

ELECTROCHLOR[®]

Mineral Chlorinator

Owner's Manual



WARNING

This equipment must be installed and serviced by a qualified technician.

Improper installation can create electrical hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.



Notice to Installer

This manual contains important information about the installation, operation and safe use of this product. Once the product has been installed **this manual must be given to the owner/operator of this equipment.**

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**Warning**

This equipment must be installed and serviced by a qualified technician. Improper installation can create electrical hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.

**Warning**

Electrochlor operates with 240 volts and must be installed by licensed electricians and must be installed in accordance to the local statutory authority regulations.

**Warning**

The appliance should be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30mA.

**Warning**

Disconnect all AC power during installation.

**Warning**

Electrochlor is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been provided supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance.

**Warning**

In certain situations unexpected start up may occur when the appliance is in automatic mode. The installer should assess the risk associated with unexpected start-up of any connected device which, in any circumstance should have no hazardous effect.

**Warning**

Electrochlor should be deactivated if the pool or spa has been drained.

**Warning**

Parts incorporating electrical components, except remote control devices, must be located or fixed so that they cannot fall into the spa - pool.

SAVE THESE INSTRUCTIONS.

GENERAL SAFETY RULES

1. The equipment mentioned in this manual is specially designed for the sanitizing of water in swimming pools.
2. It is designed to work with clean water at a temperature not exceeding 35°C (95°F).
3. The installation should be carried out in accordance to the safety instructions of swimming pools especially Standard HD 384.7.702 and the specific instructions for each facility.
4. The rules enforced on accident prevention should be carefully followed.
5. Any modification of the chlorinator requires the prior consent of the manufacturer.
6. Original replacement parts and accessories authorised by the manufacturer ensure a high level of safety. The manufacturer accepts no liability for the damage and injuries caused by unauthorised replacement parts and accessories.
7. During operation, some parts of the chlorinator are subject to dangerous electric voltage. Work may only be performed on the chlorinator or on the equipment connected to it after disconnecting them and the starting device from the mains power.
8. The user should make sure that assembly and maintenance tasks are carried out by qualified authorised persons and that these persons have first carefully read the Service and Installation Instructions.
9. The operating safety of the chlorinator is only guaranteed if the Installation and Service instructions are correctly followed.
10. The limit values stated in the Technical Specifications should not be exceeded under any circumstance.
11. In the event of defective operation or fault, contact the manufacturer's Technical Support Department or its nearest Authorized Agent.
12. If the supply cord is damaged, it shall be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard.
13. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
14. The appliance is not intended for use by young children. Young children should be supervised to ensure that they do not play with the appliance.

These chlorinators are approved and conformed to AS3136 Swimming Pool Equipment, as a prescribed article under Australian Registration.

These chlorinators conform to the Australian Electromagnetic Compatibility Standard marked by the C-tick.

1. WHAT'S IN THE BOX?

- Electrochlor Power Pack
- Owner's Manual
- Warranty Booklet

NOTE:

If bought as Salt Water Chlorinator unit, the electrolytic cell is provided in a separate carton.

2. INTRODUCTION

Consistently maintained sanitiser levels in the pool water will prevent the growth of all common algae and bacteria. A salt-water chlorinated pool requires much less attention than a chlorine pool.

A chlorine generator's main function is to produce chlorine for the pool. This keeps a residual of chlorine in the pool that prevents algae and bacteria from growing. The chlorine then turns back into salt and the system continues as long as the generator is functioning properly.

Through the process of electrolysis, a saline solution passing over an electrolytic cell, the saline solution is separated into its basic components: chlorine and sodium. The chlorine is instantaneously transformed into hypochlorous acid; this the chlorine form that kills algae and other harmful organisms in the water.

About the ELECTROCHLOR

Electrochlor Mineral Chlorinator consists of a Power Pack (power supply) and an electrolytic salt cell (where the chlorine is produced).

Electrochlor Power Pack

The Power Pack monitors and regulates chlorine production by regulating the amount of electrical energy supplied to the electrolytic salt cell.

Electrolytic Salt Cell

Waterco's salt cell consists of a series of titanium electrodes with opposite charges. Waterco's clear salt cell housing, is constructed using clear U.V. stabilized acrylic, and allows visual inspection of the salt cell plates.

Both anode and cathode of the self-clean chlorinator are made from uniquely coated titanium plates for extra durability.

Self-Cleaning Cell - How it works

The Electrochlor Power Pack powers up the salt cell (anode and cathode) and holds an electrical potential difference between them for a designated period of time. This difference is reversed after that period of time has expired and then the anode becomes the cathode and the cathode becomes the anode.

The reversing of polarity or electrical potential difference will then start to remove any calcium build-up, which may have been deposited onto the cathode.

This continuous reversing of polarity will keep the cell clean from calcium deposits during its operation, providing the chemical balance and flow of the pool water thru the cell is maintained within normal parameters.

Electrochlor Main Features

Self-Cleaning

Waterco's Self Clean Salt Cell has the added ability to reverse the polarity of the voltage to clean calcium build up off its electrodes.

Battery Backup

The Power Pack comes with a battery incorporated to save your settings in the event of a power failure.

Pump Protection

In case flow is not detected, Electrochlor will shut down the pump to protect it. It also displays an alarm indicating the condition.

Salt Alarms

If the salt level is too low or too high, Electrochlor will reduce the output and display the corresponding alarm. In case of high salt it will record the time it was kept operating under these conditions.

Dual General Power Outlets (GPO)

Electrochlor provides two GPOs, one for the pool pump and one for the pool light or any other auxiliary device that needs to be operated under a schedule. Please refer to the technical specifications for the maximum allowable load of the Electrochlor.

Variable Speed Pump Control

Electrochlor can control a variable speed pump via communication cable. The control includes switching on/off the pump, and controlling the pump speed. This function of Electrochlor is only compatible with Waterco's variable speed pumps.

Control of two Pumps (when variable speed pump is present)

When a Waterco (variable speed) pool pump is connected to Electrochlor using the pump control cable, the pump can be connected to an independent GPO. This will leave the pool GPO to be available for a second pump, for example a pressure cleaner pump or infloor cleaning pump.

Pool Water Temperature Display

Electrochlor includes a temperature sensor that allows the display of the pool water temperature on the LCD screen.

4 Independent Timers

Electrochlor includes 4 independent timers to control the pump light/auxiliary equipment and caters for most of the possible operational conditions.

Super Chlorination Function

In this function, Electrochlor will raise chlorine production to 100% during a period of 24 hours to Super-chlorinate the pool. After that period the chlorinator will return to its pre-set operating conditions.

Spa Mode/Low Chlorine Output

In this mode, Electrochlor will reduce the chlorine production to 10%, whilst active.

