



LUX[®]

WIFI THERMOSTAT

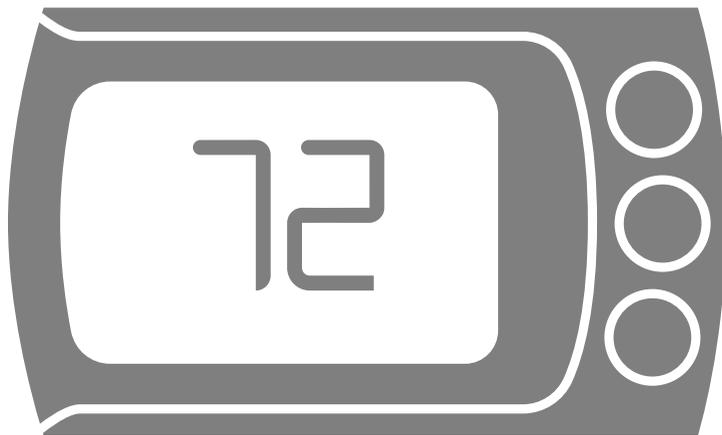
CS1 Edition



Installation Manual



CS1 is ready to make your home energy efficient and more comfortable. Follow these easy steps to get started.



LUX Products offers installation and product videos. Please visit LuxProducts.com/videos or visit our YouTube channel LUX Products Corporation. To contact LUX Technical Support, please call 856.234.8803.

For more information about installation settings, please visit

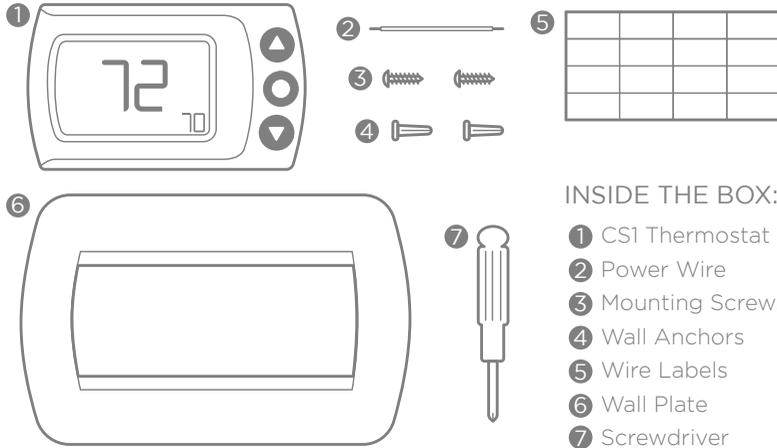
LuxProducts.com/CS1manual

Para ver estas instrucciones en español, por favor visite

LuxProducts.com/CS1manualsSP

This manual is a comprehensive guide to installation and wiring.

1. START HERE



INSIDE THE BOX:

- 1 CS1 Thermostat
- 2 Power Wire
- 3 Mounting Screws
- 4 Wall Anchors
- 5 Wire Labels
- 6 Wall Plate
- 7 Screwdriver

Required Tools:

- Phillips Screwdriver
- Smartphone

Optional Tools:

- Power Drill
- Wire Stripper

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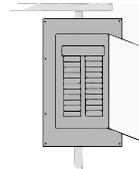
Step 1.1: Download the LUX Products App to your mobile device and create an account.



Step 1.2: Now set your phone aside and turn off the power at the circuit breaker to both your heating and cooling systems before performing any wiring.

Step 1.3: Confirm that your heating and cooling system is powered down by changing the temperature on your thermostat.

Hint: Your system should not make any noise and you should not feel any air exiting your vents.



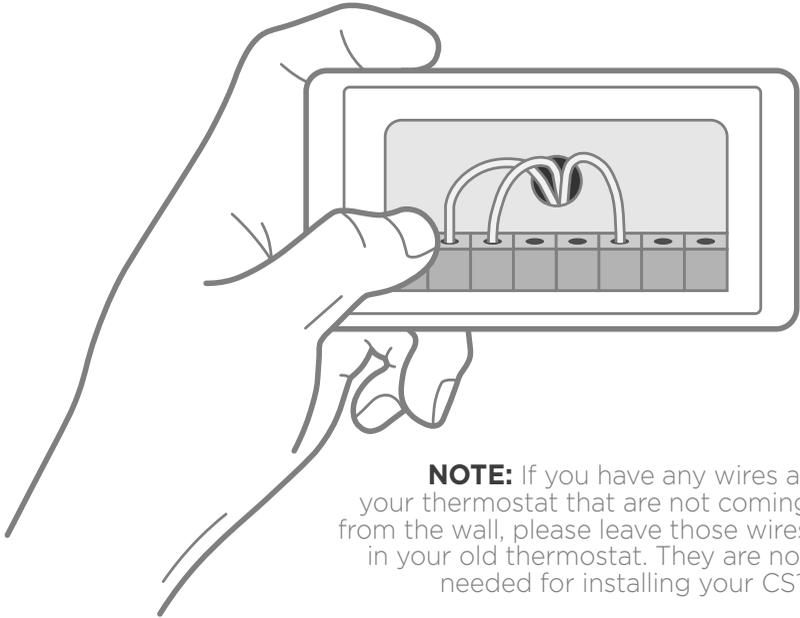
Step 1.4: Remove the front of your old thermostat from its base. If you see thick black wires, wire nuts, or any labels that say 120-240VAC or High Voltage, your system is not compatible with CS1. Please call LUX Technical Support at 856.234.8803 before proceeding with your installation. If you do not see any high voltage labels or wires, you can continue with your installation.



