AprilAire Thermostats

Model S86W MUPR
Wi-Fi Thermostat with IAQ

READ AND SAVE THESE INSTRUCTIONS

TABLE OF CONTENTS

ABOUT YOUR NEW THERMOSTAT

THERMOSTAT FEATURES

• Remote access and control over Wi-Fi.

• Indoor air quality control.

  NOTE: Only one of the following IAQ accessories can be controlled per installation:

  - Humidifier, automatic or manual control.

  - Dehumidifier.

  - Ventilation, with temperature and humidity limits.

• Heat Blast® raises the room temperature 3°F to 5°F.

• Easy to read, color display.

• 7 day programmability.

• Displays room temperature, room humidity, temperature setting, and 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.

• Optional wireless indoor and outdoor sensors.

• Sensor averaging and the ability to assign a sensor to a schedule event.

# QUICK REFERENCE TO CONTROLS & DISPLAY

HOME SCREEN

EQUIPMENT STATUS

ROOM TEMPERATURE

ROOM TEMPERATURE SETTING

EVENT STATUS

AprilAire

HEATING
70
♨ 72
↪ AWAY

UP ARROW

BACK

SELECT (OPENS MENU FROM HOME SCREEN)

DOWN ARROW

BACK   SELECT
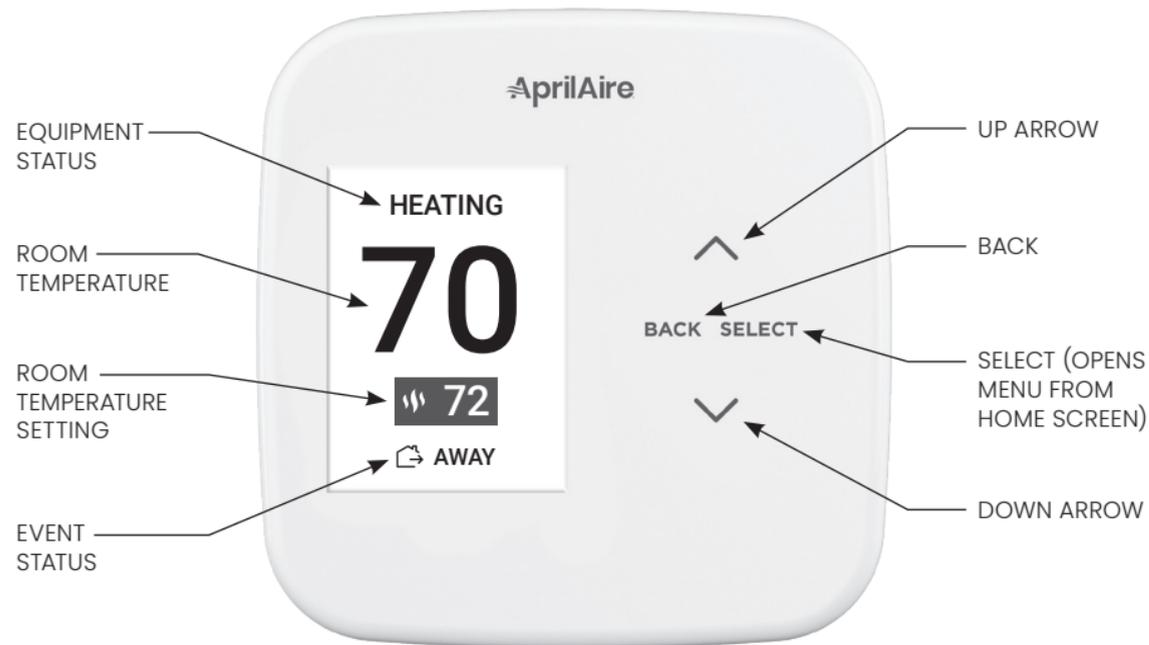
MAIN MENU

☰ **Main Menu**
⇌ **Mode**
🌀 **Fan**
⏸ **Hold**
☑ **Schedule**
♨ **Heat Blast**
↪ **Away**
💧 **Humidifier**
💧 **Dehumidifier**
🌬 **Ventilation**
▦ **Air Cleaning**
🧳 **Vacation**
⚙ **Settings**

Item availability based on installed options.

AprilAire

☰ Main Menu
⇌ Mode   >
🌀 Fan
⏸ Hold
☑ Schedule
♨ Heat Blast
⌄

BACK   SELECT

Starts 45 seconds after inactivity, press any button to wake the screen.