Diagnostic Menu

Electrochlor has a comprehensive diagnostic screen that allows the pool technician/user to quickly assess the conditions of operation at any time.

Interlocking Functions

Electrochlor can be programmed to activate/control multiple equipment together including a control valve and define the minimum required water flow for ancillary functions.

Low Flow Condition

In the event of a “no-flow” condition Electrochlor will increase the pump speed to try overcome it. If the “no-flow” condition is resolved, the Electrochlor will keep the new speed to maintain water flow. This feature is only enable when a Waterco variable speed pumps is installed.

3. INSTALLATION

**Warning**

Ensure that the electrolytic cell is the last piece of equipment installed on the filtration system - this is so the chlorine produced will not damage other equipment such as heaters.

**Warning**

The electrolytic cell may be installed above or below water level. If it is below water level, an isolation valve must be installed so the unit can be serviced without losing water from the pool.

Installing the Power Pack

Choose a location for the Power Pack close enough to the Cell/Housing and filtration pump so that both may be connected/disconnected easily. The Power Pack should not be mounted in areas where chemicals are stored (e.g. acid and chlorine). Also ensure the Power Pack can be connected to the mains power outlet of the pool area. Note that this outlet must meet the current applicable local standards at the time of installation.

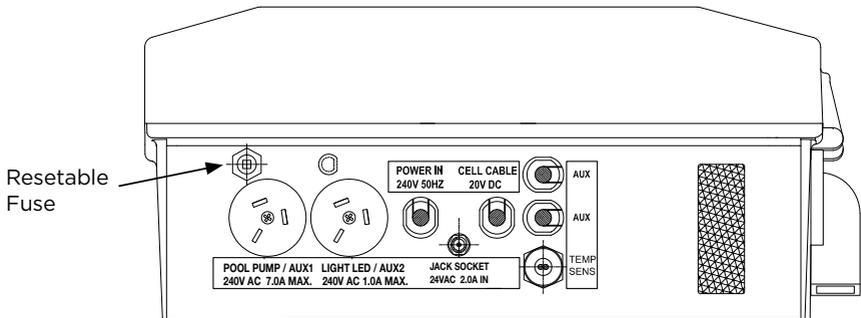
**Warning**

The Power Pack should not be mounted in areas where corrosive chemicals are stored (e.g. acid and chlorine).

1. Install the Power Pack in a protected location out of direct sunlight. At top rear of the control panel locate two keyhole fixing points. Mount two pan head type screws at 216mm centres using a spirit level on an adequately stable vertical surface. Align the screw heads with the keyhole fixing points and allow the enclosure to slide down on the screws.



2. To access the Electrochlor for connection of cabling and sensors, there are screw wells in each corner of the front panel. To open the panel, insert a flat blade screw driver and half turn anti-clock wise to release the spring loaded locking pin. Ensure the pins are fully released prior to opening the hinged front panel.



Electrochlor Mineral Chlorinator Power Outlets/Inputs

The Electrochlor has the following input/output connections:

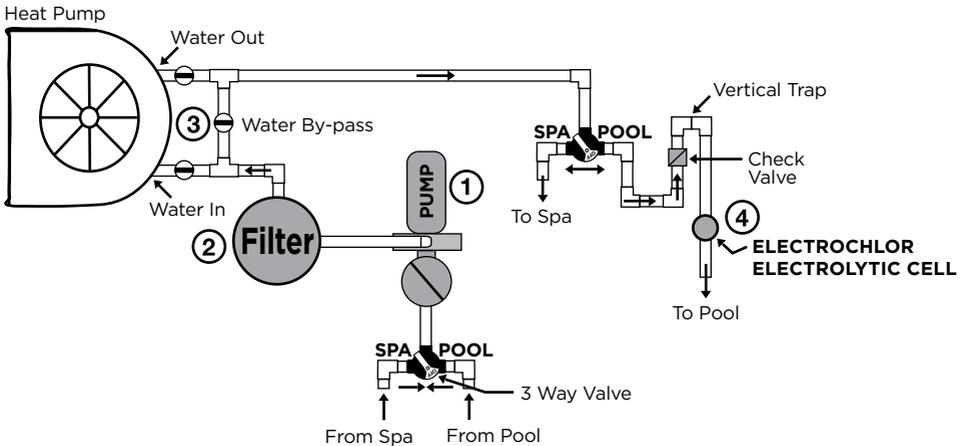
1. A GPO for the pool pump or auxiliary equipment (AUX1) with a maximum current output of 7.0A and 240V
2. A GPO for a pool light or auxiliary equipment (AUX2) with a maximum current output of 1.0A and 240V
3. A 24VAC jack socket to supply power to valve actuator with a maximum current input of 2.0A
4. Provision for 2 cables input/output for a variable speed control cable and for low chlorine/spa signal cable (dry connection)

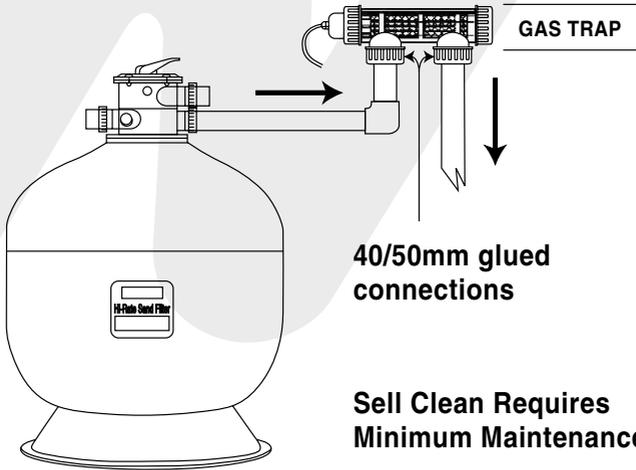
**Warning**

The PUMP socket outlet in the base of the Power Pack is dedicated to the filtration pump only. Do not use a double adaptor to connect another pump as this will overload the system and void warranty.

Installing/Connecting Electrolytic Cell

The Cell/Housing assembly should be plumbed into the pool return line after all other accessories (and prior to any heating take-offs). Note water flow direction on the Cell/Housing. The Cell will need to be removed from the housing periodically for cleaning - do not install it where its removal can be difficult/obstructed.

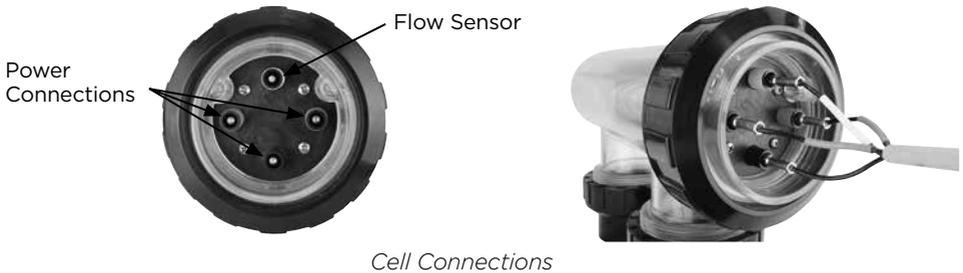
PLUMBING DIAGRAM



GAS TRAP:

The cell must be positioned in such a way as to provide a gas trap. The bottom of the cell must be above the top surface of the pipe from the previous piece of equipment, as per the diagram above.