1. START HERE

Step 1.5: Use the included wire labels to mark which wire is connected to each terminal in your old thermostat.

Take a picture of your current wiring layout, you will need this picture later.



NOTE: If you have any wires at your thermostat that are not coming from the wall, please leave those wires in your old thermostat. They are not needed for installing your CS1.

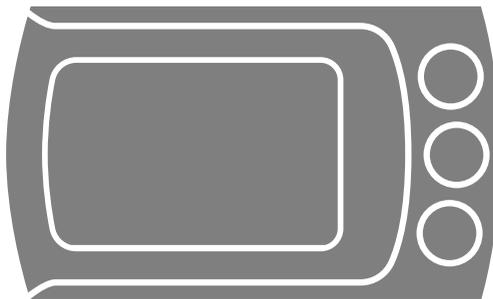
Step 1.6: Confirm that you have a C-Wire. If you do, please turn to the next page. If you do not, please skip ahead to page 10.



Installing with a C-wire

Before starting

Turn off the power at the circuit breaker to both your heating and cooling systems before performing any wiring.



Step 2.1: Identify your system configuration (see wiring diagrams in appendix). Potential configurations include:

- Conventional 1H/1C (Y, G, W, R, C)
- Conventional 2H/1C (Y, G, W, W2, R, C)
- Heat Pump Single-Stage (Y, G, R, O/B, C)
- Heat Pump with auxiliary heat or dual fuel (Y, G, R, O/B, W, C)

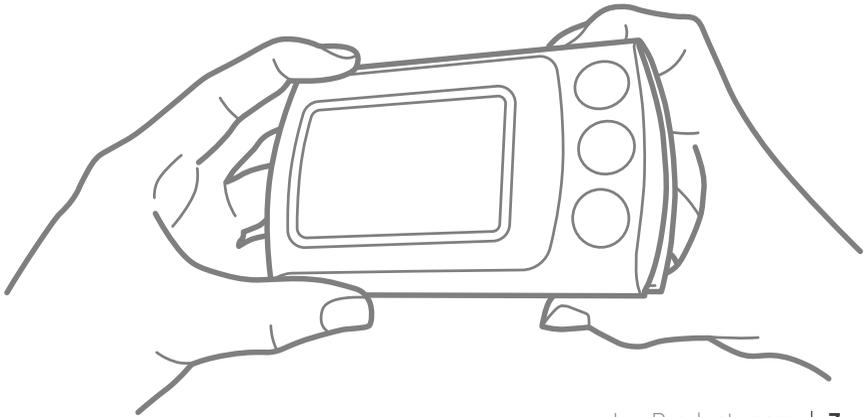
If you have only one R wire, please use the RH terminal. If you have a different configuration other than what is listed above, please call LUX Technical Support for help with your installation.

Step 2.2: Remove each wire from its terminal – make sure that they don't fall down back into the wall.

Step 2.3: Remove the mounting screws from the base of the old thermostat. Remove the base from the wall.

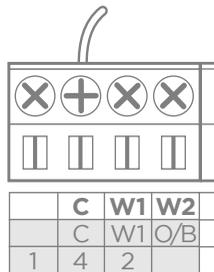
Step 2.4: If you would like to use the trim plate or wall anchors, you can install them now.

Step 2.5: Separate CS1 from its base, pull the halves apart from the bottom edge. Pull the wires from your wall through the center hole of the CS1 base. Secure the base to the wall using the included mounting hardware.



Option 1 - Conventional (furnace) Systems:

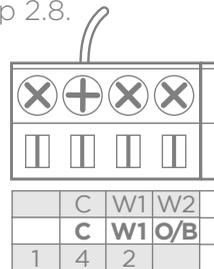
Step 2.6(f): Following the terminal labels marked “Conventional” on the thermostat base, loosen the screw and insert each labeled wire into the top hole of the corresponding terminal, tighten the screw.



Step 2.7(f): If you have both an RC and RH wire present, then remove the red cap located on the left side of the terminal pins. You can now skip ahead to step 2.8.

Option 2 - Heat Pump Systems:

Step 2.6(hp): Following the terminal labels marked “Heat Pump” on the thermostat base and referencing your wiring photo, loosen the screw and insert each labeled wire into the top hole of the corresponding terminal, tighten the screw.



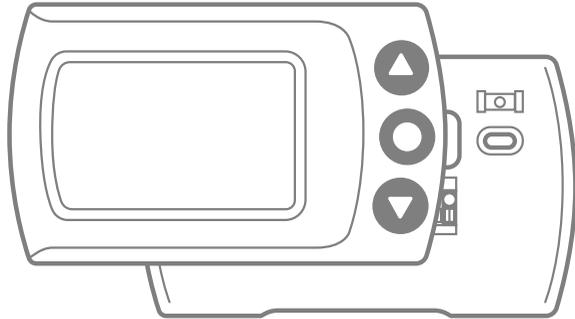
If your old thermostat did not have a W1 wire but did have a W2 wire, please insert the W2 wire into the W1 terminal.

Step 2.7(hp): If you have both an O wire and a B wire (i.e. in some systems), please install the B wire to the “C” terminal.

For more detailed directions, please see the wiring diagrams in the appendix or call LUX Technical Support.

