AQUASMART 5

Instruction Manual

dontek
CONNECT AND CONTROL

DESCRIPTION

The Aquasmart 5 is a premium automatic solar controller with temperature adjustment, manual, cooling and standby mode features.

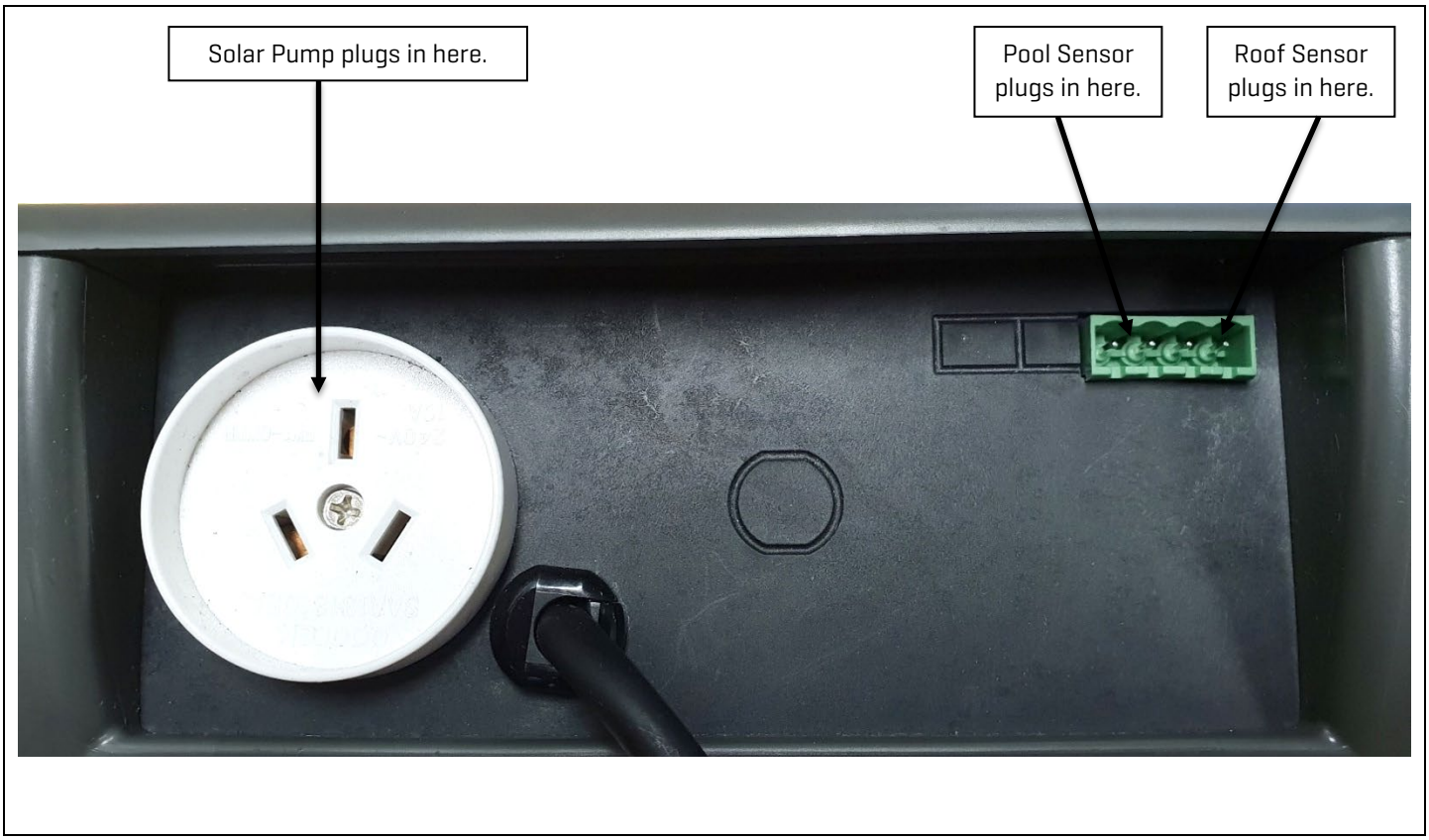
INSTALLATION INSTRUCTIONS

THIS APPLIANCE IS NOT INTENDED FOR USE BY YOUNG CHILDREN OR INFIRM PERSONS WITHOUT SUPERVISION. PLEASE ENSURE THAT YOUNG CHILDREN ARE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.

