



## AprilAire S86WMUPR Crestron Home Application Guide

### Description

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This Driver provides local control of the AprilAire S86WMUPR Thermostat and provides a wide variety of functionality for control of and live status feedback from the device:

- Heat, cool, and auto Setpoint control
- System mode
- Fan mode
- Humidity control
- Direct heat, cool, and auto setpoints from quick actions
- Direct system modes from quick actions
- Direct fan modes from quick actions
- Direct humidity setpoints from quick actions
- Support for Fahrenheit and Celsius

This Driver requires a license that can be obtained by [following the steps in later in this document](#). Each Driver requires a license. e.g., if you have 2 thermostats you wish to control, thus 2 Drivers in the system, 2 licenses are required. Licenses are tied to the Crestron processor, not the installed thermostat.

### Supported Processors

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This Driver is supported in a Crestron Home processor running Crestron Home OS version 4.000.0125 or later. This driver is not supported in SIMPL Windows. For the SIMPL Windows version of this driver, please visit <https://store.controlworks.com/products/Aprilaire-S86WMUPR-SIMPL>.

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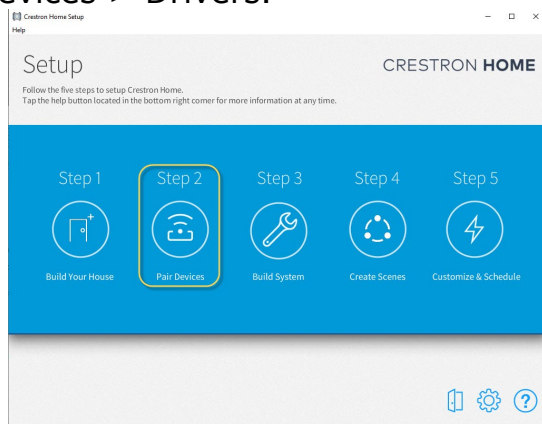
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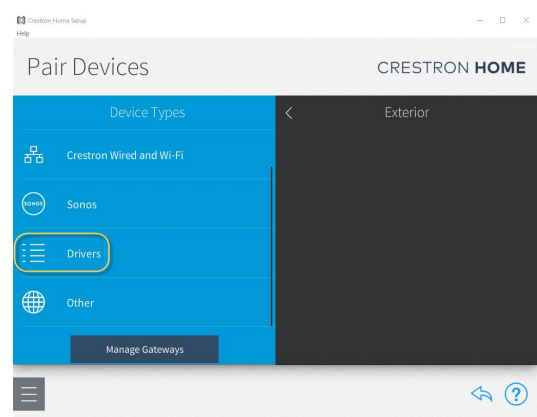
## Adding the Driver to a Crestron Home System

Note: These instructions and screenshots have been prepared with CP4-R Crestron Home version v4.000.0125. Future updates to Crestron Home may result in changes to the appearance or the steps required to implement the Driver.

1. Ensure the thermostat is installed and is functional in the AprilAire mobile app.
2. Ensure the thermostat has been configured for Automation by entering the installer settings menu: Settings -> Hold Up and Down until Installer appears -> Select Installer -> HVAC Adv -> Select Automation.
3. Ensure the Crestron processor is connected to the network, and is able to reach the internet. Internet access is required for [Driver licensing](#).
4. Add the Driver to Crestron Home - Open the Crestron Home Setup Xpanel or Mobile App, navigate to the drivers by pressing Menu > Settings > Configure System > Pair Devices > Drivers.

