Viconics Room Controller

TRC6500

Rooftop Unit (RTU), Heat Pump and Indoor Air Quality (IAQ)

Firmware Revision 2.1

Operating Guide

Version 3

Table of Contents

Safety Information

Important Information

Read these instructions carefully and inspect the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Viconics Technologies for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Before You Begin

Loss of Control

NOTICE

EQUIPMENT DAMAGE

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and over travel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of anticipated transmission delays or failures of the link.[1]
- Each implementation of equipment utilizing communication links must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in equipment damage.

Electrostatic Discharge

NOTICE

EQUIPMENT DAMAGE

Circuit boards and expansion modules can be damaged by static electricity. Observe the electrostatic precautions below when handling controller circuit boards or testing components.

Observe the following precautions for handling static-sensitive components:

- Keep static-producing materials such as plastic, upholstery, and carpeting out of the immediate work area.
- Store static-sensitive components in protective packaging when they are not installed.
- When handling a static-sensitive component, wear a conductive wrist strap connected to the component or ground through a minimum of 1 megohm resistance.
- Avoid touching exposed conductors and components.

Failure to follow these instructions can result in equipment damage.

1 For additional information about anticipated transmission delays or failures of the link, refer to NEMA ICS 1.1 (latest edition), *Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control* or its equivalent.

SECTION 1

Introduction

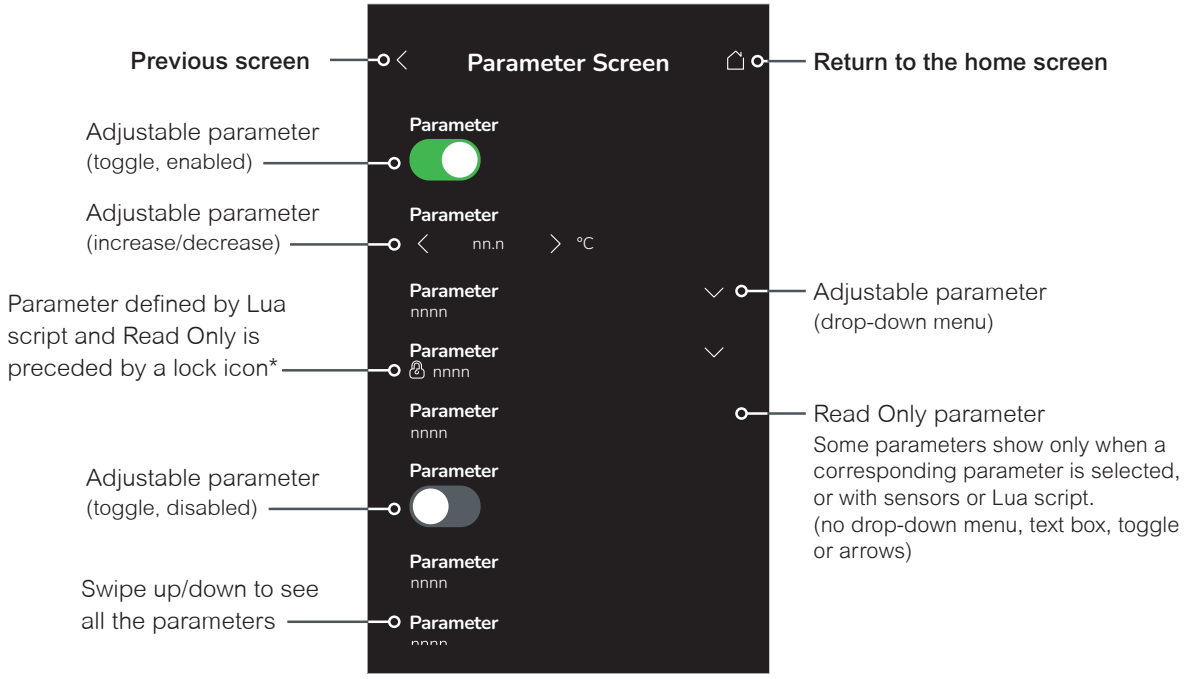
Introduction

This guide shows the user interface instructions for the TRC6500 Viconics Room Controller firmware **revision** 2.1 for users and integrators.

User and Integrator Screens

The TRC6500 Viconics Room Controller has dynamic screens that show adjustable parameters and read-only status information. Some screens and parameters only show when a corresponding parameter is selected. The Lua selection on the Setup screen only shows if a Lua script is uploaded to the Room Controller.

Refer to the following illustration for a legend of the screen details:



* The Lua settings include generic parameters that do not have a specific function or pre-configured functions. These parameters can be used in custom Lua scripts to store a value. They are also user configurable in their default state, but when assigned a value via a Lua script or via BACnet (Priority 1-16), they become read only (not configurable locally by the user). A lock icon will precede the parameter value to indicate this clearly.

NOTE: When a change is made to a parameter on the Home or Preferences screen and saved (by tapping OK/Save/Connect/etc.), the value is automatically saved in memory when the next parameter is selected or another screen is opened. This event is true only if a parameter was changed locally on the Room Controller. Making changes through BACnet will not have the same outcome. If changes need to be done remotely through BACnet, use priority 1, 2 or 3, or write to relinquish default (priority 17). Refer to the BACnet Integration Guide for more details on BACnet Priorities.

BACnet Integration Guide References

To simplify cross-referencing between the Operating Guide and the BACnet Integration Guide, BACnet object properties are included in the Parameter Details tables as follows:

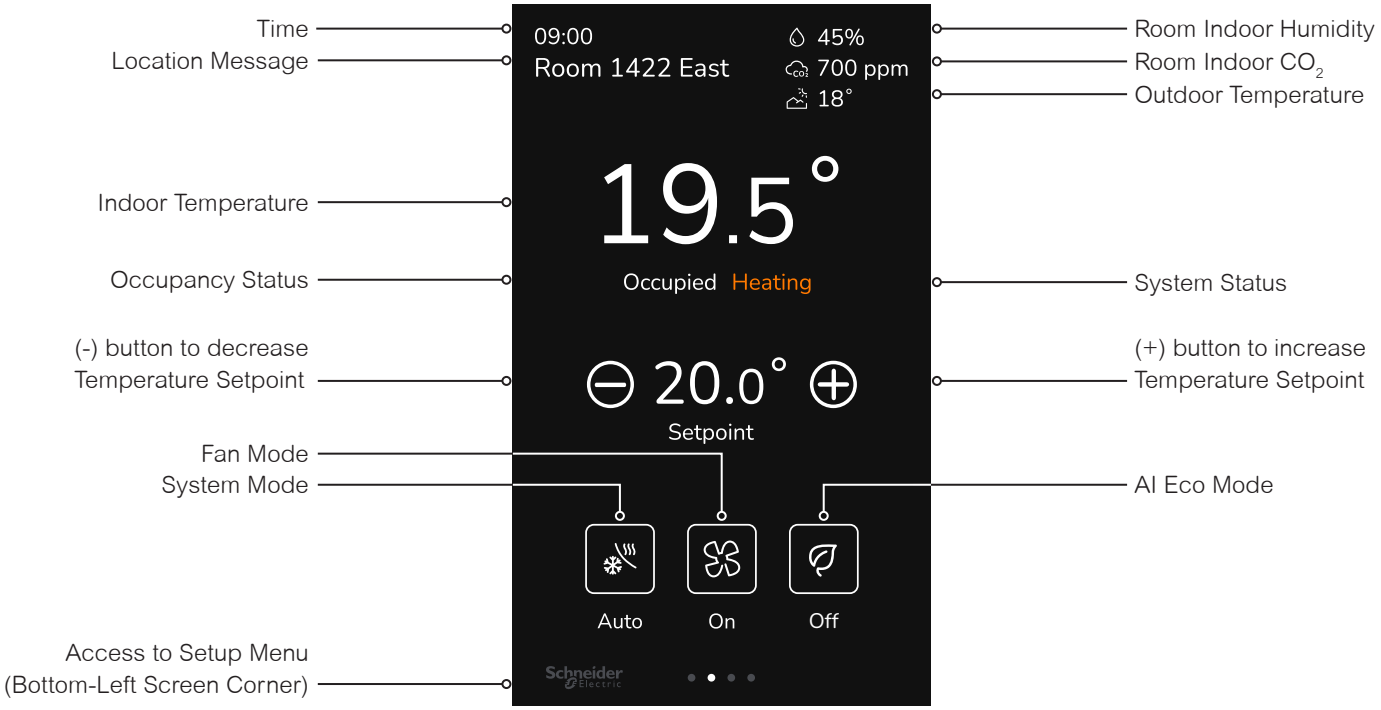
- **Object name**.
- **Instance number** and **object type prefix**. Object type prefixes are described as follows:
  - AI - Analog Input
  - AO - Analog Output
  - AV - Analog Value
  - BI - Binary Input
  - BO - Binary Output
  - BV - Binary Value
  - CSV - Comma-Separated Value
  - MSI - Multi-State Input
  - MV - Multi-State Value
- **Binary range values** (for BI, BO and BV) and **status enumeration** (MSI and MV) descriptions.

PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Parameter Default value: **Auto** **MV99** ⟵ **Instance number**	**Parameter** ⟵ **Object name** **Choices**: 1=On, 2=Auto, 3=Off ⟵ **Range values and enumeration**

HMI Display

The User Human Machine Interface (HMI) is configurable and allows display functions such as Time, Humidity, CO2 levels, Outdoor Temperature and Setpoint to be enabled or disabled by setting various parameters.



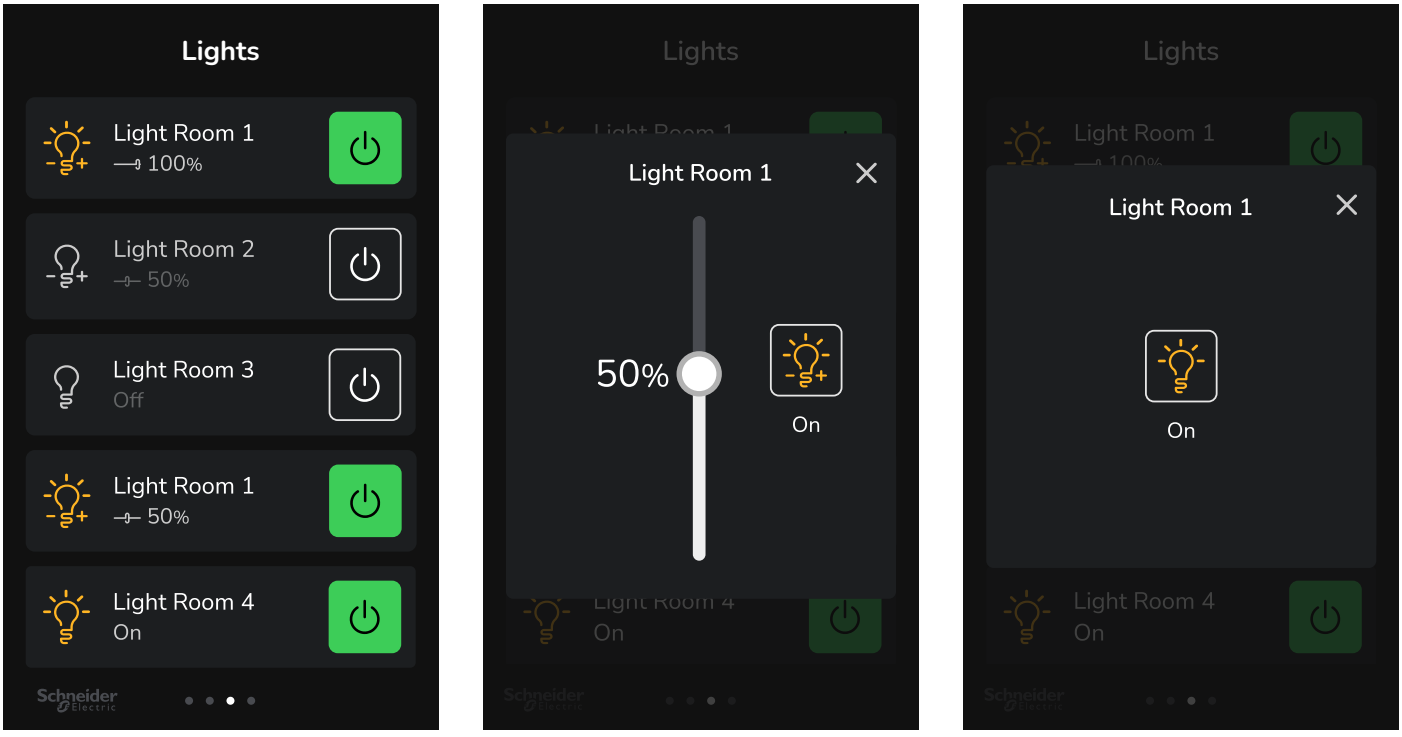
Lights and Blinds

The Lights and Blind screens provide an easy to access interface where the occupants can control the lights and blinds in the room. The Room Controller does not control the lights and blinds directly, it must be connected by the Modbus network to a SpaceLogic™ Room Purpose Controller (RP-C). The RP-C is then be connected to the SpaceLogic™ Light and Blind Modules. The Room Controller always shows the current state of the Lights and Blinds it controls, and will respond immediately to show the progress of the control changes. Refer to the Application Guide for more information on the Lights and Blinds system architecture.
To revert Lights and Blinds back to factory default values, turn on the Reset Lights and Blinds switch on the Factory Reset setup screen.
To configure Lights and Blinds, refer to the following sections:

- "Factory Reset" on page 27
- "Lights and Blinds" on page 47.

Lights (Main)

To see the main Lights screen, swipe left on the home screen. To return to the home screen, swipe right on the Light screen's header or footer. After the configurable inactivity time, the Lights screen will return back to the home screen.
If there are no lights enabled on the device, the Lights screen will be hidden.
The Lights screen can contain any number of lights, up to a maximum of 8 lights.
Each light has a display name and a status indicator (on/off, dim percentage) to help identify which light the occupant wants to operate.
Each light element has an on-off power button at the right of the element, and a status icon at the left of the element. When pressed, the power button will turn green and the status icon will turn yellow.
Pressing anywhere on the light element (except the power button) will open the light element popup screen, where an on-off power button and a dim slider can be used to control the light. To close the popup screen, press the 'X' button or press outside of the popup.

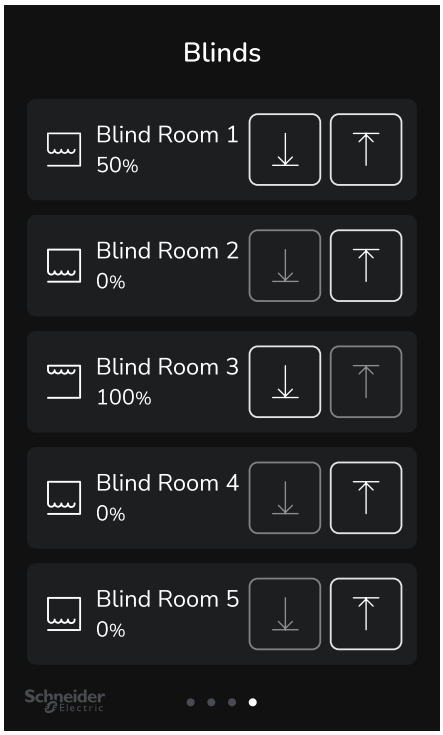


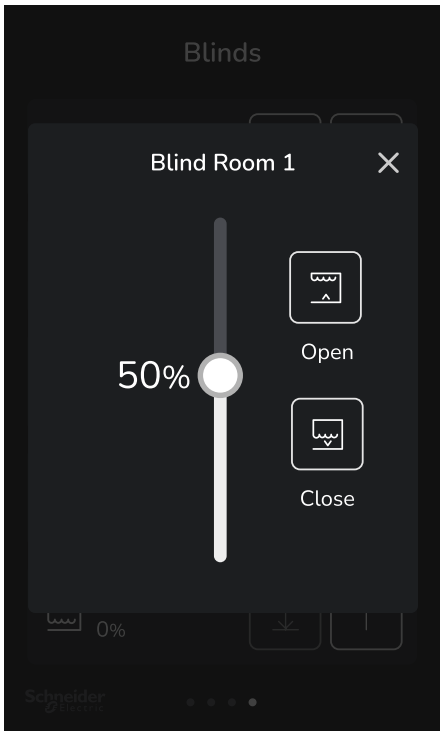
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Light Command Default value: **0** **AV300** to **AV307**	**Light # Cmd** On-off power button and dim percentage slider control. **Range**: 0 to 201
Light Status Default value: **0** **AV284** to **AV291**	**Light # Status** On-off status icon and dim percentage. **Range**: 0 to 201

Blinds (Main)

To see the main Blinds screen, swipe left on the home screen, then if lights are enabled, swipe left again on the Light screen's header or footer. To return to the home screen, swipe right on the Blind screen's header or footer, then if lights are enabled, swipe right again on the Light screen's header or footer. After the configurable inactivity time, the Blinds screen will return back to the home screen.
If there are no blinds enabled on the device, the Blinds screen will be hidden.
The Blinds screen can contain any number of blinds, up to a maximum of 8 blinds.
Each blind has a display name and a status indicator (open/close percentage) to help identify which blind the occupant wants to operate.
Each blind element has two control buttons to open and close the blinds at the right of the element, and a status icon at the left of the element. When pressed, the control button will be highlighted and the status icon and the open/close percentage indicator will show the blind's position.
Pressing anywhere on the blind element (except the control buttons) will open the blind element popup screen, where the open/close buttons and a percentage slider can be used to control the position of the blind. To close the popup screen, press the 'X' button or press outside of the popup.





PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Blind Command Default value: **0** **AV308** to **AV315**	**Blind # Cmd** Open-close control buttons and percentage slider control. **Range**: 0 to 201
Blind Status Default value: **0** **AV292** to **AV299**	**Blind # Status** Open-close status icon and percentage. **Range**: 0 to 201

Enter Setup Screen

Tap and hold this area for 3 seconds to enter the set-up mode. When the list of users appears on the screen, tap to select the desired user, then enter the corresponding PIN code. This step is to prevent unauthorized access to the configuration menu parameters.

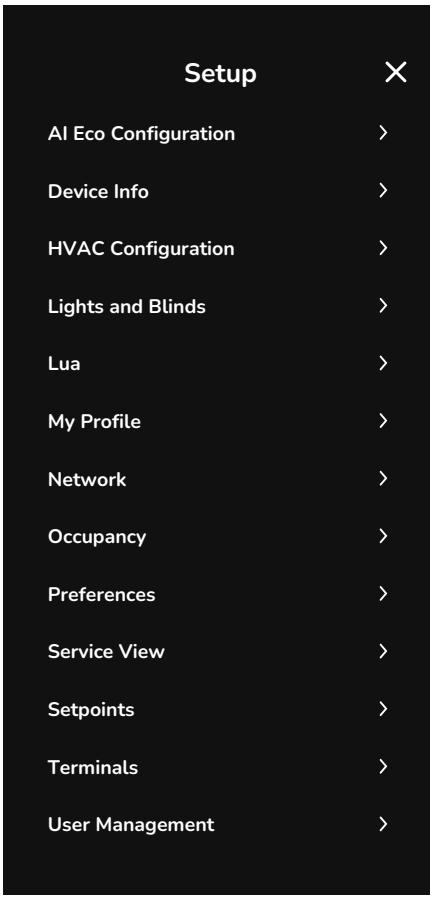
NOTICE

PIN CODE

If an incorrect PIN code is entered repeatedly, a user profile will be blocked for a configurable period of time.

Failure to follow these instructions may lead to an inability to configure the Room Controller.

Setup



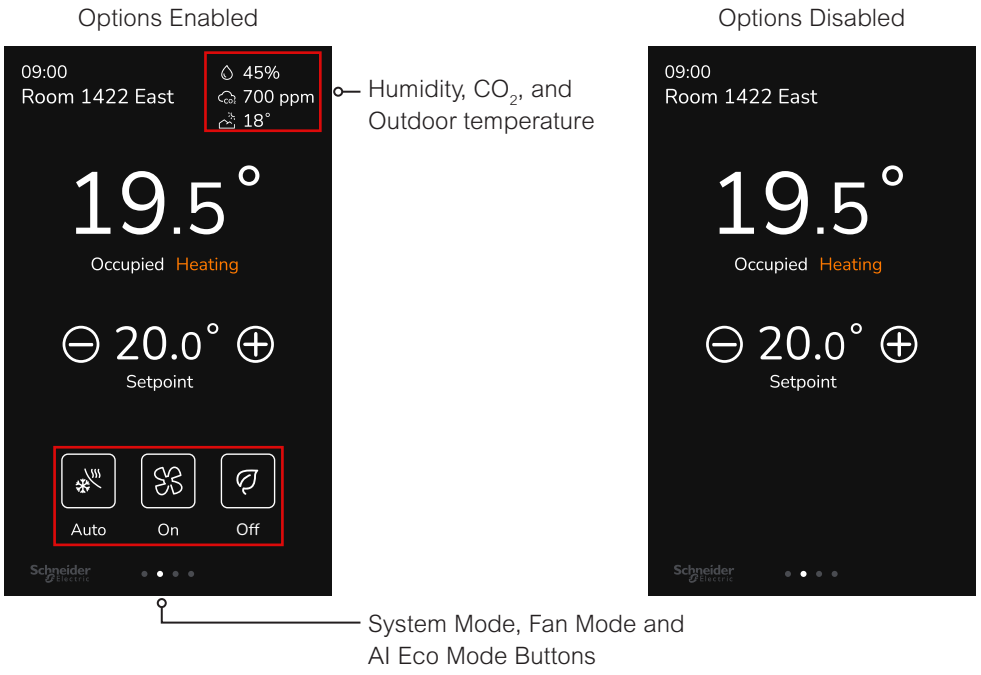
- Enable and configure AI Eco settings
- Device name, location, model number, firmware version, serial number, and factory reset
- HVAC ADR, dehumidifier, inputs, and setpoint configuration
- Enable and configure light and blind settings and display name
- Lua script, status, and variables
- User ID, display name, role, and change PIN
- BACnet MS/TP, Modbus, ZigBee and Wi-Fi network settings (ZigBee network settings appear only if ZigBee feature is available)
- Occupancy configuration and schedule
- Preferences for date and time, display, halo, language selection, and time zone
- Service view for alarms, environment, operating status, and system status
- Setpoint configuration
- Input and output terminals
- User list, add users, and settings

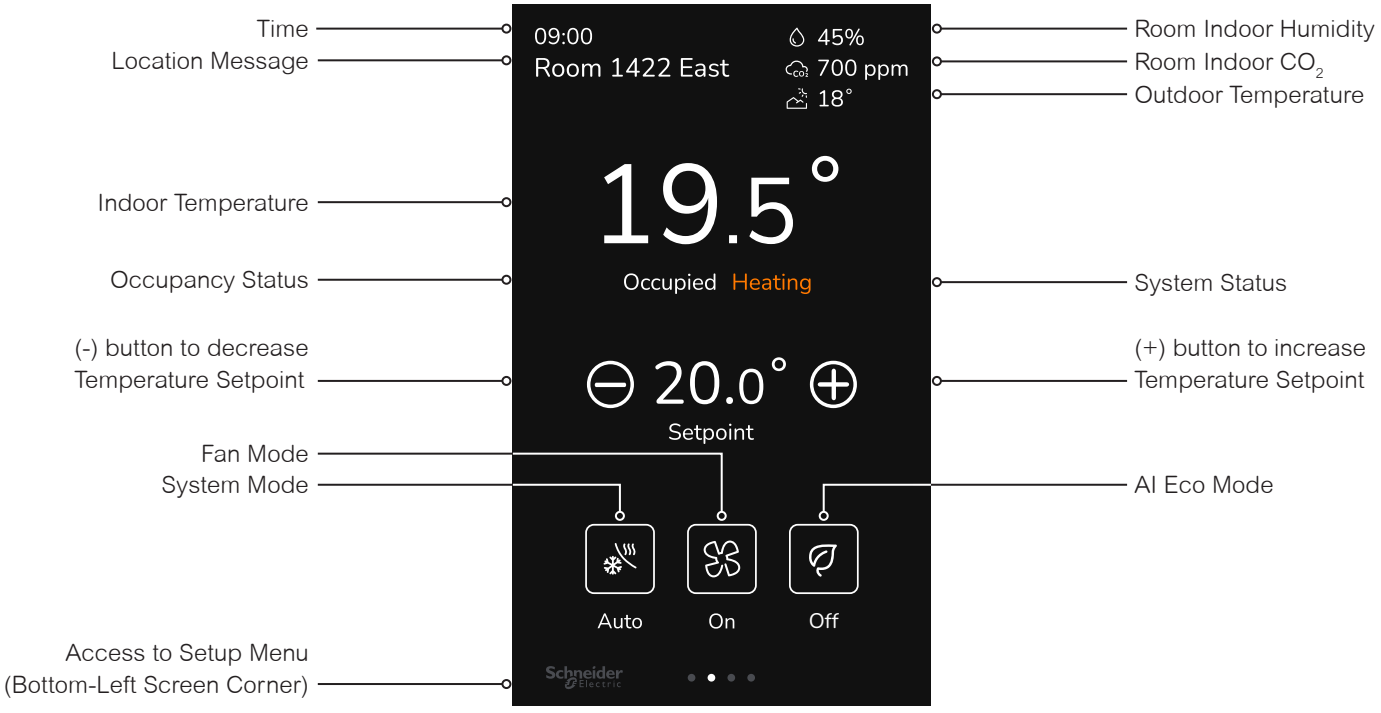
SECTION 2

Customized User HMI Display

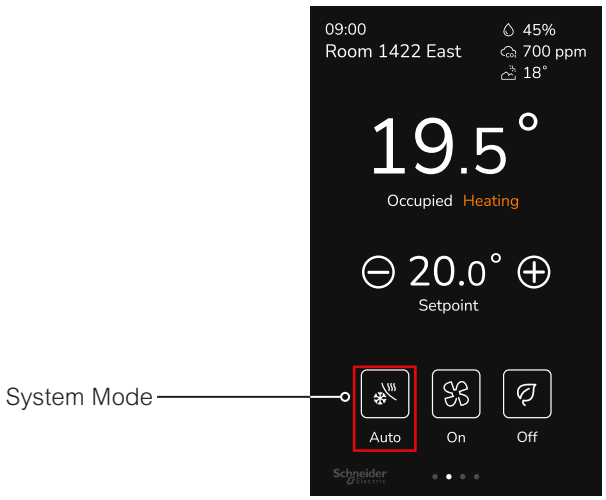
Display Show/Hide Options

The display can be customized further by changing the information and configuring 2 of the buttons, or simply by hiding them entirely. To hide the option, select disabled for each display setup screen parameter. Refer to “Display” on page 78.





