INSTALLATION, USE AND MAINTENANCE MANUAL

# **PROFESSIONAL SALT**





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## 1. FOREWORD

READ, UNDERSTAND AND CAREFULLY FOLLOW ALL OF THE INSTRUCTIONS IN THIS MANUAL BEFORE INSTALLING AND USING THIS EQUIPMENT.



- In this manual, the pictograms opposite indicate a WARNING, or a NOTE OF CAUTION, accompanied by instructions to be followed to the letter.
- Failure to comply with these instructions may result in significant risk of damage to the equipment and/or serious injury to people. <u>THESE INSTRUCTIONS MUST BE FOLLOWED AND COMPLIED WITH.</u>

## 2. SAFETY INSTRUCTIONS

To avoid the risk of injury or accident, install the equipment out of reach of children and anyone not authorised to operate and handle the equipment.

Ensure that the equipment room in which the equipment is installed complies with the standards in force in the country of installation, at the time of commissioning the equipment. If in doubt, contact a qualified electrician. This equipment must also be installed by an authorised, qualified person in accordance with the electrical codes in force in the country of installation at the time of installation. The installation must also comply in all respects with the technical specifications given in this manual and in any document supplied with the appliance.

The equipment's electrical cables must be protected against any accidental damage. A damaged cable must be replaced immediately, using only a cable identical to the original. Never cut or extend the electrical cables.

Only authorised, qualified people may work on the equipment in case of failure or to perform maintenance. Always disconnect the power supply before carrying out any technical work on the equipment.

Do not modify the equipment. Any modification of the equipment can lead to risks to people as well as the environment, and result in the deterioration of the equipment.

The detailed safety instructions in this manual are not exhaustive. They detail the most common risks encountered when installing and using this equipment. Caution and common sense must accompany all installation and use of this equipment.

## **3. GENERAL DESCRIPTION**

PROFESSIONAL SALT is professional equipment intended for both large, private family pools and communal pools with average use rates (according to the legislation in force in the country of installation).

## 3.1. Technical data sheet

PROFESSIONAL SALT model	50 70 100 140				210	280	420	560
Production characteristics :								
Maximum production of chlorine (g/h)	50	70	100	140	210	280	420	560
Electronics unit :								
Electrical power supply				220 V - 5	50/60 Hz	2		
Section of the general power supply cable				3G1.5			3	G2.5
Length of the general power supply cable (m)				2.	.5			
Calibration of the internal circuit breaker (A)			e	õ		12		20
Maximum power (W)	300	400	600	800	1,200	1,600	2,400	3,200
Nominal current on sector (A)	1.5	2.1	3	4.2	6.3	8.4	12.6	16.8
Maximum current on sector (A)	1.6	2.3	3.3	4.6	6.9	9.2	13.8	18.4
Dimensions [length x width x depth] (mm)			325 x 29	90 x 145	400 x	400 x 320 x 240 61		390 x 240
Weight (kg)	3.4	3.4	4.1	4.1	6.7	7.5	12.4	14
Material			AE	BS		ABS and a	aluminiu	m
Dimensions of the LCD screen (mm)	64x128							
Chlorinator cells :								
Maximum voltage on each cell (V)	oltage on each cell (V) < 24							
Maximum current on each chlorinator cell (A)	18.5	20	18.5			20		
Life time (h)				10,	000			
Conditions of use :								
Pipe connection diameter (mm)				6	3			
Salt level in the basin (g/L)				3 to	o 35			
Water temperature (°C)				> :	15			
Maximum pressure (bar)	3							
Ambient temperature (°C)	5 to 40							
Chassis with pre-installed cells (optional)								
Dimensions [width x depth x height] (mm)	-			220 x 600 x 540	220 x 1	L,100 x 540	843 x 1	.,100 x 540

## 3.2. Electronics unit

3.2.1. Nameplate on the electronics unit



- 1 : Item code for the unit (The last 3 digits: unit model)
- 2 : Unit serial number
- 3 : Additional code for the unit
- 4 : Access code for the website linked to the unit
- 5 : Week/year of manufacture of the unit
- 6 : Supply voltage
- 7 : Nominal current
- 8: Supply frequency
- 9 : Configuration code
- 10 : QR code

#### 3.2.2. Technical specifications and use conditions

- The device is built to IP20 :
  - The device must be installed in a room sheltered from water spray.
  - The appliance must be installed in an air-conditioned room where the probability of water presence is negligible (spray or falling water due to condensation).
  - Weather conditions : between 5 and 40°C.
  - Relative humidity : between +5 and +85%.
  - Spacing is required for unobstructed ventilation of the device. Do not block the airflow.
- Degree of pollution : 2.
- The device must be installed in accordance with the rules of use and safety in force in the country of installation on the day of installation.
- The manufacturer cannot be held responsible for failures in the event of failure to comply with the instructions given in this manual.
- Failure to comply with these requirements may lead to overheating of the device and a shutdown of production.
- The device is not intended for use by persons (including children) with reduced physical, sensory or mental capacities, or persons without experience or knowledge, unless they are supervised by a person responsible for their safety or have received prior instructions concerning the use of the device. Children should be supervised to ensure that they do not play with the device.



Before accessing the connection terminals, the power supply must be disconnected.