The Electrolytic Cell is connected to Power Pack using the cell cable.



Ensure that the 4 connections (3 for cell power and 1 for flow detection) are not loose. A loose connection is likely to cause arcing, which may damage the entire system.

NOTE:

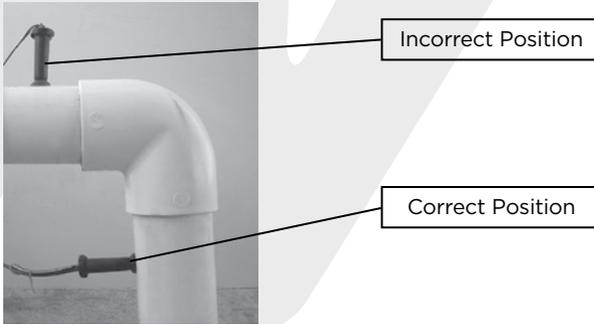
Connect all plumbing to the Cell Housing taking care that all joints are glued or tightened securely to prevent leaking.

NOTE:

Allow 24 hours for glue (solvent) to set before starting the Electrochlor.

Installing Temperature Sensor

1. The pool water temperature sensor should be installed prior to any heater or solar.
2. Immediately after the filter drill a 9.5mm hole in the side of the line as shown in the image below.
3. Insert the special plug into the hole and rotate home.



Pool Sensor Installation

4. Insert the sensor holder by pushing into the plug fully up to the head. This is a tight fit to ensure sealing. Lubricate with soap if necessary but do not use mineral oil or grease.
5. Strap lead firmly to pipe to prevent any strain on the sensor holder or lead entry.

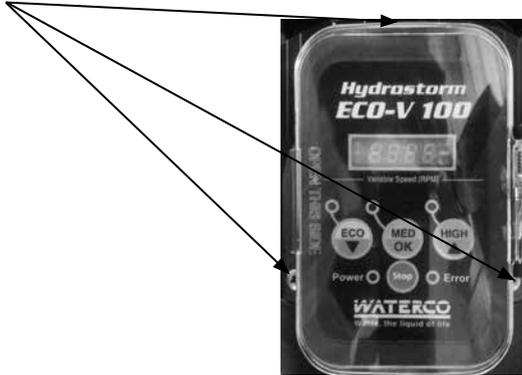
NOTE:

The sensor should not be installed on top of any pipe work coming from the pump as it is exposed to sunlight and accidental physical damage may occur. It should be installed on an inside elbow of the pipe work (as shown above). This will eliminate heating of the sensor by sunlight -giving inaccurate readings, and minimise the risk of damage to the sensor by pool users.

Connection of Communication Cable to Waterco ECO Pumps

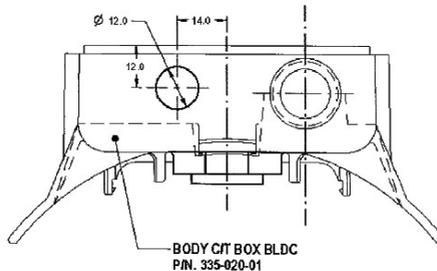
Waterco ECO pumps may be purchased with the communication cable fitted. Consult your local Waterco sales office for order details.

Step 1 - Unscrew the 3 x Philips head screws holding the control housing to the motor.



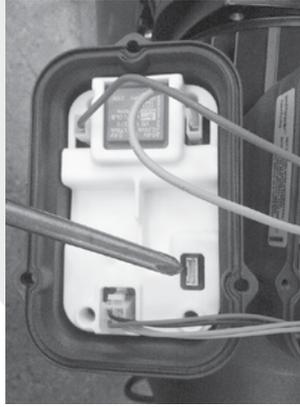
Step 2 - Lift the control housing off the pump to reveal the motor control box.

Step 3 - At the rear of the motor control box drill a 12mm hole at the position indicated in the drawing below. Use stepped drill bit sizes starting at 4mm and working up to 12mm, otherwise there is a high risk of damaging (splitting) motor control box.

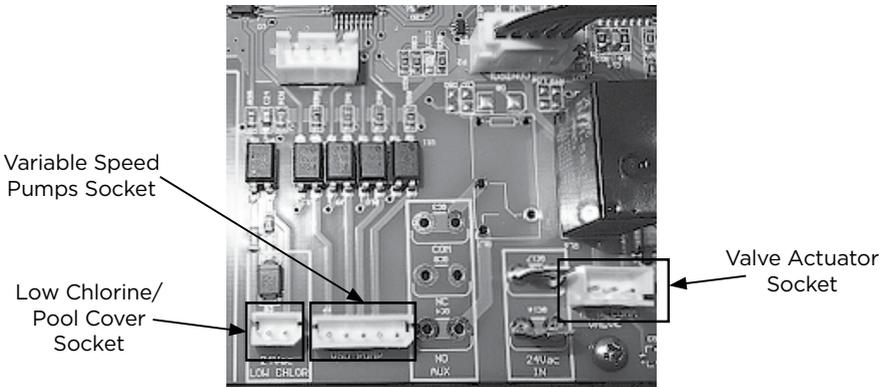


Step 4 - When the hole is drilled remove the locking nut from the cable gland and thread the cable through the hole so that the plug is now located within the motor control box. Thread the lock nut over the cable and screw onto the cable gland and tighten.

Step 5 - Locate the motor control socket on the underside of the control housing and insert the control cable plug and then reattach control housing to the motor control housing.



Step 6 - Connect the communication cable the main board of the Electrochlor into the Waterco ECO pumps socket.



Main Board showing ECO Pumps Socket, Valve Actuator and Low Chlorine/Pool cover connections.

Valve Actuator

The Electrochlor is optimized to operate Waterco FPI valve actuators and should be installed in consultation with the product installation and operating instructions.



Valve actuator is powered by a 24V AC transformer (sold separately) and connected to the Electrochlor via the 24 VAC jack input.

Spa Mode/Low Chlorine Output

The **Spa Mode/Low Chlorine** OUTPUT is a 24V dry contact which is activated when **Spa Mode/Low Chlorine mode** is enabled. This socket may be used on compatible equipment e.g. reducing the chlorination level to the spa whilst in spa mode or when a pool cover is activated.

