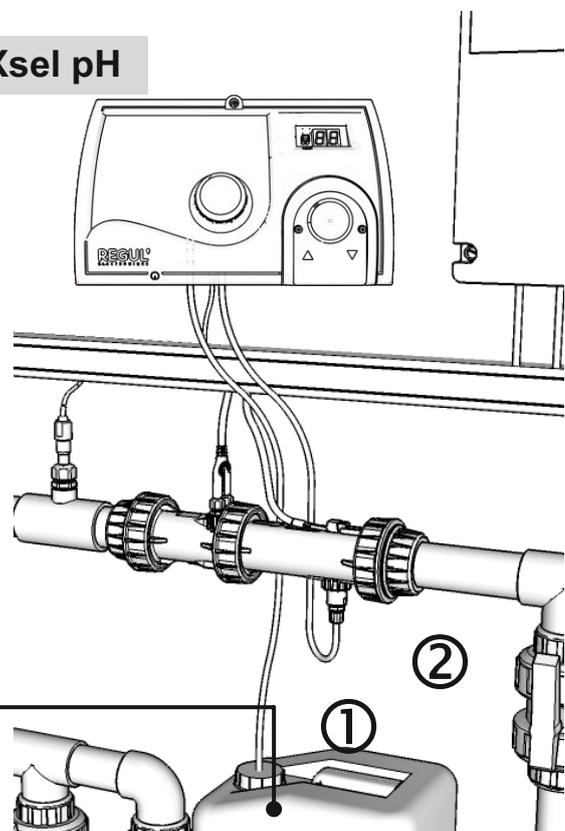
- 1 - Stick the tee to the pipework.
- 2 - Screw the probe holder.
- 3 - Screw the probe firmly by hand and plug it into the Xsel on its connector by its BNC file (page 7).



Injection system installation for the Xsel pH

- 1 - Drill the cap of the pH- (diam. 6mm) pass the crystal tube and connect the suction strainer that is going to dive into the bottom of the can. Connect the other end on the left side of the pump electrolyser.
- 2 - Unscrew the cap under the cell recovering the O-ring. Place the seal toric on the injector then screw by hand on the cell. Connect the opaque tube to this one and the other end on the part right of the pump.

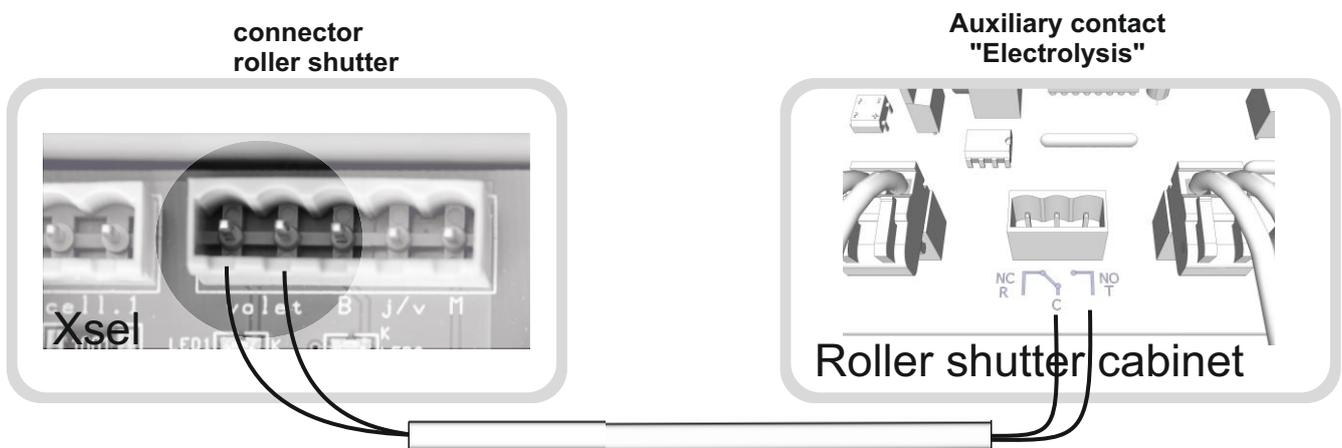
pH- Container



Roller shutter function



When the pool is covered by a shutter, the U.V. has no effect on the water, the chlorine builds up and keeps increasing. In order to avoid over-chlorination, the electrolyser, connected roller shutter cabinet (see manufacturer's manual), automatically switches to closed shutter mode. In this mode, the electrolyser automatically adjusts its power to the programmed value (see below).



