



Model 8910W Touch Screen Wi-Fi Thermostat with Integrated Indoor Air Quality Solutions

INCLUDES WIRED OUTDOOR TEMPERATURE SENSOR

READ AND SAVE THESE INSTRUCTIONS

Safety & Installation Instructions



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WI-FI SETUP

For detailed instructions for connecting the thermostat to a Wi-Fi network and registering it to an Aprilaire account, refer to the Wi-Fi Quick Start Guide included in the box.

INSTALLATION

THERMOSTAT INSTALLATION LOCATION RECOMMENDATIONS

Thermostat should be mounted:

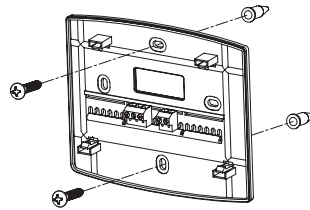
- On an interior wall, in a frequently occupied space.
- Approximately 5' above floor.
- At least 18" from outside wall.
- Thermostat can be mounted to a vertical junction box.

Do not mount thermostat:

- Behind doors, in corners or other dead air spaces.
- In direct sunlight, near lighting fixtures, or other appliances that give off heat.
- On an outside or unconditioned area wall.
- In the flow of a supply register, in stairwells, or near outside doors.
- On a wall with concealed pipes or ductwork.

THERMOSTAT MOUNTING

1. Remove the rear mounting plate from the thermostat.
2. Pull wires through the opening on the rear mounting plate.
3. Position and level the mounting plate of the thermostat on wall and mark the hole locations with a pencil.
4. Drill 1/4" holes and insert supplied anchors (drywall only).
5. Place mounting plate over anchors, insert and tighten screws.
6. Seal wire entry holes to prevent drafts affecting temperature readings.



EQUIPMENT CONTROL MODULE INSTALLATION LOCATION RECOMMENDATIONS

Note: Installer must touch a grounded metal object before handling the Equipment Control Module to avoid potential damage due to electrical discharge.

Equipment control module should be mounted:

- In a location where the temperature will not exceed 158°F (70°C) or drop below 32°F (0°C).

Do not mount equipment control module:

- On foundation walls or on the HVAC equipment or ductwork. These locations can cause moisture to condense on the equipment control module.

EQUIPMENT CONTROL MODULE MOUNTING

The Equipment Control Module has the following features to simplify mounting and wiring and provide for a clean and neat installation.

- Six (6) mounting holes. One on each corner and two centered top and bottom. Any combination of these holes may be utilized. Mount the Equipment Control Module using 2 to 4 #8 screws appropriate for the mounting surface substrate. (See **Figure 2**.)
- Wires can be routed through the top, bottom, sides or back.
- Nylon wire ties can be used to secure wires in 10 places.

Installation Steps

1. Select mounting location.
2. Pull from bottom to remove front cover. (See **Figure 1**.)
3. Mount base using 2 to 4 #8 screws (field supplied).



Figure 1

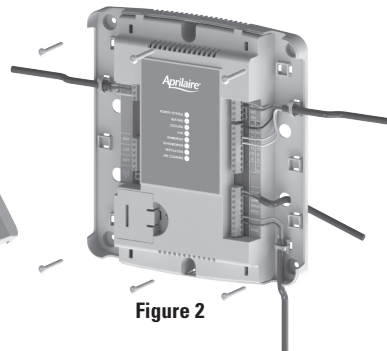


Figure 2

INSTALLATION

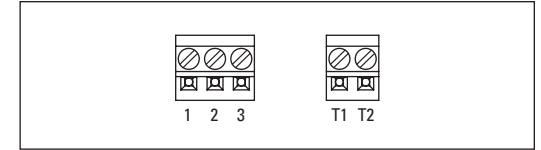
THERMOSTAT WIRING

Wire specifications:

18-24 gauge thermostat wire

Installation notes:

- Ensure power at the HVAC equipment is off.
- Loosen screw terminals, insert stripped wire and re-tighten.
- Push the excess wire back into the opening and plug the wall opening to prevent drafts.



- 1** – Connection to terminal 1 at equipment control module
- 2** – Connection to terminal 2 at equipment control module
- 3** – Connection to terminal 3 at equipment control module
- T1 & T2** – Remote temperature sensor (optional)

REMOTE TEMPERATURE SENSOR (OPTIONAL)

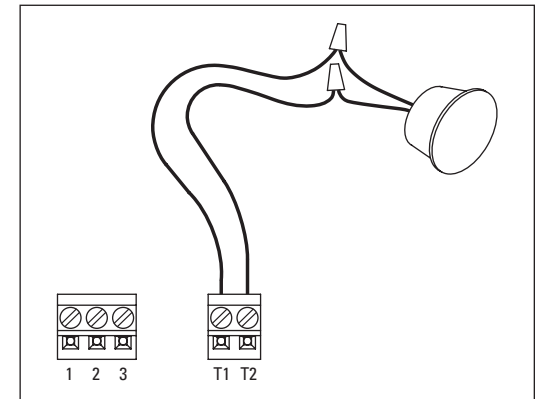
A remote temperature sensor can be used for control if the thermostat is to be mounted in a concealed location or a remote sensor can be averaged with the thermostat sensor to control a large space. An 8051 flush mount or 8053 surface mount remote temperature sensor can be attached to the T1 and T2 terminals and mounted in a recommended area. The remote sensor must be enabled in the installer set-up menu, and once enabled will override or be averaged with the thermostat's internal temperature sensor, based on the setting.

Remote temperature sensor should be mounted:

- On an interior wall, in a frequently occupied space.
- Approximately 5' above floor.
- At least 18" from outside wall.
- Using less than 300' of wire.

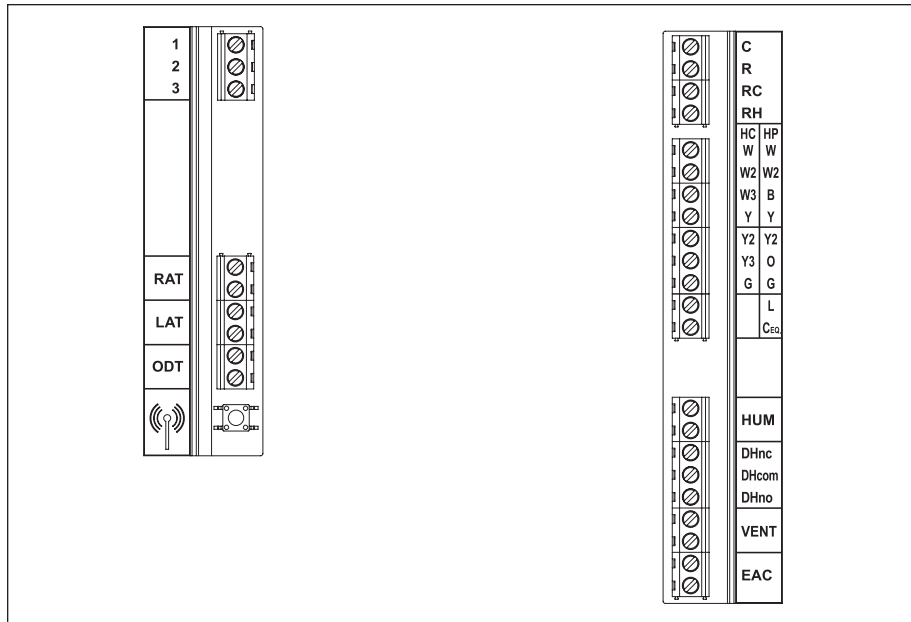
Do not mount remote sensor:

- Behind doors, in corners or other dead air spaces.
- In direct sunlight, near lighting fixtures, or other appliances that give off heat.
- On an outside or unconditioned area wall.
- In the flow of a supply register, in stairwells, or near outside doors.
- On a wall with concealed pipes or ductwork.
- Near 120 VAC lines.



INSTALLATION

EQUIPMENT CONTROL MODULE WIRING



Wire specifications:

18-24 gauge thermostat wire

Installation notes:

- Ensure power at the HVAC equipment is off.
- Loosen screw terminals, insert stripped wire and re-tighten.
- Use zip tie to route wiring through the wiring channels.