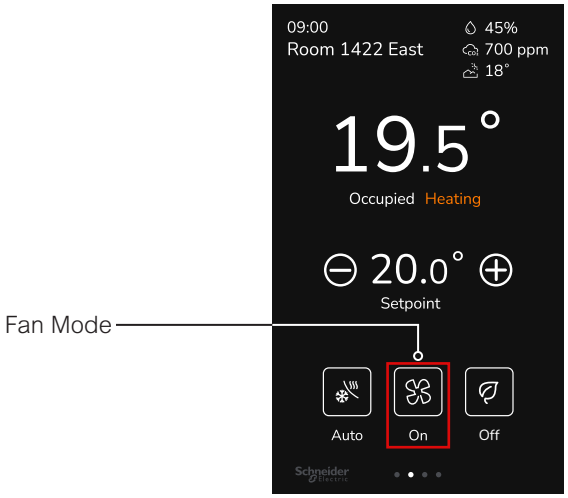
System Mode



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
System Mode Default value: **Heat** **MV16**	**System Mode** • Off: Heating, Cooling and Dehumidification demands are ignored. • Auto: Room Controller automatically toggles between Heating and Cooling modes to satisfy both Heating and Cooling demands. Dehumidification is allowed. • Cool: Room Controller only satisfies Cooling demands; Heating demands are ignored. Dehumidification is allowed. • Heat: Room Controller only satisfies Heating demands; Cooling demands are ignored. Dehumidification is allowed. **Choices**: 1=Off, 2=Auto, 3=Cool, 4=Heat

Fan Mode Settings



The Fan mode settings displayed on the home screen must be configured in the Fan menu tab of the Configuration menu.

PARAMETER DETAILS

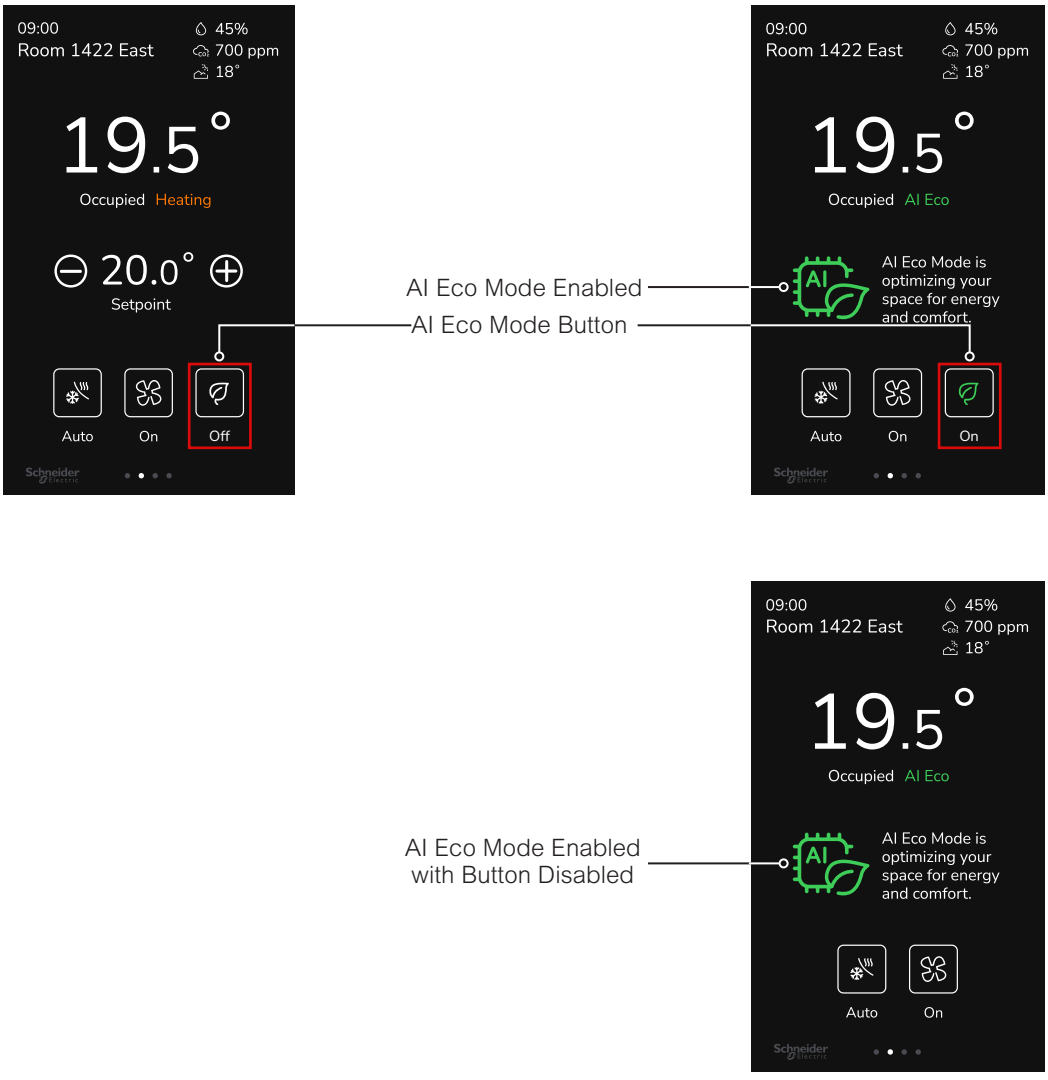
Parameter Default Value	Significance and Adjustments
Fan Mode Default value: **Smart** **MV17**	**Fan Mode** **Choices**: 1=On, 2=Auto, 3=Smart, 4=Low, 5=Medium, 6=High

AI Eco Mode

Dynamic HVAC optimization with AI Eco Mode will automatically optimize energy consumption while maintaining comfort through advanced thermal, energy, and comfort modeling. Unlike traditional systems with fixed schedules, the Room Controller can dynamically adapt to changing conditions with self-regulating setpoints. AI logic can continuously analyze factors like occupancy patterns, indoor temperature, outdoor weather conditions, and humidity levels to make real-time adjustments to HVAC setpoints. Occupants can enable AI Eco Mode by pressing the AI Eco Mode button. Since AI Eco Mode is automatic, the setpoint adjustments are not required and will be replaced with the AI Eco Mode logo and text message. The occupant can turn off AI Eco Mode and return to manual setpoint control by pressing the AI Eco Mode button.
If manual setpoint control is not required, AI Eco Mode can be configured as the default HVAC control setting by disabling the AI Eco Mode button on the Display setup screen.
To enable/disable AI Eco Mode, press the Enable AI Eco Setpoint Control switch on the AI Eco Configuration setup screen.
To revert AI Eco Mode back to factory default values, turn on the Reset AI Eco Configuration switch on the Factory Reset setup screen. A Factory Reset will clear all model weights so that the Room Controller doesn't control the zone with the model weights calculated in the previous configuration.
The AI Eco Mode Warnings are used to notify the Integrator that the AI Eco Mode is not configured correctly. When the AI Eco Mode configuration is corrected, the AI Eco Mode Warnings will be removed from the home screen.

To configure AI Eco Mode, refer to the following sections:

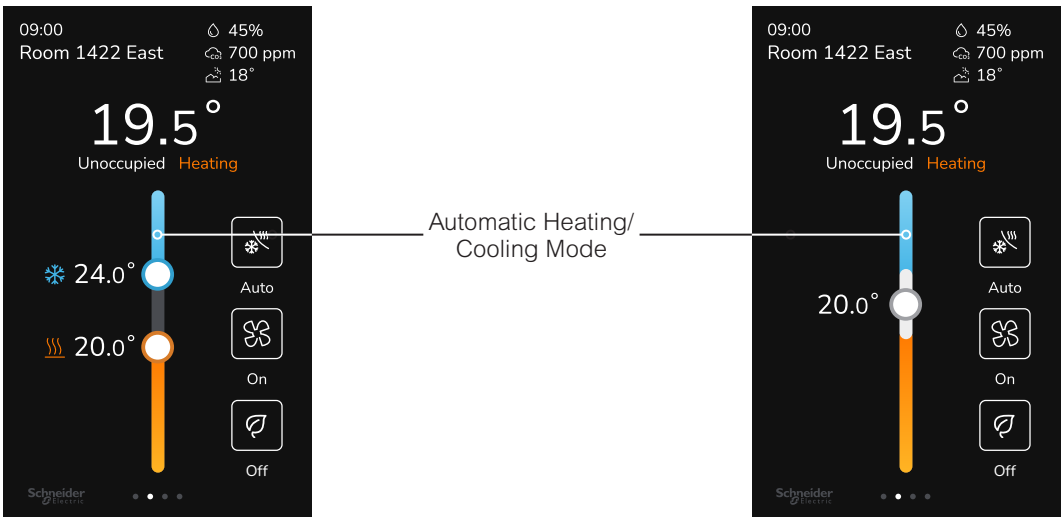
- "AI Eco Configuration" on page 20
- "AI Eco Mode Warnings" on page 23
- "Factory Reset" on page 27
- "Display" on page 78



Setpoint Adjustment for Automatic Mode

In automatic mode, setpoint showing at the top of the setpoint bar located directly under the blue line represents the actual occupied cooling setpoint.

The actual setpoint is dependent on the last effective demand (heating or cooling). The setpoint on top of the orange line represents the actual occupied heating setpoint. The differential between the occupied heating and cooling setpoint is defined by the minimum deadband configuration parameter.

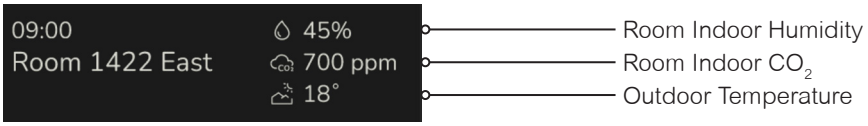


Other Functions

Local humidity shows when RH display is enabled on the setup display screen, from the internal onboard sensor selected by the RH sensor parameter on the setup configuration screen.

CO2 shows when CO2 display is enabled on the setup display screen, from the optional CO2 detection sensor module selected by the CO2 source parameter on the setup configuration screen.

Outdoor temperature shows when receiving a valid networked outdoor temperature value.

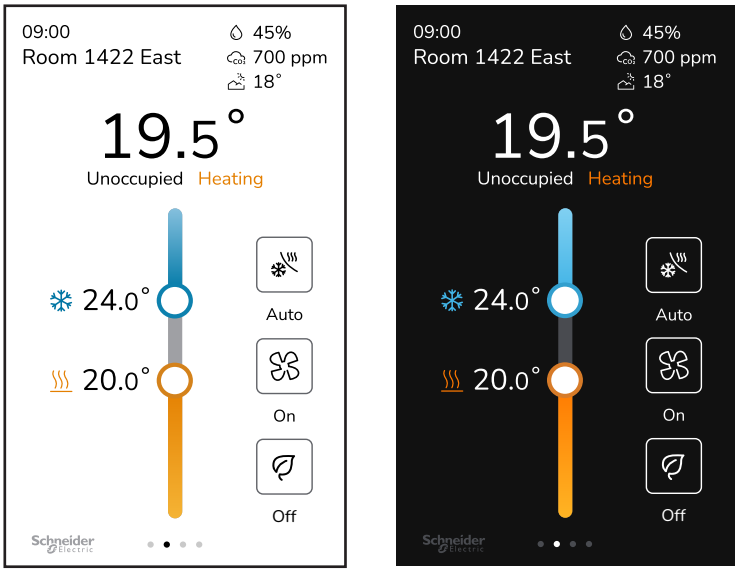


Optional Halo Backlight

The Viconics Room Controller offers the possibility of projecting a halo light onto the wall behind the device. The halo color will fade in to orange when heating, blue when cooling, and off when on standby. To select the halo option, refer to “Halo” on page 80.

Customizable Color Themes

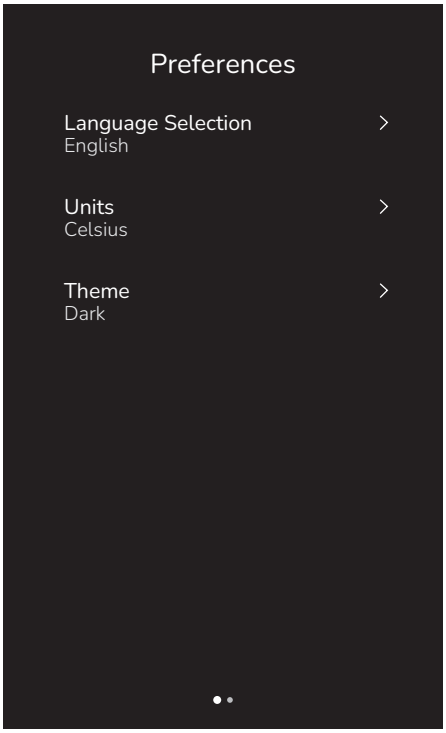
The Viconics Room Controller offers two main color themes: Light and Dark. To select the color option, refer to “Preferences (Main)” on page 18.



Light Dark

Preferences (Main)

To see the main device Preferences screen, swipe right on the home screen.



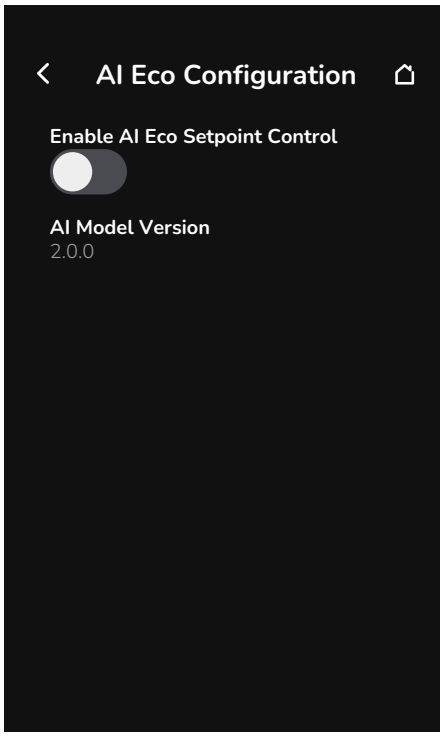
PARAMETER DETAILS

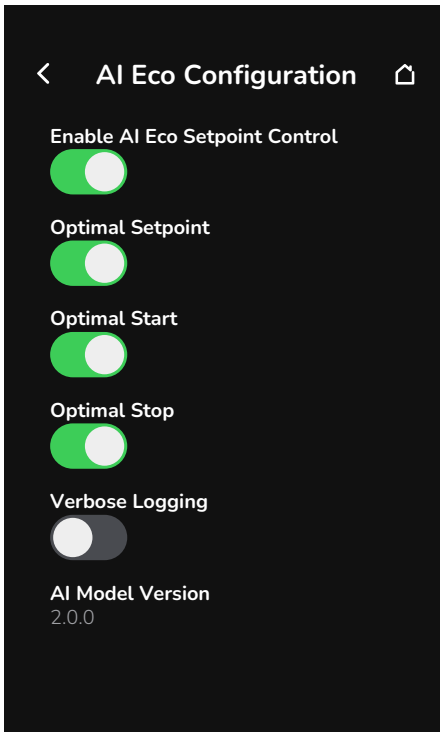
Parameter Default Value	Significance and Adjustments
Language Selection Default value: **English** **MV4**	**Display Language** Allows the user to choose the main device language. While the default is English and always available, the listed options are defined on the Setup Preferences screen. Refer to “Language Selection” on page 81 for more information. **Choices:** 1=English, and the rest of the selected options
Units Default value: **Celsius**	**Network Units** • Celsius • Fahrenheit **Choices:** Celsius, Fahrenheit
Theme Default value: **Dark** **MV2**	**Color Theme** Allows the user to choose a Light or Dark color theme, which will be applied across all screens. This selection is kept in memory throughout power cycles. **Choices:** 1=Light, 2=Dark

SECTION 3

Integrator Setup Screens

AI Eco Configuration





PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Enable AI Eco Mode Setpoint Control Default value: **Disabled** **MV211**	**AI Eco Mode** AI Eco Mode is an automated and optimized HVAC control system that will replace the manual setpoint control with an AI Eco Mode logo and text message on the home screen, and will automatically optimize the HVAC setpoints based on: • Occupied cooling setpoint • Occupied heating setpoint • Unoccupied cooling setpoint • Unoccupied heating setpoint • Indoor relative humidity • Outdoor temperature **Note**: Although it is recommended to use an outdoor temperature sensor to improve the AI accuracy, AI Eco Mode will still work correctly without one. AI Eco Mode is compatible with Automated Demand Response (ADR). When both are enabled, AI Eco Mode will use the setpoints that are modified by ADR. For best AI Eco Mode performance, Optimal Setpoint, Optimal Start and Optimal Stop must be enabled. This feature is configurable via BACnet and Modbus. Refer to “AI Eco Mode” on page 15 for more information. **Choices**: 1=Disabled, 2=Enabled

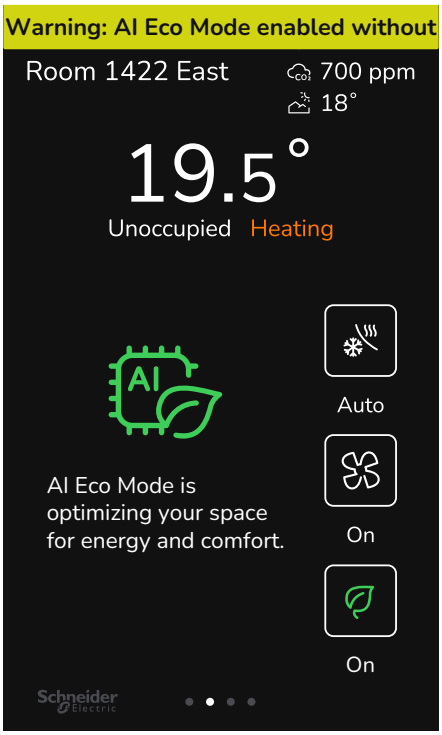
Parameter Default Value	Significance and Adjustments
Optimal Setpoint Default value: **Disabled** **MV212**	**AI Eco Optimal Setpoint** Optimal Setpoint allows for AI-enabled dynamic setpoints based on zone conditions to minimize energy usage while maintaining comfort. When enabled, the Room Controller will automatically optimize the HVAC setpoints. When setpoints are not configured correctly, a setpoint warning notification will be displayed in a banner on the top of the home screen. Refer to “AI Eco Mode Warnings” on page 23 for more information. When disabled, Optimal Setpoint will not modify the setpoints and the Room Controller will rely on occupant-defined setpoints instead. **Note**: Disabling Optimal Setpoint will not remove the warning notification. This feature is configurable via BACnet and Modbus. **Choices**: 1=Disabled, 2=Enabled
Optimal Start Default value: **Disabled** **MV213**	**AI Eco Optimal Start** Optimal Start allows for AI-enabled dynamic start time based on zone conditions to modify HVAC setpoints to reach the desired occupied setpoints at schedule start. When enabled, the Room Controller will start controlling the temperature at the latest time possible to minimize energy usage while maintaining comfort. When Occupancy configuration and schedule settings are not configured correctly, a schedule warning notification will be displayed in a banner on the top of the home screen. Refer to “AI Eco Mode Warnings” on page 23 for more information. When disabled, Optimal Start will not modify the setpoints and the Room Controller will rely on local schedules instead. **Note**: Disabling Optimal Start and Stop will remove the warning notification. This feature is configurable via BACnet and Modbus. **Choices**: 1=Disabled, 2=Enabled
Optimal Stop Default value: **Disabled** **MV214**	**AI Eco Optimal Stop** Optimal Stop allows for AI-enabled dynamic stop time based on zone conditions to modify HVAC setpoints to reach the desired unoccupied setpoints at schedule stop. When enabled, the Room Controller will stop controlling the temperature at the earliest time possible to minimize energy usage while maintaining comfort. When Occupancy configuration and schedule settings are not configured correctly, a schedule warning notification will be displayed in a banner on the top of the home screen. Refer to “AI Eco Mode Warnings” on page 23 for more information. When disabled, Optimal Stop will not modify the setpoints and the Room Controller will rely on local schedules instead. **Note**: Disabling Optimal Start and Stop will remove the warning notification. This feature is configurable via BACnet and Modbus. **Choices**: 1=Disabled, 2=Enabled

Parameter Default Value	Significance and Adjustments
Verbose Logging Default value: **Disabled** **MV215**	**AI Eco Verbose Logging** Verbose Logging adds information to the system logs that is used to better understand model performance. When enabled, the following information will be printed to the system logs: • Model parameters: Example: “clear:0, control:1, comfort:1, start:1, stop:1, cl_lim:28.0, cl_occ:27.5, cl_unocc:26.7, ht_lim:15.5, ht_occ:26.0, ht_unocc:16.7” • TRC parameters: Example: “device:1741036804 room_temp:23.7, humidity:0.14, cool:0, demand:1.00” • Occupancy details: Example: “occ_time:1741036804 duration:9600s” • Weather details: Example: “weather:1741036804 outdoor_temp:20.0” • AI Eco model version: Example: “Model version:2.0.0” • Model weights: Example: “a[0]:0.590550, b[0]:0.009562, a[1] ..... b[5]:0.00000” • Control predictions for next 4 hours: Example: “1741037430 temp:22.9, cool:0, cl_ctl:28.0, cl_cft:28.0, ht_ctl:26.7, ht_cft:26.7, occ:1, start:0, stop:0, demand:1.0” • Effective heat and cool setpoints: Example: “Effective sp[0]: 28.0/26.7” When disabled, the Room Controller will not log any additional information in the system logs. This feature is only accessible via BACnet and Modbus. **Choices**: 1=Disabled, 2=Enabled
AI Model Version Read Only **CSV61**	**AI Model Version** Displays the current AI model version. **Display Readings**: 0 to 16 characters

AI Eco Mode Warnings

The AI Eco Mode Warnings are used to notify the Integrator that the AI Eco Mode is not configured correctly. When the AI Eco Mode configuration is corrected, the AI Eco Mode Warnings will be removed from the home screen. The corrections must be done before placing the Room Controller into service. The AI Eco Mode Warnings are also displayed via the BACnet and Modbus networks. The AI Eco Mode Warnings will be translated into the language selected on the main Preferences screen.

Note: If the Notifications parameter is set to Disabled or Custom Only, then the AI Eco Mode Warnings will not be displayed on the home screen. Make sure that the Notifications parameter is set to All. Refer to “Display” on page 78 for more information.

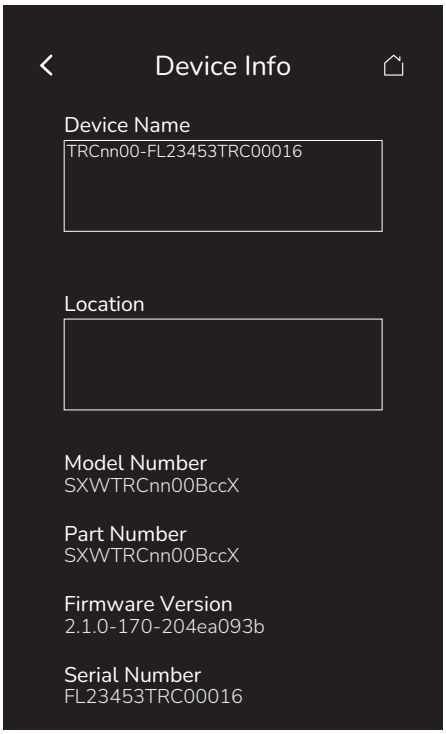


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
AI Eco Schedule Warning Read Only **BV11**	**AI Eco Schedule Warning** When Occupancy configuration and schedule settings are not configured correctly, a schedule warning notification will be displayed in a banner on the top of the home screen: “Warning: AI Eco mode enabled without local schedule”. Make sure that the Occupancy Command is set to Local Occupancy, the Occupancy Source is set to Schedule, and that the Occupancy Schedule is set correctly. If your Occupancy Configuration requires other settings than the above, then the AI Eco Mode Optimal Start and Optimal Stop must be disabled. Refer to “Occupancy” on page 72 for more information. **Display Readings**: 0=Off, 1=On

Parameter Default Value	Significance and Adjustments
AI Eco Setpoint Warning Read Only **BV12**	**AI Eco Setpoint Warning** When setpoints are not configured correctly, a setpoint warning notification will be displayed in a banner on the top of the home screen: “Warning: AI Eco paused (setpoints out of range)”. To use AI Eco Mode, the following setpoints must be between 60.0°F to 82.0°F (15.5°C to 28.0°C): • Occupied Cooling Setpoint • Occupied Heating Setpoint • Unoccupied Cooling Setpoint • Unoccupied Heating Setpoint If your HVAC configuration requires these setpoints to be out of range of the temperatures above, then AI Eco Mode must be disabled. Refer to “Setpoints” on page 93 for more information. **Display Readings**: 0=Off, 1=On
AI Eco Dehumidification Warning Read Only **BV13**	**AI Eco Dehumidification Warning** AI Eco Mode is not compatible with dehumidification, a warning notification will be displayed in a banner on the top of the home screen: “Warning: Dehumidification not recommended with AI Eco”. Refer to “Dehumidifier” on page 31 for more information. If your HVAC configuration requires dehumidification, then AI Eco Mode must be disabled. **Display Readings**: 0=Off, 1=On

Device Info



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Device Name Default value: **ShortSKU-SerialNumber** **CSV4**	**Device Name** The Device Name (BACnet name) is a combination of the short SKU and the serial number. The BACnet name can be changed via the BACnet front end, and the new name appears on the above screen. Example: TRCnn00-MT-2023-W28-1-FL23453TRC00016 **Range**: 5 to 49 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Location **CSV35**	**Location** Read/write value shows the location of the device as configured in BACnet, Lua, on screen via the keyboard, etc. NOTE: The information is kept across power cycles. It is also important to note that there is no text wrapping on the Home screen; the Room Controller displays the characters that fit on one line. **Range**: 0 to 49 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Model Number **Read Only**	**Model Number** Read Only value shows the device SKU: • **TRC6500BccX-VC**: Viconics Room Controller for Rooftop Unit (RTU), Heat Pump and Indoor Air Quality (IAQ) Systems with Passive Infrared (PIR). • **TRC6500BccW-VC**: Viconics Room Controller for Rooftop Unit (RTU), Heat Pump and Indoor Air Quality (IAQ) Systems with Passive Infrared (PIR), ZigBee and Wi-Fi.

