User Guide

EnergyCenter®
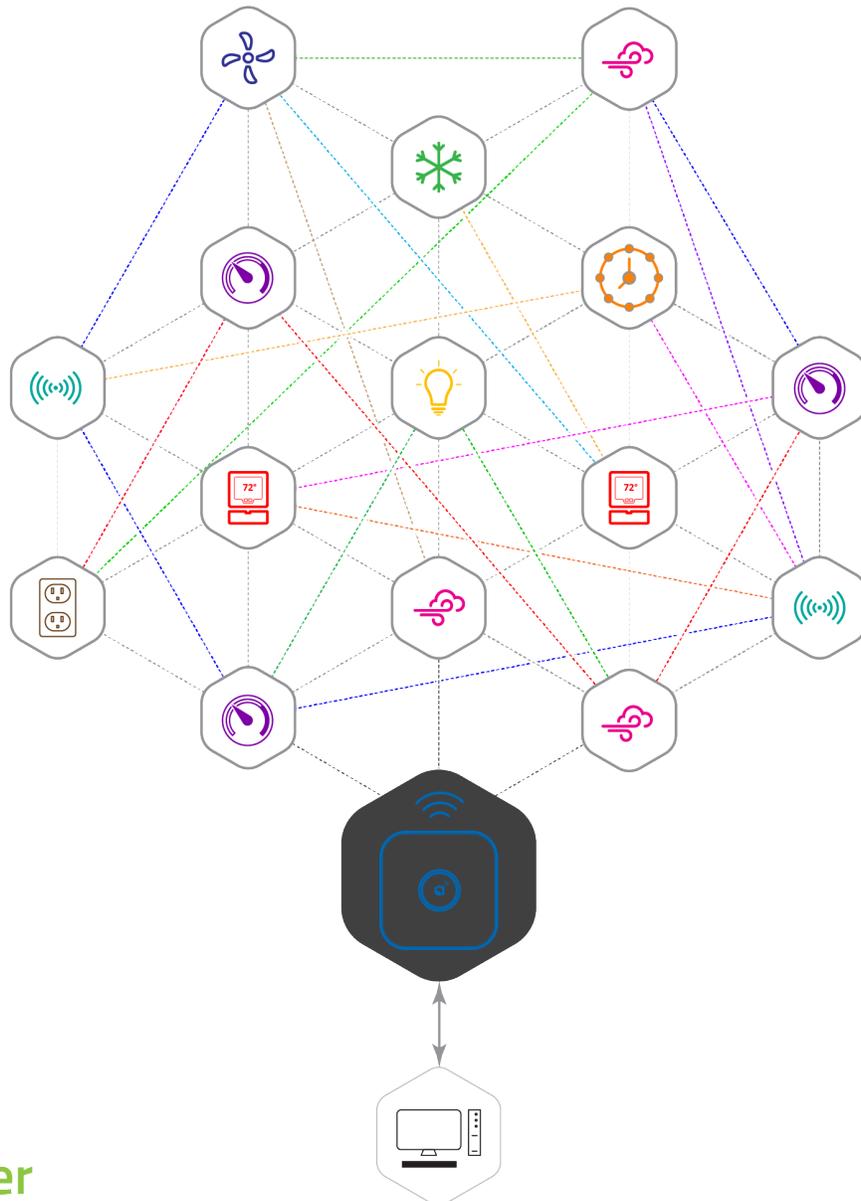
HVAC Management

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1. Software Overview

The heating and cooling management module enables multiple thermostats to be wirelessly networked throughout a building or multiple buildings. A web-based interface is used to quickly and easily configure, program, monitor, and control thermostats.

Occupancy sensors can be used to regulate the temperature in a space based on whether or not motion is detected. Multiple types of sensors can be used including Autani wired or wireless motion sensors, third-party wired motion sensors, contact sensors, and computers running an Autani Energy Management client.

The software can also be used to determine:

- Energy consumption and the related cost and carbon footprint for different time periods
- Times of peak energy use
- Where modifications could be made to ensure optimal energy usage

1.1. Navigating Through the Software

The following two tables provide site maps of the heating and cooling management module. The options on the left navigation bar appear in the tables as the column headings. The column lists are the HVAC-related tabs that appear when an option is selected.

Table 1: Site Map for Entering Meter Data or Selecting Options

Devices	Automation	Settings
▪ Dashboard ▪ Meters	▪ Thermostats ▪ 24/7 Schedules ▪ Calendar ▪ Advanced	▪ Customer Information ▪ Contractor ▪ System ▪ Data Maintenance ▪ Energy ▪ Security ▪ Device Setup

Table 2: Site Map for Viewing Meter Data or Information

Groups	Energy	Alerts	Analysis > Reports	Help

▪ Groups list
▪ System views
	▪ Data display
	▪ Chart
		▪ Recent Alerts
		▪ Alert Setup
			▪ Run Time Report: Thermostat Relays
			▪ Analysis: Consumption Comparison
			▪ Energy Consumption: Usage History
			▪ Energy Consumption: Billing Report
			▪ Devices: Device Inventory
			▪ Devices: Detailed Device Inventory
				▪ User Guide
				  □ Tasks Common to All Applications (Zigbee)
				  □ HVAC Management
				▪ About

1.2. Configuring the Software

To fully utilize all the features of the software, complete the tasks in the table below.

Table 3: HVAC Management Tasks Overview

Task	Description	See
Complete hardware setup tasks	▪ Install the Autani Manager ▪ Install thermostats ▪ Connect transceivers to thermostats, if necessary ▪ Install occupancy sensors, if appropriate	Installation instructions for the device

Access the Autani Manager appliance	▪ Initial steps for setting up the network using one of the following options:
	  ▪ Remote access over the internet (preferred option)
	  ▪ Local network access
	▪ Establishing a static IP Address after first connection
		See included documentation with Autani Manager.

Complete application commissioning tasks	Tasks needed to setup and commission the system, regardless of device-type, including:
	  ▪ Entering customer and contractor information
	  ▪ Creating user accounts
	  ▪ Selecting temperature unit of measurement
	  ▪ Entering utility billing rates
	  ▪ Creating E-mail alert notifications
		User Guide module entitled 'Tasks Common to All Applications (Zigbee)'

Configure Thermostats	Define thermostat settings including:
	  ▪ Setpoints ranges
	  ▪ Thresholds for thermostats alerts
	  ▪ Relay outputs for energy estimation
		2.1. Configuring T-32-P Thermostats, OR
		
		2.2. Configuring SMT-131 Thermostats, OR
		
		2.3 Configuring Aprilaire 8870 Thermostats

Configure occupancy sensors	Define Sensor settings including:
	  ▪ Temperature setpoints based on occupancy
	  ▪ Occupancy delay
	  ▪ Associating senor to a Thermostat
		3. Using Sensors to Determine Occupancy

Monitor and Control energy consumption	▪ Monitor and Control:
	  ▪ Individual Thermostats
	  ▪ HVAC-related energy consumption separately from energy consumed by other devices in the network.
	  ▪ View total energy consumed
		7. Using HVAC Energy Consumption Data

Create schedule templates with events and assign them to thermostats and sensors	▪ Schedule changes to thermostat settings including:
	  ▪ Temperature setpoints
	  ▪ Mode
	  ▪ Fan settings
		6.1. Creating and Assigning a Schedule

Create overrides and curtailments, if applicable	Tasks needed to setup and commission the system, regardless of device-type, including:
	  ▪ Entering customer and contractor information
	  ▪ Creating user accounts
	  ▪ Selecting temperature unit of measurement
	  ▪ Entering utility billing rates
	  ▪ Creating E-mail alert notifications
		6.2. Selecting Event Rule Settings

2. Configuring Thermostats

2.1. Configuring T-32-P Thermostats

To manage a thermostat and monitor energy usage, it must be set up and then configured based on dip switch settings. Settings are initially set by the technician when installing each thermostat.

Settings can be changed using the thermostat keypad or the software. The process for changing the configuration using the software is described in the following sections.

2.1.1. Updating General Settings

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.

5. Click the **General Settings** tab.
6. Enter data or make changes as necessary for the settings listed in the table below.

    NOTE: A single set of setpoints is used by T-32-P thermostats to control heating and cooling. The keypad day/night settings equate to the occupied/unoccupied mode setpoints in the application.

7. Click **Save**.

Table 4: General Settings for T-32-P Thermostats

Setting	Used To	Options	Default
Pin Number	Access setup menu of the thermostat	0 -99	32
Keypad Security	Enable or disable thermostat	▪ All Keys Locked Except Mode, Up, and Down ▪ All Keys Locked ▪ All Keys Unlocked	All Keys Unlocked
Mode	Indicate current mode for the HVAC system	▪ Off ▪ Autos ▪ Cool ▪ Heat ▪ May display the current mode as E (Emergency) Heat if heat pumps with that automatic feature are used.	Auto
Time Format	Specify the time format to display on the thermostat LCD	▪ 12 Hour ▪ 24 Hour	12 Hour
Temp Display	Specify scale to set and report temperatures on the thermostat LCD	▪ Celsius ▪ Fahrenheit	Fahrenheit
Temp Display (LCD)	Specify temperatures to display on the thermostat LCD	▪ Display Set and Space Temps ▪ Display Set Temp Only	Display Set and Space Temps
Internal Calibration (°)	Set the internal sensor calibration temperature limit, in 0.2° F increments.	-9° to +9°	0°
Fan Purge	Set time the fan runs after a heating or cooling cycle.	▪ Off ▪ 1 Minute ▪ 2 Minutes ▪ 3 Minutes ▪ 4 Minutes ▪ 5 Minutes	Off
High Temp Limit (°)	Set the maximum temperature for heating	41°F to 122°F	90°F
Heat Setpoint Range (°)	Set the heat range for maximum temperature	41°F to 122°F	90°F
Low Temp Limit (°)	Set the minimum temperature for cooling	43°F to 122°F	50°F
Cool Setpoint Range (°)	Set the cool range for minimum temperature	43°F to 122°F	50°F
Cooling Off Temp (°) (Available only if Remote Temperature sensor = Outdoor)	Set the outdoor temperature below which cooling is disabled	43°F to 98°F	55°F
Heating Off Temp (°) (Available only if Remote Temperature sensor = Outdoor)	Set the outdoor temperature at which heating is disabled	41°F to 98°F	75°F
Freeze Protection	Turn on heating if the indoor air temperature falls below 41°F, even if heating is set to OFF	▪ ON ▪ OFF	On

2.1.2. Updating the Thermostat Configuration Settings

The Thermostat Configuration tab lists current switch settings. Switches are set by the technician when installing each thermostat.

To select thermostat settings:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.
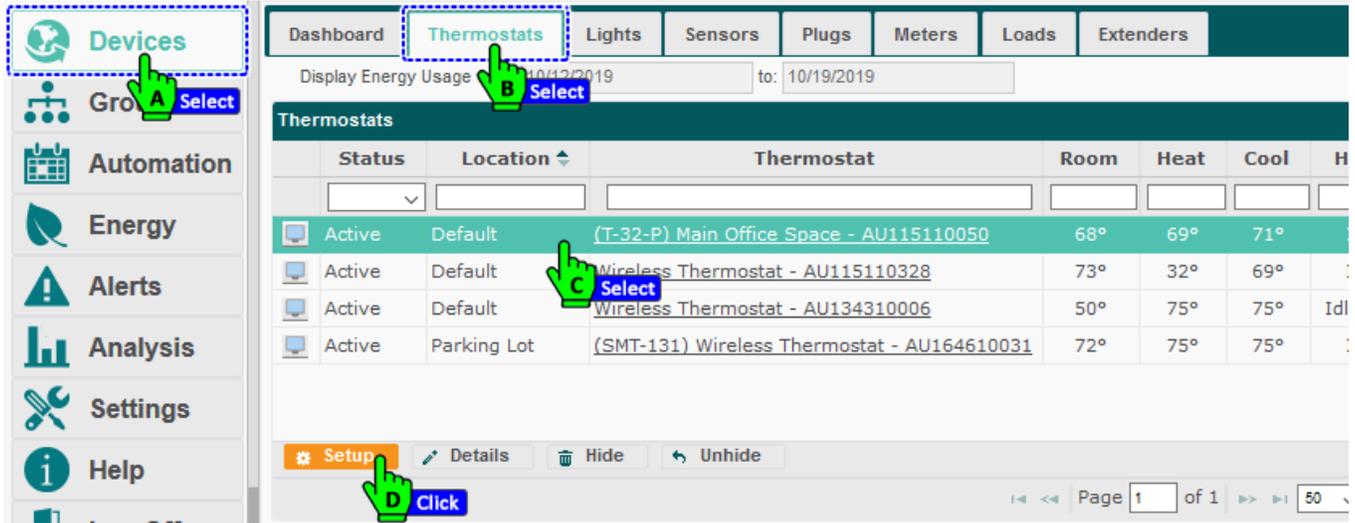
5. Click the **Thermostat Configuration** tab.
6. Enter data or make changes as necessary for the settings listed in the table below.
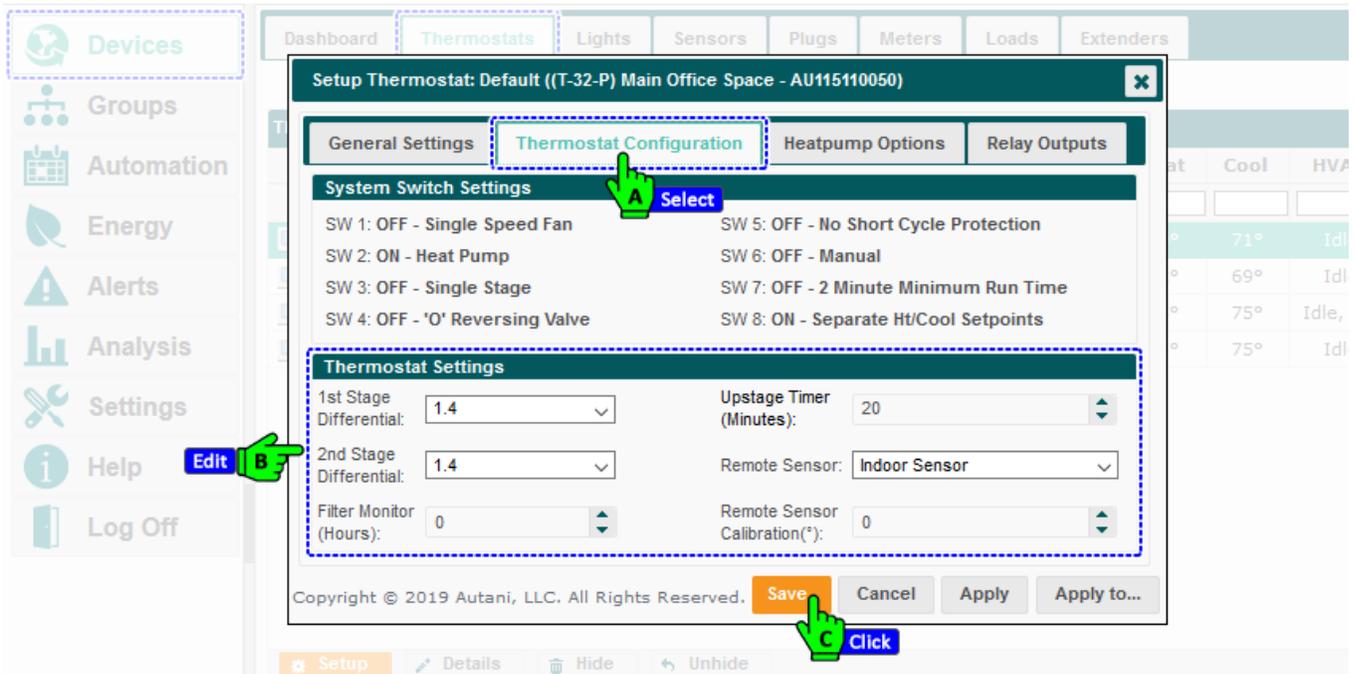7. Click **Save**.

