



USER MANUAL

© SMARTPOOL SYSTEMS

V1.2

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Congratulations on purchasing your new SmartPool System! Your swimming pool management is about to get a whole lot better.

Now, let's get started...

The first thing you need to do is connect the SmartPool System to your home Wifi network. You should only have to do it once.

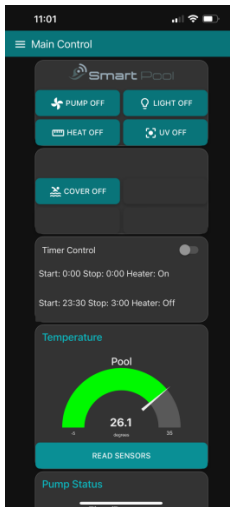
STARTING UP

- After a few minutes of turning on your SmartPool Hub you will see a new Wifi network being displayed on your phone or tablet in it's connect to Wifi settings .
- Connect your phone, tablet or computer to the new Wifi hotspot: 'SmartPool' and the Wifi code is *SmartPool*. This is used for the initial setup of the Hub.

Note. If after 5 minutes of powering the Hub, this network doesn't appear, just press and hold the reset button on the Hub for 10 seconds. This will allow the system to reset and reboot and after around 3 minutes the SmartPool Wifi will be displayed.

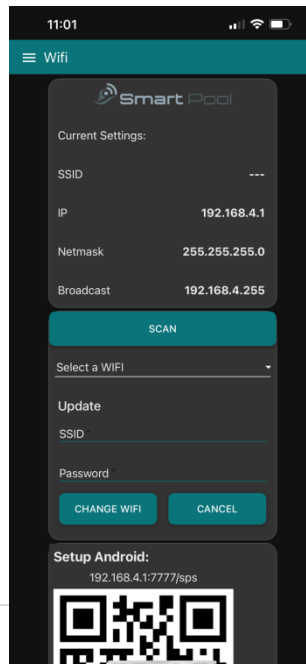
- **Apple only** - Once connected to the Hub's Wifi, use Safari and open: *smartpoolhub:7777/sps (or use QR code).*
- **Android only** - Once connected to the Hub's Wifi, use a web browser and open: *192.168.4.1:7777/sps (or use QR code).*
- The site should look like this:





Connecting to your home Wifi

- Click on the “three lines”, ‘**menu**’ icon in the top left-hand corner next to ‘**Main Control**’. When the side menu appears, click on ‘**Wifi**’.
- This Wifi screen allows you to scan for your local Wifi. You may have to tap “Scan” several times to discover your home network. After the scan tap the ‘**Select a Wifi**’





drop down to see if SmartPool has found your home Wifi network.

- Select your network from the list.
- Now tap on '**Password**' and type in the password for your home network, take care as it is case sensitive.
- Once you have entered the correct ID and password, click on '**Change Wifi**'. After about 2 minutes the device will restart and connect to your home network.
- **Apple only** – Connect your phone back to your home Wifi. Now add this site to your home screen. For example, if you are using an iPhone, open the site using Safari and click on the '**share**' icon (a little square with an arrow pointing up). Scroll down and select the '**Add to home screen**' option.
- **Apple only** - Once you have added the website to your home screen you should see the SmartPool icon on your phone or tablet and this will be your shortcut to controlling SmartPool.

- **Android Only** - Connect your phone back to your home Wifi. *Open your web browser and connect to smartpoolhub:7777/sps (or use the QR code).*



- Once you have the SmartPool screen displayed add the site to your home screen. The process will vary depending on which web browser you are using and your particular Android phone but with Chrome you will see three dots in the top right, tap this and select '**add to home screen**'.

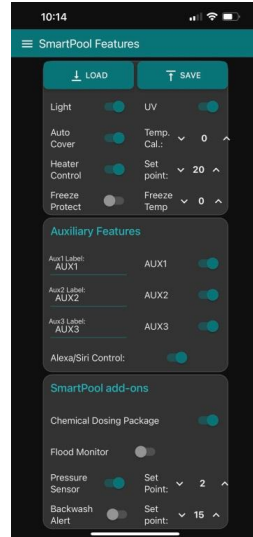
Congratulations! You are now ready to start enjoying your new SmartPool System.

SMARTPOOL FEATURES

SmartPool is a versatile, bespoke system. It can be tailored and personalised to your individual needs and your own swimming pool specifications. These next steps will enable you to select and control your chosen features. *(It is possible that your installation*

engineer will complete this for you in which case please skip this section).

