DAVEY

SpaPOWER®

SP500 Spa Pool Controllers
User Guide

IMPORTANT
PLEASE READ CAREFULLY

CAUTION: In the interest of safety, we advise that all brands and types of pool pumps must be installed in accordance with AS/NZS 3000, known as the national wiring rules, or equivalent local standards. All electrical installations must be carried out by a qualified electrician. Davey recommends that all installations are fitted with earth leakage, or residual current protection devices. Rated residual operating current not exceeding 30mA.

WARNING: This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure they do not play with the appliance.

WARNING: The product must be covered by an enclosure having a degree of protection to IP24 or better to prevent water ingress. If the supply cord is damaged, it must be replaced by Davey, a Davey service agent, or a similarly qualified person in order to avoid a hazard.

CONGRATULATIONS

Congratulations on choosing the latest SpaPOWER 500A Mk2 control system. This controller makes use of the latest technology, including innovative optical & digital sensor designs. The user friendly touchpad & reliable components provide you with the best value controller in its class.

TEMPERATURE CONTROL

The SpaPOWER 500A Mk2 automatically controls the pump & heater to filter the water & maintain it at the desired temperature as set by the user (see below). The user can leave the system to look after the spa & know it will be at the correct temperature whenever he or she wants to use it.

Adjusting Set Temperature

The SpaPOWER 500A Mk2 gives the user direct control of the pool temperature from the poolside control panel. Holding down the Up or Down button will adjust the temperature set point as shown on the digital readout. There is a slight delay before the buttons operate to reduce the risk of accidental adjustment. The pool temperature will be maintained very close to the set temperature.

UP   Increase the set temperature by 0.5°C per beep (Max = 41.5°C)

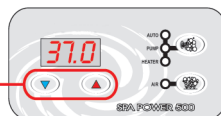**DOWN**   Decrease the set temperature by 0.5°C per beep (Min = 10°C)

Default Display = Temperature Set Point   `37.0`

Sensed Temperature

The sensed temperature (in the heater) can be checked if necessary by pressing the Up & Down buttons simultaneously. The display flashes while showing the sensed temperature.

Press both buttons simultaneously

Heating Mode Selection

In addition to the temperature setting the user can select the preferred heating mode. The two available heating modes are....

1. Demand Heating (displayed as Ht.d). This is the default setting in which the pump & heater will come on automatically whenever the temperature drops slightly below the set point.

2. Filtration Only Heating (displayed as Ht.F). In this mode the pump & heater will come on automatically no more than once per hour to filter & heat the water. This mode is provided as an option for those who prefer to limit the natural cycling of the system.

To select the heating mode first press the Pump & Down buttons simultaneously to display the current heating mode, then press & hold the Up or Down buttons to change modes.

Press both buttons simultaneously
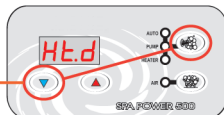
**Press Up or Down buttons to toggle between heating modes**
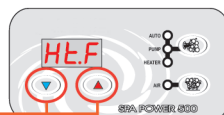
PUMP OPERATION

The default state is Auto Mode in which the pump & heater are controlled automatically to filter the water & maintain the desired water temperature. The Pump Button allows the user to control the water pump manually as desired when using the pool.

Pump

Push 1 - Pump ON   (Heater automatic)
Push 2 - Pump OFF   (Heater OFF)
Push 3 - Auto Mode   (Pump & Heater automatic)

Note: If the user does not set the system back into Auto mode, the system reverts to Auto Mode by itself, 90 minutes after the last push of the Pump Button.

