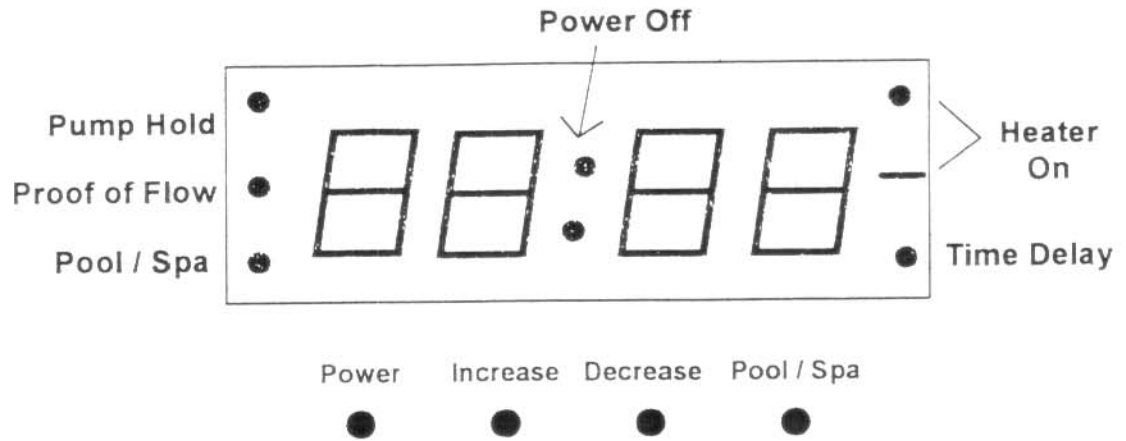


**Trevor-Martin  
Heat Pump  
Controller**

## Display & Buttons



The indicators operate as follows:

**Power Off** flashes once a second when the unit is off and power is applied.

**Pump Hold** is lit whenever the controller is engaging the Pump Hold relay.

**Proof of Flow** is lit whenever the pressure sensor detects pressure.

**Pool / Spa** is on solidly when in Pool mode and flashes once every second when in Spa mode.

**Heater On** is indicated by the dot in the upper right corner and the line just below it. Both are lit whenever the Heat Pump is turned on.

**Time Delay** is lit whenever the controller is waiting for the temperature to stabilize and/or for the Heat Pump anti-cycle delay to expire.

The buttons operate as follows:

**Power** turns the unit on and off.

**Increase** raises the temperature or increments the configuration values.

**Decrease** lowers the temperature or decrements the configuration values.

**Pool / Spa** toggles between Pool and Spa operation if unit properly configured for Pool/Spa operation.

## Operation

### Startup –

When power is first applied to the controller it will display the software version number '**UEr2**' unless there is a jumper on the two pins closest to the 'RMT' connector.

If there is a jumper on the two pins closest to the 'RMT' connector, the unit will go into configuration mode and the display will show '**PO**'.

If the unit is not in configuration mode then one of three things will be displayed:

- 1) If there is a jumper on the two pins closest to the 'SENS' connector this indicates that the controller is used for a pool/spa combination. '**PSPA**' will be displayed.
- 2) If there is no pool/spa jumper '**2TnP**' will be displayed if there is a temperature sensor connected to the Sensor B input. This indicates that the sensor is in the Pool Body of water.
- 3) If there is no sensor connected to Sensor B input the display will read '**POOL**'.

Next a '**00**' will be displayed that indicates that the controller is cycling thru its startup operations. This will take over 5 minutes while the system waits for the temperature to stabilize and to provide a heat pump anti-cycling lockout.

The controller starts out in Pool mode.

After startup has completed the pool temperature will be displayed unless an error occurred (see Errors below).

### Power On/Off –

The unit is turned on and off by pushing the button on the leftmost side of the display. Turning the unit off also turns off the Heat Pump and Pump Hold relays.

### Setting the temperatures -

To set the desired temperature use the middle two buttons. Pressing the left middle button will increase the temperature and pressing the right middle button will decrease the temperature.

The minimum pool and spa temperatures are 40 degrees F and the maximum pool and spa temperatures are 104 degrees F. The desired temperatures cannot be set lower than the minimum or higher than the maximum. After five seconds with no button being pushed the display will return to showing the pool or spa temperature.

