



Manufacturer:	Aprilaire
Model Number(s):	WiFi Thermostats: 8840, 8830, 8820, 8810
Models Tested:	8820 rev 1.04
Minimum Core Module Version:	ELAN 7.3
Document Revision Date:	5/17/17

*This integration note can be applied to several different Aprilaire Wi-Fi thermostat models. We will be using an “Aprilaire 8820 Thermostat” as our example.*

**Note:** Your configuration steps may be different depending on your thermostat model. The official Aprilaire documentation for your thermostat can be found at the following link. [Official Aprilaire Documentation](#)

## OVERVIEW AND SUPPORTED FEATURES

### THE WiFi THERMOSTATS SUPPORT THE FOLLOWING FEATURES:

**Temperature Control:** Temperature control can be managed by schedules tied to house modes or by manual control based on time (Timed Temporary Hold, Temporary Hold and Permanent Hold). Temperature can be shown as either Fahrenheit or Celsius on the viewer interface.

**Mode Control:** The climate system can be set to run in the following heating and cooling modes: **Heat** only, **Cool** only, **Auto Heat Cool**, **Emergency Heat** or **Off**.

**Fan Mode Control:** Systems that have a fan can be set to run in **Automatic**, **Continuous** or **Circulate** mode.

**History View:** The history view shows the inside temperature, outside temperature, unit run and fan run times, and cooling and heating set points.

**Schedule Control:** Multiple schedules can be set using the Viewer software and configured using the configurator. Up to 10 schedules can be created and are tied to the system mode.

**Outside Air Temperature:** The outside air temperature can be obtained from the weather information on the web, a sensor connected to the thermostat, or monitored using an 8081 or 8082 Support Module. The outside air temperatures can be displayed in real-time or tracked in history for each thermostat in the Viewer.

**Humidistat:** The 8800 series can be configured as fully functioning humidistat. The driver should automatically detect the configuration and the UI should show the appropriate controls for humidity.

**Celsius and Fahrenheit:** Aprilaire Thermostats support displaying Temperatures in C or F both at the stat and in the ELAN system. The system operates in half degree increments in Celsius, and Full degree increments in Fahrenheit.

**Remote Room Temp Sensor connected directly to 8800 Thermostat:** The 8800 can be configured to utilize a remote temperature sensor in place of its on board sensor. The sensor connects directly to its T1 & T2 terminals. When properly connected and configured this sensor will override the onboard sensor and the thermostat then reports the remote sensor value to the system controller as its room temperature value. Please refer to the Aprilaire documentation for setup information.

### THE 8800 THERMOSTATS DO NOT SUPPORT THE FOLLOWING FEATURES:

**Auto Thermostat Detection:** Thermostat need to be added individually. (see below)

Any feature not specifically noted as “supported” is not supported.
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## INSTALLATION OVERVIEW

1. Install the Aprilaire WiFi thermostat and control cables during the rough-in phase. Consult the **Aprilaire Documentation for your model** for details and control cabling requirements
2. Mount and connect the thermostats bases using the diagrams provided below.
3. Thermostat power wiring:  
The 8800 thermostats are powered by the distribution panel. Refer to the Aprilaire documentation for details.
4. Recheck the wiring on both at the thermostat and the Distribution Panel.
5. Install and power up the thermostats one at a time, while noting the thermostat locations on the inside of the cover for the corresponding Distribution Panel. Program the thermostats as outlined in the thermostat programming section below. Do not turn on the A and B switches at this time.
6. Test the thermostat and climate system to ensure that the thermostats correctly turn on the appropriate heating or cooling equipment, and open or close the appropriate valves / dampers.
7. Configure the ELAN system for the thermostats and confirm communication between the thermostats and the Controller.
8. Configure the ELAN system for HVAC equipment on the Climate tab under Heating/Cooling Units.
9. Test the system by changing the set points, modes and schedules on the viewer and various thermostats, confirming that the various components in the system are communicating with each other.
10. Optionally, configure the climate scheduling using the configurator to create the schedule format and the viewer to adjust the times and temperature settings as desired.