- 1** – Connection to terminal 1 at thermostat
- 2** – Connection to terminal 2 at thermostat
- 3** – Connection to terminal 3 at thermostat

- RAT** – Return air temperature sensor (optional)
- LAT** – Leaving air temperature sensor (optional)
- ODT** – Outdoor temperature sensor (optional)

- C** – 24VAC common
- R** – 24VAC
- RC** – 24VAC cooling
- RH** – 24VAC heating
- W** – First stage heat (conventional)/auxiliary (heat pump)
- W2** – Second stage heat (conventional)/ auxiliary (heat pump)
- W3/B** – Third stage heat (conventional)/reversing valve (heat pump)
- Y** – First stage cooling (conventional)/first stage compressor (heat pump)
- Y2** – Second stage cooling (conventional)/second stage compressor (heat pump).
- Y3/O** – Third stage cooling (conventional)/reversing valve (heat pump)
- G** – Fan
- L** – System fault indicator (heat pump only) (optional)
- Ceo** – 24VAC common from heat pump for system fault indicator (optional)
- HUM** – Humidifier
- DHno & DHcom** – Normally open dehumidifier control
- DHnc & DHcom** – Normally closed dehumidifier control
- VENT** – Ventilation
- EAC** – Electronic Air Cleaner

INSTALLATION

OUTDOOR TEMPERATURE SENSOR (INCLUDED)

Outdoor temperature can be measured by installing an 8052 sensor to the ODT terminals and enabling the outdoor sensor in the installer set-up menu. When an outdoor sensor is installed, the features below will be enabled.

In heat pump mode the outdoor temperature sensor can be used to efficiently utilize an air source heat pump:

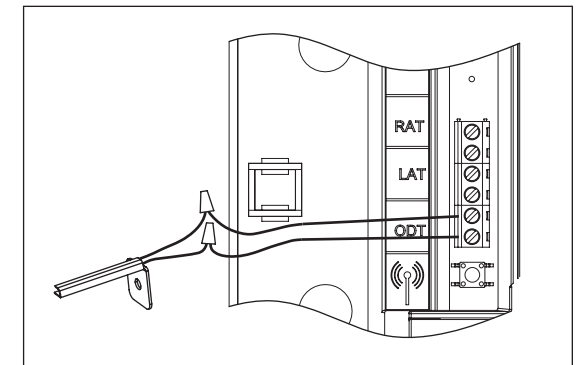
- When the outdoor temperature is less than the Low Balance Point, the heat pump will be locked out and only auxiliary heating will be used to provide heating.
- When the outdoor temperature is higher than the High Balance Point, the auxiliary heating will be locked out and only the heat pump will be used to provide heating.

Indoor Air Quality functions can use the outdoor temperature sensor to:

- Control humidification setpoint based on outdoor temperature to prevent condensation
- Lock out humidification for temperatures over 60°F or below -30°F.
- Lock out ventilation based on high and/or low outdoor temperatures.
- Display outdoor temperature on thermostat.

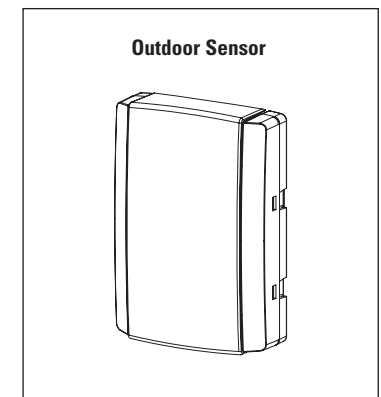
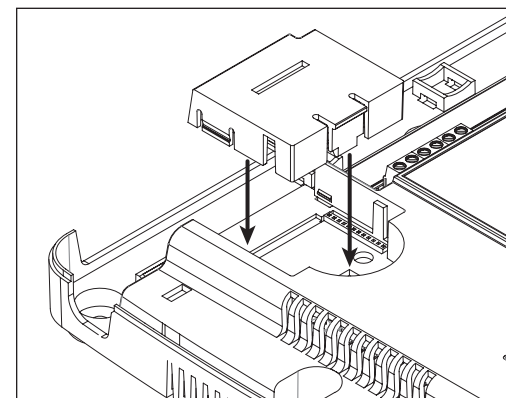
Outdoor temperature sensor should be mounted:

- On side of building out of direct sunlight (north side recommended).
- Above snow line.
- At least 3' away from exhaust vents and condensing lines.
- Using less than 300' of wire.
- Do not route wires along 120 VAC lines.



OPTIONAL WIRELESS OUTDOOR TEMPERATURE AND HUMIDITY SENSOR

For installations where it is difficult to wire the included 8052 outdoor temperature sensor, a Model 8056 wireless outdoor sensor can be used. The Model 8056 module has two radio units, one that is placed on the equipment control module as shown below, and a second radio that is placed outside. See the Model 8056 Installation Instructions for detailed directions regarding installation.

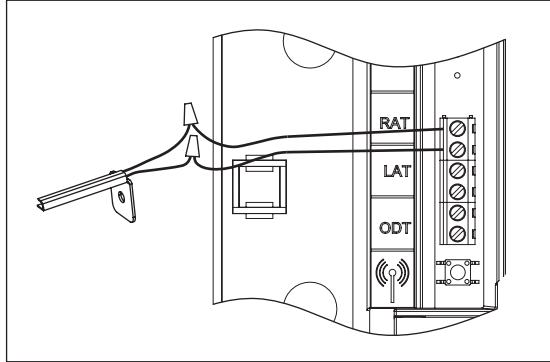


INSTALLATION

RETURN AIR TEMPERATURE SENSOR (OPTIONAL)

Return air temperature can be measured by attaching an 8052 sensor to the RAT terminals. The return sensor must be enabled in the installer set-up menu. The return air temperature sensor provides protection in the event that the equipment control module loses connection with the thermostat. In the event that the thermostat connection is lost, the equipment control module will use the return air temperature sensor to maintain a temperature greater than 40°F and less than 100°F.

1. Locate the Aprilaire Model 8052 sensor in the return trunk.
2. Mount the sensor according to the installation instructions provided with the sensor.
3. Wire the sensor to the equipment control module RAT terminals.



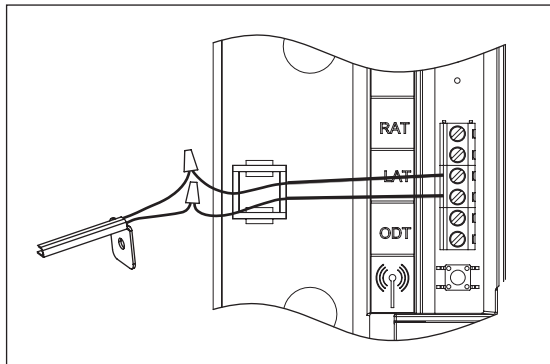
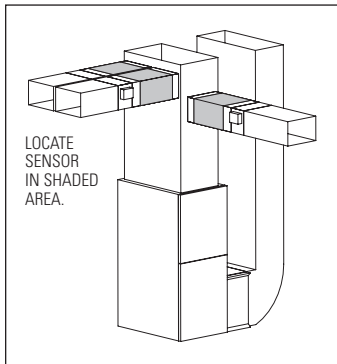
LEAVING AIR TEMPERATURE SENSOR (OPTIONAL)

Leaving air temperature can be measured by attaching an 8052 sensor to the LAT terminals. The leaving air temperature sensor measurement is displayed during the installer test for diagnostic purposes.

