

SYSTEM COMPATIBILITY

The electrical rating for this thermostat is 1.5 Amps per terminal, with a maximum total combined load of 2.0A for all terminals combined.

COMPATIBLE WITH:

- Most single-stage 24-volt, heating and cooling systems
- 1 stage heat / 1 stage cool: gas, oil, or electric systems
- Single-stage heat pump systems (without auxiliary or emergency heat)
- 2-wire hydronic (hot water) zone valves
- Millivolt heaters (including wall heaters / gas fireplaces)

NOT COMPATIBLE WITH:

- 120/240 VAC line-voltage systems (without a transformer)
- Multi-stage heat pump systems (with auxiliary or emergency heat)
- 3-wire hydronic (hot water) zone valves

(ask your LUX dealer for thermostats to control these systems)

FEATURES

- 7-day programming, 5/2-day programming, or non-programmable options
- All days can be programmed separately
- User-selectable periods per day (2 or 4)
- Lighted display
- Keypad lockout for unauthorized users
- Manual temperature hold
- Temporary temperature override
- Adjustable temperature differential / cycle-rate
- User temperature calibration
- Adjustable heat/cool set temperature limit stops
- Dual-powered (battery and/or 24-volt system powered)
- F/C temperature display
- 5/2-minute selectable time delay for equipment protection

TOOLS YOU MAY NEED

- Screwdrivers
- Wire Stripper
- Wire Cutter
- Drill with assorted drill bits (new installations only)

MOUNTING LOCATION

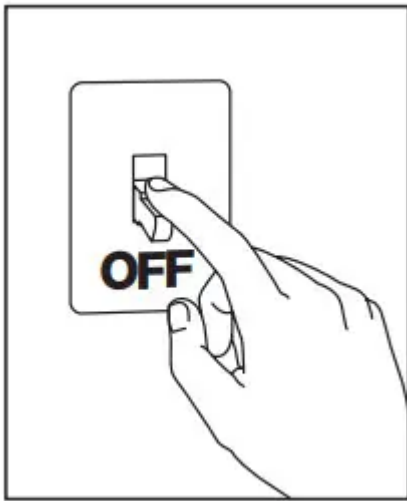
On replacement installations, mount the new thermostat in place of the old one unless the conditions listed below suggest otherwise. On new installations, please follow these general guidelines:

1. Mount the thermostat on an inside wall, about 5 ft. (1.5m) above the floor.
2. Do not locate the thermostat where air circulation is poor such as in a corner, alcove, or behind a door that is normally left open.
3. Do not locate the thermostat where unusual heating or cooling conditions may be present, such as: direct sunlight, above a lamp, television, or radiator, or on a wall next to an exterior door or window.
4. Do not locate in a damp environment, as this can lead to corrosion that may shorten thermostat life.
5. If painting or construction work is still ongoing, cover the thermostat completely or wait until this work is complete before installation.

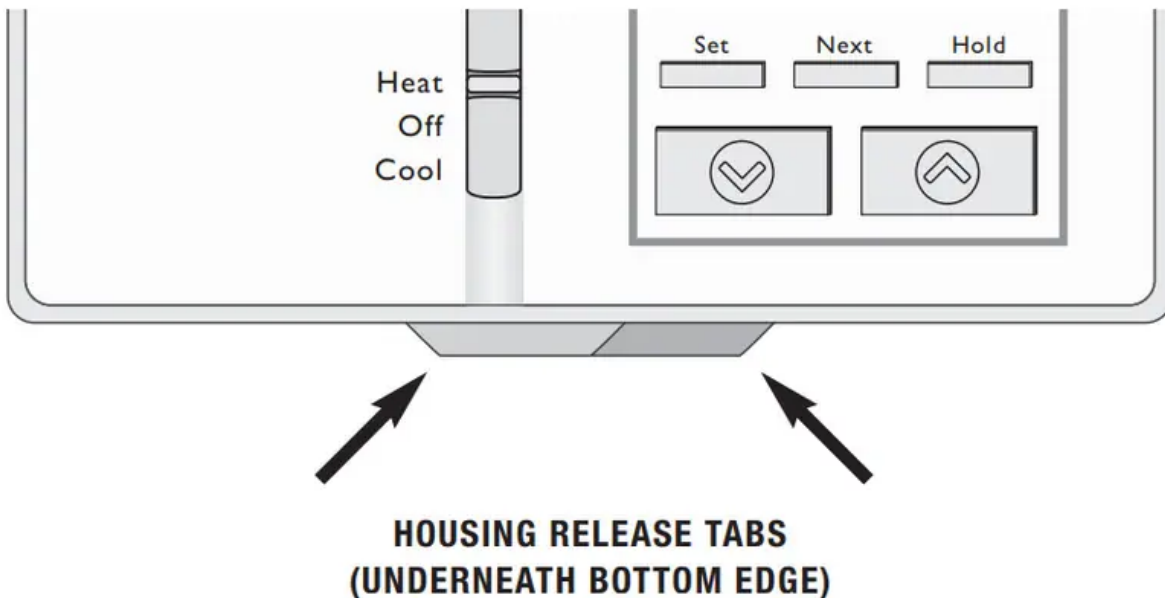
WARNING: All wiring must conform to the local codes and ordinances that are in your particular location.

REMOVE OLD THERMOSTAT

1. Turn OFF the electricity to all heating and cooling components. Do not turn the electricity back on until all work is completed.
2. Remove the front portion of your old thermostat to expose the wiring connections.
3. Write down the letters printed near each wire terminal that is used, and also the color of each wire that is connected to it. Self-adhesive wire labels are also enclosed.
4. Carefully remove the wires one at a time, and bend them in a manner so that they do not fall back inside the wall. Do not allow bare wire ends to touch each other.
5. Loosen the mounting screws for the old thermostat and carefully remove it from the wall.



INSTALL THERMOSTAT BASE



1. Strip wire insulation leaving only 3/8 in. (9.5mm) bare wire ends, and clean off any corrosion present.
2. Fill the wall opening with non-combustible insulation to prevent drafts from affecting the thermostat's normal operation.
3. Separate new thermostat housing using your thumb and index finger. Provide pressure in opposite directions to the release tabs under the bottom edge of the housing.
4. Route the wires through the opening in the new thermostat base plate, and hold the base against the wall. Try to line up the screw holes from the prior thermostat, and install the mounting screws.
5. If the previous holes cannot be used, hold the thermostat base against the wall so that it appears straight and level (position the base for best appearance) and mark for the new

screw holes. Attach the base to the wall using the screws provided (use the supplied plastic anchors if needed when mounting to a soft material such as drywall).