**NOTE: After a reboot or upgrading your ELAN system, it may take up to 15 minutes for the WiFi thermostats to show as online in the ELAN viewer. This issue is due to the communication link on the thermostat not allowing ELAN to reconnect until the thermostat drops the previously broken link or the thermostat is rebooted. To force the Aprilaire to reconnect sooner, reboot the thermostat.**

For the physical installation instructions for your specific thermostat, please refer to the Aprilaire documentation for your specific product
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# 1. THERMOSTAT PROGRAMING:

**Please perform the following instructions for each of your thermostats individually.**

Once your thermostat is powered up and running properly, you need to make a few changes to its settings in order to properly integrate with the ELAN System.

## 1.1.1 Wi-Fi Setup Overview:

Configuring your Aprilaire thermostats network settings involves the following.

1. Turn your thermostat into a Wi-Fi hotspot.
2. Connect a wireless device to your thermostat's Wi-Fi hotspot as a wireless IP client.
3. Connect to your thermostat's Application Interface.
4. In the AprilAire App, configure your thermostat to become a client on your network.

The subsequent steps will tell you in detail how to do this.

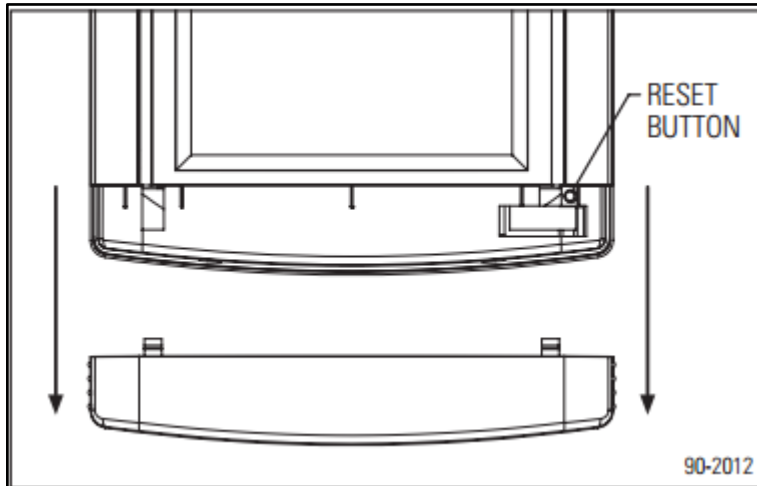
## 1.1.2 Turn Your Thermostat Into a Wi-Fi Hotspot:

### 1.1.3 Factory Reset:

Before you begin, it's recommended that you factory reset your thermostat. This will also turn your thermostat into a hotspot.

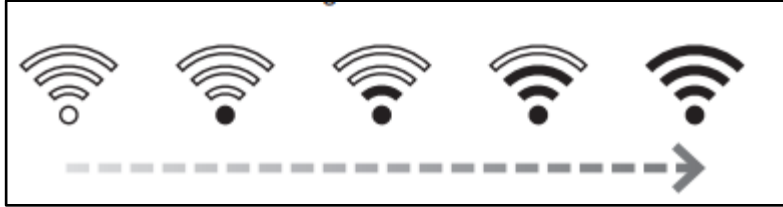
You will find a reset button, under the cover, on the front of your thermostat. This button will be used to reset your thermostat to factory default settings.

1. Press and hold the reset button for 10 seconds then release.



2. Your thermostat should now be at its factory default settings.

3. Your thermostat by default will be in Wi-Fi Connection Mode. To confirm that your thermostat is in Wi-Fi Connection Mode verify that the radio bars on your thermostat are strobing as shown below.



#### **1.1.4 Connect a Wireless Device to Your Thermostat's Wi-Fi Hotspot as a Wireless IP Client:**

1. On your computer or mobile device scan for available Wi-Fi networks.
2. Your thermostat's hotspot should appear as **APRILAIRE8820** followed by a unique identifier corresponding to the last 6 digits of its MAC address.
3. Connect to your thermostat's hotspot.

If you are installing multiple thermostats, the MAC address of each thermostat will be displayed in the message center on the display of the thermostat. This information can be used to identify each individual thermostat when scanning for wireless networks.

The MAC address can also be discovered by removing the cover on the front of the thermostat.

