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L3511C/L3522C/L3532H 5/2 Day Programmable Thermostats

The Lennox ComfortSense™ 3000 Series 5/2 day programmable electronic thermostats provide excellent temperature control and have a large, easy to read display. Also provided is a programmable filter-change reminder, an equipment maintenance reminder, and a system check indicator. The system check indicator will notify the user when the equipment requires service.

Thermostat model L3511C is suitable for non-heat pump, single stage heat/single stage cool applications using a gas or electric furnace.

Thermostat model L3522C is suitable for non-heat pump, two-stage heat/two-stage cool applications using a gas or electric furnace.

Thermostat model L3532H is suitable for heat pump, three-stage heat/two-stage cool applications using a gas or electric auxiliary heat source. An optional outdoor temperature sensor provides auxiliary heat lockout, balance point operation, and dual-fuel compatibility.

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.

INSTALLATION INSTRUCTIONS

ComfortSense™ 3000 Series Models L3511C/L3522C/L3532H 5/2 Day Programmable Thermostats

CONTROLS
506077-01
02/08
Supersedes 505,051M

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Shipping and Packing List

Shipped With Product

- 1 - Thermostat (L3511C, L3522C, or L3532H)
- 2 - Plastic Wall Anchors
- 2 - Screws

Optional Accessories

- Outdoor Sensor (Used with L3532H only): X2658
- Wall Plate: X2659

Requirements

⚠ IMPORTANT

Read all of the information in this manual before using this thermostat.

All wiring must conform to local and national building and electrical codes and ordinances.

This is a 24VAC low-voltage thermostat. Do not install on voltages higher than 30VAC.

Be sure that power routed to the thermostat has been powered off before beginning installation.

This thermostat should be used only as described in this manual.

Do not install the thermostat on outside walls (where there is unconditioned space on opposite side of wall) or in locations where direct sunlight may be present.

Install thermostat about 5 feet up from the floor.



⚠ CAUTION

Do not short (jumper) across terminals on the gas valve or at the system control to test installation. This will damage the thermostat and void the warranty.

Installation

NOTE - If this thermostat is replacing an existing thermostat, carefully label the existing thermostat wires so that they can be identified later.

1. If a previously-installed thermostat exists, remove it; if none exists, identify the location for installation (locate, or install wiring as necessary). To facilitate installation, enlarge the hole where the thermostat wires protrude through the wall to about 3/4" wide by 3/4" high.
2. Pull about 3 inches of the thermostat wiring through the wall opening. Strip 1/4" of the insulation from the ends of the thermostat wires.
3. Use a screwdriver to remove the thermostat subbase from the body. Carefully pry the subbase away from the body along the bottom edge of the subbase near the two mounting snaps; then lift the subbase upward.
4. Use the subbase as a template to mark the desired mounting hole locations on the wall.
5. Drill two 3/16" holes at the marked locations on the wall. Insert the provided plastic wall anchors provided into the holes. Press the anchors into the holes until anchors are flush with the wall.
6. Align the subbase over the plastic anchors and secure it to the wall using the provided screws.
7. Use a small slotted screwdriver to secure all wires to the subbase terminal block. Make thermostat connections as follows:
 - L3511C - See table 1 and figure 1.
 - L3522C - See table 2 and figure 2.
 - L3532H - See table 3 and figure 3.
8. After wiring is complete, thoroughly seal the hole in the wall with a suitable material to prevent unconditioned air in the wall space from entering the thermostat.
9. Set the thermostat DIP switches as required for the application. See table 4 for DIP switch settings.
10. Carefully attach the thermostat body to the subbase by first engaging the hinges at the top of the unit, then pivoting the body downward until it snaps onto the subbase.

The thermostat is now ready for operation. Turn on power to the thermostat and refer to the appropriate 5/2 Programmable Thermostat Operation Manual.

11. Remove the clear protective film from the face of the thermostat display.

Note: After this film is removed, some dark streaks or lines may temporarily appear on the display. These are normal and should disappear within a few minutes.

Removing Thermostat

The thermostat hinges on tabs on the top of the subbase. After installation is complete, 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.

