

EXPLORER[®] PORTABLE

WIRELESS THERMOSTAT SYSTEM

Wi-Fi  VENNet[™]



USER
MANUAL
T3951RF
T3951B

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for an intentional radiator, pursuant to Part 15, subpart C 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 in radio communications.

However, there is no guarantee that the 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:

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that of the receiver.
- Consult the dealer or an experienced radio or TV technician for help.

Notice: Only peripherals complying with FCC limits may be attached to this equipment. Operation with non compliant peripherals or peripherals not recommended by Venstar, is likely to result in interference to radio and TV reception. Changes or modifications to the product, not expressly approved by Venstar could void the user's authority to operate the equipment.

FCC - INDOOR Mobile Radio Information:

To comply with FCC/IC RF exposure limits for general population/ uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This Device complies with Industry Canada License-exempt RSS standard(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.

Under Industry Canada regulations, this radio transmitter may only operate using

an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Cet appareil est conforme avec Industrie Canada, exempts de licence standard RSS(s). Son fonctionnement est soumis aux deux conditions suivantes: 1) ce dispositif ne doit pas causer d'interférences, et 2) ce dispositif doit accepter toute interférence, y compris /es interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

En vertu des règlements d'Industrie Canada, cet émetteur de radio ne peut fonctionner en utilisant une antenne d'un type et maximale (au moins) Gain approuvé pour l'émetteur par Industrie Canada. Pour réduire /es interférences radio potentiel/es aux autres utilisateurs, le type d'antenne et son gain doivent être choisis afin que la puissance isotrope rayonnée équivalente (PIRE) ne est pas plus de ce qui est nécessaire pour une communication réussie.

We, Venstar, declare under our sole responsibility that the device to which this declaration relates: 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.

This Explorer wireless thermostat system has the ability to receive updates to its firmware. Periodically firmware updates are released by the manufacturer to add features and/or performance enhancements. This manual was produced reflecting the most current firmware/feature set at the time of publication, firmware rev. 1.0. Firmware releases after rev. 1.0 may not be adequately depicted in this manual. Please refer to the appropriate website or contact your place of purchase to learn about changes to the thermostat after firmware release 1.0.

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WELCOME

Thank you for choosing the Venstar Explorer Portable Thermostat. Designed for flexibility, precision, and ease of use, Explorer Portable gives you the freedom to monitor and control comfort exactly where you need it. We're confident you'll enjoy the convenience and control Explorer Portable brings to managing temperature with confidence.

While Skyport Cloud Services is not required to operate Explorer Portable, connecting your thermostat to Skyport unlocks additional features such as remote access, enhanced system visibility, alerts, and performance insights, all accessible from a web browser or app on your mobile device.

If your Explorer Portable Thermostat is already installed and powered on, please continue to page 2 to begin setup and daily operation.

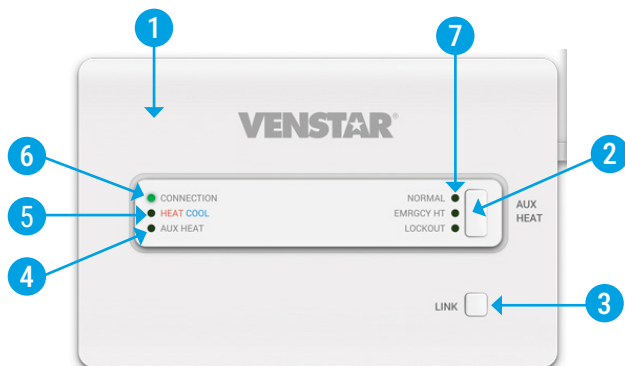
If you need to install your Explorer Portable Thermostat, visit page 37 for step-by-step installation instructions before proceeding.

To visit the product page and view tutorial videos, scan the QR code below.



BASE STATION BUTTONS & LED INDICATORS

Front Panel



1. **Front housing** - front housing snaps off of the base plate.
2. **AUX Heat Button** - controls operation of auxiliary heat.
3. **LINK Button** - used to pair devices or wifi network.
4. **AUX Heat Indicator** - illuminates when auxiliary heat is turned on.
5. **HEAT COOL Indicator** - illuminates **red** when heating, **green** when cooling.
6. **CONNECTION Indicator** - illuminates when base station is connected to home wifi network.
7. **AUX HEAT setting indicators** - controlled by AUX HEAT button.

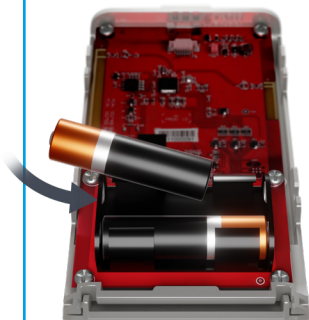
INSTALLING BATTERIES

The Explorer Portable uses AA alkaline batteries which are included in the box.

- 1 Gently Pull the tab on top until the front separates from the back.



- 2 Replace or insert new batteries.



- 3 Insert the bottom hinge on to the front and gently close until you hear a snap.



THERMOSTAT BUTTONS

Functions of Main Buttons.

From left to right.

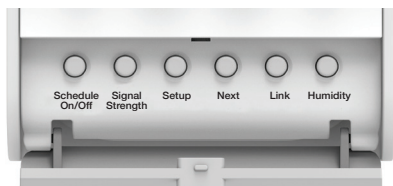
- **Mode** - Selects Heat, Cool, Auto or Off
- **Cooler/Warmer** - Adjusts temperature & settings
- **FAN** - Press the FAN button to toggle the fan between AUTO (runs only with heating or cooling)



Functions of buttons located behind the door

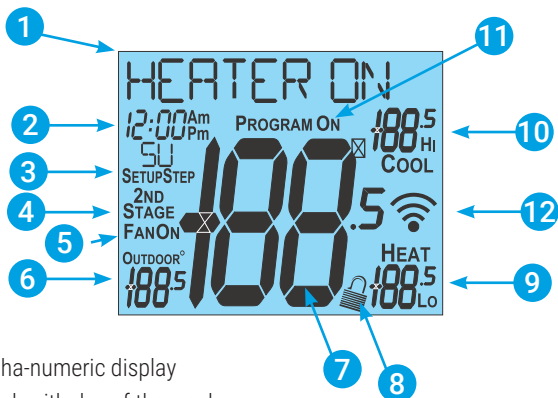
From left to right.

- **Schedule On/Off** - Turns on and off the stored time schedule.
- **Signal Strength** - Used to display the signal strength between the thermostat and the base station
- **Setup** - Used to enter the setup steps
- **Next** - This button is used to advance to the next step in the installation setup steps.
- **Link** - Used to link the thermostat to a base station.
- **Humidity** - Used to view and adjust humidification / dehumidification set points.



Note: Additional setup steps are to be found and configured in the mobile app

THERMOSTAT DISPLAY



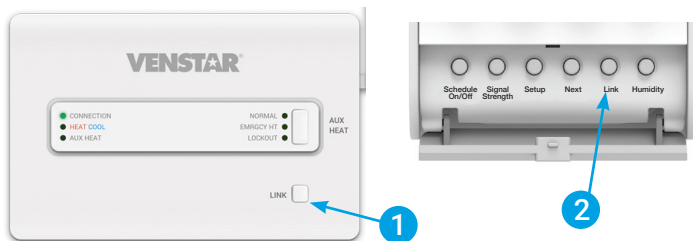
1. Alpha-numeric display
2. Clock with day of the week
3. Install setup step #
4. 2nd Stage of Cool or Heat indicator
5. Fan On Indicator
6. Outdoor temperature when connected to Skyport via Wi-Fi
7. Current room temperature
8. Keypad locked indicator
9. Desired heat set point
10. Desired cool set point
11. Time period program on

12. Wi-Fi Symbol Legend

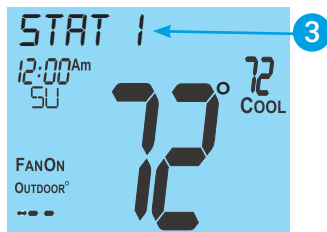
- No Symbol = Base station is not connected to Wi-Fi
-  = Base station is connected to Wi-Fi

LINKING A THERMOSTAT TO A BASE STATION

The thermostat must be 'Linked' with the base station to communicate properly.



