

# SG Series

## User Manual for SG Series Saltwater & Mineral Chlorinators



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## IMPORTANT

***If the power cord is damaged the unit must be returned to Pool Controls for repair.***

***Always read the instructions and warnings on chemical containers before using chemicals.***

**Serial Number.....**

**Date of Installation.....**

**Installed by.....**



# Manufacturer's Warranty

## **Pool Controls Manufacturer's Warranty**

Pool Controls products come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The benefits under this warranty are in addition to other rights and remedies under a law in relation to the goods.

## **3 Year Warranty on New Domestic Installations**

Pool Controls warrants all its products used in new domestic installations to be free from defects in material and/or workmanship for a period of 3 years from the original date of purchase or installation.

## **2 Year Warranty on Replacement Parts**

Pool Controls warrants replacement parts used in domestic installations, including multi-electrodes (probes), solenoid valves and electrolytic cells (but excluding wearing parts such as tubing and squeeze tubing) to be free from defects in material and/or workmanship for a period of 2 years following purchase.

## **Exclusion for Wearing Parts**

This warranty does not extend to wearing parts, in particular the squeeze tubes fitted in dosing pumps. Squeeze tubes should be replaced every **six months** by a suitably qualified technician. Pool Controls is not liable for any failure of its products or other damage caused by failure of a squeeze tube that has been used for more than six months.

## **WARRANTY OBLIGATIONS OF POOL CONTROLS**

If a defect in workmanship or materials in any Pool Controls product covered by this warranty is discovered during the term of the warranty, and provided the warranty holder follows the procedure set out below, Pool Controls will repair or replace **that item** at the option of the warranty holder.

## **PROCEDURE FOR CLAIMING UNDER THIS WARRANTY**

In order to claim under this warranty, the warranty holder must:

- Contact Pool Controls Service as soon as possible after the discovery of the defect and in any event, within the relevant warranty period;
- Confirm date of installation;
- Confirm that the installation was completed by a suitably qualified technician, as set out in the installation manual; and
- If required, arrange for the relevant Pool Controls' product to be returned to Pool Controls for repair, and the warranty holder is responsible for the cost and risk of any freight or transportation to and from Pool Controls.

## **CALL OUT FEES**

- This is a “Back to Base” Warranty, which means that if the Pool Controls product needs to be serviced, replaced or repaired at a place other than Pool Controls’ premises, a call out fee will be charged to cover the cost of travel by an authorised Pool Controls technician. Please note that this call out fee will NOT be charged when the relevant Pool Controls product is returned to Pool Controls for repair.
- If an authorised Pool Controls technician repairs or replaces a Pool Controls Product and this warranty does NOT apply, a fee for labour and parts supplied will be charged in addition to the call out fee.
- If the Pool Controls product needs to be returned for repairs under this warranty, the warranty holder is responsible for the cost and risk of any freight or transportation to and from Pool Controls.

## **WARRANTY EXCLUSIONS**

- This warranty is for domestic installations only. Where Pool Controls products are installed for a commercial application this warranty does not apply.
- This warranty extends to the original owner only, beginning on the date of installation and is not enforceable by any other party without the prior written consent of Pool Controls.
- Pool Controls is not responsible for any cost of freight or transportation to or from its Service Department.
- Pool Controls is not liable under this warranty if the installation of the Pool Controls product was not carried out by a suitably qualified technician.
- To the extent permitted by law, Pool Controls is not liable for:
  - any incidental or consequential loss incurred in connection with the removal or replacement of the Pool Controls product under this warranty; or
  - product failure resulting from misuse, freezing, accident, negligence, improper installation or inadequate maintenance.
- To the extent permitted by law, Pool Controls disclaims all other warranties, either express or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose with regard to Pool Controls products, parts and/or any accompanying written materials.

## **REGISTER YOUR WARRANTY NOW**

Go to [www.poolcontrols.com.au](http://www.poolcontrols.com.au), click on the warranty registration tab to fill in your details.

## **CONTACT POOL CONTROLS**

Pool Controls is based at 20 Abrams Street, Balcatta, Western Australia. We also have service technicians based in NSW, Queensland and Victoria.