Table 1. L3511C Terminal Designations

Terminal	Description
R	24VAC
Y1	First stage cooling
W1	First stage heating
G	Fan control
L	Service Indicator
C	24VAC common

Table 2. L3522C 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

Table 3. L3532H Terminal Designations

Term.	Description
B	Reversing valve, heat active
O	Reversing valve, cool active
R	24VAC
Y1	First-stage cooling/heating, compressor energized
W1*	Auxiliary heating, furnace energized
Y2	Second-stage cooling/heating, compressor energized
E*	Emergency heat
G	Fan control
L	Service Indicator
C	24VAC common
T	Outdoor temperature sensor connection 1
T	Outdoor temperature sensor connection 2

** For most applications, E will be jumpered to W1. If separate wires are not provided for both E and W1, jumper the E terminal to the W1 terminal on the thermostat subbase. For applications involving the use of a balance point (whereby the outdoor temperature is to be used to restrict either heat pump operation or backup heat source operation), the optional outdoor sensor (part number X2658) MUST be installed.*

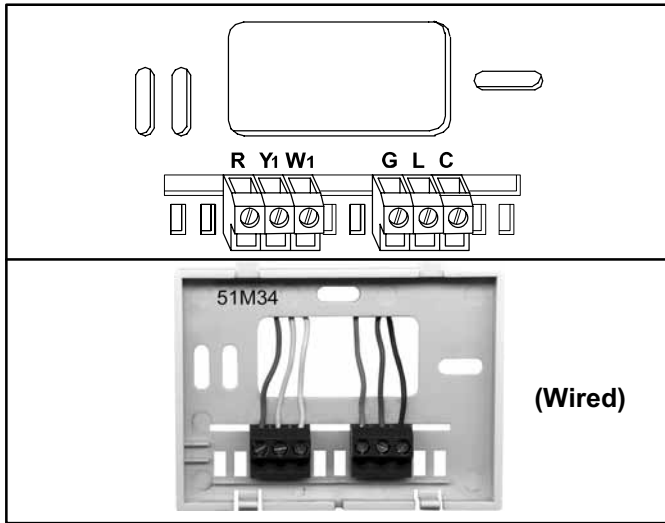


Figure 1. L3511C Terminal Strip

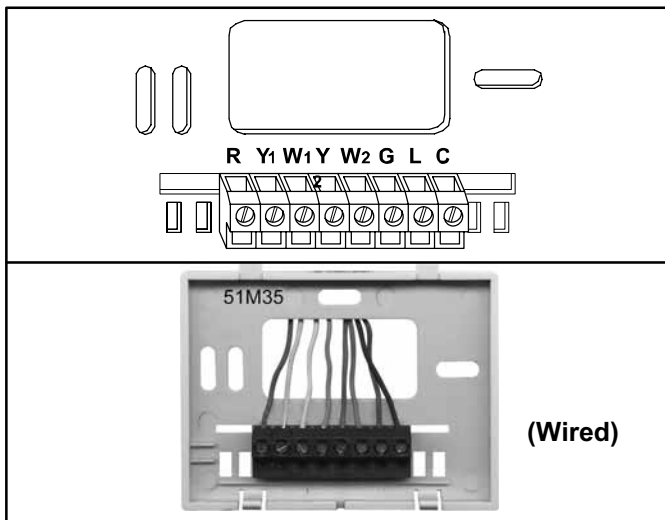


Figure 2. L3522C Terminal Strip

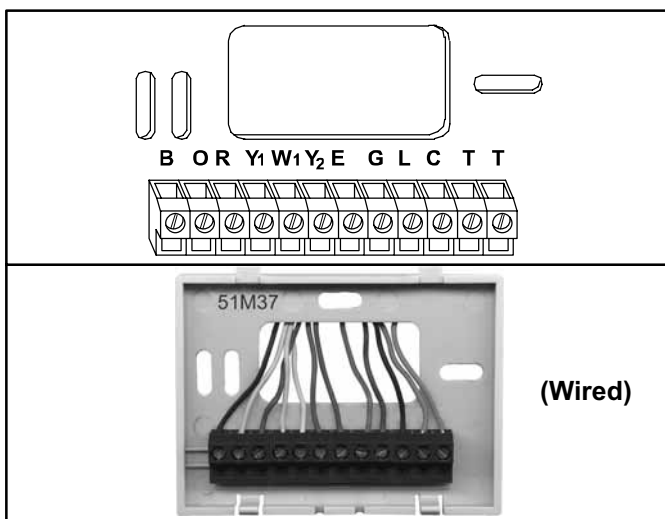


Figure 3. L3532H Terminal Strip

Thermostat Operation

NOTE: The thermostat heating mode will not operate if the thermostat has been stored or is being used at ambient temperatures that are above 93°F. The heating function will be enabled after the thermostat is exposed to ambient temperatures below 93°F for about 30 minutes.