1. Press the "LINK" button on the Base Station momentarily (not more than 2-3 seconds). All three AUX HEAT LED's will start to blink.
2. Place the thermostat directly next to the Base Station. The thermostat must be in close proximity to the Base Station during pairing, as the devices may not pair reliably if they are separated by several feet. Press the "LINK" button on the thermostat. "SEARCHING" will appear on the display. After a few seconds, the words "CONNECTING," then "PAIRING," will appear on the display. The Base Station LEDs will flash twice and then extinguish to confirm the link.
3. Upon successful linking, the thermostat's display will show the Unit # of the thermostat. You may assign a name to the thermostat, using Skyport Cloud Services.

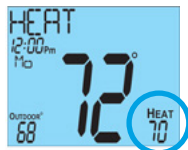


SYSTEM MODE SELECTION



Press the MODE button to select one of the following modes.* The mode appears briefly on the display.

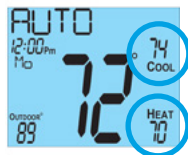
The **HEAT** setting indicates the desired room temperature for heater operation.



The **COOL** setting indicates the desired room temperature for air conditioning operation.



AUTO will automatically select heat or cool based on room temperature demand also known as Auto Changeover

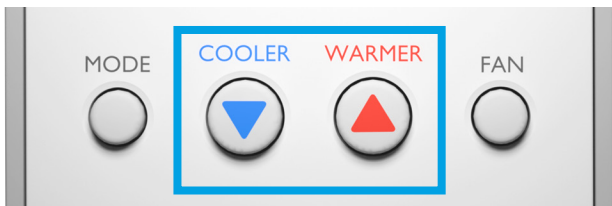


SYSTEM OFF indicates both heating and air conditioning systems are turned off.



*Not all Modes may appear, The default setting allows all mode options to appear but that can be adjusted to suit your preference via Skyport Cloud Services. Options are ALL MODES, HEAT only, COOL only or HEAT & COOL only.

TEMPERATURE ADJUSTMENTS



Once you have selected your desired operating mode, you can adjust the temperature setpoint.

Press the  **WARMER** button to raise the set temperature.

Press the  **COOLER** button to lower the set temperature.

When the system is in **HEAT** mode, the adjusted temperature represents the desired room temperature for heating.

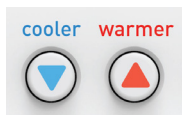
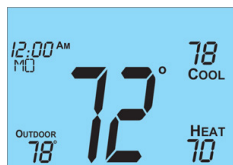
When the system is in **COOL** mode, the adjusted temperature represents the desired room temperature for cooling.

In **AUTO** mode, the thermostat automatically switches between cooling and heating, activating cooling when the temperature rises above the COOL setpoint, and heating when it falls below the HEAT setpoint.

The new temperature setting will appear on the display and the system will respond as needed to maintain your selected comfort level.

SET TEMPERATURE & FAN

Select the Desired Temperature



In any mode, adjust the Desired Set Temperature with the warmer and cooler buttons.

Pressing the Warmer/Cooler buttons in Auto mode will adjust both the desired Heat and Cool set points simultaneously.

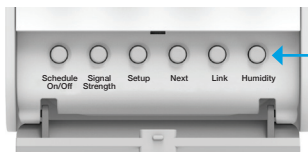
To adjust the Heat or Cool set points individually for Auto, exit Auto Mode and adjust the Heat or Cool set point while in Heat or Cool mode. This will adjust only the Heat or Cool set temperature. Then return to Auto mode.

Fan Operation



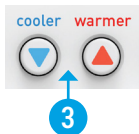
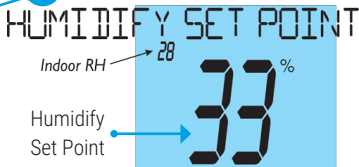
The FanOn icon indicates that the fan should be running, even if mode OFF. If you do not see this icon, the fan is in auto mode and will only run with a heat or cool demand

HUMIDITY: VIEW AND ADJUST SET POINTS



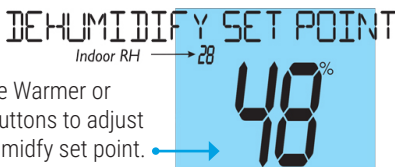
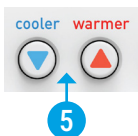
1. Press the Humidity button to view the indoor relative humidity as well as the HI/LO humidity values of the day. **Press Humid again at anytime to leave the humidity screens.**

2. While viewing the humidity screen, press the Next button to display the Humidification set point.



3. Press the Warmer or Cooler buttons to adjust the humidity set point.

4. Press the Next button to display the Dehumidification set point.



5. Press the Warmer or Cooler buttons to adjust the dehumidify set point.

Press Humidity again at anytime to save the setpoints screens.

HUMIDITY CONTROL NOTES

If a humidifier or external dehumidifier is to be controlled, the W3/AUX terminal must be configured for that function in Skyport. Note that the base station can use any connected air conditioner to dehumidify without the need for a dedicated piece of equipment. Described below, this will not require the use of the W3/AUX terminal.

NOTE : all of the following options are configured within Skyport

If the Aux usage is configured to Humidify.

- **Humidifier to Run Only when there is a Heat Demand**, ON or OFF. When ON is selected the W3/AUX output will be asserted if the humidity is lower than the set point and the heater is active. If OFF is selected the W3/AUX output will be asserted if the humidify is lower than the setpoint irrespective of whether the heater is or is not running.
- **Run Fan with Humidify Demand**, ON or OFF. When ON is selected the indoor blower will run whenever the humidifier is turned on.

If the AUX usage is configured to Dehumidify then the Aux terminal can be connected to a compatible air handler with a Dehum terminal. It can also be used to turn on an external dehumidifier.

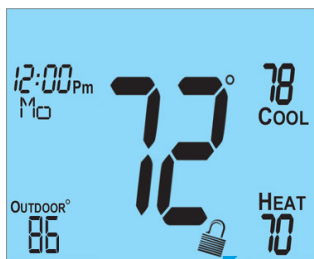
Dehumidification control options that do not use the AUX output.

- **Cool to Dehumidify, ON or OFF.** (This feature is available even if Aux is not set to Dehum) When ON is selected and the humidity is higher than the Dehumidification set point the A/C may turn on and "Cool to Dehumidify" with a maximum overcool temperature set in the following step.
- **Maximum Overcool Temperature**, 0 - 20 degrees. When Run to Dehumidify is active, this is the amount of cooling the A/C is allowed to run under the Cool set point.

SECURITY KEYPAD LOCK

KEYPAD LOCK - To prevent unauthorized use of the thermostat, the front panel buttons may be disabled. To disable, or 'lock' the keypad, press and hold in the Mode button. While holding the Mode button in, press the Up and Down buttons simultaneously. The Locked icon will appear on the display.

Press all 3 buttons as described above for Keypad Lockout.



• Locked Icon

To **unlock** the buttons, again press and hold the Mode button. While holding the Mode button in, press the Up and Down buttons simultaneously. The **Locked** icon will disappear from the display.

THERMOSTAT DISPLAY MESSAGES

PRIORITY OF MESSAGES IN THE SCROLLING DISPLAY

UNPAIRED - This indicates that the thermostat has not been paired to a base station.

A blue rectangular box containing the word "UNPAIRED" in white, bold, sans-serif capital letters.

OFFLINE - This indicates that the thermostat cannot communicate with the base station it was paired to. If the base station had been unpowered for more than an hour, press any button on the thermostat a couple of times to speed up the reconnection process

A blue rectangular box containing the word "OFFLINE" in white, bold, sans-serif capital letters.

STAT 1 - This is the assigned name of the thermostat. It is advisable to alter this name via Skyport to better reflect where the thermostat will be located.

A blue rectangular box containing the text "STAT 1" in white, bold, sans-serif capital letters.

