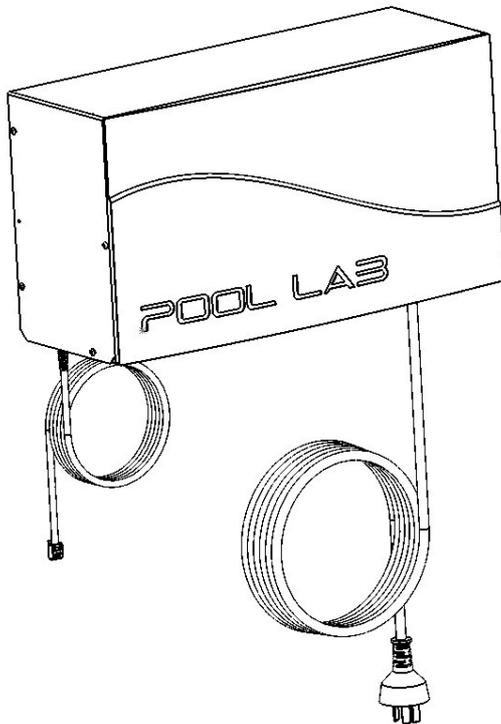# OWNER'S MANUAL

POOL LAB®

PL Series EXP – Expansion Module

Patented Technology

Patent Technology Numbers:

Australia No. 2003240282
Canada No. 2,483,477
France No. FR 1 511 976
Germany No. 603 28 601.1-08
New Zealand No. 537012
Spain No. EP 1 511 976
Switzerland No. CH 1 511 976
UK No. UK 1 511 976
USA No. 7,988,916

IMPORTANT

Read this manual carefully before operating your Pool Lab EXP

Before use ensure the unit is securely mounted as per the INSTALLATION GUIDE in this manual, with the outlet sockets facing DOWNWARDS.

**KEEP THIS MANUAL IN A SAFE PLACE
FOR FUTURE REFERENCE**

rev. 5

Table of Contents

PACKAGE CONTENTS

Qty	Description	Image
1 x	EXP – Expansion Module (EXP5 shown)	
1 x	Water Temperature Sensor Kit Includes: Water Temperature Sensor with 3m lead, gear clamp and 8mm drill bit NOTE: 2 x additional sensors are required for solar control function – sold separately.	
1 x	Mounting Fastener kit	
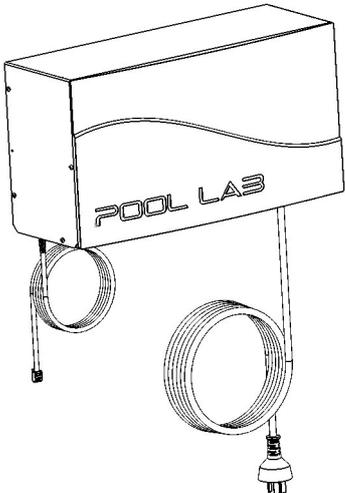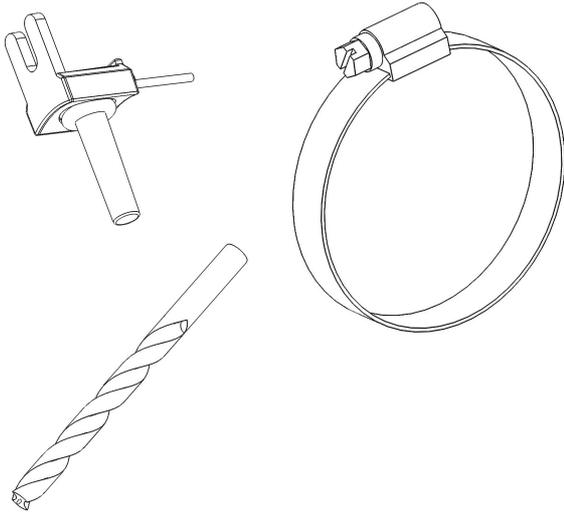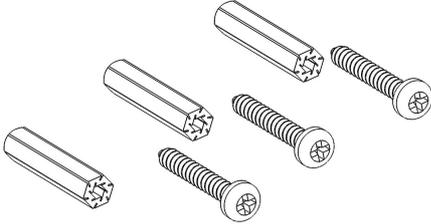
EXTRAS – SOLD SEPARATELY

Pool and Spa Combination systems require a **"SPA FLOW SWITCH"** to be fitted to the spa suction line. This is so that the system is able to determine which body of water is being treated by the chlorinator. It is also required for the solar, heater and automatic valve actuator functions to operate correctly.

The Integrated Solar controller requires two additional temperature sensors. One is a roof temperature sensor for measuring available solar energy, and the other is for the solar collector water inlet temperature.

Automatic Valve Actuators can be fitted for automated control of pool and spa flow control valves, as well as up to two additional valves for other functions such as solar control, in-floor cleaning systems, or water features, etc.

15 Amp Relay and Switched Socket can be used where the EXP is required to switch higher powered equipment or large pumps. An electrician will be required for installation.

IMPORTANT SAFETY INSTRUCTIONS

➔ Read all sections of this owner's manual before installing or operating the equipment
➔ Do not allow children or any unqualified person to operate or perform any maintenance on this equipment.
➔ Always ensure free chlorine level is maintained above 1.0ppm and avoid free chlorine levels above 3.0ppm
➔ Ensure water is regularly tested by a pool professional, and ensure all aspects of water balance are properly maintained.
➔ Do not allow bathers to use pool or spa if the free chlorine level is above 8.0ppm
➔ FOR SPA ONLY INSTALLATIONS: Proper sanitation requires the spa be periodically drained completely. As a guide, the number of days between complete spa drainage should be equal to the volume of the spa in litres, divided by 10 times the maximum number of daily spa users

Health and Hypothermia Warnings

➔ People with medical conditions should consult a physician before entering pool or spa water
➔ Maximum spa water temperature is 40 degrees C
➔ Bathing time in spa water at (or near) 40 degrees C should not exceed 15 minutes

INTRODUCTION

The Pool Lab EXP (Expansion Module) is a feature packed pool and spa automation system that integrates all of your equipment into one powerful controller.

Available in two models to suit your requirements:

All models features integrated gas heater and solar heating system controls, and connections for up to four automated flow control valves.

EXP5 – is a plug-in appliance that comes with a standard 10 Amp power lead. This model is simple to install, and installation generally does not require an electrician.
Features 5 x 240V, 10 Amp outlet sockets and is perfect for smaller systems where the total load of the connected equipment does not exceed 10 amps.

EXP9 – is fitted with an industrial 20 Amp power lead. If the installation location does not have a suitable outlet, then an electrician will be required to install this. This model features 9 x 240V, 10 Amp outlet sockets. The maximum total load of the connected equipment is 20 Amps.

Flexible configuration options allow the Pool Lab EXP to adapt to almost any residential or small commercial pool and spa configuration.