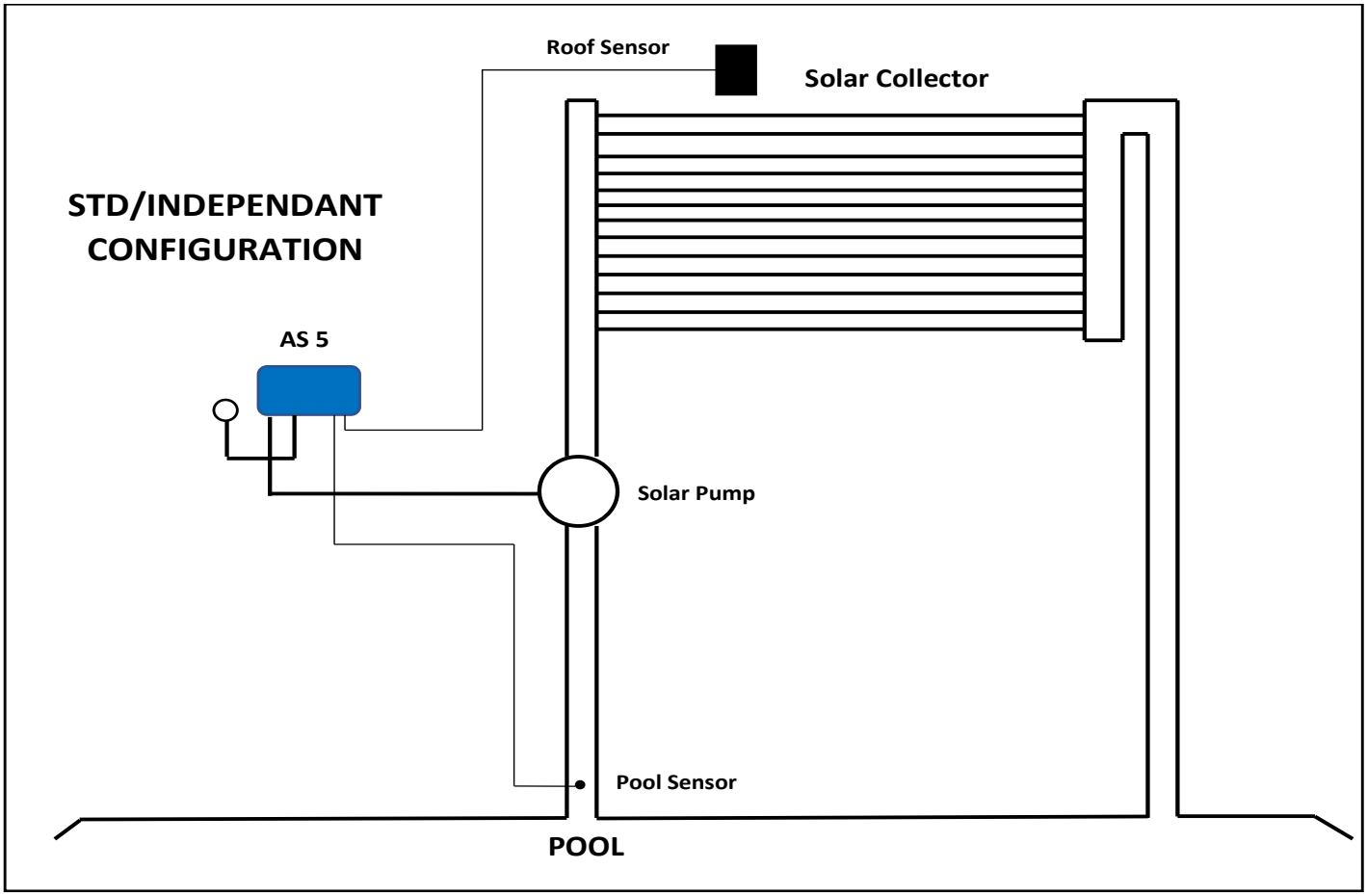
Ideally, as with all pool equipment, the controller should be installed out of direct weather.