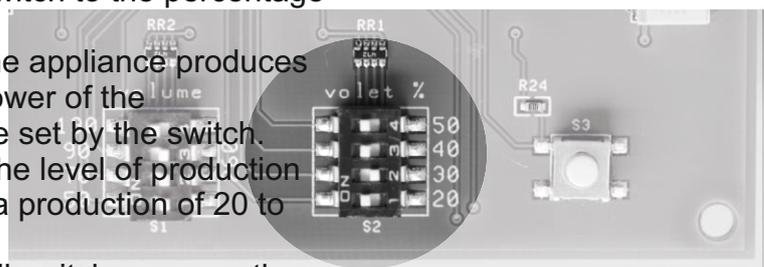
The electrolyser automatically switches to roller shutter mode, when the contact Auxiliary "electrolysis" is closed. Test this contact as described in the table once more.

Roller shutter		Electrolysis
Position	Contact	Production
closed	closed	reduced
open	open	normal

Shutter in%" setting: move the switch to the percentage of desired power.

When the roller shutter is closed, the appliance produces the percentage of the maximum power of the device depending on the percentage set by the switch. Shutter closed, the LEDs indicate the level of production set by switch from 2 to 5 LEDs for a production of 20 to 50%.

No production has a 0% position, all switches are on the left (ON side) in case it will be controlled by redox regulation (Xsel redox).



3- Function - Settings before getting started

Startup settings

The unit has a single adjustment knob that allows you to adjust all operating parameters.

Control button

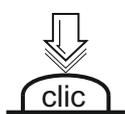
By a click or by turning the knob it is possible to simply access all the functions of the device settings.

- Choice of use function, pH, ORP or Doser.
- Volume.
- Injection pump flow for a delivered device without pump (Phredo SP).
- The quantity of liquid to inject.
- etc ...



The control button allows, to enter the menu to change the displayed options, by pressing a button, turning it, to modify and save values.

Click

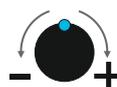


a 2 "long click to modify data



a brief click to validate

Turn



To increase or decrease a value

LCD Display

The display lights up completely at each start for one second



The display lights up completely at each start for one second
One of these segments is displayed when one of the functions,

This symbol indicates the state of the injection pump. It also indicates the control of an electrolyser, in the case of a Phredo SPE, ORP or a Xsel REDOX

3 digits display for the values measured by the probes

The state of the pump



works 8'

Sign flashes



pause 12'

Sign is on



stopped

Sign is off

Function pH if the Xsel has one

Phredo processes the information measured by the pH probe and manages the injection pH- (or pH +) depending on the setting chosen.

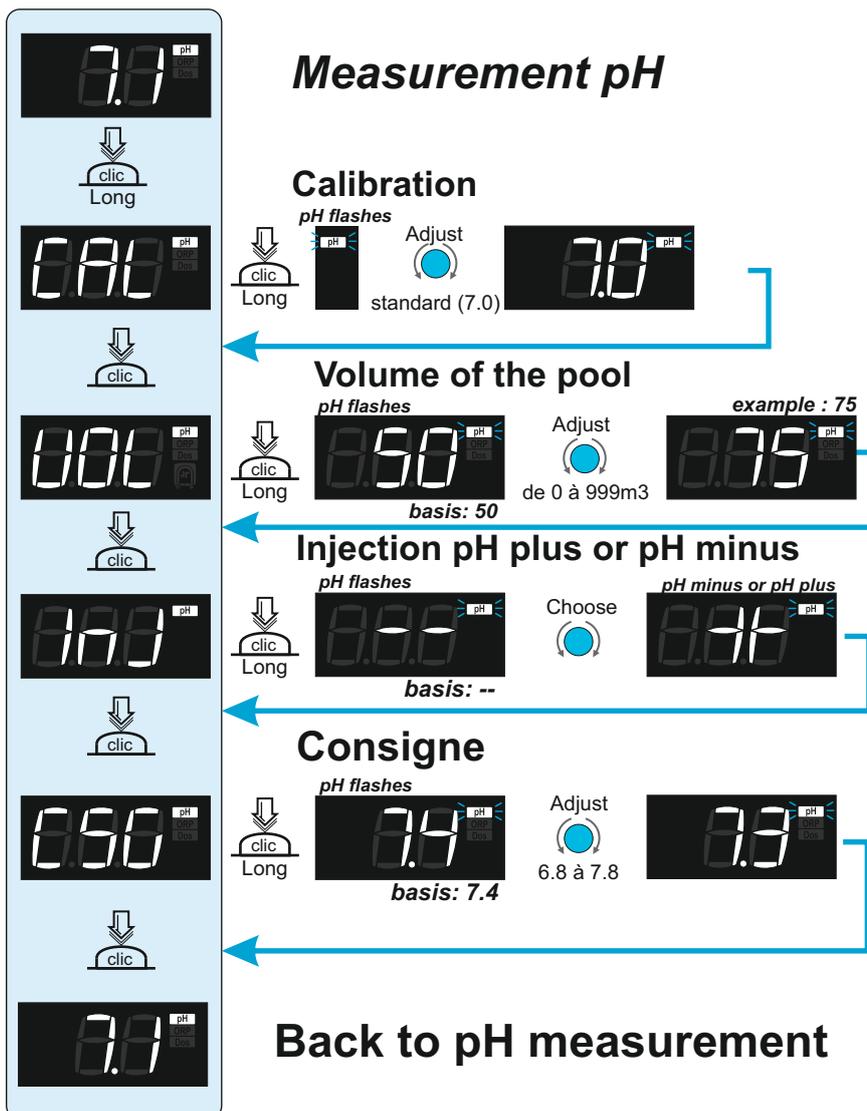
The adjustment of the injection set point makes it possible to regulate the pH and the redox to a desired value. Calibration the pH or redox probes with a appropriate solution.

