VT8000 Room Controllers

VZ8250 User Interface Guide

Variable Air Volume (VAV) Unit

Firmware Revision 2.6

VICONICS
Beyond Comfort

Version 5

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 Schneider Electric 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

LOSS OF CONTROL

- 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

STATIC SENSITIVE COMPONENTS

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

Failure to follow these instructions can result in equipment damage.

Observe the following precautions for handling static-sensitive components:

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

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

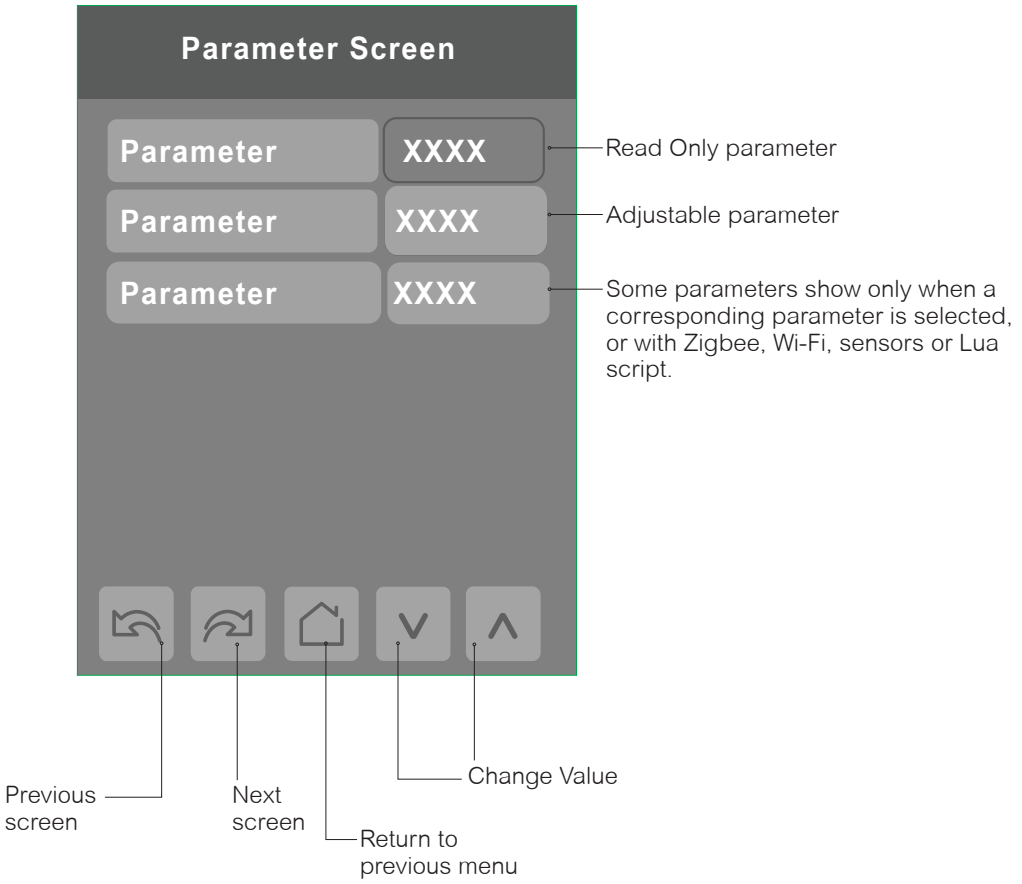
Introduction

This guide shows the User Interface instructions for the VZ8250 Room Controller (RC) firmware revision 2.6 for users and integrators.

User and Integrator Screens

The VZ8250 Room Controller has dynamic screens that show adjustable parameters and read-only status information. Some screens and parameters show only when a corresponding parameter is selected. Some screens show only on models with onboard Zigbee, optional Zigbee add-on module (VCM8000), optional Wi-Fi module (VCM8002) or paired Zigbee wireless sensor end devices (SED). The Lua selection on the Setup screen shows only if a Lua script is uploaded to the Room Controller.

See below legend screen details.



Note: When any change is made to a parameter, 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 RC. 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).

Disclaimer

Standby screen: The Room Controller incorporates TFT-type LCD technology, and therefore, necessary precautions are required to prevent the phenomenon of image retention (residual image) from occurring.

Image retention may occur when a static image is displayed on the screen for a prolonged period of time. This can cause a faint outline of the image to remain visible on the screen when the screen is changed via the user menu, or a different image is uploaded and selected to be displayed. To minimize and prevent image retention, it is recommended to select the **Screen save** setting on the **Standby screen** selection from the setup menu **"Display 1/3"** on page 52. This setting switches the display during periods of inactivity from the Home Screen.

It is recommended to use a black or medium gray image, or one with light color contrasts as the screen saver to prevent this phenomenon from occurring. If the display still exhibits this phenomenon, loading an all-black or all-medium gray image as the screen saver and displaying it for upwards of 5 hours continuously minimizes this effect.

Note: Avoid placing the Room Controller in poorly ventilated areas, or in areas that may create excess heat around the display.

BACnet Integration Guide References

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

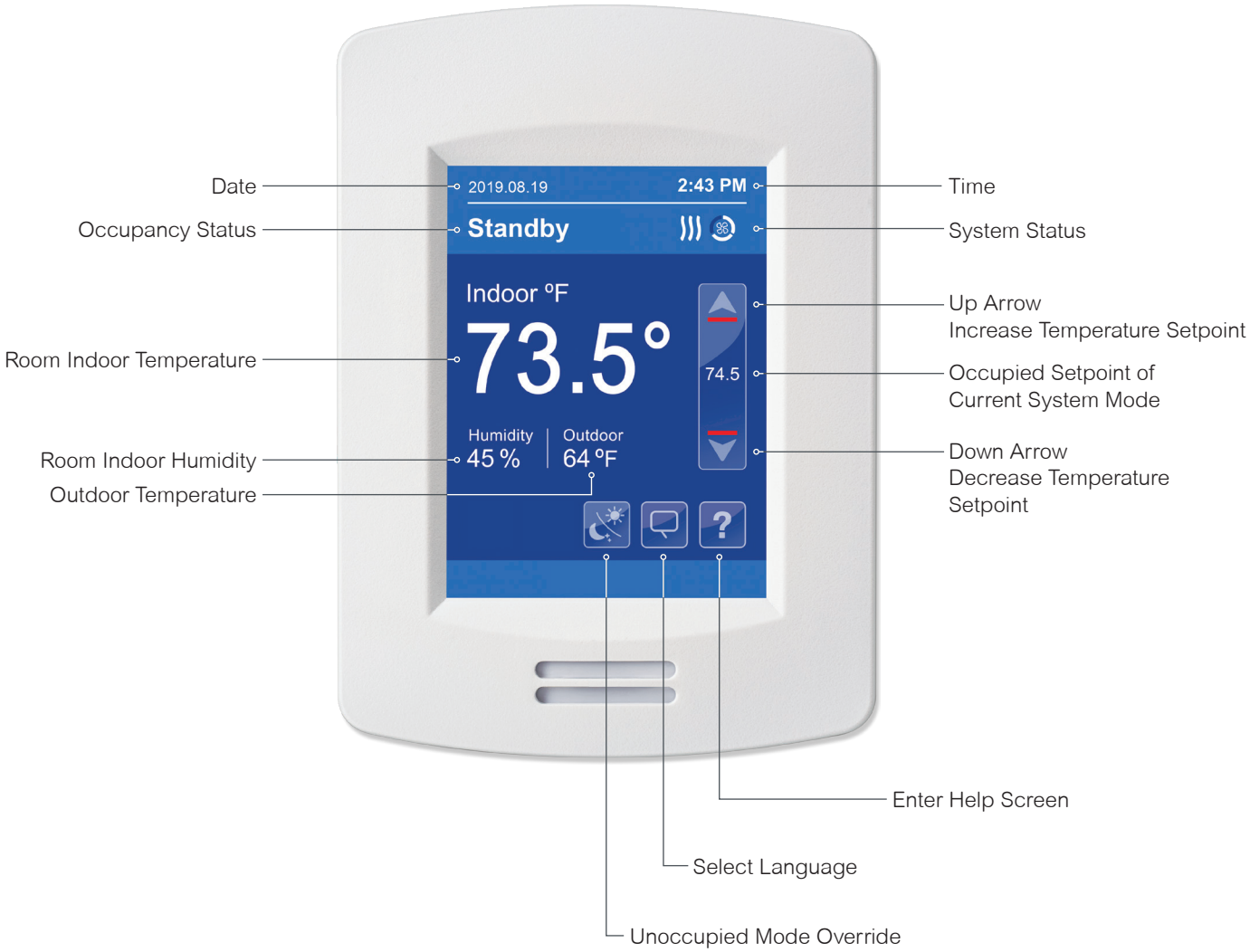
- **Object name**.
- **Instance number** and **object type prefix**. Object type prefixes are described as follows:
  - AI - Analog Input
  - AO - Analog Ouput
  - AV - Analog Value
  - BI - Binary Input
  - BO - Binary Output
  - BV - Binary Value
  - CSV - Comma-Separated Value
  - MSI - Multi-State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

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Fan status Default value: Off MSI326 ⟜—— **Instance number**	Fan Speed Status ⟜—— **Object name** Status value: 1=Off, 2=Low, 3=Med, 4=High ⟜—— **Range values and enumeration**

HMI Display

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

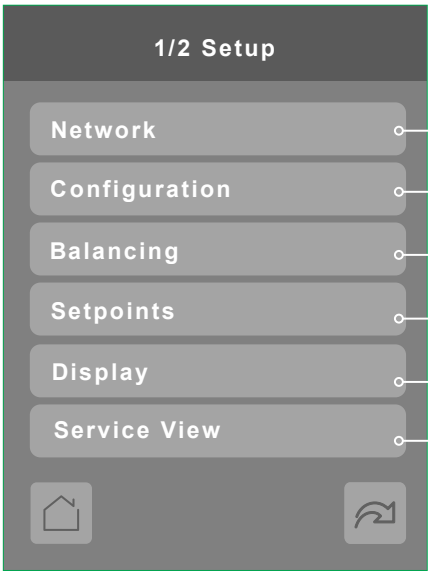


Enter Setup Screen

Touch and hold this point for 3 seconds to enter setup mode

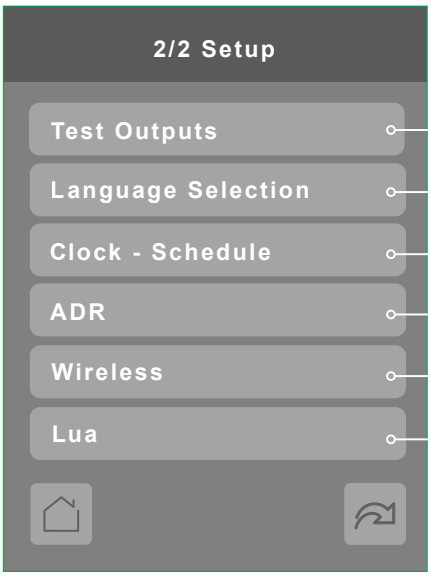
Note: If a configuration/installer password is activated to prevent unauthorised access to the configuration menu parameters, you will be prompted to enter your password before proceeding.

SETUP 1/2



- **Network**: BACnet MS/TP, Modbus, Zigbee and Wi-Fi network settings (Zigbee network settings appear only if Zigbee feature is available)
- **Configuration**: Enter parameter configuration menu
- **Balancing**: Enter balancing settings
- **Setpoints**: Enter setpoint settings
- **Display**: Enter display settings
- **Service View**: Enter status and service view

SETUP 2/2



- **Test Outputs**: Test output settings
- **Language Selection**: Select language
- **Clock - Schedule**: Set clock, schedule and occupancy
- **ADR**: Automatic Demand Response
- **Wireless**: Wireless Ecosystem settings (shows only if Zigbee feature is available)
- **Lua**: Lua scripting (shows only if Lua script uploaded)

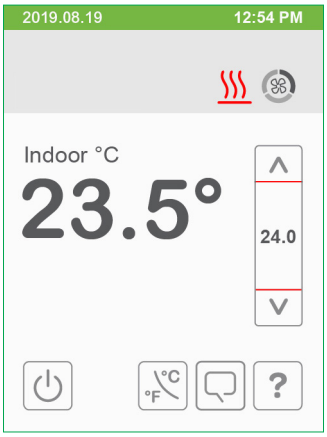
SECTION 2

Customized User HMI Display

User HMI for Hospitality

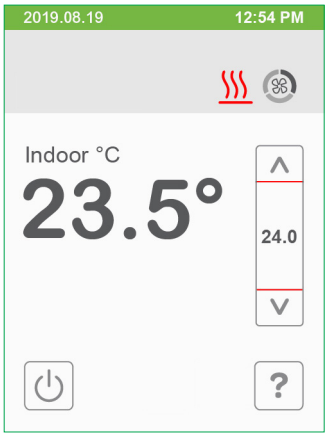
To select the User HMI configuration, refer to “Display 1/3” on page 52.

Hospitality 0



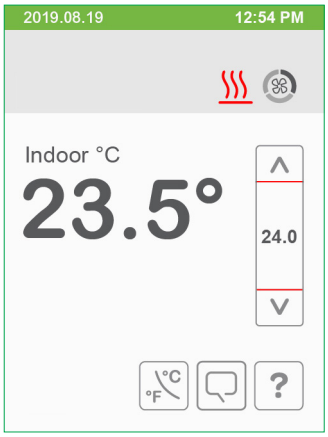
- Setpoint adjustment
- System mode setting
- Local unit scale adjustment
- Local user language
- User help menu

Hospitality 1



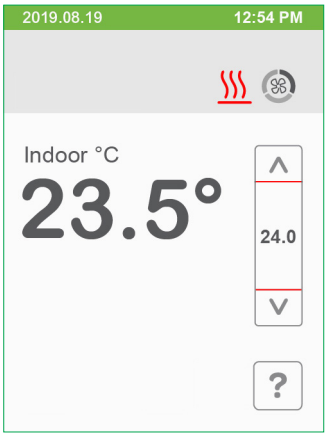
- Setpoint adjustment
- System mode setting
- User help menu

Hospitality 2



- Setpoint adjustment
- Local unit scale adjustment
- Local user language
- User help menu

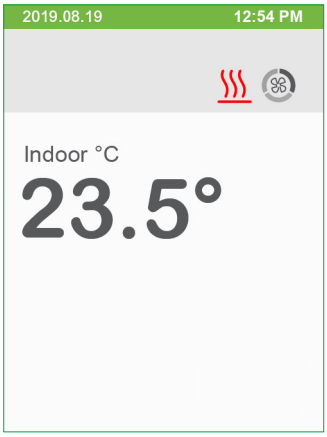
Hospitality 3



- Setpoint adjustment
- User help menu

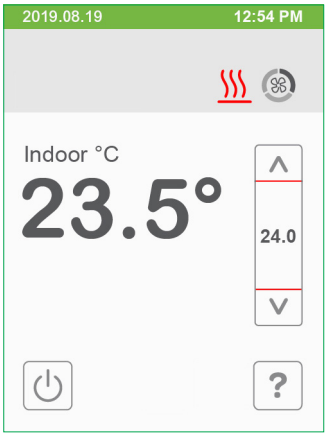
Note: Parameters are model dependent and may not appear on certain models.