The solar controller can be configured to suit both integrated or isolated solar systems with options to suit simple valve controlled systems, booster pump (retro-fit) systems, or even multiple pump solar systems.

Multiple outputs can be grouped together, for example where multiple lighting transformers are connected.

Over 20 years of ground breaking research and development have led to this unique Australian product, with pool owner's globally enjoying the benefits of Pool Lab's innovative technology.

Welcome to Pool Lab!

INSTALLATION GUIDE

INSTALLATION SCHEMATIC

The following schematic diagram shows an example of a typical installation.
This example shows a pool and spa combination with a gas heater and integrated solar.

The ASP must be mounted before any heaters or solar equipment, and after the filter.
The ASP must be mounted before the chlorine cell, and before the acid injection point.

The SPA FLOW SWITCH is mounted on the SPA SUCTION line. This is required for pool and spa combination systems. (not required for spa only systems)
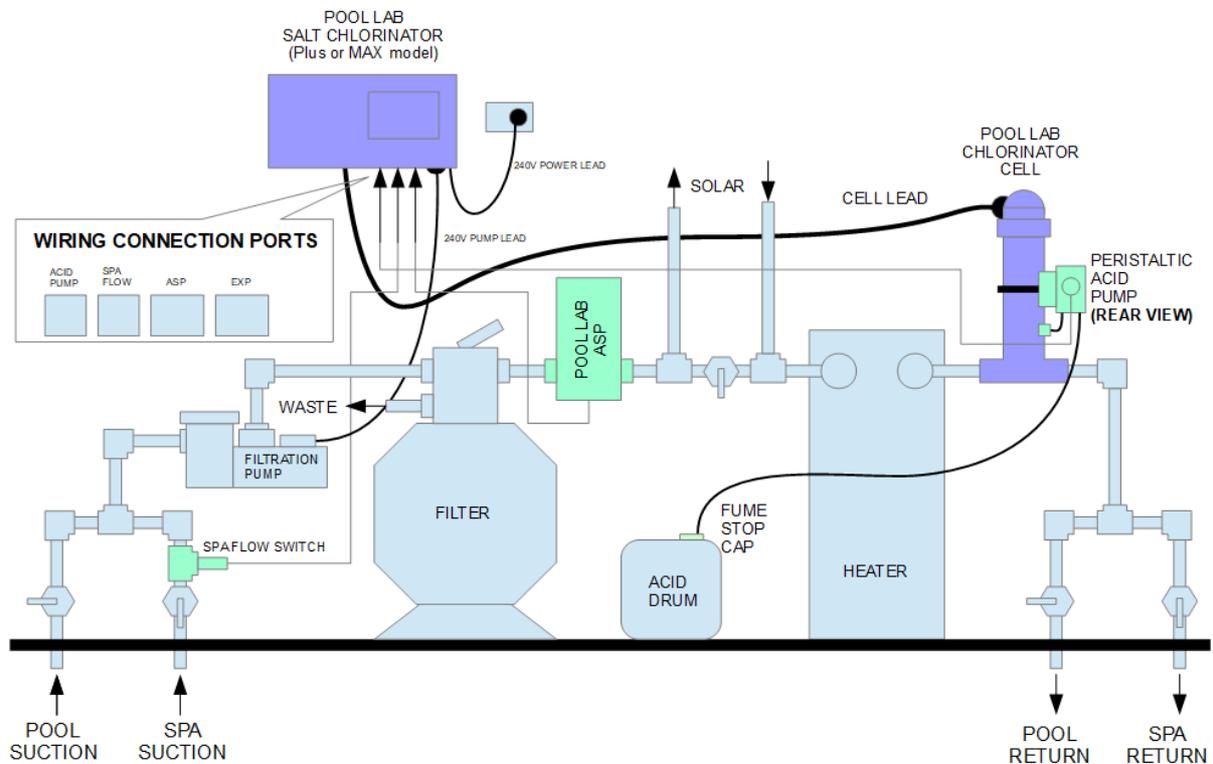
MOUNTING LOCATION

The EXP module must be mounted on a vertical wall or post, with the power sockets facing downwards.

The unit will need to be mounted within approximately 2.5 meters of the Pool Lab Chlorinator control box to allow connection of the data cable. Both units must be mounted outside the pool zones as defined by AN/NZS 3000:2000.

As a general rule for swimming pools, the Pool Lab units must be mounted at least 3.5 meters away from the inside edge of the pool to be clear of the pool zones, and at least 45cm above the ground to protect the outlet sockets from water being splashed up from the ground.

The EXP module should be mounted so that the equipment can be easily connected. Masonry plugs and screws are provided, and these screws are also suitable for mounting to timber.

The EXP enclosure is fitted with a keyhole mounting system. To mount the unit, install 2x screws into the wall at the desired mounting location, level and 300mm apart, leaving approximately 3mm of thread exposed. Place the keyholes on the back of the enclosure onto these screws, and allow the unit to drop down and lock into place.

After mounting, mark a hole location for the third screw securing the safety chain. This will prevent the unit from accidentally falling off the keyhole mounts when plugging or unplugging equipment from the EXP.
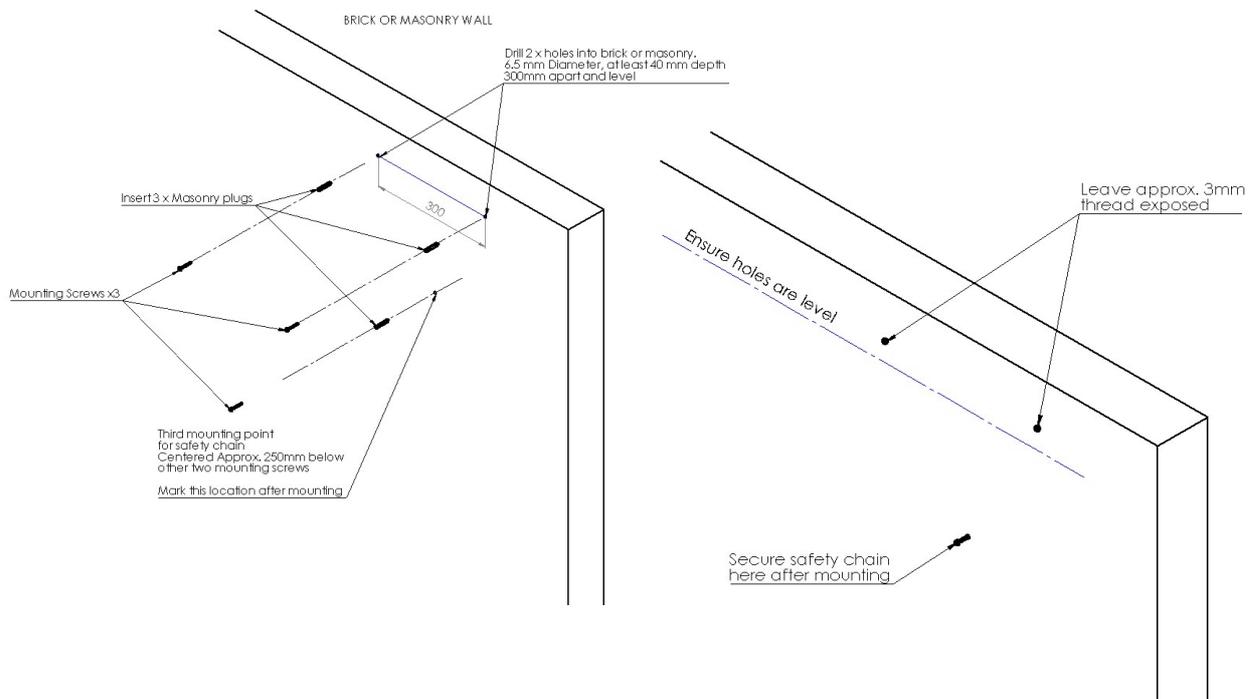
Mounting on Brick or Masonry Wall - Example

