



- On the User Preferences screen, use the navigation buttons to highlight **More**, and press **Mode/Select** to access the second User Preferences screen.
- On the second User Preferences screen, use the navigation buttons to highlight **More**, and press **Mode/Select** to access the third User Preferences screen.
- Use the navigation buttons to highlight **Advanced Setup**, and press **Mode/Select** to access the Advanced Setup screen. Use the navigation buttons to highlight **More**, and press **Mode/Select** to access the second User Preferences screen.
- On the second User Preferences screen, use the navigation buttons to highlight **More**, and press **Mode/Select** to access the third User Preferences screen.
- Use the navigation buttons to highlight **Advanced Setup**, and press **Mode/Select** to access the Advanced Setup screen.
- With HVAC System highlighted, press **Mode/Select** to indicate the type of HVAC system you are using.

Setting the Balance Point for a Heat Pump System

Balance Point configuration enables you to adjust a balance point to limit auxiliary heat pump operation according to the current outdoor temperature. The balance point establishes the outdoor temperature at which time the heat pump turns off and remains off until the outdoor temperature exceeds the balance point again. For example, if the balance point is set to 25 degrees and the outdoor temperature is 25 degrees or less, the heat pump remains off until the temperature exceeds 25 degrees again. The compressor terminals will not be energized when the outdoor temperature is below the balance point. This does not affect Emergency Heat operation.

Note: This option is only necessary if the thermostat has been configured to operate as a heat pump.

Perform these steps to set the balance point:

- From the Main screen, press **Mode/Select** until the Thermostat Mode screen appears.
- Use the navigation buttons to select **Settings**, and press **Mode/Select**. The Settings screen appears.
- Use the navigation buttons to select **Advanced Setup**, and press **Mode/Select** to access the Security Code screen.
- Enter the security code, and select **Enter** to access the User Preferences screen.
- Use the navigation buttons to highlight **More**, and press **Mode/Select** to access the second User Preferences screen.
- On the second User Preferences screen, use the navigation buttons to highlight **More**, and press **Mode/Select** to access the third User Preferences screen.
- Use the navigation buttons to highlight **Advanced Setup**, and press **Mode/Select** to access the Advanced Setup screen.
- Use the navigation buttons to highlight **More**, and press **Mode/Select** to access the second Advanced Setup screen.
- Use the navigation buttons to highlight Thermostat Setup, and press **Mode/Select** to access the Thermostat Setup screen.
- Use the navigation buttons to highlight **More**, and press **Mode/Select** to access the second Thermostat Setup screen.
- With Balance Point highlighted, press **Mode/Select** to activate it.
- Press **Mode/Select** to indicate the balance point.
- Use the navigation buttons to highlight **Exit**, and press **Mode/Select** to return to the second Advanced Setup screen.

Security Code

You must enter a security code to access the advanced setup options on the thermostat. The default security code is 1988. Perform the following steps to enter the security code.

- On the Main screen, press **Mode/Select** to access the Settings screen.
- Use the navigation buttons to select **Advanced Setup**.
- Press **Mode/Select** to access the Security Code screen.
- Use the navigation buttons to scroll through the numbers until you reach the first digit in the code, and press **Mode/Select** to move to the next digit in the code.
- Repeat the previous step until you have entered the full four-digit code.
- Press **Mode/Select** while **Enter** is selected. If the code is correct, the User Preferences screen appears.

Turning on Diagnostic Mode

Diagnostic Mode enables you to activate a mode during which you can test the functionality of the thermostat. With Diagnostic Mode turned on, the cycle rate no longer applies and you can enter the Advanced Settings sections without entering a security code. Text appears on the Main screen notifying you when Diagnostic Mode is active. Perform the following steps to turn on Diagnostic Mode:

- From the Main screen, press **Mode/Select** to access the Thermostat Mode screen.
- Use the navigation buttons to select Settings, and press **Mode/Select**. The Settings screen appears.
- Use the navigation buttons to select **Advanced Settings**. Press **Mode/Select** to access the Security Code screen.
- Enter the security code, and select **Enter** to access the User Preferences screen. See the *Security Code* section for more information.
- Use the navigation buttons to highlight **More**, and press **Mode/Select** to access the second User Preferences screen.
- On the second User Preferences screen, use the navigation buttons to highlight **More**, and press **Mode/Select** to access the third User Preferences screen.
- Use the navigation buttons to highlight **Advanced Setup**, and press **Mode/Select** to access the Advanced Setup screen.
- Use the navigation buttons to highlight **More**, and press **Mode/Select** to access the second Advanced Setup screen.
- Use the navigation buttons to highlight **More**, and press **Mode/Select** to access the third Advanced Setup screen.
- With Diagnostic Mode highlighted, press **Mode/Select** to toggle the mode setting to On.
- Use the navigation buttons to highlight **Exit**, and press **Mode/Select** to return to the Main screen.