EQUIPMENT STATUS - The display will announce the status of the heater, or air conditioning equipment. This will include Aux Heat, 2nd/3rd/4th Stage if so configured in Skyport

A blue rectangular box representing a thermostat display. At the top, it says "HEATER ON" in white. Below that, on the left, is "12:00 PM" and "MON" in white. In the center is a large "72°" in white. At the bottom left, it says "OUTDOOR 48" in white. At the bottom right, it says "HEAT 75" in white.

THERMOSTAT DISPLAY MESSAGES

EMERGENCY HEAT

Emergency Heat locks out the compressor of a heat pump, and only allows gas or electric auxiliary heat connected to W2 and W3/AUX, to satisfy a heating demand. The display of the thermostat will announce when the equipment is heating and the Base Station switch is in the Emergency Heat position.

This feature only applies to heat pump equipment.



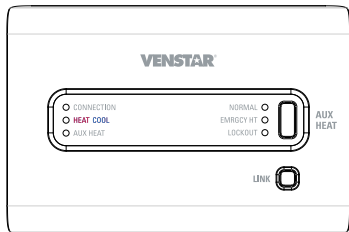
Emergency heat is accessed by pressing the AUX HEAT button on the Base Station.

When emergency heat is active the LED labeled "EMRGCY HT" will be illuminated on the Base Station.

BASE STATION LED BEHAVIOR & MEANINGS

LED Indicators

- **EMRGCY HT + LOCKOUT**
blinking fast (500ms on/500ms off) - VenNET pairing mode active
- **CONNECTION LED** Off - WiFi not connected
- **CONNECTION LED** On - WiFi connected, Skyport not connected
- **CONNECTION LED** blinking fast in series of 3 - WiFi AP mode active
- **CONNECTION LED** blinking slow (2sec on/2sec off) - WiFi connected, Skyport connected
- **CONNECTION LED** blinking fast (500ms on/500ms off) - OTA is active and downloading a firmware update over the air



Button Operations

- **LINK** short press - enable/disable VenNET pairing mode to join portable thermostat and sensors
- **LINK** long (>10sec) press - enable/disable WiFi AP mode with 10 minutes timeout to join base station to home WiFi network (Note: WiFi AP and VenNET pairing modes are mutually exclusive)
- **AUX HEAT** short press - cycle between **NORMAL** -> **EMRGCY HT** -> **LOCKOUT** modes.

UNDERSTANDING SYSTEM OPERATION

A Base Station can communicate with up to six wireless thermostats or VenNet sensors. In a home with multiple rooms, each thermostat can be installed in a different area while still controlling the same heating and cooling system through the shared Base Station. For proper operation, all thermostats and sensors must be linked to the Base Station.

System Configuration

Although the system can be configured using the Skyport Mobile or Web App, all setup parameters including system configuration and Time Period Schedules are stored in the Base Station.

The Base Station also provides each thermostat with the correct time and day information. After any thermostat power loss, it will automatically re-sync, and the Base Station periodically refreshes the time on all linked devices.

Which Thermostat Is in Control

When multiple thermostats are linked, only one thermostat controls the HVAC system at any given time.

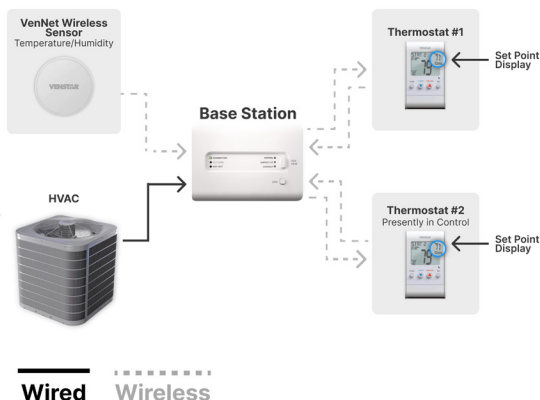
- The thermostat in control displays the active setpoints.
- Thermostats not in control hide their setpoints until they take control.

Control is transferred in two ways:

1. **Manual Control:** The most recently pressed button (Warmer, Cooler, Mode, Fan) determines which thermostat takes control.
2. **Scheduled Control:** If a Time Period Schedule is running, each daypart can designate which thermostat or sensor should serve as the active temperature source. This allows automatic handoff—for example, switching control from a downstairs thermostat during the day to an upstairs thermostat at night.

UNDERSTANDING SYSTEM OPERATION

When a thermostat takes control, the Base Station sends it the current setpoints, mode, and fan status. These values are removed from the displays of thermostats that no longer have control. Due to battery conservation, updates may take several seconds to appear.



System Operation

During heating or cooling demands, the Base Station communicates status messages (such as Heating or Cooling On) to the thermostat in control.

The Base Station also manages system protections, including cycle timers, compressor lockouts, and heat/cool changeover delays. In addition, it periodically verifies that valid temperature demands are being received from a linked thermostat or sensor to prevent prolonged or "runaway" equipment operation.

Multi-System Homes

In homes with more than one HVAC system, additional Base Station/thermostat sets may be used. Each Base Station must be linked only to the thermostats and sensors that belong to its own HVAC equipment.

MINIMUM HEAT/COOL SET POINT DIFFERENCE

The Heat and Cool set points will not be allowed to come any closer to each other than the value set in Installation via Skyport in the settings > deadbands section. This minimum difference is enforced during any Auto Changeover operation.

DUAL SETPOINT BEHAVIOR

The adjustable set point range is: 35 - 99 degrees in Fahrenheit and 7 - 35 degrees in Celsius. When in the modes Heat or Cool, this adjustable range is unhampered.

When adjusting in Auto mode, including programming time periods, the thermostat will not allow the Heat set point to get closer to the Cool set point than the value programmed as the minimum difference (see above).

When entering the Auto mode from Cool, the Heat and Cool set points will remain spread apart by the amount that they were adjusted, prior to entering Auto. For example: If the Cool set point was set to 80 while in the Cool mode and the Heat set point was adjusted to 70 while in the Heat mode, upon entering the Auto mode the Heat and Cool set points will be 80 and 70. **Both** set points would then move up and down together, (in this example spread by 10 degrees), by pressing the up or down buttons.

To move the Heat and Cool set points closer together, enter the Cool or Heat mode by pressing the Mode button, then adjust the set point(s) before returning to auto mode. Heat is limited to how close it can come to Cool (described above).

SET UP WI-FI & SKYPORT ACCOUNT

Your Explorer Portable works right out of the box, but connecting it to Skyport unlocks a whole new level of convenience and control.

With Skyport, you can adjust temperatures from anywhere, view system status at a glance, receive helpful alerts, and keep your home comfortable whether you're on the couch or away from home. It's fast, free, and designed to make your thermostat smarter and your experience smoother.

To get started, choose the appropriate scenarios below

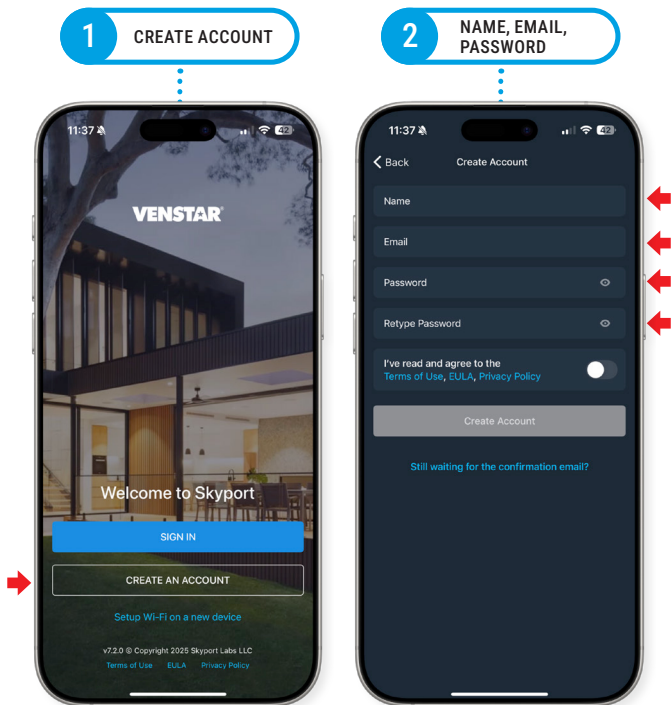
- **New Account User:** If you have not registered for a Skyport account, start at step 1
- **Existing Account User:** If you have a Skyport Account, start at step 11
- **Connect the thermostat to Wi-Fi Only:** From the Skyport welcome screen (Step 1), select Setup Wi-Fi on a new device and then complete Steps 12.

