Limpido VP

Connected touchscreen electrolyzer

Technical Manual

Réf : PF10I360 / PF10I370 / PF10I380 / PF10I390

Bleu Electrique SAS (FR47403521693)

MPNT0560

Table des matières

Avertissement

Read these instructions carefully before installing, commissioning and using this product.

1. Package contents

- 1 Limpido VP electrolysis unit
- 1 electrolysis cell with integrated flow detector + 1 set of 2 union fittings for 50 mm diameter tubes
- 1 wall mount
- 1 sachet containing
  - 1 clip for the cell connector
  - 3 screws and 3 mounting plugs for the power supply box
  - 2 Seals for the cell union connections
- Technical manual (this document)

2. Technical specifications

Power Supply	230V~ AC 50/60Hz
Power consumption	PF10I360: 90W PF10I370: 120W PF10I380: 150W PF10I390: 180W
Overall dimensions	Cell : 313 x 123 x 85mm Packaging box : 575 x 400 x 170mm
Weight	Box : 5 kg (max) / Cell : 1,5 kg (max)
Installation	Box: Wall mounting (3 screws/plugs included) Cell: On PVC pipes with a diameter of 50 mm (union fittings supplied)
Protection rating	Box : IP-54 / Cell : IP-55
Recommended salt content	3 g/l = optimal rate (2 -> 4g/l)
Cell cleaning	Automatic by polarity reversal
Maximum pressure (cell)	3 bars
Maximum flow rate (cell)	22 m3/h
Compatible cells	PFXCEL09, PFXCEL10, PFXCEL11, PFXCEL12: Détecteur de débit déporté (Voir paragraphe PFXCEL50, PFXCEL51, PFXCEL52, PFXCEL53: Détecteur de débit intégrée

3. Description

3.1. The principles of electrolysis

Salt water electrolysis separates salt (NaCl) into sodium (Na) and Chlorine (Cl). The chlorine is immediately dissolved in the water to produce hypochlorous acid (HClO). This powerful disinfectant destroys bacteria and algae before turning back into salt.

The quantity of chlorine needed to disinfect a swimming pool increases with the water temperature and pH.

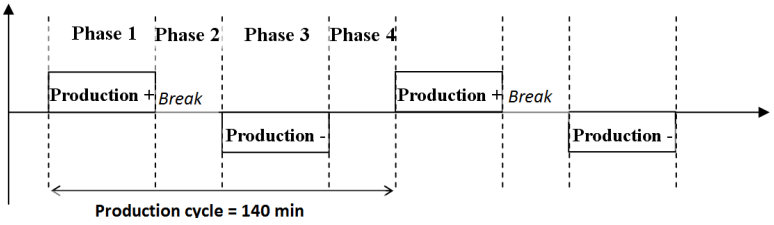
Chlorine production must be adjusted to the environment and water characteristics:

- water conductivity
- water temperature
- the volume of the pool to be treated
- water pH

Tip

For the installation's safety, the Limpido VP only produces chlorine when the flow meter indicates that water is actually flowing through the cell.

During these filtering periods, the chlorine production time is composed of two-period cycles (Normal and Reverse) that alternate electrode polarity. This polarity reversal makes it possible to prevent the electrodes from scaling.



Thus, the production cycle is split into 4 phases:

1. Phase 1, normal production (positive)
2. Phase 2, standby
3. Phase 3, reverse mode production (negative)

4. Phase 4, standby

At the end of the filtering period, the **Limpido VP** stops producing and restarts it exactly where it left off when filtering restarts.

The main benefit of this choice of operating mode is to always guarantee (even if there is a power failure) that normal and reverse production times are strictly identical and, as a result, guarantee the best cell descaling possible (giving quality production and long equipment service life).

