1. Verify that the HVAC system is operating normally.
    a. Any issues should be resolved *before* removing the old thermostat and installing the NRG thermostat.
        i. Should the customer indicate that there were issues with the installed HVAC system before installation of NRG equipment was attempted, referral to NHS is an option.
2. Shut the HVAC circuit breaker off at the breaker box.
    a. The HVAC circuit breaker is typically the highest amperage circuit breaker in the breaker box and is usually mounted closest to the main breaker near the top or bottom of the panel. System configurations vary.
    b. Refer to the breaker box label to ensure that the HVAC breaker is the breaker being shut off.
    c. Consider a consultation with an electrician if the HVAC breaker cannot be positively identified by the labels.
    d. Some homes have separate breakers for heating and cooling systems. If this is the case, ensure that both breakers are off.
    e. Power to the HVAC system must remain off until all work on the thermostat is complete.
        i. Should the customer have concerns with messing about in the breaker box or crawling around in the attic referral to NHS is an option.
3. Turn the attic AC blower switch off.
    a. The attic AC blower switch is usually located between the home's attic access and the HVAC equipment installation.
    b. Some older homes may not have an attic AC blower switch. If this is the case, ensure that the old thermostat is not getting voltage after the HVAC breaker(s) are shut off.
        i. As long as the customer shuts off the breakers and does not touch their C wire to any other wires (especially an R wire) there is minimal risk associated with the AC blower switch and its status. This step is primarily a safeguard. Because the information about removing the C wire first and keeping it separate was removed from the customer documentation we cannot assume they'll do it.
        ii. Should the customer have concerns with crawling around in the attic looking for the blower switch referral to NHS is an option.
4. Remove the faceplate from the old thermostat to expose the HVAC control wiring connections.
    a. The faceplate may be attached to the thermostat base with screws or clips.
    b. If the old thermostat utilizes mercury switches, exercise extreme caution when working around them.
5. Verify that the HVAC system uses 24 volt AC HVAC control circuits.
    a. The NRG thermostat will only work with 24 volt AC HVAC control circuits.
    b. There should be no heavy-gauge wire (like the thicker and stiffer wiring used for the electrical system in the home) or wire nuts utilized in the HVAC control circuitry. Both indicate high voltage HVAC control circuitry, which is not compatible with the NRG thermostat. *Continue only if no high voltage HVAC control circuitry is present.*

c. Consider a referral to NHS to determine if the HVAC system can be refitted with 24 volt AC control circuitry if high voltage HVAC control circuitry is present.

6. Note how the installed thermostat is connected to the HVAC control wires.
    a. There are multiple ways to ensure that the installed HVAC system is documented prior to removal of wires from the thermostat.
        i. Take a picture of the existing thermostat control wire connections.
        ii. Write down to which terminal each control wire is connected on the connector plate of the old thermostat.
        iii. Record a narrative of the wire connection on a phone / tablet / computer / recorder.
        iv. Label all of the wires by letter connection.
        v. Locate and consult any user documentation left by the original installer.
        vi. NOTE: IF the customer failed to document the connections to the installed thermostat there are two options:
            1. Have the customer remove the access panel on the side of the air handler (usually in the attic) to expose the transformer(s) and write down the color or distinguishing characteristics of each wire connected to the terminals on the transformer(s).
            2. Refer the customer to NHS.
    b. *Typically* the control wires are color / letter coded, similar to this example:
        i. **W**hite control wire to the **W** terminal (Heat)
        ii. **Y**ellow control wire to the **Y** terminal (Cooling)
        iii. **G**reen control wire to the **G** terminal (Fan)
        iv. **R**ed control wire to the **R** terminal (Power)
        v. Blue control wire to the **C** terminal (if present) (Common)
            1. NOTE: *There is no standard color code for HVAC control wiring*. That is why it is so important to document how the old thermostat is connected to the HVAC control wires and to ensure the HVAC control wires are connected to the NRG thermostat the same way.
            2. Refer to the Appendix in the Install Guide supplied with the NRG thermostat for additional information about HVAC control wiring.
    c. Check for signs that the NRG thermostat is not compatible with the installed HVAC system.
        i. Presence of X1, X2, L1, L2, T1, or T2 terminals on the installed thermostat indicate incompatible HVAC wiring.
            1. X1 and X2 are used to control variable speed fans.
            2. L1 and L2 are used to control high-voltage systems (line in).
            3. T1 and T2 are used to control high-voltage systems (line out).
7. Remove the control wire connected to the C terminal on the old thermostat (if present) first, label it, and keep it separate from all other wires.
8. Disconnect and label each remaining control wire connected to the old thermostat one at a time.

   a. As additional control wires are disconnected, keep them separate and do not allow them to touch each other.
9. Once all labeled control wires are disconnected from the old thermostat connector plate remove it from the wall.
   a. Ensure that the control wires do not fall back into the wall when removing the old thermostat.
10. NOTE: Dispose of the old thermostat responsibly. Some older thermostats contain mercury switches that need to be handled carefully and recycled responsibly. Should the old thermostat contain a mercury switch, contact the Thermostat Recycling Corporation at www.thermostat-recycle.org for information about how and where to responsibly dispose of the old thermostat.
11. Should it be necessary, any painting, cleaning, or other treatment of the wall where the new thermostat will be mounted should be done before installation of the new thermostat.
   a. Use the supplied trim plate (mounted between the NRG thermostat connector plate and the wall) if desired.
12. Consider placing some non-combustible insulation inside the wall to close up the wall opening before mounting the new thermostat if the opening in the wall through which the HVAC control wires pass to the thermostat mounting location is larger than necessary. This will help the new thermostat remain accurately calibrated.
   a. Pink fiberglass insulation works well for this unless the hole is too large to fill with it.
   b. Ensure that the control wires do not fall back into the wall during this process.