CURRENT TIME

ROOM TEMPERATURE

INDOOR RH%

OUTDOOR TEMPERATURE

AprilAire

11:11 AM

70

BACK   SELECT

55% | 84°
Indoor RH | Outside
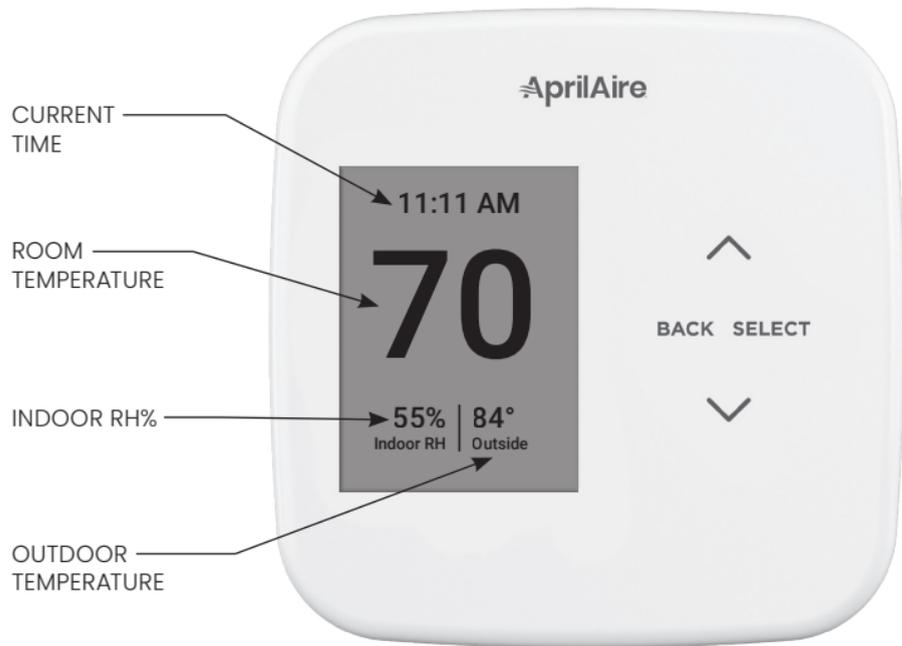
For detailed instructions for connecting the thermostat to a Wi-Fi network and registering it to an AprilAire account, refer to the **Wi-Fi Quick Start Guide** included in the box.

Visit **aprilaire.com/app** for instructions.

OPERATION

SELECT SYSTEM MODE
(EM HEAT / HEAT / COOL / AUTO / OFF)

1. Press **SELECT** to enter **Main Menu**.
2. Use ∧ or ∨ to select the **Mode** option.
3. Press **SELECT** to enter **Mode** menu:
4. Use ∧ or ∨ to select the desired mode.

   Heat: Thermostat controls only the heating system.

   **Cool:** Thermostat controls only the cooling system.

   Auto: (if enabled in installer setup) Thermostat automatically selects heating or cooling depending on the indoor temperature.

   Emergency Heat: (only for heat pumps with auxiliary heat) Thermostat controls auxiliary heat. Heat pump will not operate in **Em Heat** mode.

   Off: Heating and cooling systems are off.

5. Press **SELECT** to save the mode and return to the home screen, or **BACK** to exit without saving.
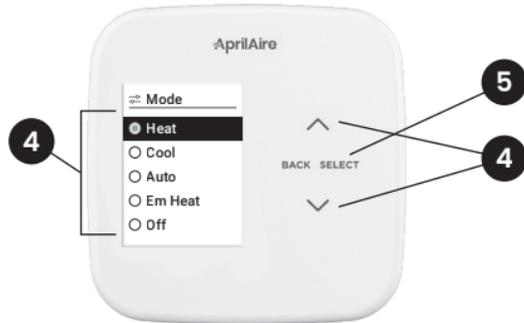
CHANGE TEMPERATURE SETTING

1. From the **Home** screen press ∧ or ∨ to adjust the current temperature setting.
2. The temperature setting will enlarge during adjustment.
3. The temperature setting will take effect 3 seconds after the last adjustment or press **SELECT** to save and return to the home screen.

See **HOW TO MODIFY PROGRAM SCHEDULES** on pages 24-25 for more information.
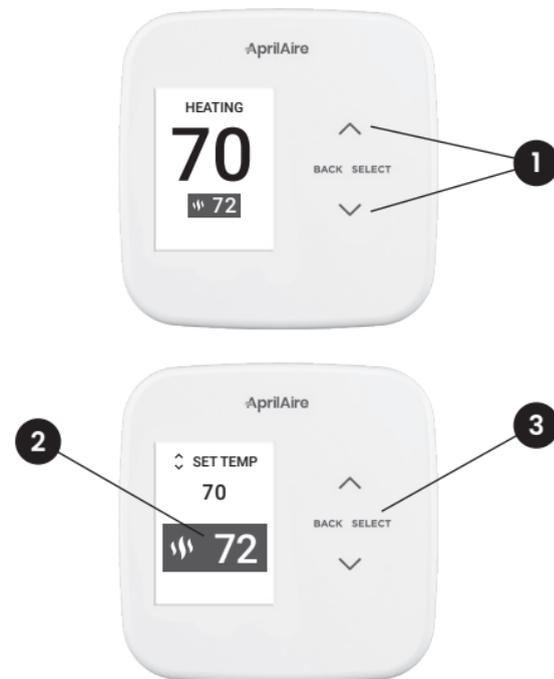
SELECT FAN SETTING (AUTO / ON / CIRCULATE)

When the fan mode is changed during a program event, it remains in that mode until the next event starts. The fan must be programmed to **Fan On** in the schedule to run continuously through all events.