- Tap the three lines, 'menu' icon in the top left-hand corner of the screen and select '**SmartPool Features**'.
- To configure the system, tap on the relevant switches, confirming if your pool has a Pool light, UV light or Cover. You may also have purchased add-on packages such as the Chemical Dosing package, digital pressure sensor, etc.
- If you have the digital pressure sensor add-on you can also enable alerts for backwash by setting the pressure requiring a backwash (as the filter clogs up with contaminants the pressure will increase indicating the need to backwash).
- You can also control other electronic devices you own. There are three controllers available for this (Aux1, Aux2 & Aux3). Use the switch to enable these devices. Clicking on the label box allows you to alter the name to your specific



aux device, e.g. 'Swim Jet', 'Fountain', 'Deck Light'.

Note. The label is limited to 10 characters.

Freeze protect

This allows you to specify the temperature below which the pump will be switched on to help protect against freezing pipes. This is an added safety measure which does not guarantee protection, but can potentially help avoid costly damage. You can also set notifications to receive an email or SMS text when a possible freeze condition occurs.

- Make sure that you click the "**Save**" button when you are done.

Note. Once you have set the configuration, your home screen and side menu will reflect your selected features.

MAIN CONTROL SCREEN

The home screen is the main hub of SmartPool. From here you can check the status of your pool and gain access to control your swimming pool and auxiliary components.

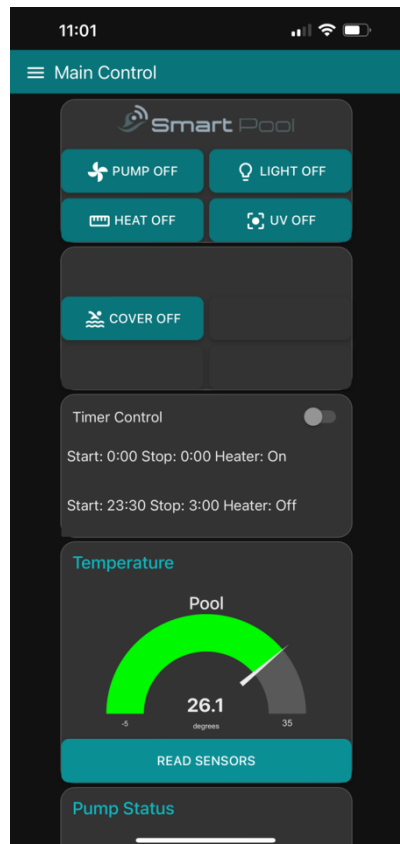
Pool Control

This section has buttons that you can simply tap to switch things on and off. For instance, opening an automatic cover or turning on and off a light.

Timer Control

This is where you control the timer for your pool once it is set up (see later section).

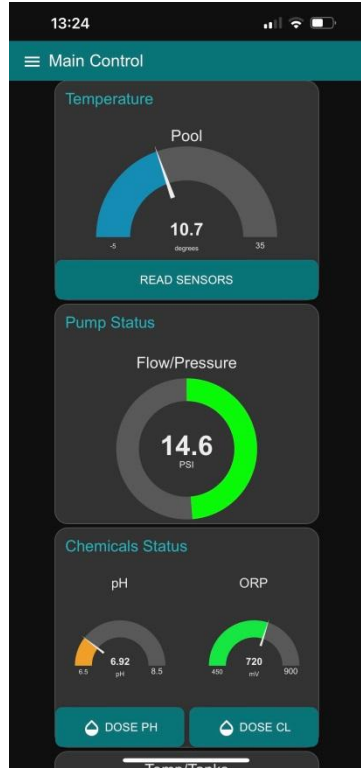
If you tap '**Pump**' or '**Heater**', it will automatically cancel the timer and switch it to manual control). Once you have completed manual control, you will need to tap the button to turn it back to auto timer.



Sensor Dials

The home screen features dials displaying the water temperature, filter pressure, pH and ORP levels. For a current reading, you can tap the **'read sensor'** buttons, otherwise they will update periodically.

Note. The readings are only accurate when the pump is running. This is because the water in the pipe will cool down when the pump is off, and the filter will only have pressure when the pump is on.



Note. The picture shows a system with the digital pressure sensor add-on. Standard system has a flow switch only and will show 30 psi when there is water flow.