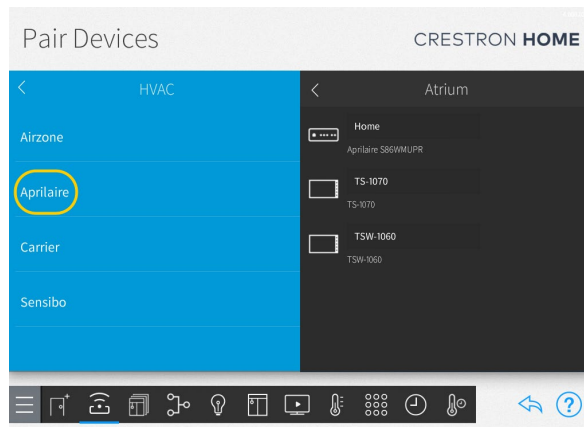


**Figure 1 - Pair Devices**

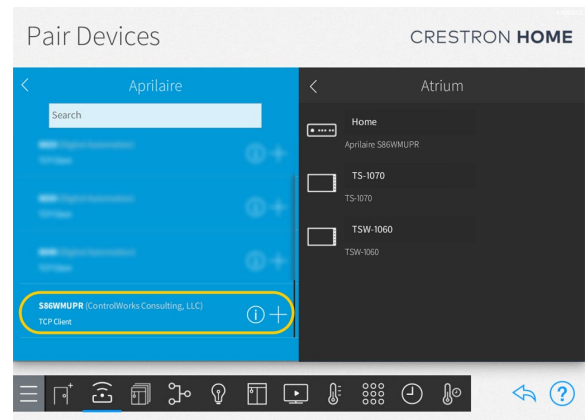


**Figure 2 - Drivers**

- After Crestron Home refreshes the Driver list, scroll the list of Drivers to locate and select the HVAC category, then select Aprilaire, then select the S86WMUPR.

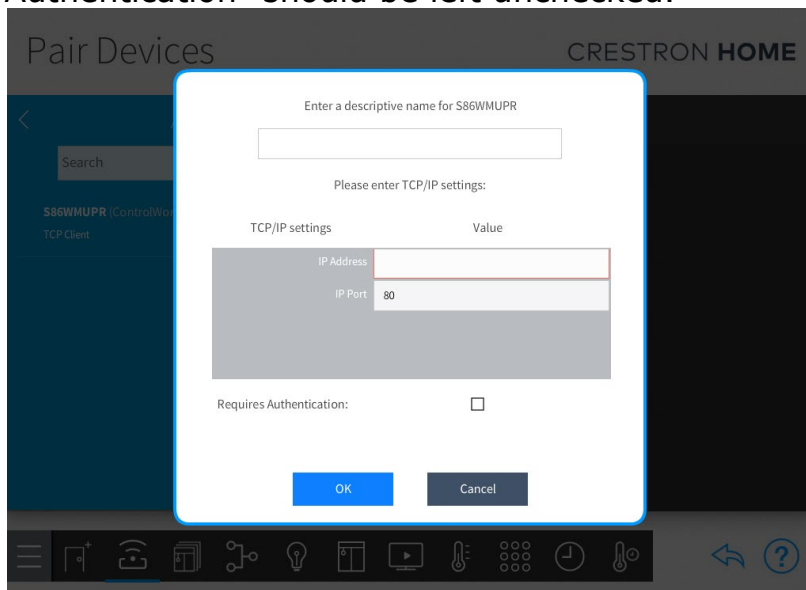


**Figure 3 Aprilaire**



**Figure 4 – S86WMUPR**

- You must add a Driver to a Room. To add the Driver to a Room, choose a Room from the "Select a Room" list that the Driver is to be added to, then select the + button next to the Driver to add the Driver to the Room.
- Enter a name of your choosing for the Driver. The name you entered will be displayed on the Room and Home Page tile. Enter the IP address of the thermostat. The Address can be location on the thermostat by selecting Settings -> Wi-Fi -> Advanced. It is recommended to set a DHCP reservation so the address does not change. "Requires Authentication" should be left unchecked.



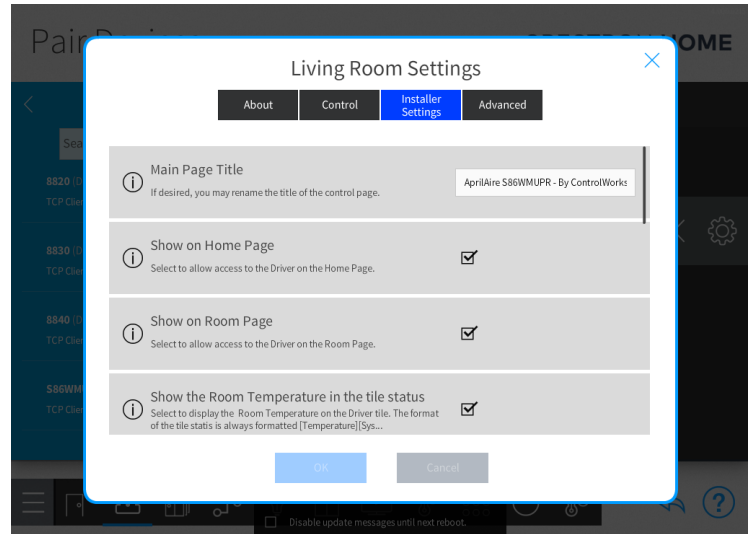
**Figure 5 - Name Device**

- Press OK, and the Driver will be added to the System.