IMPORTANT

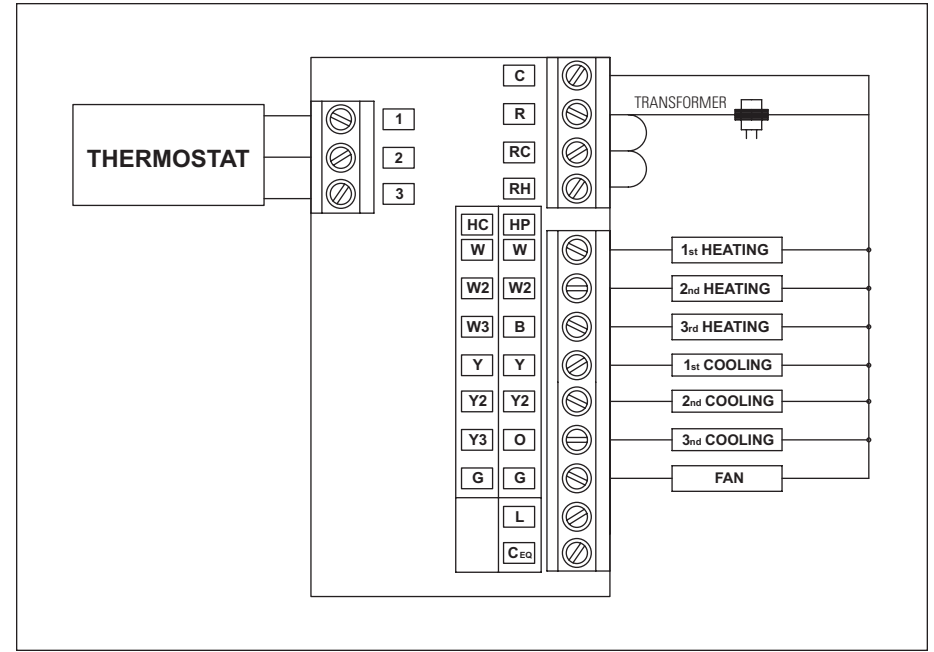
Do not mount the sensor in direct line-of-sight of the heat exchanger, cooling coils, or UV lights as this may cause the sensor to report false temperature readings.

1. Locate the Aprilaire Model 8052 sensor in the supply trunk, after the heat exchanger and cooling coils. (See shaded areas in figure below.)
2. Mount the sensor according to the installation instructions provided with the sensor.
3. Wire the sensor to the equipment control module LAT terminals.

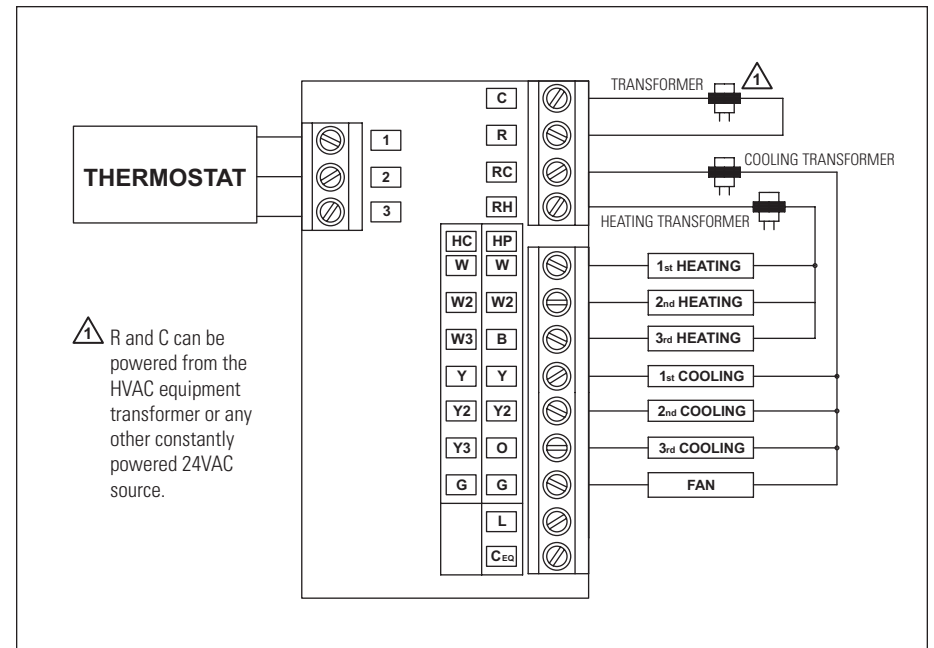


HVAC WIRING DIAGRAMS

CONVENTIONAL HEAT/COOL SINGLE TRANSFORMER (USE JUMPER)

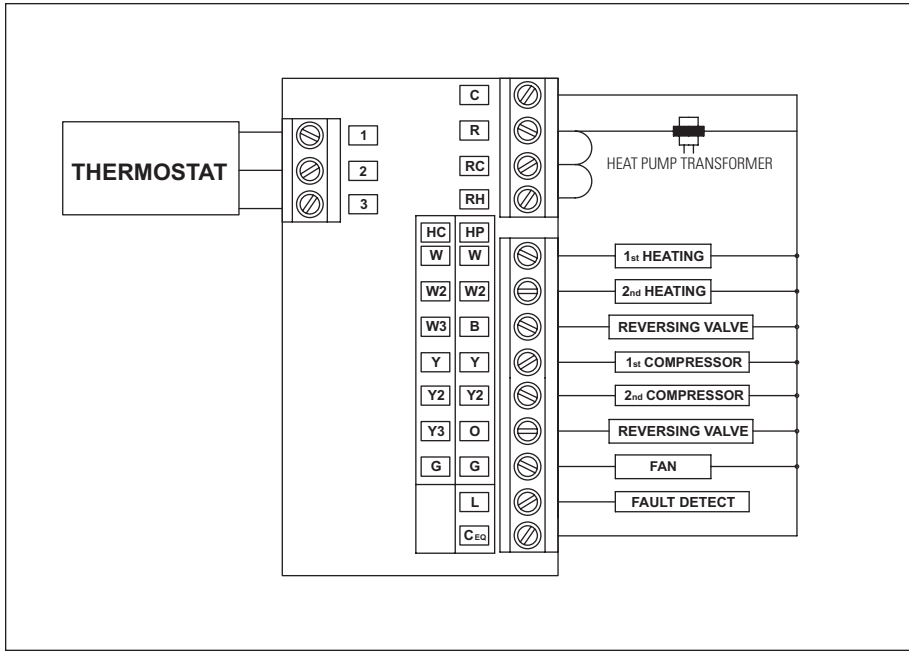


CONVENTIONAL HEAT/COOL TWO TRANSFORMER (REMOVE JUMPER)

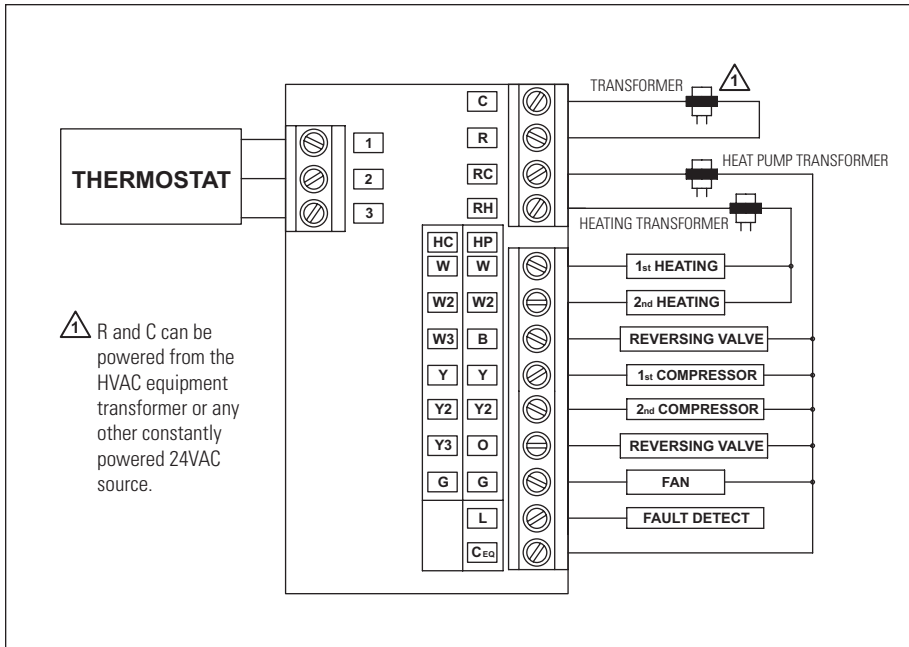


HVAC WIRING DIAGRAMS

HEAT PUMP SINGLE TRANSFORMER (USE JUMPER WIRE)

