Honeywell

THX9321 Prestige® 2.0 and THX9421 Prestige® IAQ with EIM

THX9421 Prestige® IAQ with EIM

THX9321 Prestige® 2.0
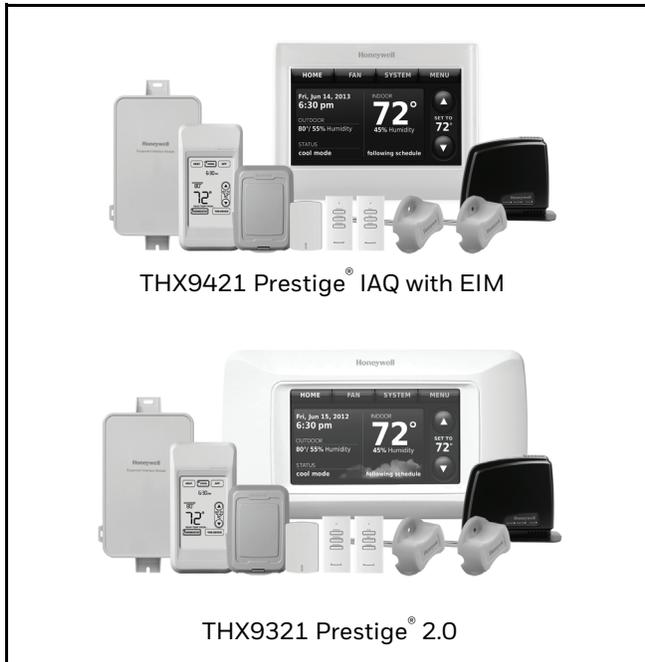
APPLICATION

The Prestige 2.0 and Prestige IAQ Systems feature an effortless, 7-Day programmable color touchscreen thermostat that provides control of temperature, humidification, dehumidification, and ventilation for up to 4 Heat/2 Cool heat pump systems or up to 3 Heat/2 Cool conventional systems for residential and commercial applications.

FEATURES

- **RedLINK™ Compatible**
  Increase your content and profit per job by including RedLINK™ accessories that meet your customers comfort and convenience needs. RedLINK accessories include the Wireless Outdoor Sensor, Portable Comfort Control (PCC), Equipment Interface Module (EIM), RedLINK Internet Gateway, Wireless Indoor Sensor, Tru-eSTEAM™ humidifier with Wireless Adapter, TrueZONE™ zoning panel with Wireless Adapter, Vent Boost Remote and Entry/Exit Remote.

- **Also Compatible with Equipment Remote Module (ERM) ERM5220R**

- **Customizable Service Reminders**
  Set up to 10 service reminders. Choose from the pre-set options or customize your own. Reminders based on date or the outdoor temperature.

- **Delta T Alerts and Diagnostics**
  Alerts give customers a sense of security while allowing you to service or replace the equipment prior to a loss of heating or cooling. Based on limits you set at installation, customers can be alerted when their system is not operating as expected. The system alert will instruct customers to contact you for assistance. Requires Equipment Interface Module.

- **Delta T Installer Test**
  Save time by viewing Delta T while running a system test to verify proper operation. Requires Equipment Interface Module.

- **Universal Inputs**
  EIM – S1, S2, S3, S4
  Assignable inputs allow you to setup Indoor and Outdoor Temperature Sensors, Discharge and Return Air Sensors or Dry Contact Devices. Dry Contact Devices can be used to trip pre-set or customized alerts on the thermostat home screen. Requires Equipment Interface Module.

- **Data Logs**
  The thermostat stores an Alerts Log, User Interactions Log and a Performance Log to quickly determine if an issue is caused by a system error or an accidental user error. Note: The Performance Log only applies to the THX9421 thermostat.

- **Selectable for Residential and Light Commercial Applications**
  One thermostat does it all to meet the needs of Residential and Light Commercial applications. Simply select Residential or Commercial during the installer setup. If Commercial is selected, the thermostat will use commercial language, meet building codes and offer 365 day holiday scheduling.

- **USB Port for Quick Installer Setup**
  Save time by using a USB stick to upload installer settings, and service reminders in one simple step.

- **Selectable Sensors**
  When paired with a Wireless Indoor Sensor(s) you have the ability to choose which sensor(s) to use for temperature, humidification and dehumidification. They can be used in combination for temperature averaging—or individually—to condition humidity levels in separate spaces.

CONTENTS

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number. If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Environmental and Combustion Controls Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
   1985 Douglas Drive North
   Golden Valley, Minnesota 55422-4386
3. http://customer.honeywell.com or http://customer.honeywell.ca

International Sales and Service Offices in all principal cities of the world. Manufacturing in Belgium, Canada, China, Czech Republic, Germany, Hungary, Italy, Mexico, Netherlands, United Kingdom, and United States.

SPECIFICATIONS

Thermostat Description:

Feature	Description
Powering method	• Common wire only
System types (up to 4 heat/2 cool heat pump and up to 3 heat/2 cool conventional)	• Gas, oil or electric heat with air conditioning • Warm air, hot water, high-efficiency furnaces, heat pumps, steam and gravity • Cool only
Changeover	Manual or Auto changeover selectable
System setting	Em Heat-Heat-Off-Cool-Auto
Fan setting	Auto-On-Circ-Follow Schedule

Electrical Ratings for:
Equipment Interface Module and the THX9321 Prestige 2.0 Thermostat

NOTE: To find what terminals are available on the Equipment Interface Module and the Prestige Thermostats, see "Terminal Designations" below the table.

Terminal	Voltage (50/60 Hz)	Max. Current Rating
W - O/B	18 to 30 VAC	1.00A
Y (cooling)	18 to 30 VAC	1.00A
G (fan)	18 to 30 VAC	0.50A
W2 - Aux 1 (heating)	18 to 30 VAC	0.60A
W3 - Aux 2 (heating)	18 to 30 VAC	0.60A
Y2 (cooling)	18 to 30 VAC	0.60A
A-L/A (Output)	18 to 30 VAC	1.00A
U1, U1 U2, U2 U3, U3	18 to 30 VAC	0.50A

Terminal Designations:
— Equipment Interface Module: R, RC, RH, C, W-O/B, W2-AUX 1, W3-AUX 2, Y, Y2, G, A-L/A, U1 U1, U2 U2, U3 U3, S1 S1, S2 S2, S3 S3, S4 S4, A, B, C, D
— THX9421 Thermostat: R, C
— THX9321 Thermostat: R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, U2 U2

Power Consumption of THX9421/THX9321:
Full brightness = 3.0 VA
1/2 brightness = 2.1 VA
Backlight off = 1.9 VA

RedLINK Communication:
Frequency: 900 Mhz frequency range
Re-Sync Time: RedLINK devices re-establish communication within 6 minutes after AC power resumes.

Temperature Setting Range:
Heating: 40 to 90 °F (4.5 to 32 °C).
Cooling: 50 to 99 °F (10 to 37 °C).

Temperature Sensor Accuracy: ± 1.5 °F at 70 °F (0.75 °C at 21.0 °C)

Humidification Setting Range:
10% to 60% RH.

Dehumidification Setting Range:
40% to 80% RH.

Humidity Display Range:
0% to 99%.

Humidity Sensor Accuracy: ± 5% RH from 30% to 50% RH at 75 °F (24 °C).

Cool Indication:
Prestige 2.0 and Prestige IAQ displays "Cool On" when the thermostat turns the cooling on.

Heat Indication:
Prestige 2.0 and Prestige IAQ displays "Heat On" when the thermostat turns the heating on.

Auxiliary Heat Indication:
Prestige 2.0 and Prestige IAQ displays "Auxiliary Heat On" when the thermostat turns the auxiliary heat on.

Interstage Differential:
Comfort: The thermostat keeps the indoor temperature within 1 degree of the setpoint (droop less control). The thermostat turns on stage 2 when the capacity on stage 1 reaches 90%.
When the interstage differential is set to 1.0 or higher, the thermostat stages the equipment based on how far the indoor temperature is from the setpoint (ISU 3030 to 3090). See page 31 for more information.

Clock Accuracy: ± 1 minute per month at 77 °F (25 °C). ± 2 minutes per month over the operating ambient temperature range.

Mounting Means:
Thermostat mounts directly on the wall in the living space using mounting screws and anchors provided. Fits a horizontal 2 x 4 in. junction box.
Equipment Interface Module (EIM) mounts on HVAC equipment or on a wall in the equipment room.
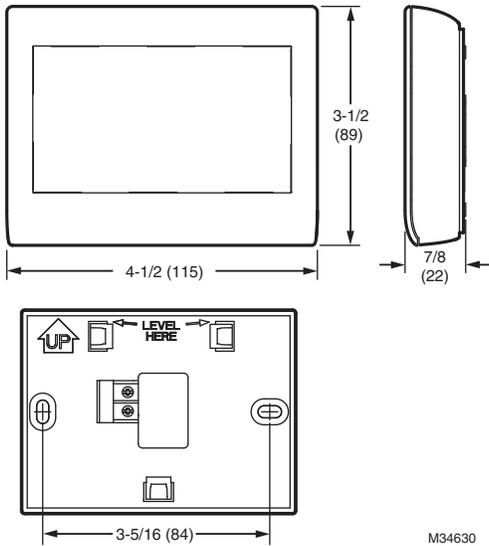
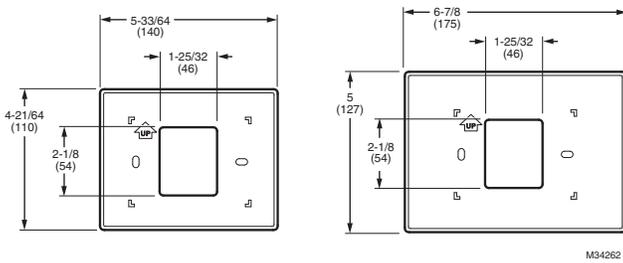**Fig. 1. Dimensions of THX9421 Prestige IAQ thermostat in in. (mm).**

Fig. 2. Dimensions of THX9421 Prestige IAQ cover plates in in. (mm).
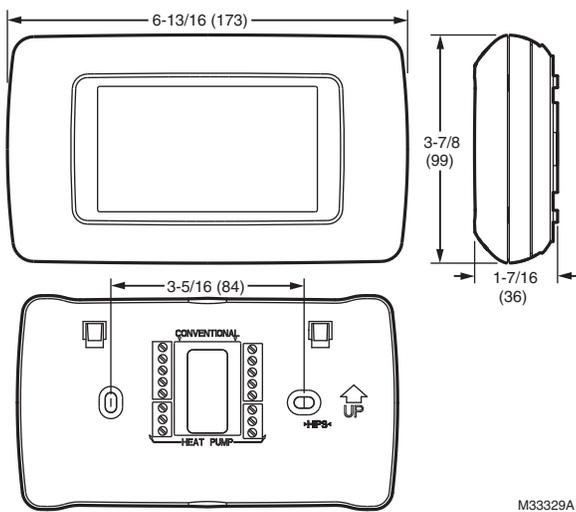
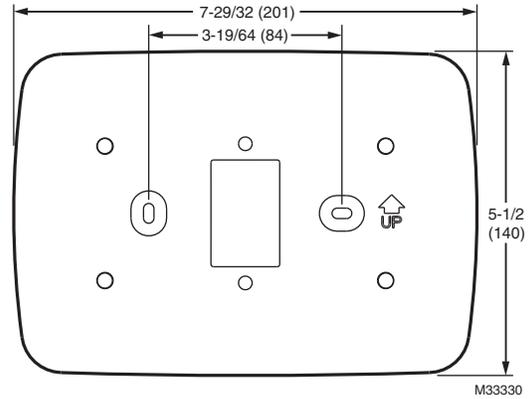**Fig. 3. Dimensions of THX9321 Prestige® 2.0 thermostat in in. (mm).**

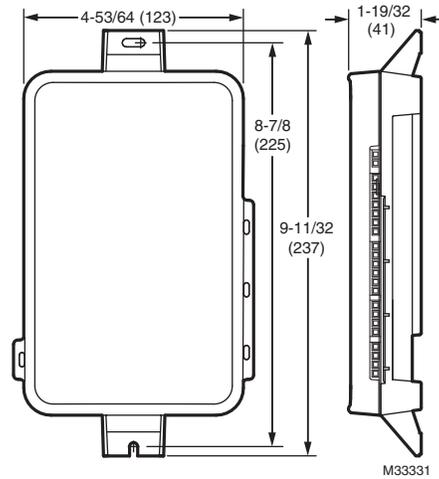**Fig. 4. Dimensions of THX9321 Prestige 2.0 cover plate in in. (mm).**

Fig. 5. Dimensions of Equipment Interface Module in in. (mm).

Table 1. Prestige Kits.

Kit Part Number	Included in Kit		
	Part Number	**Description**	
Prestige IAQ Kit YTHX9421R5101WW	THX9421R5021WW	Thermostat – White Front, White Side	
	THM5421R1021	Equipment Interface Module	
	C7089R1013	Wireless Outdoor Sensor	
	50062329-001	Discharge/Return Sensors (Qty. 2)	
Prestige IAQ Kit YTHX9421R5085WW	THX9421R5021WW	Thermostat – White Front, White Side	
	THM5421R1021	Equipment Interface Module	
	50062329-001	Discharge/Return Sensors (Qty. 2)	
Prestige IAQ Kit YTHX9421R7001WW	THX9421R5021WW	Thermostat – White Front, White Side	
	THM5421R1021	Equipment Interface Module	
	50062329-001	Discharge/Return Sensors (Qty. 2)	
	THM6000R7001	RedLINK Internet Gateway	

Table 2. Thermostat Replacement Parts and Accessories.

Product	Part Number	Operating Ambient Temperature	Operating Relative Humidity	Shipping Temperature	Physical Dimensions in in. (mm)	Color(s)
Thermostat	THX9421R5021WW	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	4–1/2 x 3–1/2 x 7/8 (115 x 88 x 22)	Front–White, Side–White
	THX9421R5021BB OBSOLETE	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	4–1/2 x 3–1/2 x 7/8 (115 x 88 x 22)	Front–Black, Side–Black
	THX9421R5021SG OBSOLETE	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	4–1/2 x 3–1/2 x 7/8 (115 x 88 x 22)	Front–Silver, Side–Gray
	THX9421R5021WG OBSOLETE	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	4–1/2 x 3–1/2 x 7/8 (115 x 88 x 22)	Front–White, Side–Gray
	THX9321R5030 OBSOLETE	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	6–13/16 x 3–7/8 x 1–7/16 (173 x 99 x 36)	Arctic White
Equipment Interface Module	YTHM5421R1010* THM5421R1021	–40 to 165 °F (–40 to 73.9 °C)	5% to 95% Non-Condensing	–20 to 165 °F (–28.9 to 73.9 °C)	9–11/32 x 4–53/64 x 1–19/32 (237 x 123 x 41)	Gray
Equipment remote module	ERM5220R1018	Compressor: –40 to 155 °F (–40 to 68 °C) Boiler: 30 to 130 °F (–1 to 54 °C)	0% to 99% Non-Condensing	–20 to 165 °F (–28.9 to 73.9 °C)	6–39/64 x 6–7/8 x 1–31/64" (168 x 175 x 38)	Gray
Wireless Adapter (For TrueZONE, TrueSTEAM or extend wireless range of EIM)	THM4000R1000	–40 to 165 °F (–40 to 73.9 °C)	5% to 95% Non-Condensing	–20 to 165 °F (–28.9 to 73.9 °C)	5–9/16 x 4–3/8 x 1–1/4 (141 x 112 x 32)	Gray
RedLINK Internet Gateway	THM6000R1002 OBSOLETE	32 to 120 °F (0 to 48.9 °C)	5% to 95% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	6 x 4–7/8 x 2–1/2 (152 x 124 x 64)	Black
RedLINK Internet Gateway	THM6000R7001	32 to 120 °F (0 to 48.9 °C)	5% to 95% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	3–7/8 x 3–9/16 x 1–1/8 (99 x 91 x 29 mm)	White
Portable Comfort Control	REM5000R1001	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	6–1/4 x 3–1/8 x 1–5/8 (158 x 80 x 38)	Front–White, Side–Gray
Wireless Entry/Exit Remote	REM1000R1003	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	3–15/16 x 1–15/16 x 5/8 (101 x 50 x 16)	Arctic White
Wireless Vent and Filter Boost Remote	HVC20A1000	32 to 120 °F (0 to 48.9 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	3–15/16 x 1–15/16 x 5/8 (101 x 50 x 16)	Arctic White
Wireless Outdoor Sensor	C7089R1013	–40 to 140 °F (–40 to 60 °C)	0% to 100% Condensing	–40 to 120 °F (–40 to 48.9 °C)	5 x 3–1/2 x 1–11/16 (127 x 89 x 43)	Gray

Table 2. Thermostat Replacement Parts and Accessories. (Continued)

Product	Part Number	Operating Ambient Temperature	Operating Relative Humidity	Shipping Temperature	Physical Dimensions in in. (mm)	Color(s)
Wireless Indoor Sensor	C7189R1004	0 to 120 °F (–17.8 to 48.9 °C) For optimal Battery Life: 35 to 114 °F (1.7 to 45.6 °C)	5% to 90% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	2–7/8 x 1–7/8 x 15/16 (74 x 48 x 24)	Arctic White
Wired Outdoor Sensor (10K ohm Negative Temperature Coefficient)	C7089U1006	–40 to 120 °F (–40 to 48.9 °C)	5% to 95% Non-Condensing	–40 to 130 °F (–40 to 54.4 °C)	1–1/2 (38)	– –
Wired Wall Mount Indoor Sensor (10K ohm Negative Temperature Coefficient)	C7189U1005	45 to 88 °F (7 to 32 °C)	5% to 95% Non-Condensing	–20 to 120 °F (–28.9 to 48.9 °C)	2–9/32 x 1–1/2 x 11/16 (58 x 38 x 18)	Premier White
Wired Wall Mount Indoor Sensor (20K ohm Negative Temperature Coefficient)	TR21	45 to 99 °F (7 to 37 °C)	5% to 95% Non-Condensing	–40 to 150 °F (–40 to 65.5 °C)	4–9/16 x 3 x 7/8 (116 x 76.5 x 22)	White
Wired Wall Mount Indoor Sensor (10K ohm Negative Temperature Coefficient)	TR21-A	45 to 99 °F (7 to 37 °C)	5% to 95% Non-Condensing	–40 to 150 °F (–40 to 65.5 °C)	4–9/16 x 3 x 7/8 (116 x 76.5 x 22)	White
Wired Flush Mount Indoor Sensor (20K ohm Negative Temperature Coefficient)	C7772A1004	45 to 99 °F (7 to 37 °C)	5% to 95% Non-Condensing	–40 to 150 °F (–40 to 65.5 °C)	4–1/2 x 2–3/4 x 5/16 (114 x 70 x 8)	Brushed Stainless Steel
Wired Flush Mount Indoor Sensor (20K ohm Negative Temperature Coefficient)	C7772A1012	45 to 99 °F (7 to 37 °C)	5% to 95% Non-Condensing	–40 to 150 °F (–40 to 65.5 °C)	4–1/2 x 2–3/4 x 5/16 (114 x 70 x 8)	Brushed Stainless Steel
Discharge or Return Air Sensor (10K ohm Negative Temperature Coefficient)	C7735A1000*	0 to 200 °F (– 17.8 to 93.3 °C)	– –	–20 to 120 °F (–28.9 to 48.9 °C)	Probe: 3–3/4 x 1/4 (77 x 6.4) Cap Diameter: 2–7/16 (62)	Gray
Discharge or Return Air Sensor (20K ohm Negative Temperature Coefficient)	C7041	– –	– –	– –	4–3/16 x 2–5/16 x 1–11/16 (107 x 59 x 43)	– –
Discharge or Return Air Sensor (20K ohm Negative Temperature Coefficient)	C7770A1006	45 to 99 °F (7 to 37 °C)	5% to 95% Non-Condensing	–40 to 150 °F (–40 to 65.5 °C)	Probe: 6 x 1/4 (152 x 6.4)	– –

Table 2. Thermostat Replacement Parts and Accessories. (Continued)

Product	Part Number	Operating Ambient Temperature	Operating Relative Humidity	Shipping Temperature	Physical Dimensions in in. (mm)	Color(s)
Occupancy Sensor for Remote Setback (Requires an Equipment Interface Module)	WSK-24	Receiver: - 5 to 140 °F (-21 to 60 °C) Door Sensor: -4 to 140 °F (-20 to 60 °C) PIR Sensor: -4 to 104 °F (-20 to 40 °C)	- -	- -	Receiver: 3.6 x 3.4 x 1.2 (91.4 x 86.4 x 30.5) Door Sensor: 1.4 x 2.3 x 0.6 (35.8 x 57.6 x 15.2) PIR Sensor: 2.8 x 3.9 x 1.1 (71 x 100 x 28)	White
THX9421 Coverplate (covers marks left by old thermostats)	THP2400A1027W (Includes 2 cover plates)	- -	- -	- -	Small = 5-33/64 x 4-21/64 (140 x 110), Large = 6-7/8 x 5 (175 x 127)	White
THX9421 Coverplate (covers marks left by old thermostats)	THP2400A1027B (Includes 2 cover plates)	- -	- -	- -	Small = 5-33/64 x 4-21/64 (140 x 110), Large = 6-7/8 x 5 (175 x 127)	Black
THX9421 Coverplate (covers marks left by old thermostats)	THP2400A1027G (Includes 2 cover plates)	- -	- -	- -	Small = 5-33/64 x 4-21/64 (140 x 110), Large = 6-7/8 x 5 (175 x 127)	Gray
THX9321 Coverplate (covers marks left by old thermostats)	50028399-001	- -	- -	- -	7-29/32 x 5-1/2 (201 x 140)	White
Wire Saver Module	THP9045A1023	-40 to 163 °F (-40 to 73 °C)	5% to 90% Non-Condensing	-40 to 185 °F (-40 to 85 °C)	- -	Gray

* Prestige IAQ Kits and YTHM5421R1010 Kit include 50062329-001 Discharge/Return Air Sensors. Replacement Discharge/Return Air Sensor part number is C7735A1000.

SYSTEM INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow the instructions can damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After completing installation, use these instructions to verify the product operation.

Finding Your Password (Date Code)

You will need the thermostat password to:
• Make changes to the Installer Setup.
• Setup Diagnostics.
• Perform an Installer Test.
• View Data Logs.
• Add, remove, rename or view connected RedLINK accessories.
• Reset the thermostat to Factory Default settings.

The password (Date Code) is located on the back of the thermostat. It can also be found by following these steps:

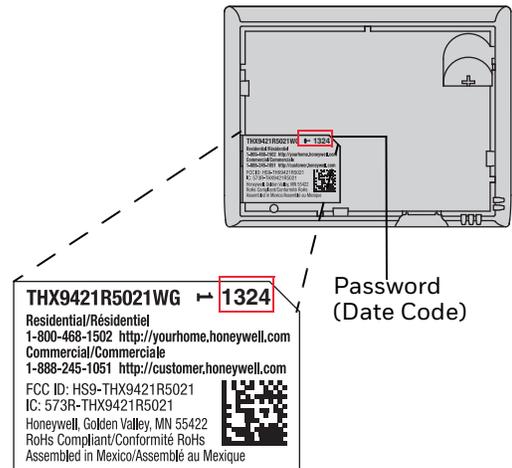1. Touch Menu.
2. Select Dealer Information.
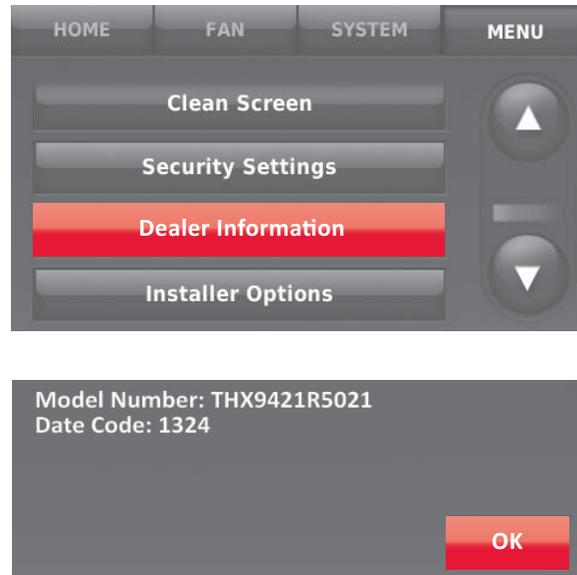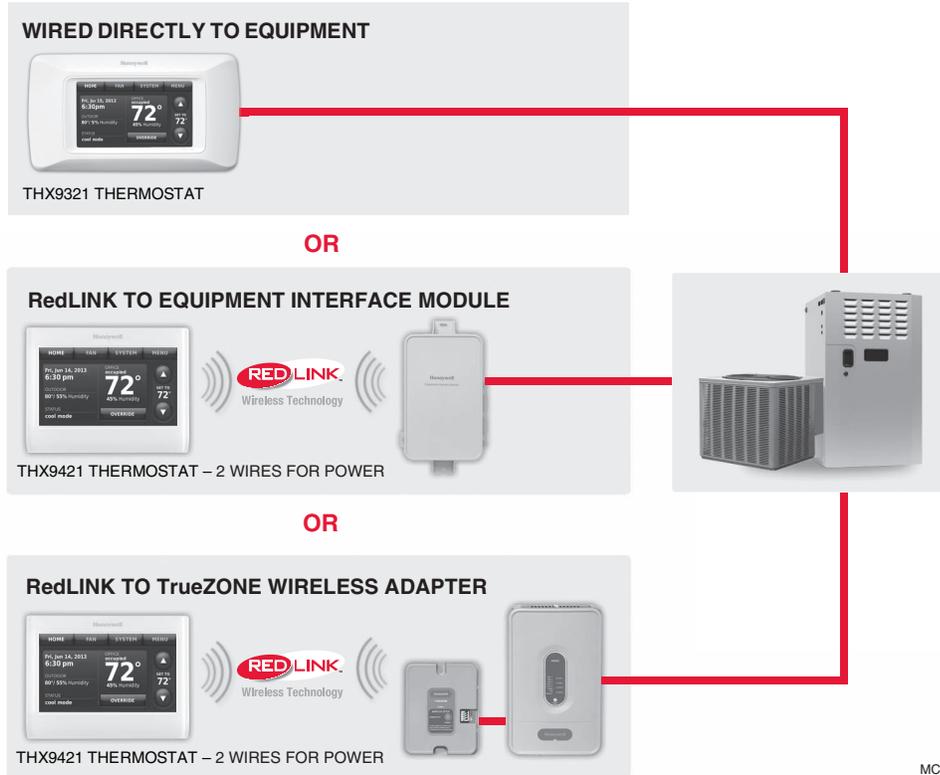

Fig. 6. Finding thermostat password.

Fig. 7. Finding thermostat password.

INSTALLATION OPTIONS

The THX9321 Prestige® 2.0 thermostat is wired directly to the equipment. The THX9421 Prestige® IAQ thermostat is used with the Equipment Interface Module or with a TrueZONE Wireless Adapter.

If using the Equipment Interface Module, see "Installing Equipment Interface Module (if used)" beginning on page 10.

If using a TrueZONE wireless adapter, follow the installation instructions that came with the TrueZONE, and go to "Selecting Thermostat Location" beginning on page 12.

WIRED DIRECTLY TO EQUIPMENT

THX9321 THERMOSTAT

OR

RedLINK TO EQUIPMENT INTERFACE MODULE

THX9421 THERMOSTAT – 2 WIRES FOR POWER

OR

RedLINK TO TrueZONE WIRELESS ADAPTER

THX9421 THERMOSTAT – 2 WIRES FOR POWER

MCR34631

Guidelines for Installing RedLINK Devices

— When installing more than one Thermostat and Equipment Interface Module, mount the Equipment Interface Modules at least 2 feet apart for best RedLINK performance. No minimum distance is required between the Thermostats if the Thermostat is linked to an Equipment Interface Module.
— When the Thermostat is wired directly to the equipment (No Equipment Interface Module and No TrueZONE Wireless Adapter), mount the Thermostats at least 2 feet apart for best RedLINK performance.
— To determine if a RedLINK device will communicate properly in the installed location, during the connection process, press and quickly release the connect button on the RedLINK device at the <u>desired mounting location</u>. If the RedLINK device connects,

then it will work reliably during normal operation. If the RedLINK device does NOT connect, try a new location. During the connection process, the signal is sent at low power and during normal operation the signal is sent at high power.
— To connect a RedLINK device, make sure to <u>press and quickly release</u> the connect button on the RedLINK device. Press and holding the connect button down too long will not allow the device to connect.
— If you link the Thermostat to the TrueZONE Wireless Adapter, you will NOT be able to do the following: control humidification, dehumidification or ventilation, setup a program schedule remotely from a computer, smart phone or tablet, work with the Wireless Indoor Sensor, Entry / Exit Remote or the Vent and Filter Boost Remote. To use these features, wire the Thermostat directly to the zone panel or use an Equipment Interface Module.
— If you are using a RedLINK device from a previous installation, you must reset the device first before you re-connect it to the new Thermostat/Equipment Interface Module. See page 136 for more information.

Installing Equipment Interface Module (if used)

If no Equipment Interface Module is used, skip to "Selecting Thermostat Location" beginning on page 12.

NOTE: If an EIM is mounted inside a metal cabinet, such as a commercial rooftop unit, it is recommended to use a THM4000R1000 Wireless Adapter for extended wireless range. Mount the Wireless Adapter outside the metal cabinet and connect to the ABCD terminals at the EIM. The Wireless Adapter functions as a remote antenna for the EIM. After it is wired to the EIM, it automatically takes over as the antenna for RedLINK communi-cation. For best RedLINK performance, avoid mounting the Wireless Adapter above the roof deck or outside the exterior walls.

NOTE: If you install more than one thermostat and EIM, the EIMs must be at least 2 feet apart for best RedLINK performance.
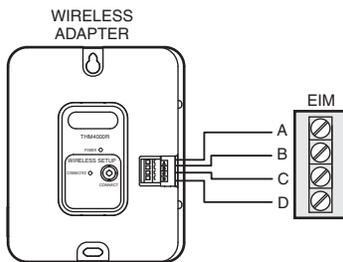

Fig. 8.

⚠️ **CAUTION**
Electrical Hazard.
Can cause electrical shock or equipment damage.
Disconnect power before wiring.

The Equipment Interface Module (EIM) can be mounted vertically on the HVAC equipment or on a wall in the equipment room.

1. Mount the EIM near the HVAC equipment or on the equipment itself. Use screws and anchors as appro-priate for the mounting surface..
2. To wire the EIM, strip 1/4" insulation, then insert wires (see Fig. 9). For wiring diagrams, see "Wiring" beginning on page 138.
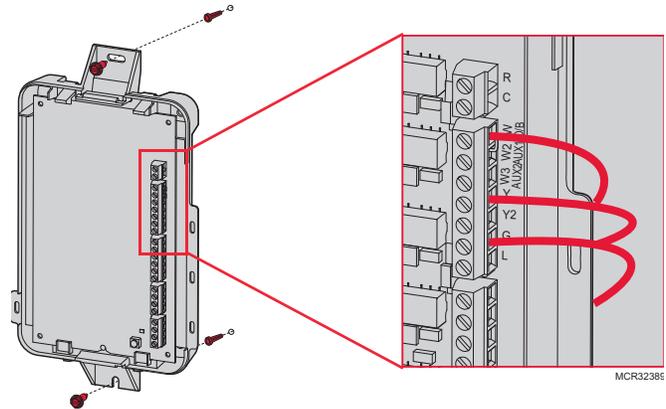

Fig. 9.

Wiring 24 Vac Common

- Single-Transformer System—Connect the common side of the transformer to the C screw terminal of the EIM. Leave the metal jumper wires in place between R, RC, and RH.
- Two-Transformer System—Connect the common side of the cooling transformer to the C screw terminal of the EIM. Remove the metal jumper wire between RC and RH. Connect the hot side of heating transformer to RH and leave the jumper wire between R and RC and connect the hot side of cooling transformer to R or RC.

Selecting Discharge and Return Air Temperature Sensor Mounting Locations

Refer to the guidelines below and Fig. 10–14 for mounting locations of the Discharge and Return Air Temperature Sensors.

Selecting Discharge Air Temperature Sensor Mounting Location

1. Mount the Discharge Air Temperature Sensor on the supply duct in a location where the air is mixed well. Mount the Discharge Air Temperature Sensor out of sight of the A-Coil/Heat Exchanger when possible. See Fig. 10.
2. When possible, mount the Discharge Air Temperature Sensor upstream of a Steam Humidifier, a Fan Powered Humidifier or a Dehumidifier that is ducted to the supply. See Fig. 11–12.
3. If space does not allow a Discharge Air Temperature Sensor upstream of a Steam Humidifier or Fan Powered Humidifier, mount the Discharge Air Temperature Sensor downstream of the Humidifier.

See Fig. 11. When setting the Delta T Limits (see "Set Delta T Limits" on page 89), be sure to consider the affect that the humidifier has on Delta T.

4. If a Bypass Humidifier is installed, mount the Discharge Air Temperature Sensor downstream of the Bypass Humidifier. See Fig. 13–14.

Selecting Return Air Temperature Sensor Mounting Location

1. Install the Return Air Temperature Sensor on the return duct in a location where the air is mixed well. Mount the Return Air Temperature Sensor downstream of a Bypass Humidifier, Dehumidifier or Ventilator. See Fig. 10–14.
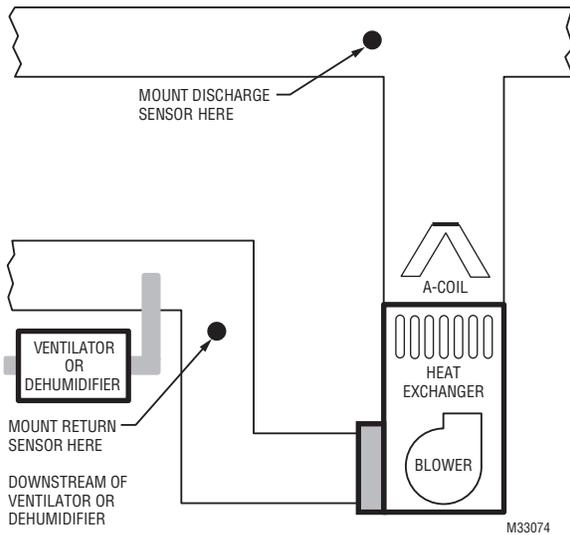

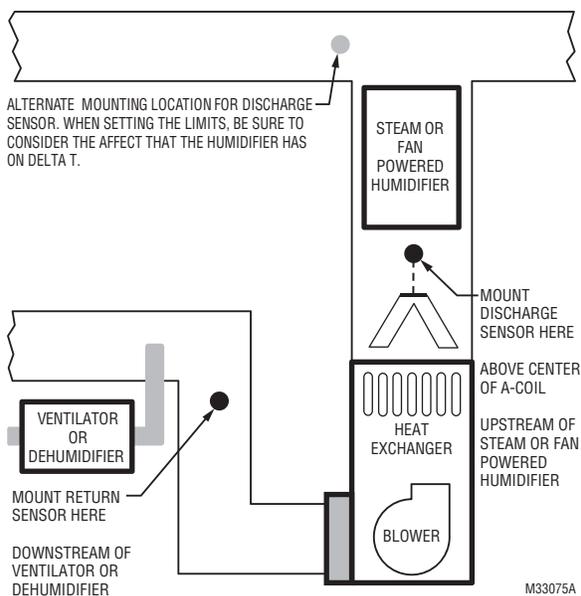MOUNT DISCHARGE SENSOR HERE

VENTILATOR OR DEHUMIDIFIER

A-COIL

HEAT EXCHANGER

MOUNT RETURN SENSOR HERE

DOWNSTREAM OF VENTILATOR OR DEHUMIDIFIER

BLOWER

M33074

Fig. 10.

ALTERNATE MOUNTING LOCATION FOR DISCHARGE SENSOR. WHEN SETTING THE LIMITS, BE SURE TO CONSIDER THE AFFECT THAT THE HUMIDIFIER HAS ON DELTA T.

STEAM OR FAN POWERED HUMIDIFIER

MOUNT DISCHARGE SENSOR HERE

ABOVE CENTER OF A-COIL

HEAT EXCHANGER

UPSTREAM OF STEAM OR FAN POWERED HUMIDIFIER

VENTILATOR OR DEHUMIDIFIER

MOUNT RETURN SENSOR HERE

DOWNSTREAM OF VENTILATOR OR DEHUMIDIFIER

BLOWER

M33075A

Fig. 11.

ALTERNATE MOUNTING LOCATION FOR DISCHARGE SENSOR. WHEN SETTING THE LIMITS, BE SURE TO CONSIDER THE AFFECT THAT THE DEHUMIDIFIER HAS ON DELTA T.

DEHUMIDIFIER

MOUNT DISCHARGE SENSOR HERE

ABOVE CENTER OF A-COIL

UPSTREAM OF DEHUMIDIFIER

HEAT EXCHANGER

MOUNT RETURN SENSOR HERE

DOWNSTREAM OF DEHUMIDIFIER

BLOWER

M33076A

Fig. 12.

BYPASS HUMIDIFIER

MOUNT DISCHARGE SENSOR HERE

MOUNT DOWNSTREAM OF BYPASS HUMIDIFIER

VENTILATOR OR DEHUMIDIFIER

HEAT EXCHANGER

MOUNT RETURN SENSOR HERE

MOUNT DOWNSTREAM OF BYPASS HUMIDIFIER, DEHUMIDIFIER OR VENTILATOR

BLOWER

M33078A

Fig. 13.

Fig. 14.

Installing Discharge and Return Air Temperature Sensors

Use the following steps to mount the Discharge/Return Air Sensors:
1. Attach plastic cover to the sensor probe.
2. Drill 1/4-inch hole for the sensor probe and mount it to the ductwork with enclosed screws (see Fig. 15).
3. Connect wires to S1, S2, S3, or S4 terminals at the EIM.
4. Setup the S1, S2, S3, or S4 terminals in the Installer Setup at the thermostat.
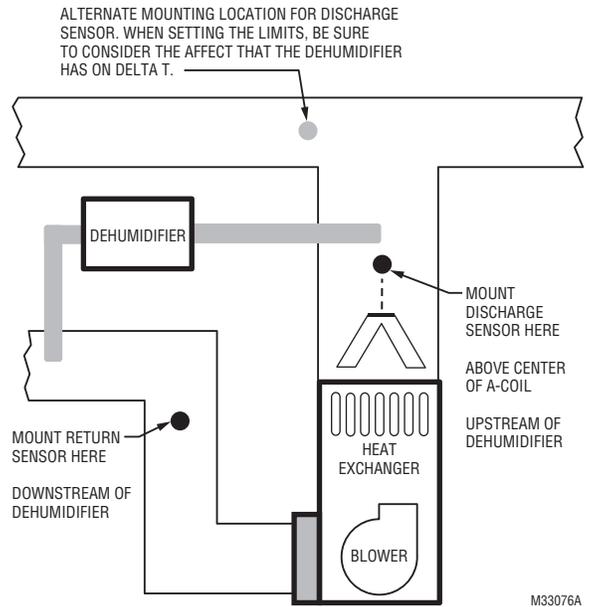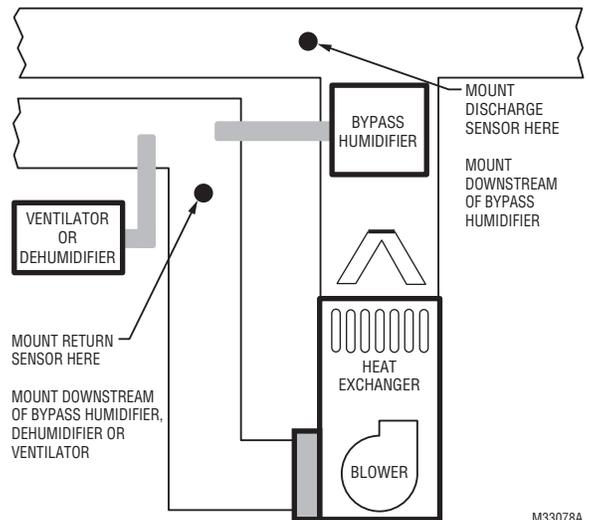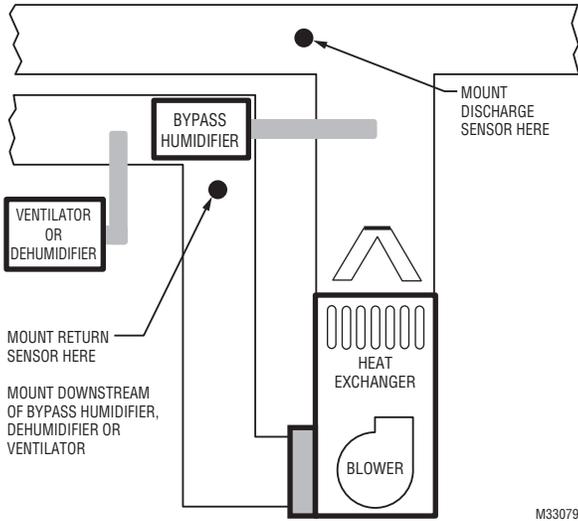

Fig. 15. Mounting Discharge/Return Air Sensor.

Selecting Thermostat Location

Install the thermostat about 5 ft. (1.5m) above the floor in an area with good air circulation at average temperature. See Fig. 16.
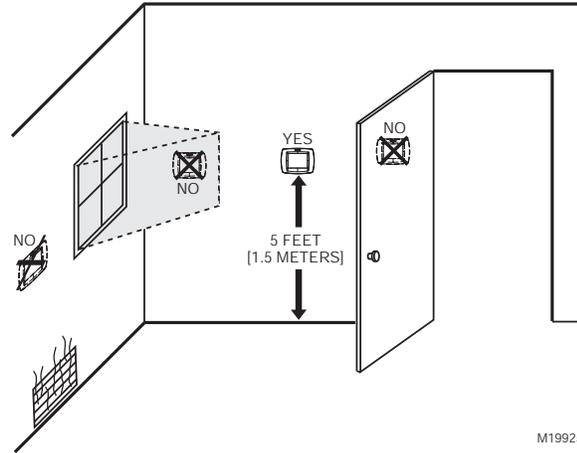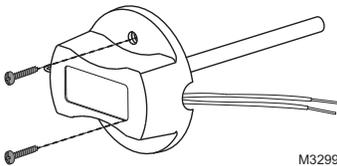

Fig. 16. Selecting thermostat location.

Do not install the thermostat where it can be affected by:
— Drafts or dead spots behind doors and in corners.
— Hot or cold air from ducts.
— Radiant heat from sun or appliances.
— Concealed pipes and chimneys.
— Unheated (uncooled) areas such as an outside wall behind the thermostat.

Installing Wallplate

⚠ **CAUTION**
Electrical Hazard.
Can cause electrical shock or equipment damage.
Disconnect power before wiring.

The thermostat can be mounted horizontally on the wall or on a 4 in. x 2 in. (101.6 mm x 50.8 mm) wiring box.
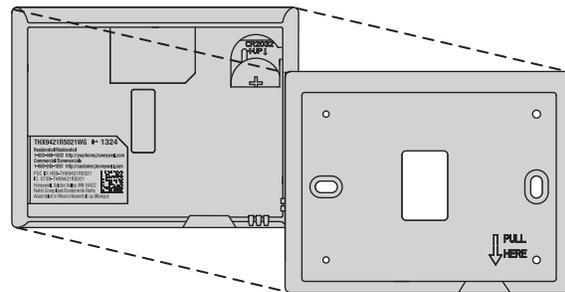
1. Separate wallplate from thermostat.

Fig. 17. Separate wallplate from thermostat (THX9421).

2. Position and level the wallplate (for appearance only).
3. Use a pencil to mark the mounting holes.

4. Remove the wallplate from the wall and, if drywall, drill two 3/16-in. holes in the wall, as marked. For firmer material such as plaster, drill two 7/32-in. holes. Gently tap anchors (provided) into the drilled holes until flush with the wall.
5. Position the wallplate over the holes, pulling wires through the wiring opening. See Fig. 18.
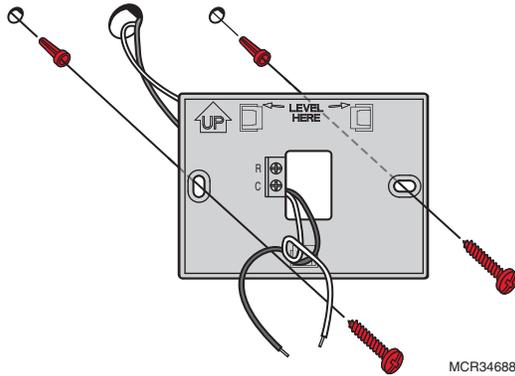6. Insert the mounting screws into the holes and tighten.

Fig. 18. Mounting wallplate (THX9421).

Insert Coin Cell Battery in Thermostat

Place coin cell battery in thermostat. Be sure to follow polarity markings on thermostat. See Fig. 19.

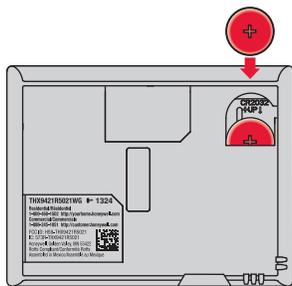NOTE: Coin cell battery saves time and date during a power loss.

Fig. 19. Insert coin cell battery (THX9421)

THX9421 Installation

INSTALLATION WITH EQUIPMENT INTERFACE MODULE (EIM)
1. Wire to C and R terminals of the EIM or to a separate 24 volt transformer (not provided). See Fig. 20.
2. Snap thermostat onto wallplate after wiring is complete.

INSTALLATION WITH TRUEZONE WIRELESS ADAPTER
1. Wire to C and R terminals of the TrueZONE panel or to a separate 24 volt transformer (not provided). See Fig. 20.
2. Snap thermostat onto wallplate after wiring is complete.

THX9321 Installation

THERMOSTAT WIRED DIRECTLY TO THE HVAC EQUIPMENT OR ZONE PANEL
1. Refer to "THX9321 Thermostat Wiring Diagrams" beginning on page 144.
2. Snap thermostat onto wallplate after wiring is complete.

INSTALLATION WITH EQUIPMENT INTERFACE MODULE (EIM)
1. Connect power and common from the EIM to the Rc and C terminals at the thermostat or use a separate 24 volt transformer (not provided) to power the thermostat.
2. Snap thermostat onto wallplate after wiring is complete.

NOTE: Note: When the THX9321 thermostat is used with an EIM, the relays in the thermostat do not function.

INSTALLATION WITH TRUEZONE WIRELESS ADAPTER
1. Connect power and common from the TrueZONE panel to the Rc and C terminals at the thermostat or use a separate 24 volt transformer (not provided) to power the thermostat.
2. Snap thermostat onto wallplate after wiring is complete.

NOTE: When the THX9321 thermostat is used with a TrueZONE Wireless Adapter, the relays in the thermostat do not function.
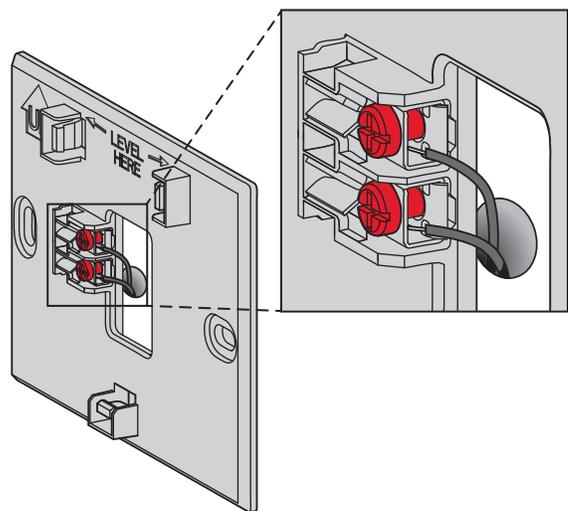

Fig. 20. Inserting wires in thermostat terminal screws (THX9421).

Mount Thermostat on Wallplate

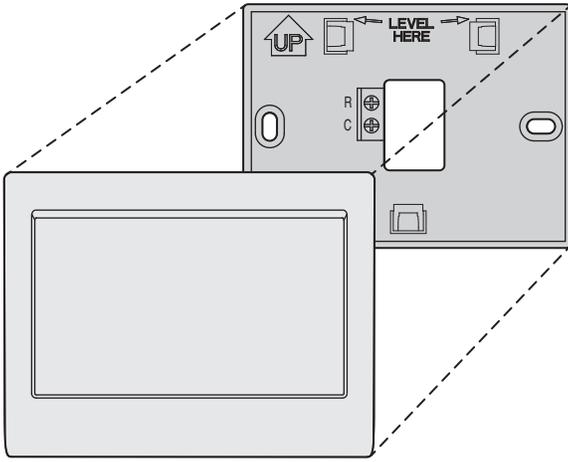Align thermostat to wallplate and snap into place. See Fig. 19.

Fig. 21. Mount thermostat (THX9421).

POWER OPTIONAL REDLINK™ ACCESSORIES

1. Install batteries or power the optional RedLINK accessories.
2. If no RedLINK accessories are used, skip to "Linking Thermostat to Equipment Interface Module (if used)" beginning on page 15.
3. If no RedLINK accessories are used and there is no EIM or TrueZONE Wireless Adapter, skip to "Completing Initial Setup" beginning on page 17.

Outdoor Air Sensor

1. Install 2 fresh AA lithium batteries.

MCR32937

Fig. 22.
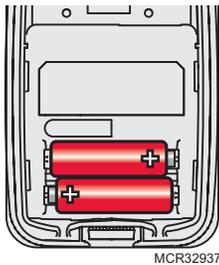
Portable Comfort Control

1. Install 3 fresh AA alkaline batteries.
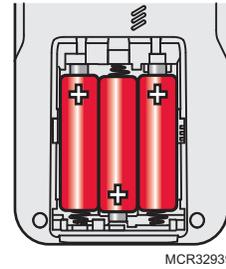

MCR32939

Fig. 23.

Indoor Air Sensor

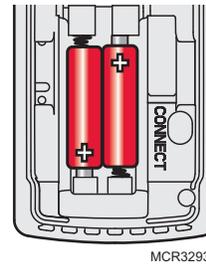1. Install 2 fresh AAA alkaline batteries.

MCR32938

Fig. 24.

RedLINK™ Internet Gateway

1. Connect power cord to an electrical outlet not controlled by a wall switch.
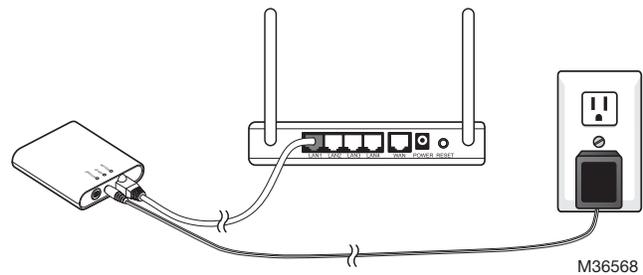2. Connect ethernet cable to router and the RedLINK Internet Gateway.

M36568

Fig. 25.

TrueSTEAM

1. Wire and power TrueSTEAM.
2. Connect the ABCD terminals between TrueSTEAM and the THM4000 Wireless Adapter.
3. Adjust the DIP Switches on TrueSTEAM as follows when using the Wireless Adapter:
   - DIP3: UP
   - DIP4: UP
   - DIP5: DOWN
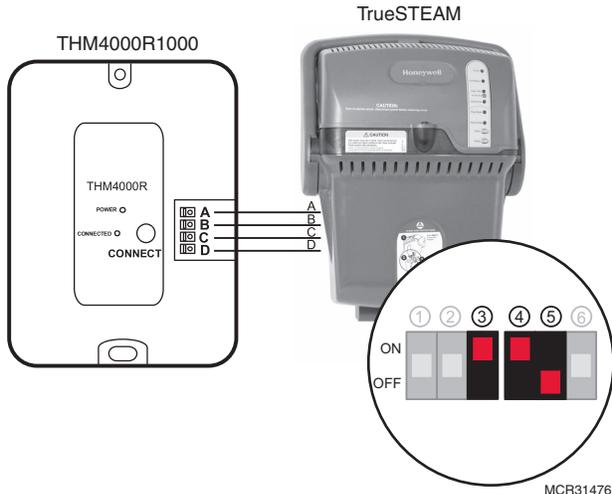
Fig. 26. Powering TrueSTEAM wireless adapter.

Entry/Exit Remote or Vent Boost Remote

1. Remove the cover.
2. Insert the CR2450 coin cell battery (included) into the slot at the bottom of the remote. See polarity marking on the remote.
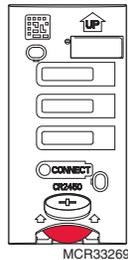
Fig. 27. Installing Entry/Exit Remote or Vent Boost Remote battery.

3. The LED will briefly flash green. If it flashes red, battery is not good.

PERFORMING INITIAL SETUP

Initial setup options define the type of system you are installing:

- Residential or commercial
- Non-zoned or zoned
- Used with or without an Equipment Interface Module (THM5421)
- Used with or without the TrueZONE Wireless Adapter (THM4000)

1. Follow prompts on the screen to select the appropriate options.
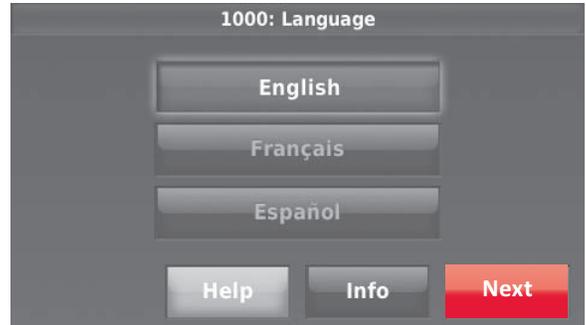
Fig. 28.

NOTE: If you are connecting the thermostat to the TrueZONE Wireless Adapter (THM4000), refer to the TrueZONE instructions to link the thermostat and RedLINK accessories.

Linking Thermostat to Equipment Interface Module (if used)

1. Press and quickly release the CONNECT button on the EIM. Make sure the Connected light is flashing green.
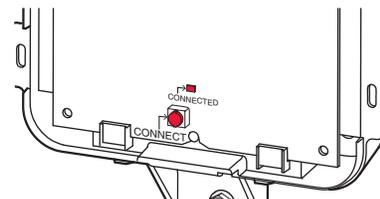
Fig. 29. EIM CONNECT button.

NOTE: If the Connected light does NOT flash green, another system may be in the listening mode. Please exit the listening mode at the other system and then try again.

- Green flashing: In Listening Mode. System is ready to add RedLINK devices.
- Green steady: RedLINK devices are communicating.
- Red: RedLINK device(s) not communicating. Check EIM and RedLINK devices.

2. Follow the prompts on the thermostat screen until you reach the Wireless Setup screen. See Fig. 30.

Fig. 30.