Download from your respective app store by using the QR codes below.



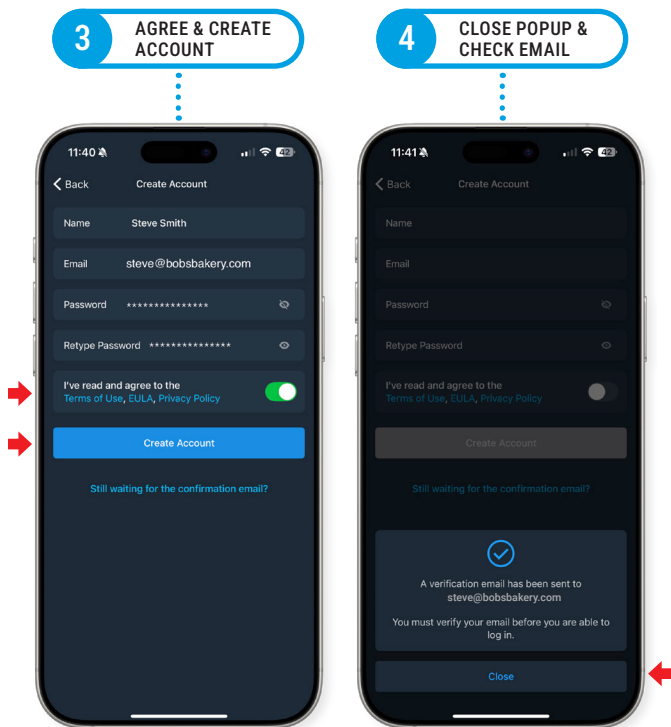
CREATE SKYPORT ACCOUNT

1. Select the Create Account button.
2. Input your name, email address, and password.



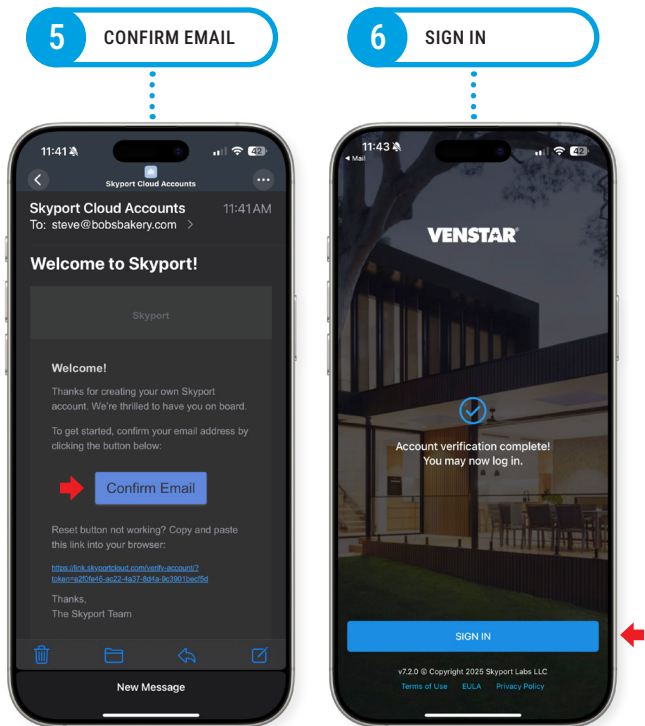
CREATE SKYPORT ACCOUNT

3. Agree to the terms of service and select the Create Account button.
4. Close the popup and check your email for the verification email.



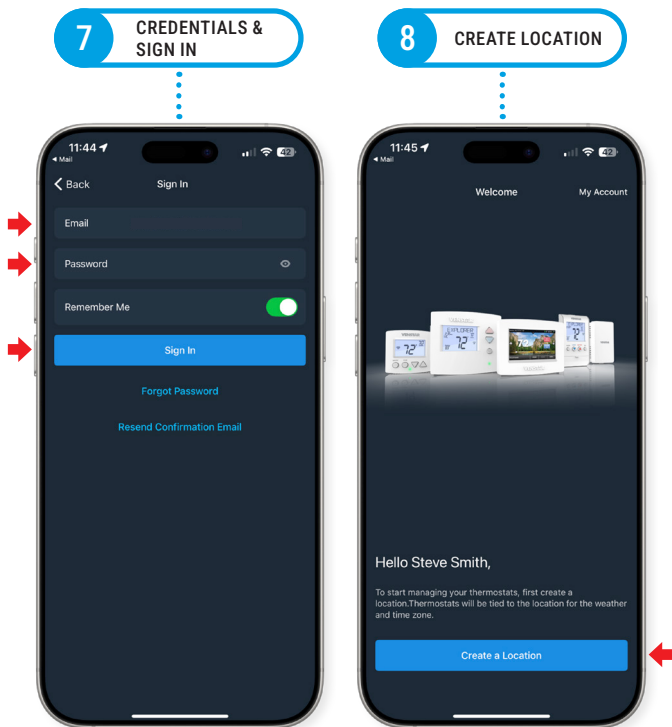
CREATE SKYPORT ACCOUNT

5. Once you receive the email, select the confirm email button.
6. Your account is now verified. Press the Sign In Button



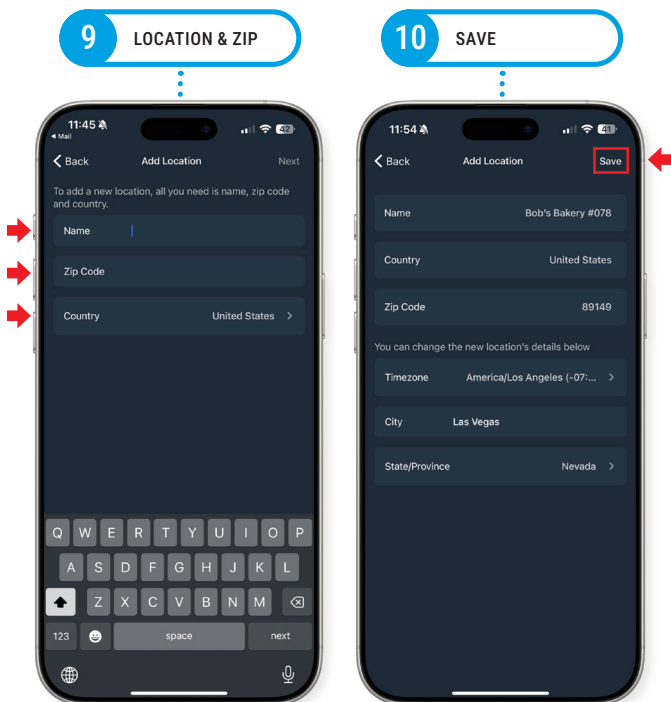
CREATE SKYPORT ACCOUNT

7. Input your credentials. When finished, Select the Sign In button.
8. Select the Create Location button.



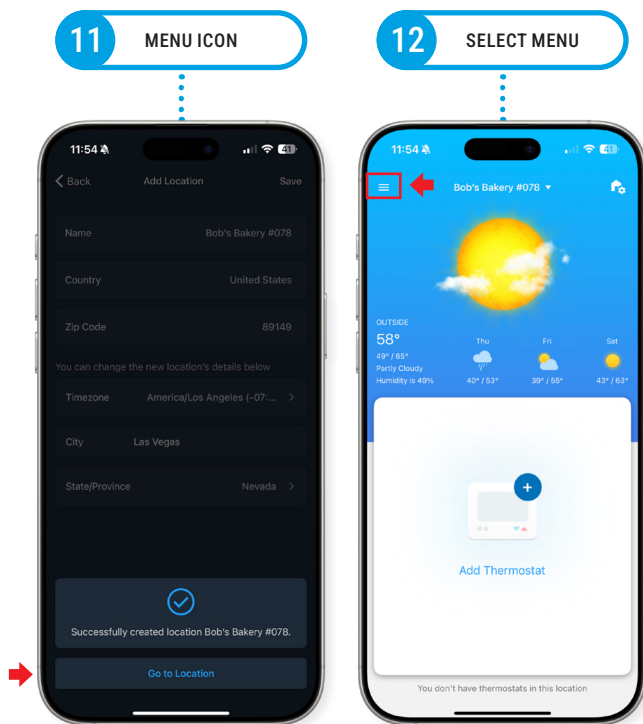
CREATE SKYPORT ACCOUNT

9. Input a location name such as Home. Input location zip code. Select next.
10. Confirm the information is correct, and press save.



