
H7-STD & H7A

Instruction Manual



DESCRIPTION

The H7-STD is a controller for heating of a swimming pool with a heat-pump or gas heater. One pump is controlled for water circulation and the gas heater can be controlled by the 240VAC socket marked 'AUXILIARY' and/or a heat-pump with the supplied interlock cable on the 'RELAY 1' output (model H7A option).

At the start of a heating cycle the pump operates without heating for three minutes to sample the pool water temperature, if heating is required it will then be switched on until the temperature limit is achieved. When the temperature limit is achieved the heater switches off and the pump continues to run for a cool-down cycle which is adjustable. When the cool-down cycle is complete the pump switches off for a sample wait period which is adjustable, during the sample wait period the last accurate pool reading will be displayed. After the sample wait period expires another sample is performed, this process repeats until the end of the heating time period.

INSTALLATION INSTRUCTION

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 water's edge and a minimum 600mm of the ground. 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 1.8m long and should be plugged directly into a general power outlet, not into an extension lead.

Mount the pump and sanitiser according to the manufacturer's instructions.

PUMP CONNECTION

The pool circulating pump plugs into the 240VAC socket labelled PUMP.

The maximum combined load for both sockets is 9.98 AMPS at 2395W.

HEATER CONTROL

Set the heaters temperature limit to maximum (40°C) as control of the pool temperature will be performed by the H7 controller.

A gas heater may be plugged into the 240VAC socket marked AUXILIARY (do NOT power a heat-pump with the H7, refer the heat-pump manufacturers installation instructions for power requirements.)

The H7A allows the use of a RELAY1 heater interlock cable to interrupt the heater's pressure or flow switch to turn off heating. 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 heater end of the heater interlock cable connects in series to the heater's flow or pressure switch circuit, most heaters have a loop wire, remove the loop wire and connect the heater interlock cable in its place, contact the manufacturer of the heater for help on locating the heaters loop cable or flow/pressure switch. The heater interlock is for low-voltage switching only, if the heater's flow or pressure switch circuit is 240Vac then an external relay is to be connected (KIT02) by a licensed electrician.

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 minimize the chance of shattering pipe. Insert the grommet into the pipe and gently push in the blue 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 green (or blue) sensor plug is to be fitted to the plug socket marked COLD.

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. If the cable end is to be refitted to the plug sockets then the polarity must be observed as incorrect polarity will show an error as stated in Fault Diagnosis. The sensor cable with the red wire (or white) is the positive and should be fitted to the right hand cable entry when the screws are in a vertical position. Once cables have been correctly fitted the unit can be turned on.

RECOMMENDED PLUMBING

See Diagram under INSTALLER CONFIGURATION.

OPERATING INSTRUCTIONS

LCD SCREEN

In automatic mode the LCD screen displays the pool temperature, heating timer settings, heater temperature limit and on/off/locked-out status and the time of day & date [clock]. In manual backwash mode the controller displays the pump status and in manual heating mode the controller displays the temperature and set temperature.

LED INDICATORS

AUX. ON – 240V socket labelled AUXILIARY is ON.

PUMP ON – 240V socket labelled PUMP is ON.

ENTER/MANUAL BUTTON

The controller always starts in automatic mode of operation. When this button is pressed the following is shown on the LCD screen;

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

The above message is displayed for ~3 seconds, simply wait and the controller will return to automatic operation. Any delays active will be cancelled by this action.

If the ENTER/MANUAL button is pressed for a second time within a 3 second period, the display will indicate you have entered manual heating mode;

```
MANUAL MODE 24HR  
23.5° SET=37.0°
```

The pump will be switched ON and the heater will controlled according to the temperature limit, timeout is set to 24 hours before it returns to automatic mode. Press the ↑ or ↓ buttons to adjust the temperature limit. Press the ENTER/MANUAL button to return to automatic mode.

↑ AND ↓ BUTTONS (CONTROLLER SETTINGS)

To change controller settings enter the SETTINGS MENU by pressing the ↑ or ↓ buttons.

The following will be displayed;

```
SETTINGS MENU  
1) TEMPERATURE
```

The menu system can be navigated using the ↑ or ↓ buttons, all selectable and changeable values will flash on the LCD screen. Press the ENTER/MANUAL button to accept the currently displayed [flashing] item.

All menu items are shown below;

```
SETTINGS MENU  
1) TEMPERATURE  
2) AUX. HEATER  
3) SYSTEM SETUP  
4) SAVE & EXIT
```

1) TEMPERATURE

When the temperature menu is selected the following is displayed;

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

Adjusting the temperature limit will allow the controller to heat pool until the temperature limit + $\frac{1}{2}$ °C is achieved*, heating will then remain off until the sample wait period expires.

*Notes:

1. Due to rounding the actually heating hysteresis is + $\frac{1}{4}$ °C.
2. Menu item 4 [AUX. HEATER] must be turned on to allow temperature adjustments.

** Factory default for AUX. LIMIT is 27°C

2) AUX. HEATER

When the AUX. HEATER selected the following is displayed;

```
No. OF TIMES PER  
DAY TO RUN: x
```

Select the number of times per day you wish the heater to operate. If OFF is selected then the heater will never operate for automatic heating, otherwise the following is displayed;

One time per day menu:

```
AUX. CYCLE  
xx:xx TO xx:xx
```

Twice per day AUX CYCLE 1 menu:

```
AUX. CYCLE 1  
xx:xx TO xx:xx
```

Twice per day AUX CYCLE 2 menu:

```
AUX. CYCLE 2  
xx:xx TO xx:xx
```

Adjust the start time and end time for the required heating cycle(s), the circulation pump and heater will operate between these times for automatic heating purposes.

Note: For 24 hour heating set to run 1 time per day with the start & end times the same [E.g. 12:00 – 12:00].

