

CONTROLLER MOUNTING:

The controller enclosure must be firmly attached to a nearby solid fixture by either the two mounting lugs or direct attachment through 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 PUMP:

The circulating pump plugs into the right hand 240Vac socket marked as PUMP and will be operating as indicated by the PUMP ON LED. The left hand 240Vac socket marked as Auxiliary provides continuous power as indicated by the AUX ON. LED. *The maximum allowable combined current for both sockets is 10 AMPS @ 2400W.*

HEATER INTERLOCK:

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 (daisy chain) to the heater's flow or pressure switch circuit (refer manufactures instructions). If the heater's flow/pressure switch circuit is **240Vac** then **DO NOT** connect the RELAY1 cable directly to the heater, a KIT02 needs to be used which is supplied with an external 240V rated relay which will need to be connected in series with the flow/pressure switch by a **licensed electrician**. Set the temperature setting on the heater 5°C above the desired water temperature to allow the SLH7 to be in control without conflict.

VALVE:

The valve actuator is connected to the green socket marked VALVE, wired as described on the label. The valve is used for selecting or bypassing the solar collector. Wire as per the label on the controller.

TEMPERATURE SENSORS:

The pool sensor must be fitted into the suction line of the pump, 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.

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.

DESCRIPTION:

The SLH7 SV is a swimming pool controller that heats a swimming pool by the use of an auxiliary heater or if solar gain is available an automatic valve will divert water to the solar collectors.

The auxiliary heater (gas or heat pump) has a temperature limit setting (AUX LIMIT) and run time settings, the pool will be heated to this limit by the auxiliary heater, in situations of high solar gain the controller activates an energy saver mode, in energy saving mode the auxiliary heater is switched off regardless of pool temperature when the roof temperature exceeds 15°C above the AUX LIMIT, once the energy saver mode is active the auxiliary heater remains OFF until the roof temperature drops below the AUX LIMIT plus 10°C.

If solar gain is available the solar system will heat the pool to the solar limit (SOL LIMIT).

Solar has a time lockout that prevents heating outside the hours of 08:00 to 19:00 and can be changed (see note 6).

An automatic divert valve will divert water to the solar collectors when there is enough solar gain and will bypass the collector when solar heating is no longer available.

Heating is performed to the temperature limit plus ½°C and once that temperature is achieved heating will no re-occur until the temperature drops below the desired limit by ½°C or until the sample period has elapsed and the temperature is at or below the limit.

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) TEMPERATURE
3) HEAT DEMAND
4) SOLAR MODE
5) SET CLOCK
6) SAVE & EXIT
```

1) MANUAL MODE

```
MANUAL MODE 24H
UP=ON DOWN=OFF
```

MANUAL MODE allows you to manually set the 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 pump from 'on' to 'off' and vice versa.

MANUAL MODE will time out, after 24 hours the SLH7 will return to automatic operation.

2) TEMPERATURE

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TEMPERATURE
SOL LIMIT XX.X°
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When you enter the TEMPERATURE menu you may change the solar temperature limit setting by pressing the *Up/Down* buttons, if no change is required simply push *Enter* and you will then be taken to the AUX LIMIT setting. (Factory default is for SOL LIMIT is 30°C.)

```
TEMPERATURE
AUX LIMIT XX.X°
```

Note: If heat demand is turned off, aux limit will not be shown.

You may change the auxiliary heater temperature limit setting by pressing the *Up/Down* buttons, if no change is required simply push *Enter*. (Factory default is for AUX LIMIT is 25°C.)

NOTE: For maximum efficiency it is advisable that the solar limit (SOL LIMIT) be set higher than the auxiliary limit (AUX LIMIT) **SETTING THE AUX LIMIT HIGHER THAN SOLAR LIMIT WILL RESULT IN COOLING!**

3) HEAT DEMAND (only set ON if auxiliary heating fitted)

```
HEAT DEMAND
ON/OFF
```

When you enter the AUX. HEATER menu you will need to select ON or OFF.

If OFF is selected you will return to the menu and the heater will never run automatically, If ON is selected you will be prompted for START and END time, the heater will only run between these times.

```
HEAT DEMAND TIME          HEAT DEMAND TIME
START TIME  hh:mm        END TIME    hh:mm
```

NOTE: if a 24 hour continuous run time is required then set the start time and end time to the same value. (E.g. Start 12:00, End 12:00)

```
IF LIMIT ACTIVE
SAMPLE AT XXXX
```

Sets the sampling period once the pool has reached the auxiliary or solar temperature limit, options are 15 min, 30 min, 1 hour, 2 hours. Once the pool reaches the aux or solar temperature limit the pump is turned off it will not be turned on until the sample period expires*, the 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 pump will remain on to heat the pool.

*The sampling period may end if solar gain becomes available, for this to occur the roof must be greater than 40°C and the last pool temperature (when the pump was running) is under the solar limit.

```
GAS HEATER USED?
YES/NO
```

Setting this option to YES will turn off the heater before the valve is moved to the roof, auxiliary heating will then resume until solar gain is high or until aux limit is reached. For PARALLEL installation the heater remains off while water is diverted to the solar collector (See HEATER CONFIG.)