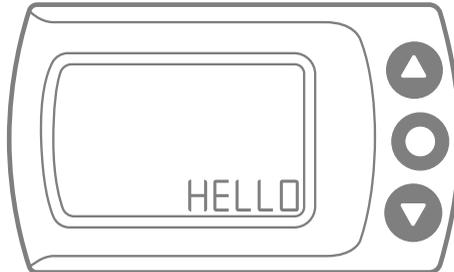
Installation with C-wire

Step 2.8: Securely fasten CS1 onto its base. Once it has clicked into place, return power to your heating and cooling system.

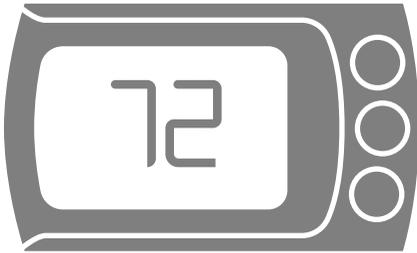


Step 2.9: After your thermostat powers up, you are ready to configure CS1 for your heating and cooling system and connect to a wireless network.

Please skip ahead to the “System Setup” section of this manual on page 18.



Installing without a C-Wire Using the LUX Power Wire (included)



1. Install and wire CS1



2. Install LUX Power Wire (at your furnace)

For installation without C-wire,
you will need to access your furnace.



Before starting

Turn off the power at the circuit breaker to both your heating and cooling systems before performing any wiring.

Installation without C-wire

Hint: helpful videos showing how to wire a thermostat with the LUX Power Wire are available at:

[LuxProducts.com/videos](https://luxproducts.com/videos)

Step 3.1: Starting at your thermostat, confirm that you have one of the system configurations below:

- Conventional 1H/1C (Y, G, W, R)
- Conventional 2H/1C (Y, G, W1, W2, R)

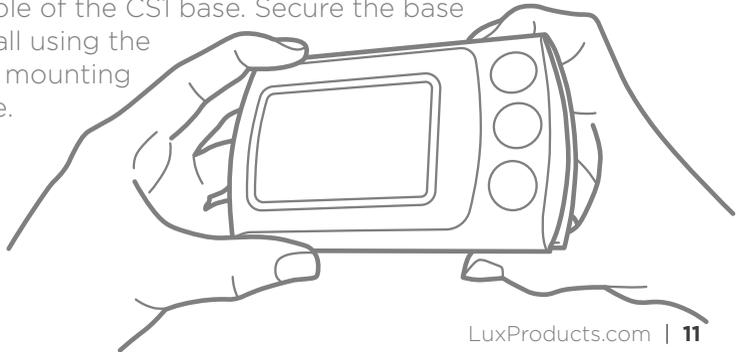
If you have a different configuration other than what is listed above or if you have an electric furnace, please call LUX Technical Support for help with your installation.

Step 3.2: Remove each wire from its terminal – make sure that they do not fall down back into the wall.

Step 3.3: Remove the mounting screws from the base of the old thermostat. Remove the base from the wall.

Step 3.4: If you would like to use the trim plate or wall anchors, you can install them now.

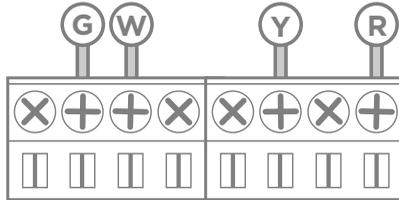
Step 3.5: Separate CS1 from its base, pull the halves apart from the bottom edge. Pull the wires from your wall through the center hole of the CS1 base. Secure the base to the wall using the included mounting hardware.



Step 3.6: Following the terminal labels marked “Conventional” on the thermostat base, loosen the screw and insert each labeled wire into the top hole of the corresponding terminal.

Connect as follows:

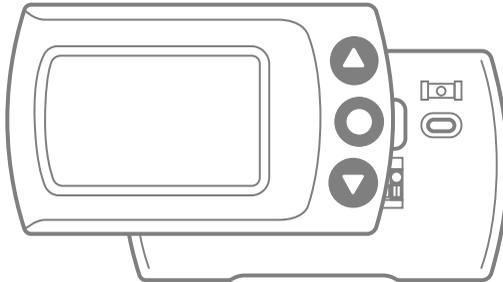
- Y Wire → Y1 Terminal
- W Wire → W1 Terminal
- R Wire → RH Terminal
- G Wire → C Terminal



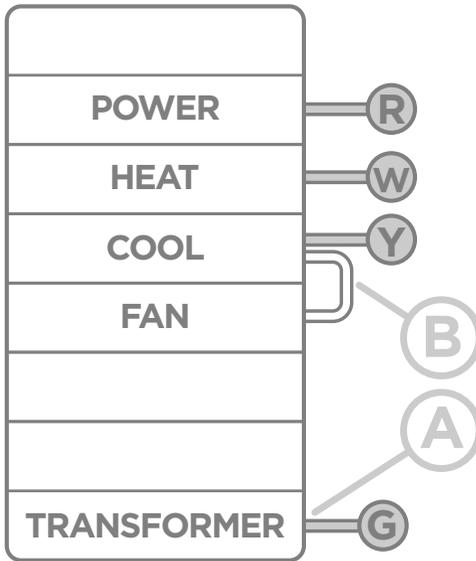
NOTE: The G wire was previously in the G terminal, it will now go to the C Terminal on CS1.

