

## Non-electric Room Responsive Control

### Applications

The Hydronic Alternatives Non Electric Room Responsive Control (WM-32) provides room responsive water temperature control of a diverting valve.

### Features

The Room Temperature Control is a non-electric modulating diverting valve control. The control modulates system water temperature to maintain a room temperature set by the user.

### Specifications

Capillary length from actuator to room thermostat: 32 feet

### Installation

Mount the room thermostat on an inside wall of the heated room approximately 5 feet from the floor. Do not place it near drafts or behind objects that will block natural circulation (curtains, doors, cabinets, HA30D.) Unscrew the actuator at its center joint and remove the body from the actuator bellows. The bellows can be easily run through walls to the mixing valve, being careful not to kink the capillary. Make sure the plastic insert that sets on top of the bellow is reinstalled after snaking capillary through the wall. If present, unscrew the plastic cap from the mixing or modulating valve. Thread the actuator onto the valve and hand tighten. Do not use pliers or a wrench. The circulation pump must be wired for constant circulation with seasonal shut down and start up.

**Note:** Precaution should be made to limit the maximum water temperature delivered to the diverting valve to protect floors from excessive temperatures.

This is simply accomplished by installing an aquastat (M/H L6006 C series) that breaks on temperature rise and is wired in series with the circulator. Once the temperature limit is achieved the circulator stops. The temperature range should be from 140 F to 150F (maximum).

### Operation

The Non Electric Room Responsive Control (WM-32) is a modulating diverting valve control. The closer the room temperature gets to the set point of the thermostat, the lower the system water temperature will be. When the set-point is reached, the diverting valve will recirculate 100% of the system return water, assuring constant circulation at all times.

#3 adjustment on the thermostat represents 65°F room temperature.

1 - closed

❄ - frost protection: valve opens when room temperature drops below 43°F [6°C]

1 - 54°F

2 - 60°F

3 - 66°F

4 - 72°F

5 - 78°F

6 - 84°F

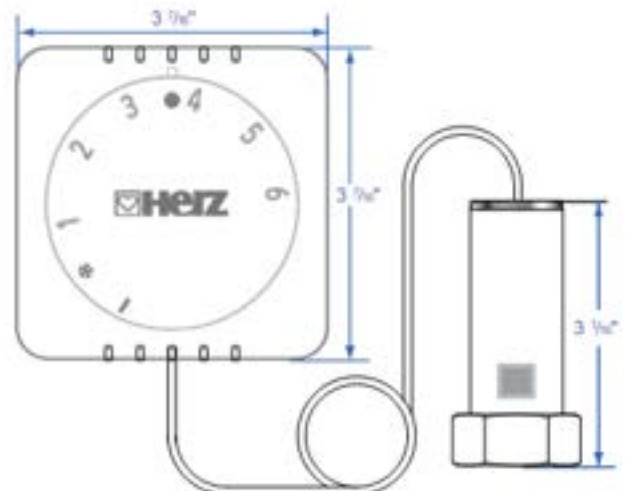


### Troubleshooting

If the room is under-heating, increase the setting at the thermostat. Also Make sure the pump is running and there is sufficient water temperature provided from heat source. Reduce the thermostat setting if the room is overheating.