- Service Email: [service@poolcontrols.com.au](mailto:service@poolcontrols.com.au)
- Service Phone: 1300 550 010

## **What’s in the box?**

- SG Series® Power Supply, Cell and Cables
- User Manual
- 40/50 Bushes and Mounting hardware (raw plugs, screws and paper template)

## How it works:

A salt/mineral chlorinator works by putting a dc current through an electrolytic cell in a flow of salted water. Salt/minerals is made up of sodium/magnesium and chloride ions. Electrolysis of these salts produces chlorine gas, which dissolves almost instantly to form free chlorine in the water. This free chlorine is a highly effective sanitiser for your pool.

The SG Series® constantly adds a dose of chlorine to the water over the operating period of the system. The amount of chlorine added depends upon the cell output and the running time.

Generally, a salt water / mineral pool is run for around 8 hours per day in summer and 2 to 4 hours per day in winter. The summer operating periods are usually in the early morning and later evening. This allows a chlorine residual to build up for pool use during the day.

**The filter system should always be running when the pool is being used.**

### Optional pH Control

When chlorine is added to water the pH always changes – this is because chlorine is not a neutral chemical. The pH will slowly rise as chlorine is produced in a salt/mineral water system. A rise in pH greatly reduces the effectiveness of the chlorine as a sanitiser, so it is important to ensure that the pH remains in the correct range.

The pH of the water can be lowered by the addition of acid – and if your SG Series® has the optional pH control, this can be done automatically. The SG Series® uses a sophisticated algorithm to calculate how much chlorine has been produced by the cell, and how much acid needs to be dosed to correct the resultant pH rise.

The algorithm can be adjusted if installed on a concrete/plaster pool. When adjustments are made it should be in small values with the pool then monitored for effectiveness.

**Note:** while the algorithmic pH control is effective it does not measure pH. pH measurement and checking must be done manually to make sure the pH is correct.

## Initial pool balance

Before you begin using the Chlorinator, make sure your pool water is balanced as follows:

### Salt and Minerals – only add salt/minerals after checking the levels

There should be between 3000 and 5000ppm of TDS in the pool ideally 4000ppm. This is achieved by adding 4kg of salt for every 1000 litres (1m<sup>3</sup>) of pool volume. Note that this amount of salt will take time to dissolve.

**Minerals:** the conductivity of minerals is different to pure salt. All TDS testers are calibrated for sodium chloride salt. You will need less weight of minerals to achieve an equivalent TDS to salt – follow the mineral instructions.

**Note: keep salt/minerals below 7500ppm to avoid overloading the cell and causing shutdown. Only add after checking the level.**

## **Chlorine**

If it is a new installation, add enough chlorine (liquid or granular) to achieve a reading of 3ppm on an appropriate test kit.

## **Stabiliser**

If the pool is outdoors, it is vital that stabiliser (also known as cyanurate and cyanuric acid) be added and maintained at 50ppm. This compound reduces chlorine destruction due to sunlight. However, too much stabiliser will reduce the effectiveness of chlorine and can result in poor quality water so ensure stabiliser does not exceed 80ppm.

## **pH**

For chlorine to be effective, the pH must be within a certain range. This is usually between 6.8 (fibreglass/liner pools) or 7.2 (concrete/plaster) and 7.8.

Adjust pH down with acid – powder, liquid sulphuric or liquid hydrochloric. Be very careful with acid as it can be harmful and corrosive.

**Minerals:** the magnesium in mineral salts can form a soft scale on the cell even though it is reversing polarity. This is minimised by keeping the pH at the lower range for your pool type. The use of hydrochloric acid is recommended for magnesium mineral systems.

## **Total Alkalinity (TA)**

Total alkalinity is also known as carbonate hardness or TA for short. The recommended level is between 80 and 120ppm.

TA is related to pH in that it stops the pH from varying quickly with small additions of acidic or alkaline chemicals. When the TA is low it is almost impossible to control the pH. To raise the TA, buffer (sodium bicarbonate) is added. This must be done slowly as buffer will also cause the pH to rise. As an approximate rule every increase of 20ppm of TA will also cause a 0.1 rise in pH. Once buffer is added it should be left to mix in the pool for a few hours before reducing the pH.