	C	W1	W2	G	Y1	RC	RH
	C	W1	O/B	G	Y1	RC	RH
1	4	2					3

Step 3.7: Securely fasten CS1 onto its base



Step 3.8: Go to your furnace - remove the door or panel and locate your control board or transformer. In most cases, there should be four wires running from the furnace to your thermostat - Y, G, W, and R. If you have additional wires, leave them as is.



Step 3.9:

A) Remove the G Wire from the Fan Terminal at your furnace, insert the wire into your Furnace Transformer Terminal

B) Insert one end of the LUX Power Wire into the now empty Fan Terminal and the other end into the Cool Terminal (with the Y Wire).

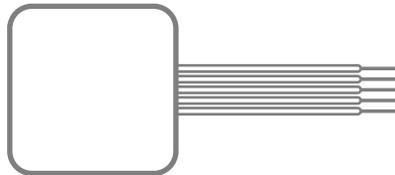
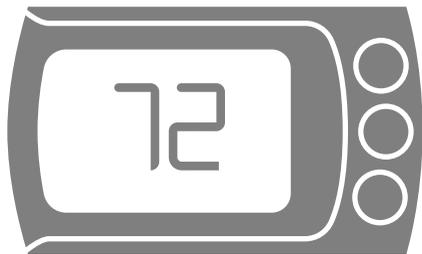
Step 3.10: If you had to remove a panel or door to access your control panel, replace it now.

Step 3.11: Return power to your heating and cooling system. If your system, including your thermostat, does not power up please call LUX Technical Support.

After CS1 powers up, you are ready to configure it for your heating and cooling system (page 21) and connect to a wireless network (Skip to page 22).

Installing without a C-Wire

Using the LUX Power Bridge (sold separately)



1. Install and wire CS1

**2. Install LUX Power Bridge
(at your furnace)**

LUX Power Bridge available at:

[Shop.LUXProducts.com/PowerBridge](https://shop.luxproducts.com/PowerBridge)

For installation without C-wire,
you will need to access your furnace.



Before starting

Turn off the power at the circuit breaker to both your heating and cooling systems before performing any wiring.

Installation without C-wire

Hint: helpful videos showing how to wire a thermostat with the LUX Power Bridge are available at:

Step 4.1: Starting at your thermostat, confirm that you have one of the system configurations below:

- Conventional 1H/1C (Y, G, W, R)
- Conventional 2H/1C (Y, G, W1, W2, R)

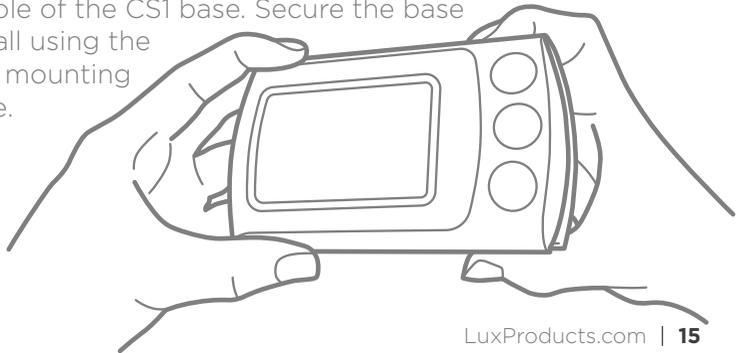
If you have a different configuration other than what is listed above, please call LUX Technical Support for help with your installation.

Step 4.2: Remove each wire from its terminal – make sure that they do not fall down back into the wall.

Step 4.3: Remove the mounting screws from the base of the old thermostat. Remove the base from the wall.

Step 4.4: If you would like to use the trim plate or wall anchors, you can install them now.

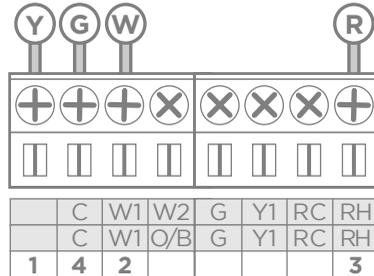
Step 4.5: Separate CS1 from its base, pull the halves apart from the bottom edge. Pull the wires from your wall through the center hole of the CS1 base. Secure the base to the wall using the included mounting hardware.



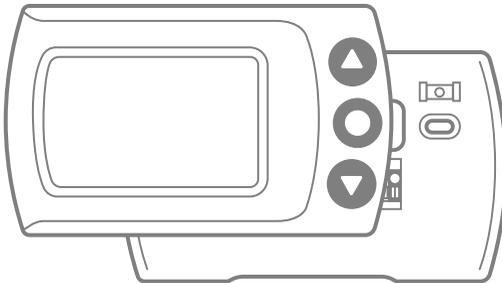
Step 4.6: Following the terminal labels marked “Power Bridge” on the thermostat base, loosen the screw and insert each labeled wire into the top hole of the corresponding terminal.

Connect as follows:

- Y Wire → Terminal 1
- W Wire → Terminal 2
- R Wire → Terminal 3
- G Wire → Terminal 4



Step 4.7: Securely fasten CS1 onto its base



Step 4.8: Go to your furnace - remove the door or panel and locate your control board or transformer. In most cases, there should be four wires running from the furnace to your thermostat - Y, G, W, and R. If you have additional wires, leave them as is.