DIP Switch Settings

DIP Switch Settings

L3511C, L3522C, and L3532H thermostats include six DIP switches which are located on the back side of the thermostat body. These switches may be used to re-calibrate the thermostat (Cal 1, Cal 2 and Cal±) and to select the thermostat display (Fahrenheit or Celsius). Thermostats L3511C and L3522C also include a DIP switch used to select fan operation for either electric heat or gas heat applications.

Thermostat L3532H includes a DIP switch used to indicate whether electric or gas back-up heat will be used. Also, SSR (Smart Setback Recovery) can be enabled or disabled. When enabled, this feature provides additional comfort when changing from one program period to the next. If SSR is disabled, the HVAC equipment will respond to a program change at the time the change is set to occur.

However, if SSR is enabled, the HVAC equipment will respond to a program change before the change is set to occur. Refer to table 4 for DIP switch function descriptions.

Table 4. DIP Switch Function Description

Designation	Description	Off	On	Factory Setting
1- Cal 1	Room Temperature Offset: 1°F	0°F	1°F	0°F
2- Cal 2	Room Temperature Offset: 2°F	0°F	2°F	0°F
3- Cal +/-	Room Temperature Offset: Sign	Positive	Negative	Positive
4- F/C	Select Fahrenheit or Celsius Display	F	C	F
5- Fan Option (L3511C or L3522C only)	Select Heating Fan Operation: Electric (E) or Gas (G)	G	E	G
5- Backup Heat (L3532H only)	Select Heat Backup: Electric (Aux) or Gas (Dual)	Aux	Dual	Aux
6- SSR	Enable or Disable Smooth Setback Recovery	Disable	Enable	Disable

Thermostat Calibration

Cal 1, Cal 2, Cal± DIP switches may be used to offset or recalibrate the room temperature display. Table 5 provides DIP switch settings and corresponding temperature offset values.

L3511C & L3522C Thermostats Only - If the fan option DIP switch is set on G, fan operation during the heating mode will be controlled by the furnace, rather than the thermostat. The thermostat fan icon is not displayed during heating mode operation, even though the fan may be energized. This setting is used in applications which include a gas furnace. If the fan operation DIP switch is set on E, the thermostat controls fan operation during the heating mode. This setting is used in applications which include an electric furnace.

L3532H Thermostats Only - Restriction of the backup heat functions requires the installation of the optional outdoor temperature sensor (X2658). The sensor must be wired to the subbase terminal strip "T" terminals. Use the backup heat DIP switch to select either electric heat backup or gas heat backup.

Table 5. DIP Switch Temperature Offset

Cal 1	Cal 2	Cal +/-	Temperature Offset
Off	Off	Off	+0°F (no offset)
On	Off	Off	+1°F
Off	On	Off	+2°F
On	On	Off	+3°F
Off	Off	On	-0°F (no offset)
On	Off	On	-1°F
Off	On	On	-2°F
On	On	On	-3°F

