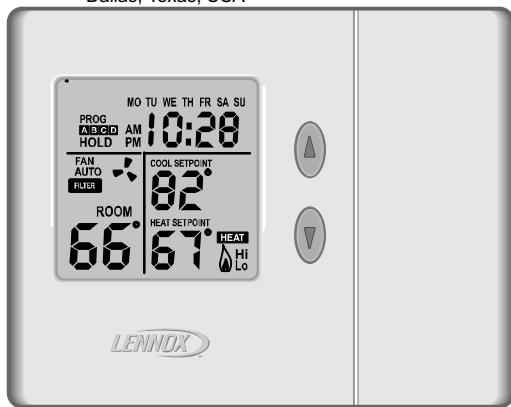




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RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

L3722C 7-Day Programmable Thermostat

The Lennox ComfortSense™ 3000 Series model L3722C 7-day programmable electronic thermostat provides excellent temperature control and has a large, easy-to-read display. This product includes a programmable filter change reminder, an equipment maintenance reminder, and a system check indicator to notify the user when the equipment requires service.

Thermostat model L3722C is suitable for non-heat pump, two-stage heat/two-stage cool applications using a gas or electric furnace. Also, the thermostat provides auto-changeover capability.

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 L3722C 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.

OPERATION MANUAL

ComfortSense™ 3000 Series Model No. L3722C 7-Day Programmable Thermostat

CONTROLS

506071-01
02/08
Supersedes 505,068M

TIP Technical
Publications
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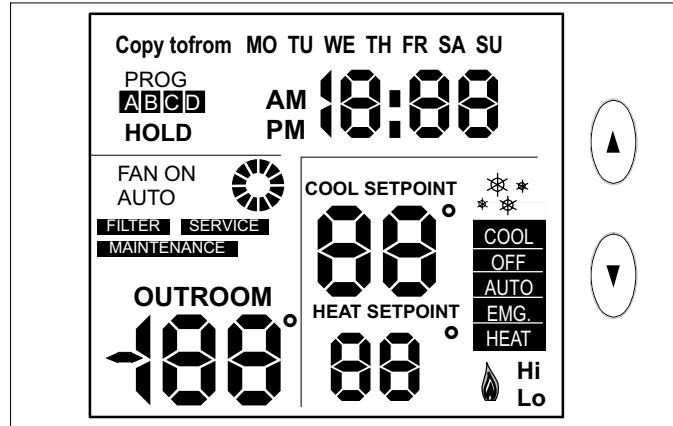


Figure 1. Initial Power-Up Display

All display segments are momentarily activated. This occurs as a normal part of thermostat initialization.

Within a few seconds, the HOME screen appears (see figure 2) with default settings as shown. After about 1 minute of initialization time, the actual room temperature will be displayed.



NOTE - Tables 3 and 4 on page 7 show all system and programming defaults.

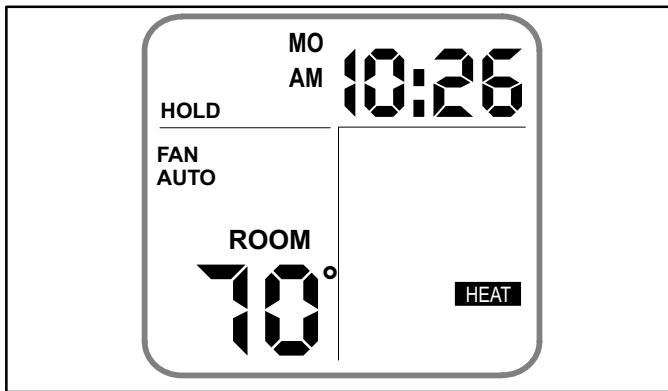


Figure 2. Home Screen

At this point, the thermostat will be fully functional; its default temperature setpoint (not shown) is 70°F. At this point, if the equipment has been fully powered and if a heat demand were present, the system would begin operating.

NOTE - Temperature scale default is Fahrenheit units but may be reset to show Celsius, if desired. See page 8.

Buttons, Backlight, Timers & Settings

Buttons are located behind the small door on the right-hand side of the thermostat (see figure 3).

⚠️ IMPORTANT

Do NOT begin pressing buttons until after you read the following section describing each button.

A pale blue display backlight illuminates for 30 seconds each time any button is pressed.

