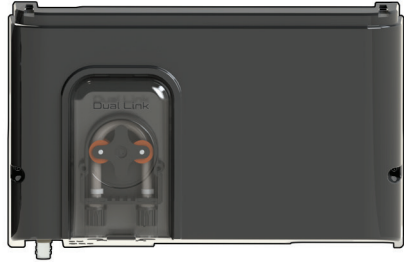




### pH Link



### Dual Link

for installation with  
**eXO®**  
**Clearwater Duo™**  
**MagnaPool™**

## **WARNING**

**FOR YOUR SAFETY** - This product must be installed and serviced by a licensed electrician in accordance with AS/NZ 3000 - 2007 and any other applicable local regulations. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation will void the warranty.

Improper installation and/or operation can create unwanted electrical hazard which can cause serious injury, property damage, or death.



For detailed instructions on installing and using the controller, please download the complete manual.

**EQUIPMENT INFORMATION RECORD**

**DATE OF INSTALLATION** \_\_\_\_\_

**INSTALLER INFORMATION** \_\_\_\_\_

**INITIAL PRESSURE GAUGE READING  
(WITH CLEAN FILTER)** \_\_\_\_\_

**PUMP MODEL** \_\_\_\_\_ **HORSEPOWER** \_\_\_\_\_

**FILTER MODEL** \_\_\_\_\_

**CONTROL PANEL MODEL SERIAL NUMBER** \_\_\_\_\_

**NOTES:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## Section 1. Important Safety Instructions

### READ AND FOLLOW ALL INSTRUCTIONS

All electrical work must be performed in accordance with AS/NZ 3000 - 2007. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

#### DANGER

To reduce the risk of severe injury or death, do not remove the suction fittings of your spa or hot tub. Never operate a spa or hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the equipment assembly.

#### WARNING

Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 37°C. The symptoms of hyperthermia include dizziness, fainting, drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include: 1) unawareness of impending danger; 2) failure to perceive heat; 3) failure to recognize the need to exit spa; 4) physical inability to exit spa; 5) fetal damage in pregnant women; 6) unconsciousness resulting in a danger of drowning. The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia.

#### WARNING

**Risk of electric shock which could result in severe injury or death -**

Install the controller at least 3.5 metres from the inside wall of the pool and/or hot tub using non-metallic plumbing.

Children should not use spas or hot tubs without adult supervision.

Do not use spas or hot tubs unless all suction guards are installed to prevent body and hair entrapment.

People using medications and/or having an adverse medical history should consult a physician before using a spa or hot tub.

#### WARNING

To avoid injury ensure that you use this control system to control only packaged pool/spa heaters which have built-in operating and high limit controls to limit water temperature for pool/spa applications. This device should not be relied upon as a safety limit control.

 **WARNING****To Reduce the Risk of Injury -**

- a) The water in a spa should never exceed 40°C. Water temperatures between 38°C and 40°C are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
- b) Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 38°C.
- c) Before entering a spa or hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices varies.
- d) The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.
- e) Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.
- f) Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

People with infectious diseases should not use a spa or hot tub.

To avoid injury, exercise care when entering or exiting the spa or hot tub.

Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.

Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub.

Water temperature in excess of 38°C may be injurious to your health.

Before entering a spa or hot tub, measure the water temperature with an accurate thermometer.

Do not use a spa or hot tub immediately following strenuous exercise.

Prolonged immersion in a spa or hot tub may be injurious to your health.

Do not permit any electric appliance (such as a light, telephone, radio, or television) within 1.52m of a spa or hot tub.

The use of alcohol, drugs or medication can greatly increase the risk of fatal hypothermia in hot tubs and spas.

**SAVE THESE INSTRUCTIONS**

## Section 2. Package Contents



### Additional tools needed:

- Power Drill
- Pencil or Marking Pen
- Flat Head Screwdriver
- Phillips Head Screwdriver
- Small Flathead or Slotted Screwdriver

### pH Link, Dual Link

- |  |
|--|
| <p>a. Module (pH Link or Dual Link)</p> <p>b. POD Housing Upper</p> <p>c. POD Housing Lower</p> <p>d. 40 mm Pipe Adapter</p> <p>e. POD Cap</p> <p>f. Cap Plug (X2)</p> <p>g. pH Injector Valve</p> <p>h. Hole Saw and Hex Key</p> <p>i. Compression Fitting</p> <p>j. Ceramic Weight</p> <p>k. 6mm Tube (5 m)</p> <p>l. Acid Cap, 5 L</p> <p>m. Acid Cap, 15/20 L</p> <p>n. Locking Collar</p> <p>o. Locking Collar Tool</p> <p>p. PH Sensor</p> <p>q. ORP Sensor*</p> <p>r. Sensor Holder (X2*)</p> |
|--|

