

WARRANTY – AquaSun 3FS

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 cover 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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AquaSun 3FS INSTRUCTIONS

DESCRIPTION:

The AquaSun 3FS is a premium automatic solar controller with temperature adjustment, manual, winter and tropical mode features. This unit is fitted with a flow/pressure switch input; the solar pump can only start if flow is detected.

CONTROLLER INSTALATION:

Find a suitable location to mount the control box. The controller must be installed out of direct weather and no closer than 3 meters from the waters 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 Flow switch is fitted in the PVC pipe after the filter and before the take-off T; it must be mounted at the top of the pipe with the arrow matching the direction of water flow. If a pressure switch is used it must be mounted before the filter.

The pool sensor must be fitted into the suction line of the filtration 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 minimize the chance of shattering pipe. Insert the grommet into the pipe and gently push in the black sensor barb. The green 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 arms 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 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 exceeded by ½°C the pump is stopped until the pool temperature drops ½°C below the temperature limit setting. Solar heating may occur whenever the flow switch is detecting water flow unless the controller is operating in time-clock mode where heating can occur until solar lockout time (default run 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, WINTER, TROPICAL and SETTINGS.

Summer mode is the normal operating mode for heating the pool while the flow switch detects water flow.

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. Note that Manual ON requires the flow switch to detect water flow.

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 once a day from when the flow switch detected water flow.

Tropical mode is for situations where the pool water overheats due to direct heating from the sun, beyond the set limit. When the roof is 4°C cooler than the pool temperature, the pump is started (this will most likely occur at night and requires the flow switch to detect water flow) and will attempt to cool the pool to 1°C above the temperature limit. Normal heating will occur the next day if the pool drops below the set temperature limit by 1°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 allow the solar pump to run whenever there is solar heating available if the flow switch detects water flow.

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 noon, default is 9am which means the solar pump cannot start before 9am.

Now select the END hour from 15 (3pm) till 21 (9pm), default is 19 (7pm) which means the solar pump will stop at 7pm.

INSTALLER SETTINGS - Adjustable differential:

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 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 pipe 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.

Once the Advanced settings have been adjusted all the above settings will be saved and the unit will restart. Re-adjust the temperature limit if required.

Factory Test:

To run the factory test, hold the SELECT button when first applying power, the unit will perform a series of self-diagnostic functions with the pump running.

If there are any faults they will be reported on the display before the unit restarts into normal operation.

Note: that this will force all settings to a factory default state. Re-enable time-clock, temperature limit and operating mode if desired.

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. Temperature sensors used with this unit is digital and is accurate to 0.5°Celsius, no calibration is required.
4. The sensor cable with the thin trace is the positive and is fitted to the right hand side of the green plug when looking at the plug screws, incorrect polarity will be displayed as a short circuit or reversed fault.
5. When the flow switch detects water flow a 3 minute checking sequence that ensures there is suitable temperature & water flow before the unit will start. When the water flow is interrupted the solar pump is turned off.
6. When the solar pump starts it will display the SOLAR ON (PURGE) message this indicates a 3 minute minimum solar run time to ensure the pipes are cool before allowing the system to drain.
7. Maximum total rated output load is 10 Amps 2400 Watt.