

AQUAGEN 5 RT

CONTROLLER

USER MANUAL



Australian Made by **dontek**

The AquaGen 5RT Controller is designed for systems where the solar is plumbed into the existing pool plumbing and operates the filter time-clock and solar pump.



Supreme Heating

Heating Australian Pools For Over 30 Years.



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.

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 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 using the screws and wall plugs kit provided, and slide the controller on, locking into place. Adjust screws on the back of the unit to ensure snug fit.

To remove unit, lift and gently pull away from structure.

PUMP CONNECTION

The filter (sanitiser) pump plugs into the 240V socket labelled FILTER.
The solar pump plugs into the 240V socket labelled SOLAR.
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 PDO1 grinding drill or a small pilot hole can be drilled with 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 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 as 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.

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 point to current mode 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.

Night Cool mode is for situations where the pool water overheats beyond the set temperature limit due to direct heating from the sun.



NOTE that heating & cooling is only allowed during the allowable time if solar run hours have been selected

Standby mode of operation is for off-season maintenance or if pool heating is not required. 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. A 3 minute flush of the solar collector occurs between the solar start time and the end time, providing the roof temperature is equal or greater than the pool, but if that condition does not occur before 1pm (13:00) then a solar system flush will be forced to occur.

Filter Manual is for switching the filter pump on or off for 3min/Backwash to 24hrs, Once Filter manual is selected the filter pump will start. The ENTER button will toggle the pump on or off during this mode. After manual mode time-outs, unit will return to the previous mode.

Solar Manual is for testing the solar pump installation on a cold or cloudy day. Once manual mode is selected the pump will start. After manual mode time-outs, unit will return to the previous mode.



The factory default for SOLAR MODE is Heating MODE

TEMPERATURE SETTING (UP AND DOWN BUTTONS)

Adjusting the temperature limit will allow the controller to heat the pool until the temperature limit $+1/2^{\circ}\text{C}$ is achieved. 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 $1/2^{\circ}\text{C}$ below the temperature limit setting. Due to rounding the actual heat may vary by up to $\pm 1/2^{\circ}\text{C}$.

The ability to solar heat the pool will depend on weather conditions.





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) FILTER TIMERS
- 3) SYSTEM

1) EXIT

Will save changes and return to automatic operation

2) FILTER TIMERS

When the FILTER TIMERS is selected the following is displayed;

No. OF TIMES PER
DAY TO RUN: x

Select the number of times per day you wish the circulation pump to operate for filtration purposes. If OFF is selected then the pump will only operate for heating purposes, otherwise the following is displayed;

One time per day menu:

FILTER CYCLE menu:

FILTER CYCLE
xx:xx TO xx:xx

Twice per day FILTER CYCLE 2 menu:

FILTER CYCLE 1 FILTER CYCLE 2
xx:xx TO xx:xx xx:xx TO xx:xx

Adjust the start time and end time for the required filter cycle(s), the circulation pump will run between these times for filtration purposes.

Notes

- Take care not to overlap filter cycle 2 times with the filter cycle 1 times as the result will be one cycle per day.
- For 24 hour filtration set to run 1 time per day with the start & end times the same (E.g. 12:00 – 12:00).
- If the unit is configured as a series retro-fit and solar is not locked to the filter timer then any solar gain will over-ride the filter timer to operate circulating pump for solar heating.
- In winter mode the 2nd filter cycle does not run if it is set to disabled in winter mode.
- Single cycles are also halved during winter months.
- At the start of every month in winter months (if Auto Winter is set), Standby mode is activated



Factory Default is ON, one time per day from 09:00 to 17:00
(the 2nd cycle default is 17:00-21:00)

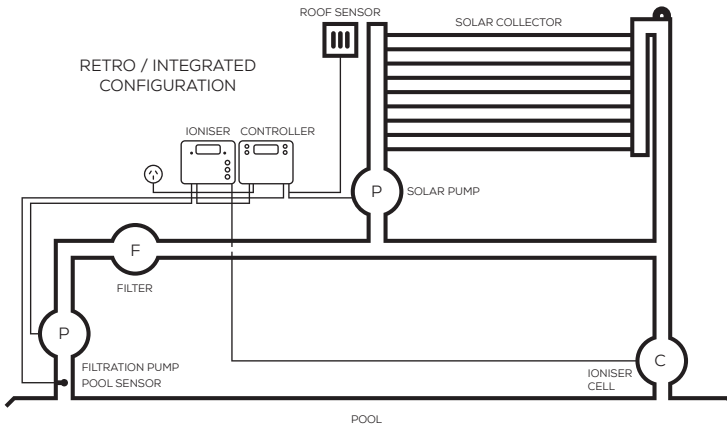
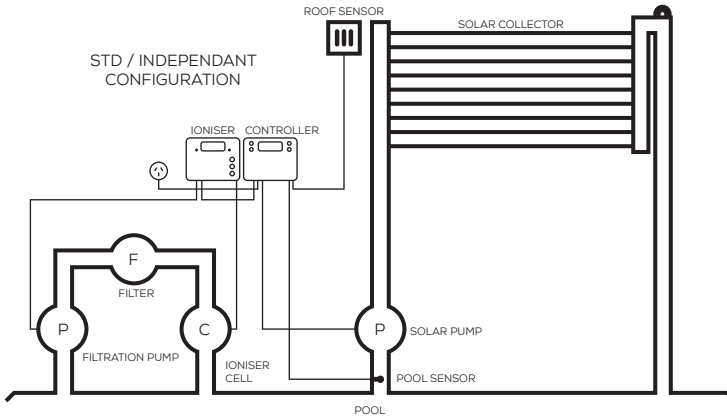
3) SYSTEM

- EXIT** Press ENTER on this menu to return to automatic operation.
- SET CLOCK** Allows you to adjust calendar date and time of day.
- LCD TIME** Adjust the number of seconds the backlight remains on after the time a button was pressed. (Select NONE for always on.)

