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Dallas, Texas, USA

INSTALLATION INSTRUCTIONS

ComfortSense™ 5000 Series, Model No. L5711U 1 Heat / 1 Cool Programmable Touch Screen Thermostat



! WARNING

This thermostat is to be installed by a qualified service technician or other qualified agency in accordance with the manufacturer's instructions, all codes, and requirements of the authority having jurisdiction.

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General

The Lennox ComfortSense™ 5000 Series model L5711U programmable touch screen thermostat provides control for single-stage heating and cooling. The thermostat may be used to control either a conventional HVAC system which includes an outdoor condensing unit and indoor furnace or a heat pump unit and indoor air handler.

The thermostat terminal block accommodates 24V power common from the furnace or air handler. Three AAA alkaline batteries are provided to be used as an alternate power source or as a back-up in case of an interruption of power.

Shipping and Packing List

Package 1 of 1 contains

- 1 - Assembled thermostat (includes wallplate and thermostat)
- 1 - Bag assembly containing the following:
 - 2 - Screws
 - 2 - Wall anchors
 - 3 - AAA alkaline batteries
- 1 - Installation instruction
- 1 - Owner's guide
- 1 - Warranty certificate

Necessary Tools

- No. 2 Phillips screwdriver
- Standard pocket screwdriver
- Drill
- Drill bits (use 3/16" for drywall and 7/32" for plaster)
- Pencil
- Level
- Hammer
- Electrical tape

Thermostat Location

Install the thermostat about 5 feet (1.5m) above the floor in an area with good air circulation.

Do not install the thermostat where it may be affected by the following:

- Drafts or dead spots behind doors and in corners.
- Hot or cold air from ducts.
- Radiant heat from the sun or appliances.
- Concealed pipes or chimneys.
- Adjacent unconditioned areas (outside wall behind the thermostat)

Remove Existing Thermostat

If this thermostat is being used to replace an existing thermostat, remove the old thermostat:

- 1 - Turn off power at the heating and/or cooling system or fuse/circuit breaker panel.
- 2 - Remove the cover from the existing thermostat.
- 3 - Remove securing screws and remove existing thermostat from wall or wallplate. Disconnect the existing wires.
- 4 - Remove any remaining portion of the existing thermostat from the wall. Do not install the replacement thermostat faceplate on the existing wallplate. Though the wallplates may appear to be the same and the faceplate may fit on the existing wallplate, the terminal positions may vary in important ways. In addition, serial number and part number information is

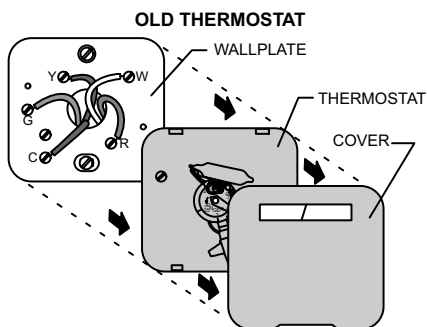
carried on the replacement wallplate.

Do not allow the thermostat wires to fall behind the drywall.

⚠ WARNING

This thermostat must be installed using the provided replacement wallplate.

Failure to do so will bypass thermostat control and activate continuous heating.



⚠ WARNING

MERCURY NOTICE

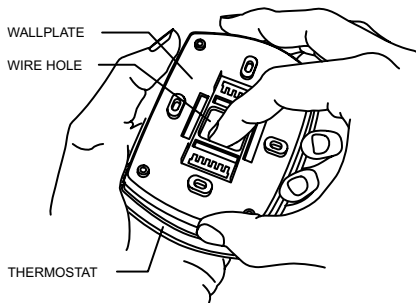
If the existing thermostat includes a mercury bulb, the thermostat must be disposed of properly.

Contact your local waste management authority for instructions regarding recycling and proper disposal of thermostats which include mercury bulbs.

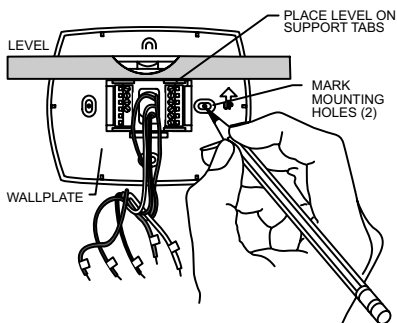
Thermostat Installation

The thermostat may be installed horizontally in a 4 in. X 2 in. (101.6 mm X 50.8 mm) wiring box or on the wall using the provided anchors.

