

VENSTAR®

RESIDENTIAL MODEL

T3900

DIGITAL THERMOSTAT
Up To 4 Heat & 2 Cool Stages
Dual Fuel Capable with **Humidity Control**
Time Period Programming



EXPLORER®

Simply connected.

*Anytime. Anywhere.**

Optional accessories
available, including Wi-Fi



OWNER'S MANUAL AND INSTALLATION INSTRUCTIONS





CAUTION

Follow the Installation Instructions before proceeding. Set the thermostat mode to “OFF” prior to changing settings in setup or restoring Factory Defaults.

This Explorer thermostat 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. 12. Firmware releases after rev. 12 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 12.



Glossary of Terms

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

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 Time Period Programming.

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.

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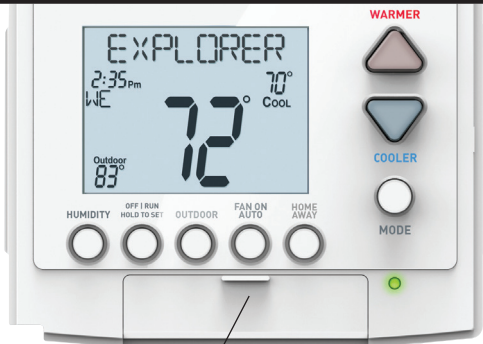
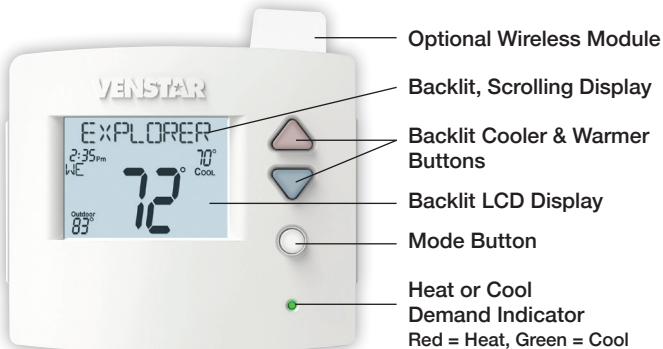
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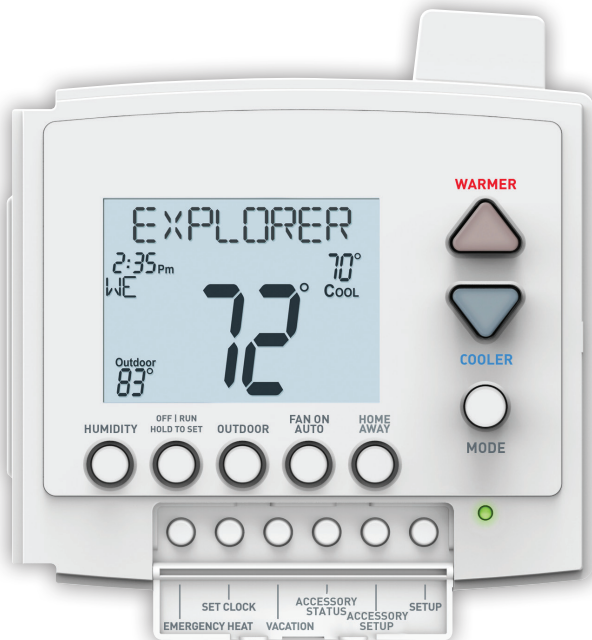
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Get To Know Your Thermostat



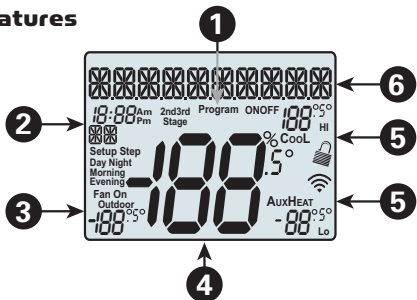
Get To Know Your Thermostat



Setup Buttons

Get To Know Your Thermostat

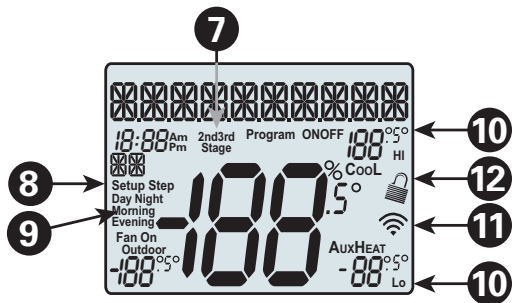
Display Features



- 1 Program icon**—Indicates that Time Period Programming is running or is enabled to be set.
- 2 Clock with Day of the Week**—Indicates the current time and day. This clock is also used to program the time period schedules.
- 3 Outdoor icon**—Indicates the temperature displayed is from the optional outdoor sensor.
- 4 Room Temperature Display**—Indicates the **current** room temperature and displays the outdoor temperature when selected.
- 5 Mode Indicators**
Selects the operational mode of the equipment.
 - HEAT** - Indicates the heating mode.
 - COOL** - Indicates the air conditioning mode.
 - HEAT & COOL** - Indicates the system will automatically change-over between heat and cool modes as the temperature varies.
 - OFF** - Indicates heating and cooling are turned off.
- 6** The scrolling display will be used to help you easily navigate the setup screens in the thermostat.

Get To Know Your Thermostat

Display Features



7 2nd and 3rd Stage icons

Indicates what stage of cooling or heating is currently energized.

8 Setup Step icon

Indicates the step number when the thermostat

9 Morning, Day, Evening & Night icons

Indicates the day part of the time period program is in the setup mode.

10 Desired Set Temperature

Indicates desired room temperature(s). Also displays the highest and lowest temperatures for the day.

11 Wi-Fi icons

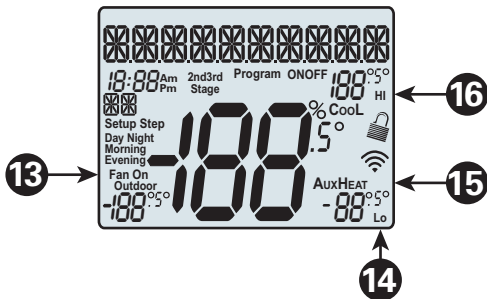
One dot indicates the thermostat recognizes the wireless module. The **full** icon indicates the thermostat is currently connected to the Local access point, via the optional Wi-Fi Module.

12 icon

Indicates the keypad has been locked.

Get to know your thermostat

Display Features



13 Fan On icon –

Indicates constant, continuous fan operation.

When **Fan On** is not lit - indicates the fan will only operate when necessary to heat or to cool.

14 Lo icon

Indicates the lowest recorded outdoor temperature for the day.*

15 AuxHeat icon

Indicates 2nd stage electric strip heat is being used when the thermostat is programmed for Heat Pump operation. Only the Aux icon will appear during Cool to Dehumidify to indicate Reheat operation.

16 Hi icon

Indicates the highest recorded outdoor temperature for the day.*

* *Hi and Lo Temperatures for the day, reset at midnight.*

Quick Start

During Setup and Programming

Press the **WARMER** or **COOLER** buttons to modify the selection.

Press the **MODE** button to advance and confirm through the setup steps.

Setting the Clock and Day

Not available when Wi-Fi module is present

Press the SET CLOCK button. Adjust the clock using the WARMER or COOLER buttons. Press MODE to advance to the day setting. Adjust the day using the WARMER or COOLER buttons. Press the SET CLOCK button to confirm settings.

TIP: To adjust the time by hours press and hold the FAN button while pressing the WARMER or COOLER buttons.



Selecting the Heat or Cool Mode

Select mode by pressing the **MODE** button.

Heating Only - Only the heating operation will be controlled by the thermostat in this mode.

Cooling Only - Only the cooling operation will be controlled by the thermostat in this mode.

Heating or Cooling (Auto-Changeover) - AUTO will automatically select heat or cool based on room temperature demand.

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



Quick Start

Selecting your desired temperature

AUTO-CHANGEOVER MODE - Pressing the WARMER or COOLER buttons in Auto mode will adjust both the heat and cool setpoints simultaneously. To adjust heat and cool setpoints individually, choose HEAT mode to adjust the heat setpoint and COOL mode to adjust the cool setpoint, then return to AUTO mode.

HEAT OR COOL MODE - Pressing the WARMER or COOLER buttons in Heat or Cool mode will adjust only the heat or cool setpoints individually displayed.

Using the Fan Button

FAN ON indicates constant fan operation. Pressing the **FAN** button toggles this feature. If you don't see **FAN ON**, the fan is in auto mode and will only turn on during a heat or cool demand.



