VT8000 Room Controllers

VT8650 User Interface Guide

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

Firmware Revision 2.5.1

VICONICS
Beyond Comfort

Version 15

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

⚠ WARNING

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 death, serious injury, or 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

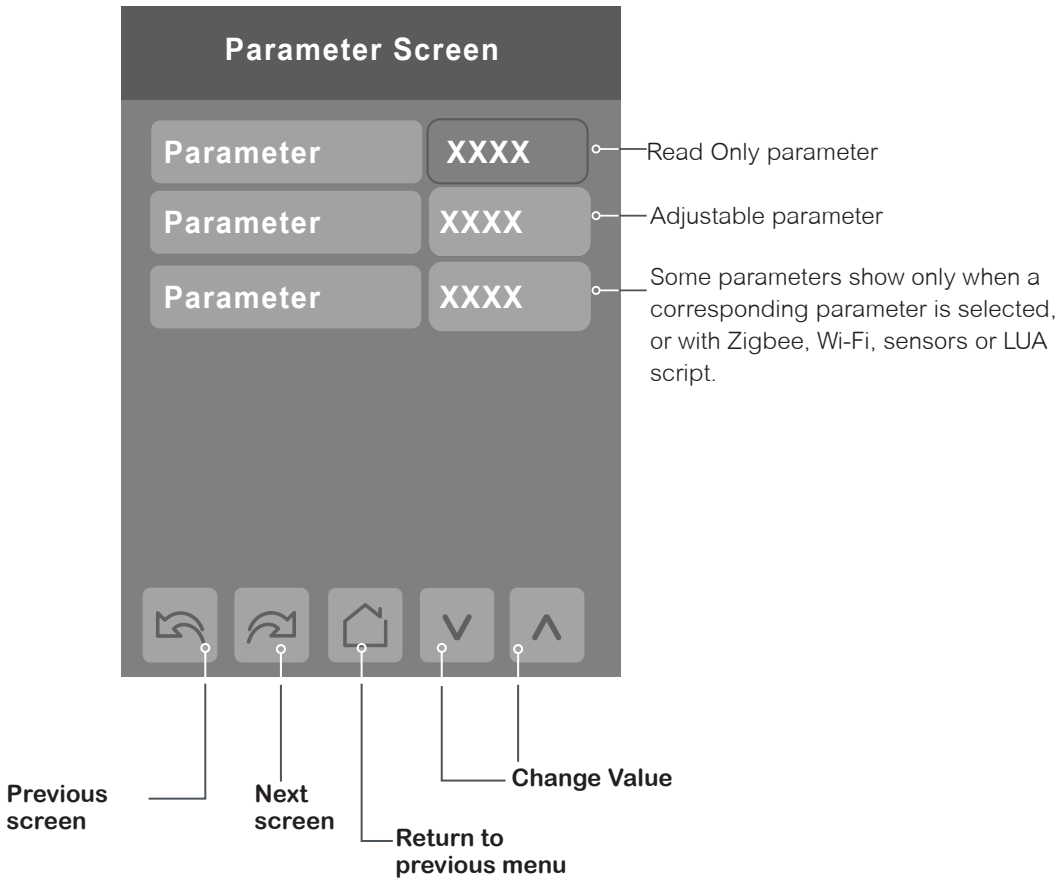
Introduction

This guide shows the user interface instructions for the VT8650 Series Room Controller (RC) firmware revision 2.5.1 for users and integrators.

User and Integrator Screens

The VT8650 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.

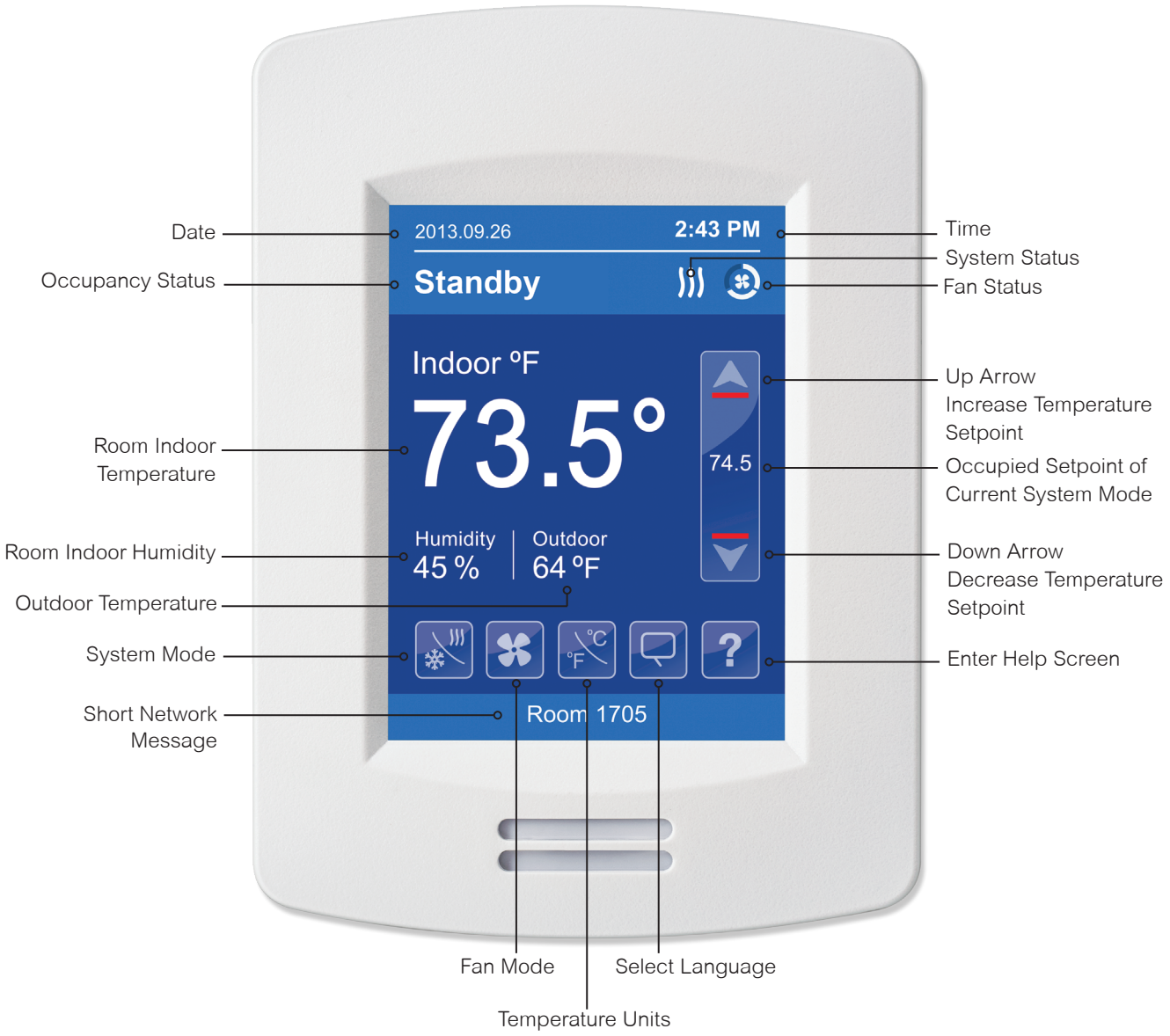
Image retention may occur when a static image is displayed on the screen for a prolonged period of time. This can cause a faint outline of the image to remain visible on the screen when the screen is changed via the user menu, or a different image is uploaded and selected to be displayed. To minimize and prevent image retention, it is recommended to select the **Screen Save** setting on the **Standby screen** selection from the setup menu **Display 1/2**. 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.

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.

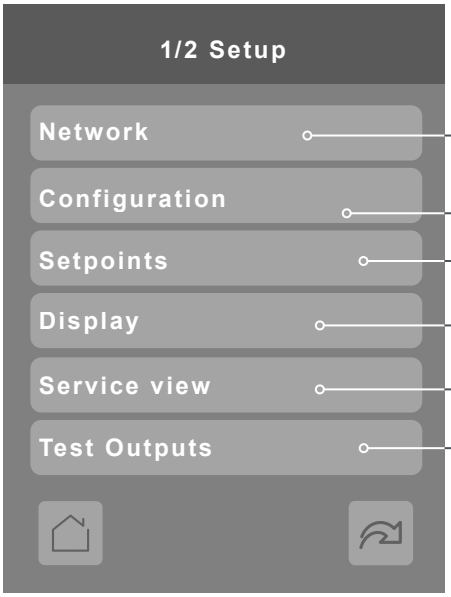


Enter Setup Screen

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, a password entry prompt shows to prevent access to device configuration components.

SETUP 1/2



BACnet MS/TP, Modbus, Zigbee and Wi-Fi network settings (Zigbee network settings appear only if Zigbee feature is available)

Parameter configuration menu

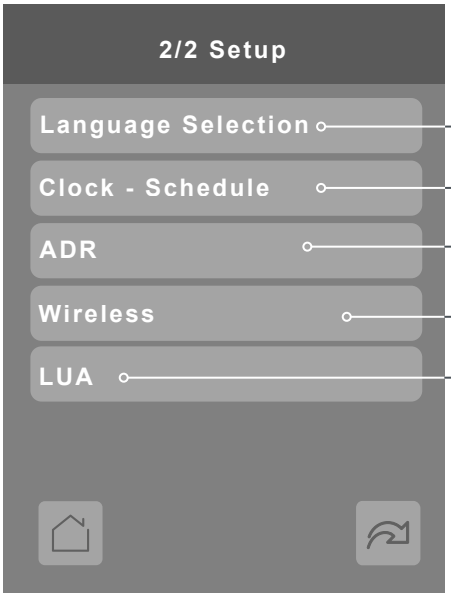
Setpoint settings

Display settings

Status display (Read Only)

Test outputs settings

SETUP 2/2



Select language

Set clock, schedule and occupancy

Automatic Demand Response

Wireless Ecosystem settings (shows only if Zigbee feature is available)

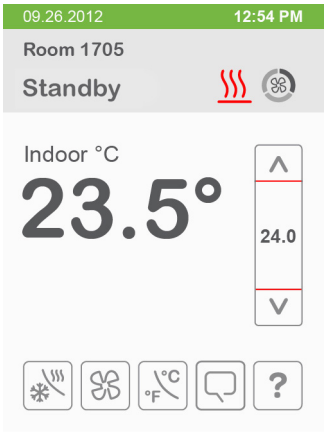
LUA scripting (shows only if LUA script uploaded)

SECTION 2

Customized User HMI Display

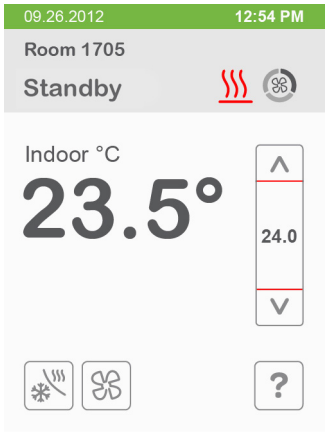
User HMI for Hospitality

Hospitality 0



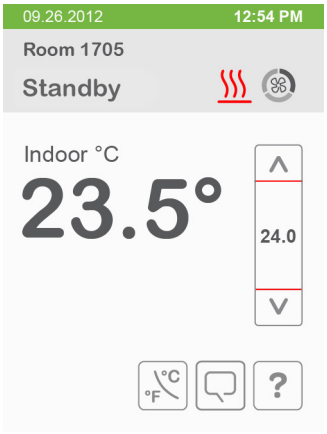
- Setpoint adjustment
- System mode setting
- Fan mode setting
- Local unit scale adjustment
- Local user language
- User help menu

Hospitality 1



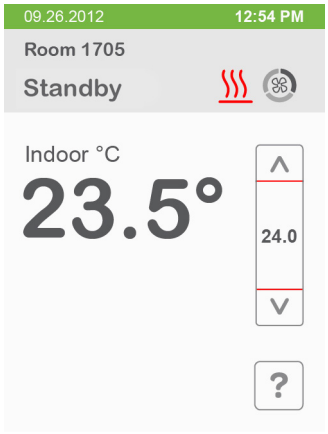
- Setpoint adjustment
- System mode setting
- Fan mode setting
- User help menu

Hospitality 2



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

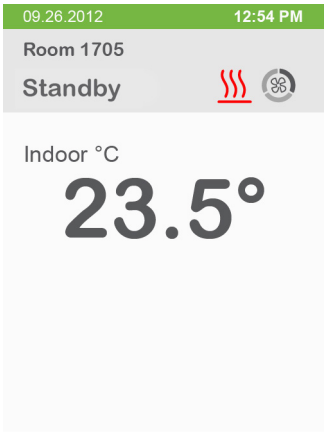
Hospitality 3



- Setpoint adjustment
- User help menu

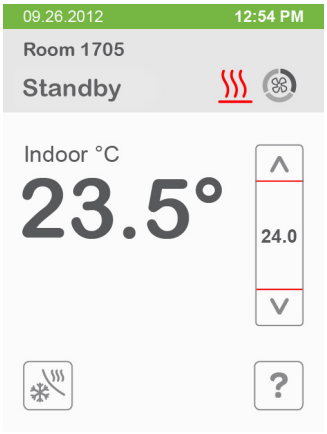
NOTE: Parameters are model dependent and may not appear on certain models.