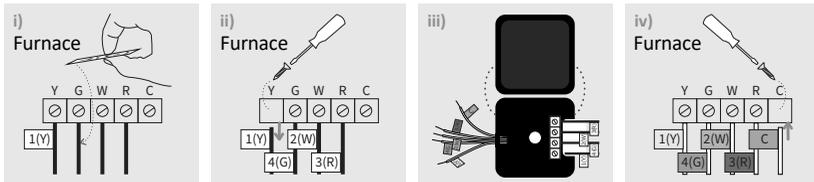
Step 4.9: i) Matching the letters, label the wires connected to your furnace with the included wire labels for the Power Bridge.

Take a picture of the wiring at your control board.

ii) Disconnect these wires from the control board.

iii) Open the Power Bridge and insert each of your old wires into the corresponding numbered terminals in the Power Bridge.

iv) Finally, insert the Power Bridge wires (with the colored labels) into the corresponding terminals on your furnace control board.



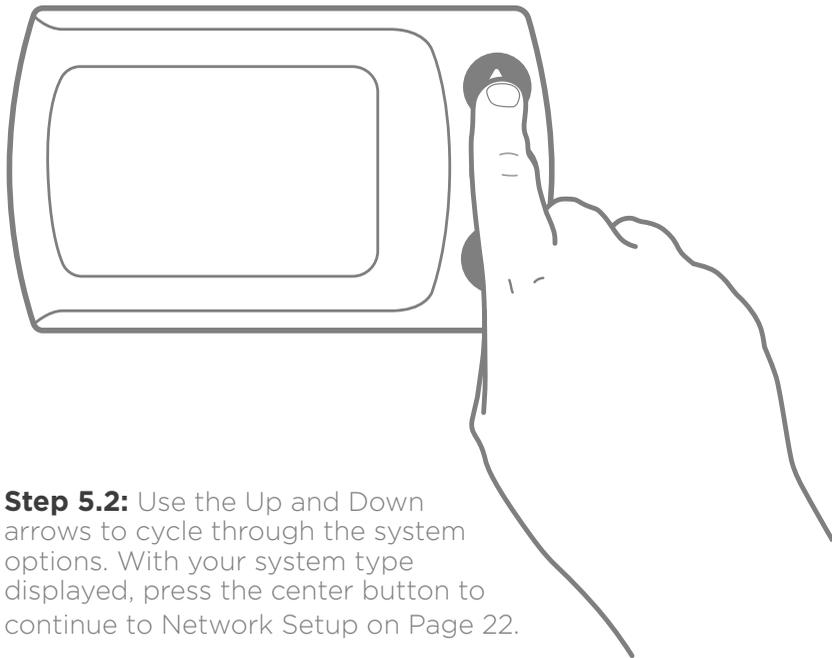
Step 4.10: Secure the LUX Power Bridge to your furnace. If you had to remove a panel or door to access your control panel, replace it now.

Step 4.11: Return power to your heating and cooling system. If your system, including your thermostat, does not power up please call LUX Technical Support.

After CS1 powers up, you are ready to configure it for your heating and cooling system and connect to a wireless network.

Setup - Selecting your System Type

Step 5.1: After your thermostat powers up, your CS1 will auto scan the terminal pins to determine what type of HVAC system you have. If there is more than one possible system type, you will need to select your system type (options described on the next page).



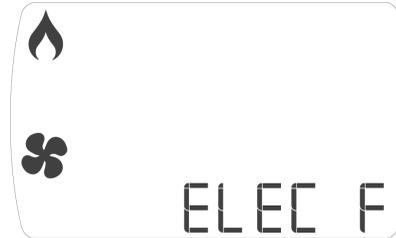
Step 5.2: Use the Up and Down arrows to cycle through the system options. With your system type displayed, press the center button to continue to Network Setup on Page 22.

HVAC SYSTEM
5. SETUP

System options:

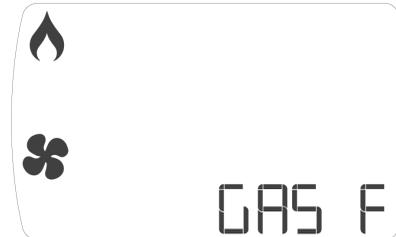
Electric Furnace:

Electric system with fan.
Thermostat calls for fan to
run with heat.



Gas Furnace:

Gas system with fan.
Thermostat calls for fan to
run with heat.



Air Conditioning Only:

Cooling Only. Thermostat
calls for fan to run with cool.

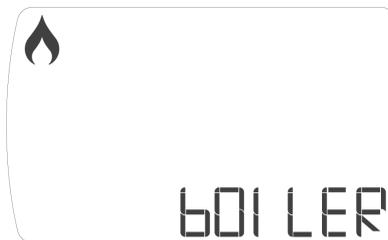


Continued on Page 20.

System options (con't):

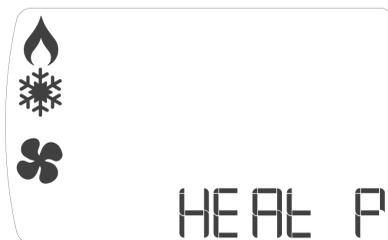
Boiler:

Boiler heating system with no fan connected.

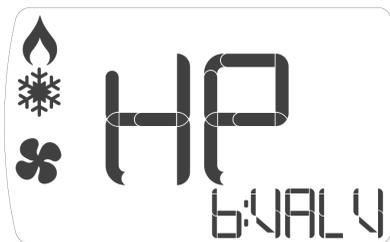


Heat Pump:

Heat pump system, thermostat calls for fan to run with heat or cool.