Quick Start

Viewing the Temperature Sensors

OUTDOOR TEMP - Press the **OUTDOOR** button to view the current outdoor temperature. The high and low temperatures for the day will also be displayed. The high and low temperatures reset at 12:00 am. Press the **OUTDOOR** button again to return to normal operation.

OUTDOOR



If the thermostat is connected to Skyport; upon pressing the **OUTDOOR** button the scrolling display will read "Forecast"

The forecasted high and low temperatures for the day will be displayed.

Press the **OUTDOOR** button again to view any connected wired sensor (remote or SUPPLY).

Note: If no outdoor sensor is connected, and there isn't outdoor temperature via Wi-Fi, then 2 dashes [- -] will appear with the first button press.

REMOTE/SUPPLY TEMP - Press the **Accessory Status** button to view linked wireless wired sensors and other accessories. Press the **Accessory Status** button to return to the main screen. Setup step #46 selects the use of the wired temperature sensor.

ACCESSORY
STATUS



Viewing the Indoor Humidity Sensor

IMPORTANT: Allow at least 2 minutes after the thermostat is powered on for the humidity to read correctly.

HUMIDITY



Press the **HUMIDITY** button to display the current humidity measured at the thermostat. The room's relative humidity is displayed in the top left corner. The humidification setpoint appears in the larger, center display and can be adjusted using the **WARMER** or **COOLER** buttons. Press the **MODE** button again to view and adjust the dehumidification setpoints. Press the **HUMIDITY** or **MODE** button again to confirm settings and return to normal operation.

Note: Due to variations in environmental and equipment conditions, it is not always possible to achieve the desired humidification or dehumidification setpoint.

Installation 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, call a qualified technician for assistance.

- Assemble tools: Flat blade screwdriver, wire cutters and wire strippers.



- 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 fuse panel. Most residential systems have a separate breaker for disconnecting power to the furnace.
- Remove the cover of the old thermostat. If it does not come off easily, check for screws.
- Loosen the screws holding the thermostat base or subbase to the wall and lift away.
- If you have a smart phone handy, take a photo of the wiring for future reference.
- 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.

Installation Instructions

Wire Connections

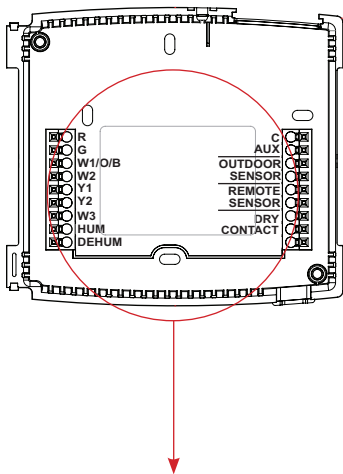
If the terminal designations on your old thermostat do not match those on the new thermostat, **refer to the chart below or the wiring diagrams that follow.**

Wire from the old thermostat terminal marked	Function	Install on the new thermostat connector marked
G or F	Fan	G
Y1, Y	Cooling	Y1
W1, W	Heating	W1/O/B
Rh, R, M, Vr, A	Power	R
C	Common	C
O/B	Rev. Valve	W1/O/B*
W2	2nd Stage Heat	W2
Y2	2nd Stage Cooling	Y2
W3	3rd Stage Heat	W3
H, Hum	Humidity	HUM
D, Dehum	Dehumidity	DEHUM
Ck1	Dry Contact Switch	DRY CONTACT
CKGND	Dry Contact Switch	DRY CONTACT

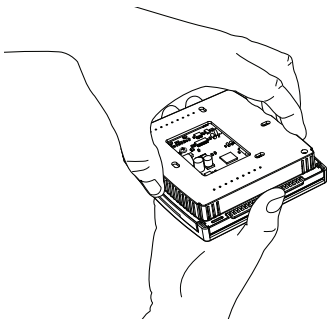
* O/B is used if your system is a Heat Pump.

Installation Instructions

The Explorer Thermostat Backplate



To remove the thermostat backplate: Gently separate the display from the base by pulling first from one side, then the other until the two pieces unsnap. A small screwdriver may be used, very carefully, to start separating the two pieces.



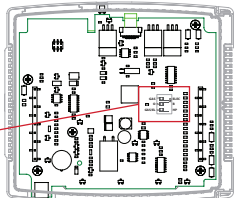
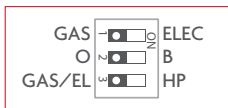
R	24 VAC return	C	24 VAC common
G	Fan relay	AUX	Aux output
W1/O/B	1st stage heat circuit	OUTDOOR SENSOR	Outdoor sensor connections
W2	2nd stage heat circuit	REMOTE SENSOR	Remote sensor connections
Y1	1st stage compressor relay	DRY CONTACT	Dry Contact connections
Y2	2nd stage compressor relay		
W3	3rd stage heat circuit		
HUM	Humidifier control circuit		
DEHUM	Dehumidifier control circuit		

IMPORTANT: This thermostat requires both R (24 VAC Return) and C (24 VAC Common) be connected to the backplate terminals.

Installation Instructions

Check Dip Switch

Ensure which switch is correct for your system. Dip switches are located on the back of the thermostat.



GAS ELEC



OR

GAS ELEC



1. When GAS/EL or HP is set for GAS/EL:
This switch (GAS or ELEC) controls how the thermostat will control the Fan (G) terminal in heating mode. When GAS is chosen, the thermostat will not energize the Fan (G) terminal in heating. When ELEC is chosen the thermostat 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 using a Dual Fuel system, set this switch for GAS. When ELEC is chosen, up to two stages of auxiliary strip heat will be allowed to run.



OR



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.



OR



This dip switch configures the thermostat 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.

Installation Instructions

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
W3 3rd Stage Heat
Y1 1st Stage Cool
Y2 2nd Stage Cool
G Fan



Installation Instructions

Sample Wiring Diagrams

Heat Pump Systems

5 Wire, 1 Stage Cooling, 1 Stage Heat

Residential & Commercial Heat Pump with
O Reversing Valve

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



6 Wire, 1 Stage Cooling, 2 Stage Heat

Residential & Commercial Heat Pump with
O Reversing Valve

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



7 Wire, 2 Stage Cooling, 3 Stage Heat

Residential & Commercial Heat Pump with
O Reversing Valve.

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

Setup Step 24 is set to 2
(Number of Compressor Stages)



8 Wire, 2 Stage Cooling, 4 Stage Heat

Residential & Commercial Heat Pump with
O Reversing Valve.

R	24VAC Power
C	24VAC Common
W1/O/B	Reversing Valve
W2	3rd Stage Heat
W3	4th Stage Heat
Y1	1st Stage Compressor (Cool or Heat)
Y2	2nd Stage Compressor (Cool or Heat)
G	Fan

Setup Step 31 is set to 2
(Number of Compressor Stages)



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

Installation Instructions

Sample Wiring Diagrams

Heat Pump Systems with Dual Fuel

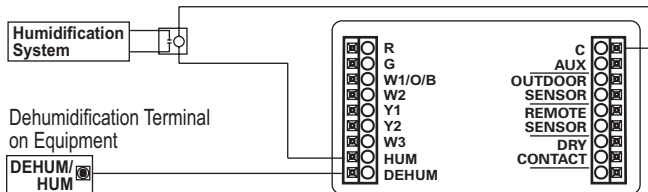
5 Wire, 1 Stage Cooling, 1 Stage Heat

Residential & Commercial Heat Pump with
O Reversing Valve

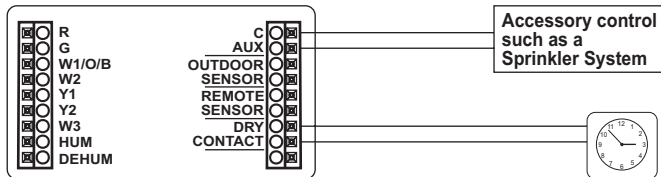
R 24VAC Power
C 24VAC Common
W1/O/B Reversing Valve
Y1 1st Stage Compressor
(Cool or Heat)
G Fan



Humidification or Dehumidification



Dry Contact and Aux Output



Installation Instructions Test Operation

The thermostat has a diagnostic feature that enables testing of all outputs. This feature is contained in the thermostat's **technician setup**.

*To enter Technician Setup, press and hold the **SETUP** button for 10 seconds until all the icons appear. Follow the next steps to view settings and test equipment.*

1. Press **MODE** to view the version numbers of the thermostat.
2. Press **MODE** again to view the jumper settings and current state of the Dry Contact terminal.
3. Press **MODE** again and the scrolling display will read **TURN ON EQUIPMENT?** Press **WARMER** for Yes or **COOLER** for No.