Hospitality 4



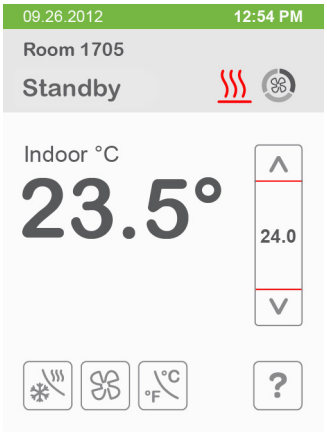
- Fully locked interface with no user settings

Hospitality 5



- Setpoint adjustment
- System mode setting
- User help menu

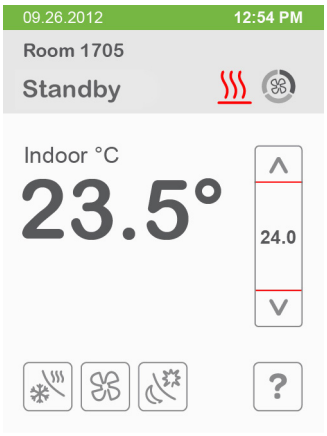
Hospitality 6



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

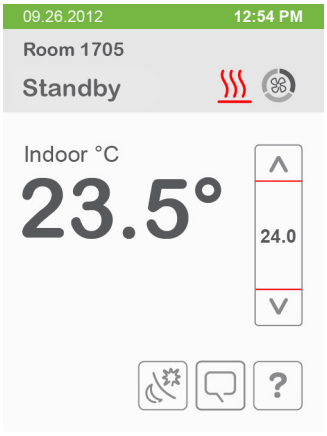
User HMI for Commercial

Commercial 7



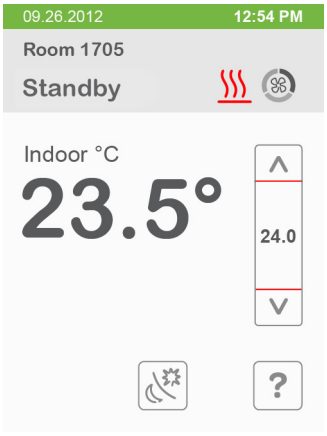
- Setpoint adjustment
- System mode setting
- Fan mode setting
- Unoccupied mode overdrive
- User help menu

Commercial 8



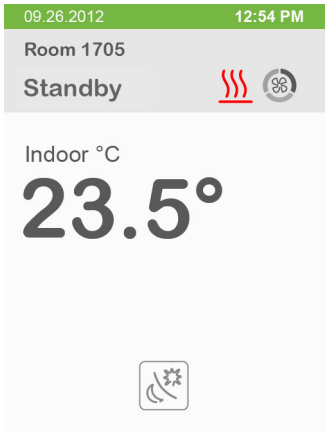
- Setpoint adjustment
- Unoccupied mode override
- Local user language
- User help menu

Commercial 9



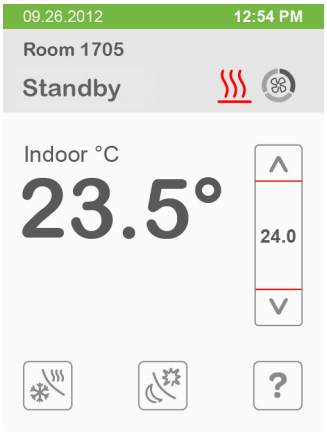
- Setpoint adjustment
- Unoccupied mode override
- User help menu

Commercial 10



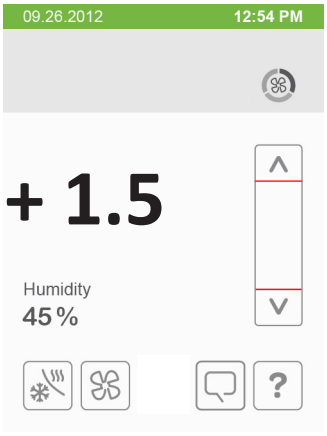
- Unoccupied mode override

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

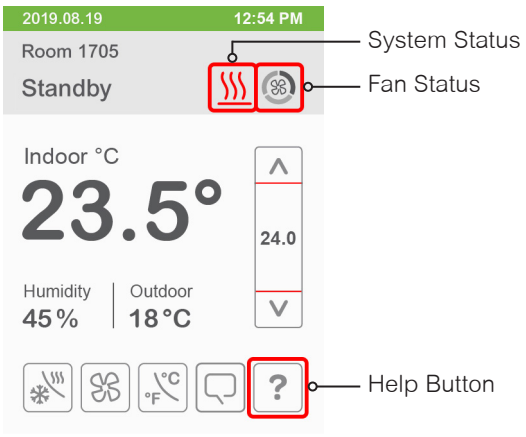
NOTE: The day/night setback button appears only in unoccupied mode in the Commercial HMIs 7 to 11. If UI17 input is configured as “override”, the day/night setback button does not show.

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

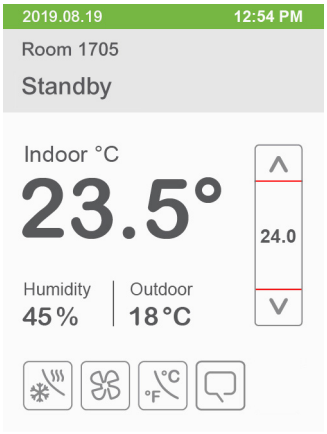
User HMI Show/Hide Options

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 Screens in Section 3.

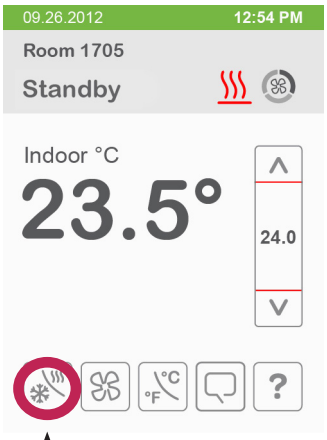
Options Enabled



Options Disabled



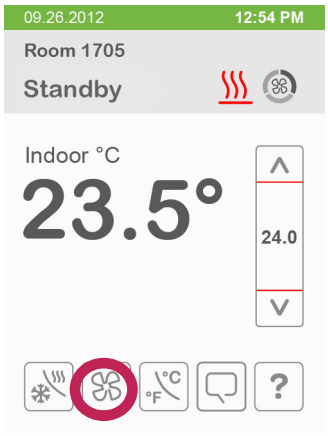
System Mode



System Mode

Mode	Significance and Adjustments
System mode **Off**	**Off** Heating, Cooling and Dehumidification demands are ignored
System mode **Auto**	**Auto** Room Controller automatically toggles between Heating and Cooling modes to satisfy both Heating and Cooling demands. Dehumidification is allowed
System mode **Cool**	**Cool** Room Controller only satisfies Cooling demands, Heating demands are ignored. Dehumidification is allowed
System mode **Heat**	**Heat** Room Controller only satisfies Heating demands, Cooling demands are ignored. Dehumidification is allowed

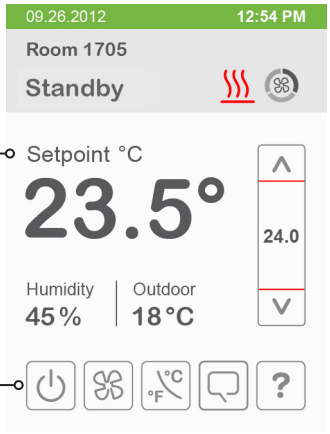
Fan Mode Settings



Fan Mode Setting

Mode	Significance and Adjustments
Fan mode **ON**	**On** Fan is on continuously, even when system mode is OFF.
Fan mode **Auto**	**Auto** Fan cycles on a call for heating or cooling for both occupied & unoccupied periods.
Fan mode **Smart**	**Smart** During occupied periods, fan is on continuously. In unoccupied mode, fan cycles on a call for heating or cooling.

Heating Only Configuration



Time and Date show only when a network time synchronisation command is received.

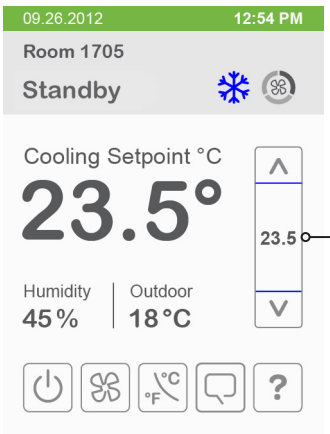
Setpoint value shows if main display parameter is set to Setpoint.

On/Off icon is used instead of system mode icon when sequence of operation is set to either heating only or cooling only.

Setpoint Adjustment for Cooling Mode

In Cooling mode, the setpoint displayed in the bar is the current occupied cooling setpoint. During occupied setpoint adjustment, the large digits are temporarily used to show occupied cooling setpoint while it is adjusted.

Normal temperature display resumes after setpoint is adjusted and actual occupied cooling setpoint shows in setpoint bar.



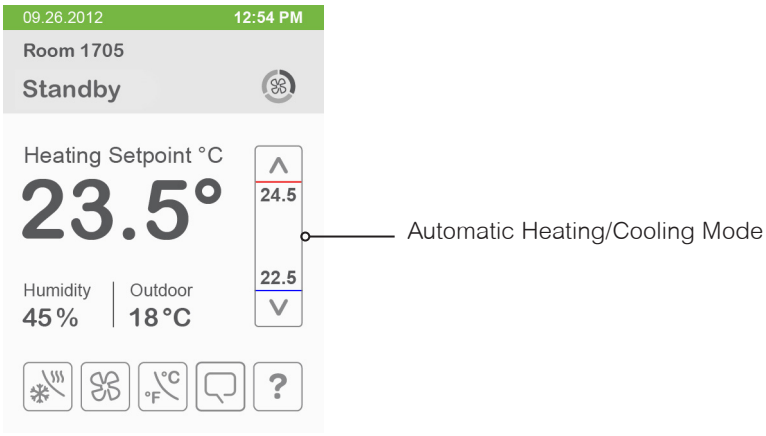
Cooling mode or cooling only sequence of operation.

Setpoint Adjustment for Automatic Mode

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

During occupied setpoints adjustment, large digits are temporarily used to display the occupied Cooling Setpoint or occupied Heating Setpoint. The actual setpoint is dependent on the last effective demand (heating or cooling). The setpoint on top of the blue line represents the actual occupied heating setpoint. The differential between the occupied heating and cooling setpoint is defined by the minimum deadband configuration parameter.

Normal temperature display resumes after setpoints are adjusted and the actual occupied heating and cooling setpoints show in the setpoint bar.

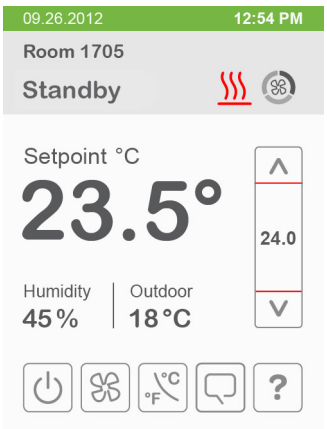


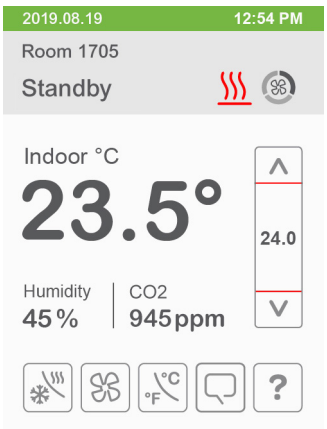
Other Functions

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.

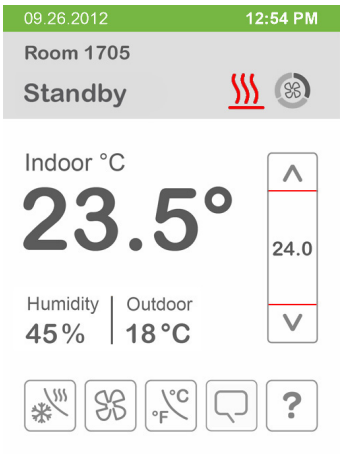
CO2 shows when CO2 display is enabled on the setup display screen, from either the optional CO2 detection sensor module or a wireless sensor end device selected by the CO2 source parameter on the setup configuration screen.