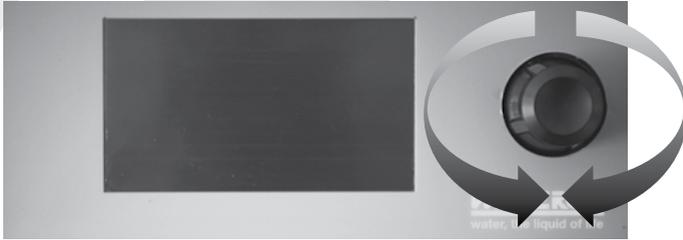
This function can also be triggered by Waterco's Aquamaster, whenever the Spa mode is activated.

This mode can be activated automatically by connecting a Normally Open (N.O.),/ Normally Close (N.C.) contacts directly to the chlorinator main board.

4. PROGRAMING THE ELECTROCHLOR

a. The Wheel (Rotary Index Switch (RIS))

Located in the upper right side of the Electrochlor Power Pack there is a wheel that is used to control the instrument. The wheel can be rotated in both directions to scroll over the menus and/or pressed to confirm a highlighted selection/value.



Scrolling through menus/options



Making/confirming a selection

NOTE:

Once changes are made press "✓" or "OK" to save and exit from submenu. Select "x" or "Exit" to exit without saving.

b. The Screen

Electrochlor LCD screen was designed to present to the user the most critical information of the operation of the equipment continuously.

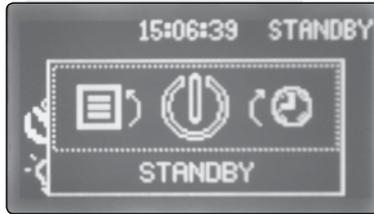
The main screen displays the current time, pool temperature, pool pump status, and chlorine production level (when pump is on) among others.



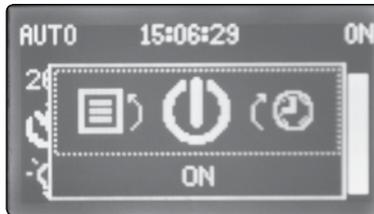
Note: Please refer to page 46 for icons list and keys.

c. Switching STANDBY(Off)/ON Pool Pump

Rotate or push the wheel to access menu. Locate the STANDBY/ON option. Press the wheel to confirm the selection.



When selecting STANDBY, Electrochlor switches the pool pump off and disregards current timer cycle programming. The Electrochlor will resume normal programming functions with the next timer cycle if AUTO or WINTER modes are active.



d. Operating Modes:

Accessing Electrochlor Modes: rotate or push the wheel to access menu. Locate the MODE menu. Press the wheel to enter menu.



Electrochlor has the following operating modes:

Auto Mode (AUTO):

This is the default operation mode. Timers are operational according to programmed settings.



Manual Mode (MANUAL):

This mode overrides the Timer settings. The Electrochlor can only operate in STANDBY or ON mode. This mode is recommended for slave type operation, e.g. when its operation is controlled by a pool controller, such as Waterco's Aquamaster.



Winter Mode:

By selecting WINTER, hours of operation will be reduced to save energy during the winter months. Pressing AUTO will instantly return to standard (Summer) hours of operation.



Spa Mode/Low Chlorine Output (LOW CL):

When operating in this mode the Electrochlor will limit the chlorine output to maximum of 10%. Please see section Spa Mode/Low Chlorine Output.



Service Mode:

When this mode is selected the Electrochlor disables the chlorine production (salt cell) and the flow sensor. This allows servicing of the pool filter, backwashing and draining the pool. The pool pump is switched on/off by pressing the wheel. In Service Mode with a variable speed pump installed the default speed is high.

**Superchlorination Mode:**

Electrochlor will be set to produce chlorine at maximum level for 24 hours non-stop overriding previous programming and the Superchlorination icon will be displayed on the LCD screen. Pressing the SUPER CL again when the Superchlor icon is displayed on the LCD screen will disable the Superchlorination and revert to the original programming.



e. Programming the Timers

Accessing Electrochlor Timer menu: rotate or push the wheel to access menu. Locate the TIME menu, then press the wheel to access it.



Electrochlor has a digital clock and 4 independent timers. Each of the timers can be programmed independently to have different behaviour and control different devices (outputs).

- i. Programming the digital clock. In the TIME menu rotate the wheel until the CLOCK menu is located, then press the wheel to access it.



Setting the time:

- Select hours or minutes, rotate the wheel to the desire value. Then press to confirm. To confirm the time and exit rotate the will to the check mark (✓) and push to save the time.
- To exit without saving select X and press the wheel.

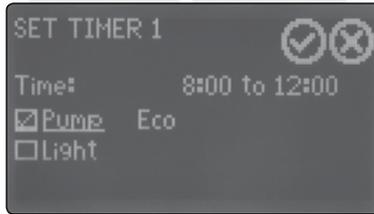


- ii. Programming the Timer:
- Select desire Timer (1-4)



- Rotate the wheel to select time, then press the wheel and rotate the wheel to select the desire starting and finishing time. Press the wheel to confirm the selection. To select the devices that will be activated, just rotate the wheel to device and press to select. To deselect go to device and press the wheel.

- To exit without saving select X and press the wheel.

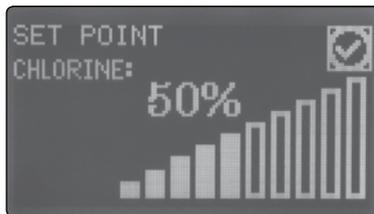


f. Setting the Chlorine Output

The output of the chlorinator can be adjusted to reflect the different seasonal requirements in order to maintain satisfactory chlorine sanitiser levels. The amount of chlorine produced can be adjusted from 10% - 100% (10% increments) by accessing the CHLORINE production level menu.



Rotate the wheel to the right to raise production. If the pool water is over chlorinated, simply reduce the chlorine production set level by rotating the wheel to the left. Press the wheel confirm the desire chlorine output.



g. Controlling the Lights:

To Switch the light ON/OFF rotate or press the wheel to access menu. Locate the LIGHT icon on the menu, then press the wheel to confirm. LIGHT ON indicates the pool light(s) is (are) "ON". LIGHT OFF indicates the pool light(s) is (are) "off".



h. Changing Pump Speed

Accessing PUMP SPEED menu: rotate or press the wheel to access menu then press the wheel to access it. Please refer to settings section to learn how to define the pump type. This menu is only available when the pump is defined as variable speed pump.

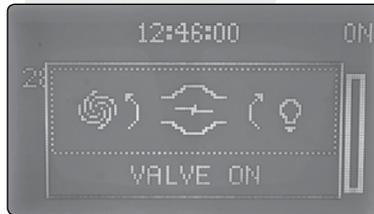


Use the wheel to select the desire pump speed. Rotate the wheel to check mark (✓) and press to confirm or select X to exit without saving.