If Yes is chosen, press **WARMER** to turn on heat or **COOLER** to turn on Cooling. The scrolling display will read **NOTHING ON**. Next:

Press **WARMER** to turn on and cycle up through the heating stages.
Press **COOLER** to turn the heating stages off. Press **MODE** to exit.

Press **COOLER** to turn on and cycle down through the cooling stages.
Press **WARMER** to turn the cooling stages off. Press **MODE** to exit.

4. Press **MODE** until **CALIBRATE SENSORS?** appears on the scrolling display. Press **WARMER** for Yes or **COOLER** for No. Press **MODE** to select which sensor to calibrate. Use **WARMER** or **COOLER** to modify your selection.
5. Press **MODE** until **CONTROL HUM?** appears on the scrolling display. Press **WARMER** for On or **COOLER** for Off. Press **MODE** to continue.
6. Press **MODE** until **CONTROL DEHUM?** appears on the scrolling display. Press **WARMER** for On or **COOLER** for Off. Press **MODE** to continue.
7. Press **MODE** until **CONTROL AUX OUT?** appears on the scrolling display. Press **WARMER** for On or **COOLER** for Off. Press **MODE** to exit.

*To exit Technician Setup at any time, press the **SETUP** button. Technician Setup will automatically exit after 10 minutes if no buttons are pressed.*

User Setup: Backlight Operation

How to Change Settings in the Setup Screens

To enter Advanced Setup, press the **SETUP** button, then press **MODE**. Use the **WARMER** or **COOLER** buttons to adjust the value of your selection. Press **MODE** to advance to the next setup step. Press **SETUP** again to leave the setup screens.



Backlight (Setup Steps 3-8)

Backlight (setup step 3)

Off - Backlight turns on with any button press and turns off after 8 seconds.

On - Backlight is on continuously.

Backlight Intensity Level (setup step 4)

The backlight can be adjusted between Off and seven levels of brightness.

Night Dimmer (setup step 5) - Selecting **On** allows for automatic dimming of the display at night.

Night Dimmer Brightness (setup step 6)

Off through seven levels of brightness

Night Dimmer Start Time (setup step 7) - 12:00 am to 12:00 am

Night Dimmer Stop Time (setup step 8) - 12:00 am to 12:00 am

Language (Setup Step 20)

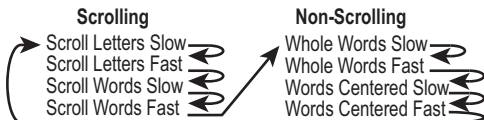
Setup step instructions on the scrolling display can be set for English, Spanish, or French.

Press the SETUP button, then press MODE repeatedly until the Language setup step appears. Use the WARMER or COOLER buttons to make selection. Press MODE to advance to the next step. Press SETUP to leave the setup screens.

User Setup: Scrolling Screen and Display Options

Scrolling Display Method (Setup Step 21)

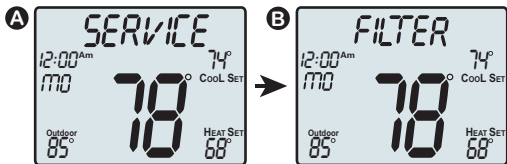
This option allows the user to choose how the scrolling text is displayed. Options are:



Press the SETUP button, then press MODE repeatedly until the Scrolling Method setup step appears. Use the WARMER or COOLER buttons to make selection. Press MODE to advance to the next step. Press SETUP to leave the setup screens.



Example of “Whole Words Centered”:



User Setup

Vacation & Away Settings

The Vacation feature allows the thermostat to use temporary, energy saving setpoints without having to change regular programming.



The HOME/AWAY feature allows for a one button press to bring in your stored unoccupied vacation settings. A subsequent press of the HOME/AWAY button restores the last used comfort settings.



Press the VACATION button to enter Vacation/Away programming.

Use the WARMER and COOLER buttons to choose the number of days desired to run the in Vacation/Away settings.

To confirm your settings and advance to the next step, press the MODE button again. Choose the desired Vacation/Away Mode. Press the MODE again to adjust the 'unoccupied' setpoint. If you selected auto changeover mode for unoccupied/vacation settings, then pressing MODE again will allow the adjusting of the 2nd setpoint. Otherwise press MODE to confirm and return to normal operation.

Press the VACATION button again to return to the main screen. Both VACATION and AWAY use these same settings. VACATION button use specifies a duration of days for these settings, whereas Away maintains these settings until the HOME/AWAY button is pressed again.

When the VACATION button is pressed and the thermostat detects that a Wi-Fi module is installed:

During Non-Vacation Periods: the scrolling display will read:

"Use Skyport to View/Edit Settings"

During Vacation Period: the scrolling display will read:

"To cancel VACATION press MODE button"

NOTE: If the HOME/AWAY button is pressed during an active VACATION period, the scrolling display will read: "To cancel VACATION press MODE button."

The thermostat must be running in Program On for VACATION to have any effect. After you alter any settings, they will take effect until midnight on that day. The thermostat does not need to be running in Program On for the HOME/AWAY button to have effect.

Emergency Heat

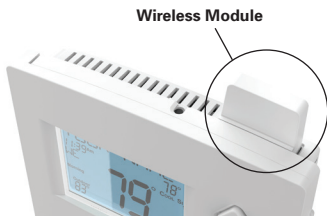
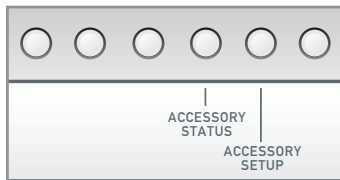
The Emergency Heat function is only available if your thermostat is set to control a Heat Pump.



To initiate the Emergency Heat feature, Press the EMERGENCY button. During Emergency Heat operation the thermostat will turn on the fan and auxiliary stages of heat when there is a demand for heat. The compressor used for heating and all stages of cooling will be unavailable. To exit Emergency Heat, press the EMERGENCY button.

User Setup - Wireless Modules

Wireless Module



The **Accessory Status** button allows the user to view the status of wired and wireless accessories. For many of the wireless devices this status includes: Battery Level, Signal Strength & LastTime Updated.

If there is an optional wireless module installed, the **Accessory Setup** button allows the user to link or connect wireless devices to the thermostat, or the thermostat to the network.

Explorer thermostats may use different types of optional accessory modules. They are:

1. Wi-Fi Module
2. Z-Wave Module

Note for WiFi and ZWAVE: *In order for 3rd party devices (such as home automation systems) to communicate with your thermostat through its local API, Setup Step #84 must be set to ON.*

If desired both Skyport access and API access may be both set to on, allowing 3rd party device access as well as Skyport access.

User Setup - Service Filter

These setup steps allow the user to monitor equipment runtimes and program service alerts. Service alerts are displayed in the scrolling marquee.

FAN ON
AUTO



Press and hold FAN to clear service alert messages from the scrolling marquee.

Runtime hours or days appear in the clock display.



Service Filter Runtime (Setup Steps 9-10, 16-17)

Current Service Filter Runtime Hours (Setup Step 9) - This counter keeps track of the number of hours of fan runtime in the Heating mode, Cooling mode, and in stand alone Fan operation. Press **FAN** to reset.

Current Service Filter Calendar Days (Setup Step 10) - This counter displays the total number of calendar days that have elapsed since the counter was reset to help the user track Fan runtime. Press **FAN** to reset.

Set Service Filter Runtime Hours (Setup Step 16) - This timer allows the user to specify the number of hours the fan will run before the "Replace Filter" alert will be displayed. Press **COOLER** continuously until **OFF** is displayed to disable this alert.

Set Service Filter Calendar Days (Setup Step 17) - This timer allows the user to specify the number of calendar days that will elapse before the "Replace Filter" alert will be displayed. Press **COOLER** continuously until **OFF** is displayed to disable this feature.

Press the **SETUP** button, then press **MODE** repeatedly until the desired setup step appears. Use the **WARMER** or **COOLER** buttons to make selection. Press **MODE** to advance to the next step. Press **SETUP** to leave the setup screens.



User Setup - Runtimes

*To view, set, or reset System Runtimes, press the **SETUP** button, then press **MODE**. Press **MODE** to advance to the desired setup step. Use the **WARMER** or **COOLER** buttons to adjust the value of your selection. Press **SETUP** again to leave the setup screens.*

Heating and Cooling System Runtime - Energy Watch

(setup steps 11-13)

Current Heat Runtime Hours (Setup Step 11) - This counter keeps track of the number of hours the system has run in Heating. Press **FAN** to reset.