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

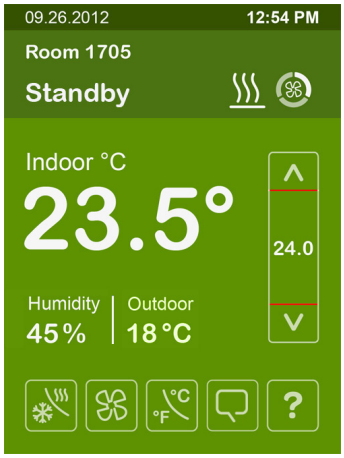




Customizable Color Options

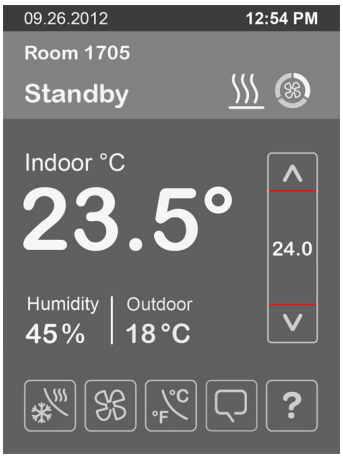


White



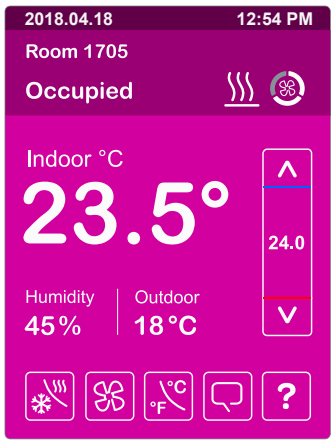
Green

Blue

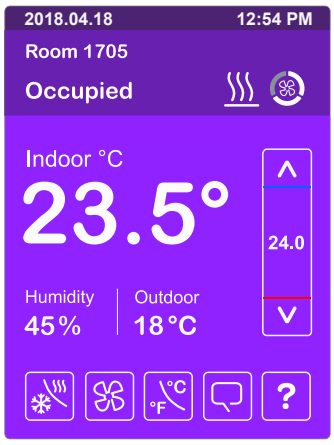


Dark Grey

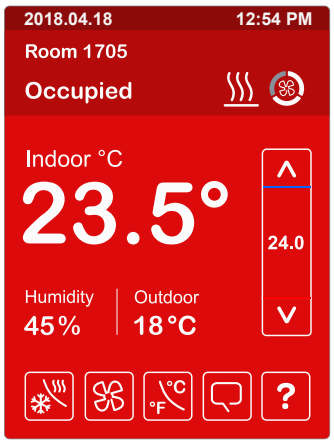
Grey



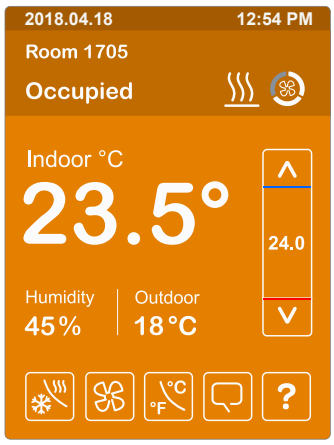
Pink



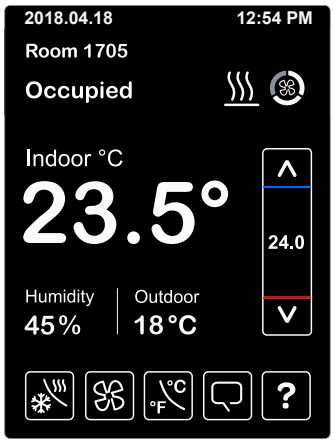
Purple



Red



Orange



Black

SECTION 3

Integrator Setup Screens

Network Screens

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

NOTICE

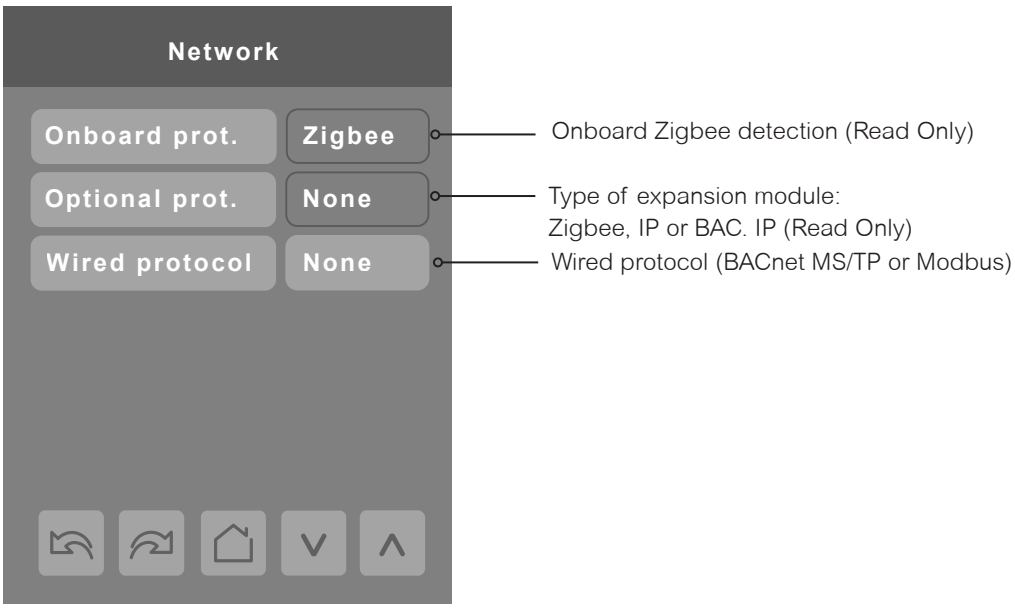
UPGRADE OF ZIGBEE 24 TO 30

The upgrade from Zigbee 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 21):

- **Low** (default value) is fully backwards compatible with Zigbee Home Automation 1.2 devices, and therefore compatible with all of our sensors.
- **Normal** (needs to be selected by user) is only compatible with Green Power and Zigbee 30 (Leedarson sensors). If the Normal 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.



PARAMETER DETAILS

Configuration 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 Zigbee add-on module (VCM8000) or Wi-Fi module (VCM8002). **None:** No module detected **Zigbee:** Zigbee module detected **IP:** Wi-Fi module detected **BAC. IP:** Wi-Fi module detected and BACnet/IP enabled **Display Readings**: None, Zigbee, IP or BAC. IP
Wired protocol Default value: **BACnet**	**Wired Protocol** **None:** No wired protocol configured **BACnet:** BACnet MS/TP network protocol **Modbus:** Modbus network protocol **Choices**: None, BACnet or Modbus

ZIGBEE NETWORK 1/2

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 Multi-Purpose Manager (MPM) paired to multiple RCs, the MPM is set as Coordinator and the RCs are set as Router. The Coordinator MPM 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

Configuration 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
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

Configuration Parameters Default Value	Significance and Adjustments
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 **Important!** Selecting the Normal Security option will result in the removal of legacy sensors from the network. **Choices**: Low or Normal
Network Status **Read Only**	**Zigbee Network Status** Shows the current status of the Zigbee network. **No NWK**: Zigbee configured but no network joined **Joined**: Zigbee network joined **Online**: Communicating (Exchanging data) **Display Readings**: No NWK, Joined, Online
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

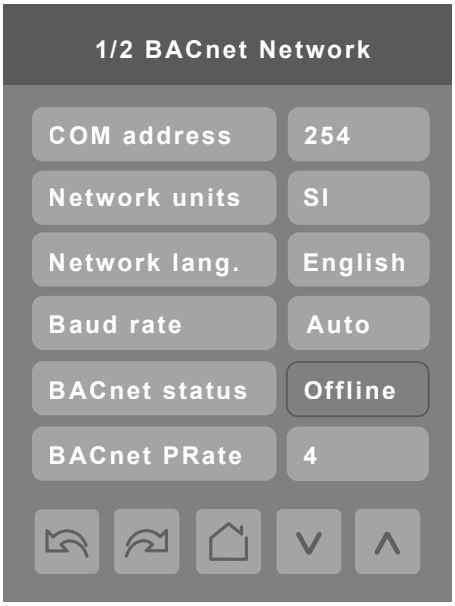
ZIGBEE NETWORK 2/2

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
COM address Default value: **254**	**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 an MPM. 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**	**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**	Communication Module Revision Number Shows the Zigbee firmware revision number.

BACNET NETWORK SETTINGS

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



PARAMETER DETAILS

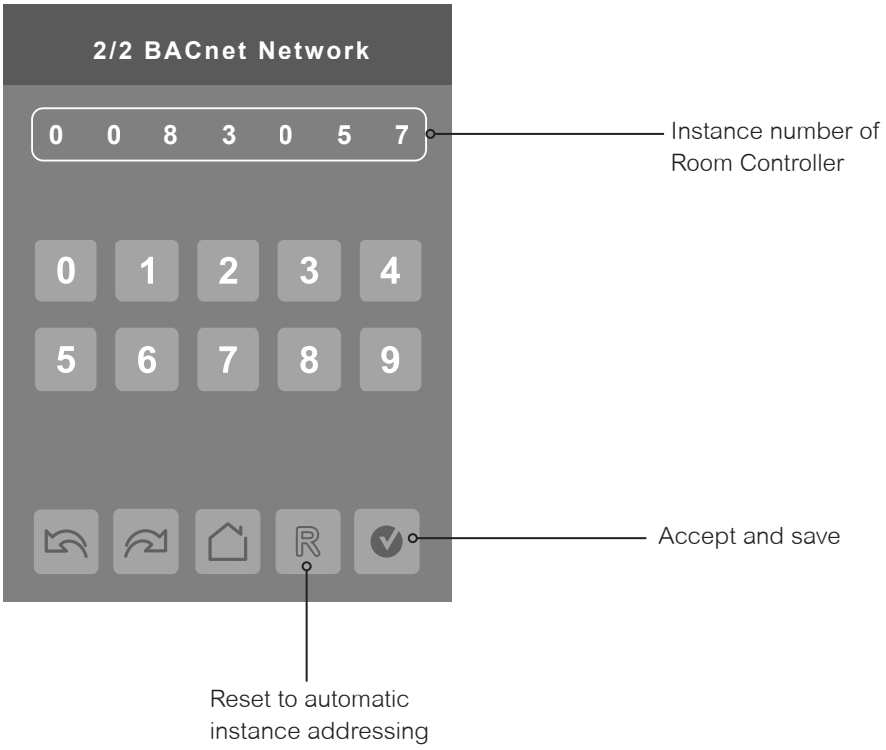
Configuration Parameters Default Value	Significance and Adjustments
COM address Default value: **254**	**Communication Address** Room Controller networking address. Default value of 254 disables BACnet communication for the Room Controller. **Range**: 0 to 254
Network units Default value: **SI**	**Measurement Units** Network units transmitted over the BACnet 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
Network lang. Default value: **English**	**Network Language** Network language/object names transmitted over network. **Choices**: English, French or Spanish
Baud rate Default value: **Auto**	**BACnet Baud Rate** Leave the value at **Auto** unless instructed otherwise as this automatically detects BACnet baud rate. **Choices**: Auto, 115200, 76800, 57600, 38400, 19200, and 9600
BACnet status **Read Only**	**BACnet Status** Read Only value shows if a BACnet Network is detected or not. **Diplay Readings**: Online or Offline
BACnet PRate Default value: **4**	**BACnet 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 VT8650U5B00 with a COM address of 57 is generated as “86057”.

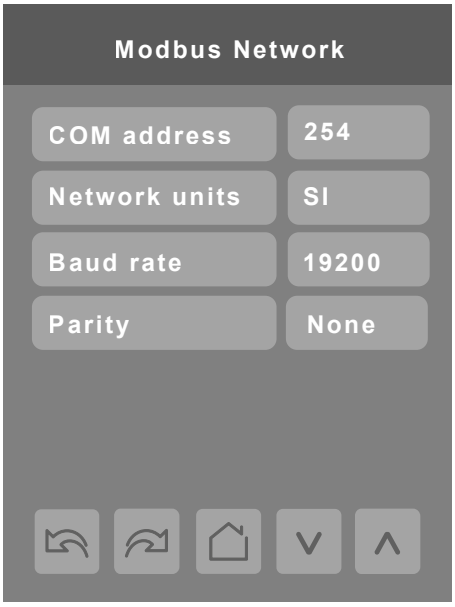
The default instance number appears first. To change the instance number, use number pad and press **Accept and save.**

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



MODBUS NETWORK SETTINGS

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

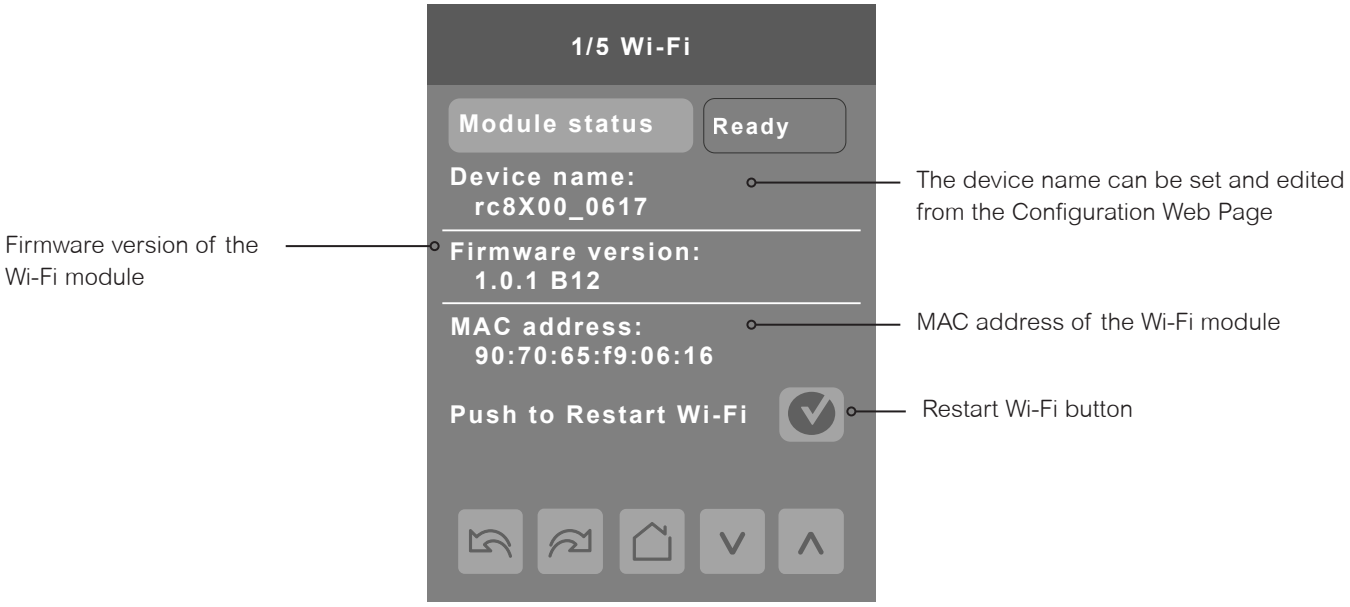


PARAMETER DETAILS

Configuration 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 BACnet 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

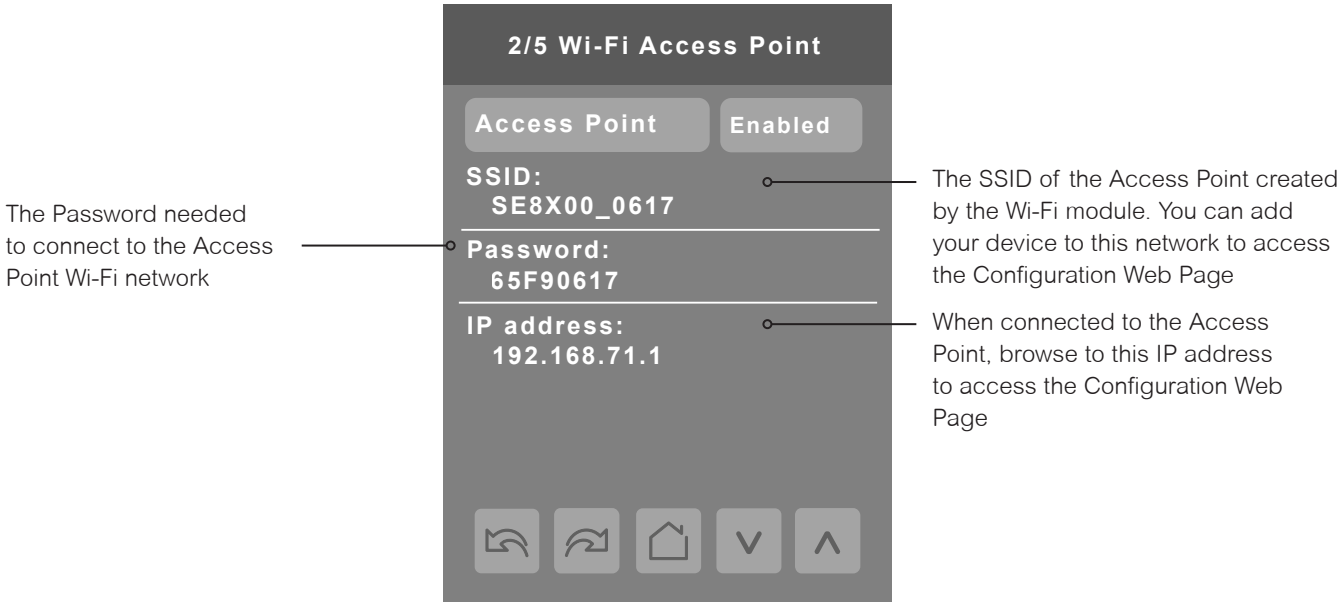
The Wi-Fi Network screen shows only in models with optional Wi-Fi module (VCM8002).