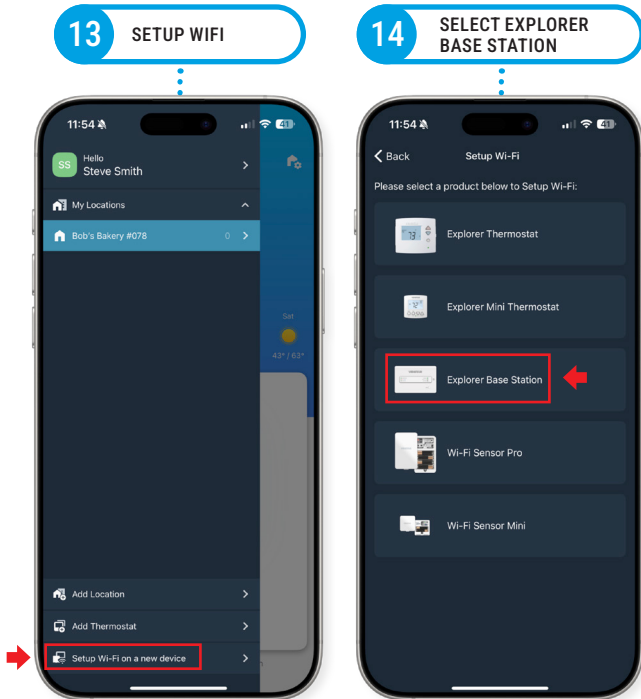
CONNECT THE THERMOSTAT TO WI-FI

11. Go to Location
12. Select the menu icon in the top left.



CONNECT THE BASE STATION TO WI-FI

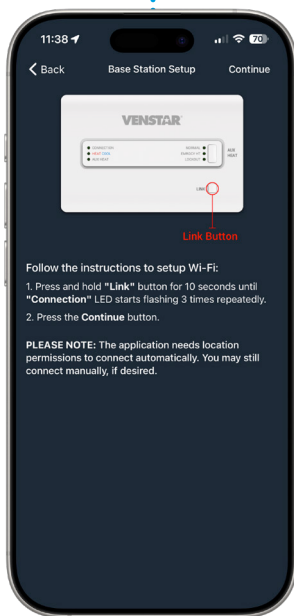
13. Select Setup Wi-Fi on a new device.
14. Select the Explorer Base Station option.



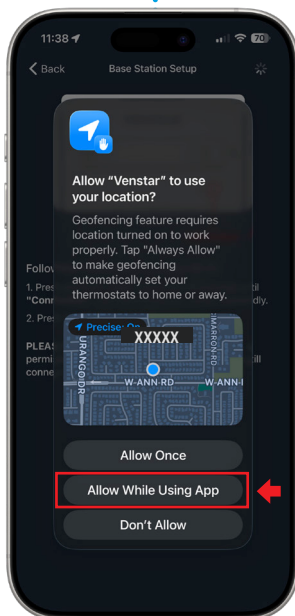
CONNECT THE BASE STATION TO WI-FI

15. Press and hold the "LINK" button until the "Connection" LED starts flashing repeatedly.
16. To utilize advanced Skyport features such as Geofencing, the app needs to use your location. Press Allow While Using APP.

15 LINK BUTTON FLASHING, CONTINUE



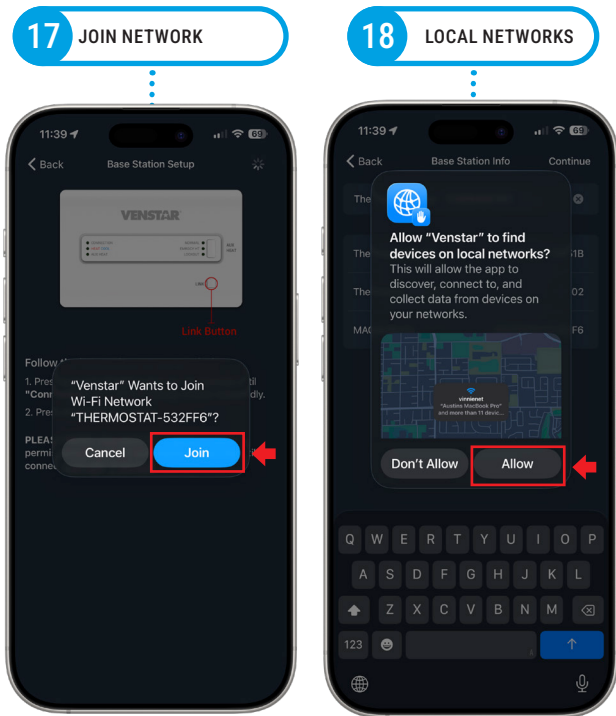
16 ALLOW LOCATION



CONNECT THE BASE STATION TO WI-FI

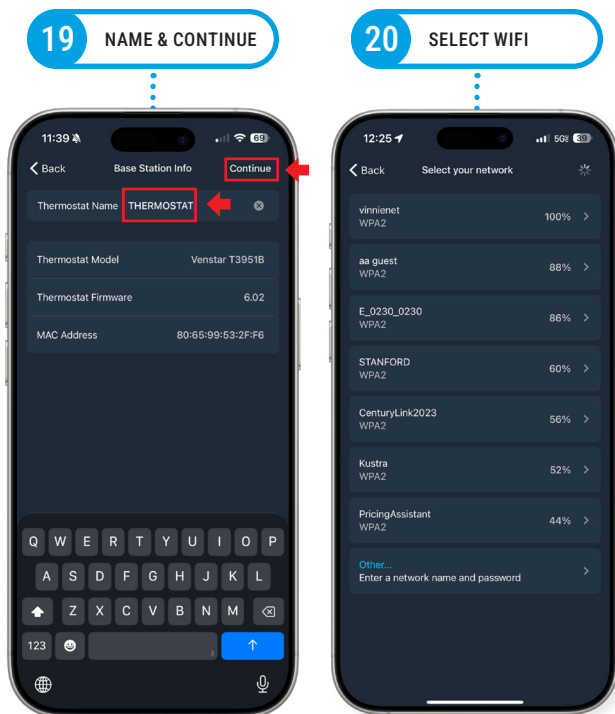
17. To Connect the Base Station to your local network, press the join button..

18. If prompted to allow Venstar to find devices, select Allow.



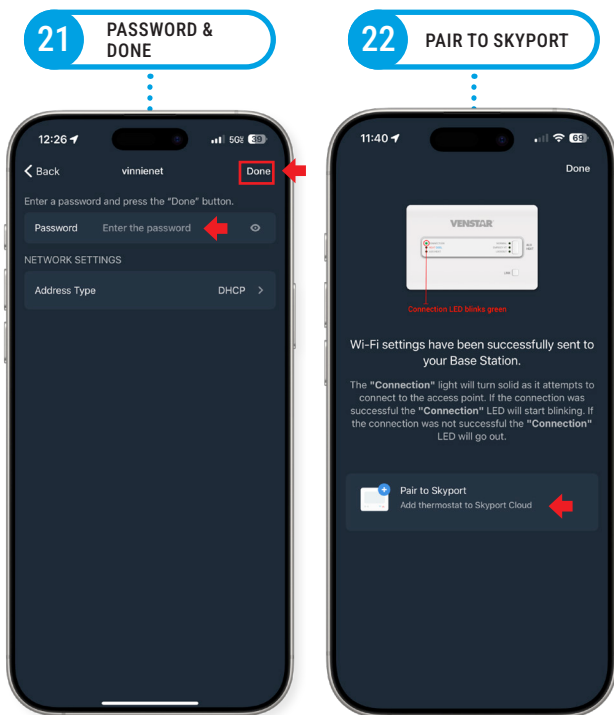
CONNECT THE BASE STATION TO WI-FI

19. Give your base station a name, such as Davis house. When finished, press Continue.
20. Select your preferred Wi-Fi network.