Indicator Lights

AUTO Flashing = No Water
HEATER Flashing = Error

Pump Button
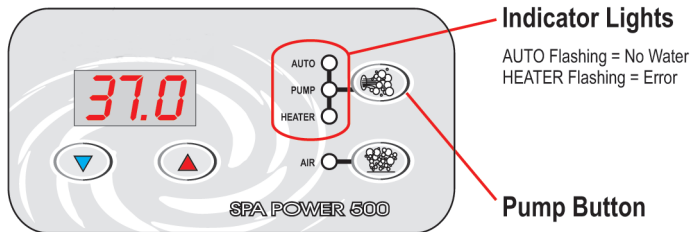
⬤ **Auto Light**
The **YELLOW** or **BLUE** Auto indicator light will appear on the touch pad whenever the system is in full automatic control mode. In this mode the system automatically activates the pump & heater to filter the water & maintain the set water temperature. If this light is flashing the water sensor is not detecting any water.

⬤ **Pump Light**
The **GREEN** Pump indicator light will appear on the touchpad whenever the pump is running, in both auto & manual use mode.

⬤ **Heater Light**
The **RED** Heater indicator light will appear on the touchpad whenever the heater element is on. For safety the heater is always automatically controlled. Usually switching on the air blower accessory will cause the heater to switch off (loadshedding). This is in order to keep the total power load to a safe level. If this light is flashing the system has an error. (see back page)

AUTO SANITISING (FILTRATION)

The Spa Power 500A Mk2 automatically maintains the filtration/sanitation of the spa pool water. The minimum amount of filtration time is programmable by the user & can be adjusted between 0 & 15 minutes per hour (0 to 6 hours per day). In order to maintain correct filtration of the pool water, the SP500A Mk2 monitors the time for which the pump runs in normal pool operation. If the pump has only run for a short time, the system will automatically run the pump for an additional period every hour to reach the minimum filtration time set by the user.

Adjusting Minimum Filtration Time

First push the Down ▼ & Air/Aux 🎛️ buttons together to display the filtration time setting on the digital readout.

Press both buttons simultaneously ⟶
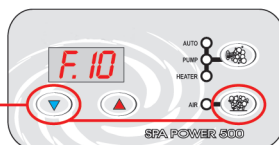
The default setting is 10 minutes per hour (= 4 hours per day). Holding down the Up Button ▲ or Down Button ▼ will adjust the filtration time setting between 0 & 15 minutes per hour (= 0 to 6 hrs per day).

Clean Up Cycle

If desired a clean up cycle can be initiated to filter the water after the spa pool has been used. This is done by simply pushing the Pump Button 🎛️ to leave Auto Mode & switch on the pump. This will circulate the water through the filter for 90 minutes. After 90 minutes the system will return to Auto Mode & maintain the temperature ready for the next time the spa pool is used.
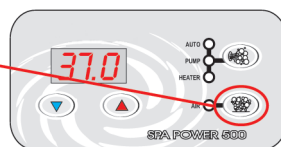
AUXILIARY AIR BUTTON

The Air button controls an auxiliary air blower (or water pump). It is used to turn the blower on & off. Two pushes of the air button cycles the blower as follows:

🎛️ **Air Blower or Auxiliary Pump**

Push 1 - Blower ON
Push 2 - Blower OFF

Note: If left on, this accessory will automatically switch off after 20 minutes. If the heater element is on, switching on this accessory may cause the heater to loadshed & switch off. This is to keep the total power load to a safe level.

MY SPA IS TO HOT IN SUMMER!

During summer months in hot climates, there may be times when the actual water temperature exceeds the desired temperature set by the user. E.g. If the spa is set to heat to 35°C, but the actual water temperature is 38°C. Please consider this - In the Winter your spa gets cold because the air temperature is cold. To combat this we heat the water & keep the spa covered when not in use. If the spa is turned off & the ambient temperature is 15°C, eventually the spa water will lose heat until it too is 15°C. In the summer the same applies but in reverse - you can turn the heater down, even turn the pump off, but if the ambient daytime temperature is 35°C - 42°C then the spa water will also remain at that temperature.