Current Aux Strip Heat Runtime Hours (Setup Step 12) - This counter keeps track of the number of hours the system has run in Auxiliary Heating. This setup step is only available when the thermostat jumpers are configured for Heat Pump and Electric Heat. Press **FAN** to reset.

Current Cool Runtime Hours (Setup Step 13) - This counter displays the number of hours the system has run in Cooling. Press **FAN** to reset.

UV Lamp Runtime (setup steps 14, 18)

Current UV Lamp Calendar Days (Setup Step 14) - This counter displays the total number of calendar days that have elapsed to help the user track UV lamp runtime. Press **FAN** to reset.

Set UV Lamp Calendar Days (Setup Step 18) - This timer allows the user to specify the number of calendar days the UV Lamp will operate before the "Replace UV Lamp" alert will be displayed. Press **COOLER** continuously until **OFF** appears to disable this alert.

Humidifier Runtime (setup steps 15, 19)

Current Humidifier Calendar Days (Setup Step 15) - This counter displays the total number of calendar days that have elapsed to help the user track the Humidifier run-time. Press **FAN** to reset.

Set Humidifier Calendar Days (Setup Step 19) - This timer allows the user to specify the number of calendar days the Humidifier will run before the "Service Humidifier" alert will be displayed. Press **COOLER** continuously until **OFF** appears to disable this alert.

User Setup - Time Period Programming

Programming a Daily Schedule*

**not available when wi-fi module is present*

To enter Time Period Programming screens. Press and hold PROGRAM until the scrolling prompt appears.

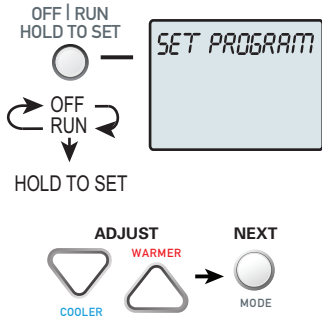
OFF - Time Period Program is off.

RUN - Time Period Program is running.

HOLD TO SET - Press and hold PROGRAM to make Time Period Programming changes.

Select Day of Week to program -

Press the WARMER or COOLER buttons to choose the day of the week to be. Press MODE to advance to the next step.



(continued next page)

User Setup - Time Period Programming

This thermostat features four programmable time periods per 24 hour day: Morning, Day, Evening, and Night. The start time for each time period is adjustable. The stop time for each time period is the start time for the next period. Each time period, or day part may be individually disabled.

Select the Day to Program - Press the WARMER or COOLER to select the desired Day or Week Part in the case of 5-2 (weekday – weekend) programming.

Enable/Disable Morning Period - Press the WARMER or COOLER to select ON or OFF. If the default ON is selected, then the Morning period will run complete with the Mode and Set Points selected. If OFF is selected then the Morning day part will be skipped and the thermostat will use the next day part that is enabled.

Select Morning Mode - Press the WARMER or COOLER to select the desired mode, which includes OFF. You may be limited by the available modes in advanced Installer setup step#2. Press MODE to advance to the next step.

Select Morning Start Time - Press the WARMER or COOLER buttons to adjust the time of day desired. Press MODE to advance to the next step.

Select Morning Cool Setpoint - Press the WARMER or COOLER buttons to adjust the cool setpoint desired. This step will appear if Cool or Auto Mode was selected in the step where the Morning mode is specified. Press MODE to advance to the next step.

Select Morning Heat Setpoint - Press the WARMER or COOLER buttons to adjust the heat setpoint desired. This step will appear if Heat or Auto Mode was selected in the step where the Morning mode is specified. Press MODE to advance to the next step.

Repeat Enable, Mode, Start Time and Setpoint programming for Day, Evening, and Night.

“Copy Current Day to Next Day” is available - Press the UP button to Copy the current day's program to the next day. Press Mode again to continue copying the following day.

Press the PROGRAM Button to exit Time Period Programming at any time.

Installer Setup

How to Change Settings in the Setup Screens

To enter Advanced Setup, press the **SETUP** button, then press **MODE**. Use the **WARMER** or **COOLER** buttons to adjust the value of your selection. Press **MODE** to advance to the next setup step. Press **SETUP** again to leave the setup screens.



Selecting Your Time Period Schedule (setup step 1)

This thermostat may be configured to be programmable or non programmable.

7 Day Program - Allows all seven days to be programmed independently.

Non Program - No advanced time period programming available.

1 Day Program - Allows one 24 hour day to be programmed. This same schedule will be repeated everyday the program is set to run.

5/2 Day Program - Allows weekdays, Saturday, and Sunday to be programmed independently.

Selecting Your Available Modes (setup step 2)

Auto-Changeover - Allows the thermostat to turn on heating or cooling based on room temperature demand. Also allows the manual selection of **HEAT** only or **COOL** only and **OFF**.

Heat and Cool - Allows the thermostat to turn on heating or cooling depending on which one has been manually selected. Auto-Changeover is not available when this is selected.

Heat Only - Allows the thermostat to only turn on **HEAT** or **OFF** modes.

Cool Only - Allows the thermostat to only turn on **COOL** or **OFF** modes.

Installer Setup

Setpoint Limits (setup step 22)

When this feature is set to ON, the heat and cool setpoints can be restricted to preset levels, set in steps 23 and 24.

Maximum Heat Setpoint (Setup Step 23) - (35° - 99°).

Minimum Cool Setpoint (Setup Step 24) - (35° - 99°).

Cycles Per Hour (setup step 25)

The Cycles Per Hour setting may limit the number of times per hour your HVAC unit may energize. For example, at a setting of 6 cycles per hour the HVAC unit will only be allowed to energize once every 10 minutes. The Cycles Per Hour limit may be overridden and reset by pressing the WARMER or COOLER buttons on the thermostat. Settings are No Limit, 2, 3, 4, 5, or 6.

Compressor Minimum Off Minutes (setup step 26)

This feature allows the user to set a minimum off time for the compressor. Settings are 5 mins., 3 mins., or 0 mins.

Minimum Heat/Cool Setpoint Difference (setup step 27)

This feature allows the user to set the minimum gap between Heat and Cool setpoints in **AUTO** mode. Select from 0 to 6. If setup step 2 is not set for **AUTO-CHANGEOVER**, this step will not appear.

Number of Heat Stages (setup step 28)

This setting assures proper stage callouts on the thermostat display for non-heat pump applications.

Number of Cool Stages (setup step 29)

This setting assures proper stage callouts on the thermostat display for non-heat pump applications.

Number of Compressor Stages (setup step 30)

This feature is for heat pump application only.

This feature allows the thermostat to control 1 or 2 compressor stages when configured for heat pump.

NOTE: When step 60 (Dual Fuel) is set to ON, this step will not appear and Compressor Stages will automatically be set to 2.

Number of Aux Stages (setup step 31)

This feature is for heat pump application only.

This feature allows for proper Aux Heat Staging. (0-2 stages)

Installer Setup

Deadband Settings (setup steps 32 - 41)

The Deadband is the number of degrees or minutes that the thermostat waits before it initiates the stages of heating or cooling.

1st Stage Deadband (Setup Step 32) - Specifies the minimum temperature difference between the room temperature and the desired setpoint before the first stage of heating or cooling is allowed to turn on. (1 - 6 degrees) For example, if the heat setpoint is 68° and the 1st Stage deadband is set to 2 degrees, the room temperature will need to reach 66° before the heat turns on.

2nd Stage Deadband (Setup Step 33) - Specifies the additional minimum temperature difference after the first stage turns on before the second stage is activated. (0° - 10°)

3rd Stage Deadband (Setup Step 34) - Specifies the additional minimum temperature difference after the second stage turns on before the third stage is activated. (0° - 10°)

4th Stage Deadband (Setup Step 35) - (Two Stage heat pump only) - Specifies the additional minimum temperature difference after the third stage turns on before the final stage of strip heat is activated. (0° - 10°)

Minutes Between 1st and 2nd Stage (Setup Step 36) - Specifies the *minimum* time (in minutes) after the first stage turns on before the second stage can turn on. (0° - 60°)

Minutes Between 2nd and 3rd Stage (Setup Step 37) - Specifies the *minimum* time (in minutes) after the second stage turns on before the third stage can turn on. (0° - 60°)

Delay Between 3rd and 4th Stage (Setup Step 38) - Specifies the *minimum* time (in minutes) after the third stage turns on before the final stage can turn on. (0° - 60°)

Second Stage on Until Deadband (Setup Step 39) - Specifies whether second stage will turn off at first stage deadband or remain on until the room temperature demand is satisfied. Choose between Deadband or Setpoint.