CONNECT THE BASE STATION TO WI-FI

21. Input your Wi-Fi network password. Press Done.
22. The "Connection" LED will turn solid, indicating your thermostat is now connected to Wi-Fi. Press Pair to Skyport

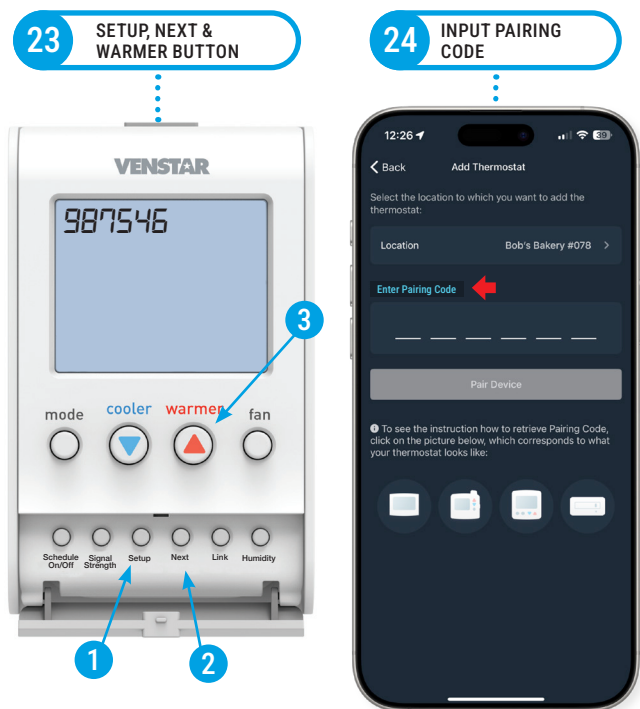


LINK YOUR THERMOSTAT TO SKYPORT

23. On the thermostat:

1. Press the "Setup" Button,
2. Press the "Next" Button if necessary to reach Setup Step 3.
3. Press the Warmer button. After a few seconds, a 6-digit code will appear on the screen if not already paired to Skyport

24. Input Pairing Code



LINK YOUR THERMOSTAT TO SKYPORT

23. Your thermostat is now linked to your Skyport account.



SKYPORT BASIC OPERATION

The web app, or Skyweb, and the mobile app are designed to have a similar look and feel. Some features are only available on Skyweb. If you have multiple thermostats on your account, you can view many at the same time on Skyweb, but the mobile app can only display a single thermostat at a time. Swipe left/right to show other thermostats. You can control the basic functions such as changing the desired temperature, operating mode or time period schedule as well as setup alerts.

To access more functions on Skyweb, look for “ ” at upper right corner. A quick summary of available features is shown below. Remember that the mobile app version does not have all of the features that are available on Skyweb.

To access more functions on the mobile app, press the MORE button (...) then the icon for the base station.

Thermostat info – allows you to name the thermostat, view software revision

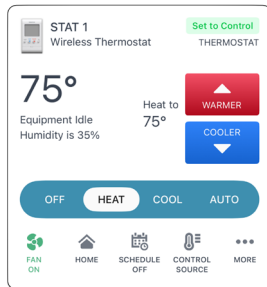
Runtimes – view the two week heat or cool runtime of this base station

Sensors – view the current and daily min/max temperature and humidity values from the base station, thermostats or paired VenNet sensors.

Alerts – view and edit alerts and setup email notifications

Schedule – view/edit the time period schedule

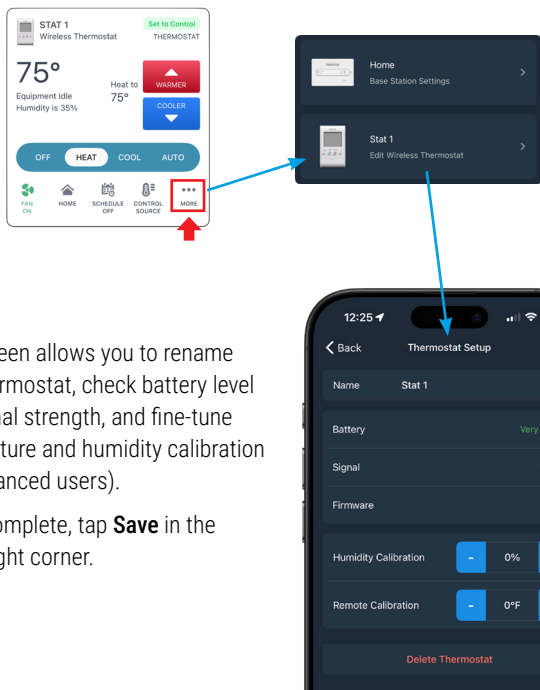
Settings – view/edit settings within the thermostat



SKYPORT THERMOSTAT SETUP

View key information, such as battery level, signal strength, and edit the thermostat name directly in the Skyport app.

From the Skyport app, tap **MORE** (...) in the bottom-right corner, then select your thermostat. The Thermostat Setup screen will be displayed.



This screen allows you to rename your thermostat, check battery level and signal strength, and fine-tune temperature and humidity calibration (for advanced users).

When complete, tap **Save** in the upper-right corner.

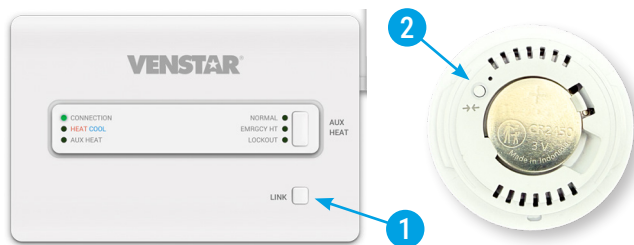
ACCESSORIES: VENNET SENSOR

Extend your system's flexibility with the ACC-VNTH1 Wireless VenNet Sensor. Easily pair one (or more) VenNet sensors to monitor OR control temperature and humidity from any indoor space bringing greater comfort, accuracy, and control to your home.



Pairing to the Explorer Portable System

1. Press the Link button on the base station, the "EMRGCY HT" and "LOCKOUT" LED's will start to blink.
2. Move the VenNet sensor to within a foot of the base station, then press and hold the link button until the LED starts blinking red. When pairing is complete, the LED will blink green then stop. The blinking LED's on the Base Station turn off. The sensor is now paired.

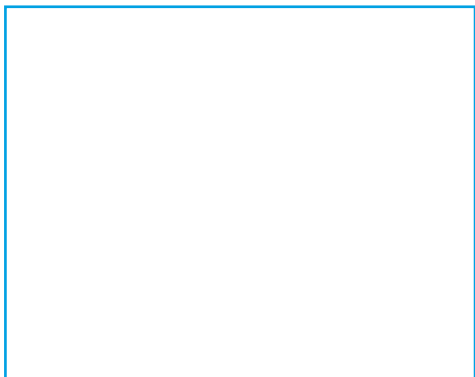


Unpairing the Sensor

1. On the Base Station, Press and hold the "Link" button then press and hold and "AUX HEAT" button until the "EMERGNCY HT" and "LOCKOUT" LED's Light solid.
2. Move the VenNet sensor to within a foot of the base station, then press and hold the link button until the LED starts blinking red. When the red LED on the sensor stops blinking and the "EMERGNCY HT" and "LOCKOUT" LED's turn off, the sensor will be unpaired.

ACCESSORIES: PLUG IN POWER

Thermostat Battery Eliminator, ACC-ADAPT5V. This accessory allows the wireless thermostat to use house supplied power. When this accessory is powering the thermostat, this is the only time you may have the back light on full time. You select backlight on/off and intensity via skyport.