Dotted border : Measuring circuit

- 1 : Electronics unit
- 2 : Accessories holder
- 3 : Temperature / salt / low water level sensor
- 4 : Pool Terre Electrode
- 5 : Ground rod (not supplied)
- 6: Chlorinator cell (quantity according to model / see chapter 4.3)
- 7: Set [saddle / flow sensor] (see chapter 4.7.3)
- 8 : Electrical power supply (not supplied)
- 9 : Measuring circuit pump (not supplied)
- 10: Filtration pump (not supplied)
- 11: Filter (not supplied)
- 12 : pH corrector container (not supplied)
- 13: PH filter with ballast
- 14 : Semi-flexible tubing
- 15: pH peristaltic pump
- 16 : pH injection fitting
- 17: Set [ valve / connector ]
- 18: Bypass valve (not supplied)
- 19: Measuring chamber with probes (see chapter 5)
- 20 : Copper cable without insulating sheath (not supplied)
- 21: Shutter switch (not supplied) to be connected to the electronics unit instead of the flow sensor (functions cannot be combined)
- 22 : Venting system



- The pH corrector container must be kept 2 metres away from any electrical device or any other chemicals. In order for acid fumes to be expelled outside the pool house, a venting system must be placed on the pH corrector's hermetic cap. Failure to follow these instructions may lead to abnormal oxidation of metal parts, possibly resulting in complete device failure. Personal protective equipment (glasses with side protection, suitable gloves, refer to the product's safety data sheet) must be worn whenever handling the pH corrector or the injection circuit.
- Chlorinator cells must not be placed higher than the accessories holder.
- Ensure that the chlorinator cells are not powered on when the bypass valves are closed, at risk of destruction of the cells.
- Ensure that the flow rate in the electrolysis cells is sufficient, so that the chlorinator gas circulates correctly in the filtration circuit (see minimum flow values in chapter 3.1).
- Make sure the flow in the measuring circuit is correct (see values in chapter 3.1).
- Flow variations affect the measurement of the probes. Carry out a calibration of the free chlorine level after any change or modification to the flow in the measuring circuit (see "Cl calibration" in chapter 6.5.1).
- Never use hydrochloric acid, as this may lead to irreversible damage to the device and void the warranty. Only use a sulphuric acid- or alkali-based pH corrector product recommended by your professional dealer. Please note that use of a multi-acid pH corrector requires increased maintenance, and its use may also lead to premature wear of the pH circuit and void the warranty. Refer to the product's safety data sheet.

## 4. INSTALLATION

## 4.1. Important preliminary precautions

#### $\Delta~$ Before installing the equipment, the following instructions must be followed :

- PROFESSIONAL SALT's treatment capacity must be adapted to the volume of the pool to be treated, the pool's use rates, the possible presence of nearby equipment (overflow, water mirror, slide, etc.), as well as the weather conditions at the place of installation.
- Use water from the mains water supply. Do not use water of natural origin (rain, run-off, body of water, drilling), as it may cause premature deterioration of the electrolytic cells.
- Check the condition and the proper operation of the basic filtration equipment on which PROFESSIONAL SALT will be installed. Make sure the basic equipment is compatible with PROFESSIONAL SALT (filtration pump flow, capacity of the filter associated with the filtration pump, diameter of the pipes).
- PROFESSIONAL SALT must be installed in a closed, dry and sufficiently ventilated room protected from splashing water and UV rays. The temperature inside this room must not exceed 40°C.
  - $\rightarrow$  If this room is located in a country with a hot and humid climate, it must be air conditioned.
  - ightarrow If this room is located in a country with a temperate climate, it must be equipped with forced ventilation.
- Determine a specific location to install each PROFESSIONAL SALT component, taking into account its size and the length of its power cables. Also provide extra space around the unit, in order to facilitate access for maintenance.
- Select a location for the container of pH corrector that is far enough away from any electrical equipment and any other chemicals.

 $\rightarrow$  Failure to do this may cause oxidation of metal parts that could lead to the total failure of PROFESSIONAL SALT. The warranty will not apply in this case.

- The water pressure in the electrolytic cells(s) must not exceed 3 bar. If necessary, provide an additional location to install equipment for this purpose.
- The water flow in the measuring chamber(s) must not exceed 80 L/h. If necessary, provide an additional location to install equipment for this purpose.
- According to the diagram in Chapter 3.3, respect the location of the various components with respect to each other following the direction of the fluid, as well as their orientation (horizontal or vertical).
- Parts intended to be connected to the water supply system must bear the water pressure likely to occur in normal use. No part should leak, including the water inlet hose.

## 4.2. Mounting the electronics unit onto a wall



## Models 50 to 140

Following the image and the instructions shown opposite :

- 1) Drill the wall at fixing points A and B, then insert the 2 plastic anchors and screws supplied.
- 2) Attach the unit at fixing points A and B.
- **3)** Indicate on the wall fixing points **C** and **D**.
- 4) Remove the cabinet from the wall.
- 5) Drill holes in the wall at fixing points C and D, then insert the 2 plastic anchors supplied.
- 6) Put the cabinet back on the wall.
- 7) Screw the 2 screws supplied at fixing points C and D.





# Models 420 - 560 Apply the same procedure as for models 210 to 280, the only difference being the distance between the 2 brackets : 420.

## 4.3. Installing chlorinator cells

 $\rightarrow$  <u>Up to 4 cells</u>, connect in series :





→ From 6 cells upwards, connect in parallel and in series.



4.4. Installing the accessories holder



- 1) Remove the 3 plugs screwed into the accessories holder, and then screw them back into the accessories holder by <u>hand</u> using the Teflon tape provided.
- 2) Install the accessories holder in the filtration circuit, following the diagram in Chapter 3.3.
  - ightarrow The accessories holder must be positioned as indicated below :



## 4.5. Installing the ground rod

- 1) Following the diagram in chapter 3.3, connect the ground rod to the Pool Terre electrode using a copper cable without insulating sheath.
- 2) Insert the whole ground rod into the ground.



## 4.6. Installing the pH injection heat contactor



1) Fix the peristaltic pump 15 to the wall.

<u>Choose a suitable location so that the peristaltic pump can easily be</u> <u>connected to the electronics unit according to the length of the cable.</u>

**2)** Place the pH corrector container **12** as close as possible to the equipment room's internal ventilation and as far away as possible from any electrical device.

