

# THERMOSTAT INSTALLATION

## INSTALLATION INSTRUCTIONS FOR DIGITAL THERMOSTAT #5110740

*PREPARATION: This is a Low Voltage Thermostat. Before installing this thermostat, verify that the system is a low voltage heating system. If necessary, check with your local dealer.*

*NOTE: Leave these instructions with the homeowner for future reference.*

- › Find a location about 5 ft above the floor that has a constant temperature, and is not subject to big swings in temperature. Avoid mounting close to; oven, fireplace, outside door, air conditioning register, TV, or full sun.
- › **WARNING!!!** Turn off the main power switch before installing the thermostat.
- › Release the front cover by pressing the tab on the top of the front cover with a screwdriver (see figure 1).
- › Remove the front cover with your hand holding both sides of the cover (see figure 2).
- › Remove the terminal cover to get access to the terminals by pushing a small flat screwdriver into the gap from the front and push the tab toward the center to open the cover. Pull the cover straight up (see figure 3).
- › Route the wires through the cutout in the base and mount the thermostat to the wall with two screws (see figure 4).
- › Install the thermostat wire as necessary following the guide in Fig. 5. And tighten the screws.
  - » For heating applications, use terminals #1 & #5
- › Install the two AAA batteries as shown in Fig. 5.
- › Replace the terminal cover. Replace the front cover onto the base.
- › Turn on power to the system for operation.

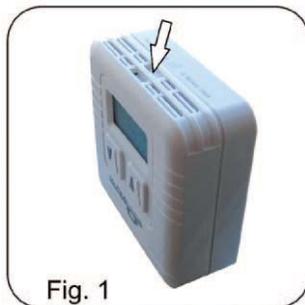


Fig. 1

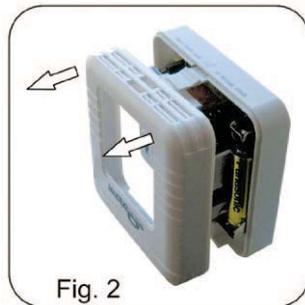


Fig. 2

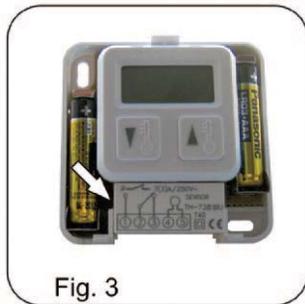


Fig. 3

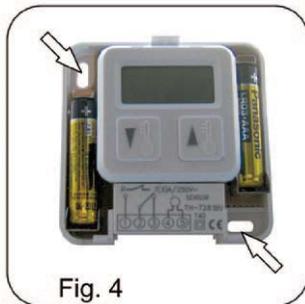


Fig. 4

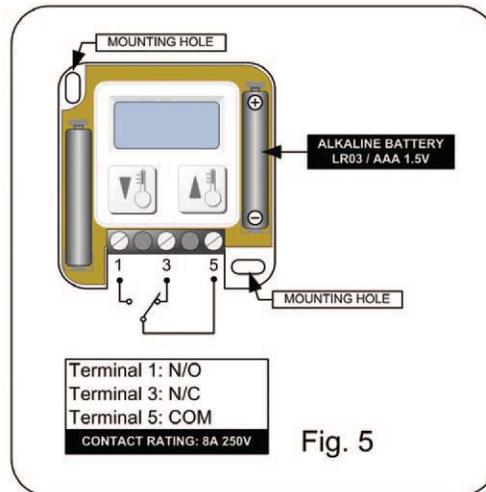
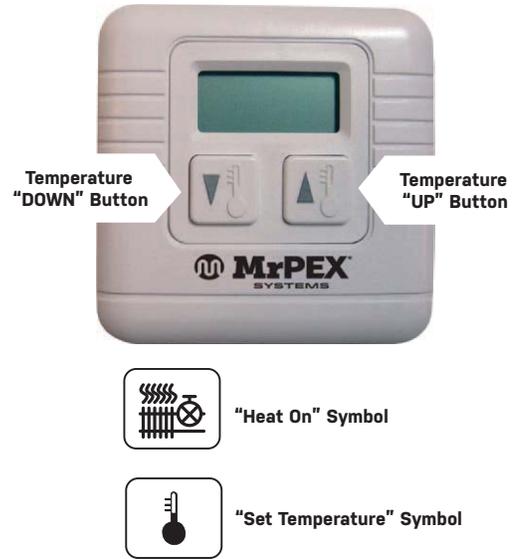