1. Press **SELECT** to enter **Main Menu**.
2. Use ∧ or ∨ to select the **Fan** option.
3. Press **SELECT** to enter **Fan** menu:
4. Use ∧ or ∨ to select the desired fan mode.

   On: Fan runs continuously. Use this mode for maximum air circulation/filtering.

   Auto: Fan runs only when the heating or cooling system is on.

   Circulate: Same as **Auto**, but ensures the fan is on for at least 30 minutes per hour. Use this mode for a balance of energy savings and air circulation/cleaning.

5. Press **SELECT** to save the fan mode and return to the home screen, or **BACK** to exit without saving.

MAINTENANCE REMINDERS

Maintenance reminders are set up by the installer to indicate when the equipment is due for service. If a maintenance reminder is displayed, call your HVAC dealer for service. They can be reset by selecting the **Reset** option on the reminder message or in the **Reset Service Reminders** option found in the **Settings** menu.

LOCKOUT

The user can disable access to the thermostat's features. (See **USER SYSTEM SETTINGS TABLE** on page 30 for details.) This feature can be overridden by pressing and holding the **SELECT** button for 7 seconds.

INDOOR AIR QUALITY FUNCTIONS

EVENT-BASED™ AIR CLEANING (IF INSTALLED)

1. Select **Air Cleaning** from the **Main Menu**. Air Cleaning has two temporary events and three persistent modes that can be set. Air cleaning will activate the fan for the purpose of air cleaning.

2. **Events** (temporary)

    3 Hrs: When selected, the air cleaner will run for 3 hours continuously and then return to the most recent mode of **Auto**, **Continuous**, or **Off**. This option only cleans the air when needed; an example would be after vacuuming.

    24 Hrs: When seasonal allergies spike and outside air quality is at its worst, choose this option. Your air cleaner will run continuously for 24 hours, then return to the most recent mode of **Auto**, **Continuous**, or **Off**.

NOTE: The thermostat will manage fan and air cleaning selections when the selections overlap.
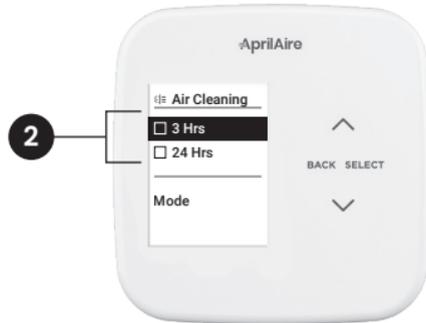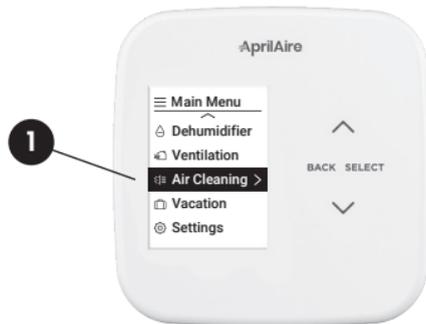
3. **Modes** (persistent)

    Auto: The air cleaner will run a minimum of 30 minutes every hour. The air cleaner will monitor the amount of time your heating and cooling system runs; if 30 minutes is not reached the air cleaner will automatically turn on. This will maximize the amount of air cleaning while minimizing energy consumption.

    Continuous: This option will provide the maximum amount of air cleaning available. The air cleaner will be active for 24 hours a day, seven days a week.

    Off: The air cleaner will not run the fan for the sole purpose of air cleaning.

NOTE: If air cleaning is installed, air cleaning will still occur during normal fan operation during heating, cooling or other indoor air quality events.
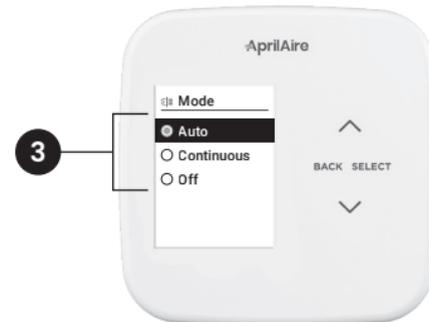
HUMIDIFIER CONTROL (IF INSTALLED)

The thermostat can be configured, through the **Installer** set-up, to control a humidifier and operate it in one of two modes, either **Automatic** or **Manual**. The thermostat will allow you to set a range of humidity based on an outdoor temperature reading (Automatic) or set and hold a value based on a single set point (Manual).

