DUAL STAGE TEMPERATURE CONTROLLER PROGRAMMING (ALL MODELS)

STEP	ANNUCIATOR	DESCRIPTION	DISPLAY	
1	**F** or **C**	Fahrenheit or Celsius Scale		**F**
2	**S1** (blinking)	Stage 1 Setpoint Temperature	**S1**	**77**
3	**DIF1** (blinking)	Stage 1 Differential Temperature	**DIF1**	**1**
4	**C1/H1**	Stage 1 Heating Mode		**H1**
5	**S2** (blinking)	Stage 2 Setpoint Temperature	**S2**	**77**
6	**DIF2** (blinking)	Stage 2 Differential Temperature	**DIF2**	**1**
7	**C2/H2**	Stage 2 Cooling Mode		**C2**



Liquid Crystal Display (LCD)

The LCD display provides a constant readout of the sensor temperature and indicates if the output relay is energized. When the **S1 or S2** annuciator is constantly illuminated during operation, the relay is energized. The display is also used in conjunction with the keypad to allow the user to adjust the setpoint temperature, differential and heating /cooling modes.

Programming Steps and Display

The control can be programmed in four simple steps using the LCD display and the three keys on the face of the control. (See photo for display and keys.)

NOTE: For correct operation: <u>All heat pumps, Stage 1 **must** be set for heat mode (H1) and Stage 2 for cool mode (C2). For chiller and electric heater combination, Stage 1 **must** be set for the cooling mode (C1) and Stage 2 for heating mode (H2).</u>

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 ⇧ arrow or down ⇩ arrow key to toggle between the **F** or **C** designation.
2. Press the **SET** key again to access the setpoint temperature. The LCD will display the current setpoint temperature and the **S1** annuciator will be blinking to indicate that the control is in the setpoint mode. Press either the up ⇧ key to increase or down ⇩ key to decrease the setpoint to the desired temperature.
3. Press the **SET** key again to access the Stage 1 differential temperature. The LCD will display the current differential and the **DIF 1** annuciator will be blinking to indicate that the control is in the differential mode. Then press either up ⇧ key to increase or the down ⇩ key to decrease the differential to the desired setting (minimum 1˚F, maximum 30˚F).
4. Press the **SET** key again to select Stage 1 mode. The LCD will display the current mode: **C1 or H1.** Then press either up ⇧ key or the down ⇩ key to toggle between the **C1** or **H1** designation.
5. Press the **SET** key again to access the Stage 2 setpoint temperature. The LCD will display the current setpoint temperature and the **S2** annuciator will be blinking to indicate that the control is in the setpoint mode. Then press either the up ⇧ key to increase or down ⇩ key to decrease the setpoint to the desired temperature.
6. Press the **SET** key again to access the differential temperature. The LCD will display the current differential and the **DIF 2** annuciator will be blinking to indicate that the control is in the differential mode. Then press either up ⇧ key to increase or the down ⇩ key to decrease the differential to the desired setting (minimum 1°F, maximum 30˚F).
7. Press the **SET** key again to access the Stage 2 mode. The LCD will display the current mode: **C2 or H2**. Then press either up ⇧ key to t or the down ⇩ key to toggle between the **C2** or **H2** designation.
8. Press the **SET** key again to exit programming mode. Controller will display current water temperature.

Controller will automatically drop out of “program mode” and return to “operating mode” 30 seconds after last key press.

Troubleshooting Controller Error Messages:

Display Messages

- **E1** - Appears when the up ⇧ or down ⇩key is pressed when not in the programming mode.
  To correct: If the E1 message appears even when no keys are being pressed, replace the control.
- **E2** - Appears if the control settings are not properly stored in memory.
  To correct: Check all settings and correct if necessary.
- **EP** - Appears when the probe and or flow switch is open , shorted or sensing a temperature that is out of range.
  To correct: Check to see if the sensed temperature is out of range. If not , check for probe damage by comparing it to a known ambient temperature between -30˚F and 220˚F. Replace the probe is necessary. Also, check for proper water flow through heater. If water flow is correct, flow switch.
- **EE** - Appears if the EEPROM data has been corrupted.
  To correct: This condition cannot be field repaired. Replace the control.
- **CL** - Appears if calibration mode has been entered.
  To correct: Remove power to the control for least five seconds. Reapply power. If the **CL** message still appears, replace the control.

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