Table 5: Thermostat Settings for T-32-P Thermostats

Setting	Used To	Options	Default

First Stage Differential	Define the permitted temperature fluctuation from heating or cooling setpoints before the system is triggered in Stage 1	1.4°F 0.5°C 1.9°F 1.0°C 2.4°F 1.5°C	1. 9°F or 1.0°C
Second Stage Differential	Define the permitted temperature fluctuation from heating or cooling setpoints before the system is triggered in Stage 2	1.4°F 0.5°F 1.9°F 1.0°F 2.4°F 1.5°F	1.9°F or 1.0°C
Filter Monitor	▪ Specify the number of hours before filters should be changed ▪ Generate an alert when the filter is scheduled to be changed	Zero to 900 hours (in 100 hour increments)	
Upstage Timer (Minutes) (Available if SW3 = ON)	Specify the time HVAC system should run before switching to another phase of cooling/heating For example, during a blizzard you may stipulate the heat pump to run for five minutes before the HVAC system switches to the auxiliary heat phase.	10 to 90 minutes (in 5 minute increments)	
-Remote Sensor	Select type of remote sensor available	▪ Outdoor Sensor ▪ Indoor Sensor ▪ Indoor Remote Sensor Averaging ▪ Onboard Sensor and Remote Sensor Averaging ▪ Dry Contact Thermostat ON/OFF Switch ▪ Dry Contact Switch Replaces User Setpoint ▪ Send Temperature No Display	
Remote Sensor Calibration (°)	Set the remote sensor calibration temperature limit, in 0.2° F increments.	-9° to +9°	0°

2.1.3. Updating Heat Pump Options

The Heat Pump Options tab is enabled when Slide Switch 2 (SW2) is set to ON. Switches are initially set by the technician when installing the system.

To select heat pump settings:

1. On the left navigation bar, click **Devices**, and click the **Thermostats** tab.
2. Click the row of the thermostat to select it, and click the **Setup** button.
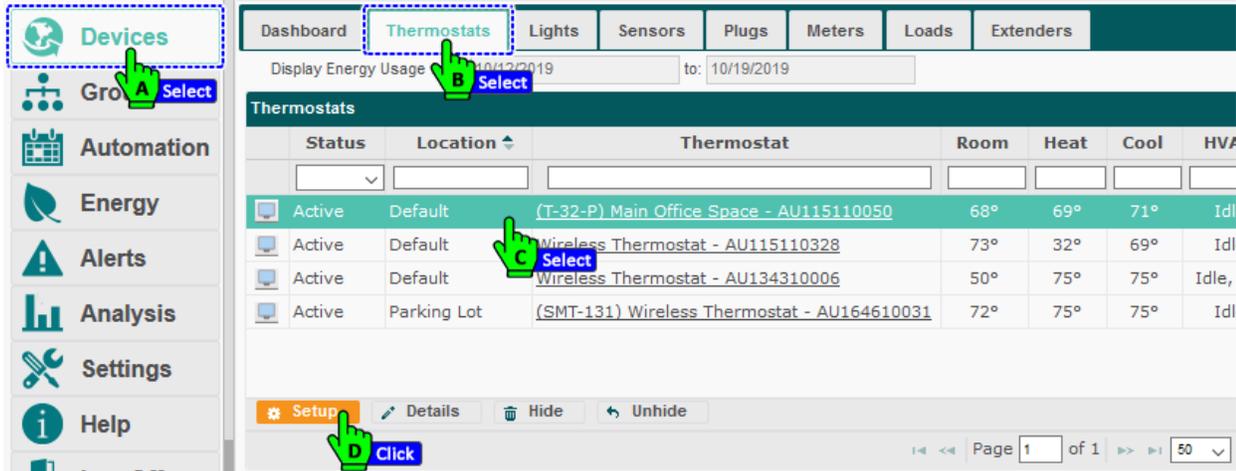
3. Click the **Heat Pump Options** tab.
4. Enter data or make changes as necessary for the settings listed in the table below. Click **Save**.

Table 6: Heat Pump Settings for T-32-P Thermostats

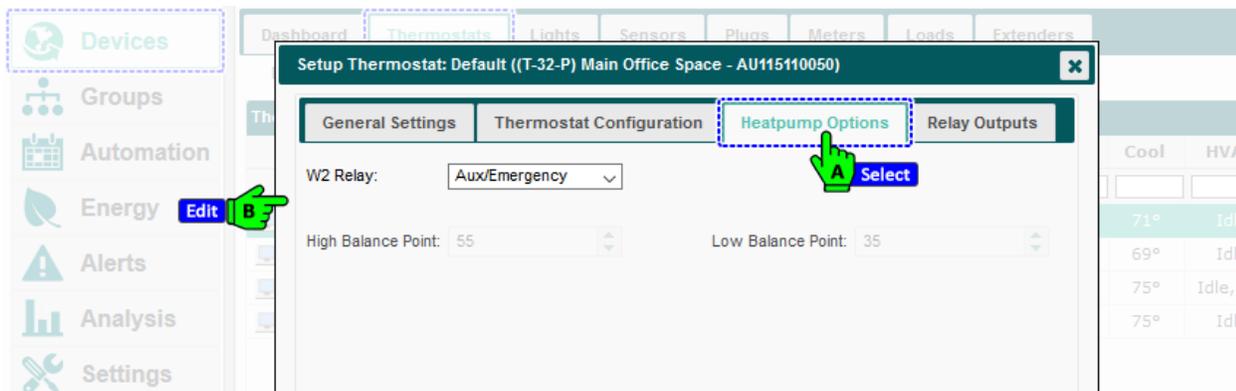| Settings	Used To	Options	Default
W2 Relay	Define the type of auxiliary/emergency heat	▪ Auxiliary ▪ Emergency ▪ Add-On Heat ▪ Aux/Emergency ▪ Fossil Fuel	Auxiliary
High Balance Point (Available if: ▪ Remote Temperature sensor = Outdoor ▪ SW1 = OFF)	Set the temperature above which auxiliary heat is disabled. **NOTE**: Does not affect Emergency Heat.	▪ 32°F to 122°F ▪ 0°C to 50°C	▪ 55°F ▪ 13°C
Low Balance Point (Available if: ▪ Remote Temperature sensor = Outdoor ▪ SW1 = OFF ▪ SW2 = ON ▪ W2 Relay = Fossil Fuel)	▪ Set the temperature below which auxiliary heat is disabled **NOTE**: If the outdoor temperature falls below the Low Balance Point, the thermostat: ▪ Switches to Fossil Fuel heat mode ▪ Locks out the heat pump compressor	▪ 15°F to 77°F ▪ 9°C to 10°C	▪ 35°F ▪ 2°C

2.1.4. Updating Relay Outputs

The application uses the rate at which each relay consumes energy to estimate total HVAC consumption and the carbon footprint. For more information about the calculations, see *7.Using HVAC Energy Consumption Data*.

To enter the gas or electric rates for each relay controlled by the thermostat:

1. On the left navigation bar, click **Devices**, and click the **Thermostats** tab.
2. Click the row of the thermostat to select it. Click the **Setup** button.
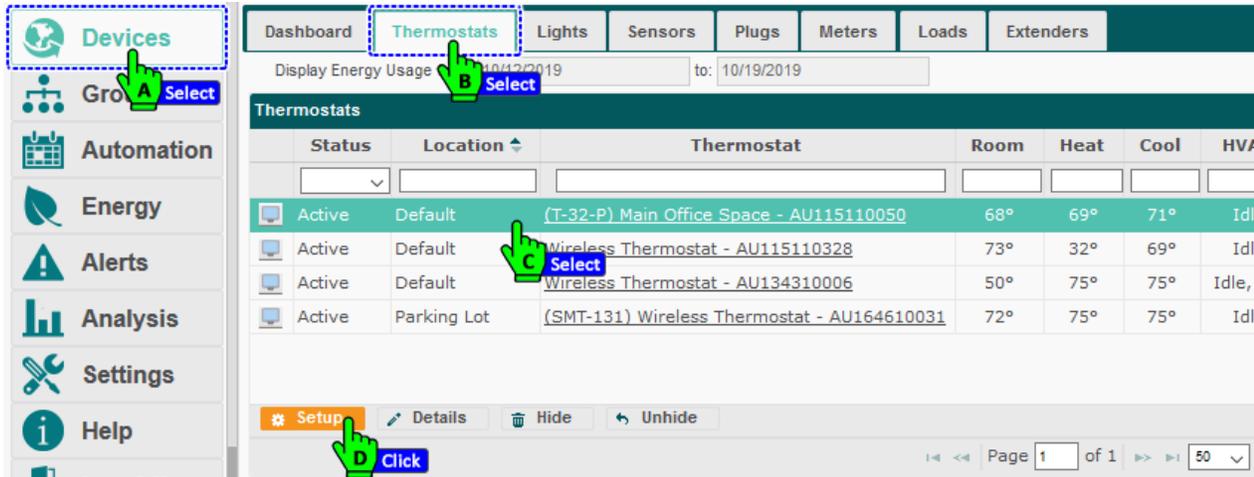
3. Click the **Relay Options** tab.
4. Select the checkboxes next to the relays that are connected.
5. Click in the Electric Rate and/or Gas Rate columns to enter data or make changes. Click **Save**.
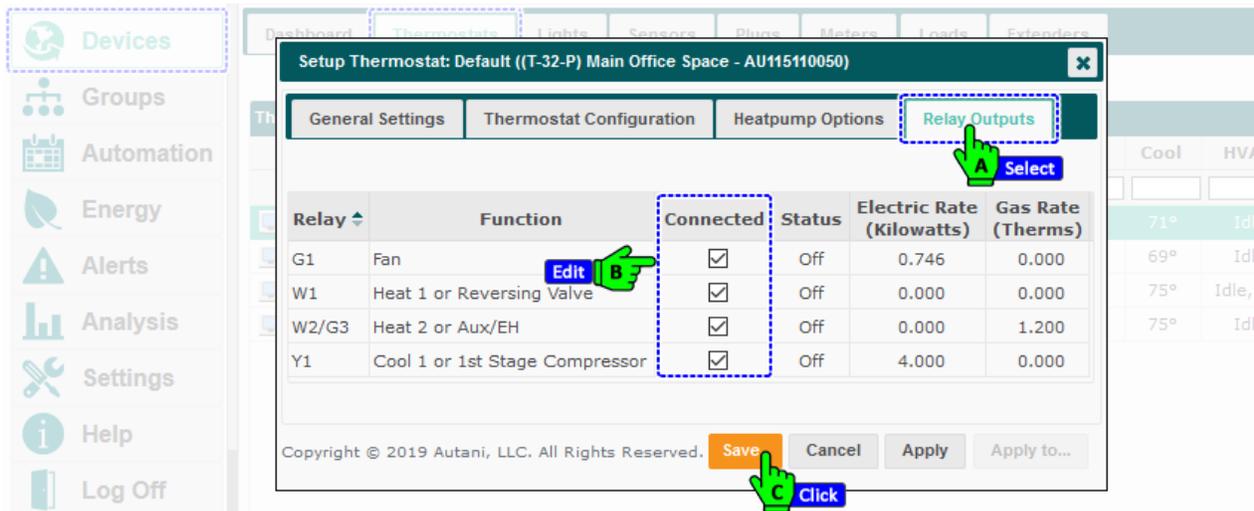
Table 7: Relay Outputs Tab for T-32-P Thermostats

Column	Description	Used To
Relay	List functional relays for an individual thermostat	Display relay names
Function	Describe the function of the relay listed	Display relay function
Connected	Indicate if the relay is active	Display relay on chart
Status	Indicate if the relay is currently operating	Display On/Off status
Electric Rate (Kilowatts)	Provide the rate at which kilowatt hours of electricity are consumed when the relay is energized	Enter numerical value
Gas Rate (Therms)	Provide the rate at which therms of gas are consumed when the relay is energized	Enter numerical value

## 2.2. Configuring SMT-131 Thermostats

To manage a thermostat and monitor energy usage, it must be set up and then configured based on dip switch settings. Settings are initially set by the technician when installing each thermostat.

Settings can be changed using the thermostat keypad or the software. The process for changing the configuration using the software is described in the following sections.

2.2.1. Updating General Settings

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.
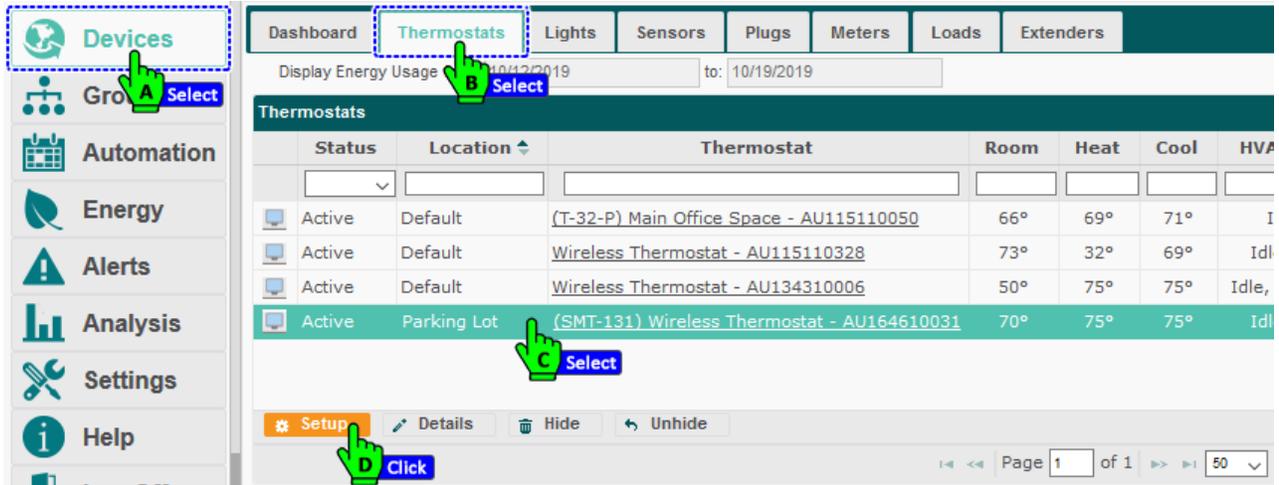
5. Click the **General Settings** tab.
6. Enter data or make changes as necessary for the settings listed in the table below.
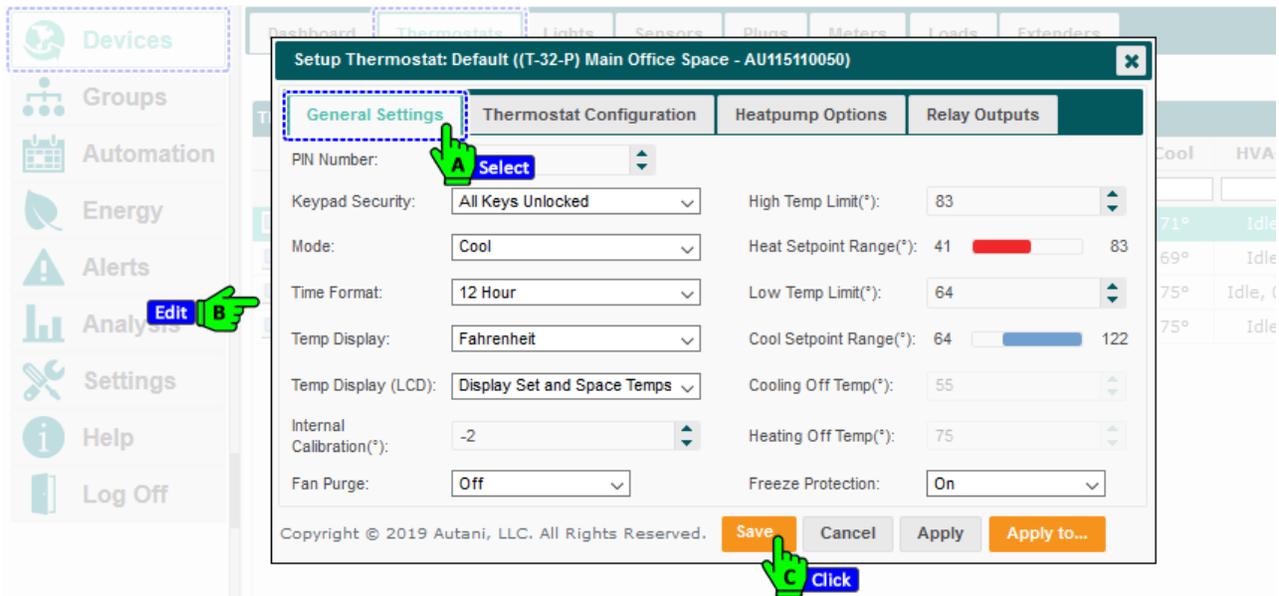7. Click **Save**.