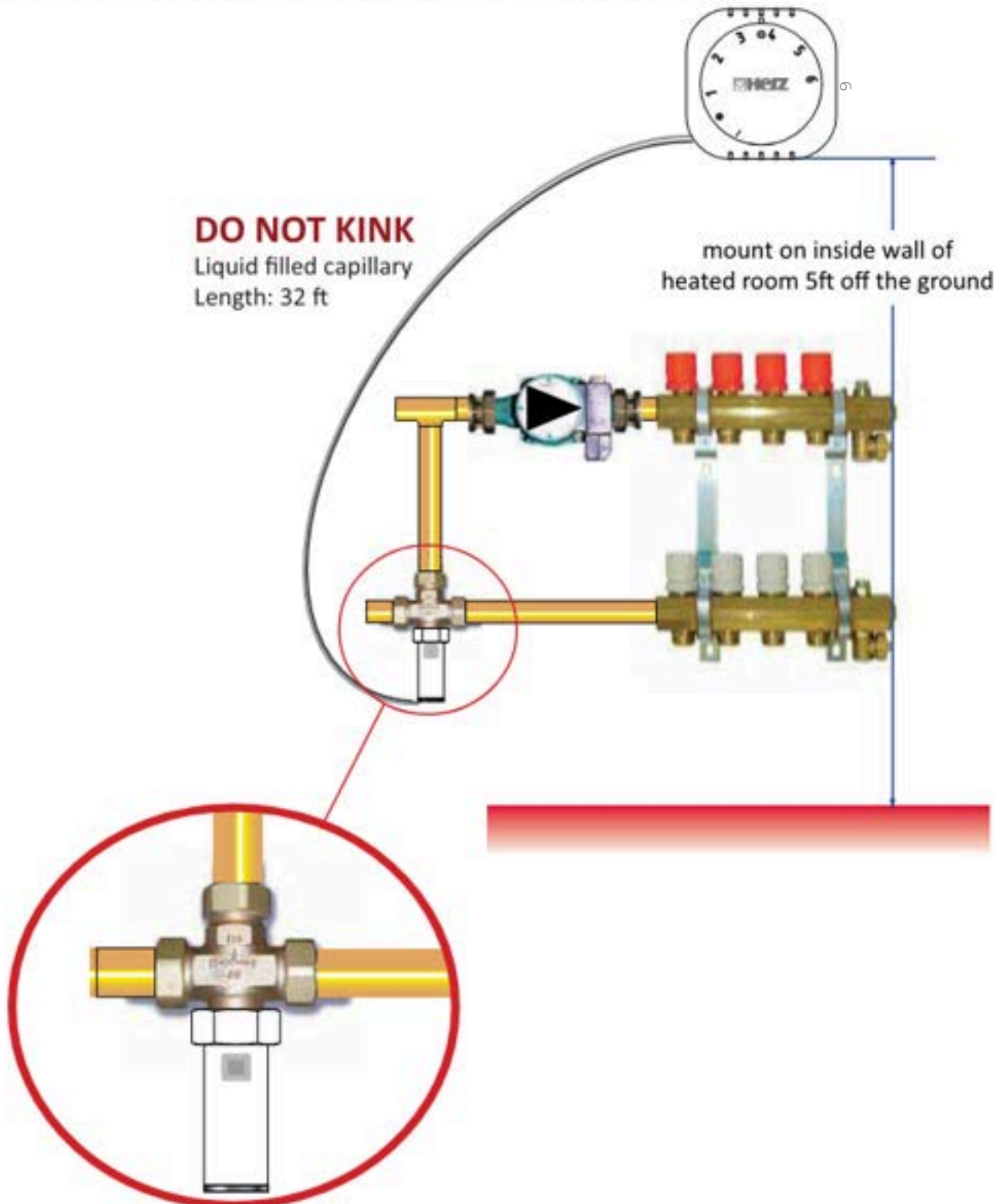
If the system does not respond to changes in thermostat setting, check that the actuator is firmly screwed onto the valve. Also examine the capillary for any kinks or damaged sections. If any damage is found the control may need to be replaced.

If the actuator is screwed firmly on the diverting valve depressing the pin, it will not function properly. In some cases the chrome screw needs to be backed off 1/2 to a full turn to allow the actuator pin it proper throw.