<table>
<tr><th>Parameter Default Value</th><th>Significance and Adjustments</th></tr>
<tr><td>Part Number
Read Only</td><td>Part Number

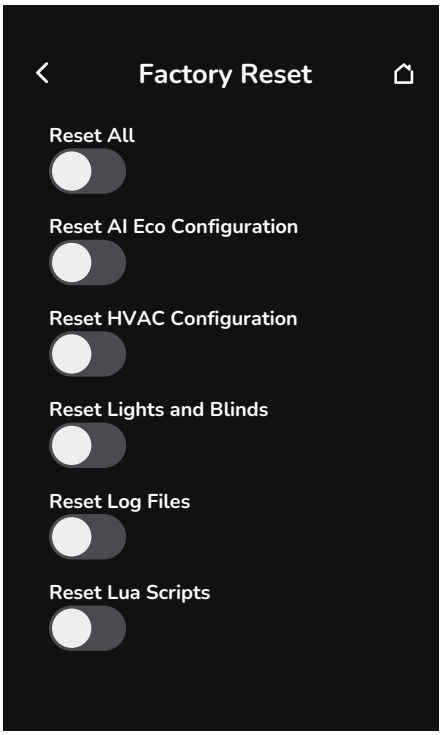
Read Only value shows the device variant:

<table>
<tr><th>Part Number</th><th>BACnet/ MSTP or Modbus RTU</th><th>RF (Wi-Fi + Zigbee)</th><th>RH Sensor</th><th>Passive IR Sensor</th><th>Proximity Sensor</th><th>Halo Light</th><th>Color</th><th>Region</th></tr>
<tr><td>TRC6500B11X-VC</td><td>●</td><td></td><td>●</td><td>●</td><td></td><td></td><td>White</td><td>Global</td></tr>
<tr><td>TRC6500B11W-VC</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>White</td><td>Global (except NAM)</td></tr>
<tr><td>TRC6500B11WA-VC</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>White</td><td>North America</td></tr>
<tr><td>TRC6500B00X-VC</td><td>●</td><td></td><td>●</td><td>●</td><td></td><td></td><td>Black</td><td>Global</td></tr>
<tr><td>TRC6500B00W-VC</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>Black</td><td>Global (except NAM)</td></tr>
<tr><td>TRC6500B00WA-VC</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>Black</td><td>North America</td></tr>
</table>
</td></tr>
<tr><td>Firmware Version
Read Only
CSV5</td><td>Firmware Version

Read Only value shows the firmware version currently installed on the Room Controller. Upgrading to a newer Firmware version deletes the previous Firmware version.</td></tr>
<tr><td>Serial Number
Read Only</td><td>Serial Number

Read Only value shows a string of characters that identifies a single specimen of product.</td></tr>
<tr><td>Factory Reset</td><td>Refer to “Factory Reset” on page 27 for more information.</td></tr>
</table>

Factory Reset

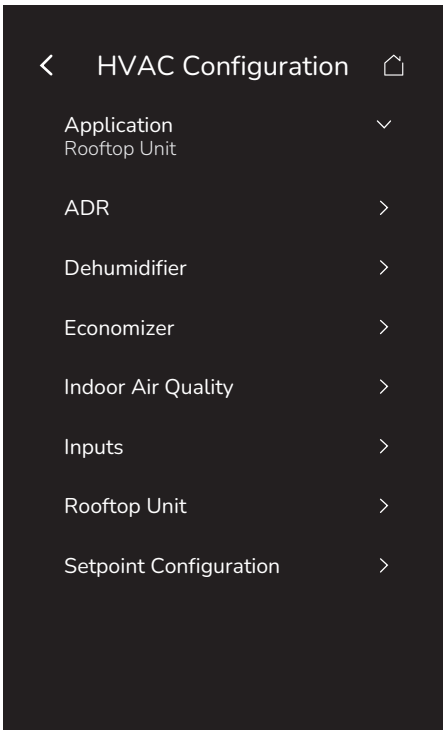


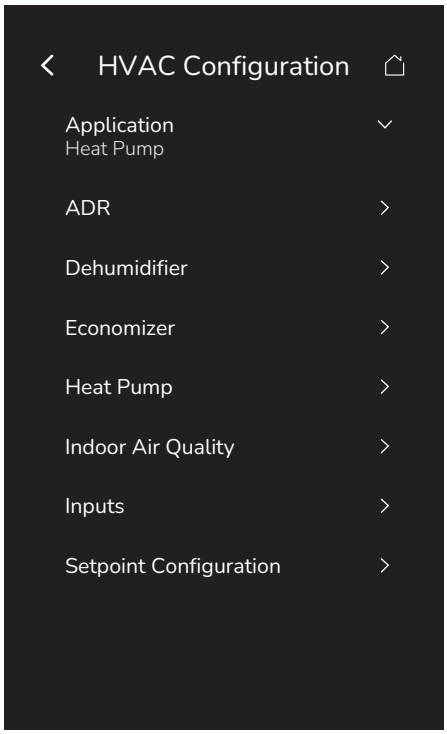
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Factory Reset	**Factory Reset** Used to perform a software factory reset, which clears the configuration of the Room Controller and reverts back to factory default values for: • Reset All • Reset AI Eco Configuration • Reset HVAC Configuration • Rest Lights and Blinds • Reset Log Files • Reset Lua Scripts • Reset Network Configuration • Reset User Data • Reset System Data **NOTE**: The device may restart during this process.

HVAC Configuration

Refer to “Setup” on page 11 to see the accessible menus for the configuration screens.

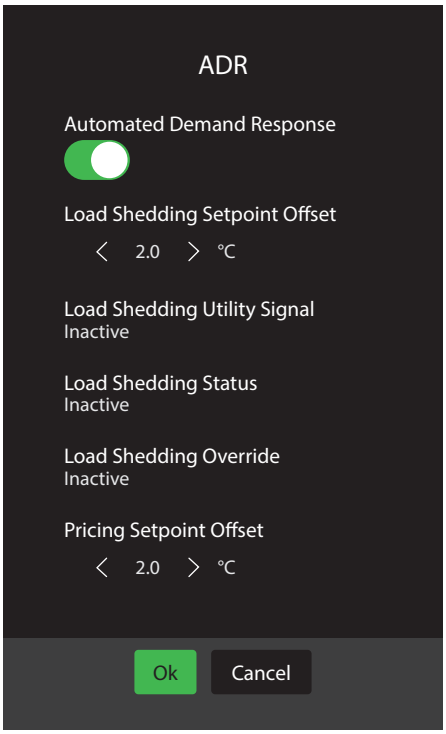




PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Application Default value: **Rooftop Unit MV119**	**Application** Used to indicate the HVAC application of this device. **Choice**: 1=Rooftop Unit, 2=Heat Pump
ADR	Refer to “ADR (Automated Demand Response)” on page 29 for more information.
Dehumidifier	Refer to “Dehumidifier” on page 31 for more information.
Economizer	Refer to “Economizer” on page 32 for more information.
Heat Pump	The Heat Pump screen is displayed when Application is set to Heat Pump. Refer to “Heat Pump” on page 34 for more information.
Indoor Air Quality	Refer to “Indoor Air Quality” on page 38 for more information. The IAQ screen is displayed when Economizer is enabled.
Inputs	Refer to “Inputs” on page 39 for more information.
Rooftop Unit	The Rooftop Unit screen is displayed when Application is set to Rooftop Unit. Refer to “Rooftop Unit” on page 42 for more information.
Setpoint Configuration	Refer to “Setpoint Configuration” on page 45 for more information.

ADR (Automated Demand Response)

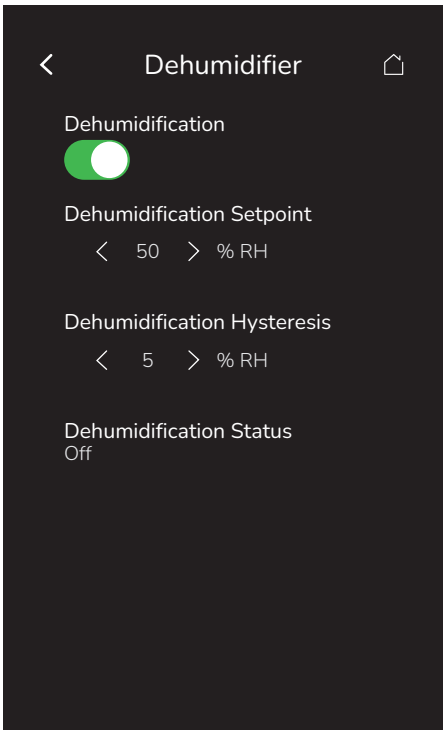


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Automated Demand Response Default value: **Disabled** **MV157**	**ADR Permission** Indicates if this feature is enabled or disabled. **Choices:** 1=Disabled, 2=Enabled
Load Shedding Setpoint Offset Default value: **4°F (2°C)** **AV280**	**ADR Setpoint Offset - Load Shedding** Used to change the effective setpoints in occupied, standby and unoccupied modes. For example, when Load Shedding Status is active and Room Controller is in occupied mode: The cooling setpoint is calculated as follows: Occupied cooling setpoint = occupied cooling setpoint + Load shedding offset. The heating setpoint is calculated as follows: Occupied heating setpoint = occupied heating setpoint - Load shedding offset. **Range**: 1°F to 10°F (0.5°C to 5.5°C)
Load Shedding Utility Signal Default value: **Off** Read Only **BV80**	**ADR Utility Signal - Load Shedding** Sets the request to initiate Load Shedding. This demand can only be set through BACnet by the local Utility company. • Inactive (off): No Load Shedding Demand is received or the Shedding demand is disabled. • Active (on): Received the Load Shedding Demand or received the signal to activate Load shedding. This parameter resets to its default value after a power cycle. **Display Readings**: 0=Off, 1=On

Parameter Default Value	Significance and Adjustments
Load Shedding Status Default value: **Off** Read Only **BV81**	**ADR Status - Load Shedding** Displays the status of the Load Shedding Demand, whether it is active (On) or not (Off). The Load Shedding status is On when the Permission is On, Shed demand is On, and the Shed Override is Off. • Inactive (off): Load Shedding Demand is not activated. • Active (on): Load Shedding Demand is activated. This parameter resets to its default value after a power cycle. **Display Readings**: 0=Off, 1=On
Load Shedding Override Default value: **Off** Read Only **BV82**	**ADR Override - Load Shedding** Displays whether the user disabled the ADR request by the utility company. When the demand shed is applied, the user can override the ADR settings from its original setpoints settings. • Inactive (off): Allows shed load demand request from utility company (setpoint will change according to shed offset) • Active (on): Rejects or cancels shed load demand request from utility company (setpoints remain the same). **Display Readings**: 0=Off, 1=On
Pricing Setpoint Offset Default value: **4°F (2°C)** **AV281**	**ADR Setpoint Offset - Pricing** Used to configure the difference between the pricing setpoint and the actual measurement. **Range**: 1°F to 10°F (0.5°C to 5.5°C)
Pricing Utility Signal Default value: **Off** Read Only **BV83**	**ADR Utility Signal - Pricing** Indicates the grid is approaching its limit, dynamic pricing is high, and it is recommended to reduce energy usage to save money and reduce the load on the grid. This feature is configurable via BACnet and Modbus. **Display Readings**: 0=Off, 1=On
Pricing Status Default value: **Off** Read Only **BV84**	**ADR Status - Pricing** Indicates if there is an ADR Status Pricing point. This feature resets to its default inactive on power cycle. It is active when: • ADR is enabled • Pricing Utility Signal is active • Pricing Override is inactive **Display Readings**: 0=Off, 1=On
Pricing Override Default value: **Off** Read Only **BV85**	**ADR Override - Pricing** Indicates if the ADR Pricing Override is active or not. This feature resets to its default inactive on power cycle. Configurable via the home screen interface when ADR is enabled, and ADR Pricing Utility Signal is active. Reverts to its default value when ADR Pricing Utility Signal changes from active to inactive. **Display Readings**: 0=Off, 1=On

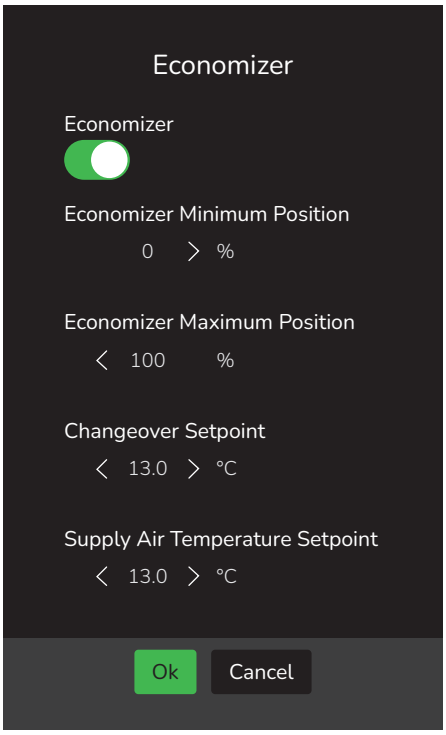
Dehumidifier



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Dehumidification Default value: **Disabled** **MV13**	**Dehumidification Enabled** Indicates if this feature is enabled or disabled. **Choices:** 1=Disabled, 2=Enabled
Dehumidification Setpoint Default value: **50%** **AV71**	**Dehumidification Setpoint** Used when Dehumidification is enabled. Used to define the target humidity level for the dehumidification sequence. **Range**: 30% to 95%
Dehumidification Hysteresis Default value: **5% RH** **AV72**	**Dehumidification Hysteresis** Used as a hysteresis around the Dehumidification Setpoint to avoid fast toggling of the equipment when the humidity is around the setpoint. Example: If setpoint is 50% and hysteresis is 5%, the dehumidifier will: • Turn on when the humidity rises above 50% • Turn off when the humidity falls below 45% **Range**: 2% to 20% RH
Dehumidification Status Default value: **Off** Read Only **BV38**	**Dehumidification Status** Used when Dehumidification is enabled. Defines whether dehumidification is currently active or inactive. This can be used to balance smaller reheat loads installed in regard to the capacity of the cooling coil. **Display Readings**: 0=Off, 1=On

Economizer



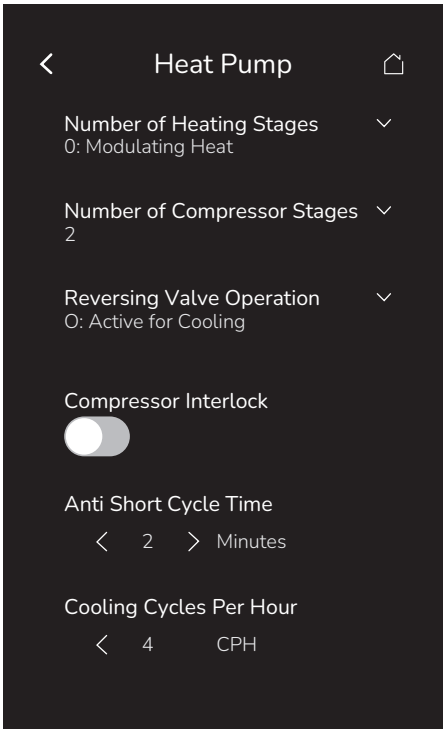
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Economizer Default value: **Off** **MV72**	**Economizer Configuration** Enables or disables the economizer functionality. • Off: Economizer deactivated • On: Economizer activated **Choices:** 1=Off, 2=On
Economizer Minimum Position Default value: **0%** **AV78**	**Economizer Minimum Position** Minimum Outside Air damper position when Room Controller is in Occupied, Standby or Override mode and Fan status is ON. If Room Controller is Unoccupied mode and/or the Fan is Off, Outside Air damper position goes to 0%. **Range**: 0% to 100%
Economizer Maximum Position Default value: **100%** **AV81**	**Economizer Maximum Position** Maximum Outside Air damper position when Room Controller is in Occupied, Standby or Override mode and Fan status is ON. This is valid only for Economizer, CO2 and Airflow functions. **Range**: 0% to 100%
Changeover Setpoint Default value: **55°F (13°C)** **AV95**	**Changeover Setpoint** In Cooling mode, the outside air temperature value at which the cooling gets switched over from mechanical (compressor) to free cooling (economizer). **Range**: 14°F to 70°F (-10°C to 21°C)
Supply Air Temperature Setpoint Default value: **55°F (12°C)** **AV94**	**Supply Air Temperature Setpoint** Free cooling supply air setpoint when economizer mode is enabled. **Range:** 50 to 90°F (10.0 to 32.0°C)

Parameter Default Value	Significance and Adjustments
Mechanical Cooling Allowed Default value: **Off** **MV79**	**Mechanical Cooling Allowed** Allows operation of mechanical cooling if free cooling (economizer) cannot maintain the cooling setpoint. • Off: Applies when the mixed air temperature sensor is installed after the mechanical cooling refrigeration coils. In this case, mechanical cooling never operates at the same time as free cooling. • On: Applies when the mixed air temperature sensor is installed before the mechanical cooling refrigeration coils in the mixing plenum. In this case, mechanical cooling is allowed when the free cooling (economizer operation) cannot maintain the cooling setpoint. **Choices:** 1=Off, 2=On

Heat Pump

The Heat Pump screen is displayed when Application is set to Heat Pump on the HVAC Configuration screen.



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Number of Heating Stages Default value: **1 stages** **AV87**	**Number of Heating Stages** Sets number of Heating Stages applicable to 2 stage models only. • 0: Modulating Heat: AO3 modulating 0-10Vdc output is used for Heating. DO5 is disabled. • 1: Auxiliary Heat: DO5 is used. AO3 is disabled. **Choices:** 0: Modulating Heat, 1: Auxiliary Heat
Number of Compressor Stages Default value: **2 stages** **AV75**	**Number of Cooling Stages** Sets number of Cooling Stages. • 1 Stage: Only Y1 (DO3) terminal is used. Y2 (DO2)is disabled. • 2 Stages: Both Y1 (DO3) and Y2 (DO2) terminals are used in sequence. **Choices:** 1 or 2 stages
Reversing Valve Operation Default value: **O** **MV117**	**Reversing Valve Operation** Heat pump reversing valve operation. • **O**: Active for Cooling: Energize valve in cooling operation. • **B**: Active for Heating: Energize valve in heating operation. **Choices**: 1=O, 2=B
Compressor Interlock Default value: **Off** **MV118**	**Compressor - auxiliary interlock** Sets the operation and interaction mode of the heat pump with the auxiliary heat. • Off: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized at the same time as the heat pump stage. Typically applies when the air handler heat pump coil is installed before the auxiliary heat (all electric systems). • On: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized and the heat pump is cut off. Typically applies when the air handler heat pump coil is installed after the auxiliary heat (add on systems) There is a 2 minute delay to restart the heat pump when the auxiliary heat is shut down. **Choices:** 1=Off, 2=On

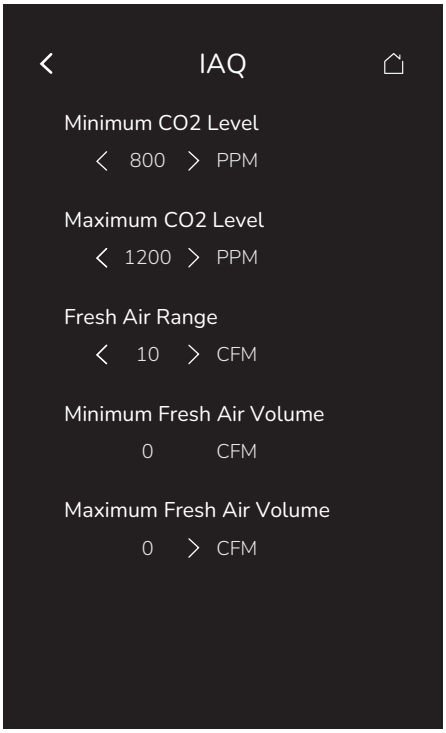
Parameter Default Value	Significance and Adjustments
Anti Short Cycle Time Default value: **2 min** **AV86**	**Anti Short Cycle Time** Minimum On time and minimum Off time of operation time for stages. IMPORTANT: anti-short cycling can be set to 0 minutes for equipment that possess their own anti cycling timer. Do not use this value unless the equipment is equipped with an internal timer. Failure to do so can damage the equipment. **Range:** 0 to 5 min
Cooling Cycles Per Hour Default value: **4 CPH** **AV85**	**Cooling CPH** CPH is used to "modulate" On/Off outputs controlling equipment such as compressors. When the Room Temperature is within the Proportional Band, the output performs 3 or 4 CPH. A higher CPH represents a higher accuracy of control at the expense of wearing mechanical components faster. **NOTE**: The CPH does not limit the number of Cycles Per Hour. It is limited by the "Anti short cycle" parameter. 4 CPH is typical for Rooftop applications. **Range:** 3 to 4 CPH
Heating Cycles Per Hour Default value: **4 CPH** **AV84**	**Heating CPH** CPH is used to "modulate" On/Off outputs controlling equipment such as compressors. When the Room Temperature is within the Proportional Band, the output performs 3 to 8 CPH. A higher CPH represents a higher accuracy of control at the expense of wearing mechanical components faster. For multi-stage models, heat CPH applies to W1 (DO5) & W2 (DO6). A CPH value between 6 - 8 is recommended for applications with electric heating. For gas applications set CPH to 4 and for oil applications set CPH to 3. **Range:** 3 to 8 CPH
Room Frost Protection Default value: **Off** **MV55**	**Room Frost Protection** If the Room Temperature drops below 42°F (5.6°C), the Fan and the Heat will be activated until the Room Temperature rises over 42°F (5.6°C). • Off: No room frost protection • On: Room frost protection enabled in all system modes at 42°F (5.6°C). Frost protection is enabled even if System mode is 'Off'. **Choices:** 1=Off, 2=On
Heating Lockout from Outside Air Temperature Default value: **120°F (49°C)** **AV91**	**Heating Lockout from Outside Air Temperature** Disables mechanical heating operation when Outdoor Temperature is higher than the "Heating Lockout" value. The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller (UI23) or via a BACnet front end (network). **Range:** -15°F to 120°F (-26°C to 49°C)
Cooling Lockout from Outside Air Temperature Default value: **-40°F (-40°C)** **AV93**	**Cooling Lockout** Disables mechanical cooling operation when Outdoor Temperature is lower than the "Cool Lockout" value. The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller (UI23) or via a BACnet front end (network). The Economizer functionality (Free-cooling) can still be enabled during the Cooling Lockout. **Range:** -40°F to 95°F (-40°C to 35°C)
High Balance Point Default value: **90°F (32°C)** **AV82**	**High Balance Point** In Heating or Auto mode, it is the outside air temperature value at which the auxiliary heat is cut off. If the temperature exceeds this value, only the heat pump is used to maintain the heating setpoint. **NOTE**: Function enabled only if outside air temperature value is populated (not -40°F/°C). The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller or via a BACnet front end (network). **Range:** 34°F to 90°F (1°C to 32°C)

Parameter Default Value	Significance and Adjustments
Low Balance Point Default value: **-12°F (-24.5°C)** **AV83**	**Low Balance Point** In Heating, Cooling or Auto mode, it represents the outside air temperature value at which the heat pump operation will be cut off. If the temperature falls below this value, only the auxiliary heat is used to maintain the heating setpoint. **NOTE**: Function enabled only if outside air temperature value is populated (not -40°F/°C). The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller or via a BACnet front end (network). **Range:** -40°F to 30°F (-40°C to -1°C)
Comfort or Economy Mode Default value: **Comfort** **MV116**	**Comfort or Economy Mode** Sets the operation and interaction mode of the heat pump with the auxiliary heat. • **Comfort**: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized to satisfy the same heating setpoint. • **Economy**: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized to satisfy only when the temperature drops 2.0°F (1.1°C) below the heating setpoint. Selecting economy mode adds a deadband between the heat pump & auxiliary heat in heating mode. The actual temperature maintained will be lower than the true heating setpoint to maximize the heat pump operation. When the outdoor air temperature drops below the low balance point, the deadband gets eliminated and the auxiliary heat maintains the true heating setpoint alone. **Choices:** 1=Comfort, 2=Economy
Minimum Supply Heat Default value: **64°F (18.0°C)** **AV97**	**Minimum Supply Heat** Displayed when Number of Heating Stages = 0: Modulating Heat. **Range:** 50°F to 72°F (10°C to 22°C)
Supply Heat Lockout Default value: **32°F (0.0°C)** **AV98**	**Supply Heat Lockout** Displayed when Number of Heating Stages = 0: Modulating Heat. **Range:** -15°F to 120°F (-26°C to 48.5°C)
Supply Temperature High Limit Default value: **120°F (49°C)** **AV99**	**Supply Temperature High Limit** Supply air high temperature value at which the heating stages get locked out. **Range:** 70°F to 150°F (21°C to 66°C)
Supply Temperature Low Limit Default value: **45°F (7°C)** **AV20**	**Supply Temperature Low Limit** Supply air low temperature value at which the cooling stages get locked out. **Range:** 35°F to 65°F (2.0°C to 18.0°C)
Fan Control in Heating Mode Default value: **Enabled** **MV95**	**Fan Control in Heating Mode** • **Enabled**: Room Controller always controls the fan (terminal DO4: G Fan). Valid for On or Auto fan mode. • **Forced Off**: Fan (terminal DO4: G Fan), when heating stages (terminals W1 (DO5) & W2 (DO6)) are solicited, will not be energized. The fan is controlled by the equipment fan limit control. Valid only for Auto fan mode. On fan mode leaves the fan always on. For multi-stage models, fan control applies to W1 (DO5) & W2 (DO6). **Choices:** 1=Enabled, 2=Forced Off
Fan Delay Default value: **On** **MV12**	**Fan Delay** • **Off**: Fan delay not operational. • **On**: Fan mode will leave the fan always on and extends fan operation by 60 seconds after the call for heating or cooling ends. Valid only for Auto fan mode. **Choices:** 1=Off, 2=On

Parameter Default Value	Significance and Adjustments
Proportional Band Default value: **3°F (2°C)** **AV65**	**Proportional Band** Adjusts proportional band used by Room Controller PI control loop. NOTE: Default value of 3 gives satisfactory operation in most normal installation cases. The use of a superior proportional band different than the factory value is normally warranted in applications where Room Controller location is problematic and leads to unwanted cycling of the unit. A typical example is a wall mounted Room Controller installed between return and supply air feeds and is directly influenced by the supply air stream of unit. **Range:** 3°F to 10°F (2°C to 5.5°C) – Resolution: 0.5°F/C
Power-up Delay Default value: **10 seconds** **AV76**	**Power-up Delay** On initial power up of the Room Controller there is a delay before any operation is authorized (fan, cooling or heating). This can be used to sequence the start up of multiple Room Controllers in one location. **Range:** 10 to 120 seconds (Resolution: 1 second)

Indoor Air Quality

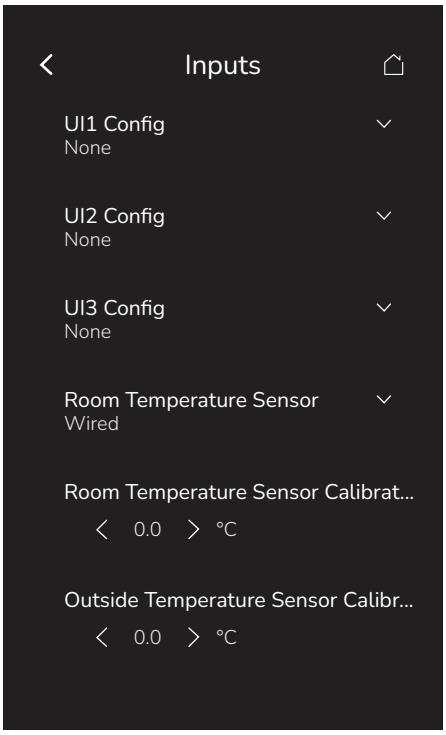
The IAQ screen is displayed when Economizer is enabled.