BASE STATION INSTALL INSTRUCTIONS

Remove and Replace the old thermostat

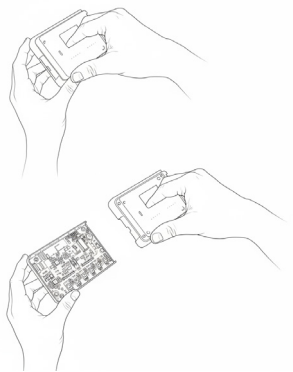
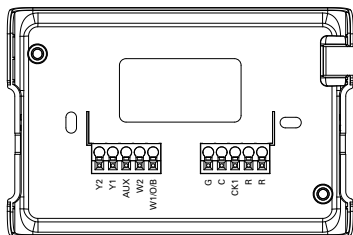
To install the thermostat properly, please follow these step by step instructions. If you are unsure about any of these steps, contact a qualified technician for assistance.

- Assemble tools: Flat blade screwdriver, wire cutters and wire strippers. (Phillips screwdriver and small screwdriver for wire terminals)
- Make sure your Heater/Air Conditioner is working properly before beginning installation of the thermostat.
- Carefully unpack the thermostat. Save the screws, any brackets, and instructions.
- Turn off the power to the Heating/Air Conditioning system at the main breaker fuse panel. Most residential systems have a separate breaker switch for disconnecting power to the furnace.
- Remove the front cover of the old thermostat. If it does not come off easily, check for screws.
- If you have a smart phone handy, take a photo of the wiring for future reference.
- Loosen the screws holding the thermostat base or subbase to the wall and lift away.
- Disconnect the wires from the old thermostat. Tape the ends of the wires as you disconnect them, and mark them with the letter of the terminal for easy reconnection to the new thermostat.
- Keep the old thermostat for reference purposes, until your new thermostat is functioning properly.

BASE STATION INSTALL INSTRUCTIONS

The Explorer Base Station Backplate

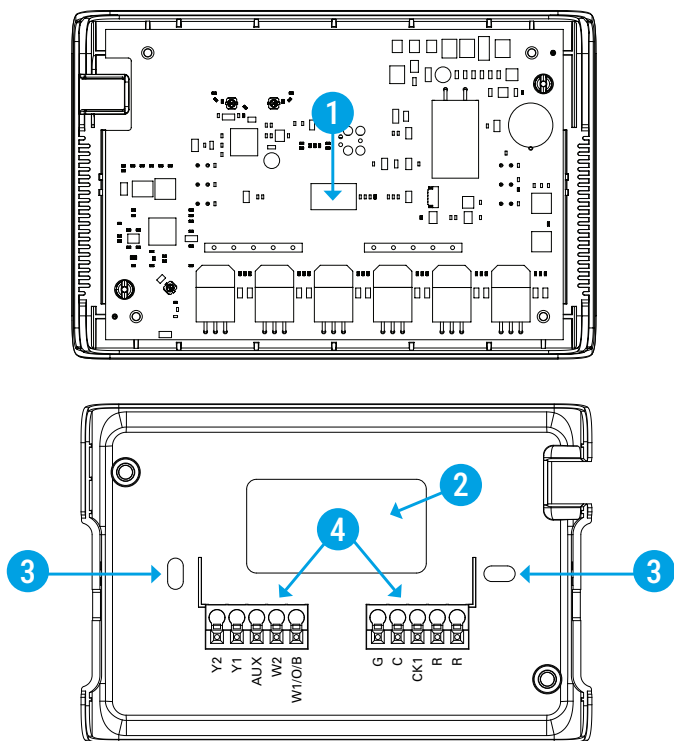
To remove the Base Station backplate:
Gently separate the front from the Base Station by pulling from the center.



Y2	2nd Stage Compressor
Y1	1st Stage Compressor
AUX	Auxiliary Output
W2	2nd Stage Heat
W1/O/B	1st Stage Heat - or Reversing Valve (when connected to a heat pump)
G	Fan
C	24Vac Common
CK1	Dry Contact
R	24Vac Power.

Important - This thermostat requires both the R (24vac Return) and the C wires (24vac Common) to be connected to the back plate terminals for the base station to operate properly.

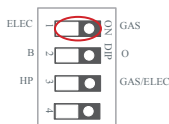
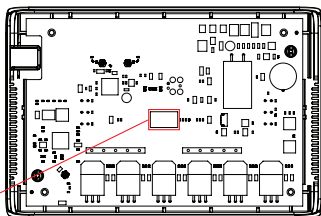
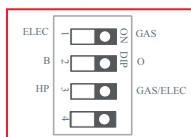
REAR HOUSING & CIRCUIT BOARD



1. Dip Switches
2. Wire Entrance
3. Mounting Holes
4. Wire Terminals

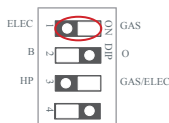
SPECIFY GAS, ELECTRIC, HEAT PUMP

Ensure that the Dip Switches are set correctly for your equipment. The Dip Switches are located on the backside of the base station circuit board as shown.



1. When GAS/EL or HP is set for GAS/EL:

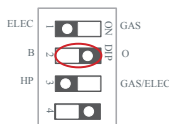
This switch (GAS or ELEC) controls how the base station will control the Fan (G) terminal in heating mode. When GAS is chosen, the base station will not energize the Fan (G) terminal in heating. When ELEC is chosen the base station will energize the fan in heating.



2. When GAS/EL or HP is set for HP:

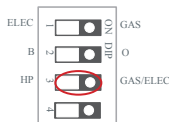
This switch (GAS or ELEC) defines the Aux Heat type. When GAS is chosen, the auxiliary heat will not be allowed to run during heat pump operation.

When ELEC is chosen, up to two stages of auxiliary strip heat will be allowed to run.



For Heat Pump Only

When the GAS/EL or HP dip switch is configured for HP, this dip switch (O or B) must be set to control the appropriate reversing valve. If O is chosen, the W1/O /B terminal will energize in cooling. If B is chosen, the W1/O /B terminal will energize in heating!



This dip switch configures the base station to control a conventional gas/electric system or a heat pump. If your system is anything other than a heat pump, leave this switch set for GAS/EL

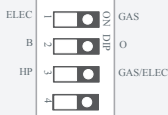
DIP SWITCH CONFIGURATION

Sample Wiring Diagrams – Conventional Heating and Cooling Systems

3 Wire, Heat Only

Residential & Commercial
1 Stage Heating with
no Fan.

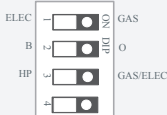
R 24VAC Power
C 24VAC Common
W1/O/B 1st Stage Heat



4 Wire, Cool Only

Residential & Commercial
1 Stage Cooling.

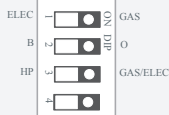
R 24VAC Power
C 24VAC Common
Y1 1st Stage Cool
G Fan



5 Wire, 1 Stage Cooling, 1 Stage Heat

Residential & Commercial
1 Stage Cooling, with 1
stage Gas Heat.

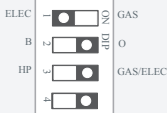
R 24VAC Power
C 24VAC Common
W1/O/B 1st Stage Heat
Y1 1st Stage Cool
G Fan



5 Wire, 1 Stage Cooling, 1 Stage Heat

Residential & Commercial
1 Stage Cooling, with
1 stage Electric Heat.

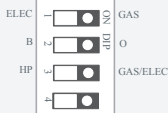
R 24VAC Power
C 24VAC Common
W1/O/B 1st Stage Heat
Y1 1st Stage Cool
G Fan



8 Wire, 2 Stage Cooling, 3 Stage Heat

Residential & Commercial
2 Stage Cooling, with
3 stage Gas Heat.