Manufacturers make no attempt to supply a system that cools water. The quickest way to combat the problem is to change the water, but even this new water will eventually heat up to the air temperature. Turn the set temperature down so the heater does not come on. Reduce the minimum filtration time so the pump runs less. The less the pump runs the more the water will cool. If the nighttime temperature is low, leave the cover off the spa to let heat escape, but put it back on during the day to keep heat out. Also make sure the spa is shaded from direct sunlight.

> ⚠ **Do not operate your water heater in ambient temperatures over 40°C.**

> **WARNING:** Before using ensure that the spa pool has been connected to a suitable weather protected outlet socket, equipped with a double pole isolating switch, which is of the correct rating and complies with the local wiring regulations.
>
> When installing, refer to your local wiring code. In particular refer to ECP2 & ECP25 (AS/NZ) and EN60364-4-1 & EN60364-7-1 (EU). The system must be installed in such a way that live parts are not accessible by a person in the pool. If a supply cord is not fitted the system must be permanently connected to fixed wiring through a 30mA or less RCD.
>
> It is recommended that the steel reinforcing in any concrete base on which the pool is sitting be equipotential bonded to the earth conductor in the supply to the spa. This is to protect against the possibility of low voltage shocks caused by differential earth voltages. Refer to AS/NZS3000:2000 Sections 5.8 & 7.2 or EN 60364.

> ⚠ **WARNING:** This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure they do not play with the appliance.

> ⚠ **WARNING:** This product must be covered by an enclosure to prevent water ingress. If the supply cord is damaged, it must be replaced by Davey, a Davey service agent, or a similarly qualified person in order to avoid a hazard.

SELF-DIAGNOSTIC ERROR CODES

The Spa Power 500A Mk2 controller has extensive self diagnostic capabilities. In the event of a problem it will indicate an error number according to the nature of the problem. The error numbers & their meanings are listed below. Note: When in an error state the alarm can be muted by pushing the AIR/AUX button.

Error 1 (H20) - Prime Failed
This is not necessarily a problem with the SP500A Mk2 itself, but indicates that no water is being detected in the heaters housing. Prime failed is a special case in that it can be recovered from by pushing a button. A push of the pump button will run the pump for 10 seconds to try to get water to the heater. If successful normal operation will resume. If unsuccessful, Error 1 (H20) will be indicated on the display again.

With any Error 3 - 5, 7 - 8, spa operation will stop & not continue until the controller is reset. The controller can only be reset by pushing the UP,DOWN & PUMP buttons simultaneously.

The controller will remain in an error condition even when reset at mains power, controller will only continue normal operation after the UP, DOWN & PUMP buttons are pushed simultaneously (see below).
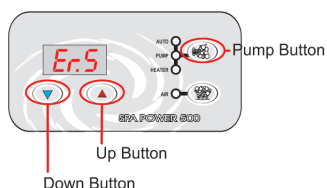
Error 3 - Stuck Button
This error indicates that one of the buttons in the touchpad is stuck or has been held down for more than one minute. This may be caused by the pool cover pressing on the touchpad or by water getting into the touchpad or by damage to the touchpad or its cable. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

Error 4 - No Water Sensor
This error indicates a problem with the optical water sensor in the heater. The problem may be caused by the sensor being disconnected or by damage to the sensor. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

Error 5 - Overtemperature
This error indicates that the digital temperature sensor in the heater or pool has detected a temperature of 45°C or more. This may not be a problem with the SP500A Mk2, it may be caused by excessive pump use in hot weather, or pump failure. Turn off the spa & allow time for the water to cool. If there is still a problem contact your spa pool supplier.

Error 6 - Please call service for assistance.

Error 7 - Stuck Relay
This error indicates a problem with the heater control circuitry inside the unit. Contact your spa pool supplier.

Error 8 - No Temperature Data
This error indicates a problem with the digital temperature sensor in the heater or pool wall or that both the in heater & in pool sensors are connected. Check that only one sensor is connected & that it has not become disconnected or damaged. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

SPA WATER TREATMENT

Recommended Chemical Values
Chlorine.......................... 1.5 - 3.0 PPM (Parts Per Million)
pH.................................. 7.4 - 7.6
Total alkalinity................. 100 - 120 PPM

It is important to maintain your spa water chemistry to the above values to ensure a healthy experience both for you as bathers & for your spa pool equipment.