Changing the Heating and Cooling Setpoints

You can change the heating and cooling setpoints on the Main screen. Setting the temperature on this screen creates a constant heating and cooling setpoint that runs as long as you have these setpoints enabled.

- On the Main screen, press either of the navigation buttons to access the heating or cooling setpoints that appear on the left side of the screen. When either of the setpoints blinks, you can change the setpoint by using the navigational buttons to increase or decrease its value.
- Press **Mode/Select** to select the next setpoint, and use the navigational buttons to increase or decrease its value.

The setpoints continue to blink and are able to be changed until the thermostat reaches a 10-second timeout.

Changing the Heating/Cooling Mode

You can access Hold mode by holding Mode/Select for three seconds while on the Main screen. With the Hold mode menu open, press Mode/Select one time and a menu with heating/cooling options appears.

Perform these steps to change the Heating/Cooling mode:

- On the Main screen, hold **Mode/Select** for three seconds. The Hold Mode menu appears.
- Press **Mode/Select** to open the Heating/Cooling mode menu.
- Use the navigational buttons to select the option you want.
- Press **Mode/Select** to activate the selected mode.

Changing the Fan Settings

The thermostat has two separate settings to configure the fan on your HVAC system. You can use the Fan State option to set the fan state to On, which runs the fan continuously, or Auto, which runs the fan when the heating and cooling settings determine it should do so. You can also set the Fan Speed option to Low, Medium, or High. If you are unable to change the fan settings, make sure the fan lock is not turned on. Perform the following steps to change the fan settings:

- On the Main screen, press **Mode/Select** until the Thermostat Mode screen appears.
- Use the navigation buttons to select Settings, and press **Mode/Select**. The Settings screen appears.
- Press **Mode/Select** to select Fan State.
- Use the navigation buttons to toggle the Fan State between On and Auto.
- Press **Mode/Select** to select Fan Speed.
- Press **Mode/Select** to select the appropriate Fan Speed.

ATTENTION: READ THIS FIRST!

For more detailed installation, configuration, programming, and operating instructions, or for other wiring diagrams not shown here, refer to the *ViewStat Color Communicating Thermostat Operation/Reference Guide* available on-line at www.amx.com.



FIG. 1 ENV-VST-C ViewStat Color Communicating Thermostat

Overview

The ENV-VST-C ViewStat Color Communicating Thermostat (FG2050-12K) (FIG. 1) provides the current temperature (from an on-board sensor, a remote sensor, or an average of the on-board and remote sensors), controls and displays humidity, and displays the current outdoor temperature. The thermostat displays this information on a 3.5" (8.89 cm) color display. In addition, the thermostat provides the current day's weather forecast along with a five-day forecast, when connected to an Internet-enabled Master. The forecast information is driven from AMX's i!-Weather application. A three-year subscription to i!-Weather is included with purchase of the thermostat.

Specifications

ViewStat Color Communicating Thermostat Specifications	
Control Voltage	24 VAC (interfaces with a power supply through the RC terminals.) Warning: Exceeding the control voltage may cause damage to the thermostat.
Switched Voltage	18-30 VAC, 57-63 Hz
Maximum Operating Current	• 2 amps total at rated voltage, through all outputs. • 1 amp through any one output.
Minimum System Power	24VAC, 48VA
Maximum Surge Current	2.0 A
Internal Battery	CR2032 for maintaining real-time clock settings during a power loss.
Control Accuracy	±1.0° F (± 0.56° C) ±3% relative humidity
Operating Range	• Temperature: 40°-99° F (5°-37° C) • Humidity: 5%-95% RH <i>non-condensing</i>
Certifications	IC, FCC Class B, CE, and IEC60950
Front Panel Components:	
Main LCD display	3.5" (8.89 cm) color QVGA (320 x 240) Thin Film Transistor Liquid Crystal Display (TFT-LCD).
Navigation buttons	The Navigation buttons are used to change various parameters on the thermostat, including the temperature setpoints. These buttons are located beneath the display.
Mode/Select button	The Mode/Select button is used to navigate through the various thermostat screens, including the weather screens. This button is located beneath the display.