- Use the stencil provided to mark the top 2x hole locations. Avoid locating holes near the edge of bricks or in mortar joints where possible. Ensure the holes are level with each other.

- Use a hammer drill with a 6.5mm masonry bit, and drill holes to a depth of at least 40mm.

- Use a hammer or mallet to drive the masonry plugs provided into the drilled holes.

- Insert screws and tighten down until approximately 3mm of thread is left exposed.

- Mount the EXP module by hooking the keyholes at the back of the enclosure over the mounting screws, and allow the unit to fall and lock into place.

- Mark a suitable hole location for the safety chain, so that when the chain is secured the unit cannot lift off the keyhole mounts.

- Drill the hole and insert masonry plug as above, then secure the chain.
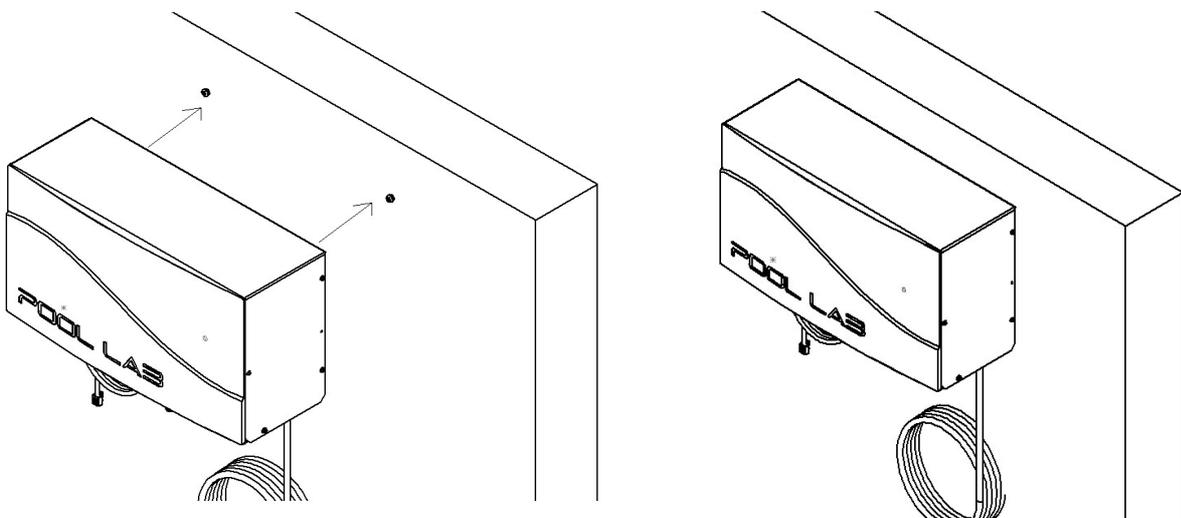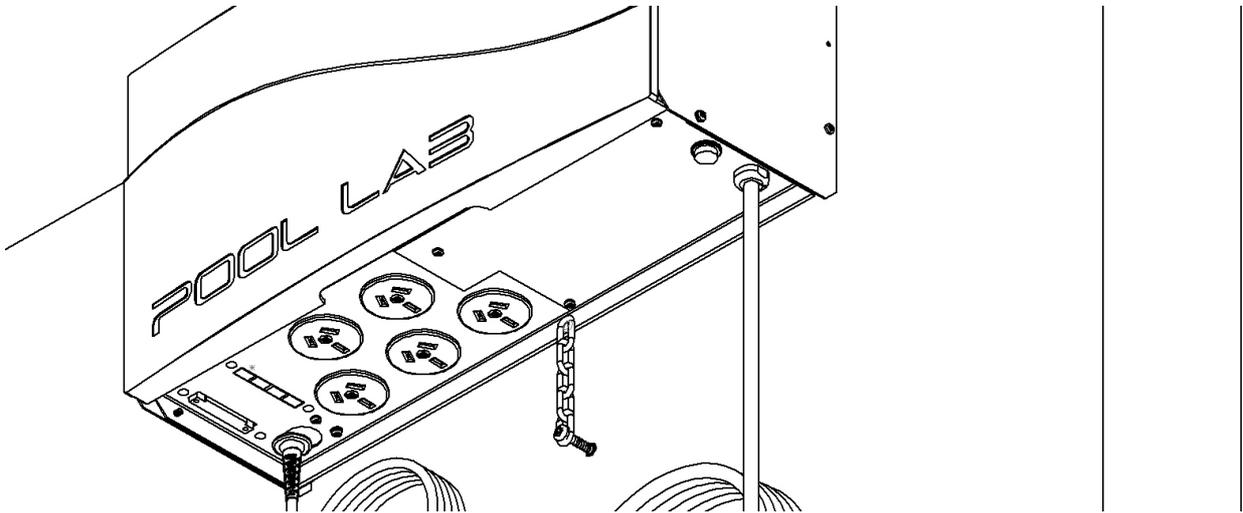
LOW VOLTAGE WIRING

Spa Flow switch (Pool & Spa Combination Systems only) must be connected to the Pool Lab Salt Chlorinator port marked "SPA FLOW"

Peristaltic Acid Pump must be connected to the Pool Lab Salt Chlorinator port marked "ACID PUMP".

The Pool Lab ASP power/data cable must be connected to the Pool Lab Salt Chlorinator port marked "ASP".

ELECTRICAL POWER CONNECTION

EXP5 models are fitted with a power cord for connection to a standard 10 amp power outlet. The unit is protected from overload by a 10 amp manual reset circuit breaker.

EXP9 models are fitted with an industrial 20 Amp power cord, and include a 20 Amp power cord. A 20 Amp combination switch/socket is also included, which must be installed by a qualified electrician (unless a suitable power socket is already available). This model is protected from overload by a 20 Amp manual reset circuit breaker.

The Pool Lab EXP module is intended to be powered at all times. Power should only be turned off when the system is not in use for an extended period of time.

TEMPERATURE SENSORS

FILTRATION CIRCUIT TEMP SENSOR

The Pool Lab EXP is shipped with 1 x temperature sensor included for the filtration circuit. This sensor should be installed on the filtration system pipework before any solar or other heating equipment. This sensor is required for the integrated gas heater controller to function, and also enables water temperature display.