3. While the Connected light is flashing green on the EIM, press Next on the thermostat. After a short delay, the screen will display Device Connected.
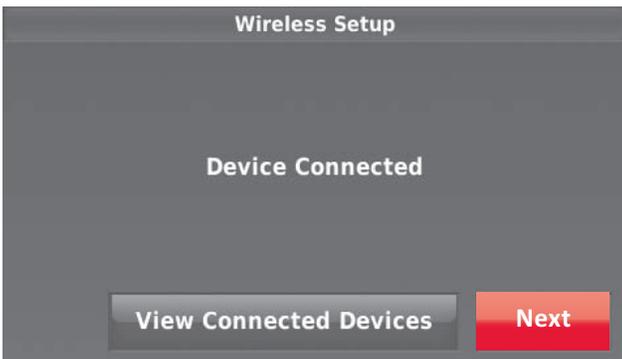
Fig. 31.

4. Press Next, as directed on screen, to link RedLINK accessories.

Linking RedLINK™ Accessories

Fig. 32. Connect RedLINK accessories.

1. When you see the prompt Do you have RedLINK accessories to connect? touch Yes or No.
   a. If you select No, continue to step 5.
   b. If you select Yes, you will be prompted to Press Connect on New Accessories. Continue to step 2.

NOTE: Accessories must be at least 2 feet away from the thermostat or EIM during the linking process.

2. While the Add Device screen is displayed (listening mode), press and quickly release the CONNECT button on each new RedLINK accessory.

NOTE: For locations of CONNECT buttons on RedLINK accessories, see "Locating the Connect Buttons on RedLINK Accessories" beginning on page 18.

Fig. 33. Thermostat in listening mode.

3. After a short delay (up to 20 seconds), check the thermostat to confirm the connection of each RedLINK accessory.

Fig. 34. Thermostat in listening mode.

4. Touch Done at the thermostat after all new RedLINK accessories are connected.

NOTE: The thermostat displays a countdown timer while in the listening mode. If it detects no activity for 15 minutes, it exits the listening mode.

Completing Initial Setup

5. Finish the setup by selecting the desired options. Touch Done after you select the last option you want to change. See "Installer Options" beginning on page 21 for a full listing of setup options.

Fig. 35. Scheduling options.

6. The thermostat now displays its Home screen and the thermostat setup is complete.

Fig. 36. Thermostat home screen.

Adding RedLINK Accessories to the Thermostat

If you want to add RedLINK accessories after the thermostat has been setup, follow these steps.

1. Touch Menu.
2. Select Installer Options.
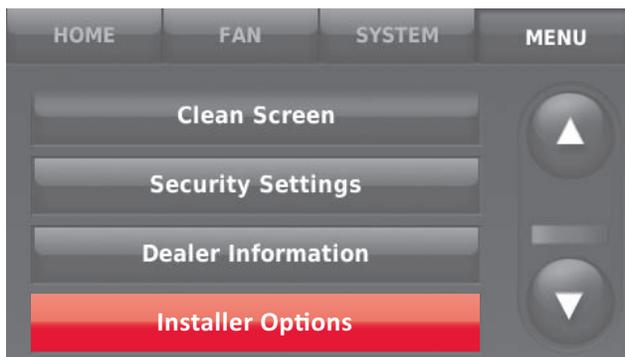
Fig. 37.

3. Enter password (date code) and touch Done. See "Finding Your Password (Date Code) to Access Installer Options" beginning on page 20 for more information.
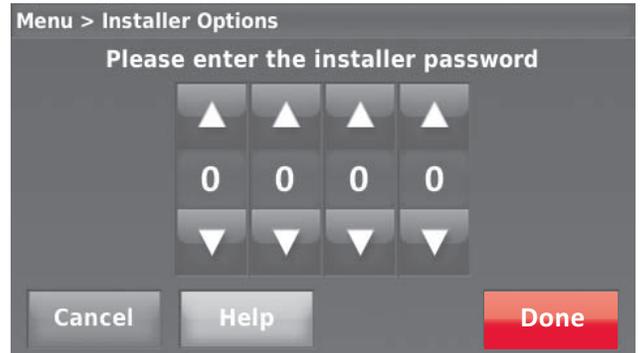
Fig. 38.

4. Select Wireless Device Manager.
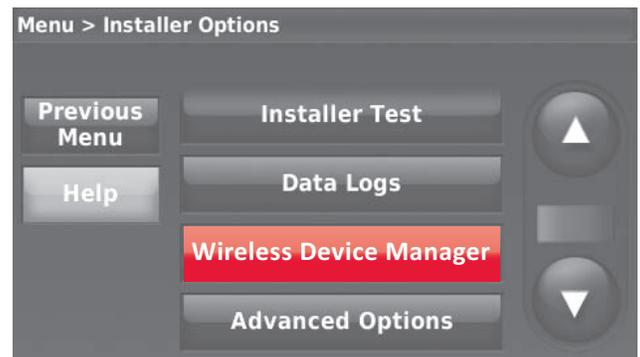
Fig. 39.

5. Select Add Device to display the Add Device screen. The thermostat is now in listening mode.

Fig. 40.

NOTE: Accessories must be at least 2 feet away from the thermostat or EIM during the linking process.

6. Press and quickly release the CONNECT button on each new RedLINK accessory.

   NOTE: For locations of CONNECT buttons on RedLINK accessories, see "Locating the Connect Buttons on RedLINK Accessories" beginning on page 18.
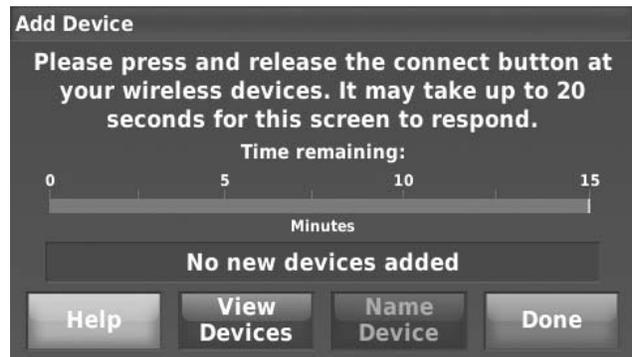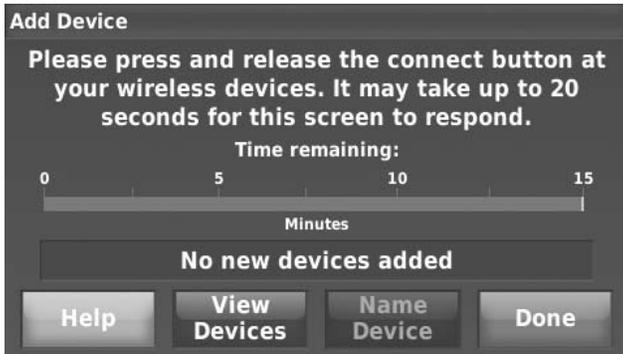

Fig. 41. Thermostat in listening mode.

7. After a short delay (up to 20 seconds), check thermostat to confirm the connection of each RedLINK accessory.
8. Touch Done at the thermostat after all new RedLINK accessories are connected.

Fig. 42. Thermostat in listening mode.

NOTE: Thermostat displays a count-down timer while in the listening mode. If it detects no activity for 15 minutes, it exits listening mode.

Locating the Connect Buttons on RedLINK Accessories

Wireless Outdoor Sensor

1. Press and quickly release the CONNECT button on the Wireless Outdoor Sensor. After a short delay (up to 15 seconds), the thermostat will display "Wireless Outdoor Sensor added."
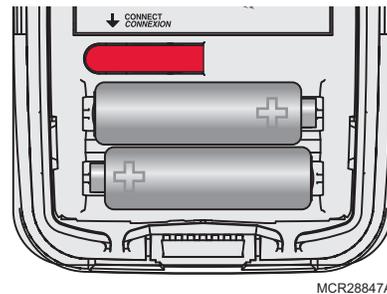
Fig. 43. Wireless outdoor sensor connect button.

Portable Comfort Control

1. Press CONNECT on the Portable Comfort Control display screen.

Fig. 44. Portable Comfort Control connect button.

2. Press DONE on the Portable Comfort Control when it displays "Connected."
3. Press "No" at the next screen to save and exit, or press "Yes" if you need to connect additional thermostats to the Portable Comfort Control. See Fig. 45.

NOTE: The Portable Comfort Control can control up to 16 thermostats.

Fig. 45. Connect additional thermostats to Portable Comfort Control.

4. Follow the same linking procedure as above to connect additional thermostats.

ERROR MESSAGES:
E1 29: Incompatible device cannot be connected.
E1 34: Low RF signal. Move device to a different location and try again.
E1 38: Make sure the thermostat, EIM, or TrueZONE Wireless Adapter is in Wireless Setup mode, and the Portable Comfort Control is at least 2 feet away (600 mm).

NOTE: The linking procedure will time out if there is no keypress for 30 minutes. To begin again, press and hold in the lower right corner of the screen until the display changes (about 3 seconds). See Fig. 46.

Press and hold the blank space (or arrow may be present)

Fig. 46. Restarting the linking process.

RedLINK Internet Gateway

1.   Press and quickly release the button on the side of the Internet Gateway. After a short delay, the RedLINK status light will glow steady green.
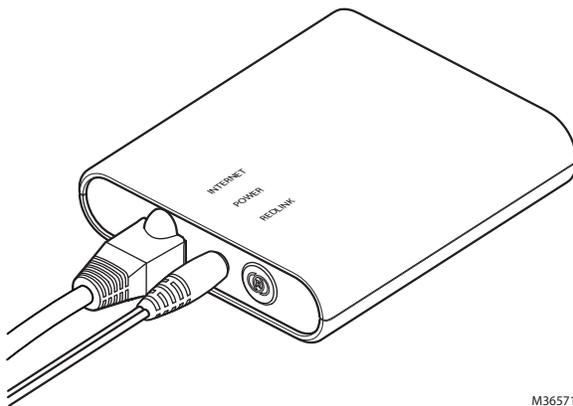
Fig. 47. RedLINK Internet Gateway connect button.

NOTE: The Internet Gateway must be registered online before use at www.mytotalconnectcomfort.com. Enter the MAC ID and MAC CRC numbers located on the bottom of the Internet Gateway. For additional information, see instructions provided with the device.

TrueSTEAM

1.   Press and quickly release the CONNECT button on THM4000 Wireless Adapter. After a short delay, the CONNECTED status light will glow steady green.
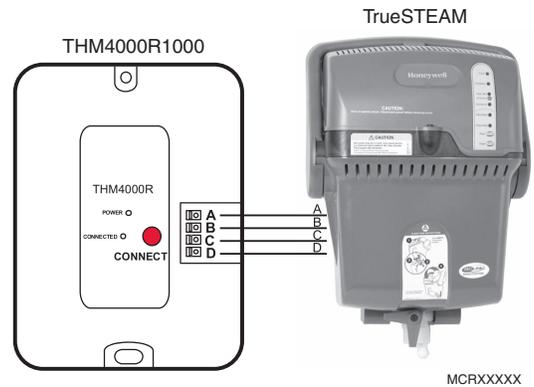
Fig. 48. Connect button on TrueSTEAM wireless adapter.

Wireless Indoor Sensor

1.   Press and quickly release the CONNECT button. After a short delay, the status light (see Fig. 49) will glow green for 15 seconds. If the status light turns red, the sensor did not link with the thermostat.
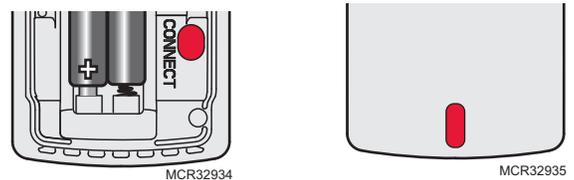
Fig. 49. Wireless indoor sensor connect button and status light.

NOTE: In normal operation, the status light remains off. If it begins flashing red, batteries are low (power will be depleted after 2–3 weeks).

2.   If you are installing more than 1 wireless indoor sensor, give each sensor a name as you install it. Press Name Device, as shown in Fig. 50.
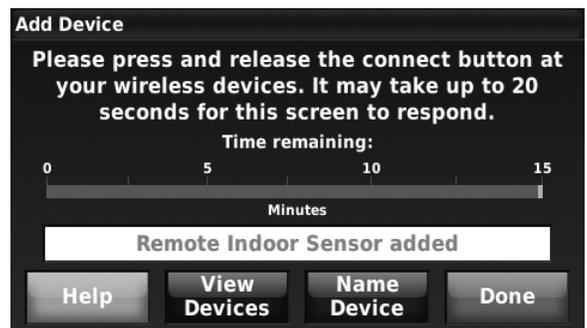
Fig. 50.

3. Type the sensor name and press Done. The sensor names are used when selecting which sensor to use for temperature, humidification, and dehumidification control.

Fig. 51.

NOTE: If you link more than 1 wireless indoor sensor, and forget to name them, you will be prompted to name each wireless indoor sensor after you exit wireless setup. See Fig. 52.

Fig. 52.

Linking Entry/Exit Remote or Vent Boost Remote

1. Press and quickly release the CONNECT button.
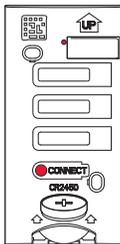
Fig. 53. Connect button and status light on Entry/Exit Remote or Vent Boost Remote.

2. After a short delay, the status light will glow green for 15 seconds. If the status light turns red, the remote did not link with the thermostat for the connection process.

NOTE: The thermostat can work with up to 3 Entry/Exit remotes. Each Entry/Exit remote can control up to 16 thermostats.

NOTE: The thermostat can work with up to 6 Vent Boost remotes.

Finding Your Password (Date Code) to Access Installer Options

You will need the thermostat password to:
•   Make changes to the Installer Setup.
•   Setup Diagnostics.
•   Perform an Installer Test.
•   View Data Logs.
•   Add, remove, rename or view connected RedLINK accessories.
•   Reset the thermostat to Factory Default settings.

The password (Date Code) is located on the back of the thermostat.
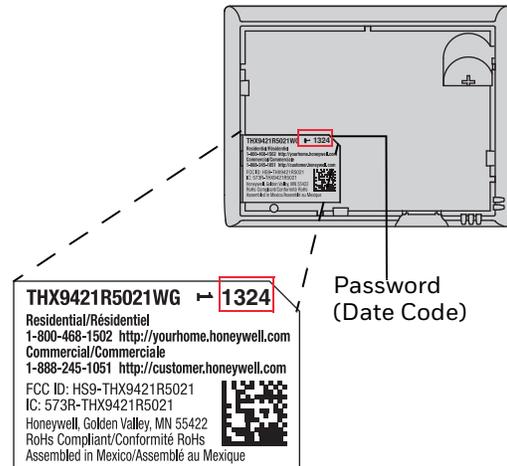
Fig. 54. Finding thermostat password.

The password (Date Code) can also be found by following these steps:

1. Touch Menu.
2. Select Dealer Information.
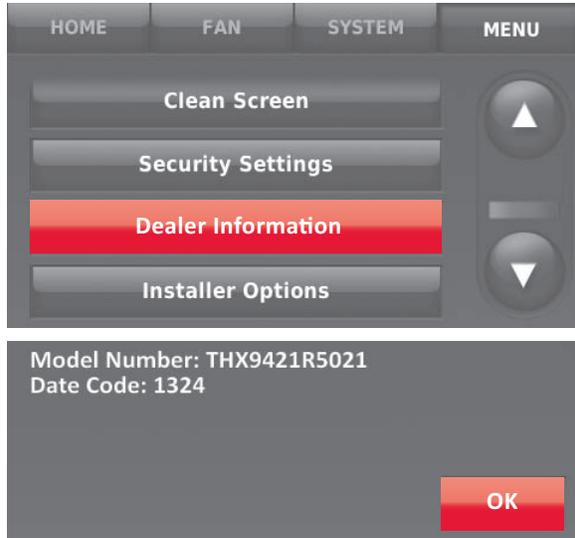
Fig. 55. Finding thermostat password.

Installer Options

The following options are available when you access Installer Options. For more information on each, press Help on the thermostat or see Table 3.

Fig. 56. Installer Options screen.

Table 3. Installer Options.

Menu Item	Description
Create Setup	Press CREATE SETUP to set all system settings one by one.
View/Edit Current Setup	Press VIEW/EDIT CURRENT SETUP to select a specific function and make quick changes
Set Up Diagnostics	Press SET UP DIAGNOSTICS to set up and test Delta T diagnostics.
Installer Test	Press INSTALLER TEST to quickly determine if the heat, cool, fan and thermostat are operating properly. Minimum off timers are ignored during the test
Data Logs	Press DATA LOGS to view the Alerts Log, User Interactions Log, and Performance Logs.
Wireless Device Manager	Press WIRELESS DEVICE MANAGER to add, remove, rename, or view the connected wireless accessories.
Advanced Options	Press ADVANCED OPTIONS to setup the thermostat using a USB device or to restore the thermostat to the factory default settings. NOTE: If the THX9321 has been setup WITHOUT an Equipment Interface Module or the TrueZONE Wireless Adapter and you would like to add one, you must reset the thermostat back to factory defaults.

NOTE: You can use the thermostat USB port to download all Installer Setup settings, including your company name and contact information. You can upload this data to each thermostat you install, to save time.

Making Changes to Installer Setup

Follow these steps to set system options after initial installation.

NOTE: Use a USB device to save set up time. See "USB Port" beginning on page 121 for more information.

1. Touch Menu.
2. Select Installer Options.
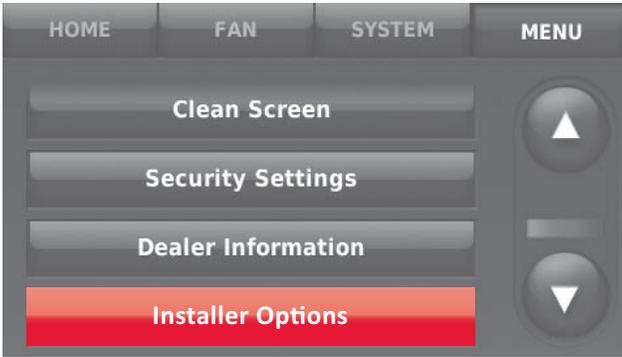
Fig. 57.

3. Enter password (Date Code) and touch Done. See "Finding Your Password (Date Code) to Access Installer Options" beginning on page 20 for more information.
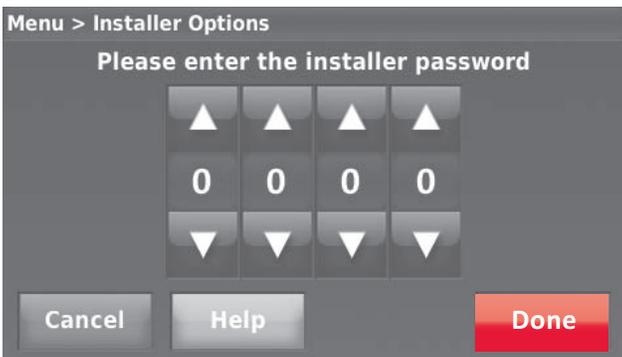
Fig. 58.

4. Select Create Setup.
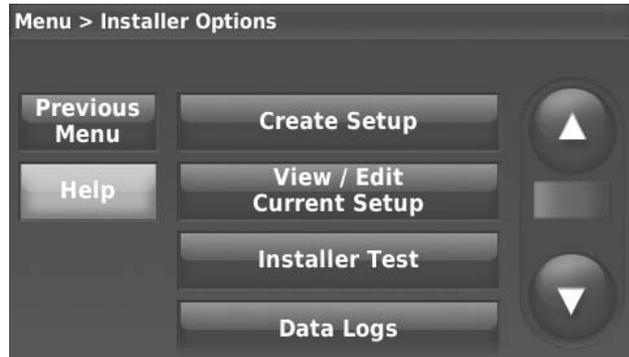
Fig. 59.

5. Follow prompts on the screen to select the desired setup options. See Table 4 for Installer Setup options.

Table 4. Installer Setup (ISU) Table.

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
1000	Language	English Français Español	English	Both	No	
1010	Application	Residential Commercial	Residential	Both	No	
1020	Zone Number	1-16	1	Both	No	This ISU is only displayed on a thermostat that is controlling a zone panel through the THM4000 Wireless Adapter.
1030	Device Name	[Enter Device Name]	Thermostat	Both	No	The Portable Comfort Control remote and Web Interface displays the name of the thermostat that you enter on this screen.
1030	Display on Home Screen	No Yes (select check box)	No	Commercial	No	Thermostat location (name) can be displayed on the home screen. This feature is typically used when multiple thermostat's are mounted in a manager's office or equipment room. This allows you to quickly identify which thermostat is in control of a specific zone or area.
1040	Scheduling Options	Non-Programmable Programmable	Programmable	Both	No	

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
1050	Temperature Indication Scale	Fahrenheit Celsius	Fahrenheit	Both	No	
1060	Outdoor Air Sensor	No Yes	No	Both	No	This ISU automatically defaults to Yes when a Wireless Outdoor Sensor is connected. An Outdoor Sensor is required to set the following ISUs: ISU 3120 Outdoor Temperature Lockouts (Compressor Lockout and Backup Heat Lockout) ISU 4050 Outdoor Temperature used with Minimum Heat Recovery Ramp Rate ISU 4060 Outdoor Temperature used with Maximum Heat Recovery Ramp Rate ISU 4070 Outdoor Temperature used with Minimum Cool Recovery Ramp Rate ISU 4080 Outdoor Temperature used with Maximum Cool Recovery Ramp Rate ISU 8050 Humidification - Window Protection ISU 10130 Ventilation Low Temperature Lockout ISU 10130 Ventilation High Temperature Lockout ISU 10130 Ventilation High Dew Point Lockout (requires Wireless Outdoor Sensor) ISU 13070 Allow Heat Delta T Diagnostics when Outdoor Temperature is [Out. Temp. Range] ISU 13080 Allow Heat Delta T Diagnostics when Outdoor Humidity is [Out. Humidity Range] ISU 13110 Allow Backup Heat Delta T Diag. when Outdoor Temperature is [Out. Temp. Range] ISU 13120 Allow Backup Heat Delta T Diagnostics when Outdoor Humidity is [Out. Humidity Range] ISU 13150 Allow Cool Delta T Diagnostics when Outdoor Temperature is [Out. Temp. Range] ISU 13160 Allow Cool Delta T Diagnostics when Outdoor Temperature is [Out. Humidity Range]
2000	Heating System Type	Conventional Forced Air Heat Heat Pump Radiant Heat Other None (Cool Only)	Conventional Forced Air Heat	Both	No	

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
2010	Heating Equipment Type	**Conventional Forced Air Heat:** Standard Efficiency Gas Forced Air High Efficiency Gas Forced Air Oil Forced Air Electric Forced Air Hot Water Fan Coil Other **Heat Pump:** Air to Air Heat Pump Geothermal Heat Pump Geothermal Radiant Heat **Radiant Heat:** Hot Water Radiant Heat Geothermal Radiant Heat Steam Other **Other:** Gravity Other	Default varies based on previous selections	Both	No	Cycle Rate and Fan Operation automatically default to the correct settings based on the equipment type selected. This ISU is not displayed when ISU 2000 Heating System Type is set to None (Cool Only). See "Geothermal Radiant Heat" beginning on page 100.
2030	What Terminals are Wired to Radiant Heat?	None U1 U2 U3	Default varies based on previous selections	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Geothermal Radiant Heat. Geothermal Radiant Heat must be wired to a universal terminal (U1, U2, or U3). U1, U2 and U3 are normally open dry contacts when configured for a stage of Heat. U1, U2 and U3 require power from the system transformer or a separate transformer. U3 is only available on the Equipment Interface Module (EIM).
2040	What Terminals are Wired to Radiant Heat - Stage 2?	None U1 U2 U3	Default varies based on previous selections	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Geothermal Radiant Heat. Geothermal Radiant Heat must be wired to a universal terminal (U1, U2, or U3). U1, U2 and U3 are normally open dry contacts when configured for a stage of Heat. U1, U2 and U3 require power from the system transformer or a separate transformer. U3 is only available on the Equipment Interface Module (EIM).

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
2050	Geothermal Forced Air System	None Used for Cooling Only Used for Heating and Cooling	Used for Heating and Cooling	Both	No	This thermostat has the capability of controlling Geothermal Radiant Heat, Geothermal Forced Air and Backup Heat. If this thermostat is not controlling the Geothermal Forced Air System, select None. This setting is typically used if the thermostat is only controlling Geothermal Radiant Heat. If this thermostat is using the Geothermal Forced Air System for cooling and not for heating, select Used for Cooling Only. If this thermostat is using the Geothermal Forced Air System for both heating and cooling, select Used for Heating and Cooling.
2060	Reversing Valve O/B	O (O/B on Cool) B (O/B on Heat)	O/B on Cool	Both	No	Only displayed if the equipment type is Air to Air Heat Pump, Geothermal Heat Pump or Geothermal Radiant Heat.
2070	Cool Stages / Compressor Stages	1-4	1 if ISU 1010 is Residential 2 if ISU 1010 is Commercial	Both	No	Conventional: Cool Stage 3 and 4 are only available if ISU 1010 is Commercial. Cool Stage 3 and 4 must be wired to a universal terminal (U1, U2 or U3). Heat Pumps: Maximum of 2 Compressor Stages for heat pump systems.
2020, 2070	Heat Stages / Backup Heat Stages	1 - 3	Default is 1 stage if ISU 1010 Application is Residential Default is 2 stages if ISU 1010 Application is Commercial	Both	No	Maximum of 3 Heat Stages for conventional systems. Maximum of 2 Backup Heat Stages for systems with more than 1 heating equipment type.
2080	What Terminals are Wired to Cool - Stage 3?	None U1 U2 U3	Default varies based on previous selections	Commercial	No	Cool Stage 3 is only available if ISU 1010 is Commercial. Cool Stage 3 must be wired to a universal terminal (U1, U2 or U3). U1, U2 and U3 are normally open dry contacts when configured for a stage of Cool. U1, U2 and U3 require power from a system transformer or a separate transformer. U3 is only available on the Equipment Interface Module (EIM).

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
2090	What Terminals are Wired to Cool - Stage 4?	None U1 U2 U3	Default varies based on previous selections	Commercial	No	Cool Stage 4 is only available if ISU 1010 is Commercial. Cool Stage 4 must be wired to a universal terminal (U1, U2 or U3). U1, U2 and U3 are normally open dry contacts when configured for a stage of Cool. U1, U2 and U3 require power from a system transformer or a separate transformer. U3 is only available on the Equipment Interface Module (EIM).
2100	What Terminals are Wired to Heat - Stage 3?	None U1 U2 U3	Default varies based on previous selections	Both	No	THX9321 Thermostat Only: This ISU is only displayed on the THX9321 thermostat when it is wired directly to the equipment (Equipment Interface Module is NOT used). Heat Stage 3 must be wired to a universal terminal (U1 or U2). U1 and U2 are normally open dry contacts when configured for a stage of Heat. U1 and U2 require power from a system transformer or a separate transformer.
2110	Fan Operation in Heat	No Fan Equipment Controls Fan Thermostat Controls Fan	Thermostat Controls Fan	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Electric Forced Air, Hot Water Fan Coil or Other. The thermostat automatically defaults to Equipment Controls Fan when ISU 2010 Heating Equipment Type is Standard Efficiency Gas Forced Air, High Efficiency Gas Forced Air or Oil Forced Air. No Fan is only displayed when ISU 2010 Heating Equipment Type is Other.
2120	Backup Heat Type	None Standard Efficiency Gas Forced Air High Efficiency Gas Forced Air Oil Forced Air Electric Forced Air Hot Water Fan Coil Hot Water Radiant Heat Other	None	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Hot Water Radiant Heat, Steam, Hot Water Fan Coil, Electric Forced Air or Other. The list of Backup Heat Types will vary based on the type of primary heat selected at ISU 2010 Heating Equipment Type. When ISU 2010 Heating Equipment Type is Hot Water Radiant Heat, the thermostat keeps the Hot Water Radiant Heat on when it calls for Backup Heat. When ISU 2010 Heating Equipment Type is Steam, the thermostat keeps the Steam Heat on when it calls for Backup Heat. When ISU 2010 Heating Equipment Type is Hot Water Fan Coil, Electric Forced Air or Other, you can select how the backup operates. See ISU 2150 Backup Heat Operation.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
2130	Backup Heat Stages	0 - 2	1	Both	No	This ISU is only displayed when a backup heat source is selected at ISU 2120 Backup Heat Type. Maximum of 2 Backup Heat stages.
2140	What Terminals are Wired to Backup Heat?	None U1 U2	Default varies based on previous selections	Both	No	THX9321 Thermostat Only: This ISU is only displayed on the THX9321 thermostat when it is wired directly to the equipment (Equipment Interface Module is NOT used). The thermostat can support up to 3 conventional heat stages. When there are a total of 3 conventional heat stages, the last stage of heat must be wired to U1 or U2. U1 and U2 are normally open dry contacts when configured for a stage of Heat. U1 and U2 require power from a system transformer or a separate transformer.
2150	Backup Heat Operation	NOT Allowed to Run with Primary Heat Allowed to Run with Primary Heat	NOT allowed to run with Primary Heat	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Hot Water Fan Coil, Electric Forced Air or Other. When ISU 2010 Heating Equipment Type is Hot Water Fan Coil, Electric Forced Air or Other, you can select how the Backup Heat operates. The thermostat can be setup to keep the primary heat source on when it calls for Backup Heat or the thermostat can be setup to turn off the primary heat source when it calls for Backup Heat. When ISU 2010 Heating Equipment Type is Hot Water Radiant Heat, the thermostat keeps the Hot Water Radiant Heat on when it calls for Backup Heat. When ISU 2010 Heating Equipment Type is Steam, the thermostat keeps the Steam Heat on when it calls for Backup Heat.
2160	Backup Heat Fan Operation	No Fan Equipment Controls Fan Thermostat Controls Fan	Thermostat Controls Fan	Both	No	This ISU is only displayed for conventional systems when ISU 2120 Backup Heat Type is Electric Forced Air, Hot Water Fan Coil or Other. Backup Heat Fan Operation automatically defaults to Equipment Controls Fan when ISU 2120 Backup Heat Type is Standard Efficiency Gas Forced Air, High Efficiency Gas Forced Air or Oil Forced Air. No Fan is only displayed when ISU 2120 Backup Heat Type is Other.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
2170	What Terminals are Wired to Backup Heat - Stage 2?	None U1 U2	Default varies based on previous selections	Both	No	THX9321 Thermostat Only: This ISU is only displayed on the THX9321 thermostat when it is wired directly to the equipment (Equipment Interface Module is NOT used). The thermostat can support up to 2 backup heat stages for heat pump applications. When there are 2 backup heat stages, backup heat stage 2 must be wired to U1 or U2. U1 and U2 are normally open dry contacts when configured for a stage of Heat. U1 and U2 require power from a system transformer or a separate transformer.
2180	Backup Heat Type	Electric Forced Air Standard Efficiency Gas Forced Air High Efficiency Gas Forced Air Oil Forced Air Hot Water Fan Coil Hot Water Radiant Heat Other	Electric Forced Air	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Air to Air Heat Pump, Geothermal Heat Pump or Geothermal Radiant Heat and there is at least one stage of backup heat. See "Heat Pump and Backup Heat Operation" beginning on page 100.
2190	External Fossil Fuel Kit	Thermostat Controls Backup Heat External Fossil Fuel Kit Controls Backup Heat	Thermostat Controls Backup Heat	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Air to Air Heat Pump, Geothermal Heat Pump or Geothermal Radiant Heat and ISU 2180 Backup Heat Type is Standard Efficiency Gas Forced Air, High Efficiency Gas Forced Air or Oil Forced Air.
2200	Backup Heat Operation	NOT allowed to Run with Heat Pump Allowed to Run with Heat Pump	Default varies based on previous selections	Both	No	This ISU is only displayed when ISU 2010 Heating Equipment Type is Air to Air Heat Pump, Geothermal Heat Pump or Geothermal Radiant Heat and ISU 2180 Backup Heat Type is Hot Water Fan Coil or Other. Not Allowed to Run with Heat Pump: The thermostat turns off the heat pump when it calls for backup heat. Allowed to Run with Heat Pump: The thermostat keeps the heat pump on when it calls for backup heat.
2210	Backup Heat Fan Operation	No Fan Equipment Controls Fan Thermostat Controls Fan	Default varies based on previous selections	Both	No	This ISU is only displayed for heat pumps when ISU 2180 Backup Heat Type is Other. Backup Heat Fan Operation: Electric Forced Air: Thermostat Controls Fan Standard Efficiency Gas Forced Air: Equipment Controls Fan High Efficiency Gas Forced Air: Equipment Controls Fan Oil Forced Air: Equipment Controls Fan Hot Water Fan Coil: Thermostat Controls Fan Hot Water Radiant Heat: Not Applicable

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
2220	A-L/A Terminal Setup	None Time Of Day Economizer Heat Pump Failure Indication	None	Commercial	No	This ISU is only displayed when ISU 1010 Application is Commercial. Note: When the thermostat is setup for Residential, the L/A terminal operates as described under "Heat Pump Failure Indication." The L/A terminal requires no setup for residential applications. None: The A-L/A terminal is not used. Time of Day: The A-L/A terminal is energized during Occupied periods and when the user overrides the temperature. The terminal is de-energized during Unoccupied periods and in Standby mode. Economizer: The thermostat controls an economizer module to provide ventilation during Occupied periods and free cooling when outdoor conditions are favorable. The A-L/A terminal is energized during Occupied periods and during a call for cooling in Unoccupied periods. See "Economizer and Time of Day (TOD) Operation" beginning on page 128. Notes: The economizer module determines when outdoor conditions are favorable for free cooling. Delta T Diagnostics is not available when the thermostat is setup for an Economizer. If an economizer fault alert is required, see Fig. 355 on page 156. Heat Pump Failure Indication: When 24 volts is detected on the L/A terminal (compressor monitor), the thermostat displays a message to alert the user when the heat pump requires service. The L/A terminal sends a continuous output to a zone panel when the thermostat is set to Emergency Heat mode. The zone panel will not turn on the heat pump when a zone is set to Emergency Heat mode.
3000	Changeover	Manual Automatic	Manual: if ISU 1010 is Residential Automatic: if ISU 1010 is Commercial	Both	No	Manual: The user must select heating or cooling as needed to maintain the desired indoor temperature. Automatic: The user has the option to select Auto for the system setting. In Auto mode, the thermostat controls heating and cooling equipment as needed to maintain the desired indoor temperature.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3000	Deadband	2° F to 9° F (in 1° F increments)	3° F	Both	No	This ISU is only displayed when ISU 3000 is set to Automatic. Deadband is the minimum separation between heat and cool settings when the thermostat is setup for Auto Changeover. For example, if the deadband is set to 3° F and the cool setpoint is 75° F, the warmest heat setpoint allowed would be 72° F. If the heat setpoint is adjusted above 72° F, it will automatically adjust the cooling setpoint higher to maintain the 3° F deadband. When ISU 9070 (Dehumidification - Over Cooling Limit) or ISU 9100 (High Humidity Comfort Reset Setting) is set to 1, 2, 3, 4 or 5° F, the thermostat will not show the full Deadband range. For example, if you set a Deadband of 3° F and an Over Cooling Limit of 2° F, the minimum Deadband that you can select will be 5 F. This prevents the heating system from turning on when the thermostat over cools to reach the dehumidification setting.
3010	Temperature Control Options	Basic Options Advanced Options Advanced Options + PID Settings	Basic Options	Both	No	Basic Options: The Installer Setup displays basic temperature control options which include Backup Heat Differential, Backup Heat Upstage Timer and Outdoor Temperature Lockouts. Note: Outdoor Temperature Lockouts only apply to Heat Pump applications. Advanced Options: The Installer Setup displays both Basic and Advanced Options. Advanced temperature control options include Finish With High Cool Stage, Finish With High Heat Stage, Temperature Differential settings between all stages and Cycle Rate settings per stage. Advanced Options+PID Settings: The Installer Setup displays both Basic and Advanced Options including PID settings which allow you to adjust the integral, derivative and throttling range.
3020	Finish With High Cool Stage	No Yes	No	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust Finish With High Cool Stage. This ISU is only displayed when the thermostat is set for 2 or more cool stages. When set to Yes, this feature keeps the high stage of the cooling equipment running until the desired setpoint is reached.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3021	Finish With High Heat Stage	No Yes	No	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust Finish With High Heat Stage. This ISU is only displayed when the thermostat is set for 2 or more heat stages. When set to Yes, this feature keeps the high stage of the heating equipment running until the desired setpoint is reached.
3030	Staging Control - Cool Differential Stage 2	Comfort 1.0° F to 3.5° F from setpoint (in 0.5° F increments)	Comfort	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed when the thermostat is set to 2 cool stages. The indoor temperature must rise to the selected differential setting before the thermostat turns on the stage of cooling. For example, if stage 2 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 2 turns on. When set to Comfort, the thermostat uses the stage of cooling as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.
3030	Staging Control - Cool Differential Stage 3	Comfort 1.0°F - 4.0°F from setpoint (in 0.5° F increments)	Comfort	Commercial	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed when the thermostat is set to 3 cool stages. The indoor temperature must rise to the selected differential setting before the thermostat turns on the stage of cooling. For example, if stage 3 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 3 turns on. When set to Comfort, the thermostat uses the stage of cooling as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.
3030	Staging Control - Cool Differential Stage 4	Comfort 1.0° F to 4.5° F from setpoint (in 0.5° F increments)	Comfort	Commercial	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed when the thermostat is set to 4 cool stages. The indoor temperature must rise to the selected differential setting before the thermostat turns on the stage of cooling. For example, if stage 4 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 4 turns on. When set to Comfort, the thermostat uses the stage of cooling as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3040	Staging Control - Radiant Heat Differential Stage 2	Comfort 1.0° F to 3.5° F from setpoint (in 0.5° F increments)	Comfort	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed if ISU 2010 Heating Equipment Type is Geothermal Radiant Heat and there are 2 radiant heat stages. The indoor temperature must drop to the selected differential setting before the thermostat will turn on the stage of heating. For example, if stage 2 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 2 turns on. When set to Comfort, the thermostat will use the stage of heating as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.
3050	Staging Control - Heat Differential Stage 2 Note: Depending on the application, the text displayed on the screen may show the specific heating equipment type	Comfort 1.0° F to 3.5° F from setpoint (in 0.5° F increments)	Comfort	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed for conventional systems that have 2 heat stages. The indoor temperature must drop to the selected differential setting before the thermostat will turn on the stage of heating. For example, if stage 2 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 2 turns on. When set to Comfort, the thermostat will use the stage of heating as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.
3050	Staging Control - Heat Differential Stage 3 Note: Depending on the application, the text displayed on the screen may show the specific heating equipment type	Comfort 1.0° F to 4.0° F from setpoint (in 0.5° F increments)	Comfort	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed for conventional systems that have 3 heat stages. The indoor temperature must drop to the selected differential setting before the thermostat will turn on the stage of heating. For example, if stage 3 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 3 turns on. When set to Comfort, the thermostat will use the stage of heating as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3060	Staging Control - Compressor Heat Differential Stage 1	Comfort 1.0° F to 4.0° F from setpoint (in 0.5° F increments)	Comfort	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed if ISU 2010 Heating Equipment Type is Geothermal Radiant Heat and ISU 2050 Geothermal Forced Air System is set to Used for Heating and Cooling. The indoor temperature must drop to the selected differential setting before the thermostat will turn on the stage of heating. For example, if stage 1 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 1 turns on. When set to Comfort, the thermostat will use the stage of heating as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.
3060	Staging Control - Compressor Heat Differential Stage 2	Comfort 1.0° F to 4.5° F from setpoint (in 0.5° F increments)	Comfort	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust this ISU. This ISU is only displayed if ISU 2010 Heating Equipment Type is Air to Air Heat Pump, Geothermal Heat Pump or Geothermal Radiant Heat and there are 2 compressor stages. The indoor temperature must drop to the selected differential setting before the thermostat will turn on the stage of heating. For example, if stage 2 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before stage 2 turns on. When set to Comfort, the thermostat will use the stage of heating as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.
3080, 3090	Staging Control - Backup Heat Differential Stage 1 Note: "Stage 1" is not displayed if there is only 1 stage of Backup Heat.	Comfort 2.0° F to 15.0° F from setpoint (in 0.5° F increments)	Comfort	Both	No	A backup heat differential can be set on any system that has more than one heating equipment type. See "Backup Heat Differential (Droop)" beginning on page 97. The Comfort setting is only available on systems when the Backup Heat Type is Allowed to Run with the Primary Heat (Heat Pump). For example, Heat Pumps with Electric Forced Air Backup Heat. The Comfort setting is NOT available for Dual Fuel systems. For example, Heat Pumps with Gas Forced Air.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3080, 3090	Staging Control - Backup Heat Differential Stage 2	Comfort 2.0° F to 15.5° F from setpoint (in 0.5° F increments)	Comfort	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust Backup Heat Differential Stage 2. This ISU is only displayed if there are 2 backup heat stages. The indoor temperature must drop to the selected differential setting before the thermostat will turn on backup heat stage 2. For example, if backup heat stage 2 is set to 2° F (1.0° C), the indoor temperature must be 2° F (1.0° C) away from the setpoint before backup heat stage 2 turns on. When set to Comfort, the thermostat will use backup heat stage 2 as needed to keep the indoor temperature within 1° F (0.5° C) degree of the setpoint.
3110	Backup Heat Upstage Timer	Off (30, 45, 60, 75, 90) minutes (2, 3, 4, 5, 6, 8, 10, 12, 14, 16) hours	Off	Both	No	The Backup Heat Upstage Timer starts when the highest stage of the previous heating equipment type turns on. Backup heat will be used (if needed) when the timer expires. See "Backup Heat Upstage Timer" beginning on page 99. This ISU is only displayed when Backup Heat Differential Stage 1 is set to 2 F or higher (ISU 3080, 3090).
3110	Backup Heat Holdoff Timer	Auto, 15, 30, 45, 60, 75, 90, 105, 120 minutes	Auto	Both	Yes	The Backup Heat Holdoff Timer starts when the highest stage of the previous heating equipment type turns on. Backup heat will be used (if needed) when the timer expires. See "Backup Heat Holdoff Timer" on page 98. This ISU is only displayed when upstage timer is set to 30 minutes or longer."
3120	Outdoor Temperature Lockouts: Compressor Lockout / Balance Point	Off -15° F to 60° F (in 5° F increments)	Off (See Notes)	Both	No	ISU 3120 Compressor Lockout / Balance Point requires an outdoor sensor. Default is 40 F if ISU 2010 Heating Equipment Type is Air to Air Heat Pump and ISU 2180 Backup Type is gas or oil forced air. Default is Off if ISU 2010 Heating Equipment Type is Air to Air Heat Pump and ISU 2180 Backup Type is electric forced air. Default is Off if ISU 2010 Heating Equipment Type is Geothermal Heat Pump or Geothermal Radiant Heat. Compressor Lockout / Balance Point is optional for any type of heat pump (Air to Air Heat Pump, Geothermal Heat Pump or Geothermal Radiant Heat). See "Heat pump with outdoor temperature lockouts" beginning on page 100.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3120	Outdoor Temperature Lockouts: Backup Heat Lockout	Off 5° F to 65° F (in 5° F increments)	Off	Both	No	ISU 3120 Backup Heat Outdoor Temperature Lockout requires an outdoor sensor. This ISU is only displayed if ISU 2010 Heating Equipment Type is Air to Air Heat Pump, Geothermal Heat Pump or Geothermal Radiant Heat and ISU 2190 External fossil fuel kit is set to Thermostat Controls Backup Heat. See "Heat pump with outdoor temperature lockouts" beginning on page 100.
3130	Radiant Heat Cycles Per Hour - Stage 1 Note: "Stage 1" is not displayed if there is only 1 stage of Radiant Heat.	1 to 12 CPH	3	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2010 Heating Equipment Type is Geothermal Radiant Heat. The thermostat automatically defaults to the recommended setting for Geothermal Radiant Heat (3 CPH). Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load.
3130	Radiant Heat Cycles Per Hour - Stage 2	1 to 12 CPH	3	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2010 Heating Equipment Type is Geothermal Radiant Heat. The thermostat automatically defaults to the recommended setting for Geothermal Radiant Heat (3 CPH). Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3140	Cool / Compressor Cycles Per Hour - Stage 1 Note: "Stage 1" is not displayed if there is only 1 stage.	1 to 6 CPH	3	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2070 Cool / Compressor Stages is set to 1 stage. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load.
3140	Cool / Compressor Cycles Per Hour - Stage 2	1 to 6 CPH	3	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2070 Cool / Compressor Stages is set to 2 stages. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load.
3140	Cool Cycles Per Hour - Stage 3	1 to 6 CPH	3	Commercial	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 1010 Application is set to Commercial and ISU 2070 Cool Stages is set to 3 stages. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load.
3140	Cool Cycles Per Hour - Stage 4	1 to 6 CPH	3	Commercial	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 1010 Application is set to Commercial and ISU 2070 Cool Stages is set to 4 stages. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3150	Heat Cycles Per Hour - Stage 1 Note: Depending on the application, the text displayed on the screen may show the specific heating equipment type. "Stage 1" is not displayed if there is only 1 stage.	1 to 12 CPH	Default varies based on heating equipment type selected	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2070 Heat Stages is set to 1 stage. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load. The thermostat automatically defaults to the recommended cycle rate based on the heating equipment type that is used. You can change the cycle rate as needed. Defaults for commonly used systems are shown below. Standard Efficiency Gas Forced Air = 5 CPH High Efficiency Gas Forced Air = 3 CPH Oil Forced Air = 5 CPH Electric Forced Air = 9 CPH Hot Water Fan Coil = 3 CPH Hot Water Radiant Heat = 3 CPH Geothermal Radiant Heat = 3 CPH Steam = 1 CPH Gravity = 1 CPH
3150	Heat Cycles Per Hour - Stage 2 Note: Depending on the application, the text displayed on the screen may show the specific heating equipment type.	1 to 12 CPH	Default varies based on heating equipment type selected	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2070 Heat Stages is set to 2 stages. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load. The thermostat automatically defaults to the recommended cycle rate based on the heating equipment type that is used. You can change the cycle rate as needed. Defaults for commonly used systems are shown below. Standard Efficiency Gas Forced Air = 5 CPH High Efficiency Gas Forced Air = 3 CPH Oil Forced Air = 5 CPH Electric Forced Air = 9 CPH Hot Water Fan Coil = 3 CPH Hot Water Radiant Heat = 3 CPH Geothermal Radiant Heat = 3 CPH Steam = 1 CPH Gravity = 1 CPH

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3150	Heat Cycles Per Hour - Stage 3 Note: Depending on the application, the text displayed on the screen may show the specific heating equipment type.	1 to 12 CPH	Default varies based on heating equipment type selected	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2070 Heat Stages is set to 3 stages. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load. The thermostat automatically defaults to the recommended cycle rate based on the heating equipment type that is used. You can change the cycle rate as needed. Defaults for commonly used systems are shown below. Standard Efficiency Gas Forced Air = 5 CPH High Efficiency Gas Forced Air = 3 CPH Oil Forced Air = 5 CPH Electric Forced Air = 9 CPH Hot Water Fan Coil = 3 CPH Hot Water Radiant Heat = 3 CPH Geothermal Radiant Heat = 3 CPH Steam = 1 CPH Gravity = 1 CPH
3160	Backup Heat Cycles Per Hour - Stage 1 Note: "Stage 1" is not displayed if there is only 1 stage.	1 to 12 CPH	Default varies based on heating equipment type selected	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2070 or 2130 Backup Heat Stages is set to 1 stage. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load. The thermostat automatically defaults to the recommended cycle rate based on the heating equipment type that is used. You can change the cycle rate as needed. Defaults for commonly used systems are shown below. Standard Efficiency Gas Forced Air = 5 CPH High Efficiency Gas Forced Air = 3 CPH Oil Forced Air = 5 CPH Electric Forced Air = 9 CPH Hot Water Fan Coil = 3 CPH Hot Water Radiant Heat = 3 CPH Geothermal Radiant Heat = 3 CPH Steam = 1 CPH Gravity = 1 CPH

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3160	Backup Heat Cycles Per Hour - Stage 2	1 to 12 CPH	Default varies based on heating equipment type selected	Both	No	ISU 3010 Temperature Control Options must be set to Advanced to view or adjust cycle rate. This ISU is only displayed when ISU 2070 or 2130 Backup Heat Stages is set to 2 stages. Cycle rate limits the maximum number of times the system can cycle in a 1 hour period measured at a 50% load. For example, when set to 3 CPH, at a 50% load, the most the system will cycle is 3 times per hour (10 minutes on, 10 minutes off). The system cycles less often when load conditions are less than or greater than a 50% load. The thermostat automatically defaults to the recommended cycle rate based on the heating equipment type that is used. You can change the cycle rate as needed. Default for commonly used systems are shown below. Standard Efficiency Gas Forced Air = 5 CPH High Efficiency Gas Forced Air = 3 CPH Oil Forced Air = 5 CPH Electric Forced Air = 9 CPH Hot Water Fan Coil = 3 CPH Hot Water Radiant Heat = 3 CPH Geothermal Radiant Heat = 3 CPH Steam = 1 CPH Gravity = 1 CPH
3170	Cooling Throttling Range	1° F to 30° F	2° F	Commercial	No	The default Cooling Throttling range is 2° F (1.5° C) which is appropriate for most applications. Do not change this setting unless advised to do so by Honeywell technical support. The throttling range controls the cycling of the system and helps to compensate for load changes, equipment sizing and thermostat mounting location.
3180	Cooling Integral	0, 100 to 25,000 sec	10,000 sec	Commercial	No	The default Cooling Integral is 10,000 seconds which is appropriate for most applications. Do not change this setting unless advised to do so by Honeywell technical support. The integral controls how much droop is used.
3190	Cooling Derivative	0, 100 to 25,000 sec	0 sec	Commercial	No	The default Cooling Derivative is 0 seconds which is appropriate for most applications. Do not change this setting unless advised to do so by Honeywell technical support. The derivative makes adjustments to the algorithm for fast acting systems.
3200	Heating Throttling Range	1° F to 30° F	2° F	Commercial	No	The default Heating Throttling Range is 2° F (1.5° C) which is appropriate for most applications. Do not change this setting unless advised to do so by Honeywell technical support. The throttling range controls the cycling of the system and helps to compensate for load changes, equipment sizing and thermostat mounting location.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
3210	Heating Integral	0, 100 to 25,000 sec	10,000 sec	Commercial	No	The default Heating Integral is 10,000 seconds which is appropriate for most applications. Do not change this setting unless advised to do so by Honeywell technical support. The integral controls how much droop is used.
3220	Heating Derivative	0, 100 to 25,000 sec	0 sec	Commercial	No	The default Heating Derivative is 0 seconds which is appropriate for most applications. Do not change this setting unless advised to do so by Honeywell technical support. The derivative makes adjustments to the algorithm for fast acting systems.
3240	Minimum Compressor Off Time	Off 1 - 5 minutes	5 minutes	Both	No	The thermostat has a built in compressor protection (minimum off timer) that prevents the compressor from restarting too early after a shutdown. The minimum-off timer is activated after the compressor turns off. If there is a call during the minimum-off timer, the thermostat shows "waiting for equipment" in the display.
3260	Extended Fan Run Time in Cool	0, 30, 60, 90 seconds, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 minutes	0 seconds	Both	No	After the call for cooling ends, the thermostat keeps the fan on for the selected amount of time for increased efficiency. This may re-introduce humidity into the living space.
3260	Extended Fan Run Time in Heat	0, 30, 60, 90 seconds, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 minutes	0 seconds	Both	No	After the call for heating ends, the thermostat keeps the fan on for the selected amount of time for increased efficiency.
4000	Number Of Schedule Periods	2 or 4 periods per day	4 periods per day	Both	No	Residential: 4 Periods = Wake, Leave, Return, Sleep 2 Periods = Wake, Sleep Commercial: 4 Periods = Occupied 1, Unoccupied 1, Occupied 2, Unoccupied 2 2 Periods = Occupied 1, Unoccupied 1
4010	Pre-Occupancy Purge Duration	Off 1 hour 2 hour 3 hour	Off	Commercial	No	Runs the fan 1 to 3 hours before each occupied period to provide a comfortable workplace upon arrival.
4020	Type of Override	Standard Initiate Occupancy	Standard	Commercial	No	Standard: The system maintains temperatures programmed for the occupied and unoccupied time periods. Pressing OVERRIDE will allow the user to make a temporary schedule change. Initiate Occupancy: The system maintains temperature at an energy saving level until the Press to Start Occupancy button is pressed by the user. The system will then maintain a comfortable temperature until the occupied period ends. This option is recommended for cost savings when the workplace is used infrequently or arrival times change from day to day (example - schools). Once the occupancy is activated by pressing the Press to Start Occupancy button, the user will still be able to perform a standard OVERRIDE of the schedule.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
4030	Override Duration	No Limit 1 to 12 Hours	3 hours	Commercial	No	When the user presses the OVERRIDE button, the thermostat will maintain the new temperature for at least 1 hour. The user can adjust the Hold Until time from 1 hour to the amount set for the Override Duration (1-12 hours). Default setting is 3 hours. If set to No Limit, the user can adjust the Hold Until time up to 24 hours.
4050	Minimum Heat Recovery Ramp Rate	Off 1° F/hr to 20° F/hr	5° F/hr	Commercial	No	Off: The heating system will begin recovery at the time that is scheduled. When a Minimum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Minimum Recovery Ramp Rate based on the rate that the heating system can recover at for a cold day in your region. Default setting is 5° F / hour. If an outdoor sensor is installed, set an Outdoor Temperature that is representative of a cold day in your region to be associated with the Minimum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature. If there is no outdoor sensor, the Minimum Recovery Ramp Rate is used.
4050	Outdoor Temperature used with Minimum Heat Recovery Ramp Rate	Off -20° F to 100°F	0° F	Commercial	No	Off: The heating system will begin recovery at the time that is scheduled. When a Minimum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Minimum Recovery Ramp Rate based on the rate that the heating system can recover at for a cold day in your region. Default setting is 5° F / hour. If an outdoor sensor is installed, set an Outdoor Temperature that is representative of a cold day in your region to be associated with the Minimum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature. If there is no outdoor sensor, the Minimum Recovery Ramp Rate is used.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
4060	Maximum Heat Recovery Ramp Rate	Off 1° F/hr to 20° F/hr	8° F/hr	Commercial	No	Off: The heating system will begin recovery at the time that is scheduled. When a Maximum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Maximum Recovery Ramp Rate based on the rate that the heating system can recover at for a mild day in your region. Default setting is 8° F / hour. Set an Outdoor Temperature that is representative of a mild day in your region to be associated with the Maximum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature.
4060	Outdoor Temperature used with Maximum Heat Recovery Ramp Rate	Off -20° F to 100° F	40° F	Commercial	No	Off: The heating system will begin recovery at the time that is scheduled. When a Maximum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Maximum Recovery Ramp Rate based on the rate that the heating system can recover at for a mild day in your region. Default setting is 8° F / hour. Set an Outdoor Temperature that is representative of a mild day in your region to be associated with the Maximum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
4070	Minimum Cool Recovery Ramp Rate	Off 1° F/hr to 20° F/hr	3° F/hr	Commercial	No	Off: The cooling system will begin recovery at the time that is scheduled. When a Minimum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Minimum Recovery Ramp Rate based on the rate that the cooling system can recover at for a hot day in your region. Default setting is 3° F / hour. If an outdoor sensor is installed, set an Outdoor Temperature that is representative of a hot day in your region to be associated with the Minimum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature. If there is no outdoor sensor, the Minimum Recovery Ramp Rate is used.
4070	Outdoor Temperature used with Minimum Cool Recovery Ramp Rate	Off -20° F to 100° F	90° F	Commercial	No	Off: The cooling system will begin recovery at the time that is scheduled. When a Minimum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Minimum Recovery Ramp Rate based on the rate that the cooling system can recover at for a hot day in your region. Default setting is 3° F / hour. If an outdoor sensor is installed, set an Outdoor Temperature that is representative of a hot day in your region to be associated with the Minimum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature. If there is no outdoor sensor, the Minimum Recovery Ramp Rate is used.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
4080	Maximum Cool Recovery Ramp Rate	Off 1° F/hr to 20° F/hr	6° F/hr	Commercial	No	Off: The cooling system will begin recovery at the time that is scheduled. When a Maximum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Maximum Recovery Ramp Rate based on the rate that the cooling system can recover at for a mild day in your region. Default setting is 6° F / hour. Set an Outdoor Temperature that is representative of a mild day in your region to be associated with the Maximum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature.
4080	Outdoor Temperature used with Maximum Cool Recovery Ramp Rate	Off -20° F to 100°F	70° F	Commercial	No	Off: The cooling system will begin recovery at the time that is scheduled. When a Maximum Recovery Ramp Rate is set, the thermostat will begin recovery early to ensure the temperature is reached at the scheduled time. Set a Maximum Recovery Ramp Rate based on the rate that the cooling system can recover at for a mild day in your region. Default setting is 6° F / hour. Set an Outdoor Temperature that is representative of a mild day in your region to be associated with the Maximum Recovery Ramp Rate. The thermostat will begin recovery at the optimal time based on a calculated ramp rate, allowing the system to recover on time and save energy during changing outdoor conditions. During recovery, the setpoint changes at a rate in degrees per hour depending on the outdoor temperature.
4090	Adaptive Intelligent Recovery	No Yes	Yes	Residential	No	No: The system will begin heating or cooling recovery at the scheduled time. Yes: The thermostat will begin heating or cooling recovery early to ensure that the temperature is reached at the scheduled time. The thermostat will adjust the start time of the equipment based on how quickly the scheduled temperature was reached on previous days.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
4100	Minimum Cool Setpoint	50° F to 99° F	50° F	Both	No	The user cannot set the temperature below this level.
4100	Maximum Heat Setpoint	40° F to 90° F	90° F	Both	No	The user cannot set the temperature above this level.
4110	Keypad Lockout	Unlocked Partially Locked Fully Locked	Unlocked	Both	No	Unlocked: User has access to all thermostat settings. Partially Locked: User can modify only temperature settings. Fully Locked: User cannot modify any settings.
4120	Residential: Entry / Exit Remote - Home Cool Setpoint Commercial: Entry / Exit Remote - Occupied Cool Setpoint	None 50° F to 99° F Note: setpoint is limited based on setting at ISU 4100.	75° F	Both	No	The thermostat maintains this Cool setting when the user presses Home / Occupied at the Entry / Exit Remote. Select None to delete this temperature setting. The thermostat only responds to the Entry / Exit Remote if a temperature is pre-set at this screen. See "Wireless Entry/Exit Remote" beginning on page 130.
4120	Residential: Entry / Exit Remote - Home Heat Setpoint Commercial: Entry / Exit Remote - Occupied Heat Setpoint	None 40° F to 90° F Note: setpoint is limited based on setting at ISU 4100.	70° F	Both	No	The thermostat maintains this Heat setting when the user presses Home / Occupied at the Entry / Exit Remote. Select None to delete this temperature setting. The thermostat only responds to the Entry / Exit Remote if a temperature is pre-set at this screen. See "Wireless Entry/Exit Remote" beginning on page 130.
4130	Residential: Entry / Exit Remote - Away Cool Setpoint Commercial: Entry / Exit Remote - Unoccupied Cool Setpoint	None 50° F to 99° F Note: setpoint is limited based on setting at ISU 4100.	78° F	Both	No	The thermostat maintains this Cool setting when the user presses Away / Unoccupied at the Entry / Exit Remote. Select None to delete this temperature setting. The thermostat only responds to the Entry / Exit Remote if a temperature is pre-set at this screen. See "Wireless Entry/Exit Remote" beginning on page 130.
4130	Residential: Entry / Exit Remote - Away Heat Setpoint Commercial: Entry / Exit Remote - Unoccupied Heat Setpoint	None 40° F to 90° F Note: setpoint is limited based on setting at ISU 4100.	65° F	Both	No	The thermostat maintains this Heat setting when the user presses Away / Unoccupied at the Entry / Exit Remote. Select None to delete this temperature setting. The thermostat only responds to the Entry / Exit Remote if a temperature is pre-set at this screen. See "Wireless Entry/Exit Remote" beginning on page 130.
4140	Residential: Entry / Exit Remote - Vacation Cool Setpoint Commercial: Entry / Exit Remote - Holiday Cool Setpoint	None 50° F to 99° F Note: setpoint is limited based on setting at ISU 4100.	82° F	Both	No	The thermostat maintains this Cool setting when the user presses Vacation / Holiday at the Entry / Exit Remote. Select None to delete this temperature setting. The thermostat only responds to the Entry / Exit Remote if a temperature is pre-set at this screen. See "Wireless Entry/Exit Remote" beginning on page 130.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
4140	Residential: Entry / Exit Remote - Vacation Heat Setpoint Commercial: Entry / Exit Remote - Holiday Heat Setpoint	None 40° F to 90° F Note: setpoint is limited based on setting at ISU 4100.	60º F	Both	No	The thermostat maintains this Heat setting when the user presses Vacation / Holiday at the Entry / Exit Remote. Select None to delete this temperature setting. The thermostat only responds to the Entry / Exit Remote if a temperature is pre-set at this screen. See "Wireless Entry/Exit Remote" beginning on page 130.
5000	What Sensors are WIRED to your System?	**Check box on screen for each:** Indoor Air Temperature Outdoor Air Temperature Return Air Temperature Discharge Air Temperature	None	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module). This ISU is only displayed if one of the S1-S4 terminals is available. Click boxes on screen to select which sensors are wired to the S1-S4 terminals at the EIM. The thermostat will not display the Outdoor Air Temperature option at ISU 5000 if a wireless outdoor air sensor is connected. The thermostat will not display the Indoor Air Temperature option at ISU 5000 if 6 wireless indoor air sensors are connected. If you have a wired Indoor Air Temperature network (1, 4, 9 etc), the thermostat will allow up to 5 wireless indoor air sensors. The thermostat will not display the Return / Discharge Air Temperature option at ISU 5000 if there is no fan in the system.
5010	Indoor Temperature Sensor Name	[Sensor Name]	Indoor Sensor	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module). Enter a name (location) of the Wired Indoor Air Temperature Sensor.
5020	What Terminals are Wired to the Indoor Temperature Sensor?	None S1 S2 S3 S4	None	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module).