Table 8: General Settings for SMT-131 Thermostats

Setting	Used To	Options	Default
Cool Span (°)	Set cool span temperature	1 - 6°	0.5°
Cool Interval (secs)	Set the duration for cool span	10 – 300 secs	60
Cool Minimum Voltage (V)	Set the min. voltage for cool span	0 – 10 V	0
Heat Span (°)	Set heat span temperature	1 - 6°	2
Heat Minimum Voltage (V)	Set the min. voltage for heat span	0 – 10 V	0
High Temp Limit (°)	Set the maximum temperature for heating	41°F to 86°F	86°F
Low Temp Limit (°)	Set the minimum temperature for cooling	41°F to 86°F	41°F
Dead Band (°)	Set the dead band temperature	1 - 10°	1°
Internal Calibration (°)	Set the internal sensor calibration temperature limit	-20° to +20°	0°
Belimo Mode	Turn ON/OFF the Belimo mode	▪ Off ▪ On	Off
Temp Display	Specify scale to set and report temperatures on the thermostat LCD	▪ Celsius ▪ Fahrenheit	Fahrenheit
Temp Display (LCD)	Specify temperatures to display on the thermostat LCD	▪ Display Set and Space Temps ▪ Display Set Temp Only	Display Set and Space Temps

2.2.2. Updating the Thermostat Configuration Settings

The Thermostat Configuration tab lists current switch settings. Switches are set by the technician when installing each thermostat.

To select thermostat settings:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.
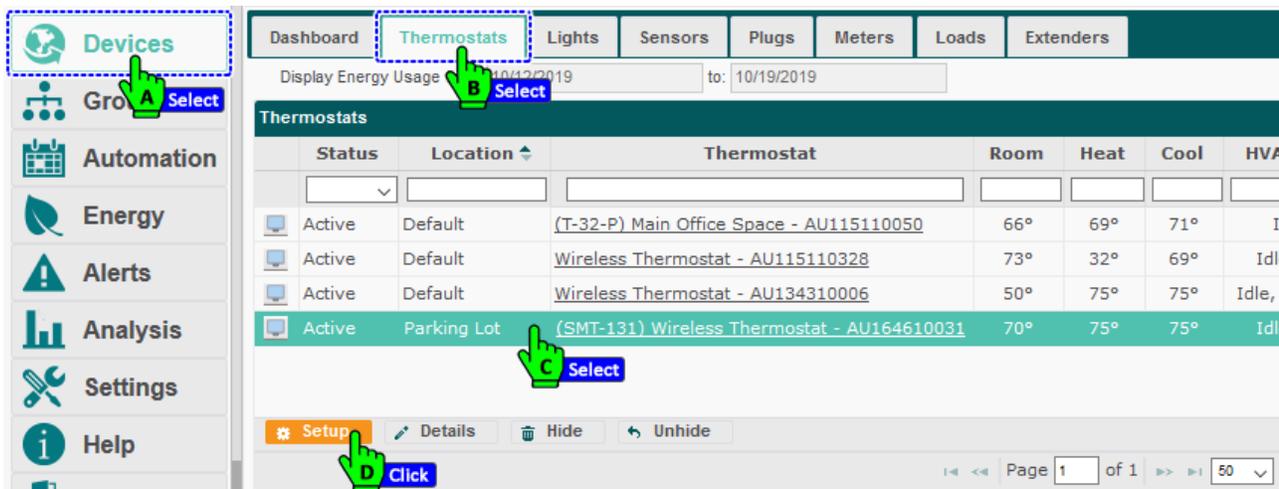
5. Click the **Thermostat Configuration** tab.
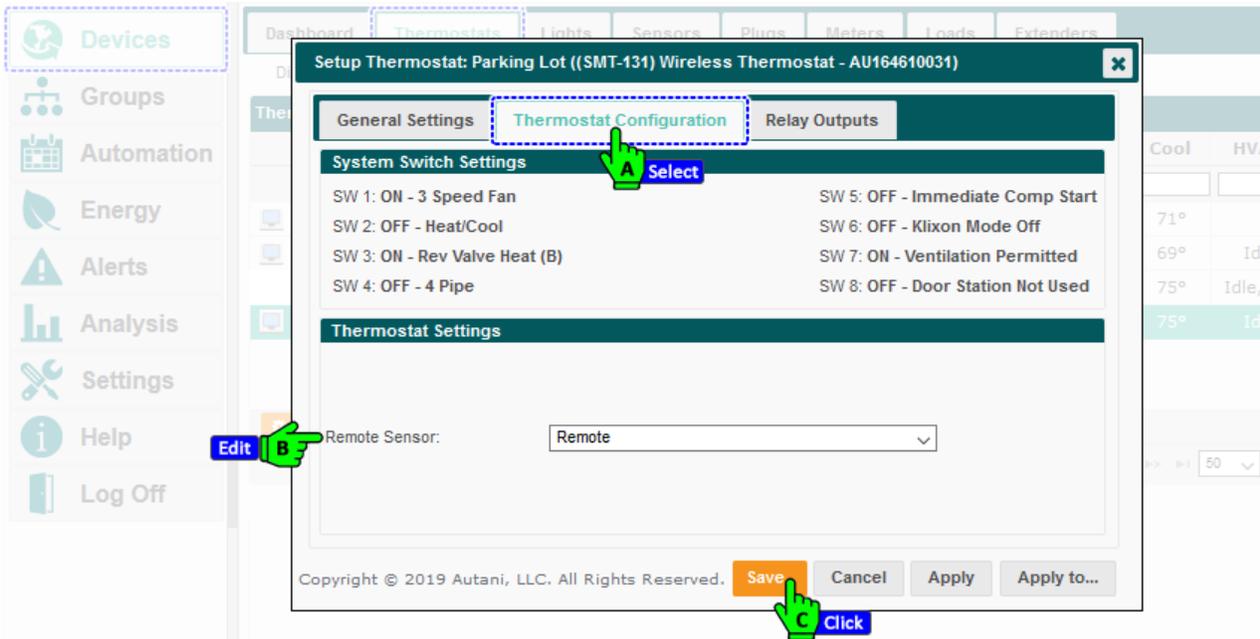6. Enter data or make changes as necessary for the settings listed in the table below. Click **Save**.

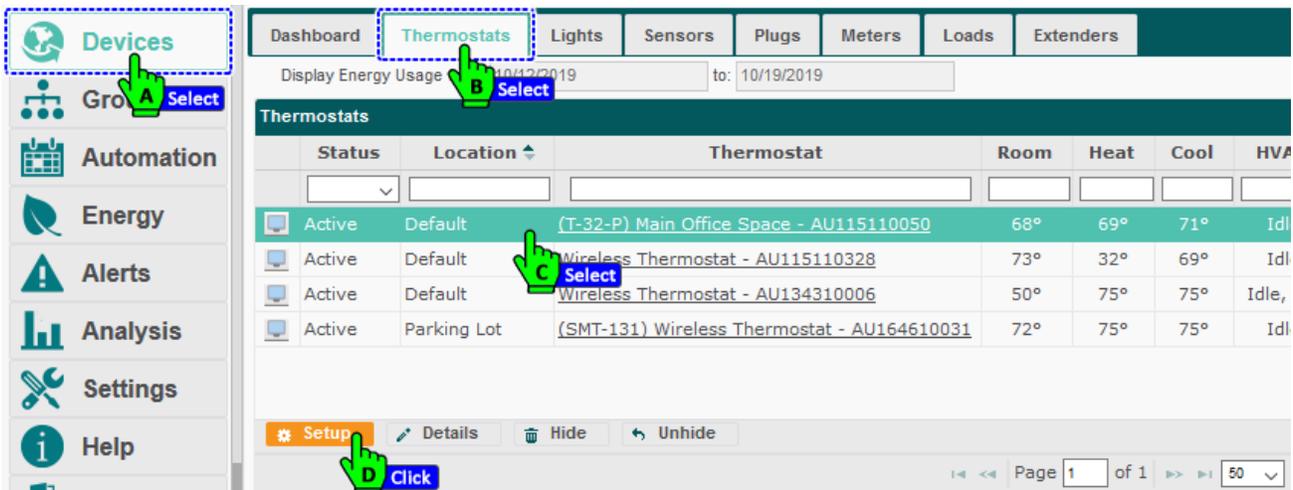Table 9: Thermostat Settings for T-32-P Thermostats

Setting	Used To	Options	Default
Remote Sensor	Select type of remote sensor available	▪ Remote ▪ Average ▪ Data Only (use on-board sensor)	Remote

2.2.3. Updating Relay Outputs

The application uses the rate at which each relay consumes energy to estimate total HVAC consumption and the carbon footprint. For more information about the calculations, see section *7. Using HVAC Energy Consumption Data*.

To enter the gas or electric rates for each relay controlled by the thermostat:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.

5. Click the **Relay Options** tab.
6. Select the checkboxes next to the relays that are connected.
7. Click in the Electric Rate and/or Gas Rate columns to enter data or make changes.
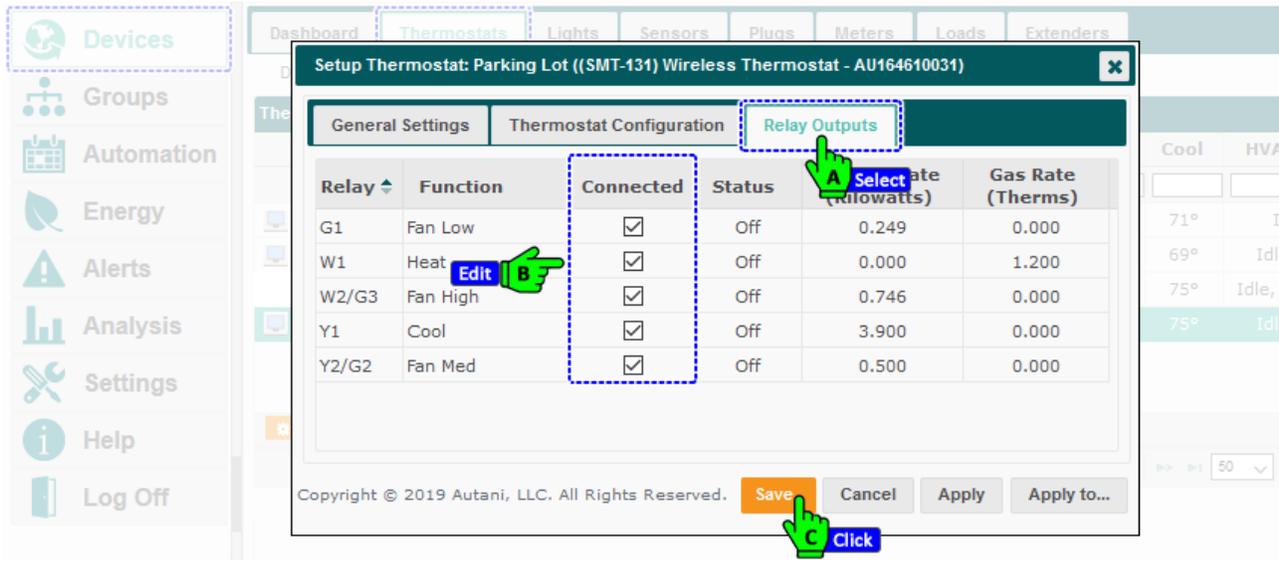8. Click **Save**.

Table 10: Relay Outputs Tab for T-32-P Thermostats

Column	Description	Used To
Relay	List functional relays for an individual thermostat	Display relay names
Function	Describe the function of the relay listed	Display relay function
Connected	Indicate if the relay is active	Display relay on chart
Status	Indicate if the relay is currently operating	Display On/Off status
Electric Rate (Kilowatts)	Provide the rate at which kilowatt hours of electricity are consumed when the relay is energized	Enter numerical value
Gas Rate (Therms)	Provide the rate at which therms of gas are consumed when the relay is energized	Enter numerical value

2.3. Configuring Aprilaire 8870 Thermostats

To manage a thermostat and monitor energy usage, it must be set up and then configured based on dip switch settings. Settings are initially set by the technician when installing each thermostat.

Settings can be changed using the thermostat keypad or the application. The process for changing the configuration using the application is described in the following sections.

2.3.1. Updating General Settings

1. On the left navigation bar, click **Devices**, and click the **Thermostats** tab.
2. Click the row of the thermostat to select it, and Click the **Setup** button.
3. Click the **General Settings** tab.
4. Enter data or make changes as necessary for the settings listed in the table below. Click **Save**.

Table 11: General Settings for Aprilaire 8870 Thermostats

Setting	Used To	Options	Default
Keypad Security	Set the level of keypad security for the thermostat	▪ No Lockout ▪ Time ▪ Time and Temperature ▪ Total Lockout	No Lockout
Keypad Lockout – Time (Available if Keypad Security = Time and Temperature or Time)	Set the time keypad settings remain in effect before reverting to the previous value	0 to 255 minutes	0 minutes
Keypad Lockout – Temp Range (Available if Keypad Security = Time and Temperature)	Set a range of temperatures for a thermostat in locked mode	±20°	0°
Temp Display	Set the scale used to set and report temperatures on the thermostat LCD	▪ Celsius ▪ Fahrenheit	Fahrenheit

2.3.2. Viewing Switch Settings

The **Thermostat Configuration** tab lists current switch settings. Switches are initially set by the technician when installing the system. For information on how to make changes to the switch settings, see the Installation Guide that came with the thermostat.

For full system functionality, do not change the default setting for switch 1 as indicated in the table below.

To view switch settings:
1. On the left navigation bar, click **Devices**, and click the **Thermostats** tab.
2. Click the row of the thermostat to select it and click the **Setup** button.
3. Click the **Thermostat Configuration** tab.

Table 12: Switch Settings for Aprilaire 8870 Thermostats

Switch	Description	Used To	Setting Instructions	Default
SW 1	Fan Relay	Not used to change setting	Do not change default	OFF
SW 2	Equipment	Define the type of HVAC equipment.	▪ Heating/cooling equipment: OFF ▪ Heat pump: ON	OFF
SW 3	Equipment Stages	Define a single stage or multiple stages	▪ Single stage equipment: OFF ▪ Multistage equipment: ON	OFF
SW 4	▪ Fan Mode ▪ Reversing Value	▪ Set the fan logic for heating/cooling systems ▪ Set the reversing valve configuration for heat pump systems	Fan Mode ▪ Gas or oil systems (equipment controls fan in heating mode): OFF ▪ Electric systems (thermostat controls fan in heating mode): ON Reversing Valve ▪ **O** reversing value (energize in cooling): OFF ▪ **B** reversing mode (energize in heating): ON	OFF

2.3.3.   Updating Thermostat Configuration Settings

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.
5. Click the **Thermostat Configuration** tab.
6. Enter data or make changes as necessary for the settings listed in the table below.
7. Click **Save**.

Table 13: Thermostat Settings for Aprilaire 8870 Thermostats

Setting	Used To	Options	Default
1st Stage Differential	Define the permitted temperature fluctuation from heating or cooling setpoints before the system is triggered for Stage 1	Range of two degrees (0° to 2°) Fahrenheit or Celsius, in increments of 0.5°	0.5°F
2nd Stage Differential	Define the permitted temperature fluctuation from heating or cooling setpoints before the system is triggered for Stage 1	Range of two degrees (0° to 2°) Fahrenheit or Celsius, in increments of 0.5°	0.5°F
Filter Monitor (Hours)	Specify the period of time before the thermostat displays a filter change reminder	0 to 900 hours (in 100 hr. increments)	OFF (0)

2.3.4.   Updating Heat Pump Settings

The Heat Pump Options tab is enabled when Slide Switch 2 (SW2) is set to ON. Switches are initially set by the technician when installing the system.