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Minimum CO2 Level Default value: **800 ppm** **AV23**	**Minimum CO2** Defines the minimum comfort level for CO_2. When the CO_2 level is above this value, the fresh air damper will be (progressively) opened to reduce the CO_2 level. **Range**: 0 to 4800 ppm
Maximum CO2 Level Default value: **1200 ppm** **AV24**	**Maximum CO2** Defines the maximum comfort level for CO_2. When the CO_2 level is above this value, the fresh air damper will be opened to the maximum position to reduce the CO_2 level. **Range**: 200 to 5000 ppm
Fresh Air Range Default value: **0 cfm** **AV96**	**Fresh Air Range Upper Limit** Sets the upper limit (reading range) of the “airflow measuring station” (e.g., for 0~1,000 CFM station, setting “FA Range” to 1,000). **Range**: 0 to 20000 cfm
Minimum Fresh Air Volume Default value: **0 cfm** **AV21**	**Minimum Fresh Air** Displayed when Fresh Air Range is greater than 0. **Range**: 0 to 20000 cfm
Maximum Fresh Air Volume Default value: **0 cfm** **AV22**	**Maximum Fresh Air** Displayed when Fresh Air Range is greater than 0. **Range**: 0 to 20000 cfm

Inputs



PARAMETER DETAILS

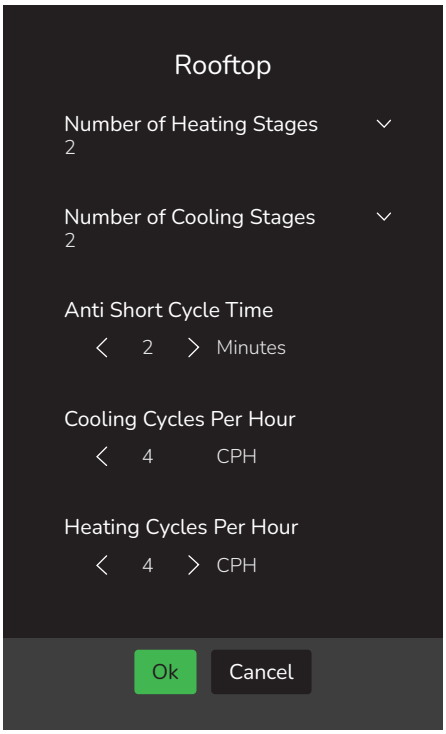
Parameter Default Value	Significance and Adjustments
UI1 Config Default value: **None** **MV46**	**UI1 Configuration** • None: No function will be associated with the input. Input can be used for remote network monitoring. • Rem NSB: Remote night setback (NSB) timer clock input. The scheduling gets set as per the binary input and provides low-cost setback operation via a dry contact. • Motion NO and Motion NC: Advanced PIR occupancy functions using a Normally Open (NO) or Normally Closed (NC) remote PIR motion sensor. • Window: Forces the system to disable any current heating or cooling action by the Room Controller when the window is open. • Fan Lock: Forces the system to disable any current heating or cooling action by the Room Controller when the (G) Fan output is activated, but the Fan Lock input is not activated after 10 seconds. **Choices:** 1=None, 2=Rem NSB, 3=Motion NO, 4=Motion NC, 5=Window, 6=Fan Lock
UI2 Config Default value: **None** **MV47**	**UI2 Configuration** • None: No function associated with input. • Door Dry: Room Controller goes to standby mode when door is opened then closed followed by no presence detection for the next 10 seconds if the local PIR is used in this application. The Occupancy command must be set to Local Occupancy and Occupancy Source must be set to Motion. • Override: A closed contact forces the Room Controller to go in occupied mode. An open contact keeps the current occupancy mode. • Filter: backlit flashing filter alarm shows on the Room Controller screen when input is energized. • Service: backlit flashing Service alarm shows on Room Controller screen when input is energized. NOTE: When the Room Controller is in unoccupied mode, touching the screen sets the Room Controller to Override mode for defined time period, and uses the Occupied Cooling and Heating setpoints. **Choices:** 1=None, 2=Door Dry, 3=Override, 4=Filter, 5=Service

Parameter Default Value	Significance and Adjustments
UI3 Config Default value: **None** **MV49**	**UI3 Configuration** • None: No function associated with input; however, input can be used for remote network monitoring. • CO_2: Using the CO_2 level measured by a wired CO_2 sensor (0~2000 ppm = 0~10 Vdc), the Outside Air damper (Econo) will modulate between "Economizer Minimum Position" to "Economizer Maximum Position" following the "Minimum CO_2" and "Maximum CO_2" setpoints. **Choices:** 1=None, 2=CO_2
Room Temperature Sensor Default value: **Wired** **MV150**	**Room Temperature Sensor** Sets the source of the indoor room temperature for Room Controller. Then user can designate either the Room Controller itself, a wired remote sensor, or any of the paired wireless devices* that support temperature to function as the source for the room temperature. • Wired: Sets the thermistor connected to U4 (RS) as the source to report room temperature. • Internal: Sets the Room Controller as the source for the room temperature. • WL 1 to WL 20: Sets the selected Zigbee wireless device as the source for the room temperature. Only one device can be selected. NOTE: If a wired or wireless sensor is selected while it is offline, then the Room Controller internal sensor will be the source for the temperature measurement. **Choices:** 1=Wired, 2=Internal, 3=Wireless Sensor 1, 4=Wireless Sensor 2, 5=Wireless Sensor 3, 6=Wireless Sensor 4, 7=Wireless Sensor 5, 8=Wireless Sensor 6, 9=Wireless Sensor 7, 10=Wireless Sensor 8, 11=Wireless Sensor 9, 12=Wireless Sensor 10, 13=Wireless Sensor 11, 14=Wireless Sensor 12, 15=Wireless Sensor 13, 16=Wireless Sensor 14, 17=Wireless Sensor 15, 18=Wireless Sensor 16, 19=Wireless Sensor 17, 20=Wireless Sensor 18, 21=Wireless Sensor 19, 22=Wireless Sensor 20
Room Temperature Sensor Calibration Default value: **0 °F (-17.8°C)** **AV7**	**Calibrate Room Temperature Sensor** Room temperature sensor calibration. Offset can be added or subtracted to actual displayed room temperature. **Range**: -5°F to 5°F (-2.5°C to +2.5°C) – Resolution: 1°F/0.5°C
Outside Temperature Sensor Calibration Default value: **0 °F (-17.8°C)** **AV74**	**Calibrate Outside Temperature Sensor** Calibrates the temperature value. **Range**: -5°F to 5°F (-2.5°C to +2.5°C) – Resolution: 1°F/0.5°C
Relative Humidity Sensor Default value: **Internal** **MV154**	**Relative Humidity Sensor** Sets the source of the indoor room humidity. This parameter allows the user to designate either the Room Controller or any of the paired wireless devices* that support humidity to function as the source for the room humidity. • None: Relative Humidity source disabled. • Internal: Sets the Room Controller as the source for the room humidity. • WL 1 to WL 20: Sets the selected ZigBee wireless device as the source for the room humidity. Only one device can be selected. NOTE: None is kept as an option here to allow humidity to be supplied via BACnet, Modbus or Lua. **Choices:** 1=None, 2=Internal, 3=Wireless Sensor 1, 4=Wireless Sensor 2, 5=Wireless Sensor 3, 6=Wireless Sensor 4, 7=Wireless Sensor 5, 8=Wireless Sensor 6, 9=Wireless Sensor 7, 10=Wireless Sensor 8, 11=Wireless Sensor 9, 12=Wireless Sensor 10, 13=Wireless Sensor 11, 14=Wireless Sensor 12, 15=Wireless Sensor 13, 16=Wireless Sensor 14, 17=Wireless Sensor 15, 18=Wireless Sensor 16, 19=Wireless Sensor 17, 20=Wireless Sensor 18, 21=Wireless Sensor 19, 22=Wireless Sensor 20
Relative Humidity Sensor Calibration Default value: **0%** **AV8**	**Calibrate Humidity Sensor** Offset that can be added or subtracted to actual displayed humidity. **Range**: -15% to 15% (Resolution: 1%)

Parameter Default Value	Significance and Adjustments
CO_2 Sensor Source Default value: **Local** **MV155**	**CO_2 Source** Sets the source of the indoor CO_2. This parameter allows the user to select the embedded CO_2 detection sensor or to disable the feature. • None: CO_2 source disabled. • Local: Sets the embedded CO_2 detection sensor as the source for the room CO_2. **Choices:** 1=None, 2=Local, 3=Wireless Sensor 1, 4=Wireless Sensor 2, 5=Wireless Sensor 3, 6=Wireless Sensor 4, 7=Wireless Sensor 5, 8=Wireless Sensor 6, 9=Wireless Sensor 7, 10=Wireless Sensor 8, 11=Wireless Sensor 9, 12=Wireless Sensor 10, 13=Wireless Sensor 11, 14=Wireless Sensor 12, 15=Wireless Sensor 13, 16=Wireless Sensor 14, 17=Wireless Sensor 15, 18=Wireless Sensor 16, 19=Wireless Sensor 17, 20=Wireless Sensor 18, 21=Wireless Sensor 19, 22=Wireless Sensor 20

Rooftop Unit

The Rooftop Unit screen is displayed when Application is set to Rooftop Unit on the HVAC Configuration screen.



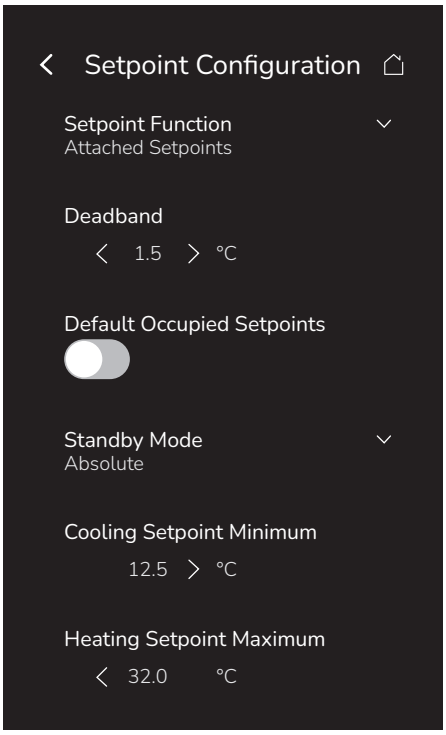
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Number of Heating Stages Default value: **2 stages** **AV87**	**Number of Heating Stages** Sets number of Heating Stages applicable to 2 stage models only. • 0 Stages: Only (UO11) modulating 0-10Vdc output is used for Heating. W1 & W2 are disabled. • 1 Stage: Only W1 (D5) terminal is used. W2 is disabled. • 2 Stages: Both W1 (D5) and W2 (A1/D6) terminals are used in sequence. **Choices:** 0: Modulating Heat, 1 or 2 stages
Number of Cooling Stages Default value: **2 stages** **AV75**	**Number of Cooling Stages** Sets number of Cooling Stages. • 1 Stage: Only Y1 (D3) terminal is used. Y2 is disabled. • 2 Stages: Both Y1 (D3) and Y2 (D2) terminals are used in sequence. **Choices:** 1 or 2 stages
Anti Short Cycle Time Default value: **2 min** **AV86**	**Anti Short Cycle Time** Minimum On time and minimum Off time of operation time for stages. IMPORTANT: anti-short cycling can be set to 0 minutes for equipment that possess their own anti cycling timer. Do not use this value unless the equipment is equipped with an internal timer. Failure to do so can damage the equipment. **Range:** 0 to 5 minutes
Cooling Cycles Per Hour Default value: **4 CPH** **AV85**	**Cooling Cycles Per Hour** CPH is used to “modulate” On/Off outputs controlling equipment such as compressors. When the Room Temperature is within the Proportional Band, the output performs 3 or 4 CPH. A higher CPH represents a higher accuracy of control at the expense of wearing mechanical components faster. NOTE: The CPH does not limit the number of Cycles Per Hour. It is limited by the “Anti short cycle” parameter. 4 CPH is typical for Rooftop applications. **Range:** 3 to 4 CPH

Parameter Default Value	Significance and Adjustments
Heating Cycles Per Hour Default value: **4 CPH** **AV84**	**Heating Cycles Per Hour** CPH is used to “modulate” On/Off outputs controlling equipment such as compressors. When the Room Temperature is within the Proportional Band, the output performs 3 to 8 CPH. A higher CPH represents a higher accuracy of control at the expense of wearing mechanical components faster. For multi-stage models, heat cph applies to W1 & W2. A CPH value between 6 - 8 is recommended for applications with electric heating. For gas applications set CPH to 4 and for oil applications set CPH to 3. **Range:** 3 to 8 CPH
Room Frost Protection Default value: **Off** **MV55**	**Room Frost Protection** If the Room Temperature drops below 42°F (5.6°C), the Fan and the Heat will be activated until the Room Temperature rises over 42°F (5.6°C). • Off: No room frost protection • On: Room frost protection enabled in all system modes at 42°F (5.6°C). Frost protection is enabled even if System mode is ‘Off’. **Choices:** 1=Off, 2=On
Heating Lockout from Outside Air Temperature Default value: **120°F (49°C)** **AV91**	**Heating Lockout from Outside Air Temperature** Disables mechanical heating operation when Outdoor Temperature is higher than the “Heating Lockout” value. The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller (UI23) or via a BACnet front end (network). **Range:** -15°F to 120°F (-26°C to 49°C)
Cooling Lockout from Outside Air Temperature Default value: **-40°F (-40°C)** **AV93**	**Cooling Lockout from Outside Air Temperature** Disables mechanical cooling operation when Outdoor Temperature is lower than the “Cool Lockout” value. The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller (UI23) or via a BACnet front end (network). The Economizer functionality (Free-cooling) can still be enabled during the Cooling Lockout. **Range:** -40°F to 95°F (-40°C to 35°C)
Minimum Supply Heat Default value: **64°F (18.0°C)** **AV97**	**Minimum Supply Heat** Displayed when Number of Heating Stages = 0: Modulating Heat. **Range:** 50°F to 72°F (10°C to 22°C)
Supply Heat Lockout Default value: **32°F (0.0°C)** **AV98**	**Supply Heat Lockout** Displayed when Number of Heating Stages = 0: Modulating Heat. **Range:** -15°F to 120°F (-26°C to 48.5°C)
Supply Temperature High Limit Default value: **120°F (49°C)** **AV99**	**Supply Temperature High Limit** Supply air high temperature value at which the heating stages get locked out. **Range:** 70°F to 150°F (21°C to 65°C)
Supply Temperature Low Limit Default value: **45°F (7°C)** **AV20**	**Supply Temperature Low Limit** Supply air low temperature value at which the cooling stages get locked out. **Range:** 35°F to 65°F (2.0°C to 19.0°C)

Parameter Default Value	Significance and Adjustments
Fan Control in Heating Mode Default value: **On** **MV95**	**Fan Control in Heating Mode** • Off: Fan (terminal G), when heating stages (terminals W1 & W2) are solicited, will not be energized. The fan is controlled by the equipment fan limit control. Valid only for Auto fan mode. On fan mode leaves the fan always on. • On: Room Controller always controls the fan (terminal G). Valid for On or Auto fan mode. For multi-stage models, fan control applies to W1 & W2. **Choices:** 1=Off, 2=On
Fan Delay Default value: **On** **MV12**	**Fan Delay** • On: Fan mode will leave the fan always on and extends fan operation by 60 seconds after the call for heating or cooling ends. Valid only for Auto fan mode. • Off: Fan delay not operational. **Choices:** 1=Off, 2=On
Proportional Band Default value: **3°F (2°C)** **AV65**	**Proportional Band** Adjusts proportional band used by Room Controller PI control loop. NOTE: Default value of 3 gives satisfactory operation in most normal installation cases. The use of a superior proportional band different than the factory value is normally warranted in applications where Room Controller location is problematic and leads to unwanted cycling of the unit. A typical example is a wall mounted Room Controller installed between return and supply air feeds and is directly influenced by the supply air stream of unit. **Range:** 3°F to 10°F (2°C to 5.5°C) – Resolution: 0.5°F/C
Power-up Delay Default value: **10 seconds** **AV76**	**Power-up Delay** On initial power up of the Room Controller there is a delay before any operation is authorized (fan, cooling or heating). This can be used to sequence the start up of multiple Room Controllers in one location. **Range:** 10 to 120 seconds (Resolution: 1 second)

Setpoint Configuration

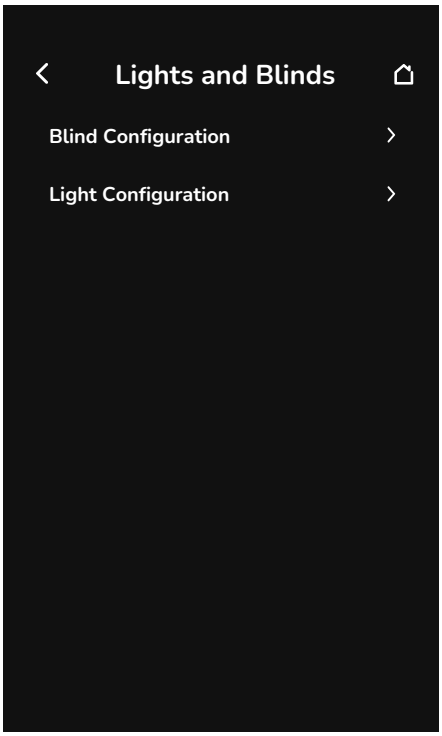


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Setpoint Function Default value: **Attached Setpoints** **MV58**	**Setpoint Function** Local setpoint settings to set the local setpoint interface for the User. • Dual Setpoints: "Minimum" Deadband, Heat and Cool Setpoints can be adjusted independently. • Attached Setpoints: Fixed Deadband in occupied mode, Heat and Cool setpoints always follow each other, separated by Deadband value (acts like a single setpoint). **Choices:** 1=Dual Setpoints, 2=Attached Setpoints
Deadband Default value: **3.0°F (1.5°C)** **AV63**	**Minimum Deadband** Temperature offset between the Cooling and Heating setpoints to ensure that Cooling setpoint is always warmer than the Heating setpoint. Cooling setpoint ≥ (Heating setpoint + Deadband) **Range**: 2.0°F to 5.0°F (1.0°C to 2.5°C)
Default Occupied Setpoints Default value: **Disabled** **MV205**	**Default Setpoints** Indicates whether the Room Controller follows Default Occupied Setpoints. **Choices:** 1=Disabled, 2=Enabled
Standby Mode Default value: **Absolute** **MV11**	**Standby Mode Configuration** • Absolute: Standby setpoints are individually configurable • Offset – Standby setpoints are automatically managed by the Room Controller with: ▪ Standby Cooling Setpoint = Occupied Cooling Setpoint + Standby Differential ▪ Standby Heating Setpoint = Occupied Heating Setpoint - Standby Differential **Choices:** 1=Absolute, 2=Offset
Cooling Setpoint Minimum Default value: **54.0°F (12.0°C)** **AV59**	**Minimum Cooling Setpoint Limit** • Cooling Setpoint Minimum is applied to all setpoints, as it is the physical limit of how cold we want to allow the space to be chilled too. There is no reason an Unoccupied or Standby setpoint would want to be colder than the user allowed Cooling Setpoint Minimum. • Cooling Setpoint Minimum cannot be more than the deadband above Heating Setpoint Maximum, otherwise it is not possible to respect the attached setpoints and deadband. **Range**: 54.0°F to 100.0°F (12.0°C to 38.0°C)

Parameter Default Value	Significance and Adjustments
Heating Setpoint Maximum Default value: **90.0°F (32.0°C)** **AV58**	**Maximum Heating Setpoint Limit** Heating Setpoint Maximum is applied to all setpoints, as it is the physical limits of how hot we want to allow the space to be heated too. There is no reason an Unoccupied or Standby setpoint would want to be hotter than the user allowed Heating Setpoint Maximum. **Range**: 40.0°F to 90.0°F (4.5°C to 32.0°C)

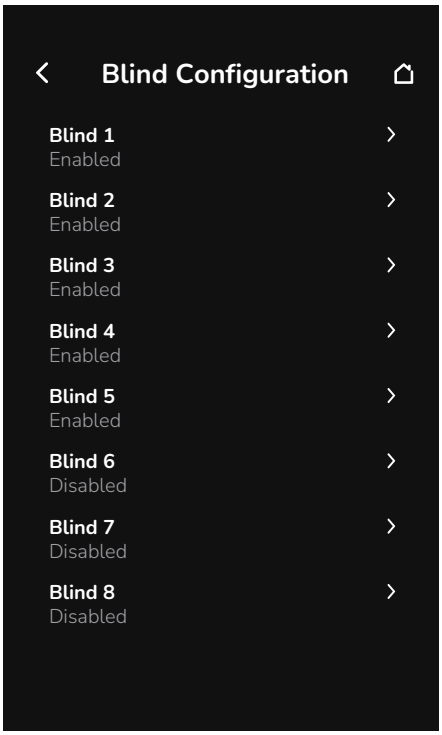
Lights and Blinds



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Blind Configuration	Refer to “Blind Configuration” on page 48 for more information.
Light Configuration	Refer to “Light Configuration” on page 50 for more information.

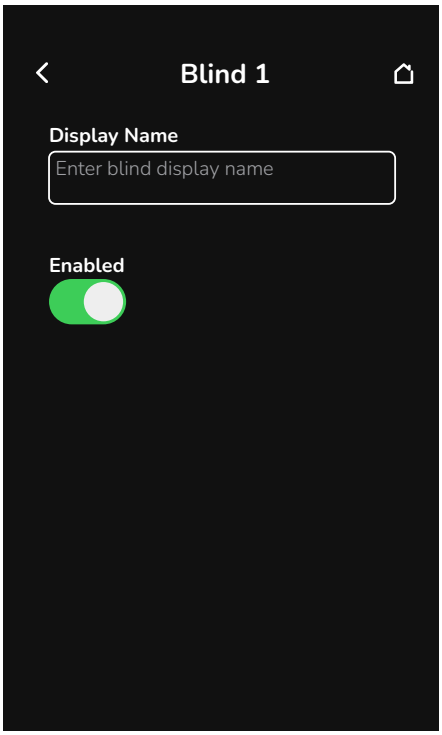
Blind Configuration



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Blind 1 to 8	Refer to “Blind 1 to 8” on page 49 for more information.

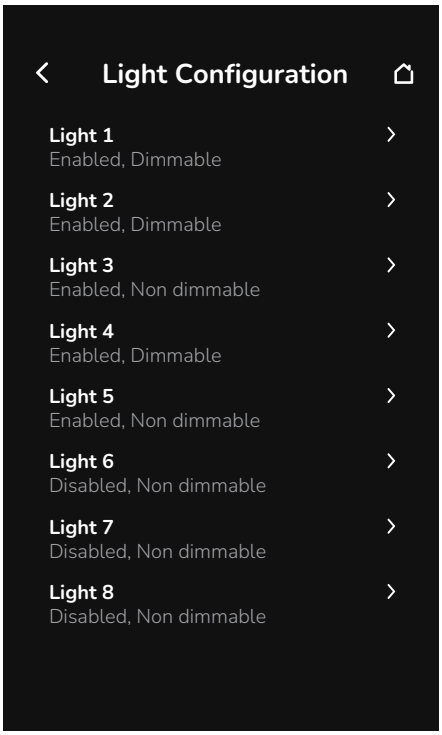
Blind 1 to 8



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Display Name Default value: **Blind #** **CSV52** to **CSV59**	**Blind # Display Name** Enter the blind display name. The blind display name will be displayed for each blind element on the Blinds home screen, refer to “Blinds (Main)” on page 10 for more information. **Note**: The blind display name will be shortened to about 9 characters for each blind element on the Blinds home screen and to about 18 characters on the blind element popup. **Range**: 0 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Enabled Default value: **Disabled** **AV324** to **AV331**	**Blind # Cfg** Enable the blind configuration on the home screen. **Choices:** 0=Disabled, 1=Enabled

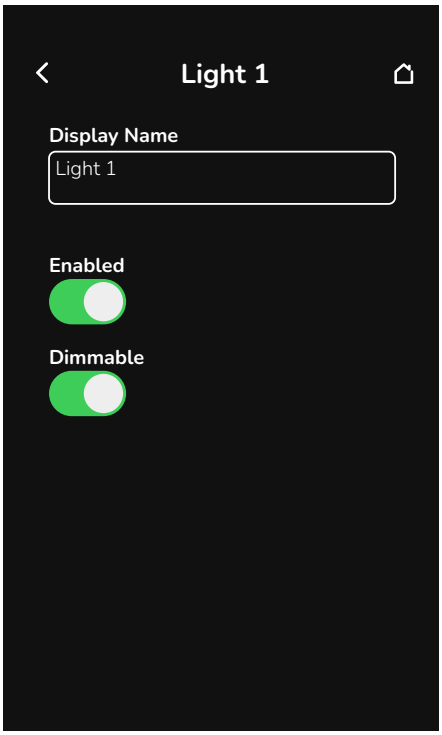
Light Configuration



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Light 1 to 8	Refer to “Light 1 to 8” on page 51 for more information.