Third Stage on Until Deadband (Setup Step 40) - Specifies whether third stage will turn off at second stage deadband or remain on until the room temperature demand is satisfied. Choose between Deadband or Setpoint.

Fourth Stage on Until Deadband (Setup Step 41) - Specifies whether fourth stage will turn off at third stage deadband or remain on until the room temperature demand is satisfied. Choose between Deadband or Setpoint.

Installer Setup

Programming the Fan (setup steps 42 - 45)

Fan Program (Setup Step 42) - This feature allows the fan to be programmed to turn on automatically for a specified amount of time during the day. If this feature is set to ON, the next three steps will appear.

Minutes of Fan Runtime Per Hour (Setup Step 43) - This setting specifies the number of minutes (0 - 60, in increments of 5) that the fan will run at the top of each hour.

Fan Program Start Time (Setup Step 44) - This setting specifies the hour of each day when the programmable fan feature will start.

Fan Program Stop Time (Setup Step 45) - This setting specifies the hour of each day when the programmable fan feature will stop. **NOTE: Setting the Stop Hour equal to the Start Hour will cause the fan to run 24 hours a day.**

Wired Sensor Type (setup step 46)

Specifies the use of the connected, wired sensor. The choices are: Remote, Supply, Outdoor. Only the remote option allows control of the sensor.

Fan Off Delay in Seconds (setup step 64)

This feature allows the user to increase the cooling or electric strip heating efficiency of the system. The thermostat may be programmed to continue running the fan after a call for cooling or electric strip heating has been satisfied. This delay can be set for 0, 30, 60, 90, or 120 seconds. If set to 0, the fan will not run after a call for cooling or electric strip heating has been satisfied.

Comfort Recovery (setup step 77)

With Comfort Recovery on, the thermostat will attempt to reach the Occupied setpoint temperature at the exact time programmed into the thermostat. Comfort Recovery, only works when the thermostat enters the Occupied mode from the Unoccupied mode. For example, if the Unoccupied program is set for 11pm at 65°F heating and 85°F cooling, and the Occupied program is set for 6am at 72°F heating and 75°F cooling, the thermostat will turn the system on before 6am in an effort to bring the temperature to its correct setting at exactly 6am. The thermostat learns from experience, so please allow 4-8 days after a program change or after initial installation to give Comfort Recovery time to adjust. If used with a heat pump, electric strip heat will be disabled while Comfort Recovery is active.

Installer Setup

Humidity and Dehumidity (setup steps 49 -55, 80-82)

Humidity Only With Heat (Setup Step 49) - When this step is set to ON, Humidity will not run without a demand for Heat.

Fan With Humidity Demand (Setup Step 50) - Specifies if the fan should be turned on with a demand for Humidity. (This step will only appear if step 48 is set to OFF.)

Fan with Dehumidify (Set up Step 51) - Specifies if the fan should be turned on with a demand for Dehumidify. (This step will only appear if step 81 is set to OFF.)

Humidity Setpoints (Setup Step 52) - Specifies whether the Humidity setpoint should be entered by the user (MANUAL) or determined automatically by outdoor temperature (AUTO). An outdoor temperature sensor is required for the **AUTO** setting. If the outdoor temperature sensor stops reading while this step is set to **AUTO**, the Humidity setpoint will revert automatically to a setting of 15 percent.

Cool To Dehumidify (Setup Step 53) - Specifies if the cooling equipment is allowed to turn on exclusively to lower room humidity. (If set to **OFF** the following two steps will not appear.)

Max Dehum Overcool (Setup Step 54) - Specifies how many degrees below the Cool setpoint the air conditioning will run to satisfy a Cool to Dehumidify demand. (0° - 20°)

Reheat Operation With Cool To Dehumidify (Setup Step 55) - Specifies if electric strip heat is allowed to turn on during a Cool to Dehumidify demand to help maintain desired room temperature. This step is not available if Electric Heat is not present.

Humidity Output Polarity (setup step 80)

Open (Normally Open) means no voltage is sent to the **HUM** output when there is no demand for humidity.

Closed (Normally Closed) means voltage is sent to the **HUM** output when there is no demand for humidity.

Dehumidify Only With Cooling (setup step 82)

When set to ON, Dehumidify will only turn on with a 1st stage cooling demand.

When set to OFF, Dehumidify will turn on at any time that the room humidity exceeds the dehumidification setpoint.

Dehumidify Output Polarity (setup step 81)

Open (Normally Open) means no voltage is sent to the **DEHUM** output when there is no demand to dehumidify.

Closed (Normally Closed) means voltage is sent to the **DEHUM** output when there is no demand to dehumidify.

Installer Setup

Lockout Heat Pump on Outdoor Temp (setup steps 56 - 57)

This feature stops the heat pump from running below a specified outdoor temperature, where the heat pump has become inefficient or could damage equipment. A local outdoor sensor must be used for this feature to work.

Lockout Heat Pump With Outdoor Temp (setup step 56) - When set to ON, the Heat Pump Lockout feature is enabled. When set to OFF, the heat pump will stage normally.

Heat Pump Lockout Temp (setup step 57) - This step allows the user to set the temperature at which the heat pump will be locked out. Adjustable from 0 to 75 degrees Fahrenheit in five degree increments.

Auxiliary Heat Lockout (setup steps 58 - 59)

This feature allows the auxiliary heat for a heat pump (W2 and W3) to be locked out above a specific outdoor temperature. These steps will only appear if the thermostat jumper J1 is set for **Heat Pump** and J3 is set for **Electric Heat**. A local outdoor sensor must be used for this feature to work.

Lockout Aux Heat With Outdoor Temp

(Setup Step 58) - When set to ON, the Aux Heat Lockout feature is enabled. When set to OFF, Auxiliary Heat will stage normally.

Aux Heat Lockout Temp (Setup Step 59) - (20° - 75°) This step allows the user to set the temperature at which Auxiliary Heat will be locked out. Adjustable from 20 to 75 degrees Fahrenheit. **NOTE: This temperature setting cannot be lower than 5 degrees above the Heat Pump Lockout temperature.**

Dual Fuel (setup steps 60 - 62)

This feature is for heat pump applications only. Steps 56 - 59 will only appear if the thermostat jumper is set J1 for Heat Pump and J3 is set for Gas Heat.

Dual Fuel On, Off, (Setup Step 60) - On - Tells the thermostat an outdoor temperature or a demand for third stage heat will be used to stop running the heat pump and only run a fossil fuel source of heat. **NOTE:** Once the change to fossil fuel is made, the heat demand must finish with fossil fuel. Additional heat demands within 10 minutes will also use fossil fuel, regardless of outdoor temperature.

(continued next page)

Installer Setup

Dual Fuel (cont.)

Setup steps 61-63 will only appear if step 60 is set to ON.

Dual Fuel Changeover on Outdoor Temp (setup step 61) - ON: the change from Heat Pump to a fossil fuel source of heat will be based on outdoor temperature. (a local outdoor sensor is required for 'ON')

OFF: Heat Pump heating will be terminated when there is a demand for third stage heat and a switch to fossil fuel will be made.

Dual Fuel Balance Point (setup step 62) - (0° - 60°) Specifies the outdoor temperature at which the heat pump will cease operating and a fossil fuel source of heat is used.

Dual Fuel Changeover Delay (setup step 63) - (0 - 90) Specifies the number of seconds the heat pump is allowed to continue running after a fossil fuel heat source has been engaged.

Control to Temp Source (setup step 47)

This feature allows the user to specify which temperature sensor source the thermostat will use to measure room temperature.

Thermostat: Uses the internal thermostat sensor only.

Remote Sensor: Uses wireless or wired sensors only.

Average Of Remote Sensor And Thermostat: Averages the temperatures of the remote sensor(s) and the thermostat.

NOTE: If a remote sensor is being used, the degree icon on the large room temperature display will blink.

Wireless Remote to Use (setup step 48)

Specifies the use of the connected, wired sensor. The choices are: Remote or Supply. The remote option allows control to the sensor, the supply does not.

Fahrenheit or Celsius (setup step 65)

This feature allows the thermostat to display temperature in Fahrenheit or Celsius.

Installer Setup

Auxiliary Output

The Explorer Thermostat is equipped with a programmable auxiliary output. This output can be configured to be controlled from a variety of sources.

Aux Output Polarity (setup step 66)

Specifies if the Auxiliary output will be **Open** (Normally Open) or **Closed** (Normally Closed).

Aux Output (setup step 67)

Specifies which source will control the Aux output.
Choices are:

Time - Uses the internal clock of the thermostat.

Temp - Uses one of three temperature sources.

External - The Auxiliary Output is controlled from an external accessory source.