## **Phosphates and Nitrates**

Phosphate and ammonia nitrogen will make your garden green – and they will do the same thing to your pool. Check for phosphates and add phosphate remover if necessary. Don't let fertiliser get into your pool! Phosphates are also in some cleaning products – check the label if using around your pool.

# Installation Guide

## Installation Diagrams

For most installations, please refer to the installation diagram on page 8.  
If your SG Series® has the optional pH control, refer to the installation diagram on page 9.

## Choosing a good location

The SG Series® is manufactured from weather resistant materials and is designed for operation in full sun and rain. However, your SG Series® will benefit if it is protected from the weather.

Choose a well ventilated area to allow for efficient cooling. Installing the unit in a hot and closed shed or box may lead to overheating and activate the internal protective thermal cut-out.

The SG Series® Power Supply should not be mounted in areas where chemicals are stored (eg acid and chlorine) as vapours from these chemicals are corrosive and may damage the electronic controls within the unit.

Insect intrusion (particularly ants) can cause problems with all equipment. Ensure that the pool equipment area is kept free of insects as much as possible. Insect intrusion is not covered under the warranty.

## Installing the SG Series® Power Supply

Locate the SG Series® Power Supply close to the Cell/Housing and filtration pump so that both may be connected easily.

Mount the SG Series® Power Supply at least 1.5m above the ground and at least 3m from the pool water. A mounting template has been provided with the SG Series® that shows you where to place screws on either a wall or post.

Connect the SG Series® Power Supply to the mains power outlet of the pool area and make sure this outlet meets all applicable Australian Standard at the time of installation.

The PUMP socket outlet in the base of the SG Series® Power Supply 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 the SG Series® Cell

The SG Series® cell housing assembly should be plumbed into the pool return line after all other accessories (and prior to any heating take-offs).

Remember that the cell will need to be removed from its housing periodically for cleaning – do not place it where its removal will be obstructed.



Note any water flow direction on the cell housing and insure the cell housing is installed so that water will flow in this direction.

Connect the cell cable to the cell connector on the base of the SG Series<sup>®</sup> Power Supply. Ensure that all 3 connections (2 for cell power and 1 for gas sensing) are colour matched and not loose.

### **pH Control (optional)**

Units with pH control have an injection fitting and a peristaltic pump which must be installed. Refer to the installation diagram on page 9 for details. Mount the peristaltic pump unit adjacent to the SG Series<sup>®</sup> Power Supply, as it is hard-wired to this power supply.

Cut a length of tubing that will reach from the base of the peristaltic pump to the injection fitting. Connect one end of the tubing to the outlet side of the peristaltic pump (the direction of flow is indicated by an arrow on the front cover of the pump.) Connect the other end of the tube to the injection point.

Cut another length of tubing that will reach from the base of the peristaltic pump to the base of the acid drum. Position the acid drum in a safe and secure location, preferably about 2 metres from the SG Series<sup>®</sup>.

Connect the one end of this tube to the inlet side of the peristaltic pump (the direction of flow is indicated by an arrow on the front cover of the peristaltic pump.)

Drill an 8mm hole in the lid of the acid drum and pass the tubing through the hole in the drum lid. Place a sinker on to the end of the tubing that will be in the drum and then attach the drum filter. Note that the drum filter incorporates a non-return valve to prevent back-flow into the chemical drum.

Before placing the tubing into the drum, measure the tubing against the outside of the drum and wrap several turns of PVC tape around the tubing above the drum lid so that the drum filter will be 10-15mm above the bottom of the drum. Lower the drum filter and sinker into the drum and screw on the lid.