9. Review and update any installation settings you choose to. Options include:

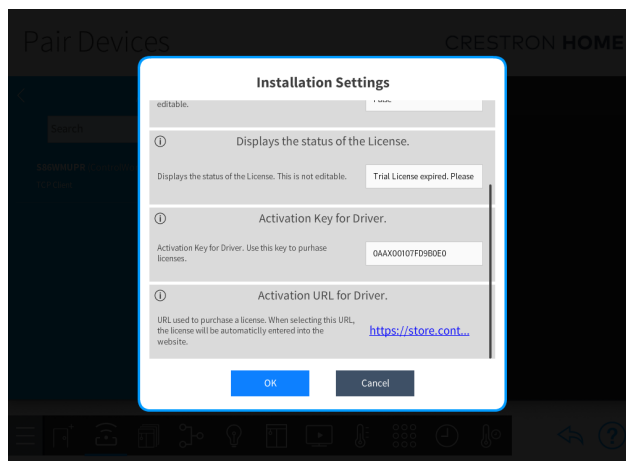
- Changing the Page Title
- Showing/hiding the driver on the home page
- Showing/hiding the driver on the room page
- Displaying the system mode and fan mode on the tile
- Adjusting the initial humidity value
- Showing/hiding the license information.
- Display system status on the tile

Once all options have been set, press OK.



**Figure 6 - Installation Settings**

10. After entering the installation settings, the Driver will attempt to retrieve the license for the processor. The state of the license, activation key, and activation URL will be provided below. This information will be available at a later time, so it is not important to copy it down. Press OK to continue and the Driver will be fully added.



**Figure 7 - License**

11. At this time, if no license has been purchased, the Driver will be operating in [trial mode](#). You may purchase licenses for the Processor at this time if desired. Click the License URL or navigate to <https://store.controlworks.com/products/Aprilaire-S86WMUPR-License> and purchase the necessary number of licenses for this processor. Each Thermostat you are controlling requires a license. For more information about licenses, please review [Module Instance License](#).

## User Interface Overview

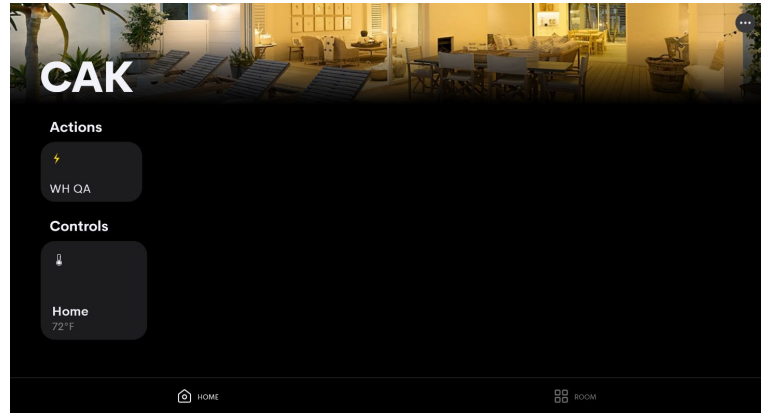
This section describes the general operation of the customer facing user interface; however, the exact configuration and display of the Driver is dependent on factors such as the size of the user interface being used and configuration of the thermostat.

### Home Tile

Crestron Home displays the Driver on the Home page and Room page as a Tile which is created automatically when the Driver is added to a System. The name of the Driver specified while [Adding the Driver to a Crestron Home System](#), will be displayed in the Tile. To access the Driver's controls, select the Tile.

The Tile can be shown on the Home page, Room page or both. To modify where the Tile is displayed, using the Crestron Home setup tool, navigate to Pair Devices ->

Choose the room the Driver is located -> Select the Gear Icon to enter the setup for the Driver, select "Installer Settings" and choose the page to display the tile.