1. Select **Humidifier** from the **Main Menu**.

2. From this screen you can select humidity level adjustment or turning the control on or off.

3. To determine which mode the thermostat is set to, see **3a** and **3b** at right.
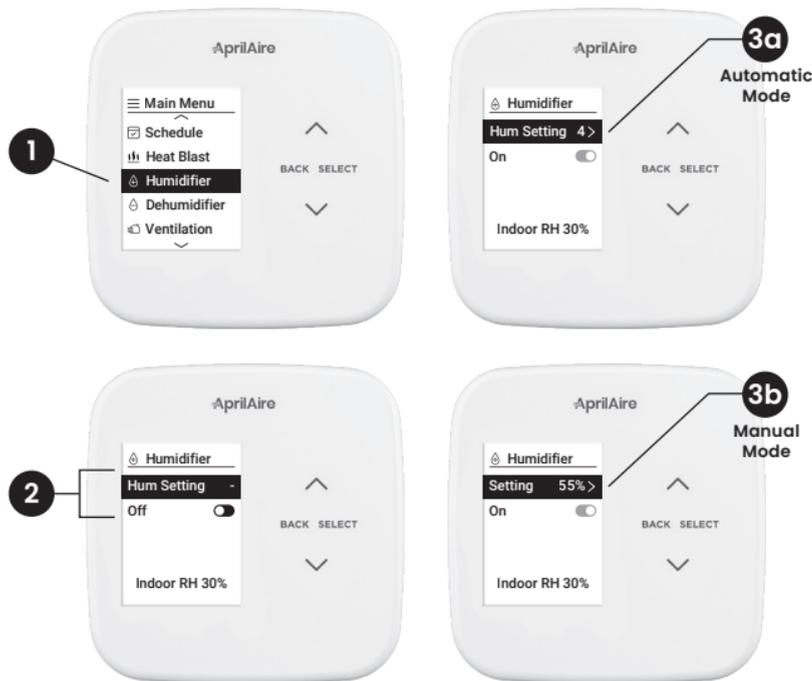
AUTOMATIC MODE

In **Automatic Mode**, you will receive the optimal amount of humidity so that your home and its furnishings will be protected from the potentially damaging effects of excessive or insufficient humidity during the heating season. The thermostat automatically adjusts your home's relative humidity based on the outdoor temperature to provide as much humidity as possible while avoiding window condensation.

The humidity setting needs to be set low initially to determine the humidity limits of your home. Please follow these steps when adjusting your thermostat.

1. Adjust the humidity setting to **3**, which is within the low-normal range. During the next 24-48 hours, it may be necessary to adjust the setting for more or less humidity, depending on your personal comfort and home's construction.

2. During the coldest days of the first heating season, minor adjustments may be necessary. This will depend on your home's windows and overall insulation. The relative humidity in your home will then be accurately controlled to meet your needs and should not need any adjustment during future heating seasons.

MANUAL MODE

In Manual Mode, it is important to anticipate drops and react to increases in outdoor temperature to maintain as much humidity as possible while avoiding window condensation.

1. Use **TABLE 1** below to determine the proper relative humidity setting. Changes may be necessary several times per day throughout the heating season.

TABLE 1 – RECOMMENDED RELATIVE HUMIDITY	
Outdoor Temperature	**Indoor Relative Humidity**
+50°F	50%
+40°F	45%
+30°F	40%
+20°F	35%
+10°F	30%
0°F	25%
–10°F	20%
–20°F	15%
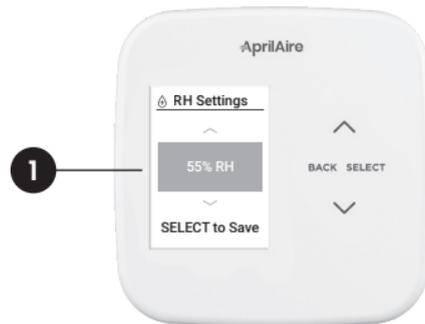
DEHUMIDIFIER CONTROL (IF INSTALLED)

The thermostat can be configured, through the installer set-up, to control dehumidification with either a whole home dehumidifier or with the air conditioner (cooling unit). The thermostat will allow you to set the desired humidity (% relative humidity) level in your home and can be used to turn the dehumidification **On** or **Off**.

1. Use the dehumidification adjustment to set the dehumidification setpoint to **60%** when first installed. Allow dehumidification to run until the initial setpoint is reached, before deciding if you want to change the humidity setting.

    Raise the setting if you prefer the air to be **less dry**; this will reduce the amount of time that dehumidification runs.

    Lower the setting if you prefer the air to be **more dry**; this will increase the amount of time that dehumidification runs.

