

# VT8600 Series User Interface Guide

Rooftop Unit, Heatpump and Indoor Air Quality Controller



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# SECTION 1

Introduction

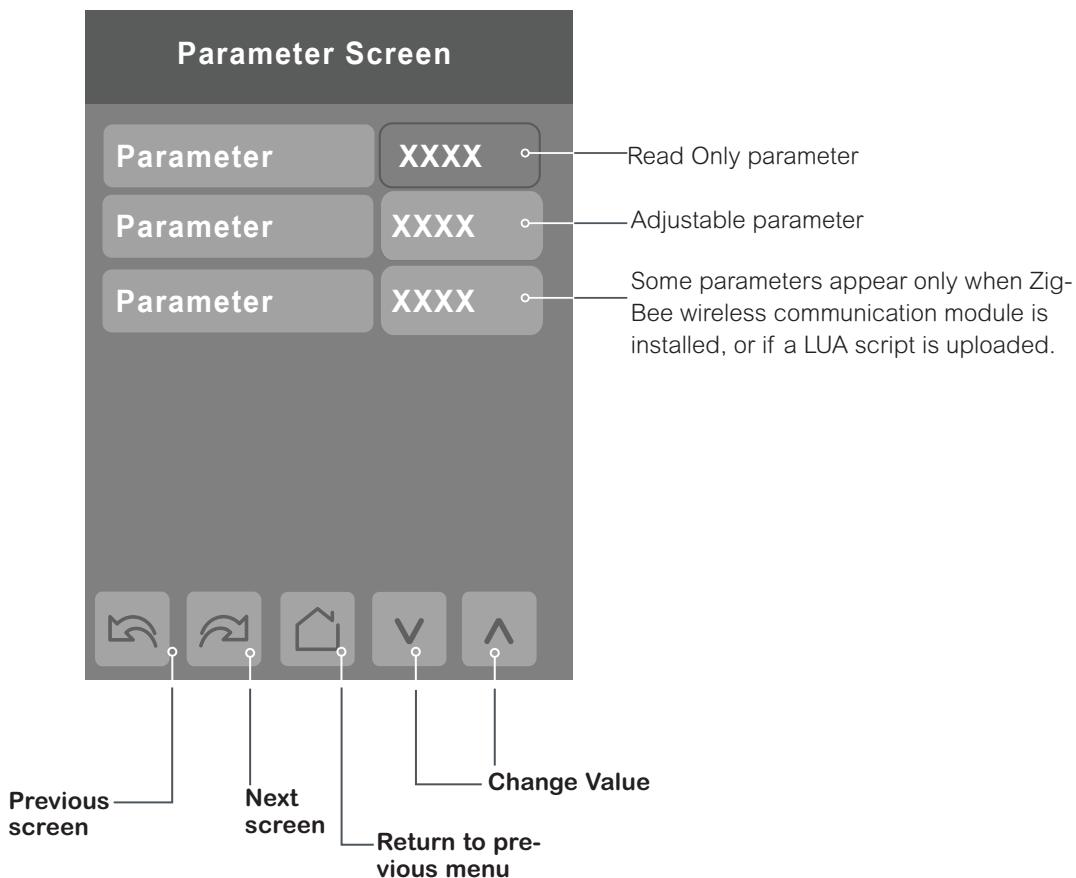
# Introduction

This guide shows the User Interface instructions for the VT8300 Series Room Controller (Firmware Release version 1.7) for User and Integrators.

## User and Integrator Screens

The VT8300 Room Controller has dynamic screens and parameters that only appear on certain models or based on the presence of a communication module (VCM). The LUA tab on the second menu screen, will also only show if a LUA script is uploaded to the Room Controller.

See below legend screen details.



### Notes

1. When any change is made to a parameter, the value is permanently saved in the database when the next parameter is selected or another screen is opened. This event is true only if a parameter was changed locally on the Room Controller. Making changes through BACnet will not have the same outcome. If permanent changes need to be done remotely through BACnet, use priority 1, 2 or 3, or write to relinquish default (priority 17)
2. The ZigBee Pro communication module must be Revision 10 (R10) or later to support newly introduced devices such as water leak sensor and the ZigBee Green Power environmental sensor.
3. The Room Controller must be running Firmware version 1.7 or later to enable the Automatic Demand Response (ADR) feature.

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# Disclaimer

## \*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.

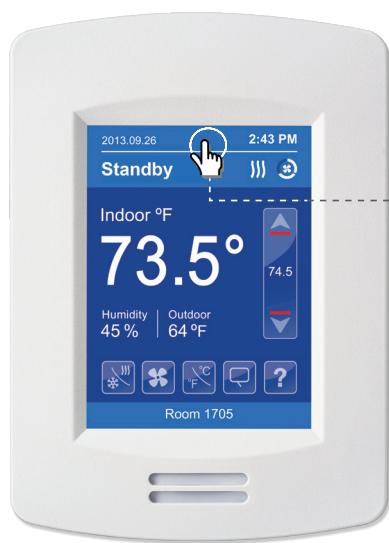
## HMI Display and Set-up

# HMI Display

The below shows a typical user interface for the hospitality industry. The User HMI is configurable and allows display functions such as Date, Time, Humidity, Outdoor Temperature, and Setpoint to be enabled or disabled by setting various parameters.



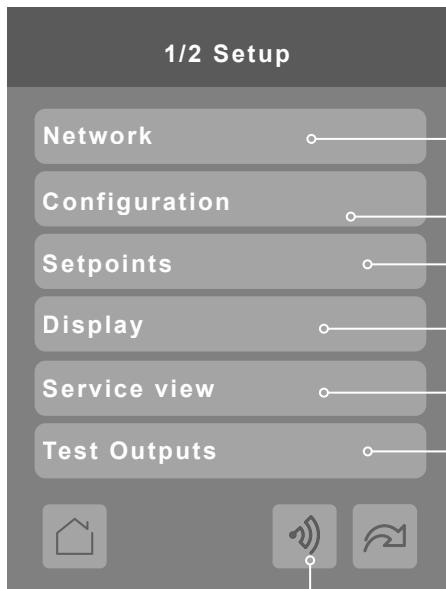
# Enter Set-up Screen



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.