1. To select heat pump settings:
2. On the left navigation bar, click **Devices**.
3. Click the **Thermostats** tab.
4. Click the row of the thermostat to select it.
5. Click the **Setup** button.
6. Click the Heat Pump Options tab.
7. Enter data or make changes as necessary for the settings listed in the table below. Click **Save**.

Table 14: Heat Pump Settings for Aprilaire 8870 Thermostats

Setting	Used To	Options	Default
High Balance Point	▪ Set the temperature above which auxiliary heat is disabled ▪ Used by the thermostat when: ▪ Configured to operate as a heat pump ▪ A remote outdoor temperature sensor, with address #1, is wired to the thermostat **NOTE**: Does not affect Emergency Heat.	40°F to 80°F (in 5° increments)	▪ 55°F ▪ 13°C
Low Balance Point	▪ Set the temperature below which auxiliary heat is disabled ▪ Used by the thermostat when: ▪ Configured to operate as a heat pump ▪ A remote outdoor temperature sensor, with address #1, is wired to the thermostat **NOTE**: Does not affect Emergency Heat.	0°F to 40°F (in 5° increments)	▪ 35°F ▪ 2°C

2.3.5.   Updating Relay Outputs

The application uses the rate at which each relay consumes energy to estimate total HVAC consumption and the carbon footprint. For more information about the calculations, see *7.Using HVAC Energy Consumption Data*.

To enter the gas or electric rates at which each relay functions:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.
5. Click the **Relay Options** tab.
6. Select the checkbox(es) next to the relays that are connected.
7. Click in the Electric Rate and/or Gas Rate columns to enter data or make changes.
8. Click **Save**.

Table 15: Relay Output Settings for Aprilaire 8870 Thermostats

Column	Description	Used To
Relay	List of functional relays for an individual thermostat	Display relay names
Function	Describe the function of the relay listed	Display relay description
Connected	Indicate if the relay is displayed on the chart	Select or deselect the display checkbox
Status	Indicate if the relay is currently operating	Display On/Off status
Electric Rate	Provide the rate at which kilowatt hours of electricity are used by the relay	Enter numerical value
Gas Rate	Provide the rate at which therms of gas are used by that relay	Enter numerical value

2.4. Changing T-32-P Thermostat Setpoints

To view or change thermostat settings or setpoints:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the thermostat name link, **double-click** the row of the thermostat, or select the row of the thermostat and then click the **Details** button.
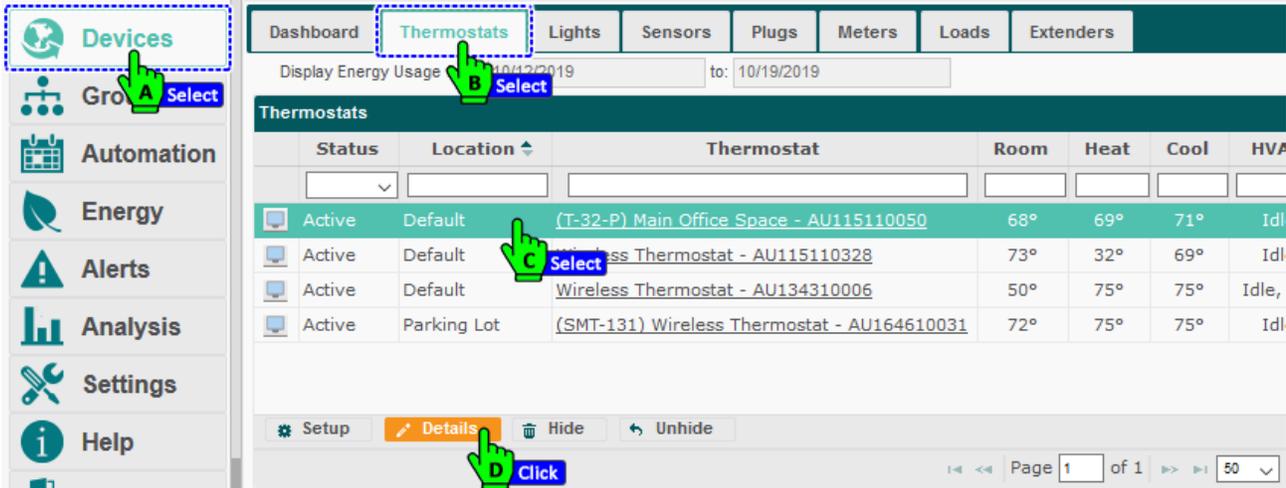
4. Change any necessary setting or **Setpoint** as described in the table below.
5. Click **Save** or **Apply**.
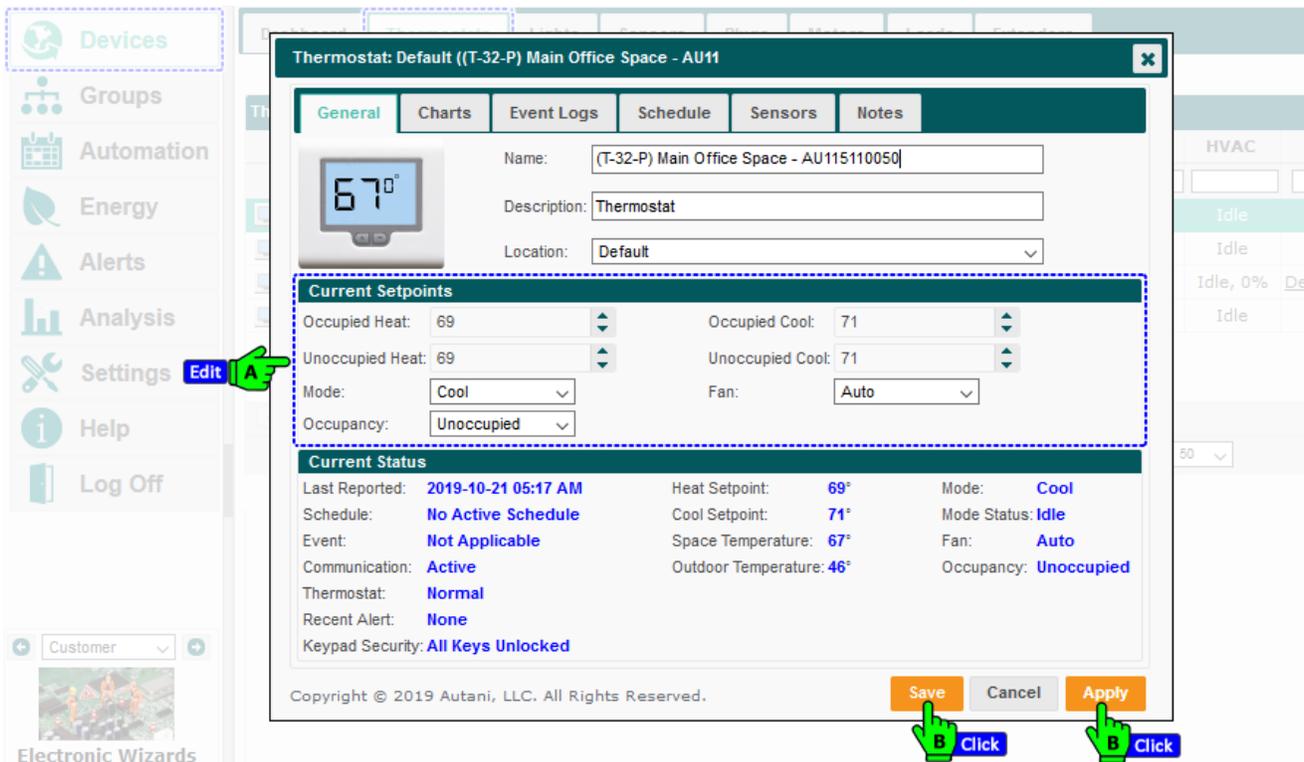
Table 16: Thermostat Settings and Setpoint Options

Setting	Used To	Options
Occupied Heat	Display the occupied heat setpoint	41° - 83° F
Unoccupied Heat	Display the occupied heat setpoint	41° - 83° F

Setting	Used To	Options
Mode	Select a mode of the HVAC system.	• Off: Turns off HVAC systems • Auto: System turns on heating, cooling, and/or fan as needed to maintain temperature setpoints • Cool: Turns on air conditioning • Heat: Turns on heating system • E. Heat (Heat Pump only)
Occupancy (available if sensors are a part of the system)	Indicate the occupancy mode of the thermostat.	• Occupied • Unoccupied
Occupied Heat		64° - 122° F
Unoccupied Heat		64° - 122° F
Fan	Program how the fan should operate.	• Auto: Run only as needed to maintain temperature setpoints • On: Run continually

2.5. Changing SMT-131 Thermostat Setpoints

To view or change thermostat settings or setpoints:

1. On the left navigation bar, click **Devices**.

2. Click the **Thermostats** tab.

3. Click the thermostat name link, **double-click** the row of the thermostat, or select the row of the thermostat and then click the **Details** button.

4. Change any necessary setting or **Setpoint** as described in the table below. Click **Save** or **Apply**.

Table 17: Thermostat Settings and Setpoint Options

Setting	Used To	Options

Heat and Cool Setpoints	Enter the heating and cooling setpoints for the thermostat when it is in both occupied and unoccupied mode.
	
	NOTE: There is a deadband of two degrees between setpoints.
		Heating:
		  ▪ 41°F -86°F
		  ▪ 5°C -50°C
		Cooling:
		  ▪ 43°F -122°F
		  ▪ 6°C -50°C

Mode	Select a mode of the HVAC system.	▪ OFF: Turns off HVAC systems ▪ Auto: System turns on heating, cooling, and/or fan as needed to maintain temperature setpoints ▪ Cool: Turns on air conditioning ▪ Heat: Turns on heating system
Occupancy (available if sensors are a part of the system)	Indicate the occupancy mode of the thermostat.	▪ Occupied ▪ Unoccupied
Fan	Program how the fan should operate.	▪ Auto: Run only as needed to maintain temperature setpoints ▪ ON: Run continually

2.6. Applying Settings to One or More Thermostats

Configuration settings can be applied to one thermostat, several thermostats, or all thermostats in a group. To apply configuration settings to one or more thermostats:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.

5. Configure the thermostat based on your needs. Click **Apply to**.

NOTE: The Apply Settings From dialog box displays, only thermostats of the same type that have the same switch settings.

6. To include relay output dip switch settings when copying a thermostat configuration:

> **NOTE**: Do not use this option if the thermostats are wired to different types of HVAC equipment or to the same type of HVAC equipment that has been configured differently.

    a. Select the **Also copy relay information** checkbox.

    b. Select the checkbox(es) next to the applicable thermostats.
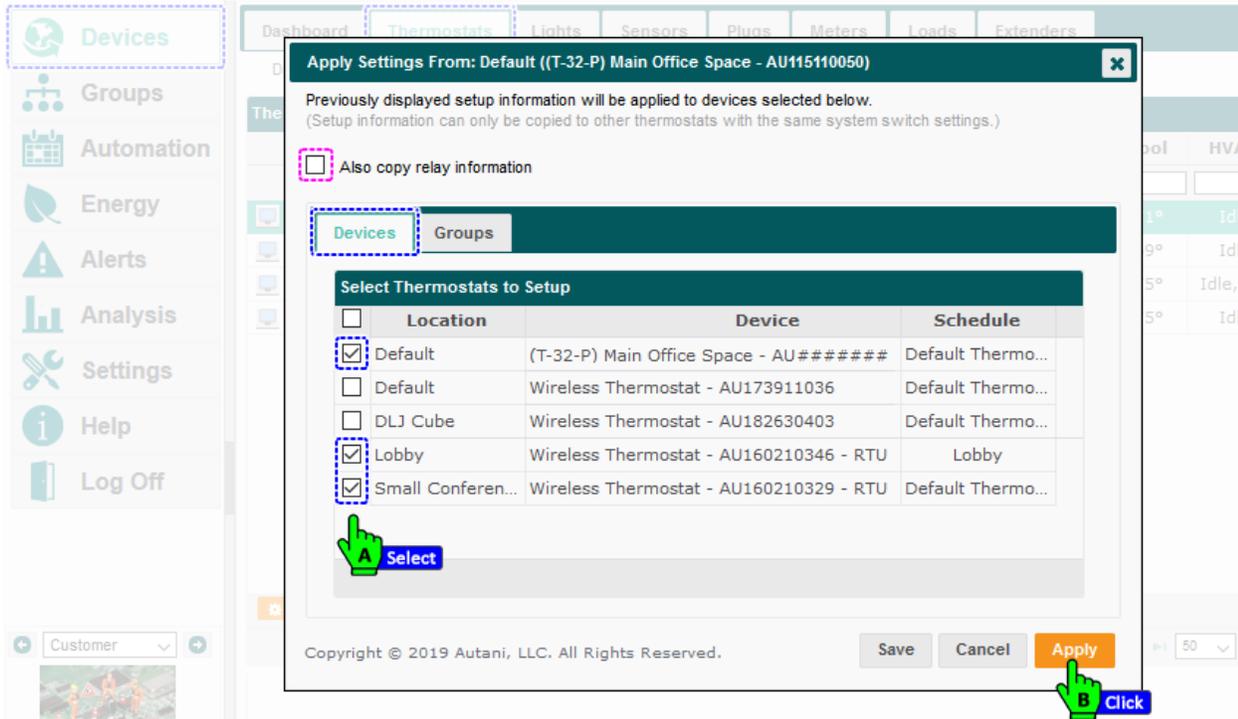
7. To apply settings to a group of thermostats or thermostats within a group:

    a. Click the **Groups** tab to view a list of all the groups in the system.

    b. Select the checkbox(es) next to the applicable group(s) of thermostats.

    c. Click **Save** or **Apply**.
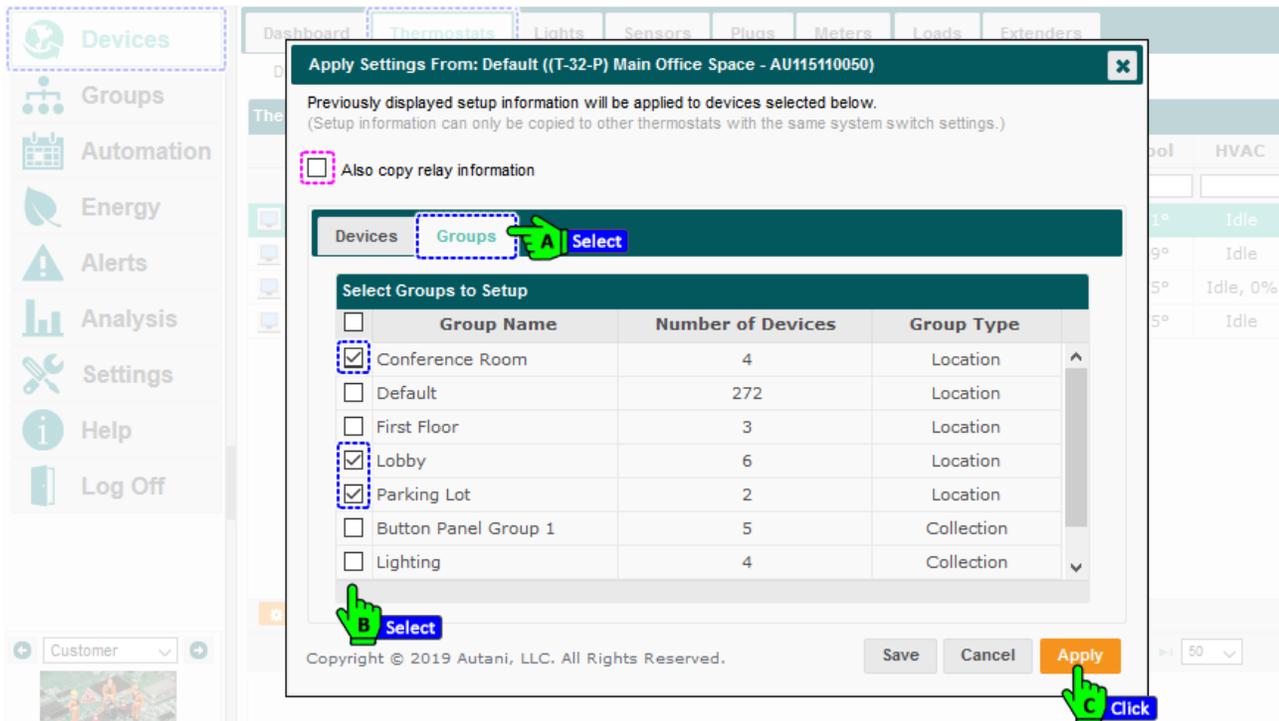
If settings were applied to a group of thermostats, a confirmation dialog box appears listing all the thermostats to which the settings have been applied.