**3)** Connect the filter with ballast **13** to the peristaltic pump **15**, using the semiflexible tubing **14** to be cut to the right size (see photos **A** and **B**).

4) Insert the filter with ballast 13 into the bottom of the container 12.

**5)** Tighten, <u>by hand</u>, the injection fitting **16** in the accessories holder **2**, with the Teflon tape provided.

Following image **C** (exploded view of the injection connector 16), respect the direction of assembly of the parts, and in particular the direction of the arrow engraved on the connector. Failure to follow these instructions can lead to the peristaltic pump being damaged.

**6**) Connect the injection connector **16** to the peristaltic pump **15**, with the semiflexible tubing, **14** to be cut as needed.









## 4.7. Electrical connections

4.7.1. Electrolytic cells



- → Connect each electrolytic cell to the electronics cabinet, with the power cable(s) provided. The connection plugs on the electronics unit are located on the side at the bottom.
- → Depending on the number of chlorinator cells included in the pack, the associated electronics unit is equipped with a certain number of connection plugs :



#### 4.7.2. Shutter switch





#### 4.7.3. Accessories



- 1: Ethernet network (for Connect Pro)
- 2 and 4 : Temperature / salt / low water level sensor
- 3: Flow sensor or shutter switch
- 5: ORP probe <u>or</u> amperometric probe
- 6: PH peristaltic pump <u>or</u> pH electromagnetic pump
- 7: pH probe

#### 4.7.4. Electronics unit

- Before connecting the power supply cable to the electronics unit, make sure that the electrical installation meets the specifications of the unit *(see chapter 3.2.1)*, as well as the standards and regulations in force in the country of installation.
- The connection must be carried out by a qualified and authorised electrician.
- Do not use an extension cord.
- Do not plug the device into an electrical socket.
- Disconnect the power supply at the circuit breaker beforehand and make sure that the power supply is switched off using suitable tools.

Connect the power cable of the electronics unit (see arrow below) :

- permanently to a power supply board.
- taking into account the characteristics of the unit (see chapter 3.2.1).
- so that power to the unit automatically switches off when the filtration pump is not running. <u>(A sufficient flow of</u> water must be maintained in the chlorinator cells when they are powered on.)



## 4.7.5. pH electromagnetic pump (for models **210** to **560**)

 $\rightarrow$  The electromagnetic pump replaces the peristaltic pump, for larger volumes of pH corrector to be injected.





1) According to the table below, select one of the 3 communication solutions and carry out the corresponding connections.



- A: Electronics unit
- B: Ethernet cable (with RJ45 connector on each side)
- C: Router

<u>'!</u>

- **D** : Access point
- E: Wi-Fi link
- F: CPL socket
- G: 220 V socket
- H: 220 V connection (cable enclosed)

Ethernet cable (B) must be at least category 5, and a maximum length of 100 m.

- **1)** Power up and turn on the electronic box (switch located on the side of the box).
- 2) At the Ethernet port on the electronics box (see photo below), check that the green LED is lit and the orange LED is flashing (successful Internet connection). If necessary, check that all connections are correct.



Do not disconnect the electrical accessories (sensors, probes, ...) from the electronics unit when the power is on.

## 5. COMMISSIONING

- Spread 5 kg/m3 of salt\* around the inner edges of the pool (depending on its volume).
   \* High purity salt tablets conforming to the EN 16401 standard, quality A (free from flow agents and anti-caking agents). At the start of a new season, top up the salt, if necessary, so as to achieve a salt rate of 5 kg/m3.
- 2) Power on the installation (commissioning of the electronics unit, the filter pump and the measuring circuit pump).
- 3) Switch off the electronics unit only (switch button located on the side of the unit).
- 4) Wait until the salt poured into the basin is completely dissolved.
- 5) Check the water quality parameters and if necessary carry out manual calibrations, following the table below :

General visual state is	limpid, without algae and without sediments
Temperature	greater than 15°C
potential Hydrogen (pH)	between 7.0 and 7.4
Stabilizer rate (cyanuric acid)	less than 30 ppm (mg/L)         Do not pour stabiliser into the filtration circuit if an amperometric probe         is installed : any stabilizer prevents the measurement of chlorine.
Total Alkalinity (TAC)	between 80 ppm and 120 ppm
Water hardness (TH)	less than 40°f
Salt rate	5 kg/m³

 $\bigwedge$ 

Any maintenance additive must be prohibited :

- <u>This type of product may distort the measurements of the probes.</u>
- Any clogging product destroys the probes irreversibly.

6) Program and switch on the filtration pump using the table below :

Water temperature (°C)	16	18	20	22	24	26	28	30	> 30
Hours of filtration per day (h)	8	9	10	11	12	14	17	20	24

 $\rightarrow$  These figures should only be used as a guide. They should be adjusted if necessary in order to optimise filtration.

7) Check the water flow in the measuring chamber(s) :

- Minimum flow : 20 L/h.
- Maximum flow : 80 L/h.
- Recommended flow rate : 30 L/h.

#### 8) CALIBRATING THE pH PROBE

- a) Equip yourself with :
  - 2 sachets of pH 7 and pH 10 calibration solutions (use only single-use calibration solutions),
  - a container filled with tap water.
- b) Close the measuring chamber's input and output valves.
- c) Remove the pH probe from the measuring chamber.
- d) Rinse and place the probe in the container with tap water.
- e) Switch on the electronics unit (switch button located on the side of the unit).
- f) On the interface of the electronics unit, press and hold OK.
- g) Following the menu structure (see chapter 6.4), go to the "PH calibration" menu.
- h) Follow the display/navigation and instructions on the next page.
- i) Put the probe back in the measuring chamber.



A : Initial display of the menu "PH calibration".