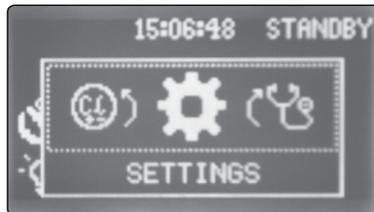
i. Activating Valve Actuator (Manually)

To Switch the valve actuator ON/OFF rotate or press the wheel to access menu. Locate the VALVE icon, then press the wheel to confirm. VALVE ON indicates the actuator is in "ON" position; VALVE OFF indicates actuator is in "off" position.

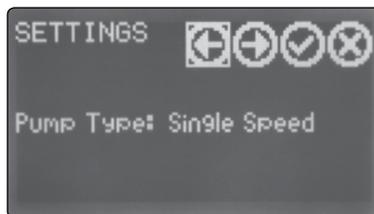


j. Changing Chlorinator Settings:

Accessing the setting menu: rotate or press the wheel to access menu. Locate the SETTINGS menu, then press the wheel to access it.



In order to navigate through the setting options, use the wheel to select the arrows (either -> or <-), to cycle through the menu.



i. Defining Pump Type

Electrochlor is designed to work with single speed pumps and variable speed pumps.

To select the type of pump, rotate the wheel to pump type and press it, then select the type of pump.



- Selecting variable speed pumps: rotate the wheel to variable speed and press wheel to confirm selection.



Note: The control of the variable speed pump is executed via communication cable. When the pump is controlled via the communication cable the pump can be connected to an independent power output. This enables the pump GPO to be used as an independent output to control a secondary pump (booster pump) or any other equipment that needs to be operated at the same time of the pool pump. This also can be used to interlock functions. Please refer to the Interlock section below for more information.



Warning

Only one pump can be plug to the Electrochlor GPO or else the combined amperage will exceed the chlorinator's maximum. The only way to operate two pumps is for a variable speed pump to be plugged into a separate GPO.

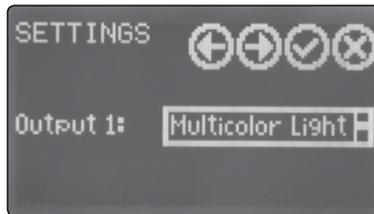
- Controlling a secondary pump: once the selection of variable speed pump has been confirmed, rotate the wheel to select AUX1 and set it to Independent Pump. This enable the pool pump GPO as AUX1 and can be used as secondary pump.



ii. Defining Output 1 (AUX2)

Electrochlor AUX2 output can be set to behave differently and adapt to the users requirement. It can be set to control:

- Basic Light, in this case it switches on/off the light
- Multi-coloured light, in addition to the switch operation, It enables the selection of the light colour. This function only works with Waterco multi-coloured lights. To change the colour of the light, navigate to light colour and select the desired colour.
- Interlocked, in this case AUX2 functionality will be interlocked to the pool pump. Please refer to Interlocked section below,
- Independent, in this case AUX2 is set to function as an independent timer. It can be programmed through the timer function.



iii. Changing Light colour: navigate in Setting to light colour, rotate the wheel to select the colour. This is only compatible with Waterco's multicolour lights.



- iv. Defining type of contact for Spa/low chlorine mode: navigate the setting and select the required type of contact (Normally Open or Normally Closed).



- v. Displaying Auxiliary 2 on screen: select the option of “show” to enable the on/off control via menu or “no show” to allow only control via timers.



- vi. Calibrating/Defining Temperature units

Electrochlor has an option to define the temperature units and calibrate the reading. To select the temperature units, enter to settings and navigate to Pool Temperature, select Pool Temperature and select the desired units (Celsius/Fahrenheit degrees).

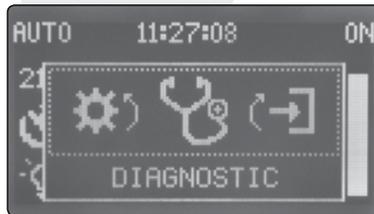
To calibrate rotate the wheel to calibrate and press it. Adjust the calibration as required.



k. Diagnostics Menu:

The diagnostic menu allows the user to quickly evaluate the current state of the Electrochlor. It provides a picture of all the functions that are active at any given the moment.

To access to the diagnostic menu, rotate the wheel until you find the DIAGNOSTIC menu and press the wheel to select. See below figure. Press the wheel to enter.



The menu allows the user to get the current status of the following parameters:

Parameter	Status	
	Active Relay	
Electrolytic Cell (Cell A/B)	ON	OFF
Valve	ON	OFF
Pool Pump	ON	Off
Flow Detection	Detected	No Detected
Light/AUX2	ON	OFF
Low Chlorine	Activated	Deactivated
AUX1	ON	OFF
Hi Current	Electrochlor indicating that is operating at current output higher than the maximum expected.	
High Salt	Electrochlor indicating high salt level in pool water.	
Low Salt	Electrochlor indicating low salt level in pool water.	
Pump Dry1	Pump tried to start but no water flow was detected through the electrolytic cell.	
Pump Dry2	Pump tried to start a second time but no water flow was detected through the electrolytic cell.	
Cell Swap	Indicates the last time the salt cell reversed it polarity.	
Run Hours	Indicates the total time the electrolytic cell has been active.	
Low Salt Hrs	Indicates the number of hour the Electrochlor has been operating with a detected low salt condition.	



Page 1 of Diagnostic Screen



Page 2 of Diagnostic Screen



Page 3 of Diagnostic Screen

I. Default Settings

Default Mode:	Auto
Default Timer Setting:	On from 08:00 to 12:00 And from 16:00 to 20:00
	Temperature: set in Celsius Degree
	Pump Type: Single Speed
	Chlorine Production: 100%
	Light: Single Colour Light
	Display Auxiliary: Off
	Minimum Chlorine: N.O.

InterLock/InterLink Function

InterLock: The interlock feature ensures that the filtration pump is operating prior to allowing another system component to operate.

InterLink: The interlink feature allows the user to operate two or more functions together. Select the “*Interlink*” button and then select the function required to operate with the relevant output.

The Pump Output (Auxiliary 2) can be made available for a secondary pump. This will only be possible, when a variable speed pump is connected to an external and suitable GPO/output.

This feature is only available when a VSD pump is in use and connected to Electrochlor via a communication cable.

Functionality:

- If any function that is interlocked to the filtration pump is activated, the filtration pump will switch on. Electrochlor will check all interlocked functions, set the minimum required pump speed required by any interlocked function.
- If any interlocked output is manually switch on, the filtration pump will switch to the preset pump default speed.
- If the filtration pump is manually turned off all interlocked function will also turn off.
- If an interlocked function is turned off outside a filtration time the filtration pump will turn off.
- If any function that is interlocked is manually turned on/off or automatically turned on/off the pump speed is checked and set to minimum required by the running function.
- If an interlocked function is turned off within a timer cycle if no other functions are operating the filtration will lower is pump speed to the default pump speed.
- “Pump Speed limited” will be displayed if user tries to select a pump speed that is below the required speed of an interlocked function.
- When filtration pump is deactivated, it will also deactivate all interlocked outputs.
- If the user selects a lower pump speed (below activation speed) the interlock functions cease.