**Figure 8 - Home Page**

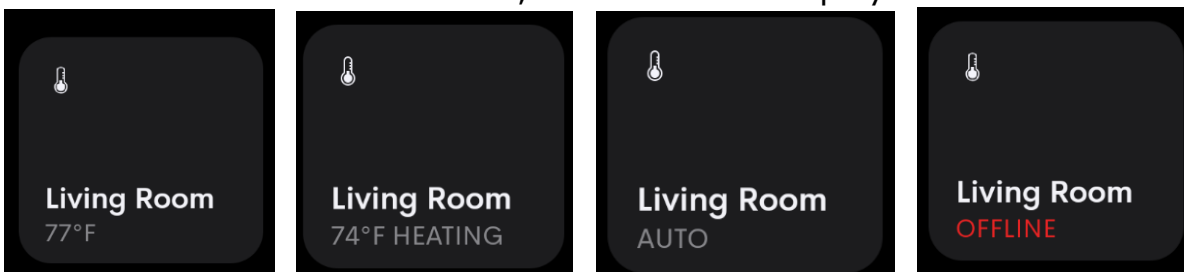
### Tile Settings

The main tile displays the name you have given the driver during the setup process, and can display status. The tile can display statuses in the following order:

- Current Room Temperature
- Current System Mode
- Current H/C Equipment status
- Current Fan Mode

Each item can be turned on and off in the Installation menu however will always be in the order [Room Temperature][System Mode][H/C Equipment status][Fan Mode].

If the thermostat is not connected, the Driver tile displays "OFFLINE" text.



To modify which text is displayed, using the Crestron Home setup tool, navigate to Pair Devices -> Choose the room the Driver is located -> Select the Gear Icon to enter the setup for the Driver, select "Installer Settings" and choose the page to display the tile.

## Main Page

The main page of the Driver is broken into a few components, the Title area, Licensing Information, and Thermostat controls.

The Title may be changed using the Crestron Home Setup tool.

## Licensing Controls

The Licensing information may be turned off using the Crestron Home Setup tool.

The image below shows the Activation Key, the details of the license, and the “Update License Information” button.

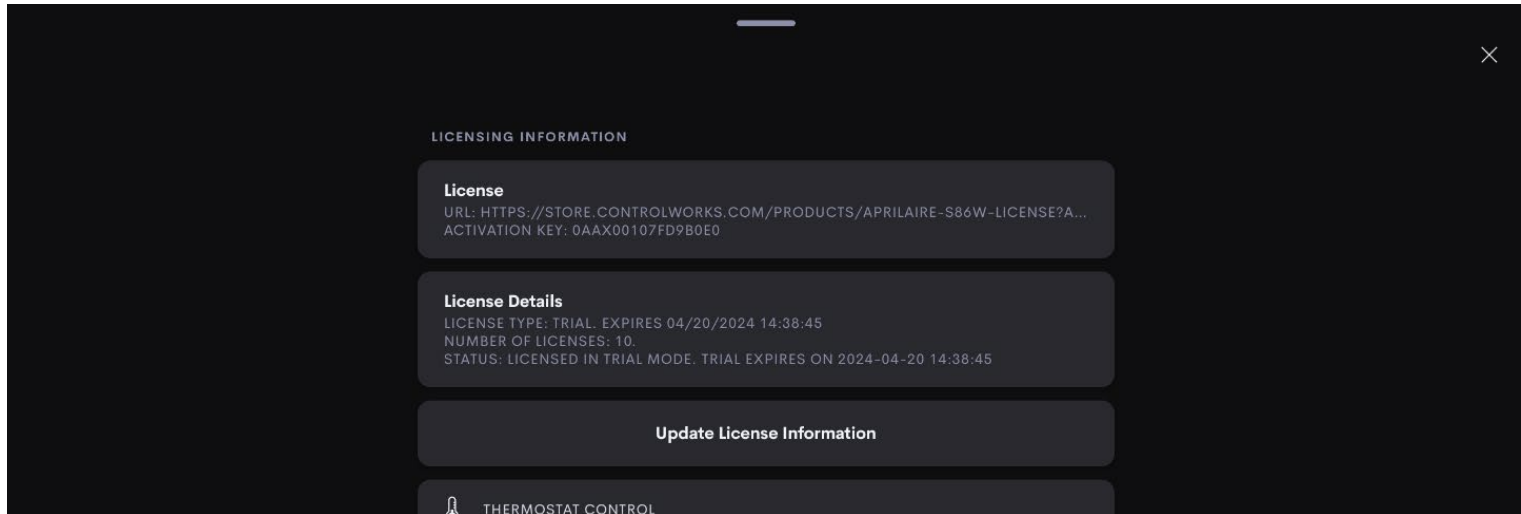


Figure 9 - Licensing Information

## Thermostat Control Area

This area of the Driver displays the controls and status for the thermostat.