WIRING INFORMATION

CONNECTING THE WIRES:

When attaching the wires to the thermostat, please ensure that the bare wire ends are held ALL the way into the terminal block while the screw is being tightened.

WIRING BASE PLATE NOTICE:

This thermostat model is part of a family of similar models that have the same general visual appearance. Even though this base plate may look the same as base plates from other models, the wiring connections may have different terminal letters for different purposes. Please do not interchange the back plates and/or thermostat front halves of other similar looking models. Doing so may cause undesired heating and/or cooling operation to occur.

WIRING DIAGRAM NOTES:

(Important, please read all notes before connecting wires)

- If the information provided in the following wiring diagrams does not clearly represent or match your system, please refer to the “TECHNICAL ASSISTANCE” section of this manual, and contact us before removing any of your existing thermostat wiring.
- All of the dashed wires shown in the wiring diagrams are either optional, or their usage depends upon your specific system type or brand. For example: Diagram #1 shows the fan wire as optional. If your system does not have a fan, than this terminal will not be used.
- Terminal letters shown in black represent typical wiring applications. Depending upon the brand of your specific system or thermostat, your terminal letters may not match exactly. Terminal letters shown in gray represent other possible wiring designations that you might see on your existing thermostat terminals.
- If replacing a thermostat that has a clock wire labeled as “C,” tape off this wire and do not connect it to this thermostat.
- If “Y” and “C” wires are both present, then “C” is a common wire, do not connect it to this thermostat.
- If a “B” wire in your system is a common wire, connecting it to the “B” terminal of this thermostat may damage your system and the thermostat, tape it off and do not connect it.

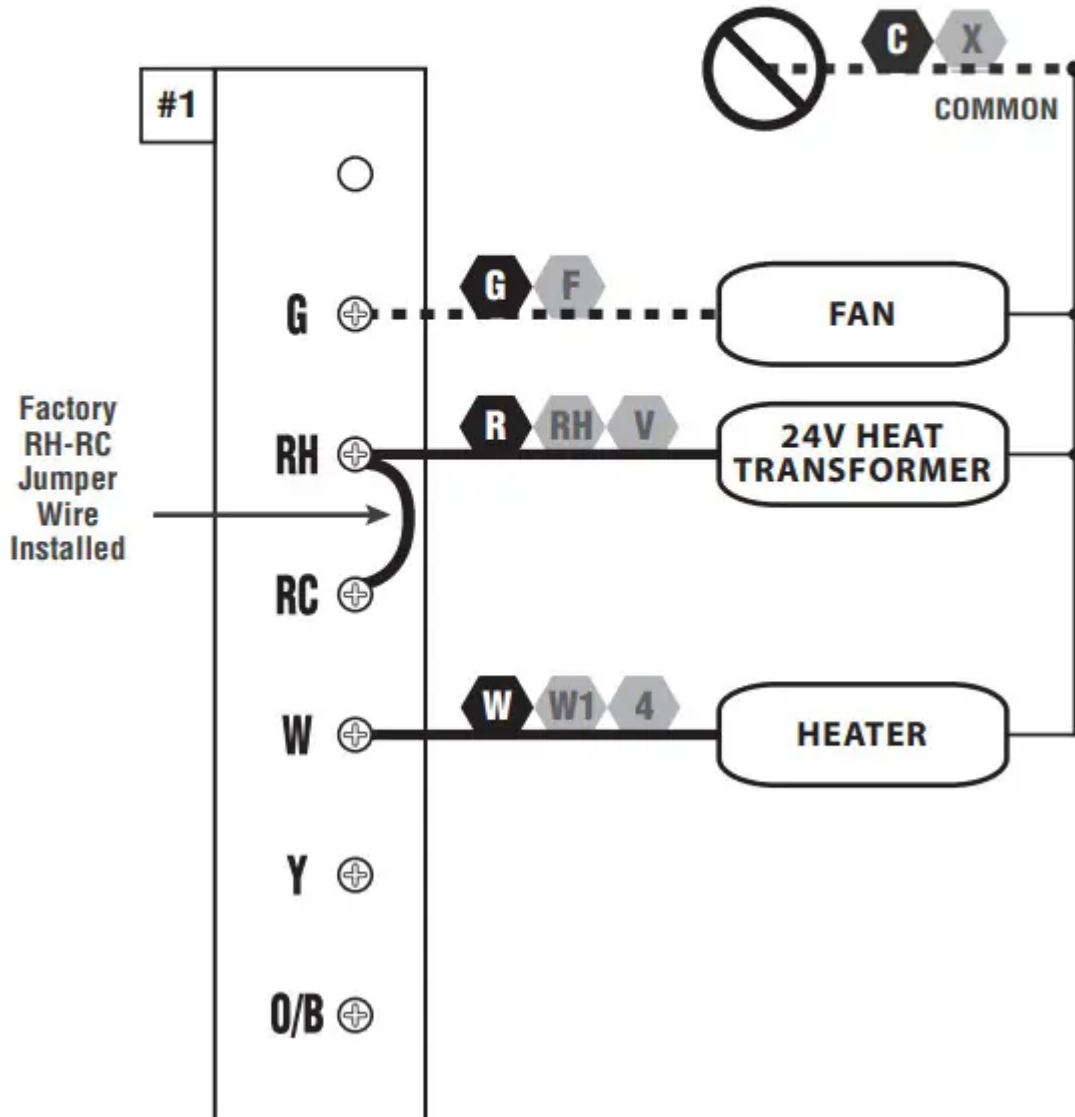
WIRING DIAGRAMS

DIAGRAM	SYSTEM TYPE / DESCRIPTION	PAGE #
#1	CONVENTIONAL: HEATING ONLY SINGLE-STAGE 2, 3, or 4 WIRES	10
#2	CONVENTIONAL: COOLING ONLY SINGLE-STAGE 3 or 4 WIRES	11
#3	CONVENTIONAL: HEATING AND COOLING SINGLE-STAGE 4 or 5 WIRES	12
#4	CONVENTIONAL: HEATING AND COOLING TWO-TRANSFORMERS, SINGLE-STAGE 5 or 6 WIRES	13
#5	HEAT PUMP: HEATING AND COOLING NO AUXILIARY / EMERG HEAT, SINGLE-STAGE 4 or 5 WIRES	14



2 / 3 / 4 WIRES

CONVENTIONAL, NON HEAT PUMP 1-STAGE, HEAT ONLY (INCLUDING MILLIVOLT)