Temperature

The temperature reading is taken from the water passing through the sensor rail from the pool. When the pump has been running for a few minutes, this



water will be coming directly from the main body of the pool itself and the reading will be accurate, reflecting the actual pool water temperature. Once the pump has been switched off, the water in the sensor rail will change to reflect the temperature in the air around it, which is likely to be different. Therefore, for an accurate reading, keep the pool pump running for a few minutes to ensure that you are getting a sample from the main body of water in the pool.

Filter Pressure (optional pressure sensor)

The reading of the filter pressure is taken from the sensor placed at the top of your pool filter. Each pool runs at a different pressure depending on the filter type and the power of your pool pump. You should familiarise yourself with the “normal” pressure reading for your system rather than seek a specific value for this reading. Use the “normal” setting to define the backwash alert level setting in SmartPool Features.

Note. If you don't have the digital pressure sensor then the dial will show 30psi the switch detects flowing water, i.e. when the pump is on.

pH reading (optional dosing package)

The pH reading is most accurate once the pool pump has been running for some time. This is

because it is being taken from the water in the main body of the pool, rather than from the pipe, where it may have been “standing” for some time.

The pH is a measure of the pool water acidity. Your pool service engineer will advise you on the “right” pH reading for your pool, but as a guideline, a value of between 7.2 and 7.4 is good. You can add a “set-point” into your pool settings screen to specify the pH level that you would like to maintain when auto-dosing. Alternatively, you can tap the **‘Dose PH’** button to apply a manual dose of pH adjuster to your pool if required.

Note. The pH Dose pump will only activate when the pump is running to prevent build-up of chemicals in the pipes.

ORP Reading (optional dosing package)

As with the pH reading, the ORP reading is only accurate when the pump has been running for some time, so that the sample water is coming from the main body of the pool, rather than from the pipes.

The ORP reading is the measure of the “ability” of the water to keep the water hygienic (see *Appendix for a definition of ORP*). Your swimming pool service engineer will advise you on the correct ORP level for your pool, but as a guideline, it is



suggested that with a pH of 7.3 you should look to have an ORP level of 650-750 to ensure that your pool water is healthy and clean.

You can add a "set-point" into your pool settings screen to maintain the desired ORP level with auto-dosing of chlorine. Alternatively, you can tap the '**Dose Cl**' button to apply a manual dose of chlorine to your pool if required. However, the dosing system will only activate while the pump is running to avoid chemical build-up.

Home Screen Graphs

Your home screen displays graphs indicating how your sensor readings have been changing over time. These are updated only when the pump is running, and readings are then taken every hour.

Tank Status (optional dosing package)

The two circles indicate the remaining quantity of dosing chemical in your tanks. For these to function, you need to go to '**Settings**' and specify the size of your refill tank and quantity of each dose to be delivered. SmartPool will then track doses and calculate how much chemical you have remaining. When you replace or refill your dosing tanks, tap the '**Refilled**' button, to confirm you have filled your tanks to return to 100%.

Note. You may configure your system to email your supplier for replacement chemicals when you get low. See the dosing section.

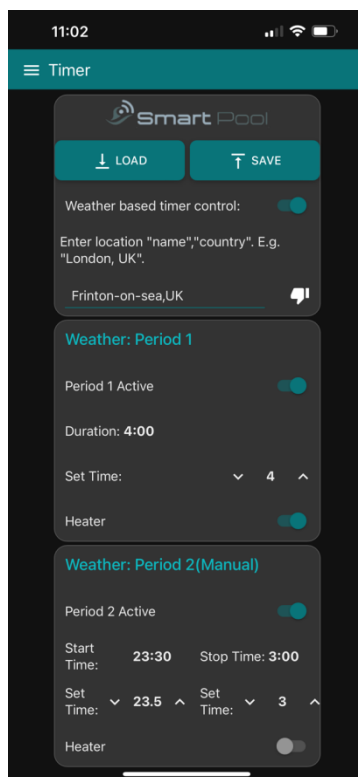
SMARTPOOL TIMER

The SmartPool System has an advanced timer for the pump and heater allowing you to select **'standard'** or **'weather based'** timer.

To set up the Timer click the **'menu'** button from the Main Control screen and select **'Timer'** from the side menu bar. This will take you to the Timer Screen.