The radial gauge displays the current temperature of the controlling indoor air temperature sensor (The AprilAire S86WMUPR can have multiple sensors that are all configured differently, that all result in a 'controlling' value. This is the same value that is displayed on the thermostat).

The radial gauge also displays the current setpoint for the selected mode, and separate raise and lower controls for the setpoint.

When the system is in Heat, Cool, or Auto mode the radial gauge will display a circle indicating the setpoint. Dragging the circle on the radial gauge will adjust the setpoint. Additionally, depending on the system mode, cool and heat setpoint + and - buttons appear below the gauge, and pressing + or - will increment or decrement the setpoint.



**Figure 10 – Thermostat Controls**

System Mode buttons are dynamically displayed depending on configured capabilities. Pressing on a mode button immediately sends the command to the thermostat. The system mode status will be reflected in the System mode text area.

Pressing on a fan mode button immediately sends the command to the thermostat. The fan mode status will be reflected in the fan mode text area.



### Auto Mode

The S86WMUPR supports dual setpoint auto only. It does not support single setpoint auto. When in auto the radial gauge displays handles for both the cool and heat setpoint. Additionally, the control displays individual raise and lower controls for both heat and cool setpoints only when Auto mode is selected.

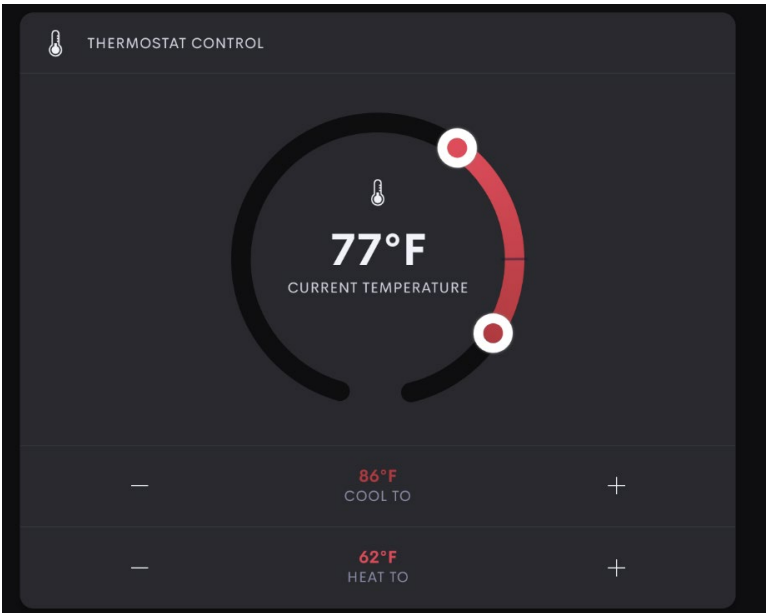


Figure 11 - Auto Mode

### Humidity Control

This area displays the Humidity controls and the functionality changes depending on the humification configuration type that is setup in the thermostat configuration. If no humidifier is enabled, no humidity controls will be displayed.

When in Auto mode, the current humidity is displayed in the text box. the user may select between modes 0-7. 0 being off and 7 being the highest setting.

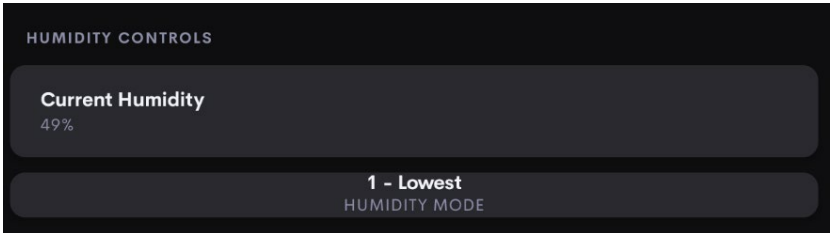


Figure 12 - Auto Humidity

When in manual mode the current humidity is displayed in the text box. The user may turn the humidifier on and off, and set the specific humidity level.