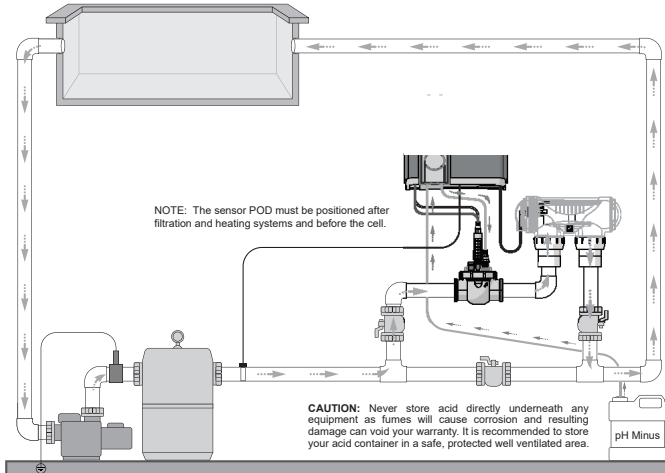
\*Items only included with Dual Link modules  
 PH Buffer Solutions: pH 7 (X3), pH 4 (X3) - (not shown)  
 ORP 465 mV Buffer Solution (X3) - (not shown)

### Section 3. Electrical Specifications

Power Supply	Extra low voltage (connected to controller)
Peristaltic pump flow rate	1.2 L/h
Maximum back pressure (injection)	1.5 bar
pH correct	Acidic pH only (sulfuric/hydrochloric acid)
pH sensor calibration	1 or 2 point (pH 4 and pH 7)
Sensor Cable Length	3 Meters
ORP sensor calibration*	1 point (470 mV)
*Applicable only to Dual Link modules	

### Section 4. pH Link/Dual Link Plumbing

**NOTE:** The sensor and POD must be installed after the filtration system and any heating system, and before the TRi cell.



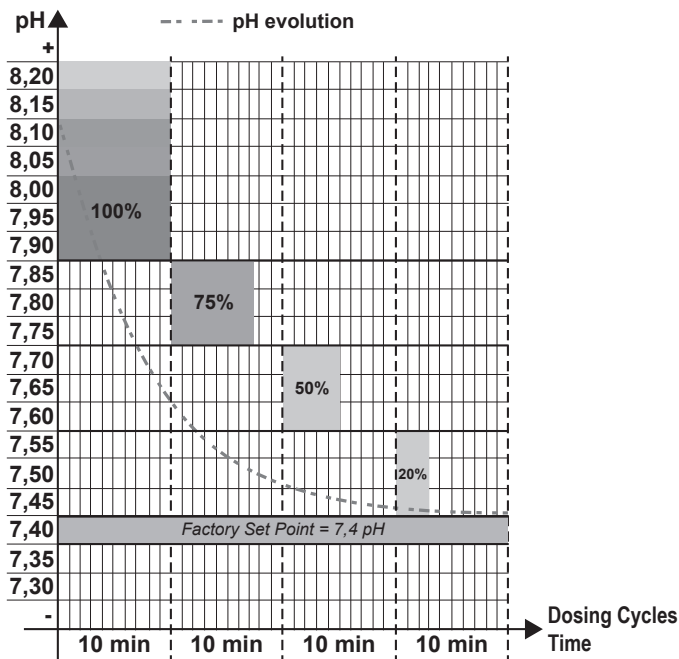
## Section 5. Installation

### 5.1 Prepare and Balance the Pool

The pH Link module maintains the correct pH of the water in your pool. The Dual Link module maintains the pH level and disinfectant (ORP) level. It is very important to maintain good pH balance and suitable alkalinity in your pool and to prepare and balance the pool before installing the pH Link or Dual Link module.

#### 5.1.1 pH Regulation Principle

The amount of chlorine needing to be produced is dictated by the pH level in the pool. As the pH level rises, the amount of chlorine must be increased to compensate.



## 5.1.2 Water Chemistry Table

Test and maintain correct water balance throughout the season, according to the table.

	Free Chlorine	pH	Total Alkalinity (ppm)	Calcium Hardness (ppm)	Cyanuric Acid (ppm)	Salt Level (ppm)	Metal
Australian Standard	1 -3	7.2 - 7.8	60 - 200	100 - 400 ***	up to 50	4000 - 7000	x
Ideal range	1 - 3	7.4	80 - 140	90 - 300	up to 50	4000 at 27°C	< 0.10 ppm
To Increase	Add chlorine or increase equipment output	Add buffer or soda ash (sodium carbonate)	Add sodium bicarbonate	Add calcium chloride	Add cyanuric acid	Add salt or minerals **	x
To Decrease		Add muriatic acid	Add muriatic acid or dry acid	Partially drain and refill pool*	Partially drain and refill pool*	Partially drain and refill pool*	x
In Season Testing Frequency	Weekly	Weekly	Weekly	Weekly	Weekly	Monthly	x

NOTE: Test all equipment sensors quarterly.

- \* Fill pool with water from the mains water supply. Do not use rain water or well water.
- \*\* Do not add salt directly into the skimmer. Do not initiate electrolysis until salt has fully dissolved.
- \*\*\* Reading is True Calcium Hardness, not Total Calcium Hardness.