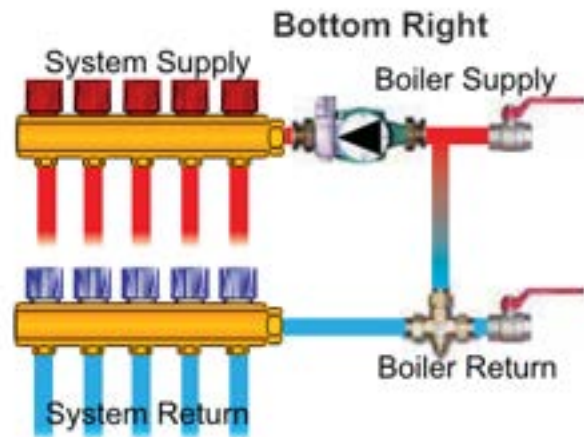
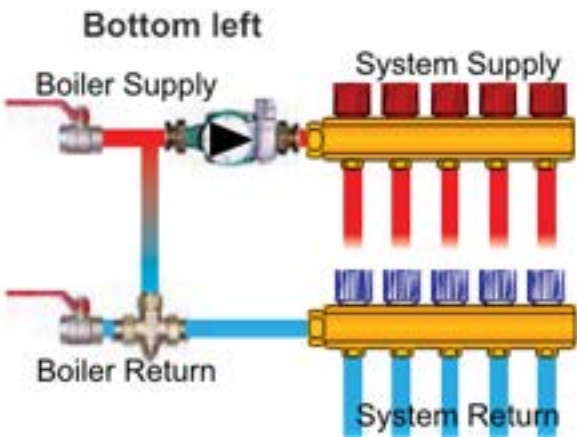
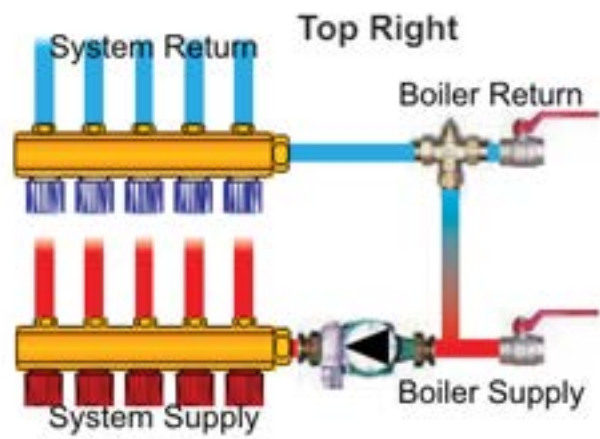
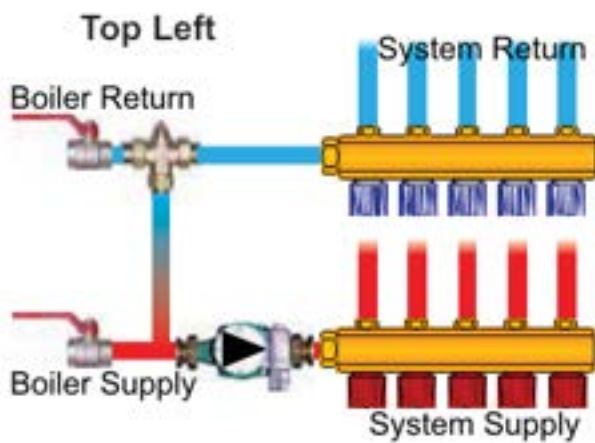
## Non-electric Room Responsive Control

Mounting the Non-Electric Responsive Control  
on the *Hydronic Alternatives* Mixing station or Diverting Valve