R 24VAC Power
C 24VAC Common
W1/O/B 1st Stage Heat
W2 2nd Stage Heat
AUX 3rd Stage Heat
Y1 1st Stage Cool
Y2 2nd Stage Cool
G Fan



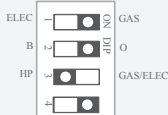
DIP SWITCH CONFIGURATION

Sample Wiring Diagrams – Heat Pump Systems

**5 Wire, 1 Stage Cooling,
1 Stage Heat**

**Residential & Commercial
Heat Pump with 0 Reversing
Valve**

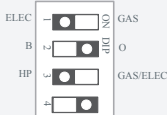
R 24VAC Power
C 24VAC Common
W1/O/B Reversing Valve
1st Stage
Y1 Compressor (Cool
or Heat)
G Fan



**6 Wire, 1 Stage Cooling,
2 Stage Heat**

**Residential & Commercial
Heat Pump with 0 Reversing
Valve**

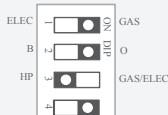
R 24VAC Power
C 24VAC Common
W1/O/B Reversing Valve
1st Stage
Y1 Compressor (Cool
or Heat)
W2 Aux Heat
G Fan



7 Wire, 2 Stage Cooling, 1 Stage Heat

**Residential & Commercial Heat Pump with 0
Reversing Valve**

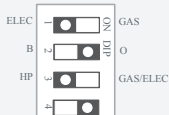
R 24VAC Power
C 24VAC Common
W1/O/B Reversing Valve
Y1 1st Stage Compressor (Cool or Heat)
Y2 2nd Stage Compressor (Cool or Heat)
G Fan



8 Wire, 2 Stage Cooling, AUX

**Residential & Commercial Heat Pump with 0
Reversing Valve**

R 24VAC Power
C 24VAC Common
W1/O/B Reversing Valve
W2 3rd Stage Heat
AUX 4th Stage Heat
Y1 1st Stage Compressor (Cool or Heat)
Y2 2nd Stage Compressor (Cool or Heat)
G Fan

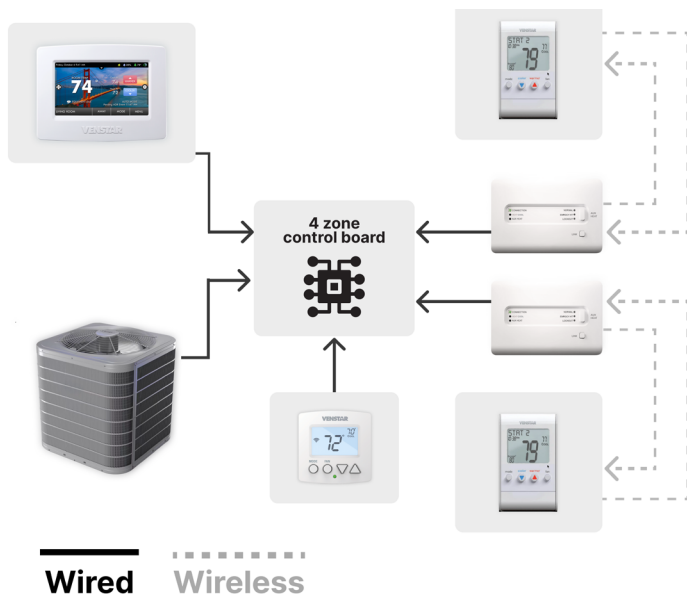


Note: When the unit goes into 4th stage heating, there is no 4th stage indicator, the display will still show 3rd stage.

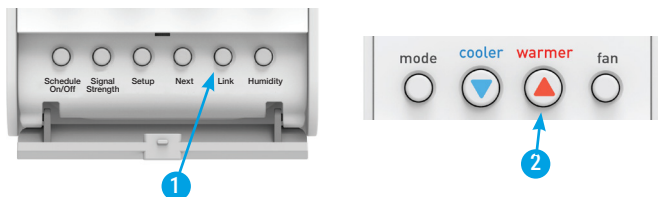
ADDITIONAL USES - ZONING

This wireless thermostat may be used with many popular zoning control boards that replace 24 VAC thermostats. Each zone will require a Base Station to receive the commands from the wireless thermostat and assert the proper outputs to the zone control board for that zone.

A sample 4 zone control board with 2 wireless and 2 wired thermostats is illustrated below.



UNLINK A THERMOSTAT



To Unlink a Thermostat from the Base Station:

1. Press the "Link" button on the thermostat. "Device Already Paired" Press Warmer Button to Confirm Device will be UnPaired" scrolls on the screen.
2. Press the "WARMER" button. UNPAIRING will appear on the screen. After the unpairing has completed, the thermostat will display NOT PAIRED on the screen.

RESTORE FACTORY DEFAULTS

THERMOSTAT FACTORY DEFAULTS / RESET

If, for any reason it is desirable to return all stored settings back to the factory default settings, press and hold the Setup button for 5 seconds.

All the display icons will appear on the display. After all the icons appear on the display, release the Setup button.

SETUP

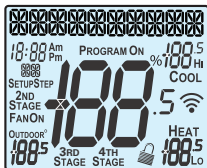


1. Press & hold the Setup button until you see this screen.

FAN



2. Press and hold the FAN button until ALL and FD is displayed. You now have the option of restoring the factory settings to Wi-Fi and thermostat (ALL), thermostat only (STAT), configured Wi-Fi network only (Wi-Fi) or connected VenNet sensors only (SENSORS)
3. Select one of the options using the Up or Down buttons.



FAN

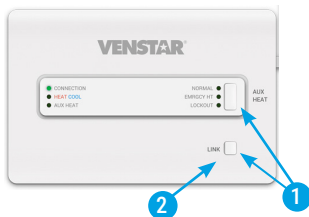


4. Press Fan for 2 seconds to restore the factory settings.



BASE STATION FACTORY DEFAULTS / RESET

1. Press and hold LINK and AUX HEAT buttons until the "EMRG CY HT", and "LOCKOUT" LED's light up (10 sec).
2. Release both buttons. Then hold the LINK button until EMRG CY HT + LOCKOUT LED's blink (5 sec).



CALIBRATE SENSORS & TECHNICIAN SETUP

To enter Technician Setup, press the Setup button for 5 seconds. After all the icons appear, press Mode. The firmware version number of the Base Station will appear in the scrolling display.

Press MODE once more to return to normal operation or press NEXT to enter the technician steps, including sensor calibration. Keep pressing NEXT to move through these steps:

- Thermostat firmware revision.
- VenNet driver firmware revision.
- Base Station DIP switch settings for equipment type.
- Equipment test. This should be used carefully as it allows the base station outputs to stage on/off without regard to temperature or equipment timers. This should ONLY be used by a qualified HVAC technician to assist in debugging equipment or wiring issues.
- Base Station temperature sensor calibration. This sensor resides in the base station and may not be well placed to sense room temperature. This is selectable to be used when communication from the thermostat (or VenNet sensor) in control has ceased.
- Base Station humidity sensor calibration.
- RF stat temperature sensor calibration. Applies to this specific thermostat only.
- RF stat humidity sensor calibration.

Press MODE at any time to return to normal operation.

GLOSSARY OF TERMS

Auto-Changeover: A mode in which the thermostat will turn on the heating or cooling based on room temperature demand.

Base Station: The component that is connected to, and its outputs control, the HVAC system. The base station takes direction from the wireless thermostat(s) or from Skyport.

Cool Setpoint: The warmest temperature that the space should rise to before cooling is turned on (without regard to deadband).

Deadband: The number of degrees the thermostat will wait, once a setpoint has been reached, before energizing heating or •cooling.

Dehumidify: To reduce the amount of moisture in the air.

Differential: The forced temperature difference between the heat setpoint and the cool setpoint.

Heat Setpoint: The coolest temperature that the space should drop to before heating is turned on (without regard to deadband).

Humidify: To increase the amount of moisture in the air.

Icon: The word or symbol that appears on the thermostat display.

Mode: The current operating condition of the thermostat (i.e. Off, Heat, Cool, Auto, Program On).

Non-Programmable Thermostat: A thermostat that does not have the capability of running Time Period Programming.

Programmable Thermostat: A thermostat that has the capability of running a schedule.

Reheat: Running the cooling and 2nd stage strip heaters at the same time in order to dehumidify the air without cooling down the room temperature.

Temperature Swing: Same as Deadband.

Time Period Programming: A program that allows the thermostat to automatically adjust the heat setpoint and/or the cool setpoint based on the time of the day.

Patents Issued & Pending

Part Number 88-1597

Rev. 1 05/25/26

VENSTAR®