### **Pool Light Outlet (optional)**

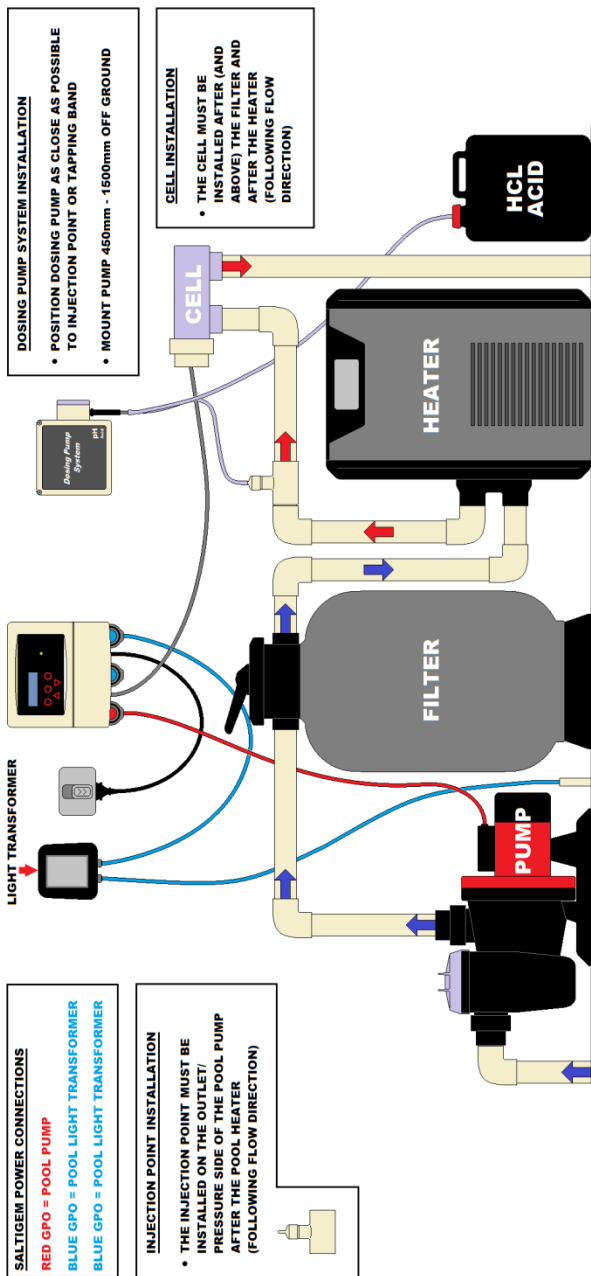
If your SG Series<sup>®</sup> has a light power outlet on its base, this can be used to run one or two 150W pool light power supplies. This outlet is timed, allowing pool lights to be set to come on and turn off automatically.

### **Auxiliary Power Outlet (optional)**

If your SG Series<sup>®</sup> has a third power outlet on its base, this can be used to run other pool equipment such as a Delta UV unit, or an ozone generator. This outlet is timed as for the pump outlet, so accessories can be set to come on and turn off automatically with the pump.



# OPTIONAL pHP INSTALLATION DIAGRAM



## The SG Series Front Panel

### SG Series<sup>®</sup> Display

The SG Series<sup>®</sup> uses a two line LCD display to provide the user with information.



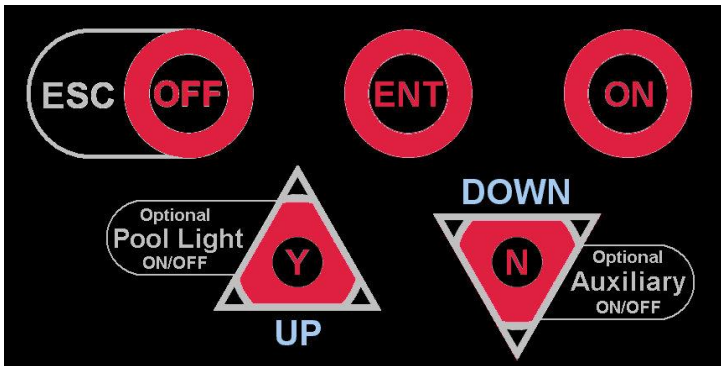
The first line of the display shows the current time and the cell status and output. In the example above the time is 10.15am and the Cell is “OFF”. If the Cell is on, the output of the Cell will be displayed. If the output of the Cell has been set at lower than 100%, “CELL OFF” will be displayed intermittently even while the unit is running as the Cell regulates output. (See Chlorine Output Menu on page 16 for more details)

The second line of the display shows the automatic timer status. In the example above, the automatic timer status is “OFF” and the display is telling you that the SG Series<sup>®</sup> will turn on again at 17:00 or 5pm.

