OPERATION MANUAL

ComfortSense™ 3000 Series Model No. L3011C Non-Programmable Thermostat

CONTROLS
506079-01
02/08
Supersedes 504,865M

Technical Publications
Litho U.S.A.

RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

Table of Contents

L3011C Thermostat

The Lennox ComfortSense™ 3000 Series model L3011C non-programmable electronic thermostat is easy-to-use, has a large, easy-to-read display, and provides excellent temperature control. The thermostat also includes a programmable filter change reminder, and a system check indicator which will notify the user of the need for equipment service.

Thermostat model L3011C t is suitable for non-heat pump, single-stage heat/single cool applications that are matched with a gas or electric furnace.

General

These instructions are intended as a general guide and do not supersede local codes in any way. Consult authorities having jurisdiction before installation.

Check equipment for shipping damage. If you find any damage, immediately contact the last carrier.

Introduction

This document describes the operation of Lennox model L3011C thermostat. Refer to the installation manual for instructions regarding installation and wiring of the thermostat.

Initial Thermostat Power-up

When power is initially applied to the thermostat, the display will appear as shown in figure 1.

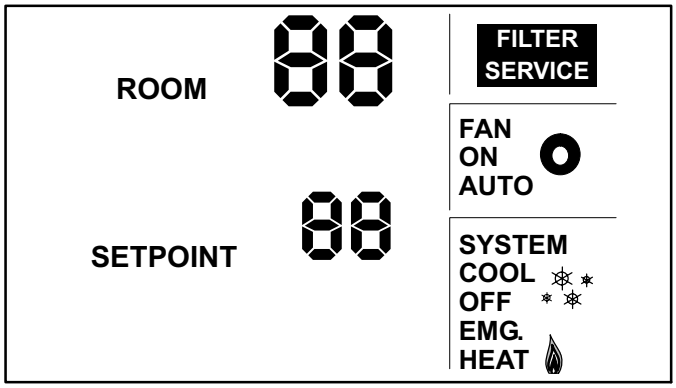

Figure 1. Display - Initial Power-Up

All display segments are momentarily activated. This occurs as a normal part of thermostat initialization. Within a few seconds, the display will appear as shown in figure 2 (figure shows temperature in Fahrenheit units).

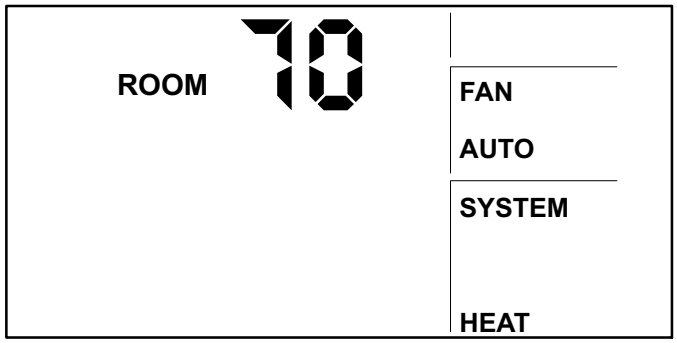

Figure 2. Display - Home Screen

Figure 2 illustrates the HOME screen. Note that an indoor room temperature of 70°F is initially displayed. After about 1 minute of warm-up time, the actual room temperature will be displayed. HEAT mode is the system default (as indicated in the SYSTEM box at lower right).

A pale blue display backlight will turn on each time a key is pressed. The backlight will turn off 8 seconds after the last key is pressed.

Heating Control

The HEAT button is located behind the small door on the right-hand side of the thermostat. See figure 3.

Figure 3. Additional Thermostat Buttons

Enabling and Disabling Heat Mode

Use the HEAT button to enable or disable heat mode as desired. If the thermostat is in off mode, heat mode is enabled when the HEAT button is pressed. This is indicated by HEAT in the SYSTEM box as shown in figure 4.

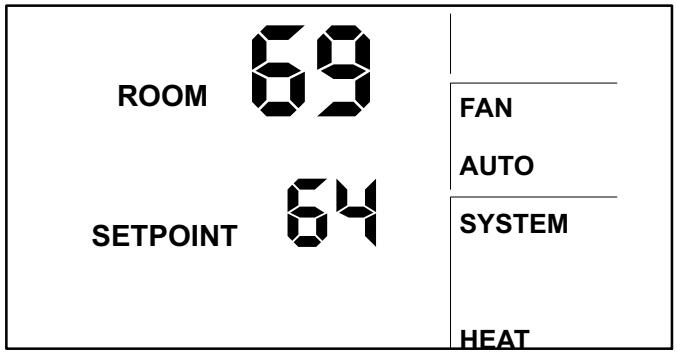

Figure 4. Heat Mode Enabled

If the thermostat is in heat mode, heat mode is disabled when the HEAT button is pressed. This is indicated by OFF in the SYSTEM box as shown in figure 5.