Interlock/Interlink Scenarios with Multi Speed Pump

Function/Output Controlled	Filtration Pump	Valve	Auxiliary 1 (8 A output)	Auxiliary 2 (2 A output)
Interlock	Lock	Lock	On	On
	Lock	Lock	Lock	On
	Lock	Lock	On	Lock
Timer	Any combination can be set to turn on via timer programming			

Lock: Output interlocked

On: output make available via timer.

Requirements:

The Electrochlor Interlock Kit is required in order to access full interlock functionality.

Electrochlor Interlock Kit Content:

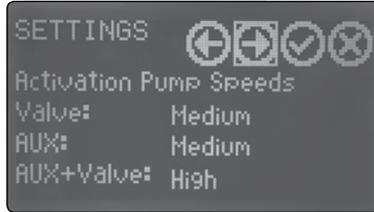
- Waterco FPI Valve Actuator
- Transformer.

Setting Interlocking Functions

1. Access setting menu and set pump type to variable speed pump. This enables the Pump GPO as Auxiliary 1. Select Auxiliary 1 functionality:
 - Interlocked: enable Auxiliary 1 as interlock output
 - Independent: enable Auxiliary 1 to act as independent GPO, programming is done through the timers.
 - Pool Pump: enable Auxiliary 1 as pool pump outlet. In this case the pump speed is controlled via a communication cable.



2. Define actuation speed: Access setting menu and select the minimum allowed pump speed that enables the interlocked functions:
 - a. Valve Speed (low, medium, high)
 - b. Auxiliary 1 (low, medium, high)
 - c. Auxiliary 1 + Valve (low, medium, high)



If the minimum speed is not reached during the Interlock functionality, interlock is disabled. This also puts a restriction defining the pump speed in the timer. If the minimum speed does not fulfill the pre-set requirements, Electrochlor won't allow the interlocking function. This is to ensure that the minimum water flow is provided for the ancillary function to operate.



Figure showing Interlocked functions programmed through timer meeting the minimum pump required speed, in this case high.



If the minimum selected pump speed does not meet requirements the interlocked function is deactivated by the timer during programming as the speed condition is not satisfied.

Low Flow Condition

Achieved a minimum water flow to allow circulation of pool water and chlorinator operation, when the default pump speed is not enough to guarantee minimum flow through the system.

This function is only available for variable speed pumps connected to chlorinator through a communication cable.

- 1) If after priming a “no-flow” condition is detected Electrochlor activates “Low Flow” condition detection mode automatically.
- 2) Electrochlor activates the pool pump again, this time increasing the programmed speed to the next higher level. This occurs only when a variable speed pump is running at Eco or Medium speed.
- 3) If the “no-flow” condition is detected again, the chlorinator will issue a “no-flow” condition alarm and stop until the next timer cycle.
- 4) If there is enough flow, the chlorinator will continue operation until timer cycle has finished.
- 5) When pump is turn off, the Low Flow condition mode is deactivated until next cycle.

5. MAINTENANCE

SALT CELL CLEANING PROCEDURE

- I. Switch off Electrochlor.
- II. Unscrew the barrel unions from the salt cell housing and disconnect the cables from the salt cell's brass connectors.
- III. Turn the salt cell housing upside down with both ports facing upwards.
- IV. Pour the Cell Wash cleaning solution into the housing to dissolve the calcium build-up from the salt cell plates. There should be just enough solution to cover the salt cell plates.
- V. Allow enough time for the solution to dissolve the calcium build-up from the salt cell plates. Approximately 5 to 10 minutes.
- VI. Once the calcium build-up has been removed, pour out the Cell Wash solution into a bucket and lightly rinse-off excess calcium and Cell Wash solution from the salt cell assembly, with fresh water.
- VII. Reconnect the salt cell onto the filter system.
- VIII. Set the time back to original "ON" or "AUTO" position on the power pack to reactivate the Electrochlor.



Warning

Never use products that are not specifically manufactured to clean the Electrochlor's salt cell. Do not use raw acids such as Hydrochloric acid. This will severely damage the salt cell and will void warranty. Please consult your local pool professional for advice on salt cell cleaning products.

Procedure to add Salt/Minerals to the Pool

1. Set chlorinator to minimum output or better yet, run the pool pump only.
2. If it is possible set the suction line on the deep end of pool as only suction point in the pool.
3. Add the recommended amount of pool salt and/or Mineral Crystals in the shallow end of the pool.
4. Allow the pool salt/Mineral crystals to dissolve. It is recommended to let the pool pump run for at least 6 hours to dissolve the salt completely and allow for even concentration in the pool water.
5. Set the chlorinator back to normal output.



Warning

Do not add pool salt/minerals through the skimmer box. This will cause the pool water to momentarily reach a significantly high concentration of salt, and this can cause overheating of the power supply of the chlorinator, premature failure of the power supply or salt cell. This practice will void the warranty of the product.

6. ALARMS

Electrochlor includes alarm signals to indicate potential problems associated with its functionality, and to protect the Power Pack/electrolytic cell. The LCD will flash, the Power Pack emit a sound and indicate the correspondent situation.

- **Low Salt Level**

Salt level is below the minimum allowed, please add salt to pool. Consult your pool professional for advice how to increase the salt level. This condition may affect the longevity of the cell and void its warranty.

- **High Salt Level:**

Salt level is above the maximum operational level. It needs to be reduced below the maximum recommended. Consult your pool professional for advice how to reduce the salt level. This condition may affect the longevity of the cell and void its warranty.

- **Failed Pump Start (No flow detected):**

If the flow sensor is not detecting water flowing through the cell housing, Power Pack will stop chlorine production and power to pool pump. Electrochlor will repeat the start-up process twice before issuing a No Flow alarm. Please refer to trouble shooting guide or consult your pool professional.



7. RECOMMENDED WATER CHEMISTRY

Salt Level

The Electrochlor chlorinators must operate between the salt level ranges listed below.

- MINIMUM = 4000 TDS
- OPTIMUM = 5500 TDS
- MAXIMUM = 6000 TDS

Testing kits are available from the local pool professional and should be used to accurately check the salt level in the pool water.

Water Balance

It is important to maintain the correct water chemical balance in the swimming pool; this will help protect the Electrochlor chlorinator and its cell.

Consult the local pool professional for the correct water balance according to the swimming pool type.