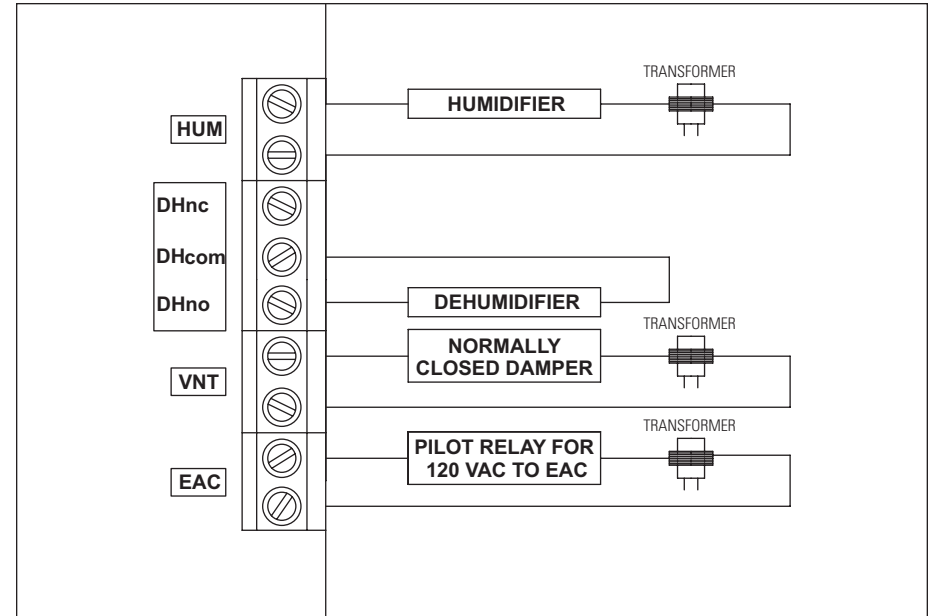


HEAT PUMP TWO TRANSFORMER (REMOVE JUMPER WIRE)



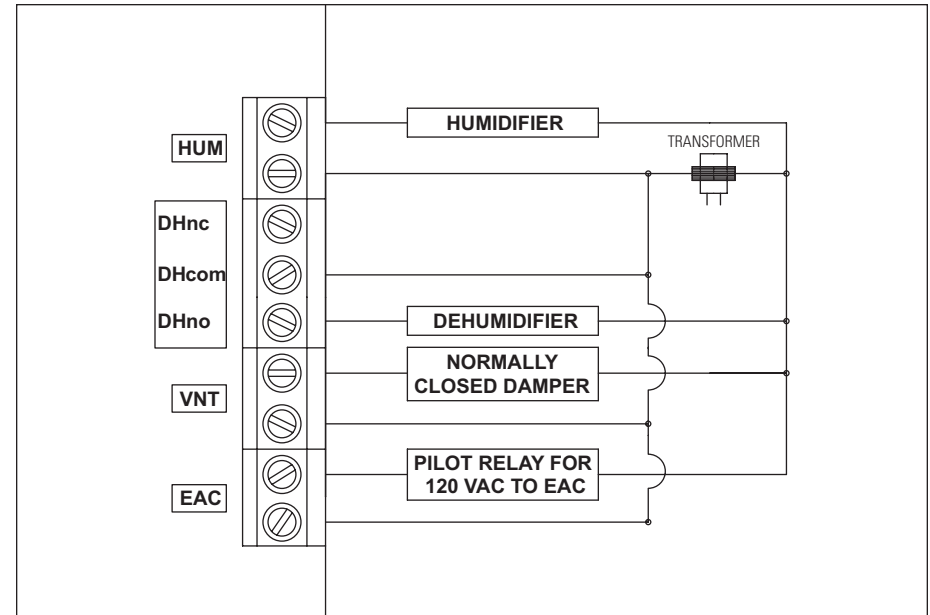
INDOOR AIR QUALITY WIRING DIAGRAMS

INDOOR AIR QUALITY WIRING WITH SEPARATE TRANSFORMERS



Note: Outputs are 24VAC dry contact. Refer to individual product installation instructions for more details.

INDOOR AIR QUALITY WIRING WITH A SINGLE TRANSFORMER

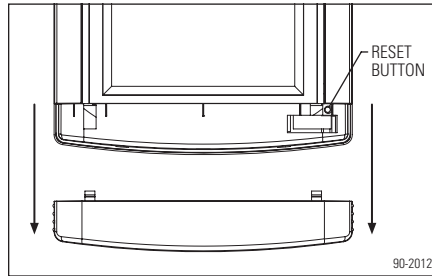


Note: Outputs are 24VAC dry contact. Refer to individual product installation instructions for more details.

POWER & RESET OPTIONS

The equipment control module is powered from 24VAC. The thermostat is powered from the equipment control module. In the case of power loss the thermostat will maintain the clock for 24 hours. The thermostat has a memory backup that saves the thermostat settings in case of power interruption.

The reset button located under the cover on the front of the thermostat can be used to reset the thermostat to factory defaults. The system settings will also be set to default.



SETUP & TESTING

REMOVAL OF INDOOR AIR QUALITY CONTROL BUTTONS

If any of the Indoor Air Quality control features are not installed, the corresponding button can be removed using the following procedure:

Step 1: Verify the specific Indoor Air Quality control feature is not installed in the installer set-up (see pages 14-16).

Step 2: From the home screen (see page 21), **press and hold** the Indoor Air Quality button you wish to remove for 7 seconds.

Step 3: The message center will display REMOVE BUTTON and the options of NO and YES (NO will be flashing).

Step 4: Press ▲ or ▼ to select YES.

Step 5: Press [DONE].

Step 6: The button is now removed.

Note: Once the button is removed it can be brought back by installing the corresponding Indoor Air Quality feature (see pages 14-16).

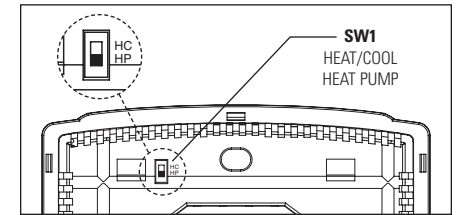


SETUP & TESTING

EQUIPMENT TYPE SELECTION SWITCH (SW1)

This thermostat has the option of being used in heat pump or heat/cool systems. Switch SW1 located on the back of the thermostat's face is used to select this option. This setting is displayed in the Installer System Settings under Equipment Type.

Note: Thermostat reboots within 10 seconds after switch position is changed.



INSTALLER SETUP MENU

HOW TO ENTER THE INSTALLER SETUP MENU AND SELECT EQUIPMENT TO SETUP:

In the Installer Setup, HVAC or Indoor Air Quality setup can be selected. If Indoor Air Quality setup is selected, the user can then select to set up Air Cleaning, Humidification, Dehumidification or Ventilation.

Press [MODE] to set system to OFF.

Press [MENU] to enter main menu.

Press and hold [SETUP] for seven seconds, [INSTALL SETUP] appears.

Press [INSTALL SETUP] to enter installer setup menu.

Press ▲ or ▼ to adjust the option.

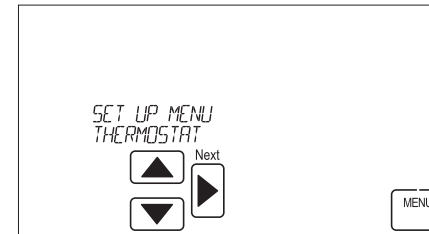
Press [MENU] to exit.

Press [NEXT] to select option.

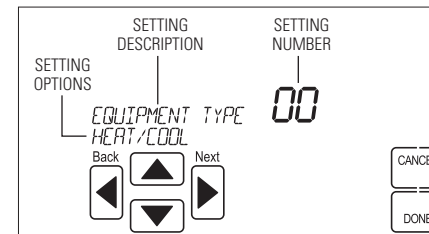
If Indoor Air Quality was selected, Press ▲ or ▼ to adjust the Outdoor Sensor setting or Indoor Air Quality option.

