

AcuTemp™

Temperature Control

Installation Instructions and Operating Manual

The AcuTemp utilizes a microcontroller-based design to control water temperature. An advanced software algorithm closely monitors the rate of tank temperature changes and controls the heating source to minimize fluctuations in tank temperature while optimizing fuel efficiency. The control features adjustable temperature settings for both residential and commercial temperature operating ranges.

NOTICE - Read these instructions completely before proceeding with the installation. Retain these instructions for future reference.



WARNING

Electrical shock hazard. To prevent electrical shock, death, or equipment damage, disconnect power supply before installing or servicing control.



WARNING

All work must be performed by a qualified and licensed professional in accordance with all applicable codes and ordinances.

RATINGS

Input	24 VAC, 60 Hz
Power	2.4 VA
Output	Dry contacts, 50 VA @ 24 VAC, 60 Hz
Ambient temp	30°F - 140°F

Operating temp (user selected)

Model 2000 (Residential Setting): 60°F - 160°F default

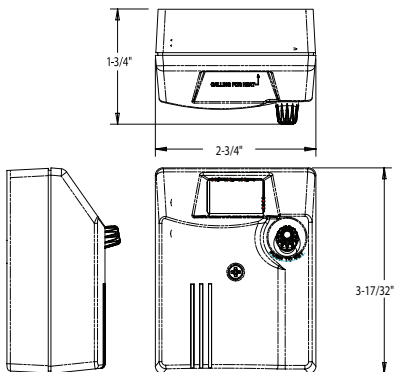
Model 2000 (Commercial Setting): 60°F - 180°F

Other Models: 60°F to the number specified in the suffix of the model number. (ex Model 2000-135 has an operating temp range of 60°F - 135°F)

Differential

Automatically controlled 5°F - 10°F

DIMENSIONS



INSTALLING THE CONTROL



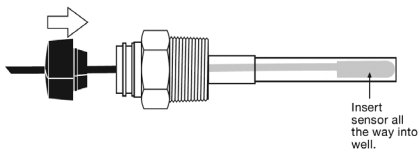
1 Locate the immersion well in the tank that is designed for the temperature control.



2 Hold the AcuTemp control onto the well and tighten the screw at the base of the control.



3 Slide the sensor into the well. **NOTE:** two sensor diameters (3/8" & 1/4") are available to accommodate different well sizes.



3A Sensor and Well (remote mounted control)

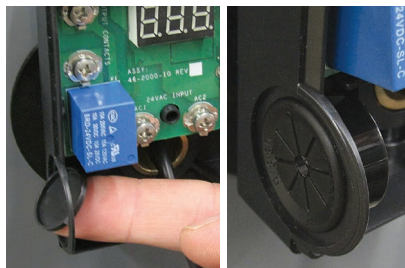
1. Insert the sensor all the way into the well.
2. Install the rubber well cap onto the sensor wire and slide to cover the end of the well

WARNING: The sensor must be fully inserted and fit snugly in the well for proper operation. If a smaller sensor is used or the sensor is not fully inserted *overheating and scalding could result.*



4 Trim the sensor wire to the required length (if needed). Plug the sensor wire into the sensor input. The terminals are not polarity sensitive.

NOTE: Be sure the wires are fully inserted into the sensor input.

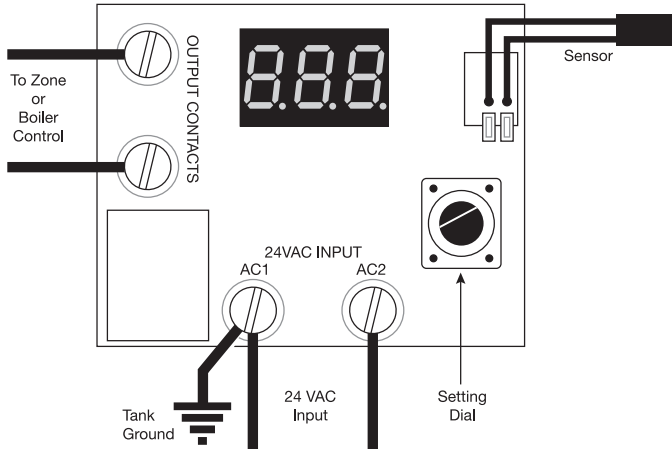


5 Remove the knockout and replace it with the plastic bushing.

NOTE: For line voltage applications replace the knockout with proper conduit in accordance with all applicable codes and ordinances.

WIRING THE CONTROL

REFER TO "WIRING THE CONTROL" BELOW OR YOUR TANK MANUAL FOR WIRING INSTRUCTIONS.



- 1 Connect the 24 VAC power source to the "24 VAC Input" terminals (24 VAC transformer field supplied).
Connect 24 VAC hot to terminal AC2 and 24 VAC common to AC1. Be sure the AC1 terminal is also electrically connected to the tank/system ground.

- 2 Connect the "Output Contacts" to the zone or boiler control's domestic water input.
NOTE: The "Output Contacts" are isolated dry contacts that close when the control calls for heat.

DISPLAY

During normal operation the control will display the temperature set point. If the control is calling for heat, the decimal point in the bottom right of the display will light. When the tank temperature is satisfied, the decimal will turn off.



Calling for Heat

SETTING THE CONTROL

Push the setting dial to enter the Temperature Setting mode. When pressed, the display will show 'OFF' or the current temperature setting. Turn the dial to select the desired water temperature to be maintained in the water heater. See Commercial/Residential (below) for available temperature ranges. The display will return to the operating mode after five seconds of inactivity.

IMPORTANT: Temperature variations can exist within the water heater. The value displayed on the control is the approximate temperature. A typical starting adjustment point is 120°F. Test the water at the closest point of use for final control adjustment.

DANGER: Scald Hazard – Exposure to 125°F or hotter water can cause scalding injuries. A mixing valve should be installed on installations where point of use water temperatures are 125°F or higher.

Temperature Differential The differential does not need to be set. The AcuTemp's advanced software algorithm determines the optimum temperature to initiate heat calls.

Celsius / Fahrenheit To change from Fahrenheit to Celsius, push and hold the setting dial for 5 seconds. The current selection, "F" or "c" will blink on the LED display. Release and turn the setting dial to the desired setting "F" or "c" then push the setting dial again to select it. **NOTE:** When the control is set for Celsius, the display will include a "c" following the temperature. Once selected, the display will return to the operating mode.

Residential / Commercial The control is equipped with two temperature ranges: One for residential installations (60°F-160°F)* and a second for commercial installations (60°F-180°F). **NOTE:** Not available on all models. To change from the Residential range to the Commercial range, remove power from the control. Then push and hold the setting dial while restoring power. The current range, "r" or "c" will blink in the LED display. Release and turn the setting dial to the desired range "r" or "c", then push the setting dial again to enter the setting. Once entered, the display will briefly show the selected setting; then the control will display "off". Follow the instructions above (Setting the Control) to set the desired temperature within the selected (residential or commercial) range.

*Note: Some models have a max set point less than 160°F. See ratings section on page 1 for details.

Error Codes



Sensor Error

The resistance value of the sensor is out of range. Check the sensor connection to the pc board. If the connection is good, the sensor may need to be replaced.



Self Test Error

The control has failed an internal test of the hardware or software. Try cycling 24 VAC power off and on. If the problem is resolved, the control will return to normal operation. If the error does not clear, the control should be replaced.



Water temperature over 125°F (52°C) can cause severe burns instantly resulting in severe injury or death.

Children, the elderly, and the physically or mentally disabled are at highest risk for scald injury.

Feel water before bathing or showering. Temperature limiting valves are available.

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