Table 7. Troubleshooting		
Symptom	**Possible Cause**	**Action**
Heating equipment is running in the cool mode.	Heating equipment is not a heat pump but System Type (Installer Setup Number 0170) is set to Heat Pump.	Set System Type (Installer Setup Number 0170) to match the installed heating and/or cooling equipment.
Heating equipment does not turn off and heat temperature setting is set below room temperature (Heat On is not in the display).	Heating equipment is not a heat pump but System Type (Installer Setup Number 0170) is set to Heat Pump.	Set System Type (Installer Setup Number 0170) to match the installed heating and/or cooling equipment.
Cannot set the system setting to Heat.	System Type (Installer Setup Number 0170) is set to Cool Only.	Set System Type (Installer Setup Number 0170) to match the installed heating and/or cooling equipment.
Cannot set the system setting to Cool.	System Type (Installer Setup Number 0170) is set to Heat Only or Heat Only with Fan.	Set System Type (Installer Setup Number 0170) to match the installed heating and/or cooling equipment.
Heat On is not in the display.	System setting is not set to Heat and/or temperature setting is not set above room temperature.	Set the system setting to Heat and set the temperature setting above the room temperature.
Cool On is not in the display.	System setting is not set to Cool and/or the temperature setting is not set below room temperature.	Set the system setting to Cool and set the temperature setting below the room temperature.
Wait is in the display.	Compressor minimum off timer is active.	Wait up to five minutes for the cooling or heating (heat pump) equipment to turn on.
"Screen Locked" appears on the screen and all or some of the keys do not respond.	The keypad is fully or partially locked.	Check ISU 0670 to change keypad locked options.

Specifications

Electrical Ratings:

W (Heating)	20 - 30 Vac	0.02 - 1.0A
Y (Cooling)	20 - 30 Vac	0.02 - 1.0A
G (Fan)	20 - 30 Vac	0.02 - 0.60A
A (Economizer/TOD)	20 - 30 Vac	0.02 - 1.0A

Temperature Setting Range:
Heating: 40°F to 90°F (4.5°C to 32°C).
Cooling: 50°F to 99°F (10°C to 37°C).

Operating Ambient Temperature:
0°F to 120°F (-18°C to 49°C).

Shipping Temperature:
-30°F to 150°F (-34.4°C to 65.6°C).

Operating Relative Humidity (Non-condensing):
5% to 90%.

Thermostat Dimensions: 3-3/4 in. (95mm) high x 6 in. (152mm) wide x 1-3/8 in. (35mm) deep.

Accessories:

- X4148 Outdoor Sensor: 10K ohm NTC

- 47W36 Wall-Mount Remote Indoor Sensor 20K ohm

- 47W37 Wall-Mount Remote Indoor Sensor 10K ohm

LENNOX

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COMMERCIAL CONTROLS

505103M
11/08
Supersedes 01/2007

INSTALLATION INSTRUCTIONS
Commercial Touch Screen Thermostat

Application

The Lennox Commercial Touchscreen Thermostat provides electronic control of 24 Vac heating and cooling systems. See Table 1 for a description.

Table 1. Thermostat Description

Feature	Description
Powering Methods	• Battery only • Direction connection to a 24 Vac transformer only. • Direct connection to a 24 Vac transformer with battery backup.
System Types	• Conventional (up to 2 heat, 2 cool stages) • Heat Pump (up to 3 heat, 2 cool stages)
Changeover	Manual or automatic changeover (selectable)
System Settings	Heat-Off-Cool-Auto
Fan Settings	Auto-on

MERCURY NOTICE

If this control is replacing a control that contains mercury in a sealed tube, do not place your old control in the trash. Dispose of properly.

Contact your local waste management authority for instructions regarding recycling and the proper disposal of an old control.

Installation

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check ratings given in instructions and on the product to ensure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

⚠CAUTION

Electrical Shock or Equipment Damage hazard.

Can shock individuals or short equipment circuitry.

Disconnect power supply before installation.

Select Thermostat Location

Select a location for the thermostat about 5 feet (1.5m) above the floor in an area with good air circulation at average temperature (see figure 1).

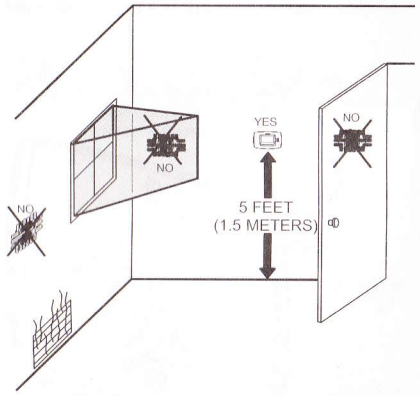

Figure 1. Select Thermostat Location

Do not install the thermostat where it can be affected by:

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

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Separate Wallplate from Thermostat

Separate the wallplate from the thermostat (see figure 2).

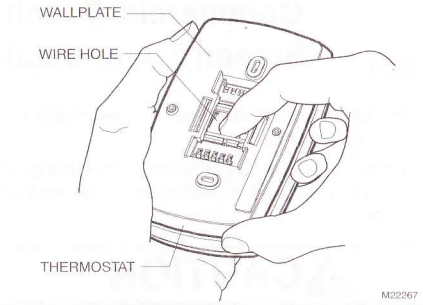

Figure 2. - Separate Wallplate from Thermostat

Install Wallplate

Install the thermostat horizontally on the wall (see figure 3):

1. Pull the wires through the wire hole on the wallplate.
2. Position the wallplate on the wall with the arrow pointing up. Level the wallplate for appearance only.
3. Use a pencil to mark the mounting holes.