Wiring Diagrams

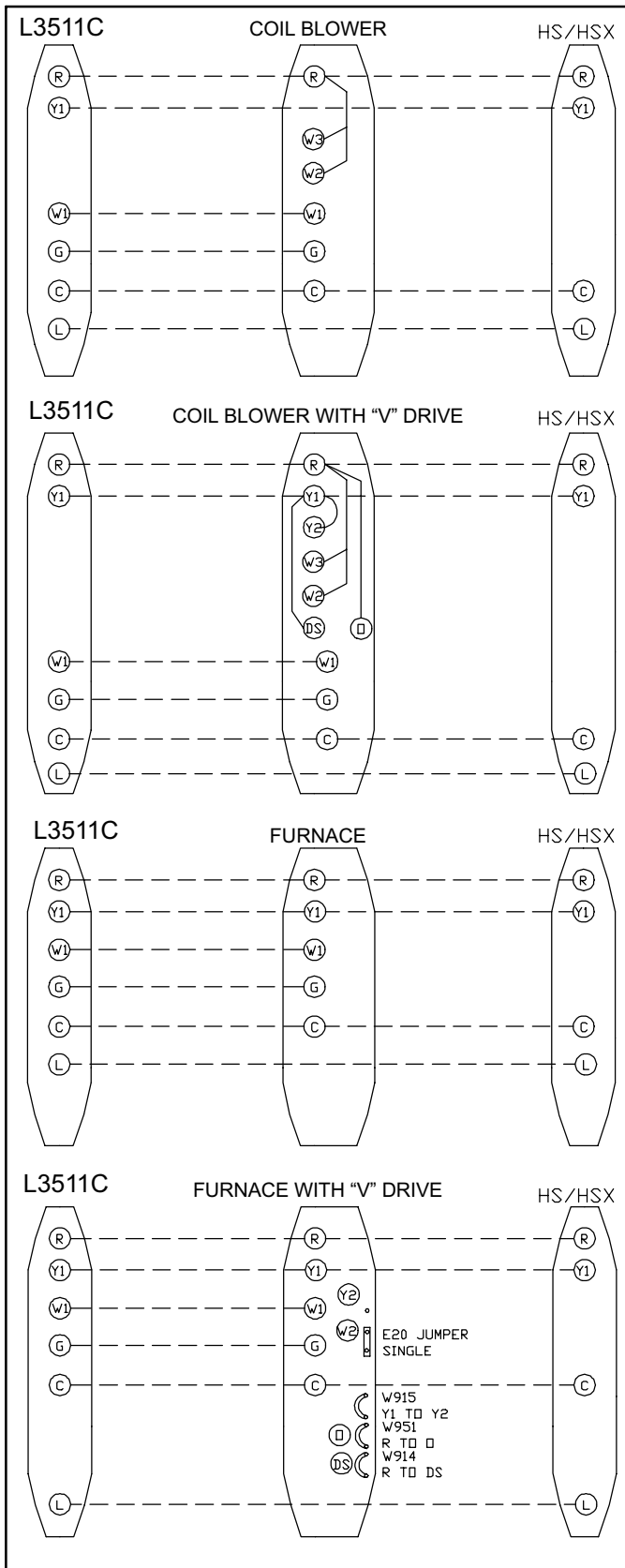


Figure 4. Typical Wiring for Condenser & L3511C Thermostat

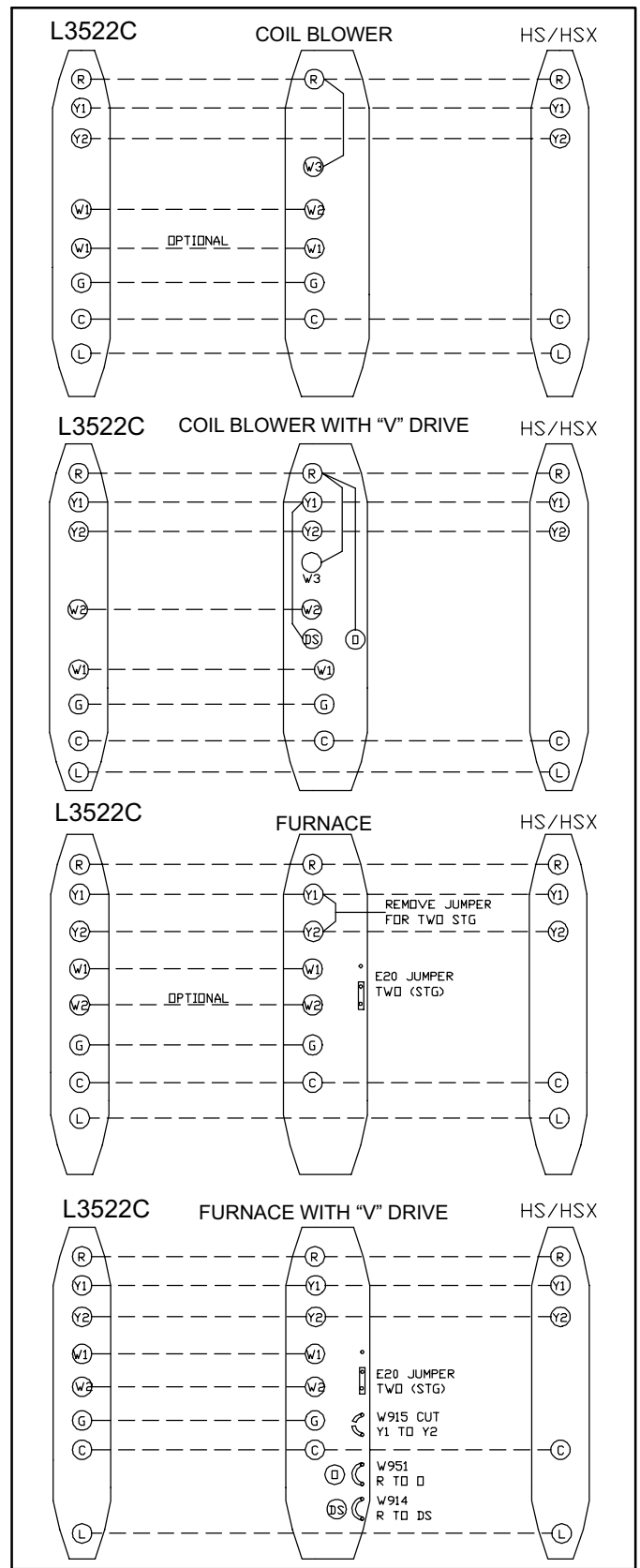