Hospitality 4



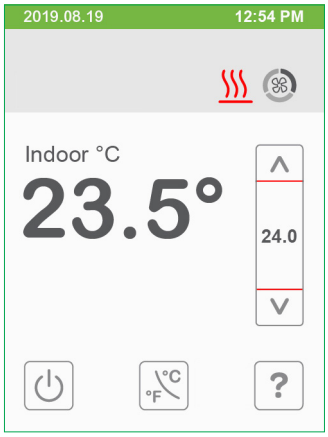
- Fully locked interface with no user settings

Hospitality 5



- Setpoint adjustment
- System mode setting
- User help menu

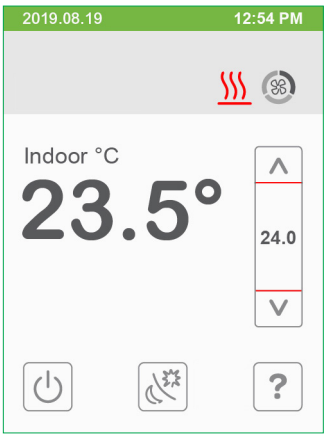
Hospitality 6



- Setpoint adjustment
- System mode setting
- Local unit scale adjustment
- User help menu

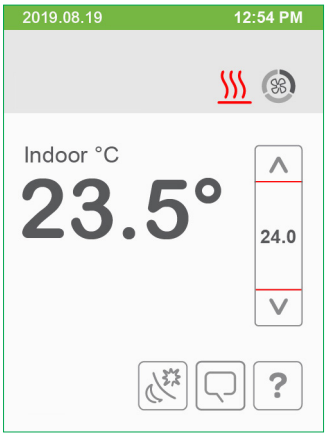
User HMI for Commercial

Commercial 7



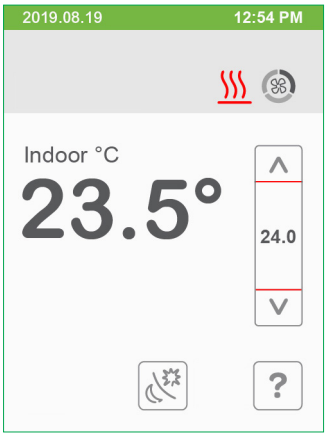
- Setpoint adjustment
- System mode setting
- Unoccupied mode override
- User help menu

Commercial 8



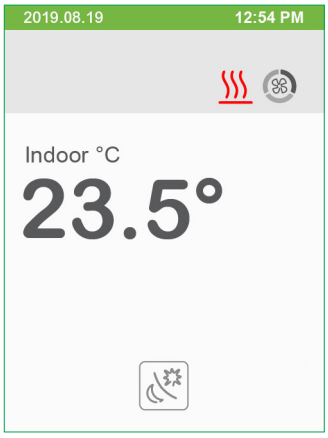
- Setpoint adjustment
- Unoccupied mode override
- Local user language
- User help menu

Commercial 9



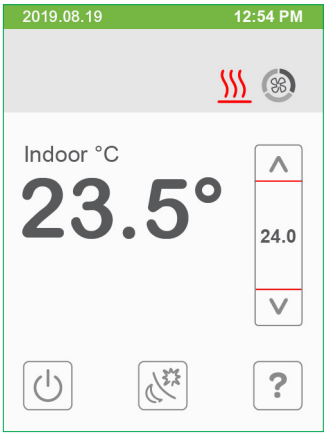
- Setpoint adjustment
- Unoccupied mode override
- User help menu

Commercial 10



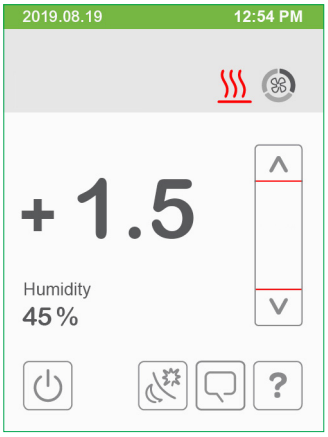
- Unoccupied mode override

Commercial 11



- Setpoint adjustment
- System mode setting
- Unoccupied mode override
- User help menu

Commercial 12



- Offset setpoints adjustment
- System mode setting
- Local user language
- Fan mode setting
- User help menu

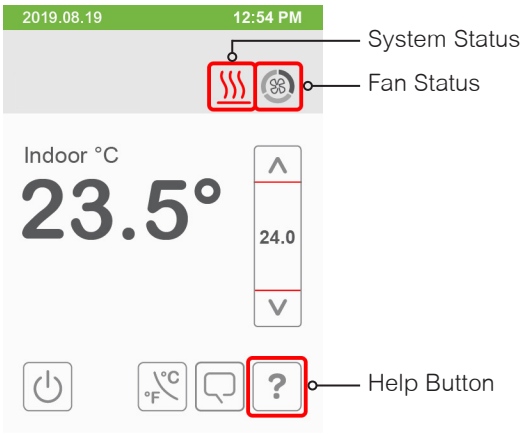
Note: The day/night setback button appears only in unoccupied mode in the Commercial HMIs 7 to 11. If UI17 input is configured as “override”, the day/night setback button does not show.

Note: Parameters are model dependent and may not appear on certain models.

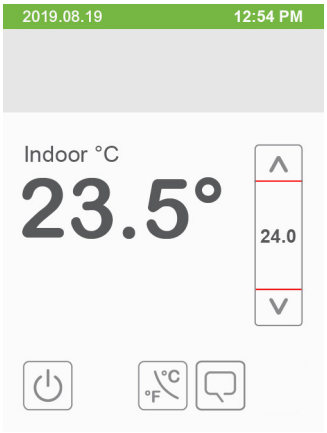
User HMI Show/Hide Options

User HMI displays can be customized further by hiding the system status, fan status or help button. Each show/hide option is applicable to all User HMI configurations where the option is shown. To hide the option, select disabled for each display setup screen parameter. Refer to ”Display 3/3” on page 56.

Options Enabled



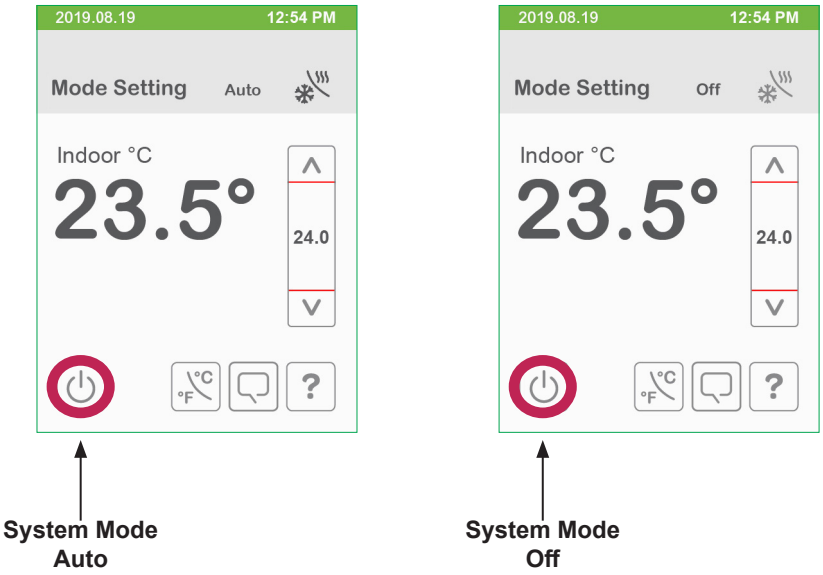
Options Disabled



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Control status Default value: Off MV112	System Status (BACnet object name: Control Status) Status value: 1=Off, 2=Cool, 3=Heat
Fan status Default value: Off MSI326	Fan Speed Status Status value: 1=Off, 2=Low, 3=Med, 4=High

System Mode

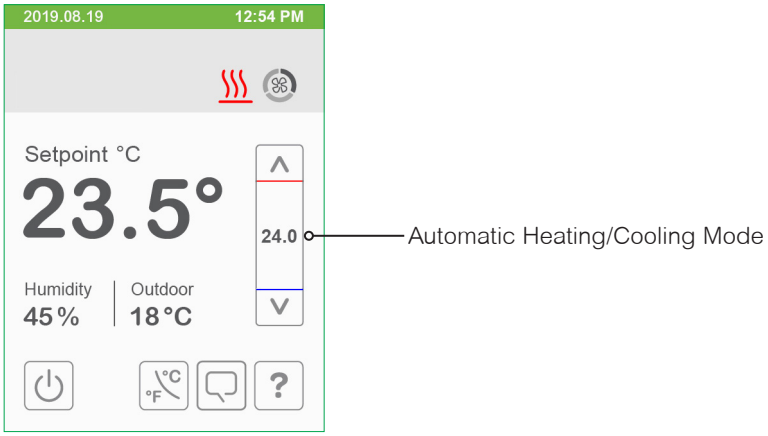


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
System mode Default value: Auto MV16	System Mode Off: Heating, Cooling demands are ignored. Auto: Room Controller automatically toggles between Heating and Cooling modes to satisfy both Heating and Cooling demands. Choices: 1=Off, 2=Auto

Setpoint Adjustment

During occupied setpoint adjustment, large digits are temporarily used to display the occupied setpoint. Use the up and down arrows to select the setpoint. Normal temperature display resumes after the adjustment and the new value is displayed in the setpoint bar.

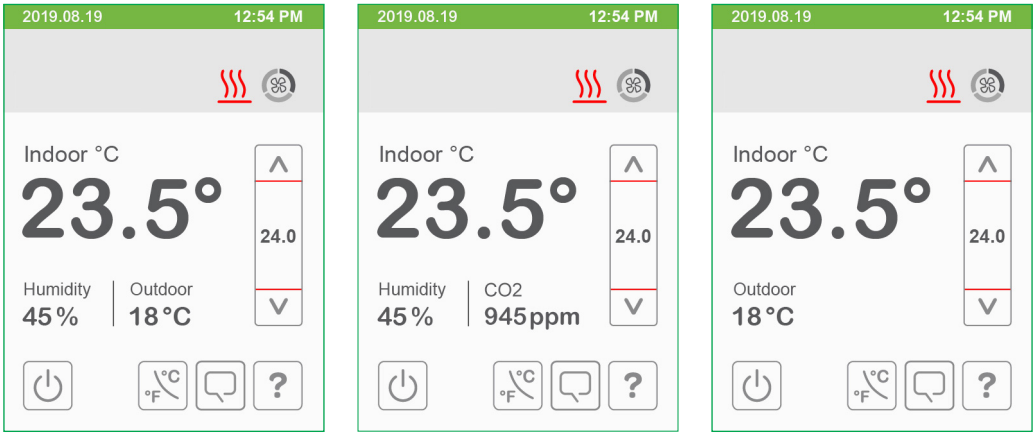


Other Functions

Local humidity shows when RH display is enabled on the setup display screen, from either the internal onboard sensor or a wireless sensor end device selected by the RH sensor parameter on the setup configuration screen.

CO2 shows when CO2 display is enabled on the setup display screen, from either the optional CO2 detection sensor module or a wireless sensor end device selected by the CO2 source parameter on the setup configuration screen.

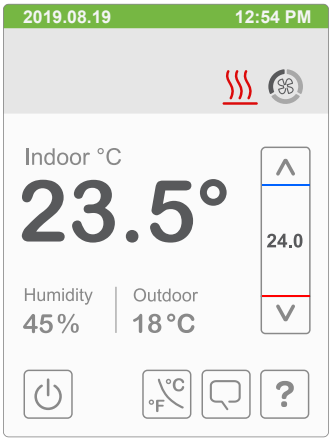
Outdoor temperature shows when receiving a valid networked outdoor temperature value or a temperature sensor connected to UI23.



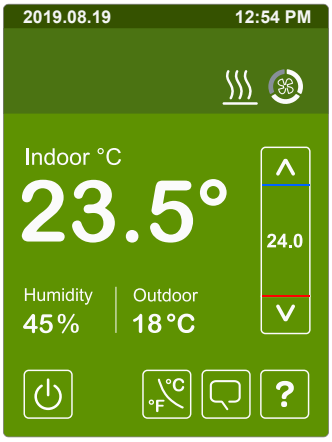
Customizable Color Options

To select the color option, refer to “Display 1/3” on page 52.

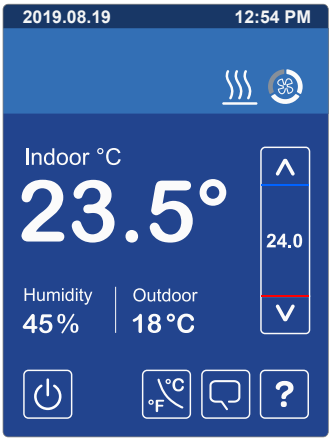
White



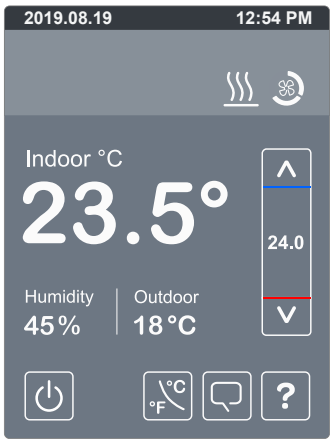
Green



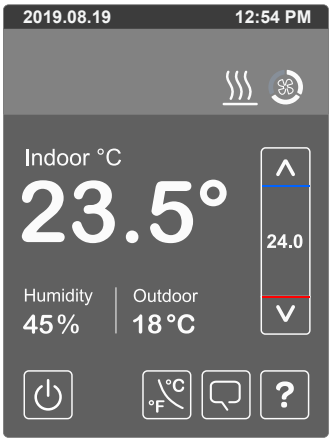
Blue



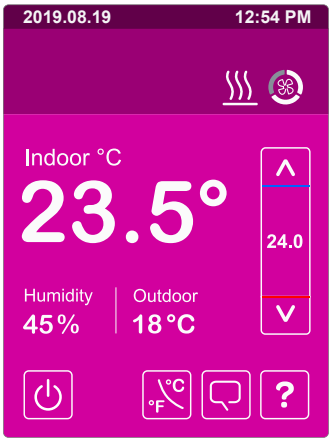
Grey



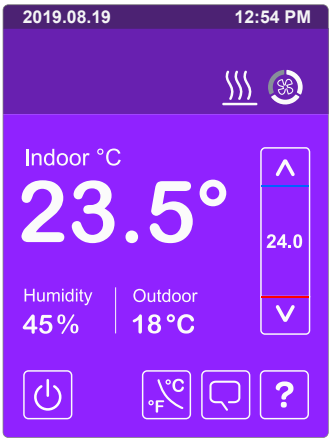
Dark Grey



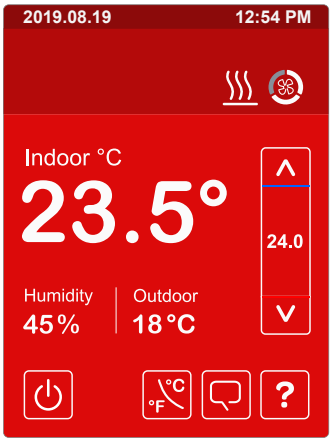
Pink



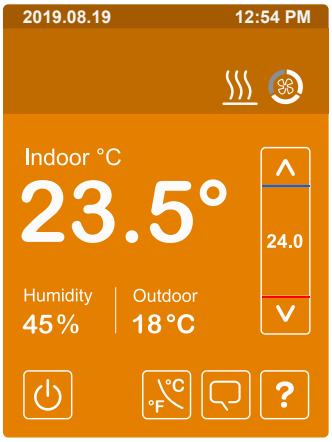
Purple



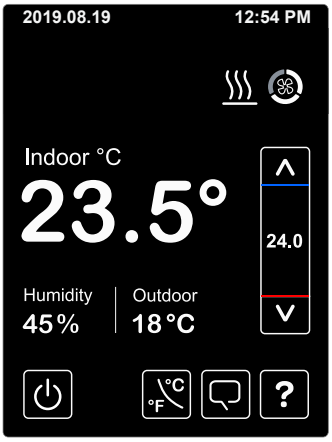
Red



Orange



Black



SECTION 3

Integrator Setup Screens

Network Screens

User can select wired BACnet / Modbus / Zigbee wireless protocol (when Zigbee feature is available).

NOTICE

UPGRADE OF ZIGBEE FIRMWARE REVISION 24 TO 30

The upgrade from Zigbee firmware revision 24 to 30 will **not** support the Green Power Sensor (SED-CO2-G-5045 or SED-TRH-G-5045). It will therefore need to be recommissioned.

There is also a new "Security Levels" parameter for the Zigbee network (see page 20):

- **Low** (default value) is fully backwards compatible with Zigbee Home Automation 1.2 devices, and therefore compatible with all of our sensors.
- **Normal** or **High** (needs to be selected by user) is only compatible with Green Power and Zigbee 3.0 network standard (Leedarson sensors). If the Normal or High Security Level is selected with old NYCE or Centralite sensors, they will be removed from the network.

Failure to follow these instructions can result in equipment being disconnected from the network.

Onboard Zigbee detection (Read Only)

Type of expansion module:
None, Zigbee, IP or BAC. IP (Read Only)

Wired protocol (BACnet MS/TP or Modbus)

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Onboard prot. Read Only	Onboard Protocol Onboard Zigbee detection Display Readings: None, Zigbee
Optional prot. Read Only	Optional Protocol Requires onboard Zigbee add-on module (VCM8000) or Wi-Fi module (VCM8002). BACnet/IP is enabled from the Configuration Web Page or the Uploader Tool. None: No Zigbee detected Zigbee: Zigbee detected IP: Wi-Fi module detected BAC. IP: Wi-Fi module detected and BACnet/IP enabled Display Readings: None, Zigbee, IP or BAC. IP

Config. Parameters Default Value	Significance and Adjustments
Wired protocol Default value: BAC MSTP	Wired Protocol None: No wired protocol configured BAC MSTP: BACnet MS/TP network protocol Modbus: Modbus network protocol Choices: None, BAC MSTP or Modbus

ZIGBEE NETWORK 1/3

The Zigbee Network screen shows only in models with onboard Zigbee or optional Zigbee add-on module.

When creating a Zigbee network, there must be one and only one device with its Node Type set to Coordinator.
For a Zigbee network with a single Room Controller (RC), the RC is set as Coordinator to pair with the Sensor End Devices (SED). Setting the RC back to Router will remove the paired SEDs.
For a Zigbee network with a Building Management System (BMS) server or controller paired to multiple RCs, the BMS is set as Coordinator and the RCs are set as Router. The Coordinator BMS controls the pairing of the Router RCs to the SEDs

Note: Before pairing any Zigbee devices, the network must first be created by the Coordinator.