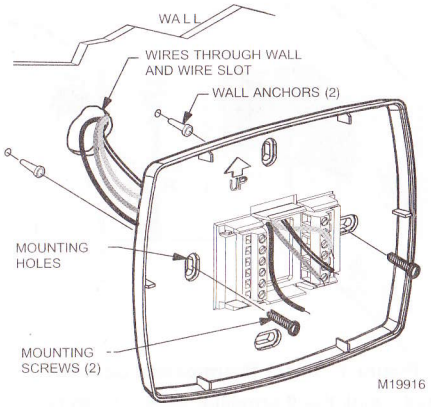

Figure 3. Install Wallplate

4. Remove the wallplate from the wall and drill two 3/16 inch holes in in the wall (if drywall) as marked. For firmer material such as plaster, drill two 7/32 inches holes. Tap the wall anchors (provided) into the drilled holes until flush with the wall.
5. Pull the wires through the wire hole on the wallplate and position the wallplate over the wall anchors.
6. Insert the mounting screws into the wall anchors and tighten.

Wiring

IMPORTANT

- All wiring must agree with applicable codes, ordinances and regulations

- Use 18 gauge thermostat wire. Shielded cable is not required.

NOTES -

- Sensor wires must have a cable separate from the thermostat control cable.

- Refer to Table 2 for terminal designation descriptions.

- See figure 7 through 10 for wiring diagrams from specific equipment applications.

1. Select conventional set of terminal identifications which correspond to the system type (conventional or heat pump (see figure 4). Lennox commercial equipment does not use the heat pump system terminals.

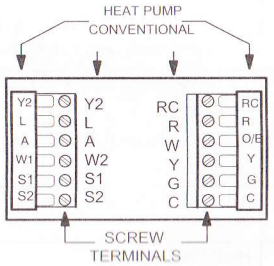

Figure 4. Terminal Identifications for System Type

2. Loosen screw terminals used for the application.
3. Insert the wires into the terminal block and tighten each screw terminal (see figure 5).

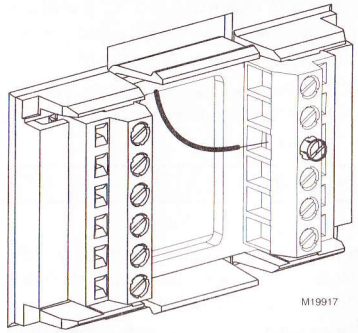

Figure 5. Insert Wires into Terminal Block

4. Push excess wire back into the wall opening and restrict wires to the shaded area (see figure 6).
5. Plug the wall opening with non-flammable insulation to prevent drafts from affecting the thermostat.

Table 2. Terminal Designation Descriptions

Terminal Designation	Description
Rc (see note 1)	Power for cooling-connect to secondary side of cooling system transformer.
R (see note 1)	Power for heating-connect to secondary side of heating system transformer.
Y	Compressor output.
C (see note 2)	Command wire from secondary side of cooling system transformer.
W	Heat relay.
G	Fan relay.
W2	Second stage heat relay.
Y2	Second stage cooling.
O/B (see note 3)	Changeover valve for heat pumps. Terminal not used with Lennox commercial equipment.
A (see note 4)	Economizer/Time-of-Day (TOD) output-powered via R terminal.
S1 (see note 5)	Optional outdoor or indoor remote sensor.
S2 (see note 5)	Optional outdoor or indoor remote sensor.
L	Powers red LED behind plastic in upper right corner of the thermostat.

NOTES -

1 When used in a single-transformer system, leave metal jumper wire in place between Rc and R. If used on a two-transform system, remove metal jumper wire between Rc and R.

2 Common wire is optional when thermostat is used with batteries. When using separate transformer for heating and cooling, the common must come from the cooling transformer.

3 Lennox commercial heat pumps do not use this terminal to energize the reversing valve. Thermostat will always be conventional type.

4 Reference economizer literature for wiring details. When set for economizer operation, the A terminal provides the occupancy signal. (Power indicates occupied.)

5 Sensor wires must have a cable separate from the thermostat control cable.

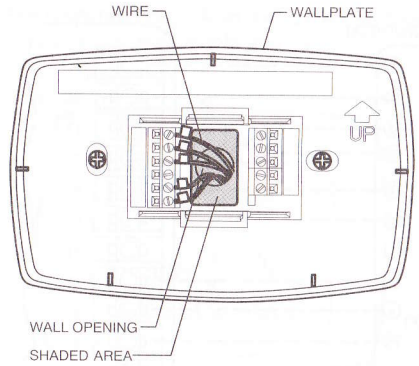

Figure 6. Restrict Wires to Shaded Area of Wire Hole

Terminal A Wiring Details for Economizers

- Wire the "A" terminal as shown in diagrams in figures 7, 8, 9 and 10.
- The "A" signal is powered from the "R" terminal and energizes the economizer to signal occupied status and drive the damper to the set minimum position.

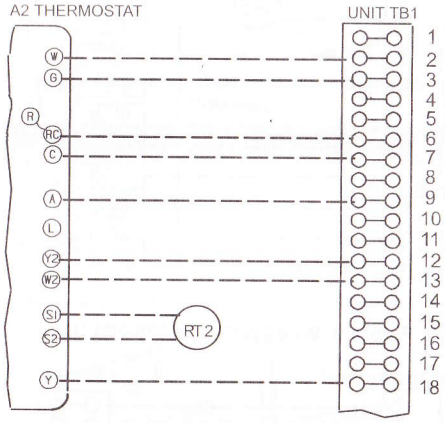

Figure 7. Wire LG/LC/LH/SG/SC Units.