The injection pump performs cycles of 8 min with a variable installation depending on the measurement deviation from the setpoint, below 10m3 the injection time automatically adapts to the set volume.

At all time, it is possible to correct the wanted values. The calibration of the probe is done under tension. It is not necessary to use a standard solution if the pH in the pool is known precisely.

Connect the BNC of the pH probe to the device.

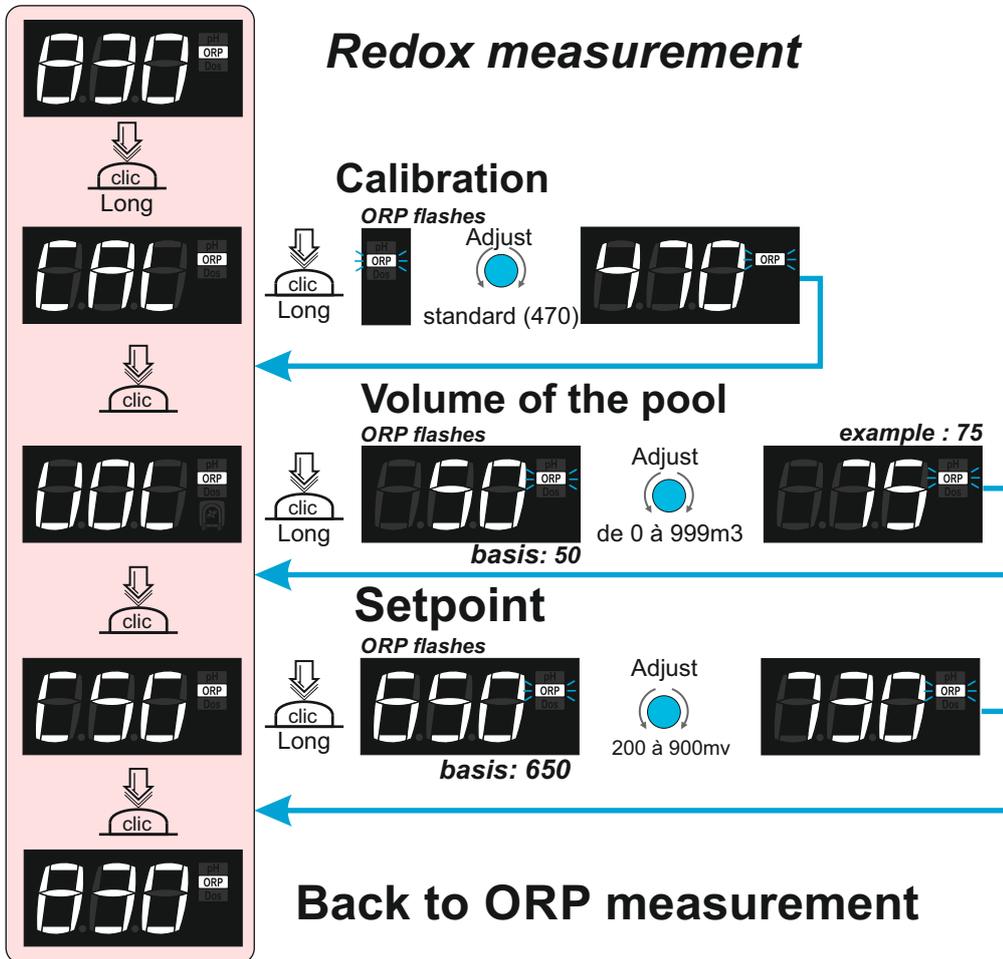
Remove the cap probe protection and place it in the container of solution (comes with the unit).