Note that the SG Series<sup>®</sup> displays the time using a 24 hour clock.

## SG Series Operational Buttons

Your SG Series® has 5 buttons that allow you to control the various functions available via the SG Series® Menu system.



Each button is labelled with its primary function either on the button itself, or adjacent to it. Secondary functions are labelled within a curved white outline next to the relevant button. The buttons are backlit to show which are active at any given time, although the ESC/OFF button is always available to take you back to the home screen.

### ON Button

#### Turn the System On Manually

Press the ON button once to switch the SG Series® and the pool pump on manually. The SG Series® will default back to AUTO and turn itself off automatically at the end of the next programmed FILTER CYCLE (and this time will be displayed on the LCD).

#### Increasing Manual Run-time in Hourly Increments

Press the ON button repeatedly (or hold the button down) to increase the manual run time in hourly increments. The run time is displayed on the LCD. When the desired run time has been reached, press the ENT button to confirm your selection and the system will commence operation.

### ESC/OFF Button

#### Turn the System Off Manually

If the SG Series® and pool pump are running, pressing this button will turn them off manually. The SG Series® will automatically turn on again at the start of the next FILTER CYCLE (and this will be displayed on the LCD).

#### Return to Home Screen

If you have unintentionally accessed a SG Series® Menu that you don't actually require, pressing the ESC/OFF button allows you to return to the home screen at any time.

## ENT Button

Use this button to enter the SG Series® Menu system and to access the various options in each Menu. Use the Y/UP and N/DOWN buttons to scroll through menu options and when your desired menu option is displayed on the LCD, press ENT to access that option.

## Y/UP Button and Optional Pool Light

If you have accessed the SG Series® Menu by pressing the ENT button, press the Y/UP button to scroll upwards through the various menu options. Some menu options will prompt a yes or no answer. If you wish to answer “yes”, press the Y/UP button.

If your SG Series® also controls your pool lighting (optional), you can turn the lights on or off manually by pressing the Y/UP button. For multi-coloured lights, hold the Y/UP button down to cycle through the various colours and release once the desired colour is reached.

## Navigating the SG Series Menu System

There are two aspects to the general SG Series® Menu system – the Timer Menu and the Chlorine Output Menu.

Access the SG Series® Menu system by pressing the ENT button and following the prompts on the LCD. If you find you have ended up in a part of the Menu system unintentionally, you can return to the Home Screen by pressing the ESC/OFF button at any time.

Use the Y/UP and N/DOWN buttons to scroll through the various menu options until the desired option is displayed on the LCD. Use the ENT button to confirm that you wish to select that option.

Once accessed, use the Y/UP and N/DOWN buttons to adjust operational settings up or down – and confirm adjustments by pressing ENT. To cancel any adjustments, simply press ESC/OFF to return to the Home Screen.

## Timer Menu

### Setting the time

Once you have installed your SG Series® and turned it on, you will need to set the correct time on the SG Series' 24 hour clock.

First, access the Menu System by pressing the ENT button. The LCD will display the word TIMER MENU. Select this by pressing the ENT button once more.

Line 2 on the LCD will now read SET TIME HOURS. Press ENT to select this option and then use the Y/UP and N/DOWN buttons- to adjust the hours on the LCD. Confirm the correct hours value by pressing ENT again.

The LCD will now show SET TIME MINUTES. Adjust the minutes using the Y/UP and N/DOWN buttons. When complete, press ENT to return to normal operation.

## Filter Cycles Menu

Your SG Series® has two filter cycles pre-programmed as factory defaults as follows:

|                 |                   |                     |
|-----------------|-------------------|---------------------|
| Filter Cycle 1: | ON at 07:00 (7am) | OFF at 11:00 (11am) |
| Filter Cycle 2: | ON at 18:00 (6pm) | OFF at 22:00 (10pm) |

You can change the start and finish times of each filter cycle to meet your sanitiser requirements and to suit your lifestyle.