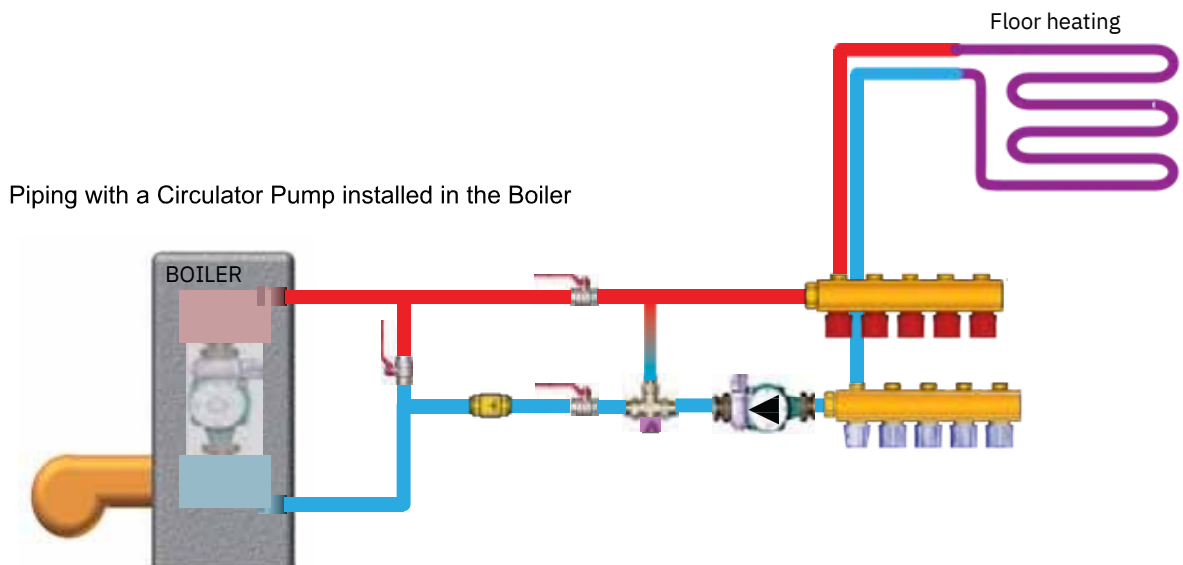
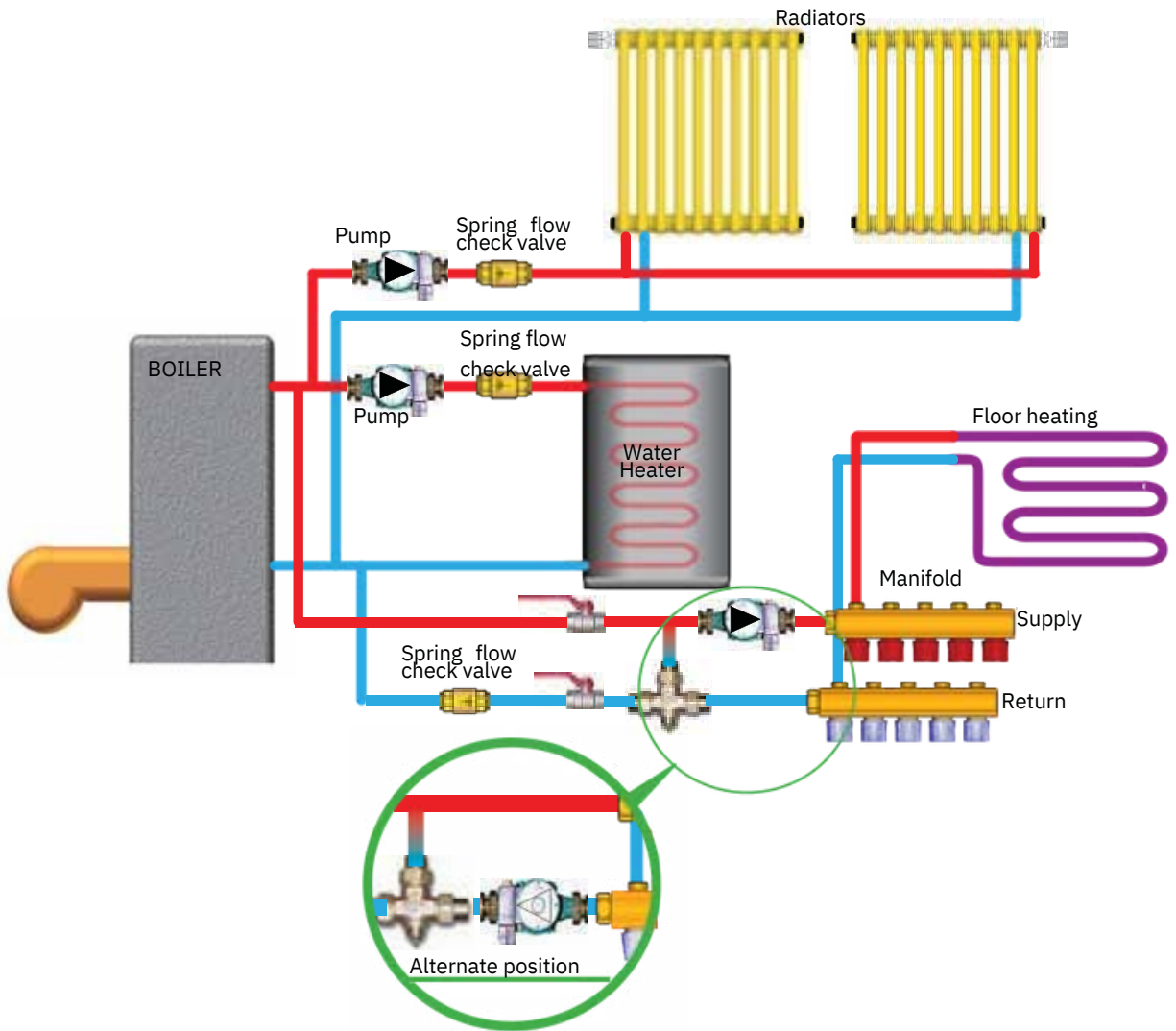
## Piping Diagrams