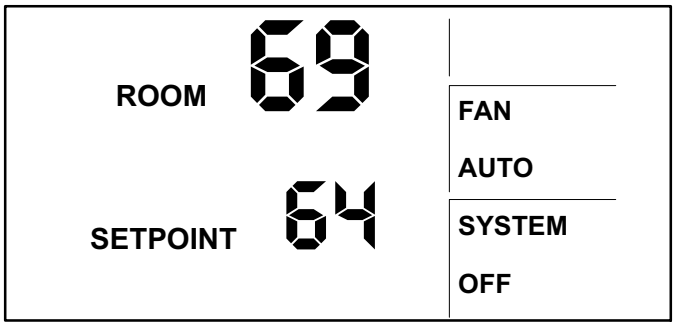

Figure 5. Heat Mode Disabled

Heating Demand

The thermostat must be in heat mode in order to properly control the heating equipment. When in heat mode, if the actual temperature is lower than the temperature setpoint, a heating demand is detected by the thermostat. The thermostat will then activate the heating equipment to satisfy the demand. Heating operation is indicated by a flame icon in the SYSTEM box as shown in figure 6.

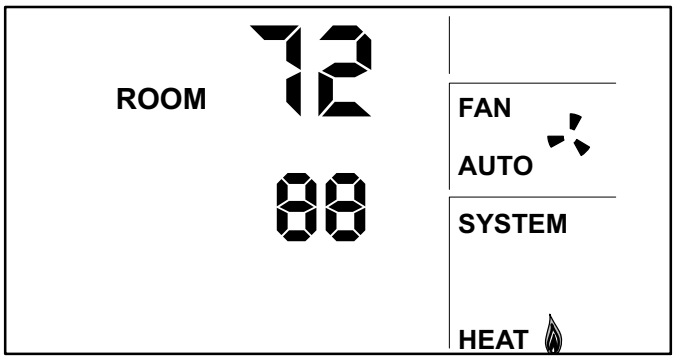

Figure 6. Heating Demand

When the actual temperature rises above the temperature setpoint, the flame icon will disappear. This indicates that the heating demand has been satisfied and that the heating equipment has been turned off.

NOTE - The heating equipment is activated for at least 3 minutes if no buttons are pressed during the demand interval.

Cooling Control

The COOL button is located behind the small door on the right-hand side of the thermostat. See figure 3.

Enabling and Disabling Cool Mode

Use the COOL button to enable or disable cool mode as necessary. If the thermostat is in off mode, cool mode is enabled when the COOL button is pressed. This is indicated by COOL in the SYSTEM box.

If the thermostat is in cool mode, cool mode is disabled when the COOL button is pressed. This is indicated by OFF in the SYSTEM box.

Cooling Demand

The thermostat must be in cool mode in order to properly control the cooling equipment. When in cool mode, if the room temperature is higher than the temperature setpoint, a cooling demand is detected by the thermostat.

The thermostat will then activate the cooling equipment to satisfy the demand. Cooling operation is indicated by a snowflake icon in the SYSTEM box as shown in figure 7. When the actual temperature drops below the temperature setpoint, the snowflake icon will disappear. This indicates that the cooling demand has been satisfied and that the cooling equipment has been turned off.

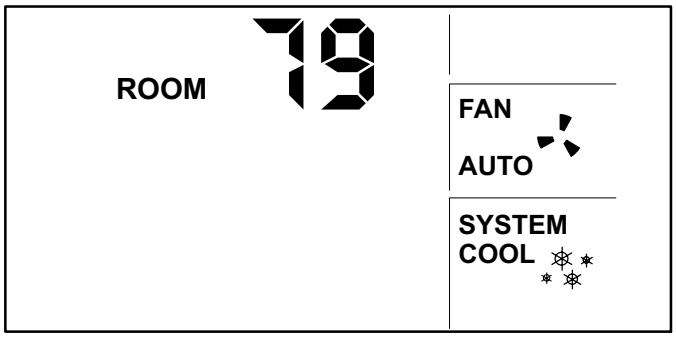

Figure 7. Cooling Demand

NOTE - The cooling equipment is activated for at least 4 minutes if no buttons are pressed during the demand interval. Cooling equipment operation is locked out for 5 minutes after a demand has been satisfied. If another cooling demand occurs during this 5-minute interval, the snowflake icon will flash; however, the cooling equipment will not run until the 5-minute delay has elapsed.