2. Install NRG Thermostat

13. Remove the cover from the NRG thermostat to expose the control wire terminals on the connector plate.
   a. This step is superfluous now. The revised packaging has the connector plate and the faceplate separated in the box.
   b. If for some reason the customer does mate the two and have trouble separating them, have the customer put a finger into the access hole in the connector plate to pull the two parts apart.
14. Mount the NRG thermostat connector plate to the wall.
   a. Place the NRG thermostat connector plate on the wall and over the existing hole through which the control wires are run to the thermostat location.
      i. If the supplied trim plate is to be used, place it between the NRG thermostat connector plate and the wall.
      ii. It is typically best to mount the NRG thermostat in close proximity to the previous thermostat location because that location was chosen intentionally by the HVAC installer.
      iii. Should the NRG thermostat need to be mounted in a different location, do not mount the NRG thermostat in the following locations:

1. Drafty, damp, or dead spots behind doors, in corners, or behind furniture.
2. Locations where hot or cold air from vents will be blown in the direction of the thermostat.
3. Locations where sunlight or radiant heat from appliances will affect the thermostat.
4. Locations where concealed pipes or chimneys run behind the thermostat in the walls.
5. Unheated or uncooled areas such as an outside wall.

b. Feed the labeled control wires through the hole in the middle of the connector plate.
c. Use the built-in bubble level to ensure the NRG thermostat will be level when mounted.
d. Using a pencil, mark the mounting hole locations through the mounting slots on the NRG thermostat connector plate.
e. Move the connector plate (and trim plate if used) aside in order to drill mounting holes.
    i. Should there be no suitable structure to accept screws behind the desired location for the thermostat, use the supplied wall anchors and screws to secure the connector plate to the wall.
f. Drill the holes for the mounting screws where previously marked.
g. Feed the incoming control wires through the access hole in the middle of the connector plate.
    i. Ensure that the control wires cannot fall back into the hole in the wall.
h. Mount the connector plate to the wall using the supplied screws (or) wall anchors but do not tighten the screws completely at this point.
i. Inspect the connector plate to ensure that it is level.
j. Once any adjustments are complete, tighten the mounting screws.
    i. Do not over-tighten the mounting screws as the thermostat connector plate could be damaged by the screws if they are over-tightened.

15. Straighten, trim, or strip insulation from the control wires to ensure they will fit properly into the terminals on the NRG thermostat.
    a. The end of each control wire to be connected should be straight and the last 1/4” of each wire should be stripped of insulation.
        i. Should labels be affixed to the bare copper the customer will need to remove them and clean off any adhesive from the copper before inserting the wires into the connectors.
    b. Ensure that the control wires will reach the terminals to which they will be connected.
        i. If the control wires will not all reach the terminals with adequate room for connections, trim them accordingly.
16. Using the labels affixed to the control wires, connect the C wire (if present) to the C terminal on the NRG thermostat.
        i. Insert the stripped end of the connector wire into the appropriate connector on the base plate.
        ii. The spring terminal will grip the control wires automatically.

iii. Gently tug on the connected wire to ensure it is securely connected.
iv. When connection is complete there should be minimal bare wire visible outside the C terminal.

17. Using the labels affixed to the control wires, connect the remaining control wires to the correct terminals on the NRG thermostat connector plate.
    i. Insert the stripped end of each connector wire into the appropriate connector on the base plate.
    ii. The spring terminals will grip the control wires automatically.
    iii. Gently tug on each connected wire to ensure it is securely connected.
    iv. When connection is complete there should be minimal bare wire visible outside the terminals.
    b. Refer to the installation instructions supplied with the NRG thermostat for additional information about the terminals and their functions.
        i. If only an R wire was connected to the old thermostat, connect it to the terminal labeled RH on the NRG thermostat.
        ii. If both RC and RH wires were connected to the old thermostat, connect both the RC and RH wires to the terminals labeled RC and RH on the NRG thermostat and remove the black jumper labeled RC to RH on the lower left of the connector plate terminal strip.
        iii. If a W3, H, or DH wire was connected to the old thermostat, connect it to the terminal labeled Z on the NRG thermostat.
            1. This is the configurable terminal on the NRG thermostat.
            2. The W3 wire is used to connect and control a third stage heating or cooling system.
            3. The H wire is used to connect and control a humidifier.
            4. The DH wire is used to connect and control a dehumidifier.
                a. If any of these wires are connected to the Z terminal the thermostat configuration must be updated.
                    i. The Configurable Terminal setting should be selected for the appropriate connection.
            5. The default configuration for the Configurable Terminal is none (or no option connected).
        iv. Wires that were bundled with the controller wires but not connected to the old thermostat should not be connected to the NRG thermostat. Leave them disconnected.
18. Push any excess HVAC control wire length back into the wall.
19. Install the four (4) AA batteries as indicated on the NRG thermostat.
    a. Ensure the batteries are inserted with the proper polarity as depicted on the inside of the battery compartment.
    b. Use alkaline batteries for the NRG thermostat. Alkaline batteries provide more predictable voltage drain and more warning time when replacement is required.

