

Product Instructions

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ProRadiant Digital Thermostat

Applications

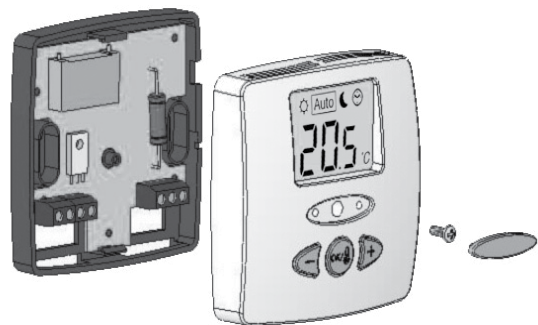
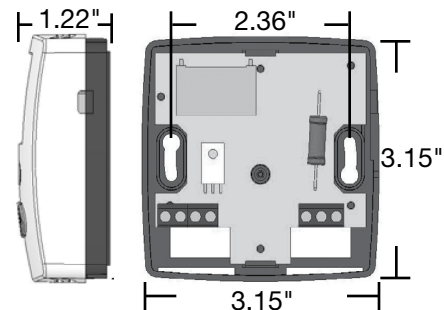
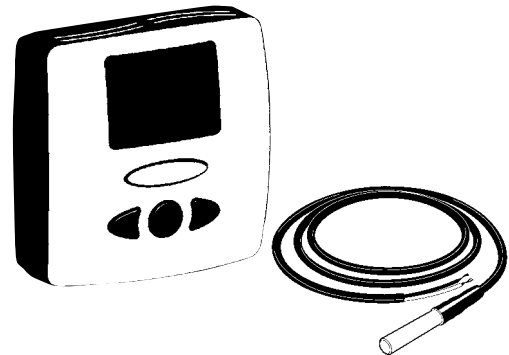
The Digital Thermostat is ideal for individual room temperature control. A user-friendly, three-button design allows for easy adjustment of settings. Thermostat can sense either room temperature or floor temperature. Adjustable temperature setback function allows for energy savings. Thermostat can control up to four powerheads directly or can be connected to a zone / circulator control box. With optional floor sensor, thermostat provides floor high or low limit function for floor protection or floor warming.

Features

- Compact design
- Digital LCD display
- Regulates floor or room temperature
- Optional Floor Sensor
- Setback function

Specifications

Control:	Microprocessor control
Accuracy:	0.2°F
Set temperature range:	41°F - 99°F, 0.5°F increments
Environment range:	32°F - 122°F
Power supply:	24 VAC \pm 10% 60Hz 15 W max
Output:	TRIAC output 24 VAC, 15 W max
Optional floor sensor:	NTC thermistor (10K Ohms), 10' cable
Floor limiting range:	50°F - 104°F
Electrical Protection:	Class II - IP30