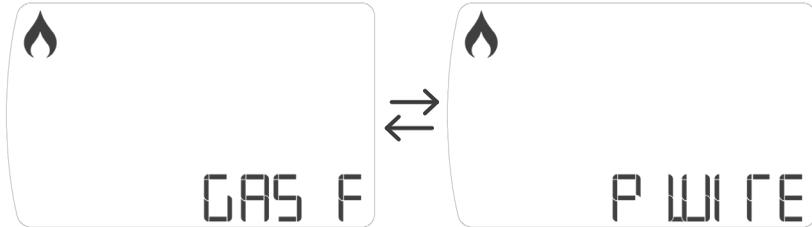


NOTE: If you have a heat pump system, press the center button to select. CS1 will now ask you to confirm your valve type. Use the up and down arrows to toggle between O & B Valves, press the center button to select:



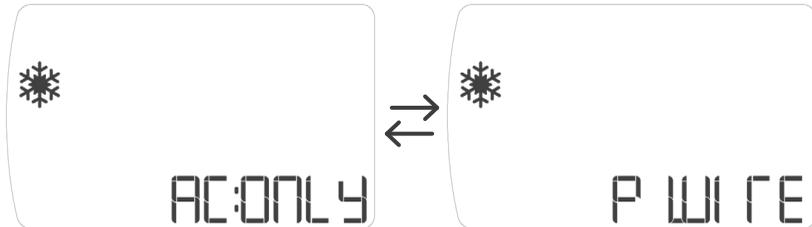
Heat With P-Wire:

This represents a furnace heat system utilizing the P-Wire. CS1 will toggle between the screens below:



Cool With P-Wire:

This represents an air conditioning system utilizing the P-Wire. CS1 will toggle between the screens below:



NOTE: When using the Power Wire, your system will only call for fan when the device calls for heat or cool, respectively. You will not be able to run your fan continuously or on internal air quality mode.

Setup - Connecting to the Network

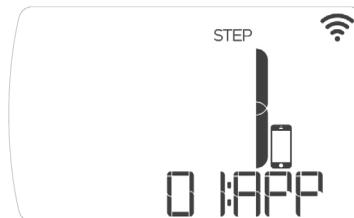
Step 6.1: After you confirm your system type, you will be given the option to Setup or Skip. Use the up and down buttons to change options and press center button to confirm your selection.

Select “Setup” to connect to a network.



Step 6.2: After selecting “Setup”, CS1 will display: “Step 1: App”. Make sure that you have downloaded the LUX Smart thermostat to your smartphone.

Step 6.3: With “Step 1: App” displayed on screen, push the center button to continue.



CONNECTING TO THE 6. NETWORK

Step 6.4: When your device displays “Step 2: Scan”, CS1 will scan for surrounding WiFi networks.

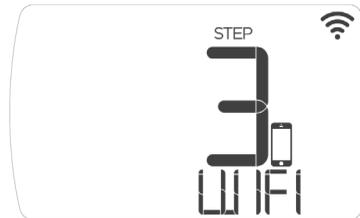


Step 6.5: When your device displays “Step 3: Phone”, You will need to go to the WiFi settings in your smartphone and select the CS1 WiFi network (e.g. LUX-CS1-xx-xx). The network name and password are on the back of the device and on a label on the box.



NOTE: If you have already recycled the box, please return to Step 2.8 to take a photo of the WiFi information that is on a label on the base of your thermostat.

Step 6.6: After you have connected to the CS1 WiFi Network, switch back to the LUX app. Select your home WiFi network from the list of available networks and enter the password. Your device will display “Step 3:WiFi” when it is ready to connect to your home WiFi network.



Step 6.7: Your device will automatically display: “Step 4: Launch” when it is attempting to connect to the internet.



Step 6.8: After your device has successfully connected to the internet, you will see “Step 4: Done”, your device will then switch to the standard operations screen.

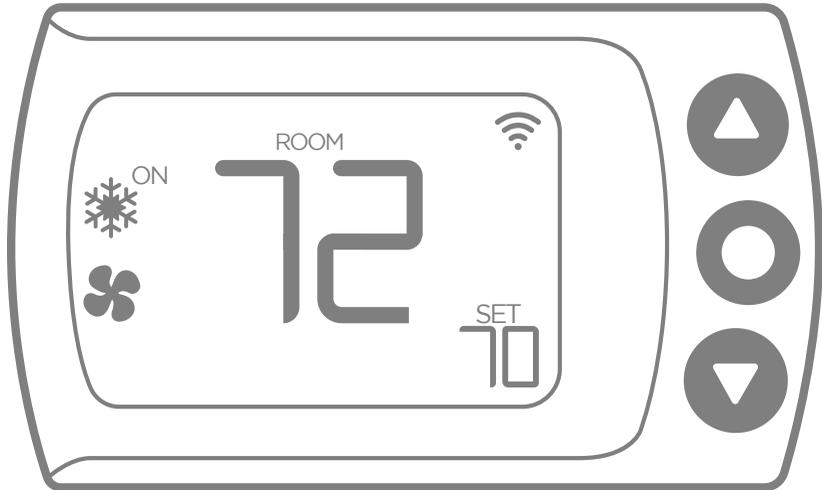


NOTE: CS1 cannot be used with a 5GHz WiFi network. Please ensure that your wireless network is set to 2.4GHz and that the security settings are set to open or WPA2. For more information about how to check your network settings, please check your router’s documentation or label.