   c. The batteries should be changed once each year to ensure continuous operation of the thermostat.
      i. Failure to replace the batteries may cause overheating or freezing if the thermostat batteries expire.
   d. If the home will be unoccupied for extended periods of time the batteries should be replaced before vacating the home.
20. Place the thermostat in close proximity to the home gateway.
21. Press the Pairing button on the home gateway to enter add mode.
   a. If the customer has a C wire, then the thermostat should ideally be paired while it is attached to the connector plate.
      i. The thermostat will function as a repeater if it is paired while connected to the 24V common electrical input.
   b. The yellow light on the gateway will begin slowly blinking for two (2) minutes.
      i. NOTE: the pairing light on the new gateway is amber.
22. Press and hold the DOWN button on the thermostat.
   a. The LINK icon on the thermostat will begin to blink.
      i. If the thermostat does not display the blinking link icon, cycle through the modes by pressing the center button until no icons are displayed.
   b. When the LINK icon remains illuminated the thermostat is added to the network.
   c. The amber light on the gateway will remain illuminated to indicate the successful addition of the NRG thermostat to the network.
23. Ensure that all HVAC control wire connections to the connector plate are still secure.
24. Mount the thermostat back on the connector plate.
   a. Line up the thermostat with the connector plate and push it into position.
   b. Ensure that the connector pins mating the thermostat to the connector plate are not bent or damaged when mating the two pieces.
   c. NOTE: No fasteners are used to mount the thermostat to the connector plate.
25. Turn the thermostat off by pressing the center button on the right side until no icons appear.
26. Energize the HVAC system by resetting the AC breaker at the breaker box.
   a. The NRG thermostat will default to setup for a standard single-stage heating and cooling system.
   b. Put the thermostat in OFF mode by pressing the middle control button until OFF mode is indicated.
27. Turn the attic AC switch back on.
   a. NOTE: If the HVAC system comes on, push the center button on the thermostat until no icons are displayed.
      i. This will turn the HVAC system off.
      ii. There may be a delay before the compressor and blower both shut down. This is normal.

NRG Thermostat Configuration and Usage

Web-based Configuration

1. Log in to the NRG Home+ user account to configure the thermostat through the network.
    a. From the NRG Home+ user account, select click the Thermostats tab.
        i. The Thermostats dialog box appears.
    b. Click the gear icon next to Suggested Features.
    c. Click Edit **>** next to Thermostat Configuration.
        i. The Thermostat Configuration dialog box appears behind a Warning popup.
    d. Click Proceed at the Warning popup to access the configuration options or Cancel to return to the main Thermostats page.
        i. If Proceed was selected, the Thermostat Configuration page is now accessible.
    e. Select the Thermostat Lock state by clicking either *Disabled* or *Enabled* next to *Thermostat Lock*
        i. The Thermostat Lock, if enabled, will lock out any changes made at the thermostat itself.
        ii. The default setting for Thermostat Lock is Disabled.
    f. Select the number of degrees for the Swing setting by clicking the **^** or **v** symbols next to *Swing*.
        i. Swing is the difference between the selected or scheduled temperature setting and the actual temperature at which the HVAC system will **activate** to heat or cool the home.
        ii. The default Swing setting is 1.5°F.
            1. Example when in cool mode: Setpoint 78 degrees with swing set to 1.5 degree = max temp will get up to 79.5 (displayed as 80) before HVAC system activates and cools the home.
            2. Example when in heat mode: Setpoint 68 degrees with swing set to 1.5 degree = low temp will get to 66.5 (displayed as 66) before HVAC system activates and heats the home.
            3. NOTE: The NRG thermostat does not display half-degree increments. Therefore the displayed temperature in the example scenarios above can be 1 degree cooler or warmer than expected.
    g. Select the number of degrees for the Overshoot setting by clicking the **^** or **v** symbols next to *Overshoot*.

i. Overshoot is the difference between the selected or scheduled temperature setting and the actual temperature at which the HVAC system will **shut off** after heating of cooling the home.
ii. The default Overshoot setting is 1.5°F.
    1. Example when in cool mode: Setpoint 78 degrees with overshoot set to 1.5 degree = HVAC system cools the home down to 76.5 (displayed as 76) before shutting off.
    2. Example when in heat mode: Setpoint 68 degrees with overshoot set to 1.5 degree = HVAC system heats the home to 69.5 (displayed as 70) before shutting off.
    3. NOTE: The NRG thermostat does not display half-degree increments. Therefore the displayed temperature in the example scenarios above can be 1 degree cooler or warmer than expected.

h. Select the Calibration Temperature by clicking the ^ or v symbols next to *Calibration Temperature*.
    i. Calibration Temperature is the temperature, warmer or cooler, that can be set to match the thermometer in the thermostat a separate thermometer.
    ii. The NRG thermostat comes from the factory pre-calibrated.

i. Select the lower and upper Heat Setpoint range by clicking the ^ or v symbols next to both the *lower parameter* (left) and the *upper parameter* (right).
    i. The Heat Setpoint range is the range in temperature, cold to hot, between which the HVAC system will warm the home.

j. Select the lower and upper Cool Setpoint range by clicking the ^ or v symbols next to both the *lower parameter* (left) and the *upper parameter* (right).
    i. The Cool Setpoint is the range in temperature, cold to hot, between which the HVAC system will cool the home.