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Node type Default: Router	Node Type Sets device to act as Router or Coordinator in a network. Coord.: Creates the network and manages the binding of wireless devices. Router: Joins a network created by a coordinator (Coordinator permit join must be set to 'ON'). Choices: Coord. or Router
PAN ID Default value: 0	Zigbee Pan ID Personal Area Network Identification that links specific Room Controllers to specific Zigbee coordinators. For every Room Controller reporting to a coordinator, set the SAME PAN ID value both on the coordinator and the Room Controller. Note: The default value of 0 is NOT a valid PAN ID and causes Zigbee to be disabled. Range: 1 to 65535

Config. Parameters Default Value	Significance and Adjustments
Channel Default value: 10	Zigbee Channel The channel (wireless frequency) on which the Zigbee network transmits and receives data. The channel of the Coordinator must match that of the routers to exchange data. The default value of 10 is NOT a valid channel and causes Zigbee to be disabled. The valid range of available channels is from 11 to 25. Using channels 15, 20, and 25 is recommended. Channel 25 is considered as being the best one because it is furthest from the Wi-Fi channels. Range: 10 to 25
Security Default value: Low	Security Levels Note: Changing between Zigbee Security levels does not require re-creating the Zigbee network, or re-commissioning sensors. Low: Disables new security features in Zigbee 3.0 to be fully backwards compatible with Zigbee Home Automation 1.2 devices, and therefore compatible with all of our sensors. Normal: Enables the typical new features of Zigbee 3.0. This means that legacy Zigbee Home Automation 1.x devices cannot join a Normal security network. Compatible with the following sensors: • SED-WDS-P-5045 • SED-WDC-G-5045 • SED-CMS-P-5045 • SED-WMS-P-5045 • SED-MTH-G-5045 • SED-TRH-G-5045 • SED-C02-G-5045 High: Enables the Zigbee 3.0 high security network joining. The high security level will encrypt the initial network key transport from the network coordinator to the joining Room Controller. This will protect the joining process from eavesdropping attacks (also known as sniffing or snooping attacks). Your network coordinator, such as a BMS server or controller, must be compatible with the Zigbee 3.0 standard. To start the network join, the Room Controller's IEEE address and install code must be transferred to the network coordinator (refer to "Zigbee Network 3/3" on page 22). Note: Before starting the network join, make sure to set the PAN ID and set the Node type to Router. High security is supported only when the Node Type is set to Router, it is disabled when the Node type is set to Coordinator. **Important!** Selecting the Normal or High Security option will result in the removal of legacy sensors from the network. Choices: Low, Normal or High
Network Status Default value: Not det. Read Only MSI2	Zigbee Network Status Shows the current status of the Zigbee network. Not det.: Zigbee module not detected Pwr on: Zigbee module detected but not configured No NWK: Zigbee configured but no network joined Joined: Zigbee network joined Online: Communicating (Exchanging data) Display Readings: 1=Not det., 2=Pwr on, 3=No NWK, 4=Joined, 5=Online

Config. Parameters Default Value	Significance and Adjustments
Permit join Default value: Off	Permit Join Changing this value to “Off” on the Coordinator prevents any new Zigbee devices from joining the network. Permit join can be On/Off when the Room Controller is a Coordinator, however the parameter is read only when the Room Controller is a router. If not set to off manually the Permit join will stay On for 3 hours. Choices: On or Off

ZIGBEE NETWORK 2/3

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
COM address Default value: 254 AV10	COM Address Room Controller networking address. For wireless models, the use of the COM address is not mandatory. The COM address is an optional way to identify a device on the network and is recommended if used with a BMS. It is Mandatory for BACnet. Range: 0 to 254
Short address Default value: 0 Read Only	Zigbee Short Address The unique Zigbee short address is generated once a wireless device joins a Zigbee network.
IEEE address Read Only CSV10	Zigbee IEEE Address The extended IEEE address (MAC address) is a unique worldwide identifier of the onboard Zigbee or optional Zigbee add-on module.
Zigbee revision Read Only CSV9	Zigbee Firmware Revision Shows the Zigbee firmware revision number.

ZIGBEE NETWORK 3/3

The 3/3 Zigbee Network screen shows only when the security level is set to high.

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
IEEE address Read Only CSV10	Zigbee IEEE Address The extended IEEE address (MAC address) is a unique worldwide identifier of the onboard Zigbee or optional Zigbee add-on module.
Install code Read Only	Install Code The install code is used as a shared key to make an initial secure connection between the network coordinator and the Room Controller when joining the Zigbee 3.0 high security network (refer to “Security Levels” on page 20). Once the Room Controller has successfully joined the network, a new key is created for future secure connections. The install code contains a key of 16-byte hexadecimal numbers plus a 2-byte cyclic redundancy check (CRC) code at the end. Warning: To maximize security, a new random install code is generated each time the Room Controller is power cycled, or its Zigbee settings are changed. Make sure to set the Zigbee PAN ID and set the Security Level to High before transferring the Install Code.
QR code Read Only	QR Code The QR code provides an easy way to transfer the Room Controller’s IEEE address and install code to the network coordinator. The QR code format is defined by the Zigbee 3.0 standard. The QR code is scanned with the mobile app for your gateway commissioning software. If your software does not support QR code data transfer, you can read the IEEE address and install code and enter them into a web page or provide them over the phone to the system administrator. Format: Z$A:{IEEE address}$I:A{Install code}

BACNET NETWORK SETTINGS

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

PARAMETER DETAILS

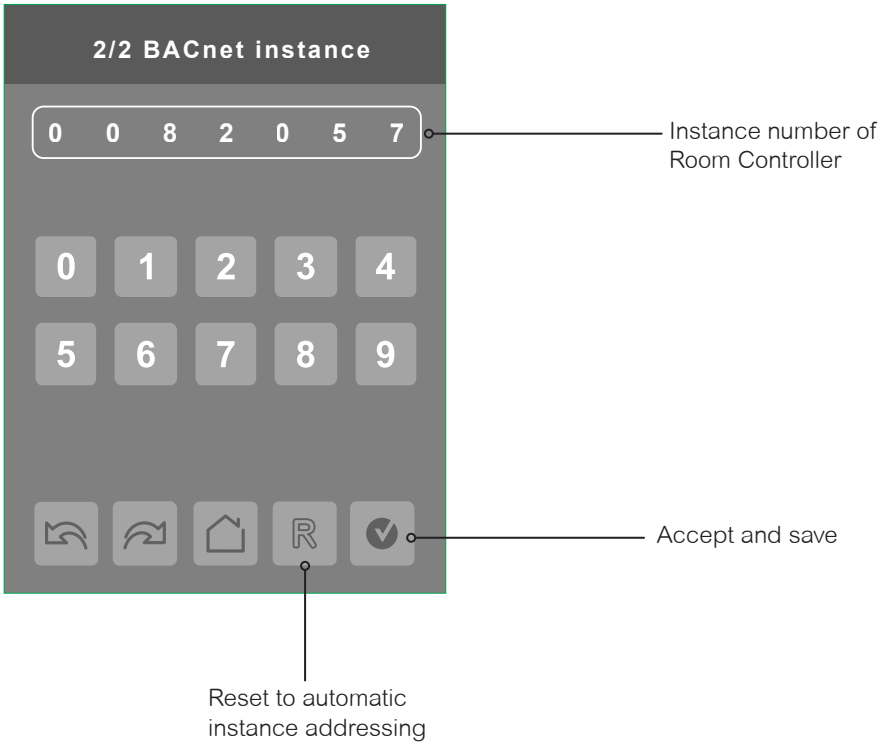
Config. Parameters Default Value	Significance and Adjustments
COM address Default value: 254 AV10	COM Address Room Controller networking address. Default value of 254 disables BACnet communication for the Room Controller. Range: 0 to 254
Network units Default value: Imperial MV6	Network Units Network 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
Network lang Default value: English MV7	Network Language Network language/object names transmitted over network. Choices: 1=English, 2=French, 3=Spanish
Baud rate Default value: Auto MV8	BACnet Baud Rate Leave the value at Auto unless instructed otherwise as this automatically detects BACnet baud rate. Choices: 1=9600, 2=19200, 3=38400, 4=57600, 5=76800, 6=115200, 7=Auto
BACnet status Read Only	BACnet Status Read Only value shows if a BACnet Network is detected or not. Display Readings: Online or Offline
BACnet PRate Default value: 4 AV16	BACnet Stack Poll Rate Rate at which a BACnet stack is processed, in milliseconds. Range: 1 to 5.

BACNET INSTANCE NUMBER

The default BACnet instance number is generated by the model number and COM address of the Room Controller. For example, the instance number of a VZ8250U5500BP with a COM address of 57 is generated as “82057”.

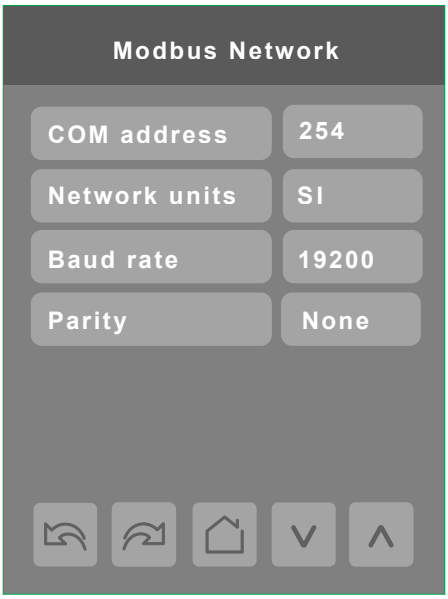
The default instance number appears first. To change the instance number, use number pad and press **Accept** and **Save**.

Tap “R” icon to reset to automatic instance addressing.



MODBUS NETWORK SETTINGS

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

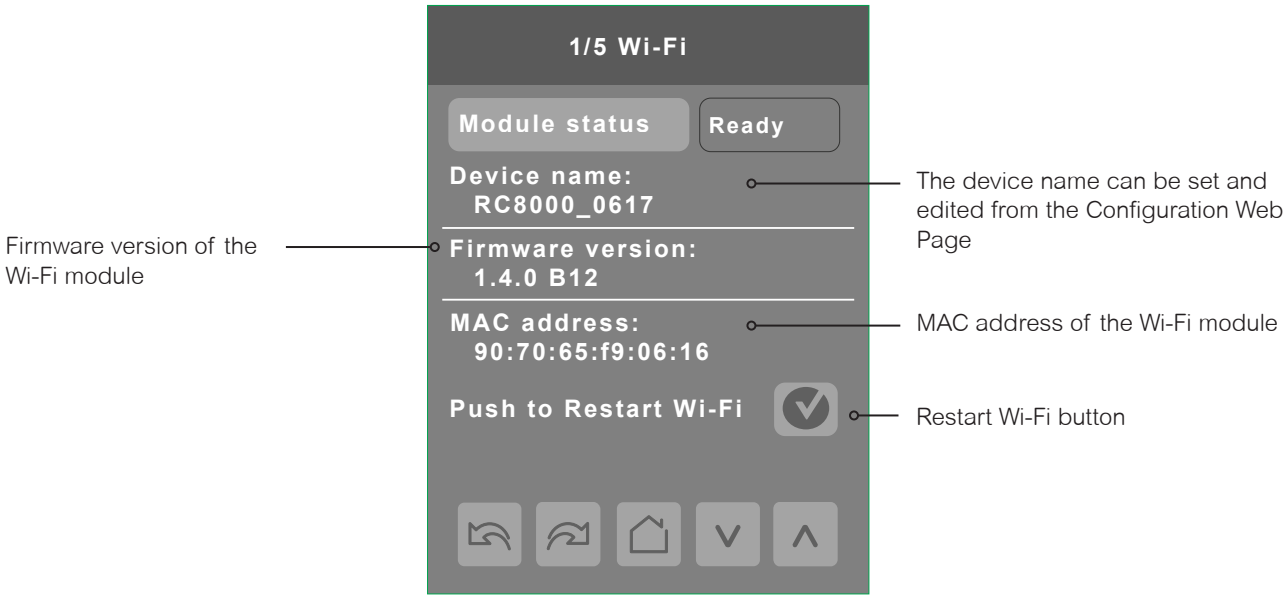


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Comm address Default value: 254	Communication Address Valid address range is set at 1 to 247 and each Modbus device must have a unique address. Other values not recommended for Modbus. Default value of 254 disables Modbus communication for the Room Controller. Range: 0 to 254
Network units Default value: SI	Measurement Units Network units transmitted over the Modbus network. Note: Use the Temperature scale parameter to change the display units locally on the Room Controller. Imperial: network units shown as Imperial units. SI: network units shown as International Metric units. Choices: Imperial or SI
Baud rate Default value: 19200	Modbus Baud Rate Automatically detects Modbus baud rate. Choices: 57600, 38400, 19200, 9600, and 4800
Parity Default value: Even	Parity Determines how the parity bit of the character's data frame is set to detect any errors in the sent/receives frame. Choices: None, Odd and Even

WI-FI 1/5

The Wi-Fi Network screen shows only in models with optional Wi-Fi module (VCM8002).



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Module status Read Only MSI315	Wi-Fi Module Status Displays the current status of the Wi-Fi module. It would normally display Ready when the Wi-Fi module is operational. Status value: 1=Offline, 2=Initializing, 3=Ready, 4=Booting, 5=Resetting, 6=Fail, 7=Testing
Device Name Read only CSV4	Wi-Fi Device Name The device name can be set and edited from the Configuration Web Page.
Firmware version Read only CSV5	Wi-Fi Firmware Version Shows the Wi-Fi Module firmware revision number.
MAC address Read only CSV6	MAC Address The MAC address is a unique hardware identifier of the Wi-Fi Module.

WI-FI 2/5

The password needed to connect to the Access Point Wi-Fi network

The SSID of the Access Point created by the Wi-Fi module. You can add your device to this network to access the Configuration Web Page

When connected to the Access Point, browse to this IP address to access the Configuration Web Page

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Access point Default value: Disabled	Access Point On this screen the access point can be enabled or disabled as needed. Choices: Enabled or Disabled

WI-FI 3/5

SSID of the building Wi-Fi network that the device is connected to

When connected to the building Wi-Fi network shown above, browse to this IP address to access the Configuration Web Page

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Wi-Fi status Read Only MSI316	Wi-Fi Status When not connected to a Wi-Fi network the status remains Idle. Once the RC is on your preferred Wi-Fi network, the status will be displayed as Ready, Status value: 1=Idle, 2=Associate, 3=Config., 4=Ready, 5=Online, 6=Disconn., 7=Failure
Signal strength Read Only MSI327	Wi-Fi Network Signal Strength Signal strength of the Wi-Fi network. Range: 1=Unknown, 2=Weak, 3=Fair, 4=Good, 5=Excellent
SMTP status Read Only MSI318	SMTP Server Status Status of the email SMTP server. Email notifications are enabled and configured from the Configuration Web Page. Status value: 1=Unknown, 2=Disabled, 3=Offline, 4=Online
SSID Read only CSV7	Wi-Fi Network SSID SSID of the building Wi-Fi network that the device is connected to. The SSID is set from the Configuration Web Page.
IP address Read only CSV8	Wi-Fi Network IP Address When connected to the building Wi-Fi network shown above, browse to this IP address to access the Configuration Web Page.

WI-FI 4/5

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Facility Expert Read Only MSI319	Facility Expert Enabled Shows whether the Facility Expert system is Disabled or Enabled. Status value: 1=Disabled, 2=Enabled
Status Read Only MSI323	Facilty Expert Status Shows the current status of the Facility Expert system. Range: 1=Disabled, 2=Offline, 3=Connect., 4=Online, 5=Failure, 6=Unknown
Last communication time Read Only	Last Communication Time
MAC address Read only CSV6	MAC Address The MAC address is a unique hardware identifier of the Wi-Fi Module.

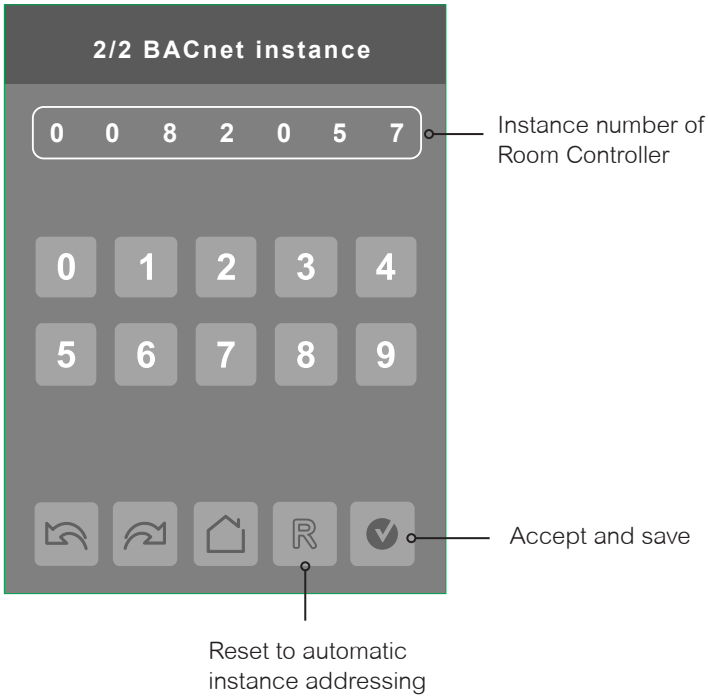
WI-FI 5/5

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Factory reset? Default value: No	Erase All Accepting Yes for both and then tapping 'Push to accept' will restore the Wi-Fi module to the factory settings, erase all configuration data and revert the Wi-Fi Module Firmware to the factory firmware version. Notes: • If you lose or forget your password for the Configuration Web Page, you must do a Factory Reset of the Wi-Fi module. • If your Wi-Fi module was connected to Facility Expert, you will need to contact your Facility Expert Administrator before the device can be reconnected after a Factory Reset.
Are you sure? Default value: No	

WI-FI BACNET NETWORK SETTINGS

BACnet network screens are shown when the wired protocol is set to BACnet or a Wi-Fi module is installed with BACnet/IP enabled. Only one BACnet protocol can be used at a time, either the wired protocol BACnet MS/TP (BACnet Network screens), or the Wi-Fi BACnet/IP (Wi-Fi screens). BACnet/IP is enabled from the Configuration Web Page or the Uploader Tool. BACnet object name, instance number and range: BACnet IP Status, MSI317, 1=Disabled, 2=Enabled.



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
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
Network lang Default value: English MV7	Network Language Network language/object names transmitted over network. Choices: 1=English, 2=French, 3=Spanish
Port Default value: 0 Read Only	Port The unique short address of Wi-Fi BACnet/IP

BACNET INSTANCE NUMBER

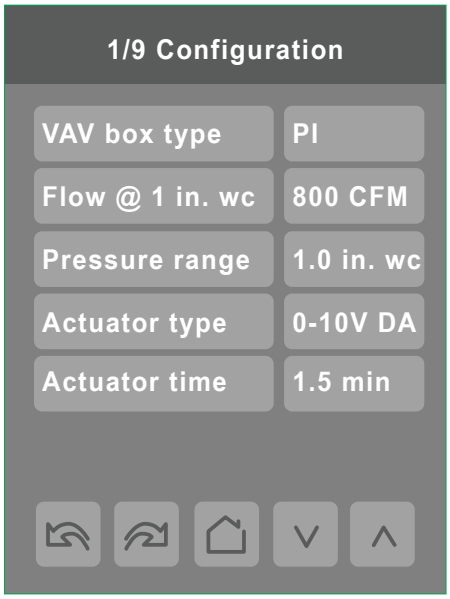
The default BACnet instance number is generated by the model number and COM address of the Room Controller. For example, the instance number of a VZ8250U5500BP with a COM address of 57 is generated as “82057”.