Standard Timer

To select **'standard'** timer, tap the **'weather based'** timer switch to "off". This will present you with two manual periods, for which you can select both whether they are enabled (active) and a start/finish



time. You may also select if the heater will be switched on during this time period.

When the SmartPool is in 'auto-timer' mode which is set on the Main Control screen it will activate the pump and heater at the times specified in the timer.

- Make sure that you click the "**Save**" button when you are done.

Note. Any manual over-ride of the pump or heater will turn off the Auto-timer and you will need to tap the timer switch on the main control screen to turn it back on again.

Weather-based Timer

The second method for timer control is weather-based. This unique and innovative mechanism allows you to access your local weather forecast to dictate when the pump/heater are activated, thereby optimising efficiency, and reducing cost.

To enable this function, you must first tap the '**weather based**' time switch on the Timer screen.

Once the weather-based timer is enabled, you can specify the "duration" for your timer period. Every day at 7am, your SmartPool will download the daily weather forecast for your location (*see Settings section to select your location*). Once SmartPool

has downloaded the forecast, it automatically calculates the start and stop times to run your heater/pump for the period set during the “warmest” part of the day. *The benefit of doing this is that your heater will be more efficient during the warmest part of the day.*

In addition, you can set a second manual timer, should you wish the pool heater/pump to activate for 2 daily periods for example if you wish to run the pump/heater during the day and at night.

Location

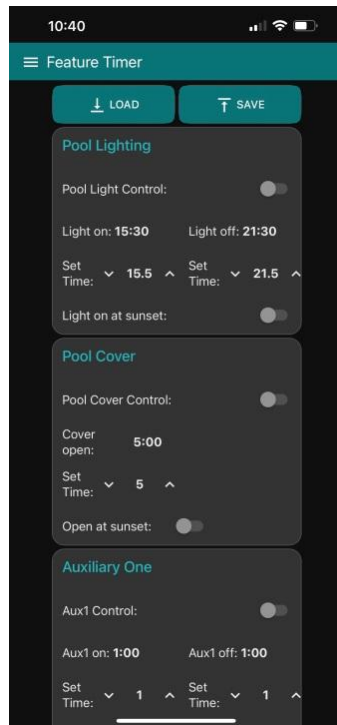
To allow SmartPool to obtain the relevant weather forecast for your location you must enter the name of your town and country in the format “town,country” for example London,UK. Once you have entered this location please tap the ‘**Save**’ button and look for the ‘Thumb’ icon to change to thumbs up! It might take a couple of goes pressing ‘**Save**’ but this confirms that it has found you. Note, this location will also be used for obtaining the sunset time for the Feature Timer.

FEATURE TIMERS

SmartPool also allows you to control other features, such as the lights and cover, and therefore it is fitted with a second timer. You can use the 'Feature Timer' screen to set a timer for each of your pool features.

There is even a **'sunset'** option to automatically light up your pool at sunset for added drama and effect! If you are fortunate enough to have an automated cover, pool light, water feature and patio lights, why not configure timers for each of these to activate at sunset, and wow your guests when the pool opens and lights up, just as the sun goes down!

Note. To allow SmartPool to obtain the sunset time for your location you must have set your location in



the Timer settings (previous section). Cover close operation not supported for safety reasons.

MAINTENANCE GUIDES

SmartPool also includes simple step-by-step guides to remind you of the procedures necessary to maintain your pool yourself. These are general guides, and you should refer to the specific instructions for your system from your pool engineer and/or equipment supplier.

DOSING SETTINGS (Dosing Option)

You can click on the '**Load**' button to obtain the current settings from your hub.

Order Chems: If you plan on using the 'auto notify' email option for ordering chemicals, you should enter an email address for your chemical supplier. You should also make sure that your customer ID is set in the System Info. Section (see later). This number can be any number that allows your supplier to identify you specifically and will be used for emails and SMS messages. When they receive an email from your system indicating that you are at or below 10% chemicals remaining, your customer ID will be included along with current tank levels. Always discuss and confirm this feature

with your chemical supplier to ensure that they can support this email request.