k. Set the Heat Staging Delay by clicking the ^ or v symbols next to *Heat Staging Delay*.
    i. The Heat Staging Delay is the time delay between the activation of the heating stages in a multi-stage heating system.
    ii. The default setting for Heat Staging Delay is 5 minutes.

l. Set the Cool Staging Delay by clicking the ^ or v symbols next to *Cool Staging Delay*.
    i. The Cool Staging Delay is the time delay between the activation of the cooling stages in a multi-stage cooling system.
    ii. The default setting for Cool Staging Delay is 5 minutes.

m. Set the Fan Circulation Period by clicking the ^ or v symbols next to *Fan Circulation Period*.
    i. The Fan Circulation period is the amount of time the HVAC fan will operate when the fan is operated, independent of heating or cooling, to circulate only the air in the home.

ii. The default setting for Fan Circulation Period is 20 minutes.

n. Set the Fan Circulation Duty Cycle percentage by clicking the ^ or v symbols next to *Fan Circulation Duty Cycle*.
   i. The Fan Circulation Duty Cycle is the percentage of the available fan power used when the HVAC fan is operated, independent of heating or cooling, to circulate only the air in the home.
   ii. The default setting for Fan Circulation Duty Cycle is 20%.

o. Set the Fan Purge Time by clicking the ^ or v symbols next to *Fan Purge Time*.
   i. The Fan Purge Time is the amount of time the HVAC fan will run after the compressor shuts down to circulate remaining cool air from the system.
   ii. The default setting for Fan Purge Time is 1 minute.

p. Select the Compressor Delay clicking the ^ or v symbols next to *Compressor Delay*.
   i. The Compressor Delay is the amount of time the compressor will wait to respond to a call for activation from the thermostat.
   ii. Compressor Delay is used to protect the compressor from damage that can be caused by short-cycling. The compressor builds up pressure that must be equalized between activations.
   iii. The default setting for Compressor Delay is five (5) minutes.

q. Select the function of the Configurable Terminal be clicking either *W3 (Third Stage)*, *Humidifier*, or *De-Humidifier*.
   i. These are auxiliary HVAC or air handling equipment settings.
   ii. The Z terminal on the NRG thermostat is the configurable terminal.
   iii. Do not change these setting unless the thermostat is connected to a three stage heating or cooling system, a humidifier, or a de-humidifier.
   iv. The default setting for Configurable Terminal is None.

r. Click Installer Setup to access the remaining configuration parameters.
   i. The remaining configuration parameters appear behind a Warning popup.

s. Click Proceed at the Warning popup to access the remaining configuration options or Cancel to return to the main Thermostats page.
   i. If Proceed was selected, the remaining configuration options are now accessible.

t. Select the HVAC system Heat Type by clicking either *Fossil (gas, oil)* or *Electric* next to *Heat Type*.
   i. The default setting for Heat Type is Electric.
   ii. NOTE: Refer back to the HVAC control wiring configuration to ensure that the thermostat configuration matches the HVAC system to which it is connected.

u. Select the HVAC system Type by clicking either *Normal* or *Heat Pump* next to *HVAC Type*.
   i. The default setting for HVAC type is Normal.

v. Select the number of HVAC system Heat Stages by clicking the ^ or v symbols next to *Heat Stages*.
    i. The default setting for Heat Stages is 1.
    ii. If the thermostat is wired for a multi-stage HVAC system (both W and W2 and / or Y and Y2) then the multi-stage nature of the system should be pre-populated.
        1. The customer should verify the heat stages setting.
w. Select the number of HVAC system Cool Stages by clicking the ^ or v symbols next to *Cool Stages*.
    i. The default setting for Cool Stages is 1.
    ii. If the thermostat is wired for a multi-stage HVAC system (both W and W2 and / or Y and Y2) then the multi-stage nature of the system should be pre-populated.
        1. The customer should verify the cool stages setting.
x. Select the Display Units by clicking either *°C* or *°F* next to *Display Units*.
    i. The default setting for Display Units is °F.
y. Select the O/B Terminal option by clicking either O or B.
    i. The default setting for the O/B Terminal is O.
z. NOTE: The Thermostat Function parameter is disabled.
aa. Click *Save* to save the configuration information and send it through the network to the NRG thermostat.
bb. Press the middle control button until AUTO mode (both heat and cool icons on) is indicated.

Web-based Operation

1. From the www.nrghomeplus.com user page, click the *Thermostats* tab.
    a. If multiple thermostats are installed, select the thermostat to be scheduled from the drop-down list in the top left corner of the screen.
2. View the data displayed on the home screen.
    a. The current local weather report, current thermostat temperature, HVAC system mode, target temperature, Schedules on / off, and the fan mode are displayed.
3. Click the gear icon to access additional information.
    a. The battery status, Mode switch, Schedule on / off switch, Schedule edit link, Fan switch, and Thermostat Configuration link are displayed.
        i. Battery status is displayed at the top of the dialog box as a percentage of total available battery remaining.
        ii. The Mode switch will list the available modes for the HVAC system.
            1. Off
            2. Heat
            3. Cool
            4. Auto
        iii. The Schedule switch will enable or disable scheduled thermostat changes.
        iv. Click the Edit **>** link next to the Schedule on / off switch to access the Schedules dialog box.
            1. Adjust time periods by clicking the sliders and dragging them right or left to decrease or increase the period of scheduled time.
            2. Adjust the temperature by hovering over the temperature. Up and down arrows will appear. Click the **^** or **v** symbols to adjust the temperature for the period of scheduled time.
            3. To apply a schedule for one day to other days, click the *stamp* icon on the far right next to the day to be copied. Select the desired days to use the same schedule and click *Apply* when finished.
            4. If the plan supports it, the Smart Schedule feature can be activated by clicking the box next to *Show Smart Schedule Activity Pattern.* This will show activity in the home based on sensor data and may be useful for selecting temperatures in the home based on activity / presence.
        v. To see templates for heat and cool schedules, click on *Energy-Saving Templates* from either the Heat or Cool Schedule tab.
            1. To apply a template, click *Apply This Template* where displayed above the template.
            2. There is a template for heat pumps accessible by clicking *Heat Pump? Click Here.*
        vi. The Fan switch will list the available fan modes.