- – Find a suitable location as close to the EXP module as practical.
- – If the pipework is below water level, close isolation valves.
- – Drain water from the pipework if necessary.
- – Drill a 10mm hole in the pipe, and insert the temperature sensor. Fix in place with the gear clamp provided.
- – Run the temperature sensor wire to the EXP module terminal block at the base of the unit. Fix wiring to the pipework with cable ties where necessary.
- – Trim length if required.
- – Connect temperature sensor wires to terminals marked FILTER CIRCUIT TEMP SENSOR (any polarity).

Note: The terminal block is removable to make connection easier.

SOLAR TEMP SENSORS

If the integrated solar controller is to be used this will require 2 x additional temperature sensors which are sold separately.

The sensor with the 3m lead and o-ring must be installed on the pipework on the inlet side of the solar collector in a location where water does not drain from the system. Generally the inlet side of the solar pump is an ideal location. This sensor should be connected to the terminals marked SOLAR INLET TEMP SENSOR.

The other sensor with a 15m lead should be installed away from the pipework in a location with similar sunlight exposure as the solar collector. A small piece of solar matting material is included in the kit. Insert the sensor into one of the solar matting tubes and attach the matting in location with silicone adhesive or similar. This sensor should be connected to the terminals marked SOLAR ROOF TEMP SENSOR.

HEATER CONNECTION

Where the integrated gas heater controller is to be used, a normally-open relay contact is provided on the terminal block for heater control. Alternatively the auxiliary power outputs can also be configured as a means of controlling a heater if required. Consult your heater documentation for the recommended connection and control method. Some heaters may require configuration settings to be changed for external temperature control. It is recommended to set the heaters internal temperature control to the maximum allowed setting, otherwise the water temperature will be limited to the setting on the heater.

The integrated gas heater controller can also be used for heat pump or electric heating, although power will need to be provided separately for these.

AUTOMATIC VALVE ACTUATORS

For pool and spa combination systems, automated control of your pool and spa mode flow control valves requires 2 x 24VAC valve actuator motors mounted on compatible valves which are sold separately.

Some examples of valve actuator motors that are directly compatible with the Pool Lab EXP module are: Hayward Goldline GVA-24, Pentair CVA24, or Jandy JVA 2444 Valve Actuators.

These must be installed on the filtration pump inlet flow control valve, and the filtration circuit return flow control valves. Consult the valve actuator documentation for specific installation instructions.

It is recommended that a small amount of water flow to the spa when in POOL mode to maintain water quality in the spa. This is usually achieved by setting the cams inside the valve actuator to not completely close the spa return line.

Care should be taken when installing to ensure that flow is not blocked at any time while the valves are in motion.

AUXILIARY EQUIPMENT

Power outlet sockets are provided at the bottom of the unit for connection to auxiliary equipment. Each connected auxiliary must be configured to suit it's application before use. Care must be taken to ensure the combined current of connected equipment does not exceed the circuit breaker rating.

EXP5 models are fitted with a 10 amp circuit breaker.

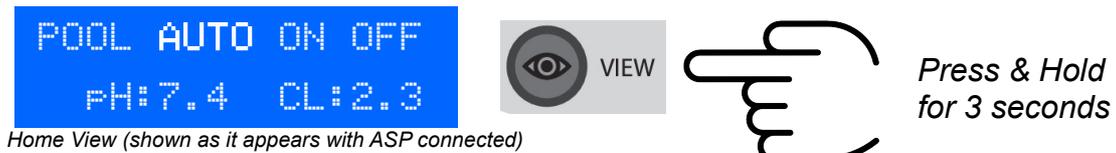EXP9 models are fitted with a 20 amp circuit breaker.

Note: To power equipment above the EXP's amp rating or to power equipment with 15A power plugs, an electrician may be required to install external relays and sockets powered from a separate circuit. See EXTRAS – SOLD SEPARATELY.

SYSTEM CONFIGURATION

Once the Pool Lab Chlorinator has detected that the Pool Lab EXP is connected, the menu system will show additional options relating to your EXP configuration and settings. For your connected equipment to operate as intended, it is important that all configuration items are set to suit your system prior to use.

Accessing the System Config Menu

1. The SYSTEM CONFIG menu is accessed via the MAIN MENU.
    From the HOME VIEW press and hold the VIEW button for 3 seconds

POOL **AUTO** ON OFF
pH:7.4   CL:2.3

Home View (shown as it appears with ASP connected)

VIEW

Press & Hold for 3 seconds

2. Navigate to SYSTEM CONFIG using the UP & DOWN buttons, then press VIEW

HISTORY
*SYSTEM CONFIG

Main Menu

*AUTHORITY
 H/W MODULES

System Config Menu

VIEW

Note: On existing installations you will need to set the AUTHORITY level to INST (installer) before changing system configuration items. See next page.

Note: For the convenience of installers, on newly commissioned units the authority level will already be set to INSTALLER by default from the factory. This will automatically revert to USER at the first crossing of midnight (assuming the unit is powered).

Authority Level

Most system configuration items are protected against accidental changes with a user AUTHORITY level. Before you can change any system configuration items, you must first set the AUTHORITY level to "INST" (INSTALLER).

1. From the SYSTEM CONFIG menu (see previous page), navigate to AUTHORITY using the UP & DOWN buttons, then press VIEW
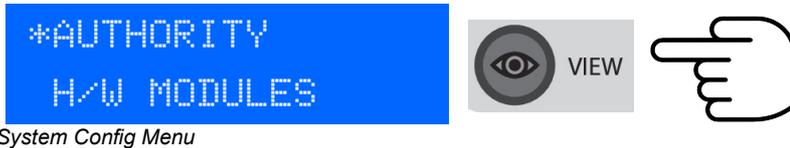
System Config Menu

2. Press VIEW again to edit the AUTHORITY level, then use the UP / DOWN buttons to change the AUTHORITY level to "INST" then press VIEW to save the changes

Authority Menu
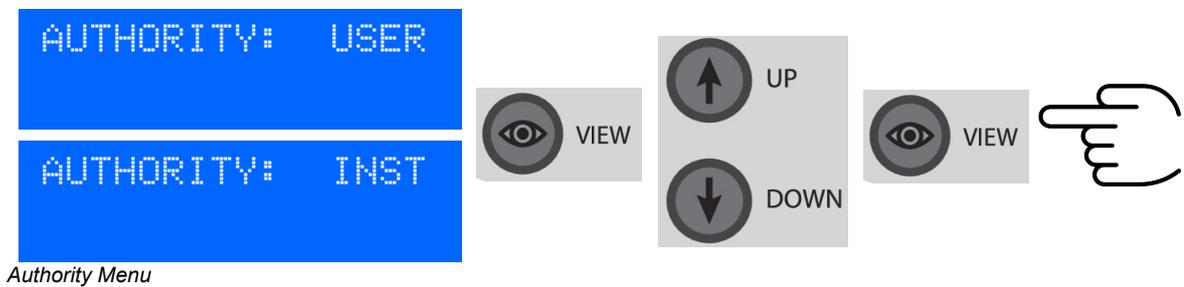
3. Press BACK once to return to the SYSTEM CONFIG menu

System Config Menu

Pool and Spa Volumes

The Pool Lab EXP uses the pool and spa volumes to determine if you have a pool only, spa only, or a pool and spa combination system.