## SET UP 1/2



**Network** BACnet MS/TP, Modbus and ZigBee network settings (ZigBee network settings appear only if a communication module is installed)

**Configuration** Parameter configuration menu

**Setpoints** Setpoint settings

**Display** Display settings

**Service view** Status display (Read Only)

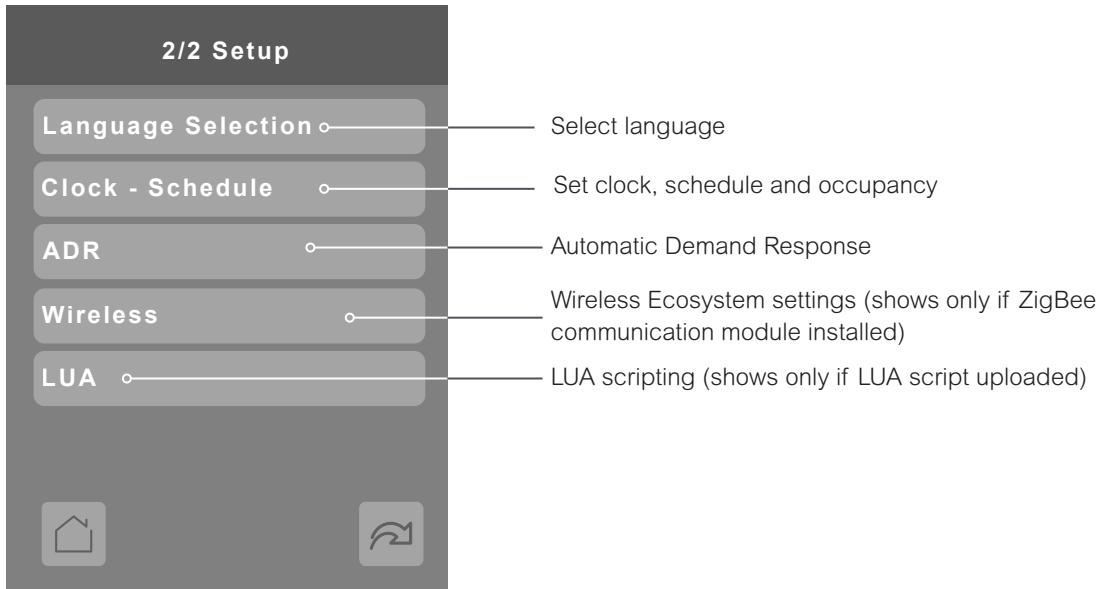
**Test Outputs** Test outputs settings



**Return to previous menu**

**Discover Mode** shows wireless ZigBee network. Icon not shown if ZigBee communication module not installed

## SET UP 2/2



# SECTION 2

Customized Screens

# User HMI for Hospitality

**0 (Hospitality)**



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

**1 (Hospitality)**



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

**2 (Hospitality)**



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

**3 (Hospitality)**



- Setpoint adjustment
- User help menu

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

**4 (Hospitality)**



- Fully locked interface with no user settings

**5 (Hospitality)**



- Setpoint adjustment
- System mode setting
- User help menu

**6 (Hospitality)**



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

**7 (Commercial)**



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

# Commercial User HMI

8 (Commercial)



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

9 (Commercial)



- Setpoint adjustment
- Unoccupied mode override
- User help menu

10 (Commercial)



- Unoccupied mode override

11 (Commercial)



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

12 (Commercial)



- Offset setpoints adjustment
- System mode setting
- User help menu

## Note:

The day/night setback button appears only in unoccupied mode from 7 to 11 in HMI Commercial. If UI17 input is configured as "override", the day/night setback button does not show.

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

# System Mode

The following apply in System Mode.

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

# Fan Mode Settings



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

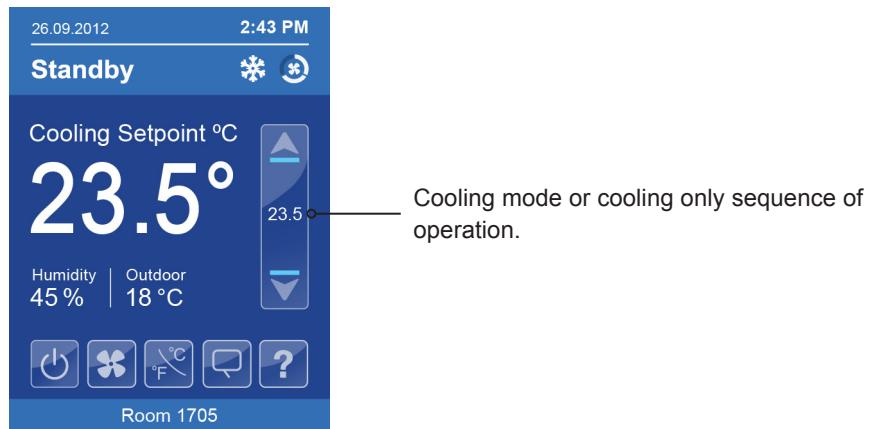
# Heating only Configuration



## 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.



# Setpoint Adjustment for Heating Mode

In automatic mode, setpoint showing at the top of the set point bar located directly under the blue 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 red 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.



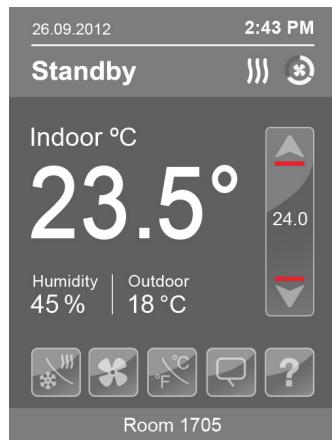
## Other Functions



Local humidity only shows on models with the humidity sensor present and when enabled by configuration property RH Display.

Outdoor temperature display is dependent on receiving a valid networked outdoor temperature value.