1. Auto
2. On (1 hr)
3. On (3 hrs)
4. On (24 hrs)
5. Circulate

vii. After making any changes or adjustments in the dialog box click ***Set*** to transmit the changes through the network to the thermostat.

b. Click Back in the upper right corner of the dialog box to return to the main Thermostat status dialog box.

4. To adjust the current temperature, click on ***Current***.
   a. Options are Heat (Schedules), Cool (Schedules), Heat (Manual), Cool (Manual), and off. Select the desired function and click *Set*. To disregard the change click the X to exit.
      i. Any changes sent to the thermostat will be confirmed via popup messages.
5. To adjust the Target Temp, click on the current temperature**.**
   a. The current temperature will be selected for adjustment.
   b. Click the blue **<** or the orange **>** symbols to change the current temperature setting.
   c. Click *Set* to save the newly selected temperature.
6. To adjust the Target Temp, click on ***Target*****.**
   a. The current Target temperature will be selected for adjustment.
   b. Click the blue **<** or the orange **>** symbols to change the target temp to change the target temperature setting.
   c. Click *Set* to save the target temperature.
7. Click the Thermostat Rules & Alerts box in the upper right hand corner of the page.
   a. The Thermostat Rules and Alerts dialog box appears.
      i. Click Temp Alert.
      ii. Click the switch next to Temperature Notification to enable of disable this option.
      iii. Click the checkboxes next to Above and Below to include either or both options.
         1. Click the drop down boxes and select temperature parameters.
      iv. Click the Address Book to select Users to notify if desired.
         1. Click the +New Contact box to add and edit Users.
      v. Click Save to set the desired settings or Cancel to return to the Thermostat Rules & Alerts dialog box.
   b. In the Thermostat Rules and Alerts dialog box, click Home / Away Thermostat Setting.
      i. The Away from Home Thermostat Override dialog box appears.
      ii. Click the switch next to Away from Home Thermostat Override to enable this option.
      iii. NOTE: The network utilizes Geo-Services and Geo-Fencing to control this feature. Click the +Enable Geo-Services on your mobile device for better “Away from Home” detection to enable Geo-Services and Geo-Fencing.

iv. Set the Target Temperatures while away from home by clicking the ^ and v symbols next to Heat Mode and Cool Mode.
v. Click Save to set the desired settings or Cancel to return to the Thermostat Rules and Alerts dialog box.

c. In the Thermostat Rules and Alerts dialog box, click *Extreme Temperature Energy Savings* tab to set up weather-triggered scheduling.
   i. The Extreme Temperature Energy Savings dialog box appears.
   ii. Click the switch next to Extreme Temperature Energy Savings to enable this option.
   iii. Click the checkboxes next to When the temperature is above and When the temperature is below to enable either or both high and low temperature parameters.
   iv. Click the drop down boxes and select parameters for temperatures above and below.
   v. Click the drop down boxes and select parameters for increase the target temp by and decrease the target temp by.
   vi. Click the Address Book to select Users to notify if desired.
      1. Click the +New Contact box to add and edit Users.
   vii. Click Save to set the desired settings or Cancel to return to the Thermostats dialog box.

d. In the Thermostat Rules and Alerts dialog box, click the Thermostat Change Alert to enable alerts when thermostat settings are changed.
   i. The Thermostat Change Alert dialog box appears.
   ii. Click the switch next to Thermostat Change Alert to enable this option.
   iii. Click the checkboxes next to Target Temp, Thermostat Mode, and Thermostat Fan Mode under When any of these settings are changed to select any or all of these events for reporting.
   iv. Click the Address Book to select Users to notify if desired.
      1. Click the +New Contact box to add and edit Users.
   v. Click Save to set the desired settings or Cancel to return to the Thermostats dialog box.

4. Manual Operation of the NRG Thermostat:

1. Buttons:
    a. UP Button: Adjusts target temperature up.
    b. MODE Button: Changes thermostat from HEAT, COOL, AUTO, and OFF modes.
    c. DOWN Button: Adjusts target temperature down.
2. Icons:
    a. HEAT Icon: Illuminated in HEAT or AUTO mode.
    b. COOL Icon: Illuminated in COOL or AUTO mode.
    c. LINK Icon: Illuminated during the wireless configuration.
3. Display:
    a. Press any button to wake the thermostat up.
    b. After waking up, the display will show the current mode and room temperature.
    c. If the system is running the display will indicate a wave motion up for heating or down for cooling.
    d. Press the UP or DOWN button once to display current temperature set point.
    e. Press the UP or DOWN button again to adjust the temperature set point.
    f. Press the MODE button at any time to change the mode.
        i. The modes are HEAT, COOL, AUTO, and OFF.
    g. The thermostat will display the mode-appropriate temperature set point.
    h. In AUTO, the brighter icon will indicate which temperature set point is displayed (HEAT or COOL).