When PROG or DAY/TIME button is pressed, a field begins flashing, expecting another input. Start making changes within 15 seconds or the HOME screen will return.

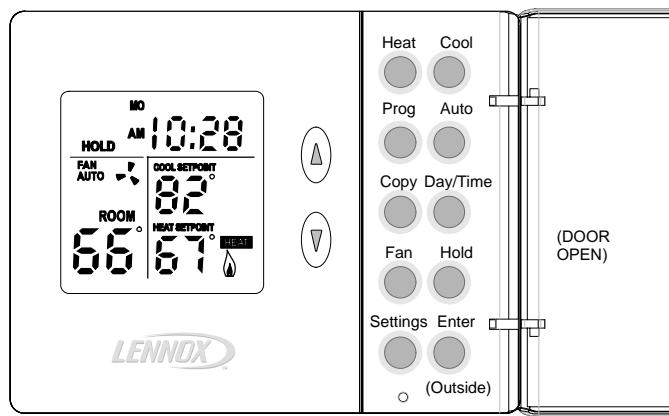


Figure 3. Thermostat Buttons

When an Arrow, HOLD, HEAT, or COOL button is pressed, SETPOINT and the temperature setting appears for 15 seconds. If desired, start making changes within 15 seconds or the HOME screen will return. The backlight will turn off 15 seconds after the HOME screen reappears.

DAY/TIME - Setting the Day and Time

Press the DAY/TIME button and set the CURRENT hour, minute, and day of week as follows:

1. "AM12" will flash on the screen. Press the UP/DOWN arrows to change the hour. ("AM" or "PM" must correspond to time of day.) Press DAY/TIME OR, if adjusting for daylight savings time, pressing the ENTER button stores the single change and exits to the HOME screen, bypassing minutes and day of week.
2. Minutes will flash. Use the UP/DOWN arrow button to display the minutes past the hour. Press DAY/TIME.
3. Day "MO" (Monday) will flash. Use UP or DOWN arrow buttons to display the current day. Day selections are abbreviated as "MO", "TU", "WE", "TH", "FR", "SA", and "SU". Press DAY/TIME.
4. The HOME screen reappears; confirm day and time are correct. This completes day and time setting.

HEAT - Using the Heat Mode

Enabling and Disabling Heat Mode

The thermostat must be in the heat mode to control the heating equipment. Press the HEAT button to enable or disable HEAT mode. If the thermostat is in cool or off mode, pressing the HEAT button enables the heat mode (indicated by HEAT in the lower right corner - see figure 4).

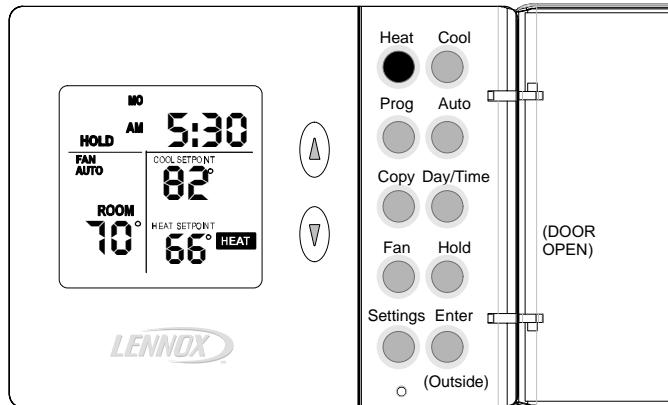


Figure 4. Turn Heat ON/OFF

If the thermostat is in heat mode, heat mode is disabled when the HEAT button is pressed. This is indicated by OFF near the right side of the display as shown in figure 5.

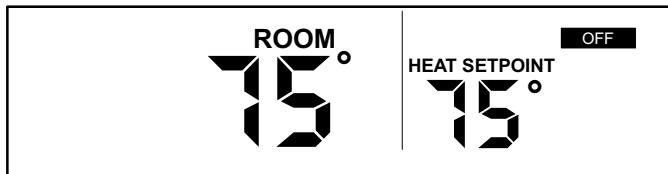


Figure 5. Heat/Cool Mode Disabled

Heating Demand

Set the thermostat to heat mode to control the heating equipment. Then, if the room temperature is lower than the temperature setpoint, as shown in figure 6, the thermostat detects a heating demand and will activate the heating equipment to satisfy the demand.



