

DESCRIPTION:

The H7 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 auxilliary heater (gas or heat pump) has a temperature limit setting (aux limit), the pool will be heated to this limit by the auxilliary heater.

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 auxiliary 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).

Solar has a time lockout that prevents heating outside the hours of 09:00 to 19:00.

An automatic divert valve will divert water to the solar collectors when there is enough solar gain and will revert back to the auxilliary heater if required.

SETTINGS MENU

To enter the SETTINGS MENU push either the up or down buttons and the following will be displayed;

SETTINGS MENU

1) MANUAL MODE

Use *Up/Down* buttons to scroll to the option you wish to change. Press the *Enter* button to select the currently displayed menu item.

All menu items are shown below;

SETTINGS MENU

1) MANUAL MODE

2) TEMPERATURE

3) HEAT DEMAND

4) MODE

5) CLOCK

6) SAVE & EXIT

1) MANUAL MODE

MANUAL PUMP MODE

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 H7 will return to normal operation.

2) TEMPERATURE

TEMPERATURE

SOL LIMIT XX.X°

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 auxilliary 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 auxilliary limit (AUX LIMIT)

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

HEAT DEMAND
ON/OFF

When you enter the HEAT DEMAND you will need to select ON or OFF, the selected option will be flashing, you can use *Up/Down* to change the selected option, *Enter* to accept.

If OFF is selected you will return to the menu, If ON is selected you will be prompted for START and END time, modify values by using the *Up/Down* buttons, use *Enter* to accept the values. Factory default is 'heat demand off'

HEAT DEMAND TIME HEAT DEMAND TIME
START TIME X:XX END TIME X:XX

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) MODE

MODE
NORMAL MODE/WINTER MODE/TROPICAL MODE

You can use *Up/Down* to change the selected option, *Enter* to accept.

NORMAL 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. There is also a feature that re-heats the pool if the temperature drops 1°C below the SOL LIMIT. Once tropical mode is activated the heat demand will be automatically turned off which also prevents the AUX LIMIT being displayed under the temperature menu.

WINTER MODE, when selected you will be prompted to select the start month and end month of winter (inclusive), this assists in the systems off-season maintenance and save energy as solar gain may be available but swimming temperature cannot be achieved. 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 the solar valve activity is monitored and will force a 3 minute flush if solar has not been active for seven days.

5) CLOCKTO CHANGE CLOCK
SET MINS XXTO CHANGE CLOCK
SET HOURS XXTO CHANGE CLOCK
SET DATE XXTO CHANGE CLOCK
SET MONTH XX

When you enter the CLOCK menu you will be prompted to change the MINS settings, adjust minutes by pressing the *Up/Down* buttons, to accept the setting press the *Enter* button.

You will then be prompted to change the HOURS, adjust by pressing the *Up/Down* buttons, to accept the setting press the *Enter* button.

You will then be prompted to change the DATE, adjust by pressing the *Up/Down* buttons, to accept the setting press the *Enter* button.

You will then be prompted to change the MONTH, adjust by pressing the *Up/Down* buttons, to accept the setting press the *Enter* button.

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* 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.

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 H7 will display which sensor and what the fault is.
2. Should power be interrupted for any reason, the H7 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.

Return to Manufacturer for repair.

IHD – In House Display (optional)

The In House Display will display the roof and pool temperatures for 5 seconds, it then displays the solar and auxilliary limits for 5 seconds, temperatures to the display are updated every 30 seconds. You can change the temperature limit settings via a menu system.

Pushing the up/down button once will activate the backlight for ~30 seconds, pushing the up/down button again within 3 seconds will then activate the settings menu shown below.

SETTINGS MENU
1) TEMPERATURE
2) SAVE & EXIT

Menu operation is the same as for the H7 described above.

Note that you can set the temperature to OFF via the IHD, be aware that if heat demand is on at the H7 the pump will still sample at the set intervals.

Also setting the solar limit to OFF is not recommended, Winter mode is a better option.

If IHD shows 'WAITING FOR UPDATE' it can be for several reasons, the H7 menu is being accessed or is in manual mode or if temperature limit changes do not get sent back to the H7 or if temperature readings do not get updated then check the wiring back to the H7.

The IHD has default power-up limits of 25°C for AUX and 30°C for Solar and 27°C for pool and roof until the H7 updates them with stored values.

To force a temperature update, you can get the IHD to retrieve temperatures by pushing up/down once, followed by select (within 3 secs) note that if the pump is off only the last recorded pool temperature will be displayed, due to the sensor being in a pipe without flow.

Installation:

There is a sticker near the connectors that describe each connection.

The heater is connected to the NO & C contacts of RELAY1 socket.

The valve is connected to the VALVE socket; wire colours are included in the label.

The IHD connects to the DATA socket; colours are to match as marked on the IHD circuit board, incorrect wiring will damage the IHD.

Pool sensor and roof sensors are pre-wired and simply connect straight in as labelled.