Figure 5. Typical Wiring for Condenser & L3522C Thermostat

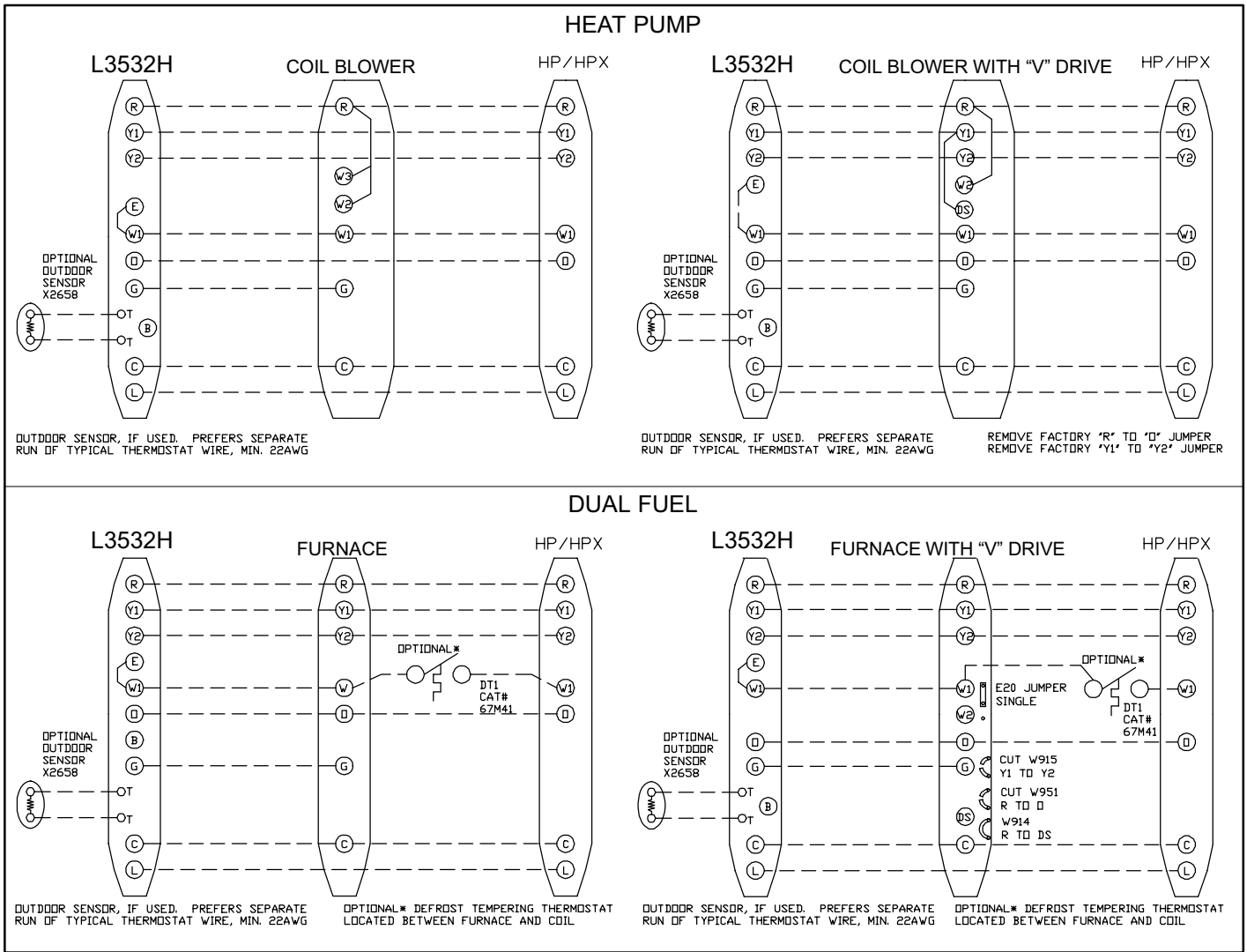


Figure 6. Typical Wiring for Heat Pump, Dual Fuel & L3532H Thermostat