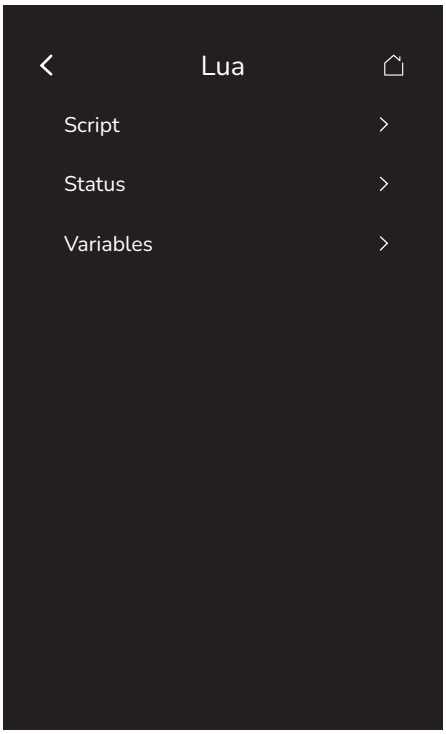
Light 1 to 8



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Display Name Default value: **Light #** **CSV44** to **CSV51**	**Light # Display Name** Enter the light display name. The light display name will be displayed for each light element on the Lights home screen, refer to “Lights (Main)” on page 9 for more information. **Note**: The light display name will be shortened to about 18 characters for each light element on the Lights home screen and on the light element popup. **Range**: 0 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Enabled **Dimmable** Default value: **Disabled** **AV316** to **AV323**	**Light # Cfg** Enable the light and dimmable configuration on the home screen. **Choices:** 0=Disabled, Non dimmable; 1=Disabled, Dimmable; 3= Enabled, Non dimmable; 3= Enabled, Dimmable

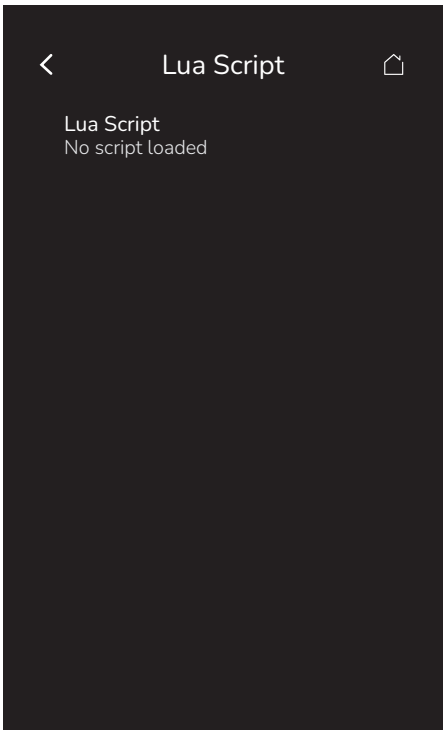
Lua



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Script	Refer to “Script” on page 53 for more information.
Status	Refer to “Status” on page 54 for more information.
Variables	Refer to “Variables” on page 56 for more information.

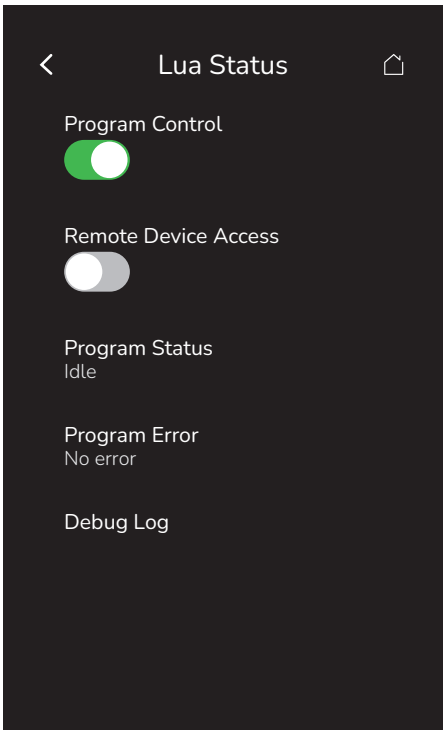
Script



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Lua Script Default value: **No script loaded** Read Only	**Lua Script** If a Lua script has been loaded onto the Room Controller, this screen displays of the first lines, truncating scripts that are longer than ~22 lines with an ellipsis. If a script line exceeds the screen width, it will be wrapped, causing it to span two (or more) of the displayed lines. Tabs are displayed as 4 spaces, to ensure consistency of indented data. NOTE: This is just to allow the first lines to be viewed to help identify the loaded script.

Status



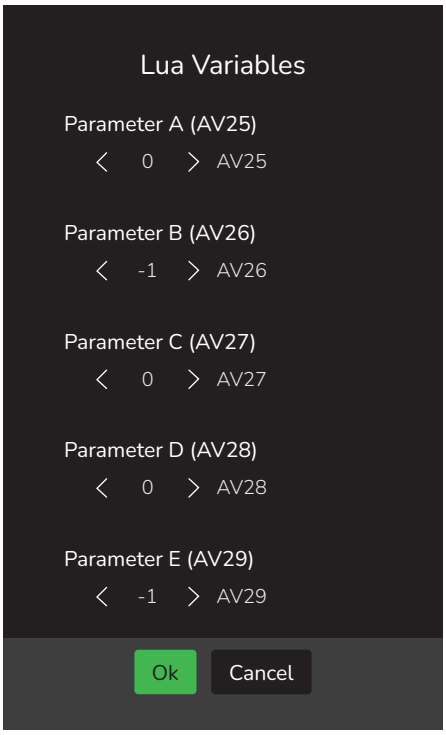
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Program Control Default value: **Run**	**Program Control** Allows the user to enable/disable the execution of the script. • Run: Lua script activated and runs continuously until deactivated. • Stop: Lua script deactivated. **Choices:** Run or Stop
Remote Device Access Default value: **Disabled** Read Only (on BACnet) **MV193**	**Remote Device Access** This feature is only editable by an Administrator user. It is used to indicate whether it is possible to access this Room Controller remotely. **Choices:** 1=Disabled, 2=Enabled
Program Status Default value: **Disabled** Read Only	**Program Status** Displays the execution status of the Lua script, with values such as: • Running: Program is running normally. • Halted: Program has been halted (via BACnet) or unloaded. • Idle: Program is idle, not present or not yet running. • Loading: Script is being loaded from disk. **Display Readings:** Disabled or Enabled
Program Error Default value: **No error** Read Only	**Program Error** Displays errors related to the execution of the Lua script, with values such as: • No error • Syntax: Syntax error detected in the script. • Runtime: Runtime error occurred when running the script. • Memory: Device has run out of memory for the script. **Display Readings:** No error, Syntax, Runtime, Memory

Parameter Default Value	Significance and Adjustments
Debug Log Read Only	**Debug Log** Displays a debug log related to the execution of the Lua script, with the following information: • Messages printed from the Lua script. • Error-related information, such as: ▪ Date and time of the error ▪ Line number (for syntax errors) ▪ Error message

Variables

There are also 18 “scratchpad” variables that are available from the Lua engine and BACnet or Modbus, but they are not visible from the Room Controller’s HMI: AV338 to AV355, named “Lua Scratchpad 1” to “Lua Scratchpad 18”. The scratchpad variables are editable via BACnet or Modbus only. Refer to the Lua4RC Programming Guide for more information.

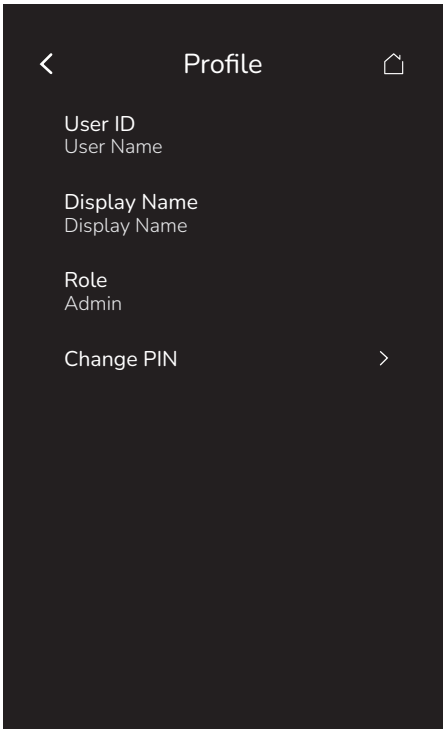


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Parameter A (AV25) Default value: **0** **AV25**	**Lua Parameter A (AV25)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter B (AV26) Default value: **0** **AV26**	**Lua Parameter B (AV26)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter C (AV27) Default value: **0** **AV27**	**Lua Parameter C (AV27)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter D (AV28) Default value: **0** **AV28**	**Lua Parameter D (AV28)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter E (AV29) Default value: **0** **AV29**	**Lua Parameter E (AV29)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter F (AV30) Default value: **0** **AV30**	**Lua Parameter F (AV30)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter G (AV31) Default value: **0** **AV31**	**Lua Parameter G (AV31)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter H (AV32) Default value: **0** **AV32**	**Lua Parameter H (AV32)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter I (AV33) Default value: **0** **AV33**	**Lua Parameter I (AV33)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.

Parameter Default Value	Significance and Adjustments
Parameter J (AV34) Default value: **0** **AV34**	**Lua Parameter J (AV34)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter K (AV35) Default value: **0** **AV35**	**Lua Parameter K (AV35)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter L (AV36) Default value: **0** **AV36**	**Lua Parameter L (AV36)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter M (AV332) Default value: **0** **AV332**	**Lua Parameter M (AV332)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter N (AV333) Default value: **0** **AV333**	**Lua Parameter N (AV333)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter O (AV334) Default value: **0** **AV334**	**Lua Parameter O (AV334)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter P (AV335) Default value: **0** **AV335**	**Lua Parameter P (AV335)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter Q (AV336) Default value: **0** **AV336**	**Lua Parameter Q (AV363)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter R (AV337) Default value: **0** **AV337**	**Lua Parameter R (AV337)** The value of this parameter depends on what is assigned to it from a BAS or Lua script.

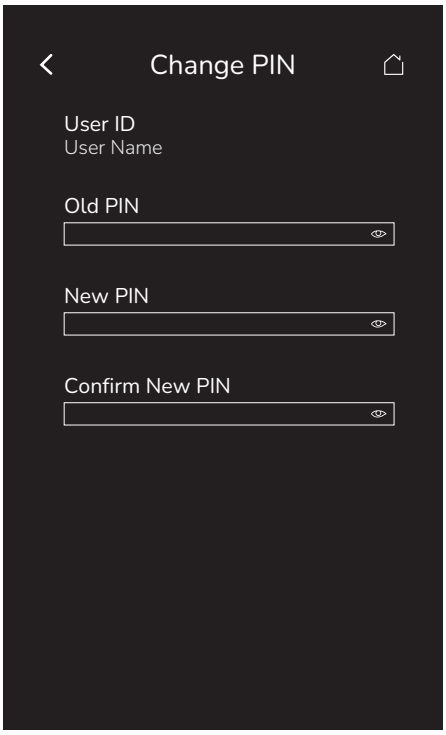
My Profile



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
User ID Read Only **CSV31**	**Active User Id** Displays the user name of this profile, unique on this device. **Display Readings**: 3 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Display Name Read Only	**Display Name** Displays the official name of the profile, shown on the screens throughout the device. **Display Readings**: 3 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Role Read Only	**Role** Displays the user role attached to this profile: • Administrator: Full access • Technician: Access to HVAC and local Room Controller-related configuration, but not to IP, FWU, etc. **Display Readings:** Administrator or Technician
Change PIN	Refer to “Change PIN” on page 59 for more information.

Change PIN

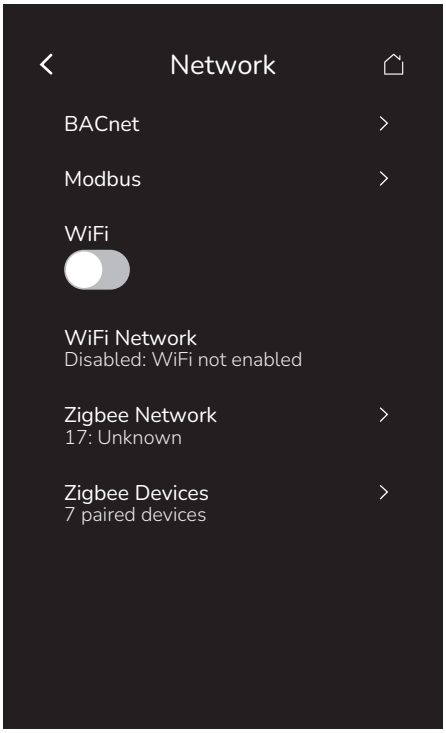


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
User ID Read Only **CSV31**	**Active User Id** Displays the user name of this profile, unique on this device. **Display Readings**: 3 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Old PIN	**Old PIN** Enter the current PIN for this profile. **Range**: 0 to 9999
New PIN	**New PIN** Enter the new PIN for this profile. **Range**: 0 to 9999
Confirm New PIN	**Confirm New PIN** Enter the new PIN once again for this profile. **Range**: 0 to 9999

Network

The user can select the protocol:

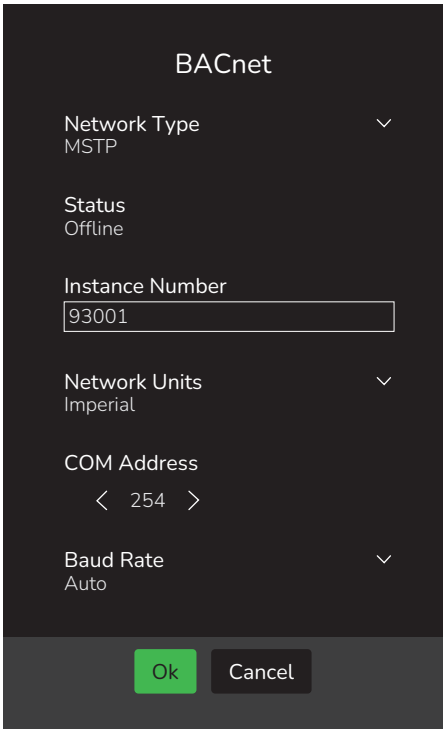


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
BACnet	Refer to “BACnet” on page 61 for more information.
Modbus	Refer to “Modbus” on page 63 for more information.
WiFi Default value: **Disabled** **MV184**	**Enable WIFI** Used to disable/enable the Wi-Fi network. **Choices**: Disabled, Enabled
WiFi Network	**WiFi Network** If the WiFi toggle switch is set to Disabled, this field will be uneditable and will indicate: Disabled: WiFi not enabled Otherwise, tapping this option will open the screen where a Wi-Fi network can be added or selected. Refer to “WiFi Network” on page 64 for more information.
Zigbee Network Read Only **MSI2**	**Zigbee Network Status** Displays the current status of the Zigbee network. Tap to display Zigbee Network screen where more features can be configured. Refer to “Zigbee Network” on page 69 for more information. **Display Readings**: Disabled, Initializing, Upgrading, Searching, Joining, Forming, Resuming, Online, Failed
Zigbee Devices Read Only **AI330**	**Paired Zibgee Devices** Displays the number of Zigbee devices paired with the Room Controller. Tap to display Zigbee Devices screen where 20 devices can be configured. Refer to “Zigbee Devices” on page 71 for more information. **Display Readings**: 0 to 20

BACnet

BACnet network screen shows when BACnet MS/TP is selected in wired protocol parameter.



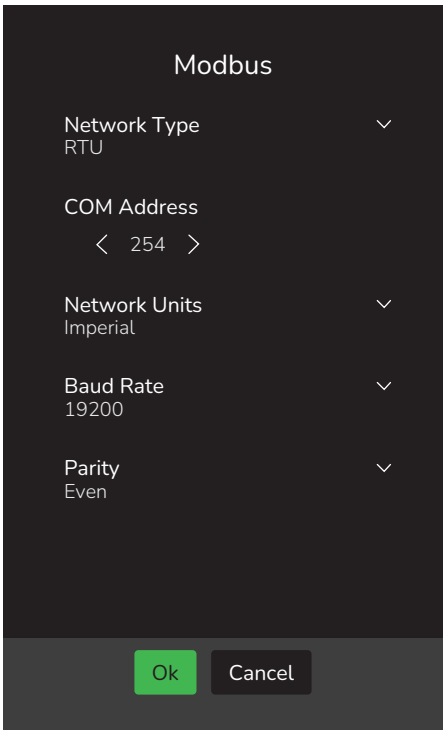
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Network Type Default value: **Disabled**	**Network Type** • MSTP: Only available if the Modbus Network Type is set to RTU. • IP: Only available if IP is present on the device. **Choices**: 1=Disabled, 2=MSTP, 3=IP
Status **Read Only** **MSI318**	**BACnet Server Status** Read Only value shows if a BACnet Network is detected or not. MSTP – Online when: • BACnet/MSTP is enabled • RS-485 communicated is detected online IP – Online when: • BACnet/MSTP is enabled • Wi-Fi network is online • IP address is valid **Display Readings**: Unknown, Disabled, Offline, Online
Instance Number Default value: **Last 4 digits of serial number**	**Instance Number** Configurable number that identifies a device uniquely on the entire interconnected BACnet network. **Range**: 0 to 4194302 (22-bit)
Network Units Default value: **Imperial** **MV6**	**Network Units** Network units transmitted over the BACnet network. NOTE: Use the Temperature scale parameter to change the display units locally on the Room Controller. • SI: Network units shown as International Metric units. • Imperial: Network units shown as Imperial units. **Choices**: 1=SI, 2=Imperial

Parameter Default Value	Significance and Adjustments
COM Address Default value: **254** **AV10**	**COM Address** Room Controller networking address. Default value of 254 disables BACnet communication for the Room Controller. Note: This field only appears when the MSTP Network Type is selected. **Range**: 0 to 254
Baud Rate Default value: **Auto** **MV8**	**BACnet Baud Rate** Leave the value at **Auto** unless instructed otherwise as this automatically detects BACnet baud rate. Note: This field only appears when the MSTP Network Type is selected. **Choices**: 1=9600, 2=19200, 3=38400, 4=57600, 5=76800, 6=115200, 7=Auto
Port Default value: **47808**	**Port** Port number for the IP Network. Note: This field only appears when the IP Network Type is selected. **Range**: 1024 to 65534
Foreign Device Registration Default value: **Disabled**	**Foreign Device Registration** A “foreign” device in the context of BACnet refers to a device that operates on a different IP subnet than the BACnet/IP network it is trying to communicate with. These devices require a process known as “foreign device registration” to join the BACnet network, allowing them to communicate with other BACnet devices despite being on a different subnet. Note: This field only appears when the IP Network Type is selected. **Choices**: Disabled, Enabled
BBMD Status Default value: **Offline** Read Only **MV207**	**BBMD Status** A BBMD (BACnet Broadcast Management Device) is essential for handling broadcasts across different IP subnets. The BBMD helps ensure that broadcast messages can be communicated effectively between devices on different subnets. **Display Readings**: Offline, DNS Lookup, DNS Fail, Registering, Registered, Registration Failed
BBMD Address	**BBMD Address** BACnet Broadcast Management Device address.
BBMD Port Default value: **47808**	**BBMD Port** BACnet Broadcast Management Device port number. **Range**: 1024 to 65534
BBMD TTL (seconds) Default value: **300**	**BBMD TTL (seconds)** Time to Live delay in seconds. **Range**: 0 to 65535

Modbus

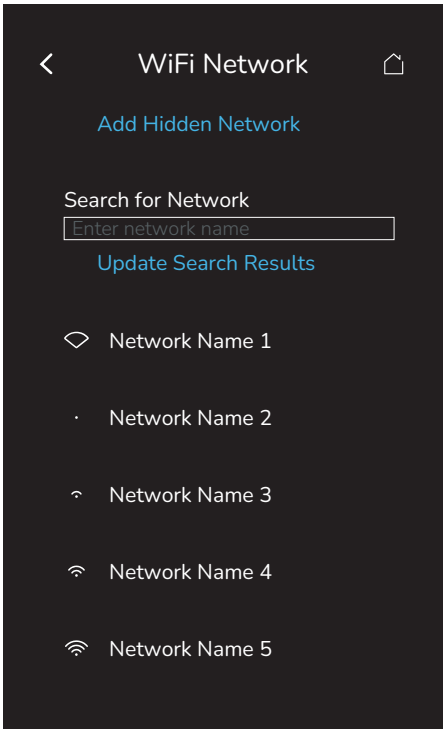
Modbus network screen shows when Modbus is selected in wired protocol parameter.



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Network Type Default value: **Disabled**	**Network Type** RTU: Only available if the BACnet Network Type is not set to MSTP. **Choices**: Disabled or RTU
COM Address Default value: **254**	**COM Address** Room Controller networking address. NOTE: A COM Address may be shared between Modbus and BACnet/MSTP. **Range**: 0 to 254
Network Units Default value: **Imperial**	**Network Units** Network units transmitted over the Modbus network. NOTE: Use the Temperature scale parameter to change the display units locally on the Room Controller. • SI: Network units shown as International Metric units. • Imperial: Network units shown as Imperial units. **Choices**: 0=SI, 1=Imperial
Baud Rate Default value: **19200**	**Modbus Baud Rate** Select the applicable Modbus baud rate. **Choices**: 0=4800, 1=9600, 2=19200, 3=38400, 4=57600
Parity Default value: **Even**	**Modbus Parity Bit** Determines how the parity bit of the character's data frame is set to detect any errors in the sent/receives frame. **Choices**: 0=None, 1=Odd, 2=Even

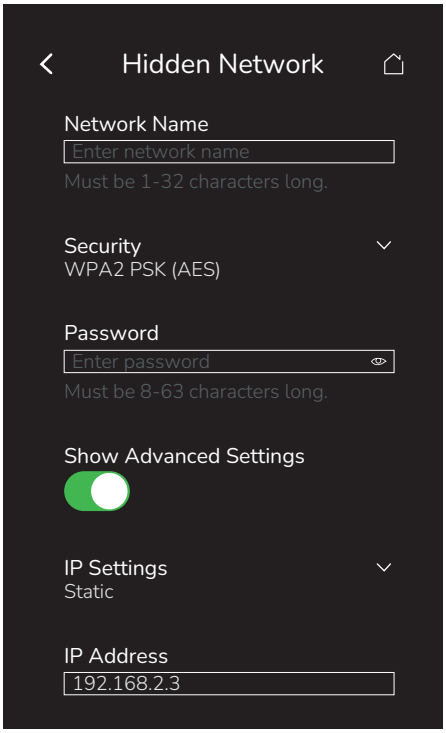
WiFi Network



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Add Hidden Network	Tap to open the screen and add a hidden Wi-Fi network. Refer to “Hidden Network” on page 65 for more information.
Search for Network	Tap and enter a Service Set Identifier (SSID), tap Update Search Results, then tap on the desired network name. Refer to “Connect to a Wi-Fi Network” on page 67 for more information.

Hidden Network



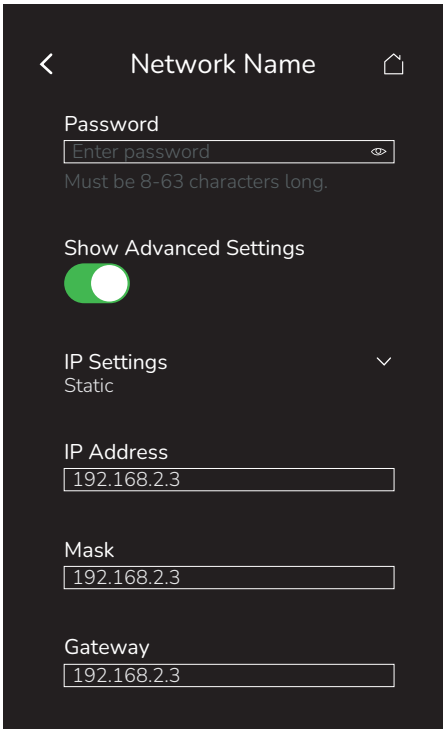
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Network Name **CSV7**	**WiFi Network SSID** Service Set Identifier (SSID), the Wi-Fi network name. **Range**: 1 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Security Default value: **UNKNOWN SECURITY** **MV206**	**WiFi Security Type** Security protocol used for this Wi-Fi network. **Choices**: 1=WPA2 AES PSK, 2=WPA2 TKIP PSK, 3=WPA2 MIXED PSK, 4=WPA3 SAE, 5=WPA3 WPA2 PSK, 6=UNKNOWN SECURITY
Password	**Password** Unique password linked to this Wi-Fi network. **Range**: 8 to 63 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Show Advanced Settings Default value: **Disabled**	**Show Advanced Settings** Used to display more settings related to the configuration of this Wi-Fi network. **Choices**: Disabled, Enabled
IP Settings Default value: **Dynamic** **MV183**	**Enable Static IP** • Dynamic (DHCP): If this option is selected, a field requiring the Domain Name System (DNS) server is displayed. • Static: If this option is selected, refer to the following rows for the required information. **Choices**: 1=Dynamic (DHCP), 2=Static
IP Address Default value: **Empty**	**IP Address** Internet Protocol (IP) address that is assigned to the device. **Range**: 0 to 255 characters

Parameter Default Value	Significance and Adjustments
Mask Default value: **Empty**	**Mask** Mask address that is assigned to the device. **Range**: 0 to 255 characters
Gateway Default value: **Empty**	**Gateway** Gateway address that is assigned to the device. **Range**: 0 to 255 characters
DNS Default value: **Empty**	**DNS** Domain Name System (DNS) address that is assigned to the device. **Range**: 0 to 255 characters

Connect to a Wi-Fi Network

The name appearing at the top of the screen will be the name of the network that was selected. Refer to “WiFi Network” on page 64.