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
5030	Indoor Temperature Sensor Type	10K 20K	10K: if ISU 1010 Application is Residential 20K: if ISU 1010: Application is Commercial	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module). Select 10K or 20K based on the sensor installed. Refer to resistance values below: C7189U1005 = 10K ohm C7772 = 20K ohm TR21 = 20K ohm TR21-A = 10K ohm (IMPORTANT - the TR21-A must be used in combination with a TR21 sensor or another TR21-A sensor for the thermostat to calculate the correct indoor temperature reading). See "Wiring guide — Wired Indoor Sensors" beginning on page 158 for information on the sensor type you should select based on how the sensors are wired. For example, you would select 20K when you have two TR21-A (10K) sensors wired in series.
5040	Which Sensors will be used for TEMPERATURE Control? (Multiple Sensors are Averaged)	Thermostat (Internal) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) (Up to 6 Remote Sensors)	Sensors are Averaged (Internal and Remote)	Both	No	Select the sensors to be used for temperature control. If you select more than one, the thermostat will average the temperature readings from each sensor. See "Remote Indoor Sensors" beginning on page 132.
5050	What Terminals are Wired to the Outdoor Temperature Sensor?	None S1 S2 S3 S4	None	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module).
5070	What Terminals are Wired to the Return Air Temperature Sensor?	None S1 S2 S3 S4	None	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module).
5080	Return Air Temperature Sensor Type	10K 20K	10K	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module). Select 10K or 20K based on the sensor installed. Refer to resistance values below: 50062329-001 = 10K ohm 32005180-002 = 10K ohm C7735A1000 = 10K ohm C7770A = 20K ohm C7041 = 20K ohm
5090	What Terminals are Wired to the Discharge Air Temperature Sensor?	None S1 S2 S3 S4	None	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module).

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
5100	Discharge Air Temperature Sensor Type	10K 20K	10K	Both	Yes	Wired Sensors requires an EIM (Equipment Interface Module). Select 10K or 20K based on the sensor installed. Refer to resistance values below: 50062329-001 = 10K ohm 32005180-002 = 10K ohm C7735A1000 = 10K ohm C7770A = 20K ohm C7041 = 20K ohm
5110	A-Coil Low Temperature Cutoff	Off 35° F to 65° F (in 5° F increments)	Off	Both	Yes	If an optional Discharge Air Temperature sensor is used, this feature can help prevent icing on the air conditioning A-Coil. When temperature reaches the limit you set, compressor(s) will shutoff while the system fan continues to run, until the temperature rises to a safe level.
6000	Select the Dry Contacts in the System	**Check box on screen for each:** Remote Setback Full Drain Pan Alert Dirty Filter Alert Water Leak Alert System Shutdown Alert Service Needed Alert Fan Failure Alert Custom Alert	None	Both Remote Setback (Commercial Only)	Yes	Remote Setback and Dry Contact Alerts requires an EIM (Equipment Interface Module). This ISU is only displayed if one of the S1-S4 terminals are available. See "Dry Contact Alerts" beginning on page 94.
6010	What Terminals are Wired to the Remote Setback Dry Contact?	None S1 S2 S3 S4	None	Commercial	Yes	Remote Setback requires an EIM (Equipment Interface Module).
6020	Remote Setback Dry Contact Setup	Normally Open when Occupied Normally Closed when Occupied	Normally Open when Occupied	Commercial	Yes	Remote Setback requires an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: Normally Open when Occupied: The Dry Contact device is open when the room is occupied and will close when the room is unoccupied. Normally Closed when Occupied: The Dry Contact device is closed when the room is occupied and will open when the room is unoccupied.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
6030	Remote Setback Time Delay from Occupied to Unoccupied	0 to 30 minutes (in 5 minute increments)	0 minutes	Commercial	Yes	Remote Setback requires an EIM (Equipment Interface Module). The Remote Setback Time Delay forces the thermostat to wait before it switches from Occupied to Standby temperature settings. When set to 0 minutes, the thermostat will switch from Occupied to Standby temperature settings immediately when the room is unoccupied.
6040	Remote Setback - Standby Cool Setpoint	72° F to 90° F	85° F	Commercial	Yes	Remote Setback requires an EIM (Equipment Interface Module). During occupied periods, the occupancy sensor tells the thermostat to go to STANDBY (setback settings) when no one is in the room. If someone is in the room, then it follows the settings of the occupied period. The occupancy sensor is ignored during unoccupied periods. If the thermostat is setup for non-programmable, the occupancy sensor tells the thermostat to go to STANDBY settings when no one is in the room. If someone is in the room, then it follows the settings set by the user.
6040	Remote Setback - Standby Heat Setpoint	50° F to 70° F	64° F	Commercial	Yes	Remote Setback requires an EIM (Equipment Interface Module). During occupied periods, the occupancy sensor tells the thermostat to go to STANDBY (setback settings) when no one is in the room. If someone is in the room, then it follows the settings of the occupied period. The occupancy sensor is ignored during unoccupied periods. If the thermostat is setup for non-programmable, the occupancy sensor tells the thermostat to go to STANDBY settings when no one is in the room. If someone is in the room, then it follows the settings set by the user.
6050	What Terminals are Wired to the Full Drain Pan Alert Dry Contact?	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module).
6060	Full Drain Pan Alert Dry Contact Setup	Normally Open Normally Closed	Normally Open	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed. Normally Open: The Dry Contact device is normally open and will close when the device detects the drain pan is full. Normally Closed: The Dry Contact device is normally closed and will open when the device detects the drain pan is full.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
6070	What Terminals are Wired to the Dirty Filter Alert Dry Contact?	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module).
6080	Dirty Filter Alert Dry Contact Setup	Normally Open Normally Closed	Normally Open	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: Normally Open: The Dry Contact device is normally open and will close when the device detects a dirty filter. Normally Closed: The Dry Contact device is normally closed and will open when the device detects a dirty filter.
6090	What Terminals are Wired to the Water Leak Alert Dry Contact?	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module).
6100	Water Leak Alert Dry Contact Setup	Normally Open Normally Closed	Normally Open	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: Normally Open: The Dry Contact device is normally open and will close when the device detects water. Normally Closed: The Dry Contact device is normally closed and will open when the device detects water.
6110	What Terminals are Wired to the System Shutdown Alert Dry Contact?	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module).
6120	System Shutdown Alert Dry Contact Setup	Normally Open Normally Closed	Normally Open	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: Normally Open: The Dry Contact device is normally open and will close when the device is activated. Normally Closed: The Dry Contact device is normally closed and will open when the device is activated.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
6130	What Terminals are Wired to the Service Needed Alert Dry Contact?	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module).
6140	Service Needed Alert Dry Contact Setup	Normally Open Normally Closed	Normally Open	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: Normally Open: The Dry Contact device is normally open and will close when the device is activated. Normally Closed: The Dry Contact device is normally closed and will open when the device is activated.
6150	What Terminals are Wired to the Fan Failure Alert Dry Contact?	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module).
6160	Fan Failure Alert Dry Contact Setup	Normally Open when Fan is Running Normally Closed when Fan is Running	Normally Closed when Fan is Running	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: Normally Open when Fan is Running: The Dry Contact device is open when the fan is running and will close when the fan is not running. Normally Closed when Fan is Running: The Dry Contact device is closed when the fan is running and will open when the fan is not running.
6170	What Terminals are Wired to the Custom Alert Dry Contact?	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module).
6180	Custom Alert Dry Contact Setup	Normally Open Normally Closed	Normally Open	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: Normally Open: The Dry Contact device is normally open and will close when the device is activated. Normally Closed: The Dry Contact device is normally closed and will open when the device is activated.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
6190	Custom Alert Name	View/Edit Custom Alert	View/Edit Custom Alert	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Enter a name for the custom alert dry contact. The thermostat displays this name including a brief message (entered on the next screen - ISU 6200) when a dry contact device detects a problem.
6200	Custom Alert Message	View/Edit Custom Alert	View/Edit Custom Alert	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Enter a message for the custom alert dry contact. The thermostat displays this message when a dry contact device detects a problem.
7000	Filter Type	None Electronic Air Cleaner Media	Media	Both	No	
7020	Number of Air Filters	1 to 2	1	Both	No	
7110	Air Filter 1 Replacement Reminder Note: "1" is not displayed if there is only 1 filter.	Off Run Time: 10, 20, 30, 45, 60, 90, 120, 150 days Calendar: 30, 45, 60, 75 days 3, 4, 5, 6, 9, 12, 15 months	Off	Both	No	
7110	Air Filter 2 Replacement Reminder	Off Run Time: 10, 20, 30, 45, 60, 90, 120, 150 days Calendar: 30, 45, 60, 75 days 3, 4, 5, 6, 9, 12, 15 months	Off	Both	No	
7120	Electronic Air Cleaner Cell Cleaning Reminder	Off Calendar Months: 6, 7, 8, 9, 10, 11, 12 months	Off	Both	No	
7120	Electronic Air Cleaner Pre-Filter Cleaning Reminder	Off Calendar Months: 3, 4, 5, 6 months	Off	Both	No	
7120	Electronic Air Cleaner Post-Filter Replacement Reminder	Off Calendar Months: 6, 7, 8, 9, 10, 11, 12 months	Off	Both	No	
8000	Humidifier Type	None Steam Bypass or Fan Powered	None	Both	No	

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
8010	Which Sensor will be used for Humidification Control?	Thermostat (Internal) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) (Up to 6 Remote Sensors)	Thermostat (Internal)	Both	No	Select a sensor to control humidification (thermostat or an optional remote sensor). If multiple sensors are installed, you can use a different sensor for dehumidification control. See "Humidification control" beginning on page 132. Note: Humidity sensing cannot be averaged.
8030	What Terminals are Wired to the Humidifier?	None U1 U2 U3	Thermostat defaults to the next unused universal terminal (U1, U2, U3).	Both	No	Number of Universal Outputs: THX9321 Thermostat: U1 and U2 terminals Equipment Interface Module (EIM): U1, U2 and U3 terminals U1, U2, U3 are dry contacts that require power. See "Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152.
8050	Humidification - Window Protection	Off On	Off	Both	No	Requires an optional outdoor sensor. Off: The thermostat controls the humidity level to the user's desired humidity setting. Frost or condensation may appear on windows. On: The thermostat prevents frost or condensation on windows by not allowing the humidity to go above the "Window Limit" when it is controlling the humidifier. The "Window Limit" is based on the current outdoor temperature and the user's window protection setting. The "Window Limit" is displayed on the user's humidification screen. See "Window Protection" beginning on page 102.
8060	System Modes Allowing Humidification	**Check box on screen for each:** Heat Cool Off	Heat Default varies based on heating/cooling equipment selected	Both	No	Click boxes on screen to select which system modes allow humidification. If a box is NOT checked, the thermostat will NOT allow humidification to operate in that mode. Heat: Includes Heat, Emergency Heat and Auto. If the system is in Auto mode, the thermostat will allow humidification if the last call was for heat. Cool: Includes Cool and Auto. If the system is in Auto mode, the thermostat will allow humidification if the last call was for cool. A discharge air temperature sensor is required to humidify in the Cool mode. Off: The thermostat will allow humidification when the system setting is Off. See "Set up Humidification" beginning on page 103.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
8070	Humidification Control	Humidify Only when Heat is On Humidify Only when Fan is On Humidify on Demand: Thermostat Controls Fan Humidify on Demand: Humidifier Controls Fan	Defaults to Humidify Only when Heat is On when ISU 8000 Humidifier Type is Bypass or Fan Powered Defaults to Humidify on Demand: Thermostat Controls Fan when ISU 8000 Humidifier Type is Steam	Both	No	Humidify Only when Heat is On: The thermostat turns on the humidifier only if the heat is currently running. Humidify Only when Fan is On: The thermostat turns on the humidifier only if the fan is currently running. Humidify on Demand - Thermostat Controls Fan: The thermostat turns on the humidifier and the fan when humidification is needed. Humidify on Demand - Humidifier Controls Fan: The thermostat turns on the humidifier when humidification is needed and the humidifier controls the fan.
8080	Humidifier Lockout	Humidifier Allowed when Cool is Running Humidifier Not Allowed when Cool is Running	Humidifier Allowed when Cool is Running	Both	No	
8095	Humidity Lockout Dry Contact	Full drain pan Water leak None	None	Both	Yes	If the selected alert (full drain pan or water leak) is detected, the thermostat will lock out the call for humidity. This is only available if the thermostat is configured to control a humidifier and is set up to do a full drain pan and/or water leak dry contact alert.
8100	Clean Tank / Water Filter Replacement Reminder	Off 60 Run Time Days 90 Run Time Days 6 Calendar Months 12 Calendar Months	Off	Both	No	This ISU is only displayed if ISU 8000 Humidifier Type is Steam. Run Time Days are not shown if ISU 8000 Humidifier Type is set to None.
8100	Humidifier Pad Replacement Reminder	Off 60 Run Time Days 90 Run Time Days 6 Calendar Months 12 Calendar Months	Off	Both	No	This ISU is only displayed if ISU 8000 Humidifier Type is Bypass or Fan Powered. Run Time Days are not shown if ISU 8000 Humidifier Type is set to None.
9000	Dehumidification Equipment	**Residential:** None A/C with Low Speed Fan A/C with High Speed Fan Whole House Dehumidifier **Commercial:** None A/C with Low Speed Fan A/C with High Speed Fan Hot Gas Bypass Dehumidifier	None	Both	No	See "Dehumidification - Residential" beginning on page 105 or "Dehumidification - Commercial" beginning on page 110.
9005	Dehumidification Fan Speed Priority	Low speed fan with cool stage 1 only Low speed fan always User selectable	Low speed fan with cool stage 1 only	Both	Yes	See "Dehumidification Fan Speed Priority" beginning on page 105 for description.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
9010	Which Sensor will be used for Dehumidification Control?	Thermostat (Internal) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) Sensor Name (Remote) (Up to 6 Remote Sensors)	Thermostat (Internal)	Both	No	Select a sensor to control dehumidification (thermostat or an optional remote sensor). If multiple sensors are installed, you can use a different sensor for humidification control. See "Dehumidification control" beginning on page 132. Note: Humidity sensing cannot be averaged.
9020	Which Indoor Humidity Sensor should be displayed on the Home Screen?	Humidification Sensor Dehumidification Sensor	Humidification Sensor	Both	No	This ISU is only displayed when separate humidity sensors are used to control humidification and dehumidification. Only one of the sensors can be displayed on the home screen. Select either the Humidification Sensor or the Dehumidification Sensor.
9040	What Terminals are Wired to A/C with Low Speed Fan? What Terminals are Wired to Hot Gas Bypass? What Terminals are Wired to the Dehumidifier? What Terminals are Wired to the Whole House Dehumidifier? Note: Installer Setup Name varies depending on the dehumidification equipment installed.	None U1 U2 U3	Thermostat defaults to the next unused universal terminal (U1, U2, U3).	Both	No	Number of Universal Outputs: THX9321 Thermostat: U1 and U2 terminals Equipment Interface Module (EIM): U1, U2 and U3 terminals U1, U2, U3 are dry contacts that require power. See "Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152.
9050	A/C with Low Speed Fan Setup Hot Gas Bypass Setup Note: Installer Setup Name varies depending on the dehumidification equipment installed.	Normally Closed Normally Open	Defaults to Normally Closed when ISU 9000 Dehumidification Equipment is A/C with Low Speed Fan Defaults to Normally Open when ISU 9000 Dehumidification Equipment is Hot Gas Bypass	Both	No	Choose an option appropriate for the type of equipment installed. Normally Open: U1, U2 or U3 will normally be open and will close when the thermostat calls for dehumidification. Normally Closed: U1, U2 or U3 will normally be closed and will open when the thermostat calls for dehumidification. Number of Universal Outputs: THX9321 Thermostat: U1 and U2 terminals Equipment Interface Module (EIM): U1, U2 and U3 terminals

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
9070	Dehumidification - Overcooling Limit	0°, 1°, 2°, 3° F	3° F	Residential	No	This ISU is only displayed when ISU 9000 Dehumidification Equipment is set to A/C with Low Speed Fan or A/C with High Speed Fan. The thermostat uses the cooling system to reduce humidity by lowering the temperature up to 3° F below the current cool setpoint until the desired humidity level is reached. The thermostat keeps the temperature below the cooling setpoint until the desired humidity level is reached. 0° F is only an option when ISU 9000 Dehumidification Equipment is set to A/C with Low Speed Fan.
9080	Dehumidification Control	Basic Minimum On Time High Humidity Comfort Reset High Humidity Comfort Reset with Minimum On Time Reheat Reheat with Minimum On Time	Basic	Commercial	No	See "Dehumidification - Commercial" beginning on page 110.
9090	Dehumidification Minimum On Time	5 to 15 minutes	10 minutes	Commercial	No	This option ensures that the compressor runs long enough to effectively reduce humidity when the cooling equipment is cycled on. The compressor will run for the "minimum on time" you set until the desired humidity level is reached.
9100	High Humidity Comfort Reset Setting	1° F to 5° F	2° F	Commercial	No	The thermostat uses the cooling system to reduce humidity by lowering the temperature up to 5° F below the current cool setpoint until the desired humidity level is reached. The thermostat keeps the temperature below the cooling setpoint until the desired humidity level is reached.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
9120	System Modes Allowing Dehumidification	**Check box on screen for each:** Heat Cool Off	Cool Default varies based on heating/cooling equipment selected	Both	No	This ISU is only displayed when ISU 9000 Dehumidification Equipment is set to Dehumidifier. Click boxes on screen to select which system modes allow dehumidification. If a box is NOT checked, the thermostat will NOT allow dehumidification to operate in that mode. Heat: Includes Heat, Emergency Heat and Auto. If the system is in Auto mode, the thermostat will allow dehumidification if the last call was for heat. Cool: Includes Cool and Auto. If the system is in Auto mode, the thermostat will allow dehumidification if the last call was for cool. Off: The thermostat will allow dehumidification when the system setting is Off. See "Dehumidification - Residential" beginning on page 105 or "Dehumidification - Commercial" beginning on page 110.
9130	Dehumidifier Fan Control	Thermostat Controls Fan Equipment Controls Fan	Thermostat Controls Fan	Both	No	This ISU is only displayed when ISU 9000 Dehumidification Equipment is set to Dehumidifier. Thermostat Controls Fan: The thermostat turns on the dehumidifier and the fan when dehumidification is needed. Equipment Controls Fan: The thermostat turns on the dehumidifier when dehumidification is needed. The fan is controlled by the equipment.
9140	Dehumidifier Lockout	Dehumidifier Allowed when Cool is Running Dehumidifier Not Allowed when Cool is Running	Dehumidifier Allowed when Cool is Running	Both	No	This ISU is only displayed when ISU 9000 Dehumidification Equipment is set to Dehumidifier. Dehumidifier Allowed when Cool is Running: Dehumidifier can run when the cooling system is on. Dehumidifier Not Allowed when Cool is Running: Dehumidifier can NOT run when the cooling system is on.
9180	Dehumidification Away Mode	Not Allowed Allowed	Not Allowed	Both	No	This ISU is NOT displayed when ISU 9000 Dehumidification Equipment is None. ISU 9190 to 9200 are only displayed when ISU 9180 Dehumidification Away Mode is Allowed. See "Dehumidification Away Mode" beginning on page 108.
9190	Dehumidification Away Mode - Fan Control	Automatic On Circulate	Automatic	Both	No	The On and Circulate settings may re-introduce humidity into the living space.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
9200	Dehumidification Away Mode – Low Limit Temperature Setting	70° F to 80° F	76° F	Both	No	If the cooling system is used to control humidity while Dehumidification Away Mode is active, the thermostat allows the cooling system to lower the indoor air to the Low Limit Temperature Setting to reach the dehumidification setting at ISU 9200.
9200	Dehumidification Away Mode – Temperature Setting	70° F to 99° F	85° F	Both	No	The temperature maintained while Dehumidification Away Mode is active and the desired humidity level is satisfied.
9200	Dehumidification Away Mode – Dehumidification Setting	40% to 70% (in 5% increments)	65%	Both	No	The desired humidity level while Dehumidification Away Mode is active.
9210	Dehumidifier Filter Replacement Reminder	Off 30, 60, Calendar Days 3 to 12 Calendar Months (in 1 month increments)	Off	Both	No	
10000	Ventilation Type	None ERV / HRV Passive (Fan Only) Fresh Air Damper	None	Both	No	None: The thermostat does not control ventilation. ERV/HRV: The thermostat controls an Energy Recovery Ventilator or Heat Recovery Ventilator for ventilation. Passive (Fan Only): The thermostat turns on the fan for ventilation. Fresh Air Damper: The thermostat turns on the fan and opens a fresh air damper for ventilation.
10020	What Terminals are Wired to the Ventilator? What Terminals are Wired to the Fresh Air Damper? Note: Installer Setup Name varies depending on the ventilation equipment installed.	None U1 U2 U3	Thermostat defaults to the next unused universal terminal (U1, U2, U3).	Both	No	Number of Universal Outputs: THX9321 Thermostat: U1 and U2 terminals Equipment Interface Module (EIM): U1, U2 and U3 terminals U1, U2, U3 are dry contacts that require power. See "Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152.
10050	Ventilation Control Method	ASHRAE Percent On Time	Defaults to ASHRAE when ISU 1010 Application is set to Residential. Percent on Time is the only choice when ISU 1010 Application is set to Commercial.	Both	No	See "Ventilation Control Methods (ISU 10050)" beginning on page 114.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
10060	Ventilation Fan Control	Thermostat Controls Fan Equipment Controls Fan if "fresh air damper" or "passive" is selected for ISU 10,000. This setting is not shown and thermostat controls fan by default.	Thermostat Controls Fan	Both	No	Thermostat Controls Fan: The thermostat turns on the ventilation equipment and the fan when ventilation is needed. Equipment Controls Fan: The thermostat turns on the ventilation equipment when ventilation is needed. The fan is controlled by the equipment.
10090	Number of Bedrooms	1 to 6	2 bedrooms	Residential	No	This ISU is only displayed when ISU10050 Ventilation Control Method is set to ASHRAE (Residential only).
10090	Size of House	1000 to 5000 sq. ft. (in 100 sq. ft. increments) (90 to 460 sq. m.)	1000 sq. feet	Residential	No	This ISU is only displayed when ISU10050 Ventilation Control Method is set to ASHRAE (Residential only).
10100	Enter Equipment Ventilation Rate	30 to 350 CFM (in 5 CFM increments) (850 - 9900 LPM)	150	Residential	No	This ISU is only displayed when ISU10050 Ventilation Control Method is set to ASHRAE (Residential only).
10120	Ventilation Percent On Time	10% to 100% (in 10% increments)	30%	Both	No	The thermostat operates ventilation equipment based on a percentage entered in the installer setup (ISU 10120). For example, if Percent on Time is set to 50%, the ventilation equipment will run at random times during a 1 hour period until it reaches a 50% run time (approximately 30 minutes).
10125	Ventilation Priority	Lockouts are Priority ASHRAE is Priority	Lockouts are Priority	Residential	No	Lockouts are Priority: The thermostat places a priority on lockouts versus the ASHRAE 62.2 ventilation standard. The thermostat will not run ventilation during the following lockout conditions (if configured) unless you manually call for ventilation: • Lockout Ventilation during Outdoor Conditions (ISU 10130) • Lockout Ventilation on Humidification or Dehumidification Calls (ISU 10140) • Lockout Ventilation during "Sleep" (Residential) program period. Note: This option is set by the user on the Ventilation screen in the Menu. ASHRAE is Priority: ASHRAE requires additional ventilation following a long off cycle. The thermostat meets the ASHRAE 62.2 ventilation standard by running additional ventilation when outdoor conditions are favorable. If ASHRAE cannot be met when outdoor conditions are favorable, the thermostat will override the outdoor lockouts and run ventilation. When using this option, it is recommended to increase the rate (CFM) of the ventilation equipment to meet the ASHRAE 62.2 ventilation standard in a shorter run time. Notes: • ISU 10140 "Lockout Ventilation on Humidification or Dehumidification Calls" is not an option when you select "ASHRAE is Priority". • The ability to lockout ventilation during the "Sleep" program period is not an option when you select "ASHRAE is Priority".

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
10130	Ventilation Low Temperature Lockout	Off -20° F to 40° F (in 5° F increments)	Off	Both	No	Requires an outdoor sensor. This ISU is only displayed when ISU 10000 Ventilation Type is set to ERV / HRV or Fresh Air Damper. See "Ventilation – Outdoor Condition Lockouts (ISU 10130)" beginning on page 115.
10130	Ventilation High Temperature Lockout	Off 80° F to 110° F (in 5° F increments)	Off	Both	No	Requires an outdoor sensor. This ISU is only displayed when ISU 10000 Ventilation Type is set to ERV / HRV or Fresh Air Damper. See "Ventilation – Outdoor Condition Lockouts (ISU 10130)" beginning on page 115.
10130	Ventilation High Dew Point Lockout	Off 65° F to 85° F (in 5° F increments)	Off	Both	No	Requires a Wireless Outdoor Sensor (sense outdoor humidity). This ISU is only displayed when ISU 10000 Ventilation Type is set to ERV / HRV or Fresh Air Damper. See "Ventilation – Outdoor Condition Lockouts (ISU 10130)" beginning on page 115.
10140	Lockout Ventilation on Humidification or Dehumidification Calls	Off On	Off	Both	No	This feature is used to help reach the user's desired humidity level by not allowing the ventilation equipment to run during a call for humidification or dehumidification. Off: Ventilation is allowed to run during a call for humidification or dehumidification. On: Ventilation is NOT allowed to run during a call for humidification or dehumidification.
10160	Ventilate on High Indoor Humidity	Off On (Heat Mode Only)	On (Heat Mode Only)	Both	No	This ISU is only displayed when ISU 10000 Ventilation Type is set to ERV / HRV. Off: The humidity level has no effect on ventilation. On: The thermostat removes excess humidity by turning on the ventilator when the indoor humidity rises 10% above the user's humidification setting. The thermostat must be in the heat mode to ventilate on high humidity.
10170	Ventilator Core Cleaning Reminder	Off 3, 6, 9, 12 Calendar Months	Off	Both	No	
10170	Ventilator Filter Cleaning Reminder	Off 3, 6, 9, 12 Calendar Months	Off	Both	No	
11000	Number of UV Devices	0, 1, 2	0	Both	No	Press the up/down arrows to select the number of UV devices installed in the system. Some systems may have two UV devices, one for the A-Coil and another for Air Treatment. A replacement reminder can be setup for each one. Select 0 if no UV devices are installed.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
11050	UV Bulb 1 Replacement Reminder *Note: "1" is not displayed if there is only 1 UV Bulb*	Off, 6, 12, 24 Calendar Months	Off	Both	No	
11050	UV Bulb 2 Replacement Reminder	Off, 6, 12, 24 Calendar Months	Off	Both	No	
12000	Installer Custom Reminders	View / Edit Custom Reminders Add Custom Reminders	None	Both	No	See "Customizable Reminders" beginning on page 119.
13000	Heat Delta T Diagnostics	Off On	On	Both	Yes	This ISU is only displayed when the thermostat is setup for a Non-Zoned Forced Air Heating System and the thermostat is setup for 10K Discharge and Return Air Sensors at ISU 5000 (What Sensors are WIRED to your System?) This ISU is NOT displayed when the thermostat is setup for an External Fossil Fuel Kit or an Economizer (ISU 2190 and 2220). See "Delta T Diagnostics" beginning on page 86.
13010	Cool Delta T Diagnostics	Off On	On	Both	Yes	This ISU is only displayed when the thermostat is setup for a Non-Zoned Cooling System and the thermostat is setup for 10K Discharge and Return Air Sensors at ISU 5000 (What Sensors are WIRED to your System?) This ISU is NOT displayed when the thermostat is setup for an Economizer (ISU 2220). See "Delta T Diagnostics" beginning on page 86.
13015	Set Advanced Delta T Diagnostic Options	No Yes	No	Both	Yes	See "Advanced Options for Delta T Diagnostics" beginning on page 89
13020	Allow Delta T Diagnostics During Humidification	No Yes	Yes	Both	Yes	This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. No: The thermostat does NOT monitor Delta T of the system during a call for humidification. Yes: The thermostat monitors Delta T of the system during a call for humidification.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
13030	Allow Delta T Diagnostics During Dehumidification	No Yes	Yes	Both	Yes	This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. No: The thermostat does NOT monitor Delta T of the system during a call for dehumidification. Yes*: The thermostat monitors Delta T of the system during a call for dehumidification. * Default is Yes for Dehumidifiers and A/C with High Speed Fan. The thermostat does NOT monitor Delta T Diagnostics during dehumidification if it is setup for A/C with Low Speed Fan, Hot Gas Bypass or Reheat.
13040	Allow Delta T Diagnostics During Ventilation	No Yes	Yes	Both	Yes	This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. No: The thermostat does NOT monitor Delta T of the system during a call for ventilation. Yes: The thermostat monitors Delta T of the system during a call for ventilation.
13050	Allow Heat Delta T Diagnostics when Indoor Temperature is [Indoor Temperature Range]	**Minimum Setting** No Limit 35° F to 115° F (in 5° F increments)	No Limit (Always)	Both	Yes	This ISU only applies to Heating. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. The thermostat monitors Delta T of the system ONLY when the indoor temperature is within a certain range. Set to No Limit to monitor Delta T during all indoor temperature conditions.
13050		**Maximum Setting** No Limit 40° F to 120° F (in 5° F increments)	No Limit (Always)	Both	Yes	
13060	Allow Heat Delta T Diagnostics when Indoor Humidity is [Indoor Humidity Range]	**Minimum Setting** No Limit 0% to 95% (in 5% increments)	No Limit (Always)	Both	Yes	This ISU only applies to Heating. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. The thermostat monitors Delta T of the system ONLY when the indoor humidity is within a certain range. Set to No Limit to monitor Delta T during all indoor humidity conditions.
13060		**Maximum Setting** No Limit 5% to 100% (in 5% increments)	No Limit (Always)	Both	Yes	
13070	Allow Heat Delta T Diagnostics when Outdoor Temperature is [Outdoor Temperature Range]	**Minimum Setting** No Limit -50° F to 135° F (in 5° F increments)	No Limit (Always)	Both	Yes	This ISU only applies to Heating. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. The thermostat monitors Delta T of the system ONLY when the outdoor temperature is within a certain range. Set to No Limit to monitor Delta T during all outdoor temperature conditions.
13070		**Maximum Setting** No Limit -45° F to 140° F (in 5° F increments)	No Limit (Always)	Both	Yes	

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
13080	Allow Heat Delta T Diagnostics when Outdoor Humidity is [Outdoor Humidity Range]	**Minimum Setting** No Limit 0% to 95% (in 5% increments)	No Limit (Always)	Both	Yes	This ISU only applies to Heating. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes.
13080		**Maximum Setting** No Limit 5% to 100% (in 5% increments)	No Limit (Always)	Both	Yes	The thermostat monitors Delta T of the system ONLY when the outdoor humidity is within a certain range. Set to No Limit to monitor Delta T during all outdoor humidity conditions.
13090	Allow Backup Heat Delta T Diagnostics when Indoor Temperature is [Indoor Temperature Range]	**Minimum Setting** No Limit 35° F to 115° F (in 5° F increments)	No Limit (Always)	Both	Yes	This ISU only applies to Backup Heat. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes.
13090		**Maximum Setting** No Limit 40° F to 120° F (in 5° F increments)	No Limit (Always)	Both	Yes	The thermostat monitors Delta T of the system ONLY when the indoor temperature is within a certain range. Set to No Limit to monitor Delta T during all indoor temperature conditions.
13100	Allow Backup Heat Delta T Diagnostics when Indoor Humidity is [Indoor Humidity Range]	**Minimum Setting** No Limit 0% to 95% (in 5% increments)	No Limit (Always)	Both	Yes	This ISU only applies to Backup Heat. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes.
13100		**Maximum Setting** No Limit 5% to 100% (in 5% increments)	No Limit (Always)	Both	Yes	The thermostat monitors Delta T of the system ONLY when the indoor humidity is within a certain range. Set to No Limit to monitor Delta T during all indoor humidity conditions.
13110	Allow Backup Heat Delta T Diagnostics when Outdoor Temperature is [Outdoor Temperature Range]	**Minimum Setting** No Limit -50° F to 135° F (in 5° F increments)	No Limit (Always)	Both	Yes	This ISU only applies to Backup Heat. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes.
13110		**Maximum Setting** No Limit -45° F to 140° F (in 5° F increments)	No Limit (Always)	Both	Yes	The thermostat monitors Delta T of the system ONLY when the outdoor temperature is within a certain range. Set to No Limit to monitor Delta T during all outdoor temperature conditions.
13120	Allow Backup Heat Delta T Diagnostics when Outdoor Humidity is [Outdoor Humidity Range]	**Minimum Setting** No Limit 0% to 95% (in 5% increments)	No Limit (Always)	Both	Yes	This ISU only applies to Backup Heat. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes.
13120		**Maximum Setting** No Limit 5% to 100% (in 5% increments)	No Limit (Always)	Both	Yes	The thermostat monitors Delta T of the system ONLY when the outdoor humidity is within a certain range. Set to No Limit to monitor Delta T during all outdoor humidity conditions.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
13130	Allow Cool Delta T Diagnostics when Indoor Temperature is [Indoor Temperature Range]	**Minimum Setting** No Limit 35° F to 115° F (in 5° F increments)	No Limit (Always)	Both	Yes	This ISU only applies to Cooling. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. The thermostat monitors Delta T of the system ONLY when the indoor temperature is within a certain range. Set to No Limit to monitor Delta T during all indoor temperature conditions.
13130		**Maximum Setting** No Limit 40° F to 120° F (in 5° F increments)	No Limit (Always)	Both	Yes	
13140	Allow Cool Delta T Diagnostics when Indoor Humidity is [Indoor Humidity Range]	**Minimum Setting** No Limit 0% to 95% (in 5% increments)	No Limit (Always)	Both	Yes	This ISU only applies to Cooling. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. The thermostat monitors Delta T of the system ONLY when the indoor humidity is within a certain range. Set to No Limit to monitor Delta T during all indoor humidity conditions.
13140		**Maximum Setting** No Limit 5% to 100% (in 5% increments)	No Limit (Always)	Both	Yes	
13150	Allow Cool Delta T Diagnostics when Outdoor Temperature is [Outdoor Temperature Range]	**Minimum Setting** No Limit -50° F to 135° F (in 5° F increments)	No Limit (Always)	Both	Yes	This ISU only applies to Cooling. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. The thermostat monitors Delta T of the system ONLY when the outdoor temperature is within a certain range. Set to No Limit to monitor Delta T during all outdoor temperature conditions.
13150		**Maximum Setting** No Limit -45° F to 140° F (in 5° F increments)	No Limit (Always)	Both	Yes	
13160	Allow Cool Delta T Diagnostics when Outdoor Humidity is [Outdoor Humidity Range]	**Minimum Setting** No Limit 0% to 95% (in 5% increments)	No Limit (Always)	Both	Yes	This ISU only applies to Cooling. This ISU is only displayed when ISU 13015 Set Advanced Diagnostic Options is set to Yes. The thermostat monitors Delta T of the system ONLY when the outdoor humidity is within a certain range. Set to No Limit to monitor Delta T during all outdoor humidity conditions.
13160		**Maximum Setting** No Limit 5% to 100% (in 5% increments)	No Limit (Always)	Both	Yes	
13170	Defrost Cycle	None 1 to 60 minutes (in 1 minute increments)	10	Both	Yes	This ISU is only displayed if ISU 2010 Heating Equipment Type is Air to Air Heat Pump. Press the up/down arrows to set the maximum time duration of a defrost cycle. Check the heat pump documentation for the defrost cycle time. Note: The diagnostic algorithm detects when the system goes into defrost based on the measured Delta T of the system. When the thermostat detects this change in temperature, the thermostat will not compare Delta T to the Minimum and Maximum Delta T Fault Limits. After the defrost cycle has ended, the thermostat will resume monitoring Delta T of the system.
13180	Delta T Alert Sensitivity	1 to 5	3	Both	Yes	See "Delta T Alert Sensitivity (ISU 13180)." beginning on page 89.

Table 4. Installer Setup (ISU) Table. (Continued)

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
13190	Display Delta T Alerts to User	No Yes	Yes	Both	Yes	No: The thermostat does NOT display a Delta T alert to the user when a Delta T alert is entered into the log. Yes: The thermostat displays a Delta T alert to the user when a Delta T alert is entered into the log. See "Delta T Alerts" beginning on page 89.
14000	Clock Format	12 hour 24 hour	12	Both	No	
14010	Daylight Saving Time	Off On	On	Both	No	Set to Off in areas that do not follow Daylight Saving Time.
14020	Indoor Temperature Display Offset	-3° F to 3° F (in 1° F increments)	0° F	Both	No	0° F - No difference in displayed temperature and the actual room temperature. The thermostat displays up to 3°F (1.5ºC) lower or higher than the actual measured temperature.
14020	Indoor Humidity Display Offset	-12% to 12% (in 1% increments)	0%	Both	No	0% - No difference in displayed humidity and the actual room humidity. The thermostat displays up to 12% lower or higher than the actual measured humidity.
15000	Dealer Name	[Dealer Name]	None	Both	No	
15000	Dealer Phone	[Dealer Phone]	None	Both	No	
15010	Dealer Email Address	[Dealer Email Address]	None	Both	No	
15010	Dealer Website	[Dealer Website]	None	Both	No	
15020	Dealer Message	[Dealer Message]	None	Both	No	

INSTALLER TESTS

Use the installer tests to check out the system:
- Equipment Test: Tests the heating, cooling, fan, and IAQ equipment. The test allows you to manually call for each system to ensure the equipment and thermostat operate properly. Any minimum off timers are ignored during the system test. You can test the following equipment:
  — Heat
  — Em Heat
  — Cool
  — Fan
  — Humidification
  — Dehumidification
  — Ventilation
  — Economizer
  — Time of Day
- Wireless Signal Strength Test: Run this test to verify that the thermostat can communicate properly in the installed location. The test measures the signal strength between the
  — Thermostat and the Equipment Interface Module (in non-zoned applications)
  — Thermostat and the TrueZONE Wireless Adapter (in zoned applications)

Indoor Sensor Readings in Installer Test

Fig. 60.

Menu > Installer Options > Installer Test> Indoor sensor readings.

Installer test allows you to view the indoor sensor readings if an optional RedLINK indoor air sensor is installed. If a WIRED sensor is connected to the Equipment Interface Module (EIM), then only the temperature reading is shown. If using multiple wired indoor sensors it cannot show you each individual sensor, only the average temperature reading of the sensors.

Accessing Installer Tests

1. Press MENU on the home screen, then scroll down and press Installer Options.
2. Enter the password (date code) when prompted. See "Finding Your Password (Date Code) to Access Installer Options" beginning on page 20.
3. Press Installer Test.

Fig. 61.

4. Select Equipment Test or Wireless Signal Strength Test.

Fig. 62.

⚠ CAUTION
Equipment Damage Hazard.
Minimum compressor off time is bypassed during the Equipment Test
Avoid cycling compressor quickly.

Using the Equipment Test

1. Press Equipment Test on the Installer Test screen (see Fig. 62). Turn the equipment on/off as needed and then press Next Test to test the remaining equipment. The time out for the Equipment Test mode is 30 minutes (if there is no keypress for 30 minutes, the thermostat will automatically exit the Equipment Test).
2. Run Time, Discharge, Return and Delta T data are displayed for heating and cooling tests (requires Discharge and Return Air Sensors). The Discharge, Return and Delta T are updated every 30 seconds during the test. The Run Time counter starts over when the next stage is turned on.
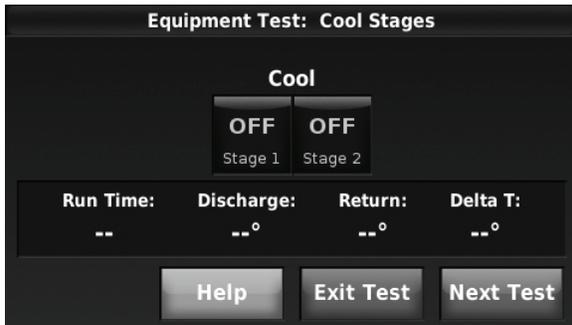
Fig. 63.

3. Discharge, Return and Delta T are updated every 30 seconds during the equipment test.
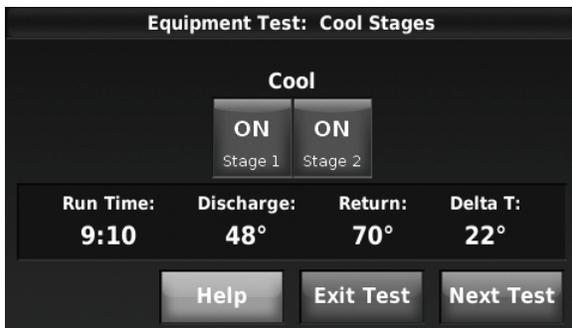
Fig. 64.

4. When that equipment test is complete, press Next Test.
5. When system testing is complete, press Exit Test.

Using the Wireless Signal Strength Test

1. On the Installer Test screen (see Fig. 62) press Wireless Signal Strength Test.

Fig. 65.

2. Press Test Signal Strength to begin. After a brief pause, the thermostat will display test results.
3. A number from 5–10 means communication is good.
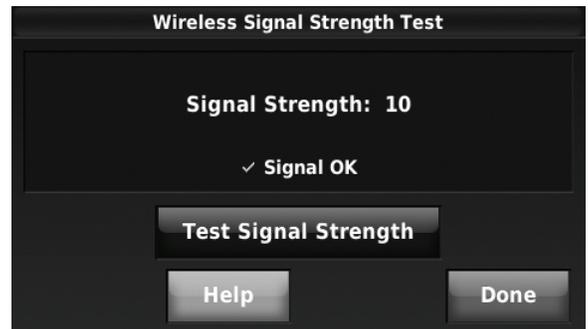
Fig. 66.

4. If the screen displays "No Signal," move the thermostat to a different location and test again.

Fig. 67.

Mounting Optional Accessories

Mounting Outdoor Sensor

Mount the sensor where:
• it cannot be tampered with.
• there is good air circulation.
• it can measure true outdoor ambient temperature and humidity.
• wire distance between C7089U1006 and EIM is less than 200 feet (wired sensor only).

Do *not* mount the sensor:
• in direct sunlight.
• where hot or cold air blows on the sensor. Discharge line from an outdoor compressor unit, vent or fan causes inaccurate temperature readings.
• where snow, ice or debris can cover it.

MOUNTING C7089R1013 WIRELESS OUTDOOR SENSOR

Use the following steps to mount the sensor (see Fig. 68):
1. Mount the sensor on a vertical exterior wall, at least 6 inches below any overhang. Choose a location protected from direct sunlight.
2. Place sensor securely in bracket, facing away from wall.
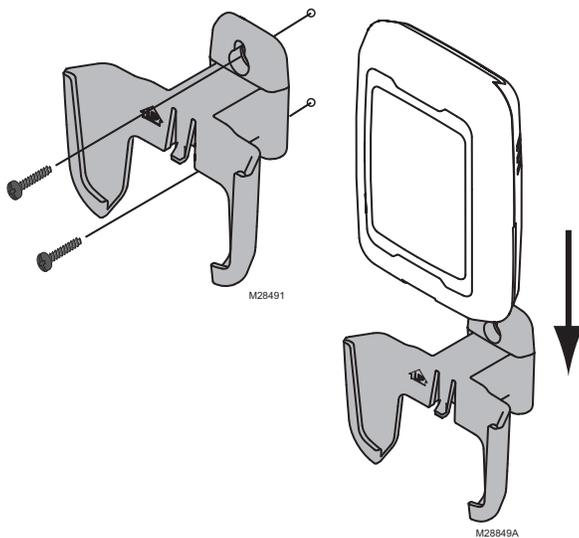
Fig. 68. Mounting Outdoor Sensor.

MOUNTING C7089U1006 WIRED OUTDOOR TEMPERATURE SENSOR

Use the following steps to mount the sensor:
1. Remove the sensor from the mounting clip.
2. Mark the area on the location selected for mounting the sensor mounting clip.
3. Mount the clip.
4. See "Wiring C7089U1006 Outdoor Sensor" on page 157.

Fig. 69. Typical locations for C7089U1006 Outdoor Sensor.

Mounting C7189R1004 Wireless Indoor Sensor

Use the following steps to mount the sensor (see Fig. 70):
1. Remove the wallplate and mount it 4 to 6 feet above the floor on an interior wall. Drill 3/16-inch holes for drywall, 7/32-inch for plaster.
2. Attach sensor securely to wallplate as shown.
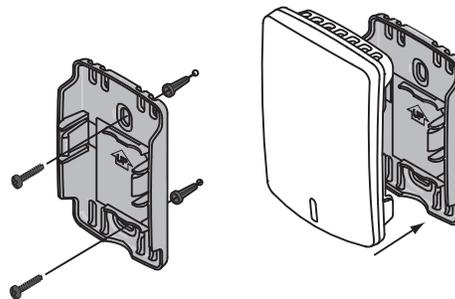
Fig. 70. Mounting Indoor Sensor.

Mounting C7189U1005 Wired Indoor Sensor

Use the following steps to mount the sensor:

1. Remove the cover from the remote sensor (see Fig. 71).
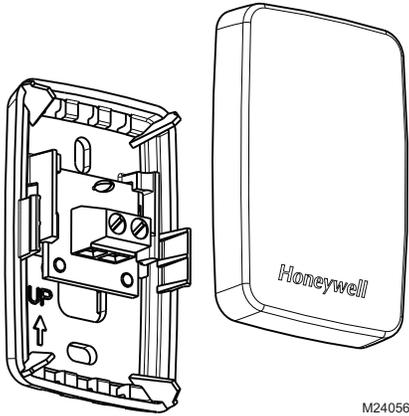
Fig. 71. Remove the cover.

2. Pull wires through wire hole.
3. Position wallplate on wall, level and mark screw hole positions with pencil.
4. Drill holes at marked positions, then tap in supplied wall anchors.

5. Place wallplate over anchors, insert and tighten mounting screws (see Fig. 72).
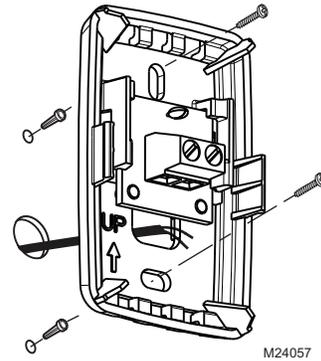
Fig. 72. Mount wallplate to wall.

6. Replace the cover on the remote sensor.

Mounting Entry/Exit Remote or Vent Boost Remote

Mounting the remote is optional.

1. Remove the front cover from the remote.
2. Use provided screws and wall anchors to fasten the remote to the wall. Drill 3/16-inch holes for drywall, 7/32-inch for plaster.
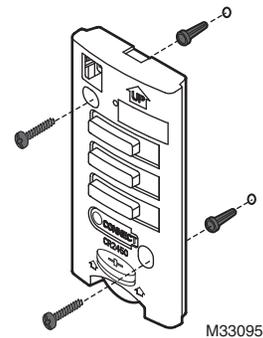
Fig. 73. Mounting Entry/Exit Remote or Vent Boost Remote.

3. Replace the cover on the remote.

OPERATION

HOME. Touch to display Home screen.

FAN. Select fan mode.

SYSTEM. Select system mode (Heat/Cool).

MENU. Touch to display options. Start here to set a program schedule.

Current schedule. Touch an arrow to change temperature setting and select a Temporary or Permanent Hold.

Indoor conditions. Shows indoor temperature and humidity.

Current date and time.