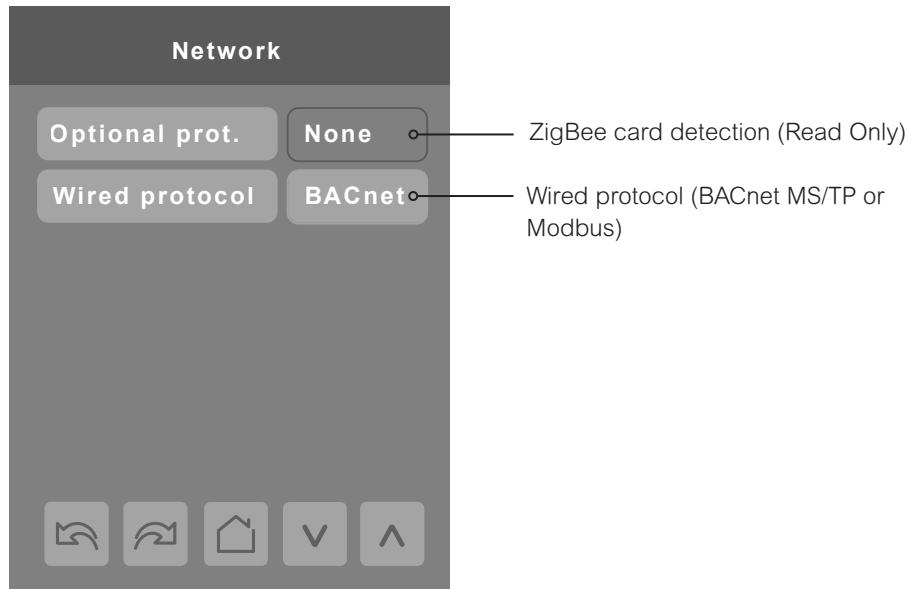
# Customizable Color Options





# Network Settings

User can select wired BACnet / Modbus / ZigBee wireless protocol (requires optional communication module).



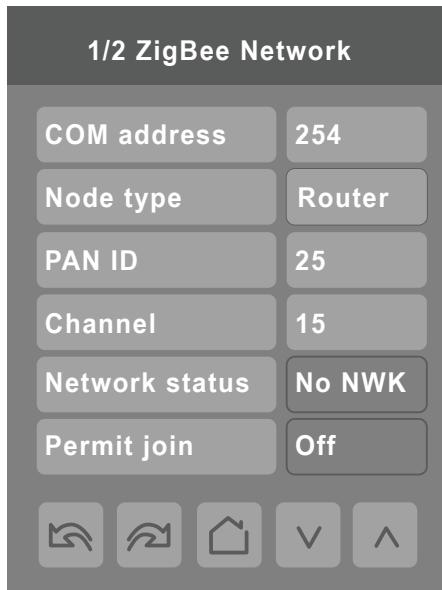
## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Optional prot. Read Only	<b>Optional Protocol</b> Requires installation of optional ZigBee Pro communication module. <b>None:</b> No ZigBee card detected <b>ZigBee:</b> ZigBee card detected <b>Display Readings:</b> None or ZigBee
<b>Wired protocol</b> Default value: <b>BACnet</b>	<b>Wired Protocol</b> <b>None:</b> No wired protocol configured <b>BACnet:</b> BACnet MS/TP network protocol <b>Modbus:</b> Modbus network protocol <b>Choices:</b> None, BACnet or Modbus

## ZIGBEE NETWORK 1/2

The ZigBee Pro Network screen shows only when the optional ZigBee Pro communication module is detected in the device. When setting up a ZigBee network to bind with multiple devices, there must first be a Coordinator to manage the initial binding between the Router and the end devices. After successful binding, the Router becomes the parent to the end devices.

**NOTE:** Before binding any ZigBee devices, the network must first be created by the Coordinator.

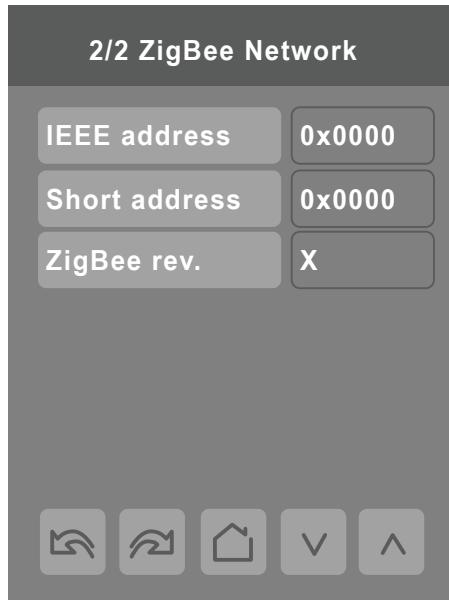


## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>COM address</b> Default value: <b>254</b>	<b>COM Address</b>  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.  <b>Range:</b> 0 to 254
<b>Node type</b> Default: <b>Router</b>	<b>Node Type</b>  Sets device to act as Router or Coordinator in a network.  <b>Coordinator:</b> Creates the network and manages the binding of wireless devices. <b>Router:</b> Joins a network created by a coordinator (permit join must be set to 'ON').  <b>Choices:</b> Coordinator or Router
<b>Pan ID</b> Default value: <b>0</b>	<b>ZigBee Pan ID</b>  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.  <b>NOTE:</b> The default value of 0 is NOT a valid PAN ID. <b>NOTE:</b> For Room Controllers running Firmware version 1.3 and earlier, the PAN ID must be set to 501-1000 for the Room Controller to act as a coordinator.  <b>Range:</b> 1 to 32767