Fig. 5

*NOTE: See pages 89-91 for electrical sample schematics..*

## TESTING THE OPERATION

- › Start by briefly pressing either the "UP" or "DOWN" button. The setpoint temperature will start flashing with "Heat On" and "temperature set" symbols.
- › While still flashing, push the "UP" or "DOWN" buttons to set the temperature at least 2 degrees above current ambient temperature. Each push of the button moves the set-point 1 degree F. Wait 15 seconds until the display stops flashing. The "Heat On" symbol should now stay on and a faint click should be heard indicating that the heatdemand relay has engaged. If this does not occur, wait for another 3 minutes. It is possible that the thermostat is in "Short cycle elimination mode". This means that if the setpoint is changed more than once within a 3 minute period, the thermostat will wait another 3 minutes to make sure that any appliance that is connected will not short cycle. If the thermostat still does not engage "Heat On" mode. Check wiring to make sure both the thermostat and associated wiring is connected correctly.



*NOTE: If the LCD changes from displaying the ambient temperature to "Lo", install new AAA size alkaline batteries.*

# INSTALLATION INSTRUCTIONS FOR DIGITAL THERMOSTAT #5110741

## BEFORE YOU START

### CAUTION:

- › For a new installation, choose a location about 1.5 m (5 ft.) above the floor.
- › The thermostat must be installed on an inside wall facing the heating system (except for floor heating systems).
- › Avoid locations where there are air drafts (top of staircase, air outlet), dead air spots (behind a door), direct sunlight or concealed chimney or stove pipes (except for floor heating systems).
- › Do NOT install the thermostat in an area where it can be exposed to water or rain.
- › Keep the thermostat's top and bottom air vents (openings) clean and unobstructed at all times.

## ABOUT YOUR THERMOSTAT

### THE 5110741 NON-PROGRAMMABLE THERMOSTAT HAS THREE TEMPERATURE CONTROL MODES:

- A mode:** • controls the ambient air temperature
- F mode:** • controls the floor temperature
- AF mode:** • controls the ambient air temperature  
• maintains the floor temperature within desired limits

### Supplied Parts

- › One (1) thermostat
- › Two (2) plastic anchors
- › One (1) flat-tip screwdriver
- › Two (2) mounting screws
- › One (1) floor sensor

## CONTROLS AND DISPLAY

Appears when the set temperature is displayed

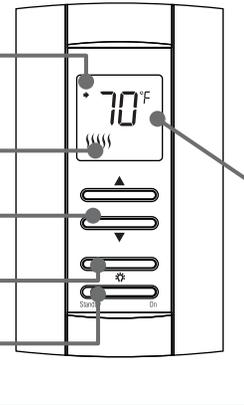
Heating indicator: The number of flames varies according to the heating intensity.  
The image disappears when heating stops.

Temperature adjustment button

Backlight button

On/Standby switch

Temperature



### Temperature Display and Setting

The thermostat usually displays the room temperature. To view the set (desired) temperature, press either of the ▲▼ buttons once. The set temperature is displayed for 5 seconds.

To set a new temperature, press one of the ▲▼ buttons repeatedly until the desired temperature is displayed. To scroll faster, press and hold the button.