### 5.1.3 Stabilizer (Cyanuric Acid)

A pool has a stabilizer content of 30 ppm and a pH of 7.4:

**1 ppm free chlorine = 700 mV**

➔ Therefore, the user can set their chlorination requirement to 700 mV to maintain a level of 1 ppm in the pool

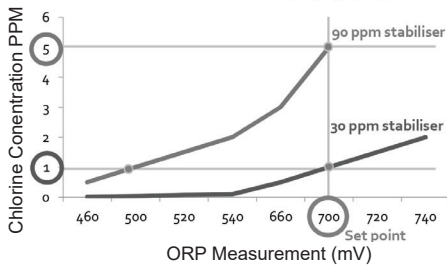
If the level of stabilizer increases to 90 ppm, the ORP reading will be false:

**1 ppm free chlorine = 500 mV**

➔ If the user keeps his setpoint at 700 mV, he will end up chlorinating up to 5 ppm!

IT IS THEREFORE ESSENTIAL TO MONITOR THE STABILIZER LEVEL IF AN ORP REGULATOR IS INSTALLED  
30 PPM IS THE RECOMMENDED LEVEL FOR SWIMMING POOLS IN AREAS WITH STRONG SUNLIGHT  
THIS IS UNNECESSARY IN OTHER CASES, ESPECIALLY IF ORP REGULATION IS USED


Variation of the ORP measurement based on the stabiliser concentration (pH 7.4, 25°C)\*

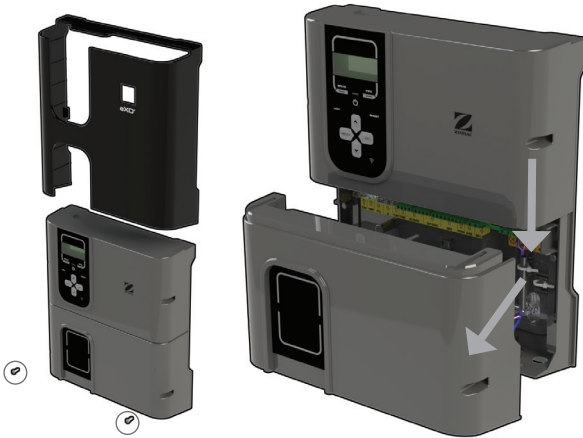


\*Theoretical values to explain the principle. Actual values may vary slightly depending on various pool waters

## Section 6. Install the pH Link or Dual Link Module on the Controller

pH balance and suitable alkalinity levels in the water must be maintained. Be sure to prepare and balance the pool before installing the pH Link or Dual Link module.

1.  Turn OFF and disconnect power to the controller.
2. Remove the front cover from the controller.




3. Connect Sens and Pump wires from the Module to the controller board, see "Section 7. Controller Enclosure Wiring" on page 20
4. Seat the Module housing on the controller.
5. Fasten two screws to secure the module to the controller.
6. Replace the external cover.



### WARNING

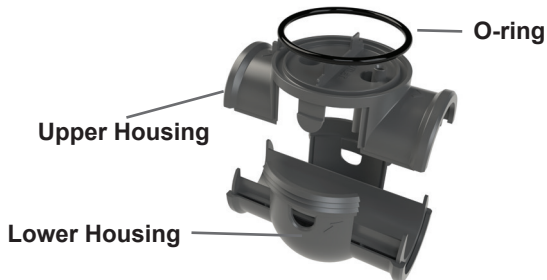
Do not reconnect power supply until all components are installed: (1) pH Link/Dual Link module, (2) POD kit, and (3) pH down injection pipe.

## 6.1 Install the POD Kit

1.  Turn off and disconnect all power to the controller.
2. For optimal performance, the POD must be installed:
  - On a 30 cm length of rigid 40 mm or 50 mm PVC pipe.
  - As far as possible from any angles.
  - Horizontally.
  - Vertically within 30°.
  - After the filtering equipment.
  - After any heating device but before the electrolytic cell or other water treatment equipment.

## 6.2 Drill the Pipe

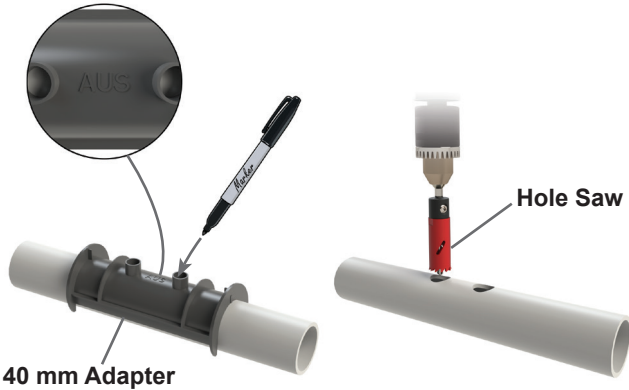
1. Inspect the POD O-ring to ensure it is in good condition and properly seated.
2. Press tabs to remove the upper POD housing from the lower POD housing.