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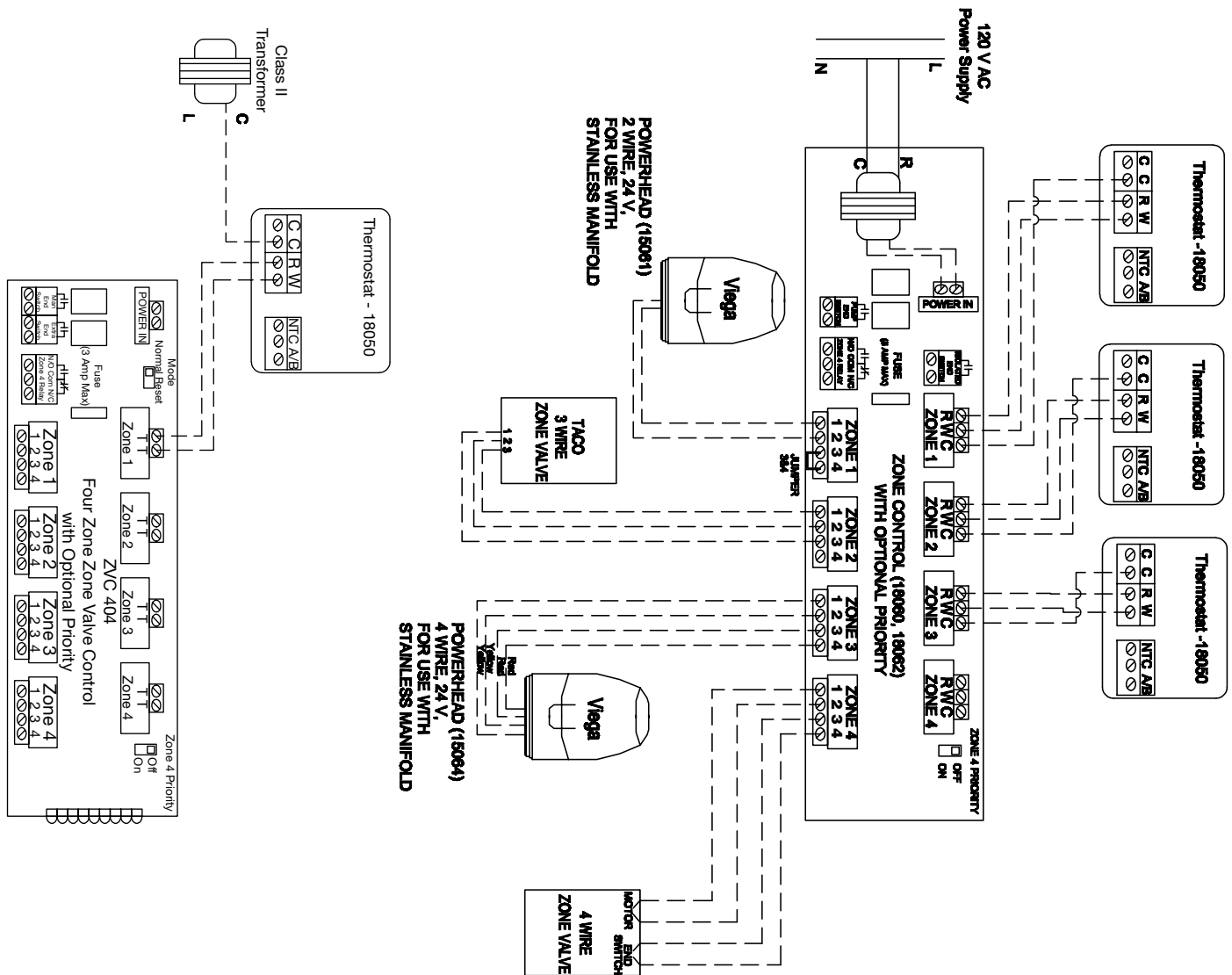
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Wiring Thermostat to Zone Control

1. Connect the "R" terminal of the thermostat to the "R" terminal of the Zone Control. "R" supplies power to the thermostat.
2. Connect the "W" terminal of the thermostat to the "W" terminal of the Zone Control. "W" is the switching signal.
3. Connect the "C" terminal of the thermostat to the "C" terminal of the Zone Control. "C" is common.

NOTE: Factory jumper between 3 and 4 must remain in place for use with 2-wire Powerhead. Factory jumper between 3 and 4 must be removed for use with 4-wire Powerhead. Up to (4) Powerheads may be controlled from a single thermostat without the use of an external relay. Refer to Zone Control and Powerhead Product Instructions for further details.