- B : Insert the probe into the pH 7 calibration solution, then wait a few minutes.
- C : Wait a few moments without touching the probe.
- D : Insert the probe into the pH 10 calibration solution, then wait a few minutes.
- E : Wait a few moments without touching the probe.
- **F** : The calibration is complete.

 $\rightarrow$  In this case, visually check the condition of the probe, and then attempt the calibration again, several times if necessary. If the calibration still fails, change the probe

#### 9) CALIBRATING THE ORP PROBE

- a) Take the ORP standard solution supplied.
- b) Remove the ORP probe from the measuring chamber.
- c) Rinse and place the probe in the container with tap water.
- d) On the interface of the electronics unit, press and hold **OK**.
- e) Following the menu structure (see chapter 6.4), go to the "ORP calibration" menu.
- f) Follow the display/navigation and the instructions below.
- g) Put the probe back in the measuring chamber.



#### 10) CALIBRATING THE AMPEROMETRIC PROBE

Cl calibration

Calibration successful

OK OK

Return to display A

- a) On the interface of the electronics unit, press and hold OK.
- b) Following the menu structure (see chapter 6.4), go to the "Cl calibration" menu.
- c) Follow the display/navigation and the instructions below.
- d) Open the measuring chamber's input and output valves.



## 6. ELECTRONICS UNIT INTERFACE



## 6.1. LED

STATUS OF THE LED	MEANING
Lights up green	Electronics unit switched on
Red light	An alarm has been triggered
Off	Electronics unit switched off

## 6.2. Keypad

KEYS	DESCRIPTION / FUNCTION
Ŷ	<ul> <li>Menu navigation</li> <li>Entry of numeric codes</li> <li>Press on ↑ : increases the chlorine production setpoint (in g/h, in increments of 5)</li> <li>Press on ↓ : decreases the chlorine production setpoint (in g/h, in increments of 5)</li> <li>Press simultaneously on ← and → : contrast adjustment</li> </ul>
OK	<ul> <li>Short press : confirmation/start-up of manual control</li> <li>Press and hold : access the menus</li> </ul>
3	<ul> <li>Cancellation/return to the previous display/stop of manual control</li> <li>Stopping Boost mode</li> </ul>
BOOST	Launching Boost mode : Immediate start of chlorination at its maximum production for a fixed period (duration to be programmed : see chapter 6.5.1" <b>Boost</b> " menu)

## 6.3. Screen

#### 6.3.1. Initial display

DISPLAY	MEANING				
ON	Chlorination is running.				
OFF	The chlorination has been stopped by the user, there is no current in the cells.				
	Chlorination has been shut down by automatic command.				
STOP	Chlorination has been stopped by an alarm.				
BOOST	Chlorination in Boost mode is running.				
	The shutter switch is activated.				
COVER	If the shutter is open : chlorination is running.				
	If the shutter is closed : chlorination is running but with reduced production.				



#### 6.3.2. Standby display

After 30 seconds without any keystrokes, the screen switches to the standby screen :

DISPLAY	MEANING				
ON	Chlorination is running.				
OFF	The chlorination has been stopped by the user, there is no current in the cells.				
	Chlorination has been shut down by automatic command.				
STOP	Chlorination has been stopped by an alarm.				
BOOST	Chlorination in Boost mode is running.				
XX h	The value shown is the time remaining in boost mode.				
	The shutter switch is activated.				
COVER	If the shutter is open: chlorination is running.				
	If the shutter is closed: chlorination is running but with reduced production.				



- $\rightarrow$  To exit the standby screen and return to the initial display, press one of the keys on the keypad.
- $\rightarrow$  It is possible to lock use of the equipment with a code (see chapter 6.5.3 "Access code" menu).
- Once the equipment is locked, the screen switches to standby.

#### 6.3.3. Alarm display

As soon as an alarm is activated, the LED on the electronics unit will turn red and the following display will appear :



 $\rightarrow$  All the alarm messages are described in chapter 9.1.

## 6.4. Menu tree



## 6.5. Description of menus

#### 6.5.1. Chlorination menu

#### Boost :

Allows you to set the duration of BOOST mode (immediate start-up of electrolysis at its maximum output). <u>Setting</u>: 2 to 24 hours, in 2-hour increments.

Default value : 12 hours.

#### Mode :

- Used to : choose the chlorination mode (<u>Setting</u> : g/h, ppm, mV)
  - disable chlorination (<u>Setting</u> : OFF)
- <u>g/h mode</u> : chlorine production control measured in grammes per hour.
- <u>Ppm mode</u> : chlorine production control measured in parts per million, with an amperometric sensor.
  - → When you confirm ppm mode, the message 'Have you added the gel?' appears. This message is a reminder to top up, if necessary, the chlorinator gel inside the amperometric sensor.
     By answering "YES", the gel top-up date is saved (see the 'History'/'Calibration' menu).
     By answering "NO", the screen returns to the 'Chlorination' menu.
- <u>mV mode</u> : chlorine production control measured in millivolts, with an ORP sensor.

#### Cl calibration :

Allows you to adjust the displayed value of the chlorine level in the filtration circuit.

<u>Setting</u>: up to + or - 2 ppm compared to the value displayed, in increments of 0.1.

#### Cl setpoint :

Allows you to set the chlorine production setpoint, as part of a control system with an amperometric probe. Setting: 1 to 4 ppm, in increments of 0.1.

Default value : 2 ppm.

#### Gel added :

Allows you to save the date of the last change of electrolytic gel in the amperometric probe.

#### **ORP calibration :**

Lets you start the calibration of the ORP probe.

#### **ORP** setpoint :

Allows you to set the chlorine production setpoint, as part of a control system with an ORP probe. <u>Setting</u>: 200 to 900 mV, in increments of 10. <u>Default value</u>: 650 mV.

#### **Reversal :**

Allows you to set the inversion frequency of the current which powers the cells.