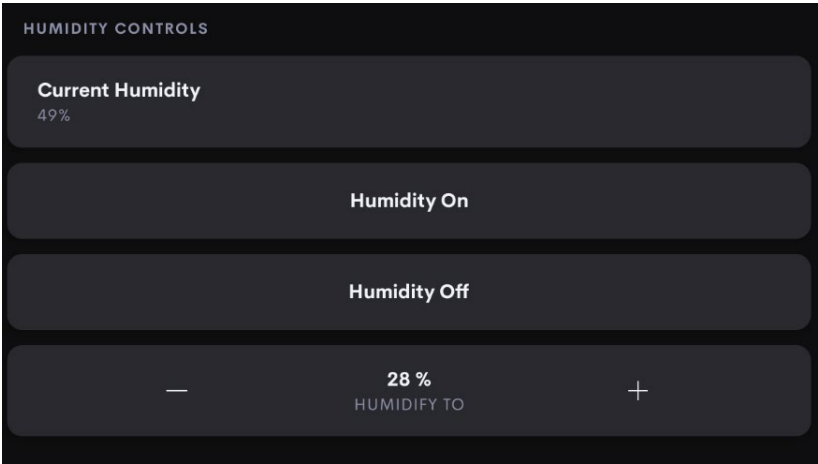


Figure 13 - Manual Humidity

## Sequences and Quick Actions

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### Quick Actions

The full steps to create Quick Actions and Events in Crestron Home can be found here: <https://docs.crestron.com/en-us/8525/Content/CP4R/Installer-Config/Configure-Quick-Actions.htm>.

This Driver supports Quick Actions for setting Setpoints, System Modes and Fan Modes.

To configure a Quick Action, navigate to the Customize & Schedule in the Crestron Home setup App, Select Customize Actions & Events, select the room the thermostat is in, select Quick Actions, create a Quick Action, then select Sequence in the Settings Tab. Navigate to the room the thermostat is in, select the thermostat Driver. From here you can choose to set modes, and setpoints.

### Events

This Driver does not support any events at this time. If you have a specific event that you would like to receive, please contact us.

## Module Instance License

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Each instance of a Driver in a system requires an associated license. For example, controlling two thermostats requires 2 licenses.

Licenses are purchased using an Activation Key unique to each Crestron Home Processor.

Licenses may be added at any time using the same Activation Key. If you have purchased one or more licenses for the processor previously, you may return and add additional licenses at any time [following the steps below](#).

### License Changes and Transfers

If a processor fails and is replaced the license will need to be updated. We offer one complimentary reassignment of the license. A processing fee is required for subsequent reassignment of the licenses. Before purchasing a license, we encourage the use of our Trial Period to allow for development and testing before purchasing licenses.

All licenses associated with an Activation Key must be transferred together. Unused licenses, or a quantity of used or unused licenses cannot be transferred.

### Trial Period


To aid testing, the Module includes a complimentary 7-day Trial Period, during which time the Driver is fully functional. This Trial Period functionality requires that the system has active Internet connection and are able to reach ControlWorks' activation servers. For offline activation, please contact us.

Trial mode is only available when no licenses have been purchased for this Driver. If a license(s) has been purchased and applied, any additional Drivers that are not licensed will not enter trial mode and will not function.

## Steps for Purchasing a License

Licenses are tied to the Crestron Processor. The steps below outline how to purchase a license(s) and how to apply them to the processor.

1. Ensure the Driver has been added to your program.
2. Using the Crestron Home setup app, navigate to one of the drivers installed.

3. Press the gear icon  for the thermostat. Select Installer Settings. Scroll to the bottom, and note the Activation Key, and Activation URL. Either:

- a. Select the Activation URL, a web browser will open, the license page will be displayed, and the activation key will automatically be entered into the web site.

- b. Copy the Activation Key and navigate to

<https://store.controlworks.com/products/Aprilaire-S86WMUPR-License>.