Figure 6. Heating Demand

Heating operation is indicated by a flame icon in the lower right corner. 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.

If your system supports 2-stage heating (as does the L3722C thermostat), you may notice various heating levels being delivered during a demand.

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

COOL - Using the Cool Mode

Enabling and Disabling Cool Mode

Use the COOL button to enable or disable cool mode as desired. If the thermostat is in heat or off mode, cool mode is enabled when the COOL button is pressed. This is indicated by COOL on the right side of the display (figure 8).

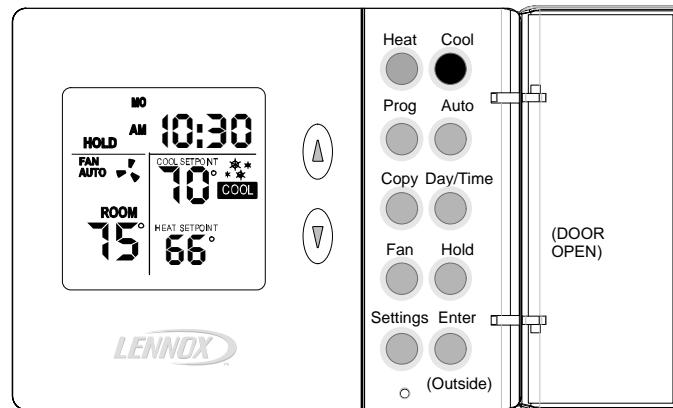


Figure 7. Turn Cool ON/OFF

If the thermostat is in cool mode, pressing the COOL button disables cool mode (indicated by OFF in the SYSTEM box - see figure 5).

Cooling Demand

Set the thermostat to cool mode to control the cooling equipment. Then, if the room temperature is higher than the temperature setpoint, as shown in figure 7, the thermostat detects a cooling demand and will activate the cooling equipment to satisfy the demand.

Cooling operation is indicated by flashing "snowflake" icons on the right side of the display. When the actual temperature drops below the temperature setpoint, the snowflake icons will disappear. This indicates that the cooling demand has been satisfied and that the cooling equipment has been turned off.

If your system supports 2-stage cooling (as does the L3722C thermostat), you may notice various cooling levels being delivered during a demand. Also, if a small cooling demand is present, "Lo" will be displayed in the SYSTEM box. However, if a large cooling demand is present, "Hi" will be displayed in the lower right corner (shown in figure 8).

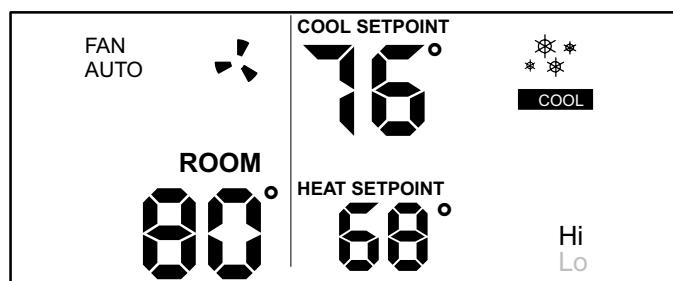


Figure 8. Cooling Demand

NOTE - If no buttons are pressed during a demand for cooling, the equipment must operate for at least 4 minutes. After a demand has been satisfied, cooling equipment operation is locked out for 5 minutes. If another cooling demand occurs during this 5-minute interval, "COOL" and the snowflakes will flash; however, the cooling equipment will not operate until the 5-minute delay has elapsed.

AUTO - Using the Autochangeover Mode

When in either heat mode or cool mode, autochangeover can be enabled or disabled by pressing the AUTO button. If enabled, AUTO appears at the lower right corner of the display. The thermostat will then automatically change over from heating to cooling and vice versa, to keep the room temperature in between the heating and cooling setpoints. Autochangeover can be used in either of the thermostat hold modes, or when the thermostat program is running. These modes are described later.

HOLD - Using Temperature Hold Modes

When HOLD is displayed at the HOME screen, the thermostat is in a temperature hold condition. This means that the temperature program data is ignored and the thermostat functions much like a non-programmable thermostat.

Adjusting Temperature Setpoint in Hold Mode

The temperature setpoint represents the desired temperature of the space around the thermostat. The default heat setpoint in hold mode is 70°F; the default cool setpoint in hold mode is 78°F.