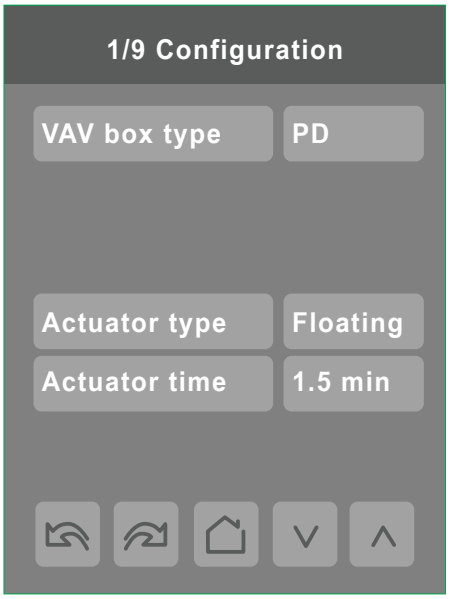
The default instance number appears first. To change the instance number, use number pad and press **Accept** and **Save**. The BACnet instance number can also be changed from the Configuration Web Page or the Uploader Tool.

Tap “R” icon to reset to automatic instance addressing.

Configuration Screens

CONFIGURATION 1/9



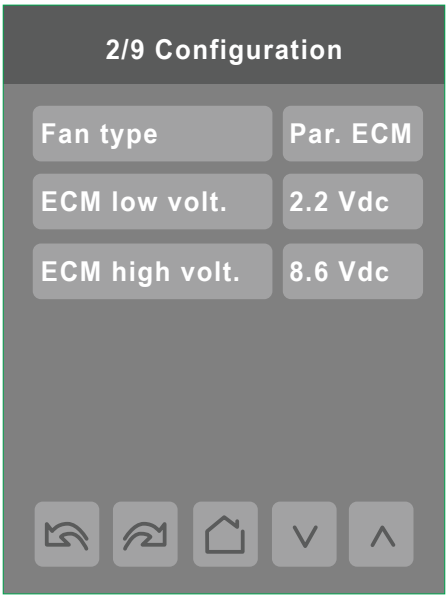


Note: See "Display 2/3" on page 54 for information on how to switch between the SI and Imperial measurement system.

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
VAV box type Default value: PI MV170	VAV Box Type PI: Pressure Independent PD: Pressure Dependent Choices: 1=PI, 2=PD
Flow @ 1 in. wc Default value: 800 CFM (377 l/s) AV222	Flow at 1-inch Water Column (K) Displayed when PI VAV box type is selected. Range: 150 CFM (71 l/s) to 7500 CFM (3540 l/s), using 10 CFM (5 l/s) increments
Pressure range Default value: 1.0 in. wc (250.0 Pa) AV223	Pressure Sensor Range Displayed when PI VAV box type is selected. Range: 0.5 in. wc (125 Pa) to 5.0 in. wc (1250 Pa), using 0.5 in wc (125 Pa) increments
Actuator type Default value: 0-10V DA MV81	Actuator Type Output type used to control the damper actuator Choices: 1=0-10V DA, 2=0-10V RA, 3=2-10V DA, 4=2-10V RA, 5=Floating
Actuator time Default value: 1.5 min AV240	Actuator Timing Displayed when PI VAV box type is selected, or when PD VAV box type and Floating Actuator type are selected. Time for floating actuator to transition between fully closed and fully open. Range: 0.5 min to 9.0 min, using 0.5 min increments

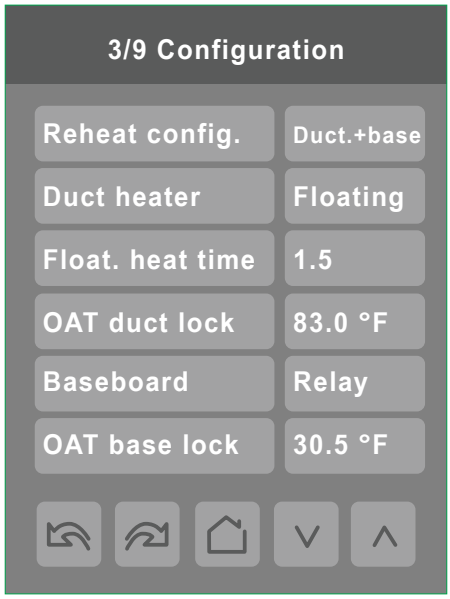
CONFIGURATION 2/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Fan type Default value: None MV154	Fan Type Fan type configuration determines the fan control method. Choices: 1=None, 2=Par. on/off, 3=Ser. on/off, 4=Par. ECM, 5=Ser. ECM
ECM low volt. Default value: 2.2 Vdc AV212	ECM Fan Low Voltage Displayed when the Parallel ECM or Serial ECM fan type is selected. Range: 2.0 Vdc to 4.0 Vdc, using 0.1 Vdc increments
ECM high volt. Default value: 8.6 Vdc AV214	ECM Fan High Voltage Displayed when the Parallel ECM or Serial ECM fan type is selected. Range: 7.1 Vdc ato 10.0 Vdc, using 0.1 Vdc increments

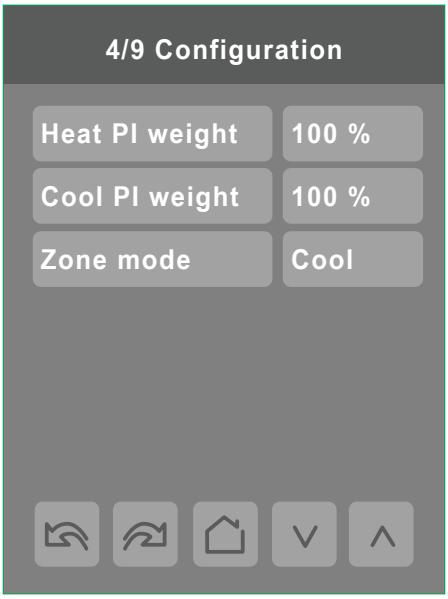
CONFIGURATION 3/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Reheat config. Default value: None MV171	Reheat Configuration Reheat configuration for the zone, using the duct, baseboard or both. Choices: 1=None, 2=Duct only, 3=Base only, 4=Duct+base, 5=Base+duct
Duct heater Default value: 0-10V DA MV160	Duct Heater Configuration Displayed when Duct only, Duct+base or Base+duct is selected. Floating is available when Fan type is not Par./Ser. ECM. Choices: 1=0-10V DA, 2=0-10V RA, 3=2-10V DA, 4=2-10V RA, 5=Floating, 6=On/Off, 7=PWM Vac, 8=Valve NC, 9=Valve NO
Float. heat time Default value: 1.5 min AV241	Floating Reheat Timing Displayed when Floating Duct heater is selected. Range: 0.5 min to 9.0 min, using 0.5 min increments.
OAT duct lock Default value: 60.0 °F (16.0 °C) AV242	Outside Air Temperature Duct Heater Lockout Outside air temperature above which duct reheat will be disabled. Displayed when Duct only, Duct+base or Base+duct is selected. Range: 30.0 °F (-1.0 °C) to 90.0 °F (32.0 °C) using 0.5 °F (0.5 °C) increments.
Baseboard Default value: Relay MV92	Baseboard Configuration Output type used for baseboard control. Displayed when Base only, Duct+base or Base+duct is selected. Choices: 1=Relay, 2=PWM Vac, 3=Valve NC, 4=Valve NO
OAT base lock Default value: 60.0 °F (16.0 °C) AV243	Outside Air Temperature Baseboard Lockout Outside air temperature above which baseboard reheat will be disabled. Displayed when Base only, Duct+base or Base+duct is selected. Range: 30.0 °F (-1.0 °C) to 90.0 °F (32.0 °C) using 0.5 °F (0.5 °C) increments.

CONFIGURATION 4/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Heat PI weight Default value: 100% AV220	Zone Heating PI Weight Zone proportional integral weight for heating system demand management. Range: 0% to 100% using 25% increments.
Cool PI weight Default value: 100% AV221	Zone Cooling PI Weight Zone proportional integral weight for cooling system demand management. Range: 0% to 100% using 25% increments.
Zone mode Default value: Cool MV173	Zone Control Mode Type of air being delivered to the zone by the VAV system. May be manually configured or automatically managed with a Changeover temperature sensor. Choices: 1=Cool, 2=Heat

CONFIGURATION 5/9

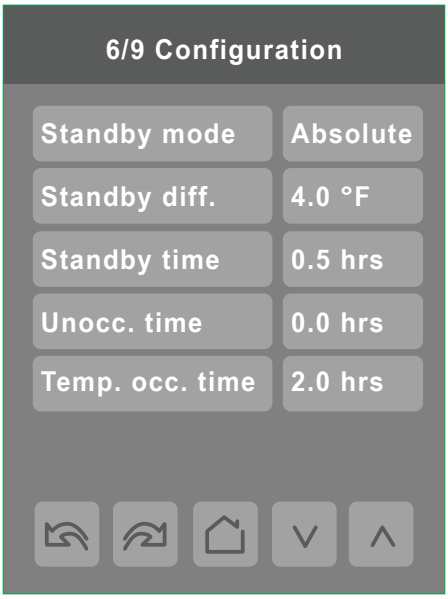
PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
UI16 config Default value: None MV46	UI16 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 system to disable any current heating or cooling action by Room Controller when window is open. Choices: 1=None, 2=Rem NSB, 3=Motion NO, 4=Motion NC, 5=Window
UI17 config Default value: None MV47	UI17 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” (refer to “Options” on page 73) must be set to “Local Occupancy” and “Occupancy Source” (refer to page 37) 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. Choices: 1=None, 2=Door Dry, 3=Override, 4=Filter, 5=Service

Config. Parameters Default Value	Significance and Adjustments
UI19 config Default value: None MV49	UI19 Configuration None: no function associated with input though input can be used for remote network monitoring. COC/NH: change over dry contact normally heat. Used to automatically change the Zone Mode between heat/cool based on temperature of incoming air. COC/NC: change over dry contact normally cool. Used to automatically change the Zone Mode between heat/cool based on temperature of incoming air. COS: change over sensor. Used to automatically change the Zone Mode between heat/cool based on temperature of incoming air. Choices: 1=None, 2=COC/NH, 3=COC/NC. 4=COS
Occupancy src Default value: Motion MV110	Occupancy Source Motion: Occupancy status received from motion sensor. Schedule: Occupancy status configured in the Setup/Schedule menu. Refer to “Configuration 7/9” on page 39. Mot. Occ: Occupied when scheduled occupied AND when motion is detected. Mot. Unoc: Occupied when scheduled occupied OR when motion is detected. Choices: 1=Motion, 2=Schedule, 3=Mot. occ., 4=Mot. unoc.
Smart recovery Default value: Off MV71	Enable Smart Recovery Off: No smart recovery. The occupied schedule time is the time at which the occupancy change will be applied, therefore the desired occupied temperature will not be attained until some minutes after the scheduled time. 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 UI16 is configured to remote NSB. Choices: 1=Off, 2=On
Prop. band Default value: 3.0 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 needed 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 to 10

Value	Effective Proportional Band	
3.0	3 °F	1.2 °C
4.0	4 °F	1.7 °C
5.0	5 °F	2.2 °C
6.0	6 °F	2.8 °C
7.0	7 °F	3.3 °C
8.0	8 °F	3.9 °C
9.0	9 °F	5.0 °C
10.0	10 °F	5.6 °C

CONFIGURATION 6/9

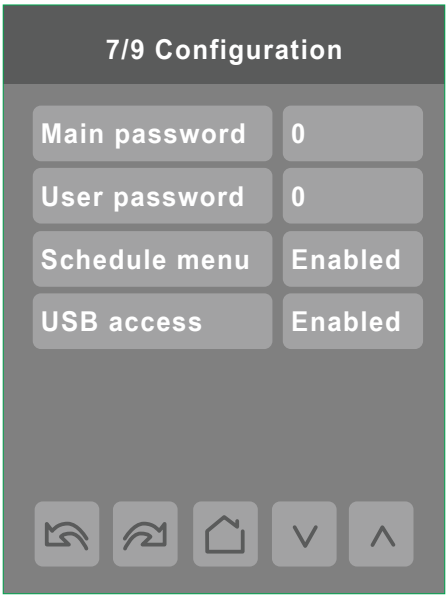


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Standby mode Default value: Absolute MV11	Standby Mode Configuration Standby setpoints used for control. Absolute: Standby entered values are used for standby mode. Offset: Occupied setpoints +/- Standby diff. used for standby mode. Refer to “Setpoints Screens” on page 50 to define Standby cool and Standby heat values. Choices: 1=Absolute, 2=Offset
Standby diff. Default value: 4.0 °F (2.0 °C) AV46	Standby Temperature Differential When Standby mode is set to ‘offset’, standby setpoints are calculated as follows: Standby cool: Cool setpoint + Standby diff. Standby heat: Heat setpoint - Standby diff. Refer to “Setpoints Screens” on page 50 to define Standby cool and Standby heat values. Range: 1.0 °F (0.5 °C) to 5.0 °F (2.5 °C), using 1.0 °F (0.5 °C) increments.
Standby time Default: 0.5 hours AV67	Standby Time Time between the moment where the motion sensor 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 24.0 hours, using 0.5 hour increments.

Config. Parameters Default Value	Significance and Adjustments
Unocc. time Default: 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: 0.0 to 24.0 hours (0.5 hour increments)
Temp. occ. time Default value: 2.0 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: 0.0 to 24.0 hours

CONFIGURATION 7/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Main password Default value: 0 AV56	Main Password Sets a protective access password to prevent unauthorized access to configuration menu parameters. A default value of “0” will not prompt for a password or lock access to the configuration menu. Range: 0 to 9999.
User password Default value: 0 AV57	User Password Sets a protective access password to prevent User unauthorized access to main screen adjustments. A default value of “0” will not prompt for a password. Range: 0 to 9999.

Config. Parameters Default Value	Significance and Adjustments
Schedule menu Default value: Dis.no.clk MV73	Schedule Menu Toggles activation of schedule menu direct access. Disabled: Schedule Menu can only be accessed through the Setup Menu screens. Enabled: Schedule Menu is directly accessible from the main screen via a touch in the upper corner. Dis.no.clk: Schedule Menu can only be accessed through the Setup Menu screens. Clock does not show. En.no.clk: Schedule Menu is directly accessible from the main screen via a touch in the upper corner. Clock does not show. Choices: 1=Disabled, 2=Enabled, 3=Dis.no.clk, 4=En.no.clk
USB access Default value: Enabled	USB access Enables/disables USB communication with the Room Comtroller (RC). Enabled: USB communication with the RC is enabled, so the Uploader tool can be used to upgrade firmware, standby images, Lua script, Wi-Fi Module settings, etc. Disabled: USB communication with the RC is disabled, so the Uploader tool cannot be used with the device. Choices: Enabled, Disabled

NOTICE

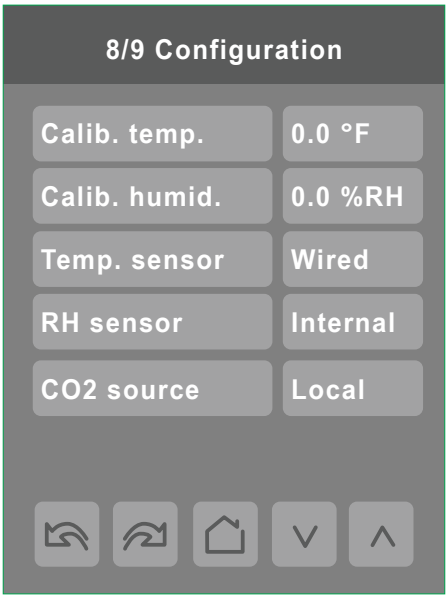
UNAUTHORIZED ACCESS

When commissioning is complete, it is recommended to minimize access points on the Room Controller:

- Disable USB access via the Configuration screen or Commissioning via USB on the Admin tab of the Configuration Web Page
- Enable main password to lock the setup screens
- Enable user password to lock the main screen adjustments (optional)
- Lock the display screen (optional)
- Use strong and unique Wi-Fi Module admin password

Failure to follow these instructions may lead to unauthorized users accessing the Wi-Fi Module or the Room Controller.