For systems where a Pool Lab ASP is installed these volumes are also used to calculate chlorine and acid deliveries as well as delivery safety limits.

1. From the SYSTEM CONFIG menu, navigate to POOL/SPA VOLS using the UP & DOWN buttons, then press VIEW

```
 H/W MODULES
*POOL/SPA VOLS
```
System Config Menu

UP DOWN VIEW

2. Use the UP & DOWN buttons to select either the POOL or SPA volume that you wish to change, and then press VIEW to begin editing the value.

```
*POOL VOL: 50 KL
 SPA VOL: 2.0 KL
```
Pool and Spa Volumes Menu

UP DOWN VIEW

3. Use the UP & DOWN buttons to set the value as required, then press VIEW to save the changes.

   Note: the value will be blinking while editing.

```
*POOL VOL: 80 KL
 SPA VOL: 2.0 KL
```
Pool and Spa Volumes Menu

UP DOWN VIEW

4. Press BACK once to return to the SYSTEM CONFIG menu

```
*AUTHORITY
 H/W MODULES
```
System Config Menu

BACK

POOL VOLUME: 0 – 250 KL (Kilolitres)
eg. the default value of 50 KL = 50,000 Litres.
Round the value down to the nearest 5 Kilolitres (5000 Litres).
Include the volume of any additional catchment basins and balancing tanks etc.
If installed on a SPA ONLY system, set POOL VOLUME to ZERO

SPA VOLUME: 0 – 50 KL (Kilolitres)
Round the value down to the nearest 0.1 Kilolitres (100 Litres).
If installed on a POOL ONLY system, set SPA VOLUME to ZERO

Heater Configuration

The Pool Lab EXP includes an integrated heater controller with optional cool down timer and auto off at midnight feature.

.

1. From the SYSTEM CONFIG menu, navigate to HEATER CONFIG using the UP & DOWN buttons, then press VIEW

```
POOL/SPA VOLS
*HEATER CONFIG
```
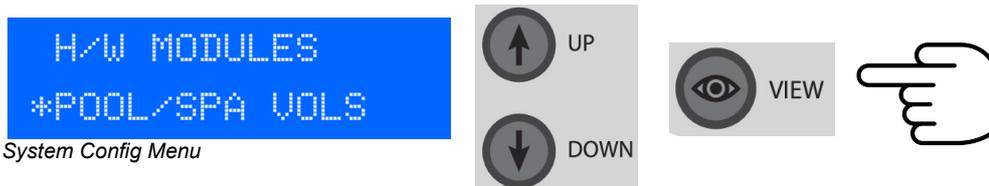*System Config Menu*

2. Use the UP & DOWN buttons to navigate to the setting you wish to change, and then press VIEW to begin editing the value.
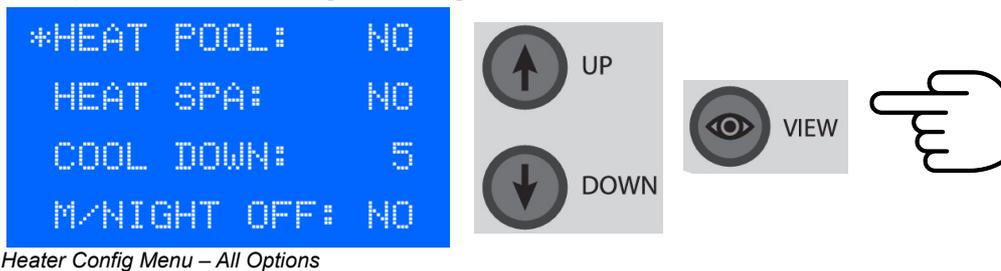
```
*HEAT POOL:     NO
 HEAT SPA:      NO
 COOL DOWN:      5
 M/NIGHT OFF: NO
```
Heater Config Menu – All Options

3. Use the UP & DOWN buttons to set the value as required, then press VIEW to save the changes.

```
 HEAT POOL:     NO
*HEAT SPA:     YES
```

Note: the value will be blinking while editing.

HEAT POOL: (YES / NO)

This will allow the gas heater to operate when the system is in POOL mode.

HEAT SPA: (YES / NO)

This will allow the gas heater to operate when the system is in SPA mode.

*Note: To disable the heater controller, set both **HEAT POOL** and **HEAT SPA** to **NO.***

COOL DOWN: (number of minutes)

Number of minutes required for the gas heater to cool down before allowing the filtration pump to turn off. This can be useful to dissipate excess residual heat which may cause nuisance tripping of the over-temperature limit switch, or in some cases damage to the plumbing. *Note: The COOL DOWN timer is canceled if the filtration mode is set to OFF.*

MIDNIGHT OFF: (YES / NO)

Enabling this feature will force the heater to OFF mode at every crossing of midnight. This is useful to avoid accidentally leaving the heater on for extended periods, especially in circumstances where where bottled gas is used.

Solar Configuration

The Pool Lab EXP includes an integrated solar controller with an optional economy mode feature that will prioritize solar heating over the primary heater when solar heat is available. See next page for details.

1. From the SYSTEM CONFIG menu, navigate to SOLAR CONFIG using the UP & DOWN buttons, then press VIEW


```
HEATER CONFIG
*SOLAR CONFIG
```
System Config Menu

2. Use the UP & DOWN buttons to navigate to the setting you wish to change, and then press VIEW to begin editing the value.


```
*SOLAR POOL:    NO
 SOLAR SPA:     NO
 ECON MODE:    OFF
 ISOLATED:     YES
 FILT O'RIDE: NO
 ROOF         48.6
 INLET        23.5
 FILT CIRC    23.6
```
Solar Config Menu – All Options
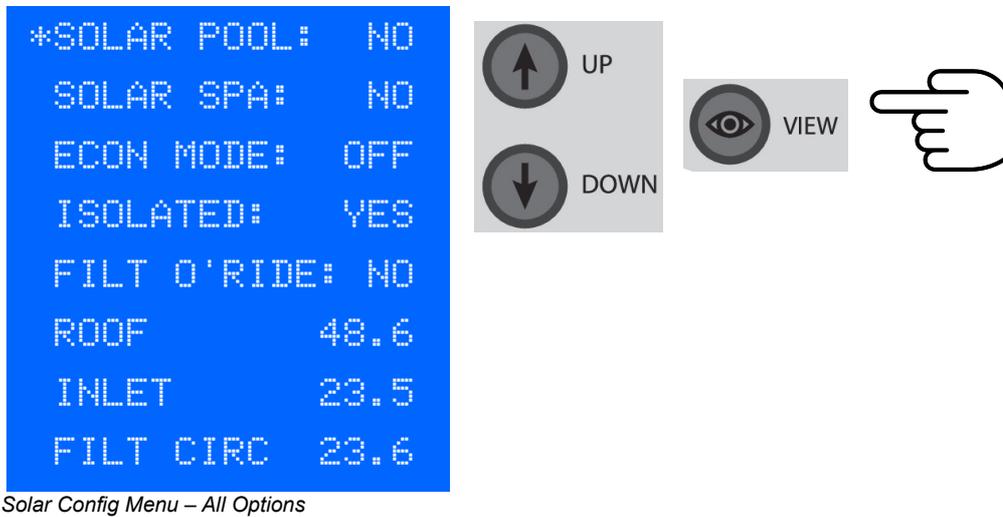
3. Use the UP & DOWN buttons to set the value as required, then press VIEW to save the changes.


```
*SOLAR POOL: YES
 SOLAR SPA:    NO
```