- 1 - Separate the wallplate from the thermostat as shown.

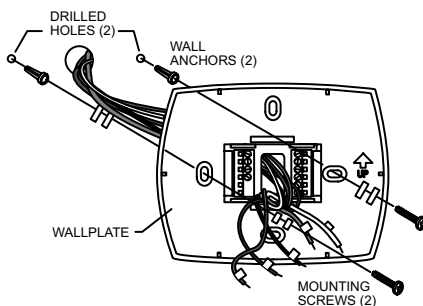


- 2 - Pass the labeled wires through the hole on the wallplate.
- 3 - Position the wallplate on the wall with the arrow pointing up. Level the wallplate (for appearance only) and use a pencil to mark the mounting holes.



- 4 - If anchors are used, move the wallplate aside and drill two new holes (3/16" for drywall; 7/32" for plaster).
- 5 - Tap the provided wall anchors into the drilled holes until the back of the anchor head touches the wall surface.

- 6 - Position the wallplate over the anchors and pull the thermostat wires back through the wiring opening.
- 7 - Secure the wallplate using the provided screws.



NOTE

Thermostat heat function will not operate if thermostat has been stored at, or is being used in, ambient temperatures at or above 90°F. Heat function will be enabled after thermostat has been placed in ambient temperatures less than 90°F for about 30 minutes.

Wiring Connections

WARNING

Use minimum 18 guage wire for all thermostat connections.

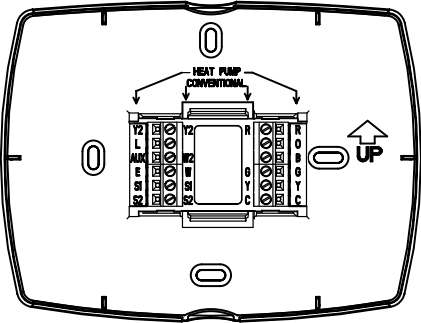
IMPORTANT

Do not connect the wires to this thermostat based on wire color. Improper wiring may cause damage to the HVAC system.

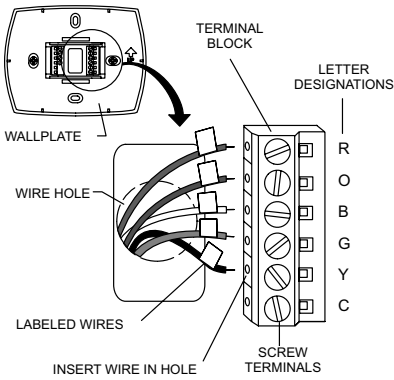
1 - Make wiring connections per the appropriate wiring diagram page 6 or 7. Refer to the table below for terminal designations.

Terminal	Description
W	First-stage heating (conventional)
S1	Remote outdoor sensor
S2	Remote outdoor sensor
R	24V power
O	Reversing valve
B	Reversing valve
G	Fan relay
Y	First-stage compressor (Conventional or heat pump)
C	24V common
L	Equipment monitor

2 - Refer to inner terminal labels when using the thermostat with conventional systems (gas, oil or electric heat plus air conditioning). Refer to outer terminal labels in heat pump applications. See figure below.



3 - Loosen screws of terminals that will be used. Insert appropriate wires in the terminal block under the loosened screws. Securely tighten each screw.



- 4 - Connect wires to the corresponding screw terminals per the appropriate diagram.
- 5 - Push excess wire back into the wall.
- 6 - Plug hole with nonflammable insulation to prevent drafts from affecting thermostat.

LED Indicator

An LED indicator is located in the upper right corner of the thermostat. It is only visible when lit.