# This current inversion aims to prevent scale deposits on the cells. The inversion frequency must be correctly set following the table below in order to ensure that the cells continues to operate correctly in the long term.

Setting : 2 to 24 hours, in 2-hour increments.

Default value : 6 hours.

Recommended values :

TH (water hardness) (French degrees)	0 to 5	5 to 12	12 to 20	20 to 40	40 to 60	> 60
Reversal frequency (h)	16	10	8	6	4	2

#### Temp. calibration :

Allows you to adjust the displayed value of the temperature in the filtration circuit. Setting : up to + or -  $10^{\circ}$ C compared to the value displayed, in increments of 1.

#### Salt mode :

Allows you to choose the salinity mode.

Setting : NS, SEA.

- <u>NS mode</u>: if salt levels  $\approx$  5 g/L (depending on the volume of water to treat).
- <u>SEA mode</u> : if salt levels > 10 g/L (depending on the volume of water to treat).

#### Salt calibration :

Allows you to adjust the displayed value of salt concentration in the filtration circuit. <u>Setting</u>: + or - 1.5 to 8 g/L compared to the value displayed, in increments of 0.5. <u>Default value</u>: 5 g/L.

#### **Chlorination test :**

- Injection of a maximum current into the cells in order to test the chlorination.
- Displays the test measurements for each cell, for the 2 directions of polarity inversion.

CHLORINATION Chlorination test CELL XX  $\rightarrow$  $\leftarrow$ XXXXXXXXXXX C = XX.X A I = XX.X AU = XX.XVОК

CELL XX : cell number.

C: theoretical intensity (maximum test current).

I: actual and instantaneous intensity.

U: instantaneous and actual voltage at the terminals of the cell.

To change the direction of polarity inversion and obtain the corresponding measurements, press OK

Reference values for a new cell :

• I ≤ C

•  $8V \leq U \leq 12V,$  depending on cell technology and salt level in the basin.

(If  $U \ge 19V$ , the cell is no longer performing.)

#### Cells :

Displays the information described below for each chlorinator cell.



#### 6.5.2. pH Regulation menu

#### Manual injection :

- Allows you to turn on the pH peristaltic pump.
- Allows you to adjust the operating time of the pH peristaltic pump : <u>Setting</u>: 1 to 59 min, in 1-min increments. <u>Default value</u>: 5 min

#### Mode :

Allows you to enable/disable the pH regulation function. <u>Setting</u>: SMART (*to activate*), OFF (*to deactivate*).

#### pH calibration :

Allows you to adjust the displayed pH value. <u>Setting</u>: up to + or - 0.5 compared to the value displayed, in increments of 0.1.



#### $\Delta~$ The calibrated value must be :

- as close as possible to the pH setpoint
- between 7 and 7.4.

#### pH calibration :

Lets you start the calibration of the pH probe.

#### pH setpoint :

Allows you to set the pH setpoint. <u>Setting</u>: 6.8 to 7.6, in increments of 0.1. <u>Default value</u>: 7.2.

#### **Corrector :**

Allows you to enter the type of pH corrector used. <u>Setting</u>: ACID, BASE (*basic*). Default value : ACID.

#### Volume :

Allows you to enter the volume of the pool to treat. <u>Setting</u>: 50 to 3,950 m<sup>3</sup>. <u>Default value</u>: 500 m<sup>3</sup>.

#### 6.5.3. Settings Menu

#### Date :

Allows you to set the date (day/month/year).

#### <u> Time :</u>

Allows you to set the time.

#### Languages :

Allows you to change the display language. <u>Setting :</u> ENGLISH, FRENCH, ESPANOL, PORTUGUES, ITALIANO, DEUTSCH.



#### Access code :

Allows you to set a keypad lock code. This function makes it possible to prevent tampering, voluntary or otherwise, by any person who does not know this code. Once the cabinet is locked, the screen switches to standby mode after a few seconds without any keystrokes. The lock code is required once the electronics unit is powered back on, as well as to exit the standby screen. To disable the lock code, set the code to 0000.

<u>Setting</u>: 0000 to 9999. <u>Default value</u>: 0000.

#### 6.5.4. History Menu

#### **Calibration :**

Allows you to view the date of the last temperature adjustment.

#### Filtration :

Displays the number of operating hours of the filtration pump for several time intervals :

D-1, D-2, D-3, W-1, M-1

(D-1 = previous day, W-1 = previous week, M-1 = previous month).

#### **Chlorination :**

Displays the number of hours and the average chlorine production, for several time intervals : D-1, D-2, D-3, W-1, M-1 (D-1 = previous day, W-1 = previous week, M-1 = previous month).

#### **Temperature :**

Displays the average temperature of the water in the circuit, for several time intervals : D-1, D-2, D-3, W-1, M-1 (D-1 = previous day, W-1 = previous week, M-1 = previous month).

#### Cells :

Allows you to view the total number of hours of operation of each electrolytic cell.  $\rightarrow$  After replacing a cell, carry out a '**Reset**' to set the time counter for this cell to 0.



#### Software :

Displays the version of the software installed in the electronics unit.

#### Code config. :

Displays the code defining the configuration of the equipment.

#### Injection :

Displays the total accumulated pH injection time since the first commissioning of the electronics unit.

#### Boost :

Displays the date of the last Boost mode activated.

#### Reversal :

Displays the date of the last power polarity inversion of the cells.

#### Installation :

Displays the date when the electronics unit is first commissioned.

## 7. SHUTDOWN FOR EXTENDED PERIODS / FOR WINTER

- 1) Switch off the electronics unit.
- 2) Drain the measuring circuit and the pH injection circuit.