3. Remove the 40 mm adapter from the lower POD housing.
4. Place the 50 mm guide on the top of the pipe.

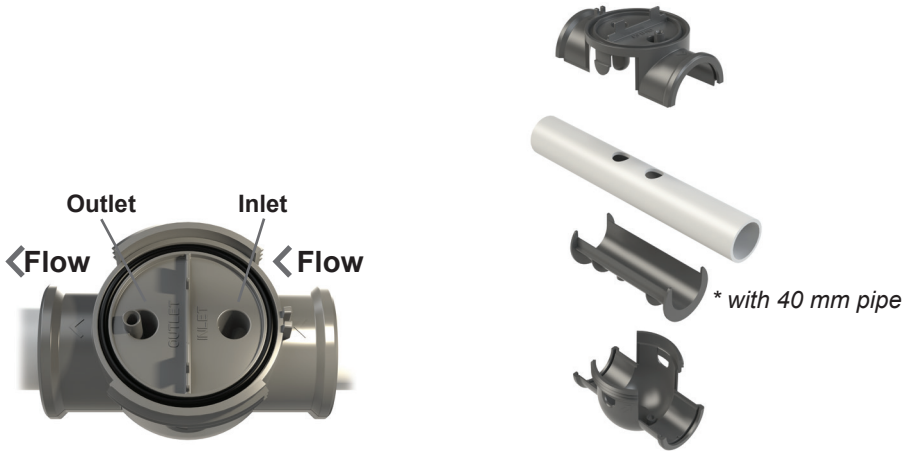
**NOTE:** For 40 mm installations use the 40 mm adapter marked “AUS” as the guide for marking the pipe, for 50 mm installations use just the bottom of the POD assembly.

5. Mark the pipe through the holes.
6. Drill holes in the PVC pipe using the hole saw. Make sure the edges are smooth without burrs.



### 6.3 Install the POD

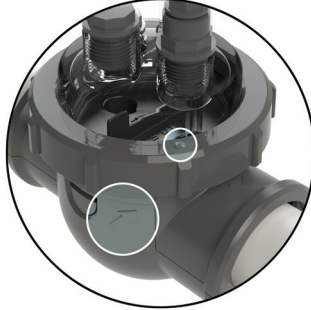
1. For 40 mm pipe installations, insert the adapter into the holes in lower POD housing.
2. Note the arrows on the upper housing indicating flow direction. Make sure the POD is in proper orientation.



3. Assemble the POD around the pipe, the tabs will click into place.

## 6.4 Install the POD Cap

1. Place the POD cap on the POD assembly. The cover and POD assembly are keyed for proper orientation. Use caution to ensure the POD O-ring is clean and properly seated.
2. Align the arrow on the POD with the locking ring.

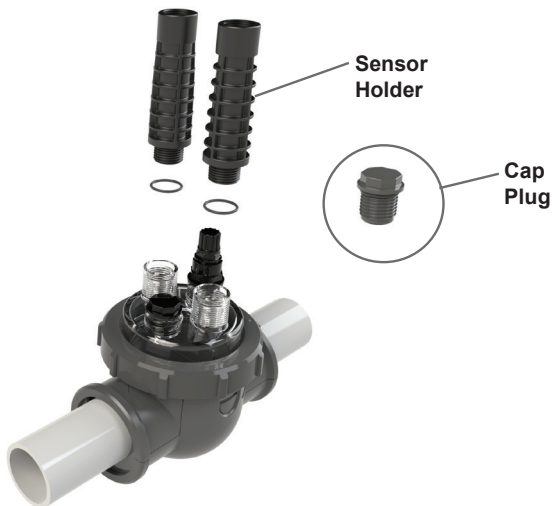


3. Tighten the locking ring with the locking collar tool until snug. Do not overtighten.

## 6.5 Install the sensor(s).

1. Install the sensor holder(s) into the correct port on the POD cap. Remove the cap plug if necessary.

**NOTE:** The ORP sensor is with Dual Link module only.



2. Carefully remove the protective tube from the sensor.
3. Rinse the end of the sensor with tap water. Shake off excess water.
4. Carefully screw the sensor(s) into sensor holder.



## 6.6 Calibrate the sensor(s).

To maintain accurate and reliable operation, the sensors must be calibrated before the initial use of the controller with pH/Dual Link module. After initial calibration, it is recommended to recalibrate sensors every few months.

### 6.6.1 Clean the Sensor(s)

Sensor(s) must be cleaned before calibration, including prior to initial use after installation.

1. Turn off the filter pump.
2. Close all valves.
3. Remove the sensor and the sensor holder from the POD.
4. Rinse the sensor with tap water for 1 minute. Shake off excess water.

**NOTE:** To avoid damaging the active sensor, do not rub or dry with a cloth.

5. Brush the junctions and metal strip using a toothbrush for 1 minute.



6. Prepare a diluted hydrochloric acid solution by pouring 50 mL tap water into 1 mL (10 drops) of commercially-available hydrochloric acid (HCl 37%).

**⚠ WARNING**

- Hydrochloric acid is a hazardous chemical that may cause burns, lesions, and irritations. Handle with extreme care using protective equipment (gloves, goggles, coveralls). Refer to the substance SDS sheet for more information.
- Always pour acid into water.
- Once cleaning is complete, dispose of the solution according to standard in effect in the country of use.

7. Wash the sensor in the diluted hydrochloric acid solution for 2 minutes.
8. Rinse sensor in clean tap water for 1 minute. Shake off excess water.

### 6.6.2 Calibrate the pH Sensor

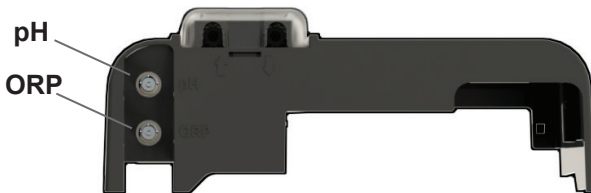
The pH sensor (blue) can be calibrated in 1 or 2 points. We recommend 2-point calibration for a more reliable measurement throughout the season.