2.7. Creating a Time Interval for Filter Maintenance (T-32-P)

If a filter replacement time period has been designated, run time data appears on bottom of the General tab for thermostats.

When an HVAC filter needs to be cleaned or replaced based on the designated time period:

- The thermostat goes into a **Warning** state.
- An alert is displayed and sent via e-mail if recipient information was designated.
- The number of hours exceeding the replacement interval appears in red at the bottom of the screen.

    NOTE: To reset the counter to zero to begin the next time interval, press the Reset button. The thermostat returns to a **Normal** state.

To create a filter replacement interval using the application:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.

5. Click the **Thermostat Configuration** tab.
6. Enter hours in the **Filter Monitor** textbox or use the spinner to select an interval in increments of 100 hours.
7. Click **Save** or **Apply**.

3. Using Sensors to Determine Occupancy

3.1. Understanding Sensors and Sensor Types

Devices used to determine occupancy can be used in tandem with thermostats to eliminate unnecessary heating and cooling of vacant spaces. Setpoints can be modified to change the temperature in a designated space when:

- A space becomes vacant and remains that way for a user-defined period
- Movement is detected, after any applicable user-defined delay

The following types of devices can be used in conjunction with the software to determine occupancy:

- Autani MINI Wired Motion Sensor and third party, wired motion sensors
- Autani MINI Wireless Motion Sensor
- Autani Wireless Contact Sensor
- Wired third party contact sensors
- Computers running the Autani Energy Management Client
    - NOTE: For additional information on using sensors and sensor settings, refer to the EnergyCenter® User Guide module entitled 'Tasks Common to All Applications (Zigbee)' or go to www.autani.com and click the Sales tab.

Schedules can be used to define heating and cooling setpoints for occupied and unoccupied spaces. Options for establishing setpoints depend on how sensors are installed. For more information, see *3.2.Understanding Occupancy Sensor Installation.*

3.2. Understanding Occupancy Sensor Installation

Occupancy sensors detect movement. The software uses sensor data to determine if a space is occupied and manage thermostats based on user-defined settings.

Thermostat control options depend on how sensors are installed. For more information, see the table below.

Table 18: Sensor Installation Effects on Occupancy Setpoints

Sensor Installation Status	Occupancy Setpoints
Not integrated into HVAC module	▪ Occupancy setpoints are not available in the application. ▪ Occupancy can be defined manually on the thermostat. ▪ Setpoints can be scheduled using expected occupancy events. NOTE: For T-32-P thermostats, the Day and Night settings equate to occupied and unoccupied mode setpoints in the application.
▪ Integrated into HVAC module ▪ Not assigned to a thermostat	▪ Occupancy can be set on demand from the user interface. ▪ Setpoints can be sent from the application to the thermostat.

▪ Integrated into HVAC module
▪ Assigned to a thermostat
	▪ Occupancy can be set remotely using a schedule or on demand from the user interface.
	▪ Users can set occupancy delays to control how quickly HVAC changes are made based on changes in occupancy when using:
	  ▪ Third-party motion sensors
	  ▪ Contact sensors
	  ▪ Computers running the Autani Energy Management Client
	NOTE: Delays can be dependent on third-party sensors that have fixed preprogrammed delays.

3.3. Changing a Thermostat Occupancy Mode (T-32-P)

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostat** tab.
3. Click the thermostat name link, **double-click** the row of the thermostat, or select the row of the thermostat and then click the **Details** button.


4. Select **Occupied** or **Unoccupied** from the drop-down list.
5. Click **Save** or **Apply**.

3.4. Mapping Sensors from other devices to a Thermostat

You can virtually map or associate sensors from other devices to a thermostat to affect the temperature in a defined space.

1. Select **Devices** and select the **Thermostat** tab.
2. Click the thermostat name link, **double-click** the row of the thermostat, or select the row of the thermostat and then click the **Details** button.
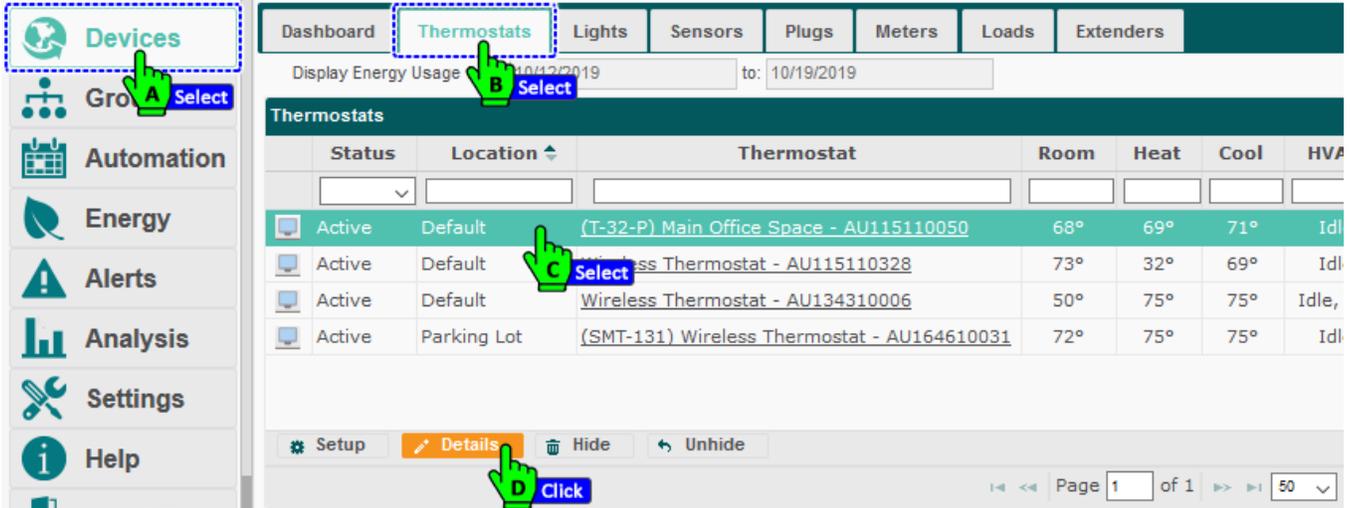
3. The General tab is loaded by default, select **Sensors** tab.
4. Select respective sensor(s) from the list to map the sensors to thermostat.
5. Click **Save** or **Apply**.
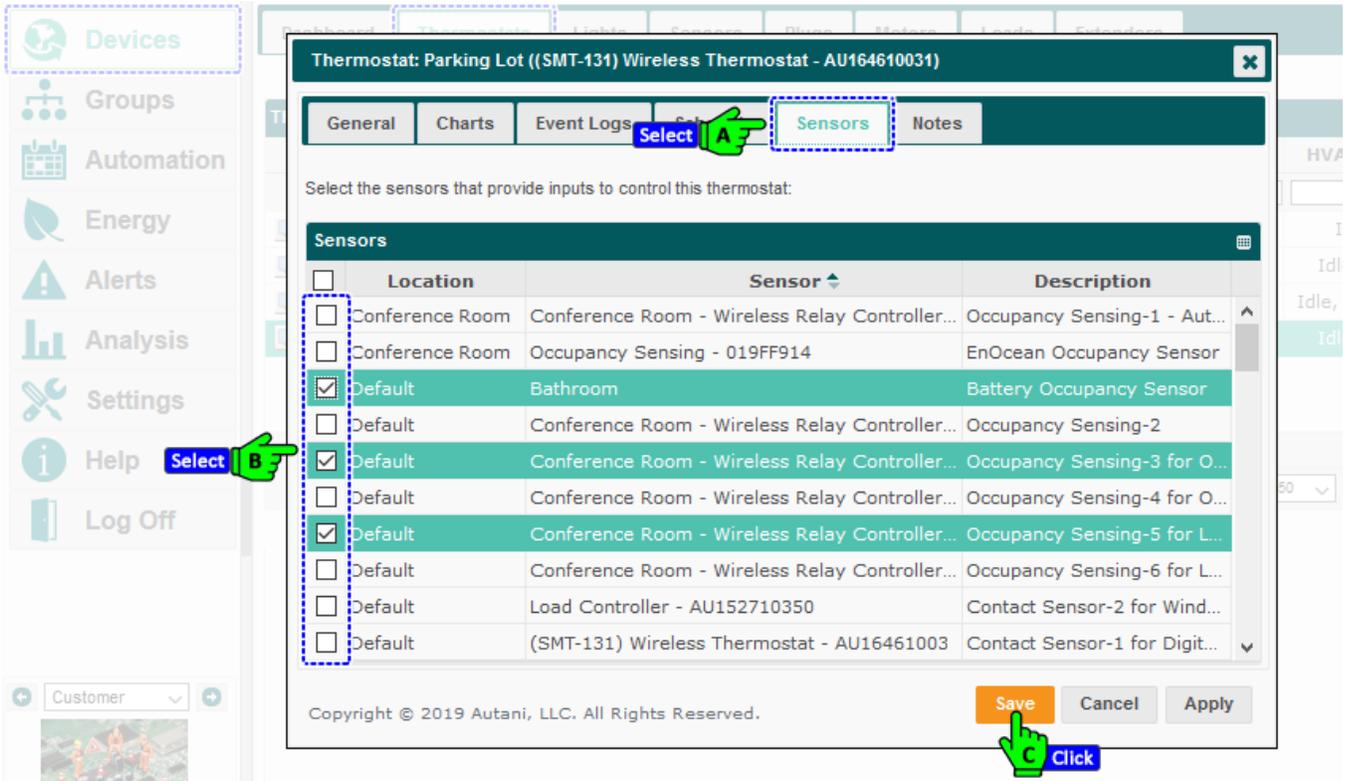
3.5. Mapping Schedules to a Thermostat

You can map schedules to a Thermostat and control the temperature of the defined area for a specific duration.

1. Select **Devices** and select the **Thermostat** tab.
2. Click the thermostat name link, **double-click** the row of the thermostat, or select the row of the thermostat and then click the **Details** button.
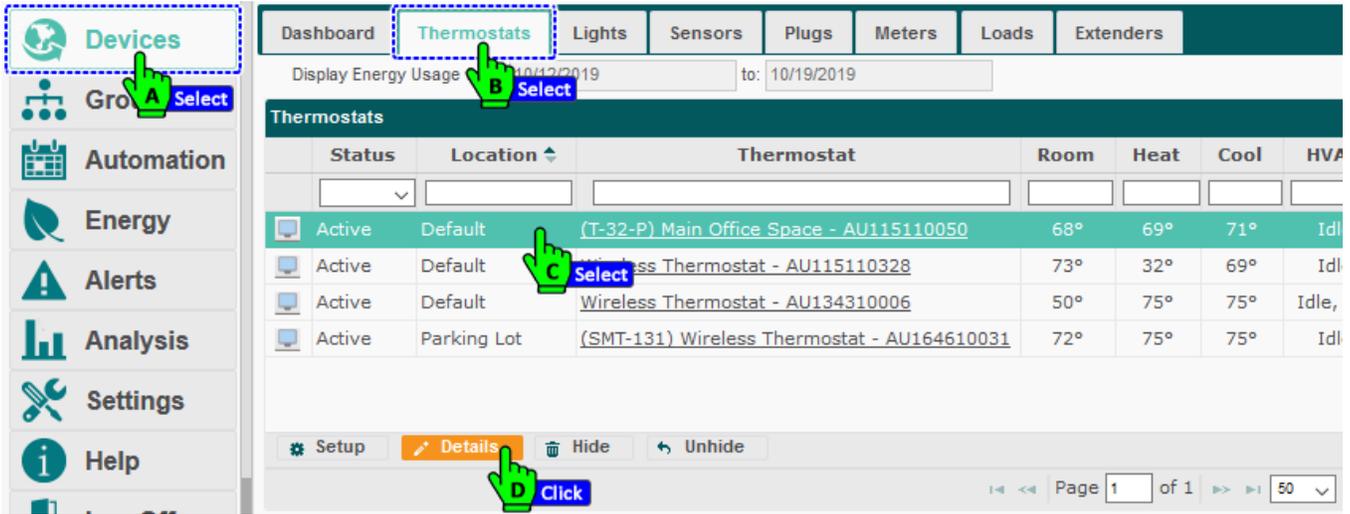
3. The General tab is loaded by default, select the next tab **Schedule**, wherein you can view or disable a Schedule for the thermostat, and verify the assigned events associated.

   NOTE: It is not recommended to create or edit Schedules here; any changes made here will be overridden by the Schedules created through Automation section.

4. Click **Save** or **Apply**.
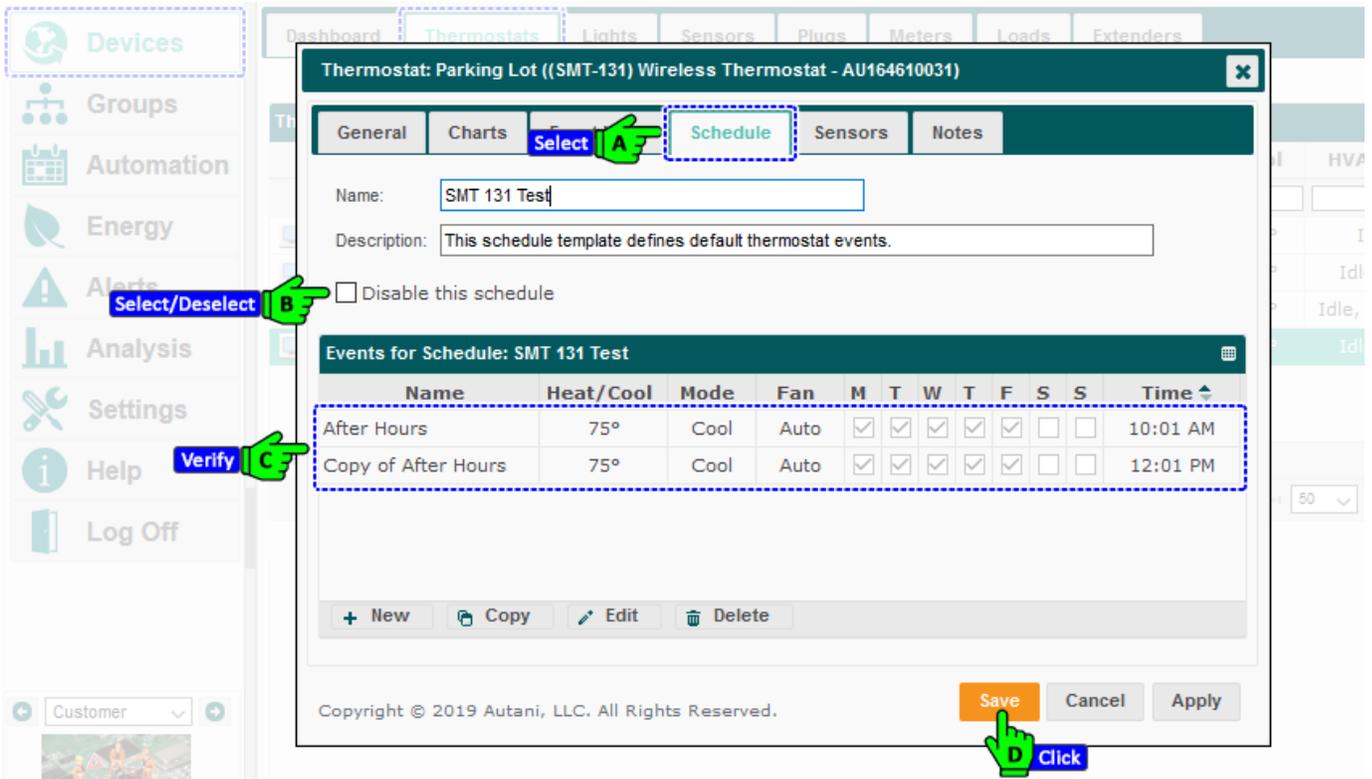
4. Enable Remote Sensor for Thermostats

This section will explain the procedures to enable the wired remote sensor for thermostats. For the Wireless remote sensor configuration refer to the 'EnOcean Bridge, Quick Start Guide' on Autani website.