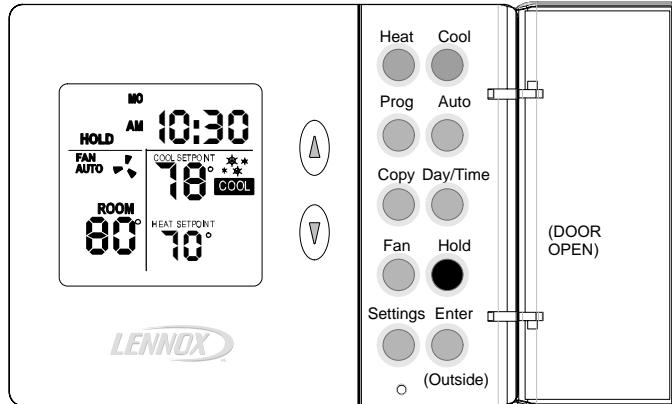


Figure 9. Hold Temperature Mode

To adjust the setpoint, press the UP or DOWN (\blacktriangle \blacktriangledown) arrow buttons; the existing setpoint is displayed to the right of the actual room temperature. Each button press adjusts the setpoint up or down by 1 degree.

After the desired setpoint is reached, the HOME screen will reappear after about 15 seconds.

Permanent Hold Mode

At any time the program is running, from the HOME screen, set a permanent hold (program override) by pressing the HOLD button (see figure 9). The thermostat now functions much like a non-programmable thermostat. Use the Up/Down arrow buttons to adjust the hold setpoint. To return to the program, press the HOLD button again.

Temporary (2-Hour) Hold

At any time the program is running, from the HOME screen, set a temporary 2-hour hold by pressing the Up/Down arrow buttons until the desired setpoint is displayed; "HOLD" flashes (see figure 10). This overrides the program for 2 hours from the last button press, then returns to the program.

While in Temporary Hold, press the HOLD button once to switch to Permanent Hold (HOLD displays solid; PROG not displayed); press the HOLD button again to return to the program (PROG displays; HOLD not displayed).

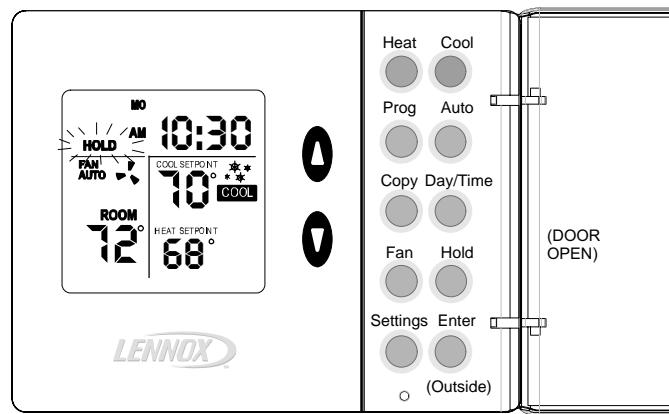


Figure 10. Temporary Hold Temperature Mode

PROG - Thermostat Programming

The L3722C thermostat can be programmed to perform a set of both heating and cooling events for each day of the week. Each day can be programmed for 4 unique events per day, and each day can be different from any other day.

To Set Program Events and Temperatures

Figure 11 gives an example of how up to 7 different programs can be set. Programs **A** and **C** reflect the desired warmth while the home IS occupied (72°); **B** allows less heating while the home is NOT occupied; **D** reflects a cool sleeping temperature.

NOTE - This example shows heat setpoints; a similar program may be set for cool setpoints.