Adjusting Temperature Setpoint

The temperature setpoint represents the desired temperature of the space around the thermostat. The default temperature setpoint is 70°F. To adjust the setpoint, press the UP or DOWN arrow keys to the right of the display screen. The existing setpoint will be displayed just below the actual room temperature as shown in figure 8.

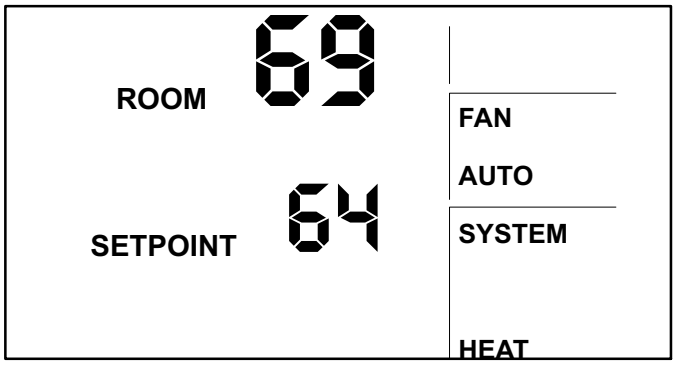

Figure 8. Setpoint Display and Adjustment

Use the UP or DOWN arrow keys to adjust the setpoint up or down. The setpoint will increase by 1°F each time the UP key is pressed. The setpoint will decrease by 1°F each time the DOWN key is pressed.

After the desired setpoint is reached, the HOME screen will reappear after about 8 seconds.

Fan Control

The FAN button is located behind the small door on the right-hand side of the thermostat. See figure 3. The FAN button can be used to select either continuous fan mode or auto fan mode.

If continuous fan mode is enabled, the fan will run continuously regardless of whether the heating or cooling equipment is running. Also, ON will be displayed in the FAN box as shown in figure 9.

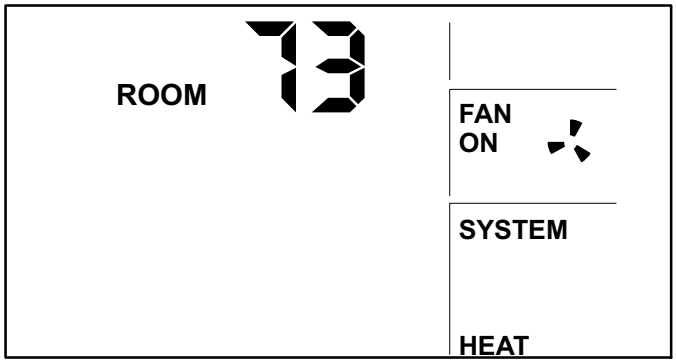

Figure 9. Fan ON with Icon

If auto fan mode is selected, the fan will only run when the heating or cooling equipment is running. In this case, AUTO will be displayed in the FAN box as shown in figure 10.

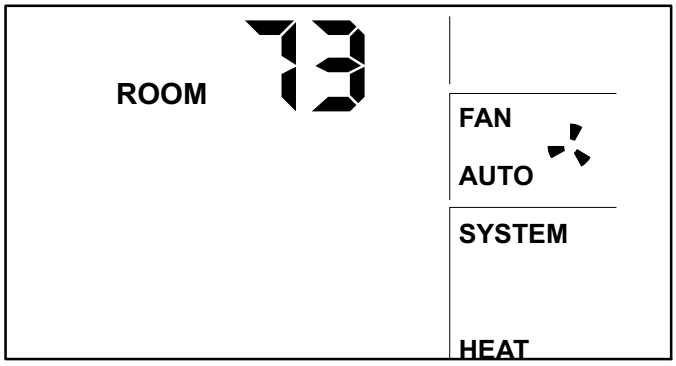

Figure 10. Fan AUTO with Icon

To change from continuous to auto fan mode and vice versa, press the FAN button. Also note the presence of a fan icon in the FAN box. This icon indicates that the fan is running.