Current status. Shows system mode (heat/cool), outdoor temperature and humidity (with optional outdoor sensor).

Fig. 74. Quick reference to residential display.

HOME. Touch to display Home screen.

FAN. Select fan mode.

SYSTEM. Select system mode (Heat/Cool).

MENU. Touch to display options. Start here to set a program schedule.

Thermostat location. Quickly identify which thermostat is in control of a specific area.

Current schedule. Touch an arrow to change temperature setting and set a Temporary Hold.

Override. Touch to temporarily override program schedule.

Indoor conditions. Shows indoor temperature and humidity.

Current date and time.

Current status. Shows system mode (heat/cool), outdoor temperature and humidity (with optional outdoor sensor).

USB port. Use USB device to load holiday schedules and custom events.

Fig. 75. Quick reference to commercial display.

Setting the time/date

1. Touch the current time. The screen displays Set Time/Set Date.

Fig. 76.

2. Touch Set Time or Set Date.
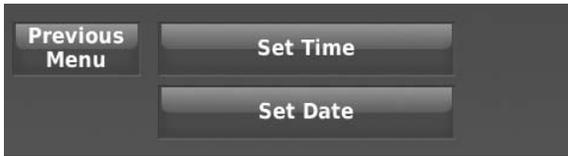
Fig. 77.

3. Touch ▲ or ▼ until the proper time/date is displayed.
4. Touch Done to save or Cancel to ignore changes.
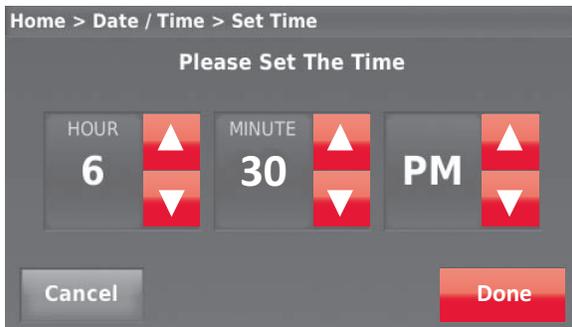
Fig. 78.

NOTE: The thermostat will automatically switch to and from Daylight Saving Time.

Setting the fan

1. Touch FAN to display fan settings.

Fig. 79.

2. Touch On, Automatic, Circulate, or Follow Schedule.

3. Touch Done to save and exit.
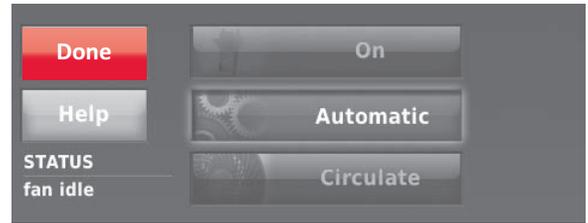
Fig. 80.

- On: Fan is always on.
- Automatic: Fan runs only when the heating or cooling system is on.
- Circulate: Fan runs randomly about 35% of the time (residential use only).
- Follow Schedule: Fan controlled by program.

NOTE: In commercial use, touch Automatic or On to temporarily override the programmed fan schedule.

Setting system mode

1. Touch SYSTEM to display system settings.

Fig. 81.

2. Touch desired option:
    - Heat: Thermostat controls only the heating system.
    - Cool: Thermostat controls only the cooling system.
    - Off: Heating/cooling systems are off.
    - Automatic: Thermostat selects heating or cooling as needed depending on the indoor temperature.
    - Emergency Heat (heat pumps with aux. heat): Controls auxiliary/emergency heat. Compressor is locked out.
3. Touch Done to save and exit.

Fig. 82.

NOTE: The Automatic and Emergency Heat system settings may not appear, depending on how your thermostat was installed.

Preset Energy–Saving Schedules

This thermostat uses default Energy Saver settings that can reduce your heating/cooling expenses.

Table 5. Residential Use Default Schedule.

Period	Start Time	Heat (Mon–Fri)	Cool (Mon–Fri)	Heat (Sat–Sun)	Cool (Sat–Sun)
Wake	6:00 am	70°	78°	70°	78°
Leave	8:00 am	62°	85°	62°	85°
Return	6:00 pm	70°	78°	70°	78°
Sleep	10:00 pm	62°	82°	62°	82°

Table 6. Commercial Use Default Schedule.

Period	Start Time	Heat	Cool	Fan
Occupied 1	8:00 am	70°	75°	On
Unoccupied 1	10:00 pm	55°	85°	Auto
Occupied 2*	12:00 am	70°	75°	On
Unoccupied 2*	12:00 am	55°	85°	Auto

* Period 2 is cancelled by default. If you activate it, the val–ues shown above are default settings.

Adjusting program schedules

1. Touch MENU.

Fig. 83.

2. Select Create/Edit Schedule.
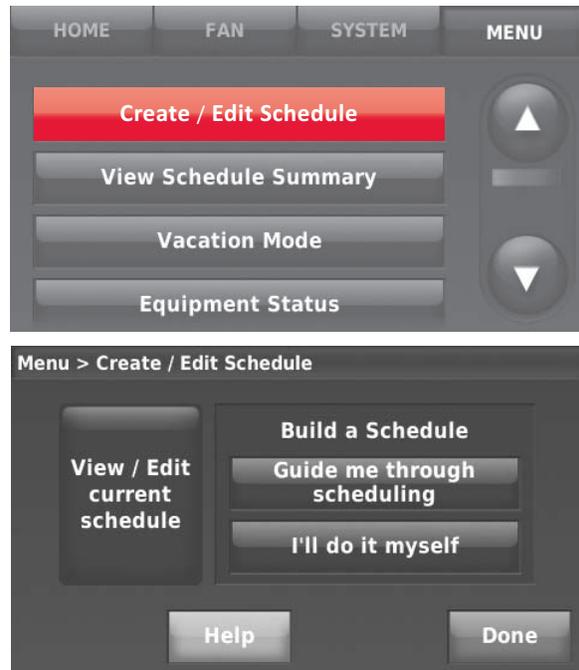
Fig. 84.

- Touch Guide Me to create a schedule by answering simple questions.
- Touch I'll do it myself to manually create a program schedule. See below.
- Touch View/Edit to view the full schedule and make a quick adjustment.

NOTE: To reduce costs, use the "Preset Energy–Saving Schedules" on page 72.

3. Select the days to schedule, touch Next.
4. Touch Wake to set your Wake time for selected day(s).
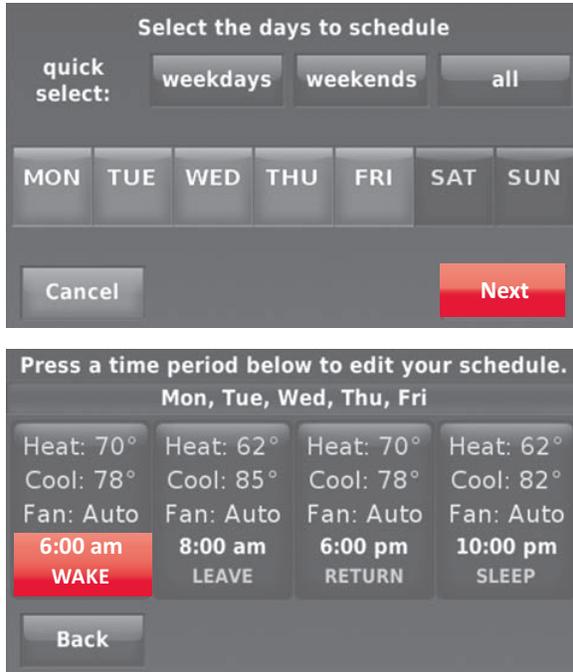
Fig. 85.

5. Touch ▲ or ▼ to set Heat and Cool temperatures for the Wake period, then touch Done.
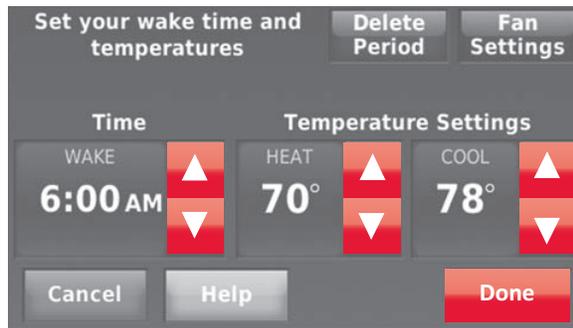
Fig. 86.

6. Touch other time periods (Leave, Return, Sleep) to set time and temperatures for each.
7. Touch Done to save and exit.

NOTE: Touch Delete Period to eliminate any unwanted time period.

NOTE: Touch Fan Settings to customize fan settings for any time period.

Overriding schedules: residential use

1. Touch ▲ or ▼ to adjust the temperature (right side of screen) and the Hold Until time (left side). The schedule will resume when the Hold Until time expires.

Fig. 87.

2. Touch Switch to Permanent Hold to keep the same temperature until you change it or resume the pro-gram schedule.
3. Touch Cancel Hold at any time to resume the pro-gram schedule.

Overriding schedules: commercial use

Touch ▲ or ▼ to adjust the temperature. It will be maintained until the hold time you set.

Fig. 88.

- To change the hold time, touch the Hold Until arrow buttons. This time can be adjusted up to the maximum time set by the installer.
- Touch Override to use a pre-set occupied temperature if a person uses the room during an unoccupied period. The new temperature will be maintained for 1 hour and can be adjusted up to the maximum time set by the installer.

Fig. 89.

The programmed schedule will resume when the override timer expires. Touch Cancel Hold at any time to resume the program schedule.

Viewing equipment status

1. Touch MENU.

Fig. 90.

2. Select Equipment Status.
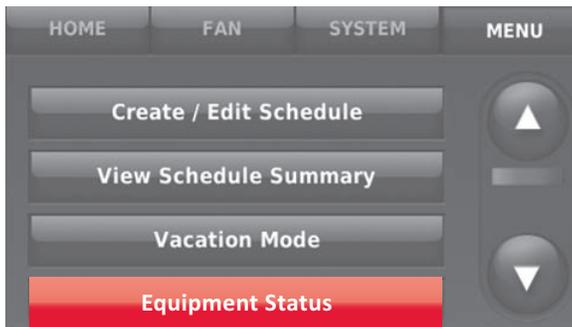
Fig. 91.

3. Touch ▲ or ▼ to view the status of all the equipment your thermostat is controlling. Depending on how your thermostat was installed, the Equipment Status screen can report data about the following systems:
   - Heating and cooling
   - Fan
   - Humidification
   - Dehumidification
   - Ventilation
   - Maintenance reminders
   - Thermostat information.
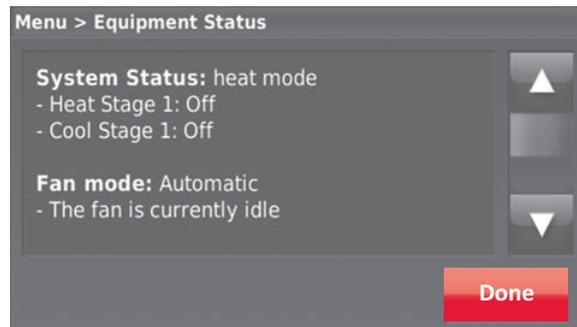
Fig. 92.

Setting vacation hold: residential use

This feature helps you save energy while you are away, and restores comfortable settings just before you return home.

1. Touch MENU.

Fig. 93.

2. Select Vacation Mode.
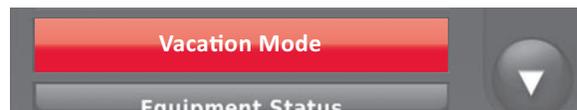
Fig. 94.

3. Touch ▲ or ▼ to select the date you leave, then touch Next for further scheduling details, including times of day, temperature settings, return date, and return settings.
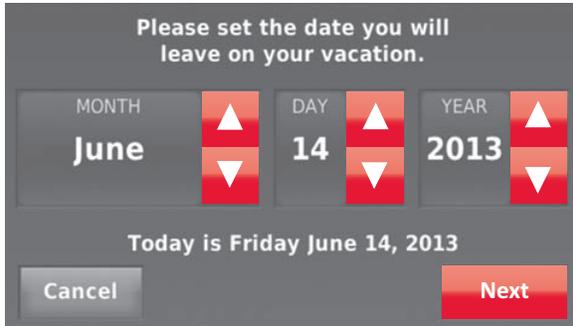
Fig. 95.

4. Review your selections on the last display, and touch Done to save your settings. Touch Back, then Cancel to ignore the changes.
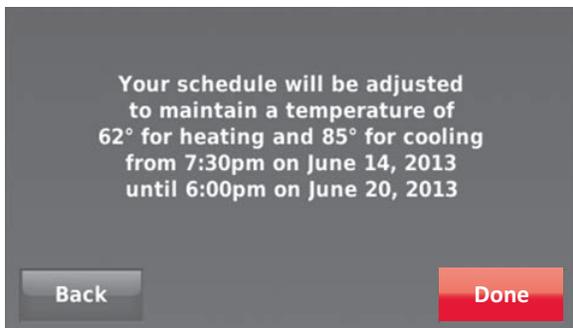
Fig. 96.

Setting holiday/event schedules: commercial use

This feature helps you conserve energy when the workplace is unoccupied for special events and holidays.

1. Touch MENU.

Fig. 97.

2. Select Holiday/Event Scheduler.

Fig. 98.

3. Select the item you want to schedule.
    • Custom Events lets you set up other days for special schedules.

• US and Canadian Holiday options let you select from a list of holidays commonly observed in each country.

Fig. 99.

4. Make selections as prompted on each screen. For more information, see next two pages.
5. Touch Done to save your settings.

Setting custom events: commercial use

This feature lets you customize temperature settings to be maintained during a specific event. You can set up an event for a specific date or day in a month. The thermostat resumes normal scheduling after the event.

1. Select Custom events from the Holiday/Event Scheduler menu.

Fig. 100.

2. Select Create a new event.

Fig. 101.

3. Select Specific Date or Month/Weekday.
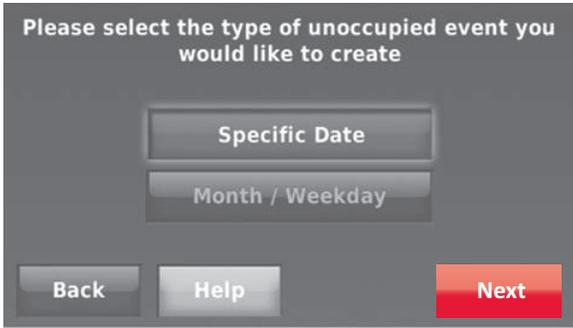
Fig. 102.

- For Specific Date, you are prompted to select the start date, settings, end date, and frequency for the event.
- For Month/Weekday, you are prompted to select the month, day of the week, week of the month, settings, length of event, and frequency of the event.

4. Review the settings and touch Done to save them. Touch Back, then Cancel to ignore the changes.
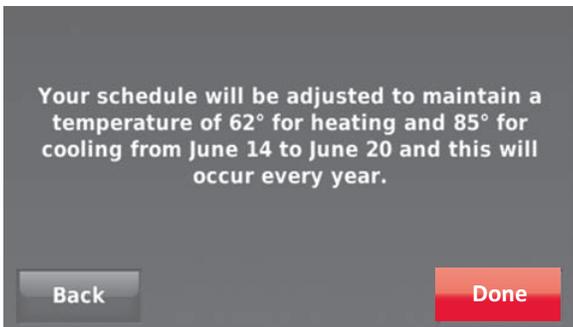
Fig. 103.

Setting holiday schedule: commercial use

This feature lets you customize temperature settings to be maintained on specified national holidays. The thermostat resumes normal scheduling between selected holidays.

1. Select US Holidays or Canadian Holidays from the Holiday/Event Scheduler menu.
2. Select Add/Edit Holidays. A list of national holidays is displayed.
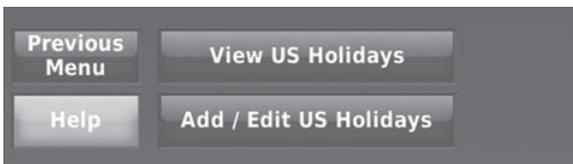
Fig. 104.

3. Touch the check box next to each holiday for which you want to maintain specific settings, (Touch ▲ or ▼ to scroll through the holiday list.) then touch Next.

Set the holiday schedule for Occupied or Unoccupied temperatures, depending whether the building will be in use.
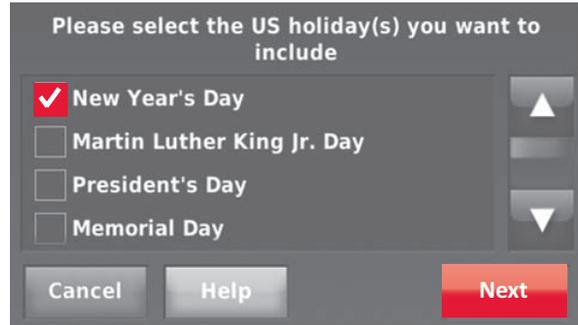
Fig. 105.

4. Touch ▲ or ▼ to select the Heat and Cool temperatures.
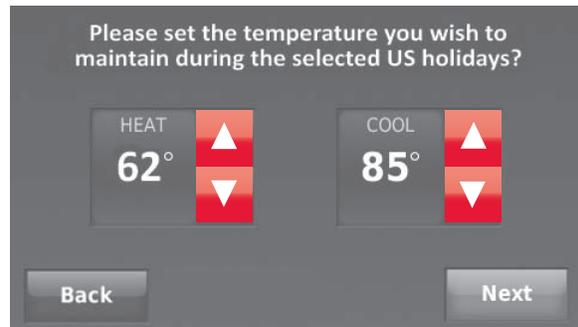
Fig. 106.

5. Review the settings and touch Done to save them. Touch Back, then Cancel to ignore the changes.

Setting holiday override: commercial use

This feature lets you customize temperature settings to be maintained from now until a specified date. The thermostat resumes normal scheduling on the date you select.

1. Touch MENU.

Fig. 107.

2. Select Holiday Mode to display temperatures while you are away on holiday.
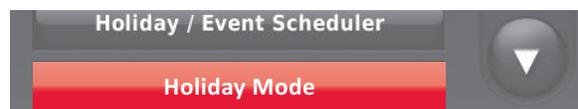
Fig. 108.

3. Touch ▲ or ▼ to select the Heat and Cool temperatures, then touch Next to select return date.
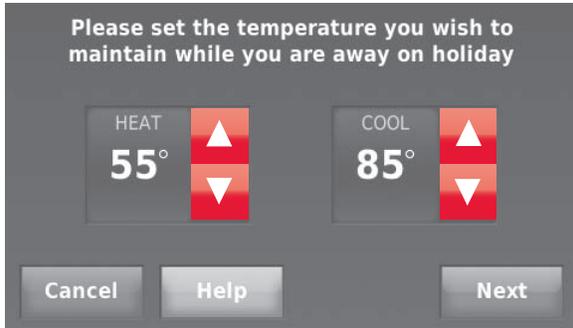
Fig. 109.

4. Review the settings and touch Done to save them. Touch Back, then Cancel to ignore the changes.
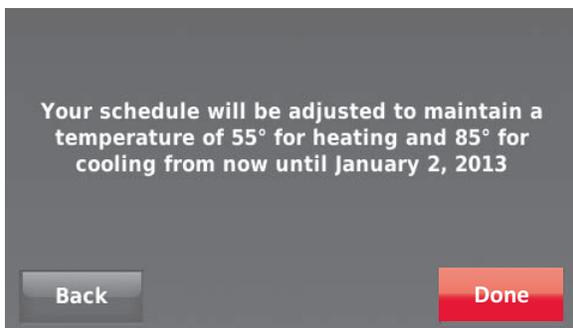
Fig. 110.

NOTE: The cool temperature can only be set higher than the unoccupied program setting and the heat temperature can only be set lower than the unoc-cupied program setting.

Initiating occupancy mode: commercial use

This feature keeps temperature at an energy-saving level until you touch Press to start occupancy. When you arrive, touch the button to maintain a comfortable temperature while the room is occupied.
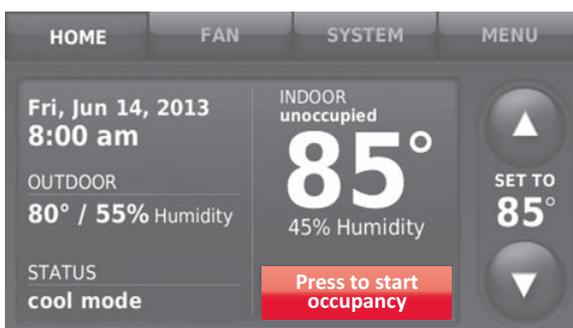
Fig. 111.

Touch the ▲ or ▼ buttons to set the temperature or the Hold Until time. The temperature is maintained until the time you set. Temperature returns to an energysaving level after the timer expires, or the "Occupied" period ends.

NOTE: This feature is available only when programmed by the installer.

Remote setback: commercial use

During Occupied program periods, an occupancy sensor directs the thermostat to go to REMOTE SETBACK settings when the room is empty. If someone is in the room, it uses the Occupied program period settings. The thermostat ignores the occupancy sensor during Unoccupied program periods.

If the thermostat is set up to be non-programmable, the sensor directs the thermostat to go to REMOTE SETBACK settings when the room is empty. If someone is in the room, then it follows the settings set by the user.

Depending on how your thermostat was installed, it may delay for up to 30 minutes before switching to REMOTE SETBACK settings. This delay allows the room to stay comfortable if the room is unoccupied for only a short time.

Adjusting humidification settings

1. Touch MENU and select Humidification.
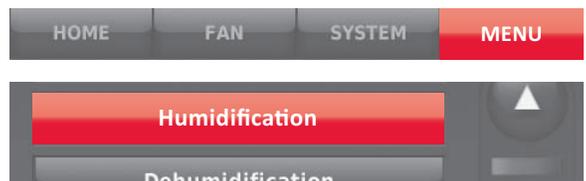
Fig. 112.

2. Select Auto.
3. Move the slider bar to select humidity level.

Fig. 113.

4. Touch More Settings if frost or condensation appears on the windows. Use a lower number to pre-vent frost or condensation. Use a higher number if indoor air is too dry. Window Protection limits the amount of humidity to prevent frost or condensation on windows. See notes below.

Fig. 114.

5. Touch Done to save your settings. Touch Cancel to ignore changes.
6. Window Protection is set on a scale from 1–10. A set- ting of 1 represents poorly insulated windows and a setting of 10 represents well insulated windows. A lower number automatically reduces the humidity to help prevent frost or condensation on your windows. Use a higher number if indoor air seems too dry. To prevent frost/condensation on your windows during cold outdoor temperatures, poorly insulated win- dows require a lower Window Protection setting, which will limit how much your humidifier can run.
7. After you set the Window Protection setting, check for frost/condensation on your windows in the morning. If frost/condensation is present, adjust the Window Protection setting to the next lowest num- ber and check for frost/condensation on your win- dows the next morning. Continue to adjust the Window Protection setting to a lower number until frost/condensation is no longer present.

NOTE: The thermostat will not run the humidifier when the indoor humidity has reached the "Window Limit" that is displayed on the screen.

NOTE: Window Protection is available only if an outdoor air sensor is installed.

Adjusting dehumidification settings: residential use

This feature can control a dehumidifier or use your air conditioner to reduce humidity.

1. Touch MENU and select Dehumidification.
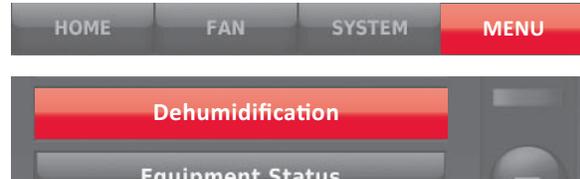
Fig. 115.

2. Select Auto.
3. Move the slider bar to select humidity level.

Fig. 116.

4. Touch Done to save your settings. Touch Cancel to ignore changes.

NOTE: If your air conditioner is used to control humidity, the temperature may drop up to 3° F below your temperature setting until humidity reaches the desired level.

Adjusting dehumidification settings: commercial use

This feature can control a dehumidifier or use your air conditioner to reduce humidity.

1. Touch MENU and select Dehumidification.
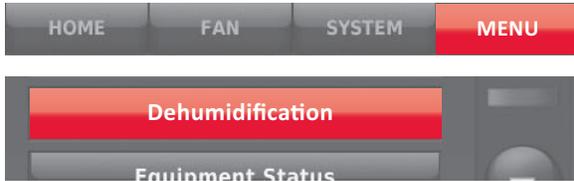
Fig. 117.

2. Select Auto.
3. Move slider bar to select humidity level.

Fig. 118.

4. Touch Done to save your settings. Touch Cancel to ignore changes.

If your air conditioner is used to control humidity, the thermostat may use the following methods to maintain humidity:
- Cool from 1° to 5° F lower than your temperature setting.
- Run cooling for the minimum "on" time to reduce humidity.
- Run cooling and heating at the same time to reduce humidity without lowering the temperature.

Adjusting ventilation settings

1. Touch MENU, and select Ventilation.
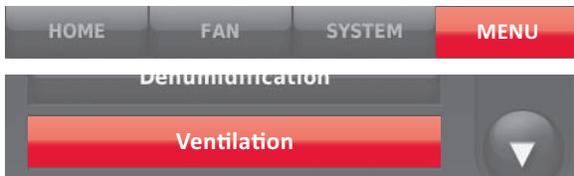
Fig. 119.

2. Touch Setting, then select:
   - Auto: Ventilation runs as programmed by the installer.
   - Off: Ventilation remains off unless turned on using the timer.
   - On: Ventilation is always on.
3. Touch ▲ or ▼ to run ventilation temporarily. To turn it off, set it to zero.
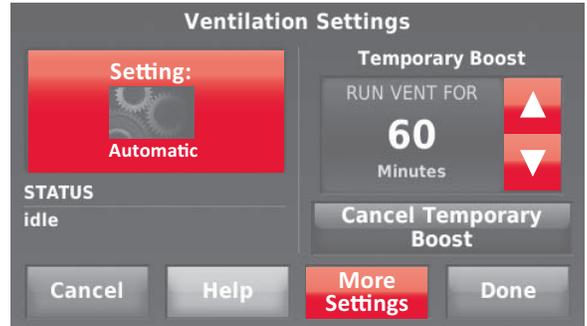
Fig. 120.

4. Touch More Settings to set maintenance reminders and lockouts. Select Yes to prevent ventilation from running during the Sleep or Unoccupied (commercial) program periods or when outdoor conditions exceed values set by the installer.

NOTE: If set up for humidification in heat mode, the ventilator will turn on to remove excess humidity if 10% or more above your humidity setting.

Customizing screen color

You can customize the color of the thermostat screen to match your décor.

1. Touch Menu.
2. Touch Color Themes.
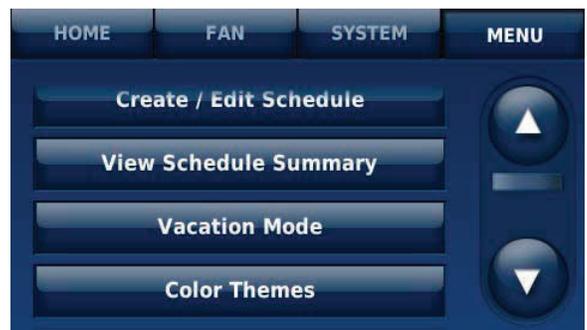
Fig. 121.

3. Select one of the predefined screen colors or select Custom to define your own screen color.

Fig. 122.

4. If you select a predefined screen color, check the left side of the screen to preview the color and touch Done to accept that selection.
5. If you select Custom, touch Next and follow the prompts on the screen to select the background color and font color.

Fig. 123.

Fig. 124.

6. Touch Make Additional Adjustments to make changes to your custom screen color or touch Accept Color Selections if you are satisfied with your custom screen color.
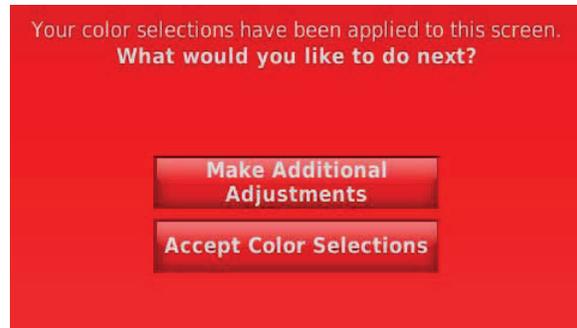
Fig. 125.

7. Touch the arrows on the slider bars to adjust the color, shading and brightness of the background color. View changes in the Preview area at the top of the screen. Touch Undo to restore the color you originally selected. Touch Next when finished.

Fig. 126.

8. Touch the arrows on the slider bars to adjust the color, shading and brightness of the font color. View changes in the Preview area at the top of the screen. Touch Undo to restore the color you originally selected. Touch Next when finished.

Fig. 127.

9. Touch Make Additional Adjustments to continue making changes, or touch Accept Color Selections when you are satisfied with the selected colors and then touch HOME.
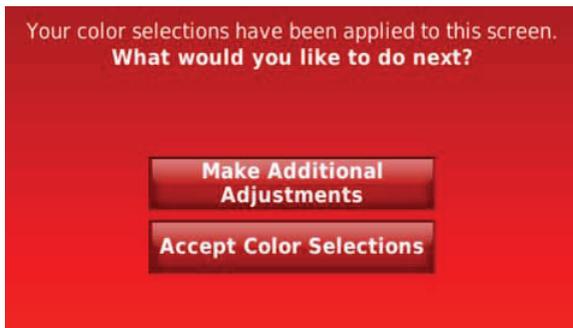
Fig. 128.

Fig. 129.

Setting preferences

Preference menu options let you select how the thermostat displays information or responds to certain situations.

1. Touch MENU and select Preferences.
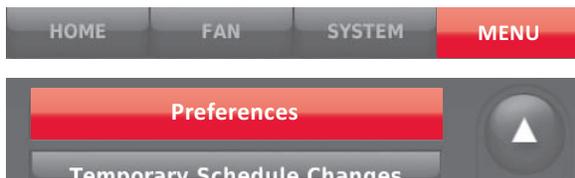
Fig. 130.

2. Select an option and follow prompts:
- Reminders to change filters
- Display heat/cool diagnostic alerts
- Utility Schedule options
- Fahrenheit/Celsius display
- 12/24-hour clock display
- Backlight
- Language choice
- Scheduling options
- Adaptive Intelligent Recovery
- Restore default schedule
- Daylight saving time
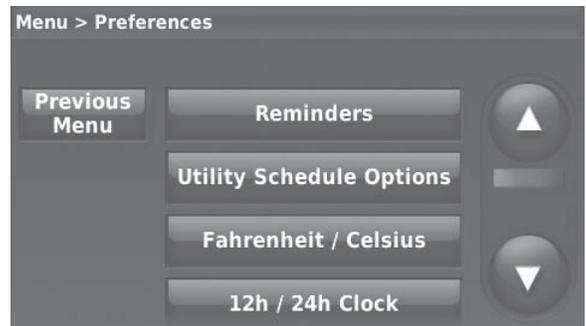
Fig. 131.

3. Touch Done to save your settings. Touch Cancel to ignore changes.

Cleaning the thermostat screen

When you select the Clean Screen option, the screen is locked so you don't accidentally change settings while you clean.

1. Touch MENU.
2. Select Clean Screen. A prompt asks if you want to clean the screen for 30 seconds.
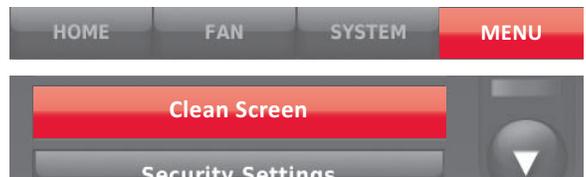
Fig. 132.

3. Touch Yes. A countdown timer displays elapsed time until the screen is reactivated.
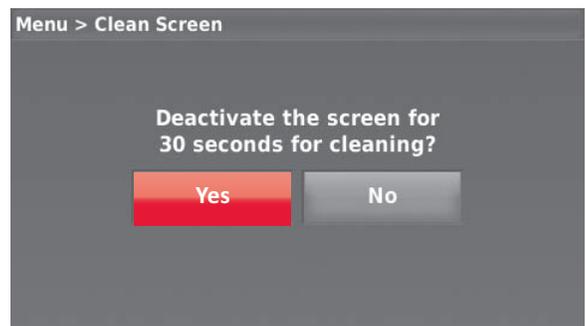
Fig. 133.

NOTE: Do NOT spray any liquid directly on the thermo–stat. Spray liquids onto a cloth, then use the damp cloth to clean the screen. Use water or household glass cleaner. Avoid abrasive cleansers.

Adjusting security settings

You can adjust security options to prevent unauthorized changes to system settings.

1. Touch MENU and select Security Settings.
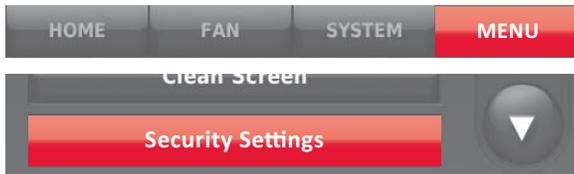
Fig. 134.

2. Select Change Lock Mode.
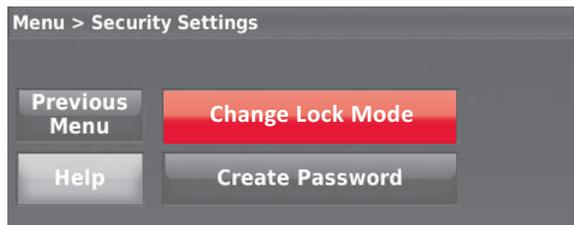
Fig. 135.

3. Select an option and follow prompts:
    • Unlocked: Full access allowed.
    • Partially locked: Only temperature can be changed.
    • Fully locked: No access allowed.

Fig. 136.

NOTE: If you choose to use a password for additional security, write it here for reference:

Viewing dealer information

Check dealer information if you need to contact your installer for maintenance, repairs, or upgrades.

1. Touch MENU.
2. Select Dealer Information.
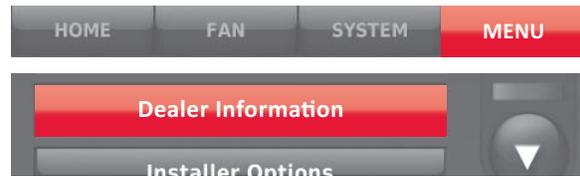
Fig. 137.

3. Touch Done to return to the menu.
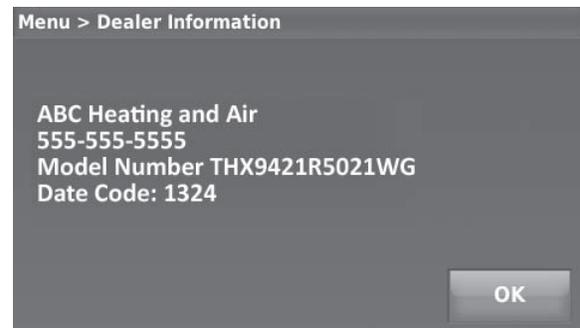
Fig. 138.

Temporary Schedule Changes

Use the thermostat to set temporary schedule changes that impact the regular schedule for the heating/cooling system. This feature is useful if your daily schedule sometimes changes.

Select an option, then follow screen prompts to conserve energy while you're away and maintain a comfortable climate after you return.

After the times you set, the normal program schedule will resume.

• Stay Home From Work: Ignores the "Away" period and keeps the temperature at a comfortable level throughout the day.
• Return Home Early: Shortens the "Away" period and applies evening temperature settings earlier than usual.

1. Press MENU

| HOME | FAN | SYSTEM | **MENU** |

2. Scroll to select TEMPORARY SCHEDULE

Temporary Schedule Changes
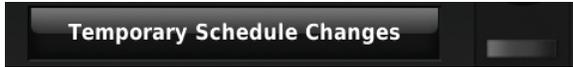
3. Select option, then follow screen prompts

Menu > Temporary Schedule Changes

Previous Menu
Help

Vacation Mode
Stay Home From Work
Return Home Early
Return Home Late
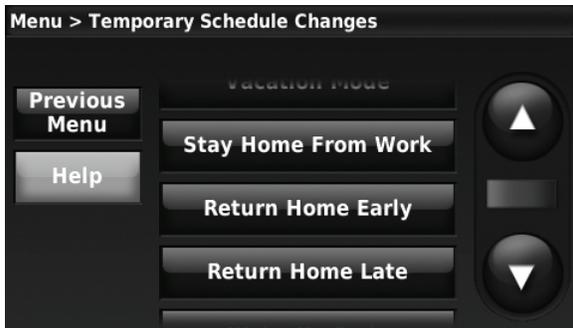
NOTE: See also "Overriding schedules: residential use" beginning on page 73.

Utility Scheduling

This feature can help reduce fuel or electric expenses by changing indoor temperatures at certain times of the day when utility charges rise. For example, the system can be set to raise indoor temperature slightly in summer (or lower it in winter) during hours of peak usage when rates are higher.

1. Press MENU, then press Preferences, then press Utility Schedule Options.

Menu > Preferences

Previous Menu
Reminders
Utility Schedule Options
Fahrenheit / Celsius
12h / 24h Clock

Fig. 139.

2. Press On, then press Next.

Menu > Preferences > Utility Schedule Options
Off
On
Cancel | Help | Next

Fig. 140.

3. Select the temperatures you would like to adjust based on the Utility Schedule. Choose to create a cost-saving schedule for the heating system, the cooling system, or both.
4. When asked if you'd like to enter the Utility Schedule now, press Yes.
5. Indicate how many different price levels the Utility Schedule has, then press Next. At this and the following screens, you can customize how the system operates for up to four different price levels, based on local utility rates.

How many different price levels does your Utility Schedule have?
Levels: Off-Peak, Peak
2 levels
Cancel | Help | Next
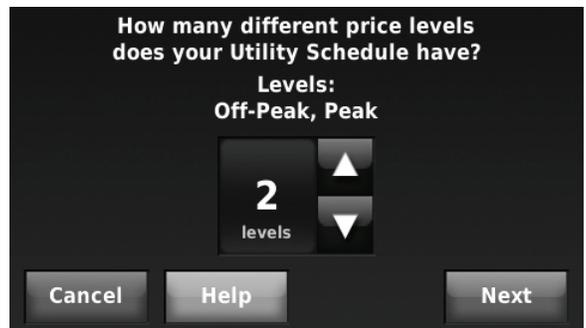
Fig. 141.

6. Use the slider to set the warmest heating or coolest cooling temperature allowed during the different price periods.

Set the coolest cooling temperature allowed during:
Peak pricing
More Comfort — Save Money
74°
Back | Help | Cancel | Next
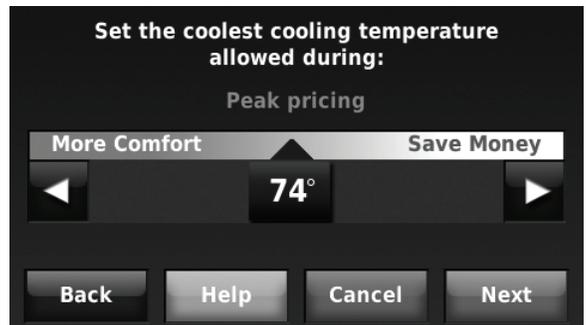
Fig. 142.

7. Follow the on-screen prompts to set the days of the week that will use the Utility Schedule, then press Next.
8. The thermostat will prompt you to enter information for additional price periods, and prompt you to review and save your Utility Schedule when complete.

Advanced Features

ADAPTIVE INTELLIGENT RECOVERY (RESIDENTIAL USE ONLY)

Over time, the Prestige® thermostat "learns" how long it takes your system to reach your programmed temperature setting.

The thermostat turns on the heating/cooling system early and assures that the programmed temperature setting is reached at the programmed time regardless of weather conditions. For example, if the Wake program period is set to 6:00 am with a heat setting of 70 degrees, the heat will turn on before 6:00 am, so the temperature is 70 degrees at 6:00 am. The thermostat displays "In Recovery" when it turns the system on early.

Adaptive Intelligent Recovery® calculates the recovery ramp based on how far the room temperature is away from the temperature setting, previous equipment performance and weather history, allowing the thermostat to start recovery at the optimal time so it can reach the programmed temperature setting at the programmed time.

The Prestige® thermostat uses two recovery ramps when setup to control a heat pump system. One ramp for the compressor and one ramp for the auxiliary heat. Once the room temperature intersects the compressor ramp, the compressor turns on until the setpoint is reached. If the room temperature does not rise quickly enough and intersects the second ramp, the auxiliary heat turns on. It takes about one week for the thermostat to adjust to weather conditions, equipment performance and construction of the home. If the temperature setting is reached too early or too late, the ramp is adjusted for the next day's recovery. See Fig. 143.
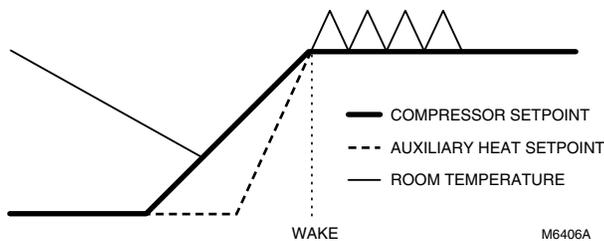
Fig. 143.

DEHUMIDIFICATION AWAY MODE

Your system can be set to control indoor climate while your home is vacant during the humid season. Before you leave, touch MENU, then select Dehumidification Away Mode. Temperature and humidity will be kept at levels that protect your home and possessions. When you return, touch Cancel to resume normal operation.

COMPRESSOR PROTECTION

The thermostat keeps the compressor off for a few minutes before restarting, to prevent equipment damage. During this "off" time, the message "waiting for equipment" is displayed on screen.

PRE-OCCUPANCY PURGE (COMMERCIAL USE ONLY)

This feature turns on the fan 1 to 3 hours before each "occupied" time period, to provide a comfortable workplace when you arrive.

P + I CONTROL

A conventional mechanical or electronic thermostat does not control temperature precisely at setpoint. Typically there is an offset (droop) in the control point as the system load changes. Many factors contribute to offset including the switch differential, thermal lag, overshoot, cycle rates and system load.

The Prestige® thermostat however, works much differently than a conventional mechanical or electronic thermostat. The proprietary algorithm in the thermostat eliminates the factors causing offset (droop). This makes temperature control more accurate than the conventional mechanical or electronic thermostat. The temperature control algorithm is called proportional plus integral (P + I) control.

The thermostat sensor or a remote indoor sensor senses the current space temperature. The proportional error is calculated by comparing the sensed temperature to the setpoint temperature. The deviation from the setpoint is the proportional error.

The thermostat also determines integral error, which is a deviation based on the length of error time (how long the sensed room temperature has been away from the setpoint temperature). The sum of the two errors is the (P + I) error. The cycle rate used to reach and maintain the setpoint temperature is computed using the P + I control algorithm. The addition of the integral error is what differentiates the thermostat from many other mechanical and electronic thermostats. See Fig. 144.
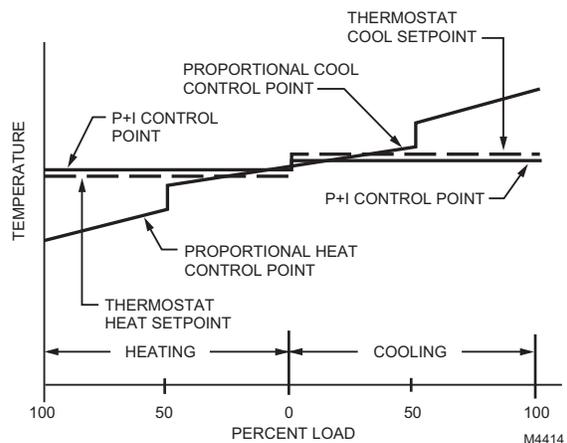
Fig. 144.

Installer options

Installer Options require a password and should only be changed by a qualified technician.

To prevent unintended changes or damage to your equipment, do not change these options yourself.
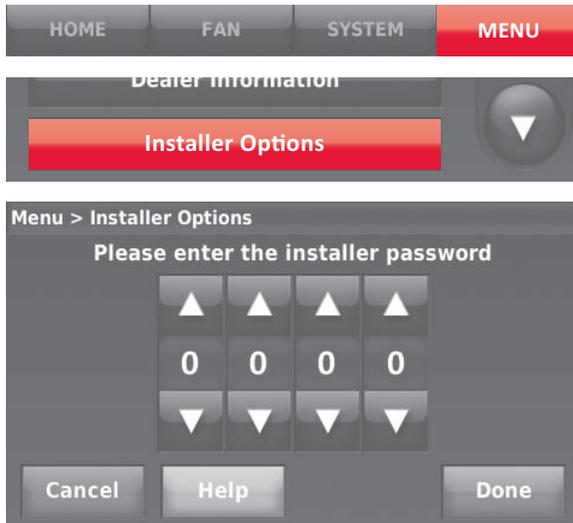
Fig. 145.

Using the temperature display

In some circumstances, the temperature displayed on the Home screen may not match the temperature near the thermostat.

If your system is set up to use remote indoor sensors, it may be reading a sensor in another location.

Temperature reading depends on location of sensor

Fig. 146.

Using the humidity display

In some circumstances, the humidity displayed on the Home screen may not match humidity near the thermostat.

Some systems are set up to use two sensors, one to control humidification, the other for dehumidification. These sensors are often installed in different locations.

Depending on how your thermostat was installed, the thermostat Home screen will display humidity readings from only one sensor.

Humidity reading depends on location of sensor.

Fig. 147.

UNIVERSAL OUTPUTS (U1, U2, U3)

U1, U2, U3 are universal outputs that can be setup to control IAQ equipment and a stage of heating or cooling in the Installer Setup. Setup options are listed below. See "THX9321 Thermostat Wiring Diagrams Using Universal Relays to Control Heating or Cooling" beginning on page 145 for more information.

Universal Output Options

THX9421 with Equipment Interface Module (U1, U2, U3):
• Humidification (ISU 8030)
• Dehumidification (ISU 9040)
• Ventilation (ISU 10020)
• Cool Stage 3 (ISU 2080)
• Cool Stage 4 (ISU 2090)
• Geothermal Radiant Heat (ISU 2030, 2040)

THX9321 Thermostat Only (U1, U2)
• Humidification (ISU 8030)
• Dehumidification (ISU 9040)
• Ventilation (ISU 10020)
• Cool Stage 3 (ISU 2080)
• Cool Stage 4 (ISU 2090)
• Conventional Heat Stage 3 (ISU 2100, 2140)
• Backup Heat Stage 2 for Heat Pumps (ISU 2170)
• Geothermal Radiant Heat (ISU 2030, 2040)

UNIVERSAL INPUTS (S1, S2, S3, S4)

S1, S2, S3, and S4 are universal inputs that can be setup to work with a sensor or dry contact device in the Installer Setup. Setup options and compatible sensors are listed below. See wiring diagrams on page 95 and page 158.

Universal Input Options

Indoor Air Sensor (ISU 5000)
- C7189U1005 (10K)
- C7772A1004 (20K)
- C7772A1012 (20K)
- TR21 (20K)
- TR21-A (10K)

Outdoor Air Sensor (ISU 5000)
- C7089U1006 (10K)

Discharge/Return Air Sensors (ISU 5000)
- C7735A1000 (10k)
- C7770A1006 (20K)
- C7041 (20K)

Occupancy Sensor for Remote Setback (ISU 6000)
- WSK–24

Dry Contact Alerts (ISU 6000)
- Low Voltage Dry Contact Device

NOTE: S1, S2, S3, and S4 terminals are only available on the Equipment Interface Module (EIM).

ALERTS AND DIAGNOSTICS

The thermostat uses alerts and diagnostics to provide greater comfort and efficiency. Alerts and diagnostics can notify customers when maintenance or service is needed, and display your contact information to make it easy for them to reach you.

Delta T Diagnostics

If discharge and return air sensors are installed, the thermostat can track system performance over time. It measures this as "Delta T." The thermostat monitors Delta T and displays an alert on the home screen when the system exceeds the limits you set.

Delta T Diagnostics tells you if the system is performing above or below expected standards which would normally go unnoticed, and may cause unnecessary energy use. It can also detect and warn about problems early, before heating or cooling equipment fails.

The thermostat will measure and record Delta T of the system for each stage you test. This information can be used to set the proper Delta T fault limits of the system. When the system operates outside those limits multiple times (see "Advanced Options for Delta T Diagnostics"

beginning on page 89), an alert is recorded in the log. If configured to do so, the system will then display an alert to the homeowner, along with your contact information.

Before You Set Up Delta T Diagnostics

Refer to the information below for tips on installation and setup of Delta T Diagnostics.

1. Refer to Fig. 10–14 for the placement of the Discharge and Return Air Sensors.
2. In gas or oil forced air systems, Delta T will continue to rise for several minutes even after Delta T begins to stabilize. Be sure the Maximum Delta T Limit is set higher than the expected stable Delta T. See Fig. 148.
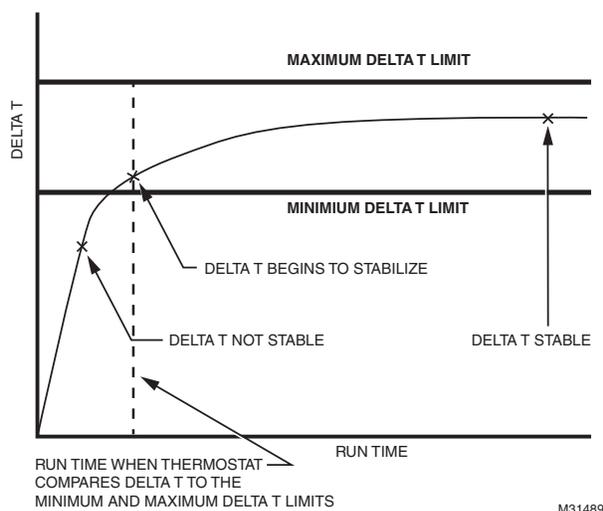
Fig. 148.

3. Delta T can be affected by indoor and outdoor conditions for heat pumps and cooling systems. Consider the total range of normal performance when setting the Delta T Limits.

    For example, in cooling, you might have a Delta T of 20 °F when the outdoor humidity is 50% and a Delta T of 16 °F when the outdoor humidity is 85%.

    You can either set Limits further apart and monitor Delta T during all indoor and outdoor conditions or set Limits closer together and turn off diagnostics during certain indoor and outdoor conditions (see "Advanced Options for Delta T Diagnostics" beginning on page 89).

    For example, you can set limits closer together and then turn off diagnostics when outdoor temperature is above 90 degrees and outdoor humidity is above 85%.

4. Verify the filter is clean and all the registers are open before running an equipment test.
5. Select a Run Time when Delta T begins to stabilize during the equipment test.

6. Set Minimum and Maximum Delta T Limits based on what you consider to be unacceptable performance from the heating and cooling equipment.

   NOTE: When the system operates below the Minimum Limit or above the Maximum Limit multiple times (Table 7), an alert is recorded in the log. If configured to do so, the thermostat will display an alert to the user, along with your contact information.

7. Delta T Diagnostics is only for non-zoned forced air systems.
8. The thermostat does not provide Heat or Cool Delta T Diagnostics when it is set to control an Economizer module (ISU 2220).
9. The thermostat cannot be setup for Heat Delta T Diagnostics when the thermostat is used with an external fossil fuel kit (ISU 2190).

Setting up Alerts and Diagnostics

1. Set up the Return and Discharge Air Sensors by selecting the check boxes on the screen. These sensors are used to measure Delta T.

Fig. 149.

2. Select the terminals that are wired to the Discharge and Return Air Sensors (terminals S1, S2, S3, or S4 at the EIM).

IMPORTANT
Be sure to select the correct terminals for the dis-charge and return air sensors. For example, if the return air sensor is wired to S1, select S1 (see Fig. 150) for the return air sensor.

Fig. 150.

3. Select the Discharge and Return Air Sensor Type (10K).

IMPORTANT
10K sensors must be used for Delta T Diagnostics.

Fig. 151.

4. Turn on the Heat and Cool Delta T Diagnostics. Default is On.
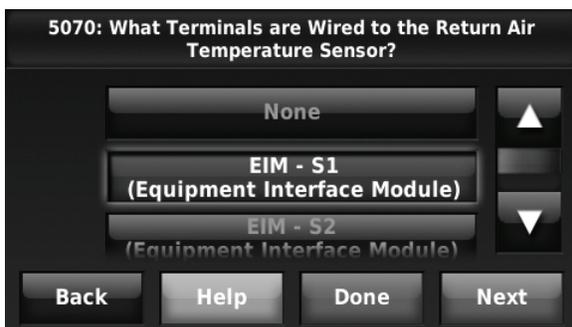
Fig. 152.

Fig. 153.

5. For Air-to-Air Heat Pumps, press the up/down arrows to set the maximum time duration of a defrost cycle. Default is 10 minutes. Delta T is not monitored during a defrost cycle. Check the heat pump documentation for the defrost cycle time.
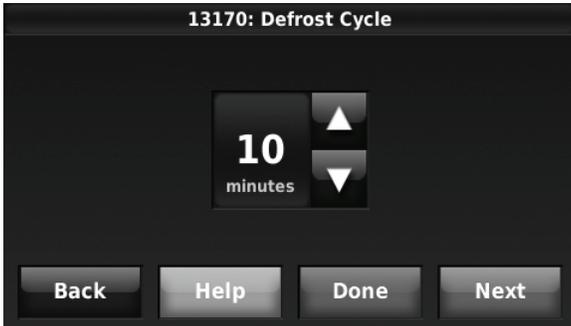
Fig. 154.

6. When you have completed Installer Setup (see "Installer Options" beginning on page 21), you will be asked to finish setting up Diagnostics.
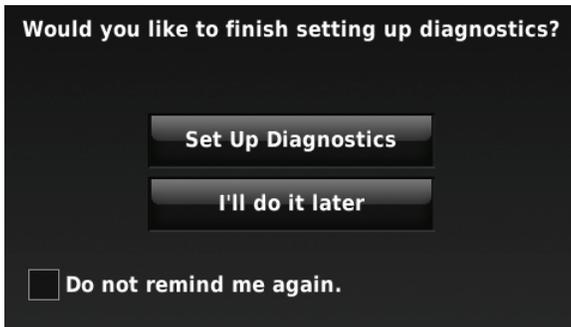
Fig. 155.

7. If you press Set Up Diagnostics, you will enter the Equipment Test. See "Run a Test for Each Stage" beginning on page 88.
8. If you press I'll do it later, you will be reminded to finish setting up diagnostics the next time you exit installer setup. You can also finish setting up diagnostics by following the procedure in "If You Decide to Set Up Diagnostics Later".

After Delta T Diagnostics Setup is complete, the thermostat will detect typical failures such as no heating or no cooling and performance related issues that are typically caused by a dirty air filter, blocked registers, loss of refrigerant, dirty a-coil, frozen a-coil, cracked heat exchanger, dirty burners, etc.

If You Decide to Set Up Diagnostics Later

When you are ready to set up diagnostics, follow these steps:
1. From the Home screen, press MENU.
2. Scroll down and press Installer Options.
3. Enter the passcode and press Done (see Note).