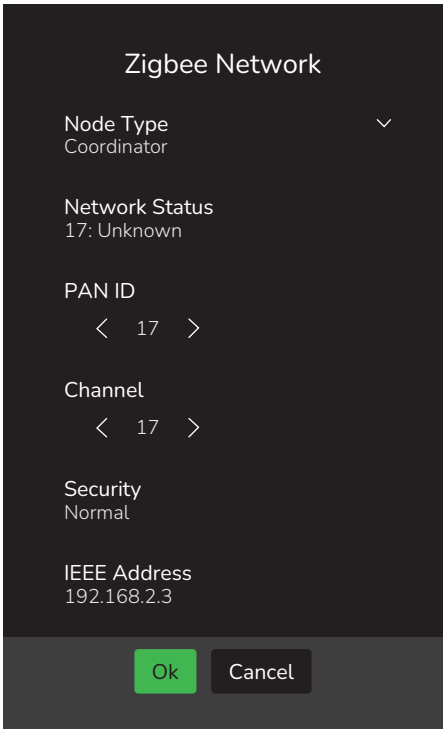


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Password	**Password** Unique password linked to this Wi-Fi network. **Range**: 8 to 63 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Show Advanced Settings Default value: **Disabled**	**Show Advanced Settings** Used to display more settings related to the configuration of this Wi-Fi network. **Choices**: Disabled, Enabled
IP Settings Default value: **Dynamic MV183**	**Enable Static IP** • Dynamic (DHCP): If this option is selected, a field requiring the Domain Name System (DNS) server is displayed. • Static: If this option is selected, refer to the following rows for the required information. **Choices**: 1=Dynamic (DHCP), 2=Static
IP Address Default value: **Empty**	**IP Address** Internet Protocol (IP) address that is assigned to the device. **Range**: 0 to 255 characters
Mask Default value: **Empty**	**Mask** Mask address that is assigned to the device. **Range**: 0 to 255 characters
Gateway Default value: **Empty**	**Gateway** Gateway address that is assigned to the device. **Range**: 0 to 255 characters

Parameter Default Value	Significance and Adjustments
DNS Default value: **Empty**	**DNS** Domain Name System (DNS) address that is assigned to the device. **Range**: 0 to 255 characters

Zigbee Network

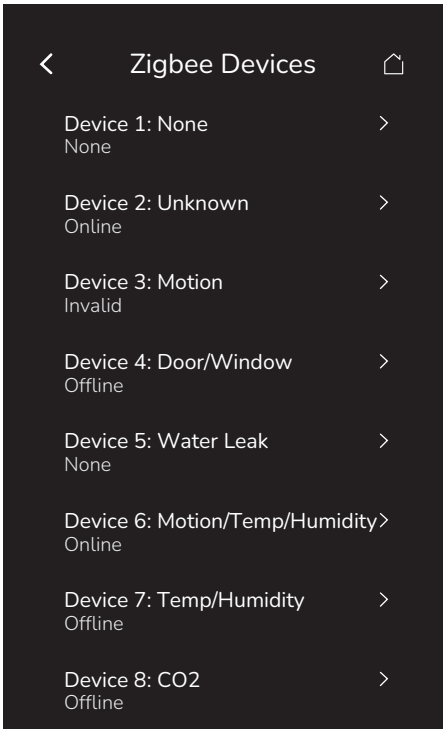


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Node Type Default value: **Disabled**	**Node Type** A Zigbee network is made up of entities called nodes: • Disabled: No Zigbee network. • Coordinator: Zigbee Coordinator (ZC) is responsible for forming the network. A coordinator can be seen as a router with additional functionality. There can be only one coordinator in a single network. **Choices**: Disabled or Coordinator
Network Status Default value: **Disabled** Read Only **MSI2**	**Zigbee Network Status** Current status of the Zigbee network. **Display Readings**: Disabled, Initializing, Upgrading, Searching, Joining, Forming, Resuming, Online, Failed
PAN ID Default value: **1**	**PAN ID** Zigbee networks are called personal area networks (PANs). Each network is defined with a unique PAN identifier (PAN ID). **Range**: 1 to 65535
Channel Default value: **11**	**Channel** A Zigbee channel is a narrow band of radio frequency used by Zigbee devices to communicate wirelessly. **Range**: 11 to 26
Security Read Only	**Security** **Display Readings**: Normal

Parameter Default Value	Significance and Adjustments
Permit Join Default value: **Disabled**	**Permit Join** Enables the coordinator to send the link key (required to join the network) to devices. **Choices**: Disabled, Enabled
Network Address Read Only	**Network Address** A 16-bit address that a device receives when it joins a Zigbee network
IEEE Address Read Only **CSV10**	**ZigBee IEEE Address** A unique 64-bit identifier assigned to each ZigBee device by the manufacturer. **Range**: 0 to 18 characters

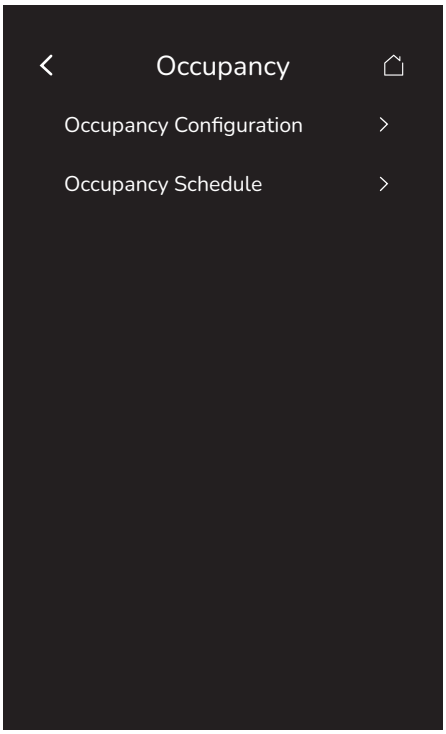
Zigbee Devices



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Device #: Name Ready Only	**Device #: Name** Tapping on a device will display its information and offer the possibility of removing the device.

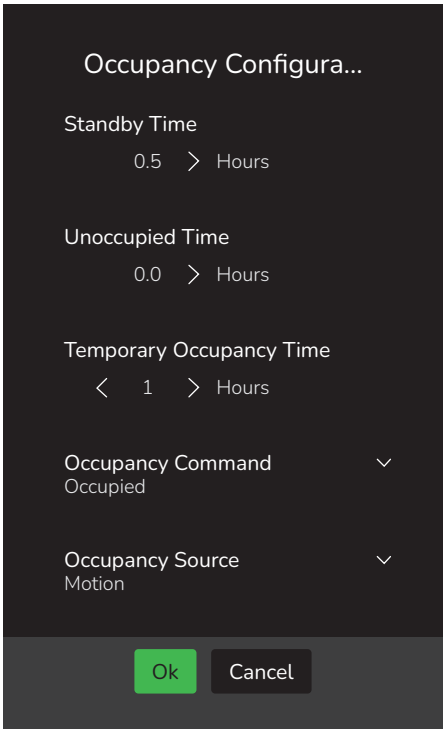
Occupancy



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Occupancy Configuration	Refer to “Occupancy Configuration” on page 73 for more information.
Occupancy Schedule	Refer to “Occupancy Schedule” on page 75 for more information.

Occupancy Configuration



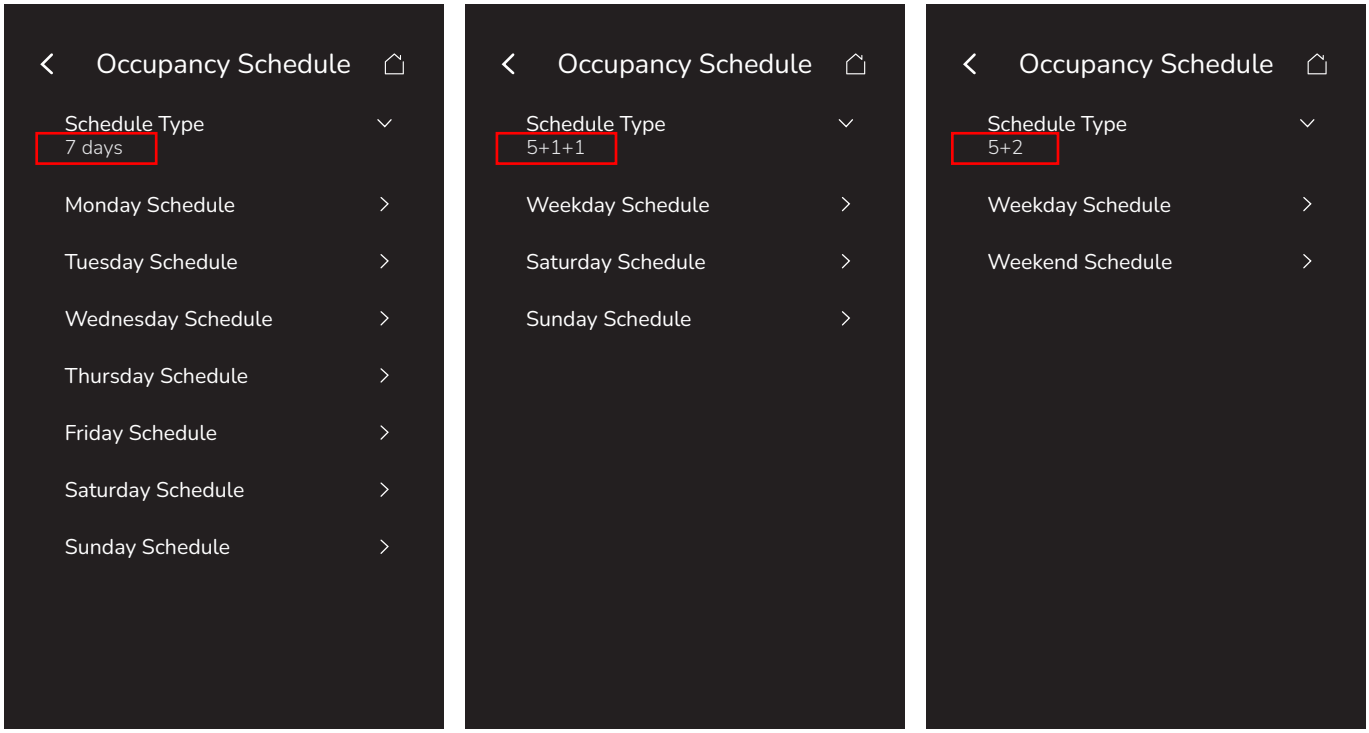
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Standby Time Default value: **0.5 Hours** **AV67**	**Standby Time** Time between the moment where the PIR cover detects last movement in the area, and the time which the Room Controller stand-by setpoints become active. NOTE: This parameter is not active when the Door function is used (wired or wireless). **Range**: 0.5 to 24 Hours (Resolution: 0.5 Hours)
Unoccupied Time Default value: **0.0 Hours** **AV68**	**Unoccupied Time** Time between the moment where the Room Controller toggles to stand-by mode, and the time which the Room Controller unoccupied mode and setpoints become active. NOTE: Default value of 0.0 hours disables the unoccupied timer. This prevents the Room Controller from being able to switch from stand-by mode to unoccupied mode when PIR functions are used. **Range**: 0.5 to 24 Hours (Resolution: 0.5 Hours)
Temporary Occupancy Time Default value: **2 Hours** **AV62**	**Temporary Occupancy Time** The time the Room Controller stays in override mode before reverting back to unoccupied mode. When the Room Controller is in unoccupied mode, pressing the on-screen Override icon or closing the contact on UI17, configured as Remote Override, sets the Room Controller to Override mode for defined time period, and uses the Occupied Cooling and Heating setpoints. **Range**: 0 to 24 Hours (Resolution: 1 Hour)
Occupancy Command Default value: **Occupied** **MV10**	**Occupancy Command** Allows quick workaround of faults in motion sensors, etc. • Local Occupancy: Occupancy is determined by local sequences (either PIR or schedule or a combination of both, as configured under Occupancy Source). • Occupied: Forces occupied mode. • Unoccupied: Forces unoccupied mode. **Choices**: 1=Local Occupancy, 2=Occupied, 3=Unoccupied

Parameter Default Value	Significance and Adjustments
Occupancy Source Default value: **Motion** **MV110**	**Occupancy Source** • Motion: Occupancy status is received from a motion sensor. • Schedule: Occupancy status is determined by the schedule. • Motion during Schedule: Occupied when scheduled occupied AND when motion is detected. • Motion or Schedule: Occupied when scheduled occupied OR when motion is detected. **Choices**: 1=Motion, 2=Schedule, 3=Motion during Schedule, 4=Motion or Schedule
Occupancy Sensor Default value: **High** **MV188**	**Occupancy Sensor** The Room Controller uses a PIR for Occupancy sensing that can be configured with sensitivities. When enabled, this feature sets the Local Motion point to active upon detection of occupancy. The target ranges for occupancy modes are: • Off: No sensibilities • Low: 1 meter (3.28 feet) • Medium: 4 meter (13.12 feet) • High: 8 meter (26.25 feet) **Choices**: 1=Off, 2=Low, 3=Medium, 4=High
Smart Recovery Default value: **Off** Read Only **BV40**	**Smart Recovery Status** • Off: No smart recovery. The occupied schedule time is the time at which the system will restart. • On: Smart recovery active. The occupied schedule time is the time at which the desired occupied temperature will be attained. The Room Controller automatically optimizes the equipment start time. In any case, the latest a system will restart is 10 minutes prior to the occupied period time. Smart recovery is automatically disabled if U1 is configured to remote NSB. **Display Readings**: Off, On
Binary Aux. Output Configuration Default value: **Normally Open** Read Only **MV92**	**Auxiliary Output** • Normally Open: • Normally Closed: **Display Readings**: Normally Open, Normally Closed

Occupancy Schedule

There are seven different schedule setting screens, one for each day of the week. Each day can have different scheduled events where the Room Controller is set to Occupied status or back to Unoccupied status. The Room Controller can use the appropriate setpoints (back and forth) up to three times per day.

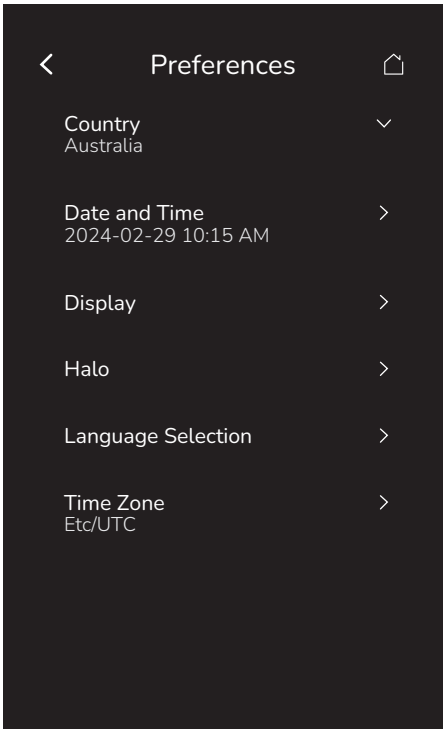


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Schedule Type Default value: **7 days** **MV136**	**Schedule Type** • 7 days: Independent scheduling identified by day of the week (Sunday - Saturday). • 5+1+1 days: Weekdays scheduling and Independent Weekend scheduling identified as Weekdays, Saturday and Sunday. • 5+2 days: Weekdays scheduling and Weekend scheduling identified as Weekdays and Weekend. **Choices**: 1=7 days, 2=5+1+1, 3=5+2
Occupied 1 – 3 Default value: **None**	**Occupied 1 – 3** Defines a time when the Room Controller is automatically set to use the Occupied setpoint. --:-- indicates no time is set for the Occupied setpoint. NOTE: There are 3 separate Occupied parameter entries. **Range**: 00:00 - 23:59, or --:--
Unoccupied 1 – 3 Default value: **None**	**Unoccupied 1 – 3** Defines a time when the Room Controller is automatically set to use the Unoccupied setpoint. --:-- indicates no time is set for the Unoccupied setpoint. NOTE: There are 3 separate Unoccupied parameter entries. **Range**: 00:00 - 23:59, or --:--

Preferences

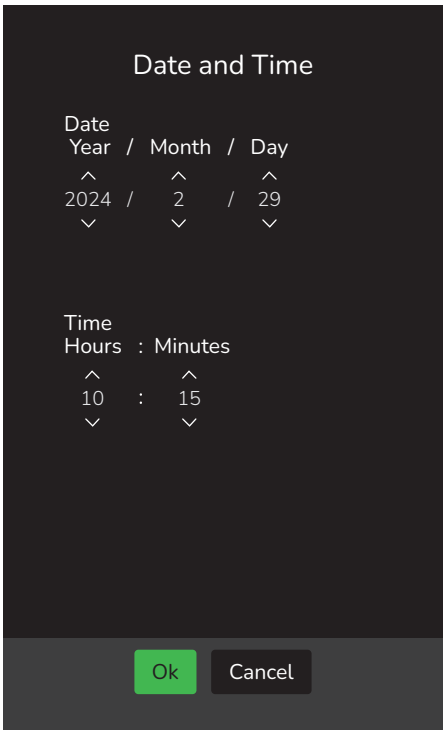
This Preferences screen is available via the Setup.



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Country	**Country** Offers the possibility of conditionally configuring the country of operation based on the factory-locked country code of the Room Controller. If the manufacturing region of the Room Controller is: • Defined: This field will use the same value and will not be editable. • Not defined: This field will be a drop-down list of available countries to choose from. Note: This feature is not available on the North American Room Controller model.
Date and Time	**Date and Time** Defines the current date and time: Year-Month-Day + 12 hour AM-PM or 24 hour format. The latter is determined by the Time Format parameter value. Refer to “Display” on page 78 for more information.
Display	Refer to “Display” on page 78 for more information.
Halo	Refer to “Halo” on page 80 for more information.
Language Selection	Refer to “Language Selection” on page 81 for more information.
Time Zone	Refer to “Time Zone” on page 83 for more information.

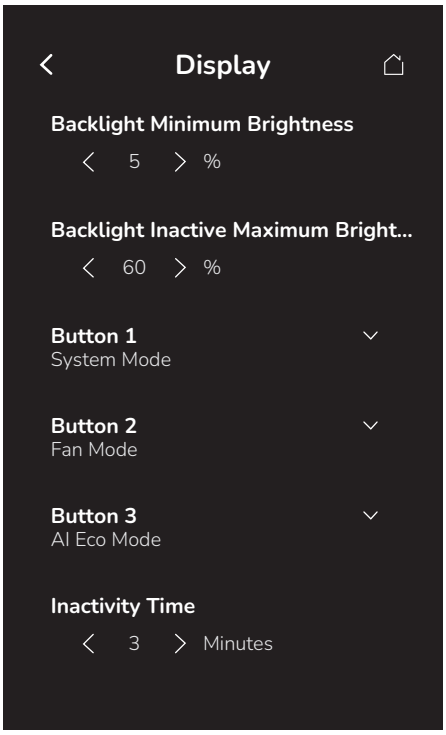
Date and Time



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Date Default value: **Current date at power up**	**Date** Standard date display, Year/Month/Day.
Time Default value: **Current time at power up**	**Time** Standard time display, 12 hour AM-PM or 24 hour format determined by the Time Format parameter value. Refer to “Display” on page 78 for more information.

Display

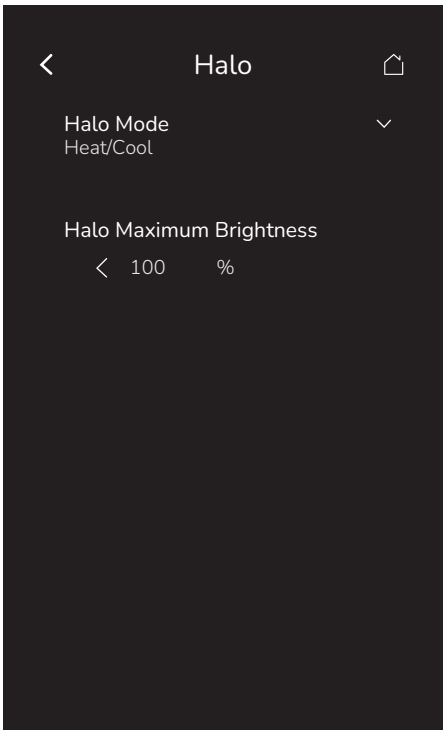


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Backlight Minimum Brightness Default value: **5%** **AV4**	**Night Backlight** Sets the lowest display backlight intensity. **Range**: 0% to Value of Backlight Inactive Maximum Brightness (e.g., 60%) (Resolution: 1%)
Backlight Inactive Maximum Brightness Default value: **60%** **AV3**	**Low Backlight** Sets the display backlight intensity. This feature is activated (screen dims) after 150 seconds of no activity on the Room Controller. **Range**: Value of Backlight Minimum Brightness (e.g., 5%) to 100% (Resolution: 1%)
Button 1 Default value: **System Mode** **MV195**	**Button 1** Used to configure the feature controlled by the first of three buttons on the home screen. **Choices:** 1=Disabled, 2=System Mode, 3=Fan Mode, 4=AI Eco Mode
Button 2 Default value: **Fan Mode** **MV196**	**Button 2** Used to configure the feature controlled by the second of three buttons on the home screen. **Choices:** 1=Disabled, 2=System Mode, 3=Fan Mode, 4=AI Eco Mode
Button 3 Default value: **AI Eco Mode** **MV197**	**Button 3** Used to configure the feature controlled by the third of three buttons on the home screen. **Choices:** 1=Disabled, 2=System Mode, 3=Fan Mode, 4=AI Eco Mode
Inactivity Time Default value: **3 Minutes** **AV231**	**Inactivity Time** Used for: • Standby screen activation • Backlight inactivity timeout **Range**: 1 to 10 Minutes (Resolution: 1 Minute)

Parameter Default Value	Significance and Adjustments
Info Item 1 Default value: **Humidity** **MV200**	**Info Item 1** Used to configure the information shown on the first of three lines on the home screen. Each information can only be shown on one Info Item. If one is selected on a second Info Item, the first item will be set to Disabled. **Choices**: 1=Disabled, 2=Humidity, 3=CO_2 Level, 4=Outdoor Air Temperature
Info Item 2 Default value: **CO_2 Level** **MV201**	**Info Item 2** Used to configure the information shown on the second of three lines on the home screen. Each information can only be shown on one Info Item. If one is selected on a second Info Item, the first item will be set to Disabled. **Choices**: 1=Disabled, 2=Outdoor Air Temperature, 3=Humidity, 4=CO_2 Level
Info Item 3 Default value: **Outdoor Air Temperature** **MV202**	**Info Item 3** Used to configure the information shown on the third of three lines on the main display. Each information can only be shown on one Info Item. If one is selected on a second Info Item, the first item will be set to Disabled. **Choices**: 1=Disabled, 2=Outdoor Air Temperature, 3=Humidity, 4=CO_2 Level
Notifications Default value: **All** **MV187**	**Notification Display Type** Used to configure the display of notifications on screen: • Disabled: No notifications shown. • Custom Only: Custom notifications shown, but no In-built notifications. • All: Custom and in built notifications shown. **Choices**: 1=Disabled, 2=Custom Only, 3=All
Setpoint Control Default value: **Slider** **MV192**	**HMI Setpoint** Used to configure the temperature setpoint control type on the home screen. **Choices**: 1=None, 2=Slider, 3=Buttons (Attached SP Only)
Standby Screen Default value: **Disable** **MV32**	**Use Standby Screen** Used to choose whether to display a custom image or not when the Room Controller switches to Standby Mode after a configurable amount of inactive time. **Choices**: 1=Disabled, 2=Custom Image
Time Format Default value: **12 Hour (AM-PM)** **MV5**	**Time Format** Used to configure the user's preferred display time format. For example: • 12 Hour (AM-PM): 5:41 PM • 24 Hour: 17:41 or 01:23 **Choices**: 1=12 Hour (AM-PM), 2=24 Hour

Halo



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Halo Mode Default value: **Heat/Cool** **MV194**	**Halo Mode** • Disabled: Halo remains off • Heat/Cool: ▪ Orange: Heating ▪ Blue: Cooling ▪ Off: On standby (room temperature at setpoint) **Choices**: 1=Disabled, 2=Heat/Cool
Halo Maximum Brightness Default value: **100%** **AV236**	**Halo Maximum Brightness** Controls the maximum brightness of the halo LED. **Range**: 0% to 100%

Language Selection

Only English, French, Spanish, Chinese, and Russian are enabled by default and are accessible to users cycling through languages on the main Preferences screen. To change the language selection settings, tap a language on the screen and then use the arrow buttons to disable or enable it.

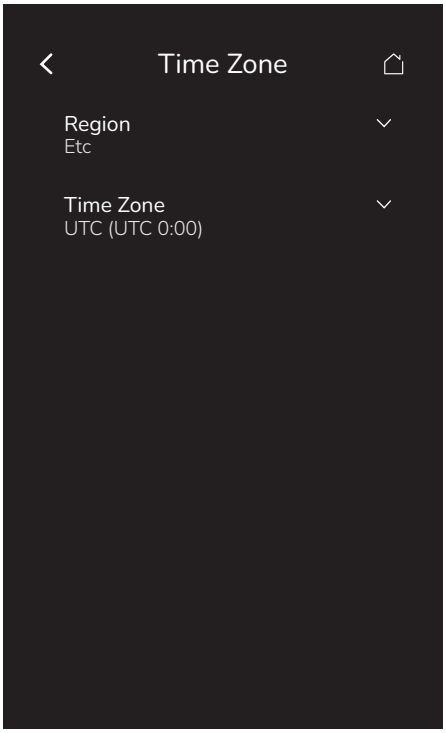
NOTE: English is always enabled.

PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Arabic **Default value: Disabled** **MV120**	**Arabic** **Choices**: 1=Disabled, 2=Enabled
Chinese **Default value: Enabled** **MV103**	**Chinese** **Choices**: 1=Disabled, 2=Enabled
Czech **Default value: Disabled** **MV122**	**Czech** **Choices**: 1=Disabled, 2=Enabled
Danish **Default value: Disabled** **MV123**	**Danish** **Choices**: 1=Disabled, 2=Enabled
Dutch **Default value: Disabled** **MV124**	**Dutch** **Choices**: 1=Disabled, 2=Enabled
Finnish **Default value: Disabled** **MV125**	**Finnish** **Choices**:1=Disabled, 2=Enabled
French **Default value: Enabled** **MV101**	**French** **Choices**: 1=Disabled, 2=Enabled
German **Default value: Disabled** **MV126**	**German** **Choices**: 1=Disabled, 2=Enabled
Hebrew **Default value: Disabled** **MV160**	**Hebrew** **Choices**: 1=Disabled, 2=Enabled

Parameter Default Value	Significance and Adjustments
Hungarian **Default value: Disabled** **MV127**	**Hungarian** **Choices**: 1=Disabled, 2=Enabled
Indonesian **Default value: Disabled** **MV128**	**Indonesian** **Choices**: 1=Disabled, 2=Enabled
Italian **Default value: Disabled** **MV129**	**Italian** **Choices**: 1=Disabled, 2=Enabled
Japanese **Default value: Disabled** **MV159**	**Japanese** **Choices**: 1=Disabled, 2=Enabled
Norwegian **Default value: Disabled** **MV130**	**Norwegian** **Choices**: 1=Disabled, 2=Enabled
Polish **Default value: Disabled** **MV131**	**Polish** **Choices**: 1=Disabled, 2=Enabled
Portuguese **Default value: Disabled** **MV132**	**Portuguese** **Choices**: 1=Disabled, 2=Enabled
Russian **Default value: Enabled** **MV104**	**Russian** **Choices**:1=Disabled, 2=Enabled
Slovak **Default value: Disabled** **MV133**	**Slovak** **Choices**: 1=Disabled, 2=Enabled
Spanish **Default value: Enabled** **MV102**	**Spanish** **Choices**: 1=Disabled, 2=Enabled
Swedish **Default value: Disabled** **MV134**	**Swedish** **Choices**: 1=Disabled, 2=Enabled
Turkish **Default value: Disabled** **MV135**	**Turkish** **Choices**: 1=Disabled, 2=Enabled

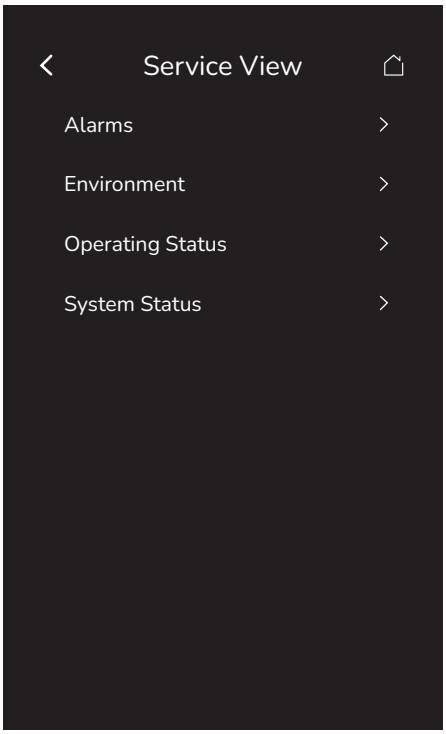
Time Zone



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Region Default value: **Etc**	**Region** Allows the user to configure their local time zone via the local interface. **Choices**: 1=Africa, 2=America, 3=Asia, 4=Australia, 5=Etc, 6=Europe, 7=Pacific
Time Zone Default value: **UTC** **CSV40**	**Timezone** • Africa ▪ Brazzaville (UTC 1:00) ▪ Cairo (UTC 2:00) ▪ Harare (UTC 2:00) ▪ Nairobi (UTC 3:00) • America ▪ Anchorage (UTC -8:00) ▪ Buenos Aires (UTC -3:00) ▪ Chicago (UTC -5:00) ▪ Denver (UTC -6:00) ▪ Godthab (UTC -3:00) ▪ Halifax (UTC -3:00) ▪ Los Angeles (UTC -7:00) ▪ Manaus (UTC -4:00) ▪ Mexico City (UTC -6:00) ▪ New York (UTC -4:00) ▪ Phoenix (UTC -7:00) ▪ Regina (UTC -6:00) ▪ Santiago (UTC -4:00) ▪ Sao Paulo (UTC -3:00) ▪ St Johns (UTC -1:30) ▪ Tijuana (UTC -7:00) • Asia ▪ Bangkok (UTC 7:00) ▪ Chongqing (UTC 8:00) ▪ Dubai (UTC 4:00) ▪ Hong Kong (UTC 8:00) ▪ Jerusalem (UTC 2:00) ▪ Katmandu (UTC 5:45) ▪ Kolkata (UTC 5:30) ▪ Kuala Lumpur (UTC 8:00) ▪ Kuwait (UTC 3:00) ▪ Rangoon (UTC 6:30) ▪ Seoul (UTC 9:00) ▪ Shanghai (UTC 8:00) ▪ Taipei (UTC 8:00) ▪ Tehran (UTC 4:30) ▪ Tokyo (UTC 9:00) • Australia ▪ Adelaide (UTC 10:30) ▪ Brisbane (UTC 10:00) ▪ Darwin (UTC 9:30) ▪ Hobart (UTC 11:00) ▪ Perth (UTC 8:00) ▪ Sydney (UTC 11:00) • Etc. ▪ UTC • Europe ▪ Amsterdam (UTC 1:00) ▪ Belgrade (UTC 1:00) ▪ Berlin (UTC 1:00) ▪ Brussels (UTC 1:00) ▪ Helsinki (UTC 2:00) ▪ Istanbul (UTC 3:00) ▪ London (UTC 0:00) ▪ Moscow (UTC 3:00) ▪ Rome (UTC 1:00) ▪ Sarajevo (UTC 1:00) • Pacific ▪ Auckland (UTC 12:00) ▪ Guam (UTC 10:00) ▪ Honolulu (UTC -10:00) ▪ Majuro (UTC 12:00) ▪ Midway (UTC -11:00) **Choices**: Choices depends on the selected Region

Service View

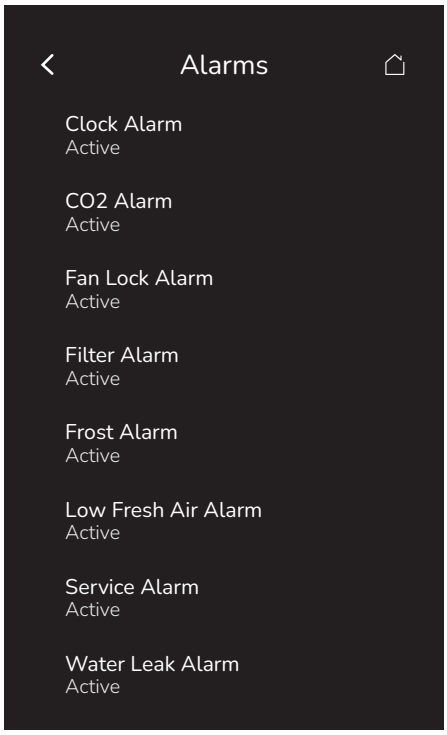


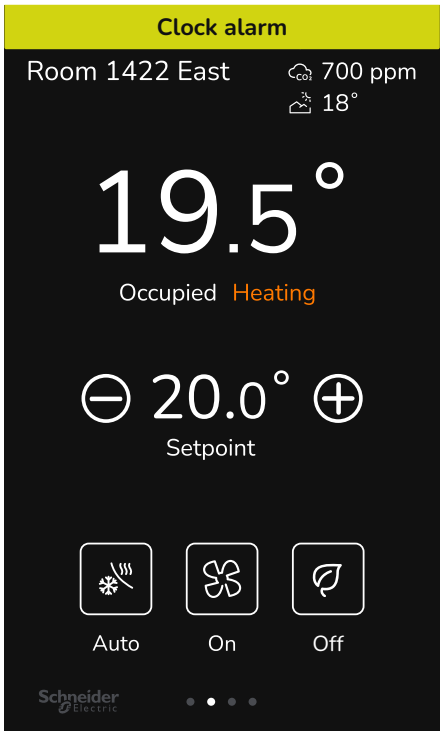
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Alarms	Refer to “Alarms” on page 85 for more information.
Environment	Refer to “Environment” on page 88 for more information.
Operating Status	Refer to “Operating status” on page 90 for more information.
System Status	Refer to “System Status” on page 91 for more information.

Alarms

The information displayed on this screen depends on the Room Controller configuration and the installed sensors. When an alarm is active, a notification will be displayed in a banner on the top of the home screen. Refer to “Appendix D: Notifications” on page 110 for more information.





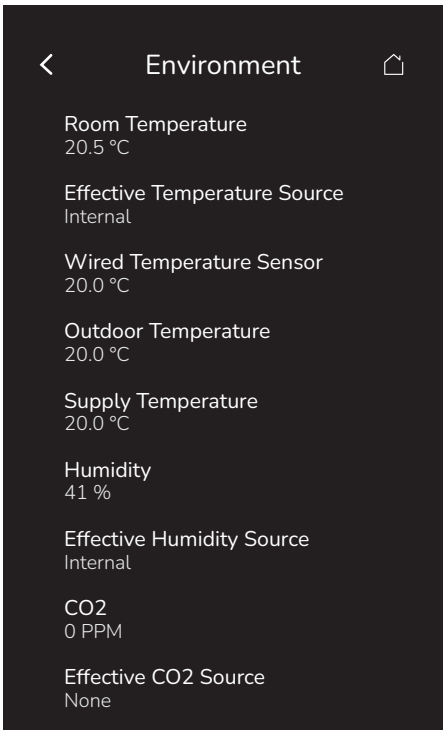
PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Clock Alarm Default value: **Off** Read Only **BV8**	**Clock Alarm** The Room Controller activates a Clock Alarm upon startup when: • Occupancy Command is set to Local Occupancy. • Occupancy Source is set to a value involving schedules. • The Room Controller time is invalid, resulting in scheduled occupancy not functioning. Upon startup when Clock Alarm is active, the occupancy status will be Unoccupied. Notification type: Warning: Yellow banner **Display Readings:** 0=Off, 1=On
CO_2 Alarm Default value: **Off** Read Only **BV41**	**CO_2 Alarm** The Room Controller activates a CO_2 Alarm when: The CO_2 level is greater than the configured “Maximum CO_2” for 30 minutes or more. Notification type: Warning: Yellow banner **Display Readings:** 0=Off, 1=On
Fan lock Alarm Default value: **Off** Read Only **BV39**	**Fan Lock Alarm** The Room Controller supports Fan Lock Alarms: When the (G) Fan Output is activated, if this input is not activated after 10 seconds, the Room Controller disables Heat and Cool outputs and enables the “Fan Lock” alarm. The alarm is cleared when: • Fan Lock input is activated, or • (G) Fan is deactivated Notification type: Critical: Red banner **Display Readings:** 0=Off, 1=On

Parameter Default Value	Significance and Adjustments
Filter Alarm Default value: **Off** Read Only **BV36**	**Filter Alarm** The Room Controller supports Filter Alarms. • Active when: ▪ Configurable input U2 is configured as Filter Alarm, AND ▪ Input is active • Inactive when: ▪ Configurable input U2 is not configured as Filter Alarm, OR ▪ Input is inactive Notification type: Critical: Red banner **Display Readings:** 0=Off, 1=On
Frost Alarm Default value: **Off** Read Only **BV43**	**Frost Protection Alarm** The Room Controller supports Frost Alarms: • The room frost protection operates in all system modes, even 'Off'. • When room temperature is less than 42°F (5.6°C): ▪ Frost Protection alarm is activated. ▪ Pressure-Independent Heating Demand is forced to 100%. Notification type: Critical: Red banner **Display Readings:** 0=Off, 1=On
Wireless Sensor Low Battery Default value: **Off** Read Only **BV5**	**Low Battery Alarm** The Room Controller supports Low Battery Alarms. • Active when: Any paired Zigbee device has a low battery level. • Inactive when: All paired Zigbee devices have a normal battery level. Notification type: Warning: Yellow banner **Display Readings:** 0=Off, 1=On
Low Fresh Air Alarm Default value: **Off** Read Only **BV42**	**Low Fresh Air Alarm** The Room Controller supports Low Fresh Air Alarms. • Enabled when: The "Fresh Air Range Upper Limit" is greater than zero. • Active when: The fresh air flow is 15% or more below the configured "Minimum Fresh Air" for 30 minutes or more. Notification type: Warning: Yellow banner **Display Readings:** 0=Off, 1=On
Service Alarm Default value: **Off** Read Only **BV37**	**Service Alarm** The Room Controller supports Service Alarms. • Active when: ▪ Configurable input U2 is configured as Service Alarm, AND ▪ Input is active • Inactive when: ▪ Configurable input U2 is not configured as Service Alarm, OR ▪ Input is inactive Notification type: Critical: Red banner **Display Readings:** 0=Off, 1=On
Water Leak Alarm Default value: **Off** Read Only **BV44**	**Water Leak Alarm** The Room Controller activates a Water Leak Alarm when: • Active when any connected water leak sensor reports a leak. • Inactive when all connected water leak sensors report no leak. Notification type: Critical: Red banner **Display Readings:** 0=Off, 1=On

Parameter Default Value	Significance and Adjustments
Window Alarm Default value: **Off** Read Only **BV35**	**Window Alarm** The Room Controller supports Window Alarms. • Active when: Any connected wired or wireless window sensor reports an open window. • Inactive when: All connected wired and wireless window sensors report closed windows. Notification type: Warning: Yellow banner **Display Readings:** 0=Off, 1=On
Wireless Sensor Offline Default value: **Off** Read Only **BV50**	**Wireless Sensor Communication Alarm** The Room Controller supports Wireless Sensor Communication Alarms. • Active when: Any paired Zigbee device stops comminicating. • Inactive when: All paired Zigbee devices are communicating normally. Notification type: Warning: Yellow banner **Display Readings:** 0=Off, 1=On

Environment

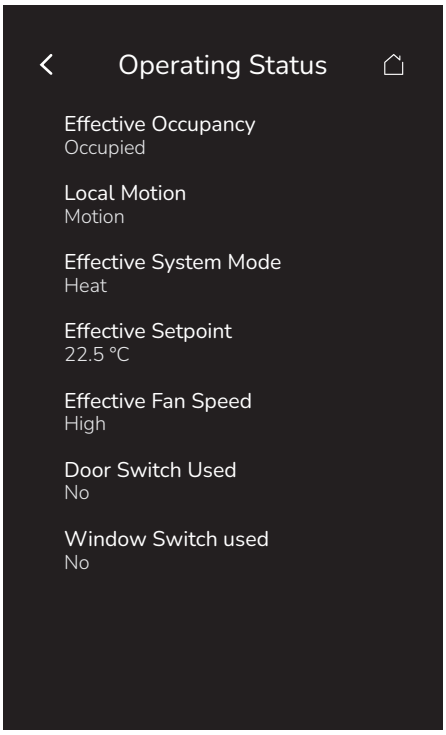


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Room Temperature Read Only **AV100**	**Room Temperature** Displays the current room temperature. **Display Readings**: -40°F to 122°F (-40.0°C to 50.0°C)
Effective Temperature Source Default value: **Wired** Read Only **MSI309**	**Effective Temperature Sensor** Sets the source of the indoor room temperature. This parameter allows the user to designate either the Room Controller or any of the paired wireless devices that support temperature to function as the source for the room temperature. • Wired: Sets the thermistor connected to U4 (RS) as the source to report room temperature. • Internal: Sets the Room Controller as the source for the room temperature. • Wireless Sensor 1 to 20: Sets the selected Zigbee wireless device as the source for the room temperature. Only one device can be selected. NOTE: The Room Controller uses the internal temperature sensor only if the U4 (RS) terminal is empty. If a valid temperature sensor is connected to the U4 terminal, the Room Controller will use the sensor as the control point. Disconnecting the sensor, or if the sensor is faulty, the Room Controller will automatically revert to its internal temperature sensor. **Display Readings**: Wired, Internal, Wireless Sensor 1, Wireless Sensor 2, Wireless Sensor 3, Wireless Sensor 4, Wireless Sensor 5, Wireless Sensor 6, Wireless Sensor 7, Wireless Sensor 8, Wireless Sensor 9, Wireless Sensor 10, Wireless Sensor 11, Wireless Sensor 12, Wireless Sensor 13, Wireless Sensor 14, Wireless Sensor 15, Wireless Sensor 16, Wireless Sensor 17, Wireless Sensor 18, Wireless Sensor 19, Wireless Sensor 20
Wired Temperature Sensor Default value: **-40.0°F (-40.0°C)** Read Only **AV105**	**Wired Temperature Sensor** Displays the current room temperature, as recorded by the Wired Temperature Sensor. All wired temperature sensors are 10,000 ohm Type 2 NTC thermistor. **Display Readings**: -40.0°F to 180.0°F (-40.0°C to 82.0°C)
Outdoor Temperature Default value: **-40.0°F (-40.0°C)** Read Only **AV101**	**Outdoor Temperature** Displays the outdoor temperature on the main screen. All wired temperature sensors are 10,000 ohm Type 2 NTC thermistor. **Display Readings**: -40.0°F to 180.0°F (-40.0°C to 82.0°C)

Parameter Default Value	Significance and Adjustments
Supply Temperature Default value: **-40.0°F (-40.0°C)** Read Only **AV102**	**Supply Temperature** Displays the supply air temperature, as measured by the sensor. All wired temperature sensors are 10,000 ohm Type 2 NTC thermistor. **Display Readings**: -40.0°F to 180.0°F (-40.0°C to 82.0°C)
Humidity Read Only **AV103**	**Room Humidity** Indicates the current level of humidity inside this room. **Display Readings**: 0% to 100%
Effective Humidity Source Default value: **None** Read Only **MSI313**	**Effective Relative Humidity Sensor** Indicates the type of relative humidity sensor used with this Room Controller. **Display Readings**: Wired, Internal, Wireless Sensor 1, Wireless Sensor 2, Wireless Sensor 3, Wireless Sensor 4, Wireless Sensor 5, Wireless Sensor 6, Wireless Sensor 7, Wireless Sensor 8, Wireless Sensor 9, Wireless Sensor 10, Wireless Sensor 11, Wireless Sensor 12, Wireless Sensor 13, Wireless Sensor 14, Wireless Sensor 15, Wireless Sensor 16, Wireless Sensor 17, Wireless Sensor 18, Wireless Sensor 19, Wireless Sensor 20
CO2 Default value: **0 PPM** Read Only **AV106**	**CO2 Level** Indicates the current level of CO_2 in parts per million (PPM). **Display Readings**: 0 PPM to 5000 PPM
Effective CO2 Source Default value: **None** Read Only **MSI324**	**CO2 Effective Source** Indicates the type of CO_2 sensor used with this Room Controller. **Display Readings**: None, Internal, Error, Wired, Wireless Sensor 1, Wireless Sensor 2, Wireless Sensor 3, Wireless Sensor 4, Wireless Sensor 5, Wireless Sensor 6, Wireless Sensor 7, Wireless Sensor 8, Wireless Sensor 9, Wireless Sensor 10, Wireless Sensor 11, Wireless Sensor 12, Wireless Sensor 13, Wireless Sensor 14, Wireless Sensor 15, Wireless Sensor 16, Wireless Sensor 17, Wireless Sensor 18, Wireless Sensor 19, Wireless Sensor 20
Door Switch Used Default value: **No** Read Only **BV2**	**Door Contact Installed** Used to indicate that a Zigbee or wired door sensor is in use. **Display Readings**: 0=No, 1=Yes
Window Switch Used Default value: **No** Read Only **BV4**	**Window Contact Installed** Used to indicate that a Zigbee or wired window sensor is in use. **Display Readings**: 0=No, 1=Yes

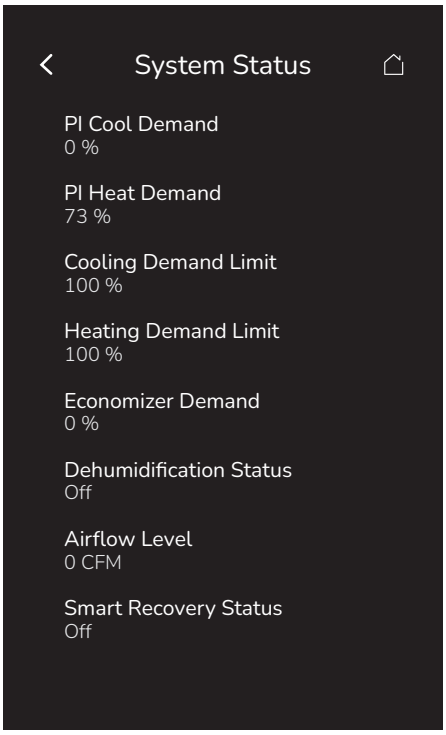
Operating status



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Effective Occupancy Default value: **Occupied** Read Only **MSI33**	**Effective Occupancy** Displays the occupancy mode currently in operation. **Display Readings**: 1=Occupied, 2=Unoccupied, 3=Override, 4=Standby
Local Motion Default value: **No Motion** Read Only **BV32**	**PIR Local Motion** Indicates whether the Motion alarm is active or not. **Display Readings**: 0=No motion, 1=Motion
Effective System Mode Default value: **Cool** Read Only **MSI314**	**Effective System Mode** Displays the current operating mode of the system. For example, when the system is in Auto mode, this parameter shows whether it is currently heating or cooling. **Display Readings:** 1=Cool, 2=Heat
Effective Setpoint Default value: **40°F (4.5°C)** Read Only **AI329**	**Effective Setpoint** Displays the value of the temperature setpoint currently in operation. **Display Readings**: 40.0°F to 100.0°F (4.5°C to 38.0°C)
Effective Fan Speed Default value: **Off** Read Only **MSI326**	**Fan Speed Status** Displays the fan speed currently in operation. **Display Readings:** 1=Off, 2=Low, 3=Medium, 4=High
Door Switch Used Default value: **No** Read Only **BV2**	**Door Contact Installed** Used to indicate that a Zigbee or wired door sensor is in use. **Display Readings**: 0=No, 1=Yes
Window Switch Used Default value: **No** Read Only **BV4**	**Window Contact Installed** Used to indicate that a Zigbee or wired window sensor is in use. **Display Readings**: 0=No, 1=Yes

System Status



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
PI Cool Demand Default value: **0%** Read Only **AO22**	**PI Cooling Demand** Displays the percentage of demand for cooling in the zone, using a Proportional-Integral control loop. **Display Readings**: 0% to 100% (Resolution: 1%)
PI Heat Demand Default value: **0%** Read Only **AO21**	**PI Heating Demand** Displays the percentage of demand for heating in the zone, using a Proportional-Integral control loop. **Display Readings**: 0% to 100% (Resolution: 1%)
Cooling Demand Limit Default value: **100%** Read Only **AV89**	**Cooling Demand Limit** Displays the configurable maximum limits for cooling. It is configurable via the BACnet and Modbus interfaces. **Display Readings**: 0% to 100% (Resolution: 1%)
Heating Demand Limit Default value: **100%** Read Only **AV88**	**Heating Demand Limit** Displays the configurable maximum limits for heating. It is configurable via the BACnet and Modbus interfaces. **Display Readings**: 0% to 100% (Resolution: 1%)
Economizer Demand Read Only **AO23**	**Economizer Demand** **Display Readings**: 0-100%
Dehumidification Status Default value: **Off** Read Only **BV38**	**Dehumidification Status** Indicates whether dehumidification is currently active or inactive. Used when Dehumidification is enabled. **Display Readings:** 0=Off, 1=On

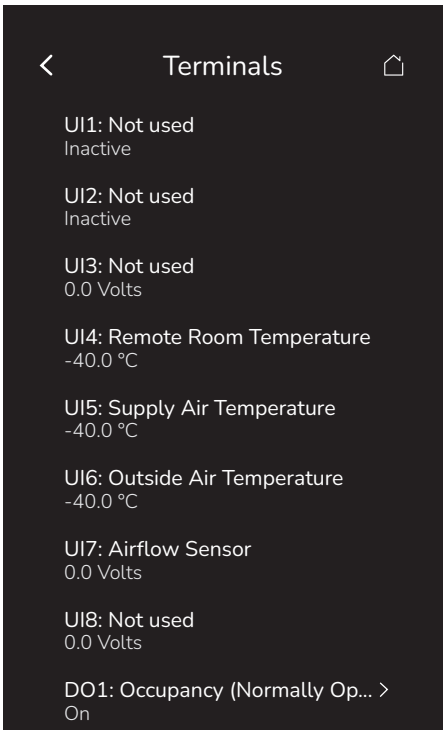
Parameter Default Value	Significance and Adjustments
Airflow Level Default value: **0 CFM** Read Only **AV107**	**Airflow Level** Displays the amount of air (in cubic feet/minute or liters/second) that flows through a particular device. **Display Readings**: 0 to 20,000 CFM (0 to 9440 l/s)
Smart Recovery Status Default value: **Off** Read Only **BV40**	**Smart Recovery Status** • Off: No smart recovery. The occupied schedule time is the time at which the system will restart. • On: Smart recovery active. The occupied schedule time is the time at which the desired occupied temperature will be attained. The Room Controller automatically optimizes the equipment start time. In any case, the latest a system will restart is 10 minutes prior to the occupied period time. Smart recovery is automatically disabled if U1 is configured to remote NSB. **Display Readings**: Off, On

Setpoints

PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Unoccupied Cooling Setpoint Default value: **80.0°F (26.5°C)** **AV44**	**Unoccupied Cool Setpoint** Displays the Cooling Temperature setpoint used when in Unoccupied mode. **Range**: 54.0°F to 100.0°F (12.0°C to 37.5°C)
Standby Cooling Setpoint Default value: **78.0°F (25.5°C)** **AV42**	**Standby Cool Setpoint** Displays the Cooling Temperature setpoint used when in Standby mode. **Range**: 54.0°F to 100.0°F (12.0°C to 37.5°C)
Occupied Cooling Setpoint Default value: **75.0°F (24.0°C)** Read Only **AV40**	**Occupied Cool Setpoint** Displays the Cooling Temperature setpoint used when in Occupied or Override mode. **Display Readings**: 54.0°F to 100.0°F (12.0°C to 37.5°C)
Occupied Heating Setpoint Default value: **72.0°F (22.0°C)** Read Only **AV39**	**Occupied Heat Setpoint** Displays the Heating Temperature setpoint used when in Occupied or Override mode. **Display Readings**: 40.0°F to 90.0°F (4.5°C to 32.0°C)
Standby Heating Setpoint Default value: **69.0°F (20.5°C)** **AV41**	**Standby Heat Setpoint** Displays the Heating Temperature setpoint used when in Unoccupied mode. **Range**: 40.0°F to 90.0°F (4.5°C to 32.0°C)
Unoccupied Heating Setpoint Default value: **62.0°F (16.5°C)** **AV43**	**Unoccupied Heat Setpoint** Displays the Heating Temperature setpoint used when in Unoccupied mode. **Range**: 40.0°F to 90.0°F (4.5°C to 32.0°C)
Dehumidification Setpoint Default value: **50%** **AV71**	**Dehumidification Setpoint** Displays the Dehumidification setpoint used when dehumidification is enabled. **Range**: 30% to 95%

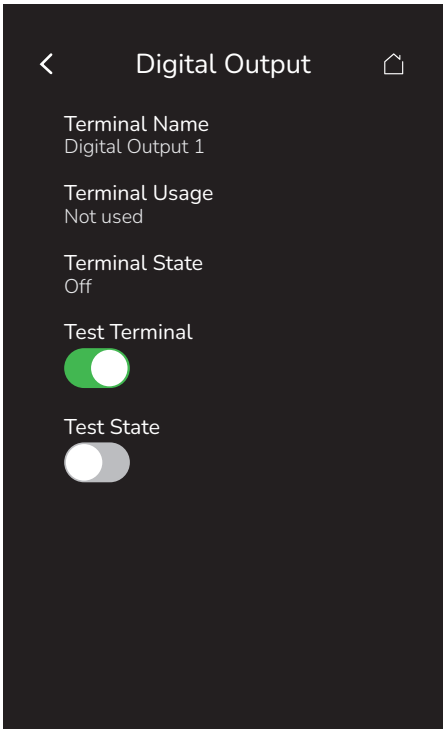
Terminals



PARAMETER DETAILS

- Terminals will be shown with their usage, based on their configuration.
- Inputs will show the binary state, analog voltage or temperature based on their configuration.
- Outputs can be binary or analog outputs, and can be controlled by clicking on the output to access the corresponding Test Output page.