Your comfort is the best measure of how to adjust your setting. When first installed, your dehumidifier has to remove all the moisture that is initially in your home. The home acts like a sponge so the moisture in the materials of your home is at the same level as the air. After drying the air, the materials of the home will release the moisture back into the air until they are again at the same level. As a result, it is not uncommon for dehumidification to operate for an extended period of time when it is first installed.
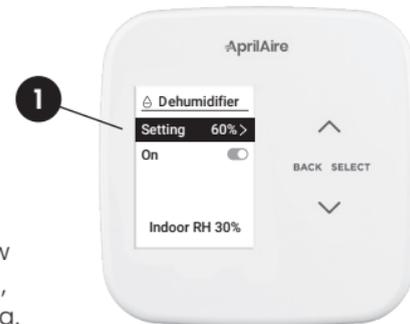
IF DEHUMIDIFICATION IS DONE WITH THE AIR CONDITIONER

The thermostat will cool up to 3°F beyond the cooling setpoint for dehumidification.
NOTE: overcooling may not be sufficient to meet the dehumidification setpoint.

ENERGY SAVING TIP #1:

Adjust the setting to be as high as is comfortable to reduce dehumidification run time – if it feels clammy or smells damp or moldy lower the setting. To save energy, turn the dehumidifier control **OFF** when you open your windows just as you would with air conditioning.

ENERGY SAVING TIP #2:

If vacating your home for an extended period in the summer, set the relative humidity to **60%** and the cooling set point to the highest level that meets the comfort and safety needs of your pets and possessions. Consult with professionals to determine the best set point. This will keep the humidity at a controlled level to help prevent mold while minimizing the amount of the cooling energy used. **Vacation** hold is a convenient way to adjust the dehumidification and cooling setpoint when you will be away. See page 27.

FRESH AIR VENTILATION (IF INSTALLED)

This thermostat can be configured, through the **Installer** set-up, to control fresh air ventilation based on a predetermined hourly schedule. You can temporarily override that schedule to bring in more fresh air, if desired, or even turn it off if outdoor conditions are poor.

1. Select **Ventilation** from the **Main Menu**.

2. From this screen you can select **Ventilation Events** or **Mode**.
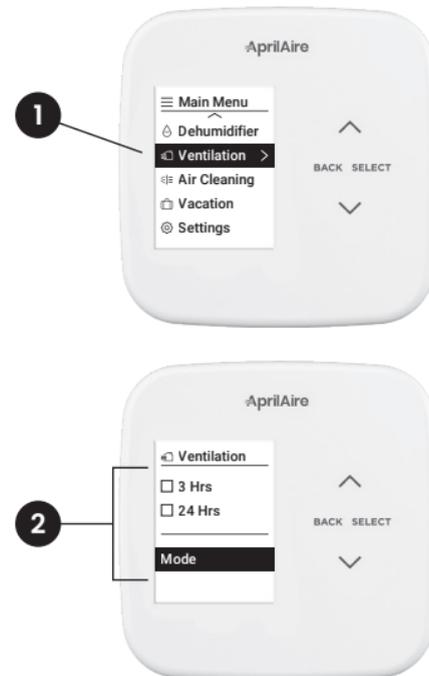
Ventilation has two temporary events and two permanent modes that can be set.

3. Events (temporary)

3 Hours: Ventilation will be constantly energized for 3 hours and then the fresh air mode will return to **Auto** or **Off** depending on which mode was most recently active. This option is used when fresh air is needed. **Example:** To dilute unwanted cooking odors.

24 Hours: Ventilation will be constantly energized for 24 hours and then the fresh air mode will return to **Auto** or **Off** depending on which mode was most recently active. This option is used when a large amount of fresh air is desired. **Example:** A day with desirable outdoor conditions.

4. Mode (persistent)

Auto: Ventilation will cycle based on the parameters set by the installer to meet your home's ventilation requirements.

Off: Ventilation will not run.
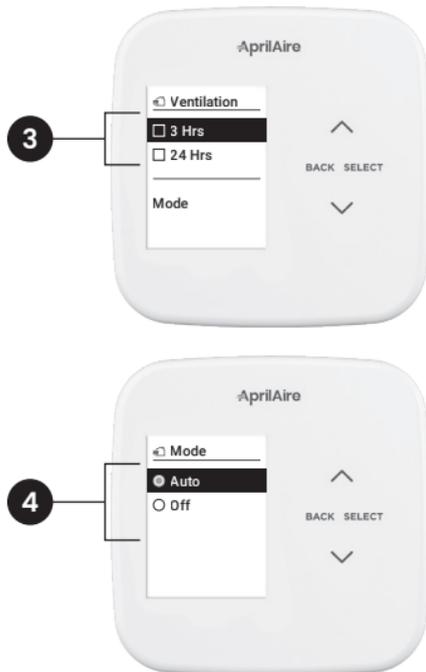
SET TIME AND DATE