Filter Reminder

The L3011C thermostat includes a filter reminder feature. The filter reminder can be set for 1, 3, 6, or 12-month intervals. The SETTINGS button, located behind the door on the right-hand side of the thermostat is used to set the filter reminder interval. See figure 3. Press the SETTINGS button from the HOME screen to display the Filter Reminder Settings screen as shown in figure 11.

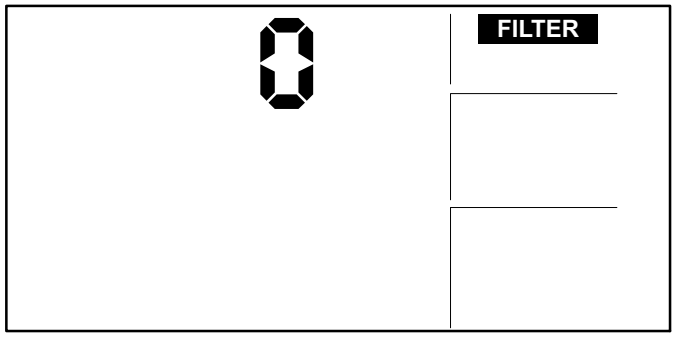

Figure 11. Filter Reminder Settings

The default setting for the filter reminder is 0, which disables the function. Use the UP arrow while in the Filter Reminder Settings screen to select the desired interval between reminders. It may be necessary to press the UP arrow several times to access the desired setting. The HOME screen will reappear about 10 seconds after the arrow key has been pressed for the final time.

After the programmed interval has elapsed, the FILTER reminder will be displayed as shown in figure 12. After the filter has been changed, reset the filter reminder by pressing the SETTINGS button for 4 seconds. The screen will blink for a few moments to indicate that the timer has been reset.

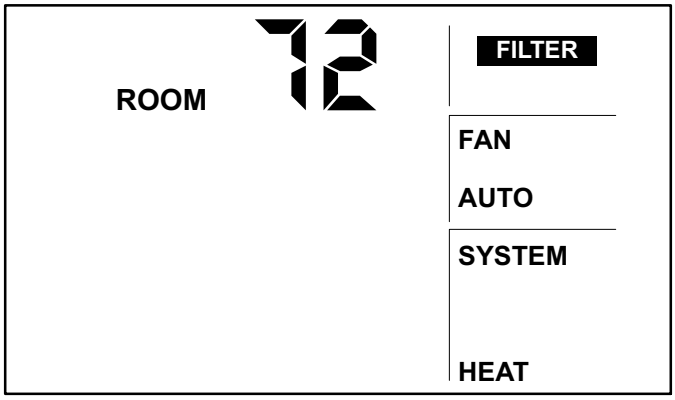

Figure 12. Display of Filter Reminder

Service Indicator

When abnormal equipment operation is detected, the SERVICE indicator will flash on the upper-right corner of the screen. This indicates that the equipment requires service from a qualified service technician. The SERVICE indicator is shown in figure 13.

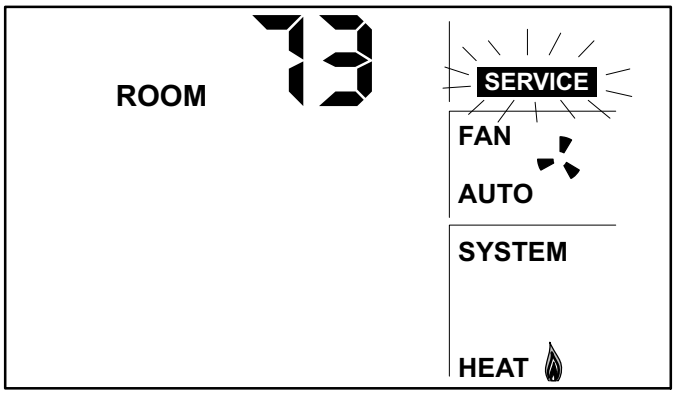

Figure 13. Service Indicator Flashing

Thermostat RESET

Under some abnormal conditions, it may be desirable to "reset" the thermostat to its default condition. This can be useful on rare occasions when the the thermostat is behaving abnormally (e.g. after an electrical storm or power outage). The RESET button can be used to recover from this situation.

The RESET button is an unlabeled, recessed button located behind the door on the right-hand side of the thermostat, just below the SETTINGS button. The RESET button is visible in figure 3. Use a paper clip or small pencil to press the RESET button. After the RESET button is pressed, the thermostat settings will return to the defaults listed in the Default Settings section.