Digital Output

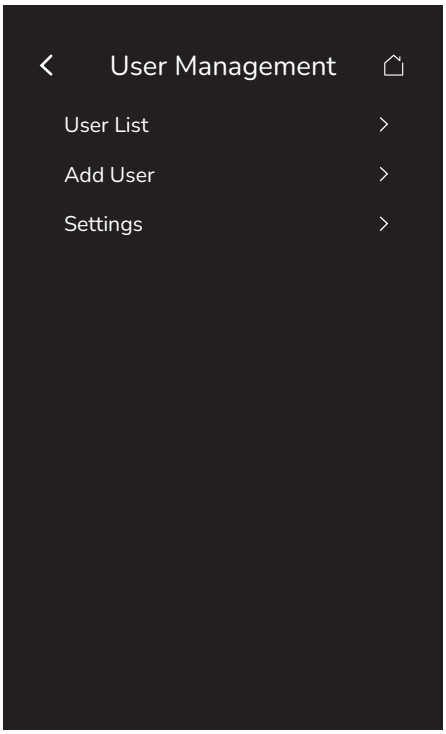


PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Terminal Name Read Only	**Terminal Name** Displays the full name of this Digital Output. **Display Readings:** Active, Inactive
Terminal Usage Read Only	**Terminal Usage** The Terminal Usage is based on the current configuration of the Room Controller: • Native features include: ▪ DO1 ▪ Y1 Cool ▪ Y2 Cool ▪ W1 Heat ▪ W2 Heat ▪ Low Speed Fan ▪ Medium Speed Fan ▪ High Speed Fan ▪ Supply Temperature Sensor ▪ Filter Alarm • Terminals under the control of BACnet/Lua can be customized
Terminal State Read Only	**Terminal State** Displays the status of this Digital Output relay: • On: Relay closed • Off: Relay open NOTE: For D6, the relay will be selected by the configured output type. **Display Readings:** Off, On

Parameter Default Value	Significance and Adjustments
Test Terminal Default value: **Disabled**	**Test Terminal** Used to disable/enable the verification of this Digital Output terminal. If enabled, it allows the user to see the Test State feature. NOTES: • The test must be disabled when the user disables Test Terminal or when the Terminals screen is exited (user exit, timeout). • The test is disabled when the (parent) Terminals screen is exited rather than the individual output page, to allow the test of two terminals in combination. In the case of an ECM fan, for example, it has a Digital Output to enable it, then an Analog Output to control the speed. **Choices:** Disabled, Enabled
Test State Default value: **Disabled**	**Test State** Used to disable/enable the verification of this Digital Output status. Test State is only visible if Test Terminal is set to enabled. **Choices:** Disabled, Enabled

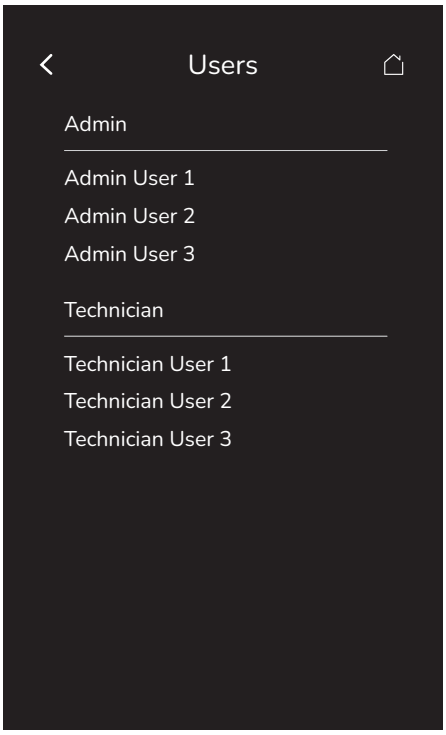
User Management



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
User List	Refer to “User List” on page 98 for more information.
Add User	Refer to “Add User” on page 100 for more information.
Settings	Refer to “Settings” on page 101 for more information.

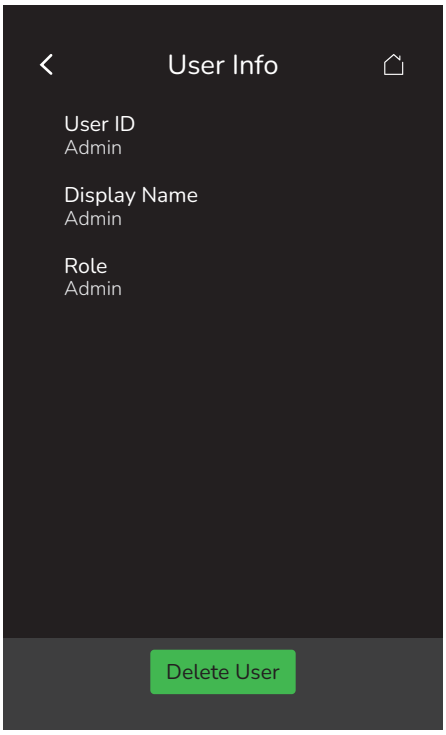
User List



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
User List	Displays the list of available users on this Room Controller. Tapping on a name will open the User Info screen. Refer to “User Info” on page 99 for more information.

User Info

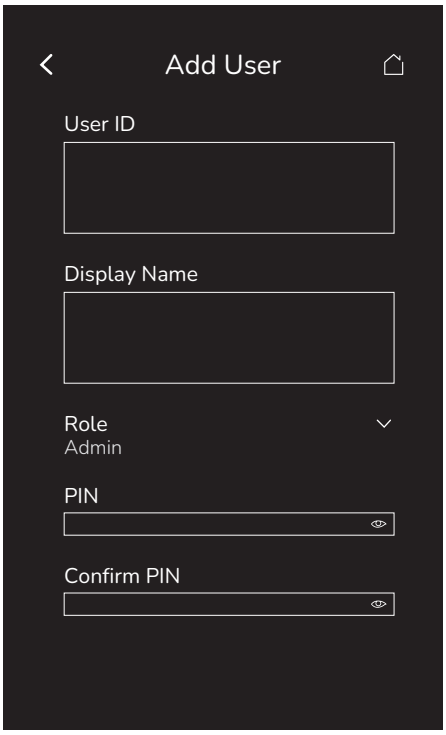


PARAMETER DETAILS

NOTE: The Delete User button is only visible to Admin users.

Parameter Default Value	Significance and Adjustments
User ID Read Only **CSV31**	**Active User Id** Displays the user name that is unique on this Room Controller. **Display Readings**: 3 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Display Name Read Only	**Display Name** Displays the user screen name. **Display Readings**: 3 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Role Read Only	**Role** • Technician: Access to HVAC and local Room Controller-related configuration, but not to IP, FWU etc. • Admin: Full access to all screens and features. **Display Readings**: Technician, Admin

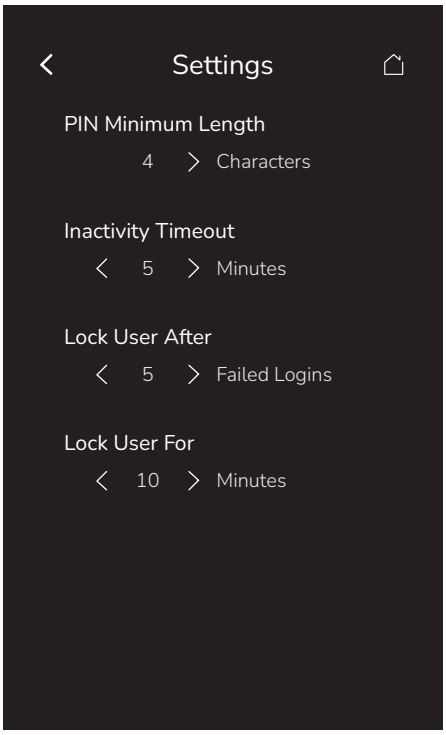
Add User



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
User ID **CSV31**	**Active User Id** Allows the user to enter a user name that is unique on this Room Controller. **Range**: 3 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Display Name	**Display Name** Allows the user to enter a screen name. **Range**: 3 to 32 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Role Default value: **Technician**	**Role** • Technician: Access to HVAC and local Room Controller-related configuration, but not to IP, FWU etc. • Admin: Full access to all screens and features. **Choices**: Technician, Admin
PIN	**PIN** Allows the user to create a unique protective access PIN. The PIN can be up to a configurable number of 16 digits (PIN Minimum Length). Refer to “Settings” on page 101 for more information. **Range**: 0 to 9999 (0-9)
Confirm PIN	**Confirm PIN** Allows the user to reenter the protective access PIN to confirm and complete the process. The PIN can be up to a configurable number of 16 digits (PIN Minimum Length). Refer to “Settings” on page 101 for more information. **Range**: 0 to 9999 (0-9)

Settings



PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
PIN Minimum Length Default value: **4**	**PIN Minimum Length** Sets the minimum number of characters required for user PINs. **Range:** 4 to 16 characters
Inactivity Timeout Default value: **5 Minutes**	**Inactivity Timeout** Sets the configurable period of inactivity (no touches of the screen) before the Room Controller automatically signs a user out. **Range**: 1 to 60 Minutes
Lock User After Default value: **5 Failed Logins**	**Lock User After** Sets the configurable number of consecutive unsuccessful login attempts before the Room Controller: • Locks the user out for a configurable number of minutes defined in Lock User For. • Notifies the user that they have been locked out and for how long. **Range**: 1 to 10 Failed Logins
Lock User For Default value: **10 Minutes**	**Lock User For** Sets the configurable number of minutes during which a user is locked out after the number of consecutive unsuccessful login attempts defined in Lock User After. The Room Controller will notify the user when they have been locked out and for how long. **Range**: 1 to 60 Minutes

SECTION 4

Appendices

Appendix A: Terminal Correspondence

The terminals of a TRC6500 are identified differently and have a wider range of possible functions compared to those of any of the VT8650 Room Controllers. Nonetheless, there is a direct correspondence of functions between the terminals of the VT8650 and the TRC6500. Consult the table below to verify the appropriate terminal when replacing a VT8650 Room Controller with a TRC6500 Room Controller.

VT8650 Terminal ID	VRC6500 Terminal ID
BO1	D1
Y2	D2
Y1	D3
G	D4
RC	RC
C	C
RH	RH
W1	D5
W2-O/B	A1/D6
Economizer	A2/D7
Auxiliary Heat	A3/D8
Dehumidifier	A4/D9
RS485 +	RS485 +
RS485 -	RS485 -
RS485 REF	RS485 REF
UI16	U1
UI17	U2
COM	COM
UI19	U3
UI20 (RS)	U4
COM	COM
UI22 (SAT)	U5
UI23 (OAT)	U6
UI24	U7
--	U8

Appendix B: Cybersecurity Checklist

Physical Security

Security Screw

☐ It is important to install the security screw on the bottom of the unit.

If this screw is not installed:
- The device could be stolen.
- An attacker could potentially access the RS-485 communication bus and perform unauthorized actions on the communication network.
- The device could be factory reset by an unauthorized person.

RS-485 Wiring (BACnet/MSTP and Modbus RTU)

☐ BACnet/MSTP and Modbus RTU networks rely on the physical security of RS-485 wiring. It must therefore be installed behind physical barriers, so it is only accessible to authorized personnel.

An attacker with access to the RS-485 communication bus could potentially perform unauthorized actions on the communication network.

RS-485 wiring is present on the base board, so access must be limited to authorized personnel only. Install the security screw, as described in the previous section.

NOTICE

ACCESS TO RS-485 WIRING

Access to the RS-485 wiring of the BACnet/MSTP or Modbus/RTU network gives access to configure, upgrade, read logs or write files to the Touchscreen Room Controller. This must be restricted to authorized personnel only.

Failure to follow these instructions may lead to unauthorized users modifying the firmware or the configuration of the Room Controller.

Communication Networks

Disabled Unused Communication Networks

☐ BACnet/MSTP and Modbus/RTU are disabled by default and should be left disabled on the Viconics Room Controller if they are not used.

BACnet and Modbus can be disabled in the Network menu for the Viconics Room Controller.

NOTICE

NOT A SECURITY SYSTEM

While the Viconics Room Controller supports various sensors (PIR Motion, Door/Window, Water Leak), any alarming or notifications are best effort only. The Viconics Room Controller is NOT a security system, and no guarantees are given that an alarm will be generated or delivered to the Building Management System (BMS) or higher-level systems.

Failure to follow these instructions may lead to system failure.

Wi-Fi

Networks

☐ IP networks should be carefully planned and managed to minimize risks:
- Reference: Guidance on Implementing a Cybersecure BMS Architecture with EcoStruxure Building Operation.
- Use VLANs and firewalls to separate networks.
- Separate building control networks from networks or devices that:
  - Are critical systems.
  - Contain payment or private data.
  - Are publicly accessible (e.g., to guests or staff).
- Limit or disable external access to building control networks.

Viconics Room Controller

☐ Recommendations:
- Wi-Fi is disabled by default and should only be enabled when required.
- Regularly update your Room Controller firmware to ensure the latest Wi-Fi security enhancements are in use.
- Viconics Room Controller supports the following security protocols:
  - WPA2-personal
  - WPA3-personal (Recommended).
- Viconics Room Controller does not support connecting to Wi-Fi networks using the following insecure security protocols:
  - No security
  - WEP
  - WPA
- When a Viconics Room Controller is removed from a Wi-Fi network, ensure all security material is removed by performing:
  - “Disconnect and forget” from the Wi-Fi menu, or
  - Factory reset:
    - Full factory reset via reset pin, or
    - Software factory reset via Device info menu, with `Network` selected.
- Wi-Fi can be disabled and re-enabled in the Network menu. Disabling Wi-Fi does not remove network information from the Viconics Room Controller.
- All wireless networks are vulnerable to interference and jamming, which can block or disrupt communication. Carefully consider if wireless communications are appropriate for your application.

BACnet/IP

☐ BACnet/IP relies on security of the IP network:
- The device is intended to operate on a private IP network, without external connectivity, or protected by security aware device(s).
- Use VLANs and firewalls to separate the BACnet/IP network.
- Prevent access to the network by authorized people and devices by physically protecting IP cabling and managing wireless network access.
- Monitor your network to check for unexpected devices or traffic.
- Do not enable BACnet/IP on a public network.

NOTICE

UNAUTHORIZED ACCESS

It is very important to plan and manage the BACnet/IP network according to the above guidelines.

Failure to follow these instructions may lead to unintended access to the Room Controller.

Ping

☐ Ping is a useful debugging tool for IP devices, but it can also be used by attackers to perform DDoS attacks to overwhelm a device and attempt to disable it.

To prevent or reduce ping attacks, it is recommended to:
- Use a firewall to shield your network from malicious or unnecessary network traffic.
- Block ICMP ping in your firewalls. This prevents pings from external devices entering your network.
- Add filters to your firewall or router to drop packets from unknown sources.
- Use network monitoring software to detect unusual traffic patterns on your network.

Zigbee

- ☐ ZigBee is disabled by default and should only be enabled when required.

  ZigBee sensors that are no longer used should be removed from the Viconics Room Controller.

  ZigBee networks configured for “normal” security are vulnerable to sniffing attacks while Permit Join is active. Ensure Permit Join is only activated when necessary, then deactivate immediately afterwards.

  All wireless networks are vulnerable to interference and jamming, which can block or disrupt communication. Carefully consider if wireless communications are appropriate for your application.

User Management

Best Practices

- ☐ Accounts should not be shared between users. Unique accounts should be created for each user.
- ☐ When a user is no longer needed (e.g., employee leaves), their account should be removed.
- ☐ User accounts should be created with roles allowing the least privileges required to perform their tasks.

Roles	Administrator	Technician
Factory Reset via Menu	✓	⊘
General HVAC/device configuration	✓	✓
Lua – Enable remote device access	✓	⊘
Manage users	✓	⊘
Test terminals	✓	✓
USB access	✓	⊘
View status/service information	✓	✓

- ☐ Passwords should not be obvious or repeated on many devices.
- ☐ Do not use 1234, or the street number of the site.
- ☐ Segment devices by area, do not use the same passwords on all devices.
- ☐ Wipe screen after use to avoid fingerprints from password entry remaining on the screen.
- ☐ Consider regional privacy requirements when creating user and display names, as user names will appear in event logs.
- ☐ Ensure user names are unique to help ensure clear traceability. For example, avoid creating both “User1” and “User 1”.
- ☐ Regularly delete the account or downgrade the role of users who no longer need access to the device.
- ☐ Update passwords regularly.

Other Scenarios

- ☐ If shared accounts are used (e.g., for a maintenance team in a large hotel), shared accounts should not have Admin privileges.

Impacts of Shared/Common Passwords

- ☐ Shared accounts make it unclear who accessed the devices; if someone acts in bad faith, it is not possible to detect who it was.
- ☐ It is difficult to track who knows the common password, and hence when it should be changed.
- ☐ If the password is disclosed externally, all users of the shared account will be affected by the required password change.

Store Administrator Passwords Securely

- ☐ If all administrator passwords are lost, then the device must be factory reset manually by holding the reset button while powering on the device.

  For more information, refer to the Viconics Room Controller Installation Sheet.

Log Files

The Viconics Room Controller contains two log files:

- System Log: Status of the system, including any errors.
- Audit Log: Record of changes made to the system, and by whom.

If unexpected issues occur, log files should be reviewed to determine the cause.

NOTICE

CONFIDENTIAL DATA IN LOG FILES

Log files may contain private or confidential data:
- Encrypt log files before transmitting them.
- Ensure log files are removed when decommissioning devices.

Failure to follow these instructions may lead to the unauthorized sharing of private or confidential information.

Firmware Updates

NOTICE

UNAUTHORIZED ACCESS

The Viconics Room Controller firmware should be updated regularly to ensure the latest security improvements are applied.

Failure to follow these instructions may result in unauthorized access to the device.

Lua

NOTICE

UNAUTHORIZED ACCESS

Lua scripts allow customization of the device behavior, but come with risks:
- Only use scripts that are required for your device or site.
- Only use scripts that you understand or are from a trusted source.
- Remove scripts that are no longer required.
- Check scripts contain only the code you need and meet the recommendations of the Lua4RC Programming Guide.
- Carefully review and test scripts before deploying to sites.

Lua scripts can read and write data points on remote BACnet devices:
- Interacting with remote devices increases the scope of the Lua script and hence the risk of unintended behavior.
- Lua access to remote devices is disabled by default. If required, Remote Device Access must be enabled by an Admin in the Lua/Status menu.
- Lua access to remote devices should only be enabled if required.

Excessive writing of non-volatile priority levels may wear out the device's EEPROM memory. Refer to the Lua4RC Programming Guide for more information.

Failure to follow these instructions may result in poorly-written or malicious Lua scripts, which may damage the device or result in unintended behavior.

Decommissioning

To decommission a device:

1. Factory reset:
   - Launch a factory reset to remove all data:
     a. Log in as an administrator.
     b. Tap on Device Info, then Factory Reset, ensuring all categories are selected.
   - Or perform a physical factory reset by holding the reset button while powering on the device. For more information, refer to the Viconics Room Controller Installation Sheet.
2. Refer to the End-of-Life Instruction (EoLi) document for information on how to recycle or dispose of the product.

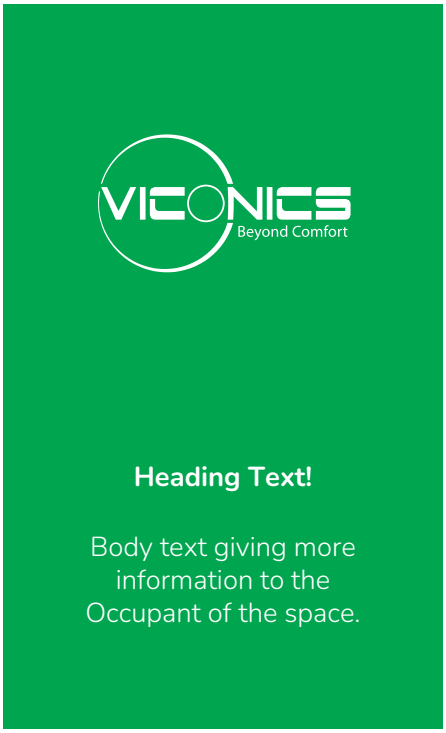
NOTICE
DECOMMISSIONING A DEVICE It is important to decommission a device properly to ensure that no confidential data is left on it. **Failure to follow these instructions may lead to the unauthorized sharing of private or confidential information.**

Reporting an Incident or Vulnerability

Please report any cybersecurity incident or vulnerability via the Cybersecurity Support Portal on www.viconics.com.

The Schneider Electric Security Operations Center (SOC) operates 24 hours a day, 7 days a week, year-round, and is staffed with security analysts who receive and triage your reports.

Appendix C: Standby Screen



The Room Controller supports the display of a standby screen with a full screen image supplied by the user, which can be loaded via: USB or BACnet.

The Standby Screen is enabled when a custom image is selected via the Preferences/Display menu, or on BACnet:

- Use Standby Screen:
  - BACnet ID = MV32
  - 1=Disabled (Default)
  - 2=Custom Image

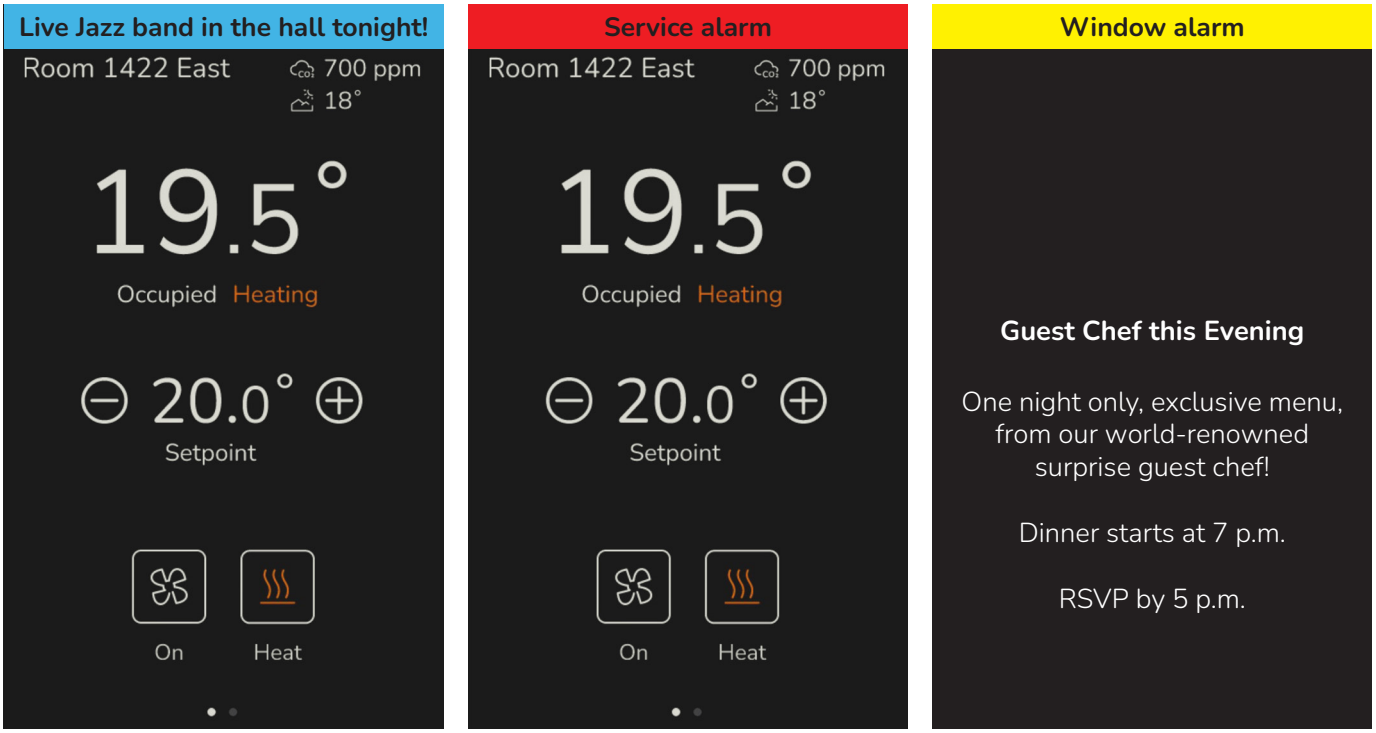
Size and format:

- Resolution: 480 x 800 pixels
- File format: 24-bit bitmap (.bmp)

The text overlay has 3 properties:

- Custom Standby Heading Text
  - BACnet ID = CSV41
  - Maximum length: 64 characters
  - Value: Input Characters: En ISO-8859-1 (Western Europe) character set glish
  - Displayed if string is not empty
- Custom Standby Body Text
  - BACnet ID = CSV42
  - Maximum length: 160 characters
  - Value: Input Characters: ISO-8859-1 (Western Europe) character set
  - Displayed if string is not empty
- Custom Standby Text Color
  - BACnet ID = MV190
  - 1=White (Default)
  - 2=Black

Appendix D: Notifications



The Room Controller supports the option of displaying custom notifications on the screen.

PARAMETER DETAILS

Parameter Default Value	Significance and Adjustments
Short Screen Message Text **CSV1**	**Short Screen Message Text** Allows the user to enter a message on this Room Controller. Settable via BACnet only. **Range**: 0 to 160 characters (a-z, A-Z, 0-9, @_-~+=^<>,.½:;*'`, and spaces)
Notification Type Default value: **Disabled** **MV186**	**Notification Type** Used to configure the display of the notifications banner on the top of the screen. Settable via BACnet only: • Disabled: • Critical: Red banner • Warning: Yellow banner • Ok: Green banner • Informative: Blue banner **Display Readings**: 1=Disabled, 2=Critical, 3=Warning, 4=Ok, 5=Informative
Notifications Default value: **All** **MV187**	**Notification Display Type** Used to configure the display of notifications on screen. Refer to “Display” on page 78 for more information: • Disabled: No notifications shown. • Custom Only: Custom notifications shown, but no In-built notifications. • All: Custom and in built notifications shown. **Display Readings**: 1=Disabled, 2=Custom Only, 3=All