#### **PROPERTIES AND CONDITIONS OF USE OF THE CHLORINATION CELLS :**

- When the water temperature descends below 15°C, its chemical properties cause premature wear to the cell. In this situation, switch off the electronics unit.
- The water in the cell must not freeze under any circumstances.
- As long as the cells are not electrically powered, they can remain installed on the pipeline without risk of deterioration. In this • instance, carry out a suitable chemical treatment, preferably without the use of stabilisers.

When returning to service, check the condition and tightening of the chlorinator cell connection, as well as the condition

of the associated power cables.

## 8. MAINTENANCE



- The set of operations described in chapter 8 presents some risks. These operations must be carried out by persons with the required training and authorisation.
- Comply with all the safety instructions presented in chapter 2.

## 8.1. Electrolytic cells

- → <u>The cells' self-cleaning function is intended to prevent limestone deposits on the chlorinator cells.</u> However, this periodic maintenance must be carried out in order to preserve the life of the cells.
- 1) Stop the equipment.
- 2) Turn off and then disconnect the equipment.
- 3) Close the valves needed to drain only the cells' line.
- 4) Drain the cells' line.

#### For each cell :

- 5) Disconnect the 2 electrical connections A and B on the cell (see photo below).
- 6) Completely unscrew the PVC nut (see arrow below).



7) Extract the electrode :



8) Perform a general visual inspection.

#### If the electrode is scaled :

9) Find the cause of scaling and remedy it :

- Check the salt level in the filtration circuit.
- Check the hardness of the water in the filtration circuit with an adequate hardness test kit (not supplied).
- Adjust the cell power inversion time (see chapter 6.5.1 "Inversion" menu).
- **10)** Fill a container with an acid solution.

- 11) Immerse the electrode in this container, keeping the connection plugs out of the liquid.
- 12) Rinse the electrode in tap water.
- **13)** If the inside wall of the cell's sleeve is scaled, manually remove this scale.
- **14)** Refit the electrode in the sleeve.
- **15)** Screw the PVC nut back on.
- **16)** Reconnect both electrical connections.
  - The service life of the chlorinator cells is very closely related to observance of the instructions contained in this manual.
  - The replacement of cells at the end of their life with so-called 'compatible' cells may lead to a decrease in production and reduce the life of the equipment. Therefore, it is strongly recommended that you only use so-called original cells.
  - Any damage due to the use of so-called compatible cells will void the contractual warranty.

### 8.2. pH peristaltic pump

#### → Periodic maintenance to be carried out : once/year.

- ightarrow To replace the parts below, you will need a maintenance kit.
- 1) Change the hose inside the pump (see arrow below).



2) Change the pH injection fitting's check valve (exiting the pump) :



Ensure the above parts are assembled the right way round, paying particular attention to the direction of the arrow marked on the fitting. Failure to follow these instructions can lead to the peristaltic pump being damaged.

## $\underline{\wedge}$

- The set of operations described in chapter 9 presents some risks. These operations must be carried out by persons with the required training and authorisation.
- Comply with all the safety instructions presented in chapter 2.

## 9.1. Alarm messages

- $\rightarrow$  Any message starting with "Alarm ..." means an alarm that automatically stops the chlorination.
- $\rightarrow$  Any alarm message concerning a module/cell stops automatically and only the chlorination of this module/cell.
- $\rightarrow$  An alarm is automatically dismissed after the corresponding fault has been resolved.

Flashing message displayed at the centre of the screen	Message displayed at the bottom of the screen	Fault detected	Checks and solutions
Alarm low water level	Low water level	Insufficient amount of water in the filtration circuit	<ul> <li>Make sure the temperature / salt / low water level sensor is correctly plugged in.</li> <li>Make sure the water inlet valve is open.</li> <li>Make sure the intermediate valves are open.</li> <li>Make sure the drainage valve is closed.</li> <li>Make sure there are no leaks in the filtration circuit.</li> <li>As a last resort, replace the temperature / salt / low water level sensor.</li> </ul>
Alarm Low salt	Low salt	Salt content in the filtration circuit is less than 2.5 kg/m3	<ul> <li>Manually control the actual salt content in the filtration circuit.</li> <li>Top up the salt, if necessary, so as to achieve a salt content of 5 kg/m3.</li> <li>Go to the 'Chlorination' menu, and then carry out a 'Salt calibration'.</li> <li>As a last resort, replace the temperature / salt / low water level sensor.</li> </ul>
Temperature Alarm	Low temp.	Temperature of the water in the filtration circuit below 15°C	<ul> <li>Make sure the temperature / salt / low water level sensor is correctly plugged in.</li> <li>Manually measure the temperature and check the consistency of the value obtained with the value displayed on the electronics unit. If the difference is significant, go to the 'Chlorination' menu, and then carry out a 'Temperature calibration'. If the calibration is rejected, replace the temperature / salt / low water level sensor.</li> </ul>
-	Temp. fault	Water temperature in the filtration circuit greater than the maximum temperature	<ul> <li>Make sure the temperature / salt / low water level sensor is correctly plugged in.</li> <li>Manually measure the temperature and check the consistency of the value obtained with the value displayed on the electronics unit. If the difference is significant, go to the 'Chlorination' menu, and then carry out a 'Temperature calibration'. If the calibration is rejected, replace the temperature / salt / low water level sensor.</li> </ul>
-	pH calibration	Several successive unsuccessful attempts to calibrate the pH probe	<ol> <li>Replace the pH probe.</li> <li>Go to the 'pH calibration' menu, and then carry out a 'pH calibration'.</li> </ol>
Alarm Low pH	Low pH	pH value in the filtration circuit lower than the setpoint <i>(tolerance of -0.5)</i>	<ul> <li>If the 'Corrector' menu is set to 'ACID': Manually measure the pH. If the value obtained corresponds with the value displayed on the electronics cabinet, wait until the pH value increases. If the difference is significant, go into the 'pH calibration' menu, and then carry out a 'pH calibration'. If the 'Corrector' menu is set to 'BASIC':</li> <li>Ensure the pH corrector container is not empty.</li> <li>Go to the 'pH calibration' menu, and then carry out a 'Manual injection', and make sure the pH pump is running.</li> <li>Go to the 'pH calibration' menu, and then carry out a 'pH calibration'.</li> <li>Check the condition of the filter with ballast and the pH injection fitting.</li> </ul>