4.1. Enabling Remote Sensor for T-32-P Thermostat

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.

5. Click the Thermostat **Configuration** tab.
6. Select a **Remote Sensor** from the drop down and enter a **Calibration** value.
7. Click **Save**.

4.2. Enabling Remote Sensor for SMT-131 Thermostat

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the row of the thermostat to select it.
4. Click the **Setup** button.

5. Click the **Thermostat Configuration** tab.
6. Select **Remote** for the Remote Sensor.
7. Click **Save**.

5. Checking Thermostat Status

5.1. Viewing System Dashboard Data

Click Devices on the left navigation bar to view thermostat summary information for the last 24 hours. If the dashboard tab does not appear, see *8.2.Dashboard Does Not Appear* in the Troubleshooting section.
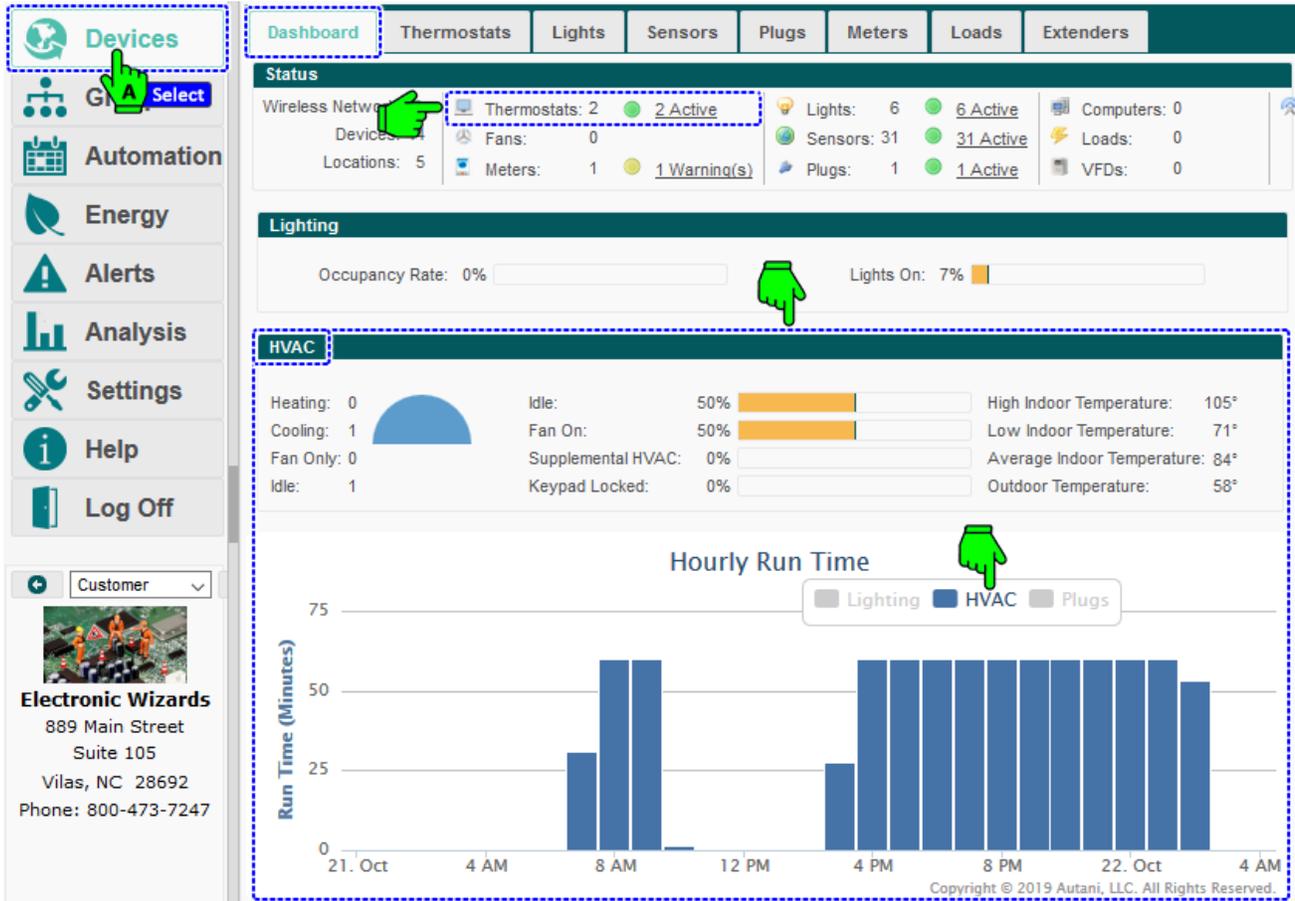
The Dashboard tab displays information on thermostats as indicated in the table below.

Data	Description
Thermostat Status	▪ Number of thermostats in the system ▪ Number of thermostats that are reporting data or are in an error or warning state
Pie chart depicting HVAC status	▪ Heating (red) ▪ Cooling (blue) ▪ Fan Only (light gray) ▪ Idle (off-white)
Idle	Percentage of reporting thermostats in Idle status
Fan On	Number of HVAC systems with the fan running
Supplemental HVAC	Percentage of thermostats using supplemental heat
Keypad Locked	Percentage of thermostats with locked keypads
High Indoor Temperature	Highest temperature reported d by a thermostat during last 24 hours
Low Indoor Temperature	Lowest temperature reported by a thermostat during last 24 hours
Average Indoor Temperature	Average temperature of all thermostats during last 24 hours
Outdoor Temperature	Currently reported outdoor temperature
Hourly Run Time Chart (Minutes)	▪ HVAC run time data appears as red bars in the chart ▪ To view exact HVAC run time in minutes and seconds or total run time for all the devices in the system, mouse over the HVAC portion of a bar in the chart.

5.2. Viewing Summary Data for All Thermostats

To view data from configured thermostats:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab to view the data in the table below for each thermostat.

NOTE: The spreadsheet format can be modified to quickly view needed information

- Rows can be sorted by clicking a column heading.
- Rows can be hidden or redisplayed using the Hide and Unhide buttons.
- The width of a column can be changed by dragging the lines on either side of the column heading to the desired size.
- Columns can be hidden or displayed using the picker in the right-hand corner of a heading row

3. To view energy consumption data and/or the Daily Energy Usage of Selected Thermostats chart, click the **Show/Hide Energy** link in the upper right-hand corner of the screen. For more information, see *7.3.Viewing HVAC Energy Consumption per Thermostat.*

Table 19: Data Displayed on Thermostat Device Tab

Column	Used To	Options
Status	Display the communication status between the transceiver and the EnergyCenter® application	▪ Active: No errors ▪ Warning: Thermostat error status message ▪ Error: The thermostat is not communicating with the Autani Manager over the autaniNet network. ▪ Removed: Device removed from the network
Location	Identify the location group to which the thermostat belongs	▪ Assigned to the **Default** location group when a thermostat is first added to the network ▪ User can change ▪ Alphanumeric characters

Thermostat	▪ List the name of the configured thermostat
	▪ Provides link to open tabs for detailed information on individual thermostats
	
	For more information on linked tabs, see *5.5 Finding Detailed Data for Individual Thermostats*.
		▪ Name
		  □ User-defined name
		  □ Alphanumeric characters
		▪ Links to tabs:
		  □ General
		  □ Charts
		  □ Event Logs
		  □ Schedule
		  □ Occupancy
		  □ Contacts

Room	▪ Display the last space temperature reported by the thermostat ▪ Update the space temperature every 10 minutes or whenever the temperature changes by a degree.	Reports temperature using Fahrenheit or Celsius scale **NOTE**: The temperature scale is set by clicking Settings on the left navigation bar, and then clicking the Systems tab.
Heat	Display the occupied/unoccupied heat setpoint	Reports temperature using Fahrenheit or Celsius scale **NOTE**: The temperature scale is set by clicking Settings on the left navigation bar, and then clicking the Systems tab.
Cool	Display the occupied/unoccupied cool setpoint	Reports temperature using Fahrenheit or Celsius scale **NOTE**: The temperature scale is set by clicking Settings on the left navigation bar, and then clicking the Systems tab.
HVAC	Indicate the HVAC mode of operation	▪ Heating ▪ 2nd Stage heating ▪ Fan On ▪ Cooling ▪ 2nd Stage cooling ▪ Idle ▪ Fan

Schedule	▪ Link to Schedule tab to view, change, copy, disable or create a new schedule
	▪ Indicate if a schedule curtailment or override is in effect
	▪ Modify schedule events associated with the thermostat
		▪ Schedule:
		  □ Name
		  □ Description
		  □ Disable
		▪ Events:
		  □ New
		  □ Copy
		  □ Edit
		  □ Delete

5.3. Checking Detailed Status Data for a Thermostat

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the thermostat name link, double-click the row of the thermostat, or select the row of the thermostat and then click the **Details** button.
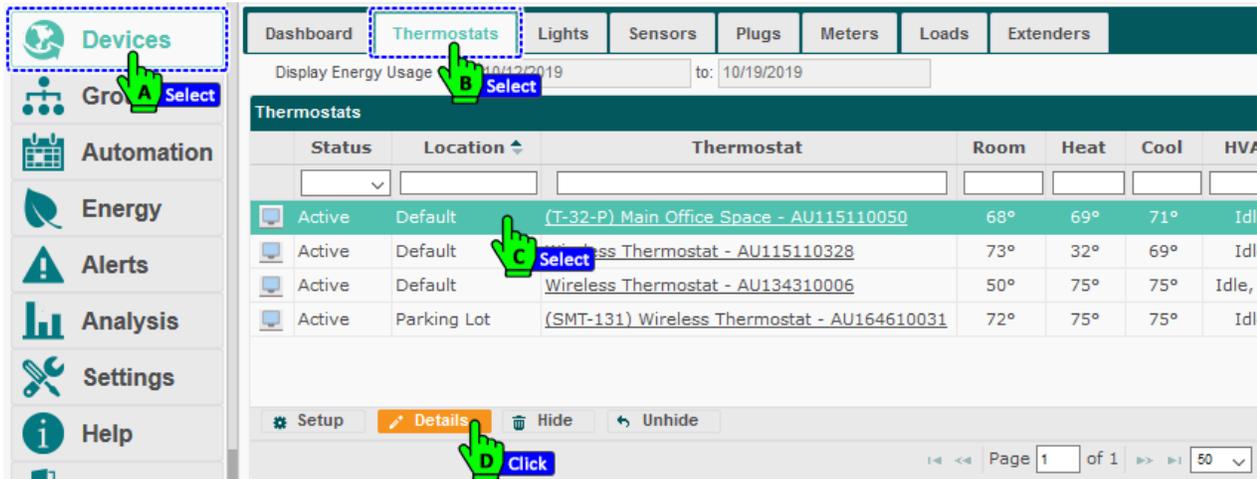
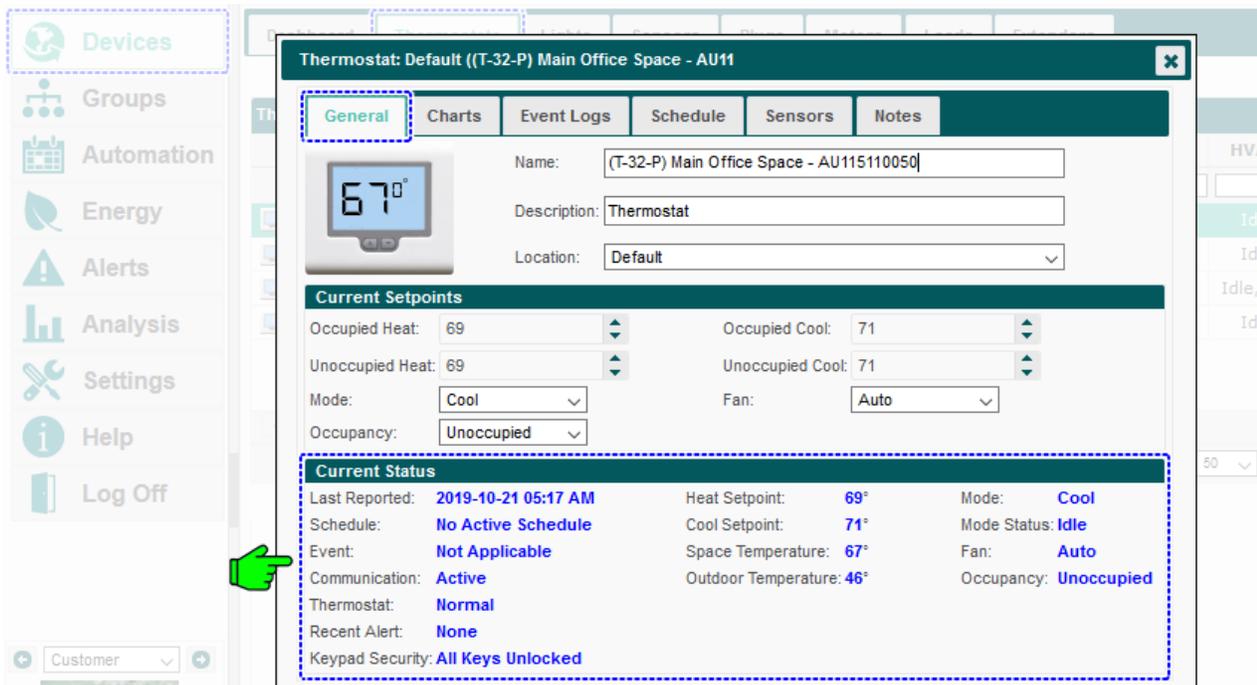4. The details appears, view the current status of the thermostat in the lower section.

Table 20: Thermostat Current Status Information

Setting	Used To	Options
Last Reported	Show the time/date stamp of the last report from the thermostat	In the following format: yyyy-mm-dd hh:mm AM/PM
Schedule	Indicate the schedule currently in effect for the thermostat	▪ User-defined schedule names ▪ Alphanumeric characters
Event	Indicate the schedule event currently applied to the thermostat	▪ User-defined schedule events ▪ Alphanumeric characters ▪ Not Applicable: Schedule is disabled, or no schedule has been applied to the thermostat.

