CONTROLLER MOUNTING:
The controller enclosure must be firmly attached to a nearby solid fixture by either the two mounting lugs or direct attachment though the controller. If mounting through the controller ensure the power cord is disconnected from the mains supply then remove the enclosure front cover by turning the four corner locks so each arrow points to the 'O' marked on the front cover. Insert two mounting screws diagonally through the oval holes in the enclosure, refit front cover and turn the four corner locks to the 'I' position.
The power cable is 1.8m long and should be plugged directly into a general power outlet, not into an extension lead.

CIRCULATING PUMPS:
The solar circulating pump plugs into the right hand 240Vac socket marked as SOLAR PUMP and is plumbed via a T-piece after the filter (RETRO-FIT) a non-return valve is to be fitted between the filter and the T-piece. The left hand 240Vac socket marked as AUXILIARY will control the filtration pump. The AUX ON. LED will be lit when the filtration pump is operating. The maximum allowable combined current for both pumps is 10 AMPS @ 2400W.

TEMPERATURE SENSORS:
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 before the take off Tee fitting for 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 14.0mm 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.
Roof sensor must be fitted into a small piece of rubber collector material away from the main collector but on the same aspect. Keep in mind that it is of the utmost importance to keep the roof sensor cable 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 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.

HEATER INTERLOCK AND CHLORINATOR:
The heater interlock cable connects to the green socket marked RELAY1 which switches on the NO/C contacts when the heater is to be turned on. The other end of the heater interlock cable connects in series to the heater's flow or pressure switch circuit. If the heater's flow/pressure switch circuit is 240Vac then a special switchbox is to be connected (Option SB02).
The Chlorinator switchbox (SB01) connects to the green socket marked RELAY2 which switches on when within the filter times.

DESCRIPTION:
The RSI-C is a swimming pool controller that heats a swimming pool by the use of solar collectors and/or an auxiliary heater via an interlock cable (if fitted). It will also run a chlorinator during filter times via the RELAY2 contact and an external switch box.
It is designed for retro-fit installations where independent plumbing for the solar pump is unavailable, at times of solar gain the filtration pump is started prior to the solar pump regardless of filter times.
Solar has a time lockout that prevents heating outside of the time set (default 09:00 – 18:00).
The auxiliary heater (gas or heat pump) has a temperature limit setting (aux limit), the pool will be heated to this limit by the auxiliary heater via the RELAY1 interlock cable.
The auxiliary heater run time is controlled by heat demand settings, which can be set to on/off and set to run between start and end times, note that if the start & end time are set to the same values the auxilliary heater will run for 24 hours to achieve temperature limit.
If solar gain is available the solar system will heat the pool to the solar limit (sol limit), if large solar gain is detected the auxilliary heater will be switched off to save energy.

SETTINGS MENU:
All items on the LCD that flash are adjustable items, use the *Up* or *Down* buttons to modify the adjustable item.
Press *Enter* to accept the adjustable value.
To enter the SETTINGS MENU push either the up or down buttons and the following will be displayed;

```
SETTINGS MENU
1) MANUAL MODE
```

All menu items are shown below, use the *Up* or *Down* buttons to scroll to different items in the menu;

```
SETTINGS MENU
1) MANUAL MODE
2) FILTER TIMER
3) TEMPERATURE
4) HEAT DEMAND
5) MODE
6) SET CLOCK
7) SAVE & EXIT
```

1) MANUAL MODE

```
MANUAL PUMP MODE
UP=ON   DOWN=OFF
```

MANUAL MODE allows you to manually set the aux pump to 'on' by pressing the *Up* button or 'off' by pressing the *Down* button.
Pressing *Enter* will return you to the SETTINGS MENU. You can also keep pressing *Enter* to toggle the filter pump from 'on' to 'off' and vice versa.
MANUAL MODE will time out, after 24 hours the unit will return to automatic operation.

2) FILTER TIMER

When the FILTER TIMER is selected the following is displayed;

```
SINGLE CYCLE
DUAL CYCLE
```

Select SINGLE CYCLE or DUAL CYCLE, Single Cycle runs the filtration and chlorinator once per day, Dual Cycle runs the filtration and chlorinator twice per day.

Single & Dual cycle sub menu;   Dual cycle sub menu;
```
FILTER CYCLE        FILTER CYCLE          2nd FILTER CYCLE        2nd FILTER CYCLE
START TIME  x:xx    END TIME   x:xx       START TIME  x:xx        END TIME   x:xx
```

Adjust the start time and end time for filter cycle 1; if dual cycle was selected then also adjust the start and end time for the 2nd cycle. Note that If dual cycle is selected take care not to overlap the 2nd filter times with the first filter times as the result will be one cycle per day.
If 24 hour filtration is required set a single cycle with the start & end times the same (12:00 – 12:00).
Any solar gain will force the filter pump to turn on if required and heat demand requirements will also control the filtration pump.
**Factory Default is ON, DUAL CYCLE from 09:00 to 13:00 and 16:00 to 20:00

3) TEMPERATURE

```
   TEMPERATURE
SOL LIMIT    xx.x°
```

When you enter the TEMPERATURE menu you may adjust the solar heater temperature limit setting (SOL LIMIT).
**Factory default is for SOL LIMIT is 30°C.