<b>Channel</b> Default value: <b>10</b>	<p><b>ZigBee Channel</b></p> <p>The frequency or channel on which the ZigBee network transmits and receives data. The channel of the Coordinator must match that of the routers to exchange data.</p> <p>The default value of 10 is <b>NOT</b> a valid channel. The valid range of available channel is from 11 to 25.</p> <p><b>Using channels 15 and 25 is recommended.</b></p> <p><b>Range:</b> 10 to 25</p>
<b>Network status</b> <b>Read Only</b>	<p><b>ZigBee Network Status</b></p> <p>Shows the current status of the ZigBee network.</p> <p><b>No NWK:</b> ZigBee configured but no network joined</p> <p><b>Joined:</b> ZigBee network joined</p> <p><b>Online:</b> Communicating (Exchanging data)</p> <p><b>Display Readings:</b> No NWK, Joined, Online</p>
<b>Permit join</b> Default value: <b>On</b>	<p><b>Permit Join</b></p> <p>Changing this value to "Off" on the Coordinator prevents any new ZigBee devices from joining the network.</p> <p>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.</p> <p><b>Choices:</b> On or Off</p>

## ZIGBEE NETWORK 2/2

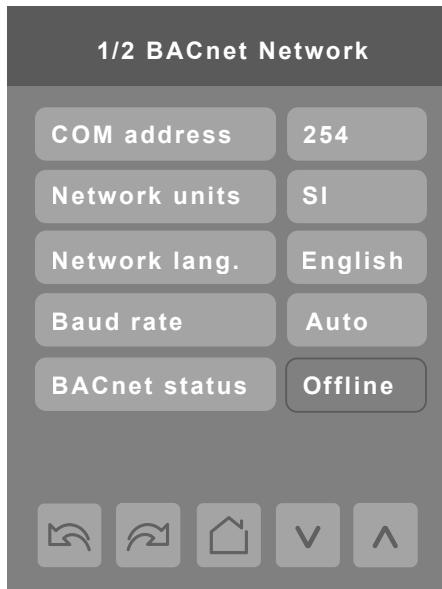


## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>IEEE address</b> <b>Read Only</b>	<b>IEEE Address</b> The extended IEEE address (MAC address) is a unique worldwide identifier of the VCM Module.
<b>Short address</b> Default value: <b>0</b> <b>Read Only</b>	<b>ZigBee Short Address</b> ZigBee Pro short address. The unique address is generated once device joins a ZigBee network
<b>ZigBee rev.</b> <b>Read Only</b>	<b>Communication Module Revision Number</b> Shows the revision number of the communication module (if installed).

# BACnet Network Settings

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



## PARAMETER DETAILS

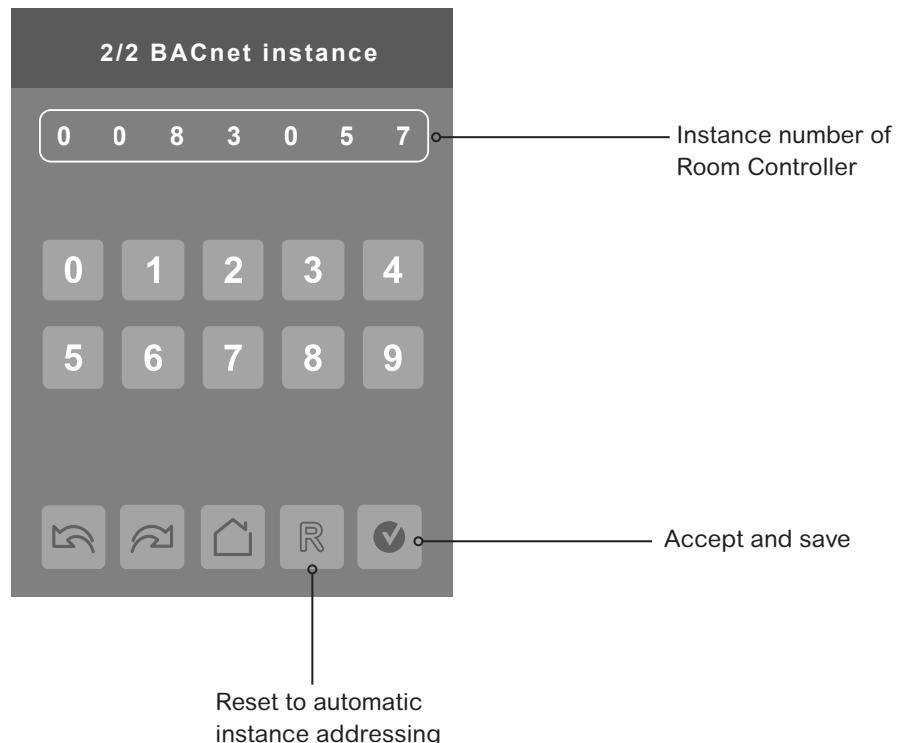
Configuration Parameters Default Value	Significance and Adjustments
<b>Comm address</b> Default value: <b>254</b>	<b>Communication Address</b>  Room Controller networking address.  Default value of 254 disables BACnet communication for the Room Controller.  <b>Range:</b> 0 to 254
<b>Network units</b> Default value: <b>SI</b>	<b>Measurement Units</b>  Network units transmitted over the BACnet network.  <b>NOTE:</b> Use the Temperature scale parameter to change the display units locally on the Room Controller.  <b>Imperial:</b> Network units shown as Imperial units. <b>SI:</b> Network units shown as International Metric units.  <b>Choices:</b> Imperial or SI
<b>Network lang</b> Default value: <b>English</b>	<b>Network Language</b>  Network language/object names transmitted over network.  <b>Choices:</b> English, French or Spanish
<b>Baud rate</b> Default value: <b>Auto</b>	<b>BACnet Baud Rate</b>  Leave the value at <b>Auto</b> unless instructed otherwise as this automatically detects BACnet baud rate.  <b>Choices:</b> Auto, 115200, 76800, 57600, 38400, 19200, and 9600
<b>BACnet status</b> <b>Read Only</b>	<b>BACnet Status</b>  Read Only value shows if a BACnet Network is detected or not.  <b>Display Readings:</b> Online or Offline

# 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 VT8600A5B00 with a COM address of 57 is generated as "86057".

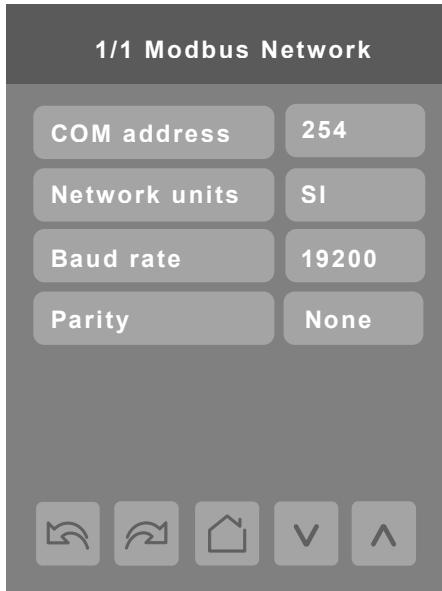
The default instance number appears first. To change the instance number, use number pad and press **Accept and save**.