Error - Uses the thermostat's error processing to signal an active error condition.

Free Cooling - Drives a damper to bring fresh air in from outdoors.

Venting - Drives a damper to exhaust inside air to the outside.

Auxiliary Output Programming By Time

If **TIME** is selected for the **Aux Output**, the following setup steps will appear:

Aux Output Days (Setup Step 68) - Specifies if the Aux Output will be single day (1 DAY), weekday/weekend (5/2 DAY), or seven day (7 DAY) programmable.

Day Of Week To Program (Setup Step 69) - Specifies which day of week to program.

Aux Output Start Time (Setup Step 70) - Specifies the time of each day when the Aux output will turn on.

Aux Output Stop Time (Setup Step 71) - Specifies the time of each day when the Aux output will turn off.

Copy (Setup Step 72) - This step only appears if Aux Output Days (setup step 68) is set for 7 programmable output days.

Installer Setup

Auxiliary Output Programming By Temp

If TEMP is selected for the Aux Output, the following setup steps will appear:

Aux Output Temp Source (setup step 73) - Specifies what temperature source will be monitored for controlling the programmable output.

The options are:

Thermostat - Temperature is monitored from the thermostat sensor.

Outdoor Sensor - Temperature is monitored from the Outdoor temperature sensor.

Wired Remote - Temperature is monitored from a wired sensor connected to the Remote Sensor terminals.

External - The Auxiliary Output is controlled from an external accessory source.

Aux Output Trigger Point Temp (setup step 74) - Specifies the temperature from the above selected source above which the Aux Output is triggered. A non-adjustable two degree deadband is applied to avoid frequent triggering. The 'N.O.' (Normally Open) or 'N.C.' (Normally Closed) function (Setup Step 67) can be altered to make the output trigger below the set temperature. Temps are adjustable from 0 - 120 degrees Fahrenheit.

Press Fan To Clear All Messages (setup step 93)

This feature allows the user to clear all current error messages from the display.

Skyport (setup step 83)

Set to ON to allow access to Skyport services or to OFF to not allow access to Skyport services. (Wifi accessory is required) Visit venstar.com for more information.

Local API (setup step 84)

Set to ON to allow third-party software to interface with your thermostat. Typically used with home automation set-ups. (Wifi accessory is required)

Installer Setup

Free Cooling (setup steps 75 - 76)

To use Free Cooling, setup step 67 must be set to 'FREE COOLING'.

Free Cooling is an energy saving way to boost the efficiency of your air conditioning system by bringing in fresh air from the outside. The installation of a Free Cooling damper and outdoor temperature sensor are required.

Free Cooling With A/C (Setup Step 75) - When the Aux Output is being used for Free Cooling and an air conditioning system is present, set this step to **ON**. Fresh, outside air may be used for first stage cooling in place of your air conditioner. If your system does not have an air conditioner installed, set this step to **OFF**. This will enable all stages of cooling to use only the Free Cooling damper.

Free Cooling Usable Temp (setup step 76) - This step allows the user to specify the outdoor temperature below which Free Cooling can be utilized. For example, if this step is set for 65 degrees, Free Cooling will be used until the outdoor temp rises above 65. Temps are adjustable from 40° to 80° Fahrenheit.

Venting *To use Venting, setup step 67 must be set to 'VENTING'.*

The Venting feature allows your HVAC system to exhaust air from inside to the outside, when there is a cooling call. Press FAN twice to activate Venting. While Venting is active, heating and cooling are disabled. The installation of a Venting damper will be required.

Dry Contact Operation (Setup Step 78 - 79)

Dry Contact Polarity (setup step 78)

Open (Normally Open) - The dry contact is open until the connected device closes the circuit.



'Idle'



'Active'

Closed (Normally Closed) - The dry contact is closed until the connected device opens the circuit.



'Idle'



'Active'

Condensate Dry Contact Use (setup step 79)

If selected when the dry contact is active, the thermostat will lockout the compressor terminal(s) and "CONDENSATE PAN OVERFLOW" will appear on the display.

VACATION - If VACATION is selected when the dry contact is active, the thermostat will be forced into AWAY/unoccupied settings.

FDD - If FDD is selected when the dry contact is active, the scrolling display will read "Equipment fault." This error message will disappear when the Dry Contact is idle.

Installer Setup

Resetting the Thermostat to the Factory Default Settings

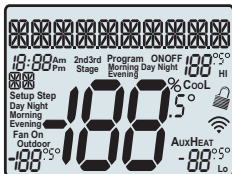
(for default values see page 43, Advanced SetupTable)

If, for any reason, you desire to return all the stored settings back to the factory default settings, follow the instructions below.

WARNING: This will reset all Time Period and Advanced Programming to the default settings. Any information entered prior to this reset may be permanently lost.

- 1 Press and hold SETUP for 10 seconds. All icons will appear on the display.

Keep pressing the SETUP button until you see this screen.



- 2 After all the icons appear, release SETUP. Press and hold FAN for 5 seconds. DEFAULTS will appear on the display.

Keep pressing the FAN button until you see this screen.



- 3 After DEFAULTS appears, release FAN. Press MODE to return to normal operation.



MODE

Installer Setup - Automated Demand Response

Overview

Explorer thermostats support the handling of specific signals from the utility provider. The utility generated signals carry pricing information and/or setback actions that alter the comfort settings of the thermostat in order to reduce energy usage on demand. This is known as Automated Demand Response or ADR for short. You must register to participate in a utility sponsored program, if offered by your local utility, to take advantage of this feature.

Skyport Cloud Services

From the web application the user will select Thermostat Settings from the left column. Then the Demand Response button is selected.

The screenshot displays a web application window titled "Office - Configuration" with a close button in the top right corner. On the left side, there is a vertical navigation menu with the following items: "Profile" (Rename your thermostat or change its location), "Runtime Data" (View Heat & Cool runtimes), "Sensors" (View sensors connected this thermostat), "Notifications" (Quickly add and remove thermostats notifications), "Alerts" (View current alerts for this thermostat), "Schedule" (Modify your thermostat schedule), and "Thermostat Settings" (Change your thermostat settings). The "Thermostat Settings" item is highlighted with a blue background. Below the menu is a "Delete Thermostat" button. The main content area is titled "Thermostat Settings" and contains the instruction "Modify your thermostat settings and preferences." Below this instruction are seven icons representing different settings: "Preferences" (laptop with charts), "Alerts" (warning triangle with exclamation mark), "Holiday" (umbrella on a beach), "Security" (padlock), "Humidity" (water droplets), "Settings" (gears), and "Demand Response" (power line tower).

Installer Setup - Automated Demand Response

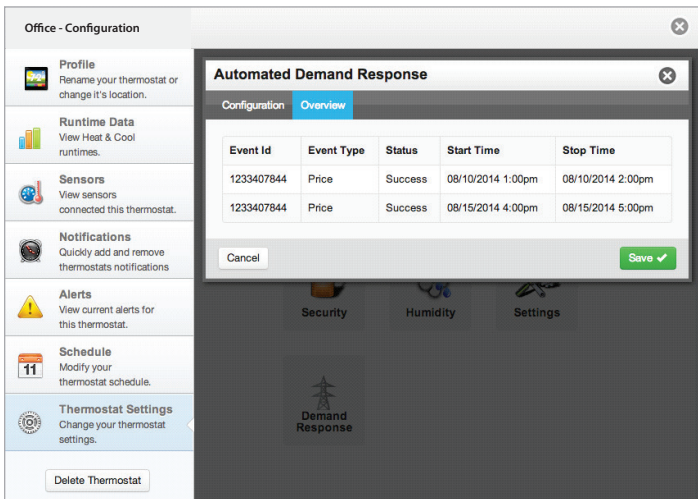
The Demand Response configuration page, shown below, is where the thermostat is configured to respond to the energy provider's signals. It also sets operational parameters for the thermostat.

The left column of the ADR configuration page allows or prevents access by the utility. Here communication with the utility and your thermostat may be turned On or Off.

The screenshot shows the 'Automated Demand Response' configuration page. On the left is a sidebar with navigation options: Profile, Runtime Data, Sensors, Notifications, Alerts, Schedule, and Thermostat Settings. The main area is titled 'Automated Demand Response' and has two tabs: 'Configuration' (selected) and 'Overview'. Under 'Configuration', there is a 'Demand Response' section with an 'ON' button selected and an 'OFF' button. Below this is a question 'What is Demand Response?' followed by an explanatory paragraph: 'It is a way for energy suppliers to automatically reduce load during high energy use periods. This reduces the strain on the powergrid while offering incentives to individuals who participate in demand response events.' To the right of the 'Demand Response' section are several setting categories: 'Min & Max Settings' (Event Max Cool Setpoint: 89° F, Event Min Heat Setpoint: 83° F), 'Static Settings' (Static Cool Setpoint: 77° F, Static Heat Setpoint: 83° F), 'Offset Settings' (Cool Setpoint Offset: +2, Heat Setpoint Offset: -3), and 'Price Settings' (Price Trigger: \$ 0.5, Dependent Action: Observe Setpoint Offsets). At the bottom of the configuration window are 'Cancel' and 'Save' buttons.