1. Select **Settings** from the **Main Menu**.

2. From the **Settings** menu, select **Clock** the to set the time, or **Date** to set the date.

NOTE: Once the thermostat connects to the cloud, the time and date will be updated periodically. The thermostat will automatically update for daylight savings.
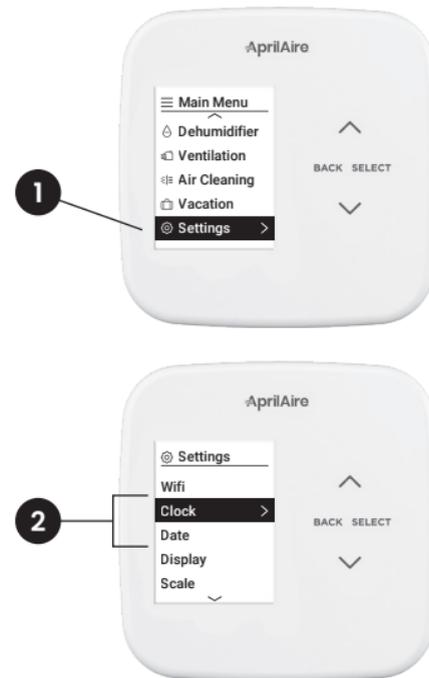
UNDERSTANDING PROGRAM SCHEDULES

The daily schedule is split into four sections:

Wake: Temperature you would prefer to wake up to.

Leave: Temperature when you are away from the house.

Return: Temperature you would prefer to return home to.

Sleep: Temperature you would prefer while sleeping.

Event 1: Optional additional event enabled in app only.

Event 2: Optional additional event enabled in app only.

The times and temperatures shown in **TABLE 2** are the defaults. The start time and temperature of each section can be changed to fit your schedule. We recommend these settings, since they can reduce your heating/cooling expenses. The fan program is pre-set to **Auto** for all events.

TABLE 2 – DEFAULT SCHEDULE

Event Designator	Start Time	Set Temperature		Fan
		Heat	Cool	
Wake	6:00 AM	70ºF (21ºC)	78ºF (25.5ºC)	Auto
Leave	8:00 AM	62ºF (16.5ºC)	85ºF (29.5ºC)	Auto
Return	5:00 PM	70ºF (21ºC)	78ºF (25.5ºC)	Auto
Sleep	10:00 PM	62ºF (16.5ºC)	82ºF (27.5ºC)	Auto
Event 1*	User defined	70ºF (21ºC)	78ºF (25.5ºC)	Auto
Event 2*	User defined	70ºF (21ºC)	78ºF (25.5ºC)	Auto

Event 1 and 2 are optional events, enabled from the app.

PROGRESSIVE RECOVERY

The Progressive Recovery feature allows Pre-Heating or Pre-Cooling PRIOR to a scheduled event in order to reach the desired temperature at the start of that scheduled event. **Example:** According to **TABLE 2**, the **Wake** time is 6:00 am, the **Wake** heat set point is 70ºF and the **Sleep** set point is 62ºF. The heat will turn on prior to 6:00 am so that the temperature reaches 70ºF by the time the **Wake** event begins.

1. From the **Schedule** option in the **Main Menu**, you can turn the schedule on or off, and make changes to the schedule.

   Modify: The event start time, temperature, fan mode, and controlling sensor (if installed) can be adjusted for each event of each day.

   On/Off: When the **Schedule** is turned **Off** the thermostat will continue to control at the current temperature setting until adjusted with ∧ and ∨.

2. Select **Modify** to change default schedule settings.

3. Select the group of days or day you would like to modify.

4. Adjust **Wake** details (**Start**, **Heat**, **Cool**, **Fan**, **Sensors**), and/or select **Next** to proceed.

1

Main Menu
⇄ Mode
Fan
Hold
Schedule >
Heat Blast

BACK SELECT

2

☑ Schedule

Modify >
On ⬤

3

☑ Modify Day

All Days >
Weekdays
Weekends
Monday
Tuesday

4

☑ Wake

Next ••••>
Start 6:00a
Heat 70°
Cool 70°
Fan Auto
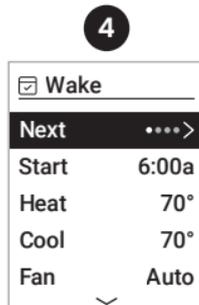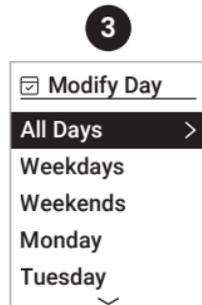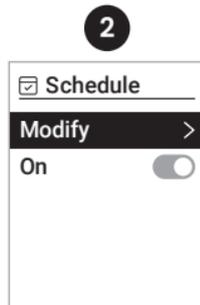
5. Adjust **Leave** details and/or select **Next** to proceed.