ViewStat Color Communicating Thermostat Specifications (Cont.)	
Circuit Board Components:	
Communication and HVAC Equipment connectors	Terminals with captive-wire connectors that connect to the thermostat, HVAC equipment, control system, remote sensors, and power supply.
Enclosure:	
Material	White plastic and removable front panel. Panel can be painted to match wall decor. Warning: If you paint the panel, do not paint over the exposed thermistor. Doing so can cause the external temperature sensor to work improperly.
Dimensions (HWD)	5.31" x 3.93" x 1.18" (13.48 cm x 9.98 cm x 2.99 cm)
Weight	5.29 oz. (150 grams)
Included Accessories	ENV-VST-C ViewStat Color Communicating Thermostat Installation Guide (93-2050-01) ENV-VST-TSO ViewStat Indoor/Outdoor Temperature sensor (FG2050-22) i!-Weather application (FG070-518), three-year subscription
Optional Accessories:	ENV-VST-TSF ViewStat Indoor Flush Mount Temperature Sensor (FG2050-21)

Installing a Remote Sensor

Follow these steps to install the remote sensor:

- Drill a 1/4" hole into the drywall where you want to install the sensor.
- Fish the cable that connects to the sensor through the 1/4" hole in the wall until the edge of the sensor, where the cord meets the sensor, is flush against the wall.
- Apply caulk, drywall putty, insulation, or any other appropriate sealant to the hole in the wall around the sensor to seal the hole.
- Attach the connecting wires from the sensor to the S1 and S2 terminals on the thermostat.

Note: You can use a maximum of 300 ft (91.44 m) of 18 AWG wire for connecting the indoor/outdoor remote sensor to the thermostat.

The thermostat automatically defaults to using the on-board temperature sensor when you install it. For information about activating the remote sensor, consult the *Activating the External Sensor* section of the *ViewStat Color Communicating Thermostat User Guide*.

Mounting the Base to a Wall

You should only mount the thermostat onto a sheetrock wall with the anchors and screws provided with the unit. There are four screw holes located on the base of the thermostat. No tools are required to disassemble the thermostat—simply use your hands to pull the front panel off of the base.

- Place the base over the wire hole opening in the wall. Level the base (leveling required for appearance only) and mark the screw hole mounting locations.
- Using the supplied wall anchors, drill 1/4" hole in the center of the marked locations, and tap the wall anchors into the holes. If using the supplied screws only, drill a 3/32" hole in the center of the marked locations.

Note: Minimize the wire entry hole size and seal. Drafts from inside the wall could affect temperature readings.

- Fasten the base to the wall with the supplied screws.
- Seal the wire entry with caulk, drywall putty, or insulation.

Wiring the Thermostat

Note: A qualified HVAC technician should perform these steps to ensure proper termination.

- Make sure the HVAC system power is off.
- Strip 1/4" (0.63 cm) of insulation from each wire you are using.
- Secure the wires into the terminals on the base according to the appropriate wiring diagram. Use color-coding practices (i.e. white wire to W terminal) whenever possible.
- Check each wire to ensure it is securely fastened, not broken, and any exposed wires are not touching each other.



Wiring for AxLink

Follow these steps to connect the wiring into a captive-wire connector:

- Strip 1/4 inch off the wire insulation for all four wires.
- Tin 2/3 of the exposed wire.
- Insert each wire into the appropriate captive-wire connector up to the insulation.
- Tighten the captive screws to secure the fit in the connector.

Use 18 AWG wire to connect the AxLink wiring from the thermostat to the connector on the AxLink device as shown in FIG. 2.

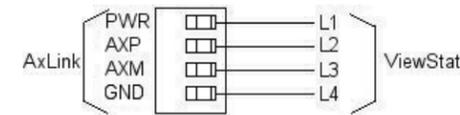


FIG. 2 AxLink wiring

Note: The ViewStat Color Communicating Thermostat interfaces with a 24 VAC power supply from the heating/cooling unit through its RC terminal. You should not connect the power wiring from the AxLink device to the thermostat with the intent of using the AxLink device to provide power to the thermostat. The L1 terminal on the thermostat can accept the AxLink +12VDC wire and you can connect the wire to the terminal if you want to assure there are no loose wires inside the thermostat, but you should not power the thermostat by running a jumper to the RC pin.