#### **1.1.5 Connect to Your Thermostat Through the Aprilaire App:**

1. If you have not already, download and install the free Aprilaire Wi-Fi Thermostat App.
2. Launch the App and select "Connect to a new Thermostat"
3. Select your Aprilaire WiFi Thermostat
4. Configure your network settings as appropriate

#### **1.1.6 Verify the Thermostat is Connected to Your Wi-Fi Network:**

1. Once all the required information is entered in the web browser interface, your thermostat should connect to the Wi-Fi network that you previously selected.
2. After your thermostat is connected to your Wi-Fi network, your thermostat will display radio bars based on the Wi-Fi signal strength of the network that its connected to.

#### **1.1.7 Additional Installer Options**

Additional Installer options may need to be set for your thermostat. Check your thermostat's manual for access to Installer Options. The following are Key to operation in Elan:

- **Automation System v. Aprilaire Cloud:** Must be set to Automation System for Elan Control
- **Equipment Type Heat/Cool:** Set as Appropriate
- **Control Setup Heat and Cool:** Set as Appropriate
- **Auto Changeover – Enable/Disable:** This **MUST** be set to Enable to have "Auto" mode in Elan.
- **Sensors:** Configure as Appropriate
- **Program Mode:** This must be set to "Non-Prog" to disable scheduling on the Aprilaire WiFi Thermostat. Leaving this set to other modes will interfere with Elan System operation.

## ELAN CONFIGURATION DETAILS

The following table provides settings used in the ELAN Configurator. In the table below:

- “<Select>”                                        Select the appropriate item from the list (or drop-down) in the Configurator.
- “<User Defined>”, etc.                        Type in the desired name for the item.
- “<Auto Detect>”, etc.                         The system will auto detect this variable.

<b>Devices</b>	<b>Variable Name</b>	<b>Setting</b>	<b>Comments</b>
<b>Communication Devices</b>	<b>None Required</b>	None Required	8800 Series are assigned IP Address under Devices
<b>HVAC Units</b>	<b>Name</b>	<User Defined>	
	<b>Model</b>	<b>Generic HVAC Unit</b>	
	<b>Controls Heat</b>	<Select from list>	
	<b>Controls Cooling</b>	<Select from list>	
	<b>Controls Fan</b>	<Select from list>	
<b>Thermostats/Humidistats</b>	<b>Name</b>	<User Defined> (Default: Aprilaire 8820 WiFi Thermostat)	
	<b>Location</b>	<User Defined> (Not Required)	
	<b>IP Address</b>	<User Defines>	IP Address of the WiFi Thermo/Humidistat
	<b>Heating Unit</b>	<Select from list>	
	<b>Cooling Unit</b>	<Select from list>	
<b>Schedules</b>	<b>HVAC Schedule</b>	<Select from list>	Select desired number of schedules
	<b>Programs</b>	<Select from list>	Select desired weekly programs
	<b>Monday - Sunday</b>	<Select days>	Select days that go together
	<b>Periods per Day</b>	<Select from list>	1, 2 or 4 periods per day
<b>Global Options</b>	<b>Units</b>	<Select from list>	Fahrenheit or Celsius, no decimal places (see note 2)
	<b>Temporary Hold Mode</b>	<Select from list>	Timed Hold or Hold until next schedule period
	<b>Temporary Hold Default Time</b>	<Select from list>	Select default Temporary Hold time
	<b>Outside Temperature Sensor</b>	<Select from list>	Choose optional sensor if installed or choose Internet
	<b>Outside Humidity Sensor</b>	<Select from list>	Choose optional sensor if installed or choose Internet
<b>Notes:</b>			
	1. Select either Fahrenheit or Celsius no decimal places. All other options are not supported.		

## COMMON MISTAKES

1. Programming two thermostats with the same address. Each thermostat must have a unique network address.
2. Bending the pins on the thermostat. Removing the thermostat from its base has a tendency to bend the pins. This can result in a poor connection when the thermostat is replaced in its base. Gently bend the pins so they are straight and square to correct the problem.
3. Mounting the thermostat base on an uneven surface. Be sure the surface that the base is mounted to is flat. An uneven surface can cause connection issues when the thermostats are seated in the base.
4. Leaving Scheduling (Program Mode) Enabled on the Thermostat. If Program Mode is set to 7-Day rather than Non-Porg, then scheduling is enabled on the thermostat. This will cause the thermostat to change setpoints according to its schedule, leaving the Elan system in Timed/Permanent Hold mode. In addition, leaving scheduling enabled on the thermostat can result in the thermostat's schedule, and Elan constantly adjusting setpoints to compensate for each other.