### Backlight

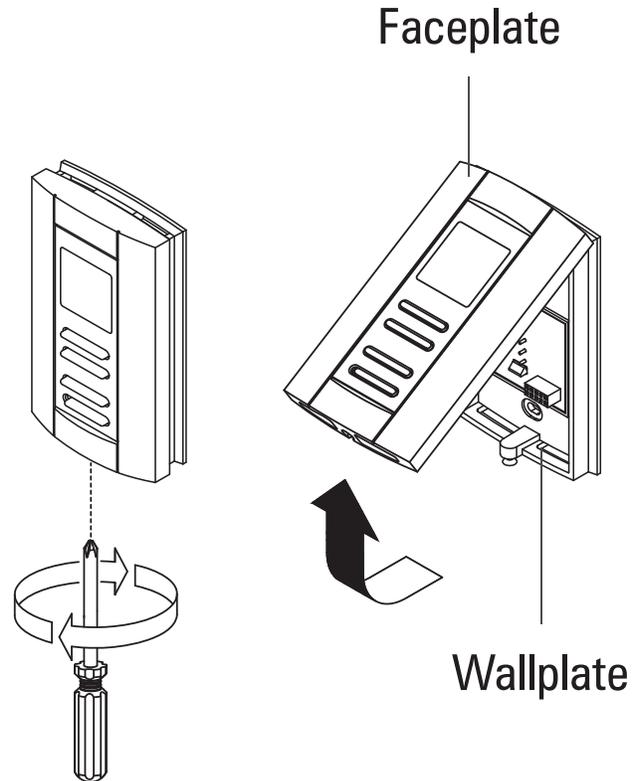
The display illuminates for 5 seconds when the backlight button is pressed. When either of the ▲▼ buttons is pressed, the display illuminates for 10 seconds. The set-point temperature appears for the first 5 seconds, then the current temperature is displayed.

### On/Standby Switch

You can set the thermostat to Standby to cut power to the heating system when it is not in use (e.g. in summer). The thermostat screen becomes blank but the settings are saved.

## INSTALLING THE THERMOSTAT

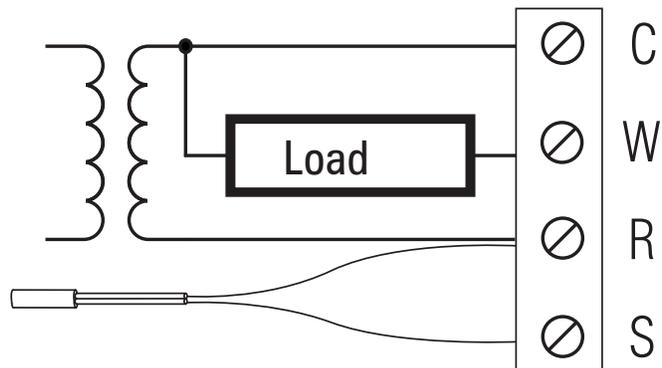
- STEP 1** Turn the heating system off at the main electrical panel.
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- STEP 2** Loosen the bottom screw and remove the thermostat faceplate from its wallplate. (The screw cannot be completely removed.)
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- STEP 3** Wire the thermostat. See typical wiring on pages 8-11.
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- STEP 4** If the thermostat will be used in F or AF mode (see page 12), connect the floor sensor (see page 7).
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- STEP 5** Install the wallplate on the wall using the provided screws and wall anchors.
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- STEP 6** Set the configuration switches (see page 12).
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- STEP 7** Install the faceplate back on the wallplate and tighten the screw.
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- STEP 8** If there is a sticker on the screen, peel it off.
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- STEP 9** You can now return power to the heating system at the main electrical panel.
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## CONNECTING THE FLOOR SENSOR

Connect the floor sensor between terminals R and S (no polarity).

- › The sensor wires should be installed in a protective sleeve and not directly in the concrete in a poured floor installation.
- › Position the sensor such that it does not come in contact with the radiant floor tube. The sensor must be centered between two floor heating tubes for best temperature control.
- › Do NOT staple the sensor head (the plastic end) to the floor. Doing so might damage the sensor. Any damage might not be noticeable during testing but can become apparent later.