Press [NEXT] to select Outdoor Sensor setting or Indoor Air Quality option.

System Settings can now be changed.



CHANGE SYSTEM SETTINGS



Press [NEXT] or [BACK] to page through the settings.

Press ▲ or ▼ to adjust the setting.

Press [DONE] to save and exit, or [CANCEL] to exit without saving.

The thermostat will discard changes and exit if nothing is pressed within 60 seconds.

To reset the installer settings to the default, reset the thermostat by pressing the [RESET] button for 5 seconds.

SETUP & TESTING

HVAC INSTALLER SYSTEM SETTINGS TABLE

The following table contains the system settings and their details. Default settings are shown in **bold**. Some settings are only available dependent upon the value of other settings.

System setting	Description	Factory default setting (bold) and setting range
01. Equipment Type	Equipment type set by SW1.	Heat/Cool Heat Pump
02. Temperature Scale	Set the thermostat to Fahrenheit or Celsius mode.	Fahrenheit Celsius
04. Control Setup	Used to lockout heating or cooling outputs. Note: Only available if Equipment Type is set to Heat/Cool.	Heat and Cool Heat Only Cool Only
05. Heat/Cool: Cooling Stages Heat Pump: Compressor Stages	Heat/Cool: Number of Cooling Stages. Heat Pump: Number of Compressor Stages.	One Two Three (only available in Heat/Cool)
06. Heat/Cool: Heating Stages Heat Pump: Aux Heat Stages	Heat/Cool: Number of Heat Stages. Heat Pump: Number of Auxiliary Heat Stages.	One Two Three (only available in Heat/Cool)
07. Heat/Cool: Fan Control in Heating Heat Pump: Auxiliary Equipment Type	Heat/Cool: Determines if the thermostat or equipment controls the fan in heating. Heat Pump: Auxiliary Equipment type.	Gas/Oil Heat (equipment controls fan) Electric Heat (thermostat controls fan)
08. Extended Fan – Heat	Extends fan operation after heat call ends.	Disable Enable (90 second extension)
09. Extended Fan – Cool	Extends fan operation after cool call ends.	Disable Enable (90 second extension)
10. Temperature Sensor Offset	Field adjustment of controlling temperature sensor(s).	0° (no offset applied) -4°F to +4°F (-2°C to +2°C)
11. Humidity Offset	Field adjustment of internal RH sensor.	0 (no offset applied) -5% to +5%
12. Auto Changeover	Enable or disable auto changeover mode.	Disable Enable
13. Deadband	Auto Changeover mode deadband.	3°F (1.5°C) 2°F to 9°F (1°C to 4.5°C)
14. Remote Sensor	Select if remote sensor is attached, and if it is attached, if it is the primary control or averaged with the built-in sensor. If the remote sensor is the primary control it can be configured to use the built-in sensor as a back-up sensor.	Not installed Control no backup Control with built-in backup Average with thermostat built-in sensor
15. Outdoor Sensor	Select if outdoor sensor is attached or not.	Not installed Installed
17. Return Sensor	Select if return sensor is attached or not.	No Yes
18. Compressor Min Off Time	Minimum off time for compressor protection.	5 minutes 1 to 5 minutes
19. Heating Min Off Time	Minimum off time for heating.	2 minutes 1 to 5 minutes
20. Equipment Min On Time	Minimum on time for heating and cooling.	2 minutes 1 to 5 minutes

SETUP & TESTING

HVAC INSTALLER SYSTEM SETTINGS TABLE (CONTINUED)

System setting	Description	Factory default setting (bold) and setting range
21. Auto Changeover Time	Minimum time between heating and cooling calls.	4 minutes 1 to 5 minutes
22. First Stage Differential	First stage differential.	1°F (0.5°C) 1°F to 9°F (0.5°C to 4.5°C)
23. Second Stage Differential	Second stage differential.	1°F (0.5°C) 1°F to 9°F (0.5°C to 4.5°C)
24. Third Stage Differential	Third stage differential.	1°F (0.5°C) 1°F to 9°F (0.5°C to 4.5°C)
25. Fourth Stage Differential	Fourth stage differential.	1°F (0.5°C) 1°F to 9°F (0.5°C to 4.5°C)
26. Away	Enables the Away feature. The Away feature allows the user to set the thermostat to a predefined setpoint(s) using a single button press in the Aprilaire mobile and web apps. The predefined setpoint(s) is set by the user in the app. The thermostat will hold the setpoint(s) until Away is canceled with the app or at the thermostat.	Disable Enable
27. Heat Blast	Enables the Heat Blast feature.	Disable Enable
28. Blast Offset	Amount of heating when Heat Blast is initiated.	3°F (1.5°C) 3°F to 5°F (1.5°C to 2.5°C)
37. Stage Rate	Accumulation of equipment run time in equipment staging determination. 1 = more rapid staging of equipment (comfort). 5 = slower staging of equipment (economy).	2 1 to 5 or "OFF" to ignore accumulated run time.
38. Progressive Recovery	Enable or disable progressive recovery.	Disable Enable
39. Low Balance Point	Outdoor temperature low balance point. Note: This option is only available if the outdoor sensor is enabled.	20°F or -8°C 0°F to 60°F (-18°C to 12°C) or OFF to ignore LBP
40. High Balance Point	Outdoor temperature high balance point. Note: This option is only available if the outdoor sensor is enabled.	65°F or 14.5°C 0°F to 80°F (-18°C to 22°C) or OFF to ignore HBP
41. Program Format	Enables the 7 day program.	7-Day Non-Prog
42. Reset Service Reminders	Clears the Change Air Filter and HVAC and Dehumidifier Service reminders if they are active and resets the start date to the current date. Clears the Change Water Panel reminder if it is active. If the reminder is set to Timed, the timer will be reset.	No Yes
43. HVAC Service Reminder	The period for displaying the "HVAC Service Reminder" message.	Off 1 to 12 months or "Off" to disable
44. Constant Backlight	Enable constant, low intensity backlight when 24VAC is present.	Disable Enable
45. Backlight Intensity	Set the active backlight intensity. Note: The minimum setting is 40% when Constant Backlight is enabled.	100 Percent 0 to 100 Percent

SETUP & TESTING

INDOOR AIR QUALITY SYSTEM SETTINGS TABLES

The following tables contain the Indoor Air Quality system settings and their details. Default settings are shown in **bold**. Some settings are only present dependent upon the value of other settings.

The use of an outdoor temperature sensor (recommended) enables additional Indoor Air Quality functionality. If the outdoor temperature sensor was not enabled in the HVAC system settings, HVAC system setting 15, Outdoor Sensor, will be presented prior to entering the Indoor Air Quality system settings.

Please refer to the Model 8910W Owner's Manual for further information about thermostat features.

Air Cleaning System Settings Table

System setting	Description	Factory default setting (bold) and setting range
Air Cleaner Installed	Selects if an air cleaner is installed. (If set to No, no other air cleaning settings will be available.)	No Yes
Change Air Filter Reminder	The period for displaying the "Change Air Filter" message.	Off 1 to 12 months or "Off" to disable

Humidifier System Settings Table

System setting	Description	Factory default setting (bold) and setting range
Humidifier Installed	Selects if a humidifier is installed. Yes/On HVAC is used for applications where the humidifier is installed on the HVAC duct. Yes/Standalone is used for application where the humidifier is independent of the HVAC system. (If set to no, no other humidifier settings will be available.)	No Yes/On HVAC Yes/Standalone
Humidifier Mode	Selects auto or manual mode. Auto mode controls humidity based on the humidity setting and outdoor temperature. Manual mode controls humidity based on the %RH setpoint. (Auto mode is only available if outdoor sensor is set to Installed.)	Auto Manual
Humidity Setpoint Deadband	Selects the minimum difference between the humidifier and dehumidifier setpoints. (Only available if a humidifier is installed and dehumidifier control is set to air conditioner. Available in both set-ups.)	10 Percent RH 10 to 20 Percent RH
Humidifier Operation	Selects when humidification is allowed to occur relative to heating and fan operation. Without Fan allows humidification to occur without the HVAC fan. This option should only be used when the humidifier is independent of the HVAC system. Note: Without Fan is only available when Humidifier Installed is set to Yes/Standalone .	Heat Only Heat or Fan Forces Fan Without Fan
⚠ CAUTION: When Humidifier Operation is set to Without Fan the thermostat will turn on humidification without energizing the HVAC fan. Do not select this option when the humidifier is installed on the HVAC duct. Without airflow moisture can accumulate in the duct resulting in significant damage.		
Change Water Panel Reminder	Selects the when the "Change Water Panel" message is displayed.	Off 1 Per Season 2 Per Season 300 Hours 600 Hours