6. Adjust **Return** details and/or select **Next** to proceed.

7. Adjust **Sleep** details and/or select **Next** to proceed.

8. **a)** If you modified a group of days you will see a confirmation message, you can return to the **Home** screen by selecting **Save & Exit**, or go back by selecting **Cancel**.
   b) Or if you modified a single day you can copy the settings to another day or group of days.

9. If you choose to copy, you will see this confirmation message, you can return to the **Modify** menu to make changes to another day by selecting **Edit More Days** or return to the **Home** screen by selecting **Save and Exit**.

5

☑ Leave

Next ••••>
Start 8:00a
Heat 70°
Cool 70°
Fan Auto

6

☑ Return

Next ••••>
Start 5:00p
Heat 70°
Cool 70°
Fan Auto

7

☑ Sleep

Next ••••>
Start 12:00p
Heat 70°
Cool 70°
Fan Auto

8a

Confirm
Schedule
Change

Save & Exit
Cancel

8b

Copy Day To...

All Days >
Weekdays
Weekends
Monday
Tuesday

9

Copied to
All Days

Save and Exit >
Edit More Days
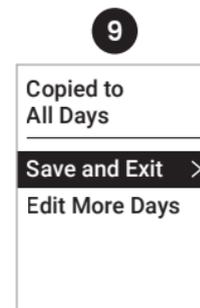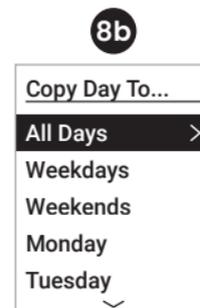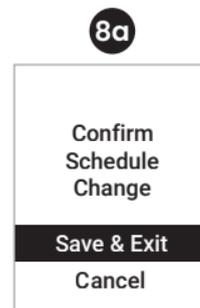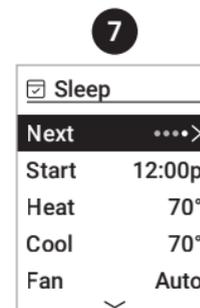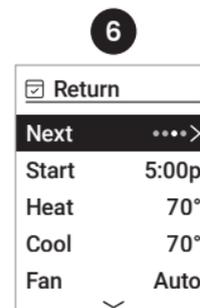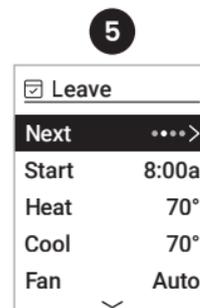
Heat Blast® will raise the current room temperature 3ºF to 5ºF based on the installer set-up, and then resume normal operation.

To activate Heat Blast, select **Heat Blast** from the **Menu**, and use the **Select** button to set the toggle to **ON**.

NOTE: Heat Blast button is only available if it is enabled in the **Installer Setup** and the thermostat is in **Heat** or **Emergency Heat** mode.

To cancel Heat Blast, select **Heat Blast** from the **Menu**, and use the **Select** button to set the toggle to **OFF**.

TEMPORARY HOLD

Press ∧ or ∨ to immediately adjust the temperature when the schedule is running. This will temporarily hold the temperature setting until the next scheduled event.

A temporary hold can also be set from the **Hold** option in the **Menu**. The end time of the hold can also be adjusted from here.

The temporary hold can be canceled from the **Hold** option in the **Menu**, or by adjusting the temperature back to the scheduled temperature.

AWAY

The Away feature allows the thermostat to be set to a predefined setpoint(s) by simply pressing the **Away** button in your App or in the thermostat's **Menu**. The default cooling setpoint is 85ºF (29.5ºC), the default heating setpoint is 62ºF (16.5ºC) and the default fan mode is **Auto**. The default settings can be modified in the **Settings Menu** under the **Away** option. Away can be canceled from the **Away** option in the **Menu**.

VACATION

This energy saving feature allows you to suspend the programmed schedule for an extended period of time. The selected temperature and dehumidification setpoint (optional) will be maintained until the vacation hold end date and time. Once that date and time are met, the previously programmed schedule will resume. If you return earlier than expected, turn off the vacation hold from the **Vacation** option in the **Menu** to resume the programmed schedule.

WI-FI MAINTENANCE AND TROUBLESHOOTING

CLEARING ROUTER SETTINGS

If you purchase a new Wi-Fi router or change the security settings on your existing router, the router settings in the thermostat need to be cleared so the new Wi-Fi router settings can be entered. To do this, enter the **Wi-Fi settings** menu (Menu > Settings > Wi-Fi). Then select **Disconnect**. This will remove all the previous Wi-Fi connection settings. Refer to the **Wi-Fi Quick Start Guide** for instructions on connecting the thermostat to your Wi-Fi network. **NOTE:** Clearing the router settings will not remove the thermostat from your user account. See **Removing the Thermostat from a User Account** below.