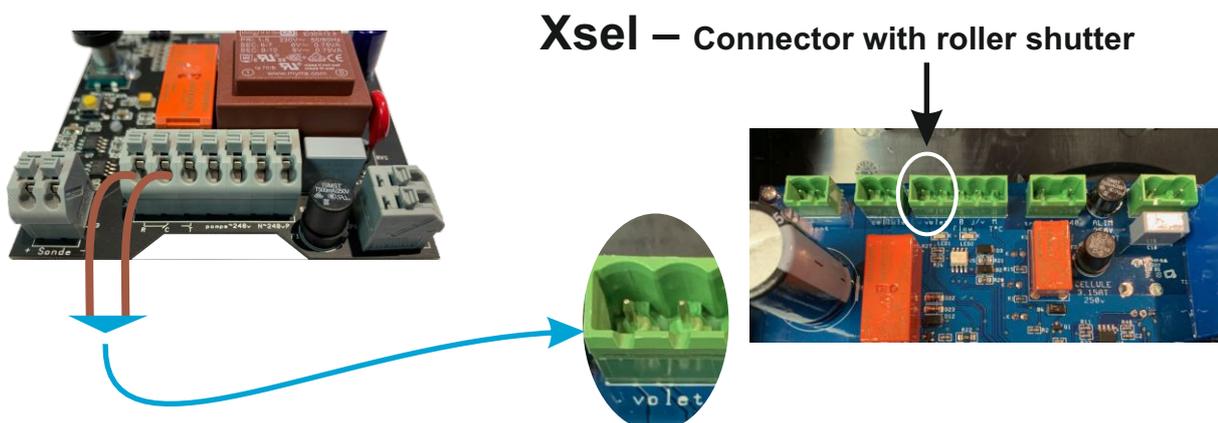
Function Redox if the Xsel has one

At all time, it is possible to correct the wanted values. The calibration of the probe is done under tension.

It is not necessary to use a standard solution if the pH in the pool is known precisely.



The Xsel redox is equipped with a relay allowing to control a pump of big flow or piloting a electrolyseur for an indoor swimming pool. The Xsel redox can control the chlorine production of an electrolyser by measuring redox in order to maintain a properly disinfected water. It also limits the production of chlorine, especially under firm shutter, avoiding any risk of over-chlorination and thus protecting the equipment (liner, shutter).



4 - Getting started

Description

Cette section décrit comment régler et utiliser l'électrolyseur.

This section describes how to set and use the electrolyser.

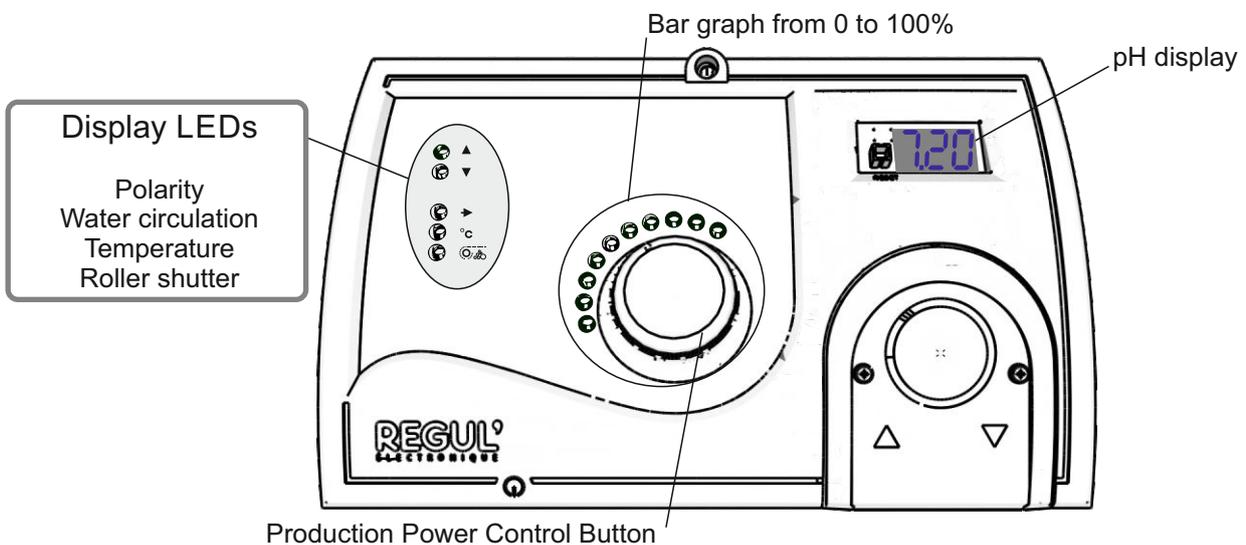
The electrolyser is equipped with a potentiometer.