Default Thermostat Settings

Default thermostat settings are in table 1.

Table 1. Default Thermostat Settings

Mode	Heat
Setpoint	70°F (or 21°C)
Fan	Auto
Filter Reminder	OFF (reminder setting = 0)
Equipment Protection Timers	Reset back to zero

Technical Specifications

Thermostat Type
Electronic nonprogrammable thermostat for 1H/1C, gas or electric heat, non-heat pump, non-power robbing applications.

Power Supply Range
18VAC - 30VAC (24VAC nominal), 60Hz

Temperature Display
Display Scale: Fahrenheit or Celsius user selectable (via DIP switches)
Display range: 35°F (2°C) to 99°F (37°C)
Display resolution: 1°F (1°C)
Display Accuracy: +/-1°F

Temperature Measurement Range
Measurement Scale: Fahrenheit
Measurement Range: 35°F to 99°F
Measurement Resolution: 0.5°F
Measurement Accuracy: +/-1°F
Field Offset: via DIP switches to +/-3°F
Sampling Method: temperature measurements sampled every 15 seconds. Displayed temperature is the average of the last four measurements.

Temperature Setpoint Range
Setting range: 50°F (10°C) to 90°F (32°C)
Setting resolution: 1°F (1°C)

Fan Control
AUTO or ON modes, gas or electric heat compatible via DIP switches (also see Thermostat Output section).

I/O Relays
All thermostat relays are latching type to minimize power consumption.

1.. HEAT/COOL relay output
2.. FAN relay output
3.. SERVICE relay input

Equipment Protection Timers
Minimum Compressor OFF time: 5 minutes
Minimum Compressor ON time: 4 minutes
Minimum Furnace ON time: 3 minutes

Minimum furnace cycle time (elapsed time between any furnace activation and the next furnace activation): 6 minutes.

Minimum elapsed time between any compressor activation and the next compressor activation: 6 minutes.

NOTE - All protection timers (except the compressor OFF timer) can be over-ridden if a heating or cooling demand is initiated or terminated using the UP, DOWN, HEAT, or COOL buttons.

Equipment Protection Override
Both the minimum compressor OFF timer and the minimum equipment cycle timer can be over-ridden by pressing and holding either the HEAT or COOL button down for 4 seconds.

Over-Temperature Protection
Thermal mechanical switch opens W1 at 93°F+/-6°F.

Filter Reminder
Settings of 0 (Off), 1, 3, 6 or 12 months are available. When programmed time has elapsed, a FILTER indicator is displayed.

Service Reminder
The SERVICE indicator is displayed only under the following conditions:

- if the thermostat Y1 terminal has been activated with 24VAC for at least 5 minutes, AND the L terminal is shorted to the R terminal;

  OR

- if the thermostat Y1 terminal has been activated with 24VAC for at least 5 minutes, AND the L terminal is shorted to the C terminal.

Power Loss/Recovery

Thermostat memory is retained for a minimum of 24 hours during a power loss (includes retention of programmed temperature setpoint, heat/cool and fan mode settings, filter reminder status, and equipment protection timers). After 24 hours of power loss, programmed settings will be lost and replaced with default settings.

⚠ IMPORTANT

Power must be applied for at least six consecutive hours prior to a power loss in order for memory to be retained for the specified time.

LCD Backlight

Activated for 8 seconds when any key is pressed.

NOTE - During an electrical storm or similar disturbance, the backlight may activate for a few seconds. This is normal and will no longer occur after the electrical disturbance has passed.

Thermostat Operating Conditions

35°F to 105°F, 5% to 90% RH

Thermostat Storage Conditions

-40°F to 185°F, 5% to 95% RH

Thermostat Output Table

Table 2 depicts the L3011C thermostat output states for various input conditions.

Table 2. L3011C Thermostat Outputs

Condition	W1	Y1	G
Gas Heat, Auto Fan			
heat demand	X		
cool demand		X	X
no demand			
Gas Heat, Continuous Fan			
heat demand	X		X
cool demand		X	X
no demand			X
Electric Heat, Auto Fan			
heat demand	X		X
cool demand		X	X
no demand			
Electric Heat, Continuous Fan			
heat demand	X		X
cool demand		X	X
no demand			X
NOTE - X = output is activated with 24VAC.			