Note: the value will be blinking while editing.

SOLAR POOL (YES / NO)

For non-isolated solar systems such as retro-fit / solar boost pump or valve operated solar, this will allow the solar heating system to operate when the system is in POOL mode.

For ISOLATED solar systems this will allow the solar heating system to heat the pool in either POOL or SPA mode, and the solar controller will be bound to the pool set temperature.

SOLAR SPA (YES / NO)

This will allow the solar heating system to operate when the system is in SPA mode.

*Note: To disable the solar heating controller, set both **HEAT POOL** and **HEAT SPA** to **NO**.*

ECON MODE (ON / OFF)

Economy mode will give priority to solar heating when solar heat is available. This will only take effect when both SOLAR and HEATER are in use at the same time.

If the solar system is isolated, then this will only affect operation in POOL mode.

This setting is particularly useful for saving energy when a combination of gas and solar heating is used. The gas heater will only operate when there is insufficient solar heat available.

ISOLATED (YES / NO)

Set to YES if the solar heating system is isolated from the filtration system, and can be run independently of the filtration system.

For valve controlled solar systems or solar boost (retro-fit) systems that require the filtration pump to be running to operate, set this to NO.

When set to YES the solar controller will always use the temperature target set for POOL mode, and will allow solar heating of the pool even if the system is in SPA mode.

When set to NO the solar controller will select the temperature target based on whether the system is in POOL or SPA mode. If the system also has a gas heater fitted, then the gas heater will be inhibited for a short time every time the solar turns ON – this is to allow some time for air to evacuate the solar system and protect the gas heater from thermal shock.

FILT O'RIDE (YES / NO)

The filter override function will allow the solar controller to override the filtration timer periods when the filtration system is in AUTO mode. This is useful for solar systems that require the filtration pump to be running, as it will allow for solar heating outside the filtration timer periods.

The override function will only operate when the solar system is on, and there is sufficient solar heat available, and the water temperature is below the set target.
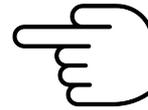
Auxiliary Configuration

The Pool Lab EXP Auxilliary outputs can be configured for general purpose switching, or be bound to one of several pre-set functions (see next page for details). Alternatively outputs can also be disabled completely.

1. From the SYSTEM CONFIG menu, navigate to AUX CONFIG using the UP & DOWN buttons, then press VIEW

```
  SOLAR CONFIG

 *AUX CONFIG
```
System Config Menu

UP
DOWN
VIEW

2. Use the UP & DOWN buttons to navigate to the AUXILLIARY output you wish to configure, and then press VIEW.

```
 *AUX1       ENABLE

  AUX2       ENABLE
```
Aux Config Menu
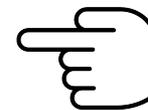
UP
DOWN
VIEW

3. Use the UP & DOWN buttons to navigate to the configuration item you wish to change, then press VIEW to begin editing the value.

```
 *AUX1:      ENABLE

  INTERLOCK:     NO

  Allow w/spa:YES
```
Aux1 Config Menu – all options

UP
DOWN
VIEW
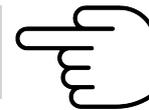
4. Use the UP & DOWN buttons to set the value as required, then press VIEW to save the changes.

```
 *AUX1:       SOLAR

  INTERLOCK:    YES
```

UP
DOWN
VIEW
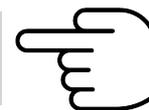
Note: the value will be blinking while editing.

AUX[x] (multiple options – see below)

Each auxiliary output can be configured to one of the following functions:

DISABLED: Output disabled, and associated controls hidden.

ENABLE: General purpose output with timer and ON - OFF – AUTO control.

SOLAR: Solar pump output controlled by the integrated solar controller.

HEATER: Heater output controlled by the integrated heater controller.

FILTER: Output synchronized with the filtration pump.

Alternatively, auxiliary outputs can be placed into the following pre-set labeled groups:

POOLLIGHT - SPA LIGHT - SPA BOOST - SPA BLOWER

INFLOOR – CLEANER - FOUNTAIN

Note: Multiple auxiliary outputs can be assigned to a single group. Each group has its' own timer and ON – OFF – AUTO control.

INTERLOCK (YES / NO)

If set to YES this output will only be allowed to operate when the filtration pump is running.

If set to NO this output will operate independently.

Ensure this is set to YES for any pumps that require the filtration system to be running. Eg. Retro-fit solar system boost pumps.

ALLOW w/ SPA (YES / NO)

If set to NO this output will be forced off when the system is in SPA mode.

This feature can be useful for preventing certain nuisance situations when heating the spa.

For example, prevent in-floor cleaning systems with heads in the spa from operating, or prevent solar systems that return water to the spa from operating.

Valve Configuration

The Pool Lab EXP can control up to 4 automated flow control valves.

Valve outputs 1 and 2 have a fixed configuration, and will always operate as pool / spa suction and return flow control valves.

Valve ouptuts 3 & 4 can be configured for general purpose flow control, or be bound to one of several pre-set functions (see next page for details). Alternatively these valve outputs can also be disabled completely.

1. From the SYSTEM CONFIG menu, navigate to VALVE CONFIG using the UP & DOWN buttons, then press VIEW

AUX CONFIG
*VALVE CONFIG

Valve Config Menu ... *System Config Menu*
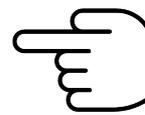
2. Use the UP & DOWN buttons to navigate to the VALVE output you wish to configure, and then press VIEW.

*VLV3   DISABLE
VLV4   DISABLE

Valve Config Menu
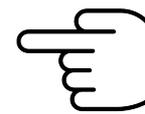
3. Use the UP & DOWN buttons to navigate to the configuration item you wish to change, then press VIEW to begin editing the value.

*VLV3:   ENABLE
INTERLOCK: NO
Allow w/spa:YES

Valve1 Config Menu – all options
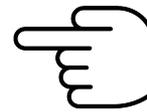
4. Use the UP & DOWN buttons to set the value as required, then press VIEW to save the changes.