NOTE: The passcode is the date code printed on the back of the thermostat or press MENU > EQUIPMENT STATUS to find the date code.

4. Press Set Up Diagnostics.
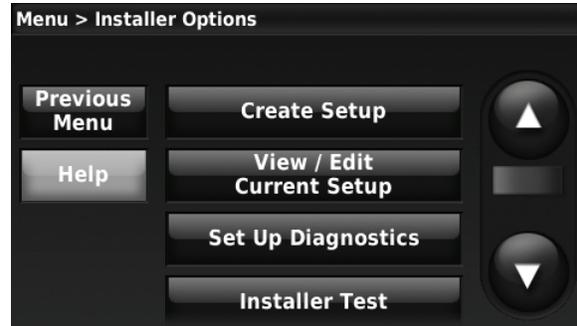
Fig. 156.

5. Proceed to "Run a Test for Each Stage".

Run a Test for Each Stage

Follow these steps to run a test for each stage in the HVAC system.

1. Turn on stage 1.

Fig. 157.

2. For each stage you test, wait until Delta T begins to stabilize, then turn on the next stage (if present). See Fig. 158 for an example.
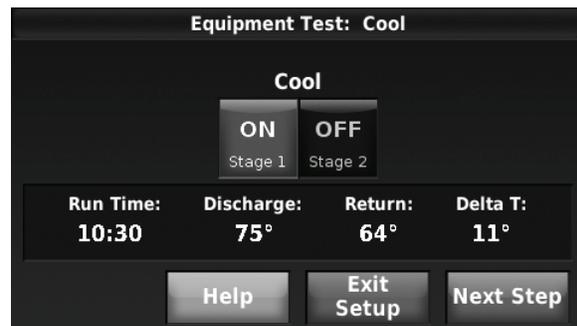
Fig. 158.

3. Press Next Step after Delta T stabilizes for the last stage. The thermostat saves the Delta T and Run Time Data for each stage you test and is displayed on the next screen.

NOTE: The thermostat only saves test data for stages that run 1 minute or longer.

Set Delta T Limits

1. Press Stage 1 to set the limits and run time (see Fig. 159). Use the saved test data located in the upper right corner of the screen to set the Delta T Minimum and Maximum Limits and the Run Time (see Fig. 160).
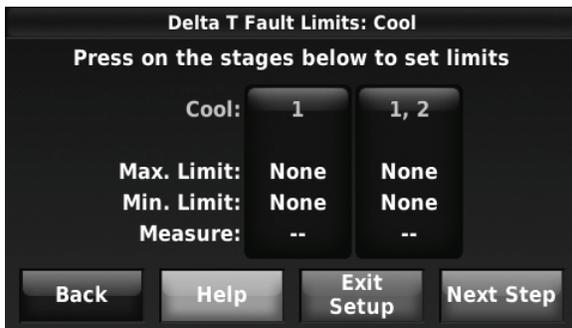
Fig. 159.

2. Press the up or down arrows to set the Minimum and Maximum Limits and the Run Time.
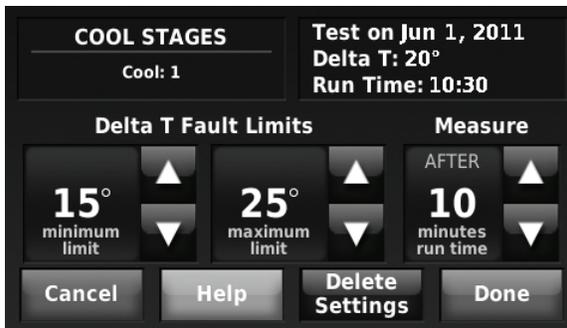
Fig. 160.

3. Set appropriate Minimum and Maximum Delta T Limits based on the reading from the equipment test and what you consider to be unacceptable performance from the heating and cooling equipment.
4. When setting the run time, select a setting based on when Delta T began to stabilize during the equipment test. In the example shown in Fig. 158 and 160, Delta T began to stabilize around 10-11 minutes.
5. Set the limits and run time for all stages of cooling using steps 1–4 above.
6. Repeat steps 1–5 above for Heating.

After Delta T Diagnostics Setup is Complete

The thermostat will measure Delta T after the specified run time, and compare Delta T to the minimum and maximum limits for each valid cycle. If the system operates below the minimum limit or above the maximum limit multiple times (see Table 7), an alert is recorded in the Alerts Log. If configured to do so, an alert is displayed to the user (Display Delta T Alerts to User, ISU 13190). The user is alerted by default. For example, if 10 of the last 15 cycles have the same fault, an alert is logged and the user is alerted.

Advanced Options for Delta T Diagnostics

To set Advanced Options for Delta T Diagnostics, select Yes for ISU 13015.Then the following advanced options are displayed:
- Delta T Alert Sensitivity (ISU 13180; Default: 3)
- Display Delta T Alerts to User (ISU 13190; Default: Yes)
- Allow Delta T Diagnostics:
  — during humidification (ISU 13020; Default: Yes)
  — during dehumidification (ISU 13030; Default: Yes*)
  — during ventilation (ISU 13040; Default: Yes)
  — only when indoor temperature is within a certain range (ISUs 13050, 13090, 13130; Default: Always)
  — only when indoor humidity is within a certain range (ISUs 13060,13100, 13140; Default: Always)
  — only when outdoor temperature is within a certain range (ISUs 13070, 13110, 13150; Default: Always)
  — only when outdoor humidity is within a certain range (ISUs 13080, 13120, 13160; Default: Always)

* Default is Yes for Dehumidifiers and A/C with High Speed Fan. The thermostat does NOT allow Delta T diagnostics during dehumidification if it is setup for A/C with Low Speed Fan, Hot Gas Bypass, or Reheat.

The Delta T Alert Sensitivity is set on a scale of 1–5 in ISU 13180 (1 is the least sensitive; 5 is the most sensitive):

Table 7. Delta T Alert Sensitivity (ISU 13180).

Setting	Alert is logged and user is alerted if
1	10 of the last 15 valid cycles have the same fault, or 25 of the last 30 valid cycles have the same fault.
2	10 of the last 15 valid cycles have the same fault, or 20 of the last 30 valid cycles have the same fault.
3 (Default)	5 of the last 5 valid cycles have the same fault, or 10 of the last 15 valid cycles have the same fault, or 15 of the last 30 valid cycles have the same fault.
4	5 of the last 5 valid cycles have the same fault, or 8 of the last 15 valid cycles have the same fault, or 15 of the last 30 valid cycles have the same fault.
5	3 of the last 5 valid cycles have the same fault, or 8 of the last 15 valid cycles have the same fault, or 10 of the last 30 valid cycles have the same fault.

By default, Delta T alerts are displayed to the user, but can be turned off and on in ISU 13190.

Delta T Alerts

The thermostat uses alerts and diagnostics to provide greater comfort and efficiency. Alerts and diagnostics can notify customers when maintenance or service is needed, and display your contact information to make it easy for them to reach you.

This tells you if the system is performing above or below expected standards which would normally go unnoticed, and may cause unnecessary energy use. It can also detect and warn about problems early, before heating or cooling equipment fails.

There are three alerts each for the heating and cooling system. They occur when:
• the system is not operating
   NOTE: The thermostat displays an alert when the system does not reach a Delta T of 5 F after the thermostat calls for a reasonable period of time.
• the system is operating below the minimum Delta T limit
• the system is operating above the maximum Delta T limit

Delta T Alerts are displayed for basic failures including no heating or no cooling that may be related to bad igniter, bad flame sensor, bad gas valve, bad draft motor, bad blower, bad contactor, bad startup capacitor, dead compressor, etc.

Delta T Alerts are also displayed for performance related issues such as dirty air filter, blocked registers, loss of refrigerant, dirty a-coil, frozen a-coil, cracked heat exchanger, dirty burners, burners need adjustment, etc.

Alerts are displayed to the user on the home screen. See Fig. 161 for an example.

Fig. 161.

When the user presses the alert for more information, the Notification screen is displayed, prompting them to perform some basic troubleshooting and, if the problem persists, contact their dealer. See Fig. 162 as an example.
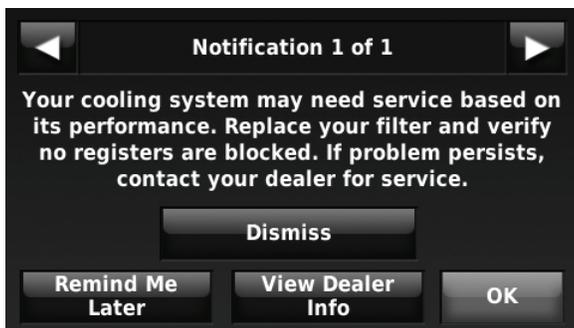
Fig. 162.

Alerts are also recorded in the Alerts Log. See "Data Logs" beginning on page 90.

Delta T Alerts and Utility Saver Switches

For systems that might be interrupted by a utility saver switch (conventional cooling and heat pumps in the heat and cool mode), the thermostat will ask if a utility saver switch is installed and provide an option to the user to turn off diagnostics temporarily while power is interrupted by the utility company. Diagnostics can be turned off for 1-14 days.
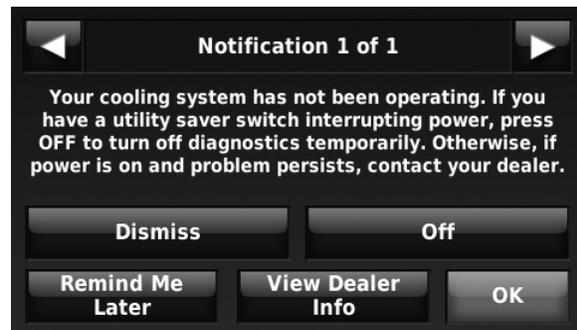
Fig. 163.
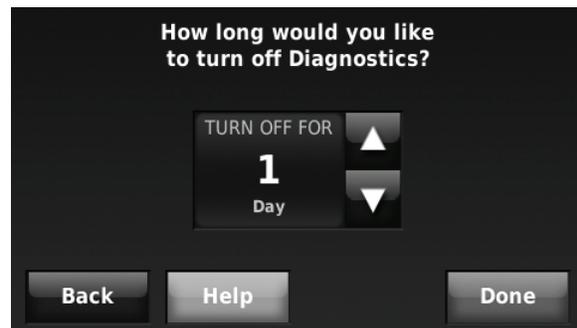
Fig. 164.

Data Logs

The Data Logs collect system information that can help point a service technician in the right direction when troubleshooting.

When accessing the Data Logs, the installer can turn off each log, delete current log entries, and save Data Logs to a memory stick via the USB port. See "Using the Data Logs" beginning on page 93 and "To save a Data Log to a memory stick" beginning on page 94 for more information.

Data Logs include the Alerts Log, User Interactions Log, and Performance Logs.

Alerts Log

The Alerts Log stores a history of the most recent 25 alerts and records the date and time of each alert. In the Alerts Log, press any of the alerts for more information.

You can also press Show Active Alerts to display the active alerts that are currently snoozed by the user. This allows the service technician to dismiss alerts for problems that have been corrected, and prevent unnecessary callbacks.

Fig. 165.

The Alerts Log contains information about the alert and system information. See Fig. 166–171 as an example.
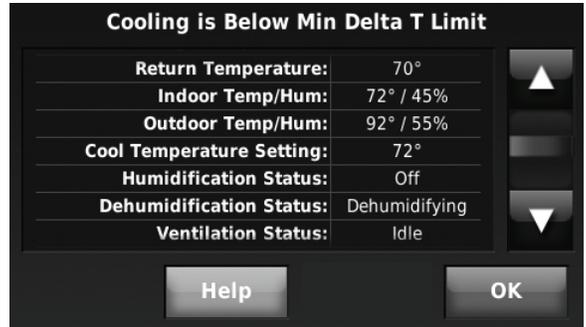
Fig. 166.
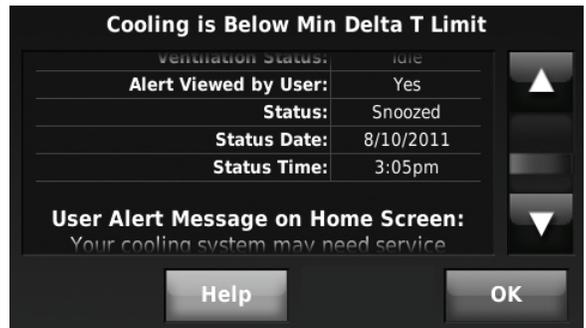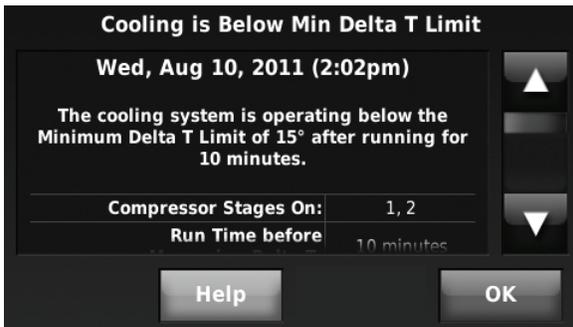
Fig. 167.

Fig. 168.

Fig. 169.

Fig. 170.
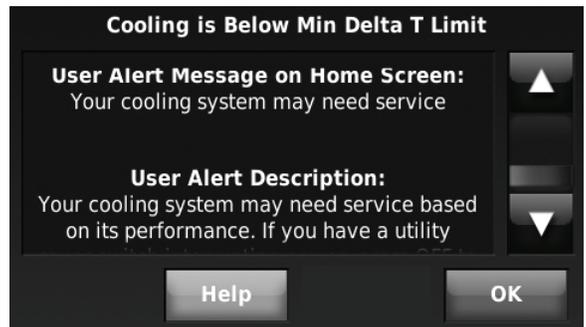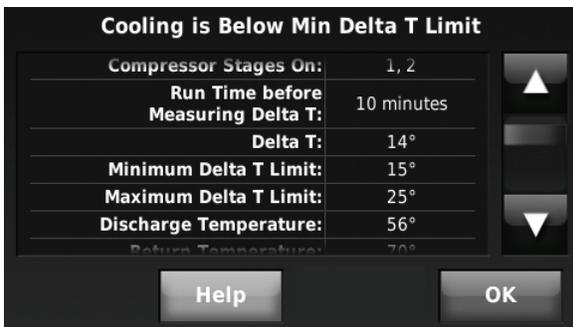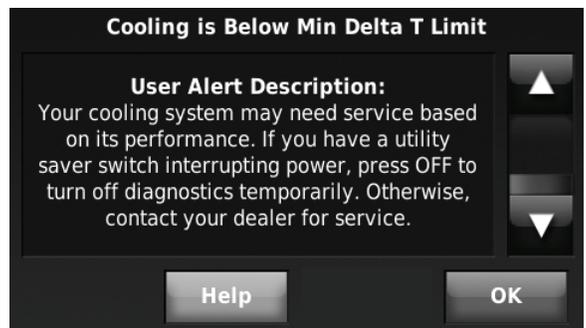
Fig. 171.

The Alerts Log can include:
- The alert name and description.
- System details at the time of the alert (Delta T, thermostat settings, heat/cool stages on, status of IAQ equipment, etc.)

• The alert message that is displayed to the user.
• The alert status (snoozed, dismissed, recovered)

User Interactions Log

The User Interactions Log can help a service technician save time by determining if the issue is related to a system problem or an accidental user error.

The User Interactions Log records the date and time for most changes made by the user, whether made at the thermostat or from a remote location (RedLINK Internet Gateway, Portable Comfort Control, etc.). The log saves the most recent 250 user changes, including:
• Indoor Air Quality Settings
• Maintenance Reminders
• Temperature Settings
• System/Fan Mode
• Alerts (snoozed or dismissed)
• Installer Setup
• Date/Time

Performance Logs

NOTE: Only applies to THX9421 Thermostat with an Equipment Interface Module.

The Performance Log allows the service technician to quickly check system performance over time to determine if the equipment is operating as expected or if it requires servicing.

The thermostat contains the following logs:
• Cooling Performance Log
• Heating Performance Log
• Emergency Heat Performance Log
• Run Time by Equipment Type
• Indoor and Outdoor Conditions Log
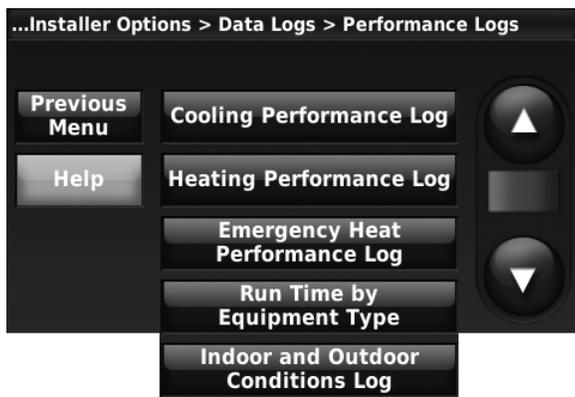
Fig. 172.

The Performance Log records the following information:
• Minimum and Maximum Delta T
• Minimum and Maximum Discharge Temperature
• Minimum and Maximum Return Temperature
• Minimum and Maximum Outdoor Temperature and Humidity
• Minimum and Maximum Indoor Temperature and Humidity
• Run Time of Heating and Cooling per stage

Fig. 173.

You have the option to view this data in 4 different time periods:
• Hourly – saves data for the last 8 days.
• Daily – saves data for the last 15 days.
• Weekly – saves data for the last 8 weeks.
• Monthly – saves data for the last 25 months.

NOTES:
— Data is collected in the Emergency Heat Per–formance Log only if the thermostat was set to the "Emergency Heat" mode.
— The Run Time by Equipment Type Log contains the Total Run Time of each equipment type since the last time it was reset.
— The Minimum and Maximum Delta T, Dis-charge Temperature and Return Temperature are only shown in the log if the equipment ran for at least 5 minutes during a cycle. If the equipment ran for less than 5 minutes in every cycle during a 1 hour period, the log will dis-play "--°."
— For Air to Air Heat Pumps, the Minimum Delta T and Minimum Discharge Temperatures will include defrost cycles in the log.

Using the Data Logs

TO ACCESS THE DATA LOGS
1. From the Home screen, press Menu.
2. Scroll down and press Installer Options.
3. Enter the password (date code) and press Done.
4. Press Data Logs.
5. Press the log you want to view.
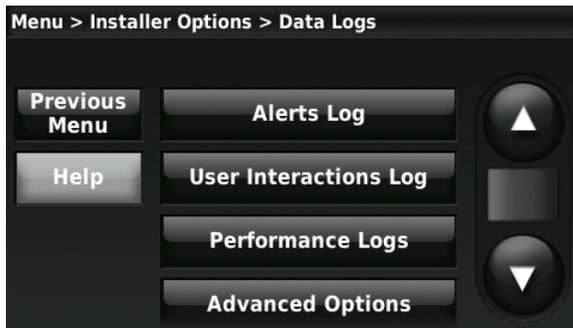
Fig. 174.

SEARCHING THE USER INTERACTIONS LOG
You can search the User Interactions Log for changes made by the user.

1. Follow the steps in "Using the Data Logs" beginning on page 93. Press User Interactions Log.
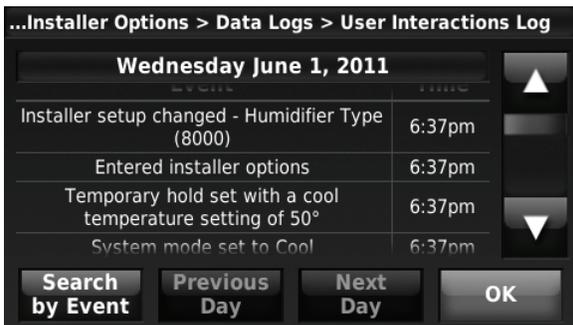
Fig. 175.

2. Press Previous Day or Next Day to view user interactions by date.
3. Press Search by Event to search for specific user interactions.
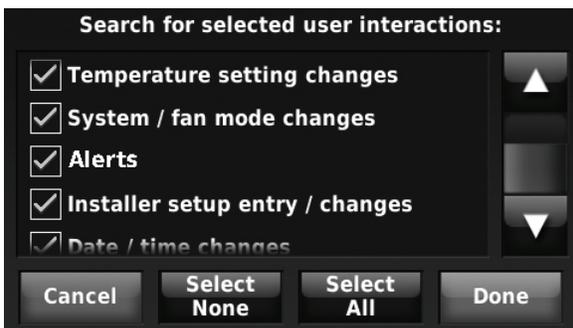
Fig. 176.

4. Select the desired user interactions and press Done.

Using the Performance Logs

1. Follow the steps in "Using the Data Logs" on page 93. Press Performance Logs.
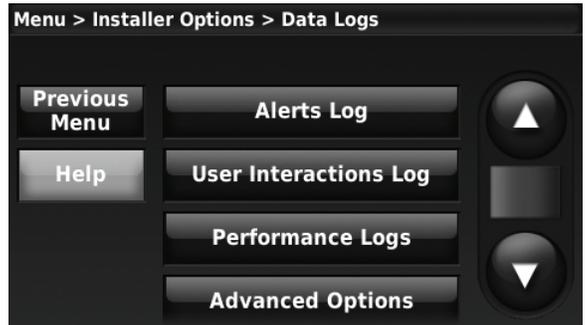
Fig. 177.

2. Select the desired log to view performance history.
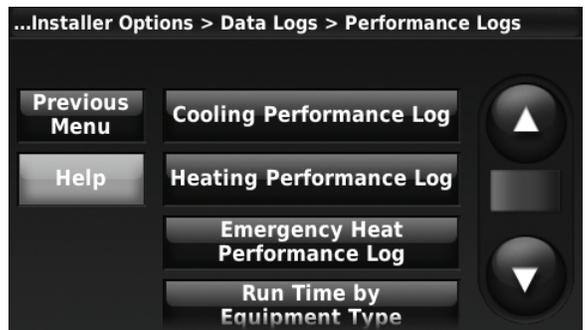
Fig. 178.

3. For example, the Heating Performance Log displays the Total Run Time of each heating stage since the last time it was reset. Press on the desired stages to view Delta T, Discharge Temperature, Return Temperature, Outdoor Temperature/Humidity, Indoor Temperature/Humidity and additional Run Time data.
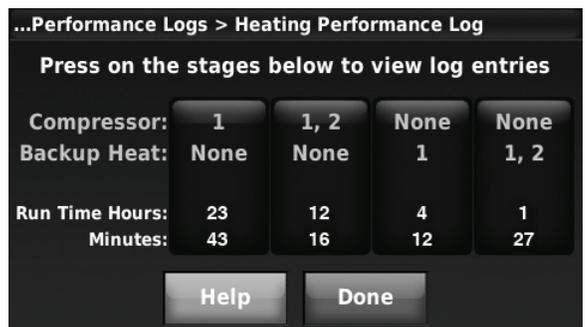
Fig. 179.

4. Select the desired time period at the top of the screen (Hourly, Daily, Weekly or Monthly). Use the Up/Down arrows to scroll for Delta T, Discharge Temperature, Return Temperature, Outdoor Temperature/Humidity and Indoor Temperature/Humidity. Use the Left/Right arrows to scroll to a desired hour, day, week or month.
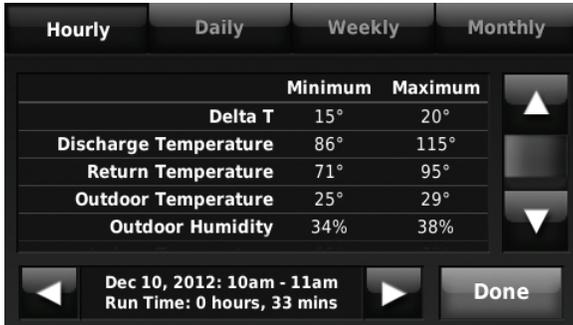
Fig. 180.

5. From the Performance Log menu, press Run Time by Equipment Type. This screen displays the Total Run Time of each equipment type since the last time it was reset. To reset the run time, press Reset Equipment Run Time Totals. Press on the desired equipment type to view additional run time data.

Fig. 181.

TO SAVE A DATA LOG TO A MEMORY STICK
1. Insert memory stick in thermostat USB port.
2. The USB options will be displayed.
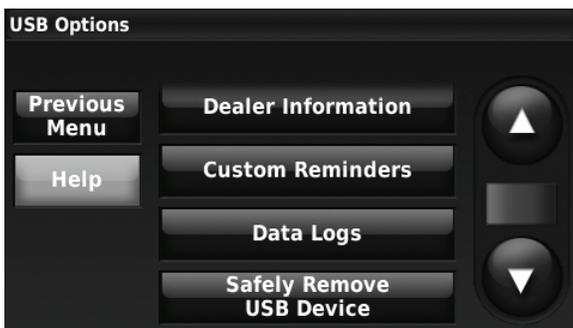
Fig. 182.

3. Press Data Logs.
4. Select the log you want to save to USB.
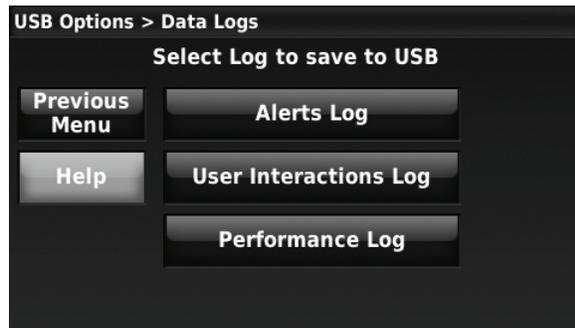
Fig. 183.

5. When you insert the memory stick into a computer, you can view the data logs in a spreadsheet.

ADVANCED DATA LOG OPTIONS
You can turn the Data Logs off or Reset them from this screen.

1. Follow the steps in "Using the Data Logs" beginning on page 93. Press the Advanced Options button.
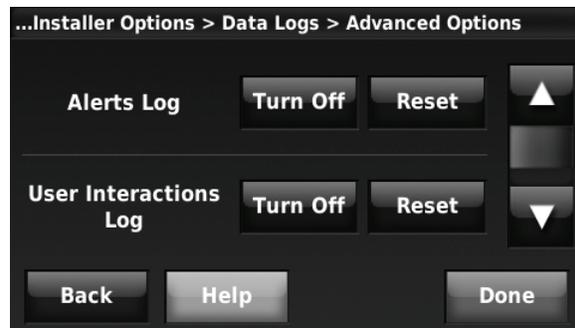
Fig. 184.

2. Press Reset and then press Done.

Dry Contact Alerts

A Dry Contact device such as a wet switch can be connected to the S1, S2, S3, or S4 terminals at the Equipment Interface Module.

When the dry contact device detects a problem, the thermostat displays an alert on the home screen along with the dealer information. See Fig. 185 as an example.

Fig. 185.

When the user presses the alert for more info, the Notification screen is displayed, prompting them to contact their dealer. See Fig. 186 as an example.
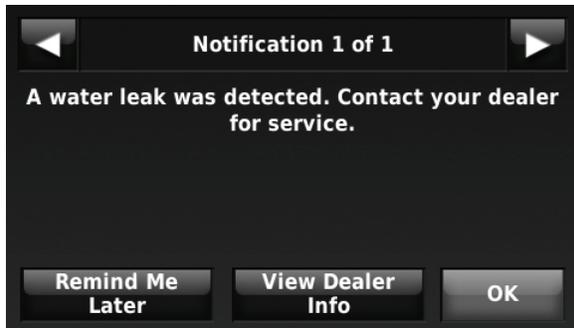
Fig. 186.

The following dry contact alerts are available.

Full Drain Pan Alert

When the dry contact device detects that the condensate drain pan is full, the thermostat provides an alert to the user.

NOTE: If you want the compressor to turn off when the drain pan is full, wire the system so the dry contact device turns off the compressor when the drain pan is full.

Dirty Filter Alert

When the dry contact device detects a dirty air filter (pressure drop across the filter), the thermostat provides an alert to the user to replace the filter.

Water Leak Alert

When the dry contact device detects a water leak, the thermostat provides an alert to the user.

System Shutdown Alert

When the dry contact device detects a critical problem with the system, the thermostat provides an alert to the user indicating that the system was shut down.

When the dry contact device detects a problem with the system (for example, smoke detection), the thermostat will not call for heating, cooling, fan or IAQ equipment until the dry contact is deactivated or the feature is unconfigured at the thermostat.

Service Needed Alert

When the dry contact device detects an issue that requires service, the thermostat provides an alert to the user.

Fan Failure Alert

The Fan Failure Alert protects the equipment when there is no airflow. When the dry contact device (for example, sail switch) detects no air flow for 5 minutes after a call for forced air heat, cool, or fan, the thermostat provides an alert to the user indicating that the system was shut down due to a lack of airflow.

The thermostat will call for the fan and lockout all other equipment until the dry contact device senses air flow again or the feature is unconfigured at the thermostat.

Custom Alert

Allows the dealer to enter a custom alert to be displayed when a dry contact device is activated. For example, a float switch can detect when your sump pump is not working.

Get Connected Alert

This alert will inform homeowners about the RedLINK Internet Gateway so they can control their thermostat using the My Total Connect Comfort app from their phone, tablet, or PC. The alert only appears if the thermostat has been installed without a RedLINK internet gateway enrolled for 14 consecutive days. The alert can be snoozed or permanently dismissed by the homeowner.

Set Up the Dry Contact Alerts

⚠ **WARNING**
Equipment Damage Hazard.
Do not apply power to S1, S2, S3, or S4 terminals. Do not connect a temperature sensor to the S1, S2, S3, or S4 terminals if setup for a dry contact device.

IMPORTANT
The dry contact device must be rated for low volt-age.

NOTE: You can connect multiple Dry Contact devices in parallel to the S1, S2, S3, or S4 terminals.

You can connect the S1, S2, S3, or S4 terminals on the EIM to a dry contact device to display an alert. Dry contact alerts include Full Drain Pan, Dirty Filter, Water Leak, System Shutdown, Service Needed, Fan Failure and Custom Alert. A dry contact device can be normally open (shown in diagram) or normally closed.
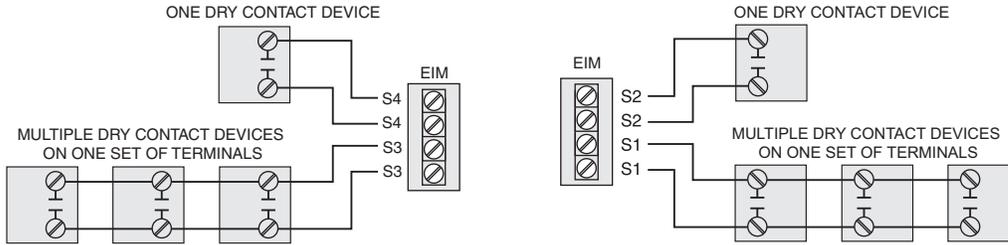
Fig. 187. Wiring dry contact devices.

1. Wire the dry contact device to S1, S2, S3, or S4 termi-nals at the EIM.
2. Enter Installer Setup (see "Installer Options" begin-ning on page 21).
3. Dry Contacts are selected at ISU 6000. Select the appropriate Dry Contact(s) and press Next.

Fig. 188.

4. Select the terminals wired to the Dry Contact device, and press Next.

Fig. 189.

5. Select Normally Open or Normally Closed, and press Next.

    NOTE: For example, if a wet switch is normally open, it will close when the device detects water. If the wet switch is normally closed, it will open when the device detects water.

Refer to the instructions packed with the dry contact device to determine if it is normally open or normally closed.

Fig. 190.

6. If you are creating a custom alert, type the alert name into the text box and press Done. The alert name is what appears on the Home screen when the alert is detected. See Fig. 191. You can edit or con-firm the alert name after you enter it.
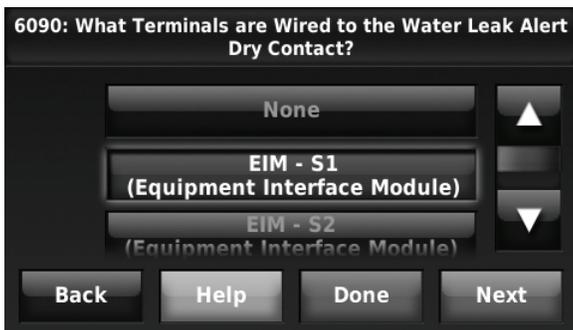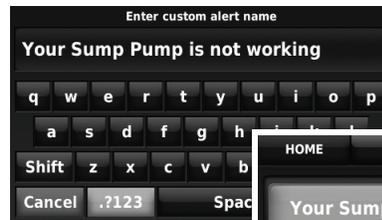
Installer setup screen

Home screen

Fig. 191.

7. Type the custom alert message into the text box and press Done. The custom alert message appears when the orange alert button is pressed. See Fig. 192. You can edit or confirm the alert message after you enter it.
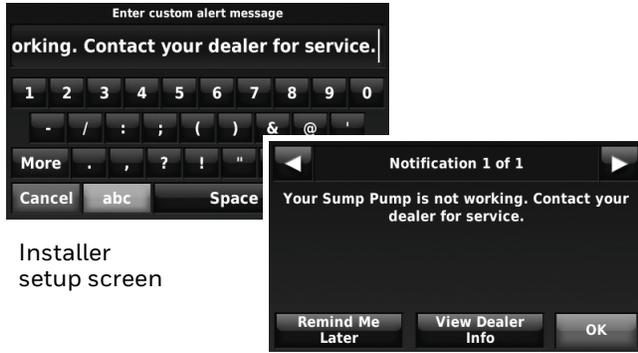
Installer
setup screen

User notification screen

Fig. 192.

8. Repeat steps 4–5 for the other Dry Contact, if neces–sary.

Dry Contact Humidifier Lockout

This feature will automatically turn off the humidifier if full drain pan or water leak dry contacts are tripped. Installers can configure this setting in option 8095 of installer setup.

Fig. 193.

Staging Control

Differential Between All Stages

The thermostat provides Differential settings between all stages. The equipment changes stages based on how far the indoor temperature is from the setpoint. Differential settings provide a way to balance comfort and conservation.

Heat Differential

The indoor temperature must drop to the selected differential setting before the thermostat will turn on the stage of heating. For example, if stage 2 is set to 2 °F (1.0 °C), the indoor temperature must be 2 °F (1.0 °C) away from the setpoint before stage 2 turns on. When set to Comfort, the thermostat will use the stage of heating as needed to keep the indoor temperature within 1 °F (0.5 °C) degree of the setpoint. The thermostat turns on stage 2 when the capacity on stage 1 reaches 90%.

Cool Differential

The indoor temperature must rise to the selected differential setting before the thermostat turns on the stage of cooling. For example, if stage 2 is set to 2 °F (1.0 °C), the indoor temperature must be 2 °F (1.0 °C) away from the setpoint before stage 2 turns on. When set to Comfort, the thermostat uses the stage cooling as needed to keep the indoor temperature within 1 °F (0.5 °C) degree of the setpoint. The thermostat turns on stage 2 (or the next stage) when the capacity on stage 1 reaches 90%.

TO CHANGE DIFFERENTIAL SETTINGS
1. Select Advanced Options to view/adjust differentials between all stages.

Fig. 194.

2. Default is Comfort. Adjust differentials as needed.

Fig. 195.

Backup Heat Differential (Droop)

A Backup Heat Differential is available for any system with 2 heating types. For example:
• Heat Pumps with any type of Backup Heat
• Radiant Heat with any type of Backup Heat
• Hot Water Fan Coil with any type of Backup Heat

The Backup Heat Differential restricts backup heat during the following conditions:
• Normal Operation
• Manual Setpoint Changes

The options are:
• Comfort – keeps temperature within 1 degree of the setpoint.
• 2 to 15 °F – Backup heat is not used unless the indoor temperature drops to the selected Backup Heat Differential. For example, if the Backup Heat

differential is set to 2 °F (1.0 °C), the indoor temperature must be 2 °F (1.0 °C) away from the setpoint before the backup heat turns on.

NORMAL OPERATION

When the Backup Heat Differential is set to Comfort, the thermostat uses backup heat as needed to keep the indoor temperature within 1 °F (0.5 °C) of the setpoint.

When the Backup Heat Differential is set to 2 °F or higher, backup heat is not used unless the indoor temperature drops to the Backup Heat Differential setting or the Backup Heat Upstage Timer expires, whichever occurs first. The upstage timer starts when the highest stage of the previous equipment type turns on.

MANUAL TEMPERATURE CHANGE

When the Backup Heat Differential is set to Comfort, the thermostat uses backup heat as needed to keep the indoor temperature within 1 °F (0.5 °C) of the setpoint.

When the Backup Heat Differential is set to 2 °F or higher, if the primary heat is making progress as expected, backup heat will not be used to reach the new setpoint. Set to a higher number to use less backup heat (a greater difference between the current indoor temperature and the new setpoint is required to turn on backup heat). See notes below.

PROGRAMMED RECOVERY

If the primary heat is making progress as expected, backup heat will not be used to reach the setpoint of the next program period. Backup heat is always restricted during a programmed recovery when the Adaptive Intelligent Recovery feature is used. See note below.

NOTE: During a programmed recovery (or when the temperature setpoint is changed by the user), the thermostat waits to turn on the backup heat depending on system performance, load conditions and how many degrees the temperature setpoint is changed. Backup heat will be used ONLY when the temperature is not rising quickly enough to reach the setpoint in a reasonable time.

NOTE: If the backup heat was used in the last 2 hours because the primary heat was not able to maintain the setpoint, the thermostat may turn on the backup heat earlier when the user raises the setpoint. This does NOT apply to heat pumps with fossil fuel backup heat.

TO CHANGE BACKUP HEAT DIFFERENTIAL (DROOP) SETTINGS

1. Select Advanced Options or Basic Options to view/adjust Backup Heat Differential settings.

Fig. 196.

2. Default is Comfort. Adjust differentials as needed.

Fig. 197.

Backup Heat Holdoff Timer

Fig. 198.

The Backup Heat holdoff Timer is available for any system with 2 heating types, the Backup Heat Differential is set to 2 °F (1.0 °C) or higher, and backup heat upstage timer is set to 30 minutes or higher. Unlike the upstage timer, the holdoff timer can be activated by a temperature set point change (not limited to steady state). The holdoff timer starts when the highest stage of the previous equipment type turns on. The out-of-box setting is "Auto" and the thermostat will hold off the use of backup heat as long as possible when the set point is changed. If this is changed to a setting other than auto, then the auxiliary heat will be FORCED to turn on after this time is met.

Backup Heat Upstage Timer

The Backup Heat Upstage Timer is available for any system with 2 heating types and the Backup Heat Differential is set to 2 °F (1.0 °C) or higher.

NOTE: Backup heat upstage timer only used in steady state (maintaining a temperature). It is not used if setpoint has been raised. The holdoff timer applies to a raise in temperature.

Backup heat is not used unless the indoor temperature drops to the Backup Heat Differential setting or the Backup Heat Upstage Timer expires, whichever occurs first. The upstage timer starts when the highest stage of the previous equipment type turns on.

Backup Heat Upstage Timer options are Off, 30 minutes to 16 hours. Default is Off.
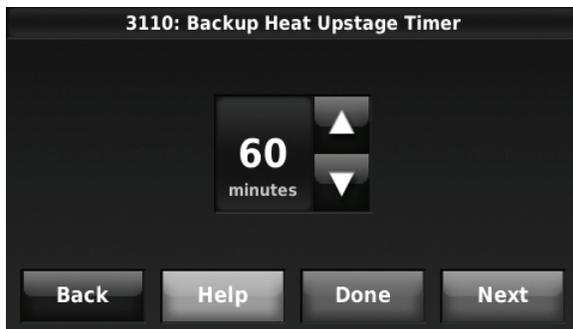
Fig. 199.

Multistage Control

Multistage Control keeps the high stage of the equipment running until the desired setpoint is reached. This setting is recommended for Geothermal Heat Pumps to allow the loop to rest.

Select Yes to turn on this feature. Default is No.

Fig. 200.

Fig. 201.

HEAT PUMP AND BACKUP HEAT OPERATION

Heat pump with outdoor temperature lockouts

Outdoor temperature lockouts are optional. See Installer Setup options (ISU 3120).

Backup heat allowed to run with heat pump *(see table below)*

* No backup heat unless indoor temperature drops to selected Backup Heat Differential setting, or Backup Heat Upstage Timer expires. **Heat pump stays ON when backup heat turns on.**

Backup heat NOT allowed to run with heat pump *(see table below)*

* No backup heat unless indoor temperature drops to selected Backup Heat Differential setting, or Backup Heat Upstage Timer expires. **Heat pump turns OFF when backup heat turns on.**

Table 8. Heat Pump and Backup Heat Operation.

Backup Heat Type	Backup Heat Operation	Backup Heat Fan Operation
Electric forced air	Allowed to run with heat pump	Thermostat controls fan
Gas or oil forced air	NOT allowed to run with heat pump	Equipment controls fan
Hot water radiant heat	Allowed to run with heat pump	[n/a]
Hot water fan coil	Selectable in installer setup	Thermostat controls fan
Other	Selectable in installer setup	Selectable in installer setup

Geothermal Radiant Heat

The thermostat can be setup to control Geothermal Radiant Heat, Geothermal Forced Air Heat and Backup Heat, all from one thermostat. The thermostat stages the equipment starting with the Geothermal Radiant Heat followed by Geothermal Forced Air Heat and then Backup Heat as needed to maintain the desired temperature. The thermostat allows you to set differential temperature settings between each stage if you want the equipment to stage a certain way (see ISU 3030 to ISU 3090, page 31). For additional wiring diagrams, see page 144.

NOTE: To turn off Radiant Heat during the shoulder seasons, install an outdoor reset control and connect to the Radiant Heat or switch the thermostat to Emergency Heat mode.

Electric Backup Heat (Backup Heat Allowed to Run with Heat Pump)

HEAT MODE
The thermostat turns on Backup Heat only when the indoor temperature drops to the selected Backup Heat Differential setting or the Backup Heat Upstage Timer

expires (whichever occurs first). Geothermal Radiant Heat and Geothermal Forced Air Heat stay on when the Backup Heat turns on.

EMERGENCY HEAT MODE
The thermostat turns on the Backup Heat to maintain the desired temperature setting. Geothermal Radiant Heat and Geothermal Forced Air Heat are not used.

Fossil Fuel Backup Heat (Backup Heat NOT Allowed to Run with Heat Pump)

HEAT MODE
The thermostat turns on Backup Heat only when the indoor temperature drops to the selected Backup Heat Differential setting or the Backup Heat Upstage Timer expires (whichever occurs first). Geothermal Forced Air Heat turns off when the Backup Heat turns on. Geothermal Radiant Heat stays on when the Backup Heat turns on.

EM. HEAT MODE
The thermostat turns on the Backup Heat to maintain the desired temperature setting. Geothermal Radiant Heat and Geothermal Forced Air Heat are not used.

Set Up Geothermal Radiant Heat

1. Select Geothermal Radiant Heat as shown in Fig. 202.

Fig. 202.

2. Select the number of Radiant Heat Stages. See Fig. 203.
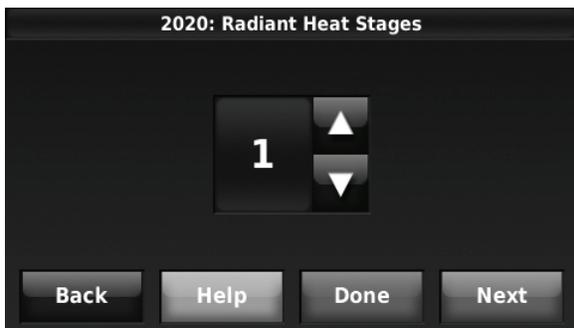
Fig. 203.

3. Select the universal terminals wired to the Geothermal Radiant Heat. See Fig. 204.
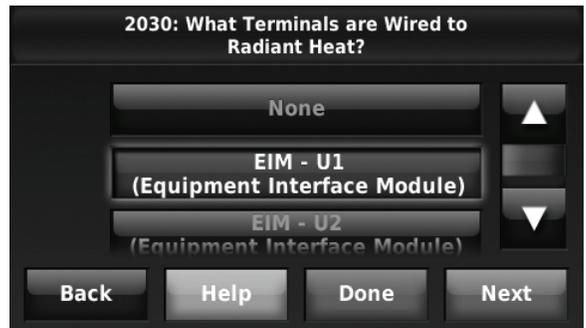
Fig. 204.

4. Select the Geothermal Radiant Heat Options. For example: If this zone is Geothermal Radiant Heat only – select None. See Fig. 205.

Fig. 205.

5. Select the Reversing Valve. See Fig. 206.

Fig. 206.

6. Select the number of Compressor and Backup Heat Stages. See Fig. 207.
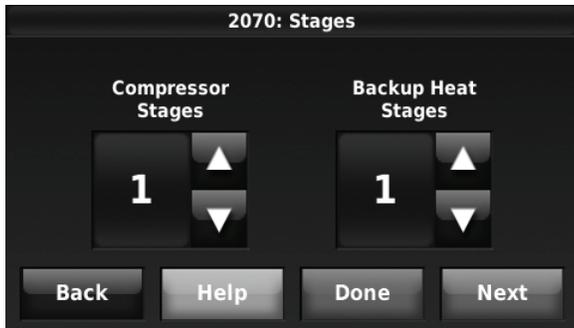
Fig. 207.

7. Select the Backup Heat Type. See Fig. 208.

Fig. 208.

INDOOR AIR QUALITY (IAQ) CONTROL

Humidification

The thermostat reads the indoor humidity level and allows the user to set a humidification setting with or without window protection.

The thermostat can be set up to control a humidifier in any system mode in the Installer Setup (ISU 8060). A discharge air sensor is required to humidify in the cool mode.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from one location, the thermostat will automatically enforce a 15% deadband between the humidification and dehumidification settings. The thermostat will automatically switch between humidification and dehumidification to maintain the desired humidity level.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from two different locations using a remote wireless indoor sensor, the thermostat will allow humidification and dehumidification to operate at the same time, and there is no deadband between humidification and dehumidification settings.

Window Protection

Window Protection limits the amount of humidity to prevent frost or condensation on windows. Window Protection (ISU 8050) requires an outdoor sensor.

The maximum humidity level that is allowed ("Window Limit") is displayed on the Humidification Settings screen. The thermostat prevents frost or condensation on windows by not allowing the humidifier to run above the "Window Limit." The thermostat may turn off the humidifier before the desired humidity setting is reached.The Window Limit is based on the current outdoor temperature and the user's window protection setting.

To adjust the Window Protection setting, press More Settings from the Humidification screen. Window Protection is set on a scale from 1-10. A setting of "1" represents poorly insulated windows and a setting of "10" represents well insulated windows. A lower number automatically reduces the humidity to help prevent frost or condensation on your windows. Use a higher number if indoor air seems too dry. To prevent frost/condensation on your windows during cold outdoor temperatures, poorly insulated windows require a lower Window Protection setting, which will limit how much your humidifier can run.

After you set the Window Protection setting, check for frost/condensation on your windows in the morning. If frost/condensation is present, adjust the Window Protection setting to the next lowest number and check for frost/condensation on your windows the next morning. Continue to adjust the Window Protection setting to a lower number until frost/condensation is no longer present.

Fig. 209.

Fig. 210.

If Window Protection is turned Off, the thermostat controls the humidity level to the user's desired humidity setting. Frost or condensation may appear on windows.

Set up Humidification

1. Select the Humidifier Type at ISU 8000. See Fig. 211.

   NOTE: Based on the humidifier type you select, the thermostat defaults to the most commonly used settings for that humidifier type.
   For example, a Bypass or Fan Powered humidifier will default ISU 8070 to "Humid-ify Only when Fan is On."
   A Steam humidifier will default ISU 8070 to "Humidify on Demand: Thermostat Controls Fan."

Fig. 211.

2. If optional remote wireless indoor sensors are installed, you can choose which sensor you want to use for humidification control. You can use a differ-ent sensor for dehumidification. See "Wireless Indoor Sensor" beginning on page 132 for more information.
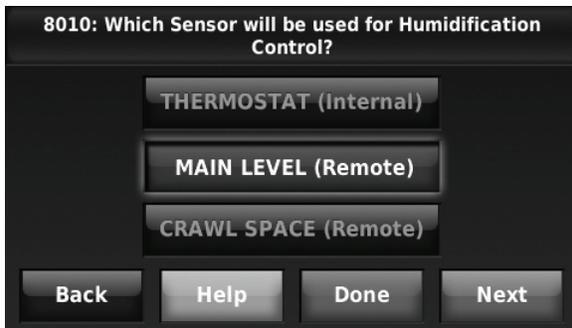
Fig. 212.

3. Select the terminals wired to the humidifier. See Fig. 213.

   NOTE: U1, U2, and U3 are Normally Open Dry Con-tacts that require power from the system transformer or a separate transformer. See

"Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152.

Fig. 213.

4. Set Window Protection settings. See Fig. 214.

   NOTE: Outdoor sensor is required for Window Pro-tection.

Fig. 214.

5. Select the system mode(s) to allow humidification. See Fig. 215.

   NOTE: Heat includes Heat, Emergency Heat and Auto. If the system is in Auto mode, the ther-mostat will allow humidification if the last call was for heat.

   Cool includes Cool and Auto. If the system is in Auto mode, the thermostat will allow humidification if the last call was for cool.

   A discharge sensor is required to humidify in the Cool mode. The thermostat prevents condensation in the duct work by not allow-ing the humidifier to run when the dis-charge temperature goes below the dew point temperature. The humidifier is allowed to run again after the discharge temperature rises above the dew point tem-perature.
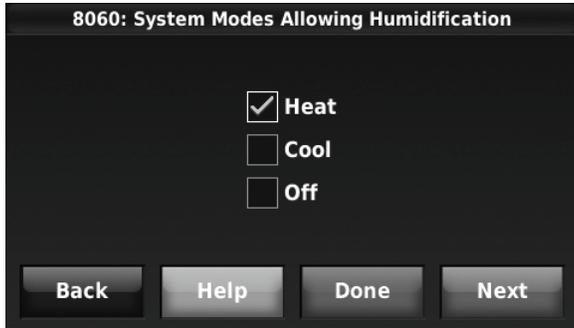
Fig. 215.

6. Select from one of the Humidification Control Options (ISU 8070). See Fig. 216.
 • Humidify Only when Heat is On
 The thermostat turns on the humidifier only if the heat is currently running and humidification is needed.
 • Humidify Only when Fan is On
 The thermostat turns on the humidifier only if the fan is currently running and humidification is needed.
 • Humidify on Demand: Thermostat Controls Fan
 The thermostat turns on the humidifier and the fan when humidification is needed.
 • Humidify on Demand: Humidifier Controls Fan
 The thermostat turns on the humidifier when humidification is needed and the humidifier controls the fan.

Fig. 216.

7. Set the desired lockout option. See Fig. 217.

Fig. 217.

NOTE: ISU 10140 gives the option to lockout ventilation during calls for humidification. This helps maintain the desired humidity level.

Control Humidification Level

1. Press MENU, then scroll to select Humidification.
2. Press Auto to use the humidifier to maintain your desired humidity level.
3. Press Off to turn off the humidifier.
4. Move the slider bar to the humidity level you prefer, then press DONE. The humidification setting range is 10–60% in 5% increments.
5. Press MORE SETTINGS if frost or condensation appears on windows. A lower number adjusts humidity to help prevent these problems. Use a higher number if indoor air is too dry.
6. To adjust the Window Protection setting, press More Settings from the Humidification screen. Window Protection is set on a scale from 1-10. A setting of "1" represents poorly insulated windows and a setting of "10" represents well insulated windows. A lower number automatically reduces the humidity to help prevent frost or condensation on your windows. Use a higher number if indoor air seems too dry. To prevent frost/condensation on your windows during cold outdoor temperatures, poorly insulated windows require a lower Window Protection setting, which will limit how much your humidifier can run.
7. After you set the Window Protection setting, check for frost/condensation on your windows in the morning. If frost/condensation is present, adjust the Window Protection setting to the next lowest number and check for frost/condensation on your windows the next morning. Continue to adjust the Window Protection setting to a lower number until frost/condensation is no longer present.

NOTE: The Window Protection option is only available if an optional outdoor sensor is installed.

NOTE: If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from one location, the thermostat will automatically enforce a 15% deadband between the humidification and dehumidification settings. The thermostat will automatically switch between humidification and dehumidification to maintain the desired humidity level.

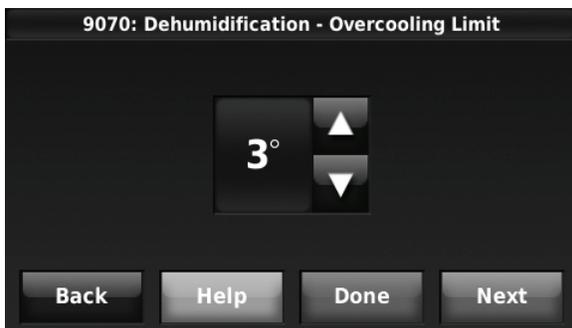If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from two different locations using a remote wireless indoor sensor, the thermostat will allow humidification and dehumidification to operate at the same time, and there is no deadband between humidification and dehumidification settings.

Press MENU

Scroll to select HUMIDIFICATION

Set humidity to desired level

Window Protection limits the amount of humidity to prevent frost or condensation on windows

Press More Settings to set:
- Window Protection Setting
- Review humidifier pad or clean tank / water filter timer

Fig. 218.

Dehumidification – Residential

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a whole house dehumidifier.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from one location, the thermostat will automatically enforce a 15% deadband between the humidification and dehumidification settings. The thermostat will automatically switch between humidification and dehumidification to maintain the desired humidity level.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from two different locations using a remote wireless indoor sensor (for example, main level and crawl space), the thermostat will allow humidification and dehumidification to operate at the same time, and there is no deadband between humidification and dehumidification settings.

Dehumidification using the Cooling System

When set for A/C with Low Speed Fan or A/C with High Speed Fan, an overcooling limit can be set from 0 °F to 3 °F (ISU 9070). The thermostat uses the cooling system to reduce humidity by lowering the temperature up to 3° F below the current cool setpoint until the desired humidity level is reached.

If set for A/C with Low Speed Fan, configure U1, U2, or U3 as normally open or normally closed (ISU 9050) and wire to the Low Speed Fan terminal on the equipment. For example, if the U1, U2, or U3 terminal is normally closed, it will open when the thermostat calls for dehumidification.See "Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152.

NOTE: The thermostat will not lower the fan speed when the second stage of cooling is on.

Dehumidification Fan Speed Priority

If the house has circulation issues to certain parts of the house when running in low speed, this feature will allow the thermostat to use the high speed fan more often so that the conditioned air has better circulation within the home.

Fig. 219.