It makes it possible to send the tension necessary for the cell to produce chlorine.

A set of ten LEDs indicates the amperage given by the production cell.

This display allows you to estimate from 0 to 100% the processing capacity you desire.

- Turn the potentiometer to the chosen power level, the last led flashes 10s, when it goes off the memorization is validated. The device limits the power to this value, it can not go up, it can go down and thus make it possible to visualize a drop in the salt content, temperature, wear of the cell.
- At any time you can save a new value by turning the knob again.

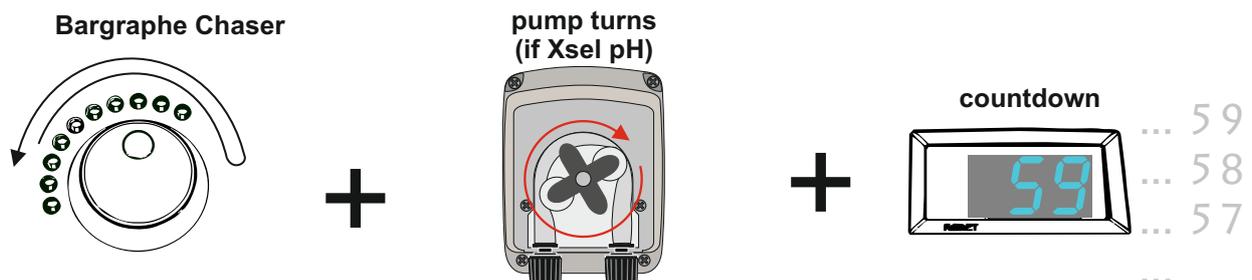


Display example:

- Flow indicator lites in the display area indicates that water is flowing through the cell.
- The lights on the bar graph indicate the power level of production applied on the cell, it varies from 0 to 100% of the power of the device.
- Up and down arrow indicator indicate the direction of polarity applied to the cell.

Turning on the device

Press the Start / Stop button (page 5). A series of indications will appear on the interface before the electrolyser is testifying to a proper functioning.