    After 5 seconds the display will turn off.

5. Helpful Tips and Hints

Dispose of the old thermostat responsibly. Some older thermostats contain mercury switches that need to be handled carefully and recycled responsibly. Should the old thermostat contain a mercury switch, contact the Thermostat Recycling Corporation at www.thermostat-recycle.org for information about how and where to responsibly dispose of the old thermostat.

6. Using the NRG Home+ Mobile App

1. The NRG Home+ mobile app can be downloaded from https://www.nrghomeplus.com/web/OtherApps/MobileSite.aspx
    a. iOS users can also download the iOS app from the App Store at iTunes.
    b. Android users can also download the Android app from the Google Play store.
2. Once the appropriate app is installed on the mobile device, tap the *NRG Home+ app icon* and log in using the same credentials used to log in to the www.nrghomeplus.com website.
    a. The app will open at the Home screen.
        i. Scroll to view status for each installed feature in the network.
        ii. NOTE: Some settings and features are not available in the NRG Home+ mobile app. All settings and features are accessible via the www.nrghomeplus.com website.
3. Tap the *History* icon in the upper right corner of the app to view activity on the network.
    a. NOTE: Activity includes logins.
4. Tap *Thermostats* to view the current temperature, the Target Temperature and the Mode and Schedules status.
    a. NOTE: If there is more than one thermostat on the network, tap the desired thermostat to view or change its settings.
    b. NOTE: When the app opens an update from the network is automatically requested.
    c. Tap *Target Temp* to open the controls.
        i. Tap the ^ or v symbols to raise or lower the Target Temperature.
        ii. NOTE: Changing the Target Temp will deactivate scheduled automation of the thermostat and HVAC system. Restore by tapping the *Mode / Schedules* bar and turning *Schedules* back on.
    d. Tap the *Mode / Schedules* bar to open the Mode and Schedules controls.
        i. Tap the button next to the desired Mode to select it.
            1. Available Modes are Heat, Cool, Auto, and Off.
        ii. Tap the *On / Off switch* next to Schedules to turn off scheduled automation of the thermostat and HVAC system.
        iii. Tap *Set* to send the command through the network to the thermostat.
            1. A confirmation message will appear after the command has been sent.
        iv. NOTE: Changing the Mode Setting will deactivate scheduled automation of the thermostat and HVAC system until the start of the next schedule period.
        v. Restore by turning Schedules back on.

7. Frequently Asked Questions

Why can't the old thermostat just be switched to "off" and pulled off the wall?

- The thermostat does not usually have high-voltage wires running to it but the AC compressor and fan motor are two of the highest electrical load items in the home. Should either one be energized while there is no thermostat connected serious damage to the HVAC system would likely result.

Why is it so important to label the wires on the old thermostat?

- There is no standard for wiring HVAC control circuitry. There are typical conventions that are widely used in the industry but no assumptions can or should be made. If the HVAC control wires are not connected correctly to the NRG thermostat damage to the thermostat and the HVAC system can occur. Therefore we recommend labeling the control wires *before* they are disconnected from the old thermostat. Taking a picture of the HVAC control wiring before disconnection and / or writing down the color / connector combinations is added documentation of the installation.

Why does the NRG thermostat need batteries?

- The batteries in the NRG thermostat are there to maintain the connection with the network. The batteries also keep settings saved when the thermostat is not connected to a "C", or common, wire which provides power to the thermostat itself.

Can Lithium AA batteries be used in the NRG thermostat?

- NRG recommends alkaline batteries because of their steady and predictable decay curve. This makes the circuitry for reporting battery life, and battery replacement at the appropriate time, much easier to accomplish.

I have a multistage heating and cooling system along with a water heater connected to my current thermostat. Will the NRG thermostat be able to control all that equipment?

- The NRG thermostat is compatible with a wide variety of HVAC and accessory equipment, but there are a few things it can't do. Consult the Thermostat Incompatibility List at www.nrghomeplus.com/support for more information.

Does NRG provide any preset heating or cooling schedules?

- Navigate your browser to the www.nrghomeplus.com/web/Automation/Thermostats.aspx and select either Heat Schedules or Cool Schedules to view templates.

What are the advantages of using automated schedules for heating and cooling?

- Scheduling heating and cooling saves money and conserves energy.

Why does it seem as if the HVAC system runs longer with the NRG thermostat than it did before?

- It may be that someone has set the thermostat to manual control. If this is the case it will need to be reset to run the preferred schedule from website or from the app.

Why does it seem like it's colder in the house now than it was before the NRG thermostat went in?

- The old thermostat may have been out of calibration. The NRG thermostat comes from the factory pre-calibrated. To check calibration of your thermostat, place an accurate thermometer as close to the thermostat as possible. You can also move your thermometer around the house

to check the HVAC system outlets. Nominally any random location should be within one to two degrees of the thermostat's location.

Why does the temperature in the house get up to 76 when it's scheduled for 74 instead?

- The thermostat has a feature for energy efficiency called swing that allows the temperature in the home to rise slightly above the desired temperature before running the HVAC system. This is more energy efficient than running the HVAC system whenever the temperature in the home rises or falls even slightly above or below the set temperature. The swing can be adjusted to decrease or increase the difference between the set temperature and the temperature at which the HVAC system will begin running from the web UI.