3.2. Presentation of Limpido VP

Efficient and optimal production, automatic depending on the current with, if necessary, a CHOC production mode that has an adjustable duration

Compact and durable monoblock cell - equipped with solid titanium plates

Chlorine production adjusted according to water temperature

Detection of cover position and adjustment of production

Self-cleaning of the cell by polarity reversal with enhanced safety through flow detection

Installs in minutes, easy connexion to connector.

3.3. The LCD screen

The Limpido VP is equipped with an LCD screen that allows you to:

- display the status of the electrolyzer
- to configure the operating mode of the electrolyzer

3.4. X-Cell 3

The X-Cell 3 unit is equipped with:

- A temperature sensor that measures the temperature of the water
- a flow detector that stops electrolysis when water is no longer circulating in the cell

3.5. How electrolysis works

To preserve the life of the plates, the device maintains a constant electrolysis current, which leads to stable production levels. To avoid producing more chlorine than necessary, the user can adjust the power using a slider ranging from 20% to 100%. The setting determines the proportion of filtration time that will be used for production.

3.6. Polarity reversal

To prevent scaling on the plates, the polarity of the electrolysis must be changed periodically. The cycles of each polarity must be of equal duration and their frequency must be increased if the water is hard or contains a high level of calcium (high TH and/or TAC). However, polarity reversals increase plate wear and tear and their frequency must therefore be kept to a minimum when the alkalinity of the water allows.

Water hardness	TH Measurement	Polarity cycle reversal time
Softened water	0-7°f	7h20
Soft Water	7-15°f	6h20
Rather soft water	15-20°f	5h20
Rather hard water	20-30°f	4h20
hard Water	30-40°f	3h20
Very hard water	>40°f	2h10

Note

There is a 4-minute pause between each polarity change.

3.7. Device settings

By clicking on the cogwheel icon (top right), you can access the device settings:

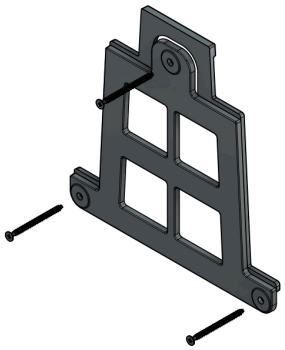
- Language
- Units of measurement
- T° minimum :15°C-20°C
- Water hardness
- Firmware Update
- Resetting the device

4. Installation

4.1. Wall mounting of the Limpido Vp

Limpido Vp

- can be installed outdoors, but must be protected from rain, cleaning jets or sprinklers, and UV rays (sun).
- resistant to water splashes but must not be placed in a location that could be flooded
- must be placed on a flat, stable surface and secured to the wall using the wall bracket and the dowels and screws provided:



4.2. Hydraulic system

The various components that need to be positioned on the pool pipe are: the electrolysis cell,et le dispositif de mise à la terre. Celui-ci doit être acheté séparément.

La cellule du **Limpido VP** s'installe sur une canalisation au diamètre 50mm, à l'aide des raccords union fournis. Elle s'installe en aval de la filtration (après le filtre) et peut être positionnée à l'horizontale comme à la verticale. Le détecteur de débit doit lui se positionner à la verticale sur une canalisation horizontale.

Prefer a bypass installation (essential above 22m3/h) in order to control the flow rate in the cell and dismantle it without interrupting filtration.

4.3. Electrical Wiring

Avertissement

Risk of electric shock. Connect the controller only to a grounded outlet protected by a ground fault circuit interrupter (GFCI). We recommend installation to a dedicated GFCI. Installation should be performed by a licensed electrician.

Disconnect power before servicing. There are no user-serviceable parts inside the controller.

All power cords should be inspected frequently. Any damaged power cords should be replaced immediately to reduce the risk of electric shock. Never operate a controller without a working flow switch.

Installation requires a properly located GFCI-protected outlet. Never use an extension cord for electrical connections to the controller.

Attention

The unit is equipped with a flow sensor and should not be installed on a power supply that is connected to the filtration system. This may cause the unit to malfunction.