1. Turn on power to the controller.
2. Turn off the pool pump and close valves as necessary to isolate the cell and sensors.

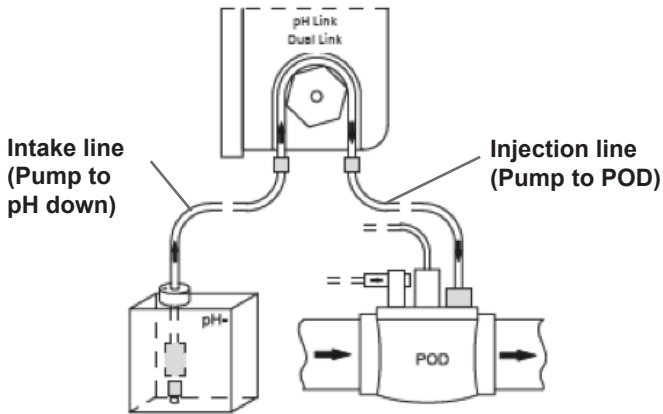
3. Unscrew the pH sensor from the POD.
4. Rinse the end of the sensor with tap water. Shake off excess water. Do not touch the glass bulb at the end of the pH sensor.
5. Start 1 or 2 point calibration via the controller User Interface, see Section 8 For details.
6. If calibration is unsuccessful, see Section 9, Troubleshooting.

### 6.6.3 Calibrate the ORP Sensor

1. Verify power to the controller is on, pump is off, and valves are closed isolating the cell and sensors.
2. Unscrew the ORP sensor from the POD.
3. Rinse the end of the sensor with tap water. Shake off excess water. Do not touch the end of the ORP sensor.
4. Place the probe in a sample of ORP 470 mV buffer solution for one minute.
5. Start calibration via the controller User Interface, see Section 8.
6. Once calibration is complete, replace the sensor on the POD. If calibration is unsuccessful, see Section 9, Troubleshooting.
7. Connect the sensor lead(s) to the module at the base of the controller (pH = blue), (ORP = yellow).



## 6.7 Install the pH Down Intake and Injection lines.



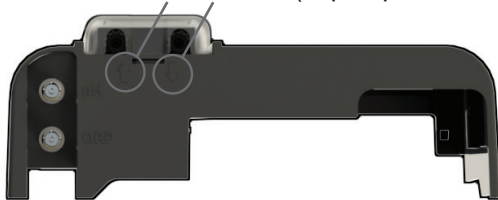
### pH- Pump Configuration

The pump rotates in a clockwise direction. Acid is fed into the left side of the pump (via the Intake line) and injected into the POD from the right side (via the Injection line).

**CAUTION:** For safety reasons, install the Injection line before the Intake line to ensure pH is not accidentally dosed into the system before all connections are made.

Never store acid directly underneath any equipment as fumes will cause corrosion and resulting damage can void your warranty. It is recommended to store your acid container in a safe, protected well ventilated area.

flow direction (↑ pump inlet, ↓ Injection)



### 6.7.1 Install the Injection Line

1. Remove the protective cover from the pump.
2. Cut a section of the plastic tubing that has adequate length to reach from the injection valve at the pump to the non-return valve on the POD.
3. Remove the threaded cap from the pump outlet (right).

4. Thread tubing through the hole in the cap, connect the tubing to the nipple on the module and reattach the threaded cap.

**NOTE:** For a better fit, soften both ends of the tubing by immersing in warm water.

5. Remove the threaded cap from the POD intake valve.
6. Thread tubing through the hole in the cap, connect the tubing to the nipple on the POD and reattach the threaded cap.

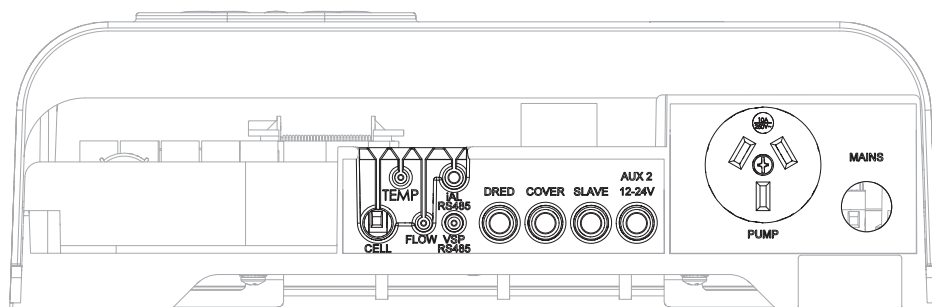
### 6.7.2 Install the pH Down Intake Line

1. Cut a section of the plastic tubing that has adequate length to reach from the pH down reservoir to the pump.
2. Remove the threaded cap from the pump inlet (left side).
3. Pass one end of the tubing through the threaded cap and attach tubing to the nipple on the pump inlet.
4. Remove the cap from the pH down container.
5. Select the appropriate size acid cap (included), either 5 L or 15/20 L.
6. Thread tubing through the hole in the cap through the ceramic weight.
7. Remove the nut from the blue compression fitting.
8. Pass the tubing through the nut and attach it to the nipple on the compression fitting.
9. Reattach the threaded nut.
10. Put the weighted end of the hose into the pH down reservoir.
11. Secure the pH down cap tightly on the container.
12. Replace the protective cover on the pump.