To adjust filter cycle start and finish times, press ENT to access the SG Series® Menu system. Press ENT again to select the TIMER menu and then scroll down using the N/DOWN button until ADJUST CYCLES is displayed on the LCD.

Select this option by pressing ENT and the LCD will show the start (ON) time of the filter cycle being adjusted. Use the Y/UP and N/DOWN buttons to adjust the start time. Press ENT to confirm your selection and then the LCD will show the end (OFF) time for that filter cycle. Adjust the OFF time in the same way as the ON time and press ENT to confirm.

After ON and OFF times for the first filter cycle have been adjusted, the ON time for the second filter cycle is shown on the LCD. This can be adjusted in the same way, or if you do not wish to make any changes, simply press ENT to confirm the time shown on the LCD. Follow the same process to either adjust or confirm the OFF time for the second filter cycle, and once this has been confirmed the LCD will display the home screen.

Note: an additional 2 filter cycles can be enabled and programmed via the Advance Settings Menu. For details on how to access this menu, please refer to the Advance Setting Manual (available to download from [www.poolcontrols.com.au](http://www.poolcontrols.com.au)) or call Pool Controls Service on 1300 550 010.

## Running Times

We recommend your system be operated for ***at least 8 hours per day and always run the system when using the pool.***

The amount of chlorine being added to the pool each day is determined by the cell size, the chlorine output settings (See Chlorine Output Menu below) and the number of hours that the SG Series® is operated. As sunlight destroys chlorine, it is recommended that the SG Series® be run mostly in the evening.

Chlorine is added for sanitation but the filter is needed to remove pollutant particles (dust, sand etc) and keep the water looking good. The filter must operate for a reasonable number of hours per day to remove pollutants.

In very hot weather and/or with large bather loads, the pool may need to run for even longer and if necessary, extra chlorine should also be added manually. If there are adverse local conditions – such as windborne dust and debris - the chlorine demand will be higher than normal and you will likely need to operate the system for longer periods to adequately filter the water.

## Light Timer Menu

You can use your SG Series® to turn your pool or garden lighting on and off automatically, you can set the ON and OFF times using the light timer menu.

Press ENT to access the SG Series® Menu system. Press ENT again to select the TIMER menu and then scroll down using the N/DOWN button until LIGHT MENU is displayed on the LCD.

Line 2 on the LCD will now read "AUTO? Y/N". To enable automatic light operation press the Y/UP-button. Line2 will read "Auto ON" for short period before displaying "ON hh:mm".

Adjust the ON time using the Y/UP and N/DOWN-buttons and confirm by pressing ENT. The LCD will now prompt you to set the OFF-time, which is accomplished using the Y/UP and N/DOWN-buttons as before. Press ENT-to confirm the new OFF-time and the LCD will return to the home screen.

To disable automatic light operation, access the LIGHT menu in the way described above and when asked "AUTO? Y/N" - press the N/DOWN button. Line 2 will read "Auto OFF" for short period then the system will return to normal operation and the light can only be operated manually (see below for how to do this).

## Manual Light Operation

If the SG Series® is turned on, the light can be turned on or off manually by pressing the Y/UP-button.

If you have multi-coloured LED lights that cycle through different colours and requiring a power pulse to change effects, you can hold down the Y/UP-button to cycle through the options and release when the desired colour or effect is achieved.



## Controlling the Chlorine Residual

There are two ways of controlling the amount of chlorine entering the pool – by altering the running times and by reducing the SG Series<sup>®</sup> Output. If the pool chlorine residual tests high you can reduce the operating time and/or decrease the Output. If the chlorine residual tests low and the output is already at maximum you will need to increase the operating time and/or add supplementary chlorine.

### SG Series<sup>®</sup> Output Control

The LCD display usually shows the amount of chlorine being produced by the Cell as a percentage of its maximum.

However, this is not the same as the SG Series<sup>®</sup> Output. The Output Control turns the Cell ON/OFF over a short period of time. The Output setting determines how long the ON time is – for example if the Output setting is 60% the Cell will be ON for 60% of the period and OFF for 40% of the period. This is why the Cell will turn ON/OFF if the SG Series<sup>®</sup> Output is below 100%.