The box is delivered with a power cable that can be connected to the mains on a standard plug (120V, 50 / 60 Hz) in the technical room. This socket must be protected by a 30mA differential device (GFCI) by the NFC15-100 standard.

5. Start Up

Avertissement

Only regular analyses allow the device settings to be adjusted.

Carefully following the steps below will ensure a smooth start-up.

Attention

The chemicals used in swimming pools are highly corrosive and can have a harmful effect on health and the environment.

These products must be handled with care and stored in suitable premises.

5.1. Stabilizer

Chlorine is gaseous at room temperature. Its solid form (tablets, granules, etc.) is obtained by combining it with a cyanuric acid molecule. This cyanuric acid acts as a stabilizer, protecting the chlorine from degradation by the sun's ultraviolet (UV) rays. However, this cyanuric acid is not consumed and inevitably accumulates in pools treated with chlorine tablets, eventually inhibiting the chlorine's effectiveness. For swimming pools, the maximum recommended concentration of cyanuric acid is 80 ppm (or mg/l).

Salt electrolysis treatment prevents this overdose of cyanuric acid, but it may be useful to add between 25 and 50 ppm (or mg/l) of stabilizer when the pool is exposed to strong sunlight and the chlorine concentration is insufficient.

In fact, in strong sunlight, 90% of free chlorine is destroyed in two to three hours in the absence of cyanuric acid, whereas this proportion is reduced to 15% with 30 ppm of stabilizer (cyanuric acid).

5.2. Salt level control

The Limpido VP is designed to operate with water conductivity corresponding to a salinity level between 2g/l and 4g/l at 25°C.

To accurately monitor the salt level in your pool, we recommend using a conductivity tester. This easy-to-use device provides a direct reading of the salt level in g/l. Test strips are also available for effectively monitoring the salinity of your water.

When salinity levels are inappropriate, the Limpido VP stops production in the event of excess or insufficient salt. If one of these faults is displayed, first check that the cell is correctly connected to the control box and that it is in good condition (not scaled up), then make the necessary corrections to the pool water.

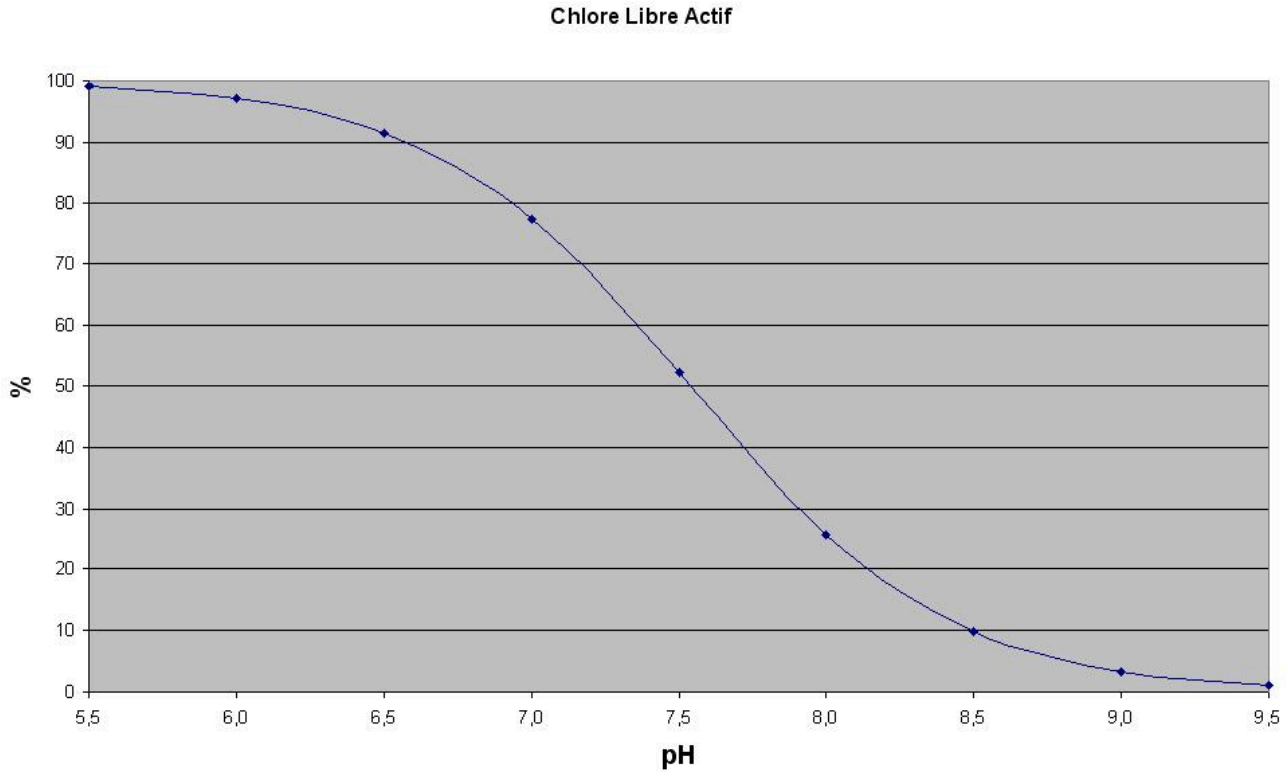
The conductivity of water is proportional to salinity, but also depends on temperature at a rate of 2.2% per degree Celsius.