Flashing message displayed at the centre of	Message displayed at the bottom of	Fault detected	Checks and solutions
the screen	the screen		If the Connector's part to ACID's
Alarm High pH	High pH	pH value in the filtration circuit greater than the setpoint <i>(tolerance of +0.5)</i>	<ul> <li>Ensure the pH corrector container is not empty.</li> <li>Go to the 'pH calibration' menu, and then carry out a 'Manual injection', and make sure the pH pump is running.</li> <li>Go to the 'pH calibration' menu, and then carry out a 'pH calibration'.</li> <li>Check the condition of the filter with ballast and the pH injection fitting.</li> <li>If the 'Corrector' menu is set to 'BASIC' : Manually measure the pH. If the value obtained corresponds with the value displayed on the electronics cabinet, wait until the pH value increases. If the difference is significant, go into the 'pH calibration' menu, and then carry out a 'pH calibration'.</li> </ul>
Alarm pH calib.	pH fault	Series of unsuccessful attempts to correct the pH	<ul> <li>Ensure the pH corrector container is not empty.</li> <li>Go to the 'pH calibration' menu, and then carry out a 'pH calibration'.</li> <li>Check the condition of the filter with ballast and the pH injection fitting.</li> <li>As a last resort, replace the pH probe;</li> </ul>
-	Module : X	Malfunction on power module X	<ul> <li>→ To carry out the following operations, refer to the visuals in chapter 9.4.</li> <li>1) If the red LED on power board X flashes : replace this card. If the red LED on the power board X is off : go to step 2.</li> <li>2) If the green LED on the power board X is off : <ul> <li>a) Switch off the electronics unit for 5 minutes.</li> <li>b) Turn the electronics unit back on.</li> <li>c) If the LED is still off, replace module X.</li> <li>If the green LED on the power board X is on : Check that the alarm has been dismissed. If not, go to step 3.</li> </ul> </li> <li>3) Check the condition and connection of the ModBUS cable (cable that connects power card X to the interface of the electronics unit). As a last resort, replace this cable.</li> <li>→ In case of error following the replacement of power card X or module X, check the position of the addressing switches on power board X.</li> </ul>
Alarm B4	Cell - B4 X	Cell X short-circuited	<ul> <li>→ To carry out the following operations, refer to the visuals in chapter 9.4.</li> <li>1) Switch off the electronics unit.</li> <li>2) Check for a short circuit in the wiring between power board X and cell X.</li> <li>3) Unplug cell X.</li> <li>4) Turn the electronics unit back on.</li> <li>5) If the alarm is dismissed : replace cell X. If the alarm remains : replace power board X.</li> <li>6) As a last resort, replace module X.</li> <li>→ In case of error following the replacement of power card X or module X, check the position of the addressing switches on power board X.</li> </ul>
Alarm B5	Cell - B5 X	Power supply failure at the output of the power supply board for module X	<ul> <li>→ To carry out the following operations, refer to the visuals in chapter 9.4.</li> <li>1) If the green LED on the power board X is on : go to step 2. If the green LED on the power board X is off : <ul> <li>a) Switch off the electronics unit for 5 minutes.</li> <li>b) Turn the electronics unit back on.</li> <li>c) If the LED is still off, replace module X.</li> </ul> </li> <li>2) Check that power card X is powered on (24 V DC). If this is not the case, proceed to the next steps.</li> <li>3) Switch off the electronics unit for 5 minutes.</li> <li>4) Turn the electronics unit for 5 minutes.</li> <li>5) Check that power card X is powered on. If this is not the case, replace module X.</li> <li>3) Switch off the electronics unit back on.</li> <li>5) Check that power card X is powered on. If this is not the case, replace module X.</li> <li>→ In case of error following the replacement of power card X or module X, check the position of the addressing switches on power board X.</li> </ul>
-	Cell - B6 X	Overvoltage at the terminals of cell X	<ul> <li>Check that the water flow in the cell is sufficient.</li> <li>Make sure there are no leaks in the filtration circuit.</li> <li>Make sure cell X is properly connected (connections on the cell itself, on the corresponding module, and on the electronics unit).</li> <li>As a last resort, replace cell X.</li> </ul>
Alarm B8	Cell - B8 X	Cell X in open circuit	<ul> <li>Make sure cell X is properly connected (connections on the cell itself, on the corresponding module, and on the electronics unit).</li> <li>As a last resort, replace cell X.</li> </ul>