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Module status **Read Only**	**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**: Offline, Booting, Initializing, Ready, Fail

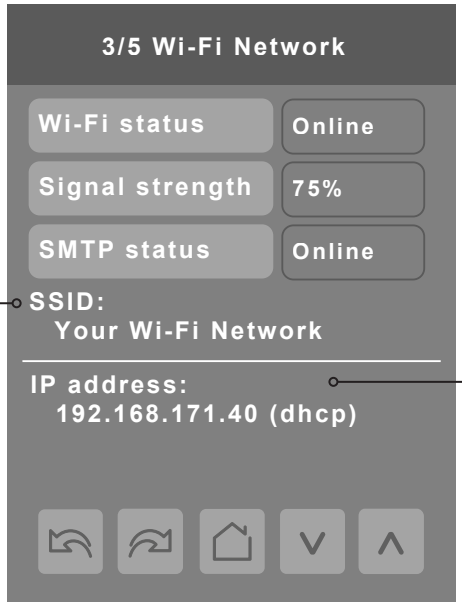
Wi-Fi 2/5



PARAMETER DETAILS

Configuration 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

Configuration Parameters Default Value	Significance and Adjustments
Wi-Fi status **Read Only**	**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, or Online if it has an internet connection. **Status value**: Idle, Connected, Associate, Config, Ready, Online, Disconn, Failure
Signal strength **Read Only**	**Signal Strength** Signal strength of the Wi-Fi network. **Range**: 0 to 100%
SMTP status **Read Only**	**SMTP Status** Status of the email SMTP server. **Status value:** Disabled, Offline, Online

Wi-Fi 4/5

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Facility Expert **Read Only**	**Facility Expert** Shows whether the Facility Expert system is Disabled or Enabled. **Status value:** Disabled or Enabled
Status **Read Only**	**Status** Shows the current status of the Facility Expert system. **Range:** Disabled, Offline, Connect., Online, Failure, Unknown.

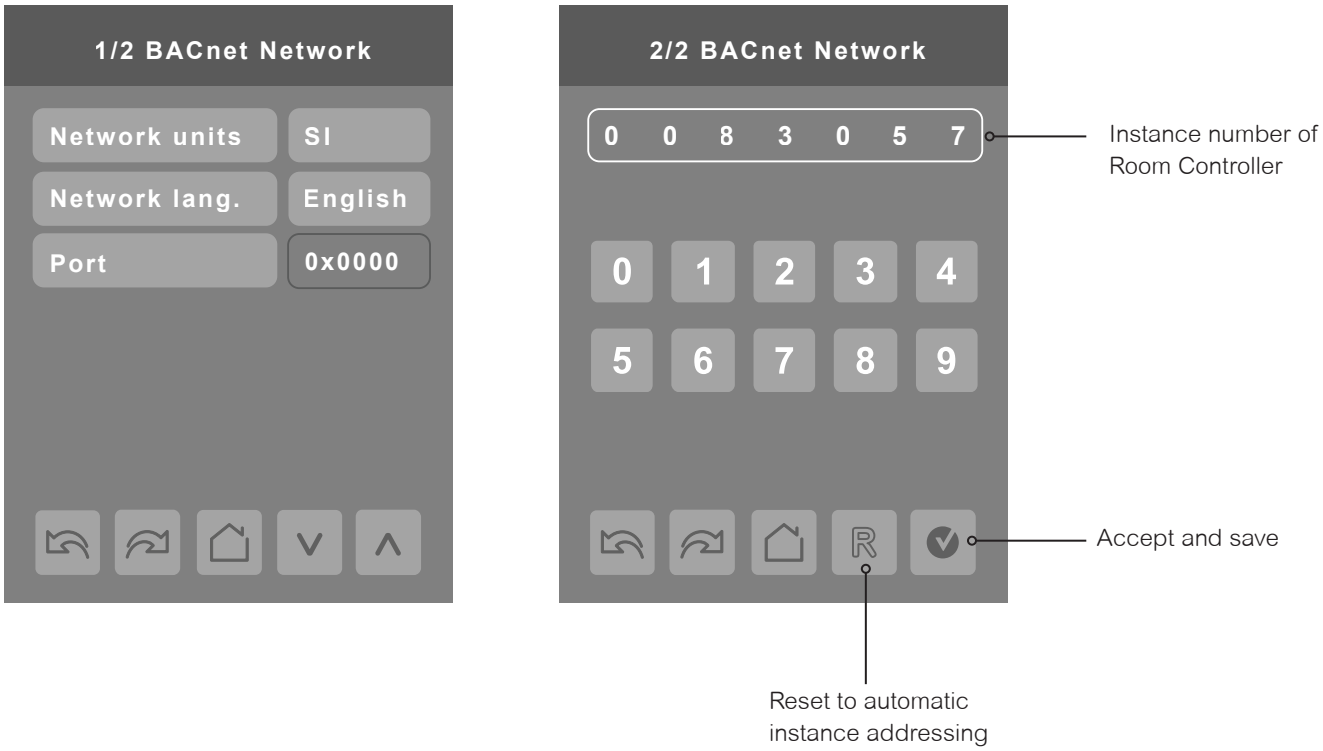
WI-FI 5/5

PARAMETER DETAILS

Configuration 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).



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Network units Default value: **SI**	**Measurement Units** Network units transmitted over the BACnet 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
Network lang. Default value: **English**	**Network Language** Network language/object names transmitted over network. **Choices**: English, French or 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 VT8650U5B00 with a COM address of 57 is generated as “86057”.

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.

Configuration Screens

CONFIGURATION 1/11

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
UI16 config Default value: **None**	**Universal Input Configuration No. 1** **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. **Fan lock**: When (G) Fan output is activated, if this input is not activated after 10 seconds, the Room Controller disables Heat and Cool outputs and display "Fan Lock" alarm. • Open contact = No airflow alarm • Closed contact = Airflow present, normal operation **Choices:** None, Rem NSB, Motion NO, Motion NC, Window and Fan lock
UI17 config Default value: **None**	**Universal Input Configuration No. 2** **None**: No function associated with input **Door Dry**: Room Controller goes to standby mode when door is opened then closed followed by no presence detection for the next 10 seconds if the local PIR is used in this application. The "Occupancy command" must be set to "Local Occupancy" and "Occupancy Source" must be set to "Motion". **Override**: A closed contact forces the Room Controller to go in occupied mode. An open contact keeps the current occupancy mode. **Filter**: backlit flashing filter alarm shows on the Room Controller screen when input is energized **Service**: backlit flashing Service alarm shows on Room Controller screen when input is energized. **Choices**: None, Door Dry, Override, Filter and Service

Configuration Parameters Default Value	Significance and Adjustments
UI19 config Default value: **None**	**Universal Input Configuration No. 3** This input is used for a wired CO2 sensor **None**: No function associated with input, however input can be used for remote network monitoring **CO2:** Using the CO2 level measured by a wired CO2 sensor (0~2000 ppm = 0~10 Vdc), the Outside Air damper (Econo) will modulate between "Econo min pos" to "Econo max pos" following the "Min CO2" and "Max CO2" setpoints. **Choices**: None or CO2
Smart recovery Default value: **Off**	**Enable Smart Recovery** **Off**: No smart recovery. The occupied schedule time is the time at which the system will restart. **On**: Smart recovery active. The occupied schedule time is the time at which the desired occupied temperature will be attained. The Room Controller automatically optimizes the equipment start time. In any case, the latest a system will restart is 10 minutes prior to the occupied period time. Smart recovery is automatically disabled if BI16 is configured to remote NSB. **Choices**: Off or On
Setpoint func. Default value: **Attach SP**	**Setpoint Function** Local setpoint settings to set the local setpoint interface for the User. **Dual SP**: "Minimum" Deadband, Heat and Cool Setpoints can be adjusted independently. **Attach SP**: "Fixed" Deadband in occupied mode, Heat and Cool setpoints always follow each other, separated by Deadband value (acts like a single setpoint). **Choices**: Dual SP or Attach SP
Mode button Default value: **Normal**	**Mode Button** Changes the behavior of the system mode button functionality and hides/shows temperature setpoints on main screen. **Normal**: System mode button switches between 'Off', 'Auto', 'Cool' and 'Heat'. Also displays temperature Setpoints on main screen. **Off-Auto:** System mode button switches between 'Off' and 'Auto'. Hides temperature Setpoints on main screen. **NOTE**: Setting 'Mode button' to 'Off-Auto' forces the 'Setpoint func.' parameter to 'Attach SP'. **Choices**: Normal or Off-Auto

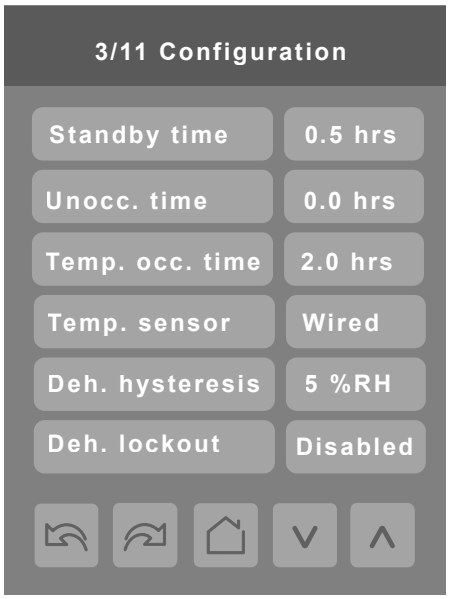
CONFIGURATION 2/11

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Fan cont. heat Default value: **On**	**Fan Control in Heating Mode** **On**: Room Controller always controls the fan (terminal G). Valid for On or Auto fan mode. **Off:** Fan (terminal G), when heating stages (terminals W1 & W2) are solicited, will not be energized. The fan is controlled by the equipment fan limit control. Valid only for Auto fan mode. On fan mode leaves the fan always on. For multi-stage models, fan control applies to W1 & W2. **Choices**: On or Off
Fan delay Default value: **On**	**Fan Delay** **On**: fan mode will leave the fan always on and extends fan operation by 60 seconds after the call for heating or cooling ends. Valid only for Auto fan mode. **Off**: fan delay not operational **Choices**: On or Off
Standby mode Default value: Absolute	**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. **Choices**: Absolute or Offset
Standby diff. Default value: **4°F (2°C)**	**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. **Range**: 1 to 5°F (0.5 to 2.5°C)

Configuration Parameters Default Value	Significance and Adjustments
Power-up delay Default value: **10 Sec.**	**Power up Delay** On initial power up of the Room Controller there is a delay before any operation is authorized (fan, cooling or heating). This can be used to sequence the start up of multiple Room Controllers in one location. **Range**: 10 to 120 seconds
Occupancy src Default value: **Motion**	**Occupancy Source** **Motion**: occupancy status is received from a motion sensor from a wired, wireless or local PIR sensor **Schedule:** occupancy status is determined by the schedule **Mot. Occ:** Occupied when scheduled occupied AND when motion is detected. **Mot. Unoc:** Occupied when scheduled occupied OR when motion is detected. **Choices**: Motion, Schedule, Mot. Occ., Mot. Unoc.