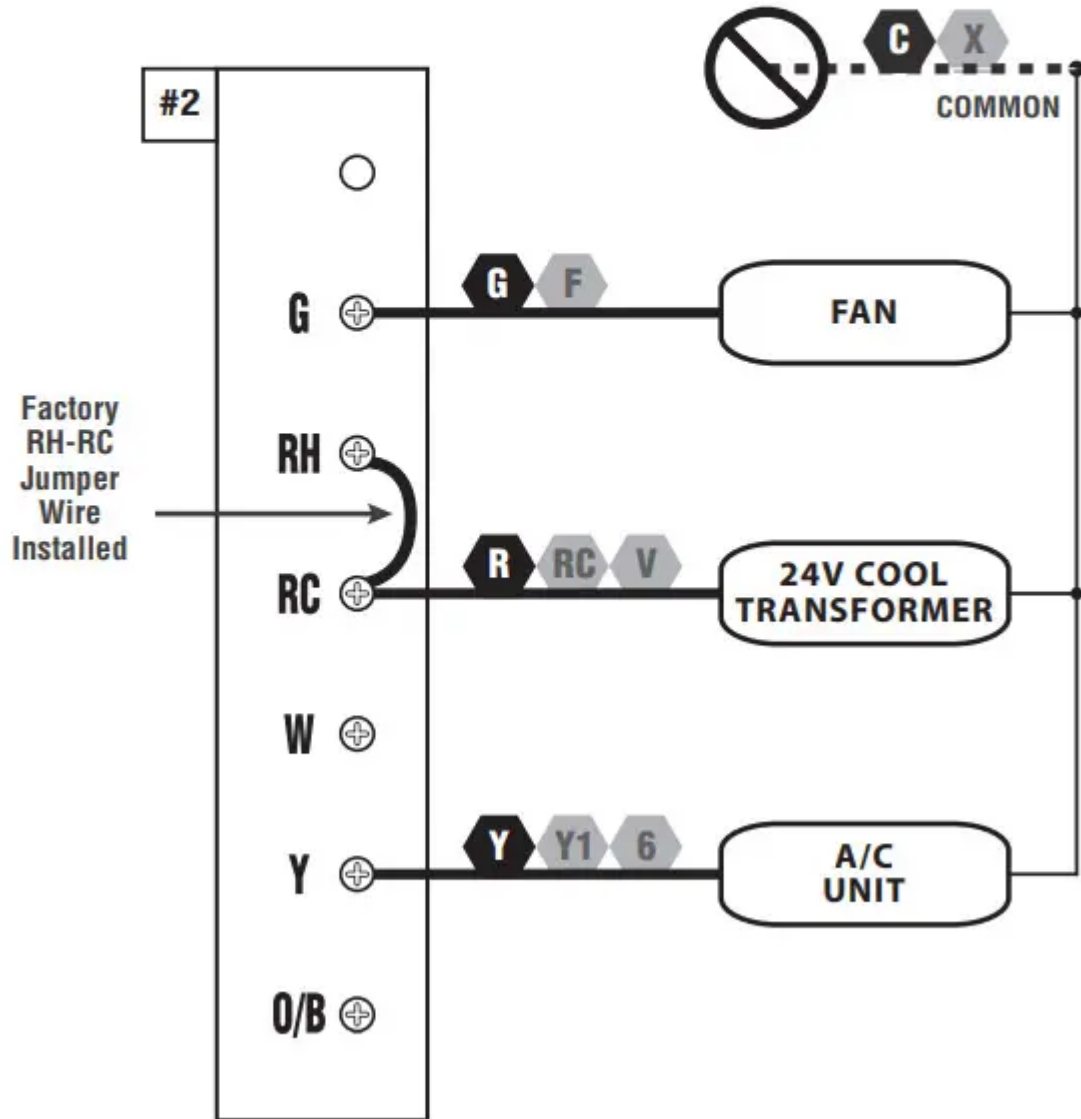


NOTE: THE BLACK TERMINAL LETTERS ARE TYPICAL, GRAY TERMINAL LETTERS ARE BRAND SPECIFIC



3 / 4 WIRES

CONVENTIONAL, NON HEAT PUMP 1-STAGE, COOL ONLY

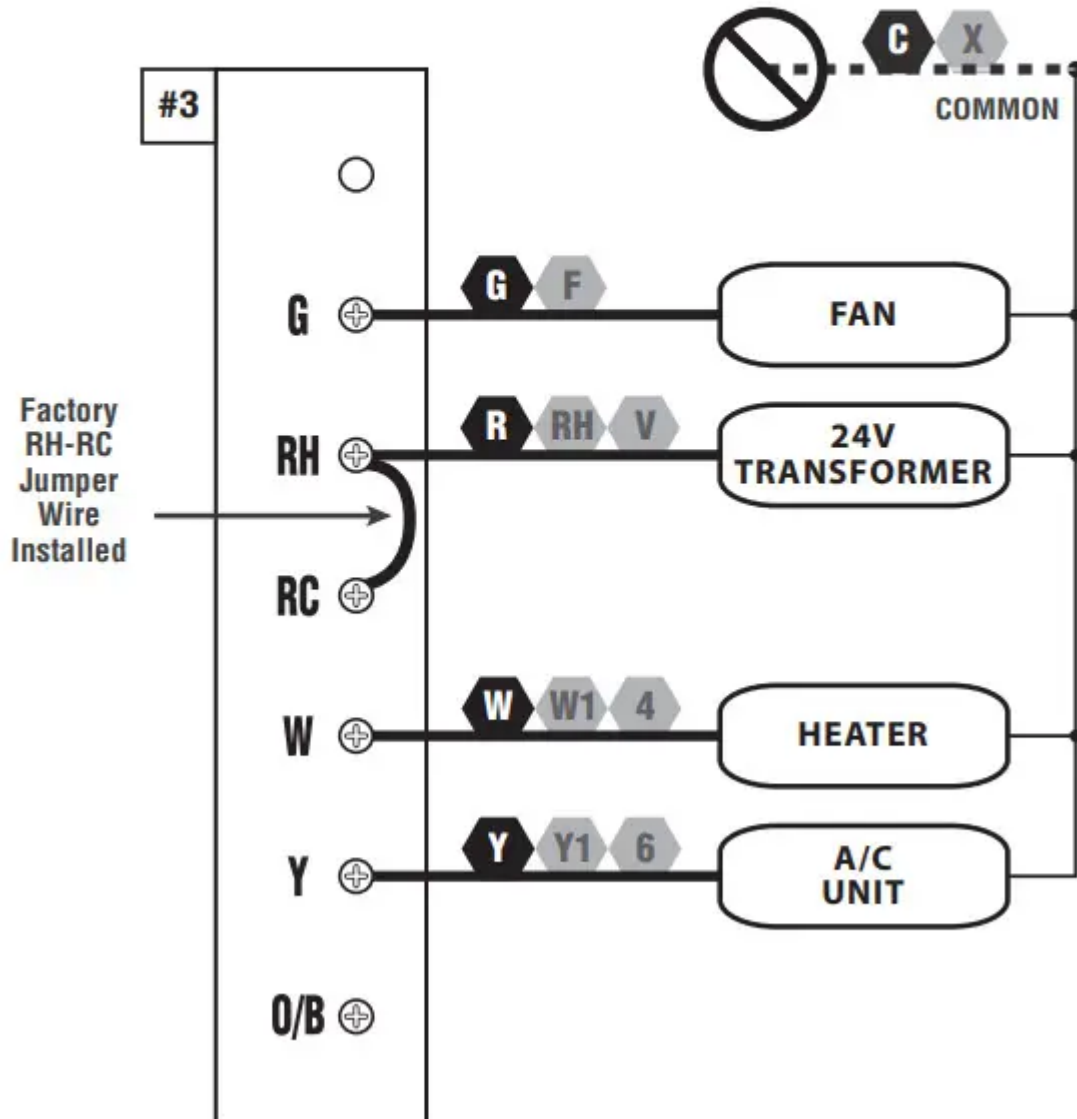


NOTE: THE BLACK TERMINAL LETTERS ARE TYPICAL, GRAY TERMINAL LETTERS ARE BRAND SPECIFIC



4 / 5 WIRES

CONVENTIONAL, NON HEAT PUMP 1-STAGE HEAT AND 1-STAGE COOL

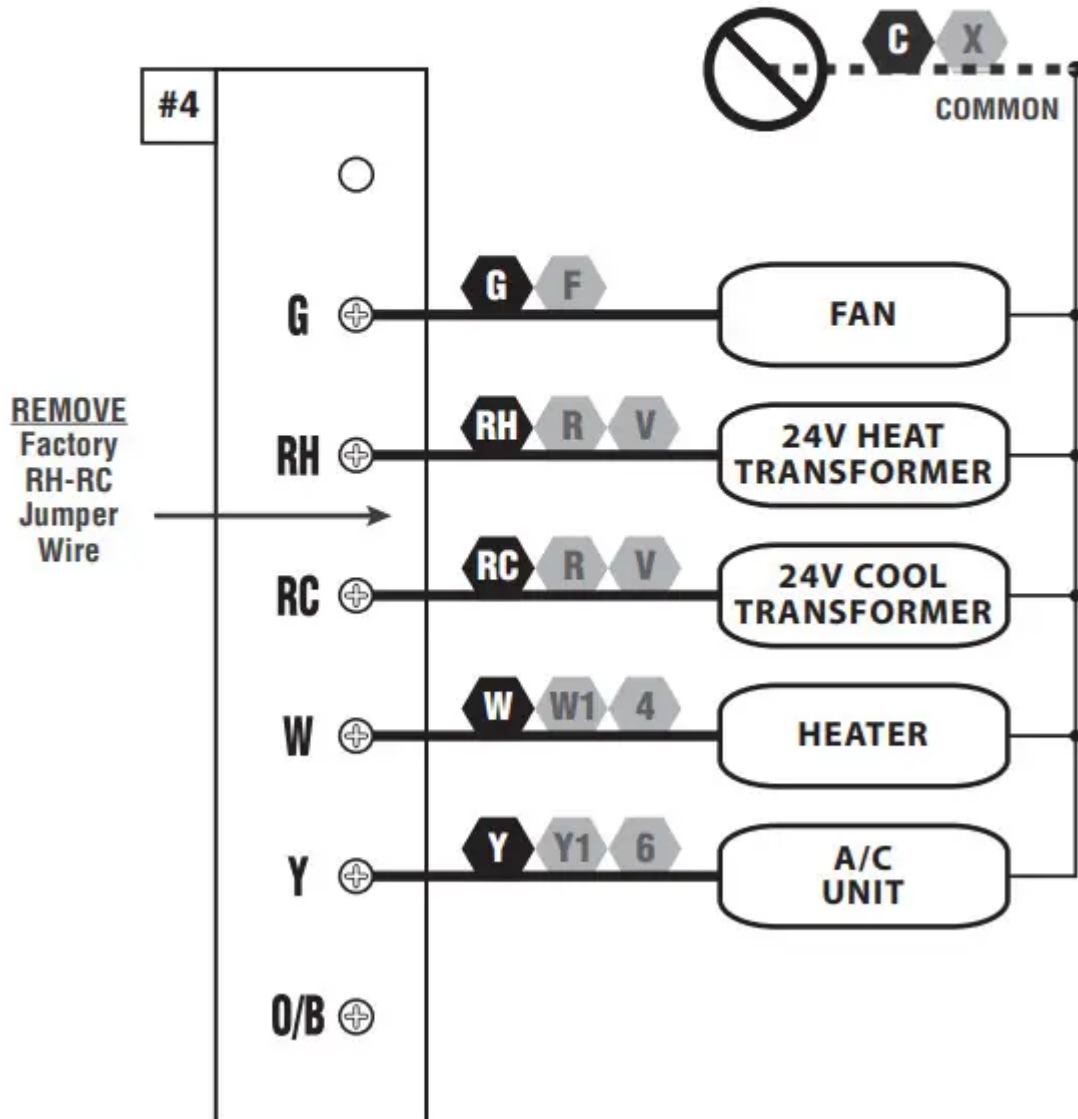


NOTE: THE BLACK TERMINAL LETTERS ARE TYPICAL, GRAY TERMINAL LETTERS ARE BRAND SPECIFIC



5 / 6 WIRES

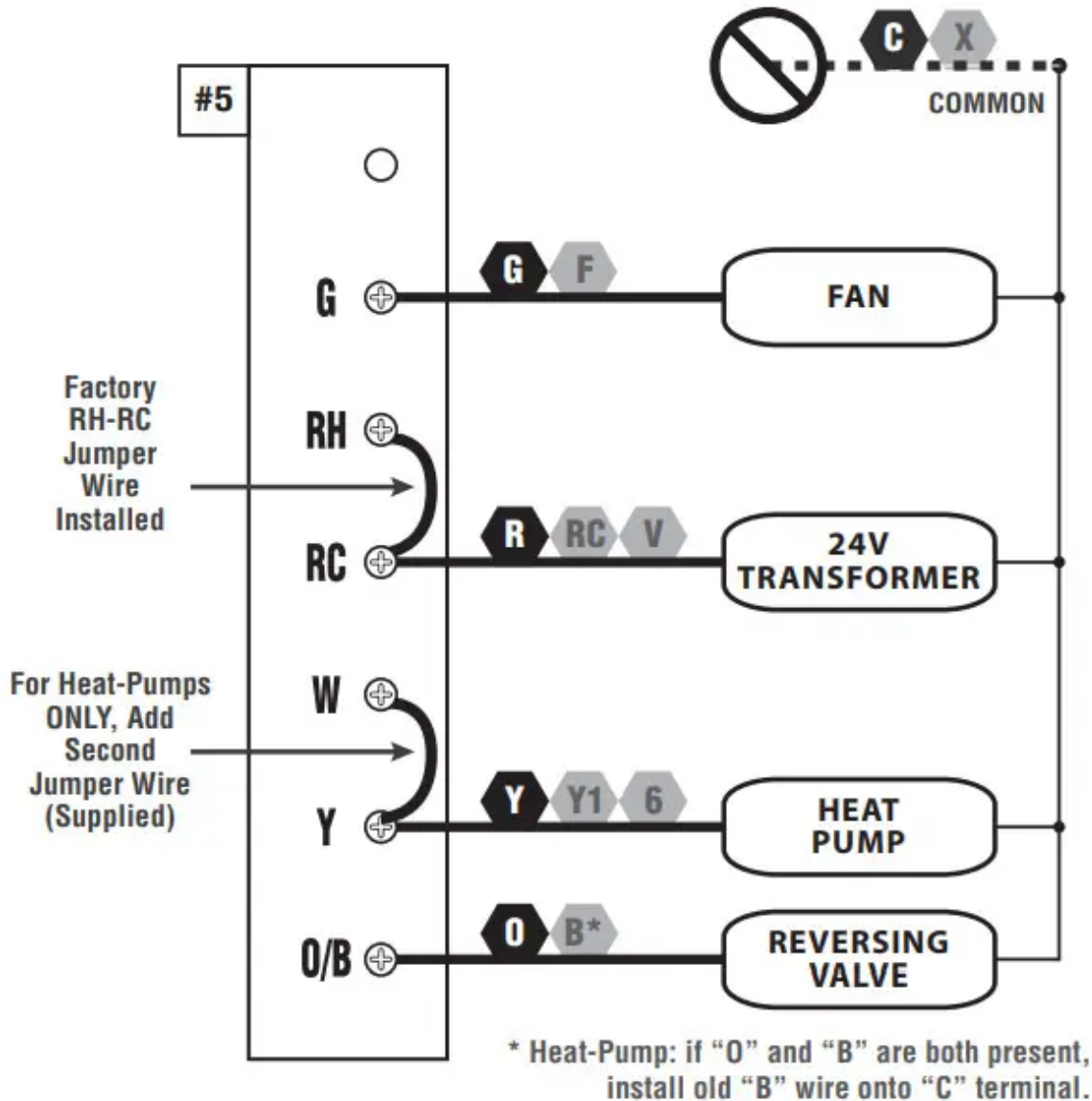