The Electrochlor chlorinator will run correctly at the following chemistry levels

Parameter	Range	Recommended
pH	7.2 - 7.8	7.2 - 7.6
Total alkalinity	60 - 200ppm	80 - 150ppm
Calcium hardness	100 - 500ppm	60 - 250ppm
Stabilizer (Sunscreen)	30 - 60ppm	

NOTE:

It is recommended that you obtain regular water chemistry tests from your local pool professional to ensure your water balance is within range.

8. TROUBLESHOOTING GUIDE

Symptom	Remedy
Low chlorine level in pool	Operating time too short. Increase operating time. Production control set too low. Set production higher. Low salt. Add required amount of salt. Pool chemistry not correct. Have water tested.
Unit does not operate	Connect power, check fuse, switch on Electrochlor.
Not keeping time	Return to distributor for repair.
Blank Screen	Return to distributor for repair.
No chlorine production	Check chlorine production settings. Set Time Switch to ON or AUTO position.
Pump does not come on:	Check timer settings, Auto Time mode. Check Diagnostic Outputs menu for pump on. If on then it's not in user programming but some connection problem.
Pump on but no cell activity:	Wait 30 seconds. Check Cl setting, cable correctly plugged in, salt level too high and unit is cycling on low settings. Increase setting. Check Diagnostic Outputs menu if Cell on and Flow is on. If on then it's not user programming but some connection or cell drive problem.
Wrong activation on timer:	Check wrong mode selected Winter/Summer.
Light does not work:	Is Light Icon is on? See light operation. In Timer mode, check light is ticked in operation box. Check Diagnostic Outputs menu.
Light flashes on basic light when powered up:	Is Light Icon is on? See light operation. In Timer mode, check light is ticked in operation box. Check Diagnostic Outputs menu.
Light flashes on basic light when powered up:	Wrong type selection in settings.
Light wrong colour after changing colour:	Sync cycle interrupted, wait time after sync flashing interrupted.
Light is different colour than last activation upon re-activation or changes colour by itself:	Intermittent connection to light power.
Valve does not change over:	Wait for time delays to finish. Check Diagnostic Output menu.
Temperature display is wrong:	Go to calibration screen and action if necessary; check probe is plugged in.

9. TECHNICAL SPECIFICATIONS

Power Pack

Input	220 – 240V AC
Frequency	50/60 Hz
Current Max	1.6 A
Input Power Max	175 W
Socket Outlet	220 – 240V AC
Maximum Current Output	8A
Minimum Salt Level	4000 ppm
Maximum Salt Level	6000 ppm
Type of Salt	Standard Pool Salt/Mineral Salts
Degree of Protection	IP23

Waterco Salt Cell

Input	20 VDC
Maximum Current Output	6A DC

Recommended Pool Sizes

Waterco Salt Cell	Chlorine Production (g/hr)	Max Pool Size/ Climate (Litres)	
		Temperate	Tropical
Series 2000	20	60,000	48,000
Series 2500	25	80,000	60,000
Series 3000	30	100,000	72,000

10. WARRANTY

Important note: The benefits under this warranty are in addition to other legal rights and remedies you may have in relation to Waterco products

1. These terms and conditions carefully, as failure to comply may affect your legal rights under this warranty; and
2. Any operation instructions carefully before commencing use of any product manufactured by
3. Waterco Limited (“Waterco”).
4. Waterco manufactures quality pool and spa products to the highest standards using the most advanced technology and production procedures available.

WARRANTY COVER

If a defect occurs in any Waterco product during the warranty period, Waterco will at its discretion, repair the product or replace and install the defective part, free of charge provided that the defect results solely from poor workmanship or materials and subject to these terms and conditions.

Labour is covered by this warranty for a period of twelve months from the date of purchase or installation, within a 25 km (15 miles) radius of an authorized Waterco Service Agent.

The purchaser is responsible for any freight incurred.

Warranties are valid only within the original country of purchase. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law [applicable only to Australian States and Territories]. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if goods fail to be of acceptable quality and the failure does not amount to a major failure.

WARRANTY PERIOD

All products sold by Waterco are covered by a one year warranty. The exceptions to this are the products listed in the schedule (which also specifies relevant warranty periods). All warranty periods commence on the date of purchase by the end user.

The provisions of this warranty are not transferable and are in addition to and not in modification of or subtraction from any applicable statutory warranties, rights or remedies.

CONDITIONS OF WARRANTY

This warranty only applies where:

1. The products requiring installation have been sold with installation included and have been installed by a licensed plumber, electrician or person who has completed an accredited course in swimming pool care and maintenance or a person with more than 12 months on the job learning or a person supervised by one of these people, in accordance with any written installation instructions provided.
2. The products have been installed and operated in accordance with written instructions supplied by Waterco;
3. The purchaser is able to provide proof of purchase that specifies the date of purchase;
4. The product has been serviced or maintained regularly.
5. Installed in an area that is free from flooding or excessive outside contact with water;
6. Any pool and spa equipment has been used in water:
 - a. With a temperature not exceeding 40°C degrees Celsius;
 - b. With a pH range maintained between 7.2 – 7.6;
 - c. That has been chemically balanced in accordance with the Langelier saturation index within a range of -0.2 to + 0.2 to ensure that it is not corrosive or scale forming;
 - d. That is not salt water (other than mild saline water conditions which are compatible with swimming pool salt water chlorination systems) – unless otherwise stated by Waterco in both the respective product labels and brochures that it is suitable for seawater applications; and
 - e. That has been regularly treated with a sanitizing system using bromine, chlorine in one of its compound forms, or generated in-situ, in concentrations (doses) recommended by the relative state or territory health departments. (In areas outside of Australia please refer to the local health department recommendations before use);
7. Electrical equipment has been adequately protected from salt air environments and from salt water; and all repairs and replacements shall be carried out by Waterco or its authorized service dealer, unless otherwise authorized in writing by Waterco.

If an authorized service dealer is not available within 25 km (15 miles) of the purchaser's area:

- The purchaser must contact the place of purchase or Waterco for further instructions and;
- The purchaser is responsible for any freight or infield labour costs.

EXCLUSIONS

This warranty does not cover, and Waterco will not be responsible for, any defect or damage caused or contributed to by:

- a. installation or use of the product other than in accordance with Waterco's written instructions,
- b. any statutory requirements and these terms and conditions;
- c. use of the product for a purpose other than for which it was designed or sold;
- d. abuse, misuse, corrosion, internal and external, or normal wear and tear;
- e. any repairs or modifications whatsoever carried out by any person, other than a Waterco authorised service dealer;
- f. exposure to water not caused by a defect in the product; and
- g. transit of the product over which Waterco has no control.
- h. inadequate ventilation
- i. cement, pebbles, render or other pool surface finishes blocking the pump's impeller
- j. insect and/or vermin infestation

Some three phase pumps are not supplied with thermal overload protection. It is the purchaser's responsibility to have this provision installed by appropriately licensed electricians prior to the initial installation of the pump. All electrical work must comply with any appropriate statutory requirements.