- **Low Speed Fan with Cool Stage 1 Only –** when the thermostat is set to humidify with low speed fan, and humidity is high, and cooling is running at stage 1, always run with the low speed fan. When cooling goes to stage 2, it ramps up to high speed fan.
- **Low Speed Fan Always –** Regardless of which cooling stage is active, the thermostat will exclusively use the low speed fan when dehumidifying.
- **User Selectable –** The homeowner can set the high speed fan priority based on their comfort level (reachable via Menu > Dehumidification > More Settings)

If set to 10, the thermostat will always use the high speed fan and never switch into low speed mode operation. If set to 1, the thermostat will only use the low speed fan and never switch to the high speed fan. See "Dehumidification Fan Speed Priority" beginning on page 105.

Set up Dehumidification With Cooling System

Some screens shown in this section may not appear on the thermostat, depending on how you set up dehumidification.

1. Select the Dehumidification Equipment in ISU 9000. See Fig. 220.

Fig. 220.

2. If optional remote wireless indoor sensors are installed, you can choose which sensor you want to use for dehumidification control. For example, you can use one sensor for humidification control, and another for dehumidification. See "Wireless Indoor Sensor" beginning on page 132 for more information.
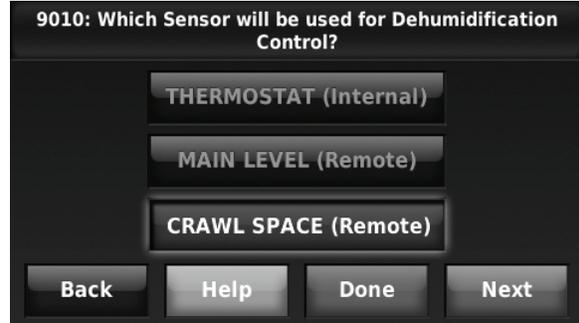
Fig. 221.

3. If you are sensing humidity from two separate locations (one for humidification and another for dehumidification), you can select which humidity reading to display on the home screen. See "Wireless Indoor Sensor" beginning on page 132 for more information.

Fig. 222.

4. Select the terminals wired to the A/C with Low Speed Fan. See Fig. 223.
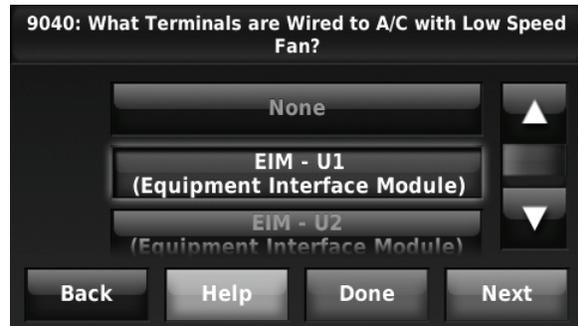
Fig. 223.

5. Select whether the U1, U2, or U3 terminals are Nor-mally Open or Normally Closed. See Fig. 224.
   • Normally Open – contacts are normally open and will close during a call for dehumidification
   • Normally Closed – contacts are normally closed and will open during a call for dehumidification.
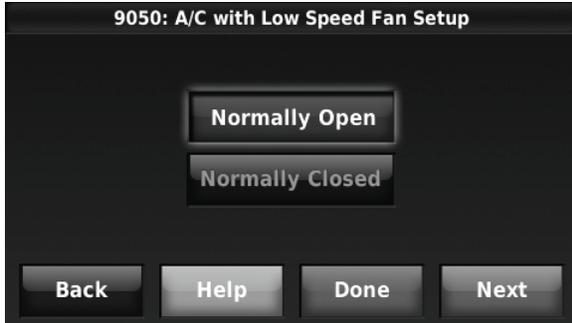
Fig. 224.

6. Set the Overcooling Limit. See Fig. 225. Options:
   • 0 °F to 3 °F (A/C with Low Speed Fan)
   • 1 °F to 3 °F (A/C with High Speed Fan)

Fig. 225.

   NOTE: ISU 10140 gives the option to lockout venti-lation on calls for dehumidification. This helps maintain the desired humidity level.

Dehumidification using a Whole House Dehumidifier

The Whole House Dehumidifier option requires a dedicated unit for dehumidification. The thermostat can be set to control dehumidification in all modes (Heat, Off, Cool [ISU 9120]).

Set up Dehumidification With Whole House Dehumidifier

Some screens shown in this section may not appear on the thermostat, depending on how you set up dehumidification.

1. Select the Dehumidification Equipment in ISU 9000. See Fig. 226.

Fig. 226.

2. If optional remote wireless indoor sensors are installed, you can choose which sensor you want to use for dehumidification control. For example, you can use one sensor for humidification control, and another for dehumidification. See "Wireless Indoor Sensor" beginning on page 132 for more informa-tion.
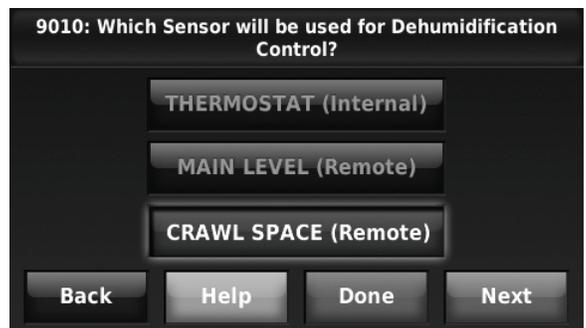
Fig. 227.

3. If you are sensing humidity from two separate loca-tions (one for humidification and another for dehu-midification), you can select which humidity reading to display on the home screen. See "Wireless Indoor Sensor" beginning on page 132 for more informa-tion.

Fig. 228.

4. Select the terminals wired to the Whole House Dehu-
midifier. See Fig. 229.
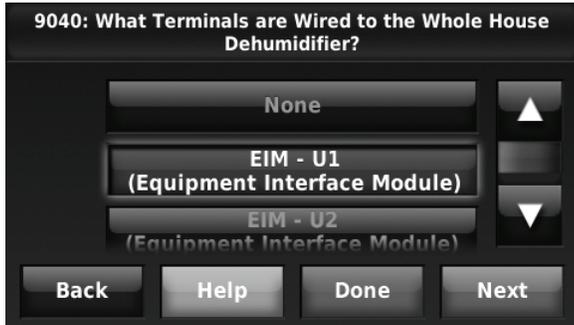
Fig. 229.

5. Select the system mode(s) to allow dehumidification.
See Fig. 230.

> NOTE: Heat includes Heat, Emergency Heat and
> Auto. If the system is in Auto mode, the ther-
> mostat will allow dehumidification if the last
> call was for heat.
>
> Cool includes Cool and Auto. If the system is
> in Auto mode, the thermostat will allow
> dehumidification if the last call was for cool.
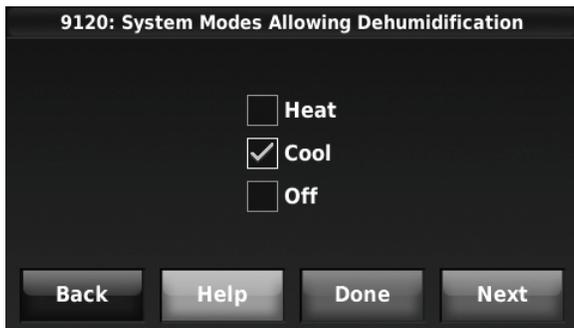
Fig. 230.

6. Set Dehumidifier Fan Control settings. See Fig. 231.
- Thermostat Controls Fan
  Thermostat turns on the dehumidifier and the fan
  when dehumidification is needed.
- Equipment Controls Fan
  Thermostat turns on the dehumidifier when
  dehumidification is needed. The fan is controlled
  by the equipment.

Fig. 231.

7. Set the desired lockout option. See Fig. 232.
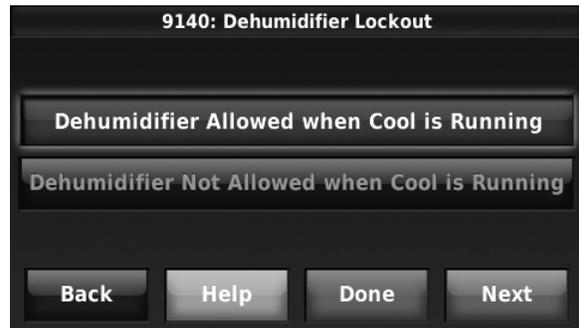
Fig. 232.

> NOTE: ISU 10140 gives the option to lockout venti-
> lation during calls for dehumidification.
> This helps maintain the desired humidity
> level.

Dehumidification Away Mode

Dehumidification Away Mode protects the home when
unoccupied for long periods of time during hot and humid
weather by maintaining the desired humidity and
temperature settings.

To start Dehumidification Away Mode, press MENU, then
press Dehumidification Away Mode.
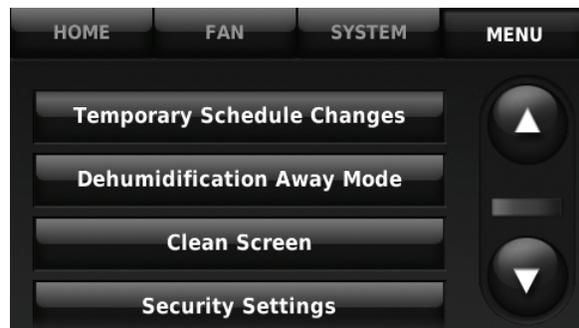
Fig. 233.

The thermostat automatically follows settings that are set
by the dealer during installer setup.

Press Cancel to end Dehumidification Away Mode.

Fig. 234.

Set up Dehumidification Away Mode

1. Select Allowed at ISU 9180. See Fig. 235.

Fig. 235.

2. Set Fan Control settings. See Fig. 236.
    *   On: Fan is always on.
    *   Automatic: Fan runs only when cooling system is on.
    *   Circulate: Fan runs randomly, about 35% of the time.
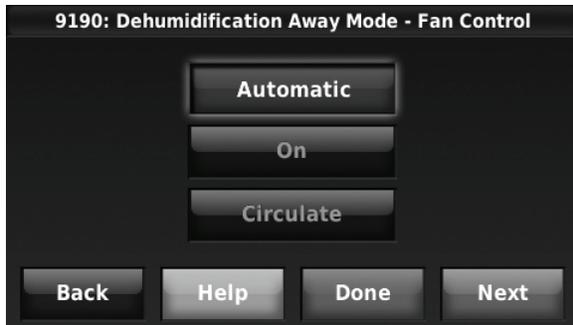
Fig. 236.

3. Set temperature and dehumidification settings. See Fig. 239.
    *   Low Limit Temperature Setting
        If the cooling system is used to control humidity while Dehumidification Away Mode is active, the thermostat allows the cooling system to lower the indoor air to the Low Limit Temperature Setting to reach the Dehumidification Setting at ISU 9200.

*   Temperature Setting
    The temperature maintained while Dehumidification Away Mode is active and the desired humidity level is satisfied.
*   Dehumidification Setting
    The desired humidity level while Dehumidification Away Mode is active.
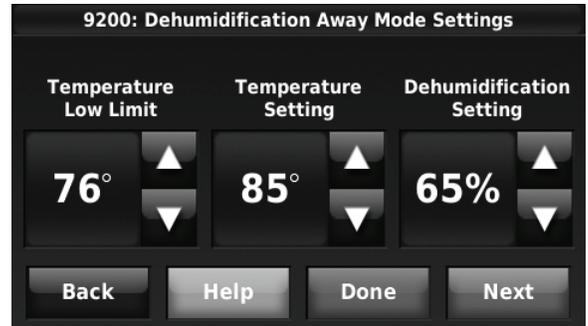
Fig. 237.

Control Dehumidification Level

1. Press MENU, then scroll to select Dehumidification.
2. Press Auto to use the dehumidifier or cooling system to maintain your desired humidity level.
3. Press Off to turn off dehumidification.
4. Move the slider bar to the humidity level you prefer, then press DONE. The dehumidification setting range is
    40–80% in 5% increments.

    NOTE: When set for A/C with Low Speed Fan or A/C with High Speed Fan, an overcooling limit can be set from 0 °F to 3 °F (ISU 9070). The thermostat uses the cooling system to reduce humidity by lowering the temperature up to 3° F below the current cool setpoint until the desired humidity level is reached.

5. Press MORE SETTINGS to review or change settings for the dehumidifier filter timer.

NOTE: If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from one location, the thermostat will automatically enforce a 15% deadband between the humidification and dehumidification settings. The thermostat will automatically switch between humidification and dehumidification to maintain the desired humidity level.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from two different locations using a remote wireless indoor sensor (for example, main level and crawl space), the thermostat will allow humidification and dehumidification to operate at the same time, and there is no deadband between humidification and dehumidification settings.

Press

Scroll to select DEHUMIDIFICATION

Set humidity to desired level

Press to review filter timer

This setting is only available if "User selectable" is set for ISU 9005. See "Dehumidification Fan Speed Priority" beginning on page 105.

Fig. 238.

Dehumidification – Commercial

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a dehumidifier.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from one location, the thermostat will automatically enforce a 15% deadband between the humidification and dehumidification settings. The thermostat will automatically switch between humidification and dehumidification to maintain the desired humidity level.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from two different locations using a remote wireless indoor sensor (for example, main level and crawl space), the thermostat will allow

humidification and dehumidification to operate at the same time, and there is no deadband between humidification and dehumidification settings.

Dehumidification Equipment Options: (ISU 9000)
• A/C with Low Speed Fan
• A/C with High Speed Fan
• Hot Gas Bypass
• Dehumidifier

NOTE: Hot Gas Bypass – During a call for dehumidification, the cooling capacity will be used to remove more latent heat than sensible heat. The operation of Hot Gas Bypass varies by equipment. For more details, contact the equipment manufacturer.

Dehumidification using the Cooling System

Dehumidification using A/C with Low Speed Fan, A/C with High Speed Fan or Hot Gas Bypass, has the following methods of dehumidification control (ISU 9080):

Fig. 239.

Basic: This option uses the cooling system to reach the desired humidity level. Minimum On Time, High Humidity Comfort Reset and Reheat are not used with this method. This setting is commonly used if your dehumidification equipment is Hot Gas Bypass.

Minimum On Time (ISU 9090): This option ensures that the compressor runs long enough to effectively reduce humidity when the cooling equipment is cycled on. The compressor will run for the minimum "on time" you set until the desired humidity level is reached.

High Humidity Comfort Reset (ISU 9100): This option uses the cooling system to lower the temperature up to 5° F below the current cool setpoint until the desired humidity is reached. The high humidity comfort range is from 1° to 5° F.

High Humidity Comfort Reset with Minimum On Time (ISU 9090 and 9100): This method uses both options above to reduce humidity while maintaining a comfortable temperature.

Reheat (ISU 9080): This option allows heating to run during dehumidification to help maintain a comfortable temperature. If only cooling stage 1 is used, during the "off" cycle, both cooling and heating run at the same time as needed to dehumidify without overcooling. This option

cannot be used in the Heat mode. This option is effective only if using a system with the A-Coil located before the heating coil (heat exchanger). This feature requires a conventional forced air heating system (gas, oil, or electric) in the application.

NOTE: Reheat can be used on heat pump applications that have a forced air backup heat source (gas, oil, or electric). The thermostat will turn on the first stage of forced air backup heat during Reheat.

NOTE: Reheat can be used on systems where the A-Coil is located after the heating coil (heat exchanger), but it is not effective at removing humidity.

Reheat with Minimum On Time (ISU 9080 and 9090): This method uses both Reheat and Minimum On Time options above to reach the desired humidity level.

If set for A/C with Low Speed Fan, configure U1, U2, or U3 as normally open or normally closed (ISU 9050) and wire to the Low Speed Fan terminal on the equipment. For example, if the U1, U2, or U3 terminal is normally closed, it will open when the thermostat calls for dehumidification.See "Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152.

NOTE: The thermostat will not lower the fan speed when the second stage of cooling is on.

Set up Dehumidification With Cooling System

Some screens shown in this section may not appear on the thermostat, depending on how you set up dehumidification.

1. Select the Dehumidification Equipment in ISU 9000. See Fig. 240.

Fig. 240.

2. If optional remote wireless indoor sensors are installed, you can choose which sensor you want to use for dehumidification control. For example, you can use one sensor for humidification control, and

another for dehumidification. See "Wireless Indoor Sensor" beginning on page 132 for more information.
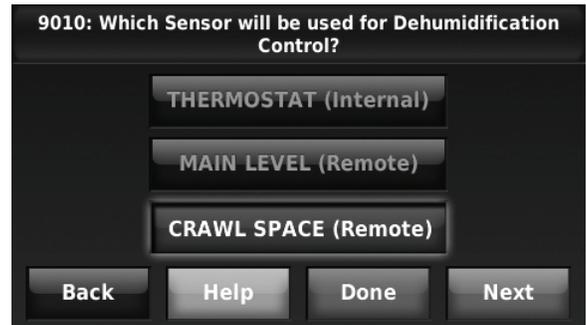
Fig. 241.

3. If you are sensing humidity from two separate locations (one for humidification and another for dehumidification), you can select which humidity reading to display on the home screen. See "Wireless Indoor Sensor" beginning on page 132 for more information.

Fig. 242.

4. Select the terminals wired to the A/C with Low Speed Fan or Hot Gas Bypass. See Fig. 243.
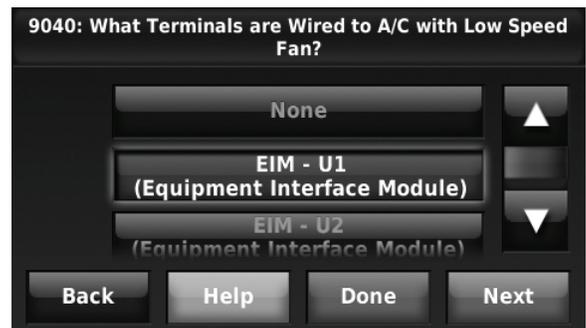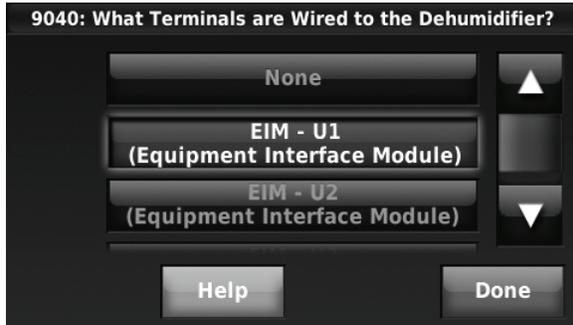

Fig. 243.

5. Select whether the U1, U2, or U3 terminals are Normally Open or Normally Closed. See Fig. 244.
   • Normally Open – contacts are normally open and will close during a call for dehumidification
   • Normally Closed – contacts are normally closed and will open during a call for dehumidification.
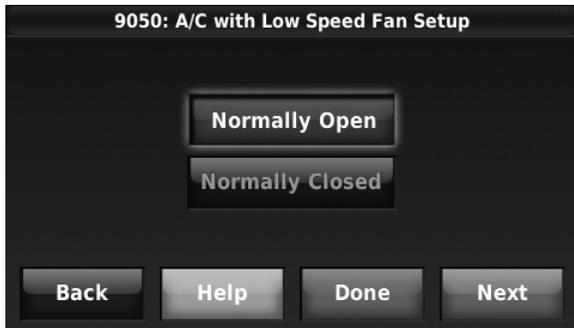
Fig. 244.

6. Set the Dehumidification Control. See Fig. 245. For more information about these options, see "Dehumidification using the Cooling System" on page 110.

Fig. 245.

> NOTE: ISU 10140 gives the option to lockout ventilation on calls for dehumidification. This helps maintain the desired humidity level.

Dehumidification using a Dehumidifier

The Dehumidifier option requires a dedicated unit for dehumidification. The thermostat can be set to control dehumidification in all modes (Heat, Off, Cool [ISU 9120]).

Set up Dehumidification With Dehumidifier

Some screens shown in this section may not appear on the thermostat, depending on how you set up dehumidification.

1. Select the Dehumidification Equipment in ISU 9000. See Fig. 246.

Fig. 246.

2. If optional remote wireless indoor sensors are installed, you can choose which sensor you want to use for dehumidification control. For example, you can use one sensor for humidification control, and another for dehumidification. See "Wireless Indoor Sensor" beginning on page 132 for more information.
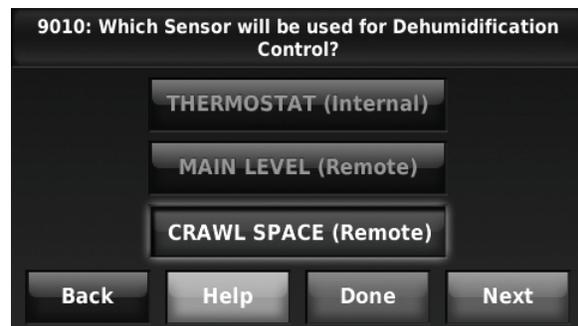
Fig. 247.

3. If you are sensing humidity from two separate locations (one for humidification and another for dehumidification), you can select which humidity reading to display on the home screen. See "Wireless Indoor Sensor" beginning on page 132 for more information.

Fig. 248.

4. Select the terminals wired to the Dehumidifier. See Fig. 249.

Fig. 249.

5. Select the system mode(s) to allow dehumidification. See Fig. 250.

NOTE: Heat includes Heat, Emergency Heat and Auto. If the system is in Auto mode, the ther-mostat will allow dehumidification if the last call was for heat.
Cool includes Cool and Auto. If the system is in Auto mode, the thermostat will allow dehumidification if the last call was for cool.
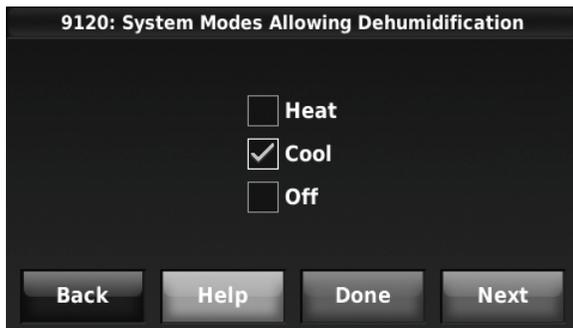
Fig. 250.

6. Set Dehumidifier Fan Control settings. See Fig. 251.
• Thermostat Controls Fan
Thermostat turns on the dehumidifier and the fan when dehumidification is needed.
• Equipment Controls Fan
Thermostat turns on the dehumidifier when dehumidification is needed. The fan is controlled by the equipment.

Fig. 251.

7. Set the desired lockout option. See Fig. 252.

Fig. 252.

NOTE: ISU 10140 gives the option to lockout venti-lation on calls for dehumidification. This helps maintain the desired humidity level.

Dehumidification Away Mode

Dehumidification Away Mode for a commercial application is identical to Dehumidification Away Mode for a residential application. See "Dehumidification Away Mode" on page 108 and "Set up Dehumidification Away Mode" beginning on page 109.

Control Dehumidification Level

1. Press MENU, then scroll to select Dehumidification.
2. Press Auto to use the dehumidifier or cooling system to maintain your desired humidity level.
3. Press Off to turn off dehumidification.
4. Move the slider bar to the humidity level you prefer, then press DONE. The dehumidification setting range is
40–80% in 5% increments.
5. If your air conditioner is used to control humidity, the thermostat may use the following methods to main-tain your desired humidity:
• Cool from 1° to 5° F lower than your temperature setting.
• Run cooling for the minimum "on" time to reduce humidity.
• Run cooling and heating at the same time to reduce humidity without lowering the temperature.
6. Press MORE SETTINGS to review or change settings for the dehumidifier filter timer.

NOTE: If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from one location, the thermostat will automatically enforce a 15% deadband between the humidification and dehumidification settings. The thermostat will automatically switch between humidification and dehumidification to maintain the desired humidity level.

If humidification and dehumidification are setup to operate in the same system mode (Heat, Cool, Off) and you are sensing humidity from two different locations using a remote wireless indoor sensor (for example, main level and crawl space), the thermostat will allow humidification and dehumidification to operate at the same time, and there is no deadband between humidification and dehumidification settings.

Press MENU

Scroll to select DEHUMIDIFICATION

Set humidity to desired

Press to review filter timer

Ventilation

The thermostat can be set for the following ventilation types: (ISU 10000)
• ERV/HRV
• Passive (Fan Only)
• Fresh Air Damper

Ventilation Control Methods (ISU 10050)

Ventilation can be setup to meet either ASHRAE or Percent On Time settings. To meet these settings, the thermostat will ventilate during calls for heat, cool, and fan. If the required ventilation has not been achieved for ASHRAE or Percent On Time, the thermostat will force the ventilation equipment on.

• ASHRAE
The thermostat operates ventilation equipment to meet the ASHRAE 62.2 ventilation standard based on CFM, number of bedrooms, and square footage of the house. ASHRAE 62.2 can only be met if the ventilation equipment is running. If the ventilation equipment is off for any reason (outdoor ventilation lockouts, set up to turn Off during Sleep period, turned off by user, etc.), ASHRAE 62.2 is not met during those times. See ISU 10125 to select a Ventilation Priority.
• Percent On Time
The thermostat operates ventilation equipment based on a percentage entered in the installer setup (ISU 10120). For example if Percent On Time is set to 50%, the ventilation equipment will run at random times during a 1 hour period until it reaches a 50% run time (approximately 30 minutes). Default setting is 30%. Range is 10% to 100% in 10% increments.

Ventilation Fan Control (ISU 10060)

• Thermostat Controls Fan
The thermostat turns on the ventilator and the fan when ventilation is needed.
• Equipment Controls Fan
The thermostat turns on the ventilator when ventilation is needed. The fan is controlled by the equipment.

Ventilation Priority (ISU 10125)

• Lockouts are Priority
The thermostat places a priority on lockouts versus the ASHRAE 62.2 ventilation standard. The thermostat will not run ventilation during the following lockout conditions (if configured) unless you manually call for ventilation:
  — Lockout Ventilation during Outdoor Conditions (ISU 10130)
  — Lockout Ventilation on Humidification or Dehumidification Calls (ISU 10140)
  — Lockout Ventilation during "Sleep" (Residential) or "Unoccupied" (Commercial) program periods. Note: This option is set by the user on the Ventilation screen in the Menu.
• ASHRAE is Priority
ASHRAE requires additional ventilation following a long off cycle. The thermostat meets the ASHRAE 62.2 ventilation standard by running additional ventilation when outdoor conditions are favorable. If ASHRAE cannot be met when outdoor conditions are favorable, the thermostat will override the outdoor lockouts and run ventilation. When using this option, it is recommended to increase the rate (CFM) of the ventilation equipment to meet the ASHRAE 62.2 ventilation standard in a shorter run time.

NOTES: ISU 10140 "Lockout Ventilation on Humidification or Dehumidification Calls" is not an option when you select "ASHRAE is Priority".

The ability to lockout ventilation during the "Sleep" or "Unoccupied" program periods is not an option when you select "ASHRAE is Priority".
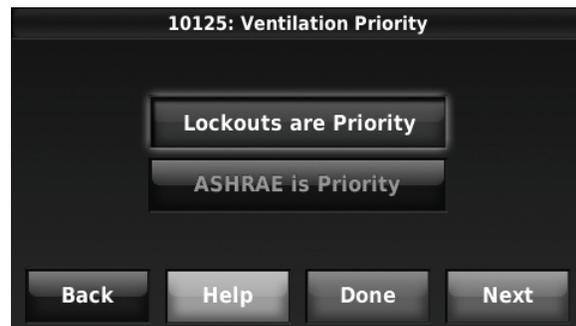
Ventilation — Outdoor Condition Lockouts (ISU 10130)

Ventilation will not operate when outdoor conditions exceed the lockout settings unless you manually call for ventilation or Ventilation Priority (ISU 10125) is set to ASHRAE is Priority and ventilation is needed to meet ASHRAE. Lockouts can prevent ventilation during extreme weather conditions to keep humid, hot, and cold air out of the home.

NOTE: This feature requires an outdoor sensor.

If the outdoor sensor also measures humidity, ventilation will not be allowed when the outdoor dewpoint is above the level you set. Options are:
• Ventilation Low Temperature Lockout Setpoint (Off, –20° to 40° F)
• Ventilation High Temperature Lockout Setpoint (Off, 80° to 110° F)
• Ventilation High Dewpoint Lockout Setpoint (Off, 65° to 85° F)

Refer to the information below if you need assistance setting the High Dewpoint Lockout.
• Higher than 80: Extremely uncomfortable
• 75 to 80: Very uncomfortable
• 70 to 74: Quite uncomfortable
• 65 to 69: Somewhat uncomfortable

Ventilate on High Indoor Humidity (ISU 10160)

If set to ventilate on high indoor humidity, the ventilator turns on to remove excess humidity if the indoor humidity is 10% above the Humidification setting. The thermostat must be in the heat mode to ventilate on high indoor humidity.

Set up Ventilation

Some screens shown in this section may not appear on the thermostat, depending on how you set up ventilation.

1. Select the Ventilation Type in ISU 10000. See Fig. 253.

Fig. 253.

2. Select the terminals wired to the Ventilator (or Fresh Air Damper). See Fig. 254.

Fig. 254.

3. Select the Ventilation Control Method. See "Ventilation Control Methods (ISU 10050)" on page 114 for more information. See Fig. 255.

Fig. 255.

4. Select the Ventilation Fan Control. See "Ventilation Fan Control (ISU 10060)" on page 114 for more information. See Fig. 256.

   NOTE: ISU 10060 is only displayed if the Ventilation Type is ERV / HRV. The thermostat controls the fan if the Ventilation Type is Fresh Air Damper.

Fig. 256.

5. If ASHRAE was selected for ISU 10050, select the Number of Bedrooms and Size of House. See Fig. 257.

Fig. 257.

6. If ASHRAE was selected for ISU 10050, enter the Equipment Ventilation Rate (CFM). Be sure this setting corresponds with the actual ventilator speed. This setting determines how often the ventilation equipment will operate to meet the ASHRAE 62.2 Standard. The thermostat will indicate the following based on the Equipment Ventilation Rate, Square Footage and Number of Bedrooms. See Fig. 258.
- Provides an indication if it meets or does not meet the ASHRAE 62.2 Standard.
- Provides% run time that is needed to meet the ASHRAE 62.2 Standard.
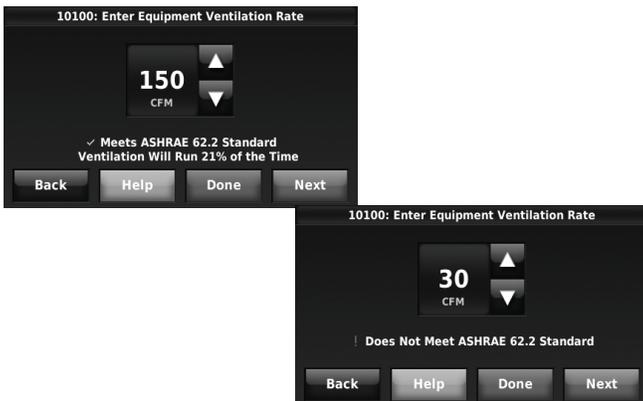
Fig. 258.

7. Select a Ventilation Priority (see Fig. 259):
c. Lockouts are Priority: The thermostat places a priority on lockouts versus the ASHRAE 62.2 ventilation standard. The thermostat will not run ventilation during the following lockout conditions (if configured) unless you manually call for ventilation:
   (1) Lockout Ventilation during Outdoor Conditions (ISU 10130)
   (2) Lockout Ventilation on Humidification or Dehumidification Calls (ISU 10140)
   (3) Lockout Ventilation during "Sleep" (Residential) or "Unoccupied" (Commercial) program periods. Note: This option is set by the user on the Ventilation screen in the Menu.
d. ASHRAE is Priority: ASHRAE requires additional ventilation following a long off cycle. The thermostat meets the ASHRAE 62.2 ventilation standard by running additional ventilation when outdoor conditions are favorable. If ASHRAE cannot be met when outdoor conditions are favorable, the thermostat will override the outdoor lockouts and run ventilation. When using this option, it is recommended to increase the rate (CFM) of the ventilation equipment to meet the ASHRAE 62.2 ventilation standard in a shorter run time.

NOTE: ISU 10140 "Lockout Ventilation on Humidification or Dehumidification Calls" is not an option when you select "ASHRAE is Priority".

The ability to lockout ventilation during the "Sleep" or "Unoccupied" program periods is not an option when you select "ASHRAE is Priority".

Fig. 259.

8. If Percent On Time was selected for ISU 10050, select the Ventilation Percent on Time. See Fig. 260.
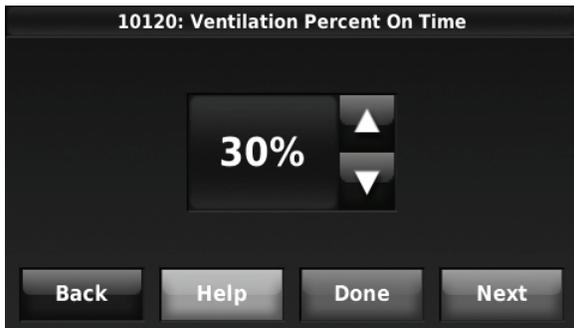
Fig. 260.

9. Select the Outdoor Condition Lockouts. See "Ventilation — Outdoor Condition Lockouts (ISU 10130)" on page 115 for more information.

When ISU 10125 Ventilation Priority is set to Lockouts are Priority, or ISU 10050 Ventilation Control Methods is set to Percent On Time, the thermostat will indicate whether this meets or may not meet the ASHRAE 62.2 Standard or the Percent On Time setting. See Fig. 261.

When ISU 10125 Ventilation Priority is set to ASHRAE is Priority, the screen below will indicate the maximum length of time that ventilation can be locked out over a 21 hour time period. For example, Ventilation Lockout Will Not Exceed 12.5 hours. The length of time that ventilation is locked out is limited to ensure that the ASHRAE 62.2 Ventilation Standard is met. See Fig. 261.

Fig. 261.

10. Select whether to lockout ventilation on humidification or dehumidification calls. This feature is used to help reach the user's desired humidity level by not

allowing the ventilation equipment to run during a call for humidification or dehumidification. The thermostat will indicate whether this meets or may not meet the ASHRAE 62.2 Standard or the Percent On Time setting. See Fig. 262.

NOTE: ISU 10140 "Lockout Ventilation on Humidification or Dehumidification Calls" is not an option when you select "ASHRAE is Priority" at ISU 10125.
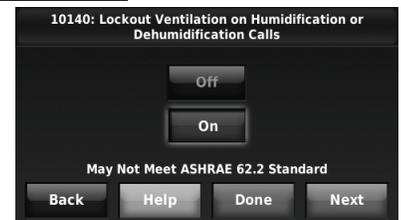
Fig. 262.

11. Select whether to Ventilate on High Indoor Humidity. See "Ventilate on High Indoor Humidity (ISU 10160)" on page 115 for more information. See Fig. 263.

Fig. 263.

Control Ventilation Level

1. Press MENU, then scroll to select Ventilation.
2. Press Setting to set the operating mode.
   • Automatic: Ventilation runs as programmed by the installer (ASHRAE or Percent On Time).
   • Off: Ventilation remains off unless turned on by the timer or from a Vent Boost Remote.
   • On: Ventilation is always on.
3. Press ▲ or ▼ to run ventilation temporarily. The Temporary Boost (timer) setting range is 0–180 in 20 minute increments. To turn Temporary Boost off, set to zero or press Cancel Temporary Boost.

4. Press MORE SETTINGS to change maintenance reminders or set outdoor lockouts (if set to Yes, ventilation will not run when outdoor conditions exceed values set by the installer).

NOTE: If set up for humidification in heat mode, the ventilator will turn on to remove excess humidity if 10% or more above your humidity setting.

Press MENU

Scroll to select VENTILATION

Set operating mode   Set temporary run time
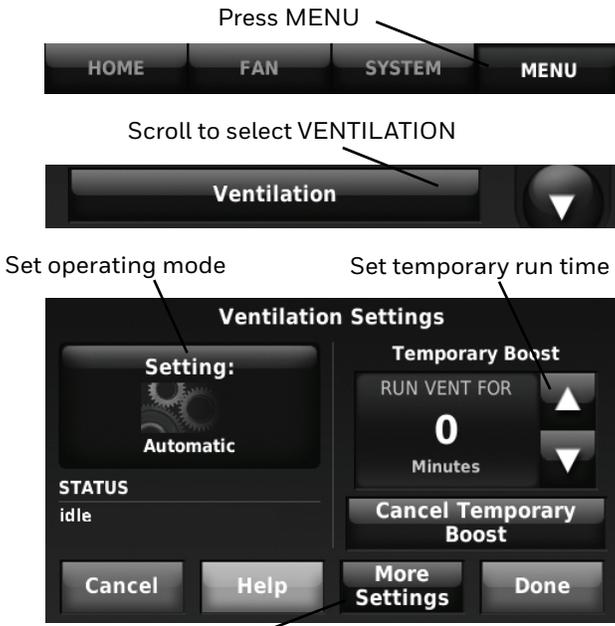
Press More Settings to:
• Set outdoor lockouts (on or off)
• Turn off ventilation during the Sleep or Unoccupied program period
• Review ventilator filter and ventilator core timer

IAQ REMINDERS

You can set up IAQ reminders in the thermostat to remind users when filters, pads, bulbs, etc. need cleaning or replacement. The following reminders can be set:
• Air Filter 1
• Air Filter 2
• Humidifier Pad
• Humidifier Clean Tank / Water Filter
• Dehumidifier Filter
• Ventilator Core
• Ventilator Filter
• Electronic Air Cleaner Pre-Filter
• Electronic Air Cleaner Cells
• Electronic Air Cleaner Post-Filter
• UV Bulb 1
• UV Bulb 2

Reminders that are displayed under Preferences will change based on the IAQ equipment installed. Reminders for equipment that is already set up can be set using the steps below. Reminders for IAQ equipment that is not yet set up must be turned on from the installer setup.

NOTE: Air Filter, Humidifier Pad, Dehumidifier Filter, and Ventilator Filter are displayed under Preferences even if they have not been set up. Humidifier Pad is not displayed if a steam humidifier has been installed.

Some screens shown in this section may be different from those on the thermostat, depending on how you set up IAQ equipment.

1. Press MENU, then scroll to select Preferences.
2. Press Reminders. Fig. 264 is displayed.
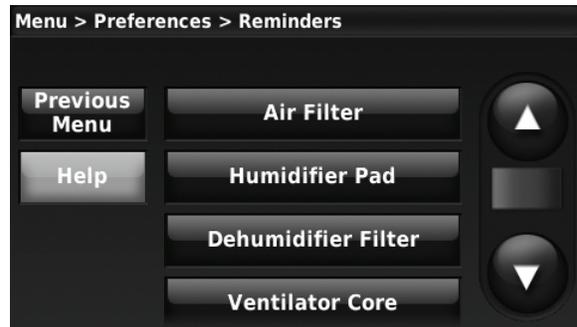
Fig. 264.

3. Select the reminder you want to set.
4. Press ▲ or ▼ to set the timer length. Ranges, increments, and units will change based on the reminder.

NOTE: When set for run time days, the thermostat tracks the amount of time the fan has run and compares that time against the number of run time days selected. Fan run time is counted when there is a call for forced air heating, cooling, or fan.
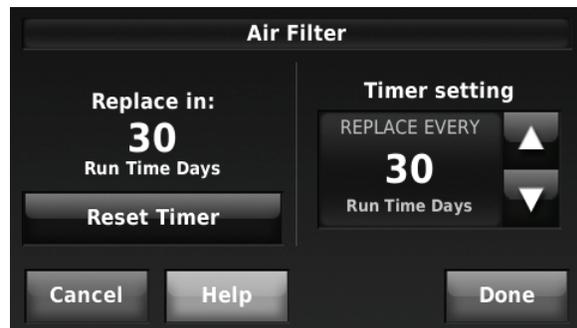
Fig. 265.

5. Press Done to save the reminder.
6. Press Reset Timer when you have completed the recommended maintenance or you can extend the timer setting to turn off the alert and remind you later to do the recommended maintenance.
7. Repeat these steps for all reminders you want to set.

CUSTOMIZABLE REMINDERS

The thermostat can be set to alert the user when it is time for system maintenance or warranty renewal. You can set up to 10 total Custom Reminders on the thermostat and save them to a USB drive for easy download to multiple thermostats.

Custom Reminders include:

- Service Reminder
  — **Set up for recurring or one time only.**
- Spring Service Reminder
  — **Provide an alert based on date or outdoor temperature.**
- Fall Service Reminder
  — **Provide an alert based on date or outdoor temperature.**
- Your Warranty is Expiring Soon
  — **Set up for recurring or one time only.**
- New Custom Reminder
  — **Enter new reminders or advertisements**
  — **Set up for recurring or one time only.**

You can change or create custom reminders in ISU 12000.

Fig. 266.

For example, to set up a Fall Service Reminder based on Outdoor Temperature:

1. Press Add Custom Reminder (see Fig. 266).
2. Press Fall Service Reminder and press Next.

Fig. 267.

3. Press Outdoor Temperature and press Next.

Fig. 268.

4. Press the up or down arrows to set the temperature, and press Next. A seasonal maintenance reminder will appear when the outdoor temperature reaches the level you select, after a specified date.

Fig. 269.

5. Press the up or down arrows to set the date to begin monitoring outdoor temperature, and press Next. The thermostat will not display a reminder unless the temperature you set is reached after the date you set at this screen.

Fig. 270.

6. The preview of the Fall Service Reminder shows you what you've selected. Press Done to accept the reminder, or press Back to change it.

Fig. 271.

7. The Fall Service Reminder will look like this on the Home Screen:

Fig. 272.

To create a new custom reminder:

1. Press Add Custom Reminder (see Fig. 266).
2. Press New Custom Reminder and press Next.

Fig. 273.

3. Type the name of the reminder, and press Done.

Fig. 274.

4. Type the reminder message, and press Done.

Fig. 275.

5. Press the up or down arrows to set the date when the New Custom Reminder should appear, and press Next.

Fig. 276.

6. Select how often you want the reminder to appear and press Next.

Fig. 277.

7. The preview of the custom reminder shows you what you've selected. Press Done to accept the reminder, or press Back to change it.

Fig. 278.

8. The New Custom Reminder will look like this on the Home Screen:

Fig. 279.

9. When the user presses the reminder on the Home screen, the reminder message will be displayed:

Fig. 280.

USB PORT

The thermostat has a USB port that allows you to save various settings to a memory stick and quickly install them on multiple thermostats. You can also use the USB device to upgrade the thermostat software.

You can save the following to a memory stick and upload them individually to the thermostat:
• Installer Setup
• Dealer Information
• Holiday / Event Scheduler (commercial)
— Holidays
— Custom Events
• Custom Reminders
• Software Update

You can also save Data Logs to a memory stick and view information in a spreadsheet on your computer. See "To save a Data Log to a memory stick" beginning on page 94.
• Alerts Log
• User Interactions Log
• Performance Logs

To display USB options, insert a memory stick in the thermostat USB port, then make selections and follow instructions on the screen.

1. Slide USB device into the bottom of thermostat.
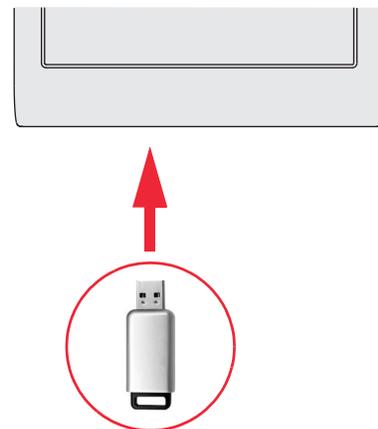
Fig. 281. Using USB device.

2. Select the item to load or save.

3. Follow the prompts on the screen for the item you selected.
   - To add information from the USB device to the thermostat, select Load into Thermostat.
   - To put thermostat information on the USB device, select Save to USB.

Fig. 282.

Loading Dealer Information

Prestige thermostats can display the dealer's contact information and logo on the screen, making it easy for users to contact them for post-sale support and service. After saving the dealer's contact information and logo to a USB device, the dealer can upload this information to the Prestige thermostat using the USB port.

1. In a web browser on your computer, go to http://thermostatsetup.honeywell.com
2. Enter your dealer information into the text boxes provided on the web site.

3. Connect a USB device to your computer.
4. Download the dealer information file to the USB device by clicking the indicated link on the web site.
5. When the File Download box opens, click Save.
6. When the Save As box opens, navigate to the directory of your USB device and save the file. For example, if your USB device is letter "F," navigate to "My Computer" and then drive "F."
7. After the file is saved, remove the USB device from the computer and connect it to the thermostat. See Fig. 281. Then select the "Dealer Information" option on the thermostat.

Updating Thermostat Software (Prestige IAQ Only)

New thermostat software can be saved to a USB drive and then uploaded to the Prestige thermostat using the USB port.

1. In a web browser on your computer, go to http://thermostatsetup.honeywell.com
2. Connect a USB device to your computer.
3. Download the software upgrade file to the USB device by clicking the indicated link on the web site.
4. When the File Download box opens, click Save.
5. When the Save As box opens, navigate to the directory of your USB device and save the file. For example, if your USB device is letter "F", navigate to "My Computer" and then drive "F".
6. After the file is saved, remove the USB device from the computer and connect it to the thermostat. See Fig. 281. Then select the "Software Update" option on the thermostat.

COMMERCIAL FEATURES

The thermostat can be setup for residential or light commercial applications (ISU 1010). When the thermostat is setup for commercial, the thermostat meets commercial code, Title 24 and provides the following features:

- Commercial language (occupied and unoccupied)
- Temporary override (permanent hold is not allowed)
- Temporary override duration is limited to the amount set by the installer
- Guide me through scheduling
- Adjustable ramp rates
- 365 holiday schedule
- Schedule up to 25 custom events
- Initiate occupancy
- Displays name on home screen
- Remote setback using an occupancy sensor
- Economizer or Time of Day output
- Pre-occupancy purge
- Additional dehumidification control options
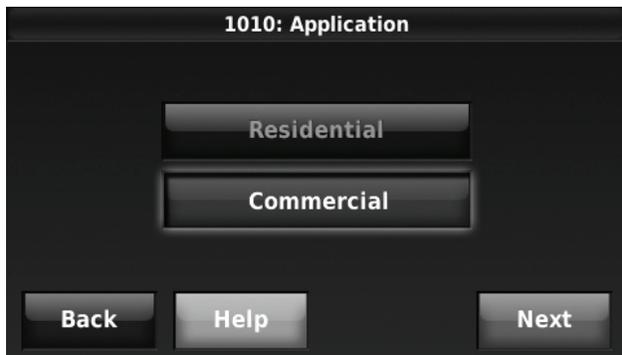
Fig. 283.

Overriding schedules: commercial use

Touch ▲ or ▼ to adjust the temperature. It will be maintained until the hold time you set.

Fig. 284.

- To change the hold time, touch the Hold Until arrow buttons. This time can be adjusted up to the maximum time set by the installer.
- Touch Override to use a pre-set occupied temperature if a person uses the room during an unoccupied period. The new temperature will be maintained for 1 hour and can be adjusted up to the maximum time set by the installer.

Fig. 285.

The programmed schedule will resume when the override timer expires. Touch Cancel Hold at any time to resume the program schedule.

Setting holiday/event schedules: commercial use

This feature helps you conserve energy when the workplace is unoccupied for special events and holidays.

1. Touch MENU.

Fig. 286.

2. Select Holiday/Event Scheduler.
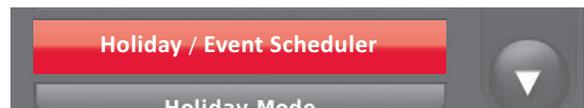
Fig. 287.

3. Select the item you want to schedule.
   - Custom Events lets you set up other days for special schedules.
   - US and Canadian Holiday options let you select from a list of holidays commonly observed in each country.
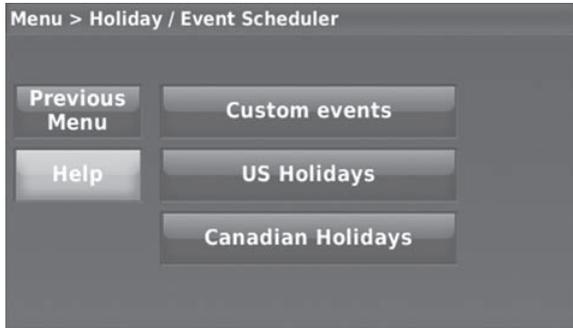
Fig. 288.

4. Make selections as prompted on each screen. For more information, see next two pages.
5. Touch Done to save your settings.

Setting custom events: commercial use

This feature lets you customize temperature settings to be maintained during a specific event. You can set up an event for a specific date or day in a month. The thermostat resumes normal scheduling after the event.

1. Select Custom events from the Holiday/Event Scheduler menu.
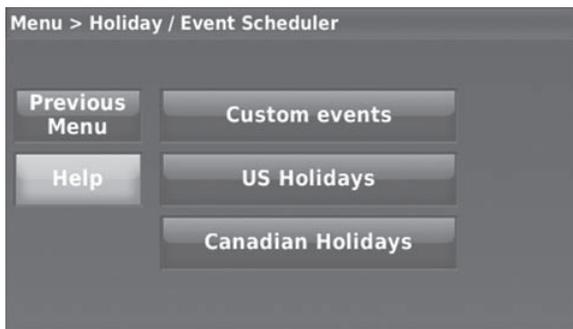
Fig. 289.

2. Select Create a new event.
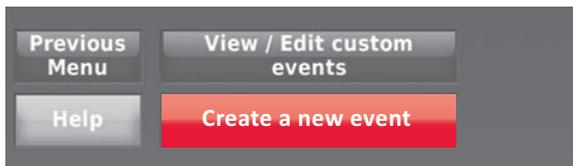
Fig. 290.

3. Select Specific Date or Month/Weekday.

Fig. 291.

- For Specific Date, you are prompted to select the start date, settings, end date, and frequency for the event.
- For Month/Weekday, you are prompted to select the month, day of the week, week of the month, settings, length of event, and frequency of the event.
4. Review the settings and touch Done to save them. Touch Back, then Cancel to ignore the changes.
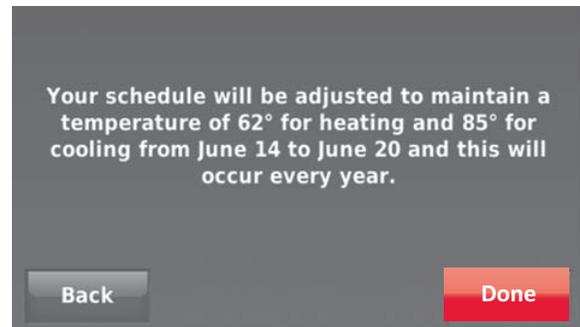
Fig. 292.

Setting holiday schedule: commercial use

This feature lets you customize temperature settings to be maintained on specified national holidays. The thermostat resumes normal scheduling between selected holidays.

1. Select US Holidays or Canadian Holidays from the Holiday/Event Scheduler menu.
2. Select Add/Edit Holidays. A list of national holidays is displayed.
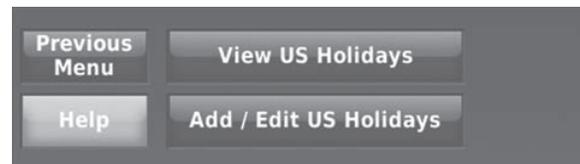
Fig. 293.

3. Touch the check box next to each holiday for which you want to maintain specific settings, (Touch ▲ or ▼ to scroll through the holiday list.) then touch Next.

Set the holiday schedule for Occupied or Unoccu-pied temperatures, depending whether the building will be in use.
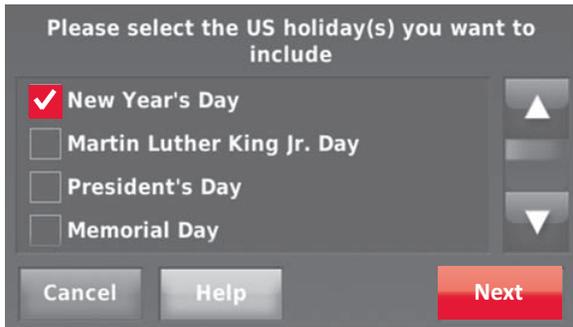
Fig. 294.

4. Touch ▲ or ▼ to select the Heat and Cool tempera-tures.
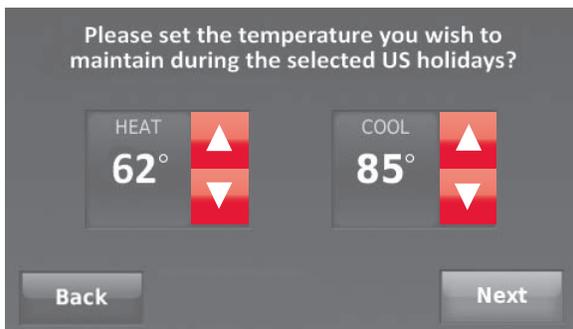
Fig. 295.

5. Review the settings and touch Done to save them. Touch Back, then Cancel to ignore the changes.

Setting holiday override: commercial use

This feature lets you customize temperature settings to be maintained from now until a specified date. The thermostat resumes normal scheduling on the date you select.

1. Touch MENU.

Fig. 296.

2. Select Holiday Mode to display temperatures while you are away on holiday.
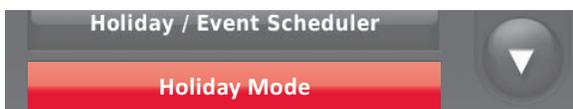
Fig. 297.

3. Touch ▲ or ▼ to select the Heat and Cool tempera-tures, then touch Next to select return date.
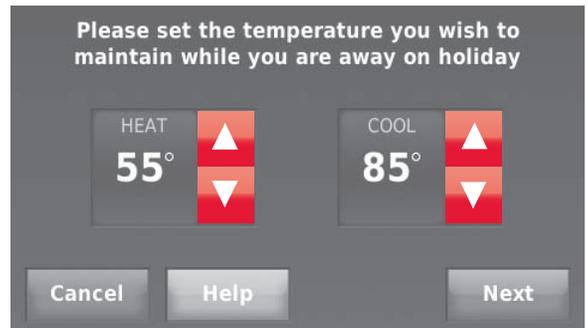
Fig. 298.

4. Review the settings and touch Done to save them. Touch Back, then Cancel to ignore the changes.
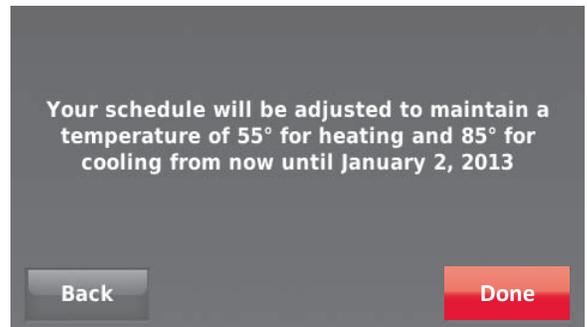
Fig. 299.

NOTE: The cool temperature can only be set higher than the unoccupied program setting and the heat temperature can only be set lower than the unoc-cupied program setting.

Initiating occupancy mode: commercial use

This feature keeps temperature at an energy-saving level until you touch Press to start occupancy. When you arrive, touch the button to maintain a comfortable temperature while the room is occupied.

Fig. 300.