NOTE: Open the LUX App. If you are adding your first device, select the CS1 shaped icon. If you are adding an additional device, start from the “Locations” menu and select the “+” icon in the top left corner within your current location. For iOS users, we recommend using an Apple® device with iOS8.0 or later.

CONNECTING TO THE 6.NETWORK

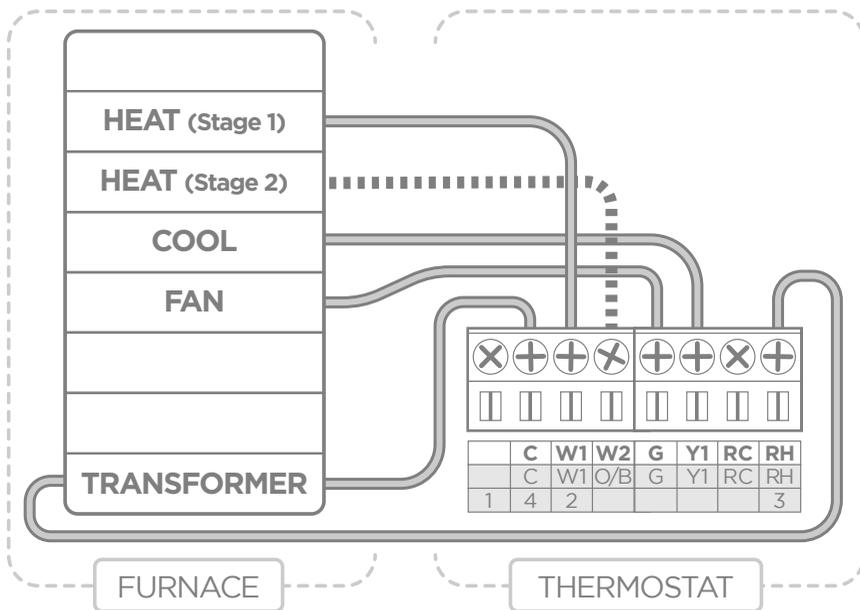
If you need to cancel the joining process at any time, simply press and hold the center button for 5 seconds.



Congratulations!

When you see the thermostat's home screen with a WiFi icon, it means you are connected. Installation is complete and your CS1 is ready to go. Now let's save some energy and make your home more comfortable. You can now control your comfort from anywhere with an internet connection!

Conventional System With C-Wire Wiring Diagram

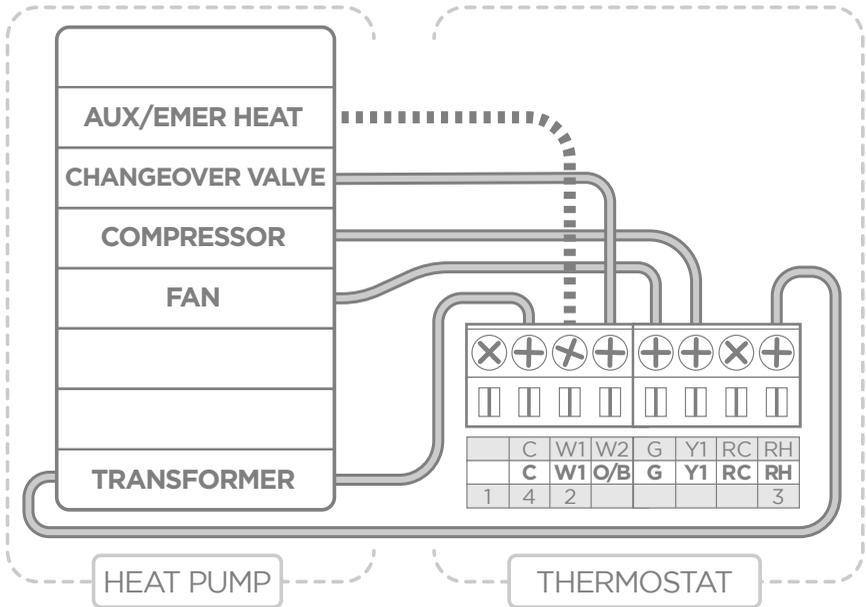


NOTES:

- The W2 terminal is used for 2 stage heating systems only
- If you have both an RH and RC wire, please remove the red cap from the back of the thermostat

7. APPENDIX

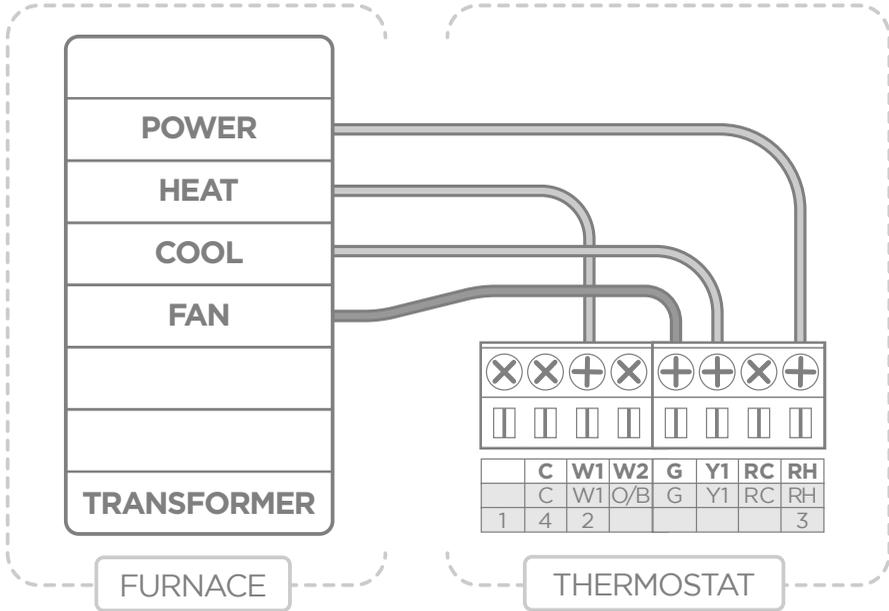
Heat Pump System With C-Wire Wiring Diagram