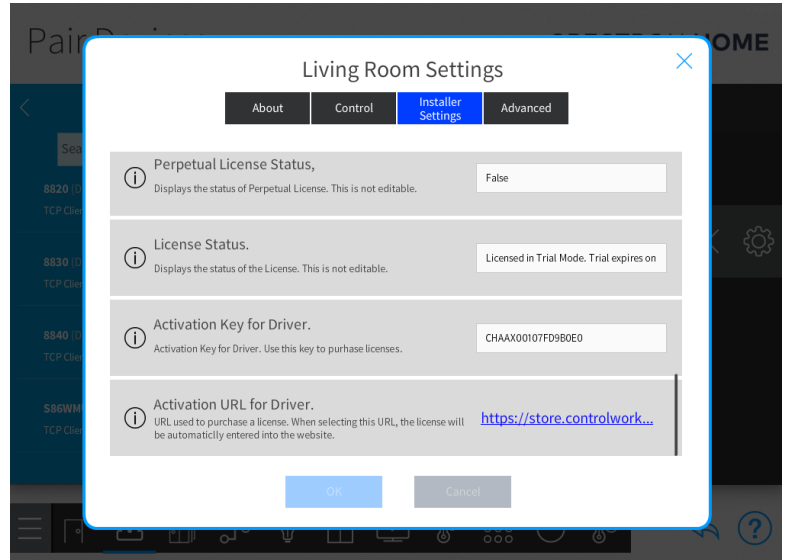
- i. Place the Activation Key into the Activation Key field on the web page.

4. Enter a Site Reference Name. This is used to help you identify your purchased licenses and may speed support in some cases.
5. Enter the quantity you wish to purchase. Note that unused licenses cannot be transferred at a later time.
6. Press Order Online for Instant License Activation and complete the payment process. Once the purchase is complete, the licenses are immediately available for the processor to retrieve. Follow [Steps to Apply Licenses](#) below for the processor to retrieve the purchased licenses.

## Steps to Apply Licenses

Once the license(s) have been purchased, you will need to apply them to the processor. There are a few ways to accomplish this:

- [Applying licenses when the driver is in trial mode](#)
- [Applying licenses when the trial mode has expired](#)
- [Applying additional licenses to a previously licensed processor](#)
- [Using a console command to apply licenses](#)



### **Applying licenses when the driver is in trial mode:**

- Display the License information on the user facing touchscreen if not already visible.
  - To display the licensing controls, using the Crestron Home setup app, navigate to one of the drivers installed. Press the gear icon for the thermostat. Select Installer Settings then check the Show License Information. The licensing information will then be displayed on the drivers control page.
- On a user touchscreen, navigate to the Driver that you displayed the licensing controls.
- At the top of the touchscreen the licensing information block will be visible. Press the Update License Information button. The Driver will reach out to the licensing server and retrieve the licenses for this processor. The status will update to show the retrieved licensing information. All Thermostat drivers will receive updated licensing information.
- If the driver is still in trial mode, each time the processor starts up, the Drivers will automatically check for licensing information. Simply restarting the Crestron Home Processor will also force a check for updated licenses.
- Alternatively, you may send a [console command](#) to initiate a license refresh.


### **Applying licenses when the trial mode has expired:**

When the trial expires, the Driver is disconnected from the Thermostat. When Crestron Home detects that a device is not online, the controls on the user-facing touchscreen are disabled.

To apply licenses in this state, there are two options:

- Simply restarting the Crestron Home Processor will force a check for updated licenses.
- Alternatively, you may send a [console command](#) to initiate a license refresh.

### **Applying additional licenses to a previously licensed processor:**

- Display the License information on the user facing touchscreens if not already visible.
  - To display the licensing controls, using the Crestron Home Setup App, navigate to one of the drivers installed. Press the gear icon  for the Thermostat. Select Installer Settings -> check the Show License Information. Now the licensing information will be displayed on the drivers control page.
- On a user touchscreen, navigate to the Driver that you displayed the licensing controls.
- At the top of the touchscreen the licensing information block will be visible. Press the Update License Information button. The Driver will reach out to the licensing server and retrieve the license for this processor. The status will reflect the updated licensing information. All Thermostat drivers will receive updated licensing information automatically.
- Alternatively, you may send a [console command](#) to initiate a license refresh.