Setting	Used To	Options
Communication	Display the status of communication between the transceiver and the EnergyCenter® application	▪ Active: Thermostat is online and reporting data. ▪ Error: Thermostat is not communicating with the Autani Manager over the autaniNet network. ▪ Removed: Thermostat was removed from the autaniNet network.
Thermostat	Display the state of the thermostat	▪ Normal ▪ Error: Device timeout ▪ Warning: Specific status message ▪ Cannot communicate with thermostat ▪ Invalid dip-switch ▪ Invalid thermostat settings ▪ Power Issue: Device is resetting too frequently. Check power and connections. ▪ Replace Filter
Recent Alert	Displays the condition that triggered a thermostat warning or error **NOTE**: To clear an alert, click **Alerts** on the left navigation bar and then delete it.	▪ None ▪ Error: Thermostat is not communicating with the Autani Manager over the autaniNet network. ▪ Warning: Specific status message
Keypad Security	Restrict the keypad operations available on the thermostat	Table 4: General Settings for T-32-P Thermostats Table 8: General Settings for SMT-131 Thermostats Table 11: General Settings for Aprilaire 8870 Thermostats
Heat Setpoint	Indicate the current heat setpoints set for the thermostat	▪ User-defined value ▪ Scheduled event setting
Cool Setpoint	Indicate the current cool setpoints set for the thermostat	▪ User-defined value ▪ Scheduled event setting
Space Temperature	Display the last temperature reported for the space by the thermostat	Reported numerical value in one-degree increments
Outdoor Temperature	Display the local outdoor temperature	Reported outdoor temperature based on zip code entered during configuration
Mode	Indicates the HVAC system mode of operation	▪ Off ▪ Auto ▪ Cool ▪ Heat
Mode Status	Display the active mode of the HVAC system	▪ Idle ▪ Second Stage Heating ▪ Heating ▪ Second Stage Cooling ▪ Cooling ▪ Fan On ▪ Emergency Heat ▪ Unknown
Fan	Display the current fan setting	▪ On ▪ Auto
Fan Speed (SMT-131)		▪ Auto

Setting	Used To	Options
Occupancy (available if sensors are a part of the system)	Indicate the occupancy mode of the thermostat	▪ Occupied ▪ Unoccupied
Heat Valve (SMT-131)	Displays the voltage output for heat valve	0-10V
Cool Valve (SMT-131)	Displays the voltage output for cool valve	0-10V

5.4. Viewing Setpoint and Relay Charts

1. On the left navigation bar, click **Devices**, and click the **Thermostats** tab.
2. Click the thermostat name link, **double-click** the row of the thermostat, or select the row of the thermostat and then click the **Details** button.

3. Click the **Charts** tab. The default display is for the current date.

4. To select a date range for the chart, click the **Start Date** and **End Date** textboxes to access the calendar.
5. To view more exact time and temperature information:
   a. Mouse over the displayed data.

b. Zoom in on a defined area of the chart by clicking and dragging the mouse to create a rectangular box. To return the view to its original size, click **Reset Zoom** in the upper right-hand corner of the chart.

6. To add additional data to the chart, select the checkbox next to all the appropriate options.

5.5. Finding Detailed Data for Individual Thermostats

To access information related to individual thermostats:

1. On the left navigation bar, click **Devices**, and click the **Thermostats** tab. See *5.2. Viewing Summary Data for All Thermostats* for specific information displayed on the tab.

2. To view additional information or enter data, click the name link of the thermostat, **double-click** the row of the thermostat, or click the row of the thermostat, and then click the **Details** button.
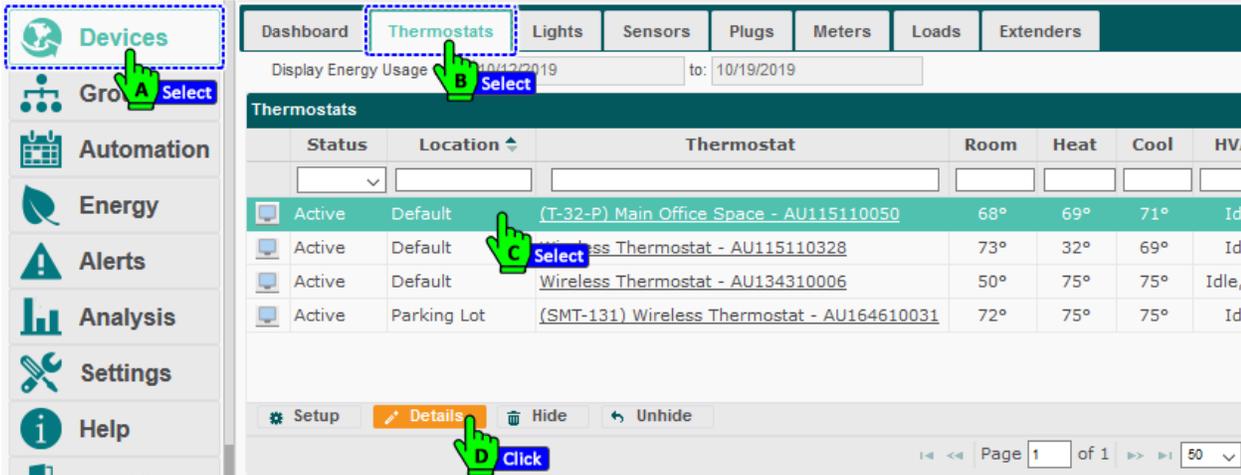
3. The detail tabs that appear are described in the following table.
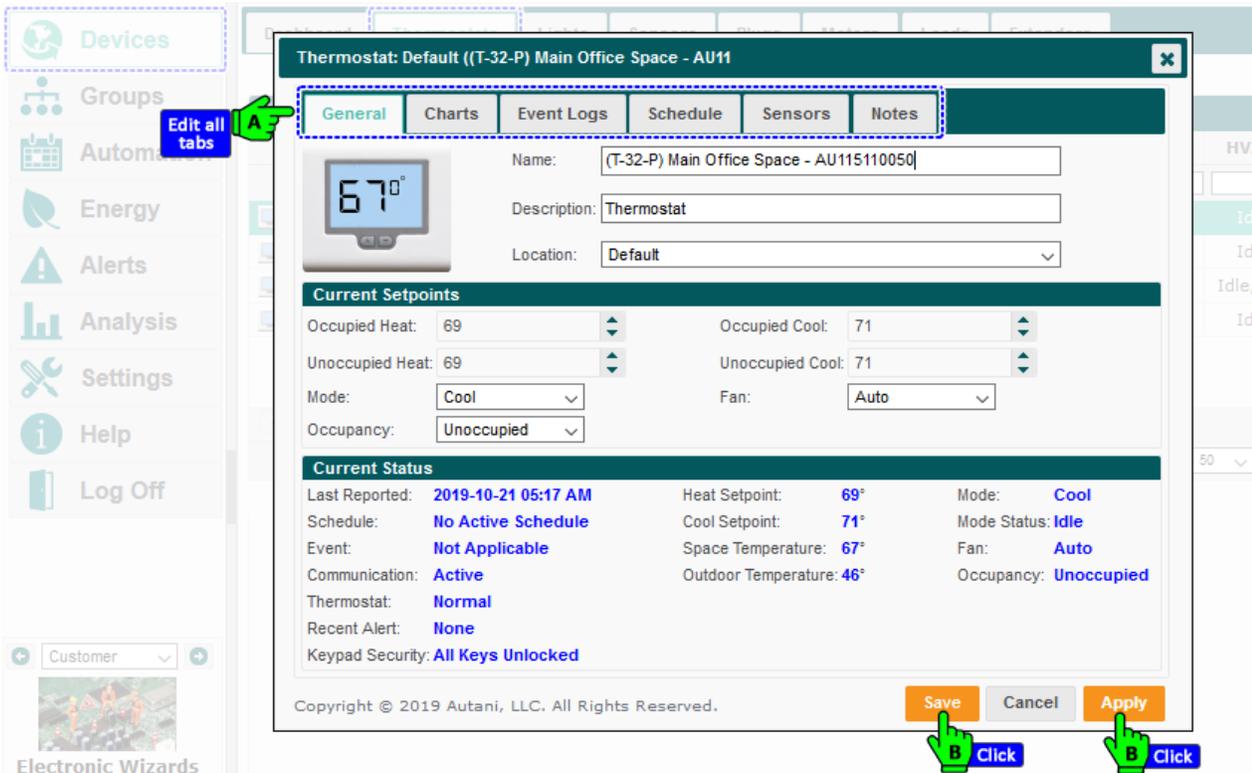
Table 21: Detailed Thermostat Data Tabs

Tab	Used To
General	- Change general descriptive information - Change heating and cooling setpoints when a space is occupied or unoccupied - Set thermostat mode - Set fan mode - View current status information
Charts	View graphical representations of thermostat status changes over a defined date range
Event Logs	View data on recent events
Schedule	- View event schedule information - Change general descriptive information - Disable the schedule - Link to screens to create or modify schedules and related events
Occupancy (available if a motion sensor or a computer running an Autani Energy Management Client are associated with the thermostat)	Select sensors to provide occupancy input to the thermostat.
Contacts (available if contact sensors are associated with the thermostat)	Select contact sensors to be used to trigger occupied or unoccupied settings.

5.6. Using Event Logs

Event logs record all important thermostat events. In addition to the current temperature, the event log includes:

- Transitions to a new setpoint, scheduled event, override, and curtailment
- The time the transition occurred
- How long the new condition lasted and when it ended
- The number of times the device reported data while the condition lasted

The data can be used to understand:

- Usage patterns and determine ways to fine tune the system
- Why and when a problem occurred and how to fix it

To view a thermostat event log:

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostats** tab.
3. Click the thermostat name link, **double-click** the row of the thermostat, or select the row of the thermostat and then click the **Details** button.
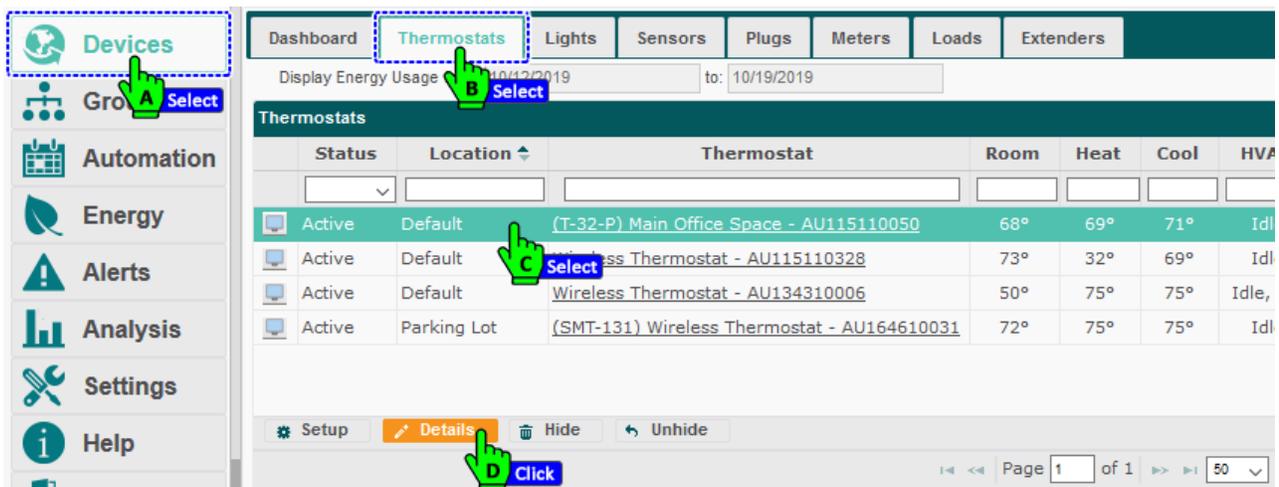
4. Click the **Event Logs** tab.
5. Click in the Start Date and End Date text boxes to access the calendar and select a date range.

    NOTE: Event logs include events that began before the date range if they continued into the selected date range.

6. To display hidden columns:
    a. Click the picker.
    b. Select the checkbox (es) for the column(s) to be displayed.
    c. Click **OK**
7. Select the checkbox(es) for the column(s) to be displayed.
8. Click **OK**.
9. After viewing the event logs:
    ▪ Click **Apply** to remain on the Event Logs screen.
    ▪ Click **Save** or Cancel to close the dialog box.

6. Scheduling System Changes

6.1. Creating and Assigning a Schedule

The steps below are required to create a schedule template and use it to assign a schedule to one or more thermostats.

1. Create a schedule template by modifying a copy of the default template or another existing template.
2. Create or modify template events as described in the table below.
3. Assign a schedule template to one or more thermostats or a group of thermostats.

For detailed instructions on how to complete each step, refer to the EnergyCenter® User Guide module entitled 'Tasks Common to All Applications (Zigbee)'.

Table 22: Event Configuration Settings

Setting	Used To	Options
Name	Enter a name for the event	▪ User defined ▪ Alphanumeric characters
Heat and Cool Setpoints	Enter the heating and cooling setpoints for the thermostat when it is in both occupied and unoccupied mode **NOTE**: There is a deadband of two degrees between setpoints.	Heating: ▪ 41°F -120°F ▪ 5°C -50°C Cooling: ▪ 43°F -122°F ▪ 6°C -50°C
Occupied Delay (Available if system includes sensors)	Delay the transition from occupied to unoccupied setpoints	▪ Zero to 1440 minutes ▪ Default = zero
Unoccupied Delay (Available if system includes sensors)	Delay the transition from unoccupied to occupied setpoints	▪ 1-1440 minutes ▪ Default = 10-minute delay
Set unoccupied when contacts are open (Available if system includes contact sensors)	Transition to unoccupied setpoints when a contact sensor indicates a door or window is open	▪ No ▪ Yes
Stays open for (Available if system includes contact sensors	Delay the transition to unoccupied setpoints when the contact sensor circuit is open	▪ Zero to 1440 minutes ▪ Default = 1-minute delay
Mode	Select a mode of the HVAC system	▪ Off: Turns off HVAC systems ▪ Auto: System turns on heating, cooling, and/or fan as needed to maintain temperature setpoints ▪ Cool: Turns on air conditioning ▪ Heat: Turns on heating system
Fan	Program how the fan should operate	▪ Auto: Run only as needed to maintain temperature setpoints ▪ On: Run continually
Keypad Lockout	Determine if changes can be made from the keypad	▪ No Change ▪ All Keys Locked ▪ All Keys Unlocked
Effective Days	Select the days of the week the event is to apply	▪ Days of the week ▪ Weekday ▪ Weekend ▪ All
Effective Time	Specify when settings should take effect.	▪ The hour and minute ▪ AM or PM