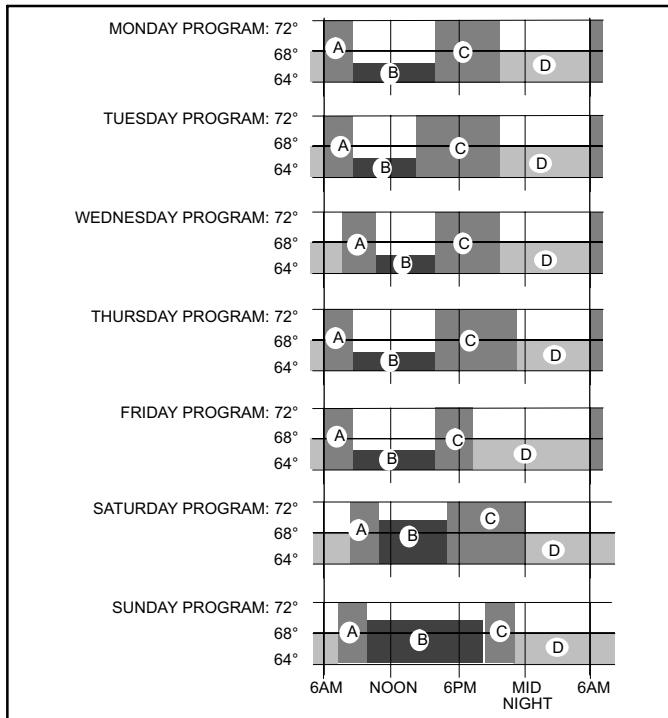


Figure 11. 7 Day Program Example

NOTE - Pressing the **ENTER** button during the following programming steps, saves and exits to the **HOME** screen. To program events and temperatures, perform the following steps.

1. Press and release the **PROG** button. "MO" (Monday), "AM 6:00", period "A", "COOL SETPOINT 78", and "HEAT SETPOINT 70" are displayed. "AM 6" flashes.
2. Use the Up/Down arrow buttons to select the desired hour; press the **PROG** button when the desired hour is reached; use the Up/Down arrow buttons again to select desired minute. The selected hour/minute is when the program will start. Press the **PROG** button.
3. Use the Up/Down arrow buttons to select the desired heat setpoint; press the **PROG** button.
4. Use the Up/Down arrow buttons to select the desired cool setpoint; press the **PROG** button.
5. Repeat steps 1 - 4 for Monday, periods B, C, and D.
6. **COPY A PROGRAM** - If the program entered for Monday is satisfactory for other days of the week, do the following to repeat the same program for other days:
 - A Press the **PROG** button, then press the **COPY** button. The display clears the screen except for "Copy from MO" with "MO" flashing. Press the **COPY** button again to copy Monday's program.
 - B The display changes to "Copy to MO". Use the arrow buttons to scroll to the desired day where you want the same program as Monday. Press the **COPY** button.
 - C Repeat steps A and B for as many days as you want the same program.

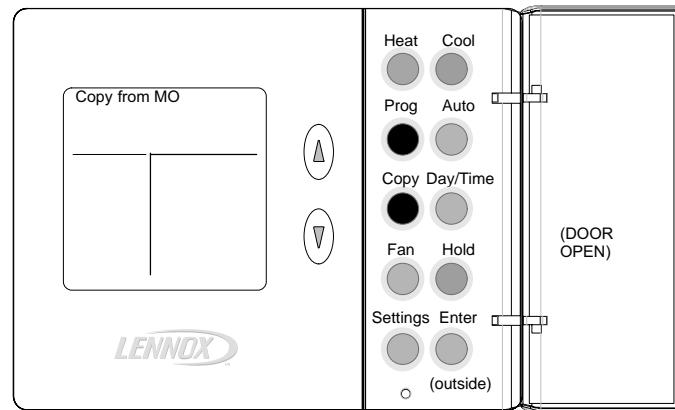


Figure 12. Copy a Programmed Day to Another Day

7. Repeat steps 1 - 5 to program different times and temperatures for days not yet programmed.

FAN - Controlling the Fan Operation

Use the **FAN** button to select either continuous fan mode or auto fan mode.

To change from continuous to auto fan mode (or vice versa), press the **FAN** button. Note whether a fan icon in the **FAN** box is present (indicating that the fan is running) or not (fan not running).

If continuous fan mode is enabled (ON displayed in **FAN** box - see figure 13), the fan will run continuously regardless of whether the heating or cooling equipment is running.

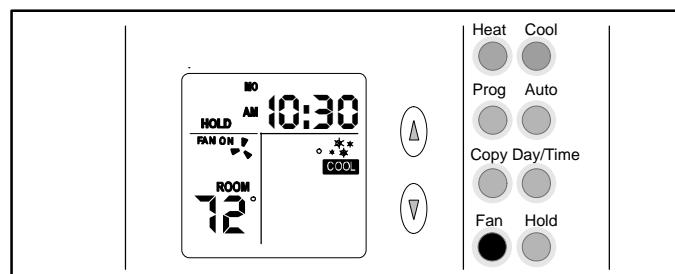


Figure 13. Using Fan ON

If auto fan mode is selected (AUTO displayed in **FAN** box - see figure 14), the fan will only run when the heating or cooling equipment is running.

