Aquasun 3

Instruction Manual

DESCRIPTION

The Aquasun 3 is a premium automatic solar controller with temperature adjustment, manual, winter and tropical mode features. All configurable items are retained after a power outage for up to 14 days.

INSTALLATION INSTRUCTIONS

CONTROLLER INSTALLATION

Find a suitable location to mount the control box. The controller should be installed out of direct weather and no closer than 3 meters from the water's edge. Lift up the two mounting tabs and use two appropriate screws to mount the control box to the wall, keeping in mind that the power cable is 1.8m long and should be plugged directly into a general power outlet, not into an extension lead.

The solar pump plugs into the 240Vac socket marked as PUMP.

The pool sensor must be fitted into the suction line of the pump, 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 PVC pipe, this can be carried out using a Dontek PD01 grinding drill or a small pilot hole can be drilled and a 14.0mm drill-bit used spinning in a counter clockwise direction to minimise the chance of shattering pipe. Insert the grommet into the pipe and gently push in the blue/grey sensor barb. The blue sensor plug is to be fitted to the plug socket marked POOL.

DO NOT cable-tie or tape sensor wires to mains power, in some cases there is some benefit to cable tie 30cm of wire from the sensor to the pipe and insulate this section (some ambient differences can travel up the tinned copper wire and affect the sensor reading).

Roof sensors must be fitted into a small piece of solar collector or equivalent and attached to the roof. The best location is within an arm's length of the gutters edge of the house or shed as long as the sensor end is not shaded and is on a roof of similar aspect of the main collector. It **must not** be fitted on top of the solar collector or fitted to high points on the roof like ridge capping as false readings will be detected.

Keep in mind that it is of the utmost importance to keep the roof sensor as short as possible as this will assist in the longevity of the sensor and controller in the event of electrical storm activity and power surges. Sensor cables **must not be run parallel to power cables** and run lengths should be less than 50m if possible. Cable ties should be used to fasten the sensor cable to the cold water inlet pipe making sure that the ties are approximately 10mm from PVC fittings. Cable ties should be tightened only firm, over tightening can cause breaks in the outer PVC if not careful. If the cable is to be run under ground a conduit must be used to protect the wire and there is to be no cable joins within, conduit ends **must** be sealed to prevent water ingress. **Any excess cable should be removed and re-fitted ensuring that the wire ends are tinned with solder.** The red sensor plug is to be fitted to the right hand socket marked ROOF.

TEMPERATURE LIMIT

To adjust the pool limit simply press the UP button to increase or the DOWN button to decrease the desired temperature.

The controller will automatically choose to run the pump based on solar gain (i.e. sun shining & roof is hot), once the desired temperature is achieved the pump is stopped and a four hour wait commences to ensure no energy is wasted by cycling the pump.

If after 4 hours the roof is hot enough then the pump may start to provide another heating cycle and if the desired temperature is reached again then no heating will occur until the next day unless the controller is operating in time-clock mode where heating can occur until solar lockout time (09:00 till 19:00)

MODE OF OPERATION

Pressing the SELECT button once will display the current mode of operation, pressing it again or holding it will select the next available mode of operation.

The available modes are SUMMER, MANUAL, TROPICAL or WINTER.

Summer mode is the normal operating mode for heating the pool.

Winter mode of operation is for off-season maintenance or if pool heating is not required *[AWAY MODE]*. This is a better option than turning off the controller as it will flush treated pool water through the solar system as well as prolong pump bearing and mechanical seal life. The pump will run for 3 minutes each day from when the winter mode was selected or at 10am if the time-clock mode was selected.

Tropical mode is for situations where the pool water overheats beyond the set temperature limit due to direct heating from the sun. The unit will attempt to sample the pool water when solar gain is available and if after 3 minutes the pool is above the desired temperature limit then the controller will wait until the roof is 4°C cooler than the pool temperature, the pump is then started to cool the pool (this will most likely occur at night).