*VLV3:   INFLOOR
INTERLOCK: YES
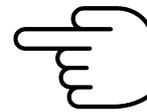
Note: the value will be blinking while editing.

VLV[x] (Multiple options – see below)

Valve 3 and Valve 4 can be configured to one of the following functions:

      DISABLED: Valve disabled, and associated controls hidden.

      ENABLE: General purpose valve with timer and P1 - P2 – AUTO control.

      SOLAR: Solar flow diverter valve controlled by the integrated solar controller.

      HEATER: Heater flow diverter controlled by the integrated heater controller.

      POOL/SPA: Valve synchronized with POOL / SPA mode (same as Valve 1 & 2).

Alternatively, valves can be placed into the following pre-set labeled groups:

      INFLOOR – CLEANER - FOUNTAIN

INTERLOCK (YES / NO)

If set to YES this valve will only be allowed to operate when the filtration pump is running.

If set to NO this valve will operate independently.

ALLOW w/ SPA (YES / NO)

If set to NO this output will be forced to P1 (Position 1) when the system is in SPA mode.

This feature can be useful for preventing certain nuisance situations when heating the spa.

For example, to prevent in-floor cleaning systems from operating while the spa is in use.

USER PREFERENCES - SETTINGS

User preferences can be changed at any time via the menu system on your Pool Lab Salt Chlorinator. With a Pool Lab EXP connected and pool and/or spa heating configured in the SYSTEM CONFIG menu, additional settings for setting the pool and spa temperatures will appear in the SETTINGS menu.

Accessing the Settings Menu

1. The SETTINGS menu is accessed via the MAIN MENU.
   From the HOME VIEW press and hold the VIEW button for 3 seconds

POOL **AUTO** ON OFF

pH:7.4 CL:2.3

Home View (shown as it appears with ASP connected)

VIEW

*Press & Hold
for 3 seconds*
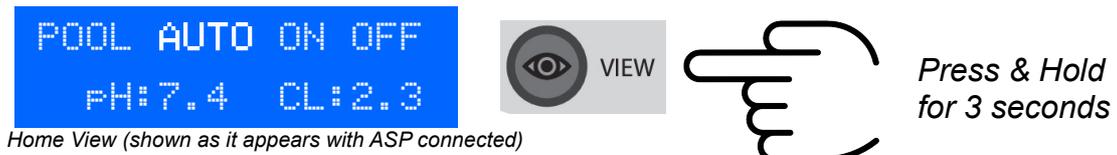
2. Navigate to SETTINGS using the UP & DOWN buttons, then press VIEW

*SETTINGS

ASP TOOLS

Main Menu

UP

DOWN

VIEW

3. Use the UP & DOWN buttons to navigate to the setting you wish to change, then press VIEW to begin editing the value.

*POOL TEMP: 29.0

SPA TEMP: 32.5

Settings Menu

UP

DOWN

VIEW

4. Use the UP & DOWN buttons to set the value as required, then press VIEW to save the changes.

*POOL TEMP: **27.5**

SPA TEMP: 32.5

UP

DOWN

VIEW

Note: the value will be blinking while editing.

Note: options available in the settings menu depend on your system configuration.

Pool Temperature

Use the UP/DOWN buttons to adjust the value between 0 – 40°C (default setting 25).

This temperature limit will be used for gas and solar heating when the system is in POOL mode.

In the case of an ISOLATED solar system that always returns water to the pool, this temperature limit will be used for solar heating in both POOL and SPA modes. This allows the solar system to heat the pool while the spa is in use.

Gas heating will only be used in POOL mode if the HEATER configuration item HEAT POOL is set to YES.

Solar heating will only be used in POOL mode if the SOLAR configuration item HEAT POOL is set to YES.

Spa Temperature

Use the UP/DOWN buttons to adjust the value between 0 – 40°C (default setting 35).

This temperature limit will be used for gas and solar heating when the system is in SPA mode.

Gas heating will only be used in SPA mode if the HEATER configuration item HEAT SPA is set to YES.

Solar heating will only be used in SPA mode if the SOLAR configuration item HEAT SPA is set to YES.
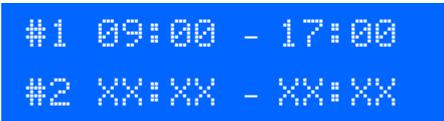
Special Scenario: In the case of an ISOLATED solar system that always returns water to the pool, only the POOL temperature limit will be used for solar heating the pool in either POOL or SPA mode. This allows the solar system to heat the pool while the spa is in use.

OPERATING GUIDE

Once setup and configuration is complete, controls for the EXP module outputs will be available in the top level views. These are accessed by pressing the VIEW button from the HOME VIEW.

AUXILIARY CONTROLS

See below for a complete list of top level views and associated controls. Views available will depend on your system configuration. Views for features that are not configured will be skipped.

TOP LEVEL VIEW	BUTTON FUNCTIONS
Home View POOL AUTO ON OFF pH:7.4 CL:2.3	Press VIEW to access the top level views
Time & Date 19:37 10/10/2024	Press VIEW to advance to the next view Press UP or DOWN to set time and date Press BACK to return to the HOME VIEW
Filtration Timers #1 09:00 - 17:00 #2 XX:XX - XX:XX	Press VIEW to advance to the next view Press UP or DOWN to set timers Press BACK to return to the HOME VIEW
Pool / Spa Mode POOL/SPA MODE POOL	Press VIEW to advance to the next view Press MODE to change POOL / SPA mode Press BACK to return to the HOME VIEW *Requires POOL and SPA volume > 0*
Heater HEATER ON OFF SPA SET: 29.0	Press VIEW to advance to the next view Press MODE to turn heater ON / OFF Press UP or DOWN to set temperature Press BACK to return to the HOME VIEW *Requires configured Heater*
Solar SOLAR ON OFF POOL SET: 29.0	Press VIEW to advance to the next view Press MODE to turn solar ON / OFF Press UP or DOWN to set temperature Press BACK to return to the HOME VIEW *Requires configured Solar*

TOP LEVEL VIEW	BUTTON FUNCTIONS
AUX1 – AUX9 AUX1 MODE T auto on **OFF** >	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires AUX[x] enabled*
VALVE3 – VALVE4 VALVE3 MODE T auto p2 **P1** >	Press VIEW to advance to the next view Press MODE to toggle AUTO/P2/P1 Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires VALVE[x] enabled*
Pool Lights POOL LIGHTS T **AUTO** on off >	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires at least one AUX configured as POOL LIGHTS*
Spa Lights SPA LIGHTS T **AUTO** on off >	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires at least one AUX configured as SPA LIGHTS*
Spa Boost SPA BOOST T **AUTO** on off >	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires at least one AUX configured as SPA BOOST*
Blower BLOWER T **AUTO** on off >	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires at least one AUX configured as BLOWER*

TOP LEVEL VIEW	BUTTON FUNCTIONS
Infloor INFLOOR　　T AUTO on off　>	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires at least one AUX and/or VALVE configured as INFLOOR*
Cleaner CLEANER　　T AUTO on off　>	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires at least one AUX and/or VALVE configured as CLEANER*
Fountain FOUNTAIN　　T AUTO on off　>	Press VIEW to advance to the next view Press MODE to toggle AUTO/ON/OFF Press UP or DOWN to set timers Press BACK to return to the HOME VIEW *Requires at least one AUX and/or VALVE configured as FOUNTAIN*

AUXILIARY TIMERS

Each auxiliary (AUX1, AUX2, AUX3...etc.), valve (VALVE3 and VALVE4) and each grouped output (POOL LIGHTS, SPA LIGHTS, etc.) has an associated timer for operation in AUTO mode.