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
<b>Comm address</b> Default value: <b>254</b>	<b>Communication Address</b>  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.  <b>Range:</b> 0 to 254
<b>Network units</b> Default value: <b>SI</b>	<b>Measurement Units</b>  Network units transmitted over the BACnet network.  <b>NOTE:</b> Use the Temperature scale parameter to change the display units locally on the Room Controller.  <b>Imperial:</b> network units shown as Imperial units. <b>SI:</b> network units shown as International Metric units.  <b>Choices:</b> Imperial or SI
<b>Baud rate</b> Default value: <b>19200</b>	<b>Modbus Baud Rate</b>  Automatically detects Modbus baud rate.  <b>Choices:</b> 57600, 38400, 19200, 9600, and 4800
<b>Parity</b> Default value: <b>Even</b>	<b>Parity</b>  Determines how the parity bit of the character's data frame is set to detect any errors in the sent/receives frame.  <b>Choices:</b> None, Odd and Even



## CONFIGURATION 1/11



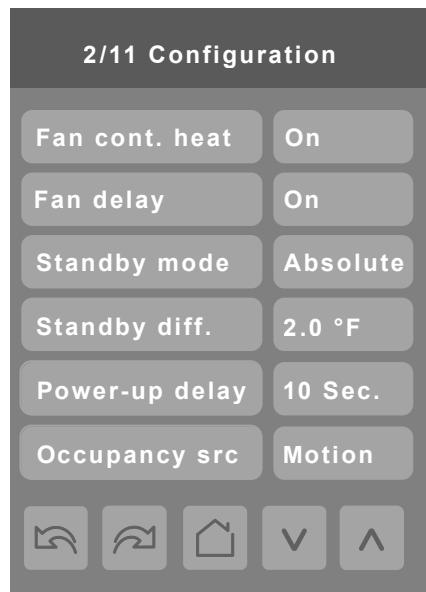
## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>UI16 config</b> Default value: <b>None</b>	<p><b>Universal Input Configuration No. 1</b></p> <p><b>None:</b> No function will be associated with the input. Input can be used for remote network monitoring.</p> <p><b>Rem NSB:</b> 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</p> <p><b>Motion NO and Motion NC:</b> Advanced PIR occupancy functions using a Normally Open (NO) or Normally Closed (NC) remote PIR motion sensor.</p> <p><b>Window:</b> Forces system to disable any current heating or cooling action by Room Controller when window is open.</p> <p><b>Fan lock:</b> 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.</p> <p>Open contact = No airflow alarm Closed contact = Airflow present, normal operation</p> <p><b>Choices:</b> None, Rem NSB, Motion NO, Motion NC, Window and Fan lock</p>

<b>UI17 config</b> Default value: <b>None</b>	<b>Universal Input Configuration No. 2</b>  <b>None:</b> No function associated with input  <b>Door Dry:</b> 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”.  <b>Override:</b> A closed contact forces the Room Controller to go in occupied mode. An open contact keeps the current occupancy mode.  <b>Filter:</b> backlit flashing filter alarm shows on the Room Controller screen when input is energized  <b>Service:</b> backlit flashing Service alarm shows on Room Controller screen when input is energized.  <b>Choices:</b> None, Door Dry, Override, Filter and Service
<b>UI19 config</b> Default value: <b>None</b>	<b>Universal Input Configuration No. 3</b>  This input is used for a wired CO <sub>2</sub> sensor  <b>None:</b> No function associated with input, however input can be used for remote network monitoring  <b>CO<sub>2</sub>:</b> Using the CO <sub>2</sub> level measured by a wired CO <sub>2</sub> 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 CO <sub>2</sub> ” and “Max CO <sub>2</sub> ” setpoints.  <b>Choices:</b> None or CO <sub>2</sub>
<b>Smart recovery</b> Default value: <b>Off</b>	<b>Enable Smart Recovery</b>  <b>Off:</b> No smart recovery. The occupied schedule time is the time at which the system will restart.  <b>On:</b> 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.  <b>Choices:</b> Off or On
<b>Setpoint func.</b> Default value: <b>Dual SP</b>	<b>Setpoint Function</b>  Local setpoint settings to set the local setpoint interface for the User.  <b>Dual SP:</b> “Minimum” Deadband, Heat and Cool Setpoints can be adjusted independently.  <b>Attach SP:</b> “Fixed” Deadband, Heat and Cool setpoints always follow each other, separated by Deadband value (acts like a single setpoint).  <b>Choices:</b> Dual SP or Attach SP

<b>Mode button</b> Default value: <b>Normal</b>	<b>Mode Button</b> Changes the behavior of the system mode button functionality and hides/shows temperature setpoints on main screen.  <b>Normal:</b> System mode button switches between 'Off', 'Auto', 'Cool' and 'Heat'. Also displays temperature Setpoints on main screen.  <b>Off-Auto:</b> System mode button switches between 'Off' and 'Auto'. Hides temperature Setpoints on main screen.  <b>NOTE:</b> Setting 'Mode button' to 'Off-Auto' forces the 'Setpoint func.' parameter to 'Attach SP'.  <b>Choices:</b> Normal or Off-Auto
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## CONFIGURATION 2/11