CONFIGURATION 8/9

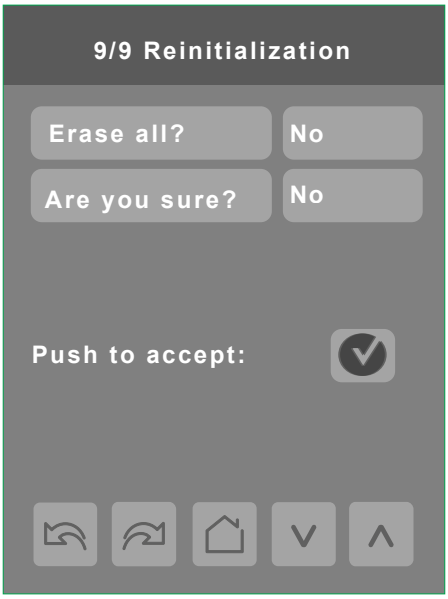


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Calib. temp. Default value: 0°F (0°C) AV7	Calibrate Room Temperature Sensor Room temperature sensor calibration. Offset can be added or subtracted to actual displayed room temperature. Range: ± 5.0 °F (± 2.5 °C)
Calib. humid. Default value: 0.0 %RH AV8	Calibrate Humidity Sensor Offset that can be added or subtracted to actual displayed humidity. Range: ± 15.0 %RH
Temp. sensor Default value: Wired MSI309, MV145	Room 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 act as the source for the room temperature. Wired: sets the thermistor connected to UI20 (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: The Room Controller uses the internal temperature sensor only if UI20 (RS) terminal is empty. If a valid temperature sensor is connected to UI20 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. Choices: 1=Wired, 2=Internal, 3=WL IO, 4 to 23=WL 1 to WL 20

Config. Parameters Default Value	Significance and Adjustments
RH sensor Default value: Internal MSI313, MV149	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 act 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. Choices: 1=None, 2=Internal, 3 to 22=WL 1 to WL 20
CO2 source Default value: Local MV150	CO2 Source Sets the source of the indoor CO2. This parameter allows the user to designate either the optional CO2 detection sensor module (VCM8001) or any of the paired wireless devices that support CO2 to act as the source for the room CO2. None: CO2 source disabled. Local: Sets the optional CO2 detection sensor module as the source for the room CO2. WL 1 to WL 20: Sets the selected Zigbee wireless device as the source for the room CO2. Only one device can be selected. Choices: 1=None, 2=Local, 3 to 22=WL 1 to WL 20

CONFIGURATION 9/9



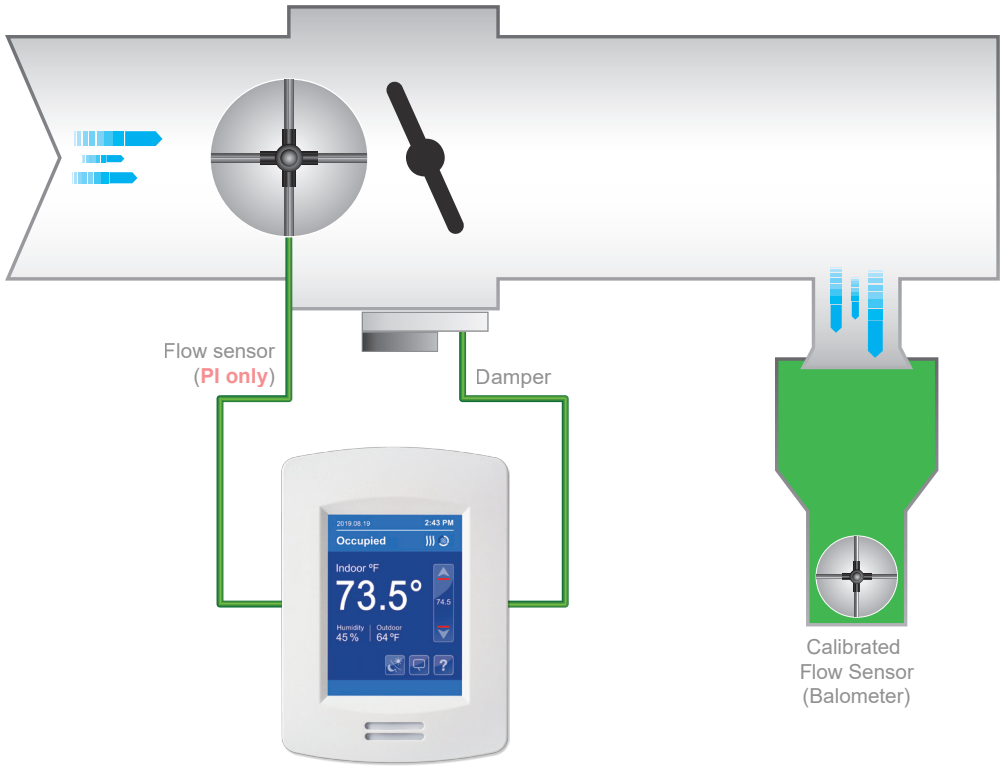
PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Erase all? Default value: No	Erase All Accepting Yes for both and then tapping 'Push to accept' returns all values to the factory default settings with the exception of the following: • COM address • Network Units • Network Language • Baud Rate • BACnet Instance • Device Name • Screen Contrast • Lua Script Note: Node type in Zigbee Network screen returns to default value (Router).
Are you sure? Default value: No	

Balancing

During balancing, a technician will install a calibrated flow sensor (Balometer) over the outlet in each room and use this to calibrate the VZ8250 Room Controller:

- **Pressure Independent**:
  - True air flow will be measured using the Balometer and compared to the airflow calculated by the Room Controller at various setpoints.
  - Room Controller calibration parameters will be adjusted to ensure the calculated air flow matches the true air flow.
- **Pressure Dependent**:
  - True air flow at various damper position percentages will be measured and used to set the appropriate damper percentages for the air flow required for the zone.



Note: Balancing menus will timeout after 8 hours and any Damper Override will be removed, returning the zone to normal operation.

PRESSURE INDEPENDENT

Before starting to Balance the system, check the following parameters are correctly configured in the Configuration menu:

- VAV Box Type
- Flow at 1-inch water column
- Airflow Sensor Pressure Range
- Actuator Type
- Floating Actuator Time

If the “Flow at 1-inch water column” or the “Airflow Sensor Pressure Range” parameters are changed, make sure that any previous airflow sensor calibration is set to 0 CFM.

Airflow Balancing settings can be found on the Balancing page of the Setup menu.

The recommended process for Balancing the system is:

1. On page “1/2 Balancing (PI)”, check the Minimum, Maximum Cooling, Maximum Heating and Reheat airflow setpoints are correctly configured for the zone.
2. Check airflow sensor is correctly calibrated at zero:
    a. On page “2/2 Balancing (PI)”, set Damper Override to Close.
    b. Wait for measured “Airflow level” to stabilize and confirm the value is less than the desired Minimum Airflow. If not, confirm damper is closed and auto-calibrated at zero the airflow sensor.
3. Before setting the Minimum and Maximum Cooling airflow, make sure that when fully open, the airflow is at least 40-60 CFM higher than the planned Maximum Cooling airflow. Otherwise, the control will be erratic.
4. Calibrate sensor at Minimum airflow:
    a. On page “2/2 Balancing (PI)”, set the Damper Override to Minimum Flow. The displayed Airflow Setpoint will use the value of Minimum Airflow.
    b. Wait for the RC8000 measured “Airflow level” to stabilize.
    c. Take a reading of the actual airflow using a calibrated Balometer.
    d. Enter the actual airflow as the “Balometer” value on “2/2 Balancing (PI)”. The RC8000 will calculate and display a new Minimum Flow Offset.
    e. Wait for the measured “Airflow level” to stabilize again. The Airflow level should now match the Airflow setpoint. Repeat if necessary.
5. Calibrate sensor at Maximum Cooling airflow:
    a. On page “2/2 Balancing (PI)”, set the Damper Override to Maximum Cooling. The displayed Airflow Setpoint will use the value of Maximum Cooling Airflow.
    b. Wait for RC8000 measured “Airflow level” to stabilize.
    c. Take reading of actual airflow using a calibrated Balometer.
    d. Enter the actual airflow as the “Balometer” value on “2/2 Balancing (PI)”.
    e. The RC8000 will calculate and display a new Maximum Flow Offset.
    f. Wait for the measured “Airflow level” to stabilize again. Airflow level should now match the Airflow setpoint. Repeat if necessary.
6. On page “2/2 Balancing”, revert the Damper Override to None allowing the system to return to normal operation.

Balancing (PI) 1/2

Pressure Independent		
Configuration parameter	**BACnet**	**Function description**
Airflow level Read Only	AV110 (R)	Airflow Level Measured (calibrated) airflow. Range: 0 to 20000 CFM (0 to 9440 l/s)
Airflow setpoint Read Only	AI350 (R)	Airflow Setpoint Current active airflow setpoint. Airflow Setpoint is not displayed when Damper Override is Open or Closed. Range: 0 to 10000 CFM (0 to 4720 l/s)
Min. flow Default value: 50 CFM (24 l/s)	AV254 (R/W)	Minimum Airflow Minimum airflow supplied to the zone. Range: 0 to 10000 CFM (0 to 4720 l/s)
Max. cool flow Default value: 200 CFM (94 l/s)	AV255 (R/W)	Maximum Cooling Airflow Maximum airflow supplied to the zone when cooling. Range: 0 to 10000 CFM (0 to 4720 l/s)
Max. heat flow Default value: 200 CFM (94 l/s)	AV256 (R/W)	Maximum Heating Airflow Maximum airflow supplied to the zone when heating. Range: 0 to 10000 CFM (0 to 4720 l/s)
Reheat flow Default value: 50 CFM (24 l/s)	AV257 (R/W)	Maximum Reheat Airflow Maximum airflow supplied to the zone with duct reheat. Range: 0 to 10000 CFM (0 to 4720 l/s)

Balancing (PI) 2/2

Pressure Independent		
Configuration parameter	**BACnet**	**Function description**
Airflow level Read Only	AV110 (R)	Airflow Level Measured (calibrated) airflow: Range: 0 to 20000 CFM (0 to 9440 l/s)
Airflow setpoint Read Only	AI350 (R)	Airflow Setpoint Current active airflow setpoint. Airflow Setpoint is not displayed when Damper Override is Open or Closed. Range: 0 to 10000 CFM (0 to 4720 l/s)
Damp. override Default value: None	MV172 (R/W)	Damper Override Force damper to selected position during balancing. **0 - None**: No damper override. Damper under normal control **1 - Minimum**: Force damper to maintain minimum airflow setpoint **2 - Max. cool**: Force damper to maintain maximum cooling airflow setpoint **3 - Close**: Force damper closed **4 - Reheat**: Force damper to maintain maximum reheat airflow setpoint **5 - Open**: Force damper fully open Choices: 1=None, 2=Minimum, 3=Max. cool, 4=Close, 5=Reheat, 6=Open
Balometer Default value: 0 CFM (0 l/s)		Measured airflow from Balometer: Measured value will be used to update calibration Offset and ensure measured Airflow level matches Balometer reading. Balometer is displayed when Damper Override is Minimum or Max. cool. Range: 0 to 20000 CFM (0 to 9440 l/s)
Minflow offset Default value: 0 CFM (0 l/s)	AV258	Minimum Airflow Offset Calibration offset applied to Airflow Level at Minimum flow. Min flow offset is displayed when Damper Override is Minimum. Range: -5000 to 5000 CFM (-2360 to 2360 l/s)

Pressure Independent		
Configuration parameter	**BACnet**	**Function description**
Max flow offset Default value: 0 CFM (0 l/s)	AV259	Maximum Airflow Offset Calibration offset applied to Airflow Level at Maximum flow. Max flow offset is displayed when Damper Override is Max. cool. Range: -5000 to 5000 CFM (-2360 to 2360 l/s)

PRESSURE DEPENDENT

Before starting to Balance the system, check the following parameters are correctly configured in the Configuration menu:

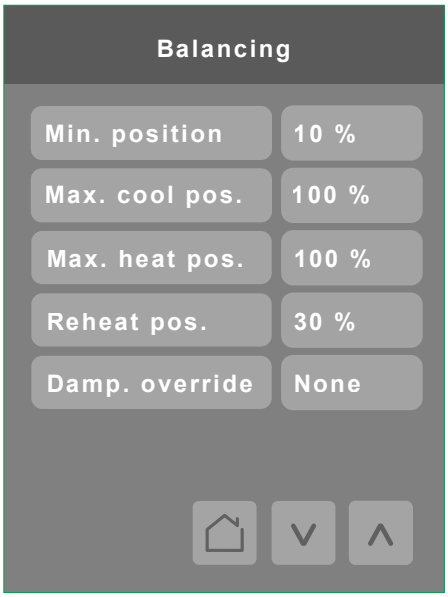
- VAV Box Type
- Actuator Type
- Floating Actuator Time

Air Flow Balancing settings can be found on the Balancing page of the Setup menu.

The recommended process for Balancing the system is:

1. On page “Balancing (PD)”, set the approximate damper positions for Minimum, Maximum Cooling, Maximum Heating, Damper override.
2. For each position, repeat the following process:
    a. Set the Damper Override to the desired position (Minimum, Maximum Cooling, Maximum Heating or Maximum Reheat).
    b. Allow time for damper to reach defined position.
    c. Take reading of actual air flow using a calibrated Balometer.
    d. Compare actual airflow to desired airflow and modify the Damper Position accordingly by adjusting the % value of the position options on the Balancing (PD) page (see below).
    e. Repeat until measured airflow at the damper position matches the desired airflow.
3. On page “Balancing (PD)”, revert the Damper Override to None to allow the system to return to normal operation.

Balancing (PD)



Pressure Dependent		
Configuration parameter	**BACnet**	**Function description**
Min. position Default value: 10 %	AV250 (R/W)	Damper Minimum Position: Range: 0 to 100 %
Max. cool pos. Default value: 100 %	AV251 (R/W)	Damper Maximum Cooling Position Range: 0 to 100 %
Max. heat pos. Default value: 100 %	AV252 (R/W)	Damper Maximum Heating Position Range: 0 to 100 %
Reheat pos. Default value: 30 %	AV253 (R/W)	Damper Maximum Reheat Position Range: 0 to 100 %
Damp. override Default value: None	MV172 (R/W)	Damper Override Force damper to selected position during balancing. **0 - None**: No damper override. Damper under normal control **1 - Minimum**: Force damper to maintain minimum airflow setpoint **2 - Max. cool**: Force damper to maintain maximum cooling airflow setpoint **3 - Close**: Force damper closed **4 - Reheat**: Force damper to maintain maximum reheat airflow setpoint **5 - Open**: Force damper fully open Choices: 1=None, 2=Minimum, 3=Max. cool, 4=Close, 5=Reheat, 6=Open

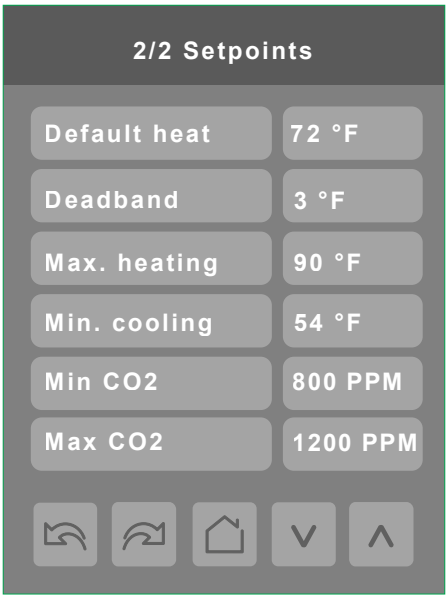
Setpoints Screens

SETPOINTS 1/2

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Unocc. cool Default value: 80.0 °F (27.0 °C) AV44	Unoccupied Cool Setpoint Cooling Temperature setpoint used by the Room Controller when in Unoccupied mode. Range: 54 to 100°F (12.0 to 37.5°C)
Standby cool. Default value: 78.0 °F (25.5 °C) AV42	Standby Cool Setpoint Cooling Temperature setpoint used by the Room Controller when in Standby mode. Range: 54 to 100°F (12.0 to 37.5°C)
Occ. cool Default value: 75.0 °F (24.0 °C) AV40	Occupied Cool Setpoint Cooling Temperature setpoint used by the Room Controller when in Occupied or Override mode. Range: 54 to 100°F (12.0 to 37.5°C)
Occ. heat. Default value: 72.0 °F (22.0 °C) AV39	Occupied Heat Setpoint Heating Temperature setpoint used by the Room Controller when in Occupied mode. Range: 40 to 90°F (4.5 to 32.0°C)
Standby heat. Default value: 69.0 °F (20.5 °C) AV41	Standby Heat Setpoint Heating Temperature setpoint used by the Room Controller when in Standby mode. Range: 40 to 90°F (4.5 to 32.0°C)
Unocc. heat. Default value: 62.0 °F (17 °C) AV43	Unoccupied Heat Setpoint Heating Temperature setpoint used by the Room Controller when in Occupied or Override mode. Range: 40 to 90°F (4.5 to 32.0°C)

SETPOINTS 2/2

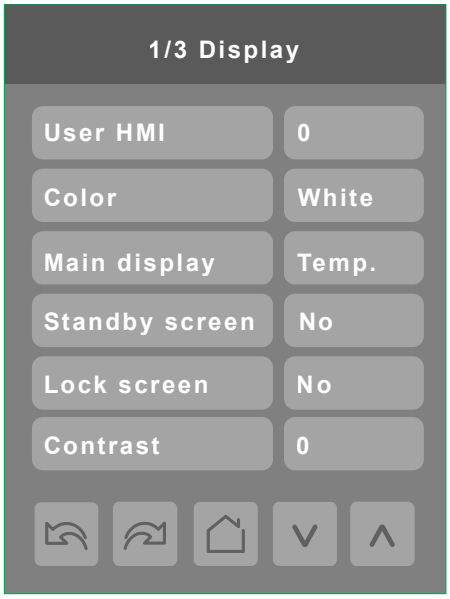


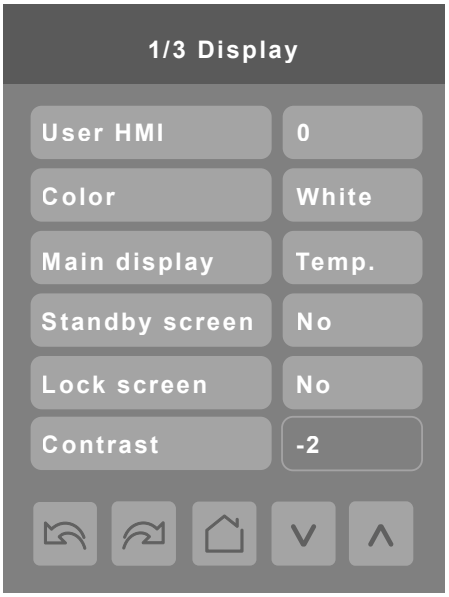
PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Default heat Default value: 72°F (22°C) AV45	Default Heating Setpoint Used for hospitality applications in stand-alone mode only to reset the occupied setpoints when a new guest enters the room. When the Room Controller is in unoccupied mode, any movement detected by a wired, wireless or local PIR sensor changes the occupancy mode to occupied modes and uses the “Default Heating Setpoint” as the new occupied setpoints. Note: This functionality is only valid when Standby mode = Offset. Refer to “Configuration 6/9” on page 38 to configure Standby mode. Range: 65 to 80°F (18.5 to 26.5°C)
Deadband Default value: 3°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 to 5°F (1.0 to 2.5°C)
Max. heating Default value: 90°F (32°C) AV58	Heating Setpoint Limit Maximum Occupied, Unoccupied, Standby and Override Heating setpoints maximum limit. Range: 40 to 90°F (4.5 to 32.0°C)
Min. cooling Default value: 54°F (12°C) AV59	Cooling Setpoint Limit Maximum Occupied, Unoccupied, Standby and Override Cooling setpoint adjustment. Range: 54 to 100°F (12.0 to 37.5°C)
Min CO2 Default value: 800 PPM AV23	Minimum CO2 Range: 0 and 4800 PPM, using increments of 10 PPM
Max CO2 Default value: 1200 PPM AV24	Maximum CO2 Range: 200 and 5000 PPM, using increments of 10 PPM