Wiring Diagrams

ViewStat Color Communicating Thermostats are equipped with terminals RC, RH, C, Y, W, G, O, B, S1, S2, L1, L2, L3, and L4. You can use terminals S1 and S2 to accommodate a remote temperature sensor. Terminals L1-L4 connect to the AxLink cable. The remaining terminals are used to control various types of heating and cooling systems. You can use the thermostat with the following types of heating and cooling systems:

- Single Stage Furnace and Single Stage A/C
- Dual Stage Furnace and Dual Stage A/C
- Roof Top Unit with Dual Stage Heat and Dual Stage Cool
- Boiler with A/C with Separate Transformers
- Single Stage Heat Pump
- Two Stage Heat Pump
- First Stage Radiant Floor Heat, Second Stage Furnace One Stage of Cooling

Communication and Equipment Terminal Wiring Definitions

FIG. 3 displays the terminal layout for the thermostat.

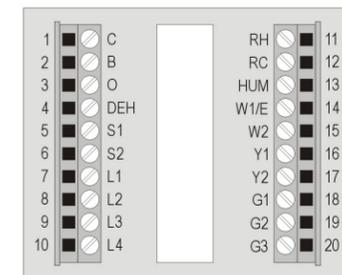


FIG. 3 Terminal Layout

The following table lists the communication and equipment terminal wiring definitions:

Communication and Equipment Terminal Wiring Definitions	
RH	24 VAC in
RC	24 VAC in for AC relays. If a separate 24 VAC is not supplied to the RC terminal, you should install a jumper from RH to RC.
C	24 VAC common
G1	Fan on 1. If you are using a single speed fan, connect it to the G1 terminal, since the fan speed is set to Low by default. On a multi-speed fan, G1 is the lowest speed.
G2	Fan on 2. On a multi-speed fan, G2 is the medium speed.
G3	Fan on 3. On a multi-speed fan, G3 is the highest speed.
W1	1st stage heat or emergency heat for a heat pump system.

Communication and Equipment Terminal Wiring Definitions (Cont.)	
W2	2nd stage heat
Y1	1st stage compressor
Y2	2nd stage compressor
B	Reversing valve (heat)
O	Reversing valve (cool)
DEH	Dehumidify
HUM	Humidify
S1	External thermistor. The ViewStat Color Communicating Thermostat supports only one external sensor.
S2	External thermistor. The ViewStat Color Communicating Thermostat supports only one external sensor.
L1	AxLink PWR. This terminal is optional for AxLink connections.
L2	AxLink AXP. This terminal is required for AxLink connections.
L3	AxLink AXM. This terminal is required for AxLink connections.
L4	AxLink GND. This terminal is required for AxLink connections.

Warning: Applying voltage to the external temperature sensor pins (S1 and S2) can cause permanent damage to the thermostat.

Single Stage Furnace and Single Stage A/C

FIG. 4 displays the thermostat wiring for a system with a single stage furnace and A/C.

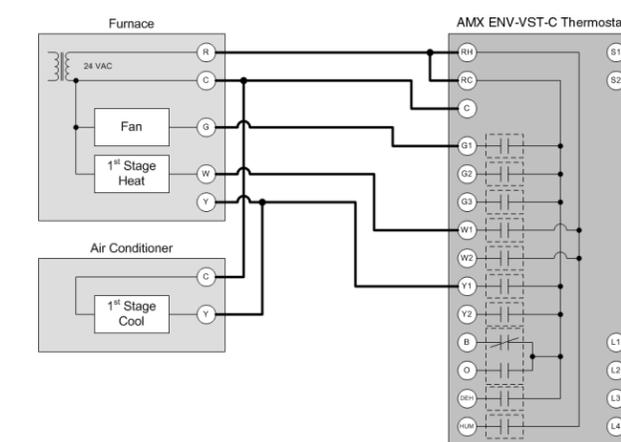


FIG. 4 Single Stage Furnace and Single Stage A/C wiring

The thermostat automatically defaults to One Stage Furnace for the HVAC System setting when you install it. For information about changing the HVAC System setting, consult the *Changing the Type of HVAC System* section in the *ViewStat Color Communicating Thermostat User Guide*.