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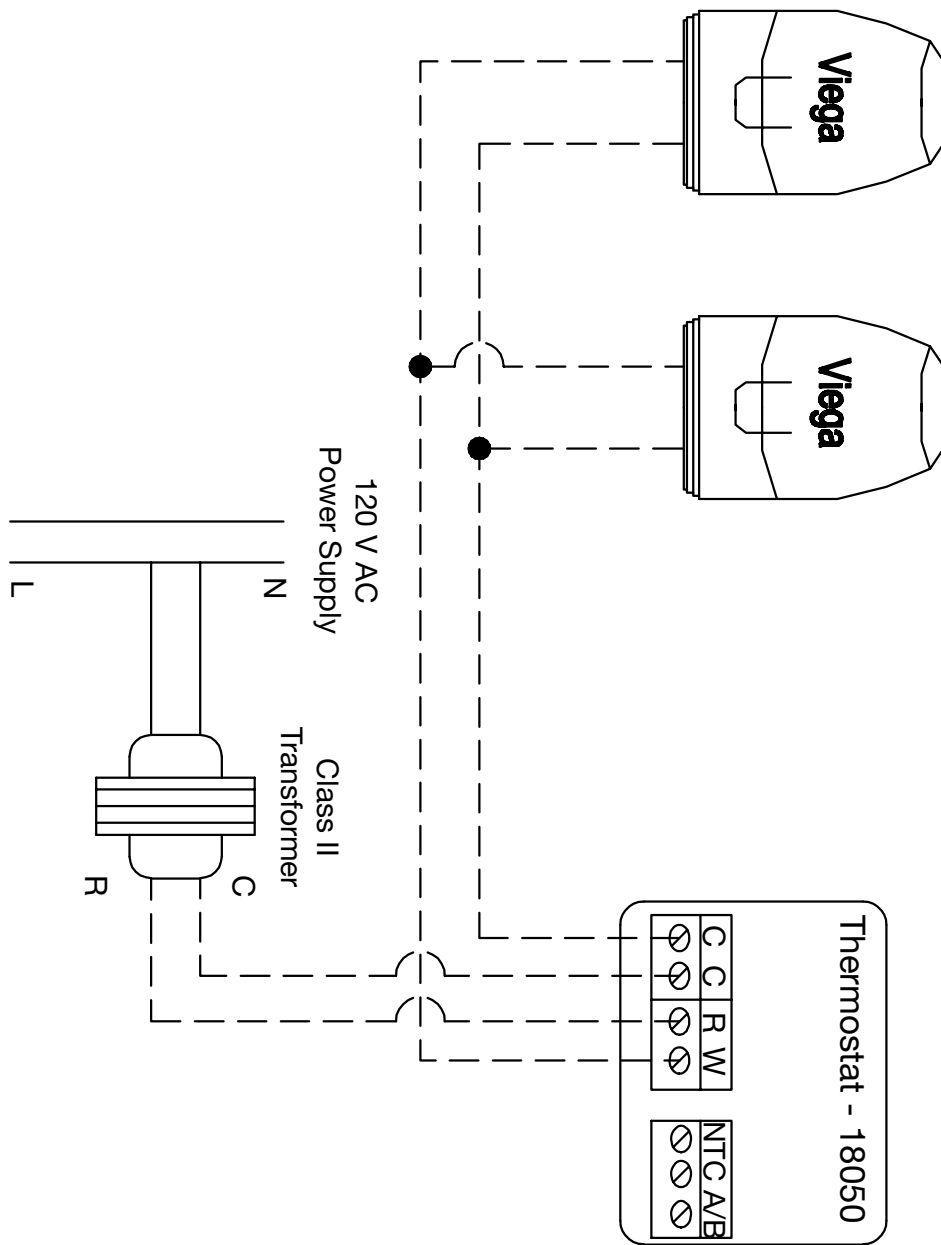
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Wiring Thermostat to Powerhead

1. Connect the "C" and "R" terminals of the thermostat to transformer.
2. Connect the other "C" terminal and "W" terminal of the thermostat to Viega powerhead.
3. Up to (4) Powerheads may be controlled from a single thermostat without the use of an external relay.



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



Wiring Floor Sensor

The Digital Thermostat Floor Sensor is a two-wire, water-sealed probe that can be used to accurately measure slab or floor temperatures. Floor sensor should be placed in conduit for protection and repair. 1/2" PEX (capped or plugged) is commonly used as conduit for the slab sensor. Sensor should be 18" from line voltage (110V). If crossing line voltage wire, cross at 90° angle. Line voltage interference can result in inaccurate readings of the sensor.

