



# GHT 2002D

## UNIVERSAL TEMPERATURE CONTROLLER



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# GHT 2002D Temperature Controller

## Introduction:

The **GHT 2002D** is a Universal Temperature Controller used for controlling the current to heating devices from 100 VAC to 240 VAC. See Specification Table Page 4

The controller uses a temperature sensor probe (TSP) to signal the ECU when more or less heat is needed, depending on the set temperature and sensed temperature relationship.



(Fig 1)

The front of the **GHT 2002D** has a three digit digital display that displays the set temperature, the sensor temperature and temperature scale in Fahrenheit (F) or Celsius (C).

Just below the digital display is a pair of easy to use temperature display control switches, one red and one blue.

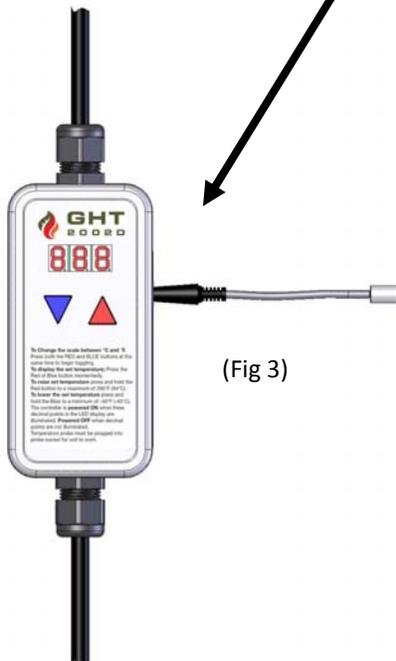
The right side has a probe socket to receive the temperature sensor probe male plug.

**NOTE:** The TSP must be plugged into the probe socket for the controller to work properly. See Fig 3.



Temperature Sensor Probe (TSP)

(Fig 2)



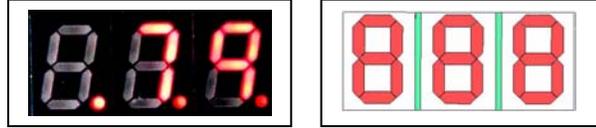
(Fig 3)

**CAUTION: Connect the GHT 2002D to a GFI protected power source.**



**Once Connected**

On power-up the **GHT 2002D** goes through a 5 second start-up routine.



(Fig 5)

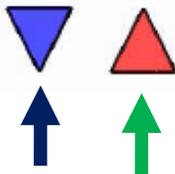
After the start-up the display will show the sensor temperature. The heater is **powered ON** when three decimal points in the LED display are illuminated and **powered OFF** when decimal points are not illuminated.



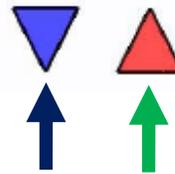
When controlling the temp of sensitive products it is best to place the probe directly against or within the product. When warming a confined space, place the probe in free air at about midway.



The aluminum tip and wire of the TSP can be in contact with most liquids, however check with suppliers of strong acid and base materials before using. A thermal well may be required



**To Change the scale between °C and °F** press both the RED and BLUE buttons at the same time to begin toggling.



**To display the set temperature** press either the Red or Blue button momentarily.

**To raise the set temperature** press and hold the Red button to a maximum of 185 °F (85°C).

**To lower the set temperature** press and hold the Blue to a minimum of -30 °F (-34°C).

<p><b>To change the scale between °C and °F</b> press both the RED and BLUE buttons at the same time to begin toggling.</p> <p><b>To display the set temperature</b> press the Red or Blue button momentarily.</p> <p><b>To raise the set temperature</b> press and hold the Red button to a maximum of 185 °F (85°C).</p> <p><b>To lower the set temperature</b> press and hold the Blue button to a minimum of -30 °F (-34°C).</p> <p>The heater is <b>powered ON</b> when three decimal points in the LED display are illuminated and <b>powered OFF</b> when decimal points are not illuminated.</p> <p>Temperature probe must be plugged into the probe socket for the unit to work properly.</p>	<p><b>Specifications:</b> Wall and control voltage range: 100 to 240 VAC</p> <table border="1"> <thead> <tr> <th>Input (VAC)</th> <th>Power (Watts)</th> <th>Output VAC</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>1200</td> <td>100</td> </tr> <tr> <td>120</td> <td>1400</td> <td>120</td> </tr> <tr> <td>200</td> <td>2300</td> <td>200</td> </tr> <tr> <td>220</td> <td>2500</td> <td>220</td> </tr> <tr> <td>240</td> <td>2750</td> <td>240</td> </tr> </tbody> </table> <p><b>Set Point Range:</b> -30°F (-34°C) to 185°F (85°C)</p> <p><b>Temperature Sensors:</b> P/N TS3212 3 foot long Temperature Sensor P/N TS6212 6 foot long Temperature Sensor</p>	Input (VAC)	Power (Watts)	Output VAC	100	1200	100	120	1400	120	200	2300	200	220	2500	220	240	2750	240
Input (VAC)	Power (Watts)	Output VAC																	
100	1200	100																	
120	1400	120																	
200	2300	200																	
220	2500	220																	
240	2750	240																	

**Calibrating the Sensor:**

The temperature sensor will be accurate to ± 5.4°F (± 3°C) without calibration. With calibration the temperature sensor will improve to ± 1.8°F (± 1°C). To calibrate the temperature sensor, place the sensor tip into an 8 oz glass of crushed ice and water for at least 30 seconds. Press and hold both buttons and plug in the **GHT 2002D**. While holding the buttons “CAL” will flash 20 times and then a number between 0 and 14 will be displayed. If the calibration failed a “---” will be displayed and the unit will return to normal operation, but not be calibrated. A successful calibration will be locked into memory and does not have to be performed again until the temperature sensor is changed with a different one.

**Caution:**

The **GHT 2002D** should be connected to a GFI protected power source before using. Should the temperature sensor become unplugged or fail, the unit will turn off the power to the controlled device and the display will show “000”. If the temperature sensor is changed for any reason, the **GHT 2002D** will require calibration to meet the temperature accuracy.

**Features:**

The **GHT 2002D** has a 15 amp internal fuse that is designed to open should the controlled device have a direct short.  
The **GHT 2002D** is water resistant and can be used in protected environments (housed out of rain and snow) to -30°F (-34°C).  
The **GHT 2002D** can display in either degrees Fahrenheit or Centigrade.  
The **GHT 2002D** calibrated temperature accuracy is ± 1.8°F (± 1°C) across the full scale.