Use these Diagrams as a guide for proper connecting your manifolds to the Boiler Supply and Return



## Piping Diagrams

### Piping with Multiple Zone Baseboard or Radiators, Single Circulator on System Supply



Piping with a Circulator Pump installed in the Boiler

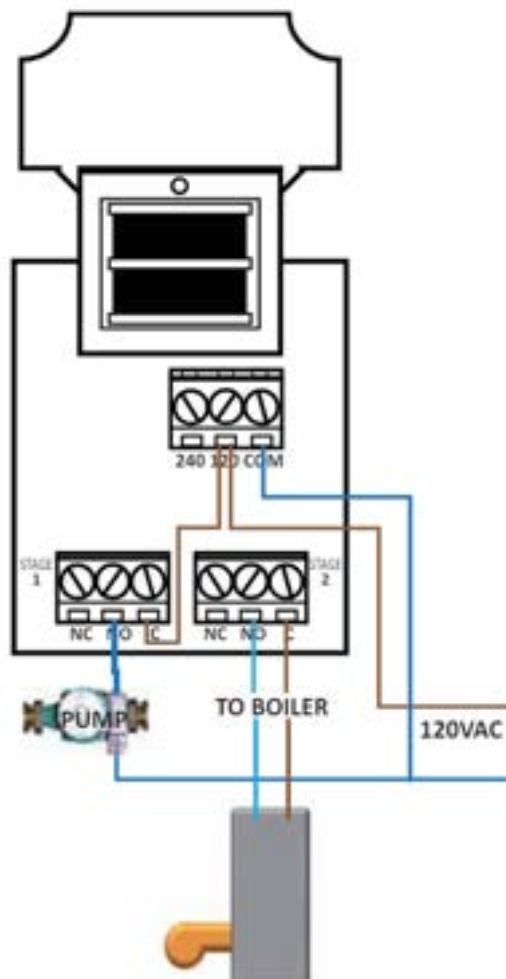
## HA30D TWO STAGE ELECTRONIC TEMPERATURE CONTROL.

The HA30D is a microprocessor-based family of electronic temperature controls, designed to provide on/off control for commercial heating, cooling, air conditioning and refrigeration. The HA30D is equipped with a liquid crystal display (LCD) that provides a constant readout of the sensed temperature, and a touch keypad that allows the user to easily and accurately select the set point temperature, differential and heating/cooling mode of the operation. Models are available that operate on either line voltage (120/208/240 VAC) or low voltage (24VAC).

### Installation Instructions HA30D

#### IMPORTANT

1. All HA30D series controls are designed as operating controls only. If an operating control failure could result in personal injury or loss of property, a separate safety control and/or alarm should be installed.
2. The schematic drawings and other information included in these installation instructions are for the purpose of illustration and general reference only.
3. These instructions do not expand, reduce, modify or alter the Terms in anyway; and no warranty or remedy in favor of the customer or any other person arises out of these instructions.
4. HA30D controls have been approved by Underwriters' Laboratories as UL Listed; however, approval does not extend to their use for any other purpose. Hydronic Alternatives assumes no responsibility for any unconventional application of its control unless such application has been approved in writing by Hydronic Alternatives.
5. It is the responsibility of the installer and the user to assure that his or its application and use of all Hydronic Alternatives products are in compliance with all federal, state and local requirements, including, without any limitation, all requirements imposed under the National Electric Code and any applicable building codes.



### Electric Installation HA30D

#### General

- All wiring should conform to the National Electric Code and local regulations.
- The total electrical load must not exceed the maximum rating of the control (see Specifications).
- Use copper conductors only.
- Electrical leads should not be taut; allow slack for temperature change and vibration.

#### Input and Output Wiring

For typical wiring diagrams, refer to Figures 6 and 7.

All connections are made to the power (lower) circuit board. When using the 24 VAC powered models, the 24 VAC input lines must enter through the sidewall of the case. Refer to Figure 5 for location of the entry hole.