CONFIGURATION 3/11



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Standby time Default: **0.5 hrs**	**Standby Time** Time between the moment where the PIR cover detects last movement in the area, and the time which the Room Controller stand-by setpoints become active. **Note**: This parameter is not active when the "Door" function is used (wired or wireless). **Range**: 0.5 to 24.0 hours (0.5 hour increments)
Unocc. time Default: **0.0 hrs**	**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 hrs**	**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 Parameters Default Value	Significance and Adjustments
Temp. sensor Default value: **Wired**	**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 the UI20 (RS) terminal is empty. If a valid temperature sensor is connected to the 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**: Wired, Internal and WL1 to WL20
Deh. hysteresis Default value: **5% RH**	**Humidity Control Hysteresis** Used only if dehumidification sequence is enabled. **Range**: 2 to 20% RH
Deh. lockout Default value: **Disabled**	**Dehumidification Lockout** Enables or disables dehumidification based on central network requirements from the BAS front end. **Enabled:** Dehumidification Authorized **Disabled:** Dehumidification Not Authorized **Choices:** Enabled or Disabled

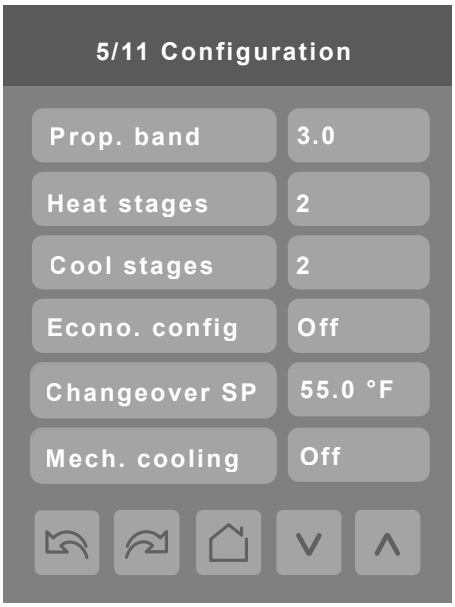
CONFIGURATION 4/11

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Cooling CPH Default value: **4 CPH**	**Cooling Output Cycles Per Hour** CPH is used to "modulate" On/Off outputs controlling equipment such as compressors. When the Room Temperature is within the Proportional Band, the output performs 3 or 4 CPH. A higher CPH represents a higher accuracy of control at the expense of wearing mechanical components faster. **Note**: The CPH does not limit the number of Cycles Per Hour. It is limited by the "Anti short cycle" parameter. 4 CPH is typical for Rooftop applications. **Range**: 3 to 4 CPH
Heating CPH Default value: **4 CPH**	**Heating Stages Cycles per Hour** CPH is used to "modulate" On/Off outputs controlling equipment such as compressors. When the Room Temperature is within the Proportional Band, the output performs 3 to 8 CPH. A higher CPH represents a higher accuracy of control at the expense of wearing mechanical components faster. For multi-stage models, heat cph applies to W1 & W2. A CPH value between 6 - 8 is recommended for applications with electric heating. For gas applications set CPH to 4 and for oil applications set CPH to 3. **Range**: 3 to 8 CPH
Frost protec Default value: **Off**	**Frost Protection** Stops the ventilation of the rooftop unit when room temperature reaches 42°F (5.6°C) and resumes automatically when room temperature exceeds 15°F (-9°C). **Off**: No room frost protection **On**: Room frost protection enabled in all system modes at 42°F (5.6°C). Frost protection is enabled even if System mode is 'Off'. **Choices**: Off or On

Configuration Parameters Default Value	Significance and Adjustments
BO1 aux config Default value: **NO**	**Binary Auxiliary Output Configuration** Output to directly follow the main Occupancy and Fan On commands. 1. NO: Occ or St-By = Contact Closed / Unoccupied = Contact Opened 2. NC: Occ or St-By = Contact Opened / Unoccupied = Contact Closed. **Choices**: NO or NC
Anti short cycle Default value: **2 min**	**Anti Short Cycle Time** Minimum On time and minimum Off time of operation time for stages. **IMPORTANT:** anti-short cycling can be set to 0 minutes for equipment that possess their own anti cycling timer. Do not use this value unless the equipment is equipped with an internal timer. Failure to do so can damage the equipment. **Range**: 0 to 5 minutes
Min. sup. heat Default value: **64°F (18°C)**	**Minimum Supply Heat** Controls the modulating heating output to maintain the supply air temperature setpoint (min. sup. heat). Apply if “Heat Stages” parameter is set to 0 (Analog Heat on UO11). In Occupied or Override mode, the output will modulate to maintain a minimum Supply Air temperature. Conditional to SAT sensor installed, System Mode = Heat or Auto and OAT < SH Lockout. **Range:** 50°F to 72°F (10°C to 22°C)

CONFIGURATION 5/11



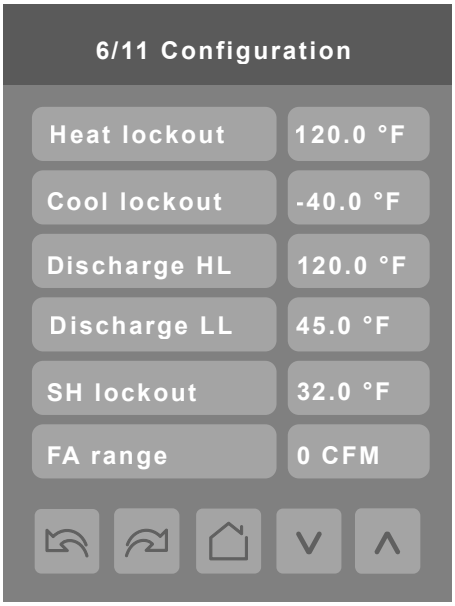
PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Prop. band Default value: **3.0**	**Proportional Band Setting** Adjusts proportional band used by Room Controller PI control loop. **Note:** Default value of 3 gives satisfactory operation in most normal installation cases. The use of a superior proportional band different than the factory value is normally warranted in applications where Room Controller location is problematic and leads to unwanted cycling of the unit. A typical example is a wall mounted Room Controller installed between return and supply air feeds and is directly influenced by the supply air stream of unit. **Range:** 3 to 10

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

Configuration Parameters Default Value	Significance and Adjustments
Heat stages Default value: **2 stages**	**Number of Heating Stages** Sets number of Heating Stages applicable to 2 stage models only. **0 Stages:** Only (UO11) modulating 0-10Vdc output is used for Heating. W1 & W2 are disabled. **1 Stage:** Only W1 (BO8) terminal is used. W2 is disabled. **2 Stages**: Both W1 (BO8) and W2 (UO9) terminals are used in sequence. **Choices:** 0, 1 or 2 stages
Cool stages Default value: **2 stages**	**Number of Cooling Stages** Sets number of Cooling Stages. **1 Stage:** Only Y1 (BO3) terminal is used. Y2 is disabled. **2 Stages:** Both Y1 (BO3) and Y2 (BO2) terminals are used in sequence. **Choices:** 1 or 2 stages
Econo. config Default value: Off	**Economizer Configuration** Enables or disables the economizer functionality. **On:** Economizer activated **Off:** Economizer deactivated **Choices:** On or Off
Changeover SP Default value: **55°F (13°C)**	**Changeover Setpoint** In Cooling mode, the outside air temperature value at which the cooling gets switched over from mechanical (compressor) to free cooling (economizer). **Range**: 14°F to 70°F (-10°C to 21°C)
Mech. cooling Default value: **Off**	**Mechanical Cooling Allowed** Allows operation of mechanical cooling if free cooling (economizer) cannot maintain the cooling setpoint. **Off:** Applies when the mixed air temperature sensor is installed after the mechanical cooling refrigeration coils. In this case, mechanical cooling never operates at the same time as free cooling. **On:** Applies when the mixed air temperature sensor is installed before the mechanical cooling refrigeration coils in the mixing plenum. In this case, mechanical cooling is allowed when the free cooling (economizer operation) cannot maintain the cooling setpoint. **Range**: Off or On

CONFIGURATION 6/11



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Heat lockout Default value: **120°F (49°C)**	**Heating Lockout from Outside Air Temperature** Disables mechanical heating operation when Outdoor Temperature is higher than the "Heating Lockout" value. The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller (UI23) or via a BACnet front end (network). **Range:** -15°F to 120°F (-26°C to 49°C)
Cool lockout Default value: **-40°F (-40°C)**	**Cooling Lockout from Outside Air Temperature** Disables mechanical cooling operation when Outdoor Temperature is lower than the "Cool Lockout" value. The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller (UI23) or via a BACnet front end (network). The Economizer functionality (Free-cooling) can still be enabled during the Cooling Lockout. **Range:** -40°F to 95°F (-40°C to 35°C)
Discharge HL Default value: **120°F (49°C)**	**Discharge High Limit** Discharge air high temperature value at which the heating stages get locked out. **Range:** 70°F to 150°F (21°C to 65°C)
Discharge LL Default value: **45°F (7°C)**	**Discharge Low Limit** Discharge air low temperature value at which the cooling stages get locked out. **Range:** 35°F to 65°F (2.0°C to 19.0°C)

Configuration Parameters Default Value	Significance and Adjustments
SH lockout Default value = **32°F (0°C)**	**Supply Heat Lockout** Disables heating operation if Outdoor Air Temperature (OAT) is higher than "SH Lockout" temperature. The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller or via a BACnet front end (network). **Note:** valid only if "Heat Stages" parameter is set to 0 (Analog Heat on UO11). **Range:** -15°F to 120°F (-26°C to 49°C)
FA Range Default value: **0 CFM) 0 l/s**	**Fresh Air Range** Sets the upper limit (reading range) of the "airflow measuring station" (eg. for 0~1,000 CFM station, set "FA Range" to 1,000). If set to 0 CFM, this function is disabled, and the fresh air damper control will be based on the "Min/Max CO_2" and "Econo Min/Max Pos" values if set to a value other than 0. Do not change Econo Min/Max Pos if FA range is set to a value greater than 0. **Range:** 0 to 20,000 CFM (±10 increments) 0 to 9440 l/s (±5 increments)

CONFIGURATION 7/11

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Econo min pos Default value**: 0%**	**Economizer Minimum Position** Minimum Outside Air damper position when Room Controller is in Occupied, Standby or Override mode and Fan status is ON. If Room Controller is Unoccupied mode and/or the Fan is Off, Outside Air damper position goes to 0%. **Range:** 0% to 100%
Econo max pos Default value: **100%**	**Economizer Maximum Position** Maximum Outside Air damper position when Room Controller is in Occupied, Standby or Override mode and Fan status is ON. This is valid only for Economizer, CO_2 and Airflow functions. **Range:** 0% to 100%

Note: The Room Controller air damper position and output signal is based on a 0-10Vdc analog actuator application. Many installations utilize 2-10 VDC actuators, which cannot be switched to 0-10 Vdc control logic. The following chart indicates the appropriate equivalent damper positions for use with 2-10Vdc actuators.

Outside air percentage	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
Setting for 0-10 Vdc Actuator	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
Setting for 2-10 Vdc Actuator	20%	24%	28%	32%	36%	40%	44%	48%	52%	56%	60%

Outside air percentage	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
Setting for 0-10 Vdc Actuator	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
Setting for 2-10 Vdc Actuator	64%	68%	72%	76%	80%	84%	88%	92%	96%	100%

Configuration Parameters Default Value	Significance and Adjustments
Min fresh air Default value: **0 CFM (0 l/s))**	**Minimum Fresh Air** Minimum fresh air required (minimum outside airflow setpoint). Effective only in Occupied, Standby or Override mode and Fan status is ON. If FA Range is set to value other than 0 CFM, the fresh air damper position control will be based on the Min/Max CO2 and Min/Max Fresh Air values. If Room Controller is in Unoccupied mode and/or the Fan is Off, the damper position goes to 0%. **Range:** 0 to 20, 000 CFM (±10 increments) 0 to 9440 l/s (±5 increments) The value set cannot exceed the value of FA Range parameter.
Max fresh air Default value: **0 CFM (0 l/s)**	**Maximum Fresh Air** Maximum fresh air allowed (maximum outside airflow setpoint). Effective only in Occupied, Standby or Override mode and Fan status is ON. If FA Range is set to value other than 0 CFM, the fresh air damper position control will be based on the Min/Max CO2 and Min/Max Fresh Air values. **Range:** 0 to 20, 000 CFM (±10 increments) 0 to 9440 l/s (±5 increments) The value set cannot exceed the value of FA Range parameter.
Min CO2 Default value: **800 ppm**	**Minimum CO2** Minimum CO2 level setpoint. Effective only in Occupied, Standby or Override mode and Fan status is ON. The Outside Air damper modulates to maintain the CO2 level between “Min CO2” and “Max CO2”. If Room Controller is in Unoccupied mode and/or the Fan is Off, Outside Air damper position goes to 0%. **Range:** 0 to 5000 ppm
Max CO2 Default value: **1200 ppm**	**Maximum CO2** Maximum CO2 level setpoint. Effective only in Occupied, Standby or Override mode and Fan status is ON. The Outside Air damper modulates to maintain the CO2 level between “Min CO2” and “Max CO2”. **Range:** 0 to 5000 ppm

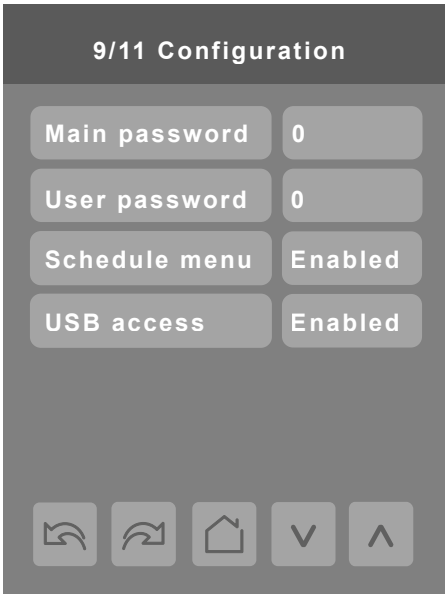
CONFIGURATION 8/11

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Application Default value: **Rooftop**	**Application** Sets Room Controller operating logic for either a Rooftop or a Heat Pump application. **Note:** if the Heat Pump Unit (HPU) does not have an O/B terminal (reversing valve), set this parameter to Rooftop. **Choices:** Rooftop or Heatpump
High BP Default value: **90°F (32.0°C)**	**High Balance Point** In Heating or Auto mode, it is the outside air temperature value at which the auxiliary heat is cut off. If the temperature exceeds this value, only the heat pump is used to maintain the heating setpoint. **NOTE:** Function enabled only if outside air temperature value is populated (not -40°F/°C). The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller or via a BACnet front end (network). **Range:** 34°F to 90°F (1.0°C to 32.0°C)
Low BP Default value: **-12 °F (-24.5 °C)**	**Low Balance Point** In Heating, Cooling or Auto mode, it represents the outside air temperature value at which the heat pump operation will be cut off. If the temperature falls below this value, only the auxiliary heat is used to maintain the heating setpoint. **NOTE:** Function enabled only if outside air temperature value is populated (not -40°F/°C). The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller or via a BACnet front end (network). **Range:** -40°F to 30°F (-40°C to -1.0°C)