### **Using a console command to apply licenses:**

- This method works at all times, regardless of trial status or licensed status.
  - Connect to the Crestron Processor using console (i.e. Crestron Toolbox Text Console, or putty).

- Send the command "CWCOMMAND RETRYAUTHSERVER" without including the quotation marks.
  - The Drivers will check the ControlWorks servers for updated licensing information and will apply the license.
  - Text will be displayed on the touchscreen showing the current license information.

## Support

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This Driver is supported by ControlWorks Consulting, LLC. Should you need support for this Driver you may email us at [support@controlworks.com](mailto:support@controlworks.com) or call us at:

- (+1) 440 449 1100 (Cleveland, Ohio)
- (+1) 508 695 0188 (Boston, Massachusetts)
- (+1) 202 381 9070 (Washington, DC)
- (+44) (0)20 4520 4600 (London, England)

ControlWorks normal office hours are 9 AM to 5 PM US Eastern time, Monday through Friday, excluding holidays.

## Updates

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Updates, when available, are free of charge, and are automatically distributed via our webstore and through the Crestron Home setup app. If you have purchased a license, you will receive an email notification to the address entered when the license was purchased. In addition, updates may be obtained using your username and password at <https://store.controlworks.com/account/login.aspx>.

## Distribution Package Contents

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The distribution package for this Driver should include:

ControlWorks_Thermostat_Aprilaire_S86WUPR_TCP-IP.pkg	Crestron Home Driver
ControlWorks_Thermostat_Aprilaire_S86WUPR_TCP-IP-help.pdf	This Help File

## Revision History

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V1.0 caleb@controlworks.com 2024.04.16

-Initial Version

## Development Environment

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This Driver version was developed on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

<b>Crestron Hardware</b>	<b>Firmware Version</b>
CP4-R Processor	4.000.0215
SDK Version	V 20.0000.0023
TS-1070	V2.004.1029
TSW-1060	v3.002.0028

# ControlWorks Consulting, LLC Type 5 Module/Driver License Agreement

## Definitions:

"ControlWorks", "We", and "Us" refers to ControlWorks Consulting, LLC, with headquarters located at 8228 Mayfield Road Suite 6B Rear, Chesterland, Ohio 44026.

"You" refer to the entity installing, integrating, or otherwise deploying the Module.

"End User" refer to the person or entity for whom the Crestron hardware is being installed, utilize, and/or will utilize the installed system.

"Module", "Driver", and "Licensed Software" each include all components provided by ControlWorks pursuant to this license agreement required for or useful in implementing the functionality described herein. The Licensed Software includes but is not limited to files with extensions such as UMC, USP, CLZ, SMW, VTP, and PKG.

"Type 5 Module/Driver License" refers to a module license that is granted to a specific Crestron processor and a single controlled device; a separate license must be purchased for each combination of Crestron processor and controlled device.

"System" refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein.

"Demo Program" refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module.

"Software" refers to the Module and the Demo Program and any files provided by ControlWorks as part of the distribution package including the Module, Demo Program, and associated documentation.

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## Indemnification/Hold Harmless

ControlWorks, in its sole and absolute discretion may refuse to provide support for the application of the Module in such a manner that We feel has the potential for property damage, or physical injury to any person. Dealer shall fully and unconditionally indemnify and hold harmless ControlWorks Consulting LLC, its employees, agents, licensors, and owners from any and all liability, including direct, indirect, and consequential damages, including but not limited to personal injury, property damage, or lost profits which may result in any way from the operation (or failure to operate) of a program or System containing Licensed Software or any component thereof.

## Provision of Support

We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous versions of the Module, modifications to the module not made by Us, or to persons who have not purchased the Module from Us. In addition, we may decline to provide support if the demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should We discontinue support for a Module.

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## License Grant

You may use the Licensed Software on the specific Crestron Processor identified when the license was purchased or otherwise granted by ControlWorks. You may integrate with only as many devices using the Licensed Software as you have been granted licenses for (for example, if you purchase 3 licenses associated with a processor, you may control up to 3 devices using the Licensed Software from that processor).

Licenses are generally non-transferrable, however in ControlWorks sole discretion, ControlWorks may grant a transfer of an existing license to a new Crestron Processor. If granted, transfer may be subject to an administrative fee as determined by ControlWorks from time to time, and the prior license may be disabled remotely.

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