CONTROLLER MOUNTING	Find a suitable location to mount the control box. The controller should be no closer than 3 metres from the water's edge and a minimum 600mm above ground. The power cable is 1.8m long and should be plugged directly into a general power outlet, **not into an extension lead.** Fix the mounting bracket to a solid structure with the screw and wall plug kit provided. Slide the controller on, locking it into place. Adjust the screws on the back of unit to ensure a snug fit. To remove unit, lift and gently pull away from structure.
PUMP CONNECTION	The Solar pump plugs into the 240V socket labelled PUMP. The maximum load is 9.98 AMPS at 2395W.
POOL SENSOR	The pool sensor must be fitted into the heating circuit, as close to the pool as practical, preferably in a position out of direct sunlight. It is recommended that a 14.5mm hole be drilled in the side of the PVC pipe, not the top of the pipe where water will collect. This can be carried out using a Dontek PD01 grinding drill or a pilot hole drilled, then a 14.0mm drill-bit spinning in a counter clockwise direction to minimize the chance of shattering pipe. Insert the grommet into the pipe and gently push in the sensor barb. Ideally ~30cm of the cable from the sensor should be tied to the shaded side of the pipe to prevent extreme ambient conditions leeching into the sensor via the copper in the cable. The blue sensor plug is to be fitted to the plug socket marked POOL.
ROOF SENSOR	The roof sensor must be fitted into a small piece of collector material away from the main collector but on the same aspect, preferably no more than 50cm from the roof gutter (for ease of sensor replacement). If required, the roof sensor can be on a different roof to the solar collector as long as the alignment to the sun is similar to the solar collector. For encapsulated collector panels, use the manufacturer's instructions for roof sensor placement. The red sensor plug is to be fitted to the plug socket marked ROOF.
SENSOR NOTES	All excess cable must be removed. Coils of cable are not permitted under any circumstances and must not be tied to 240V wiring. If the cable is to be extended with non-genuine cable, a size of 14/020 should be used. Any cable joins should be soldered. Heat shrink is to be used over soldered joints to eliminate moisture ingress, and the cable end is to be refitted to the plug sockets. Once cables have been correctly fitted the unit can be then turned on.

BASE DIAGRAM



PLUMBING CONFIGURATION



OPERATING INSTRUCTIONS

LCD SCREEN	The LCD screen displays the pool and roof temperatures, solar temperature limit, pump on status, on/off/locked-out status and the time of day & date (clock).
LCD INDICATORS	There are arrow icons on the LCD screen that indicate what actions the controller should currently be doing. These arrows point to text on the label.
MODE BUTTON	Pressing this button changes to the next mode of operation. Once the mode button is no longer being pressed then the selected mode of operation is automatically saved. • ***Heating Mode (Auto)*** is the normal operating mode for heating the pool. • ***Manual Mode*** is for switching the filter pump on or off. This mode can be used for a 3min (Backwash), for running the filter pump for up to 24hrs, or for ensuring that the filter pump doesn't turn on for system maintenance. Once Manual is selected the filter pump will start. ***The ENTER button will toggle the pump on or off during this mode**.* After Manual Mode times-out, the unit will return to the previous mode, or you can press the Mode button to return to the normal operating Mode. • ***Standby Mode*** of operation is for off-season/holiday maintenance or if pool heating is not required. This is a better option than turning the controller off, as it will flush treated pool water through the solar system, and prolong solar pump bearing and mechanical seal life. Pump will run for 3 minutes a day before 1pm. *****The factory default MODE is HEATING MODE***
↑ AND ↓ BUTTONS (TEMPERATURE SETTING)	Adjusting the temperature limit will allow the controller to heat the pool until the temperature limit +½°C is achieved. ******TEMP RANGE: OFF, 20° – 40° ****** Heating will then remain off until the sample wait period expires, if no sample wait period is active the heating will remain off until the pool temperature drops ½°C below the temperature limit setting. Due to rounding the actual heating hysteresis is ±½°C. *The ability to solar heat the pool will depend on weather conditions and other factors.* ***** The factory default for SOL. LIMIT is 30°C..***
ENTER BUTTON	Pressing the ENTER button will turn on the LCD backlight. Pressing the ENTER button while the backlight is lit will enter the SETTINGS MENU. The following will be displayed: 1) EXIT, the menu system can be navigated using the ↑ or ↓ buttons. All selectable and changeable values will flash on the LCD screen. Press the ENTER button to accept the currently displayed (flashing) item.