CONVENTIONAL, NON HEAT PUMP 1-HEAT / 1-COOL, WITH TWO-TRANSFORMERS



NOTE: THE BLACK TERMINAL LETTERS ARE TYPICAL, GRAY TERMINAL LETTERS ARE BRAND SPECIFIC

4 / 5 WIRES

HEAT PUMP SYSTEMS 1-HEAT / 1-COOL, WITH NO AUXILIARY / EMERG. HEAT



NOTE: THE BLACK TERMINAL LETTERS ARE TYPICAL, GRAY TERMINAL LETTERS ARE BRAND SPECIFIC

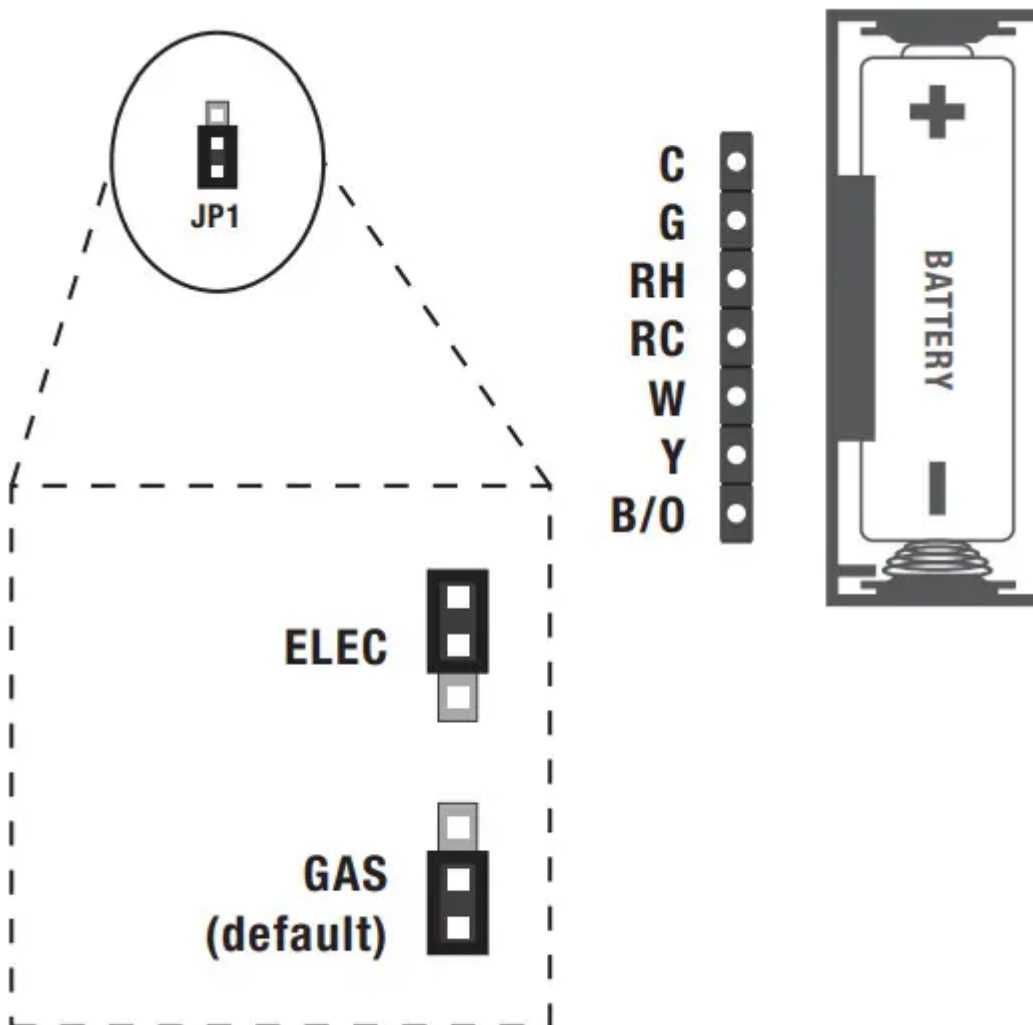
COMPLETE THE INSTALL

INSTALL BATTERIES INTO THERMOSTAT: Install two brand new Energizer® or DURACELL® "AA" size alkaline (only) batteries, into the thermostat's battery compartment. Ensure the batteries are installed in the proper direction

GAS / ELEC CIRCUIT BOARD OPTION (“G” TERMINAL FAN OPERATION): This setting is a plastic shorting cap called a jumper. This jumper must remain installed, and set to either GAS or ELECTRIC for your system to work properly. This setting changes how your system’s blower fan (if applicable) is controlled while the thermostat is in HEAT mode, when the Fan switch in the AUTO position. This setting does not affect the fan operation while in COOL mode. When set to “GAS”, the blower fan is controlled solely by the heating system itself. Systems that would typically use the “GAS” setting would be: natural gas, propane, or oil furnaces, and boilers.