Touch the ▲ or ▼ buttons to set the temperature or the Hold Until time. The temperature is maintained until the time you set. Temperature returns to an energysaving level after the timer expires, or the "Occupied" period ends.

NOTE: This feature is available only when programmed by the installer.

Ramp Rates

When the ramp rate is set to Off, the thermostat begins recovery at the scheduled time.

When a ramp rate is set, recovery begins early to reach the setpoint by the program time. Based on your recovery ramp setting and how far the thermostat is set back, the thermostat determines how early to turn on the system.

If an outdoor sensor is installed, you can set outdoor temperatures for mild, cold and hot days in your region. By setting these outdoor temperatures, the thermostat will automatically adjust the ramp rate based on outdoor conditions. This allows the thermostat to save energy by starting recovery at the optimum time as outdoor conditions change.

NOTE: The thermostat uses an adjustable ramp rate when the thermostat is setup for commercial. This allows the thermostat to recover on time during changing conditions (occupancy changes, temperature overrides, load conditions, open-ing/closing of doors etc) which are common in commercial applications.

Fig. 301.
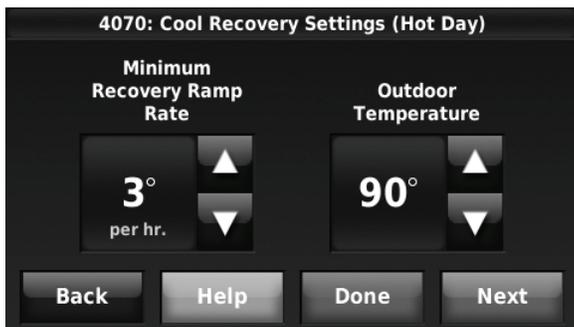
Fig. 302.

Custom Names

The thermostat location (name) can be displayed on the home screen. See the name "OFFICE" in Fig. 303 and 304. This is useful when multiple thermostats are mounted in a manager's office or equipment room, to quickly identify which thermostat is in control of a specific zone or area.
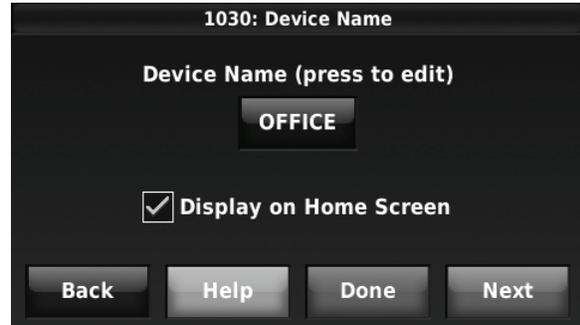
Fig. 303.

Fig. 304.

Remote Setback

The thermostat allows you to do REMOTE SETBACK when set up for commercial use. This feature requires an occupancy sensor connected to the S1, S2, S3, or S4 terminals at the EIM.

During occupied periods, the sensor tells the thermostat to go to STANDBY (setback settings) when no one is in the room. If someone is in the room, then it follows the settings of the occupied period. The occupancy sensor is ignored during unoccupied periods.

If the thermostat is setup for non-programmable, the sensor tells the thermostat to go to STANDBY settings when no one is in the room. If someone is in the room, then it follows the settings set by the user.

A Remote Setback Time Delay (ISU 6030) can be set to force the thermostat to wait before it switches from occupied settings to the standby settings. This allows the room to stay comfortable if the room is unoccupied for a short period of time. When set to 0 minutes, the thermostat will switch from occupied settings to the standby settings immediately when the room is unoccupied.

Set Up Remote Setback

1. Select "Remote Setback" as shown in Fig. 305.
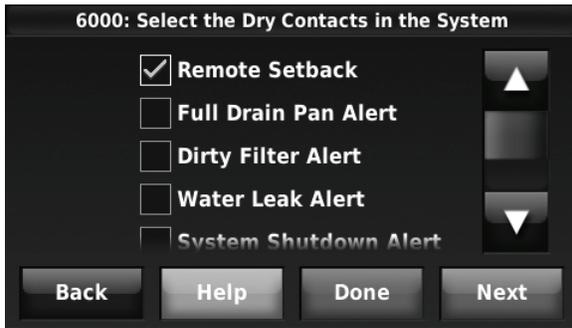
Fig. 305.

2. Select the terminals wired to the Remote Setback Dry Contact device (occupancy sensor) and press Next.

Fig. 306.

3. Select Normally Open when Occupied or Normally Closed when Occupied based on the type of dry contact device installed.

   NOTE: Normally Open when Occupied: The Dry Contact device is open when the room is occupied and will close when the room is unoccupied.
   Normally Closed when Occupied: The Dry Contact device is closed when the room is occupied and will open when the room is unoccupied.
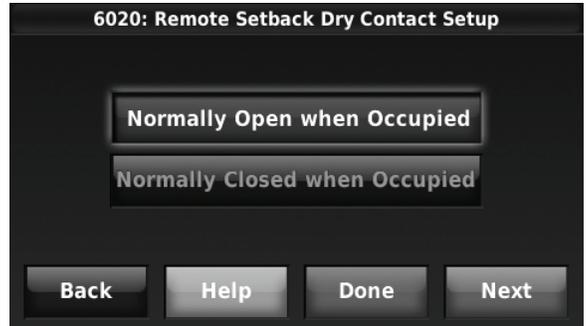
Fig. 307.

4. Select a Remote Setback Time Delay. The Remote Setback Time Delay forces the thermostat to wait before it switches from occupied settings to the standby settings. When set to 0 minutes, the thermostat will switch from occupied settings to the standby settings immediately when the room is unoccupied.
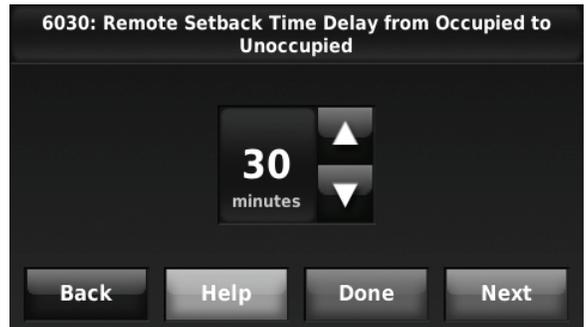
Fig. 308.

5. Select the Standby settings that you would like to maintain when the occupancy sensor detects the room is unoccupied.
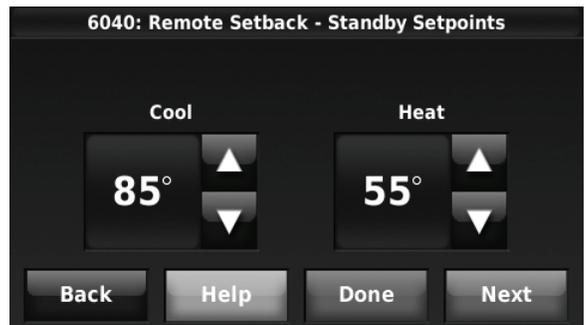
Fig. 309.

Economizer and Time of Day (TOD) Operation

Economizer

The thermostat controls an economizer module to provide ventilation during occupied periods and free cooling when outdoor conditions are favorable. In some climates the cooling system may run several hours when it may not be required to maintain indoor comfort. When outdoor conditions are favorable, ventilation with outdoor air can achieve the same level of comfort at lower cost. Table 9 explains how the Economizer Module is controlled by the thermostat.

The thermostat works with the Jade W7212 Economizer Module for conventional systems and the Jade W7213 and W7214 Economizer Modules for heat pump systems.

Table 9. Economizer Operation.

Thermostat Mode	Equipment Operation	A-L/A terminal: Economizer
Occupied	Heat/Cool/Fan running	ON
Occupied temporarily	Heat/Cool/Fan running	
Occupied	Heat/Cool/Fan NOT running	
Occupied temporarily	Heat/Cool/Fan NOT running	
Pre-occupancy purge	Fan running	
Unoccupied	Cooling system running	
Unoccupied temporarily	Cooling system running	
Standby	Cooling system running	
Unoccupied	Cooling system NOT running	OFF
Unoccupied temporarily	Cooling system NOT running	
Standby	Cooling system NOT running	ON
Non-programmable	Fan running	
Non-programmable	Fan NOT running	OFF

Time of Day (TOD)

The thermostat can be set up for a Time of Day output in the installer setup. This output is commonly used to control lighting panels, turning them on for occupied periods and off for unoccupied periods. Table 10 explains how the TOD feature works with various thermostat modes.

Table 10. TOD Operation.

Thermostat Mode	A-L/A terminal: TOD
Occupied	ON
Occupied temporarily	
Temperature overrides	
Unoccupied	OFF
Unoccupied temporarily	
Standby	
Non-programmable	

The Economizer Module and Time of Day output connect to the A-L/A terminal at the thermostat or EIM and are set up at ISU 2220.
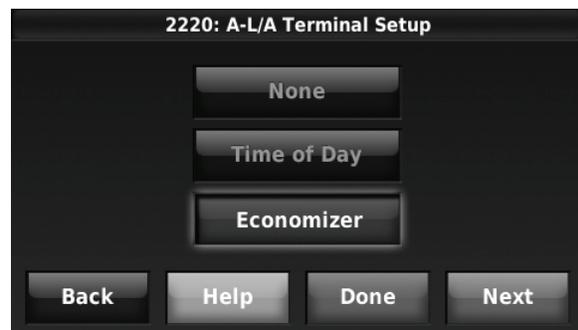
Fig. 310.

Pre-Occupancy Purge

The thermostat can be set up for Pre-Occupancy Purge in the installer setup (ISU 4010). When setup for Pre-Occupancy Purge, the thermostat runs the fan 1 to 3 hours before each occupied period to provide a comfortable workplace upon arrival. Options are Off and 1 to 3 hours.
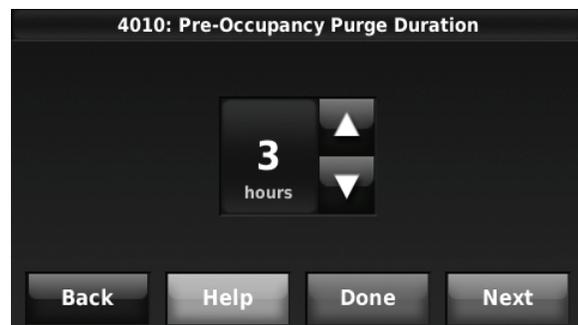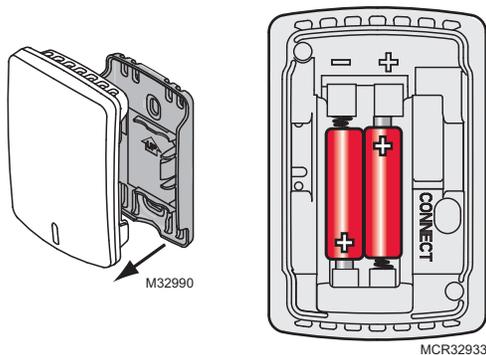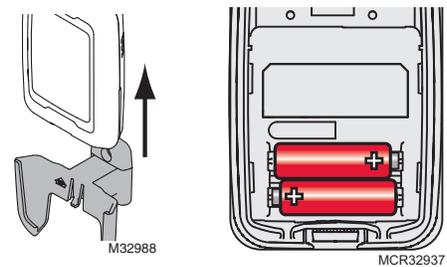

Fig. 311.

Battery Replacement

Wireless Indoor Sensor

Replace batteries in your indoor sensor when a warning appears on the thermostat screen, about two months before batteries are depleted. When the sensor status light begins flashing red, battery power is critically low and will be depleted within 2–3 weeks. During normal operation, the status light remains off. After new batteries are installed, the indoor sensor will restore communication with the wireless network within a few seconds.

NOTE: After installing batteries, the status light may glow amber for up to 20 seconds. Please wait while the indoor sensor restores communication with the wireless network.

Wireless Outdoor Sensor

Replace batteries in your outdoor sensor when a warning appears on the thermostat screen, about two months before batteries are depleted.
After new batteries are installed, the outdoor sensor will restore communication with the wireless network within a few seconds.

Portable Comfort Control
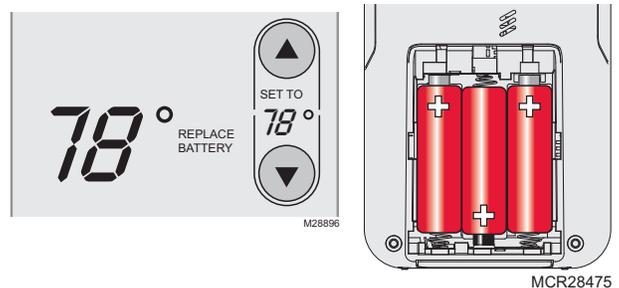
Install fresh batteries when the REPLACE BATTERY warning flashes on the screen. This warning will flash for approximately two months before the batteries fail.

After batteries are installed, the remote control will automatically restore communication with the wireless network within a few minutes.

OPTIONAL ACCESSORIES

PORTABLE COMFORT CONTROL

If you have only one thermostat, you move this remote control from room to room (like a portable thermostat), to make sure the temperature is comfortable in the room you're using. If you have multiple thermostats, you can view and adjust the temperature in each room from your armchair. A Portable Comfort Control can control up to 16 thermostats.

WIRELESS OUTDOOR SENSOR

With a wireless outdoor sensor, your Prestige® thermostat can display outside temperature and humidity. This information can also be displayed on your handheld Portable Comfort Control.

WIRELESS INDOOR SENSOR

If an indoor sensor is installed, your Prestige® thermostat will respond to temperature and humidity readings at the sensor location—providing comfort where the sensor is located. With multiple sensors, the thermostat can average temperature readings from each, to optimize comfort throughout your home. The thermostat can be used with up to 6 Wireless Indoor Sensors.

REDLINK™ INTERNET GATEWAY

The Honeywell RedLINK Internet Gateway gives you remote access to your Prestige® thermostat from the web, smart phone or tablet. You can view or adjust indoor temperature, system mode and other settings. The Gateway can also send alerts to as many as 6 email addresses to notify you if a problem occurs.

WIRELESS ENTRY/EXIT REMOTE

This device mounts beside your door for one-touch control. Press AWAY to control to an energy saving temperature when you leave home. Press HOME to control to a comfortable temperature when you return. To change pre-set temperatures, go to MENU > Entry/Exit Remote Settings. Two covers are sold with the device that allow it to be used in residential or commercial applications. The Residential cover is labeled HOME, AWAY and VACATION and the Commercial cover is labeled OCCUPIED, UNOCCUPIED and HOLIDAY. The thermostat can be used with up to 3 Entry/Exit remotes. Each Entry/Exit remote can control up to 16 thermostats.

WIRELESS VENT AND FILTER BOOST REMOTE

This handy device mounts anywhere in your home (typically bathroom or kitchen) for convenient on demand ventilation. Select 20, 40 or 60 minutes for increased ventilation. The thermostat can be used with up to 6 Vent Boost remotes.

PORTABLE COMFORT CONTROL

The Portable Comfort Control communicates wirelessly with the thermostat, and can control up to 16 thermostats, though each thermostat can only be connected to 1 Portable Comfort Control.

If you have one thermostat, you move this remote control from room to room (like a portable thermostat), to make sure the temperature is comfortable in the room you're using. If you have multiple thermostats, you can view and adjust the temperature in each room from the Portable Comfort Control.

If you have one thermostat, temperature is measured at the thermostat (Fig. 312) or Portable Comfort Control (Fig. 313), as you choose.

Fig. 312. Reading temperature at the thermostat.

Fig. 313. Reading temperature at the Portable Comfort Control.

If the thermostat is being averaged with remote indoor sensors, and you select THERMOSTAT on the Portable Comfort Control, you will see the temperature average from the remote indoor sensors and the thermostat.

NOTE: If the thermostat is not part of the temperature average, then you will only see the temperature average from the remote indoor sensors when you select THERMOSTAT on the Portable Comfort Control.

If the thermostat is being averaged with remote indoor sensors, and you select THIS DEVICE on the Portable Comfort Control, you will see the temperature measured at the Portable Comfort Control only.

If you have multiple thermostats, temperature is measured at each thermostat. Press the TOGGLE ZONE arrows to choose which room to display and adjust. See Fig. 314.

Fig. 314. Portable Comfort Control used with Multiple Thermostats. Temperature is measured at each thermostat.

REMOTE INDOOR SENSORS

For installation, see "Mounting C7189R1004 Wireless Indoor Sensor" on page 68, and "Mounting C7189U1005 Wired Indoor Sensor" on page 69. For wiring, see "Wiring guide — Wired Indoor Sensors" on page 158.

Indoor Sensor Operation

Temperature Control

The thermostat can be set to respond to its internal temperature sensor, or to an optional remote indoor sensor. If multiple sensors are used, the thermostat will average the temperature detected at each sensor.
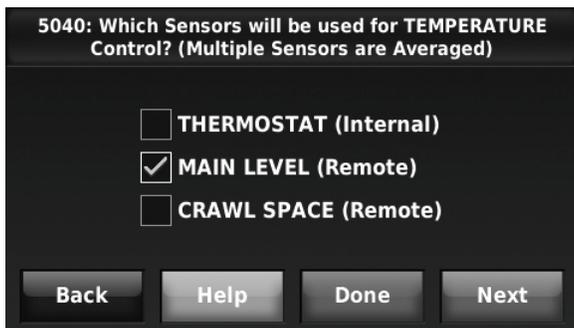
Fig. 315.

Humidification control

If optional remote indoor sensors are installed, you can choose which sensor you want to use for humidification control. You can use a different sensor for dehumidification.

NOTE: Requires wireless indoor sensor.
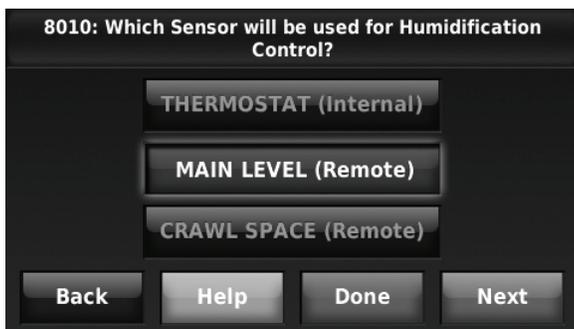
Fig. 316.

Dehumidification control

If optional remote indoor sensors are installed, you can choose which sensor you want to use for dehumidification control. For example, you can use one sensor for humidification control, and another for dehumidification.

NOTE: Requires wireless indoor sensor.
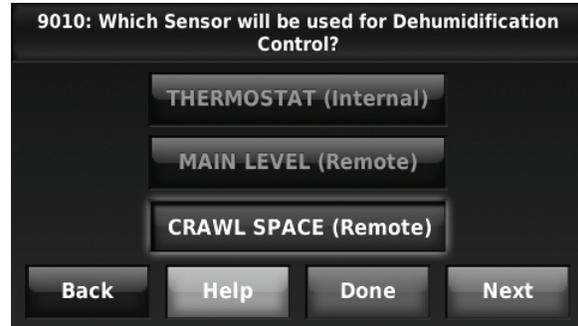
Fig. 317.

Wireless Indoor Sensor

The wireless indoor sensor senses temperature and humidity in remote locations and communicates that information wirelessly to the thermostat.

The indoor sensor can be used to do the following:
- Maintain a more consistent temperature throughout the building by averaging temperatures. Temperatures from all sensors, including the thermostat, are weighted equally.
- Relocate sensing location (thermostat is in a poor location).
- Relocate the thermostat (if you want to hide the thermostat).
- Humidify and dehumidify in separate spaces (for instance, humidify on the main level, and dehumidify in the crawl space).

You can connect up to 6 Wireless Indoor Sensors to the thermostat. If you connect a Wired Indoor Sensor network to the S1, S2, S3, or S4 terminals, you can connect up to 5 Wireless Indoor Sensors to the thermostat.

The indoor air sensor has a 1 year battery life.

Battery level indicators (when batteries are inserted)
- Good: Status light flashes green for 5 seconds.
- Low: Status light flashes red for 5 seconds. Use fresh batteries.

Battery level indicators (during use)
- Good: Status light remains off.
- Low: Battery power will be depleted in about 2 months. Thermostat displays Low Battery warning. Status light remains off.

- Critical: Battery power will be depleted in about 2–3 weeks. Status light flashes red.

Temperature Display

The temperature reading displayed on the home screen is from the sensor or sensors that are being used for temperature control.

In Fig. 318, the temperature reading is the average of the thermostat internal sensor and the MAIN LEVEL remote sensor.
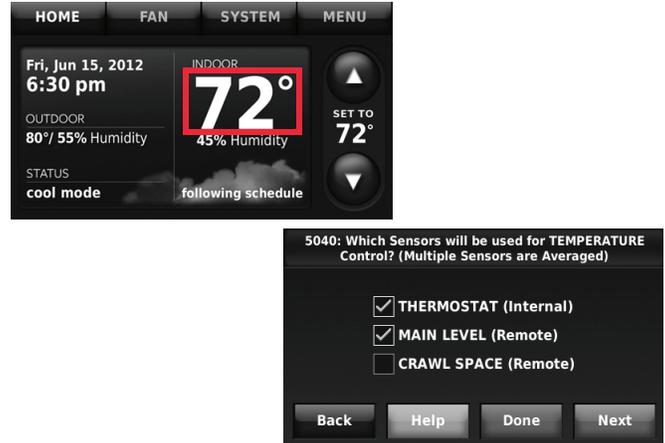

Fig. 318.

Humidity Display

If you are sensing Humidity from one location (internal or remote), the humidity reading displayed on the home screen is from the sensor that is being used for control. In Fig. 319, the humidity reading is from the Main Level Remote Sensor.

Fig. 319.

If you are sensing Humidity from two separate locations (one for humidification and another for dehumidification), you can select which humidity reading to display on the home screen. In Fig. 320, the humidity reading is from the Main Level Remote Sensor based on the setting in ISU.
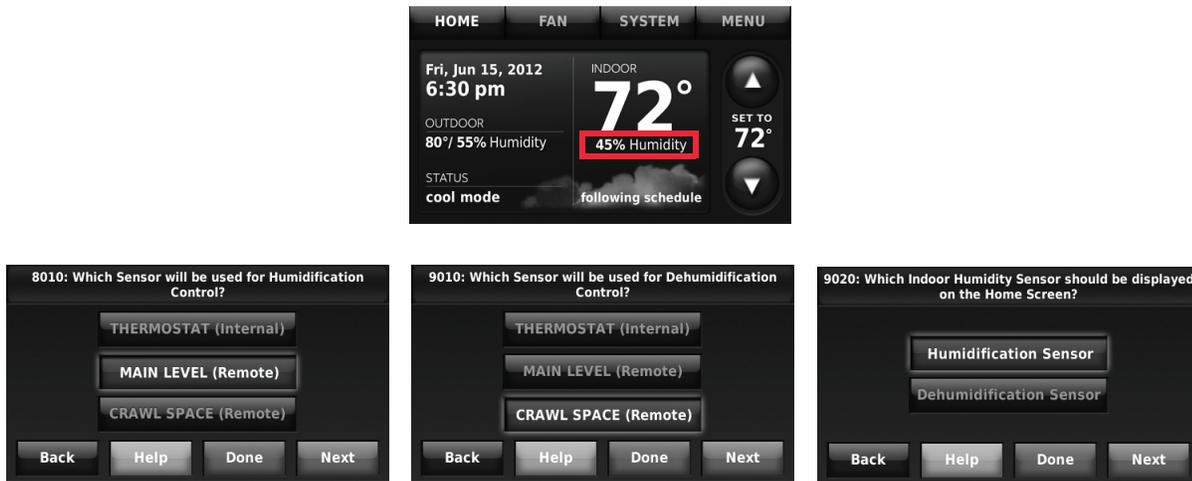
Fig. 320.

See "Indoor Sensor Readings in Installer Test" on page 66 for how to check the readings at individual wireless indoor sensors when multiple sensors are averaged.

Calibration – Outdoor Sensor

The C7089U1006 Outdoor Sensor is calibrated at the factory and cannot be recalibrated in the field.

Table 11. C7089U1006 Sensor Resistance at Outdoor Temperature.

Outdoor Temperature		Ohms of Resistance	Outdoor Temperature		Ohms of Resistance
°F	°C		°F	°C	
–20	–28.9	106926	52	11.1	17136
–18	–27.8	100923	54	12.2	16387
–16	–26.7	95310	56	13.3	15675
–14	–25.6	90058	58	14.4	14999
–12	–24.4	85124	60	15.6	14356
–10	–23.3	80485	62	16.7	13743
–8	–22.2	76137	64	17.8	13161
–6	–21.1	72060	66	18.9	12607
–4	–20.0	68237	68	20.0	12081
–2	–18.9	64631	70	21.1	11578
0	–17.8	61246	72	22.2	11100
2	–16.7	58066	74	23.3	10644
4	–15.6	55077	76	24.4	10210
6	–14.4	53358	78	25.6	9795
8	–13.3	49598	80	26.7	9398
10	–12.2	47092	82	27.8	9020
12	–11.1	44732	84	28.9	8659
14	–10.0	42506	86	30.0	8315
16	–8.9	40394	88	31.1	7986
18	–7.8	38400	90	32.2	7672
20	–6.7	36519	92	33.3	7372
22	–5.6	34743	94	34.4	7086
24	–4.4	33063	96	35.6	6813
26	–3.3	31475	98	36.7	6551
28	–2.2	29975	100	37.8	6301
30	–1.1	28558	102	38.9	6062
32	0.0	27219	104	40.0	5834

Table 11. C7089U1006 Sensor Resistance at Outdoor Temperature. (Continued)

Outdoor Temperature		Ohms of Resistance	Outdoor Temperature		Ohms of Resistance
°F	°C		°F	°C	
34	1.1	25949	106	41.1	5614
36	2.2	24749	108	42.2	5404
38	3.3	23613	110	43.3	5203
40	4.4	22537	112	44.4	5010
42	5.6	21516	114	45.6	4826
44	6.7	20546	116	46.7	4649
46	7.8	19626	118	47.8	4479
48	8.9	18754	120	48.9	4317
50	10.0	17926	—		

Calibration – Indoor Sensor

The C7189U1005 Wall Mount Temperature Sensor is calibrated at the factory and cannot be recalibrated in the field.

Table 12. C7189U1005 Sensor Resistance at Room Temperature.

Room Temperature		Ohms of Resistance	Room Temperature		Ohms of Resistance
°F	°C		°F	°C	
40	4.4	22537	72	22.2	11100
42	5.6	21516	74	23.3	10644
44	6.7	20546	76	24.4	10210
46	7.8	19626	78	25.6	9795
48	8.9	18754	80	26.7	9398
50	10.0	17926	82	27.8	9020
52	11.1	17136	84	28.9	8659
54	12.2	16387	86	30.0	8315
56	13.3	15675	88	31.1	7986
58	14.4	14999	90	32.2	7672
60	15.6	14356	92	33.3	7372
62	16.7	13743	94	34.4	7086

BACKUP CONTROL

This section explains when backup control is used. For example, if batteries in the wireless indoor sensors are depleted.

If the Thermostat is Part of the Temperature Average

1. The thermostat controls the system using the remaining sensors that are part of the temperature average.
2. If there are no remote indoor sensors remaining, the thermostat controls the system using its internal sensor.
3. If the internal thermostat sensor is not available and a Return Air Sensor is connected, the Backup Control in the EIM is used. The backup control maintains 55 °F in heat, 85 °F in cool and operates the fan continuously to sense and control temperature.

If the Thermostat is NOT Part of the Temperature Average

1. The thermostat controls the system using the remaining sensors that are part of the temperature average.
2. If there are no remote indoor sensors remaining and a Return Air Sensor is connected, the Backup Control in the EIM is used. The backup control maintains 55 °F in heat, 85 °F in cool and operates the fan continuously to sense and control temperature.

REPLACING A THERMOSTAT

When you replace a thermostat, you must reset the RedLINK accessories before connecting them to the new thermostat.

Follow the instructions below:

At the Equipment Interface Module (EIM)

1. Press and hold the CONNECT button on the EIM until the CONNECTED LED glows amber (hold for about 10 seconds).
2. Follow the prompts on the screen to connect the new thermostat to the EIM. See page 10.

At the Portable Comfort Control

1. Press and hold the blank space (or arrow) in the lower right hand corner of the screen until the display changes (hold for about 4 seconds).

Press and hold the blank space (or arrow may be present)

Fig. 321.

2. Press REMOVE, then YES to disconnect from the old thermostats.
3. To reconnect the thermostat, go to "Linking RedLINK™ Accessories" beginning on page 16.

At the Indoor Sensor, RedLINK Internet Gateway, Entry/Exit Remote, Vent–Filter Boost Remote or TrueSTEAM Wireless Adapter

1. Press and hold the CONNECT button on the accessory until the status light glows amber (hold for about 10 seconds).
2. To reconnect the thermostat, go to "Linking RedLINK™ Accessories" beginning on page 16.

REPLACING AN EQUIPMENT INTERFACE MODULE

When you replace an EIM, you must reset the RedLINK accessories before connecting them to the new thermostat.

Follow the instructions below:

At the thermostat

1. Press MENU, scroll down and select Installer Options, enter the password (Date Code) when prompted, scroll down and select Wireless Manager, scroll down and select Remove Device, then select This Thermostat.
2. Follow the prompts on the screen to connect the thermostat to the new EIM.

At the Portable Comfort Control

1. Press and hold the blank space (or arrow) in the lower right hand corner of the screen until the display changes (hold for about 4 seconds). See Fig. 321.
2. Press REMOVE, then YES to disconnect from the old thermostats. To reconnect the thermostat, go to "Linking RedLINK™ Accessories" beginning on page 16.

At the Indoor Sensor, RedLINK Internet Gateway, Entry/Exit Remote, Vent–Filter Boost Remote or TrueSTEAM Wireless Adapter

1. Press and hold the CONNECT button on the accessory until the status light glows amber (hold for about 10 seconds).
2. To reconnect the thermostat, go to "Linking RedLINK™ Accessories" beginning on page 16.

WIRING

See Table 13 for Equipment Interface Module terminal descriptions and Table 14 for thermostat terminal descriptions.

Table 13. Equipment Interface Module Terminal Designation Descriptions.

Conventional System		Heat Pump	
Terminal	**Description**	**Terminal**	**Description**
C	Common wire from 24 VAC transformer.	C	Common wire from 24 VAC transformer.
R*	Power wire from 24 VAC transformer.	R	Power wire from 24 VAC transformer.
RH*	Heating power	RH	Heating power
RC*	Cooling power	RC	Cooling power
W	Heat Stage 1	O/B	Changeover valve for heat pumps
W2	Heat Stage 2	AUX 1	Backup Heat Stage 1/Emergency Heat Stage 1
W3	Heat Stage 3	AUX 2	Backup Heat Stage 2/Emergency Heat Stage 2
Y	Compressor Stage 1	Y	Compressor Stage 1
Y2	Compressor Stage 2	Y2	Compressor Stage 2
G	Fan Relay	G	Fan Relay
A	Connect to Economizer Module or Lighting Panel (TOD).	L/A	Connect to Compressor Monitor, Zone Panel, Economizer Module or Lighting Panel (TOD).
U1 / U1[†] U2 / U2[†] U3 / U3[†]	Universal relay for humidification, dehumidification, ventilation, or a stage of heating/cooling. U terminals are dry contacts that require power.	U1 / U1[†] U2 / U2[†] U3 / U3[†]	Universal relay for humidification, dehumidification, ventilation, or a stage of heating/cooling. U terminals are dry contacts that require power.
S1 / S1[†] S2 / S2[†] S3 / S3[†] S4 / S4[†]	Universal input for a wired indoor sensor, outdoor sensor, discharge sensor, return sensor, dry contact device for alerts or dry contact device for remote setback.	S1 / S1[†] S2 / S2[†] S3 / S3[†] S4 / S4[†]	Universal input for a wired indoor sensor, outdoor sensor, discharge sensor, return sensor, dry contact device for alerts or dry contact device for remote setback.
A B C D	Connect to THM4000R1000 Wireless Adapter for extended wireless range.	A B C D	Connect to THM4000R1000 Wireless Adapter for extended wireless range.

* Remove jumpers when separate transformers are used.

[†] See "Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152 or "Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals" beginning on page 152.

[‡] See "Dry Contact Alerts" beginning on page 94 for wiring Dry Contact Devices to display alerts.

Table 14. THX9321 Terminal Designation Descriptions.

Conventional System		Heat Pump	
Terminal	**Description**	**Terminal**	**Description**
C	Common wire from secondary side of cooling transformer (if 2 transformers).	C	Common wire from secondary side of cooling transformer.
Rc*	Cooling power	Rc*	Cooling power
R*	Heating power	R	Heating power
W	Heat Stage 1	O/B	Changeover valve for heat pumps
W2	Heat Stage 2	AUX-E	Backup Heat/Emergency Heat
Y	Compressor Stage 1	Y	Compressor Stage 1
Y2	Compressor Stage 2	Y2	Compressor Stage 2
G	Fan Relay	G	Fan Relay
A	Connect to Economizer Module or Lighting Panel (TOD).	L/A	Connect to Compressor Monitor, Zone Panel, Economizer Module or Lighting Panel (TOD).
U1 / U1 U2 / U2	Universal relay for humidification, dehumidification, ventilation, or a stage of heating/cooling.	U1/ U1 U2 / U2	Universal relay for humidification, dehumidification, ventilation, or a stage of heating/cooling.
K†	Connect to K on Wire Saver module.	K†	Connect to K on Wire Saver module.

* Remove factory installed jumper for two transformer systems.

† The THP9045A1023 Wire Saver module is used on heat/cool systems when you only have four wires at the thermostat and you would like the thermostat to be powered with a common wire. Use the K terminal in place of the Y and G terminals on conventional or heat pump systems to provide control of the fan and the compressor through a single wire—the unused wire then becomes your common wire. See THP9045 instructions for more information.

⚠ **CAUTION**
Electrical Hazard.
Can cause electrical shock or equipment damage.
Disconnect power before wiring.

All wiring must comply with local electrical codes and ordinances. See Fig. 324–332.

1. Select wiring diagram that corresponds with system type and the equipment being installed (using the EIM or wiring the thermostat directly to the HVAC equipment).
2. Loosen the screws for the appropriate terminals. Insert wires in the terminal block under the loosened screw. See Fig. 322.
3. Securely tighten each screw.
4. Push excess wire back into the hole.
5. Plug the hole with nonflammable insulation to prevent drafts from affecting the thermostat.
6. See Fig. 324–332 for typical wiring hookups.

Table 15. Wiring Diagrams by System Type.

System Type	Wiring Diagram Reference
Standard Heat/Cool	324
Heat Pump with Auxiliary Heat	325
Geothermal radiant heat	326
Heat pump system with one transformer	327
2-heat / 2-cool conventional system with one transformer	328
Heat pump system with two transformers	329
Geothermal radiant heat, geothermal forced-air and backup heat with one transformer	330
Heat pump with oil forced air backup.	336
Geothermal radiant heat with geothermal forced air and backup heat using separate transformer for the radiant heat	337
Wood stove-fired hot water fan coil with forced air furnace backup heat	338
Hot water radiant heat with backup heat (single zone application)	339
Hot water radiant heat with backup forced air heat. Zoned with forced air zone panel and zone valves	340
Hot water radiant heat with backup forced air heat. Zoned with forced air zone panel and hot water panel.	341
Hot water fan coil with forced air furnace backup heat.	342
Wood stove with heat pump and backup electric strips. (For applications in which the thermostat only needs to run the blower fan when stove is hot).	343
IAQ Equipment	344–349
Wired Remote Sensors	356–360

Table 16. Zoning Diagrams by System Type.

System Type	Wiring Diagram Reference
Prestige IAQ thermostats with an HZ432 zone panel and no IAQ control	361
Prestige IAQ controlling one zone with an HZ432 zone panel and a TrueSTEAM humidifier	362
Ventilation with zoning	363
Prestige IAQ with an HZ432 zone panel and a TrueDRY dehumidifier	364

Wallplate
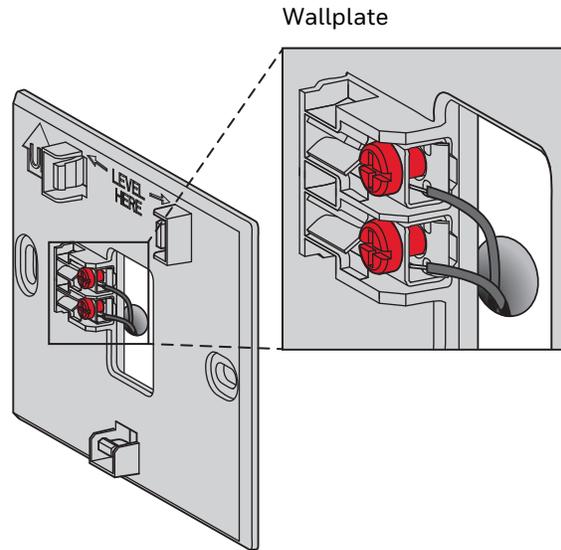
Fig. 322. Inserting wires in thermostat terminal block.
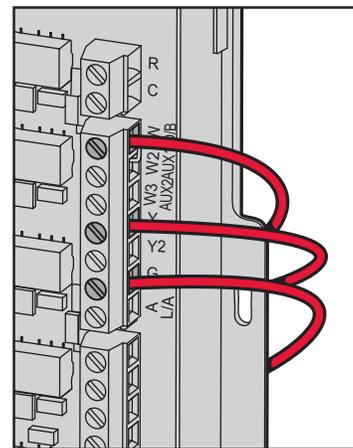
Fig. 323. Inserting wires in EIM terminal block

IMPORTANT
> *Use 18–22 gauge thermostat wire.*

EIM Wiring Diagrams

Typical wiring of a conventional system with up to 3-stage heat and 2-stage cool with one transformer.
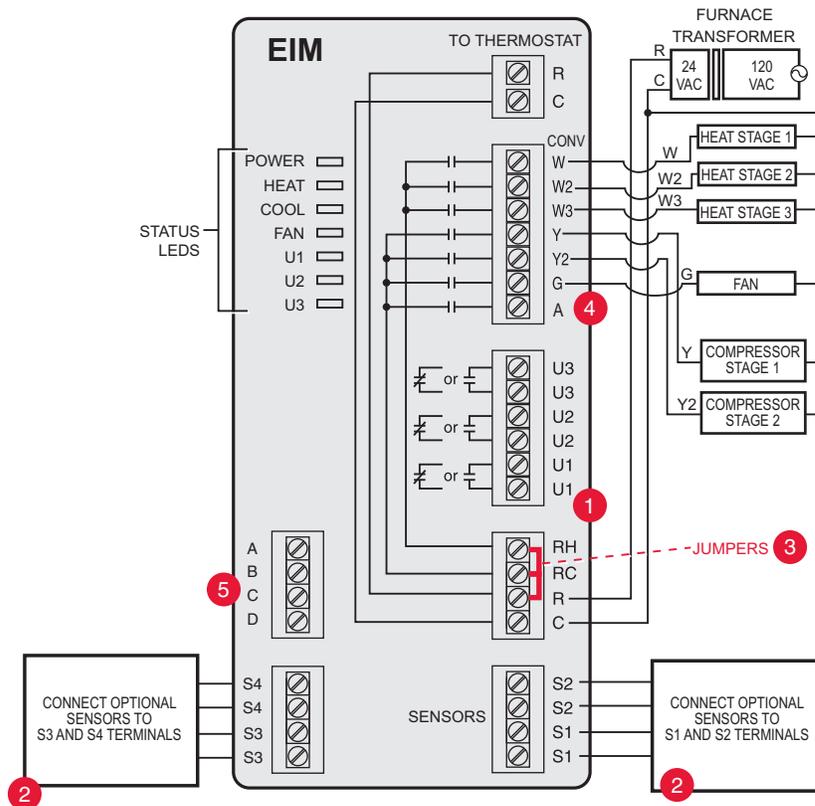
Fig. 324. EIM wiring guide — conventional systems.

1 See guides on following pages for thermostat wiring and geothermal radiant heat wiring.

2 Wire a maximum of 4 sensors using the S1–S4 terminals. S1–S4 terminals can be connected to an indoor sensor, outdoor sensor, discharge sensor, return sensor, dry contact device to display an alert or an occupancy sensor for remote setback.

3 Remove jumper(s) if using separate transformers.

4 See "Economizer Module Wiring Diagrams" beginning on page 154.

5 Connect wireless adapter to ABCD for extended wireless range.

Typical wiring of a heat pump system with up to four-stage heat and two-stage cool with one transformer.
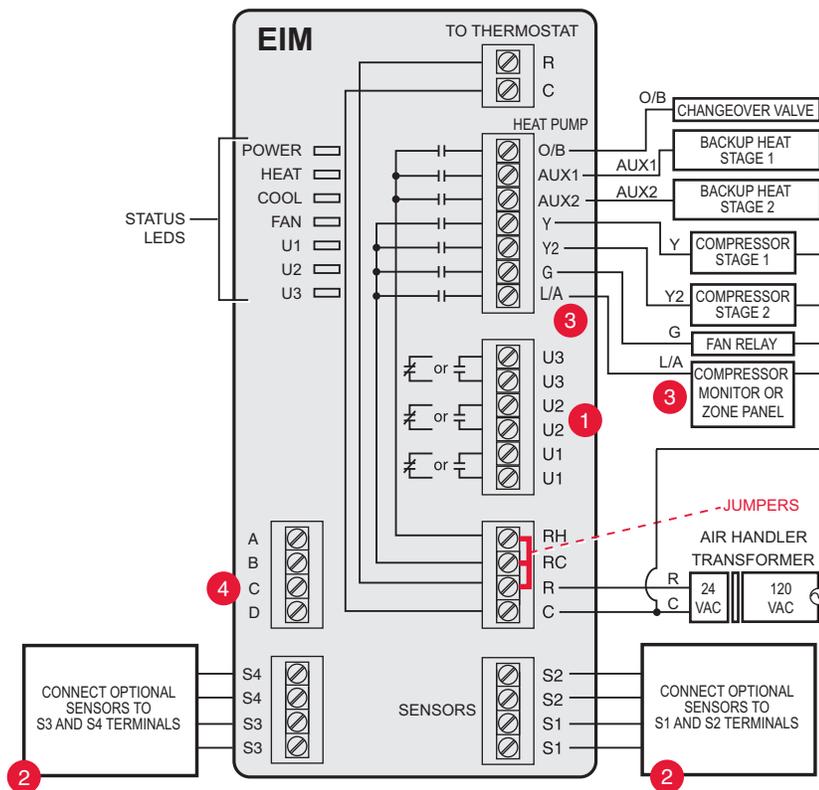
Fig. 325. EIM wiring guide — heat pump systems.

1 See guides on following pages for thermostat wiring and geothermal radiant heat wiring.

2 Wire a maximum of 4 sensors using the S1-S4 terminals. S1-S4 terminals can be connected to an indoor sensor, outdoor sensor, discharge sensor, return sensor, dry contact device to display an alert or an occupancy sensor for remote setback.

3 L/A terminal sends continuous output when thermostat is set to EM HEAT mode, except when set up for Economizer or TOD. See "Economizer Module Wiring Diagrams" beginning on page 154.

4 Connect wireless adapter to ABCD for extended wireless range.

Typical wiring for geothermal radiant heat, geothermal forced-air, and backup heat with one transformer.
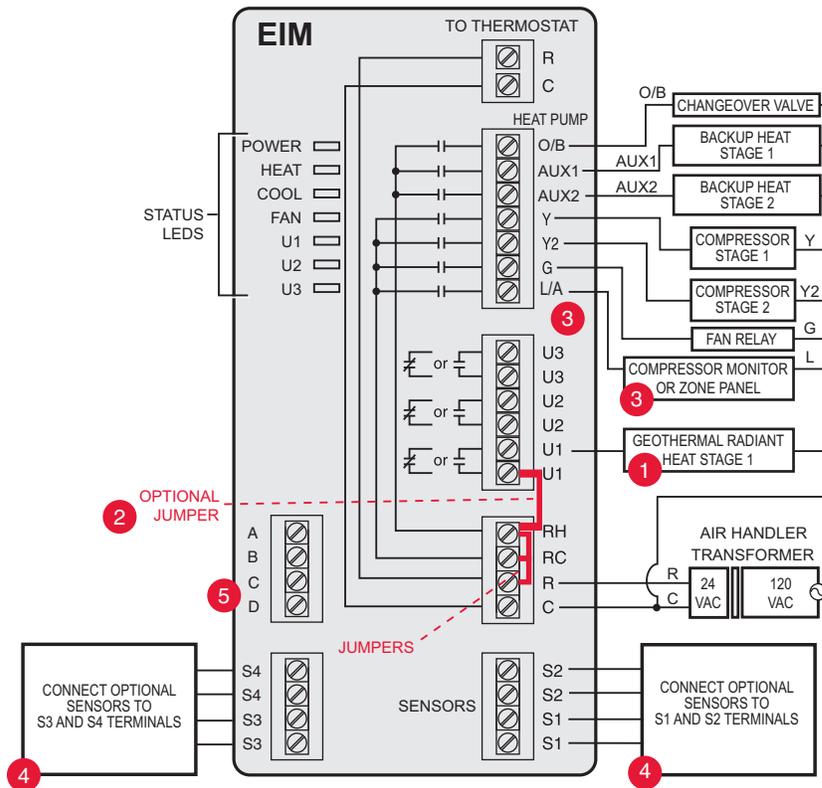
Fig. 326. EIM wiring guide — geothermal radiant heat.

1 U1, U2 or U3 terminals must be used for geothermal radiant heat (ISU 2010). Thermostat allows 2 stages of radiant heat—geothermal (stage 1) and boiler (stage 2).

2 "U" terminals are normally open dry contacts when set up for geothermal radiant heat. You must install a field jumper if radiant heat is powered by system transformer. Do NOT install a field jumper if radiant heat has its own transformer.

3 L/A terminal sends continuous output when thermostat is set to EM HEAT mode except when set up for Economizer or TOD. See "Economizer Module Wiring Diagrams" beginning on page 154.

4 Wire a maximum of 4 sensors using the S1-S4 terminals. S1-S4 terminals can be connected to an indoor sensor, outdoor sensor, discharge sensor, return sensor, dry contact device to display an alert or an occupancy sensor for remote setback.

5 Connect wireless adapter to ABCD for extended wireless range.

NOTE: For setup and operation, see "Geothermal Radiant Heat" beginning on page 100.

THX9321 Thermostat Wiring Diagrams

Typical wiring of a 3-heat / 2-cool heat pump system with one transformer.
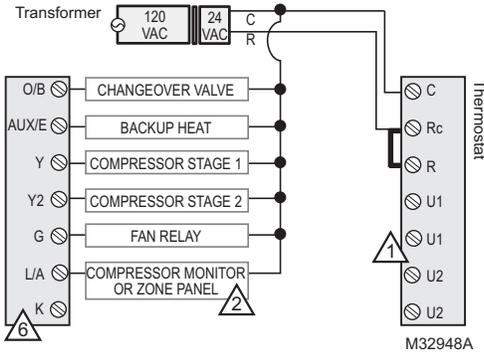
Fig. 327. Prestige THX9321 and heat pump system with one transformer.

Typical wiring of a 2-heat / 2-cool conventional system with one transformer.
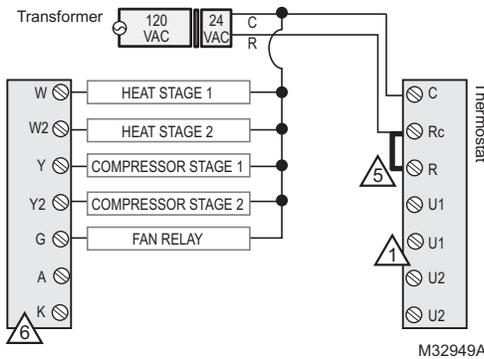
Fig. 328. Prestige THX9321 and 2-heat / 2-cool conventional system with one transformer.

Typical wiring of a 3-heat / 2-cool heat pump system with two transformers.

Fig. 329. Prestige THX9321 and heat pump system with two transformers.

Typical wiring for geothermal radiant heat, geothermal forced-air and backup heat with one transformer. See "Geothermal Radiant Heat" on page 100.
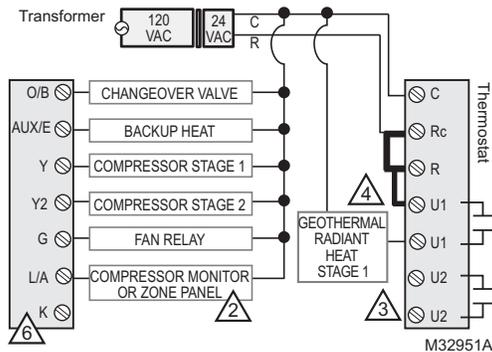
Fig. 330. Prestige THX9321 and geothermal radiant heat, geothermal forced-air and backup heat with one transformer.

1 U1 and U2 terminals are dry contacts.

2 L/A terminal sends continuous output when thermostat is set to EM HEAT mode except when set up for Economizer or TOD. See "Economizer Module Wiring Diagrams" beginning on page 154.

3 U1 or U2 terminals must be used for geothermal radiant heat (ISU 2010). Thermostat allows 2 stages of radiant heat—geothermal (stage 1) and boiler (stage 2).

4 "U" terminals are normally open dry contacts when set up for geothermal radiant heat. You must install a field jumper if radiant heat is powered by system transformer. Do NOT install a field jumper if radiant heat has its own transformer.

5 Remove jumper if using separate transformers.

6 Connect the THP9045 Wiresaver Module to the K terminal in heating/cooling applications that do not have a common wire at the thermostat. The K terminal cannot be used in heat-only applications. See THP9045 installation instructions for more information.

NOTE: For setup and operation, see "Geothermal Radiant Heat" beginning on page 100.

THX9321 Thermostat Wiring Diagrams
Using Universal Relays to Control Heating or Cooling

The THX9321 Thermostat and the EIM have universal outputs that can be configured for the following stages of heating and cooling, based on the terminals available.

THX9321 THERMOSTAT (U1 AND U2)
- Cool Stage 3 (ISU 2080 – commercial only)
- Cool Stage 4 (ISU 2090 – commercial only)
- Conventional Heat Stage 3 (ISU 2100, 2140)
- Backup Heat Stage 2 for Heat Pumps (ISU 2170)
- Geothermal Radiant Heat (see wiring diagrams on page 143, page 144, and page 147)

FOR THX9421 WITH EIM (U1, U2, AND U3)
- Cool Stage 3 (ISU 2080 – commercial only)
- Cool Stage 4 (ISU 2090 – commercial only)
- Geothermal Radiant Heat (see wiring diagrams on page 143, page 144, and page 147)

NOTE: The EIM has dedicated terminals for Conventional Heat Stage 3 and Backup Heat Stage 2 for Heat Pumps

Powering universal relay with system transformer (THX9321 shown).
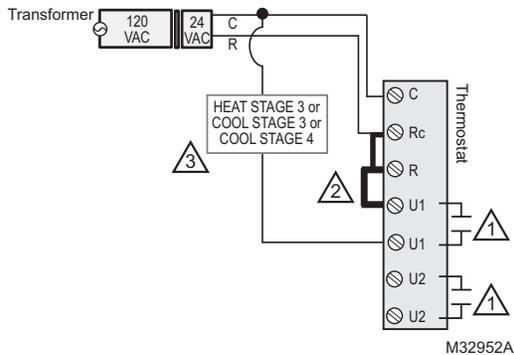
Fig. 331. Prestige THX9321 powering universal relay with system transformer.

Powering universal relay with separate heating transformer (THX9321 shown).
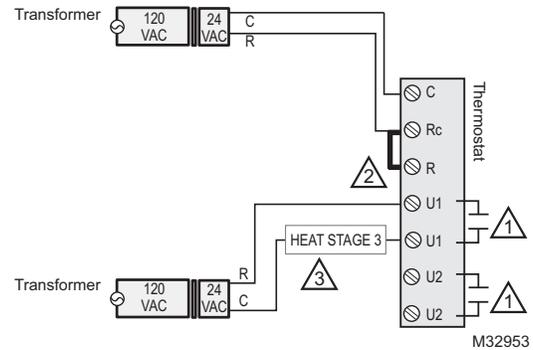
Fig. 332. Prestige THX9321 powering universal relay with separate heating transformer.

1 U1/U2/U3 terminals are normally open dry contacts when set up for a stage of heating or cooling.

2 You must install a field jumper if the stage of heating or cooling is powered by system transformer. Do NOT install a field jumper if the stage of heating has its own transformer.

3 U1/U2/U3 terminals are assigned to a stage of heating or cooling in the Installer Setup.

R IS JUMPERED TO RH.

THE BOILER CONTROLS THE CIRCULATOR PUMP IN THIS SYSTEM.

M31477
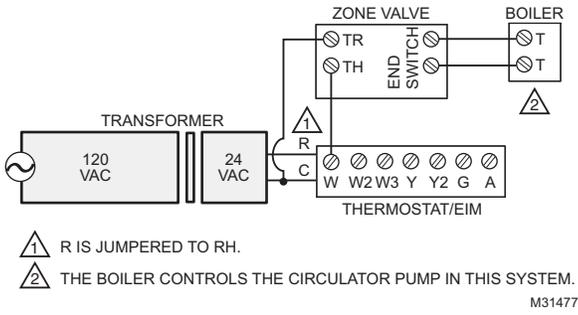
Fig. 333. 2–Wire Zone Valve with end switch.

R IS JUMPERED TO RH.

M31478
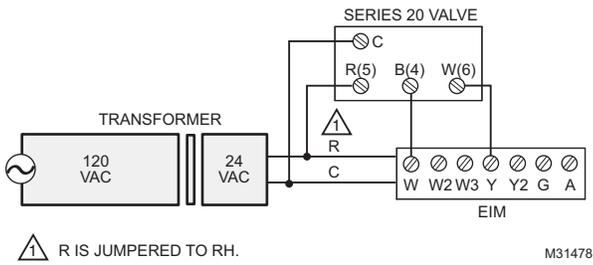
Fig. 334. Series 20 hot water heat.

REMOVE THE JUMPER FROM RH TO RC WHEN USED WITH AQ2000 SERIES PANEL.

M31479
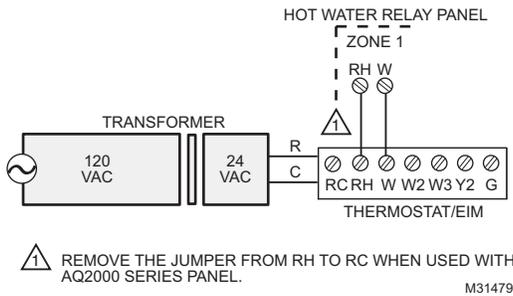
Fig. 335. AQ2000 series panels or other hot water relay panels.

THE BOILER IS CONTROLLING THE CIRCULATOR PUMP IN THIS DIAGRAM

Y2 USED WITH HEAT-PUMPS THAT HAVE 2 COMPRESSOR STAGES.