Flashing message displayed at the centre of the screen	Message displayed at the bottom of the screen	Fault detected	Checks and solutions			
No flow alarm	Flow fault	No or insufficient water flow in the filtration circuit	<ul> <li>Make sure the filtration pump is running.</li> <li>Make sure the water inlet valve is open.</li> <li>Make sure the intermediate valves are open.</li> <li>Make sure the drainage valve is closed.</li> <li>Make sure there are no leaks in the filtration circuit.</li> <li>Make sure the flow sensor is properly connected.</li> <li>As a last resort, replace the flow sensor.</li> </ul>			
Alarm Cl	Cl fault	Chlorine production control system failure (with amperometric probe)	<ul> <li>Make sure the flow rate into the measuring chamber is 30 L/h.</li> <li>Make sure the amperometric probe is properly connected.</li> <li>Make sure there is enough electrolytic gel in the amperometric sensor's tank.</li> <li>As a last resort, replace the amperometric probe.</li> </ul>			
ORP alarm	ORP fault	Chlorine production control system failure (with ORP probe)	<ul> <li>Go to the 'Electrolysis' menu, and then carry out an 'ORP calibration'.</li> <li>The addition of chemicals to the filtration circuit (<i>flocculants, anti-algae and other cleaning products</i>) can distort the measurements obtained with the ORP probe. In this case, wait a few weeks to obtain and ensure reliable measurements.</li> <li>As a last resort, replace the ORP probe.</li> </ul>			
-	ORP calibration	Several successive unsuccessful attempts to calibrate the ORP probe	<ol> <li>Replace the ORP probe.</li> <li>Go to the 'Electrolysis' menu, and then carry out an 'ORP calibration'.</li> </ol>			
Cl probe alarm	Cl probe	Failure of the amperometric probe	<ul> <li>Make sure the amperometric probe is properly connected.</li> <li>As a last resort, replace the amperometric probe.</li> </ul>			
Alarm Salt calib.	Salt calibration	Reminder to carry out a 'Salt → This "alarm" only appears 6.5.3). Go to the 'Chlorination' menu	calibration' : when the equipment is first commissioned, and after carrying out a 'Reset' (see chapter u, and then carry out a 'Salt calibration'.			
Alarm Cl gel	Cl gel	<ul> <li>Reminder to change the electrolytic gel stored in the amperometric sensor's tank :</li> <li>Update the date of the last change of electrolytic gel ('Add gel' menu).</li> <li>→ If this update has not occurred in 60 days, the message 'Add Cl gel' is automatically displayed.</li> </ul>				

## 9.2. Control card

#### 9.2.1. Description

The control board is installed inside the electronic box and manages the electrolysis.

#### 9.2.2. Wiring



## 9.3. Ethernet module

#### 9.3.1. Description

The ethernet module is installed inside the electronic box and manages the sending of data via the ethernet connection.

#### 9.3.2. Wiring



## 9.4. Power modules

#### 9.4.1. Description

A power module refers to the assembly [power supply card + power board] fuelling a chlorinator cell. The power modules are installed inside the electronics unit.

#### 9.4.2. Identification





#### 9.4.4. Replacement

After installing a new power module, configuration by positioning switches on the power board is required *(see the arrow below)*. This configuration makes it possible to address the new power module on the internal communications network.





Before contacting your dealer, please have the following to hand :

- your purchase invoice.
- the serial no. of the electronics unit.
- the installation date of the equipment.

- the parameters of your pool (salinity, pH, chlorine levels, water temperature, stabilizer level, pool volume, daily filtration time, etc.).

Every effort and all our technical experience has gone into designing this equipment. It has been subjected to quality controls. If, despite all the attention and expertise involved in its manufacture, you need to make use of our guarantee, it only applies to free replacement of the equipment's defective (excluding shipping costs in both directions).

#### Guarantee period (proven by date of invoice)

Electronics unit : 2 years.

Chlorinator cells : 2 years, up to a maximum of 10,000 hours of operation.

pH probe : 3 years.

ORP probe : 1 year.

Amperometric probe : 1 year.

Other equipment parts : 1 year.

After Sales repairs and spare parts : 3 months.

The periods indicated above correspond to standard guarantees. However, these can vary depending on the country of installation and the distribution network.

#### Scope of the guarantee

The guarantee covers all parts, with the exception of wearing parts that must be replaced regularly.

The equipment is guaranteed against all manufacturing defects within the strict limitations of normal use.

Never use hydrochloric acid, as this may lead to irreversible damage to the device and void the warranty. Only use a sulphuric acid- or alkalibased pH corrector product recommended by your professional dealer. Please note that use of a multi-acid pH corrector requires increased maintenance, and its use may also lead to premature wear of the pH circuit and void the warranty. Refer to the product's safety data sheet.

#### After-sales services

All repairs will be performed in the workshop.

Shipping costs in both directions are at the user's own expense.

Any downtime and loss of use of a device in the event of repairs shall not give rise to any claim for compensation.

In all cases, the equipment is always sent at the user's own risk. Before taking delivery, the user must ensure that it is in perfect condition and, if necessary, write down any reservations on the shipping note of the carrier. Confirm with the carrier within 72 hours by recorded letter with acknowledgement of receipt.

Replacement under guarantee shall in no case extend the original guarantee period.

#### **Guarantee application limit**

In order to improve the quality of their products, the manufacturer reserves the right to modify the characteristics of the products at any time without notice.

This documentation is provided for information purposes only and is not contractually binding with respect to third parties.

The manufacturer's guarantee, which covers manufacturing defects, should not be confused with the operations described in this documentation.

Installation, maintenance and, more generally, any servicing of the manufacturer's products should only be performed by professionals. This work must also be carried out in accordance with the current standards in the country of installation at the time of installation. The use of any parts other than original parts voids the guarantee ipso facto for the entire equipment.

The following are excluded from the guarantee :

- Equipment and labour provided by third parties in installing the device.
- Damage caused by installation not in compliance with the instructions.
- Problems caused by modifications, accidents, misuse, negligence of professionals or end users, unauthorised repairs, fire, floods, lightning, freezing, armed conflict or any other force-majeure events.

Any equipment damaged due to non-compliance with the instructions regarding safety, installation, use and maintenance contained in this documentation will not be covered by the guarantee.

Every year, we make improvements to our products and software. These new versions are compatible with previous models. The new versions of hardware and software cannot be added to earlier models under the guarantee.

#### **Implementation of the guarantee**

For more information regarding this guarantee, contact your dealer or our After-Sales Service. All requests must be accompanied by a copy of the purchase invoice.

#### **Legislation and disputes**

This guarantee is subject to French law and all European directives or international treaties in force at the time of the claim, applicable in France. In case of disputes concerning its interpretation or execution, the High Court of Montpellier (France) shall have exclusive jurisdiction.

Manufactured by :

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