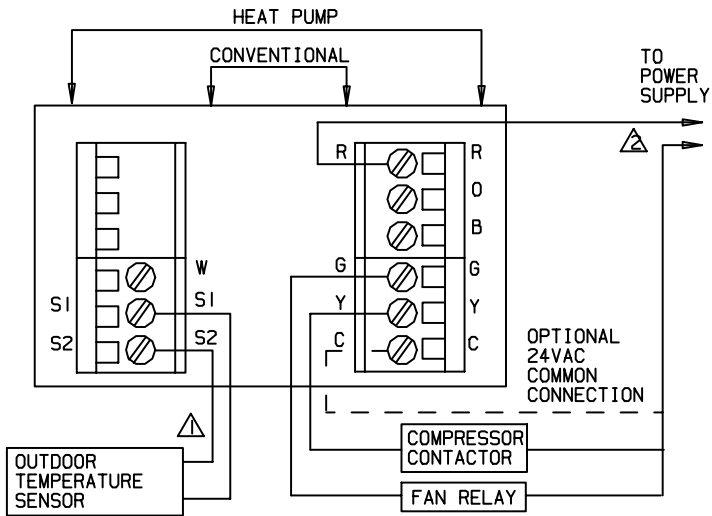
When an equipment monitor is connected to the thermostat L terminal, the LED lights when the monitor sends a check or failure message to the thermostat.

The LED requires the use of 24Vac common power. The indicator will not light when the thermostat is powered by the batteries alone, or when 24Vac power is interrupted.

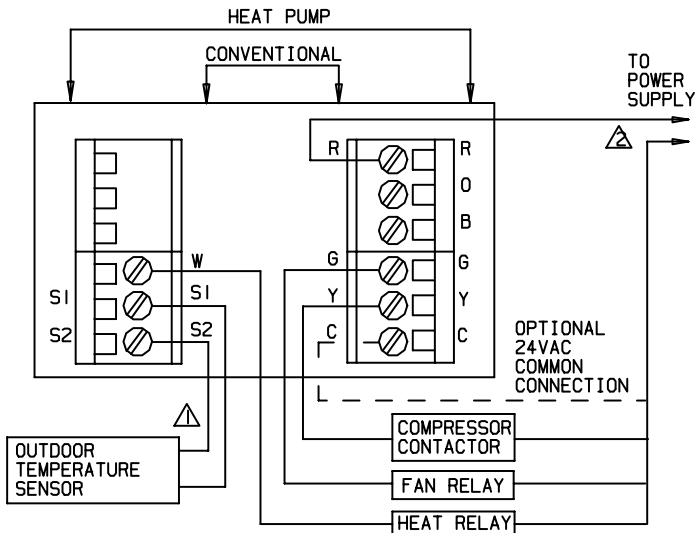
Outdoor Temperature Sensor

Install the optional outdoor temperature sensor (X4148) as outlined in the instructions provided with the sensor.