Configuration Parameters Default Value	Significance and Adjustments
Comf. or econ. Default value: **Comfort**	**Comfort or Economy Mode** Sets the operation and interaction mode of the heat pump with the auxiliary heat. **Comfort mode**: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized to satisfy the same heating setpoint. **Economy mode**: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized to satisfy only when the temperature drops 2.0°F (1.1°C) below the heating setpoint. Selecting economy mode adds a deadband between the heat pump & auxiliary heat in heating mode. The actual temperature maintained will be lower than the true heating setpoint to maximize the heat pump operation. When the outdoor air temperature drops below the low balance point, the deadband gets eliminated and the auxiliary heat maintains the true heating setpoint alone. **Choices:** Comfort or Economy
Rev. valve Default value: **O**	**Reversing Valve Operation** Heat pump reversing valve operation **O**: energize valve in cooling operation **B**: energize valve in heating operation **Choices:** O or B
Comp. interlock Default value: **Off**	**Compressor Auxiliary Interlock** Sets the operation and interaction mode of the heat pump with the auxiliary heat. **Off**: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized at the same time as the heat pump stage. Typically applies when the air handler heat pump coil is installed before the auxiliary heat (all electric systems). **On**: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat gets energized and the heat pump is cut off. Typically applies when the air handler heat pump coil is installed after the auxiliary heat (add on systems) There is a 2 minute delay to restart the heat pump when the auxiliary heat is shut down. **Choices:** Off or On

CONFIGURATION 9/11



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Main password Default value: **0**	**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**	**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.
Schedule menu Default value: **Enabled**	**Schedule Menu** Toggles activation of schedule menu direct access. **Enabled:** Schedule Menu is directly accessible from the main screen via a touch in the upper corner. **Disabled**: Schedule Menu can only be accessed through the Setup Menu screens. **En. no. clk:** Schedule Menu is directly accessible from the main screen via a touch in the upper corner. Clock does not show. **Dis. no. clk**: Schedule Menu can only be accessed through the Setup Menu screens. Clock does not show. **Choices:** Disabled, Enabled, En.no.clk and Dis.no.clk

Configuration Parameters Default Value	Significance and Adjustments
USB access Default value: **Enabled**	**USB Access** Enables/disables USB communication with the SE8000. **Enabled**: USB communication with the SE8000 is enabled, so the Uploader tool can be used to upgrade firmware, standby images, LUA script etc. **Disabled**: USB communication with the SE8000 is disabled, so the Uploader tool cannot be used with the device. it is recommended to disable USB access once the Room Controller has been commissioned to prevent unauthorized access. **Choices**: Ensabled and Disabled

NOTICE

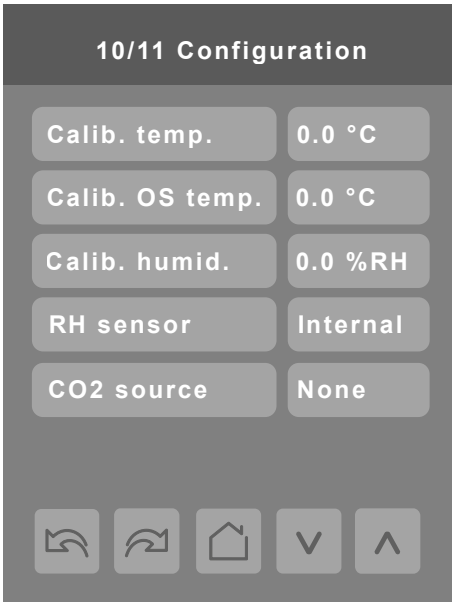
UNAUTHORIZED USB ACCESS

To prevent unauthorized access to the Room Controller via USB, it is recommended that:

- ”USB access” is set to “Disabled” to prevent changing of firmware, standby image, configuration or LUA scripts via USB.
- ”Main password” is set to a non-zero value to limit configuration menu access to authorized users only.

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

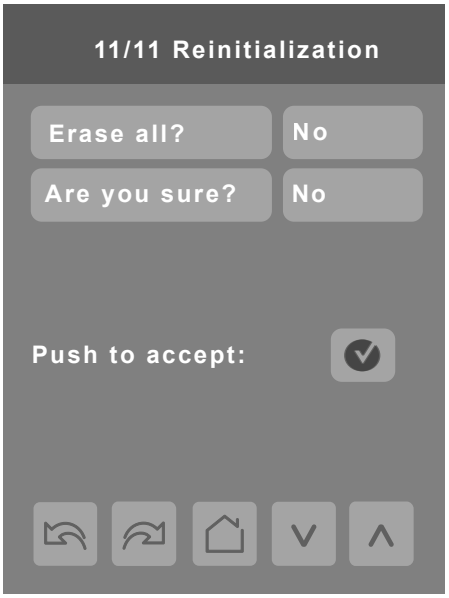
CONFIGURATION 10/11



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Calib. temp. Default value: **0°F (0°C)**	**Calibration 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. OS temp. Default value: **0°F (0°C)**	**Calibration Outside Temperature Sensor** Outside air temperature sensor calibration. Offset that can be added or subtracted to the actual displayed outdoor temperature. **Range:** ± 5.0°F (± 2.5°C)
Calib. humid. Default value: **0.0 %RH**	**Calibrate Humidity Sensor** Offset that can be added or subtracted to actual displayed humidity. **Range:** ± 15.0 %RH
RH sensor Default value: **Internal**	**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. **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**: Internal and WL1 to WL20
CO2 source Default value: **Local**	**CO2 Sensor 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**: None, Local and WL 1 to WL 20

CONFIGURATION 11/11



PARAMETER DETAILS

Configuration 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**	

Setpoints Screens

SETPOINTS 1/2

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Unocc. cool Default value: **80°F (27°C)**	**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°F (25.5°C)**	**Standby Cooling 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°F (24°C)**	**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°F (22°C)**	**Occupied Heating 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°F (20.5°C)**	**Standby Heating 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°F (17°C)**	**Unoccupied Heating 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)

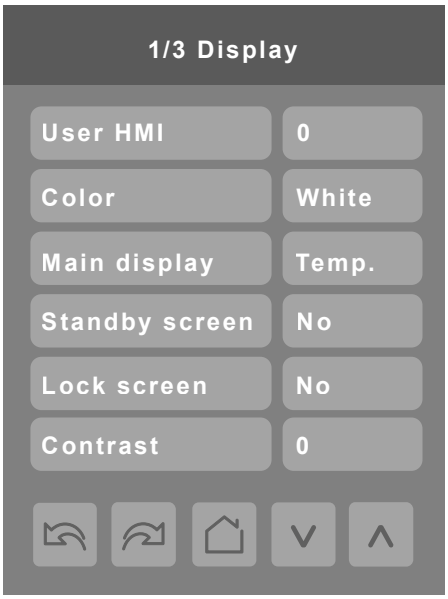
SETPOINTS 2/2

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Default heat Default value: **72°F (22°C)**	**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 Stand-by mode = Offset and “Setpoint Func” is set to “Attached”. **Range:** 65 to 80°F (18.5 to 26.5°C)
Min. deadband Default value: **3°F (1.5°C)**	**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)**	**Heating Setpoint Limit** Maximum Occupied, Unoccupied, Standby and Override Heating setpoints limit. **Range:** 40 to 90°F (4.5 to 32.0°C)
Min. cooling Default value: **54°F (12°C)**	**Cooling Setpoint Limit** Minimum Occupied, Unoccupied, Standby and Override Cooling setpoint limit. **Range:** 54 to 100°F (12.0 to 37.5°C)
Supply air SP Default value: **55°F (12°C)**	**Supply Air Setpoint** Free cooling supply air setpoint when economizer mode is enabled. **Range:** 50 to 90°F (10.0 to 32.0°C)
Dehum. SP Default value: **50%RH**	**Dehumidification Setpoint** Used only if dehumidification sequence is enabled. **Range**: 30 to 95% RH

Display Screens

DISPLAY 1/3



PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
User HMI Default value: **0**	**User HMI** Sets layout of icons on the home screen for various applications. Refer to Customized screen for more information. **Range:** 0 to 12
Color Default value: **White**	**HMI Color** Change background color of the display screen. **Choices:** White, Green, Blue, Grey, Dark Grey, Pink, Purple, Red, Orange, Black
Main display Default value: **Temp**.	**Main Display** Shows temperature or setpoint on main display. **Choices:** Temperature or Setpoint
Standby screen Default value: **No**	**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**: Standby image displays after 150 seconds. Screen turns off after 30 minutes only in unoccupied or standby mode **Choices:** No, Yes, Occupied Only or Screen

Configuration parameters Default Value	Significance and Adjustments
Lock screen Default value: **No**	**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” • User Password = not 0 **Choices:** No or Yes
Contrast Default value: **0**	**Contrast** Control screen contrast and brightness. **Range:** -5 to 5

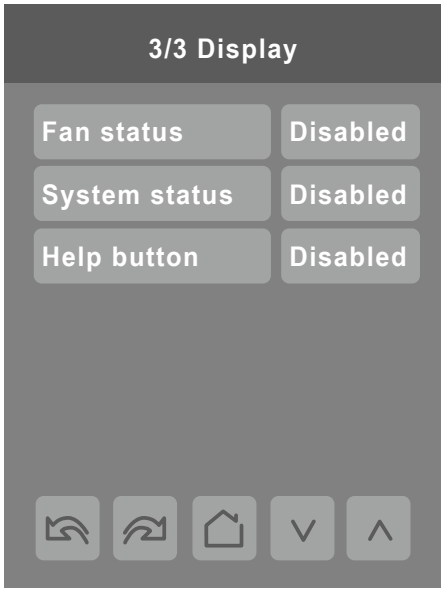
DISPLAY 2/3

PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
Language Default value: **English**	**Display Language** Select language for main display. **Choices:** English, French, Spanish, Chinese, Russian, Arabic, Bulgarian, Czech, Danish, Dutch, Finnish, German, Hebrew, Hungarian, Indonesian, Italian, Japanese, Norwegian, Polish, Portuguese, Slovak, Swedish and Turkish
Units Default value: **°C**	**Temperature Scale** Changes the local display units. Refer to Network Units to change the network units broadcasted over the network. **Choices:** °C for SI or °F for Imperial.
Low backlight Default value: **60%**	**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%**	**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%.

Configuration Parameters Default Value	Significance and Adjustments
RH display Default value: **Disabled**	**Relative Humidity** Shows humidity level in room in %RH. **Enabled**: Display %RH **Disabled**: Do not display %RH **Choices**: Enabled or Disabled
CO2 display Default value: **Disabled**	**CO2 Levels Display** Shows carbon dioxide level in room in ppm. **Enabled**: Display CO2 level **Disabled**: Do not 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**: Enabled or Disabled

DISPLAY 3/3



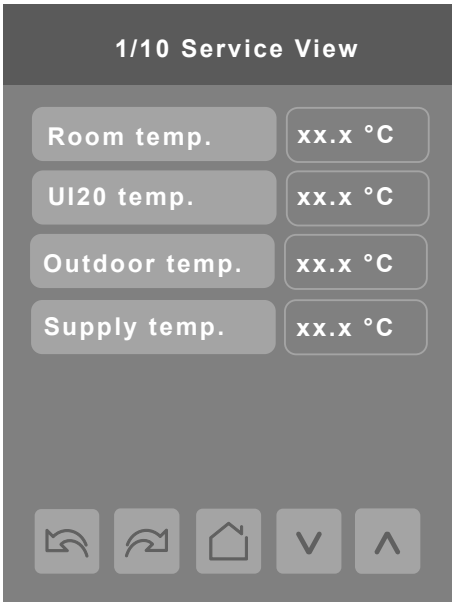
PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Fan status Default value: **Enabled**	**Fan Status Display** 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 the User HMI Show/Hide Options in Section 2. **Choices**: Enabled or Disabled
System status Default value: **Enabled**	**Systen Status Display** 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 the User HMI Show/Hide Options in Section 2. **Choices**: Enabled or Disabled
Help button Default value: **Enabled**	**Help Button Display** 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 the User HMI Show/Hide Options in Section 2. **Choices**: Enabled or Disabled.

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.

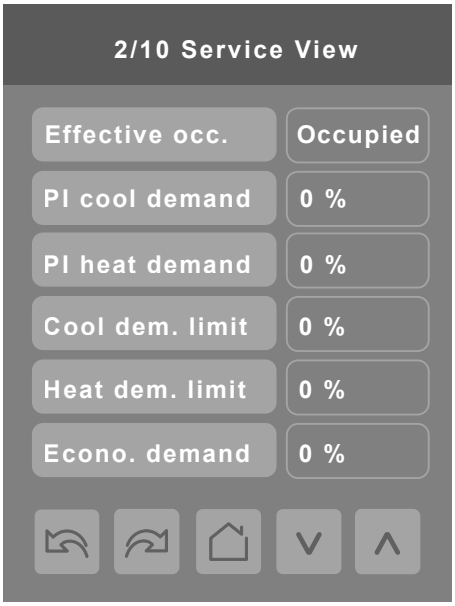
SERVICE VIEW 1/10



PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
Room temp. **Read Only**	**Room Temperature** Shows the current room temperature from the configured temperature source.
UI20 temp. **Read Only**	**Room Temperature Sensor** Shows the temperature of the sensor connected to UI20 (RS) terminal.
Outdoor temp. **Read Only**	**Outdoor Temperature** Shows the current value of the outdoor temperature.
Supply temp. **Read Only**	**Supply Temperature** Shows supply air temperature as measured by the sensor.