6.2. Selecting Event Rule Settings

Event Rules are used to implement scheduled overrides or on-demand curtailments. Event Rules specific to thermostats are described in the table below.
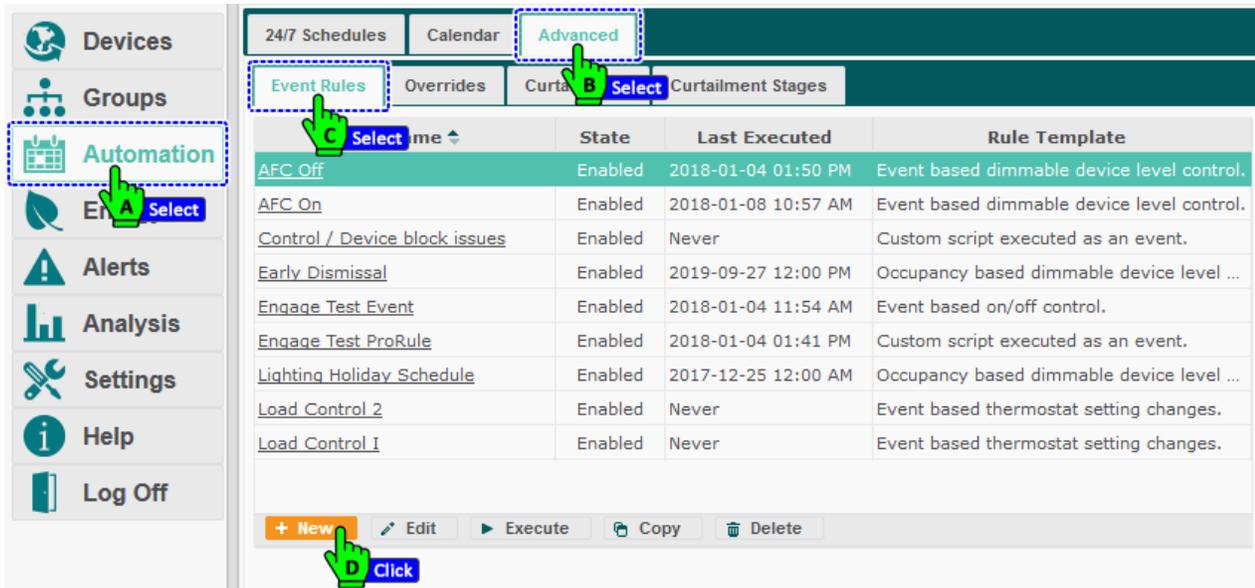
NOTE: For information about overrides or curtailments and/or how to create them, refer to the User Guide module entitled 'Tasks Common to All Applications (Zigbee)'.
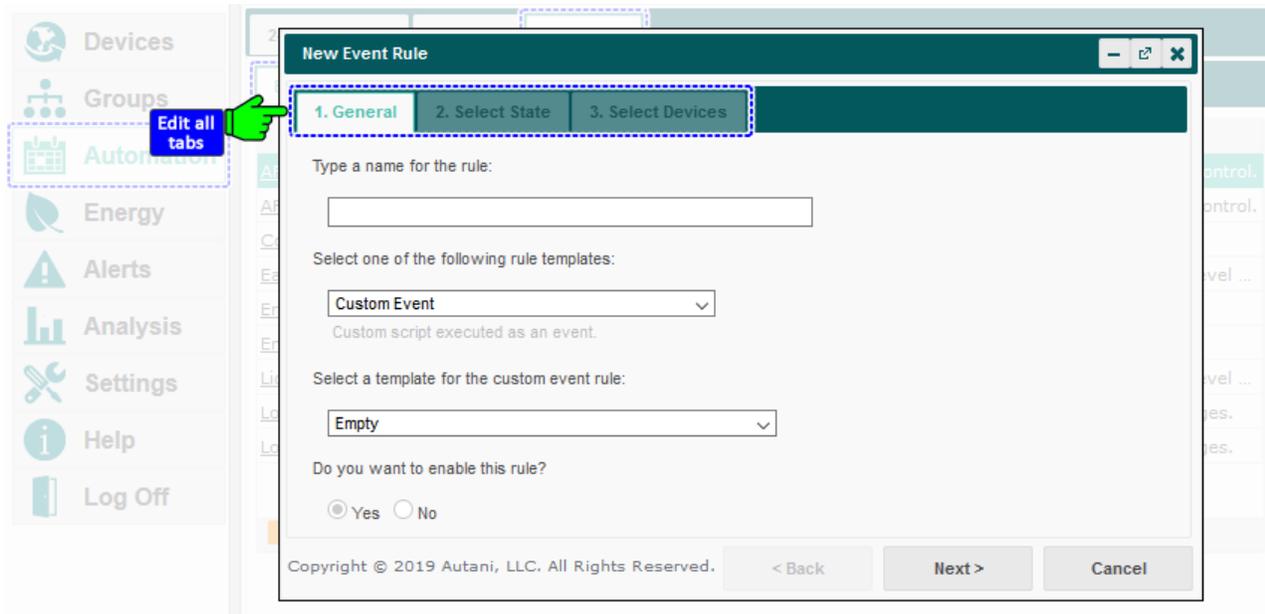

Table 23: Event Rule Settings

Setting	Used To	Options
Name	Enter a name for the event	▪ User defined ▪ Alphanumeric characters
Set State To	Determine thermostat state based on occupancy	▪ On ▪ Off ▪ Smart On/Off ▪ Vacancy
Off Delay (Available if system includes sensors)	Delay the transition from unoccupied to occupied setpoints	▪ 1-1440 minutes ▪ Default = 5-minute delay

7. Using HVAC Energy Consumption Data

7.1. Understanding Energy Estimation for HVAC Systems

The software Estimation Engine is the default source of consumption data. The Estimation Engine calculates the:

- Total amount and cost of energy for a specified date range
- CO_2 emitted during production of the energy consumed (the carbon footprint)

For information on:

- The calculation process used by the Estimation Engine based on heating and cooling related data, see the table below.
- Setting relay outputs and defining utility rates, see *2.1.Configuring T-32-P Thermostats* or *2.2 Configuring SMT-131 Thermostats* or *0.*
- *Configuring Aprilaire* 8870 Thermostats*.*
- Using actual consumption data instead of Estimation Engine calculations, refer to the User Guide module for 'Meter Management'.

Table 24: Estimation Engine Calculation Process

Step	Calculation	Description	Example
1	Determine consumption kWh rate for each component on the HVAC system controlled by the thermostat	▪ The relay output for each device is entered during setup in kilowatts for electricity or therms for gas. ▪ If gas rates are used, the application converts therms to kilowatts.	Relay outputs for a fan are defined as 0.45 kilowatts for electricity. The Estimation Engine calculates energy consumption by the fan to be 0.45 kWh. Relay output for heat is defined as 0.5 therms for gas. The Estimation Engine calculates energy consumption for heating to be 14.65 kWh.
2	Determine energy consumed by an HVAC device over a specific time period	Multiplies the consumption rate calculated in step 1 by the amount of time the device is running **NOTE**: Consumption is calculated beginning at midnight on the first day in the date range.	The fan in step 1 is on for two hours. The Estimation Engine calculates total energy consumption of the fan to be 0.9 kWh.
3	Aggregate consumption data for all HVAC devices	Adds together the device consumption totals calculated in step 2	The Estimation Engine calculates total consumption of the fan and heat relays in step 1 to be 15.1 kWh for one hour.
4	Determine HVAC-related energy cost	▪ Multiplies the consumption total calculated in step 3 by the electric rate charged by the utility ▪ For information on how to change utility rates, see the User Guide module entitled 'Tasks Common to All Applications (Zigbee)'.	Utility rate is 10¢ per kWh. The Estimation Engine calculates energy cost of the fan is $0.0452 per hour.
5	Carbon footprint	Calculates CO2 emitted during production of the energy calculated in step 3	Default conversion factors for CO_2 emissions are: ▪ 1.393 for electricity in kWh ▪ 12.061 for gas in therms The Estimation Engine calculates the carbon footprint to be 21.03 lbs. of CO_2.

7.2. Viewing Total Estimated Energy Consumption

To view summary consumption data for a selected day or date range:

1. On the left navigation bar, click **Energy**.
2. Click in the **Display Energy Usage from** and **Display Energy Usage to** textboxes to access the calendars and select the day or date range.

The Energy screen provides:

- Data related to energy consumption on the specified day or date range as outlined in the table below
- A graph showing the relationship between consumption and outdoor temperatures

    NOTE: Consumption is calculated beginning at midnight on the first day in the date range.
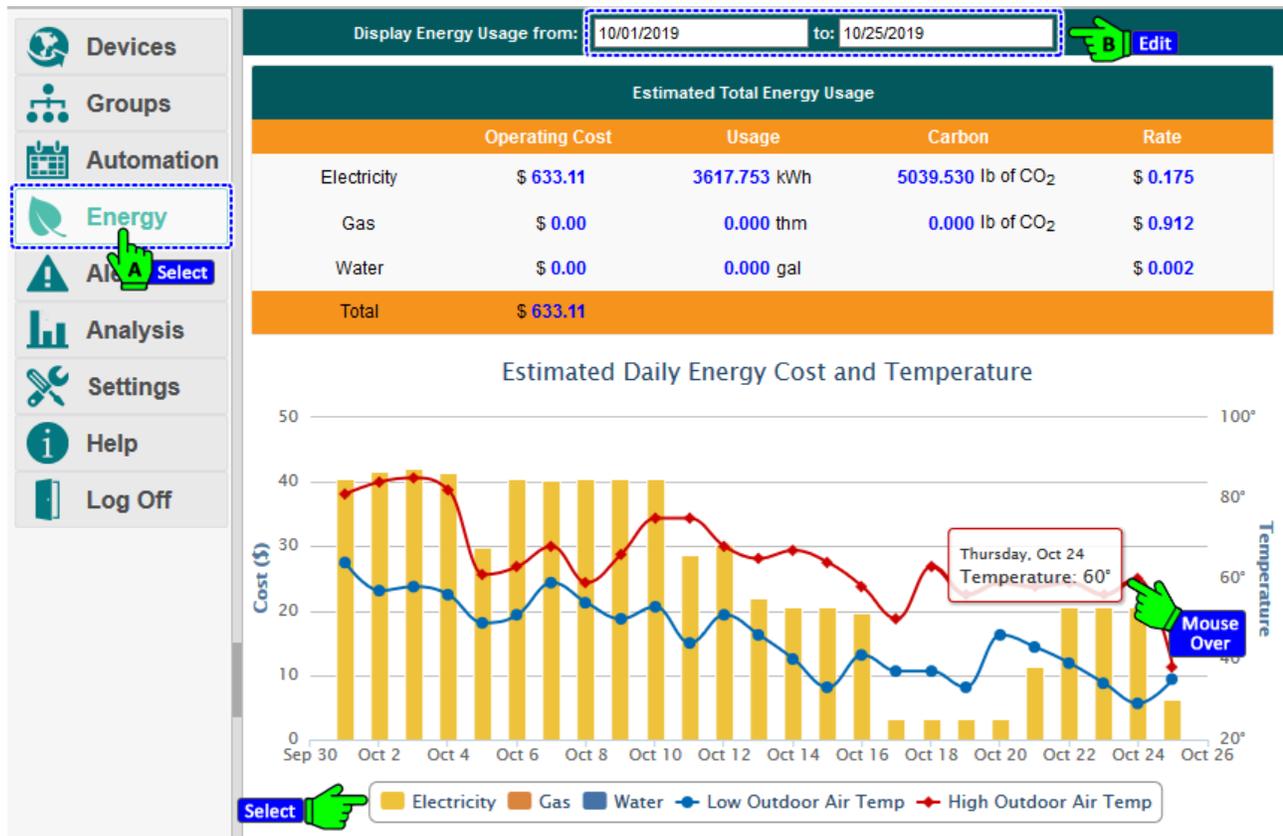
Table 25: Aggregated HVAC Energy Consumption Data

Setting	Description
Operating Costs	Calculated by multiplying kilowatt hours consumed during a specific period of time by the electricity or gas rate charged by the utility For details on changing the rate, see the User Guide module entitled 'Tasks Common to All Applications (Zigbee)'.
Kilowatt Usage	Kilowatt hours of energy reported by the HVAC system from midnight on the selected date until the most recent report for today
Carbon (lbs. of CO_2)	Estimated pounds of CO_2 produced generating the energy consumed by the HVAC system from midnight on the selected date until today
Rate	▪ Displays the current cost rate per kilowatt hour or therm charged by the utility company as specified during configuration using the Energy tab. ▪ For details on changing this rate, see the User Guide module entitled 'Tasks Common to All Applications (Zigbee)'.

7.3. Viewing HVAC Energy Consumption per Thermostat

1. On the left navigation bar, click **Devices**.
2. Click the **Thermostat** tab to view:
   - Current temperatures
   - Heating and cooling setpoints
   - The HVAC mode
   - Thermostat schedules

3. To view additional columns of thermostat data, click the picker, select the checkboxes of the columns to be displayed. Click **OK**.
4. To view the Daily Energy Usage of Selected Thermostats chart, click the **Show/Hide Energy** link in the upper right-hand corner of the screen.
   - A new Total kWh column appears in the data display.
   - A new Display column of checkboxes appears to specify which thermostat(s) are to be included in the Daily Energy Usage of Selected Thermostats chart.
   - The chart displays daily totals of estimated kilowatt hours of electricity and gas consumed. To view more exact data, mouse over a bar in the chart.

   NOTES:
   - To calculate kWh, gas consumption was converted from therms to kilowatts.
   - For more information on how the data is calculated, see *7.1 Understanding Energy Estimation for HVAC Systems*.

5. To display data for different combinations of thermostats, select or deselect the **Display** checkboxes next to the thermostats.

8. Troubleshooting

8.1. Energy Consumption Data Does Not Appear

The application uses the rate at which each relay consumes energy to estimate total HVAC consumption and the carbon footprint. It is likely that no rates were entered during commissioning.

Check thermostat and enter the gas or electric rates at which each relay functions, see *2.1.4 Updating Relay Outputs* for T-32-P thermostats, *2.2.3 Updating Relay Outputs* for SMT-131 and *2.3.5 Updating Relay Outputs* for Aprilaire 8870 thermostats.

For more information on energy consumption calculations, see *7.1 Understanding Energy Estimation for HVAC Systems*.

8.2. Dashboard Does Not Appear

To enable the dashboard:

1. On the left navigation bar, click **Settings**.
2. Click the **System** tab.
3. From the **System Device** drop-down list, select **Enabled**.
4. Click **Save**.

8.3. Thermostat Readings Appear to be Incorrect

There are a number of reasons why it may appear that temperature readings differ from actual room temperatures. They include:

- No insulation was used in the wall where wiring is connected to the thermostat. Insulation is especially important for thermostats that are located in or near outside walls.
- Drafts are affecting temperature readings of a thermostat located near an outside door.
- The thermostat is not located in the room where it is controlling the temperature. For example, a thermostat may be controlling an area that includes a separate conference room.

8.4. Scheduled Events Appear to Have Changed

There are a number of reasons why it may appear that scheduled events are not occurring as expected. They include:

- Two events cannot start at the same time on the same day.
- The thermostat is in an error state indicating that it is not communicating with the Autani Manager over the autaniNet network.
- The event was superseded by a scheduled override or by a curtailment. For more information, refer to the User Guide module entitled 'Tasks Common to All Applications (Zigbee)'.
- Programmed delays may be affected if the system includes third-party sensors that have their own delay schedules. For more information, refer to the documentation that came with the sensor.
- A thermostat was added to a group after a Schedule Template was copied to each thermostat in the group.
- A Schedule Template may have been changed. Schedule template changes are not automatically copied to a thermostat.

8.5. Event Log Contains Data Outside the Selected Date Range

Event logs include events that began before the selected date range when those events continued during the date range.

The software is programmed to include all data collected during the date range. To ensure that only data collected during a specified period is included in Event Logs, events cannot straddle the specified date range.

8.6. Filter Monitoring Information Does Not Appear

Filter information only appears on the bottom of the General tab for a specific thermostat if a replacement time period has been designated.

To create, or clear and reset, a filter replacement interval using the application, see *2.7.Creating a Time Interval for Filter Maintenance (T-32-P)*.

8.7. Contacting Customer Support

For assistance after following the steps in Troubleshooting, contact Customer Support at:

- □ **Contact Autani Support.**

  Phone: 443.320.2233 x2

  Address: 7001 Columbia Gateway Drive, Suite 210, Columbia, MD 21046 USA

  Support / Commissioning Services: support@autani.com

- □ **Contact Autani Sales**

  Phone: 443.320.2233 x1

  Sales/Quotations: sales@autani.com, quotes@autani.com

  General Inquiries: information@autani.com

  Hours of Operations: Monday to Friday, 9am to 5pm, Eastern Standard Time.

9. Glossary

Table 26: Glossary

Term	Description
ARC (Autani Room Controller)	Proprietary Autani device used to control multiple devices, including thermostats **NOTE**: The name of the ARC is the same for all end points (e.g. thermostats and sensors) wired to it.
Associated sensors	▪ Sensors must be wired to a device or associated with the device in the software in order for the motion data they report to be used in software control decisions for that device. ▪ The software determines a space to be occupied if any one of the sensors wired to or associated with the device in an area reports motion.
Carbon Footprint	▪ Total greenhouse gases emissions during production of the energy used by an organization or to produce a product ▪ In EnergyCenter®, greenhouse gas emissions associated with an event ▪ Estimated in pounds of carbon dioxide emitted
Curtailment	Used to immediately implement an Event Rule(s) to supersede a regularly scheduled Event or Override
Event	Setting or group of settings used to set the state on a single controllable point of a device at a certain time
Event Rule	Setting or group of settings used to set the state on a single controllable point of a device, or multiple points of the same type, triggered by an event defined in an override or curtailment
Kilowatt Hour (kWh)	▪ Unit of energy equivalent to one kilowatt of power expended for one hour ▪ Billing unit by electric utility company for energy delivered to its consumers
Override	Used to schedule an Event Rule(s) to supersede a regularly scheduled Event
Schedule	Used to implement Events at a specific time, on a recurring basis, or based on conditions reported by sensors
Schedule Template	Schedule that that is used as a pattern to quickly and easily apply the same setting(s) to multiple devices of the same type
Therms	▪ Energy content a gas or liquid gives off in the form of heat when burned ▪ Energy equivalent of burning 100 cubic feet of natural gas

10. Index

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