```
HEATER CONFIG
PARALLEL WTH SOL/INLINE WTH SOLAR
```

This setting depends on the installation; if the valve diverts all water flow to the roof then select PARALLEL WTH SOL, if the water return path from the solar collector returns to the heater then choose INLINE WTH SOLAR.

**Factory default for HEAT DEMAND is OFF (06:00 to 22:00, sample @ 1 hour) GAS HEATER = ON, HEATER SETUP = PARALLEL WTH SOL

4) SOLAR 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 AUX. HEATER 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 AUX. HEATER is set to ON then the system operates similar to summer 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.

****Factory default for solar mode is SUMMER MODE**

5) SET CLOCK

When you enter the CLOCK menu you will be prompted to set the calendar & time.

Adjust values by pressing the *Up/Down* buttons, to accept the setting press the *Enter* button, repeat until all values are correct.

6) 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 3-4 mins the menu will time out and automatically save all settings and return to operation.

The ENTER/MANUAL button (Manual heating mode)

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FOR MANUAL MODE
PRESS ENTER NOW

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Pressing the *Enter* button once will display the above message for ~3 seconds, to prevent accidental manual mode if ENTER is not pressed again within the 3 second period then the controller will revert to automatic operation (and it will cancel any pump lockout delays).

If ENTER is pressed again within 3 seconds then manual mode is activated, the solar pump is stopped (if operating) and the aux pump (filtration) is switched on, the following is displayed;

```

MANUAL MODE 4HR
23.5° SET=30.0°

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The displayed temperature on the left hand side is the water temperature; the SET temperature displayed on the right hand side is what manual mode will heat the water to before the aux. heater is switched off.

Use *Up* button or *Down* button to change the SET temperature to the required comfort level.

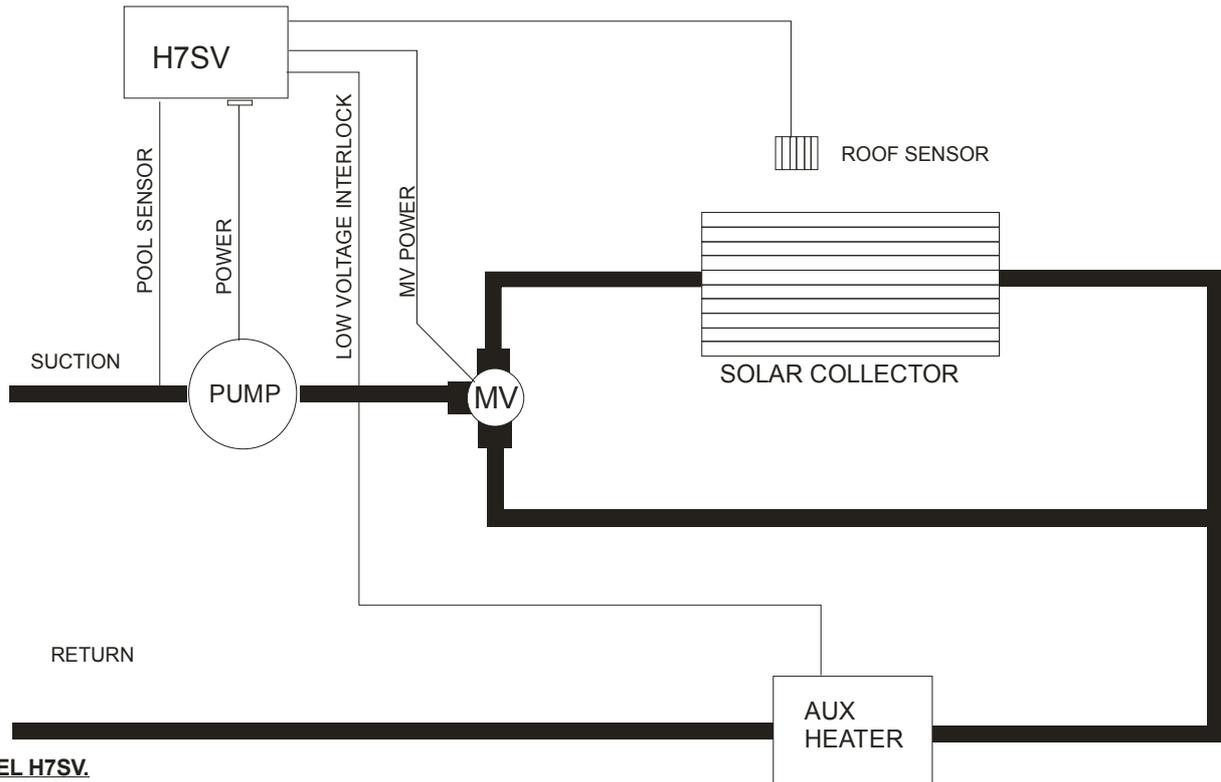
Press & hold *ENTER/MANUAL* to exit manual heating mode and revert back to automatic mode.

Manual heating mode will automatically revert to automatic operation 4 hours after the last temperature adjustment.

NOTES.

1. If a sensor fault is detected the SLH7 will display which sensor and what the fault is.
2. Should power be interrupted for any reason, the SLH7 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 lock-out can be modified by holding the up button on power-up.

Typical Installation:



MODEL H7SV.

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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 QLD 07 5597 7360

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