Display Screens

DISPLAY 1/3





IPS Screen

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
User HMI Default value: 2 AV2	User HMI Sets layout of icons on the home screen for various applications. For more information, refer to “Customized User HMI Display” on page 10. Range: 0 to 12
Color Default value: White MV2	HMI Color Change background color of the display screen. Choices: 1=White, 2=Green, 3=Blue, 4=Grey, 5=Dark grey, 6=Pink, 7=Purple, 8=Red, 9=Orange, 10=Black
Main display Default value: Temp. MV3	Main Display Shows temperature or setpoint on main display. Choices: 1=Temp., 2=Setpoint, 3=T. + set.
Standby screen Default value: No MV32	Use Standby Screen When the device is left unattended for 150 seconds, the standby image will appear. A custom image can be uploaded using the Uploader Tool. No: No Stand by image (Screen dims when no motion is detected) Yes: Stand by Image is displayed after 150 seconds Occ. Only: Standby image displays after 150 seconds. Screen turns off after 30 minutes only in occupied or override mode. Screen sav: Standby image displays after 150 seconds. Screen turns off after 30 minutes only in unoccupied or standby mode Choices: 1=No, 2=Yes, 3=Occ. Only, 4=Screen sav

Config. Parameters Default Value	Significance and Adjustments
Lock screen Default value: No MV148	Lock Screen Prevents the user from accessing the Room Controller until a password is entered. Screen lockout starts 150 seconds after no activity on the Room Controller (when standby image appears). This functionality is enabled only if the below conditions are met: • Standby image loaded • Standby Screen = “Yes” or “Screen Saver” • User Password = not 0 Choices: 1=No, 2=Yes
Contrast Default value: 0	Contrast Control screen contrast and brightness. Range: -5 to 5
Contrast Read Only	IPS Screen Contrast Starting with firmware revision 2.6, some RCs are shipped with an In-Plane Switching (IPS) screen that does not need contrast adjustment. Thus, the contrast parameter is read only with a default value of -2. To identify an RC with an IPS screen, “IPS” will appear on the RC’s box label. Note: RCs with an IPS screen cannot be downgraded to a firmware revision older than 2.6. Display Default: -2

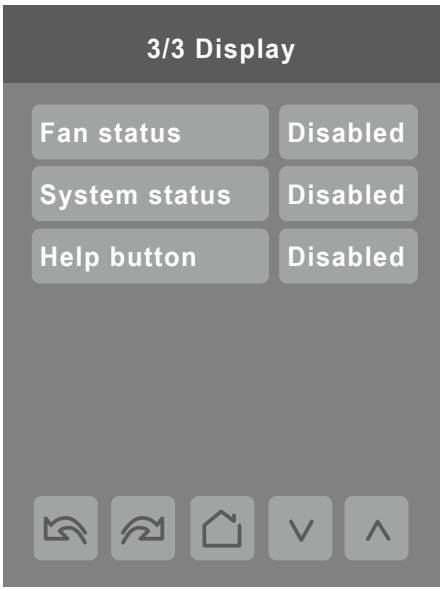
DISPLAY 2/3

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Language Default value: English MV4	Display Language Select language for main display. Choices: 1=English, 2=French, 3=Spanish, 4=Chinese, 5=Russian, 6=Arabic, 7=Bulgarian, 8=Czech, 9=Danish, 10=Dutch, 11=Finnish, 12=German, 13=Hungarian, 14=Indones., 15=Italian, 16=Norwegian, 17=Polish, 18=Portug., 19=Slovak, 20=Swedish, 21=Turkish, 22=Japanese, 23=Hebrew
Units Default value: °F MV51	Temperature Scale Changes the local display units. Refer to Network Units to change the network units broadcasted over the network. Choices: 1=°C for SI, 2=°F for Imperial
Low backlight Default value: 60% AV3	Low Backlight Sets display backlight intensity. This feature is activated (screen dims) 150 seconds after no activity on the Room Controller. Adjustable: 0 to 100%.
Night backlight Default value: 5% AV4	Night Backlight Sets backlight display intensity. Parameter only available for models with motion/light detectors. The screen backlight progressively decreases down to this setting when room is dark. This feature is used mostly in hospitality applications when a darker non obtrusive lighting level is desired when room is dark. Adjustable: 0 to 100%.

Config. Parameters Default Value	Significance and Adjustments
RH display Default value: Disabled MV70	Room Humidity Display Shows humidity level in room in %RH. Disabled: Do not display %RH Enabled: Display %RH Choices: 1=Disabled, 2=Enabled
CO2 display Default value: Enabled MV146	CO2 Display Shows carbon dioxide level in room in ppm. Disabled: Do not display CO2 level Enabled: Display CO2 level Note: The CO2 value will only be displayed on the Room Controller home screen if an optional CO2 detection sensor module is installed or a Zigbee wireless CO2 device is paired, and if there is a valid value. Choices: 1=Disabled, 2=Enabled

DISPLAY 3/3



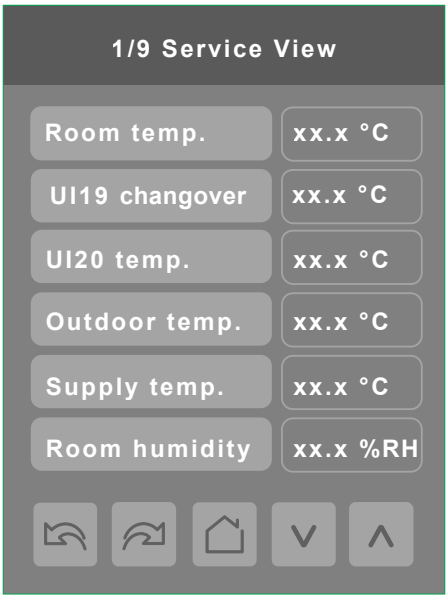
PARAMETER DETAILS

Conf. Parameters Default Value	Significance and Adjustments
Fan status Default value: Enabled MV180	Display the Fan Status icon Hides the fan status in the upper right corner of the User HMI display. Applicable to all User HMI configurations where the fan status is shown. Refer to "User HMI Show/Hide Options" on page 13. Choices: 1=Disabled, 2=Enabled
System status Default value: Enabled MV181	Display the System Status icon Hides the system status in the upper right corner of the User HMI display. Applicable to all User HMI configurations where the system status is shown. Refer to "User HMI Show/Hide Options" on page 13. Choices: 1=Disabled, 2=Enabled
Help button Default value: Enabled MV182	Display the Help button Hides the help button in the lower right corner of the User HMI display. Applicable to all User HMI configurations where the help button is shown. Refer to "User HMI Show/Hide Options" on page 13. Choices: 1=Disabled, 2=Enabled

Service View Screens

The service view screens show the current status of certain points locally on the Room Controller. These points can also be viewed through the network. Service view values are **Read Only** values but allow a service contractor to visualize the status of key functionality to correctly diagnose operational system issues.

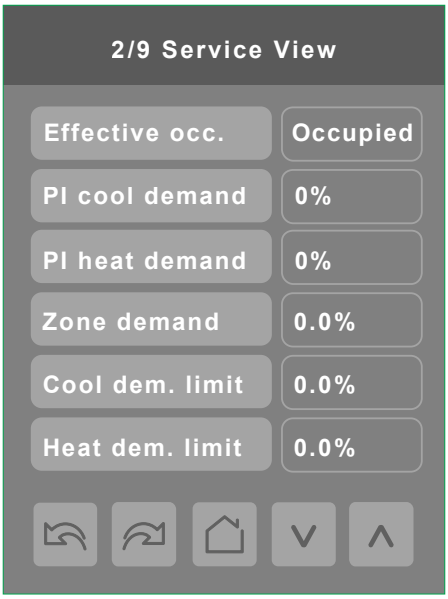
SERVICE VIEW 1/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Room temp. Read Only AV100	Room Temperature Shows the current room temperature from the configured temperature source.
UI19 changover| Read Only AV104	U19 Changeover Temperature Shows the temperature of the changeover sensor connected to UI19 terminal.
UI20 temp. Read Only AV105	UI20 Remote Temperature Shows the temperature of the sensor connected to UI20 (RS) terminal.
Outdoor temp. Read Only AV101	Outdoor Temperature Shows the outdoor temperature on the main screen.
Supply temp. Read Only AV102	UI22 Supply Temperature Shows supply air temperature as measured by the sensor.
Room humidity Read Only AV103	Room Humidity Shows the current room humidity percentage from the configured humidity source. Refer to RH sensor parameter in “Configuration 8/9” on page 41 to select RH source.

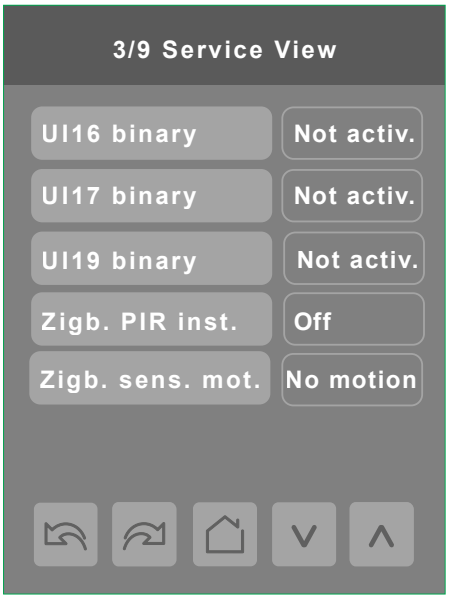
SERVICE VIEW 2/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Effective occ. Read Only MSI33	Effective Occupancy Shows as occupied, unoccupied, standby or override. Display Readings: 1=Occupied, 2=Unoccupied, 3=Override, 4=Standby
PI cool demand Read Only AO22	PI Cooling Demand Proportional Integral Cooling Demand. Percentage of cooling capacity demanded by the zone. Display Readings: 0-100%
PI heat demand Read Only AO21	PI Heating Demand Proportional Integral Heat Demand. Percentage of heating capacity demanded by the zone. Display Readings: 0-100%
Zone demand Read Only AO25	PI Zoning Demand Combined and weighted heating/cooling demand for the zone, where positive values indicate weighted heating demands, and negative values indicate weighted cooling demands. Display Readings: between -100% and +100%
Cool dem. limit Read Only AV89	Cooling Demand Limit Display Readings: 0-100%
Heat dem. limit Read Only AV88	Heating Demand Limit Display Readings: 0-100%

SERVICE VIEW 3/9



★ Only for models with onboard Zigbee or optional Zigbee add-on module

PARAMETER DETAILS

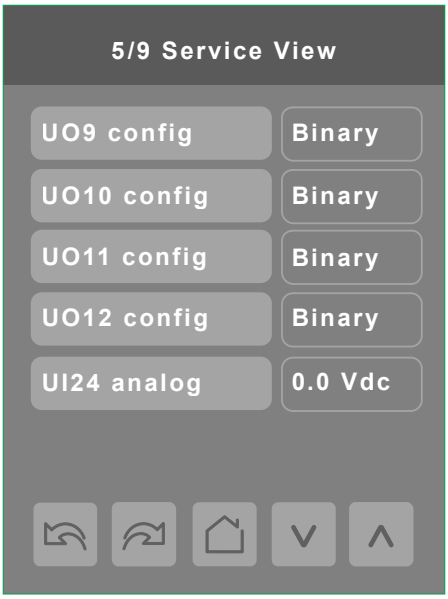
Config. Parameters Default Value	Significance and Adjustments
UI16 binary Read Only BI29	UI16 Binary Input Shows status of input. Display Readings: 1=Activated, 2=Not activ.
UI17 binary Read Only BI30	UI17 Binary Input Shows status of input. Display Readings: 1=Activated, 2=Not activ.
UI19 binary Read Only BI91	UI19 Binary Input Shows status of input. Display Readings: 1=Activated, 2=Not activ.
Zigb. PIR inst. Read Only BV200	ZigBee PIR Sensor Installed Shows if Zigbee Passive Infrared Sensor wireless motion sensor is paired to a Room Controller or not. Note: This parameter is for Zigbee wireless motion sensors only. Display Readings: 1=Off, 2=On
Zigb. sens. mot. Read Only BV201	Zigbee Sensor Motion Shows if motion is detected by any of the Zigbee wireless motion sensors. Note: This parameter is for Zigbee wireless motion sensors only. Display Readings: 1=No Motion, 2=Motion

SERVICE VIEW 4/9

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Window alarm Read Only BV35	Window Alarm Shows On if there is a Window alarm and shows Off if there is no Window alarm. This feature is for both wired and wireless sensors. Display Readings: 1=Off, 2=On
Service alarm Read Only BV37	Service Alarm Shows On if there is a Service alarm and shows Off if there is no Service alarm. Display Readings: 1=Off, 2=On
Filter alarm Read Only BV36	Filter Alarm Shows On if there is a Filter alarm and shows Off if there is no Filter alarm. Display Readings: 1=Off, 2=On
Recovery Read Only BV40	Smart Recovery Status Shows if Smart Recovery is active or not. Display Readings: 1=Off, 2=On
Local motion Read Only BV32	PIR Local Motion Shows if Motion alarm is active or not. Display Readings: 1=No Motion, 2=Motion

SERVICE VIEW 5/9



PARAMETER DETAILS

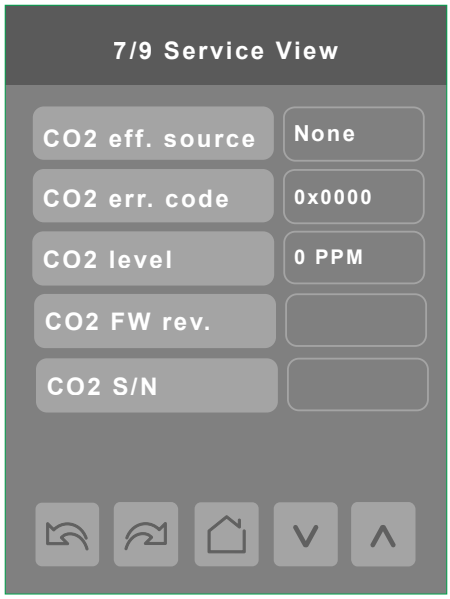
Config. Parameters Default Value	Significance and Adjustments
UO9 config Read Only MV96	UO9 Configuration Display Readings: 1=Analog, 2=Binary, 3=Relay RC, 4=Relay RH
UO10 config Read Only MV97	UO10 Configuration Display Readings: 1=Analog, 2=Binary, 3=Relay RC
UO11 config Read Only MV98	UO11 Configuration Display Readings: 1=Analog, 2=Binary
UO12 config Read Only MV99	UO12 Configuration Display Readings: 1=Analog, 2=Binary
UI24 analog Read Only AV107	UI24 Analog Input Shows the analog value of the UI24 generic Universal Input (in Volts)

SERVICE VIEW 6/9

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
UI19 type Read Only MV140	UI19 Input Type Display Readings: 1=Therm., 2=Binary, 3=Voltage
UI20 type Read Only MV141	UI20 Input Type Display Readings: 1=Therm., 2=Binary, 3=Voltage
UI22 type Read Only MV142	UI22 Input Type Display Readings: 1=Therm., 2=Binary, 3=Voltage
UI23 type Read Only MV143	UI23 Input Type Display Readings: 1=Therm., 2=Binary, 3=Voltage
UI24 type Read Only MV144	UI24 Input Type Display Readings: 1=Therm., 2=Binary, 3=Voltage

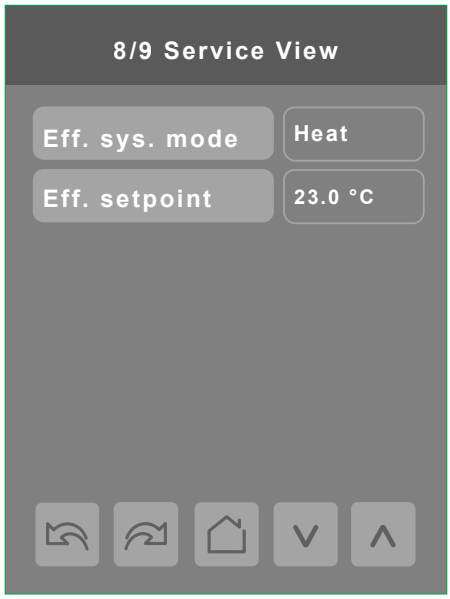
SERVICE VIEW 7/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
CO2 eff. source Read Only MSI324	CO2 Effective Source Shows the configured source of the indoor CO2. Display Readings: 1=None, 2=Internal, 3=Error, 4=Wired, 5 to 24=WL 1 to WL 20
CO2 err. code Default value: 0 Read Only	CO2 Error Code Error code 0x0001 shows if there is an error with the sensor.
CO2 level Read Only AV106	CO2 Level Shows CO2 level in PPM. Display Readings: 0 to 5000 PPM
CO2 FW rev. Read Only	CO2 Firmware Revision Shows the Firmware version of the installed CO2 sensor module.
CO2 S/N Read Only	CO2 Serial Number Shows the serial number of the installed CO2 sensor module.