When set to “ELEC”, the blower fan is controlled directly by the thermostat. This setting is required for heating systems that do not control their own fan, such as HEAT PUMPS, and units that only have an electric-resistive heating element as the heat source.

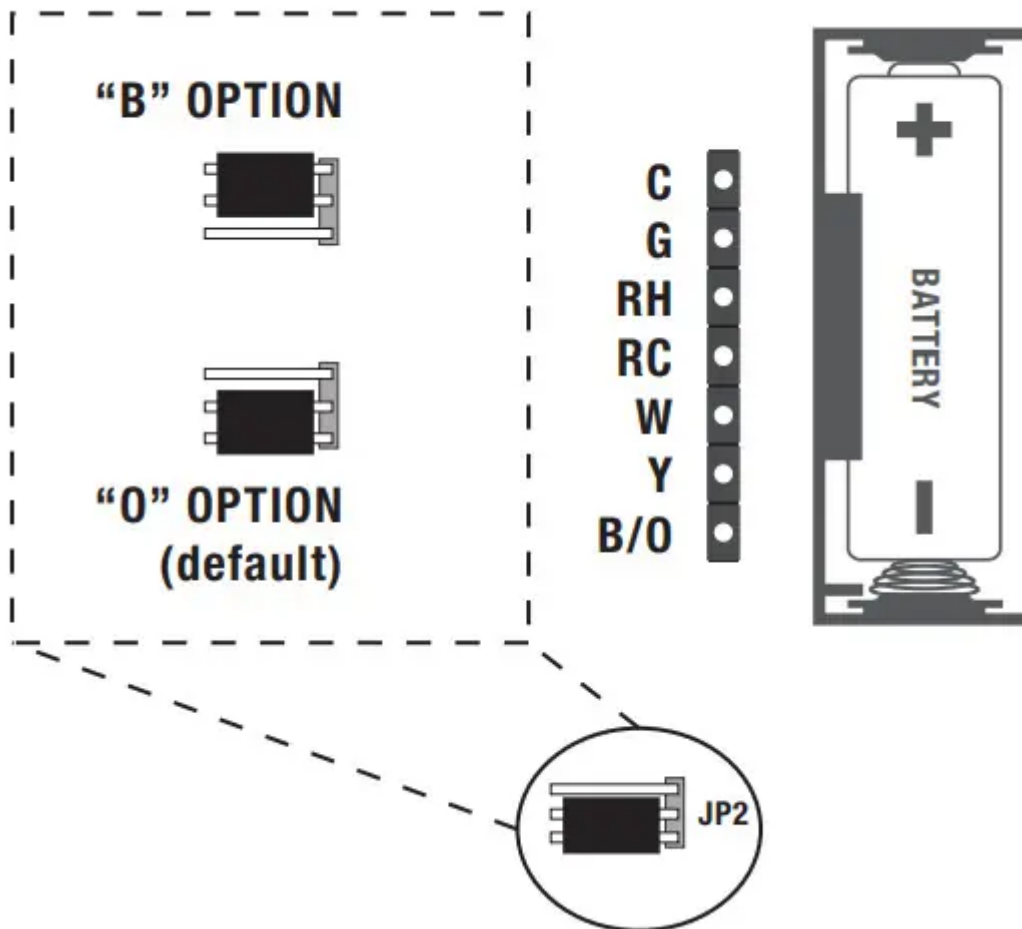
NOTE: If your blower fan does not operate properly after installation, move the Gas / Electric option to the “Electric” setting.



B/O CIRCUIT BOARD OPTION (FOR HEAT PUMP APPLICATIONS): This setting is a plastic shorting cap (called a jumper) which determines the operation of the shared B/O wire terminal connection. This jumper must remain installed for a Heat Pump system to be able to provide

heating and cooling as needed, and the majority of heat pumps today use the default “O” setting. The symptoms that will occur if this setting is not correct will be: heating while in cool mode, and cooling while in heat mode.

When this is set to “O” (factory default), the shared B/O terminal will be turned on while in COOL mode, and off in HEAT mode. When this is set to “B” (which is needed for some Rheem, Ruud, and Bard heat pumps), the shared B/O terminal will be turned on in HEAT mode, and off in COOL mode



FRONT PANEL ITEMS

HEAT / OFF / COOL, SYSTEM MODE SWITCH: Set this switch to HEAT to control your heating system, and COOL to control your cooling system. The OFF position will disable both the heating and cooling units.

AUTO / ON, FAN MODE SWITCH: When this switch is in AUTO, the blower fan (if present in your system) will automatically cycle on and off by itself while heating or cooling is running. When in the ON position, the blower fan will run constantly with or without a demand for heating or cooling, even when the System Mode switch is in the OFF position.

NOTE: The Fan Mode switch only works if your system provides a wire for the thermostat's "G" wire terminal, to control a blower fan. The Fan Mode switch has no effect in systems that do not have a blower fan (such as a hot water radiator system).

SET BUTTON: This button is used to access the temperature program settings when in heat or cool mode, and for adjusting the day and clock while in off mode.

NEXT BUTTON: This is used when setting items such as software options, and temperature programs. When items on the screen are flashing during adjustments, pressing the NEXT button will cycle through which item is flashing.

HOLD BUTTON: This button activates and deactivates the manual Temperature Hold feature, which maintains a fixed set temperature indefinitely without following a program routine. This button is not used when ITEM #02 below is set to "3" for manual non-programmable.

UP / DOWN BUTTONS: The UP and DOWN buttons are used to control the set temperature, or adjust any other on-screen items. Typically, an item that is flashing can currently be adjusted.

SYSTEM CONFIGURATION AND SETUP OPTIONS

Setup options for how the thermostat will function, along with choosing your particular system type, are performed using a menu on the display screen.

TO ACCESS THE SETUP MENU: Move the System Mode switch into the OFF position, and then hold down the SET button for approximately 5 seconds until the screen changes. The menu will always start with item #01, and is advanced to each following item by a single press of the NEXT button. The options for each item are changed using the UP or DOWN buttons.