NOTES:

- The W1 terminal is used for Auxiliary/Emergency heat or on Dual Fuel systems

Conventional System Without C-Wire (BEFORE Power Wire) Wiring Diagram

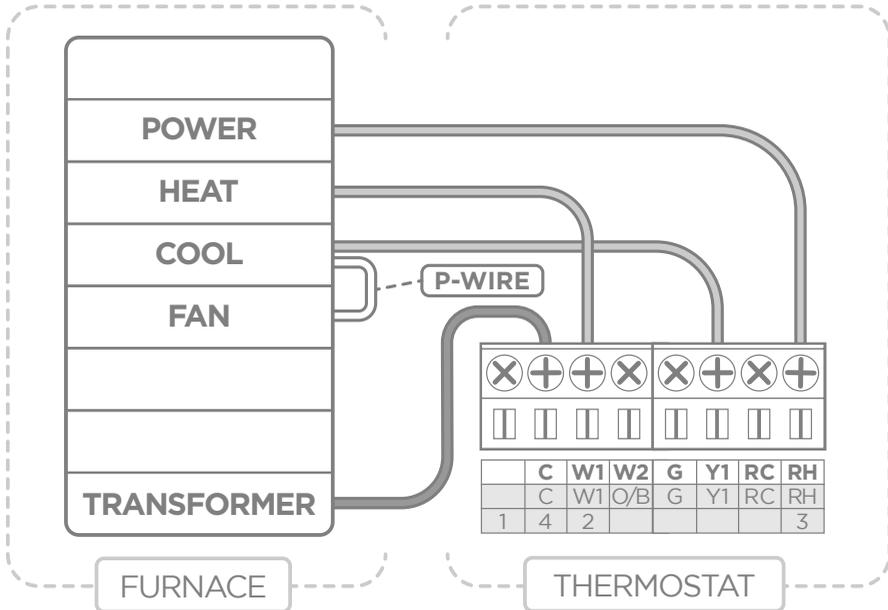


NOTES:

- At your thermostat, you will move the G Wire (dark) to the C Terminal.

7. APPENDIX

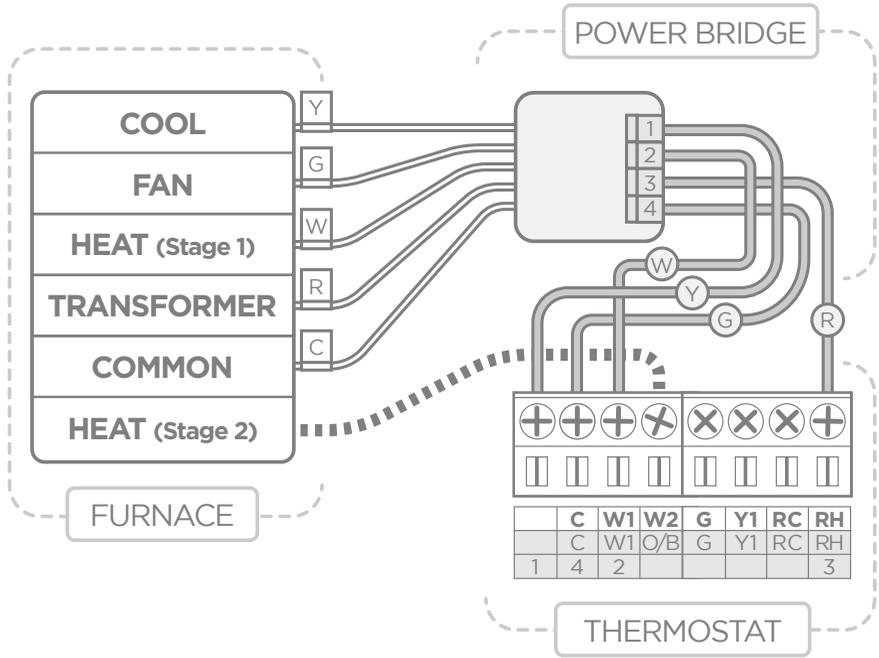
Conventional System Without C-Wire (AFTER Power Wire) Wiring Diagram



NOTES:

- The G Wire (dark) that previously went to the Fan Terminal now connects to the Furnace Transformer
- The Power Wire (white) connects to both the Fan Terminal as well as the Cool Terminal (with the Y Wire)

LUX Power Bridge Wiring Diagram



NOTES:

- If you have a heat pump or dual transformer system, please call LUX Tech support.
- If you have any wires on your furnace not shown here, please leave them as is.

7. APPENDIX

FCC Part 15C

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. FCC RF Radiation Exposure Statement

Caution: To maintain compliance with the FCC's RF exposure guidelines, place the unit at least 20cm from nearby persons.

License Agreement (Including ARM Limited and ST Microelectronics)

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Industry Canada Regulatory Information

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



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