## Chlorine Output Menu

To adjust the chlorine output on your SG Series, press ENT to access the SG Series<sup>®</sup> Menu system. Scroll down using the N/DOWN button until CHLORINE OUTPUT is displayed. Press ENT again to select this menu and then use the Y/UP and N/DOWN buttons to adjust the output level. Confirm the adjusted settings by pressing ENT once more.

### Superchlorination

When bathers enter a pool there is a reaction between nitrogen/ammonia compounds from the bathers and the chlorine in the pool. These reactions form chloramines (also called combined chlorine) which are responsible for the “chlorine” odour and for some minor irritations.

These compounds can be broken down by adding free chlorine to a level above 5ppm by the addition of a shock dose of chlorine – also known as superchlorination.

Levels of chlorine immediately adjacent to the SG Series<sup>®</sup> Cell anodes far exceed 5ppm and so a lot of chloramines are destroyed as water passes the Cell.

If the chloramine levels still become high, simply add a shock dose of chlorine or run the SG Series<sup>®</sup> for a long period overnight.

## Advanced Settings Menu

If you are interested in learning more about additional functionality of your SG Series<sup>®</sup>, a detailed **Advanced Settings Manual** is available to download from the Pool Controls website – [www.poolcontrols.com.au](http://www.poolcontrols.com.au) – or call Pool Controls Service on **1300 550 010** for further information.

Advanced Settings comprise:

- WATER TEMP - allows you to compensate for cold water
- SYSTEM DATA - shows service information
- FILTER CYCLES - allows for up to 4 Filter Cycles to be activated and is very useful for seasonal timer adjustments.
- LIGHT controls automatic light operation

## SG Series Status Indicator, Warnings and Safety Shutdowns

There is a STATUS indicator on the front panel that simply shows green (OK) and red (WARNING). The reason for any WARNING will be written on the LCD display. Possible warnings are explained below.

### Low Water Temperature & Salinity



Low water temperature and lower than recommended salt/mineral levels can both cause low conductivity of the water to be detected.

The SG Series® will, however, continue to function and will display this without a red warning indication. Simply check the salt level and make sure it is well above 3000ppm (ideally around 4000ppm).

Check the temperature of the water, and if it is lower than 20°C, you may wish to adjust the Water Temperature setting using Advanced Settings Menu (information on Advanced Settings available via [www.poolcontrols.com.au](http://www.poolcontrols.com.au) or by calling Pool Controls Service on 1300 550 010).

### Gas Detection & Dry-Run Pump Shutdown

This is an important safety feature of the SG Series® as a build-up of chlorine gas can be dangerous.



The display above left shows the Cell being turned OFF after chlorine gas is detected for approximately 10 seconds. If gas is still detected after approximately 2 minutes the pump will also be turned OFF – and the display will read as shown above right.

To re-start the pump, simply press the ON-button (as instructed by the display). This will reset the warnings and allow the pump to run (for a maximum of 3 minutes if gas is still detected).

## High Salt

Too much salt/mineral in the water results in high conductivity and the SG Series® Cell may overheat. The SG Series® will shut down to prevent this.



If the above warning is present, the SG Series® will have shut down to avoid an overload (mandated by electrical standards).

Check the salinity/TDS and water temperature. Salinity/TDS should be kept below 7,500ppm, and ideally will be above 3000ppm.

**The SG Series® is not designed for operation in seawater or brine.**

## Operation Following a Power Failure

The SG Series® unit comes with a timer function built into the operating software. The timer is a 24-hour type with quartz-crystal control. This Timer is backed-up by a Real-Time Clock (RTC) similar to those found in computers.

During a power failure the SG Series® will keep time and maintain AutoMode functions.

If a Filter Cycle is active when power is returned the pump will be turned ON within 1 minute. The SG Series® will keep all its settings and will not need to be re-programmed.

The SG Series® is ideal for use in systems where repeated power cuts occur, such as off-peak power circuits and Queensland's Tarriff33 system.

## Maintenance

Like all equipment the SG Series® will look better and last longer if it is maintained and operated in accordance with these instructions.