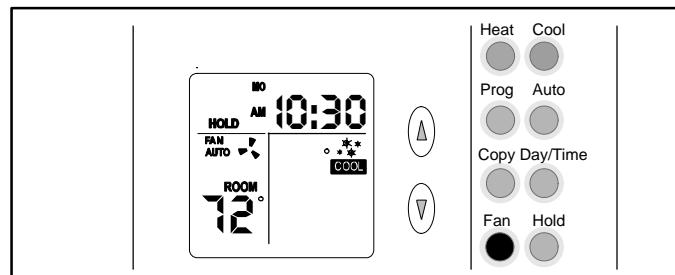


Figure 14. Using Fan AUTO

Displaying Outside Temperature

Pressing the ENTER (Outside) button at the HOME screen displays the outside temperature (see figure 15) for several seconds, then returns to room temperature.

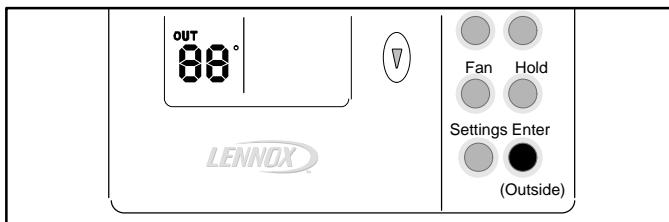


Figure 15. Check Outside Temperature

SETTINGS - Filter/Maintenance Reminders

The L3722C thermostat is designed to remind you when the filter needs changing or when routine maintenance is required, as (and if) defined, by you. These optional reminders are not enabled until you activate them. To do so, press the SETTINGS button once or twice for the desired reminder as shown in figure 16 and as described in table 1.

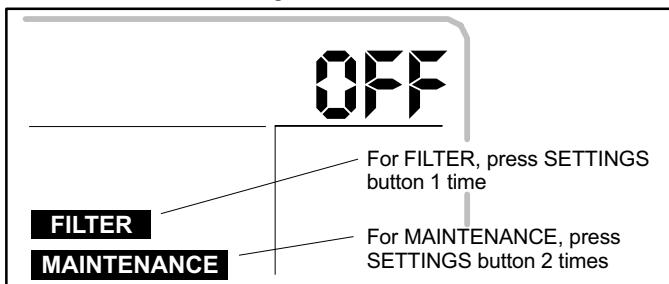


Figure 16. Reminder Settings Display

The default setting for the reminders is OFF (disabled). Press Up/Down arrow buttons to select the desired reminder intervals.

Table 1. Filter and Maintenance Reminders

Buttons to Use	Reminder	Available Settings and How to Use
Settings (1st press) then Arrows to scroll selections	FILTER	Total fan run time expressed in months (Off, 1, 3, 6, 12); for example, if fan runs 12 hours a day, 1 month reminder displays in 2 calendar months.
Settings (2nd press) then Arrows to scroll selections	MAINTENANCE	Elapsed chronological time in months (Off, 6, 12). Use this, for example, to remind yourself when to perform routine checks or when to call a technician for periodic preventive maintenance.
Enter		Stores settings.

NOTE - The HOME screen will reappear about 15 seconds after the final arrow button press. OR, press the ENTER button at any time to store any changes and exit to the HOME screen.

After either programmed interval has elapsed, the reminder will be displayed as shown in figure 17.