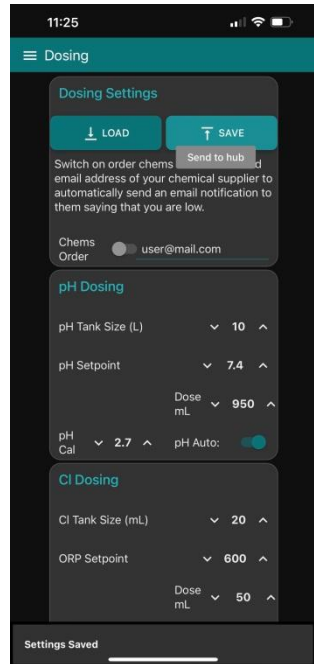
pH + Cl Auto-dosing

These both work in the same way and are used to configure settings for auto-dosing.

To get started you must specify the size of your dosing tank for pH adjuster or Chlorine dose. It is common for chemicals to be supplied in 20L or 25L sizes.

Next specify the setpoint that you would like to maintain for your system. Your service engineer will advise, for example 7.2 for pH and 720 for ORP.

If you then set the autodose switch to **'on'**, SmartPool will continually monitor the chemical levels whilst the pump is running and automatically dose to maintain them at the optimum settings.



pH and Cl calibration

Settings are specific to each installation and we recommend that your installation engineer sets this

up for you. However, it is possible to set them yourself as follows. The calibration is an adjustment for how long the dosing pumps should run to deliver the desired amount of chemical. Because the pressure in each pool is different, calibration is needed.

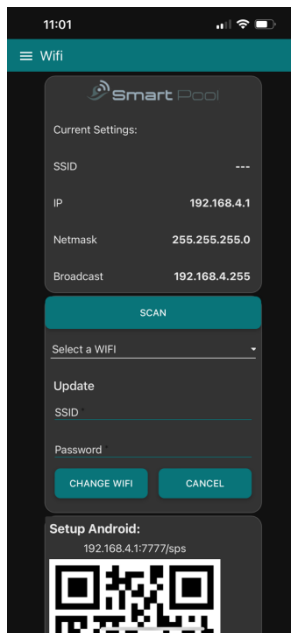
In order to set the dosing calibration:

- Set a dosing volume (e.g.) 100mL in dosing settings.
- Using a measuring jug of tap water, immerse the pump's pipe end. Set the pool pump running and press the '**dose**' button on the SmartPool interface. The dosing pump will start pumping tap water from the measuring jug into the pool.
- Once it has stopped, check the amount dosed against the amount in settings, i.e. did the dosing pump dose 100mL? If it dosed less, then increase the calibration value, 'save' the settings and start again.
- It will take a little while to get it right but once calibrated, the setting should be good for both dosing pumps. Having this set correctly will help SmartPool track your chemical usage and notify when you are low. It is also used to show the Tank status on the main screen.

WIFI SETUP

Here you can see your current Wifi settings and also change your Wifi network.

- Scan the local networks.
Please note you may have to press the 'Scan' button a few times for SmartPool to find your network.
- Once the scan is complete, tap the **'Select a Wifi'** dropdown and tap to select yours. This will copy the wifi name into the SSID field for you.
- Enter the password for your network and tap **'Change Wifi'**. This will cause the System to restart and join your home network. Please note this can take 2 or 3 minutes to complete.
- If you experience difficulties, please return to the 'Getting Started' procedure, page 1, and reset your SmartPool System.



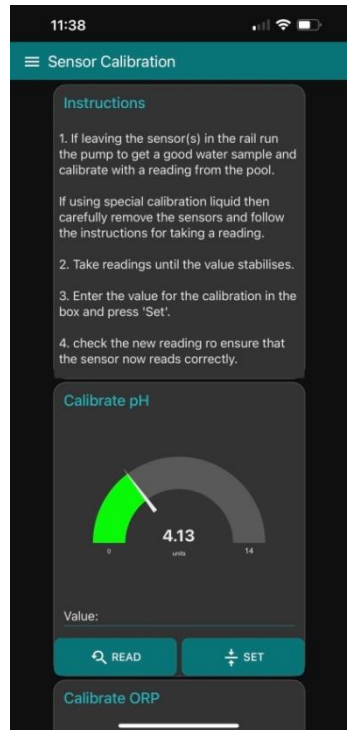


SENSOR CALIBRATION (Dosing Option)

We recommend that you ask your service engineer to set these calibrations. However, if you wish to do them yourself, you will need the “calibration fluid” for pH and/or ORP or use readings taken from the pool water.