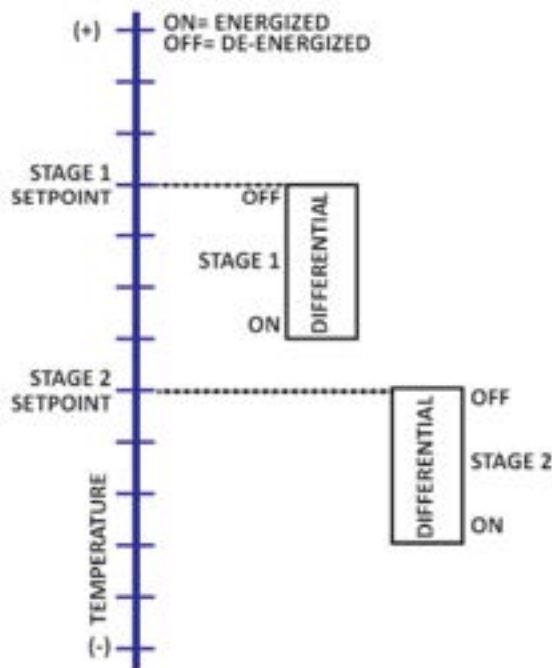
#### Analog Output

HA30D models are available with an optional 0 to 10 volt analog output. This signal is a linear representation of the sensor temperature with 0 volts = -30°F and 10 volts = 220°F. See figure 8 for wiring information and Figure 5 for location of the entry hole. The reference for this output is designated by the "-" symbol on the wiring diagram. The output signal is designated by the "+" symbol.

#### Sensor Wiring

The temperature sensor leads are soldered to the circuit board so no additional connections are necessary. However, splicing is required when extending the sensor cable length beyond the standard 8 foot length supplied with the HA30D. The sensor cable can be extended up to 400 feet.

A damaged sensor can be replaced by splicing a new sensor onto the sensor leads from the circuit board. The sensor is not polarity sensitive.



Step	Annunciator	Description	Display
1	F or C	Fahrenheit or Celsius Scale	
2	S1 (blinking)	Stage 1 Set point emperature	
3	DIF1 (blinking)	Stage 1 Differential Temperature	
4	C1/H1	Stage 1 Heating Mode	
5	S2 (blinking)	Stage 2 Setpoint Temperature	
6	DIF (blinking)	<sup>2</sup> Stage 2 Differential Temperature	
7	C2/1-12	Stage 2 Heating Mode	

## Programming Steps and Display

The HA30D two stage can be programmed in seven simple steps using the LCD display and the three keys on the face of the control.

**Step 1** To start programming, press the **SET** key once to access the Fahrenheit/Celsius mode. The display will show the current status, either **F** for degrees Fahrenheit or **C** for degrees Celsius. Then press either the up ↑ or down ↓ arrow key to toggle between the F or C designation

### Stage 1

**Step 2** Press the **SET** key again to access the stage 1 set point. The LCD will display the current set point and the **S1** annunciator will be blinking on and off to indicate that the control is in the set point mode. Then press either the up ↑ key to increase or the down ↓ key to decrease the set point to the desired temperature.

**Step 3** Press the **SET** key again to access the stage 1 differential. The LCD will display the current differential and the **DIF1** annunciator will be blinking on and off to indicate that the control is in the differential mode. Then press either the up ↑ key to increase or the down ↓ key to decrease the differential to the desired setting.

**Step 4** Press the **SET** key again to access the stage 1 cooling or heating mode. The LCD will display the current mode, either **C1** for cooling or **H1** for heating. Then press either the up ↑ or down ↓ key to toggle between the **C1** or **H1** designation.

or

### Stage 2

**Step 5** Press the **SET** key again to access the stage 2 set point. The LCD will display the current set point and the **S2** annunciator will be blinking on and off to indicate that the control is in the set point mode. Then press either the up ↑ key to increase or the down ↓ key to decrease the set point to the desired temperature.

**Step 6** Press the **SET** key again to access the stage 2 differential. The LCD will display the current differential and the **DIF2** annunciator will be blinking on and off to indicate that the control is in the differential mode. Then press either the up ↑ key to increase or the down ↓ key to decrease the differential to the desired setting

**Step 7** Press the **SET** key again to access the stage 2 cooling or heating mode. The LCD will display the current mode, either **C2** for cooling or **H2** for heating. Then press either the up ↑ or down ↓ key to toggle between the C2 or H2 designation. Press the SET key once more and programming is complete.

**NOTE:** The HA30D will automatically end programming if no keys are depressed for a period of thirty seconds. Any settings that have been input to the control will be accepted at that point,

All control settings are retained in non-volatile memory if power to HA30D is interrupted for any reason. Re-programming is not necessary after power outages or disconnects unless different control settings are required.