If heat demand is turned on the following temperature setting is also displayed;

```
   TEMPERATURE
AUX LIMIT   xx.x°
```

AUX LIMIT allows you to adjust the temperature limit for the auxiliary heater. (heat demand).
**Factory default is for AUX LIMIT is 25°C.

NOTE 1:   AUX LIMIT setting will only be shown if heat demand is turned on.

NOTE 2:   For maximum efficiency it is advisable that the solar limit (SOL LIMIT) be set higher than the auxilliary limit (AUX LIMIT)

4) HEAT DEMAND (only set to ON if auxiliary heating fitted)

```
HEAT DEMAND
 ON/OFF
```

When you enter the HEAT DEMAND you will need to select ON or OFF, the OFF setting disables any heating and the ON setting allows the auxiliary heater to run between the following times;

```
HEAT DEMAND TIME          HEAT DEMAND TIME
START TIME   x:xx         END TIME   x:xx
```

NOTE: if a 24 hour continuous heating time is required then set the start time and end time to the same value. (12:00 - 12:00)

```
IF LIMIT ACTIVE
SAMPLE AT xxxx
```

Sets the sampling period once the pool has reached the auxilliary temperature limit, options are 15 min, 30 min, 1 hour, 2 hours. Once the pool reaches the aux temperature limit and the filter pump is turned off it will not be turned on until the sample period expires, the filter pump will then run for a minimum period of 3 mins so that water can flow past the pool temperature sensor and obtain an accurate reading. Should heating be required the filter pump will remain on to heat the pool.
**Factory default for HEAT DEMAND is OFF (06:00 to 22:00, sample @ 1 hour)

5) MODE

```
MODE              MODE                MODE
SUMMER MODE       AUTO WINTER MODE    TROPICAL MODE
```

SUMMER MODE is the normal operation of heating the swimming pool.
TROPICAL MODE is selected if you wish to cool the swimming pool, the solar pump will run if the roof temperature is colder than the pool until SOL LIMIT is obtained; note that this is most likely to occur at night.
WINTER MODE, when selected you will be prompted to select the start month of winter and the start month of summer, the purpose of winter mode is not to use solar to heat the pool but to ensure the solar collector on the roof gets flushed otherwise the water in the collector becomes contaminated. If heat demand is set to OFF a 3 minute flush of the solar matting occurs between 10:00 and 16:00 providing the roof temperature is equal or greater than the pool, but if that condition does not occur a solar system flush will be forced to occur at 16:00. If heat demand is ON the system operates similar to normal mode but solar pump activity is monitored and will force a 3 minute flush if solar has not been active for seven days, note the unit may flush if winter mode is selected on the day of install.

6) SET CLOCK

```
TIME   17:00 PM
WED   29/09/2010
```

This menu allows you to adjust the time and date.
Adjust for correct day of the week, date, month, year, hour and minutes, seconds are set to zero.
Note: time is in 24 hour format, there is also an AM/PM displayed to avoid clock setting errors.

7) SAVE & EXIT

When this menu is selected, push *Enter* to save ALL settings, the unit will return to normal operation automatically.
Note: 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.

The *Enter* button.

```
FOR MANUAL MODE
PRESS ENTER NOW
```

Pressing the *Enter* button once will display the above message for ~3 seconds, simply wait and the unit will return to normal operation (this will also bypass the 3 minute pump on delay).
If you *Enter* is pressed for a second time within a 3 second period, the display will indicate you have entered Manual mode, operation is the same as manual mode in the menu with the only difference being the timeout value is 4 Hours.

NOTES.

1. If a sensor fault is detected the unit will display which sensor and what the fault is.
2. Should power be interrupted for any reason, the unit will resume normal operation when power is restored, all information will have been kept.
3. Temperature sensors used with this unit are Digital and are accurate to 0.5 Deg. C, no calibration is required.
4. The sensor cable with the thin trace is the positive and is usually fitted to the right hand side of the green plug, incorrect polarity will be displayed.
5. If Auxiliary heater interlock switching is used the maximum load is 5A at 32VAC max.
6. Solar start and end times may be changed by holding the up button while power is applied.
7. The chlorinator switchbox maximum load is 10A at 240VAC max.

WARRANTY

This 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. Unit must be returned to manufacturer for repairs.

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 SUNLOVER HEATING

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