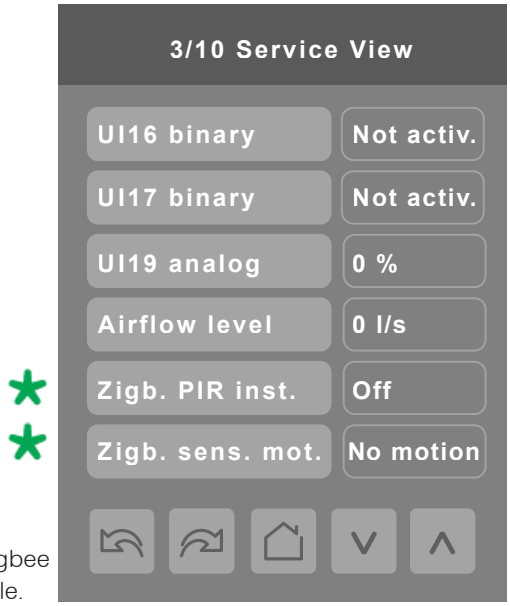
SERVICE VIEW 2/10



PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
Effective occ. **Read Only**	**Effective Occupancy** Shows as occupied, unoccupied, standby or override. **Display Readings**: Occupied, Unoccupied, Override and Standby
PI cool demand **Read Only**	**Proportional Integral Cooling Demand** **Display Readings**: 0-100%
PI heat demand **Read Only**	**Proportional Integral Heat Demand** **Display Readings**: 0-100%
Cool dem. limit **Read Only**	**Cooling Demand Limit** **Display Readings**: 0-100%
Heat dem. limit **Read Only**	**Heat Demand Limit** **Display Readings**: 0-100%
Econo. demand **Read Only**	**Economizer Demand** **Display Readings**: 0-100%

SERVICE VIEW 3/10



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

PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
UI16 binary **Read Only**	**Universal Input Configuration No. 1** Shows status of input. **Display Readings**: Activated or Not Activated
UI17 binary **Read Only**	**Universal Input Configuration No. 2** Shows status of input. **Display Readings**: Activated or Not Activated
UI19 analog **Read Only**	**Universal Input Configuration No. 3** Shows scaled percentage level of wired CO2 sensor. 0% = 0ppm, 100% = 2000ppm **Display Readings**: 0-100%
Airflow level **Read Only**	**Airflow level** Shows the amount of air (in cubic feet/minute or litres/second) that flows through a particular device.
Zigb. PIR inst. **Read Only**	**Zigbee Passive Infrared Sensor Installed** Shows if Zigbee wireless motion sensor is paired to a Room Controller or not. **NOTE:** This parameter is for Zigbee wireless motion sensors only. **Display Readings:** Off or On
Zigb. sens. mot. **Read Only**	**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**: Motion or No Motion

SERVICE VIEW 4/10

PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
Window alarm **Read Only**	**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**: On or Off
Service alarm **Read Only**	**Service Alarm** Shows On if there is a Service alarm and shows Off if there is no Service alarm. **Display Readings**: On or Off
Filter alarm **Read Only**	**Filter Alarm** Shows On if there is a Filter alarm and shows Off if there is no Filter alarm. **Display Readings**: On or Off
Fan lock alarm **Read Only**	**Fan Lock Alarm** Shows On if there is a problem detected on the Fan. **Display Readings**: On or Off
CO2 alarm **Read Only**	**CO2 Alarm** Shows On if the CO2 level (local, wired or wireless) is higher than the “Max CO2” parameter located on the Configuration screen. **Display Readings**: On or Off
Low air alarm **Read Only**	**Low Air Alarm** Shows if the fresh air flow is lower than the “Min fresh air” parameter located on the Configuration screen. **Display Readings**: On or Off

SERVICE VIEW 5/10

PARAMETER DETAILS

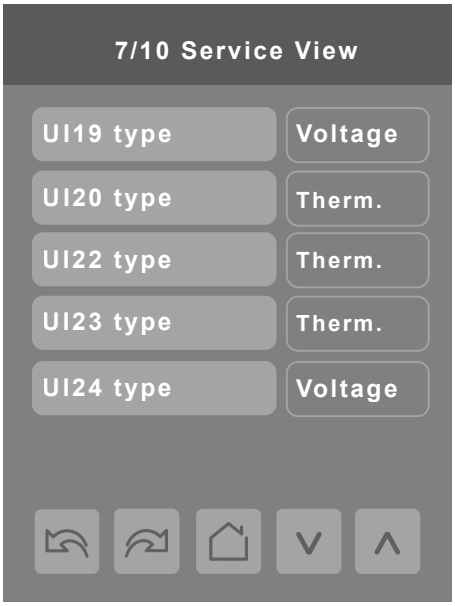
Configuration parameters Default Value	Significance and Adjustments
Frost alarm **Read Only**	**Frost Alarm** Shows if Frost Alarm is active or not. **Display Readings**: On or Off
Recovery **Read Only**	**Recovery Status** Shows if Smart Recovery is active or not. **Display Readings**: On or Off
Local motion **Read Only**	**Local Motion** Shows if motion is detected in the room by the on-board PIR sensor. **Display Readings**: Motion or No Motion
Deh. status **Read Only**	**Dehumidification Status** Shows if dehumidification is active or not. **Display Readings**: On or Off
Room humidity **Read Only**	**Room Humidity** Shows the current room humidity percentage from the configured humidity source.

SERVICE VIEW 6/10

PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
UO9 config **Read Only**	**UO9 Configuration** **Display Readings**: Analog, Binary, Relay RC or Relay RH
UO10 config **Read Only**	**UO10 Configuration** **Display Readings**: Analog, Binary or Relay RC
UO11 config **Read Only**	**UO11 Configuration** **Display Readings**: Analog or Binary
UO12 config **Read Only**	**UO12 Configuration** **Display Readings**: Analog or Binary

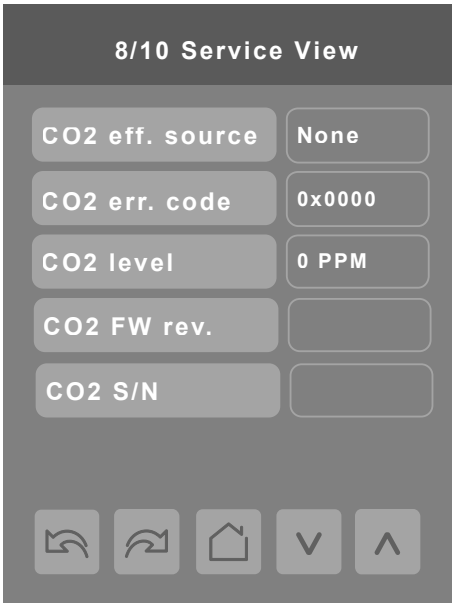
SERVICE VIEW 7/10



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
UI19 type **Read Only**	**UI19 Input Type** **Display Readings**: Thermistor, Binary or Voltage
UI20 type **Read Only**	**UI20 Input Type** **Display Readings**: Thermistor, Binary or Voltage
UI22 type **Read Only**	**UI22 Input Type** **Display Readings**: Thermistor, Binary or Voltage
UI23 type **Read Only**	**UI23 Input Type** **Display Readings**: Thermistor, Binary or Voltage
UI24 type **Read Only**	**UI24 Input Type** **Display Readings**: Thermistor, Binary, Voltage or Reserved

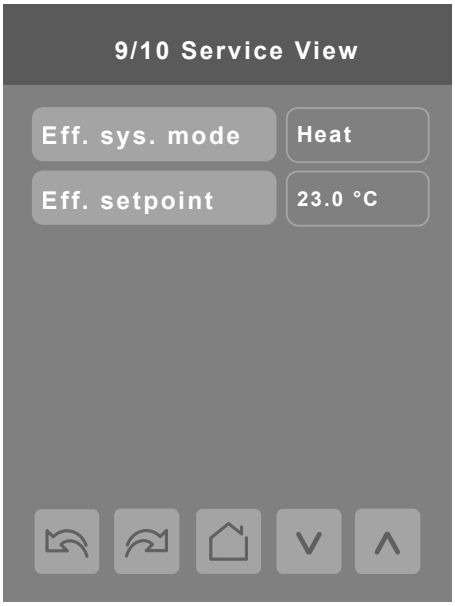
SERVICE VIEW 8/10



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
CO2 eff. source **Read Only**	**CO2 Effective Source** Shows the configured source or the indoor CO2. **Display Readings**: None, Local or WL 1 to WL 20
CO2 err. code **Read Only**	**CO2 Error Code** Error code 0x0001 shows if there is an error with the sensor.
CO2 level **Read Only**	**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 9/10



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Eff. sys. mode **Read Only**	**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. **Display Readings**: Cool or Heat
Eff. setpoint **Read Only**	**Effective Temperature Setpoint** Shows the tempertature setpoint value currently in use by the system.

SERVICE VIEW 10/10

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.

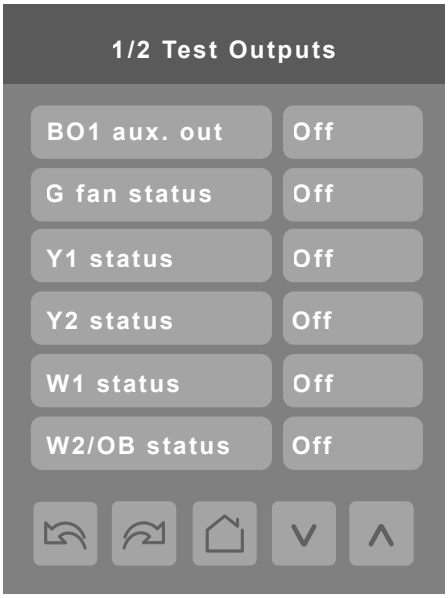
For example, when a VT8650U5B00 Room Controller with a MAC address of 41 is connected to a network, its default Device Name is VT8650U5B00-41 and its default BACnet Device ID is 86041.

Firmware Revision shows the Firmware version currently installed on the Room Controller. Upgrading to a newer Firmware version deletes the previoius 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 UO10 to UO12 are dependent on control type configuration. If mode is set to Floating or On/Off, binary options show. If mode is set to Analog, analog options show.

Language Selection Screens

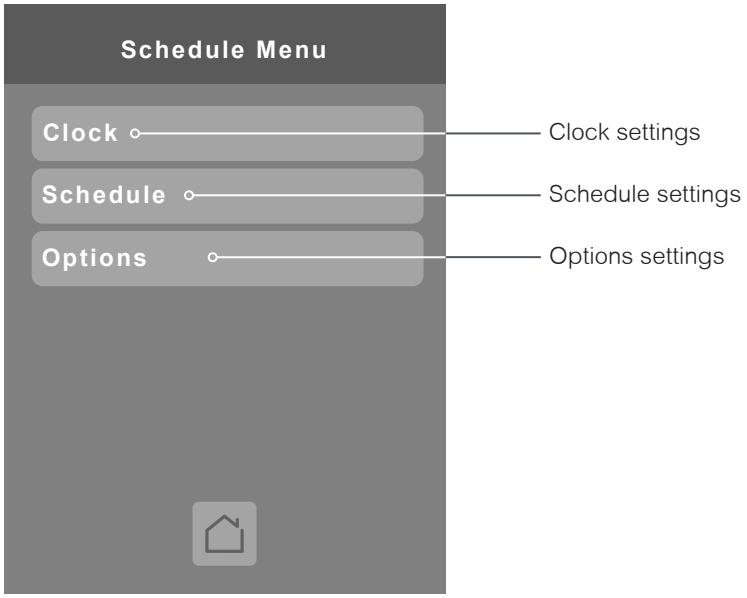
LANGUAGE SELECTION

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.

Clock - Schedule Screens

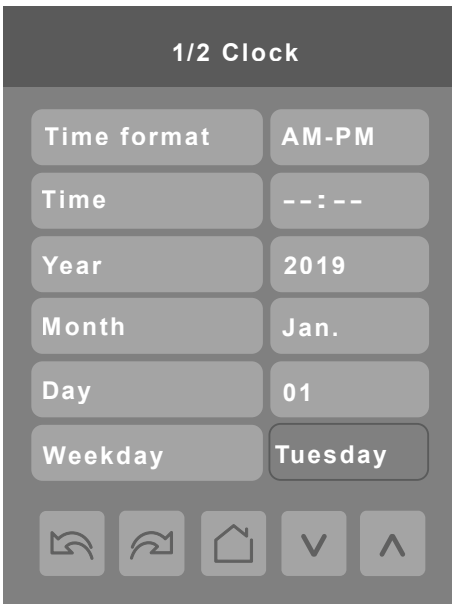
SCHEDULE MENU



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

Configuration Parameters Default Value	Significance and Adjustments
Time Format Default value: **AM-PM**	**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**: AM-PM or 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: **Local** **Read Only**	**Time Source** Shows the source that most recently set the time on the Room Controller. **Display Readings**: None, Local, BACnet, NTP or 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.

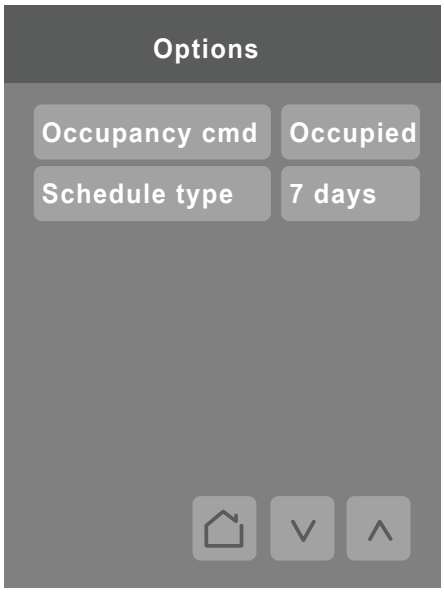
Identified by day of the week (Sunday through Saturday)

PARAMETER DETAILS

Configuration 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.