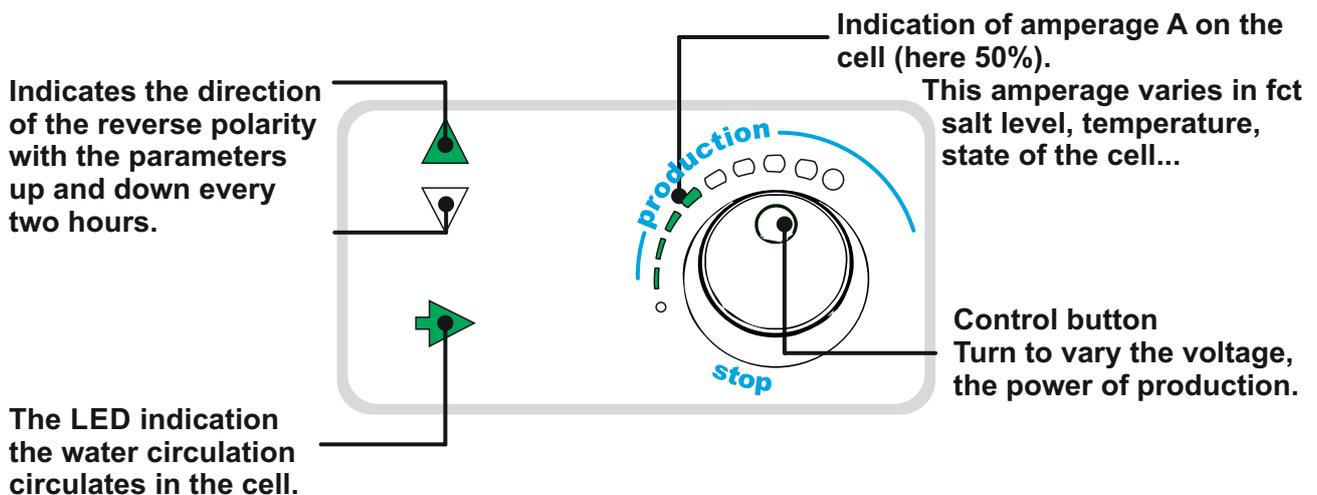


Function

The electrolyser is equipped with the "automatic descaling" function or "reverse polarity". Whatever the hardness of the water, the cell is always preserved from its scaling. Aservi to filtration, it processes the water continuously all the time of the filtration. It is possible at any time to vary the power of production except when the shutter rolling is closed (page 13) Reverse polarity occurs every 2 hours with a 2-minute pause between each inversion. The operating times are stored to ensure the continuity of the cycles of production. Thus, the cycle resumes at the same time in case of interruption or cessation of filtration. For safe operation, fault detection is integrated.

Usage

After powering up and counting down (page 14), if water flows through the cell (led flow on), the treatment starts. You can adjust the power at any time of production. e traitement démarre. Vous pouvez à tout moment régler la puissance de production.



To get started set the device to half power, turn the knob to have 4 leds shining. After a few days of use depending on the state of the water (check the residual chlorine level) increase or decrease production slightly with the control button.

The STOP zone of the potentiometer stops the production of chlorine while maintaining the pH function (for the Xsel pH).

Notes

The control knob is only used to adjust the output power, shutter open.