Field Wiring Diagrams



TYPICAL COOL ONLY SYSTEM

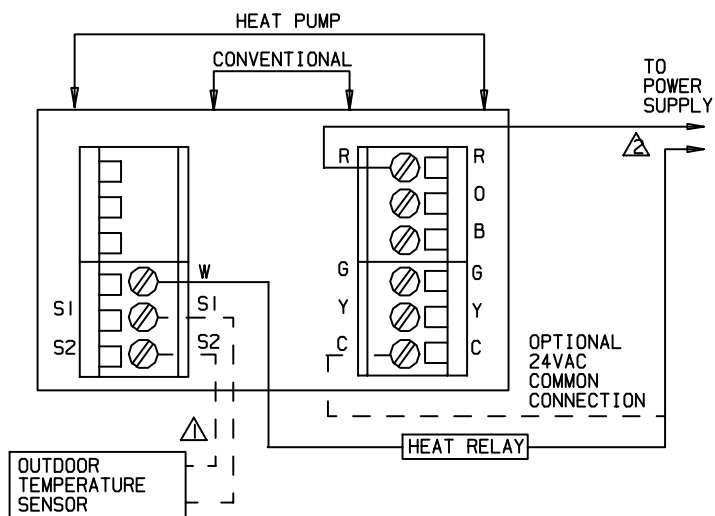


TYPICAL CONVENTIONAL SINGLE-STAGE HEAT / COOL SYSTEM

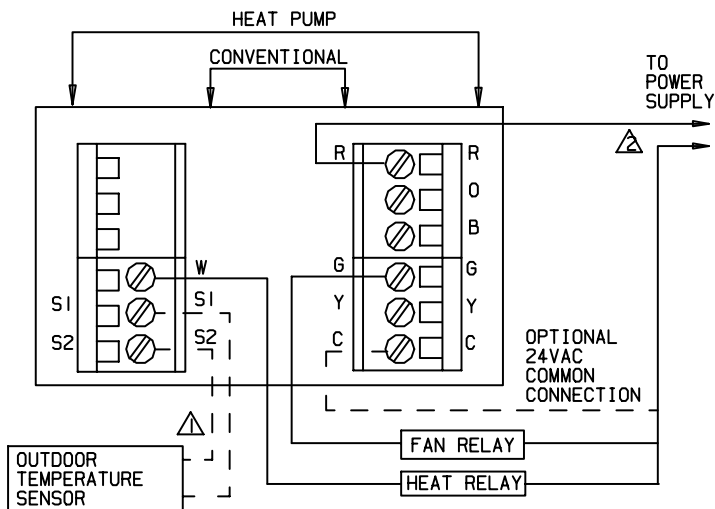
- ⚠ OPTIONAL OUTDOOR TEMPERATURE SENSOR WIRES MUST HAVE A CABLE SEPARATE FROM THE THERMOSTAT CABLE
- ⚠ POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED

- ⚠ MUST CONNECT THE 24VAC COMMON WHEN USING "L" THE TERMINAL IS SHOWN AS EQUIPMENT MONITOR.
- ⚠ CONNECT CHANGEOVER VALVE TO "O" IF THE VALVE IS TO BE ENERGIZED DURING COOLING. CONNECT TO "B" IF ENERGIZED IN HEATING.

Field Wiring Diagrams (Continued)



TYPICAL HEAT ONLY SYSTEM



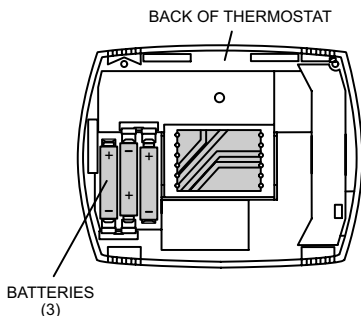
TYPICAL HEAT ONLY SYSTEM WITH FAN

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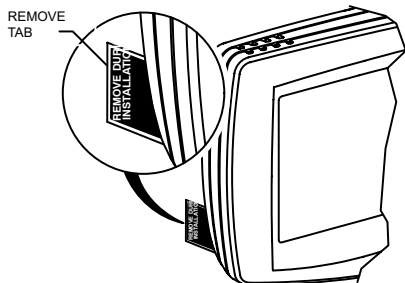
- ⚠ MUST CONNECT THE 24VAC COMMON WHEN USING "L" THE TERMINAL IS SHOWN AS EQUIPMENT MONITOR.
- ⚠ CONNECT CHANGEOVER VALVE TO "O" IF THE VALVE IS TO BE ENERGIZED DURING COOLING. CONNECT TO "B" IF ENERGIZED IN HEATING.

Install Batteries

- 1 - Install three provided AAA alkaline batteries in the back of the thermostat as shown.

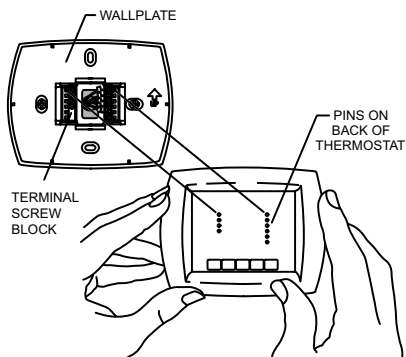


- 2 - Remove tab from the lower right-hand corner of the thermostat back to activate the real-time clock.



Attach Thermostat to Wallplate

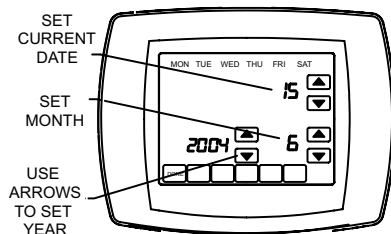
- 1 - Align the terminal blocks on the wallplate with the pins on the back of thermostat.
- 2 - Push the thermostat straight onto the pins until it snaps into place.
- 3 - Turn on power at the furnace or air handler or at the fuse or circuit breaker.



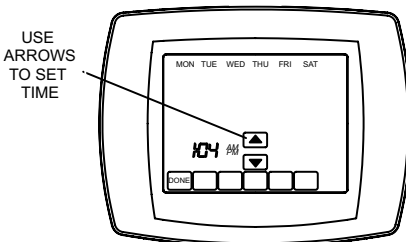
Set Calendar and Clock

This thermostat is designed to automatically keep the current time and date in memory for up to ten years, under normal use, once the calendar has been set. When power is first applied to the thermostat, the display is ready to set the calendar.