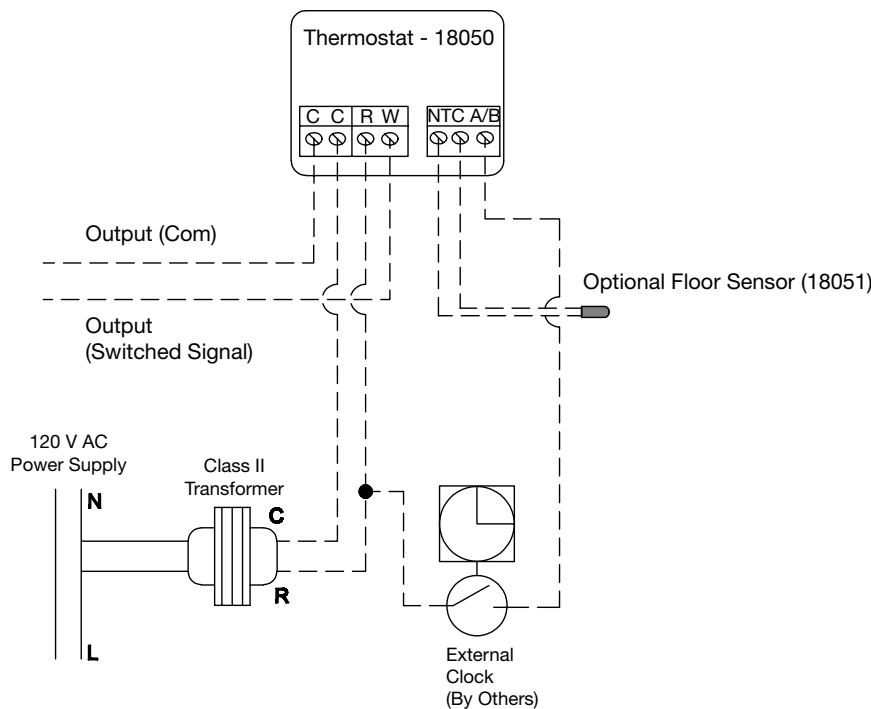
1. Connect one wire of the floor sensor to one "NTC" terminal of the Digital Thermostat.
2. Connect the other wire of the floor sensor to the other "NTC" terminal of the Digital Thermostat.

Wiring External Clock

The Digital Thermostat is compatible with an external clock for timed set-back. Press the "OK" button to select the  External Clock Mode. The thermostat display indicates whether it's in Comfort Mode or Reduced Temperature Mode by blinking the  or  symbols. Note: Viega does not offer an external clock for sale. The purpose of this section is to point out that this option is available with a third party external clock.

Powerhead(s) and Transformer

1. Connect "R" terminal of the thermostat to the transformer.
2. Splice into the "R" terminal wire and connect that to inlet side of an external clock.
3. Connect the outlet side of the external clock to A/B terminal on right side of thermostat.
4. Connect the "W" terminal of the thermostat to powerhead(s).
5. Connect a "C" terminal of the thermostat to the powerhead(s).
6. Connect a "C" terminal of the thermostat to the transformer.



Resistance Chart	
Temperature	Resistance (kΩ)
50°F	~ 19.5kΩ
59°F	~ 15.5kΩ
68°F	~ 12.5kΩ
77°F	~ 10kΩ
86°F	~ 8kΩ

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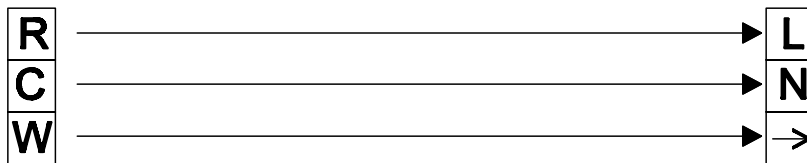
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Corresponding Zone Control and Thermostat Terminals

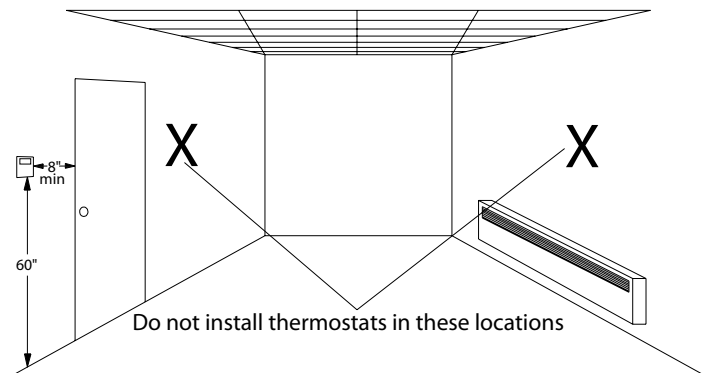
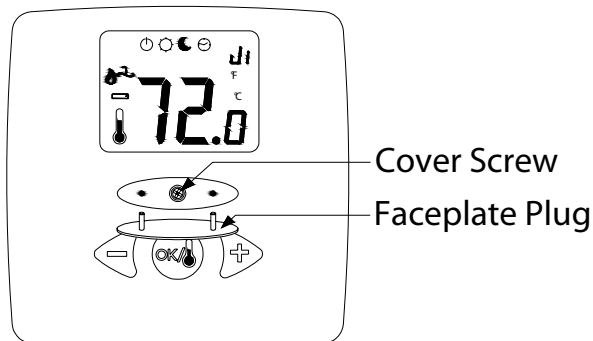
Zone Control - 18060/62
Thermostat - 18050