SETUP & TESTING

System setting	Description	Factory default setting (bold) and setting range
Reminder Month (Change Water Panel Reminder set to 1 Per Season)	Change Water Panel Reminder set to 1 Per Season: Determines the month the "Change Water Panel" message is displayed.	October November December January February March April May June July August September
First Reminder Month (Change Water Panel Reminder set to 2 Per Season)	Change Water Panel Reminder set to 2 Per Season: Determines the first month the "Change Water Panel" message is displayed.	
Second Reminder Start Month	Determines the second month the "Change Water Panel" message is displayed. (Only available when Change Water Panel Reminder set to 2 Per Season.)	October November December January February March April May June July August September

Dehumidifier System Settings Table

System setting	Description	Factory default setting (bold) and setting range
Dehumidifier Control	Selects method of dehumidification. (If set to None, no other dehumidifier settings will be available.)	None (no dehumidification installed) Whole Home Air Conditioner
Humidity Setpoint Deadband	Select the minimum difference between the humidifier and dehumidifier setpoints. (Only available if both a humidifier and dehumidifier are installed. Available in both set-ups.)	10 Percent RH 10 to 20 Percent RH
Lockout Dehumidifier During Cooling	Selects if dehumidification is disabled during a cooling call.	No Yes
Dehumidifier Forces Fan	Select if dehumidification can turn on the fan.	No Yes
Dehumidifier Service Reminder	The period for displaying the "Dehum Service Reminder" message.	Off 1 to 12 months or "Off" to disable
Dehumidifier Overcooling Limit	Selects the amount of overcooling that can occur for dehumidification. (Only available if Dehumidifier Control is set to Air Conditioner.)	3°F (1.5°C) 1°F to 3°F (0.5°C to 1.5°C)
Dehumidify in Vacation Mode	Selects if dehumidification with the air conditioner is done in Vacation Mode. (Only available if Dehumidifier Control is set to Air Conditioner.)	No Yes
Vacation Dehumidifier Low Temp Limit	Sets the lowest temperature the air conditioner will cool to, to meet RH setpoint in Vacation Mode. (Only available if Dehumidifier Control is set to Air Conditioner.)	75°F (23.5°C) 70°F to 85°F (21°C to 28.5°C)

Note: Refer to manuals for humidifier, dehumidifier, air cleaner, and ventilation products for recommended installation and operation.

SETUP & TESTING

Ventilation System Settings Table

System setting	Description	Factory default setting (bold) and setting range
Fresh Air Vent Installed	Selects if ventilation is installed. (If set to No, no other ventilation settings will be available.)	No Yes
Fresh Air Setup Type	Selects if ventilation is configured through the Code setup or Comfort. Comfort setup has more lockout options. Code setting ensures missed lockout time is made up.	Comfort Code
Number of Bedrooms	Selects the number of bedrooms to be used for the Calculated Minutes per Hour.	3 Bedrooms 1 to 10 Bedrooms
Home Size	Selects the size of the home to be used for the Calculated Minutes per Hour.	2500 SQ FT 500 to 7500 SQ FT
Measured CFM	Selects the ventilation CFM to be used for the Calculated Minutes per Hour.	110 CFM 30 to 250 CFM
Calculated Minutes per Hour	Displays the Fresh Air Time calculated.	None Range 6 to 60 Minutes
Override	Manual adjustment of Calculated Minutes per Hour.	(Calculated Minutes per Hour) Range 6 to 60 Minutes
Enable High Vent RH Limit	Selects if ventilation is disabled if the indoor RH exceeds the indoor RH limit. (Only available if Fresh Air Setup is set to Comfort.)	Yes No
High Vent RH Limit	Sets the ventilation indoor RH lockout limit. (Only available if Enable High Vent RH Limit is set to Yes.)	55% 45% to 70%
Enable Low Vent RH Limit	Selects if ventilation is disabled if the indoor RH exceeds the indoor RH limit. (Only available if Fresh Air Setup is set to Comfort.)	No Yes
Low Vent RH Limit	Sets the ventilation indoor RH lockout limit. (Only available if Enable Low Vent RH Limit is set to Yes.)	20% 10% to 30%
Enable High Vent Temperature Limit	Enables high ventilation temperature lockout limit. (Only available if Outdoor Sensor is set to Installed.)	No Yes
High Vent Temperature Limit	Sets high ventilation temperature lockout limit. (Only available if Enable High Vent Temperature Limit is set to Yes.)	100°F (38°C) 85°F to 105°F (29°C to 41°C)
Enable Low Vent Temperature Limit	Enables low ventilation temperature lockout limit. (Only available if Outdoor Sensor is set to Installed.)	No Yes
Low Vent Temperature Limit	Sets low ventilation temperature lockout limit. (Only available if Enable Low Vent Temperature Limit is set to Yes.)	10°F (-12°C) -10°F to 40°F (-24°C to 6°C)
HVAC Fan with Vent	Selects if ventilation forces the fan on. (Yes with high and low limits is only available if Outdoor Sensor is set to Installed.)	Yes Yes with high and low limits No
Enable High Mixing Temperature	Enables high mixing temperature. (Only available is HVAC Fan with Vent is set to Yes with high and low limits.)	No Yes
High Mixing Temperature	Sets the high mixing temperature. (Only available if Enable High Mixing Temperature is set to Yes.)	80°F or (26°C) 60°F to 105°F (14°C to 41°C)
Enable Low Mixing Temperature	Enables low mixing temperature. (Only available is HVAC Fan with Vent is set to Yes with high and low limits.)	No Yes
Low Mixing Temperature	Sets the Low mixing temperature. (Only available if Enable Low Mixing Temperature is set to Yes.)	40°F (6°C) 0°F to 50°F (-18°C to 12°C)
Fresh Air Service Reminder	The period for displaying the "SERVICE FRESH AIR" message.	OFF 1 to 12 months or "OFF" to disable

SETUP & TESTING

SYSTEM TEST MENU

The system test menu is used to test a system after installation. The outputs of the thermostat can be manually activated to test their function. The instructions below show how to enter the test mode and turn outputs on and off.

HOW TO ENTER THE SYSTEM TEST MENU:

Press **[MODE]** to set system to off.

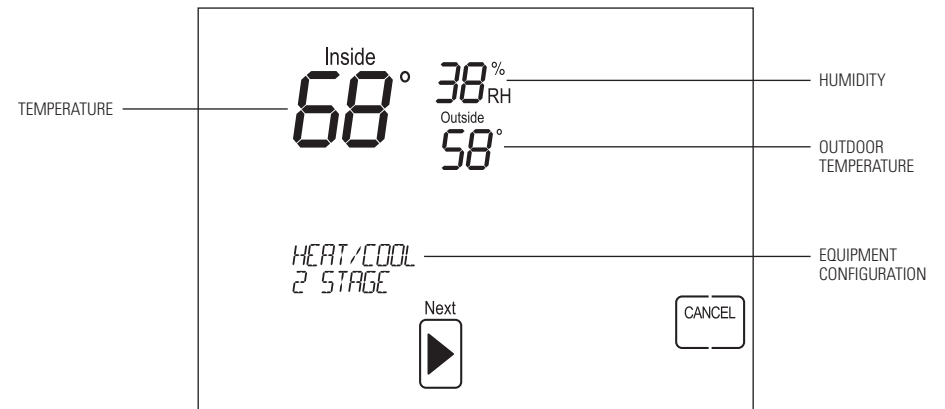
Press and hold **[FAN]** and **[MODE]** for three seconds to enter system test mode.

The first screen of the installer test displays the equipment configuration.