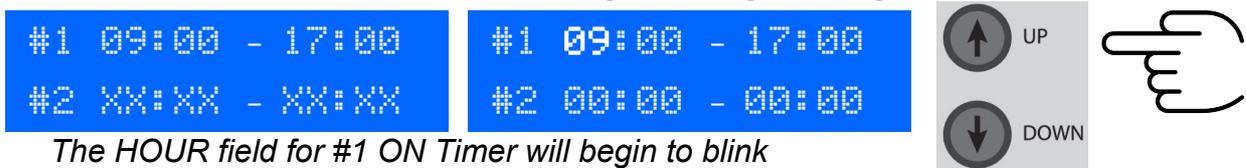To access the timer for an AUX, VALVE, or group:

1. From the HOME VIEW, press the VIEW button until the AUX/VALVE/Group you wish to alter the timer for is shown.

```
POOL AUTO ON OFF          AUX1 MODE    T
  pH:7.4  CL:2.3          auto on OFF  >
```
VIEW

2. Press either the UP or DOWN button once to show the timers view for this output.

```
AUX1 MODE    T            #1 09:00 - 17:00
auto on OFF  >            #2 XX:XX - XX:XX
```
UP
DOWN

3. Press either the UP or DOWN button again to begin editing the timers

```
#1 09:00 - 17:00          #1 09:00 - 17:00
#2 XX:XX - XX:XX          #2 00:00 - 00:00
```
UP
DOWN

The HOUR field for #1 ON Timer will begin to blink
Note: Disabled timers will now be visible

4. Use the UP and DOWN buttons to adjust the time as required then press the VIEW button to advance to the next field.

```
#1 11:00 - 17:00          #1 11:00 - 17:00
#2 00:00 - 00:00          #2 00:00 - 00:00
```
UP
DOWN
VIEW

The MINUTES field for #1 ON Timer will now begin to blink

5. Advance through all the timer fields, adjusting as required. To disable a timer set the ON and OFF times equal to each other. Once you advance past the final field, the new timer settings will be saved.

```
#1 11:00 - 17:00          #1 11:00 - 17:00
#2 06:00 - 08:30          #2 06:00 - 08:30
```
VIEW

TROUBLESHOOTING GUIDE

SYMPTOM / DISPLAY MESSAGE	POSSIBLE CAUSE	SOLUTION
Display Message: "TEMP SENSOR ERR" followed by one of the next three messages (see below)	Poor connection or failed temperature sensor, broken or damaged temperature sensor wires etc. Most common failures are open circuit (eg. Broken wire) or closed circuit (eg. Short circuit)	Check connections at terminal block. Check sensors with an ohms meter. Resistance should be approx. 10k ohms at 25 degrees celcuis. Note: Resistance increases in cold conditions, decreases in hot conditions. At 10 degrees celcius the resistance is approx 20k ohms. At 40 degrees celcius resistance is approx. 5k ohms.
"FILTER SENSOR"	Main filtration circuit temperature sensor.	
"COLD/INLET SEN'R"	Solar inlet (cold) sensor	
"HOT/ROOF SENSOR"	Solar roof or (hot) sensor	
Display Message: "HEATER COOL DOWN" Filtration pump continues to run outside of timer period.	This occurs when the system is in AUTO mode, and the filtration period has ended, and the heater has been recently operating. This allows time for the heater to cool down before stopping the filtration pump.	No action required. The default cool down period is 5 minutes and this is adjustable in the HEATER CONFIG menu. Switch the filtration mode to MANUAL OFF if you wish to override the cool down period.
Display Message: "HEATER OVERRIDE" Filtration pump continues to run outside of timer period.	Filtration period has been extended by the HEATER OVERRIDE function. Filtration pump will continue to run until the water temperature is at set point.	No action required. This feature is disabled by default. See HEATER CONFIG menu.
Display Message: "SOLAR OVERRIDE" Filtration pump continues to run outside of timer period.	The filtration pump is running due to the SOLAR OVERRIDE function. This turns the filtration pump on whenever the solar heating system is running.	No action required. If your solar system does not require the filtration pump to be running, then this feature can be disabled in the SOLAR CONFIG menu.

WARRANTY INFORMATION

DOMESTIC APPLICATIONS

3 Year Warranty – Parts (not including consumables or maintenance items*)
3 Year Warranty – Workshop Repair Labour (not including maintenance items*)
1 Year Warranty – In-field Labour (within 30km of an authorised service agent)

COMMERCIAL APPLICATIONS

1 Year Warranty – Parts (not including consumables or maintenance items*)
1 Year Warranty – Workshop Repair Labour (not including maintenance items*)
1 Year Warranty – In-field Labour (within 30km of an authorised service agent)

CONDITIONS

- **In-field labour charges will apply to units installed for a period exceeding 12 months.**
- In-field labour charges may apply within the 12 month period if location is more than 30 km from an authorised service agent.
- Freight charges are the responsibility of the home owner.
- Under no circumstances shall the manufacturer be liable for incidental or consequential damages, inconvenience or expenses in connection with the removal, installation or replacement of equipment.
- Under no circumstances shall the manufacturer be liable for damage caused to persons or property as a result of use of this equipment.
- Charges will apply during the warranty period if installation or method of operation is not is accordance with **our** instructions.
- Warranty extending beyond 1 year is not transferable.
- **Purchase receipt** must be produced to claim warranty.
- The use of bore water may void warranty where not managed correctly**, and any associated discolouration or staining is not covered by warranty.

THE FOLLOWING INVALIDATES WARRANTY
- Incorrect installations
- Incorrect use
- Misuse
- Water in excess of 40 degrees Celcius, or lower than 0 degrees Celcius.
- Water pressure exceeding 250 kpa
- Where used for a purpose other than described in this manual
- Use of non-genuine components, reagents or indicators
- Use of chemicals or optional equipment not authorised for use by Pool Lab
- Where immediate action has not been taken to rectify a problem

* Maintenance items include the acid dosing system squeeze tube, rollers, injection point non-return valve and fume-stop cap components.
** Always use the Langlier Index to determine the ideal pH for bore water. Damage caused by the formation of scale is not covered by warranty.

NOTES