SERVICE VIEW 8/9



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Eff. sys. mode Read Only MSI314	Effective System Mode Shows 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. Displayed Readings: 1=Cool, 2=Heat
Eff. setpoint Read Only AI329	Effective Setpoint Shows the tempertature setpoint value currently in use by the system.

SERVICE VIEW 9/9

The Device Name (BACnet name) consists of the model number followed by the COM address (MAC address). The BACnet name can be changed via the BACnet front end and the new name appears on the above screen.

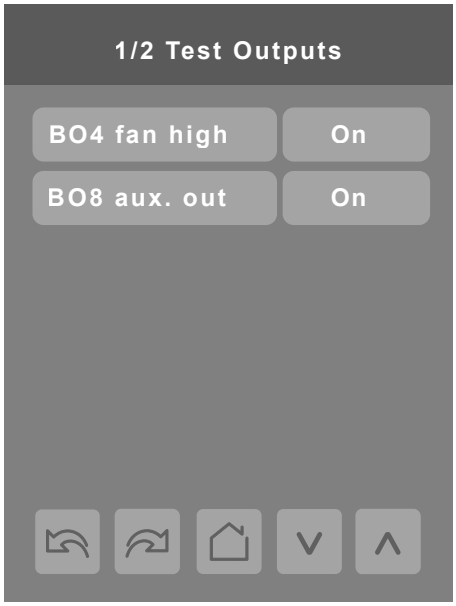
For example, when a VZ8250U5500BP Room Controller with a MAC address of 41 is connected to a network, its default Device Name is VZ8250U5500BP-41 and its default BACnet Device ID is 82041.

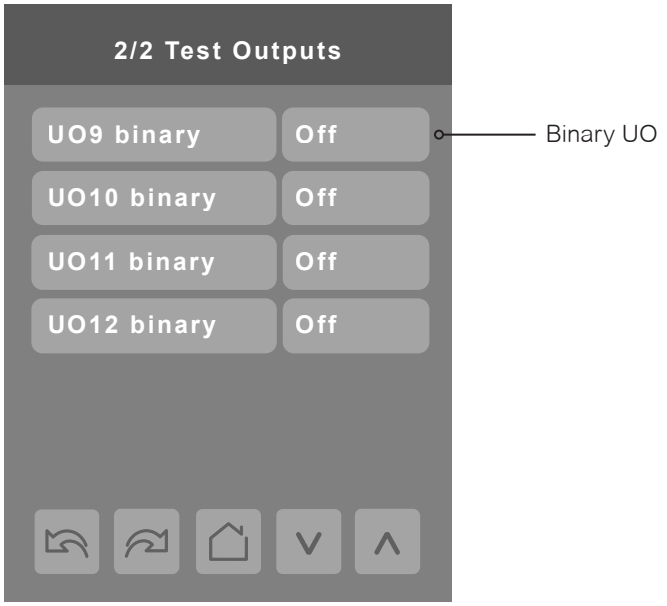
Firmware Revision shows the Firmware version currently installed on the Room Controller. Upgrading to a newer Firmware version deletes the previous Firmware version, however it is possible to set the Room Controller to an earlier Firmware version with the Uploader Tool.

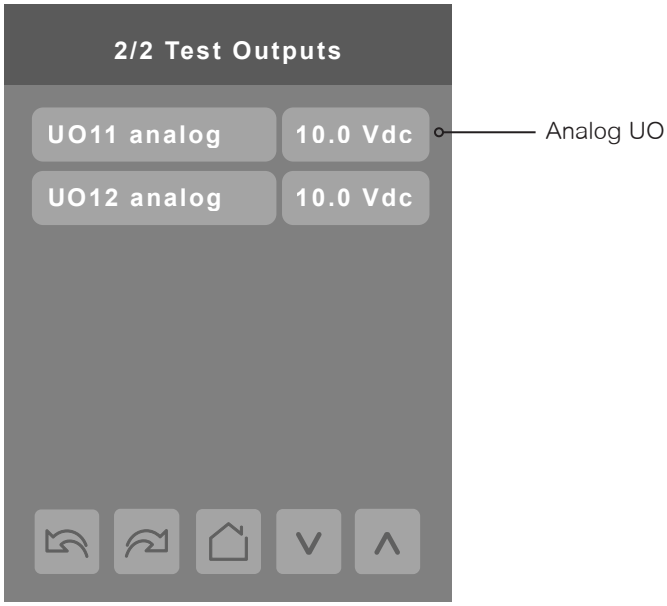
Zigbee Revision shows the Firmware version of an onboard Zigbee or optional Zigbee add-on module.

Test Outputs Screens

TEST OUTPUTS







NOTICE
SAFE OPERATION ENVIRONMENT Use high caution when manually enabling outputs so as to not cause damage to equipment. It is the responsibility of the Installer or Service Contractor to maintain a safe operation environment during usage. **Failure to follow these instructions can result in equipment damage.**

Note 1: The Test Outputs screen allows manual override of specified outputs. After any output state is overridden, the command is cancelled after 1 minute of screen inactivity (auto exit to main screen) or when page is exited.

Note 2: These parameters can also be changed via BACnet and the changed parameter background will turn red to indicate the parameter's value had been overridden. The overridden value remains even if the user exits the main screen

Note 3: Test Outputs values are LIVE. Any output gets displayed immediately for any value change according to the following:

1. If any BACnet priority array (1 - 16) includes a value, the displayed state background shows in red.
2. When toggling a value on the screen, the output directly energizes according to the selected value.
3. After any output state gets modified, all overrides get cancelled after 1 minute of button inactivity, or if you scroll from one screen to another screen.

Note 4: Test Outputs UO9 to UO12 are dependent on control type configuration. Analog or Binary options may be shown depending on the configuration of Actuator type, Fan type, Reheat config and Duct heater outputs.

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
BO4 fan high Default value: Off BO95	BO4 High Speed Fan Output Choices: 1=Off, 2=On
BO8 aux. out Default value: Off BO98	BO8 Auxiliary Binary Output Choices: 1=Off, 2=On
UO9 binary Default value: Off BO93	UO9 Binary Output Choices: 1=Off, 2=On
UO10 binary Default value: Off BO94	UO10 Binary Output Choices: 1=Off, 2=On
UO11 binary Default value: Off BO101	UO11 Binary Output Choices: 1=Off, 2=On
U1O2 binary Default value: Off BO102	UO12 Binary Output Choices: 1=Off, 2=On
UO9 analog Default value: 0.0 Vdc AO125	UO9 Analog Output Range: 0.0 Vdc to 10.0 Vdc, using 0.1 Vdc increments
UO10 analog Default value: 0.0 Vdc AO126	UO10 Analog Output Range: 0.0 Vdc to 10.0 Vdc, using 0.1 Vdc increments
UO11 analog Default value: 0.0 Vdc AO123	UO11 Analog Output Range: 0.0 Vdc to 10.0 Vdc, using 0.1 Vdc increments
UO12 analog Default value: 0.0 Vdc AO124	UO12 Analog Output Range: 0.0 Vdc to 10.0 Vdc, using 0.1 Vdc increments

Language Selection Screens

LANGUAGE SELECTION

Only English, French, Spanish, Chinese, and Russian are enabled by default and are accessible to users cycling through languages on the display settings menu 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

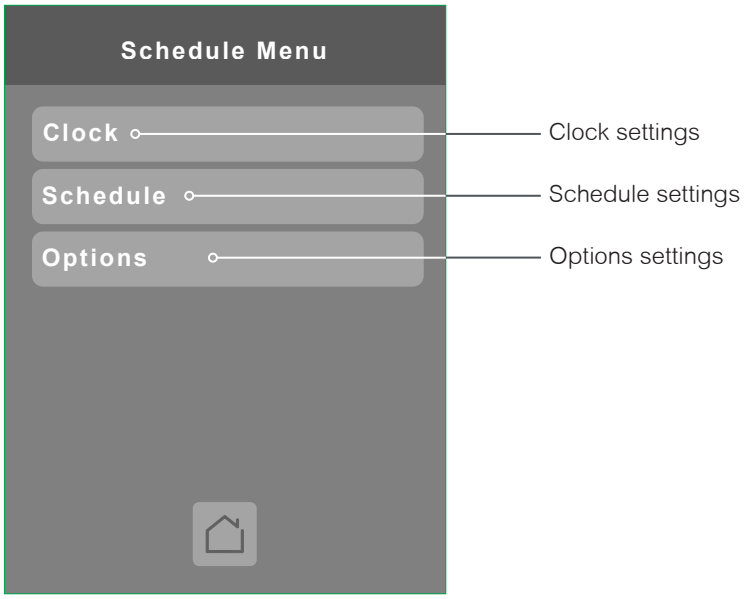
Config. Parameters Default Value	Significance and Adjustments
French Default value: Enabled MV101	French Choices: 1=Disabled, 2=Enabled

Config. Parameters Default Value	Significance and Adjustments
Spanish Default value: Enabled MV102	Spanish Choices: 1=Disabled, 2=Enabled
Chinese Default value: Enabled MV103	Chinese Choices: 1=Disabled, 2=Enabled
Russian Default value: Enabled MV104	Russian Choices:1=Disabled, 2=Enabled
Arabic Default value: Disabled MV120	Arabic 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
German Default value: Disabled MV126	German Choices: 1=Disabled, 2=Enabled
Hebrew Default value: Disabled MV156	Hebrew Choices: 1=Disabled, 2=Enabled
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 MV155	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
Slovak Default value: Disabled MV133	Slovak Choices: 1=Disabled, 2=Enabled

Config. Parameters Default Value	Significance and Adjustments
Swedish Default value: Disabled MV134	Swedish Choices: 1=Disabled, 2=Enabled
Turkish Default value: Disabled MV135	Turkish Choices: 1=Disabled, 2=Enabled

Clock - Schedule Screens

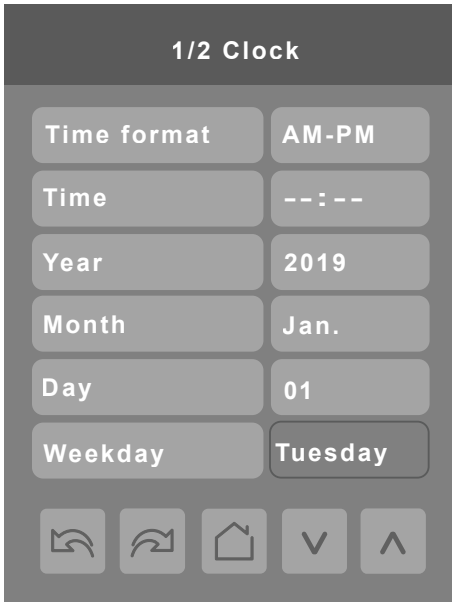
SCHEDULE MENU



Note: The Clock- Schedule Menu screen is directly accessible from the main setup screen.

CLOCK

The Clock settings screen allows the device's internal time settings to be changed (current time, day, month, year and weekday options), as well as to choose between a 12 hour AM / PM display or 24 hour display.

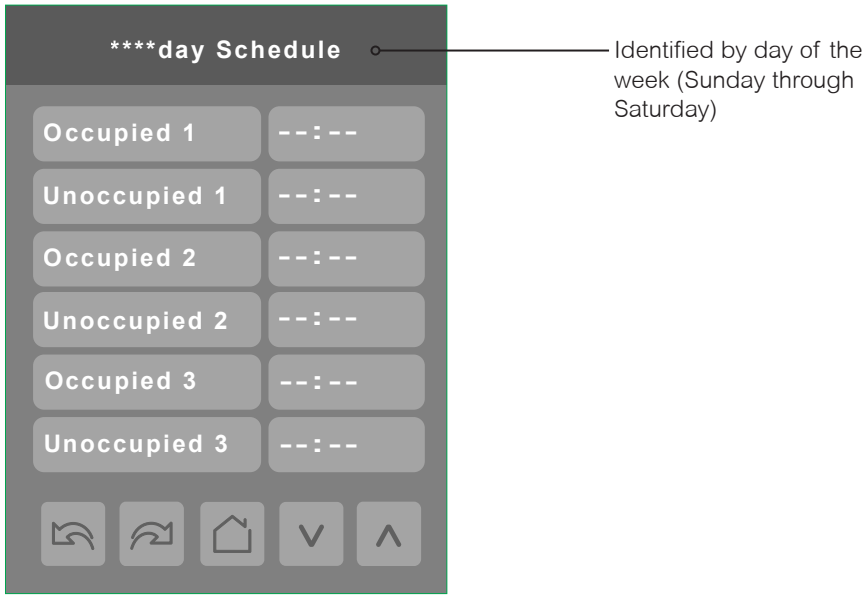


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Time Format Default value: AM-PM MV5	Time Format Current time display format. Choice between 12 hour (AM - PM) time format or 24 hour time format. Note: Changing the value of this parameter automatically changes the format of the displayed value of the time parameter. Choices: 1=AM-PM, 2=24 Hours
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.
Year Default value: 2019	Year Current year Range: 2000 - 2100
Month Default value: Jan.	Month Current month Range: Jan. - Dec.
Day Default value: 1	Date Current date Range: 1 - 31
Weekday Default value: Monday Read Only	Current Day Automatically set based on data received from Year/Month parameters. Range: Monday - Sunday
Time source Default value: None Read Only MSI325	Time Source Shows the source that most recently set the time on the Room Controller. Display Readings: 1=None, 2=Local, 3=BACnet, 4=NTP, 5=Cloud

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.

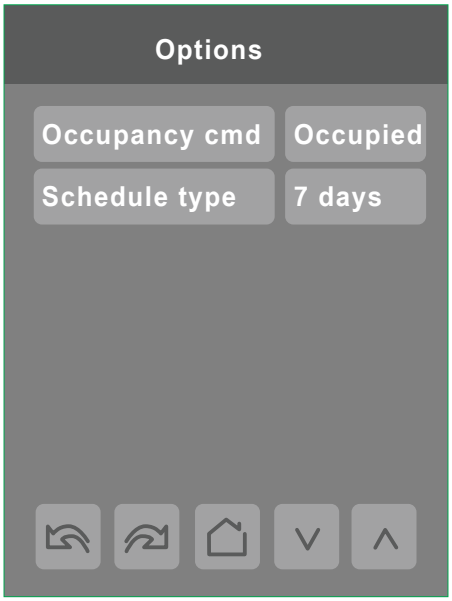


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Occupied 1 - 3 Default value: None	Occupied 1 - 3 Defines a time when the Room Controller is automatically set to use the Occupied setpoint. Note: There are 3 separate Occupied parameter entries Range: 00:00 - 23:59
Unoccupied 1 - 3 Default value: None	Unoccupied 1 - 3 Defines a time when the Room Controller is automatically set to use the Unoccupied setpoint. Note: There are 3 separate Occupied parameter entries Range: 00:00 - 23:59

OPTIONS

The options settings allow the Room Controller to function in Occupied or Unoccupied mode following a defined Schedule type set by the user.

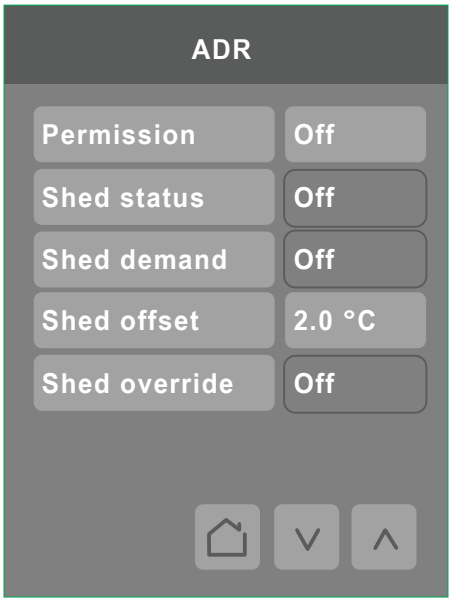


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Occupancy cmd Default value: Occupied MV10	Occupancy Command Loc occ: occupancy is determined by local sequences (either PIR or schedule, as configured under Occ. source). Occupied: force occupied mode. Unoccup: force unoccupied mode. Choices: 1=Loc occ, 2=Occupied, 3=Unocc.
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+2 days, 3=5+1+1 day

Automatic Demand Response (ADR) Screen

Automatic Demand Response (ADR) feature is used to reduce energy load when electric grid contingencies threaten supply-demand balance.