Press **[NEXT]** to enter the first installation test or **[CANCEL]** to exit.

SYSTEM TEST STEPS

- Heating equipment test
- Cooling equipment test
- Fan equipment test
- Humidification equipment test
- Dehumidification equipment test
- Ventilation equipment test
- Air Cleaning equipment test

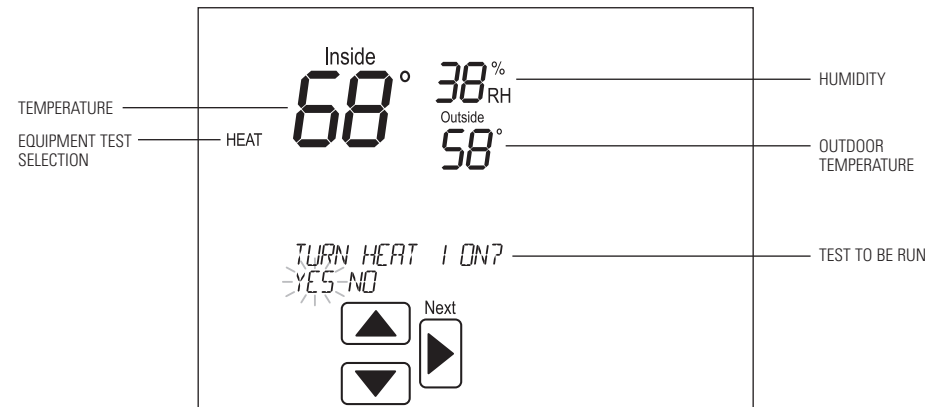


Each equipment test will begin with the selection of turning on the output or stage as shown below.

Press **▲** or **▼** to change the selection.

Press **[NEXT]** to accept the selection and proceed to the next step.

If **YES** is selected, the thermostat will test the corresponding output. If **NO** is selected, the thermostat will proceed to the next step.

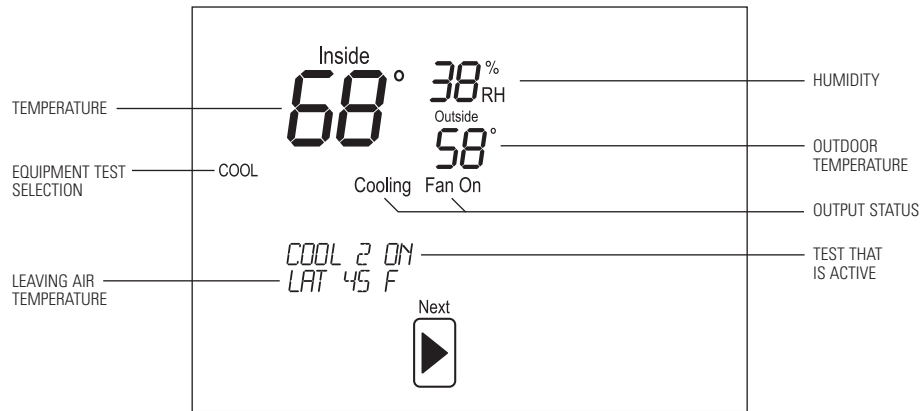


SETUP & TESTING

SYSTEM TEST MENU (CONTINUED)

While the equipment test is active the corresponding test information will be shown.

Press **[NEXT]** to accept the selection and proceed to the next test selection.



SYSTEM TEST TABLES

Heat / Cool Heating Equipment Test								
Heat Type		W	W2	W3	Y	Y2	Y3	G
Gas	1st Stage Test	ON						
Gas	2nd Stage Test	ON	ON					
Gas	3rd Stage Test	ON	ON	ON				
Electric	1st Stage Test	ON						ON
Electric	2nd Stage Test	ON	ON					ON
Electric	3rd Stage Test	ON	ON	ON				ON

SETUP & TESTING

SYSTEM TEST TABLES (CONTINUED)

Heat Pump Heating Equipment Test (Electric Heat)									
Compressor Stages	Aux Stages		W	W2	B	Y	Y2	O	G
1	1	1st Stage Test			ON	ON			ON
1	1	2nd Stage Test	ON		ON	ON			ON
2	1	1st Stage Test			ON	ON			ON
2	1	2nd Stage Test			ON	ON	ON		ON
2	1	3rd Stage Test	ON		ON	ON	ON		ON
1	2	1st Stage Test			ON	ON			ON
1	2	2nd Stage Test	ON		ON	ON			ON
1	2	3rd Stage Test	ON	ON	ON	ON			ON
2	2	1st Stage Test			ON	ON			ON
2	2	2nd Stage Test			ON	ON	ON		ON
2	2	3rd Stage Test	ON		ON	ON	ON		ON
2	2	4th Stage Test	ON	ON	ON	ON	ON		ON

Heat Pump Heating Equipment Test (Gas Heat)									
Compressor Stages	Aux Stages		W	W2	B	Y	Y2	O	G
1	1	1st Stage Test			ON	ON			ON
1	1	2nd Stage Test	ON		ON				
2	1	1st Stage Test			ON	ON			ON
2	1	2nd Stage Test			ON	ON	ON		ON
2	1	3rd Stage Test	ON		ON				
1	2	1st Stage Test			ON	ON			ON
1	2	2nd Stage Test	ON		ON				
1	2	3rd Stage Test	ON	ON	ON				
2	2	1st Stage Test			ON	ON			ON
2	2	2nd Stage Test			ON	ON	ON		ON
2	2	3rd Stage Test	ON		ON				
2	2	4th Stage Test	ON	ON	ON				

SETUP & TESTING

SYSTEM TEST TABLES (CONTINUED)

Heat / Cool Cooling Equipment Test

	W	W2	W3	Y	Y2	Y3	G
1st Stage Test				ON			ON
2nd Stage Test				ON	ON		ON
3rd Stage Test				ON	ON	ON	ON