INSTALLER SETUP

To access menu press enter and scroll down to system and press the mode button.

Warning professional only settings!!



Warn the customer not to change from series retro-fit as damage may occur

SYSTEM SUB-MENU	
FACTORY DEFAULT? NO/YES	Restore back to factory defaults.
USE AUTO WINTER? YES/NO	When selected you will be prompted to select the start month of winter and the start month of heating. Winter Mode assists in the systems off-season maintenance and save energy as solar gain may be available but swimming temperature cannot be achieved or solar heating is not desired. A 3 minute flush of the solar collector occurs between the solar start time and the end time, providing the roof temperature is equal or greater than the pool, but if that condition does not occur before 1pm (13:00) then a solar system flush will be forced to occur. Selecting winter mode does not turn off auxiliary heating. A start month of 'always' can be selected which permanently sets the unit into winter mode.
PLUMBING CONFIG: INDEPENDENT/STD PLUMBING CONFIG: SERIES RETRO-FIT	Select series retro-fit (integrated) if the solar pump requires feed from the circulating pump, select independent/std if the solar system and heater are plumbed separate from the filtration line. See images above for typical set-ups.
USE SOLAR DRAIN? NO/YES	If NO is selected then the solar pump will stop if solar heating is no longer required. If YES is selected the following menu is presented:
DRAIN IS TO STOP PUMP FOR XX MINS (RANGE = 03-15 MINUTES)	The controller stops all pumps for the selected number of minutes. This allows for the water to drain out of the solar collectors before the pool pump is restarted. If the pool is not at solar limit during the drain process and solar heating becomes available the system will resume heating. The system may delay the drain process if the pool is below limit and if the roof temperature is above the pool temperature
LOCK TO FILTER? NO/YES (ONLY SHOWN FOR SERIES RETRO-FIT)	Selecting NO allows the solar to override the filter timer to run the circulation pump for solar heating during the allowed solar times. Selecting YES will only allow the solar to run while the filter timer is active.
ALLOW SOLAR FROM (NOT SHOWN IF 'YES' WAS SELECTED ABOVE) XX:XX TO XX:XX (RANGES = 06:00- 12:00 AND 12:00- 21:00)	This setting will not allow the solar system to run outside of the times set. (Select 12:00-12:00 to always allow solar.)
USE LIVE SENSOR? NO/YES	You have the option to select a 'LIVE' sensor, select YES for a commercial system where the pool sensor is in constant water flow, selecting NO (recommended) will turn on the sampling feature where the controller assumes that pipe temperature is not always pool temperature.

ROOF TEMPERATURE START DIFF X.X° (4.0°- 40.0°C) ROOF TEMPERATURE STOP DIFF X.X° (1.0°-(START -2°C)) ROOF TEMPERATURE MIN. ROOF XX.X° (OFF,10.0°-60.0°C)	You can choose to modify the differentials, the start differential is the temperature the roof needs to rise above the pool temperature to start the pump; the end differential stops the pump when the roof drops below the pool temperature plus the end differential. Minimum roof is the roof temperature required for the solar to start heating (Off = feature disabled)
PRIME PROTECT? YES/NO	Ensure the filtration pump is operating (and at the required speed for variable speed pumps) via the controller's filter socket and is primed, press enter and then select AUTOMATIC or MANUAL
AUTOMATIC	The unit will automatically set the threshold levels and returns to automatic operation. If the current draw of the filtration pump drops below the selected threshold levels then the filter pump is forced to switch off
MANUAL	The unit will display the pump's load value and ALLOW RUN=>xxx it indicates the minimum load required to allow filter to run, set this value 25% lower than the displayed LOAD value. then set OVERLOAD=>xxx(use this if pressure will be an issue on the solar). If NO is selected the unit will operate without PRIME PROTECTION
FREEZE PROTECT? NO/YES (RANGE 1.0°C-6.0°C)	Anti-freeze function, when switched to ON will start the pump when the roof temperature drops to the selected temperature and operates for 3 minutes every 30 minutes until the roof temperature rises above the selected temperature
BOIL PROTECT? NO/YES	Anti boil function, when selected YES will start the pump when the roof temperature rises to the selected temperature and operates for 5 minutes every 15 minutes until the roof temperature rises above the selected temperature. Select NO and PIPE PROTECTION option will be offered
PIPE PROTECTION NO/YES	For use when Heatseeker UniPanels® cannot drain down and will require a wetted roof sensor for this mode
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 will display 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. FILTER PUMP FAILED TO PRIME error message cause by your pump not working to full potential, through no water in pump to a blocked filter
5. Maximum 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 at least 3 metres safely 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, and corrosion from pool chemical fumes, 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 _____



Supreme Heating

Heating Australian Pools For Over 30 Years.

2/19 Enterprise Drive, Bundoora, Victoria 3083

Phone: 1300 787 978

Email: info@supremeheating.com.au

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