Salinity (in g/l)	10°C	15°C	20°C	25°C	30°C	35°C	40°C
Mini	2,8	2,5	2,2	2,0	1,8	1,6	1,4
Ideal	4,2	3,7	3,3	**3,0**	2,7	2,4	2,1
Maxi	5,5	5,0	4,5	4,0	3,6	3,2	2,9

At 35°C, the maximum salt content therefore drops from 4g/l to 3.2g/l.

5.3. pH control

pH, or hydrogen potential, measures the acidity of water. Its value ranges from 0 to 14. A solution with a pH of 7 is neutral. If it is below 7, the solution is acidic, and if it is above 7, the solution is said to be basic (or alkaline). For the comfort of swimmers, the effectiveness of the treatment, and the reliability of the installation, the pH of the pool water must be maintained at around 7.2. However, as the ideal pH value for a pool depends on all of its components (coating, materials, etc.), refer to the manufacturer's recommendations. When the pH rises from 7.2 to 8.2, the percentage of active chlorine drops from 70% to 20%.



To obtain the best treatment efficiency, it is essential to maintain the pH of the water within the ideal range specified by your manufacturer (see manuals).

6. Operation

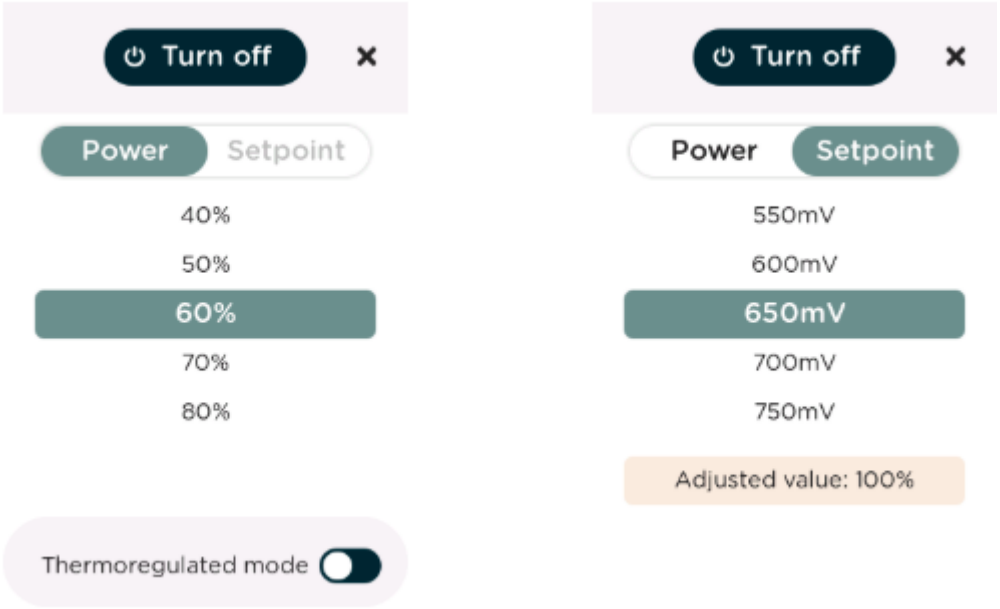
6.1. Powering up

A switch on the housing allows the electrolyzer to be turned on.

6.2. Operating modes

To select the desired production mode, simply click on the round button on the screen.