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Permission Default value: Off MV152	ADR Permission Used to permit the ADR to be applicable or not to change the Room Controller setpoints setting or not. Off: The Load Shedding Demand will not be permitted. On: The Load Shedding Demand will be permitted. Choices: 1=Off, 2=On
Shed status Default value: Off Read Only BV49	Load Shedding Status 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. Off: Load Shedding Demand is not activated. On: Load Shedding Demand is activated. Display Readings: 1=Off, 2=On
Shed demand Default value: Off Read Only BV48	Load Shedding Demand Sets the request to initiate Load Shedding. This demand can only be set through BACnet by the local Utility company, using the “Load Shedding Demand” Binary Object Value Properties. Off: No Load Shedding Demand is received or the Shedding demand is disabled. On: Received the Load Shedding Demand or received the signal to activate Load shedding. Display Readings: 1=Off, 2=On

Config. Parameters Default Value	Significance and Adjustments
Shed offset Default value: 4°F (2°C) AV211	Load Shedding Offset Used to change the effective setpoints in occupied, standby and unoccupied modes. For example, when “Shed status” is On 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. Choices: 4°F to 10°F (2°C to 5.5°C)
Shed override Default value: Off Read Only BV50	Load Shedding Override 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. Off: Allows shed load demand request from utility company (setpoint will change according to shed offset) On: Rejects or cancels shed load demand request from utility company (setpoints remain the same). Display Readings: 1=Off, 2=On

Wireless Screens

WIRELESS MENU

The Wireless screen shows only in models with onboard Zigbee or optional Zigbee add-on module.

ECOSYSTEM SETTINGS

The Ecosystem Settings screens show the network status, the number of paired devices as well as information for each paired device. A maximum of 20 Zigbee wireless devices can be paired to each Room Controller. Tap forward arrow to obtain information on each paired Zigbee device.

PARAMETER DETAILS

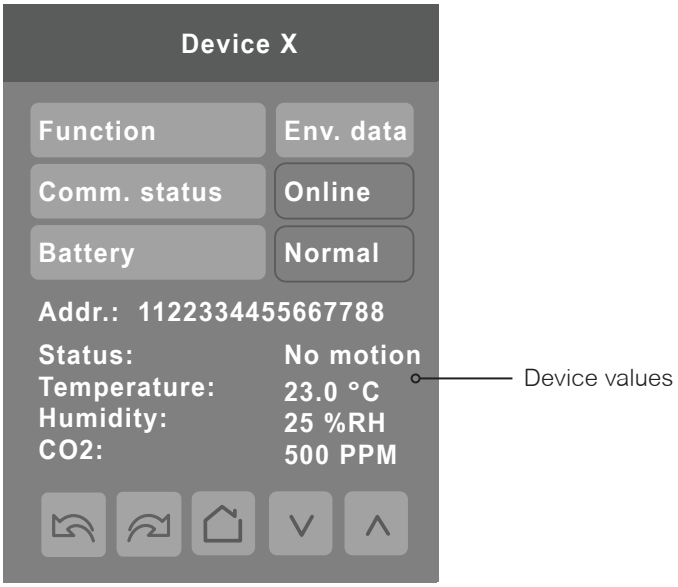
Config. Parameters Default Value	Significance and Adjustments
Network status Default value: Not det. Read Only MSI2	Zigbee Network Status Shows current status of Zigbee network. Not det.: Zigbee module not detected Pwr on: Zigbee module detected but not configured No NWK: Zigbee configured but no network joined Joined: Zigbee network joined Online: Communicating (Exchanging data) Display Readings: 1=Not det., 2=Pwr on, 3=No NWK, 4=Joined, 5=Online
Permit join Default value: Off	Permit Join Setting to 'On' allows the Room Controller to pair with a Zigbee device. Value must be set to 'On' to pair with initial device and then set to 'Off' if user wants to prevent additional Zigbee devices from joining the network. Changing this value to "Off" on the Coordinator prevents any new Zigbee devices from joining the network. Permit join can be On/Off when the Room Controller is a coordinator, however the parameter is read only when the Room Controller is a router. Permit join stays On for 3 hours. On: Allows Room Controller to pair with wireless Zigbee device Off: Prevents Room Controller from pairing with wireless Zigbee device, or prevent any additional Zigbee devices from joining network. Choices: On or Off

Config. Parameters Default Value	Significance and Adjustments
Permit timeout Default value: 0 Read Only	Permit Join Timeout Allows devices to join the Coordinator Room Controller for 180 minutes from the moment it is set to ON. Once the timer elapses, no devices will be able to join the network. Note: Permit Join parameter must be set to 'On' to enable this feature. Range: 0 or 180 minutes
Paired devices Default value: 0 Read Only AI330	Paired Zigbee Devices Shows the number of Zigbee wireless devices currently paired with the Room Controller. A maximum of 20 Zigbee wireless devices can be paired with each Room Controller. Display Readings: 0 to 20 devices

DEVICE 1-20

This screen is a subset of the Ecosystems screen and shows data for each paired Zigbee device. The Status, Temperature, Humidity and CO2 values will only be visible if they are supported by the device.

Note: Device X pages will only show up once devices have been paired.



PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Function Default value: None MV210-400	Wireless Device X - Function Shows the function of the installed Zigbee wireless device. None: No status reported to Room Controller Window: Window sensor installed Door: Door sensor installed Motion: Device set to detect motion Env. data: Temperature, Humidity, CO2 sensor installed Remove: Removes device from Device list Water: Water leak sensor installed Refrig.: Refrigerator temperature sensor installed Freezer: Freezer temperature sensor installed Choices: 1=None, 2=Window, 3=Door, 4=Motion, 5=Env. data, 6=Remove, 7=Water, 8=Refrig., 9=Freezer

Config. Parameters Default Value	Significance and Adjustments
Comm. status Default value: Not paired Read Only MSI212-402	Wireless Device X - Communication Status Shows if device is communicating with Room Controller Not paired: Device not paired Online: Device paired and online Invalid: Device was paired and Room controller detected a communication error (selected function does not match paired sensor functionality). Offline: Device paired but offline Display Readings: 1=Not paired, 2=Online, 3=Invalid, 4=Offline
Battery Default value: None Read Only MSI211-401	Wireless Device X - Battery Shows current status of battery in wireless device. Display Readings: 1=None, 2=Normal, 3=Low
Addr. Read Only CSV11-30	Wireless Device X - Address Shows unique IEEE (MAC) address of Zigbee wireless device
Status Default value: None Read Only Door status: BV1 Window status: BV3 Water status: BV46 Sensor type: MSI180-199 Status: MSI210-400	Wireless Device X - Sensor Type Wireless Device X - Status Shows the Zigbee wireless device status. Device status and values will be different depending on the type of device: • Door Contact Status: 1=Closed, 2=Opened • Window Contact Status: 1=Closed, 2=Opened • Motion Sensor: No Motion, Motion • Water Leak Sensor Status: 1=Normal, 2=Leak Display Readings: Sensor Type: 1=None, 2=Unknown, 3=Motion, 4=Contact, 5=Water, 6=Temp., 7=Temp./RH, 8=CO2 Status: 1=None, 2=Closed, 3=Opened, 4=No motion, 5=Motion, 6=Normal, 7=Leak
Temperature Read Only AI315-324, 355-364	Wireless Device X - Temperature Range: -40 to 185 °F (-40 to 85 °C)
Humidity Read Only AI365-384	Wireless Device X - Humidity Percent releative humidity Range: 0 to 100 %
CO2 Read Only AI385-404	Wireless Device X - CO2 Parts per million Range: 0 to 5000 PPM

DEVICE GROUPS

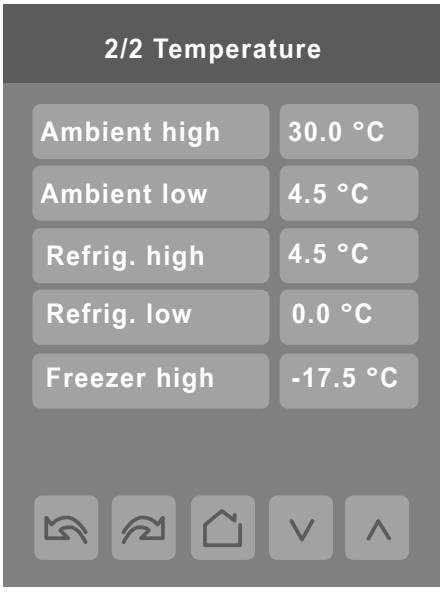
The Device Groups screen shows if a particular Zigbee wireless sensor is paired with the Room Controller.

PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Door installed Default value: No Read Only BV2	Door Contact Installed Shows if Door sensor is installed. Display Readings: 1=No, 2=Yes
Win. installed Default value: No Read Only BV4	Window Contact Installed Shows if Window sensor is installed. Display Readings: 1=No, 2=Yes
Water installed Default value: No Read Only BV45	Water Leak Sensor Installed Shows if Water Leak sensor is installed. Display Readings: 1=No, 2=Yes

TEMPERATURE ALARMS CONFIGURATION

The Temperature Alarms Configuration screens show the values that trigger an alarm only for Zigbee wireless sensors with temperature measurement.

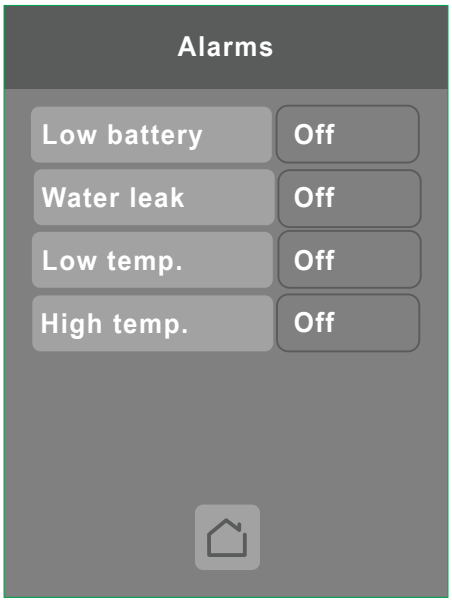


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Enable Default value: Off MV151	Temperature Alarm Enabled Enables wireless device to alert Room Controller if temperature value reaches defined value in a particular paired device. Choices: 1=Off, 2=On
Hysteresis Default value: 2.0 °F (1.0 °C) AV210	Temperature Alarm Hysteresis Choices: 0 to 10°F (0 to 5.5 °C)
Ambient high Default value: 86.0 °F (30.0 °C) AV275	Ambient High Temperature Threshold Range: 32 to 122 °F (0 to 50 °C)
Ambient low Default value: 40.0 °F (4.0 °C) AV209	Ambient Low Temperature Threshold Range: 32 to 50 °F (0 to 10 °C)
Refrig. high Default value: 40.0 °F (4.0 °C) AV276	Refrigeration High Temperature Threshold (only present if a refrigeration sensor is installed) Range: 32 to 60 °F (0 to 16 °C)
Refrig. low Default value: 32.0 °F (0.0 °C) AV277	Refrigeration Low Temperature Threshold (only present if a refrigeration sensor is installed) Range: 32 to 50 °F (0 to 10 °C)
Freezer high Default value: 0.0 °F (-18.0 °C) AV278	Freezer High Temperature Threshold (only present if a freezer sensor is installed) Range: -40 to 32 °F (-40 to 0 °C)

ALARMS

The Alarms screen shows data for paired Zigbee wireless devices.

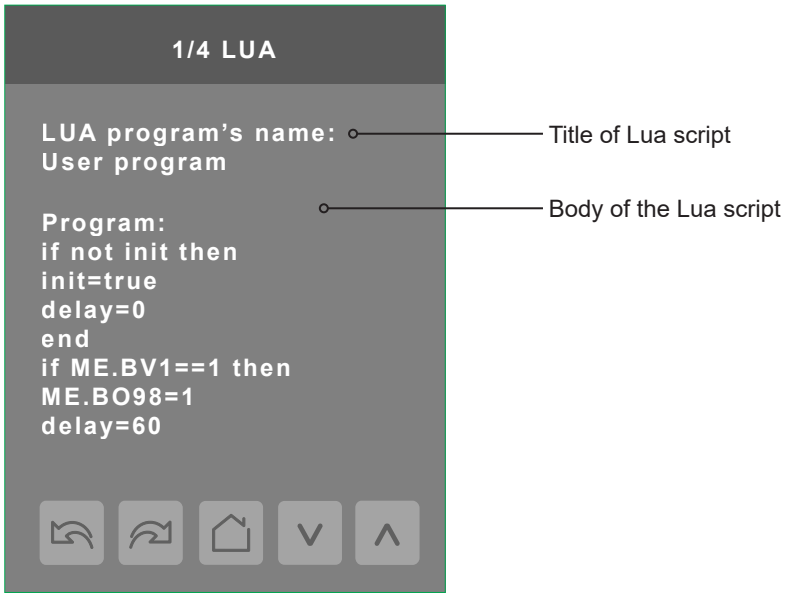


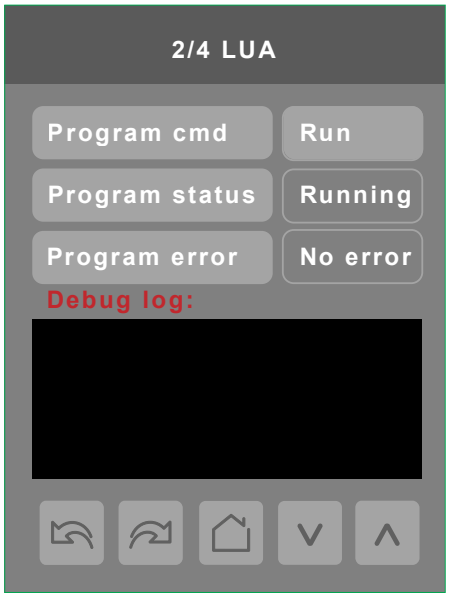
PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Low battery Default value: Off Read Only BV5	Low Battery Alarm Shows if any wireless paired device has a low battery status (On) or no paired device has low battery (Off). Display Readings: 1=Off, 2=On
Water leak Default value: Off Read Only BV44	Water Leak Shows if any water sensor paired device has detected a water leak (On) or no leak detected in any of the water sensor paired devices (Off). Display Readings: 1=Off, 2=On
Low temp. Default value: Off Read Only BV47	Low Temperature Shows if any temperature sensor paired device has detected a low temperature (On) or no low temperature detected in any of the temperature sensor paired devices (Off). Display Readings: 1=Off, 2=On
High temp. Default value: Off Read Only BV53	High Temperature Shows if any temperature sensor paired device has detected a high temperature (On) or no high temperature detected in any of the temperature sensor paired devices (Off). Display Readings: 1=Off, 2=On

Lua Screens

The Lua settings screens show information about any custom Lua script uploaded to the Room Controller. Lua scripts are not programmable on the Room Controllers. Lua scripts can be uploaded to the Room Controller via the Uploader Tool or via BACnet.



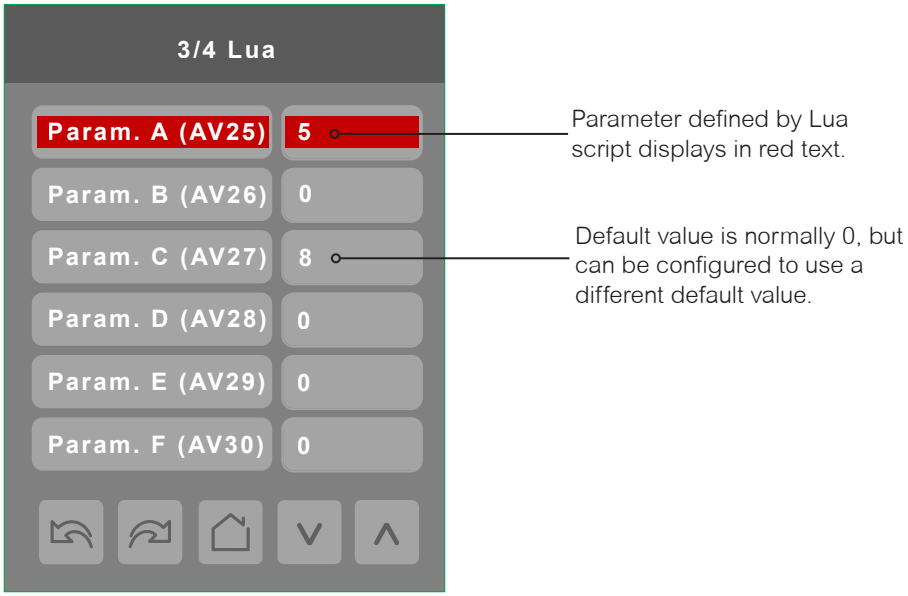


PARAMETER DETAILS

Config. Parameters Default Value	Significance and Adjustments
Program cmd Default value: Run	Program Command Run: Lua script activated and runs continuously until deactivated Stop: Lua script deactivated Choices: Stop or Run
Program status Default value: Idle Read Only	Program Status Running: Lua script active Halted: Lua script stopped and not active Idle: Lua script is running but not currently performing any actions Waiting: Lua script running and waiting for a response Uploading: Lua script currently unloading from Room Controller Loading: Lua script currently loading to Room Controller Display Readings: Idle, Loading, Running, Waiting, Halted, Unloading
Program error Default value: No error Read Only	Program Error No error: No errors in Lua script Syntax: Syntax error in Lua script detected Runtime: Runtime error occurred while running Lua script Memory: Device has run out of memory for the script Display Readings: No error, Syntax, Runtime, Memory

LUA GENERIC PARAMETERS

The Lua settings include twelve 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) and the display color of the parameter changes to red. These parameters can also be configured via Zigbee, however they can still be modified locally by the user.



PARAMETER DETAILS

Config. Parameters 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 (AV225) Default value: 0 AV225	Lua Parameter G (AV225) The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter H (AV226) Default value: 0 AV226	Lua Parameter H (AV226) The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter I (AV227) Default value: 0 AV227	Lua Parameter I (AV227) The value of this parameter depends on what is assigned to it from a BAS or Lua script.

Config. Parameters Default Value	Significance and Adjustments
Parameter J (AV228) Default value: 0 AV228	Lua Parameter J (AV228) The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter K (AV229) Default value: 0 AV229	Lua Parameter K (AV229) The value of this parameter depends on what is assigned to it from a BAS or Lua script.
Parameter L (AV230) Default value: 0 AV230	Lua Parameter L (AV230) The value of this parameter depends on what is assigned to it from a BAS or Lua script.