- Repeatedly take readings until you get a stable/consistent reading.
- Once you have obtained a stable reading, i.e. one that only varies by 0.1, enter the actual value shown for the calibration fluid or from the pool water into the '**Value**' box and tap the '**Set**' button. This will calibrate the sensor to the fluid.
- Check the reading by tapping the '**Read**' button and repeat the process if the reading is incorrect.

Note. For pH you may wish to use two or three calibration solutions





*with different pH levels to set the correct readings
and get the best results across the pH scale.*

ALEXA/SIRI INTEGRATION

Your SmartPool System is already Alexa and Siri compatible. To pair it with your Alexa or Siri (Apple Homekit) you must first ensure that it is on the same home Wifi as your hub and then “discover” your SmartPool devices.

Amazon Alexa

- Make sure that your Alexa devices and SmartPool Hub are on the same Wifi networks, or they will not be discoverable.
- Ask Alexa to “discover devices” or go into the Alexa app on your phone and follow instructions to discover devices.
- Your SmartPool will offer devices to Alexa which you will be able to control with your Alexa system (e.g.):
 - Swimming Pool Light – “On or Off”
 - Swimming Pool Cover – “Off”
 - Auxiliary One – “On or Off”

Note. Alexa doesn't understand swimming pool devices, so these will be indicated as “lights” in the



Alexa app. Once the discovery process has completed, look under lights in the devices section of your alexa app to see the SmartPool devices. You can use the Alexa app to change the name of the Auxiliary devices to something more meaningful. For example, you might rename AuxiliaryOne to "Fountain" to allow you to say "Alexa, Fountain On"

Apple's HomeKit (Siri)

- Tap "**Add Accessory**" in HomeKit.
- Tap **more options**.
- Select the SmartPool Accessory.
- **Add anyway** the "Uncertified Accessory" to add and enter the passcode "7777-7777" to add the device.
- If you wish, change the name before finishing the process

Note. If you have to resart your hub, you may need to remove and re-add your accessories from HomeKit

NOTIFICATIONS

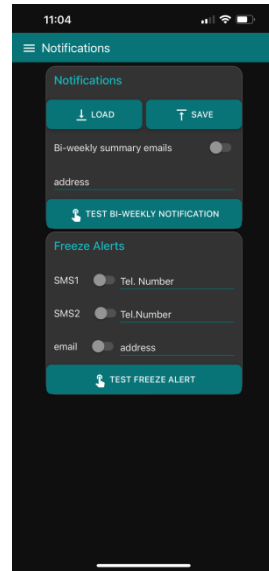
Use this section to specify email addresses and switch on the bi-weekly summary switch to receive a summary email from your hub indicating key data regarding your system. Click the 'test' button to make sure that the email capability works and the mail addresses are correct.

Freeze alerts & Flood alerts

Use this option to receive notification by email or SMS text. Please note the SmartPool system comes with a "limit" of 300 texts, as it is a paid for subscription. You may purchase more from: info@smartpoolsystems.co.uk

Once an alert has been sent you will need to manually re-enable it to prevent multiple alerts at the same time.

- Make sure that you click the "**Save**" button when you are done.



SYSTEM INFORMATION

This screen provides information on your SmartPool system. The summary information shows how much Chlorine and Acid you have used in the last 2 weeks. It also shows how many Litres of chlorine and acid you have left in the tanks (you will need to have calibrated the dosing pumps to get a good estimate).

Note. This is also where you set your customer ID to identify you for email and SMS text notifications.

Additionally, graphs show the chemical usage, central processor temperate etc. (in case you find this sort of thing interesting as it is not necessary for your pool operation).

LOGS

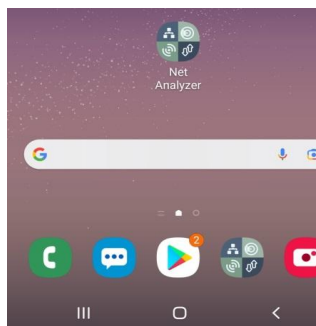
This section allows you to view any system logs such as alerts or system errors. If you test alerts, e.g. Freeze alert or Flood alert it will also show here. You can clear the log file once you have viewed it. You can also send the logs via email.

TROUBLE SHOOTING

- The most common problem with using SmartPool is with the Wifi connection.