A screen allows you to select the desired mode by selecting the power setting (On mode) or the Orp setpoint (Regulated mode) and to activate the thermoregulated mode:



6.2.1. Mode On

In this mode, a power level (from 20% to 100%) is defined corresponding to the ratio of time during which the device will produce (e.g., 50% = production during 50% of the filtration time).

Power	Production time
25%	15 minutes per hour
50%	30 minutes per hour
75%	45 minutes per hour
100%	Permanently

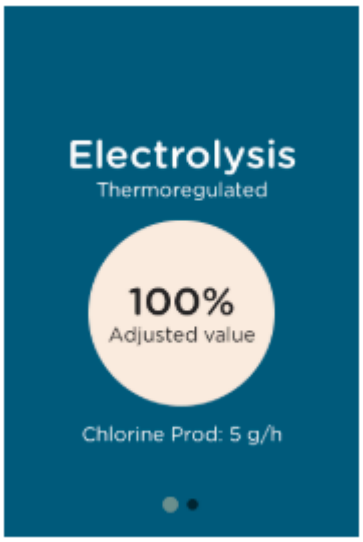
6.2.2. Thermoregulation Mode (Auto)

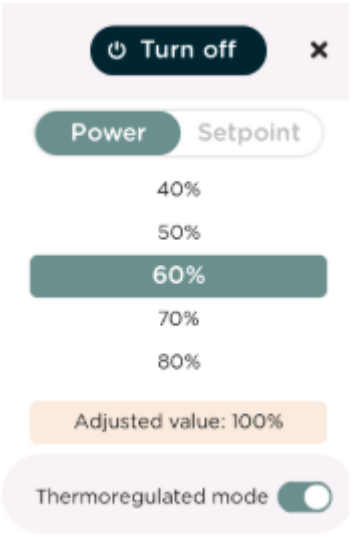
In this mode, power is used as in On mode, but water temperature is taken into account to automatically adjust the power (and therefore the production time).

Below the minimum temperature setting, the Limpido VP activates winter mode. Preset minimum temperature = 15°C

The power is adjusted according to the water temperature as follows:

Mode Thermorégulé		Power								
temper °C	K	100%	90%	80%	70%	60%	50%	40%	30%	20%
10°C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
15°C	33%	33%	30%	26%	23%	20%	17%	13%	10%	7%
20°C	66%	66%	59%	53%	46%	40%	33%	26%	20%	13%
25°C	100%	100%	90%	80%	70%	60%	50%	40%	30%	20%
30°C	125%	100%	100%	100%	100%	90%	75%	60%	45%	30%
35°C	150%	100%	100%	100%	100%	100%	100%	80%	60%	40%