**Factory default for AUX HEATER is ON from 06:00 to 22:00

3) SYSTEM SETUP

When the system setup menu is selected 6 options are available;

```
SET CLOCK, INSTALLER SETUP, FACTORY  
DEFAULTS, TEST FUNCTION, TEMPERATURE  
LOGS and EXIT.
```

The following sub menus are displayed dependent on your selection;

SET CLOCK – Allows you to adjust calendar date and time of day.

EXIT - Will return you to 3) SYSTEM SETUP with no changes.

TEMPERATURE LOGS – Logs min/max temperatures & time of occurrence, also displays run times for pumps and heater, NO support is offered for this feature.

TEST FUNCTION – Turns on the internal relays in sequence then turns all relays off.

FACTORY DEFAULTS – Restores ALL the settings to the factory default state.

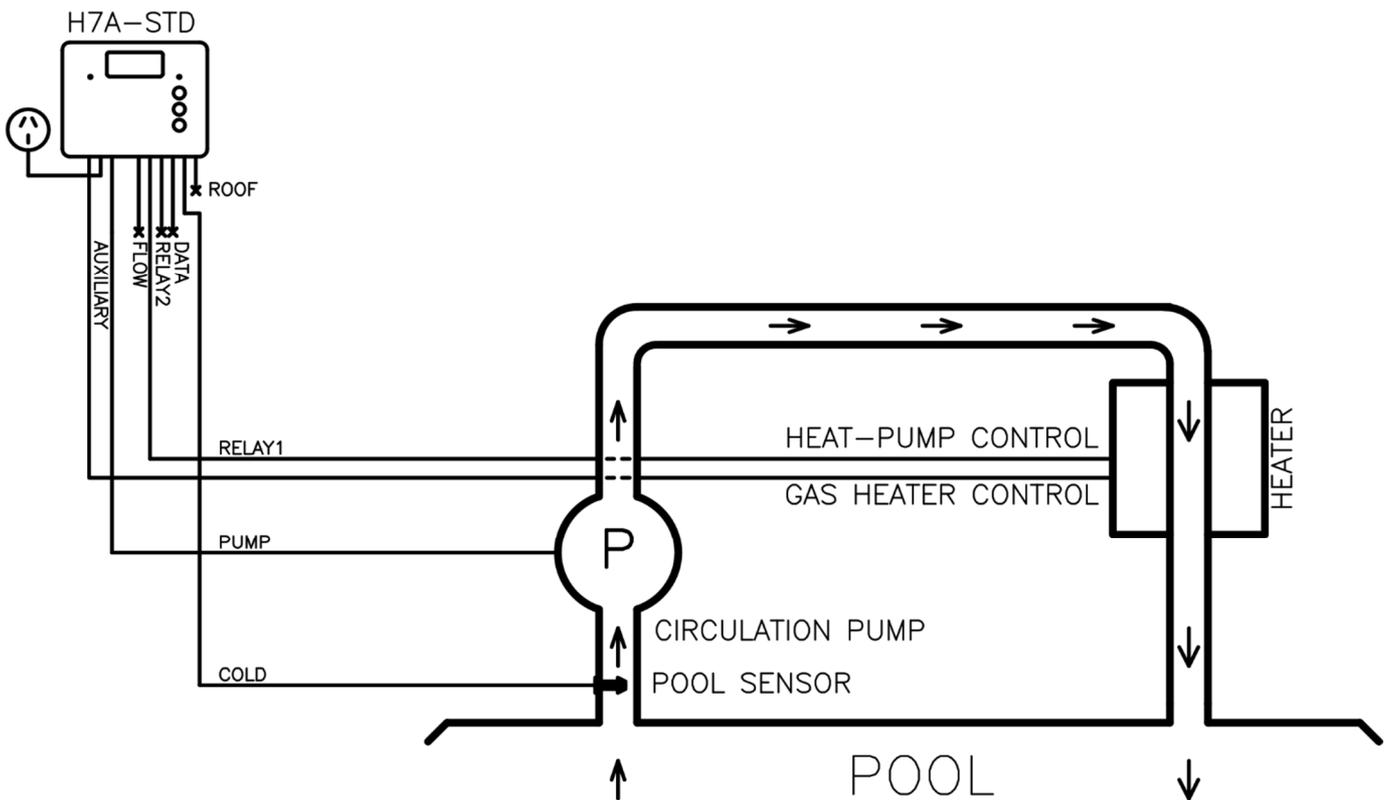
INSTALLER SETUP - This sub-menu is for installer's ONLY, see the installer configuration section for more details.

4) SAVE & EXIT

When this menu is selected, push the ENTER/MANUAL button to save ALL settings, the controller will then return to automatic operation.

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.

INSTALLER CONFIGURATION



INSTALLER SETUP - This sub-menu is for installer's ONLY;

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.

If no live sensor was selected above then the following menu item is displayed;

SAMPLE TIME:

xx:xx (hh:mm)

[RANGE = 0:15-8:45]

If the temperature limit is achieved the controller will turn off the pump and begin a sample wait period before further heating can occur. After the sample time period has expired the pump will run for 3 minutes to sample the water temperature and if after the 3 minute sample heating is required then the pump will continue to run and the heating is switched on.

After the live sensor or sample time menu is the option to adjust the heater cool-down time;

HEATER COOL DOWN

xx MINUTE(S)

[RANGE = OFF-20 MINUTES]

Once the heater achieves temperature or if the heating time period ends then the heater is switched off, the cool down timer ensures that the circulation pump continues to operate to cool the heater before the pump switches off.

WARRANTY - H7 STD

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. 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. Valves and actuators are covered by a twelve month warranty at the discretion of their manufacturer.

Warranty does not cover 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

For service assistance phone 1300 130 693



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