Installer Setup - Automated Demand Response

Selecting the Overview tab of the ADR page will cause a summary of ADR events to be displayed.



The screenshot shows a software interface for thermostat configuration. The main window is titled "Office - Configuration" and has a sidebar with several menu items: Profile, Runtime Data, Sensors, Notifications, Alerts, Schedule, and Thermostat Settings. The "Thermostat Settings" item is selected, and a sub-window titled "Automated Demand Response" is open. This sub-window has two tabs: "Configuration" and "Overview", with "Overview" being the active tab. The "Overview" tab displays a table of ADR events. Below the table are "Cancel" and "Save" buttons. The background of the main window shows other configuration options like Security, Humidity, and Settings, along with a "Demand Response" icon.

Event Id	Event Type	Status	Start Time	Stop Time
1233407844	Price	Success	08/10/2014 1:00pm	08/10/2014 2:00pm
1233407844	Price	Success	08/15/2014 4:00pm	08/15/2014 5:00pm

Installer Setup - Automated Demand Response

ADR (setup step 85)

Controls whether you want the thermostat to possibly respond to signals from the utility provider. Select ON to allow this and to have steps 86-92 appear.

Price Dependent Action (setup step 86)

Allows the user to determine what action is taken when the price rises above the set threshold. Note that the threshold price is only adjustable via Skyport.

None – take no action when the set price threshold is exceeded

Observe Setpoint Offsets – will offset the heat and cool setpoints by the amounts specified in setup steps 91 and 92

Observe Static Setpoints – will set the heat and cool setpoints to the values specified in setup steps 89 and 90

Event Max Cool Setpoint (setup step 87)

Event Min Heat Setpoint (setup step 88)

Specifies the range of allowable setpoint adjustments to be enforced when any ADR signal has been received from the utility. Since you might be paying more for energy while an event is active, you can impose tighter limits on setpoint ranges that are only enforced during the event.

Static Cool Setpoint (setup step 89)

Static Heat Setpoint (setup step 90)

Specifies the setpoints that will come into use during an event when the PRICE DEPENDENT ACTION is set to OBSERVE STATIC SETPOINTS

Cool Setpoint Offset (setup step 91)

Heat Setpoint Offset (setup step 92)


Specifies how much the current setpoints in effect prior to an event will be altered during an event when the PRICE DEPENDENT ACTION is set to OBSERVE SETPOINT OFFSETS. The heat setpoint can be automatically lowered by 1 to 10 degrees while the cool setpoint can be automatically raised by 1 to 10 degrees.

DISPLAY INDICATIONS WHEN AN ADR EVENT IS HAPPENING

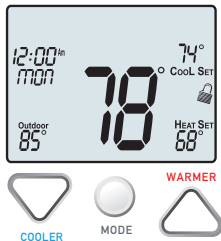
After setting your desired values for use during an ADR event, the scrolling display will give a little information when an event is pending or active. For instance, when an ADR event has been sent to your thermostat, you might see ADR STARTS at 4:15 to notify you of a pending event. Once active, you might see ADR STOPS at 5:30. If you have configured a threshold for cost of energy past which you want to trigger an event, you will see PRICING EVENT on the display. When an event is active, you can press any of COOLER, WARMER or MODE buttons, followed by the WARMER to opt out of the event.


Installer Setup

Locking/Unlocking the Keypad

To prevent unauthorized use of the thermostat, the front panel buttons may be disabled. To disable, or 'lock' the keypad, press and hold the MODE button. While holding the MODE button, press the WARMER and COOLER buttons together. The  icon will appear on the display, then release the buttons.

Press all three buttons in the order outlined above for keypad lockout



To **unlock** the keypad, press and hold the MODE button. While holding the MODE button, press the WARMER and COOLER buttons together. The  icon will disappear from the display, then release the buttons.

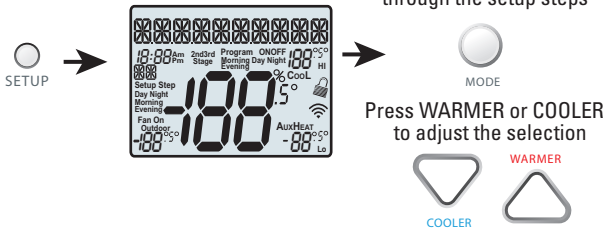
Technician Setup

To enter Technician Setup, press and hold the **SETUP** button for 10 seconds. After all the icons appear, press **MODE**. The version number of the thermostat will appear in the scrolling text. Press **MODE** to advance to the next step. Use the **WARMER** or **COOLER** buttons to adjust the value of your selection. To leave Technician Setup, press **SETUP**.

Hold for 10 seconds

All icons appear

Press **MODE** to advance through the setup steps



Technician Setup is for diagnostic and testing purposes and is intended for use by a qualified technician. See page 15 for more detailed instructions.

Technician Setup contains the following options:

- View the version number of the thermostat.
- View the jumper setting of **J1** (Gas/Electric or Heat Pump), **J2** (Reversing Valve: RV=O or RV=B), and **J3** (Fan: Gas or Electric) jumpers located on the back of the thermostat. (Remove thermostat from backplate for access)
- View the state of the Dry Contact and Fault terminals.
- Turn on equipment outputs for testing.
- Calibrate thermostat, remote, and humidity sensors.
- Control HUM output (On or Off)
- Control DEHUM output (On or Off)
- Control AUX output (On or Off)

Advanced Setup Table

Df = Factory Default Setting

Step#	Description	Pg#	Range	Df
1	Prog Mode	25	Non, 1 Day, 5/2 Day, 7 Day	7
2	Available Modes	25	Heat/Cool/Auto/Off, Heat/Cool/Off, Heat/Off, Cool/Off	Heat/Cool/Auto/Off
3	Backlight	17	On, Off	Off
4	Backlight Level	17	Off thru 7 levels of brightness	Level 5
5	Night Dimmer	17	On/Off	Off
6	Night Dimmer Brightness	17	Off thru 7 levels of brightness	2 (20%)
7	Night Dimmer StartTime	17	12A-12A	8:00P
8	Night Dimmer StopTime	17	12A-12A	6:00A
9	Current Service Filter Runtime Hours	21	0-1999 Hours	0
10	Current Service Filter Calendar Days	21	0-720 Days	0
11	Current Heat Runtime Hours	22	0-1999 Hours	0
12	Current Aux Heat Runtime Hours	22	0-1999 Hours	0
13	Current Cool Runtime Hours	22	0-1999 Hours	0
14	Current UV Lamp Calendar Days	22	0-720 Days	0
15	Current Humidifier Calendar Days	22	0-720 Days	0
16	Set Service Filter Runtime Hours	21	0-1950 hours	0
17	Set Service Filter Calendar Days	21	0-720 Days	0
18	Set UV Lamp Calendar Days	22	0-720 Days	0
19	Set Humidifier Calendar Days	22	0-720 Days	0
20	Language	17	English, Espanol, Francais	English
21	Scrolling Method	18	"L-R Slow, L-R Fast, Word L-R Slow, Word L-R Fast, Whole Word L Slow, Whole Word R Slow, Whole Word Ctr. Fast, Whole Word Ctr. Slow"	"Whole Words Center Fast"
22	Setpoint Limits	26	No, Use	No
23	Max Heat Setpoint	26	35 - 99 Degrees	74
24	Min Cool Setpoint	26	35 - 99 Degrees	70
25	Cycles Per Hour	26	No Limit, 2, 3, 4, 5, 6	6
26	Compressor Minimum Off Minutes	26	0, 3, 5 Minutes	5
27	Min. Heat/Cool Setpoint Difference	26	0 - 6 Degrees	2
28	Number of Heat Stages	26	0 - 3	2
29	Number of Cool Stages	26	0 - 2	1
30	Number Of Compressor Stages	26	1, 2	1
31	Number of Aux Stages	26	0, 1, 2	0
32	1st Stage Deadband	27	1 - 6 Degrees	2
33	2nd Stage Deadband	27	0 - 10 Degrees	2
34	3rd Stage Deadband	27	0 - 10 Degrees	2
35	4th Stage Deadband	27	0 - 10 Degrees	2