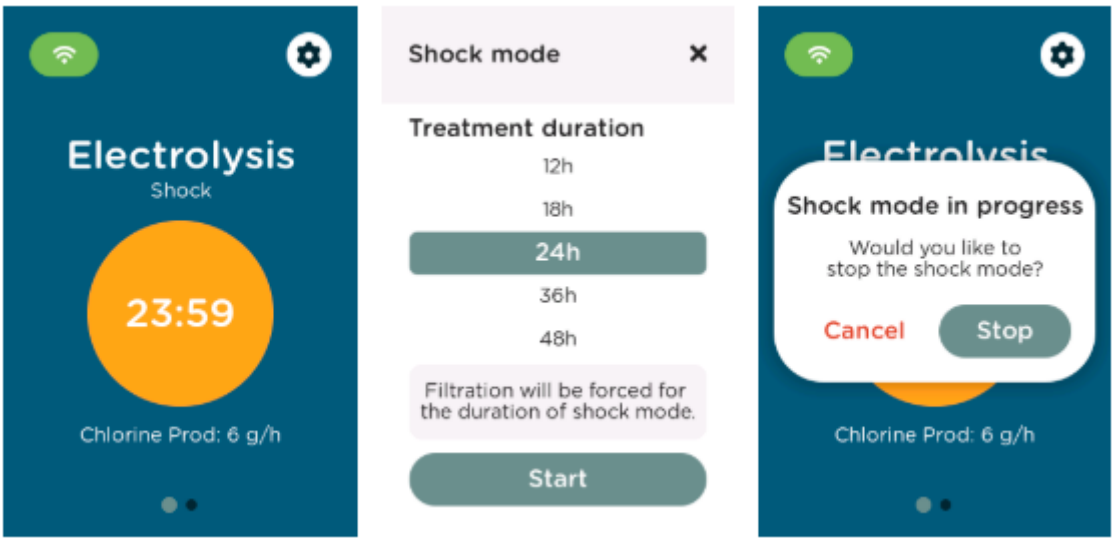




6.2.3. Shock Mode

Mode used for temporary “shock” treatment. The user selects the duration of the Shock mode (between 1 and 72 hours). Once this duration has been reached, the device returns to its previous mode.

Shock Mode can be interrupted before the scheduled end time by swiping right and then clicking on “Stop Shock Mode.”



6.2.4. Regulated Mode

Avertissement

To use this operating mode, you must have a Vigipool device that measures the oxidation-reduction potential (ORP/Redox) of the water. For example, the following products are compatible with this mode: Ofix, Antea OX

The "Regulated" mode allows chlorine to be produced only when needed: the electrolyzer's operation is then dependent on an ORP setpoint. The Limpido VP will therefore only produce chlorine if the ORP measurement is lower than the programmed setpoint. This setpoint, which is factory preset to 650mV, can be changed from the application (Setpoint). The filtration time must be sufficient for the Limpido VP to produce enough chlorine to reach the desired setpoint.

6.2.5. Low temperature

In Auto mode, the device stops producing when the temperature is lower than the minimum temperature set in the application.

Note

The minimum temperature can be set between 15°C and 20°C.

6.3. Smartphone Application

6.3.1. App Download

Search for Vigipool NA in the search engine of the App Store or Play Store and install the app on your device. You can also use the following QR code:

For Android® devices:	For Apple® devices:
FLOWCODE PRIVACY.FLOWCODE.COM	FLOWCODE PRIVACY.FLOWCODE.COM

The Phileo VP includes a Bluetooth® and Wi-Fi transmitter, which allows your device to be controlled by a smartphone or tablet. To control the Limpido Vp, an iOS (Apple®) or Android® device with a Bluetooth® Low Energy (v4.x) OR WiFi 502.11 B:N:G connection is required. Other operating systems (Windows Phone®,...) or devices equipped with a previous version of Bluetooth® - lower than 4.0 - **are not compatible**.

In Bluetooth, only one mobile/tablet can be connected at any time. **To connect to a new device, the previous one must be disconnected.**

In Wi-Fi, a Vigipool account must be created in the application, and the ID and SSID of your Wi-Fi network must be entered.