Zone Control - 18032
Thermostat - 18029



Installation

1. Remove oval rubber plug from front of thermostat faceplate.
2. Using a small Philips screwdriver remove screw securing thermostat faceplate to mounting plate.
3. Unplug faceplate from mounting plate.
4. Locate mounting plate approximately 60" above floor and a minimum of 8" away from all openings.
5. Do not locate thermostat behind doors or above any heat generating equipment.



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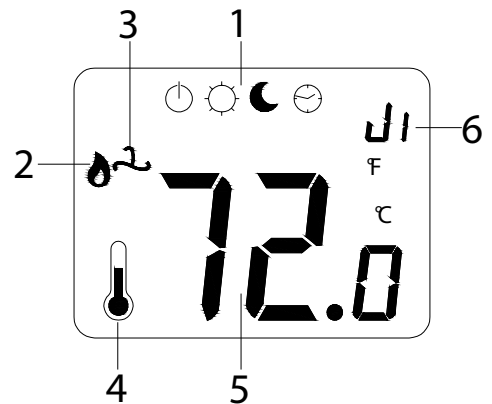
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Programming

Display Window

1. Operating mode menu (programming parameter)
2. Boiler in operation
3. Fan/AC operation
4. When displayed thermostat indicates the measured air temperature or floor temperature if floor sensor is attached. If flashing attention is required to one of the below:
 - Actual floor temperature is below the minimum floor temperature set in the thermostat parameters
 - Actual floor temperature is above the maximum floor temperature set in the thermostat parameters
 - Floor sensor is short circuited
5. Measured temperature or set temperature
6. Programming parameter



Operating Mode Menu

Press **OK** button to cycle through Operating Mode menus. When in desired Operating Mode press either the + or - button to activate the flashing display. Desired temperature can be set by using the + or - button to increase or reduce temperature setting.

OFF Mode	COMFORT Operating Mode
<p>Use this mode to turn your heating system off. Display will be blank when unit is in OFF mode.</p>	<p>Places thermostat in comfort temperature operation indefinitely.</p>
REDUCED Operating Mode	External PILOT WIRE Operating Mode
<p>Places thermostat in reduced temperature operation indefinitely. Returning to Comfort Operating Mode takes thermostat out of Reduced Mode.</p>	<p>This mode enables the thermostat to operate off of an optional clock setback control. When the Comfort icon is flashing a comfort signal is being received. When the Reduced operating icon is flashing the setback feature is enabled.</p>

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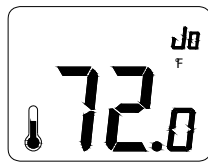
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Parameter Menus

While in any of the Operating Mode Menus press and hold down the **OK** button until End appears on the screen. You are now in the parameters menu and can cycle through the thermostats various programming features by pressing the **+** or **-** buttons. Once in the parameter press the **OK** button to cycle through the options. In parameters that require a number setting, press and hold the OK button until the number in the display flashes. Pressing the **+** or **-** keys while the number is flashing will increase/decrease the number value. Once the desired number is selected press **OK** again to store selected number then press the **+** or **-** button to move to the next parameter.

JO Parameter



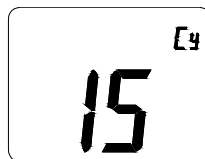
Allows selection of either Celsius or Fahrenheit temperature display. Press **OK** button to cycle through settings then press **+** or **-** button to move to next parameter. Factory default is **°F**

J1 Parameter



Select **CLd** for thermostat control of cooling systems or **Hot** for heating applications. Factory default is **Hot**.