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Fan cont. heat</b> Default value: <b>On</b>	<b>Fan Control in Heating Mode</b>  <b>On:</b> Room Controller always controls the fan (terminal G). Valid for On or Auto fan mode.  <b>Off:</b> 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.  <b>Choices:</b> On or Off
<b>Fan delay</b> Default value: <b>On</b>	<b>Fan Delay</b>  <b>On:</b> 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.  <b>Off:</b> fan delay not operational  <b>Choices:</b> On or Off
<b>Standby mode</b> Default value: Absolute	<b>Standby Mode Configuration</b>  Standby setpoints used for control.  <b>Absolute:</b> Standby entered values are used for standby mode.  <b>Offset:</b> Occupied setpoints +/- Standby diff. used for standby mode.  <b>Choices:</b> Absolute or Offset

<b>Standby diff.</b>  Default value: <b>4°F (2°C)</b>	<b>Standby Temperature Differential</b>  When Standby mode is set to 'offset', standby setpoints are calculated as follows:  <b>Standby cool:</b> Cool setpoint + Standby diff.  <b>Standby heat:</b> Heat setpoint - Standby diff.  <b>Range:</b> 1 to 5°F (0.5 to 2.5°C)
<b>Power-up delay</b>  Default value: <b>10 seconds</b>	<b>Power up Delay</b>  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.  <b>Range:</b> 10 to 120 seconds
<b>Occupancy src</b>  Default value: <b>Motion</b>	<b>Occupancy Source</b>  <b>Motion:</b> occupancy status is received from a motion sensor from a wired, wireless or local PIR sensor  <b>Schedule:</b> occupancy status is determined by the schedule  <b>Choices:</b> Motion or Schedule

## CONFIGURATION 3/11



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Standby time</b> Default: <b>0.5 hours</b>	<b>Standby Time</b>  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.  <b>Note:</b> This parameter is not active when the “Door” function is used (wired or wireless).  <b>Range:</b> 0.5 to 24.0 hours (0.5 hour increments)
<b>Unocc. time</b> Default: <b>0.0 hours</b>	<b>Unoccupied Time</b>  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.  <b>Note:</b> 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.  <b>Range:</b> 0.0 to 24.0 hours (0.5 hour increments)
<b>Temp. occ. time</b> Default value: <b>2 hours</b>	<b>Temporary Occupancy Time</b>  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.  <b>Range:</b> 0.0 to 24.0 hours

<b>Temp. sensor</b>  Default value: <b>Wired</b>	<p><b>Room Temperature Sensor</b></p> <p>Sets the source of the indoor room temperature. This parameter allows the user to designate either the Room Controller or any of the bound wireless devices that support temperature to act as the source for the room temperature.</p> <p><b>Wired:</b> sets the thermistor connected to UI20 (RS) as the source to report room temperature.</p> <p><b>Internal:</b> sets the Room Controller as the source for the room temperature.</p> <p><b>WL 1 to WL 10:</b> sets the selected wireless ZigBee Pro device as the source for the room temperature. Only one device can be selected.</p> <p><b>WL GP:</b> sets the selected ZigBee Green Power device as the source for the room temperature.</p> <p><b>Note:</b> The Room Controller uses the internal temperature sensor only if UI20 (RS) terminal is empty. If a valid temperature sensor is connected to UI20 terminal, the Room Controller will automatically disable its internal sensors (Internal, WL1 to WL10, WL GP) and use the remote sensor as the control point. Disconnecting the sensor, or if the sensor is faulty, the Room Controller will automatically re-enable its internal temperature sensor.</p> <p><b>Choices:</b> Internal, Wired, WL1 to WL10, and WL GP</p>
<b>Deh. hysteresis</b>  Default value: <b>5% RH</b>	<p><b>Humidity Control Hysteresis</b></p> <p>Used only if dehumidification sequence is enabled.</p> <p><b>Range:</b> 2 to 20% RH</p>
<b>Deh. lockout</b>  Default value: <b>Disabled</b>	<p><b>Dehumidification Lockout</b></p> <p>Enables or disables dehumidification based on central network requirements from the BAS front end.</p> <p><b>Enabled:</b> Dehumidification Authorized</p> <p><b>Disabled:</b> Dehumidification Not Authorized</p> <p><b>Choices:</b> Enabled or Disabled</p>

## CONFIGURATION 4/11



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Cooling CPH</b> Default value: <b>4 CPH</b>	<b>Cooling Output Cycles Per Hour</b> 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. <b>Note:</b> 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. <b>Range:</b> 3 to 4 CPH
<b>Heating CPH</b> Default value: <b>4 CPH</b>	<b>Heating Stages Cycles per Hour</b> 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. <b>Range:</b> 3 to 8 CPH

<b>Frost protec</b>  Default value: Off	<b>Frost Protection</b>  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).  <b>Off:</b> No room frost protection  <b>On:</b> Room frost protection enabled in all system modes at 42°F (5.6°C).  Frost protection is enabled even if System mode is 'Off'.  <b>Choices:</b> Off or On
<b>BO1 aux config</b>  Default value: <b>NO</b>	<b>Binary Auxiliary Output Configuration</b>  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.  <b>Choices:</b> NO or NC
<b>Anti short cycle</b>  Default value: <b>2 minutes</b>	<b>Anti Short Cycle Time</b>  Minimum On time and minimum Off time of operation time for stages.  <b>IMPORTANT:</b> 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.  <b>Range:</b> 0 to 5 minutes
<b>Min. sup. heat</b>  Default value: <b>64°F (18°C)</b>	<b>Minimum Supply Heat</b>  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.  <b>Range:</b> 50°F to 72°F (10°C to 22°C)