## Section 7. Controller Enclosure Wiring

1. Wire low voltage connections on the low voltage side of the enclosure.
2. Wire high voltage connections on the high voltage side of the enclosure.
3. Use the internal labels (low voltage - yellow, high voltage - orange) to identify connection points.
4. Use the cable ties provided to secure internal wiring to the controller frame.
5. Pass cables through the appropriately labeled strain relief ports. It may be necessary to pierce the strain relief grommet prior to passing the cables through it.

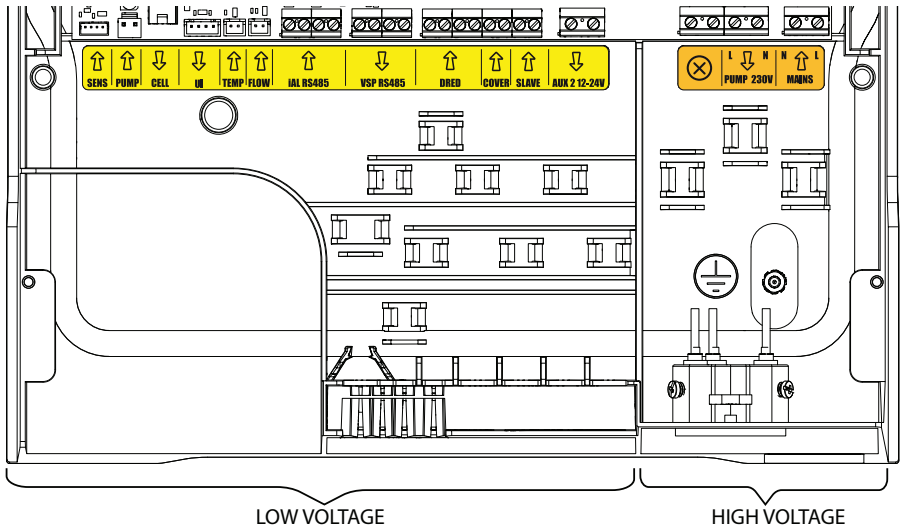


### Controller Connection Ports

NAME	TYPE	ROUTE	FUNCTION
SENS	Input	-	Connection of the pH or pH/ORP sensing PCBA
PUMP	Input	-	Connection of the pH pump for pH Link and Dual Link modules
CELL	Output	1	Connection of the electrolysis cell
UI	Output	-	Connection of the user interface
TEMP	Input	3	Connection of the water temperature probe
Flow	Input	2	Not used in AUS / South Africa
iAL RS485	Input	4	Connectivity dedicated connector
VSP RS485	Output	5	RS485 variable speed pump connection
DRED	Input	6	DRED Funtion (Demand Response Enabled Device) – for Australia only
COVER	Input	7	Pool cover contact – lower the chlorine production (dry contact: cover open = open contact/cover closed = closed contact)
SLAVE	Input	8	External connection of a device controlling the chlorinator

NAME	TYPE	ROUTE	FUNCTION
AUX 2 12-24V	Output	9	ON/OFF control of a LOW VOLTAGE external device (12 – 24V)
AUX 1 230V	Output	10	ON/OFF control of a HIGH VOLTAGE device. - Not available in Australia
PUMP 230V	Output	11	230 V Power supply for the filtration pump Maximum 8A
MAINS	Input	12	Device power supply 230 VAC – 50Hz

Table 1. Controller Wiring Positions



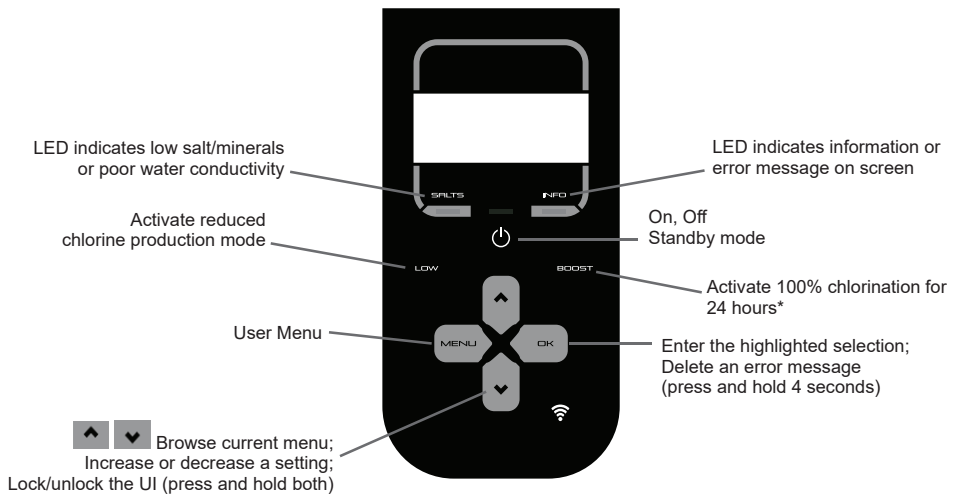
## Section 8. Calibration Procedure

To maintain accurate and reliable operation, the sensors must be calibrated before using the controller with pH/Dual Link module. After initial calibration, it is recommended to recalibrate sensors every 2 months.