Heat Pump Cooling Equipment Test

	W	W2	B	Y	Y2	O	G
1st Stage Test				ON		ON	ON
2nd Stage Test				ON	ON	ON	ON

Fan Equipment Test

W	W2	W3/B	Y	Y2	Y3/O	G
						ON

Humidification Equipment Test

HUM	DHno/DHcom	VENT	EAC	G
ON				ON

Dehumidification Equipment Test

HUM	DHno/DHcom	VENT	EAC	G
	ON			ON

Ventilation Equipment Test

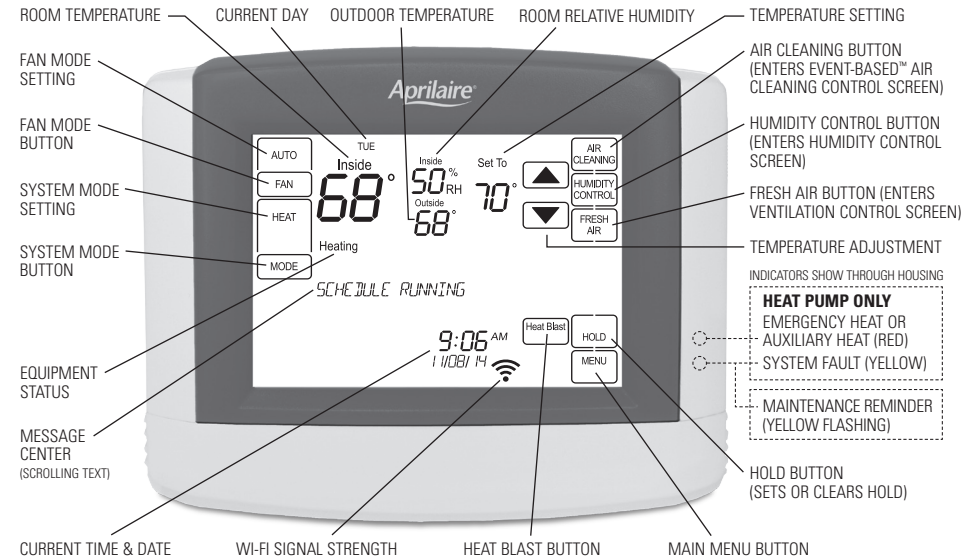
HUM	DHno/DHcom	VENT	EAC	G
		ON		ON

Ventilation Equipment Test

HUM	DHno/DHcom	VENT	EAC	G
			ON	ON

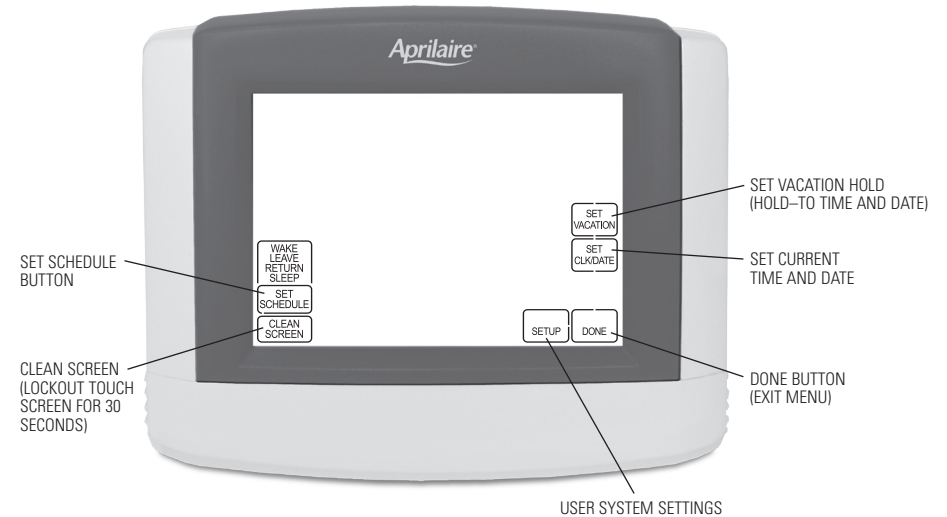
QUICK REFERENCE TO CONTROLS & DISPLAY

HOME SCREEN



NOTE: BACKLIGHT IS ACTIVATED WITH FIRST BUTTON PRESS AND AUTOMATICALLY TURNS OFF.

MAIN MENU



QUICK REFERENCE TO CONTROLS & DISPLAY

EQUIPMENT CONTROL MODULE LEDs

POWER/STATUS – On solid during normal operation. Flashes when connection to the thermostat is lost and at power-up while the thermostat connection is being established.

HEATING – On when heating outputs are active.

COOLING – On when cooling outputs are active.

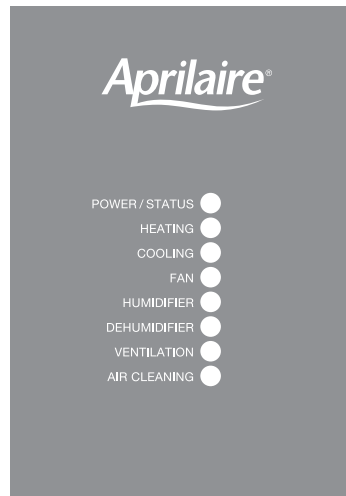
FAN – On when fan output is active.

HUMIDIFIER – On when humidifier output is active.

DEHUMIDIFIER – On when dehumidifier output is active.

VENTILATION – On when ventilation output is active.

AIR CLEANING – On when air cleaner output is active.



TROUBLESHOOTING

DISPLAY IS BLANK

If Power LED not illuminated at the equipment control module check the following.

- Check circuit breaker and reset if necessary.
- Make sure power switch at heating & cooling system is on.
- Make sure furnace door is closed securely.

HEATING SYSTEM DOES NOT RESPOND (“HEATING” APPEARS ON SCREEN)

- Check for 24VAC at the equipment on the secondary side of the transformer between power and common. If voltage is not present, check the heating equipment to find the cause of the problem.
- Check for 24VAC between the heat terminal (W) and the transformer common. If 24VAC is present, the thermostat is functional. Check the heating equipment to find the cause of the problem.
- Check for loose or broken wires between the thermostat and the heating equipment.

COOLING SYSTEM DOES NOT RESPOND (“COOLING” APPEARS ON SCREEN)

- Check for 24VAC at the equipment on the secondary side of the transformer between power and common. If voltage is not present, check the cooling equipment to find the cause of the problem
- Check for 24VAC between the cooling terminal (Y) and the transformer common. If 24VAC is present, the thermostat is functional. Check the cooling system to find the cause of the problem.
- Check for loose or broken wires between the thermostat and the cooling equipment.

FAN DOES NOT TURN ON IN A CALL FOR HEAT

- Check System Setting 07 (Fan Control), to make sure the fan control is properly set to match the type of system.

HEAT PUMP ISSUES COOL AIR IN HEAT MODE, OR WARM AIR IN COOL MODE

- Check wiring at the terminal block to confirm the reversing valve is connected to the proper terminal. O is active in cooling and B is active in heating.

TROUBLESHOOTING

HEAT/COOL BOTH ON AT SAME TIME

- Check SW1 (Equipment Type), to make sure it is set to match the installed heating/cooling equipment.
- Check to make sure heating and cooling wires are not shorted together.

HEATING EQUIPMENT IS RUNNING IN COOL MODE

- Check SW1 (Equipment Type), to make sure it is set to match the installed heating/cooling equipment (see page 11).

“HEATING” IS NOT DISPLAYED

- Check Installer System Setting 04 (Control Setup) is set correctly.
- Change the System Mode to Heat, and set the temperature level above the current room temperature.

“COOLING” IS NOT DISPLAYED

- Check Installer System Setting 04 (Control Setup) is set correctly.
- Change the System Mode to Cool, and set the temperature level below the current room temperature.

ERROR CODES

If the thermostat enters an error mode, all outputs are turned off. The thermostat attempts to recover every 10 minutes.

Error code	Message	Error Description
01	“SENSOR ERROR”	Open temperature sensor circuit
02		Shorted temperature sensor circuit
03	“EEPROM ERROR”	Error in permanent memory
05	“LOST SYSTEM CONNECTION”	Thermostat lost connection to equipment interface module
06	“REMOTE SENSOR ERROR”	Open remote temperature sensor circuit
07		Shorted remote temperature sensor circuit

THERMOSTAT FEATURES

- Remote access and control over Wi-Fi.
- Indoor air quality control.
 - Humidification automatic or manual control.
 - Dehumidification.
 - Event-Based™ air cleaning.
 - Ventilation with temperature and humidity limits.
- Temperature control.
- Heat Blast® raises the room temperature 3°F to 5°F.
- Support for optional wireless outdoor temperature sensor.
- Large touch screen with adjustable backlight – constant backlight option available.
- Message center provides feedback and instructions.
- 7 day programmability.
- Displays room temperature, room humidity, temperature setting, and optional outdoor temperature.
- Air filter, humidifier, dehumidifier, and HVAC service reminders.
- Programmable fan control with fan circulation mode.
- Easy to use temperature control can override program schedule at any time.
- Progressive recovery ensures proper temperature at the start of a program event.
- Built in compressor protection prevents damage to your equipment.
- System test mode.

SPECIFICATIONS

Environment	
Temperature (Shipping)	-30° to 150°F (-34° to 65°C)
Temperature Thermostat (Operating)	32° to 120°F (0° to 48°C)
Temperature Equipment Control Module (Operating)	32° to 158°F (0° to 70°C)
Relative humidity	Operating: 5% to 90% R.H. (non-condensing)

Electrical	
Operating voltage	24VAC (18 – 30VAC)
Current	Maximum: 2.5A (total), 1.0A (single output) Maximum surge current: 5A

Control	
Outdoor, Remote, Leaving and Return temperature sensor	Maximum distance: 300 feet
Room temperature measurement	Display range: 32° to 99°F (0° to 40°C)
Return and Leaving temperature measurement	Display range: -40° to 160°F (-40° to 71°C)
Outdoor temperature measurement	Display range: -40° to 130°F (-40° to 55°C)
Setpoint temperature range	Heat: 40° to 90°F (4° to 32°C) Cool: 50° to 99°F (10° to 37°C)
Setpoint humidity range	Humidification: 10% to 50% R.H. Dehumidification: 40% to 90% R.H.



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