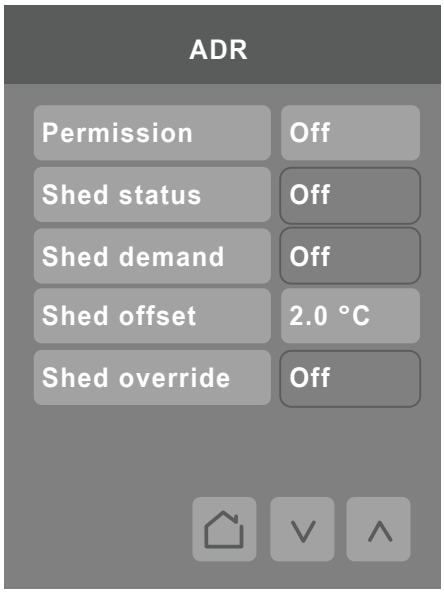


PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Occupancy cmd Default value: **Occupied**	**Occupancy Command** **Loc occ**: occupancy is determined by local sequences (either PIR or schedule, as configured under Occ. source). **Occupied:** force occupied mode. **Unocc:** force unoccupied mode. **Choices**: Loc occ, Occupied or Unocc.
Schedule type Default value: **7 days**	**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:** 7 days, 5+2 days or 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

Configuration Parameters Default Value	Significance and Adjustments
Permission Default value: **Off**	**Automatic Demand Response 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**: On or Off
Shed status Default value: **Off** **Read Only**	**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**: On or Off
Shed demand Default value: **Off** **Read Only**	**Load Shedding Demand** Sets the request to initiate Load Shedding. This demand can only be set through BACnet by the local Utility company. **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**: On or Off

Configuration Parameters Default Value	Significance and Adjustments
Shed offset Default value: **4°F (2°C)**	**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**	**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. **On**: Rejects or cancels shed load demand request from utility company (setpoints remain the same). **Off**: Allows shed load demand request from utility company (setpoint will change according to shed offset) **Display Readings**: On or Off

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

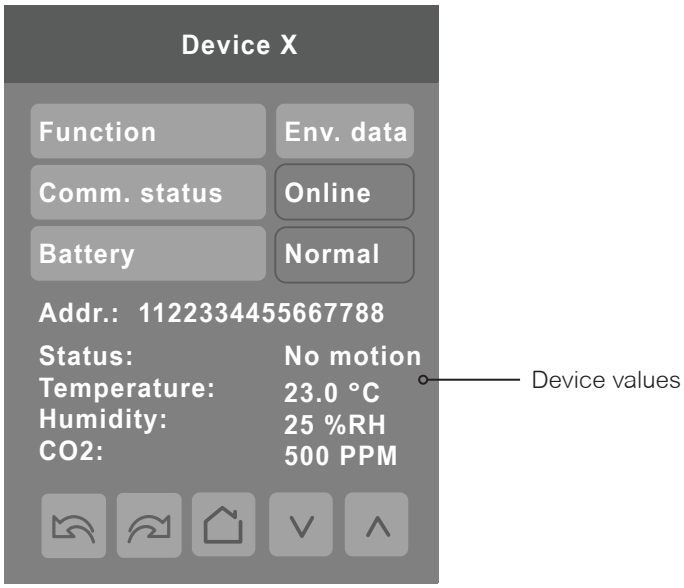
Configuration Parameters Default Value	Significance and Adjustments
Network status Default value: **Not det.** **Read Only**	**Zigbee Network Status** Shows current status of Zigbee network. **Pwr on:** Zigbee module detected but not configured **No NWK**: Zigbee configured but no network joined **Joined:** Zigbee network joined **Online:** Communicating **Display Readings**: Pwr on, No NWK, Joined and 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 Zigbee wireless device **Off:** Prevents Room Controller from pairing with Zigbee wireless device, or prevent any additional Zigbee devices from joining network. **Choices**: On or Off

Configuration Parameters Default Value	Significance and Adjustments
Permit timeout Default value: **0** **Read Only**	**Permit Join Timeout** Allows Zigbee 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**	**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

Configuration Parameters Default Value	Significance and Adjustments
Function Default value: **None**	**Zigbee Device Function** Shows status of 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**: None, Window, Door, Motion, Env. data, Remove, Water, Refrig. and Freezer
Comm. status Default value: **Offline** **Read Only**	**Communication Status** Shows if device is communicating with Room Controller **Not paired**: Device not paired **Online**: Device paired and online **Offline**: Device paired but offline **Invalid**: Device was paired and Room controller detected a communication error (selected function does not match paired sensor functionality). **Display Readings**: Not paired, Online, Offline and Invalid
Battery Default value: **None** **Read Only**	**Wireless Device Battery** Shows current status of battery in wireless device. **Display Readings**: None, Normal or Low

Configuration Parameters Default Value	Significance and Adjustments
Address **Read Only**	**Wireless Device Address** Shows unique IEEE (MAC) address of Zigbee wireless device
Device values **Read Only**	**Device Values** Shows the Zigbee wireless device values. Values displayed will be different depending on type of device: • Door and Window Sensors: Closed or Open • Motion Sensor: No Motion or Motion • Water Leak Sensor: Normal or Leak • Temperature Sensor: XX.X °C • Humidity Sensor: XX %RH • CO2 Sensor: XXX PPM

DEVICE GROUPS

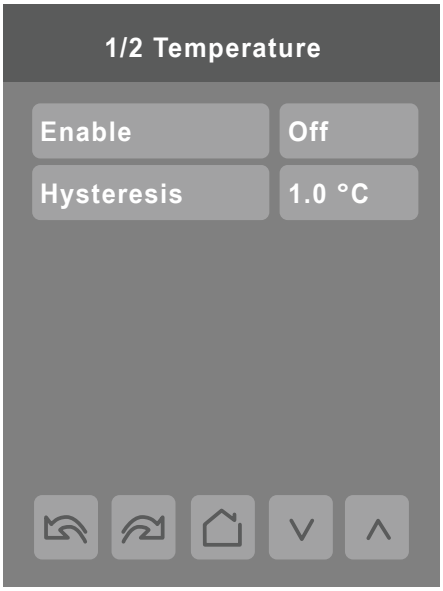
The Device Groups screen shows if a particular Zigbee wireless sensor is paired with the Room Controller.

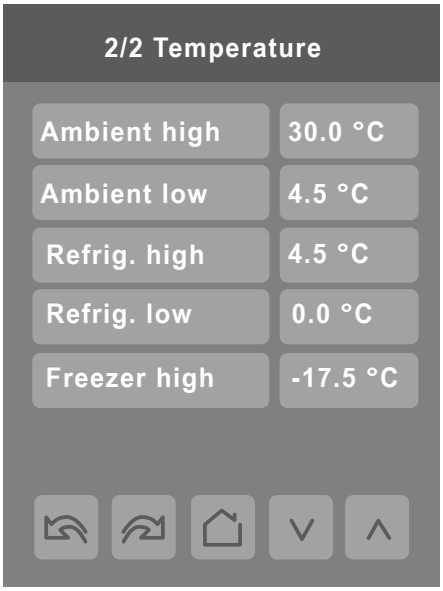
PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Door installed Default value: **No** **Read Only**	**Door Contact Installed** Shows if Door sensor installed. **Display Readings**: Yes or No
Win. installed Default value: **No** **Read Only**	**Window Contact Installed** Shows if Window sensor installed. **Display Readings**: Yes or No
Water installed Default value: **No** **Read Only**	**Water Leak Sensor Installed** Shows if Water Leak sensor installed. **Display Readings**: Yes or No

TEMPERATURE ALARMS CONFIGURATION

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



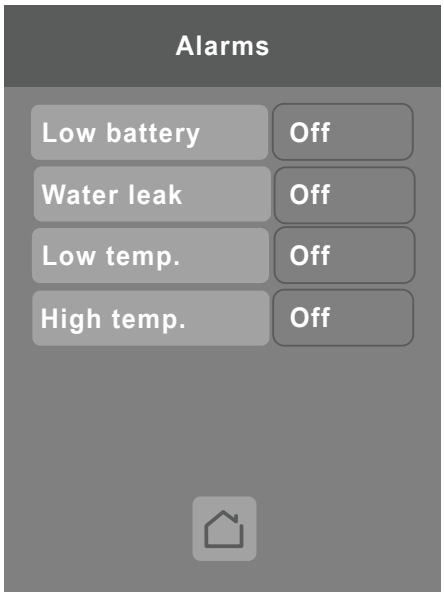


PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Enable Default value: **Off**	**Temperature Alarm Enabled** Enables wireless device to alert Room Controller if temperature value reaches defined value in a particular paired device. **Choices**: On or Off
Hysteresis Default value: **2.0 °F (1.0 °C)**	**Temperature Alarm Hysteresis** **Choices**: 0 to 10°F (0 to 5.5 °C)
Ambient high Default value: **86.0 °F (30.0 °C)**	**Temperature Alarm Ambient High** **Range**: 75 to 122 °F (24 to 50 °C)
Ambient low Default value: **40.0 °F (4.5 °C)**	**Temperature Alarm Ambient Low** **Range**: 32 to 45 °F (0 to 7 °C)
Refrig. high Default value: **40.0 °F (4.5 °C)**	**Temperature Alarm Refrigerator High** **(only present if a refrigeration sensor is installed)** **Range:** 32 to 50 °F (0 to 10 °C)
Refrig. low Default value: **32.0 °F (0.0 °C)**	**Temperature Alarm Refrigerator Low** **(only present if a refrigeration sensor is installed)** **Range**: 32 to 50 °F (0 to 10 °C)
Freezer high Default value: **0.0 °F (-17.5 °C)**	**Temperature Alarm Freezer High** **(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.

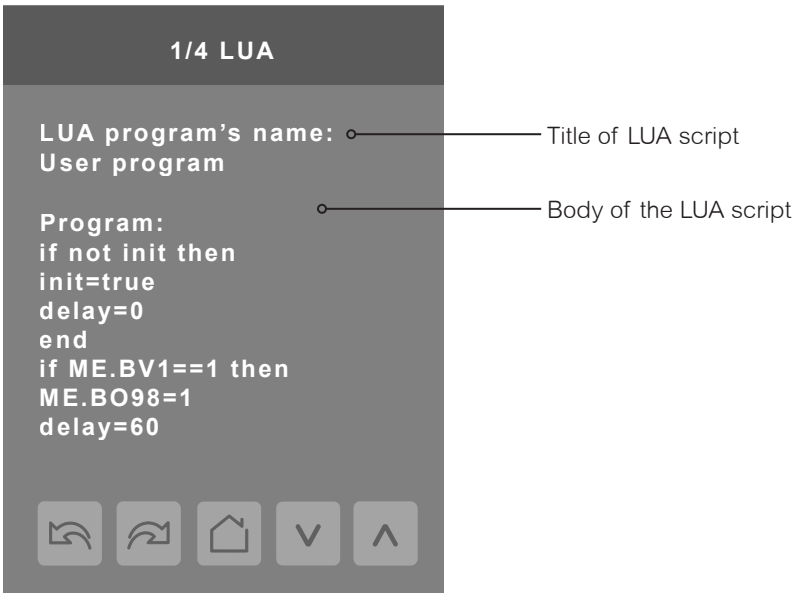


PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Low battery Default value: **Off** **Read Only**	**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**: On or Off
Water leak Default value: **Off** **Read Only**	**Water Leak Sensor Status** 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**: On or Off
Low temp. Default value: **Off** **Read Only**	**Low Temperature Alarm** 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**: On or Off
High temp. Default value: **Off** **Read Only**	**High Temperature Alarm** 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**: On or Off

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.

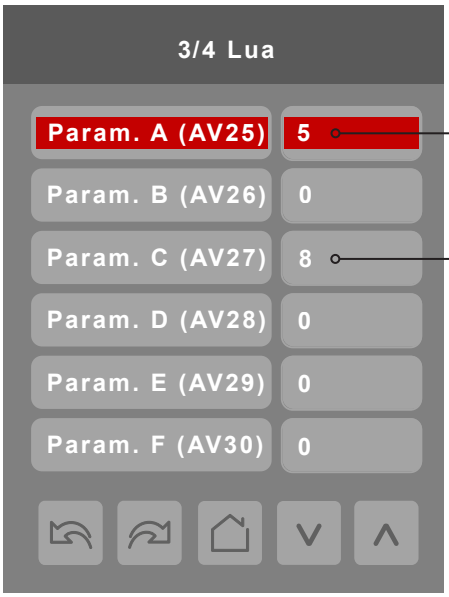


PARAMETER DETAILS

Configuration 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

Configuration Parameters Default Value	Significance and Adjustments
Parameter A Default value: **0**	**AV25** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter B Default value: **0**	**AV26** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter C Default value: **0**	**AV27** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter D Default value: **0**	**AV28** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter E Default value: **0**	**AV29** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter F Default value: **0**	**AV30** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter G Default value: **0**	**AV225** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter H Default value: **0**	**AV226** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter I Default value: **0**	**AV227** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter J Default value: **0**	**AV228** The value of this parameter depends on what is assigned to it from a BAS or LUA script.

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Parameter K Default value: **0**	**AV229** The value of this parameter depends on what is assigned to it from a BAS or LUA script.
Parameter L Default value: **0**	**AV230** The value of this parameter depends on what is assigned to it from a BAS or LUA script.

SECTION 4

Appendix

Appendix A: Terminal Correspondence

The terminals of a VT8650 are identified differently and have a wider range of possible functions compared to those of any of the VT7600 series Room Controllers. Nonetheless, there is a direct correspondence of functions between the terminals of the VT7600 series and the VT8650 series. Consult the table below to verify the appropriate terminal when replacing a VT7600 Room Controller with a VT8650 Room Controller.

VT7600		VT8650	
Terminal name	**Terminal ID**	**Terminal name**	**Terminal ID**
Binary Input 1	BI1	Universal Input 16	UI16
Binary Input 2	BI2	Universal Input 17	UI17
Sensor Common	Scom	Terminal 18 Common	COM
Remote Sensor	RS	Universal Input 20	UI20 - RS
Sensor Common	Scom	Terminal 21 Common	COM
Mix/Supply Sensor	MS	Universal Input 22	UI22 - SS