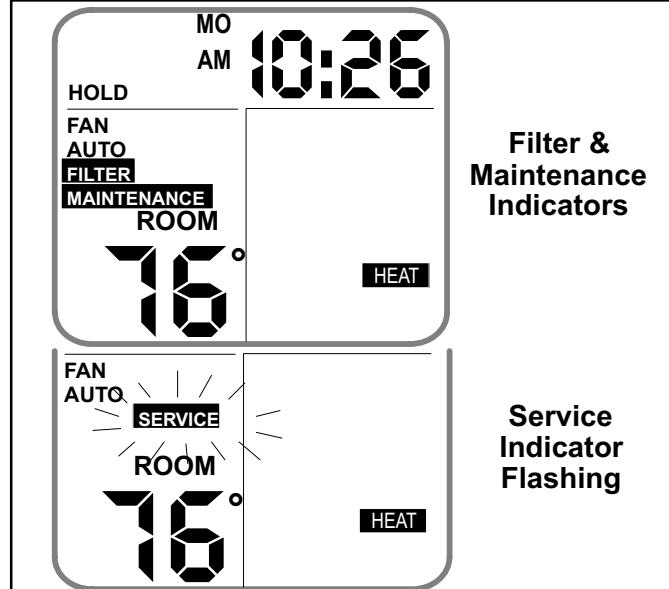


Figure 17. Reminders

After the filter has been changed or maintenance performed, reset the reminder by pressing the SETTINGS button for 4 seconds at the corresponding reminder settings screen. The screen will blink for a few moments to indicate that the timer has been reset.

Service Indicator

When abnormal equipment operation is detected, the SERVICE indicator will flash on the screen (see figure 17). This indicates that the equipment requires service from a qualified service technician.

Thermostat RESET

Under some abnormal conditions, it may be necessary to "reset" the thermostat to its default condition. Such a RESET would delete all programming and settings and therefore should only be used on rare occasions when the the thermostat fails to function as designed and/or as programmed. Such an instance can occur as a result of a power surge or similar electrical disturbance (e.g. after an electrical storm or power outage). The RESET button can be used to recover from this situation.

CAUTION

When the RESET button is pressed, ALL settings revert back to the defaults, including the default program (see tables 3 and 4).

The RESET button is an unlabeled, recessed button located behind the door on the right-hand side of the thermostat, below the SETTINGS button (see figure 3). Use a paper clip or small pencil to press the RESET button; ALL thermostat settings will be reset to the defaults listed in the Default Thermostat Settings section.

Removing and Installing Thermostat

The thermostat hinges on tabs on the top of the subbase; no tool is needed to remove the thermostat from the subbase. Pivot the bottom of the thermostat outward (releasing the snaps), then lift up to remove.

To install it, first position the top tilted toward the wall bracket and align it until you feel the tabs and slots engage; then, while the top is in place, pivot the bottom toward the wall until the thermostat snaps into place.

Thermostat Output Table

Table 2 depicts the L3722C thermostat output states for various input conditions. The following notes described terms used in the table.

Table 2. Thermostat Outputs

Condition	W1	W2	Y1	Y2	G
Gas Heat, Auto Fan					
Heat Demand, SMALL	X				
Heat Demand, LARGE	X	X			
Cool Demand, SMALL			X		X
Cool Demand, LARGE			X	X	X
No Demand					
Gas Heat, Continuous Fan					
Heat Demand, SMALL	X				X
Heat Demand, LARGE	X	X			X
Cool Demand, SMALL			X		X
Cool Demand, LARGE			X	X	X
No Demand					X
Electric Heat, Auto Fan					
Heat Demand, SMALL	X				X
Heat Demand, LARGE	X	X			X
Cool Demand, SMALL			X		X
Cool Demand, LARGE			X	X	X
No Demand					
Electric Heat, Continuous Fan					
Heat Demand, SMALL	X				X
Heat Demand, LARGE	X	X			X
Cool Demand, SMALL			X		X
Cool Demand, LARGE			X	X	X
No Demand					X

NOTE - X = output is activated with 24VAC.

NOTE - The temperature ranges expressed in the following definitions of "SMALL/LARGE" demands are for guidance only; actual temperatures may vary.

With a **SMALL** heat demand, temperature is:
below **setpoint -0.5F** but above **setpoint -1.5F**
AND 30-minute upstage timer HAS NOT expired.

With a **LARGE** heat demand, temperature is:
less than **setpoint -1.5F**
OR 30-minute upstage timer HAS expired.

With a **SMALL** cool demand, temperature is:
above **setpoint +0.5F** but below **setpoint +1.5F**
AND 30-minute upstage timer HAS NOT expired.

With a **LARGE** cool demand, temperature is:
above **setpoint +1.5F**
OR 30-minute upstage timer HAS expired.

Default Thermostat Settings

Default thermostat settings are in table 3 and the default program is shown in table 4.