### 8.1 User Interface Overview

## CAUTION

Before activating the chlorination function of your system, ensure that all salt added to the pool has completely dissolved.



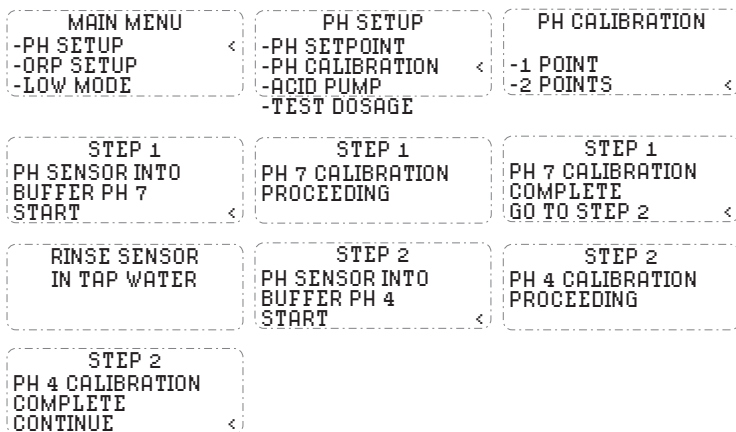
\*The filter pump will also operate if filtration pump is connected to the controller

### 8.2 pH Sensor Calibration

The pH sensor may be calibrated in 1 point calibration or 2 point calibration (pH 4 and pH 7); 2 point calibration is recommended.

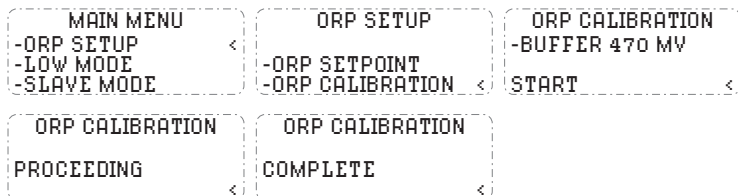
1. Turn on power to the controller.
2. Turn off the pool pump and close valves as necessary to isolate the cell and sensors.

3. Press **MENU**.
4. Use **▲▼** to select “pH Setup” then press **OK**.
5. Use **▲▼** to select “pH Calibration” then press **OK**.
6. Use **▲▼** to select “ 1 Point”, or “ 2 Points”, then press **OK**.
7. Remove the pH sensor from the POD.
8. Insert the pH sensor into the pH 7 buffer solution.
9. Press **OK** while “Start” is selected.
10. Press **OK** while “Go to Step 2” is selected.
11. Rinse the pH sensor with tap water.
12. Insert the pH sensor into the pH 4 buffer solution.
13. Press **OK** while “Start” is selected.
14. Press **OK** while “Continue” is selected.
15. Press **MENU** to exit.



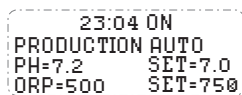
### 8.3 ORP Sensor Calibration

1. Turn on power to the controller.
2. Turn off the pool pump and close valves as necessary to isolate the cell and sensors.
3. Press **MENU**.
4. Use **▲ ▼** to select “ORP Setup” then press **OK**.
5. Use **▲ ▼** to select “ORP Calibration” then press **OK**.
6. Remove the ORP sensor from the POD.
7. Insert the ORP sensor into the 470 mV buffer solution.
8. Press **OK** while “Start” is selected.
9. Press **MENU** to exit.



### 8.4 Setpoint(s)

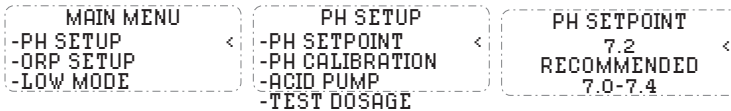
Current setpoints are displayed on the Home screen whenever the controller is ON.



### 8.4.1 Establish the pH Setpoint

Establishing the pH setpoint determines when acid will be added to the system to decrease the pH of the water.

1. Press **MENU**.
2. Use **▲▼** to select “pH Setpoint” then press **OK**.
3. Use **▲▼** to select value then press **OK**.
4. Press **MENU** to exit.

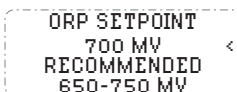
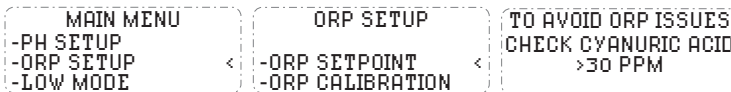


- Default pH setting is 7.2.
- Use **▲▼** to change the setpoint by increments of 0.1.
- pH setpoint range is from 6.8 (min) to 7.6 (max).

### 8.4.2 Establish the ORP Setpoint

Establishing the ORP setpoint determines when chlorine should be produced by the system to chlorinate the water. Free chlorine level should be checked every few days after initial installation.

1. Press **MENU**.
2. Use **▲▼** to select “ORP Setup” then press **OK**.
3. Use **▲▼** to select “ORP Setpoint then press **OK**.
4. Use **▲▼** to select value then press **OK**.
5. Press **MENU** to exit.