## CONFIGURATION 5/11



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments																														
<b>Prop. band</b> Default value: 3	<b>Proportional Band Setting</b> Adjusts proportional band used by Room Controller PI control loop. <b>Note:</b> 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. <b>Range:</b> 3 to 10 <table border="1"> <thead> <tr> <th rowspan="2">Value</th> <th colspan="2">Effective Proportional Band</th> </tr> <tr> <th>Fahrenheit</th> <th>Celsius</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>3</td> <td>1.2</td> </tr> <tr> <td>4</td> <td>4</td> <td>1.7</td> </tr> <tr> <td>5</td> <td>5</td> <td>2.2</td> </tr> <tr> <td>6</td> <td>6</td> <td>2.8</td> </tr> <tr> <td>7</td> <td>7</td> <td>3.3</td> </tr> <tr> <td>8</td> <td>8</td> <td>3.9</td> </tr> <tr> <td>9</td> <td>9</td> <td>5.0</td> </tr> <tr> <td>10</td> <td>10</td> <td>5.6</td> </tr> </tbody> </table>		Value	Effective Proportional Band		Fahrenheit	Celsius	3	3	1.2	4	4	1.7	5	5	2.2	6	6	2.8	7	7	3.3	8	8	3.9	9	9	5.0	10	10	5.6
Value	Effective Proportional Band																														
	Fahrenheit	Celsius																													
3	3	1.2																													
4	4	1.7																													
5	5	2.2																													
6	6	2.8																													
7	7	3.3																													
8	8	3.9																													
9	9	5.0																													
10	10	5.6																													

<b>Heat stages</b>  Default value: <b>2 stages</b>	<b>Number of Heating Stages</b>  Sets number of Heating Stages applicable to 2 stage models only.  <b>0 Stages:</b> Only (UO11) modulating 0-10Vdc output is used for Heating. W1 & W2 are disabled.  <b>1 Stage:</b> Only W1 (BO8) terminal is used. W2 is disabled.  <b>2 Stages:</b> Both W1 (BO8) and W2 (UO9) terminals are used in sequence.  <b>Choices:</b> 0, 1 or 2 stages
<b>Cool stages</b>  Default value: <b>2 stages</b>	<b>Number of Cooling Stages</b>  Sets number of Cooling Stages.  <b>1 Stage:</b> Only Y1 (BO3) terminal is used. Y2 is disabled.  <b>2 Stages:</b> Both Y1 (BO3) and Y2 (BO2) terminals are used in sequence.  <b>Choices:</b> 1 or 2 stages
<b>Econo. config</b>  Default value: Off	<b>Economizer Configuration</b>  Enables or disables the economizer functionality.  <b>On:</b> Economizer activated  <b>Off:</b> Economizer deactivated  <b>Choices:</b> On or Off
<b>Changeover SP</b>  Default value: <b>55°F (13°C)</b>	<b>Changeover Setpoint</b>  In Cooling mode, the outside air temperature value at which the cooling gets switched over from mechanical (compressor) to free cooling (economizer).  <b>Range:</b> 14°F to 70°F (-10°C to 21°C)

<b>Mech. cooling</b>	<b>Mechanical Cooling Allowed</b>
Default value: <b>Off</b>	<p>Allows operation of mechanical cooling if free cooling (economizer) cannot maintain the cooling setpoint.</p> <p><b>Off:</b> 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.</p> <p><b>On:</b> 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.</p> <p><b>Range:</b> Off or On</p>

## CONFIGURATION 6/11



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Heat lockout</b> Default value: <b>120°F (49°C)</b>	<b>Heating Lockout from Outside Air Temperature</b>  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).  <b>Range:</b> -15°F to 120°F (-26°C to 49°C)
<b>Cool lockout</b> Default value: <b>-40°F (-40°C)</b>	<b>Cooling Lockout from Outside Air Temperature</b>  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.  <b>Range:</b> -40°F to 95°F (-40°C to 35°C)
<b>Discharge HL</b> Default value: <b>120°F (49°C)</b>	<b>Discharge High Limit</b>  Discharge air high temperature value at which the heating stages get locked out.  <b>Range:</b> 70°F to 150°F (21°C to 65°C)
<b>Discharge LL</b> Default value: <b>45°F (7°C)</b>	<b>Discharge Low Limit</b>  Discharge air low temperature value at which the cooling stages get locked out.  <b>Range:</b> 35°F to 65°F (2.0°C to 19.0°C)

<b>SH lockout</b>  Default value = <b>32°F (0°C)</b>	<b>Supply Heat Lockout</b>  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).  <b>Note:</b> valid only if "Heat Stages" parameter is set to 0 (Analog Heat on UO11).  <b>Range:</b> -15°F to 120°F (-26°C to 49°C)
<b>FA Range</b>  Default value: <b>0 CFM</b>	<b>Fresh Air Range</b>  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 <sub>2</sub> " 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.  <b>Range:</b> 0 to 20,000 CFM ( $\pm 10$ increments).

## CONFIGURATION 7/11



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Econo min pos</b>  Default value: <b>0%</b>	<b>Economizer Minimum Position</b>  Minimum Outside Air damper position when Room Controller is in Occupied, Standby or Override mode and Fan status is ON. If Room Controller is in Unoccupied mode and/or the Fan is Off, Outside Air damper position goes to 0%.  <b>Range:</b> 0% to 100%
<b>Econo max pos</b>  Default value: <b>100%</b>	<b>Economizer Maximum Position</b>  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 <sub>2</sub> and Airflow functions.  <b>Range:</b> 0% to 100%

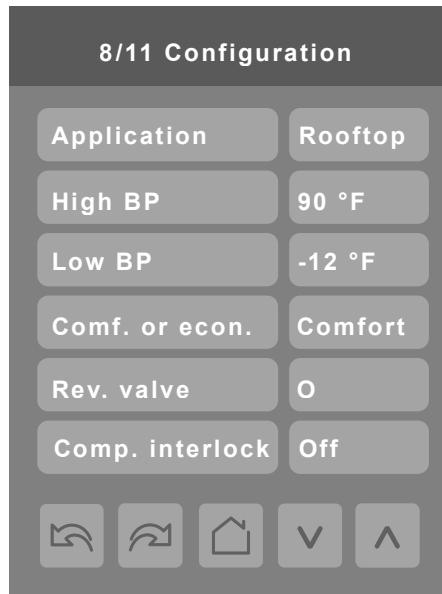
**Note:** The Room Controller air damper position and output signal is based on a 0-10Vdc analog actuator application. Many installations utilize 2-10 VDC actuators, which cannot be switched to 0-10 Vdc control logic. The following chart indicates the appropriate equivalent damper positions for use with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