- 1 - Use the arrow keys to set the year, month and day.
- 2 - Press the DONE key.



- 3 - Use the arrow keys to set the current time.
- 4 - Press the DONE key.

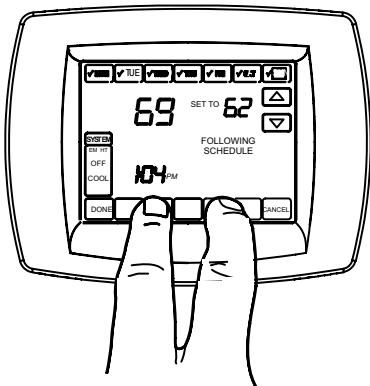


NOTE - Date and time may be adjusted after the initial set-up using either the installer or user set-up menu.

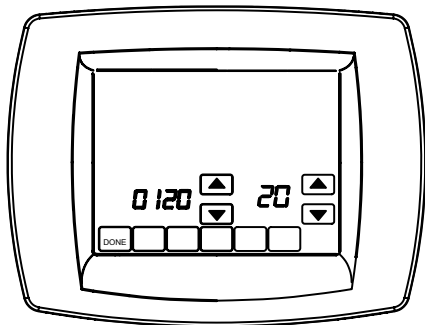
Installer Set-Up

Use the following steps and the Installer Set-Up menu to match the thermostat to the HVAC system.

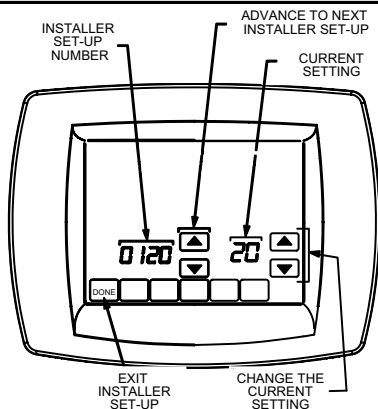
- 1 - Press and release the SYSTEM key.
- 2 - Press and hold the two blank keys on either side of the center blank key for approximately five seconds.



- 3 - Release the two keys when the thermostat display matches the display below.



- 4 - Refer to the following figure to see how the thermostat keys are used to make selections from the set-up menu.



- 5 - The installer set-up number is displayed on the left-hand side of the screen. The current installer set-up number is displayed on the right-hand side of the screen. Use the up and down arrows on the right-hand side of the thermostat to select the proper setting for that particular set-up number.
- 6 - After the proper selection has been made, use the up arrow in the center of the thermostat to advance to the next set-up screen.
- 7 - Refer to the tables on pages 10 through 14 to make proper set-up choices for your application.
- 8 - When all set-up selections have been made, press the DONE key to save your settings. Thermostat display will return to the main screen.

NOTE - Press and release the SYSTEM key, then press and hold the center blank key to access the user set-up screens. The user set-up options are limited to those features that would be used by the homeowner. Press the DONE key when finished.

Installer Set-Up No.	Installer Set-Up Name	Selection Description (Factory setting in bold print)	Notes
0120	Date (Year/first)	Select first two digits of current calendar year (20 for 2007 , etc.) Factory setting = 20.	
0130	Date (Year/last)	Select last two digits of current calendar year (07 for 2007 , etc.); 01 to 99 available.	
0140	Date (Month)	Select number that represents current calendar month. Factory setting = 8.	
0150	Date (Day)	Select number that represents current calendar date. Factory setting = 19.	
0160	Schedule Options	0 - Non-programmable. 4 - 7-day programming. Factory setting.	
0170	System Type	1 - Single-Stage Heating and Cooling (Conventional). Factory setting. 2 - Single-Stage Heat Pump with No Back-Up or Auxiliary Heat. 3 - Heat Only without Fan (Conventional) -- Gas, oil or electric heating without central air conditioning. 4 - Heat Only with Fan (Conventional). 5 - Hot Water Heat Only (Conventional) -- Gas or oil hot water heat. Power open/power close hot water zone valves or normally open valves. 6 - Cooling Only (Conventional) -- Central air conditioning only.	Available options and defaults vary by system type. System type selection automatically modifies certain default settings and installer set-up options.
0180	Fan Control Heating	0 - Gas or Oil Heat -- Heating system controls fan during heating demand. Factory setting. 1 - Electric Heat -- Thermostat control fan during heating demand.	Available only if conventional system chosen. Setting defaults to electric heat if heat pump is chosen.
0220	Cycles per Hour (cph) 1st Stage Compressor	3 - Recommended setting for compressors. Factory setting. Settings of 1 - 6 cph available.	