ITEM #01 (TEMPERATURE SCALE):

[1] (default) Shows all temperature values in Fahrenheit.

[2] Shows all temperature values in Celsius.

ITEM #02 (PROGRAMMING STYLE):

[1] (default) 5/2-Day Programming. This style uses a weekday program routine for Monday, Tuesday, Wednesday, Thursday, Friday, and a separate weekend program routine for Saturday and Sunday.

[2] 7-Day Programming. This style uses a separate program routine for each of the 7 days in the week.

[3] Manual Non-Programmable. In this setting, there are no program routines for the thermostat to follow and the temperature control will be set only by the UP and DOWN buttons on the front panel.

ITEM #03 (PERIOD QUANTITY):

[1] (default) 4-Periods. Thermostat uses four periods per day (called MORN, DAY, EVE, and NITE).

[2] 2-Periods. The thermostat uses only two periods per day (called DAY and NITE).

ITEM #04 (MAXIMUM HEAT SET TEMP LIMIT):

[1] (default) Limit 90F (32C). The maximum heating set temperature is 90F (32C) degrees with no heat mode temperature restrictions.

[2] Limit 80F (27C). The maximum heating set temperature is 80F (27C) degrees.

[3] Limit 70F (21C). The maximum heating set temperature is 70F (21C) degrees.

[4] Limit 60F (16C). The maximum heating set temperature is 60F (16C) degrees.

ITEM #05 (MINIMUM COOL SET TEMP LIMIT):

[1] (default) Limit 45F (7C). The minimum cooling set temperature is 45F (7C) degrees with no cool mode temperature restrictions.

[2] Limit 55F (13C). The maximum cooling set temperature is 55F (13C) degrees.

[3] Limit 65F (18C). The maximum cooling set temperature is 65F (18C) degrees.

[4] Limit 75F (24C). The maximum cooling set temperature is 75F (24C) degrees.

ITEM #06 (SYSTEM / EQUIPMENT TYPE):

[1] (default) Fn=Furnace. This is for the majority of heating systems such as a natural gas furnace or hot water boiler, that are not Heat Pump systems.

[2] HP=Heat Pump. Use this setting if you have a Heat Pump system (which uses the outdoor unit as the primary heat source). The presence of either an "O" or "B" wire on your previous thermostat would typically indicate you have a heat pump system. This thermostat is NOT compatible with heat pumps which also have an electric heating element as a backup heat source (called Auxiliary / Emergency Heat). IMPORTANT: When set to "2" for HP, the circuit board Gas/Electric option must also be set to "ELEC", as described earlier in the "COMPLETE THE INSTALL" section.

ITEM #07 (DELAY TIME):

[1] (default) 5 Minutes. Thermostat waits 5 minutes before turning the system back on after it was last run. The 5 minute setting is fine for most applications, and provides equipment protection by preventing rapid cycling.

[2] Same operation as above, but reduced to 2 minutes between state changes if desired.

ITEM #08 (TEMPERATURE SWING):

[1] (default) This is the tightest control, which is plus/minus 0.25F (0.14C) degrees from the target set temperature.

[2 through 9] These alternate values make the temperature control wider with more variation. Each incremental setting number adds an additional 0.25F (0.14C) degrees onto the initial setting. [9] is the widest control setting, which is plus/minus 2.25F (1.25C) degrees from the set temperature.

ITEM #09 (TEMPERATURE CALIBRATION):



[0 (zero)] (default) At zero, there are no changes made to the base room temperature measurement. The adjustment is from as low as subtracting -5F (-3C) degrees from the room temperature, to as high as adding +5F (+3C) degrees to the room temperature. The internal temperature sensor is accurately calibrated at the factory, and in most cases this setting should not need to be altered.

OPERATING INSTRUCTIONS

SET DAY AND TIME: Place the System Mode switch into the OFF position. Press the SET button one time and the backlight will illuminate; press the SET button again and the room temperature will disappear from the screen and the day icon will flash. With the day flashing, press UP or DOWN to adjust the day of the week shown on the screen. Pressing NEXT will advance from setting the day to setting the clock, with the time now flashing. Use UP or DOWN to set the time, making sure the proper AM/PM indication is correct. Holding the UP or DOWN buttons will make the clock digits scroll rapidly. The thermostat will exit the day/time adjustment mode if either the SET or NEXT buttons are pressed, or there are no button presses for approximately 10 seconds.

HEATING AND COOLING: Basic operation of your heating or cooling system can be obtained by choosing either HEAT or COOL with the System Mode switch. The temperature can be adjusted using the UP and DOWN buttons. When the thermostat is first powered up, it will follow a default temperature routine that is preset from the factory (shown below).

2-PERIOD CONFIGURATION:

PERIOD	HEAT MODE	COOL MODE
DAY	6:00 AM 70 °F (21 °C)	6:00 AM 78 °F (26 °C)
NITE	10:00 PM 62 °F (17 °C)	10:00 PM 75 °F (24 °C)

4-PERIOD CONFIGURATION:

PERIOD	HEAT MODE	COOL MODE
MORN	6:00 AM 70 °F (21 °C)	6:00 AM 78 °F (26 °C)
DAY	8:00 AM 62 °F (17 °C)	8:00 AM 82 °F (28 °C)
EVE	6:00 PM 70 °F (21 °C)	6:00 PM 78 °F (26 °C)
NITE	10:00 PM 62 °F (17 °C)	10:00 PM 75 °F (24 °C)

LCD DISPLAY BACKLIGHT: The display screen is lighted to assist viewing at nighttime, or in locations with low light levels. A press of any button on the front panel will light the display for approximately 10 seconds. Any button presses that occur while the light is on will reset the 10-second timer, causing the screen to remain illuminated for an additional 10 seconds.



TEMPERATURE OVERRIDE: While in Program RUN mode, the set temperature can be temporarily changed by pressing UP or DOWN. The set temperature will return to the programmed value stored in memory when the start time of the next upcoming program period is reached (Morn, Day, Eve, Nite). While a Temporary Override is in effect, the word "OVERRIDE" will be shown in the display screen. An Override may be cancelled moving the mode switch to OFF, then back to HEAT or COOL.

TEMPERATURE HOLD: A Temperature Hold is used for maintaining a fixed set temperature. Once a Hold is initiated, the thermostat will maintain the set temperature indefinitely. A Hold may be used for days, weeks, or even months at a time, as long as the thermostat has adequate power. To enter Hold mode: press the HOLD button one time and the word "HOLD" will appear in the display. To cancel a Hold, press the HOLD button one more time. If a complete power failure occurs during a Temperature Hold, the thermostat will continue to remain in Hold mode even after the power comes back on. NOTE: If you plan to leave the thermostat in Hold mode for an extended duration (unattended), it is advisable to install new Energizer® or DURACELL® "AA" size alkaline batteries prior to leaving to ensure reliable operation of your heating and cooling system.