Warranty for installation of thermal overload protection is the sole responsibility of the licensed electrical contractor and not Waterco.

LIMITATIONS OF LIABILITY

To the extent permitted by law Waterco excludes all liability it may have to the purchaser for indirect, special or consequential loss arising from or related to any defect in any Waterco product, or any act or omission, including negligence of Waterco, including, but not limited to, loss of business, loss of profit, loss of revenue, lost opportunity, inconvenience, and damage to any property other than the Waterco product.

To the extent permitted by law, Waterco excludes all other conditions, guarantees, liabilities or representations that are not expressly set out in this agreement. These terms and conditions do not attempt to exclude, restrict or modify any applicable statutory rights, or any exercise of any statutory rights, or any liability imposed on Waterco by any law (including the Competition and

Consumer Act 2010), if to do so would contravene that law or make any part of these terms and conditions void.

To the extent permitted by law, Waterco excludes all conditions and warranties implied into these terms and conditions and limits its liability for breach of any such condition or warranty that it cannot exclude to the greater of (at Waterco's option);

(a) for goods:

- Repairing or replacing those goods; or
- Paying the cost of having those goods repaired or replaced; and

(b) for services:

- Resupplying the services; or
- Paying the cost of having those services resupplied.

TEST YOUR WATER REGULARLY

The chemical balance of the water is a relationship between total alkalinity, pH, Calcium hardness and temperature. Waterco recommends that you have your water tested regularly by your local pool professional. A record of testing should always be kept for reference.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so any such limitation may not apply.

This warranty gives specific legal rights. The purchaser may have other rights depending on the jurisdiction in which the Waterco product was purchased or the purchaser is located.

SCHEDULE OF WARRANTY PERIODS

Electrochlor is covered by a 3 years warranty.

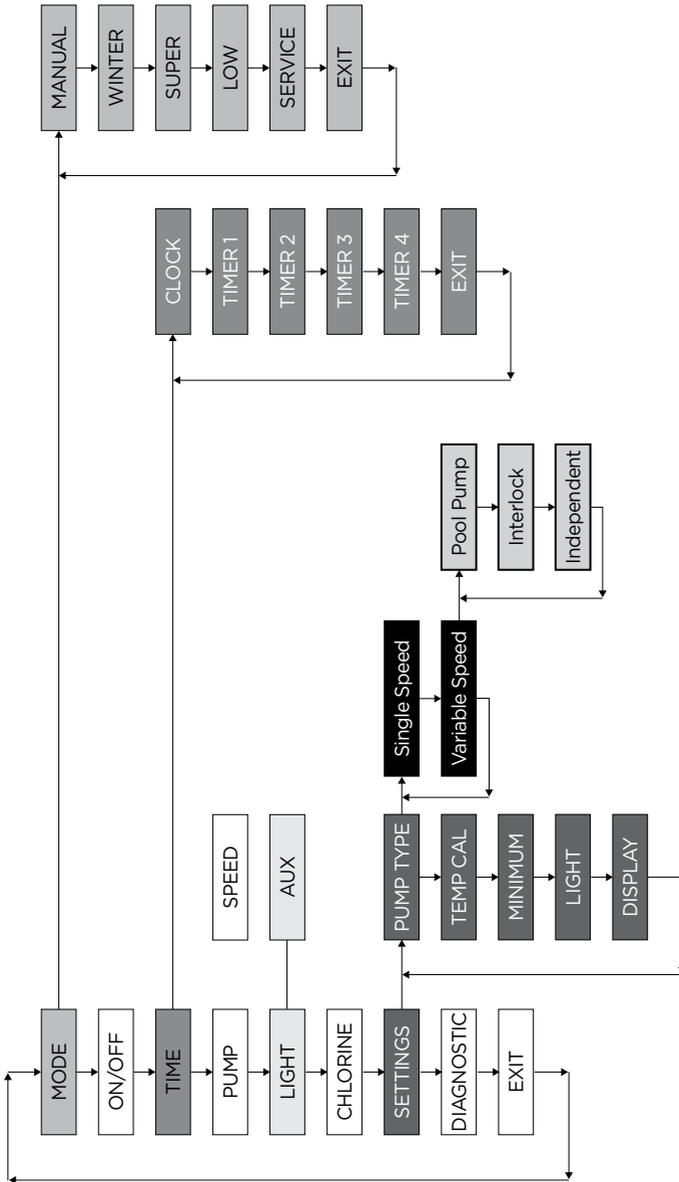
Electrochlor	3 years(*)
Electrolytic Salt Cell	3 years
Power pack	3 years
Commercial Installations	1 year

Labour is covered by this warranty for a period of 12 months from the date of purchase or installation, within a 25 km radius of an authorized Waterco Service Agent.

11. ICONS LIST

	Auto/Manual Mode
	Winter Mode
	Superchlorination Mode
	Service Mode
	Low Chlorine Mode
	Time Menu, Set Clock, Set Timer 1-4
	Settings Menu
	Pump On/Off
	Diagnostic
	Light On
	Light Off
	Exit
	Auxiliary 1/ Auxiliary 2 Off
	Auxiliary 1/ Auxiliary 2 On
	Valve Close
	Valve Open
	Auto Mode Active, number indicates active timer.

12. MENU TREE



OFFICES - AUSTRALIA

NSW - SYDNEY
(HEAD OFFICE)
TEL : +61 2 9898 8686

VIC/TAS - MELBOURNE
TEL : +61 3 9764 1211

WA - PERTH
TEL : +61 8 9273 1900

QLD - BRISBANE
TEL : +61 7 3299 9900

SA/NT - ADELAIDE
TEL : +61 8 8244 6000

ACT DISTRIBUTOR
TEL : +61 2 6280 6476

OFFICES - OVERSEAS

WATERCO (EUROPE) LIMITED
SITTINGBOURNE, KENT, UK
TEL : +44 (0) 1795 521 733

WATERCO USA
AUGUSTA, USA
TEL : +1 706 793 7291

WATERCO CANADA
LONGUEUIL, QC, CANADA
TEL : +1 450 748 1421

WATERCO (NZ) LIMITED
AUCKLAND, NEW ZEALAND
TEL : +64 9 525 7570

WATERCO (C) LIMITED
GUANGZHOU, CHINA
TEL : +8620 3222 2180

WATERCO (FAR EAST) SDN. BHD.
SELANGOR, MALAYSIA
TEL : +60 3 6145 6000

PT WATERCO INDONESIA
JAKARTA, INDONESIA
TEL : +62 21 4585 1481

WATERCO INTERNATIONAL PTE LTD
SINGAPORE
TEL : +65 6344 2378

WATERCO

Waterco Limited ABN 62 002 070 733