REMOVING THE THERMOSTAT FROM A USER ACCOUNT

The thermostat can only be registered to one account. If you need to remove the thermostat from an existing account so it can be registered to a new account, it can be done at the thermostat. This may need to be done for instance if you have purchased a home with the thermostat and need to remove the thermostat from the previous owner's account and register it to your account. To do this, enter the **Advanced Wi-Fi settings** menu (Menu > Settings > Wi-Fi > Advanced). Then select **Unregister**. This will remove the thermostat from any account that it is currently registered to. Refer to the **Wi-Fi Quick Start Guide** for instructions on registering the thermostat to a new account.

DISABLING THE WI-FI RADIO

To turn off the Wi-Fi radio on the thermostat, enter the **Advanced Wi-Fi Settings** menu (Menu > Settings > Wi-Fi > Advanced > Wi-Fi ON/OFF). Then select **OFF** and press **SELECT**. This will turn off the Wi-Fi radio, but maintain all network settings. To turn the Wi-Fi radio back on simply enter the **Advanced Wi-Fi Settings** menu and change the setting to **ON** and press **SELECT**.

TROUBLESHOOTING WI-FI CONNECTION

The Wi-Fi connection status is communicated through the use of the radio strength indicator on the **Wi-Fi Settings** menu (Menu > Settings > Wi-Fi).

SETUP MENU

TABLE 3 – USER SYSTEM SETTINGS TABLE	
WiFi	WiFi connection mode, connection status, and advanced connection settings.
Clock	Set time (Automatically updates when connected to internet).
Date	Set date (Automatically updates when connected to internet).
Display	Display can be disabled during sleep for light sensitive locations.
Scale	Change temperature scale from Fahrenheit to Celsius.
Away	Adjust the default heating and cooling temperatures used for away holds.
About	Contains thermostat model number and software/hardware version.
Reset Reminder	Reset expired service reminders.
Lockout	Locks controls to prevent tampering. To temporarily override the lockout press and hold the **Select** button for 7 seconds.

LIMITED WARRANTY

Your Research Products Corporation AprilAire® Thermostat is expressly warranted for five (5) years from date of installation to be free from defects in materials or workmanship.

Research Products Corporation's exclusive obligation under this warranty shall be to supply, without charge, a replacement for any thermostat which is found to be defective within such five (5) year period and which is returned, together with the date of installation, no later than thirty (30) days after said five (5) year period by you to either your original supplier or to Research Products Corporation, Madison, Wisconsin 53701.

THIS WARRANTY SHALL NOT OBLIGATE RESEARCH PRODUCTS CORPORATION FOR ANY LABOR COSTS AND SHALL NOT APPLY TO DEFECTS IN WORKMANSHIP OR MATERIALS FURNISHED BY YOUR INSTALLER AS CONTRASTED TO DEFECTS IN THE THERMOSTAT ITSELF.

IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE SHALL BE LIMITED IN DURATION TO THE AFORESAID FIVE YEAR PERIOD. RESEARCH PRODUCTS CORPORATION'S LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, OTHER THAN DAMAGES FOR PERSONAL INJURIES, RESULTING FROM ANY BREACH OF THE AFORESAID IMPLIED WARRANTIES OR THE ABOVE LIMITED WARRANTY IS EXPRESSLY EXCLUDED. THIS LIMITED WARRANTY IS VOID IF DEFECT(S) RESULT FROM FAILURE TO HAVE THIS THERMOSTAT INSTALLED BY A QUALIFIED HEATING AND AIR CONDITIONING CONTRACTOR. IF THE LIMITED WARRANTY IS VOID DUE TO FAILURE TO USE A QUALIFIED CONTRACTOR, ALL DISCLAIMERS OF IMPLIED WARRANTIES HALL BE EFFECTIVE UPON INSTALLATION .

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above exclusions or limitations may not apply to you.

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

WARRANTY REGISTRATION

Visit us online at **www.aprilaire.com** to register your AprilAire product. If you do not have online access, please mail a postcard with your name, address, phone number, email address, product purchased, model number, date of purchase, and dealer name and address to: Research Products Corporation, P.O. Box 1467, Madison, WI 53701.

Your warranty registration information will not be sold or shared outside of this company.

FCC AND ISED COMPLIANCE STATEMENTS

Contains FCC ID: TFB-1003 and QOQGM210P

Contains IC: 5969A-1003 and 5123A-GM210P

This device complies with Part 15 of the FCC Rules and with Innovation, Science and Economic Development Canada's License-exempt RSS standard(s). 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.

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)

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.

To comply with FCC and Innovation, Science and Economic Development Canada's RF exposure limits for general population/uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

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