table continued on next page

Installer Set-Up No.	Installer Set-Up Name	Selection Description (Factory setting in bold print)	Notes
0240	Cycles per Hour (cph) 1st Stage Conventional Heating	1 - Recommended for use with steam and gravity. 3 - Recommended for use with hot water heat and high-efficiency (90% or higher) furnaces. 5 - Recommended for use with standard-efficiency (less than 90%) fossil fuel furnaces. Factory setting. 9 - Recommended for use with electric furnaces. Settings of 1 - 12 cph available.	Shown only when conventional system is selected.
0280	Continuous Backlight	0 - Backlight not lit continuously. Backlight comes on when key is pressed. Factory setting. 1 - Backlight is continuously lit. (Thermostat must be powered by 24V common wire for this feature to be allowed.)	Option always shown; however, t'stat must be powered by 24V common.
0300	Changeover	0 - Manual changeover from heating mode to cooling mode. Factory setting. 1 - Auto-changeover from heating mode to cooling mode.	
0310	Deadband (Minimum differential between heating and cooling setpoints)	2 - 2°F (1.5°C) 3 - 3°F (2°C). Factory setting. 4 - 4°F (2.5°C) 5 - 5°F (3°C) 6 - 6°F (3.5°C) 7 - 7°F (4°C) 8 - 8°F (4.5°C) 9 - 9°F (5°C)	Option shown only when auto-changeover has been selected.
0320	Temperature Display Scale	0 - Fahrenheit (factory setting). 1 - Celsius	
0330	Daylight Savings	0 - Daylight savings disabled. 1 - Daylight savings enabled using pre-2007 calendar. Factory setting. 2 - Daylight savings enabled using 2007 DST calendar (all US; some Canada).	Set to 0 in areas that do not follow daylight savings.

table continued on next page

Installer Set-Up No.	Installer Set-Up Name	Selection Description (Factory setting in bold print)	Notes
0340	Remote Outdoor Temperature Sensor	0 - No remote outdoor temperature sensor. Factory setting. 1 - Outdoor temperature sensor used for display only. 2 - Outdoor temperature sensor used to control heat pump lock-out settings.	Defaults and options depend on system type selection. When setting 0210 is set to 0, setting defaults to 2 and item is not shown.
0500	Filter Change Reminder	0 - Filter change reminder off. Factory setting. 1 - 10 run time days. 2 - 30 run time days. 3 - 60 run time days. 4 - 90 run time days. 5 - 120 run time days. 6 - 365 run time days.	Run time based on call for fan.
0510	Humidifier Pad Replacement Reminder	0 - Humidifier pad replacement reminder off. Factory setting. 1 - 90 run time days. 2 - 180 run time days. 3 - 365 run time days.	
0520	UV Lamp Replacement Reminder	0 - UV lamp replacement reminder off. Factory setting. 1 - 365 run time days.	
0530	Adaptive Intelligent Recovery	0 - Conventional Recovery -- System starts recovery at programmed time. 1 - Adaptive Intelligent Recovery -- System starts recovery early so that setpoint is reached by the start of the program period. Factory setting.	
0540	Number of Periods	2 - Two periods (wake and sleep) available. 4 - Four periods (wake, leave, return, sleep) available. Factory setting.	Shown only when program-mable is chosen. Setting applies to all days of the week.
0580	Minimum Compressor-Off Time	Settings of 0 - 5 available. 5 - Five-minute compressor-off time setting. Factory setting.	