### Switching between Pool and Spa (optional)

This button only switches if the Pool / Spa jumper is in place. To switch between Pool mode and Spa mode push the rightmost button. If in Pool mode, Spa mode will be selected (if there is a spa) and if in Spa mode it will switch to Pool mode with indicator on solidly to indicate Pool and flashing to indicate Spa (see the display section). When this button is pushed the heat pump, if it is on, will be turned off and the optional Jandy valve will be switched to the new mode in order to read the temperature of the new selection. There will be a five-minute delay while the temperature is stabilized and to prevent rapid heat pump cycling.

### Configuration Mode –

To put the unit in configuration mode turn the unit off. Now place a jumper block on the two pins closest to the 'RMT' connector. Turn the unit on. 'P0' will be displayed for about three seconds and then the value for P0 will be displayed. At this time the value for P0 can be changed using the two middle buttons. To see the next configurable variable push the rightmost button. Again Px, where x is a number from 0 thru 7, will be displayed followed by its value. See the table below for the meanings of the configurable variables Px.

When you are done with configuration turn the unit off and remove the jumper block. Turn the unit back on and the unit will be in normal mode.

Variable	Meaning	Default
P0	Wait time between temperature checks when Temperature is above or equal to the desired value. Value represents 20-second increments.	120 (=2400 secs)
P1	Wait time between temperature checks when Temperature is below desired value. Value represents 20-second increments.	1 (=20 secs)
P2	Default desired pool temperature.	80 °F
P3	Default desired spa temperature.	80 °F
P4	Jandy valve delay in seconds.	30
P5	Wait before checking for Proof of Flow after Pump Hold relay is activated. Value in seconds.	5
P6	Wait time for Proof of Flow after activating Pump Hold relay before reporting an error. Value in seconds.	30
P7	Wait time for temperature stabilization. This is also used as the Anti-cycle delay for the heat pump. Value represents 2-second increments.	150 (=300 secs)

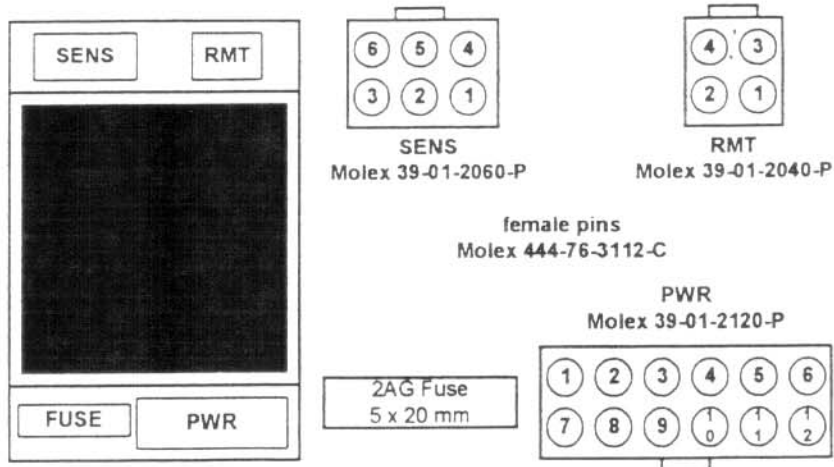
### Errors –

There are currently seven error codes. They are displayed as 'ErrX' where X is the error code number from 1 thru 7. Below is a list of the error codes and their meaning.

If the condition causing the error is corrected the display will return to normal.

Error	Meaning
Err1	No Pool temperature sensor detected
Err2	Pool temperature too low (below 40 degrees F)
Err3	Pool temperature too high (above 110 degrees F)
Err4	No Spa temperature sensor detected
Err5	Spa temperature too low (below 40 degrees F)
Err6	Spa temperature too high (above 110 degrees F)
Err7	No Proof of Flow

## Connections



### PWR Connector

Note jumper wire required between pins 2 and 8 to supply 24VAC for Heat Pump Contactor circuit.

Pin	Signal
1	24VAC Return
2	Heat Pump In
3	Heat Pump Contactor Out
4	Pump Hold Contactor Out
5	Jandy Valve Spa
6	Jandy Valve Pool
7	24VAC In
8	Heat Pump 24VAC
9	Heat Pump Contactor Return
10	Pump Hold Contactor Return
11	Jandy Valve Return
12	spare

### SENS Connector

Pin	Signal
1	Thermistor A Pool Input (Goldline 10K)
2	Thermistor B Spa (or Pool Body of Water) Input (Goldline 10K)
3	Proof of Flow Pressure Switch Input
4	Thermistor A Return
5	Thermistor B Return
6	Proof of Flow Pressure Switch Return

### RMT Connector

Pin	Signal
1	+5VDC
2	Display Data
3	Ground
4	Display Clock