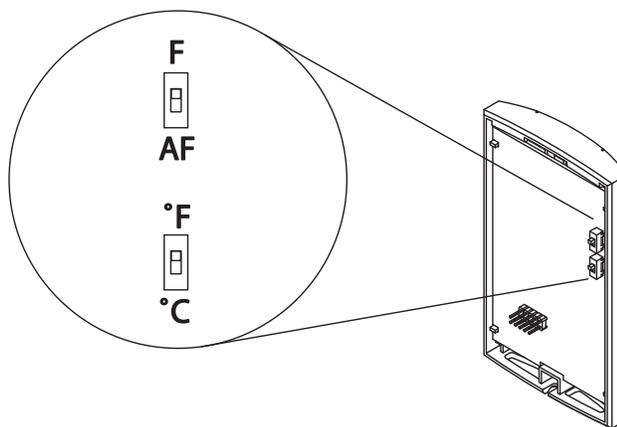
## SETTING THE CONFIGURATION SWITCHES

Configuration switches are on the back of the faceplate. Factory settings are inside grey cells.

#	CONFIGURATIONS	UP	DOWN
S2	Temperature control mode *	F	AF
S1	Displayed temperature unit	°F	°C

\* See page 3 for definition of each mode.

- › To select the F Mode, connect the floor temperature sensor (see page 8) and place the switch in the F position.
- › To select the AF Mode, proceed as follows: Connect the floor temperature sensor (see page 8). Place the switch in the F position. If the thermostat displays Er, the sensor is improperly connected or damaged. If the thermostat displays a temperature reading, place the switch in the AF position.
- › To select the A Mode, place the switch in the AF position but do NOT connect the floor temperature sensor.



## FLOOR TEMPERATURE LIMITS (AF MODE ONLY)

The minimum and maximum floor temperature limits are available only if the temperature control mode is AF (see page 9). If the floor temperature drops below the minimum limit or rises above the maximum limit, the thermostat will turn heating On or Off, regardless of the ambient temperature, to maintain the floor temperature within the set limits.

**NOTE:** The desired ambient temperature might not be attainable if the maximum floor temperature is set too low.

The minimum and maximum floor temperature limits are factory-set at 10 °C (50 °F) and 28 °C (82 °F) respectively. To modify the limits, proceed as follows:

**WARNING:** To avoid damaging your floor, follow your floor supplier's recommendations regarding floor temperature limits.

- STEP 1 Switch the thermostat to Standby.

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- STEP 2 While pressing either button ▲▼, switch the thermostat back to On to access the floor temperature limit settings.

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- STEP 3 Press the Backlight button briefly to switch between minimum and maximum floor temperature settings.

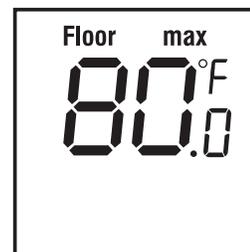
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- STEP 4 Press the ▲▼ buttons to set the desired limit.

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- STEP 5 Press the Backlight button for 3 seconds to save your modifications. After the data are saved, the thermostat displays the current temperature or "--".

**NOTE:** Your modifications are automatically saved if no button is pressed for 60 seconds.



## ERROR MESSAGES

- LO** The measured temperature is below the display range. Heating is activated.
- HI** The measured temperature is above the display range. Heating is deactivated.
- Er** Verify the thermostat and sensor connections. Heating is deactivated.

## TECHNICAL SPECIFICATIONS

**Maximum load:** 0.5 A / 24 VAC

**Wire gauge:** 14 to 22 AWG

**Heating cycle length:** 15 minutes

**Setpoint range**   **F mode:** 40 °F to 104 °F (5 °C to 40 °C)  
                          **A/AF mode:** 40 °F to 86 °F (5 °C to 30 °C)

**Floor limit range: AF mode):** 40 °F - 104 °F (5 °C to 40 °C)

**Display range**   **F mode:** 32 °F to 140 °F (0 °C to 60 °C)  
                          **AF mode:** 32 °F to 122 °F (0 °C to 50 °C)

**Resolution:** 1 °F (0.5 °C)

**Data protection:** All settings are saved during a power failure.