- Default ORP setting is 700 mV.
- Acceptable range = 600 mV (min.) - 900 mV (max)

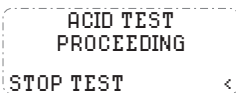
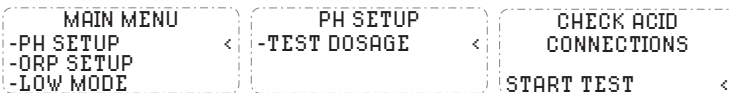
## 8.5 Prime and Test the pH Dosing Pump

The dosing pump is deactivated during the first 8 hours of the device in order to prevent acid exposure during installation. The pH dosing pump can be directly activated directly in order to perform a five-minute operating test.

### WARNING

- Hydrochloric acid is a hazardous chemical that may cause burns, lesions, and irritations. Handle with extreme care using protective equipment (gloves, goggles, coveralls). Refer to the substance SDS sheet for more information.
- Always pour acid into water.
- Dispose of the solution according to standard in effect in the country of use.

1. Press **MENU**.
2. Use **▲▼** to select “pH Setup” then press **OK**.
3. Use **▲▼** to select “Test Dosage” then press **OK**. The acid pump will perform a five-minute operating test.
4. Press **OK** while “Start Test” is selected to begin.
5. Press **OK** while “Stop Test” is selected to cancel.
6. Press **MENU** to exit.



- Pump stops automatically upon completion of the five-minute test.
- To prevent acid injection when it is not required: It is possible to stop the pH dosing pump for 8 hours through the “pH Setup” Menu.

## Section 9. Troubleshooting

When there is an error condition, a message is displayed on the screen and the “INFO” LED flashes. When an error is linked to conductivity (low conductivity) the “SALTS” LED is ON. When the error situation is corrected, the error message and LED illumination ends automatically.

Message	Possible Cause	Solution
pH LOW ("INFO" indicator lit)	<ul style="list-style-type: none"> <li>▶ The pH level is less than 5.</li> <li>▶ The pH sensor is disconnected, dirty, uncalibrated or not working.</li> <li>▶ Alkalinity is low, the pH minus injection may create large pH variations.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Check the pH level in the pool using photometer or a test strip.</li> <li>▶ Check the pH sensor wiring on the control box and on the sensor holder.</li> <li>▶ Check the operation of the sensor using a sensor tester (ask your pool specialist).</li> <li>▶ Clean and calibrate the sensor.</li> <li>▶ Replace the sensor.</li> <li>▶ Check and adjust alkalinity.</li> </ul>
pH DOSING STOP ("INFO" indicator flashing)	<ul style="list-style-type: none"> <li>▶ The pH setpoint has not been reached after 5 cumulative hours of injection.</li> <li>▶ The pH sensor is disconnected, dirty, uncalibrated or not working.</li> <li>▶ The pH minus container is empty.</li> <li>▶ The peristaltic pump is not primed.</li> <li>▶ High alkalinity, acid injection does not help to lower the pH.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Check the pH level in the pool using photometer or a test strip.</li> <li>▶ Check the pH sensor wiring on the control box and on the sensor holder.</li> <li>▶ Check the operation of the sensor using a sensor tester (ask your pool specialist).</li> <li>▶ Clean and calibrate the sensor.</li> <li>▶ Replace the pH container.</li> <li>▶ Test the peristaltic pump (ask your pool specialist).</li> <li>▶ Replace the pH sensor.</li> <li>▶ Lower the alkalinity (ask your pool specialist).</li> </ul>

Message	Possible Cause	Solution
<p>ORP STOP ("INFO" indicator flashing)</p>	<ul style="list-style-type: none"> <li>▶ The ORP setpoint has not been reached after 36 cumulative hours of chlorination.</li> <li>▶ The ORP sensor is disconnected, dirty, uncalibrated or not working.</li> <li>▶ When cyanuric acid concentration is too high the efficacy of chlorine is highly reduced.</li> <li>▶ When cyanuric acid concentration is too high it lowers the ORP reading from the sensor.</li> <li>▶ pH is too high.</li> <li>▶ When the total chlorine concentration is too high, chloramines will lower the ORP reading of the sensor.</li> <li>▶ The device is not correctly sized for the pool.</li> <li>▶ When the cell is worn, calcified or out of order the electrolysis reaction is not efficient.</li> <li>▶ Daily filtration and chlorination times are not sufficient</li> </ul>	<ul style="list-style-type: none"> <li>▶ Check the chlorine level in the pool using photometer or a test strip.</li> <li>▶ Check the ORP sensor wiring on the control box and on the sensor holder.</li> <li>▶ Check the operation of the sensor using a sensor tester (ask your pool specialist).</li> <li>▶ Clean and calibrate the sensor.</li> <li>▶ Drain the pool using the main drain in order to lower the cyanuric acid concentration.</li> <li>▶ Proceed to a shock chlorination (using calcium hypochlorite) to reduce the chloramines concentration.</li> <li>▶ Check the cell conditions.</li> <li>▶ Replace the ORP sensor.</li> <li>▶ Increase daily filtration and SWC timers</li> </ul>

## NOTES

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