Dual Stage Furnace and Dual Stage A/C

FIG. 5 displays the thermostat wiring for a system with a dual stage furnace and A/C.

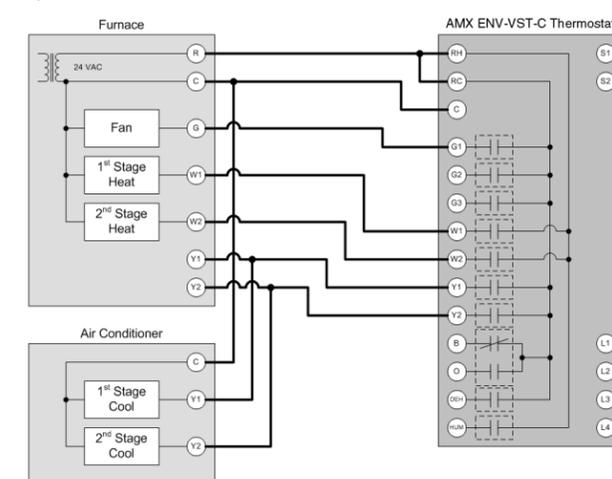


FIG. 5 Dual Stage Furnace and Dual Stage A/C wiring

Roof Top Unit with Dual Stage Heat and Dual Stage Cool

FIG. 6 displays the thermostat wiring for a system with a roof top unit with dual stage heat and dual stage cool.

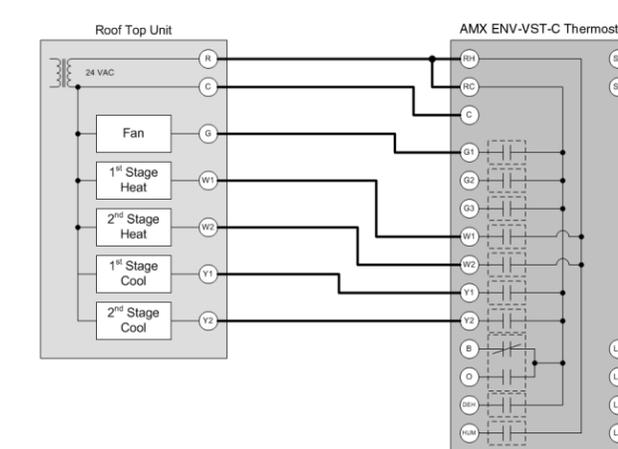


FIG. 6 Roof Top Unit with Dual Stage Heat and Dual Stage Cool

Boiler with A/C with Separate Transformers

FIG. 7 displays the thermostat wiring for a system with a boiler with A/C with separate transformers.

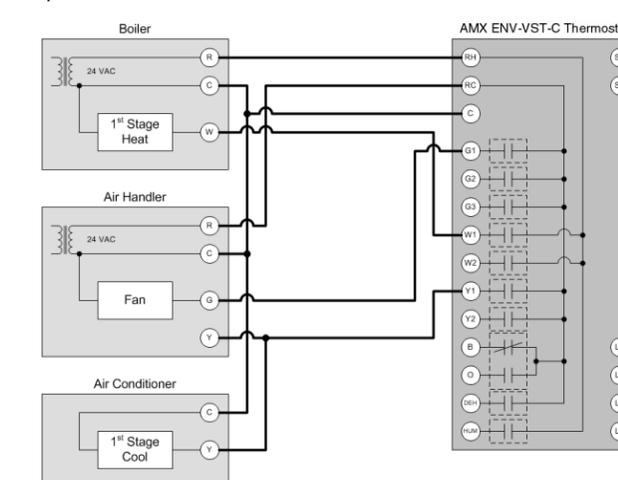


FIG. 7 Boiler with A/C with Separate Transformers

Single Stage Heat Pump

FIG. 8 displays the thermostat wiring for a system with a single stage heat pump.