table continued on next page

Installer Set-Up No.	Installer Set-Up Name	Selection Description (Factory setting in bold print)	Notes
0600	Heat Temperature Range (°F)	Settings of 40 - 90 available in 1°F increments. Factory setting = 90.	Shown in 1/2°C increments
0610	Cool Temperature Range (°F)	Settings of 50 - 99 available in 1°F increments. Factory setting = 50.	Shown in 1/2°C increments
0640	Clock Format	12 - 12-hour clock. Factory setting. 24 - 24-hour clock.	
0650	Heating Mode Extended Fan On Time	0 - No extended fan operation after heating demand satisfied. Factory setting. 90 - Fan operation continues for 90 seconds after heating demand satisfied.	Not shown when fan operation is set to fossil fuel or in cool only systems.
0660	Cooling Mode Extended Fan On Time	0 - No extended fan operation after cooling demand satisfied. Factory setting. 90 - Fan operation continues for 90 seconds after cooling demand satisfied.	Not shown in heat only systems.
0670	Keypad Lock-Out	0 - Keypad unlocked -- all functions are available. Factory setting. 1 - Keypad partially locked -- only temp. up and down keys and ability to enter installer set-up mode and modify set-up selections are enabled. 2 - Keypad fully locked -- only ability to enter installer set-up mode and modify set-up selections are enabled.	
0680	Heating Mode Temperature Control	1 - Less aggressive control. Select this setting if temperature is overshooting the setpoint. Heating may turn off before the setpoint is reached. 2 - Standard control. Factory setting. 3 - More aggressive control. Select this setting if temperature is undershooting the setpoint. Heating may remain on after the setpoint is reached.	Applies to recovery ramp and use of auxiliary heat during recovery.

table continued on next page

Installer Set-Up No.	Installer Set-Up Name	Selection Description (Factory setting in bold print)	Notes
0690	Cooling Mode Temperature Control	1 - Less aggressive control. (Cooling may turn off before set-point reached). 2 - Standard control. Factory setting. 3 - More aggressive control. (Cooling may remain on after setpoint reached).	Applies to recovery ramp.
0700	Temperature Display Offset	-3°F (-1.5°C). -2°F (-1°C). -1°F (-.5°C). 0 - No difference in displayed temperature and actual room temperature. Factory setting. 1°F (.5°C). 2°F (1.5°C). 3°F (2°C).	
0710	Reset Thermostat	0 - No thermostat reset. Factory setting. 1 - Resets all installer set-up options to default values and resets schedule to default setting.	Only calendar settings and time are retained.

System Test

The system test function allows the installer to check the HVAC system after the thermostat set-up has been completed. The system test function is accessed through the installer set-up menu.

- 1 - Press and release the SYSTEM key.
- 2 - Press and hold the two blank keys on either side of the center blank key for approximately five seconds, until the screen changes.
- 3 - Use the down arrow in the center of the thermostat to reach the installer test selections.

- 4 - The installer test number is displayed on the left-hand side of the screen. The factory setting for the test screen is displayed on the right-hand side of the screen. Use the up and down arrows on the right-hand side of the thermostat to select the desired test option.
- 5 - Refer to the following table to select proper test options.



CAUTION

While the system is in the test mode, the compressor minimum off time is bypassed.

Installer Test No.	InstallerSet-Up Name	Selection Description
Test 1	Installer Test Cool	0 - Cooling is off (factory setting). 1 - Cooling is activated.
Test 2	Installer Test Fan	0 - Fan is off (factory setting). 1 - Fan is activated.
Test 3	Installer Test Heat	0 - Heating is off (factory setting). 1 - Heat is activated.

Troubleshooting		
Symptom	Possible Cause	Action
Display does not come on.	Thermostat is not being powered.	Check to see that there is 24V between R and C terminals. Check to see that batteries are properly installed.
Temperature settings do not change.	Upper or lower temperature limits were reached.	1- Check temperature setpoints. 2- Check installer set-up numbers 0600 and 0610. Modify, if necessary.
	Keypad is fully locked.	Check installer set-up numbers 0670 and change keypad lock option, if necessary.
Heating or cooling does not come on.	Thermostat minimum-off time is activated.	Wait up to 5 minutes for the system to respond.
	System selection has not been set to heat or cool.	Select proper system mode.
	System type selection is incorrect.	Check installer set-up number 0170 and make sure proper system type is selected.
Thermostat is calling for heat (Heat ON) or cool (Cool ON); but HVAC system is not operating.	Heating or cooling equipment is not operating.	1- Check wiring. 2- Check installer set-up number 0170 and make sure proper system type is selected. 3- Verify operation of equipment in system test mode.
Thermostat does not respond when touch screen is pressed.	Keypad is fully locked.	Check installer set-up numbers 0670 and change keypad lock option, if necessary.
NOTE - Perform installer system tests (page 15) to verify thermostat control of HVAC system.		