PH
This is a measure of how acid or alkaline the spa water is (below 7.0 is acid, above 7.0 is alkaline). Low pH will cause corrosion of any metalwork in the water (element, thermostat pockets). High pH will cause scale formation & cloudy water.

Total Alkalinity
This is a measure of how resistant your spa water is to change of pH. A low TA (0 - 80 ppm) will allow the pH to fluctuate rapidly normally to the acid end & will make it very hard to correct the pH back to the ideal range.

Chlorine
Levels of sanitiser are important to prevent the build up of bacteria & algae in the pool water. Chlorine is not the only sanitiser available to do this. Other sanitisers are Bromine & Ozone.

Damage to the element, thermostat pockets & associated metalwork due to the poor maintenance of water chemistry is not covered by warranty.

Davey Warranty

Davey Water Products Pty Ltd (Davey) warrants all products sold will be (under normal use and service) free of defects in material and workmanship for a minimum period of one (1) year from the date of original purchase by the customer as marked on the invoice, for specific warranty periods for all Davey products visit daveywater.com.

This warranty does not cover normal wear and tear or apply to a product that has:
• been subject to misuse, neglect, negligence, damage or accident
• been used, operated or maintained other than in accordance with Davey's instructions
• not been installed in accordance with the Installation Instructions or by suitably qualified personnel
• been modified or altered from original specifications or in any way not approved by Davey
• had repairs attempted or made by other than Davey or its authorised dealers
• been subject to abnormal conditions such as incorrect voltage supply, lightning or high voltage spikes, or damages from electrolytic action, cavitation, sand, corrosive, saline or abrasive liquids,

The Davey warranty does not cover replacement of any product consumables or defects in products and components that have been supplied to Davey by third parties (however Davey will provide reasonable assistance to obtain the benefit of any third-party warranty).

To make a warranty claim:
• If the product is suspected of being defective, stop using it and contact the original place of purchase. Alternatively, phone Davey Customer Service or send a letter to Davey as per the contact details below
• Provide evidence or proof of date of original purchase
• If requested, return the product and/or provide further information with respect to the claim. Returning the product to the place of purchase is at your cost and is your responsibility.
• The warranty claim will be assessed by Davey on the basis of their product knowledge and reasonable judgement and will be accepted if:
  - a relevant defect is found
  - the warranty claim is made during the relevant warranty period; and
  - none of the excluded conditions listed above apply
• The customer will be notified of the warranty decision in writing and if found to be invalid the customer must organise collection of the product at their expense or authorise its disposal.

If the claim is found to be valid Davey will, at its option, repair or replace the product free of charge.

The Davey warranty is in addition to rights provided by local consumer law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

For any internet connected products the consumer is responsible for ensuring a stable internet connection. In the event of a network failure the consumer will need to address the concern with the service provider. Use of an App is not a substitute for the User's own vigilance in ensuring the product is working to expectation. Use of a Smart Product App is at the User's own risk. To the fullest extent permitted by law Davey disclaims any warranties regarding the accuracy, completeness or reliability of App data. Davey is not responsible for any direct or indirect loss, damage or costs to the User arising from its reliance on internet connectivity. The User indemnifies Davey against any claims or legal actions from them or others relying on internet connectivity or App data may bring in this regard.

Products presented for repair may be replaced by refurbished products of the same type rather than being repaired. Refurbished parts may be used to repair the products. The repair of your products may result in the loss of any user-generated data. Please ensure that you have made a copy of any data saved on your products.

To the fullest extent permitted by law or statute, Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under local laws and does not affect any rights or remedies that may be available to you under local laws.

For a complete list of Davey Dealers visit our website (daveywater.com) or call:

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* **Installation and operating instructions are included with the product when purchased new. They may also be found on our website.**