Table 3. Default Thermostat Settings

Mode	Heat (Perm. Hold)
Heat Setpoint (Perm Hold)	70°F (or 21°C)
Cool Setpoint (Perm Hold)	78°F (or 26°C)
Fan	Auto
Filter Reminder	OFF
Maintenance Reminder	OFF
Equipment Protection Timers	Reset Back to Zero
Autochangeover	OFF

Table 4. Default Program Settings (Time/Temp)

Programs	Time	Temp.- Heat	Temp.- Cool
All days - A	6:00am	70°F / 21°C	78°F / 26°C
All days - B	8:00am	62°F / 17°C	85°F / 29°C
All days - C	6:00pm	70°F / 21°C	78°F / 26°C
All days - D	10:00pm	62°F / 17°C	82°F / 28°C

Technical Specifications

Thermostat Type—Electronic programmable thermostat for 2-Stage (gas or electric) Heat/2-Stage Cool, non-heat pump, non-power robbing applications.

Table 5. L3722C Terminal Designations

Terminal	Description
R	24VAC
Y1	First-stage cooling
W1	First-stage heating
Y2	Second-stage cooling
W2	Second-stage heating
G	Fan control
L	Service Indicator
C	24VAC common
T	Outdoor temperature sensor connection 1
T	Outdoor temperature sensor connection 2

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

CAUTION

24VAC is present on the terminals of the thermostat bracket. If removing the thermostat from the wall, use caution and avoid touching any of the connector terminals on the wall bracket.

Also, when working with the thermostat dip switches, use a non-conductive tool and take caution to avoid making any contact with the circuit board, its imprinted circuitry and its connector prongs.

Temperature Display—Display Scale: Fahrenheit or Celsius user selectable (via DIP switch; see figure 18)

Display range 35°F (2°C) to 99°F (37°C)

Display resolution 1°F (1°C)

Display Accuracy +/-1°F

If the Fahrenheit/Celsius display must be changed, use a plastic, non-conductive tool to push the dip switch to the right position (see figure 18).

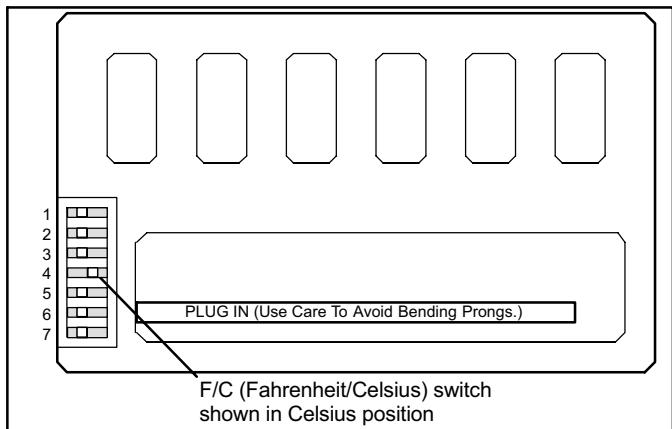


Figure 18. Changing Fahrenheit/Celsius Setting

Indoor 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.

Outdoor Temperature Measurement Range

Measurement Scale **Fahrenheit**
 Measurement Range **-22°F to 122°F**
 Measurement Resolution **1°F**
 Measurement Accuracy **+/-2°F**

Temperature Setpoint Range

Setting range **50°F (10°C) to 90°F (32°C)**
 Setting resolution **1°F (1°C)**

Smart Setback Recovery (via DIP switch #6)—Smart Setback Recovery (SSR) affects the way the thermostat responds to program events. If SSR is disabled, the thermostat will react to a program event at the time the event occurs. However, if SSR is enabled, the thermostat will react to a program event before the event occurs such that the desired temperature is reached at the time of the event, not after.

Autochangeover Deadband Selection (via DIP switch #7)—Autochangeover deadband can be set to 4 or 6 degrees. When autochangeover is enabled (via the AUTO button), the thermostat will automatically change over from heating to cooling and vice versa, to keep the room temperature in between the heating and cooling setpoints. The deadband is the minimum difference between the heating and cooling setpoints.

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.

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 & 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 and W2 at 93°F+/-6°F.

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

Maintenance Reminder—Settings of Off, 6 or 12 (months of chronological time) are available. When programmed time has elapsed, a maintenance indicator "MAINTENANCE" 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 clock setting, program information, HOLD status, programmed temperature setpoint, heat/cool and fan mode settings, filter reminder status, maintenance 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 30 seconds when any button 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**