All menu items are shown below:

1) EXIT

2) CLOCK

3) SYSTEM

1) EXIT	Will save changes and return to automatic operation.
2) CLOCK	Selecting clock, will allow you to set the time of day. Set hours then minutes.
3) SYSTEM	*EXIT* - Press ENTER on this menu to return to automatic operation. *COOLING* **-** is for situations where the pool water overheats *beyond* the set temperature limit due to direct heating from the sun. **** *Note*** *for the cooling function to work properly, it is best if the solar run hours have been left at the factory default (See Hours below). This will allow the controller to take the best advantage of the evening and early morning hours to cool the pool.* *LCD TIME* – Adjust the number of seconds the backlight remains on after the time a button was pressed. (Select NONE for always on.) *HOURS —*. is for hours of solar operation (*24hr Clock)* First selecting the start time in hour intervals *(6:00 – 12:00)* Then the end time *(12:00 – 21:00).* **** *Factory default for solar Run Hours is to run from 12:00-12:00 (24hrs).***

INSTALLER SETUP;

TO ACCESS MENU PRESS ENTER AND SCROLL DOWN TO SYSTEM AND PRESS THE MODE BUTTON WARNING PROFESSIONAL ONLY SETTINGS!!

FACTORY DEFAULT? NO/YES	Restore back to factory defaults.
ROOF TEMPERATURE	***RUN*** – When the **roof** temperature rises to the **pool** temperature+ RUN, then the solar pump will start. ***END*** – When the **roof** drops below the **pool** temperature+ END then the solar pump will stop.
FREEZE PROTECT? NO/YES (RANGE 1.0°C-6.0°C)	Anti-freeze function, when switched to YES will start the pump when the roof temperature drops to the selected temperature. It will operate for 3 minutes every 30 minutes until the roof temperature rises above the selected temperature. ***Default setting is NO.***
BOIL PROTECT? NO/YES (Range 55°C-99°C) (Range 3 - 59mins)	Anti-boil function. If you select NO, the next option will be offered. If you select YES, the pump will start when the roof temperature rises to the selected temperature. It will operate for the selected number of minutes, where the controller will then take a roof temperature reading and either start the solar pump again (if roof temp is still above selected temperature) or stop running the pump if the temperature has dropped below the selected temperature. ***Default is NO. If you select Boil Protect to be YES, the controller will display 99°C for 3mins. Adjust to required temperature and time.***
PIPE PROTECTION? NO/YES Range 50°C - 95°C	For use when solar collectors are flooded, flat and may require a wetted roof sensor for this mode. The controller will allow the pool to heat to the selected pool temperature, where it will then force the controller to stop any further solar heating of the system by not allowing the solar pump to run once the roof temperature reads above the selected Pipe Protection setting. The solar pump will be allowed to run once the roof temp drops below the selected Pipe Protection temperature. ***Default is NO. If you select Pipe Protect to be YES, the controller will display 80°C. Adjust to required temperature.*** *Note – Pipe Protection will not be offered if Boil Protection has been turned ON.*
CALIBRATE POOL SENSOR BY:	X.X (RANGE -5.0 TO +5.0°C) This is for the + series sensor only (TS02P).