Tip

Bluetooth and geolocation of your phone must be enabled when connecting for the first time and when using the product in Wi-Fi

If the device is connected via Wi-Fi (recommended), multiple devices can be connected to the product at the same time and can be controlled from anywhere.

6.3.2. Connect your Device to Vigipool

With Vigipool, all Vigipool-compatible products can be controlled with a single application.
To connect this product to the Vigipool app:

- If no other Vigipool product is connected and the Limpido VP is the only one when the product is first powered on, wait for the Cell LED to flash WHITE. When other Vigipool-compatible products are added to the environment, they will automatically pair up with the "Master" product. The "Master" product must be restarted at least 1 minute before the operation.

- If another Vigipool product is already connected, turn off all Vigipool products and start them at the same time. The new products will be paired directly with the current "Master".

Astuce

If you have a CCEI Tild, this product will always be defined as "Master".

7. Error Messages

The Limpido VP provides users with information via the app that enables them to prevent potential faults or diagnose a defect. Messages are then displayed in the app or via a notification.

8. Maintenance

8.1. Product Factory Reset

If you install a new Vigipool-compatible product and wish to change the "Master" device, or for any other reason, a factory reset is available as follows:

Using the LCD screen go to:

- Device settings

- Factory reset

Avertissement

Performing a reset will erase all settings stored in memory (WiFi configuration, pairing of phones and other Vigipool Universe devices, etc.). It is therefore necessary to repeat the commissioning procedure after performing a reset.

8.2. Adding salt

When the salt level falls below 2.5g/l, it is essential to add salt.

It is recommended to use salt that has been specially treated for swimming pools and contains stabilizers. The effectiveness of Limpido VP will be significantly improved.

At the start of the season, we recommend checking the salt level and bringing it back to 4g/l. Depending on the measured salt level, the quantities of salt to be added are as follows:

Measured rate / Basin volume	40m3	50m3	60m3	70m3	80m3	90m3
1,5 g/l	60	75	90	105	120	135
2 g/l	40	50	60	70	80	90
2,5 g/l	20	25	30	35	40	45

Weight of salt in kg to be added to reach 3g/l. For example, if the measured salt level is 1.5g/l, 60kg of salt should be added to restore the level to 3g/l in a 40m3 pool.

8.3. Wintering

Below the minimum temperature setting, the Limpido VP activates winter mode. Preset minimum temperature = 15°C

In winter, weather permitting, it is possible to continue treatment while significantly reducing the frequency. An 8-hour filtration cycle every 15 days is sufficient in most cases. However, it is essential to continue monitoring the salt level to prevent the cell from operating in water that is too low in salt (<2g/l).

8.4. Cleaning the cell

When the indicated output remains low despite a correct salt level, check the condition of the cell and clean it if tartar is visible on the plates.

Attention

This operation must be carried out with caution and it is essential to comply with the instructions for use of the acid employed.

Attention

The cell connector is not submersible. Do not immerse the cell in a bucket of water.

Cleaning procedure

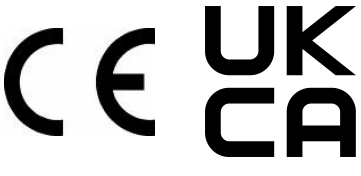
- Disconnect the cell from the cabinet
- Plug one end using a plug (PF10I190)
- Fill the cell from the other end. **CAUTION: Use water with diluted acid (10% HCl).**
- Stop filling at the top of the titanium plates and avoid any overflow that could reach the connector.
- Leave on for a few hours if necessary.

Important

Never pour water into acid!

Always pour acid into water

CCEI declares that the product Limpido VP meets the safety and electro-magnetic compatibility requirements of European Directives 2014/35/ EU and 2014/30/EU EU and the Radio Equipment Directive 2014/53/EU.



Emmanuel Baret

Marseille, on 19/11/2025

Distributor's stamp

Date of sale: . . . . . Batch N°: . . . . . .