cont. next page

Advanced Setup Table

Df = Factory Default Setting

Step#	Description	Pg#	Range	Df
36	Minutes Between 1st and 2nd Stage	27	0 - 60 Minutes	2
37	Minutes Between 2nd and 3rd Stage	27	0 - 60 Minutes	2
38	Minutes Between 3rd and 4th Stage	27	0 - 60 Minutes	2
39	2nd Stage Turnoff Point	27	Deadband, Setpoint	Deadband
40	3rd Stage Turnoff Point	27	Deadband, Setpoint	Deadband
41	4th Stage Turnoff Point	27	Deadband, Setpoint	Deadband
42	Fan Program	28	On, Off	Off
43	Minutes of Fan Runtime	28	0-60	0
44	Fan Program Start Time	28	12:00A - 12:00A	7:00A
45	Fan Program Stop Time	28	12:00A - 12:00A	9:00A
46	Wired Sensor Type	28	Remote, Supply	Remote
47	Control to Temp Source	31	Thermostat, Wired Remote*, Wireless Remote, Average of Wireless Remotes, Average Thermostat and Wired Remote*, Average All Sensors. *Option only if prior step = "Remote"	Thermostat
48	Wireless Remote to Use	31	list of wifi sensors currently linked to thermostat. * This step only appears if prior step = "Wireless Remote"	first linked sensor in list
49	Humidity Only With Heat	29	On, Off	Off
50	Fan With Humidity Demand	29	Fan On, Fan Off	Fan Off
51	Fan With Dehumidify Demand	29	Fan On, Fan Off	Fan Off
52	Humidity Setpoints	29	Auto, Manual	Manual
53	Cool To Dehumidify	29	On, Off	Off
54	Maximum Dehum Overcool	29	0 - 20 Degrees	2
55	Reheat Operation W/Cool To Dehum.	29	On, Off	Off
56	Lockout Heatpump with Outdoor Temp	30	On, Off	Off
57	Lockout Temp	30	0 - 75 Degrees	35
58	Lockout Aux Heat with Outdoor Temp	30	On, Off	Off
59	Aux Heat Lockout Temp	30	20 - 75 Degrees	75
60	Dualfuel	30	On, Off	Off
61	Dualfuel Changeover on Outdoor Temp	31	On, Off	Off
62	Dualfuel Balance Point	31	0 - 60 Degrees	35
63	Dualfuel Changeover Delay in Seconds	31	0 - 90 Seconds	30
64	Fan Off Delay	28	0 - 120 Seconds	0
65	F/C	31	Fahrenheit (F), Celsius (C)	F
66	Aux Output Polarity	32	Open, Closed	Open

cont. next page

Advanced Setup Table

Df = Factory Default Setting

Step#	Description	Pg#	Range	Df
67	Aux Output	32	Time, Temp, External, Free Cooling, Venting	Time
68	Aux Output Program Days	32	1 Day, 5/2 Day, 7 Day	1
69	Day Of Week To Program	32	Sunday - Monday (S - M)	MTWTFSS
70	Aux Output StartTime	32	12am - 12am	7am
71	Aux Output StopTime	32	12am - 12am	9pm
72	Copy	32	Yes, No	No
73	Aux Output Temp Source	33	Thermostat, Outdoor, Remote, External	Remote
74	Aux Output Trigger Point Temp	33	0 - 120 Degrees	65
75	Free Cooling with A/C	34	With A/C, Without A/C	With A/C
76	Free Cooling Usuable Temp	34	40 - 80 Degrees	65
77	Comfort Recovery	28	On, Off	Off
78	Dry Contact Polarity	34	Open, Closed	Open
79	Dry Contact Use	34	Condensate, Vacation, FDD	Vacation
80	Humidity Polarity	29	Open, Closed	Open
81	Dehumidify Polarity	29	Open, Closed	Open
82	Dehumidify only with Cooling	29	On, Off	On
83	Skyport	33	On, Off	On
84	Local API	33	On, Off	Off
85	ADR	39	On, Off	On
86	Price Dependent Action	39	Observe Setpoint Offset, Observe Static Setpoints	Observe SP Offsets
87	Event Max Cool Setpoint	39	65 - 90	90
88	Event Min Heat Setpoint	39	50 - 85	50
89	Static Cool Setpoint	39	65 - 85	82
90	Static Heat Setpoint	39	65 - 85	60
91	Cool Setpoint Offset	40	1 to 10	4
92	Heat Setpoint Offset	40	-1 to -10	-4
93	Press Fan To Clear All Messages	33		

Troubleshooting

- **SYMPTOM:** The air conditioning does not attempt to turn on.
CAUSE: The compressor timer lockout may prevent the air conditioner from turning on for a period of time.
REMEDY: Consult the Owner's Manual in the Installer Setup section to defeat the Cycles Per Hour (*page 29*).
- **SYMPTOM:** The display is blank.
CAUSE: Lack of proper power.
REMEDY: Make sure the power is on to the furnace and that you have 24vac between **R & C**.
- **SYMPTOM:** The air conditioning does not attempt to turn on.
CAUSE: The cooling setpoint is set too high.
REMEDY: Lower the cooling setpoint or lower the cooling set-point limit. *See Setpoint Limits (page 22)*.
- **SYMPTOM:** The heating does not attempt to turn on.
CAUSE: The heating setpoint is set too low.
REMEDY: Raise the heating setpoint or raise the heating set-point limit. *See Setpoint Limits (page 22)*.
- **SYMPTOM:** When controlling a residential heat pump, and asking for cooling, the heat comes on.
CAUSE: The thermostat reversing valve jumper is set for "**B**".
REMEDY: Set the reversing valve jumper for "**O**".
- **SYMPTOM:** When calling for cooling, both the heat and cool come on.
CAUSE: The thermostat equipment jumper is configured for "**HP**" and the HVAC unit is a Gas/Electric.
REMEDY: Set the equipment jumper for "**Gas**".
- **SYMPTOM:** When the Program button is pressed, the display reads "DISABLED".
CAUSE: Program mode is set to "**NON PROGRAM**".
REMEDY: Set Program Mode (Setup 1) to **1**, **5/2**, or **7 Day**. *See Selecting Your Program Mode (page 21)*.

Warranty

One-Year Warranty - This Product is warranted to be free from defects in material and workmanship. If it appears within one year from the date of original installation, whether or not actual use begins on that date, that the product does not meet this warranty, a new or remanufactured part, at the manufacturer's sole option to replace any defective part, will be provided without charge for the part itself provided the defective part is returned to the distributor through a qualified servicing dealer.

THIS WARRANTY DOES NOT INCLUDE LABOR OR OTHER COSTS incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts. Such costs may be covered by a separate warranty provided by the installer.

THIS WARRANTY APPLIES ONLY TO PRODUCTS IN THEIR ORIGINAL INSTALLATION LOCATION AND BECOMES VOID UPON REINSTALLATION.

LIMITATIONS OF WARRANTIES – ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.

THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owner's manual, including filter cleaning and/or replacement and lubrication.
2. Damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration or improper operation.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of the Manufacturer.
5. Parts not supplied or designated by the Manufacturer, or damages resulting from their use.
6. Manufacturer products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
7. Electricity or fuel costs or increases in electricity or fuel costs for any reason whatsoever including additional or unusual use of supplemental electric heat.
8. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

Programming Worksheet - see page 23

DAY	PERIOD	START TIME	COOL	HEAT	
MONDAY	Morning				
	Day				
	Evening				
	Night				
TUESDAY	Morning				<i>Copy Mon to Tues</i> <input type="checkbox"/> No <input type="checkbox"/> Yes
	Day				
	Evening				
	Night				
WEDNESDAY	Morning				<i>Copy Tues to Wed</i> <input type="checkbox"/> No <input type="checkbox"/> Yes
	Day				
	Evening				
	Night				
THURSDAY	Morning				<i>Copy Wed to Thurs</i> <input type="checkbox"/> No <input type="checkbox"/> Yes
	Day				
	Evening				
	Night				
FRIDAY	Morning				<i>Copy Thurs to Fri</i> <input type="checkbox"/> No <input type="checkbox"/> Yes
	Day				
	Evening				
	Night				
SATURDAY	Morning				<i>Copy Fri to Sat</i> <input type="checkbox"/> No <input type="checkbox"/> Yes
	Day				
	Evening				
	Night				
SUNDAY	Morning				<i>Copy Sat to Sun</i> <input type="checkbox"/> No <input type="checkbox"/> Yes
	Day				
	Evening				
	Night				

Patent Pending

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