### The SG Series® Power Supply

The Power Supply has been design for operation in full sun and weather. However, it will benefit from being under cover. There is little maintenance required however – some Do's and Don'ts –

#### Don't:

- Install it in a small sealed enclosure (so it does not overheat)
- Install it in a very hot unventilated shed (so it does not overheat)
- Allow insects to nest in the unit (because they will prevent it from functioning)
- Install chemical drums under or close to the unit (to prevent corrosion)
- Forget about the unit once installed – it should be checked regularly to ensure that it is working for you

#### Do:

- Install it as per the instructions
- Check it regularly
- Make sure the pool balance is checked regularly

### The SG Series® Cell

The Cell does not have an unlimited life because its anodes (active electrodes) will wear away slowly as it produces chlorine.

Scale forms on the SG Series® Cell cathodes (negative electrodes). Scale is a combination of calcium/magnesium and other mineral salts (usually carbonates). The rate of scale build-up is determined by the amount of use, the pH/calcium hardness/TA and the temperature of the pool water. Generally concrete and plaster pools will scale much faster than fibreglass pools due to higher calcium levels in the water caused by leaching of minerals from the pool surface.

The Cell is manufactured from extremely expensive materials so if it fails early due to lack of maintenance, the pool operating cost will not be as economical as it could have been. Note that bore water generally contains far more minerals than scheme water. If bore water is used it is likely that faster Cell scaling will be seen.

## Cell Cleaning

The SG Series® Cell is self-cleaning, however, some conditions such as very hard water can cause the cell to become scaled over time.

**Do not remove the cell straps (holding the electrodes in place) when cleaning.**

The SG Series® Cell uses an electronic means (polarity reversal) to remove scale from its cathodes. This system works very well in most pools unless there is extreme hardness and/or mineral levels. Even in the extreme cases where scaling does occur the rate at which it occurs is far slower than for normal Cells.

**Minerals:** the magnesium in mineral salts can form a soft scale on the cell even though it is reversing polarity. This is minimised by keeping the pH at the lower range for your pool type. Soft mineral scale can generally be hosed off with a strong jet of water.

If scale has become thick enough to nearly bridge between the Cell electrodes, it is time to clean the Cell. Cells can be cleaned in a solution of hydrochloric acid.

***Please read the warnings and instructions on the acid container.***

To make the acid solution, add 1 part hydrochloric acid to 4 parts water in a suitable container. This solution can be used a number of times so a re-useable container with a lid can be used, but make sure it is stored safely.

Alternatively a commercial Cell Cleaning solution can be used according to the manufacturer's instructions.

The SG Series® unit should be turned off so that any AutoMode functions cannot turn it back on until after the Cell is clean and back in its housing.

Remove the Cell from its housing and immerse in the acid solution. Note that it may foam up and overflow the sides of the container – so take care!

The Cell should not take longer than a few minutes to clean. It may also be possible to remove some or most of the scale with a jet of water.

***Never use a stiff brush or hard implement to clean the cell because this will damage the coating.***

## Trouble-shooting

Before requesting service, you may wish to run through the check list below but feel free to call Pool Controls Service on 1300 550 010 or log a service call via our website – [www.poolcontrols.com.au](http://www.poolcontrols.com.au).

### **If there appears to be low or no Chlorine Residual:**

1. Check stabiliser level is 40ppm – 60ppm. Add if necessary and wait for it to dissolve.
2. Have you added any chemical additives recently?
3. Check pool for phosphates and remove if necessary
4. Is the unit turned on and operating the filter pump?
5. Are the operating hours sufficient?
6. Is the Output set to 100%?
7. When running is the Cell ON? Is it reading 100?
8. Is there enough salt in the water? (4000ppm)
9. Is the temperature of the water low?
10. Is the Cell scaled heavily?

If the Cell is ON but not reading 100, check the Temperature Compensation setting in the WATER TEMP MENU (located in Advanced Settings – see [www.poolcontrols.com.au](http://www.poolcontrols.com.au) for Advanced Settings Manual). Also check the pool salinity is within correct range.

If the unit is not running at all **check the fuse** in the bottom of the unit.