NOTES:	1. If any of the menu items are left unattended for 3 minutes the menu will time out and automatically save all settings and return to automatic operation. 2. If a sensor fault is detected, the controller displays which sensor and what the fault is. 3. Should power be interrupted for any reason, the controller will resume normal operation when power is restored. All information will have been kept for up to 10 days. 4. If the controller has stopped the pump and is displaying a higher temperature than expected it may be caused by a pump which is failing to prime. Check the pump and if necessary, prime the pump as per the pump manufacturers' instructions. Then reset the controller by turning it off/on. 5. MAX combined rated output load for the 240V socket(s) is 9.98 Amps / 2395 Watts. 6. Degree of protection against moisture: IP33. 7. Store pool chemicals safely, at least 3 metres away from all pool equipment.

WARRANTY

- This range of product is covered by a limited 3 year warranty against component failure or faulty workmanship from the date of installation.
- Faulty units should be returned in the first instance to the dealer from which the unit was purchased. (Return to Base)
- Damage to the unit due to misuse, power surges, corrosion from pool chemical fumes, lightning strikes and or installation that is not in accordance with the manufacturer's instruction may void the warranty.
- Warranty does not include on-site labour or travel costs to or from installation site.

If the power cord is damaged, do not use the controller. Return the unit to the supplier for repair.

CUSTOMER RECORD (To be retained by the customer)

DEALER/INSTALLER NAME

SERIAL NUMBER

DATE INSTALLED

For service assistance visit *www.dontek.com.au*

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TROUBLE SHOOTING

NO POWER TO THE DISPLAY:

Power point is fault. Test power point with a known working appliance. If the power point is operational, check the controller in another power point and if there is still no display then send the controller for repair.

RTC-FAIL – This can occur if the unit has been turned off for a prolonged period of time, leave the unit on for ~30 seconds, then turn it off for ~30 seconds before turning it back on.

PIPE/ROOF SENSOR FAULTS

The following are error messages caused by pool or roof sensor faults;

SENSOR DISCONNECTED OR OPEN CIRCUIT

Sensor cable unplugged from controller, cable damaged, bad cable join or sensor is damaged.

SENSOR SHORT CIRCUIT OR REVERSED

Sensor cable or cable join polarity is incorrect, or sensor is damaged. The positive side of the cable (grey coloured wire) should be wired to the righthand side of the plug, with the screws facing towards you and the sensor cable entry at the bottom of the plug. If the cable has been joined ensure no polarity reversal occurs.

ISOLATING SENSOR FAULTS:

Swap the sensor locations. Put the pipe sensor in the roof socket and the roof sensor in the pipe socket.

If the fault moves from pipe to roof or vice versa then it is likely that there is a sensor fault.

If the fault remains the same then the controller may need to be repaired.

PUMP FAULTS:

Ensure the controller has working sensors; otherwise the pump will not operate.

PUMP WILL NOT START:

The pump will only ever run for the purpose of automatic heating if the pool is below the temperature limit and solar conditions can provide heating.

The pump may also run for a flush in winter-mode or for manual mode operation. If the pump does not operate then plug the pump into a power point and test operation, if the pump is OK then the controller requires repair.

PUMP WILL NOT STOP:

Turn off power to the controller and ensure the pump stops. If the pump continues to operate then unplug it from the power point and connect it to the 240Vac socket marked PUMP at the bottom of the controller.

POOL NOT HEATING:

If the controller has stopped pumping and is displaying a higher temperature than expected it may be caused by a pump which is failing to prime. Check the pump and if necessary, prime the pump as per the pump manufacturers' instructions then reset the controller by turning it off/on.

FACTORY RESET:

Hold down ENTER when power is off, hold down after powering up, releasing after 5 seconds.

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