STATIC NOTICE: This thermostat is protected against normal static electric discharges, however to minimize the risk of damaging the unit in extremely dry weather, please touch a grounded metal object before touching your thermostat.

TEMPERATURE PROGRAMS

By default, this thermostat has 4 separate program periods for both Heat and Cool mode, they are: MORN, DAY, EVE, and NITE. Each period ends at the start time of the following period. The heat programs are set in HEAT mode, and the cool programs are set in COOL mode.

NOTE: If the thermostat is configured to use only 2 periods per day instead of 4 (SYSTEM CONFIGURATION AND SETUP OPTIONS), the thermostat will only use the DAY and NITE periods. The MORN and EVE periods will not be visible on the screen.

SET TEMPERATURE PROGRAMS: Place the System Mode switch into the desired temperature mode that you would like to set the program for. The instructions below will differ somewhat, depending on whether you are using the 5/2-Day programming style or the 7-Day programming style.

FOR 5/2-DAY PROGRAMMING OPTION: You will set all 5 weekdays, Monday through Friday, in one combined process. After the weekdays are complete, you can advance to set both weekend days, Saturday and Sunday, in one combined process.

If the backlight is not already illuminated, press the SET button one time to light the display. With the screen illuminated, press the SET button one time, and you should now see the words SET and PROGRAM shown at the top of the display screen, and you should see "Morn" and "MoTuWeThFr" at the bottom of the display. Use the UP/DOWN buttons to adjust the start time for the MORN period, then press the NEXT button to advance. Use the UP/DOWN buttons to adjust

the set temperature for the MORN period, then press the NEXT button to advance. Now adjust the start time and set temperature for the DAY period, pressing the NEXT button after each to advance. Continue with these same steps to adjust the start times and set temperatures for the EVE and NITE program periods.

When the NITE period is finished for the weekdays, the thermostat will advance forward to the weekend program. You should see “Morn” and “SaSu” at the bottom of the display. Use the UP/DOWN buttons to adjust the start time for the MORN period, then press the NEXT button to advance. Continue with these same steps to adjust the start times and set temperatures for the DAY, EVE, and NITE program periods as desired.

FOR 7-DAY PROGRAMMING OPTION: You will be setting each day individually, one at a time. After any particular day’s program has been set, you will have the ability to copy these values either to just the next day or to the remaining days left in the week (described further below).

If the backlight is not already illuminated, press the SET button one time to light the display. With the screen illuminated, press the SET button one time, and you should now see the words “SET” and “PROGRAM” shown at the top of the display, and “Morn” and “Mo” at the bottom of the display. Use the UP/DOWN buttons to adjust the start time for the MORN period, then press the NEXT button to advance. Use the UP/DOWN buttons to adjust the set temperature for the MORN period, then press the NEXT button to advance. Now adjust the start time and set temperature for the DAY period, pressing the NEXT button after each to advance. Continue with these same steps to adjust the start times and set temperatures for the EVE and NITE program periods.

After the NITE period is finished for the weekdays, press NEXT and the thermostat will advance forward to the Tuesday MORN period. Just like the previous day, use the UP/DOWN buttons to adjust the start time then press the NEXT button to advance. Continue with these same steps to adjust the start times and set temperatures for the remaining periods of the remaining days as desired

COPY FEATURE: The copy action takes the time and temperature values from the previous day, and uses them for the current day. To perform a copy, press and release the HOLD button one time per copy. You should see the word “COPY” show up in the display screen for approximately one second, and the day of the week will have advanced forward to the next day. To keep copying to the next upcoming days, press and release the HOLD button for each day that you want to copy the previous day’s values into.

ADVANCED FEATURES

KEYPAD LOCKOUT: You can lock the front panel buttons to prevent unauthorized tampering of your thermostat settings.

TO LOCK THE KEYPAD: Start with the thermostat at rest, and the display backlight NOT illuminated. Press the NEXT button one time to illuminate the display screen, then press the NEXT button 3 more times, followed by the HOLD button 1 time.

TO UNLOCK THE KEYPAD: Start with the thermostat at rest, and the display backlight NOT illuminated. Press the NEXT button one time to illuminate the display screen, then press the NEXT button 3 more times, followed by the HOLD button 1 time.

SOFTWARE RESET: A Software Reset is used to erase ALL heating and cooling temperature programs, and to return all user-adjustable software settings back to their original factory default values. To perform a Software Reset, first ensure that the thermostat's Keypad Lockout is not enabled and then move the System Mode switch to the OFF position. Press and hold the SET and NEXT buttons together for at least 5 seconds. The LCD display screen will become fully populated (let go of buttons at this point), and then return to normal. The clock will have to be changed to match the current day and time.

COMPRESSOR PROTECTION BYPASS: This optional feature permits the installer or service technician to temporarily disable the built in compressor protection delays. This is most useful for diagnosing and testing the heating and cooling systems after installation is complete, and should not be used during normal operation. To activate this feature, first ensure that the thermostat's Keypad Lockout is not enabled and then press and hold the NEXT and HOLD buttons together for at least 5 seconds. NOTE: there will no visual confirmation on the display screen, however you should be able to turn the cooling system on and off without any protection delays being imposed. All compressor protection delays (in all modes of operation) will be disabled for 5 minutes. After the 5-minute duration has expired, the thermostat will return to normal operation automatically.

BATTERY REPLACEMENT

This thermostat is powered by two "AA" Alkaline batteries. The batteries should be replaced AT LEAST once per year to ensure reliable operation (or sooner if the battery icon or "LO BATT" appears in the display screen). The batteries are located on the back of the thermostat's circuit board. The front portion of the thermostat can be removed from the back half by using the housing release tabs on the bottom edge of the thermostat housing.

When installing new batteries, we recommend using only brand new Energizer® or DURACELL®, "AA" size alkaline batteries. Please observe the polarity markings shown in the battery compartment to ensure proper installation. When finished, line up the front of the thermostat to the base, and firmly press together to securely latch the front and back halves together properly.

TECHNICAL ASSISTANCE

If you have any problems installing or using this thermostat, please carefully and thoroughly review the instruction manual. If you require assistance, please contact our Technical Assistance department at 856-234-8803 during regular business hours between 8:00AM and 4:30PM Eastern Standard Time, Monday through Friday. You can also receive technical assistance online anytime day or night at www.luxproducts.com. Our website offers you troubleshooting guides, answers to

the most common technical questions, and also permits you to email your questions to our technical support staff at your convenience.

Warning

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.

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