M31480
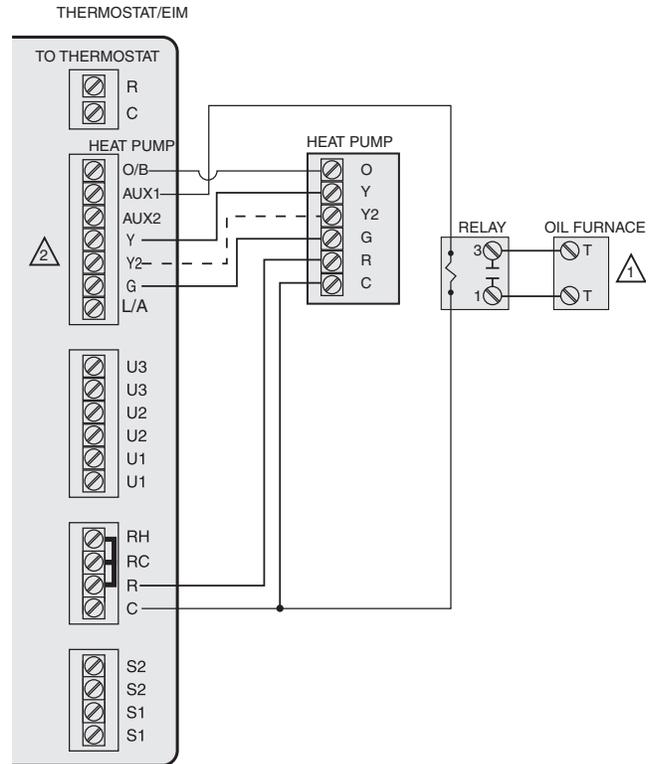
Fig. 336. Heat pump with oil forced air backup.
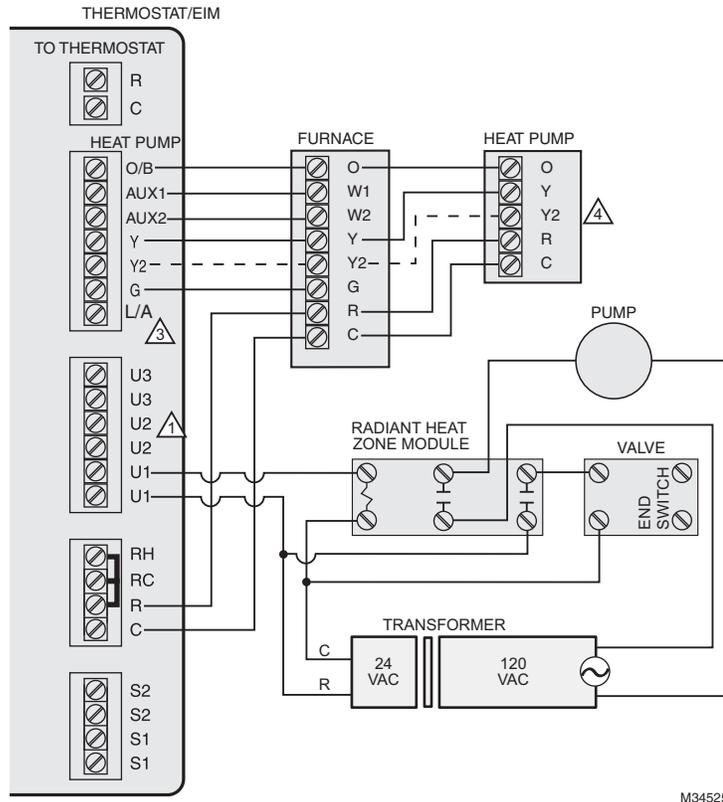
M34525

Fig. 337. Geothermal radiant heat with geothermal forced air and backup heat using separate transformer for the radiant heat.

1 U1, U2 or U3 terminals must be used for geothermal radiant heat (ISU 2010). Thermostat allows 2 stages of radiant heat—geothermal (stage 1) and boiler (stage 2).

2 "U" terminals are normally open dry contacts when set up for geothermal radiant heat. You must install a field jumper if radiant heat is powered by system transformer. Do NOT install a field jumper if radiant heat has its own transformer.

3 L/A terminal sends continuous output when thermostat is set to EM HEAT mode except when set up for Economizer or TOD. See "Economizer Module Wiring Diagrams" beginning on page 154.

4 Y2 used with heat pumps that have 2 compressor stages.

NOTE: For setup and operation, see "Geothermal Radiant Heat" beginning on page 100.
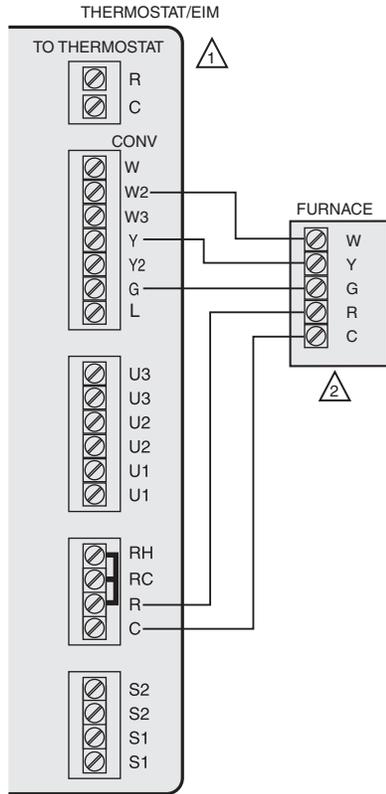
△1 CONFIGURE THE THERMOSTAT TO ENERGIZE THE FAN WITH A CALL FOR HEAT.

△2 THE THERMOSTAT WILL ENERGIZE ONLY THE FAN WITH A CALL FOR STAGE 1 HEAT. IF THE WOOD STOVE IS HOT, HEAT COMES FROM THE FAN COIL. IF THE WOOD STOVE IS COLD, ONLY THE FAN RUNS. THE THERMOSTAT WILL UPSTAGE TO THE FURNACE AS NEEDED TO MAINTAIN THE TEMPERATURE.

M31482

Fig. 338. Wood stove–fired hot water fan coil with forced air furnace backup heat.
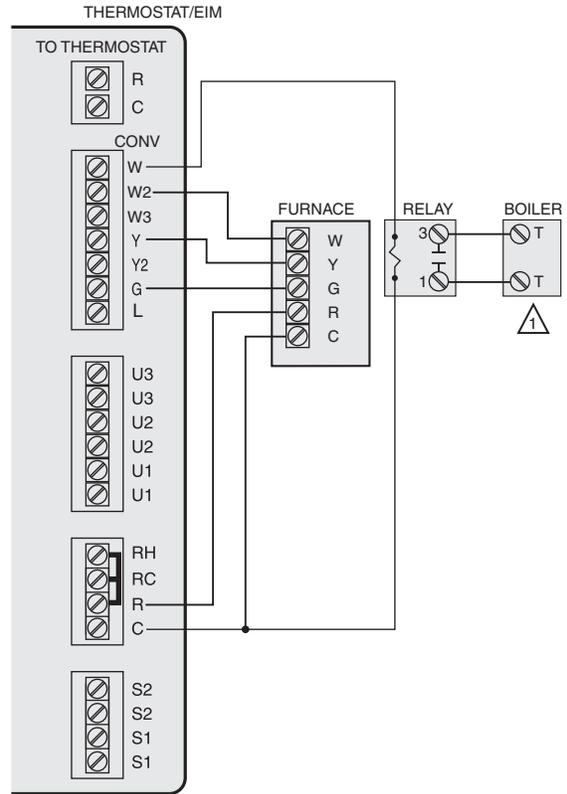
△1 THE BOILER IS CONTROLLING THE CIRCULATOR PUMP IN THIS DIAGRAM.

M31483

Fig. 339. Hot water radiant heat with backup heat (single zone application).
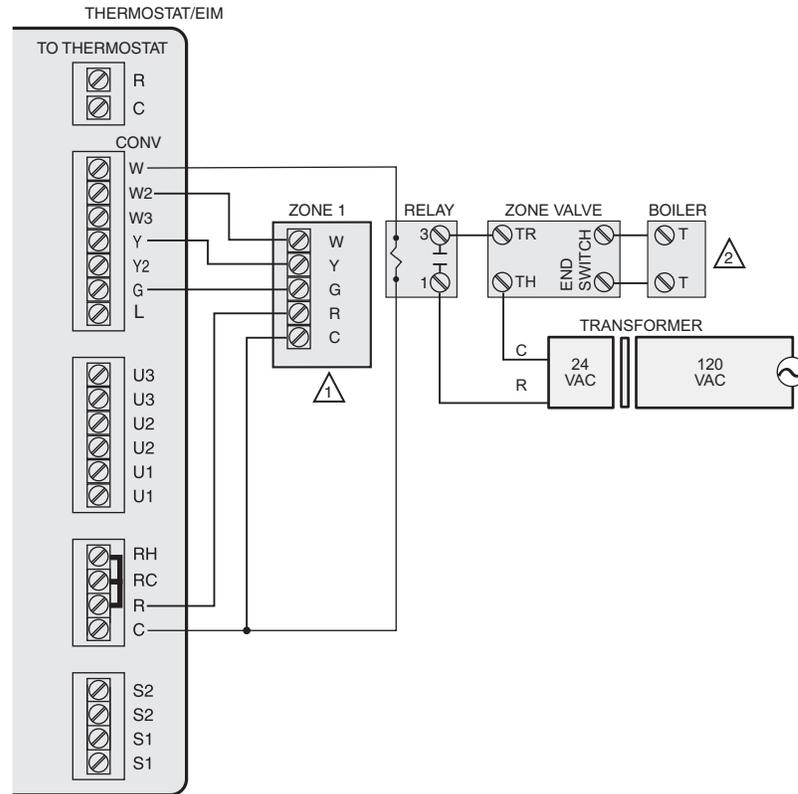
1 HZ311, HZ322, OR HZ432 ZONE PANELS COULD BE USED TO CONTROL A FORCED AIR FURNACE ZONED WITH DAMPERS.

2 THE BOILER IS CONTROLLING THE CIRCULATOR PUMP IN THIS DIAGRAM.

M34526

Fig. 340. Hot water radiant heat with backup forced air heat. Zoned with forced air zone panel and zone valves.
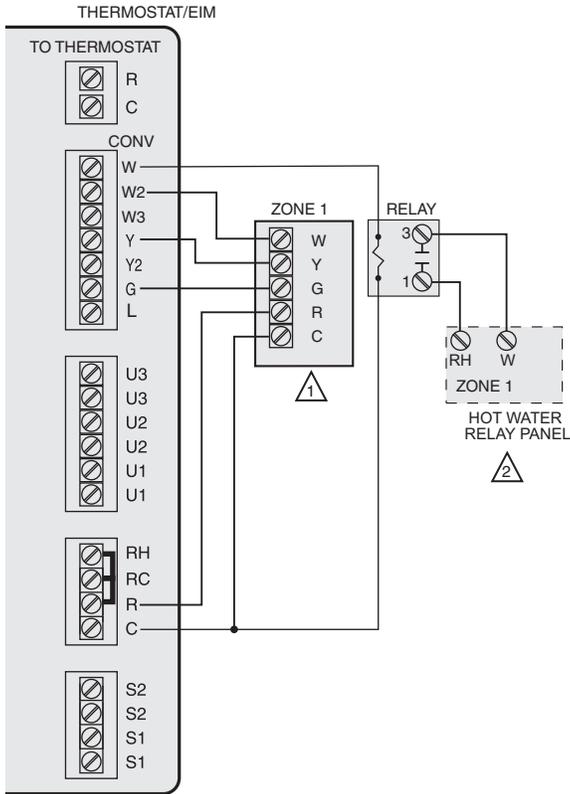
<table>
<tr><td>⚠1</td><td>HZ311, HZ322, OR HZ432 ZONE PANELS COULD BE USED TO CONTROL A FORCED AIR FURNACE ZONED WITH DAMPERS.</td></tr>
<tr><td>⚠2</td><td>AN AQ2000 SERIES HOT WATER ZONE PANEL OR OTHER RELAY-BASED HOT WATER ZONE 3 PANEL COULD BE USED.</td></tr>
</table>

M31485

Fig. 341. Hot water radiant heat with backup forced air heat. Zoned with forced air zone panel and hot water panel.
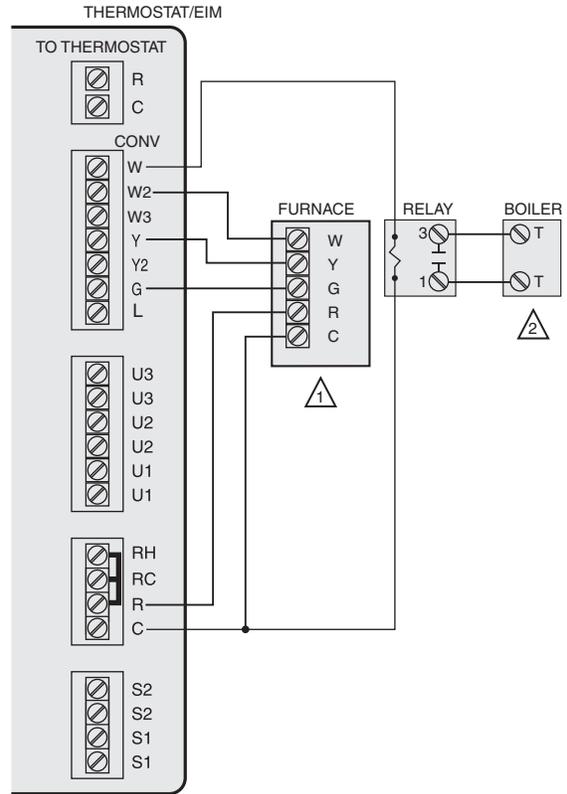
<table>
<tr><td>⚠1</td><td>CONFIGURE THE THERMOSTAT TO ENERGIZE THE FAN WITH A CALL FOR HEAT.</td></tr>
<tr><td>⚠2</td><td>THE BOILER IS CONTROLLING THE CIRCULATOR PUMP IN THIS DIAGRAM.</td></tr>
</table>

M31486

Fig. 342. Hot water fan coil with forced air furnace backup heat.
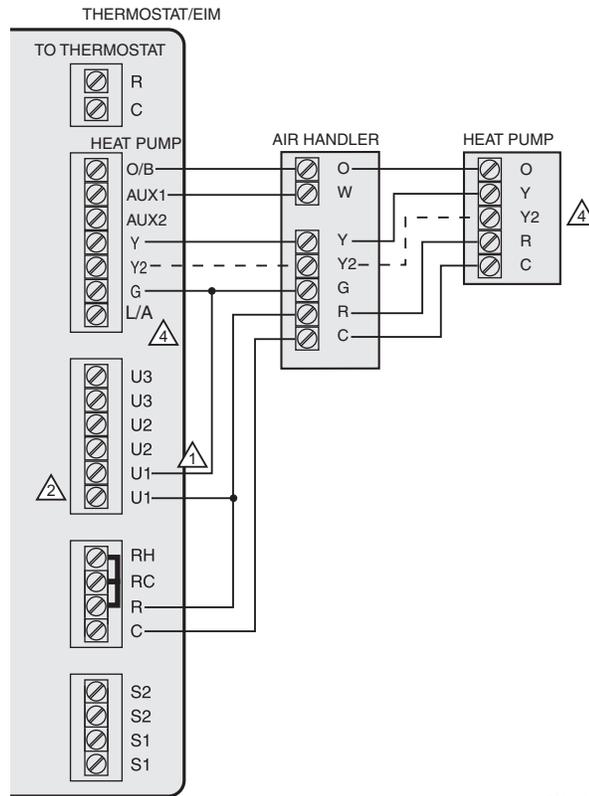
M31487

Fig. 343. Wood stove with heat pump and backup electric strips. (For applications in which the thermostat only needs to run the blower fan when stove is hot).

1 Select Geothermal Radiant Heat at ISU 2010. Connect Fan to U1, U2, or U3 as shown in the wiring diagram.

2 "U" terminals are normally open dry contacts when set up for geothermal radiant heat.

3 L/A terminal sends continuous output when thermostat is set to EM HEAT mode except when set up for Economizer or TOD. See "Economizer Module Wiring Diagrams" beginning on page 154.

4 Y2 used with heat pumps that have 2 compressor stages.

NOTE: In Fig. 343, the thermostat will energize only the fan with a call for stage 1 heat. If the wood stove is hot, heat comes from the fan coil. If the wood stove is cold, only the fan runs. The thermostat will upstage to the heat pump and backup heat as needed to maintain the temperature.

Wiring IAQ Equipment or a Heat/Cool Stage to the Universal Terminals

To Equipment Interface Module

"U" terminals can be used for humidification, dehumidification or ventilation.
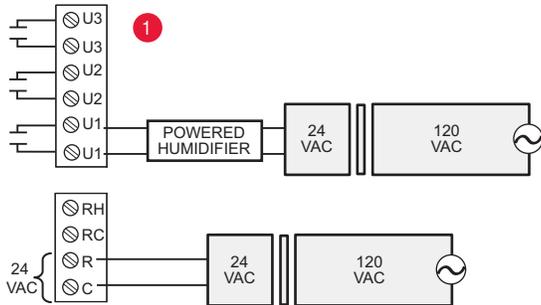
Fig. 344. Wiring a powered humidifier.
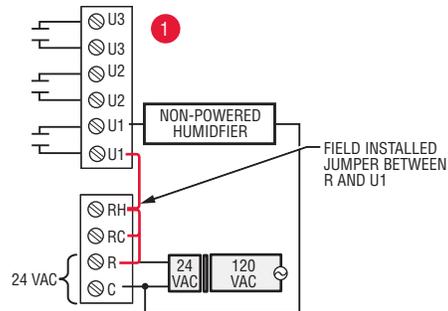
Fig. 347. Wiring a non-powered humidifier.
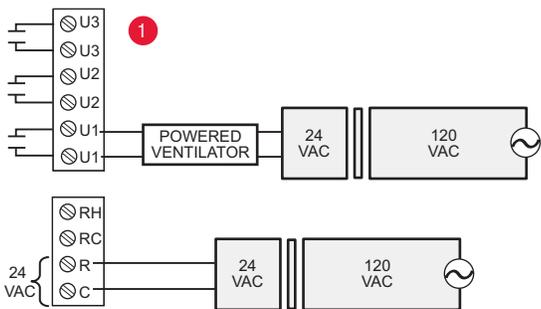
Fig. 345. Wiring a powered ventilator.
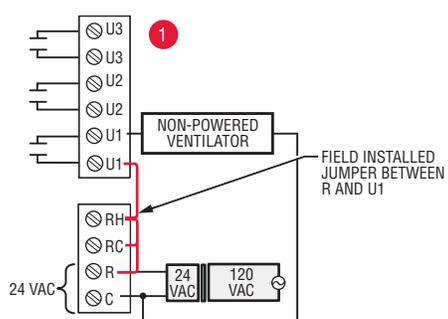
Fig. 348. Wiring a non-powered ventilator.
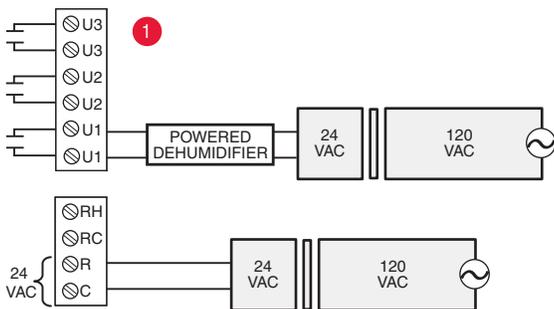
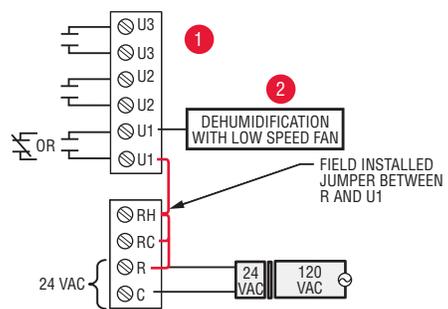**Fig. 346. Wiring a powered dehumidifier (whole house dehumidifer).**

Fig. 349. Wiring a low speed fan for dehumidification.

1 Any combination of universal relays (U1, U2, U3) can be used. They are set in the thermostat installer setup.
2 Wire the universal EIM relay to the low speed fan for dehumidification control at the equipment. The EIM relay can be set to be normally open or normally closed in the thermostat installer setup.

Normally open, dry contacts

Normally closed, dry contacts
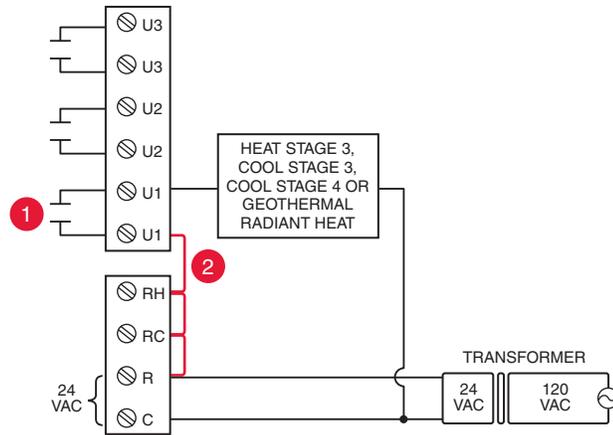
Fig. 350. Connecting a stage of heating or cooling to a universal relay (U1, U2, U3).

1 U1, U2, and U3 are normally open dry contacts when set up for a stage of heating or cooling.
2 You must install a field jumper if the stage of heating or cooling is powered by the system transformer. Do NOT install a field jumper if the stage of heating has its own transformer.

Economizer Module Wiring Diagrams

Typical wiring of a W7220 Economizer Module for a heat pump system, using a Prestige THX9321 thermostat or Equipment Interface Module.
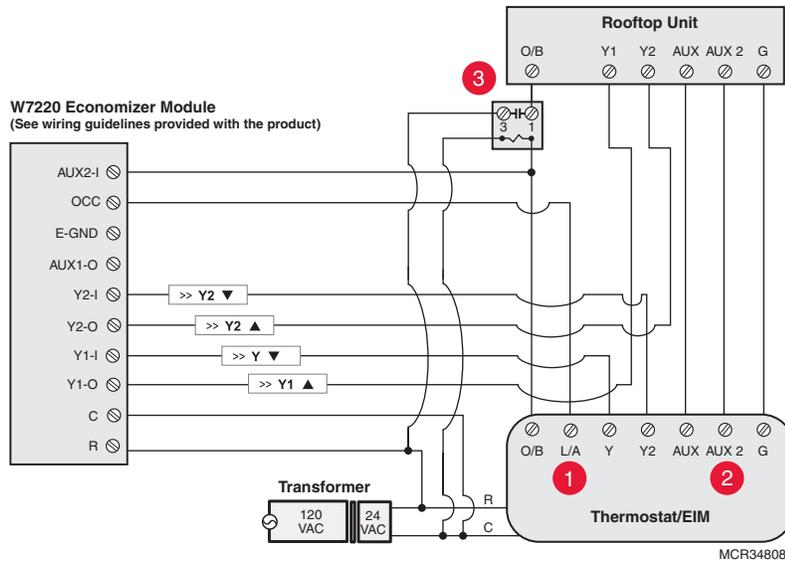
Fig. 351. Wiring a W7220 Economizer Module for a heat pump system.

Typical wiring of a W7220 Economizer Module for a conventional system, using a Prestige THX9321 thermostat or Equipment Interface Module.
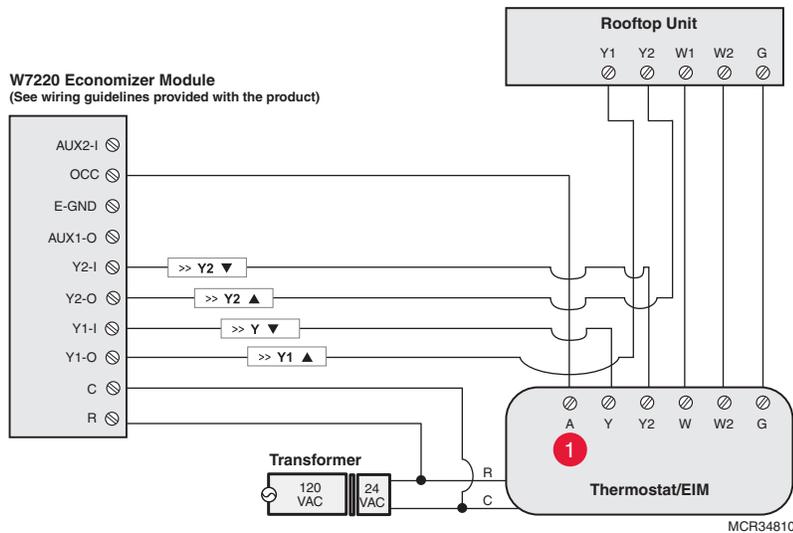
Fig. 352. Wiring a W7220 Economizer Module for a conventional system.

1 "A" or "L/A" terminal must be configured for Economizer in the installer setup (ISU 2220). These terminals are powered by the cooling transformer (Rc terminal).

2 Terminal AUX 2 is present only on the Equipment Interface Module.

3 Connect the changeover valve from the roof top unit to the normally open contacts of an isolation relay to prevent feedback into the economizer module during defrost. If this is not done when the system goes into defrost, it will change the economizer into cooling mode due to the feedback and open the outside damper while in heating mode.

Typical wiring of a W7213/W7214 Economizer Module for a heat pump system, using a Prestige THX9321 thermostat or Equipment Interface Module.
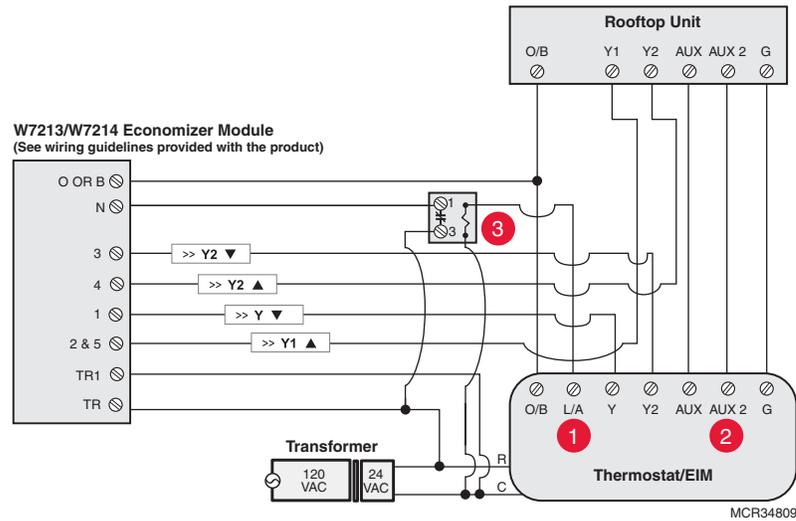

Fig. 353. Wiring a W7213/W7214 Economizer Module for a heat pump system.

Typical wiring of a W7212 Economizer Module for a conventional heating system, using a Prestige THX9321 thermostat or Equipment Interface Module.
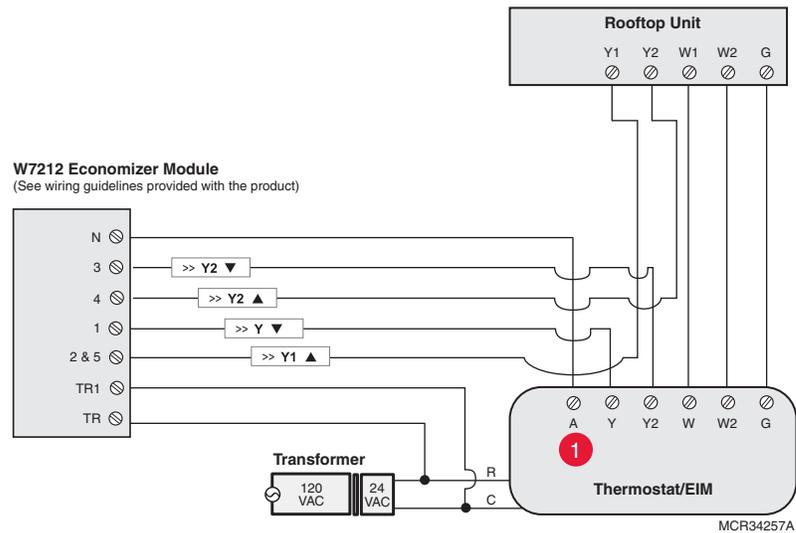

Fig. 354. Wiring a W7212 Economizer Module for a conventional heating system.

1 "A" or "L/A" terminal must be configured for Economizer in the installer setup (ISU 2220). These terminals are powered by the cooling transformer (Rc terminal).

2 Terminal AUX 2 is present only on the Equipment Interface Module.

3 Add a normally closed relay as shown to make the W7213/W7214 Economizer Module compatible with the thermostat. The thermostat energizes the "A" or "L/A" terminal during Occupied Periods.

Typical wiring of a W7220 Jade Economizer Module to the Prestige THX9421 thermostat and Equipment Interface Module, configured for economizer control with custom alert.
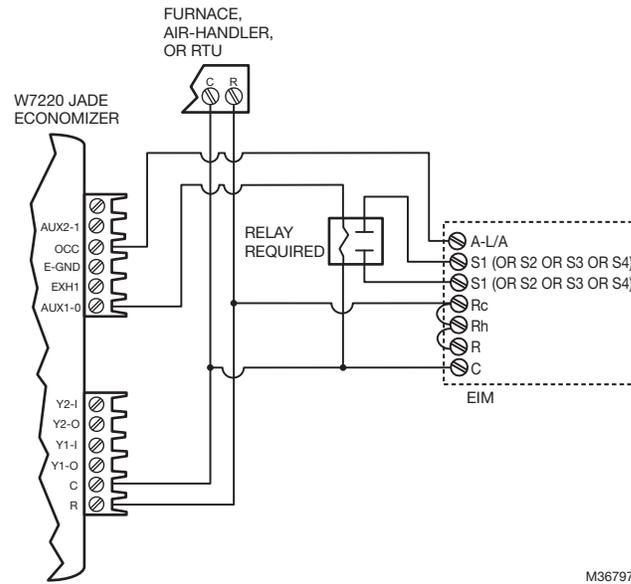

Fig. 355. Economizer control with custom alert.

Wire a relay to one of the four sets of S terminals (as shown). Configure the Prestige to control the economizer (see ISU setting 2220) and use a custom alert (see ISU settings 6170—6200).

Wiring C7089U1006 Outdoor Sensor

⚠ **CAUTION**

Electrical Interference (Noise) Hazard.
Can cause erratic system operation.
Keep wiring at least one foot away from large inductive loads such as motors, line starters, lighting ballasts and large power distribution panels.
Use shielded cable to reduce interference when rerouting is not possible.

IMPORTANT

Erratic temperature readings from a sensor can occur as a result of any of the wiring practices described below. Avoid these practices to assure correct operation. Use shielded cable to reduce interference if rerouting sensor wiring is not possible.

— *Be sure wires have a cable separate from the thermostat cable.*
— *Do not route temperature sensor wiring with building power wiring, next to control contactors or near light dimming circuits, electric motors or welding equipment.*
— *Avoid poor wiring connections.*
— *Avoid intermittent or missing building earth ground.*

⚠ **CAUTION**

Electrical Shock Hazard.
Can cause electrical shock or equipment damage.
Disconnect power supply before connecting wiring.

Wiring must comply with applicable codes, ordinances and regulations:

1. Wire C7089U1006 Outdoor Sensor to S1, S2, S3, or S4 terminals on the EIM. If leadwire provided is not long enough (60 in.), run a cable to a hole at C7089U1006 location.
   a. Using color-coded, 18-gauge thermostat wire is recommended. For example of general wiring of C7089U1006, see Fig. 356.
   b. Pigtail wiring can be used.
2. Mount C7089U1006 in its mounting clip.
3. Plug wiring hole using nonhardening caulk or putty.
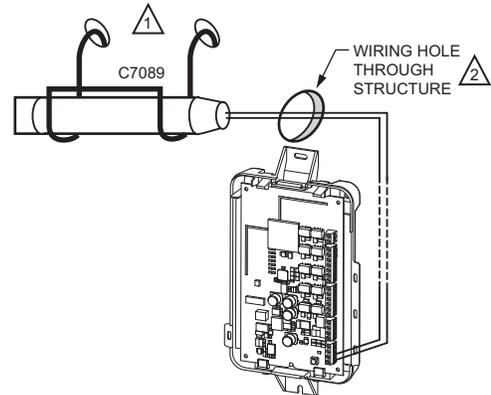
⚠1 USE APPROPRIATE MOUNTING MEANS FOR THE TYPE OF STRUCTURE.

⚠2 PLUG WIRING HOLE WITH NON-HARDENING CAULK OR PUTTY.

M31470

Fig. 356. Wire C7089U1006 Outdoor Sensor to the EIM.

Wiring guide — Wired Indoor Sensors

Use the S1, S2, S3, or S4 terminals for wired sensors.

⚠ **CAUTION**

Electrical Interference (Noise) Hazard.
Can cause erratic system operation.
Keep wiring at least one foot away from large inductive loads such as motors, line starters, lighting ballasts and large power distribution panels.
Use shielded cable to reduce interference when rerouting is not possible.

IMPORTANT

> *Erratic temperature readings from a sensor can occur as a result of any of the wiring practices described below. Avoid these practices to assure correct operation. Use shielded cable to reduce interference if rerouting sensor wiring is not possible.*

— *Be sure wires have a cable separate from the thermostat cable.*
— *Do not route temperature sensor wiring with building power wiring, next to control contactors or near light dimming circuits, electric motors or welding equipment.*
— *Avoid poor wiring connections.*
— *Avoid intermittent or missing building earth ground.*

⚠ **CAUTION**

Electrical Shock Hazard.
Can cause electrical shock or equipment damage.
Disconnect power supply before connecting wiring.

Wiring 4 C7189U1005 sensors (10k ohm) for temperature averaging network. Select 10K in the Installer Setup (ISU 5030) when using C7189U1005 sensor(s).
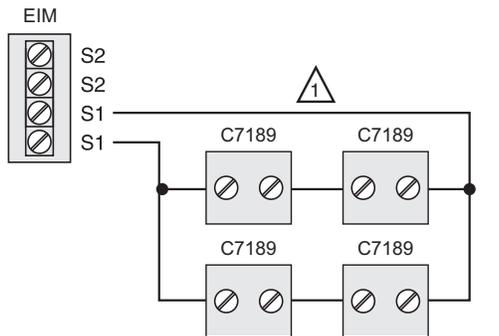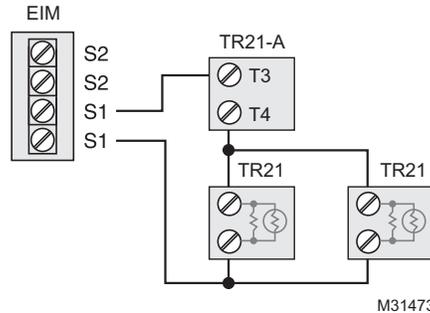

1 THE NUMBER OF C7189U SENSORS MUST BE A SQUARE NUMBER (1, 4, 9, 16, ETC.)

M31472

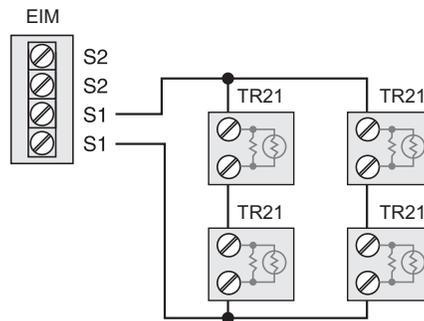**Fig. 357. Wiring 4 C7189U sensors.**

Wiring 2 TR21 sensors (20k ohm) and 1 TR21–A sensor (10k ohm) for temperature averaging network. Select 20K in the Installer Setup (ISU 5030) when using 2 TR21 sensors and 1 TR21–A sensor.

M31473

Fig. 358. Wiring 2 TR21 sensors and 1 TR21–A sensor.
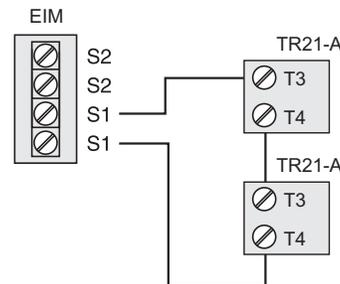
Wiring 4 TR21 sensors (20k ohm). Select 20K in the Installer Setup (ISU 5030) when using TR21 sensor(s).

M31474

Fig. 359. Wiring 4 TR21 sensors.

Wiring 2 TR21–A sensors (10k ohm) for temperature averaging network. Select 20K in the Installer Setup (ISU 5030) when using 2 TR21–A sensors in series. Note: The TR21–A sensor must be used in combination with TR21 or TR21–A sensor.
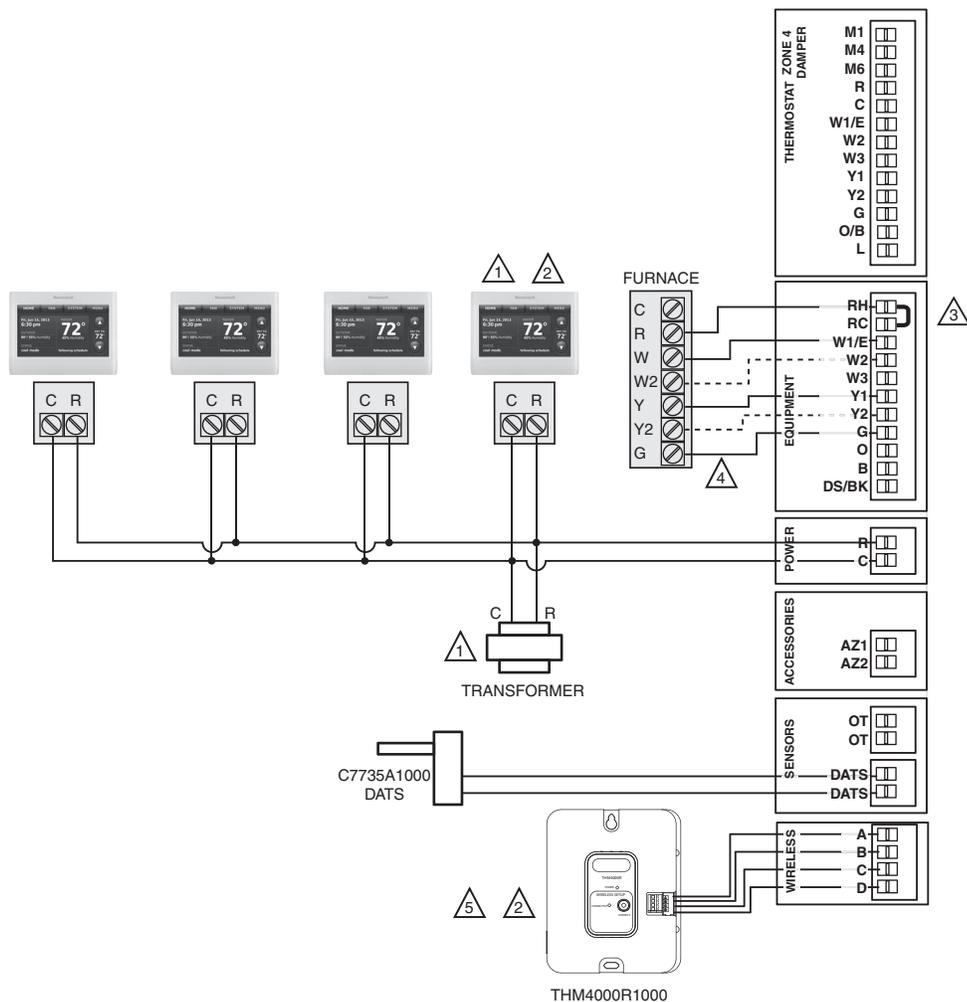

M31475

Fig. 360. Wiring 2 TR21–A sensors.

ZONING

The following diagrams show the wiring for zoning with different IAQ equipment.

1. PRESTIGE THERMOSTATS CAN BE POWERED BY ANY TRANSFORMER. IN THIS EXAMPLE THEY ARE POWERED BY THE SAME TRANSFORMER THAT POWERS THE HZ432.

2. THERE CAN BE UP TO 4 PRESTIGE THERMOSTATS USED WITH A SINGLE THM4000R WIRELESS ADAPTER AND HZ432 ZONE PANEL. THE THM4000R CANNOT BE USED IF THERE ARE MORE THAN 4 ZONES IN THE SYSTEM.

3. RH/RC JUMPER INSTALLED WHEN SINGLE HEAT/COOL TRANSFORMER IS USED.

4. DOTTED LINES APPLY ONLY TO MULTI-STAGE EQUIPMENT. SEE HZ432 INSTALLATION INSTRUCTIONS FOR HEAT PUMP WIRING.

5. A THM4000R CANNOT BE USED WITH THE PRESTIGE THERMOSTAT IF THE THERMOSTAT IS CONTROLLING HUMIDIFICATION, DEHUMIDIFICATION, OR VENTILATION.

MCR34669

Fig. 361. Prestige IAQ thermostats with an HZ432 zone panel and no IAQ control.

Zoning and Humidification
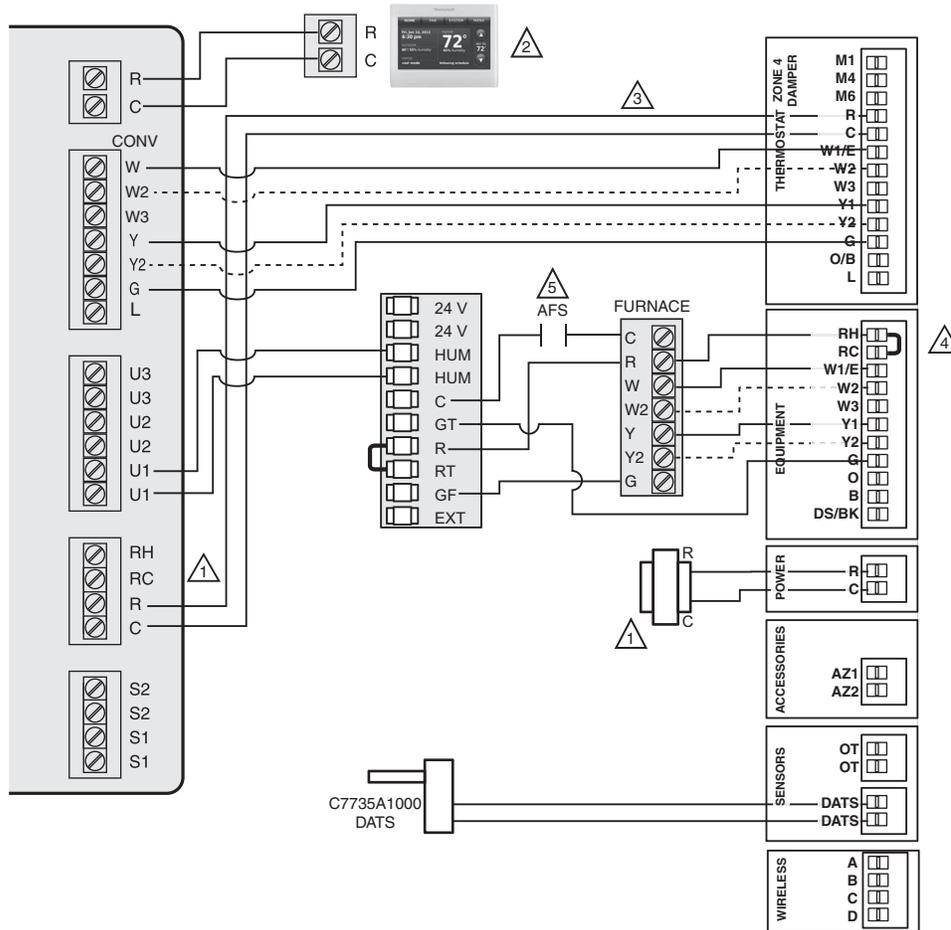
1. A DEDICATED TRANSFORMER SHOULD POWER THE HZ432. IF A DIFFERENT TRANSFORMER IS USED TO POWER THE EIM, THE JUMPER FROM R TO RH NEEDS TO BE REMOVED AND THE RH AND RC FROM EIM GETS WIRED TO R ON THE ZONE THAT THE EIM IS WIRED TO.

2. THE PRESTIGE THERMOSTAT CAN BE POWERED FROM ANY TRANSFORMER. IN THIS EXAMPLE IT IS WIRED BACK TO THE EIM.

3. DOTTED LINES ONLY APPLY TO MULTI-STAGE EQUIPMENT. SEE HZ432 INSTALLATION INSTRUCTIONS FOR HEAT PUMP WIRING.

4. RH/RC JUMPER INSTALLED WHEN SINGLE HEAT/COOL TRANSFORMER IS USED.

5. TO SIMPLIFY THE DIAGRAM, THE PRESTIGE IAQ IS CONTROLLING ZONE 4 BECAUSE IT IS LOCATED ON THE SAME SIDE OF THE EQUIPMENT WIRING ON THE PANEL. THE PRESTIGE IAQ COULD BE WIRED TO ANY ZONE ON THE HZ432 AND IS MOST COMMONLY WIRED TO ZONE 1.
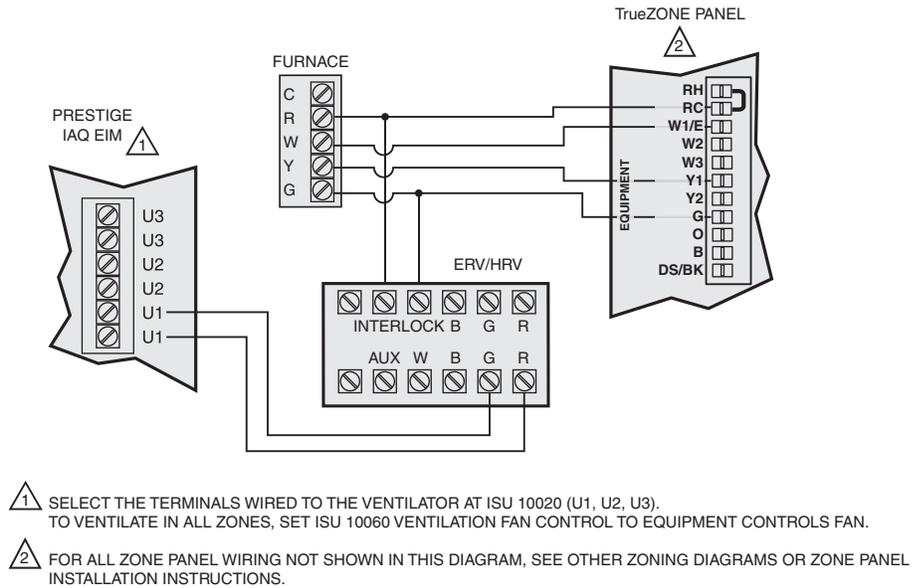
MCR34670

Fig. 362. Prestige IAQ controlling one zone with an HZ432 zone panel and a TrueSTEAM humidifier.

Setting up Humidification Control on Prestige or Prestige IAQ

Select the terminals wired to the humidifier at ISU 8030 (U1, U2, U3). In Fig. 362, the humidifier is wired to U1. To humidify in all zones, set ISU 8070 Humidification Control to Humidify on Demand: Humidifier Controls Fan. Call Honeywell zoning at 1-800-828-8367 if you need assistance with the zoning controls.
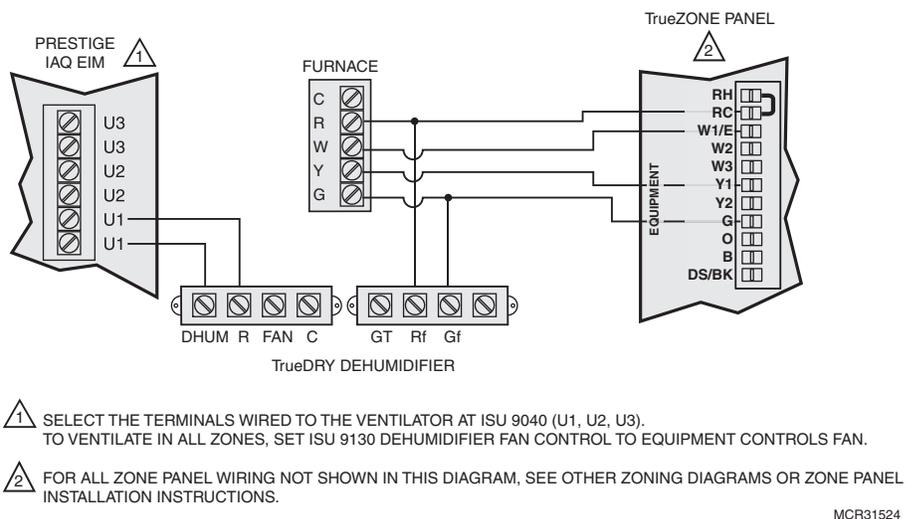
Zoning and Ventilation

Fig. 363. Ventilation with zoning.

Setting up Ventilation Control on Prestige or Prestige IAQ

Select the terminals wired to the ventilator at ISU 10020 (U1, U2, U3). In Fig. 363, the ventilator is wired to U1. To ventilate in all zones, set ISU 10060 Ventilation Fan Control to Equipment Controls Fan.

TrueDRY dehumidifier with Zoning

Fig. 364. Prestige IAQ with an HZ432 zone panel and a TrueDRY dehumidifier.

Setting up Dehumidification Control on Prestige or Prestige IAQ

Select the terminals wired to the dehumidifier at ISU 9040 (U1, U2, U3). In Fig. 364, the dehumidifier is wired to U1. To dehumidify in all zones, set ISU 9130 Dehumidifier Fan Control to Equipment Controls Fan.

Zoning FAQs

Q: How does the Prestige or Prestige IAQ thermostat control a humidifier in zoned systems?
A: If ISU 8070 Humidification Control is set to Humidify on Demand: Thermostat Controls Fan, then the zone panel will close the dampers for the other zones with a call for humidification.
If ISU 8070 Humidification Control is set to Humidify on Demand: Humidifier Controls Fan, then all dampers will be open with a call for humidification (unless another zone is calling for heat, cool or fan at that time).
See Fig. 362.

Q: How does the Prestige or Prestige IAQ thermostat control a ventilator in zoned systems?
A: If ISU 10060 Ventilation Fan Control is set to Thermostat Controls Fan, then the zone panel will close the dampers for the other zones with a call for ventilation.
If ISU 10060 Ventilation Fan Control is set to Equipment Controls Fan, then all dampers will be open with a call for ventilation (unless another zone is calling for heat, cool or fan at that time).
See Fig. 363.

Q: How does the Prestige or Prestige IAQ thermostat control a dehumidifier in zoned systems?
A: If ISU 9130 Dehumidifier Fan Control is set to Thermostat Controls Fan, then the zone panel will close the dampers for the other zones with a call for dehumidification.
If ISU 9130 Dehumidifier Fan Control is set to Equipment Controls Fan, then all dampers will be open with a call for dehumidification (unless another zone is calling for heat, cool or fan at that time).
See Fig. 364.

Q: Will the 2-wire Prestige IAQ thermostat work with a zone panel?
A: It depends on the zone panel:
  • **HZ322 or HZ432 (without an add-a-zone):** If you have an HZ322 or HZ432 on a 2-4 zone system and you are not going to control a humidifier, dehumidifier, or ventilator with the thermostat, you can use a THM4000R1000 wireless adapter with the zone panel and connect the 2-wire Prestige IAQ thermostat as one of the zones. A single THM4000R1000 wireless adapter allows you to connect up to three 2-wire Prestige IAQ thermostats or wireless FocusPRO thermostats with an HZ322 or up to four 2-wire Prestige IAQ thermostats or wireless FocusPRO thermostats with an HZ432.
  • **HZ432 (with a TAZ-4 add-a-zone):** You cannot use a wireless adapter when a TAZ-4 is used. Each 2-wire Prestige IAQ thermostat used would need a separate THM5421R Equipment Interface Module. The equipment interface module would wire to the zone it is controlling on the HZ432 or TAZ-4.
  • **Zone panel with no master or slave:** As long as all zones on the zone panel are wired the same and they use typical terminals with an R and C plus Y, G, etc, the 2-wire Prestige IAQ thermostat should work. Each 2-wire Prestige IAQ thermostat used would need a separate THM5421R Equipment Interface Module. The equipment interface module would wire to the zone it is controlling on the zone panel.
  • **Master zone:** A master uses separate O and B wires. The 2-wire Prestige IAQ thermostat cannot be used as a master thermostat.

Q: Can I use the remote indoor sensors with the Prestige IAQ if I have zoning?
A: It depends. The Prestige or Prestige IAQ can only control 1 zone, even if it is used with multiple sensors. The Prestige or Prestige IAQ cannot be used with a remote sensor if it is used with a THM4000R adapter. The 2-wire Prestige IAQ thermostat can be used with a remote sensor if it is used with a THM5421R Equipment Interface Module or if the Prestige is wired directly to the panel.

Q: Can I set up Delta T Diagnostics on a zoned system?
A: No. Delta T Diagnostics control uses supply and return sensors to measure the difference between the supply and return temperature and verify the system is operating correctly. This feature can not be used if the thermostat is set up for zoning because Delta T is affected by the position of the dampers and you may have one zone running heat while another zone is calling for cool (and vice versa).

Q: Can I use a telephone access module with the 2-wire Prestige IAQ thermostat?
A: No. The telephone access module only works with the TH9421C or TH5320C communicating thermostats and the EIM or zone panel used with those controls. See the Gateway section for information on using Prestige IAQ with a THM6000R Gateway for Internet access.

TROUBLESHOOTING

Table 17. Troubleshooting.

Symptom	Action
Screen is blank	• Check circuit breaker and reset if necessary. • Make sure power switch at heating & cooling system is on. • Make sure furnace door is closed securely.
Screen is difficult to read	• To change the screen brightness or color, see backlight options in the Preferences menu (see page 21). • At 2 am each day, thermostats change screen colors for an hour, to prevent burn-in. Touch the screen at any time to restore pre-set screen colors.
Heating or cooling system does not respond	• Press SYSTEM to set system to Heat. Make sure the temperature is set higher than the Inside temperature. • Press SYSTEM to set system to Cool. Make sure the temperature is set lower than the Inside temperature. • Check circuit breaker and reset if necessary. • Make sure power switch at heating & cooling system is on. • Make sure furnace door is closed securely. • If "Waiting For Equipment" is displayed, the compressor protection timer is on. Wait 5 minutes for the system to restart safely, without damaging the compressor.

REGULATORY INFORMATION

FCC Compliance Statement (Part 15.19) (USA only)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Warning (Part 15.21) (USA only)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Interference Statement (Part 15.105 (b)) (USA only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

Equipment interface module, thermostats and outdoor sensor

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

Portable Comfort Control

This portable transmitter with its antenna complies with FCC and Industry Canada RF exposure limits for general population/uncontrolled exposure. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Section 7.1.2 of RSS–GEN

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

Section 7.1.3 of RSS–GEN

Operation is subject to the following two conditions:
1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device

Home and Building Technologies

In the U.S.:

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