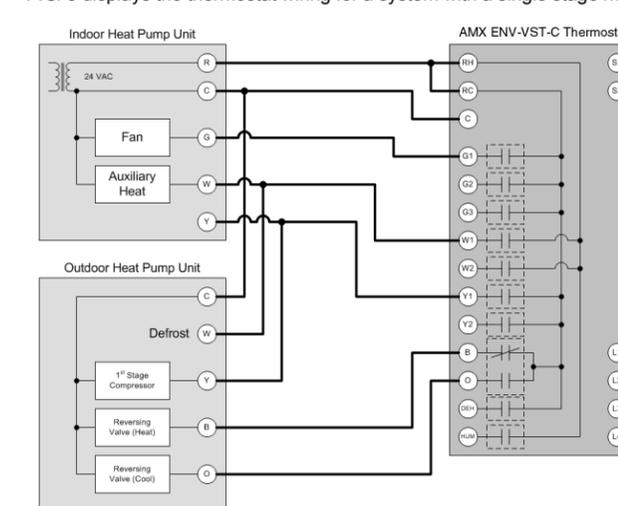


FIG. 8 Single Stage Heat Pump

Two Stage Heat Pump

FIG. 9 displays the thermostat wiring for a system with a two stage heat pump.

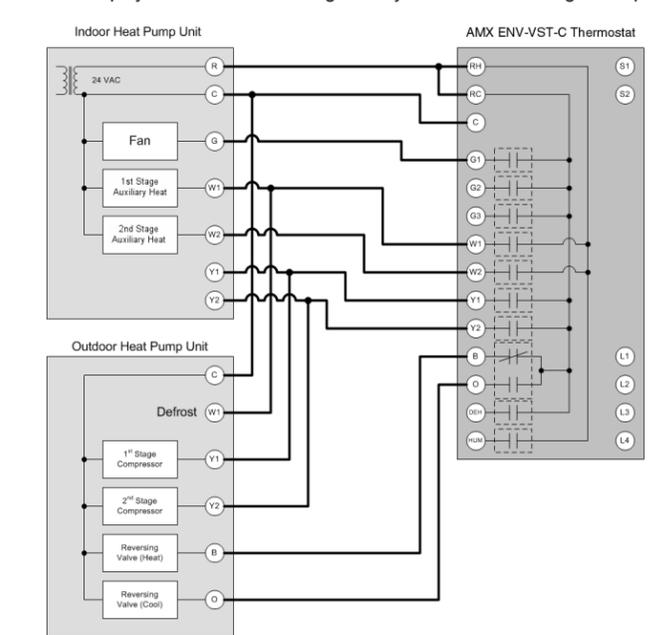


FIG. 9 Two Stage Heat Pump

First Stage Radiant Floor Heat, Second Stage Furnace One Stage of Cooling

FIG. 10 displays the thermostat wiring for a system with first stage radiant floor heat and second stage furnace, one stage of cooling.

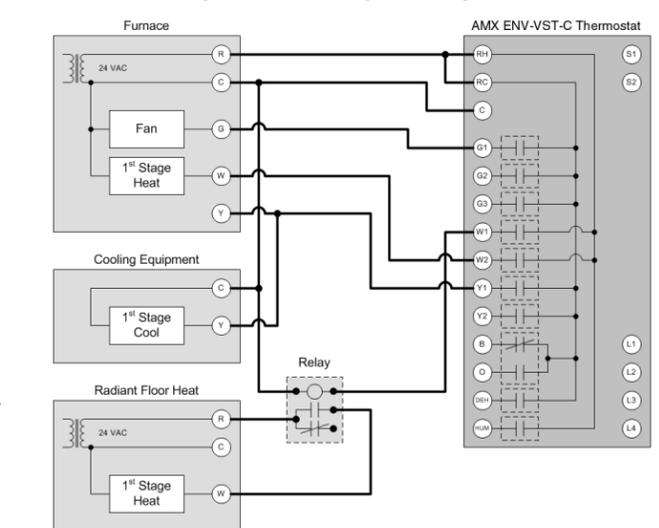


FIG. 10 First Stage Radiant Floor Heat, Second Stage Furnace One Stage of Cooling

Changing the Type of HVAC System

The thermostat automatically defaults to One Stage Furnace for the HVAC System setting when you install it. You can change the type of HVAC system you are using, which activates certain features depending on which type of system you have. This option should be set when the thermostat is installed for the first time, and should not need to be changed after that. Perform the following steps to change the type of HVAC system you are using:

- From the Main screen, press **Mode/Select** until the Thermostat Mode screen appears.
- Use the navigation buttons to select **Settings**, and press **Mode/Select**. The Settings screen appears.
- Use the navigation buttons to select **Advanced Settings**. Press **Mode/Select** to access the Security Code screen.
- Enter the security code, and select **Enter** to access the User Preferences screen.