

# V2 & V2T - INSTALLATION INSTRUCTIONS

## **Controller Mounting**

Find a suitable location to mount the control box. Ideally as with all pool equipment it should 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 1.9m long and should be plugged directly into a general power outlet, not into extension leads. If the V2 Controller is to be fitted to a Retro-Fit (Boosted System) the power cord is to be plugged into the same power source as the main filter pump, this could be into an Ioniser, Salt Chlorinator or Time Clock. This will ensure that the booster pump only activates if the main pool pump is operating.

## **Pool Sensor**

For stand alone systems with separate suction and return the pool sensor must be fitted into the suction line of the solar boost pump preferably in a position out of direct sunlight. For retro fit systems the pool sensor must be fitted in the suction line of the main filter pump or between the outlet of the filter and the 'T' fitting before the solar boost pump. 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 14.5mm drill-bit used spinning in a counter clockwise direction to minimize the chance of shattering pipe. The sensor plug is to be fitted to the left hand socket.

## **Roof Sensor**

The roof sensor end must be fitted to a small piece of solar collector or equivalent and attached to the roof. The best location is within arms length of the guttering 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 run, and must not be fitted on top of the solar collector.

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. Cable ties should be used to fasten the sensor cable to the cold water inlet pipe making sure that the ties are about 10mm from PVC fittings. Cable ties should be tightened firm but not too tight so the outer PVC of the cable is not broken. 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, ends of conduit 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.

## **Notes**

All excess cable must be removed; coils of cable are not permitted under any circumstances. If the cable is to be extended with non genuine cable a size of 14/020 should be used. **Any cable joins must be soldered and this includes where the cable enters the terminal block at the case base.** Heat shrink is to be used over soldered joints to eliminate moisture ingress. If the case is opened to attach sensors then the polarity must be observed as incorrect polarity will show an error as stated below. If the sensor cable has a black and white lead, the white lead is positive and the black is negative and if each wire is the same color, the one with the thin trace is the positive and the solid colour the negative.

Once cables have been correctly fitted the unit can be turned on.

## Fault Diagnosis

In the event of a sensor or cable failure, the display will indicate the type of failure as follows;

### ROOF SENSOR.

A display of 99 indicates a broken or disconnected sensor cable or open circuit sensor.

A display of 88 indicates wrong polarity connection or short-circuited cable or sensor.

A display of 89 indicates a high sensor reading out of normal operating range.

A display of 00/03 indicates an over extended or coiled sensor cable. (When powered up with up button pressed)

A flashing display of 44 or 55 may also indicate an over extended, coiled sensor cable or a corrupt sensor.

### POOL SENSOR

A display of 77 indicates a broken or disconnected sensor cable.

A display of 66 indicates wrong polarity or short-circuited sensor cable.

A display of 67 indicates a sensor reading out of normal operating range.

## V2 & V2T - OPERATING INSTRUCTIONS

When in **Summer Mode**, the V2 and V2T will turn the pump on when the roof temperature is higher than the pool temperature by 4-8 degrees. If the pool temperature reaches the limit setting the pump will be locked out and the limit light will flash. This condition will remain till either the pool temperature falls lower than the limit setting by 1-2 degrees or night time has passed. An auto flush program is incorporated to ensure accurate pool temperature readings are obtained as the pool sensor is normally located well away from the actual swimming pool and may sit in direct sunlight or in warm enclosures. When auto flush is in wait mode the limit light will be on constant until the pump is turned on for a three minute test, the pump light will flash until this test is over.

The V2 and V2T has a **Winter Mode**, which turns the solar pump on for 3 minutes every 24 hours to assist in the systems off-season maintenance. This may be entered by pressing and holding both the up and down buttons together for 3 seconds, the display will go blank and the pump and limit indicators will flash alternately. It will continue in this mode until either one of the buttons is pressed, which will return the unit to normal run mode. If the power is interrupted during winter mode the V2T will continue to count time accurately.

To assist in the cooling of an overheated pool the optional V2T has a **Tropical Mode**. To set this function first turn the unit off, then while holding the down switch pressed, turn the unit back on. The display will briefly show 55 on the display to indicate the unit is in tropical mode. When in tropical mode, if the limit temperature is reached, which will be indicated by the limit light flashing, and the roof temperature falls below the limit temperature (usually some time late at night) the pump will turn on and pump pool water to the roof to cool it down. The pump will turn off when the pool water is cooled to the limit setting. To switch this function off, first turn the unit off, then while holding the down switch pressed, turn the unit back on, the display will briefly show 44 on the display to indicate the unit is in normal Summer Mode

The roof temperature can be displayed if desired, by first turning the power off to the unit, then, while holding the up button pressed, turn the unit on.