Cy Parameter



Proportional integral regulation time cycle value in minutes. This feature is only available if **rEG** regulation is selected in the J7 parameter. The default setting is **15** minutes and is recommended for radiant slab heating applications. Other possibilities are:

Oil Burner << 20 >>
 Gas Burner << 10 >>
 Zone Valve << 10 >>
 Heat Pump << 20 >>

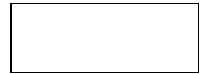
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bp Parameter



Sets the differential temperature of the proportional bandwidth with respect to how well insulated the house is. The better insulated the house, the smaller the bandwidth temperature required. This feature is only available if **rEG** regulation is selected in the J7 parameter. The default setting is **3.6°F**. Other suggested settings:

Well insulated house << 2.7°F >>
 Poor insulated house << 7.2°F >>

J4 Parameter



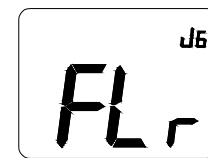
Select **NC** if using normally closed actuating motors or **NO** if normally open actuators are being used on the manifold. Viega Actuators (powerheads) are normally closed and **NC** is the default setting.

J5 Parameter



Parameter allows exercising of system pump if system is inactive for a 24 hour period. Exercise duration is one minute daily. Select **PnP** for pump exercising or **no** to disable this feature. Factory default is for pump exercising **PnP**.

J6 Parameter



Select **Air** if thermostat is to control room ambient air temperature or **FLr** for floor temperature regulation. If **FLr** regulation is selected the thermostat will ignore room ambient air temperature. If no floor sensor is connected to thermostat, the thermostat will control the ambient air temperature. **Air** regulation is the factory default.

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J7 Parameter



Select **rEG** for proportional band regulation of thermostat or **HYs** for the thermostat to operate on a static differential of 0.3°K. If **HYs** is selected **Cy**, **bp**, and **Cp** parameters become non-functional and require no settings. **rEG** is the factory default setting.

Cp Parameter



Adjust setting to match the current load of the device being controlled by the thermostat. If the current draw of the device being controlled by the thermostat is less than 2 amp. then adjust this value to match the value selected in **bp** parameter. If the amp. draw is greater than 2 amp. set this value to the actual amperage. This function is only available if **rEG** regulation is selected in the J7 parameter. The default setting is **3.6°F**.

Ao Parameter



This parameter is used to calibrate the thermostats internal air sensor if there is a variance in temperature between the actual room air temperature and the sensor reading. Calibration must be done after 15 minutes of thermostat operation at a constant temperature. Check and confirm room air temperature with an accurate thermometer and adjust the integral air sensor to compensate for the variance. Adjustment range is from -9°F to +9°F.

Fo Parameter



This parameter is used to calibrate the thermostats external floor sensor if there is a variance in temperature between the actual room floor temperature and the sensor reading. Calibration must be done after 15 minutes of thermostat operation at a constant temperature. Check and confirm room floor temperature with an accurate thermometer and adjust the external floor sensor to compensate for the variance. Adjustment range is from -9°F to +9°F.

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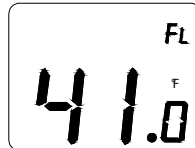
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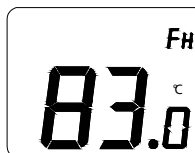
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FL Parameter

A digital display showing the floor temperature low limit parameter. The display shows "FL" at the top right, "41.0" in the center, and a small "F" at the bottom right.

Adjust to set the floor temperature low limit. This function is only available if a floor sensor is connected to the thermostat. Adjustment range is 41°F to 98°F. The default is 41°F.

FH Parameter

A digital display showing the floor temperature high limit parameter. The display shows "FH" at the top right, "83.0" in the center, and a small "C" at the bottom right.

Adjust to set the floor temperature high limit. This function is only available if a floor sensor is connected to the thermostat. Adjustment range is 83°F to 99°F with 83°F being the default setting.

CLr Parameter

A digital display showing the CLr parameter. The display shows "CLr" in the center.

While in this parameter press and hold the **OK** button for 5 seconds to restore all factory defaults to thermostat.

End Parameter

A digital display showing the End parameter. The display shows "End" in the center.

Press and hold **OK** button for 5 seconds to exit programming menu and resume normal thermostat operation.

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