Website-

Why does it appear that the cooling schedule isn't working?

- The gateway does not constantly update the site. It may be that the site has not received an update from the gateway. On the www.nrghomeplus.com website there is a refresh icon at the top of the page next to the Support Center link. Click the refresh icon. If the data reported on the page is still not what is expected, first check the thermostat schedules to verify the settings are as expected. If everything looks good there, contact support at www.nrghomeplus.com/support.

Why are there some tabs on a friend's page that don't appear on mine?

- Each customer's web page is customized for their network features and options. Your neighbor may have additional or different equipment or options.

What are the Armed Away Target and Turn off thermostat fan options at the bottom of the Thermostat pages?

- These are options for systems that include alarm panels in the network.
- To set an Armed Away Target, click ***the Armed Away Target*** drop down box near the bottom of the screen. Select a temperature for the system to set when the system is armed away instead of a schedule. Click ***Save*** when finished.
- If the plan supports it, the thermostat and HVAC fan can be shut down in the event of a Fire / Smoke or Carbon Monoxide alarm. Click the ***checkbox*** next to this option at the bottom of the page to select it if available.

App and Mobile Devices-

Is there an app for a Windows phone. How about a Blackberry?

- NRG supports iOS and Android devices. However, our partner Alarm.com also supports Blackberry and Windows Phone. Apps for Blackberry and Windows Phone can be downloaded from Alarm.com. Navigate to www.nrghomeplus.com/web/OtherApps/MobileSite to download and install the iOS and Android apps. The apps are also available from the sites from which apps are normally downloaded for your device.

Can the app be used on a tablet?

- Yes. iPads and Android tablets will run the apps.

Does the app allow me to control everything I can control from the website on my mobile device too?

- Yes it does. Don't forget to set up Geo-Services at www.nrghomeplus.com/web/LBS/GeoFences.aspx so you can automate the thermostat and sensors to change status after departure or before arrival.

Why doesn't the app seem to work when I'm in areas with weak signal?

- The app requires the same kind of connectivity to the cellular network that any other app on your mobile device does. The app can't exchange data with the home gateway if there is little or no signal.

Why does it seem as if my mobile device is in sync with my network?

- The network sends an update to the mobile device when the app is launched but does not automatically update at any other point. Tap the **Refresh icon** in the upper right corner of the display to send and receive an update to / from the network at any time.

8. Troubleshooting

No connection with the gateway- Reinitialize the gateway first, then re-pair the thermostat with the gateway. Verify that the gateway is in pairing mode (amber light blinking).

Cooling or heating not working properly- Verify that the HVAC control wires are securely connected to the correct terminals on the thermostat backplate.

Thermostat Incompatibility List

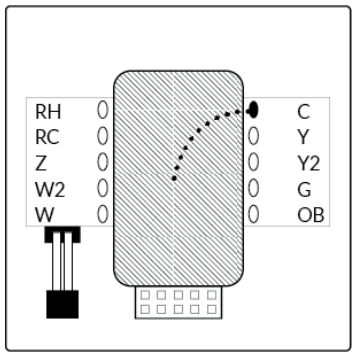
The NRG thermostat is compatible with the vast majority of HVAC systems installed across the United States. Most HVAC systems operate using a 24V signal connected to a thermostat to tell the system to turn on or *call for heat* or *call for cool*. There are a small number of HVAC systems that do not adhere to this standard. These very high end systems are only present in less than five percent of installed HVAC systems. Common types of non-conforming systems are listed in the table below.

Type of System	Defining Characteristics
Systems with Variable-Speed Fans	Non-standard wire terminals (X1, T1, 1, 2, 3)
Proprietary Systems	Non-standard wire terminals (X1, T1, 1 ,2 ,3)
High Voltage Electrical	14 or 12 gauge wire, wire nuts

The following table lists systems known to use proprietary thermostats to control the HVAC system.

Brand	Model Name
Carrier	Infinity
Bryant	Evolution
Lennox	iComfort
Honeywell	Redlink

9. Appendix 1- Example Thermostat Wiring Diagrams



Default connections showing C wire connection.

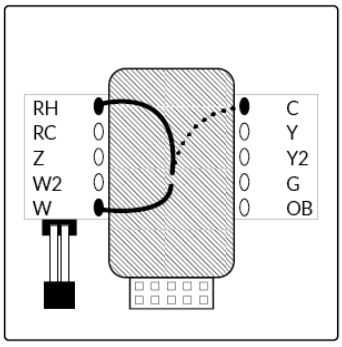


Diagram of control wire connections for 2 wire heat only control wires plus C wire.

R wire- heat power.

W wire- heat.

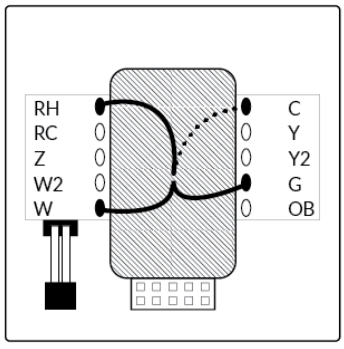


Diagram of control wire connections for 3 wire heat only control wires plus C wire.

R wire- heat power.

W wire- heat.

G wire- fan.