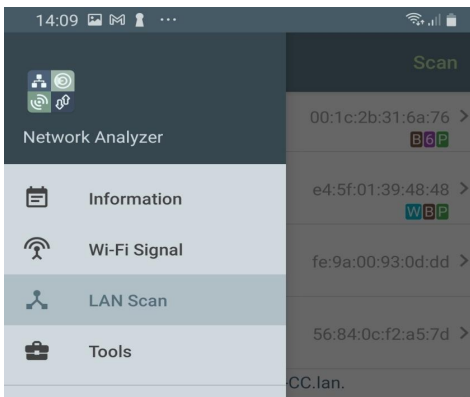
- Make sure that your home Wifi is up by connecting your phone/tablet to it and opening a web page. Refresh the web page to double check that you are connected.
- Power off, wait 10 seconds and power on the SmartPool hub. The hub will take a couple of minutes to start. If you have a hub with a screen then you should see the logo as the system starts after about one minute.
- Try and connect to the hub again using the link that you have saved on your home screen. Note if you have a new router or internet service provider you may need to go through the initial setup again.
- If this doesn't work then hold the reset button on the side of the SmartPool Hub for 10 seconds. This will cause it to shut-down and restart in setup mode. Follow the initial setup process to reconfigure it to connect to your Wifi.

Android only – Some versions of Android may not work connecting to 'smartpoolhub:7777/sps'. You will need to use the network address of the smartpoolhub





instead of the name. In order to find this install the “Network Analyzer” app from the Google PlayStore. This is a free app with an icon that looks like this:

- Once you have installed the application, open it and select the LAN Scan menu item:



- This will discover all the “services” on your network. Scroll until you find “smartpoolhub” and note the network address which is 4 numbers in the range 0-255 separated by “.”. In this example the address is “192.168.1.125” but yours will be different:

LAN Scan		Scan
101-394	192.168.1.121	00:1c:2b:31:6a:76 >
	Alertme.com Limited	
smartpoolhub	192.168.1.125	e4:5f:01:39:48:48 >
	Raspberry Pi Trading Ltd	
Unknown-fe-9a-00-93-0d-dd.lan.	192.168.1.132	fe:9a:00:93:0d:dd >
	N/A	
Unknown-56-84-0c-f2-a5-7d.lan.	192.168.1.136	56:84:0c:f2:a5:7d >

- Open your web browser and enter the address using your hub's address in the format: x.x.x.x:7777/sps where 'x' represents the address.
- This should display the SmartPool system. Add this to your home screen for easy access. The process will vary depending on which web browser you are using and your particular Android phone but with Chrome you will see **three dots** in the top right, tap this and select **'add to home screen'**.

APPENDIX

Definition of ORP:

Oxidation-reduction potential (ORP) is the potential of a disinfectant to inactivate micro-organisms in a swimming pool or spa pool. It is a direct measure of disinfection power.

Oxidation-reduction potential (ORP, redox) measures the rate of oxidative disinfection caused by the addition of the effects of all oxidants in the pool water. ORP is determined by using a high quality ORP probe and meter. The unit of measurement of ORP is millivolts (mV).

Oxidisers (mainly disinfectants) consume electrons while reductants (mainly contaminants) donate electrons. As chlorine is continuously added to the swimming pool the disinfection action is mainly due to chlorine compounds, particularly hypochlorous acid (HOCl). The ORP is the potential of a disinfectant to do its work of inactivating micro-organisms and oxidising organic materials. The higher the millivolt reading, the more powerfully the swimming pool water is able to oxidise and disinfect.

Oxidisers cause the millivolt value to increase and therefore increase disinfection. Typical oxidisers are hypochlorous acid (a component of free chlorine), ozone, hydrogen peroxide, and potassium monopersulphate.

Reductants cause the millivolt value to decrease and therefore decrease disinfection. Typical reductants are the hypochlorite ion (a component of free chlorine), chloramines, cyanuric acid, organic matter (dust and dirt), urine, perspiration, sputum, micro-organisms, cosmetics, and faecal material.

A drop in the ORP indicates an increase in chlorine demand caused by reducing agents or contaminants entering the water. A decrease in ORP indicates that chemical reactions are about to occur. Compared to amperometric control, ORP is considered to be a more accurate measure of disinfection rate. Also, ORP controllers can

automatically add disinfectant according to demand. They therefore anticipate the disinfecting and oxidising chemical reactions that are about to occur.

An ORP of 700 to 720 mV allows for both a quick disinfection and for breakpoint chlorination (destruction of chloramines) where conditions permit.





Smart Pool
Systems LTD
Designed and manufactured in the UK