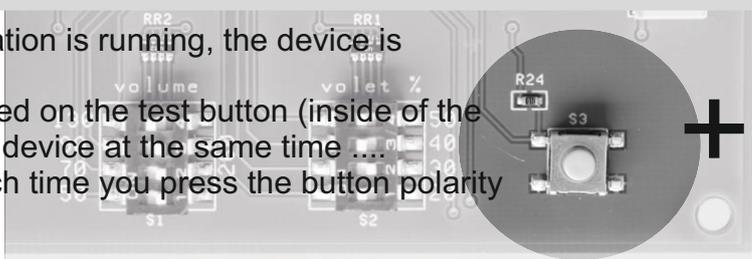
5 - Test and controls

Function Test

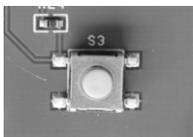
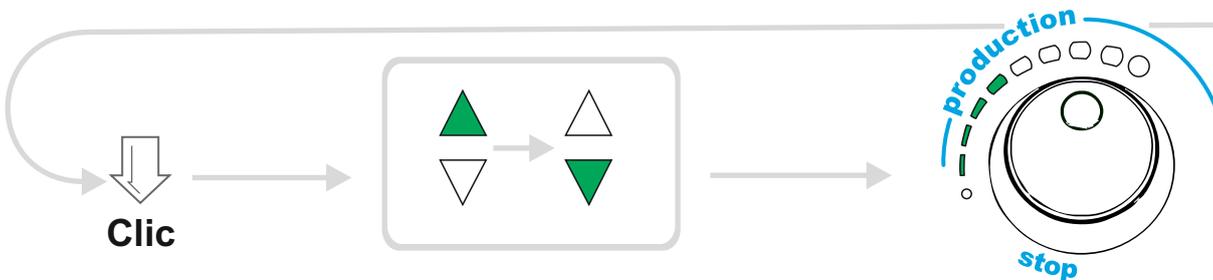
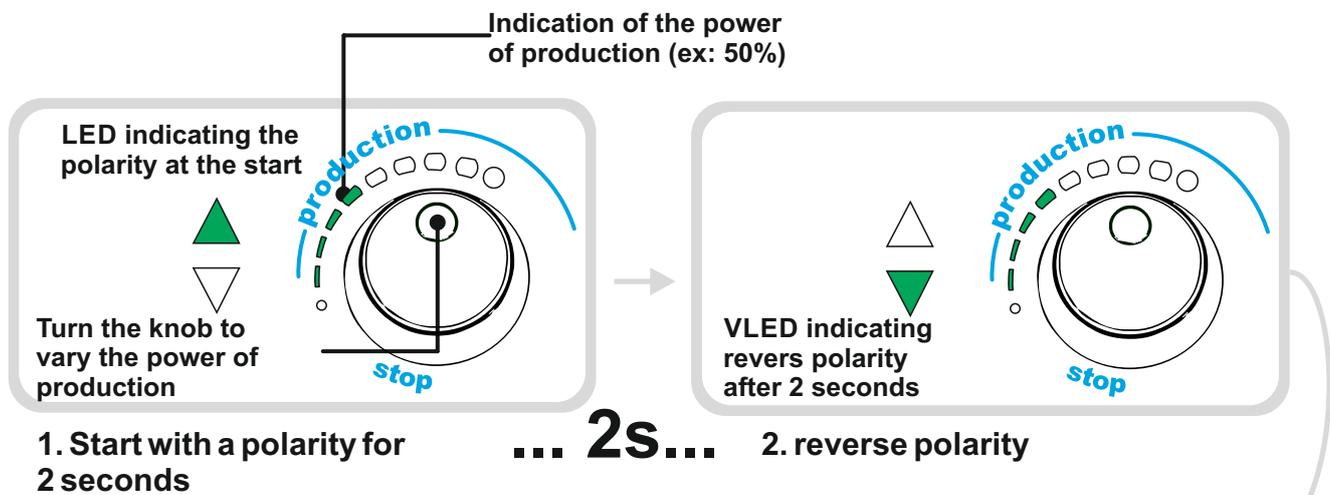
This function makes it possible to check the correct functioning of the electrolyser.

Test function: the filtration is running, the device is off.

Keep your finger pressed on the test button (inside of the box) and switch on the device at the same time ... release the button. Each time you press the button polarity is reversed.



+ Functions



3. each time the test button is pressed, the polarity changes. We can thus visualize the power provided by the cell on both polarities.

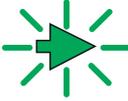
4. turn the knob to check that the measured power on the cell varies well in order to deduce its state (wearscaling)

Notes

After 7 minutes, the electrolyser automatically exits the test function and restarts normally.

Control on the functioning

4 types of events can occur on the special displays

Flow	 <p>Flashing flow: minor flow of water in the cell</p> <p><i>Stops treatment</i></p>
-------------	---

This display indicates that water circulation in the cell is insufficient.

Make sure that:

- All the valves are open
- The 6-way valve is at the Filtration
- The pump is well primed Stop treatment
- The water level in the pool is ok

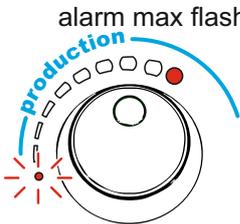
T°c	<p>The light °c flashes</p>  <p><i>Temperature too high or too low: stop treatment</i></p>
------------	---

The indicator flashes when a fault temperature occurs, causing the device to stop.

13 ° c - Water temperature too low <13 ° c, the treatment will resume automatically when 13 ° C will exceed (winter mode).

45 ° c - Overheating in the cell, check the flow of water.

CAUTION the light is on steady when the temperature sensor is not connected or HS, in these cases the device operates normally.

Cell	<p>alarm max flashes</p>  <p>Or alarm min flashes</p> <p><i>Cell power failure: missing salt, worn cell, scaly ...</i></p> <p><i>Stop treatment</i></p>
-------------	--

These mini and max alarms indicate faults

Operating

Mini : Insufficient salt, ideal between 4 and 5g / l. Cell worn, scaled, disconnected etc ...

Maxi : Salt level higher than 6g/l.

If the salt level is correct, perform a Test function (see page 16) to check the status of the cell.

Error messages

<p>Message and check up</p> 	<p>The display or dEF flashes</p>  <p><i>Reading error / regulation HS Probe, empty canister.</i></p> 
---	--

The display flashes: Indicates that the probe is at the limit of operation or calibration. **So change the probe.**

dEF flashes: when the pH or redox in the pool does not reach the injection setpoint.

Check:

- the can is empty
- the measurement is too far from the instruction
- Adjustment of the pool volume

To delete dEF:

- After changing the bottle or checking the probe.
- Open the door of the and and then press the adjusting bolt until the measurement reappears.

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Treatment of pools with salt