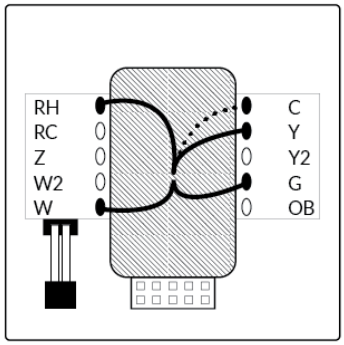


Diagram of control wire connections for 4 wire heat / cool control wires plus C wire.

W wire- heat.

Y wire- Cooling compressor.

R (or) RH wire- power.

G wire- fan.

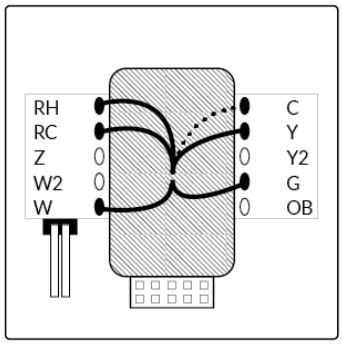


Diagram of control wire connections for 5 wire heat / cool control wires plus C wire.

W wire- heat.

Y wire- cooling compressor.

Remove jumper below W connector.

RH wire- power.

RC wire- power.

G wire- fan

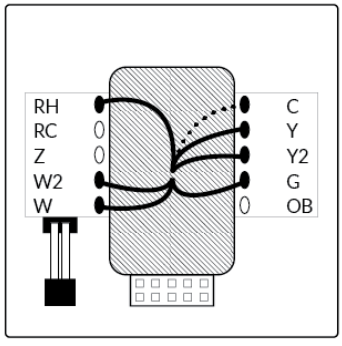


Diagram of control wire connections for 6 wire multi-stage heat and multi-stage cool control wires plus C wire.

W wire- heat.

W2 wire- heat.

Y wire- cooling compressor.

Y2 wire- cooling compressor.

RH (or) R wire- power.

G wire- fan.

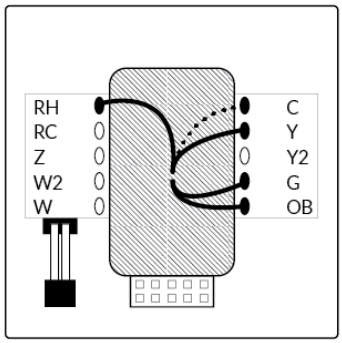


Diagram of control wire connections for 4 wire heat pump without auxiliary heat control wires plus C wire (alternate).

O wire (or) B wire- changeover valve. NOTE: If both O and B are present connect ONLY the O wire.

Y wire- compressor.

R wire- power.

G wire- fan.

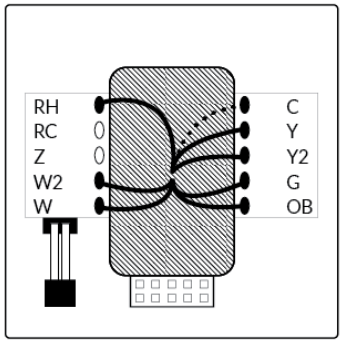


Diagram of control wire connections for 7 wire multi-stage heat pump with multi-stage auxiliary heat control wires plus C wire.

O wire (or) B wire- changeover valve. NOTE: If both O and B are present connect ONLY the O wire.

Aux1 wire- auxiliary heat.

Aux2 wire- auxiliary heat.

Y wire- compressor.

Y2 wire- compressor.

R wire- power.

G wire- fan.

Possible Wires and What They Control

R or V or VR	RH and RC Single power for HEAT and COOL
RH or 4	RH Power for HEAT (RH not connected to RC jumper wire removed)
RC	RC Power for COOL (RH not connected to RC jumper wire removed)
W	W Heat control
W2	W2 2nd stage HEAT
AUX or AUX1	AUX1 1st stage of AUX heat in the CT100
AUX2	AUX2 2nd stage of AUX heat in the CT100
Y	Y COOL control or 1st stage compression for heat pump
Y2	Y2 2nd stage COOL control or 2nd stage compression for a heat pump
G or F	G FAN control
C or X	C 24VAC power (to power thermostat) NOTE: TRANE, AMERICAN STANDARD and YORK often use the letter B for C
H	H External Humidifier
DH	DH External Dehumidifier
EX	EX external fresh air baffle
B	B Heat pump changeover (cool to heat, powered in heat)
O	O Heat pump changeover (heat to cool, powered in cool)
B and O	IMPORTANT: If there are both B and O wires (Trane heat pump products) DO NOT CONNECT B to B terminal, connect B to C terminal. If C wire present, do not connect B.
E	N/A Emergency heat (do not connect, tape off)
L	N/A System monitor (do not connect, tape off)
T	N/A Outdoor sensor (do not connect, tape off)

Possible Wires and What They Control

Lennox Heat Pump

V or VR or R	RH Power for HEAT
M or Y	Y COOL control
Y or W or W2	W2 2nd stage HEAT
F or G	G Fan control
R or O	O
X or X2 or C	C

Trane Products [American Standard]

B	C 24VAC power (to power thermostat)
X2	Emergency heat (do not connect, tape off)

Zoned Hot Water- 2 wire

R	RH
W	W

Zoned Hot Water- 3 Wire with Motor Driven Valves

R or 5	RH (power)
W or 4	W (heat ON)
Y or G or 6 (the 3rd wire)	A (heat OFF)

Zoned Hot Water- 3 Wire with Solenoid Valves

R	RH (power)
W	A (heat ON)
Y or G (the 3rd wire)	W (heat OFF)