Manual mode is for testing the pump installation on a cold or cloudy day. Once manual mode is selected the pump will start if it has been off, or stop if it has been on (running). After 30 minutes manual mode will time-out and return to Summer Mode with a default temperature limit of 30°C

Settings mode is for setting the unit into time-clock operation.

When you select this option you will be asked if you wish to use the clock feature (CLK? ON/OFF).

If you select OFF then the controller will not work as a time-clock model and will prevent starting the pump to sample at night based on a sequence of events.

If you select ON you will be prompted to set the time of day, the controller will work in time-clock mode and the solar pump is prevented from starting outside of the set hours (unless tropical mode is selected). Set the time of day in 24 hour format, note there is an AM/PM indication to avoid incorrect settings. Seconds are automatically set to zero.

Once the time is set select the START hour from 6am till 12 noon, default is 9am which means the solar pump cannot start before 9am.

Now select the END hour from 15:00 [3pm] until 21:00 [9pm], default is 19:00 [7pm] which means the solar pump will stop at 7pm.

INSTALLER SETTINGS - ADJUSTABLE DIFFERENTIAL & ANTI-FREEZE/BOIL FEATURES:

Special note: Adjusting these values to any setting other than the defaults may adversely affect the performance of this controller. To select these features, hold the DOWN button then press SELECT. When you select this option you will be prompted to set the solar gain start temperature [RUN° x] this setting allows the pump to start if the roof temperature exceeds the last valid pool temperature or pipe temperature by this value, adjust with the UP/DOWN button, press SELECT to accept. Next you will be prompted to set the differential hysteresis [END° x] which turns the pump off when roof temperature is less than the pool temperature plus this value, adjust with the UP/DOWN button, press SELECT to accept. Default values are 8° for RUN and 4° for END, these are the optimal values for maximum efficiency, some coastal locations may benefit from a reduced run value of 6°C for RUN and 4°C for END.

The next item is anti-freeze, you will be prompted by FRZ? ON/OFF, adjust with the

UP/DOWN button, press SELECT to accept. If you select OFF then you will be prompted to the anti-boil selection. If you selected ON then you will be prompted to adjust the anti-freeze start temperature point as follows; "FREEZE° x "adjust with the UP/DOWN button, press SELECT to accept. Once the roof temperature gets to the anti-freeze setting or below then the pump will be turned on for 3 minutes then turn off for 30 minutes, this sequence will repeat until the roof temperature rises above the anti-freeze temperature.

The next item is anti-boil, you will be prompted by BOIL? ON/OFF, adjust with the UP/DOWN button, press SELECT to accept, if you select OFF then the above settings will be saved and the unit will restart. If you selected ON then you will be prompted to adjust the anti-boil start temperature point as follows; "BOIL °xx" adjust with the UP/DOWN button, press SELECT to accept. The unit will save the new settings and restart. Once the roof temperature gets to the anti-boil setting or above then the pump will be turned on for 5 minutes then turn off for 15 minutes, this sequence will repeat until the roof temperature drops below the anti-boil temperature. The customer is to be made aware that these features have been turned on and that the controller must remain turned on at all times.

NOTES

1. If a sensor fault is detected the controller will display which sensor failed (POOL and/or ROOF) and the type of failure.

2. After a power outage all configurable items are retained & the clock (if used) will keep time for up to 14 days.

3. The sensor cable with the red trace is the positive and is usually fitted to the right hand side of the plug when looking at the plug screws, incorrect polarity may be displayed as a short circuit or reversed fault.

4. 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.

5. Maximum combined rated output load for the 240V socket(s) is either, 9.98 Amps / 2395 Watts, **or**, 14.97 Amps / 3593 Watts. Please refer to the unit's rating label.

6. Degree of protection against moisture: IP23

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WARRANTY – AQUASUN 3

This range of product is covered by a limited 3 year warranty against component failure or faulty workmanship from the date of installation.

A faulty unit should be returned in the first instance to the dealer from which the unit was purchased.

Damage to the unit due to misuse, power surges, lightning strikes 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 phone 1300 130 693

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