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

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

<b>Min fresh air</b>  Default value: <b>0 CFM</b>	<b>Minimum Fresh Air</b>  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 CO <sub>2</sub> 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%.  <b>Range:</b> 0 to 20, 000 CFM ( $\pm 10$ increments). The value set cannot exceed the value of FA Range parameter.
<b>Max fresh air</b>  Default value: <b>0 CFM</b>	<b>Maximum Fresh Air</b>  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 CO <sub>2</sub> and Min/Max Fresh Air values.  <b>Range:</b> 0 to 20, 000 CFM ( $\pm 10$ increments). The value set cannot exceed the value of FA Range parameter.
<b>Min CO<sub>2</sub></b>  Default value: <b>800 ppm</b>	<b>Minimum CO<sub>2</sub></b>  Minimum CO <sub>2</sub> level setpoint. Effective only in Occupied, Standby or Override mode and Fan status is ON. The Outside Air damper modulates to maintain the CO <sub>2</sub> level between "Min CO <sub>2</sub> " and "Max CO <sub>2</sub> ". If Room Controller is in Unoccupied mode and/or the Fan is Off, Outside Air damper position goes to 0%.  <b>Range:</b> 0 to 2000 ppm
<b>Max CO<sub>2</sub></b>  Default value: <b>1200 ppm</b>	<b>Maximum CO<sub>2</sub></b>  Maximum CO <sub>2</sub> level setpoint. Effective only in Occupied, Standby or Override mode and Fan status is ON. The Outside Air damper modulates to maintain the CO <sub>2</sub> level between "Min CO <sub>2</sub> " and "Max CO <sub>2</sub> ".  <b>Range:</b> 0 to 2000 ppm

## CONFIGURATION 8/11

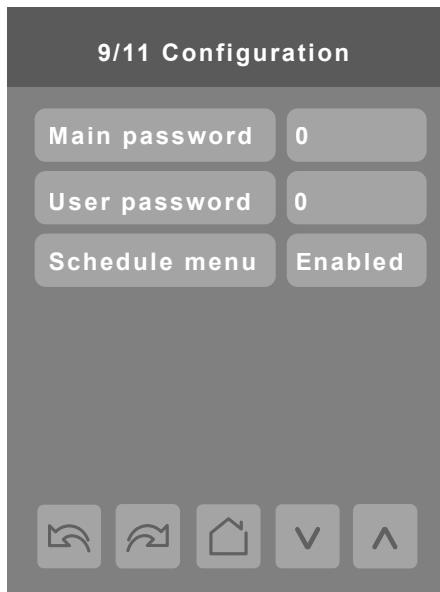


## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Application</b> Default value: <b>Rooftop</b>	<b>Application</b> Sets Room Controller operating logic for either a Rooftop or a Heat Pump application. <b>Note:</b> if the Heat Pump Unit (HPU) does not have an O/B terminal (reversing valve), set this parameter to Rooftop. <b>Choices:</b> Rooftop or Heatpump
<b>High BP</b> Default value: <b>90°F</b>	<b>High Balance Point</b> 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. <b>NOTE:</b> Function enabled only if outside air temperature value is populated (not -40°F/-40°C). The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller or via a BACnet front end (network). <b>Range:</b> 34°F to 90°F (1.0°C to 32.0°C)
<b>Low BP</b> Default value: <b>-12 °F</b>	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. <b>NOTE:</b> Function enabled only if outside air temperature value is populated (not -40°F/-40°C). The Outdoor Temperature value could be received from a sensor connected directly to the Room Controller or via a BACnet front end (network). <b>Range:</b> -40°F to 30°F (-40°C to -1.0°C )

<b>Comf. or econ.</b>  Default value: <b>Comfort</b>	<b>Comfort or Economy Mode</b>  Sets the operation and interaction mode of the heat pump with the auxiliary heat.  <b>Comfort mode:</b> 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.  <b>Economy mode:</b> 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.  <b>Choices:</b> Comfort or Economy
<b>Rev. valve</b>  Default value: <b>O</b>	<b>Reversing Valve Operation</b>  Heat pump reversing valve operation  <b>O:</b> energize valve in cooling operation  <b>B:</b> energize valve in heating operation  <b>Choices:</b> O or B
<b>Comp. interlock</b>  Default value: <b>Off</b>	<b>Compressor Auxiliary Interlock</b>  Sets the operation and interaction mode of the heat pump with the auxiliary heat.  <b>Off:</b> 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).  <b>On:</b> 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.  <b>Choices:</b> Off or On

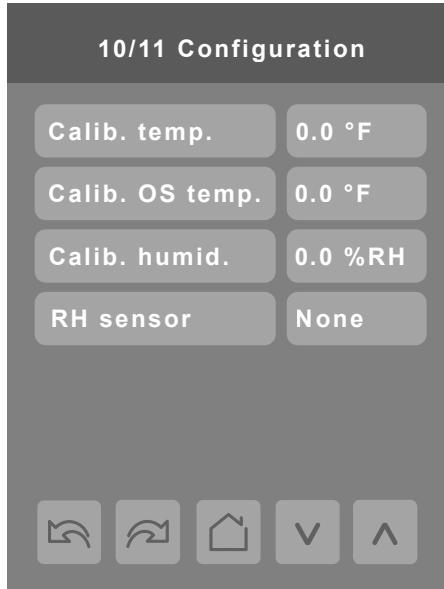
## CONFIGURATION 9/11



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Main password</b> Default value: <b>0</b>	<b>Main Password</b>  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.  <b>Range:</b> 0 to 9999.
<b>User password</b> Default value: <b>0</b>	<b>User Password</b>  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.  <b>Range:</b> 0 to 9999.
<b>Schedule menu</b> Default value: <b>Enabled</b>	<b>Schedule Menu</b>  Toggles activation of schedule menu direct access.  <b>Enabled:</b> Schedule Menu is directly accessible from the main screen via a touch in the upper corner.  <b>Disabled:</b> Schedule Menu can only be accessed through the Setup Menu screens.  <b>En. no. clk:</b> Schedule Menu is directly accessible from the main screen via a touch in the upper corner. Clock does not show.  <b>Dis. no. clk:</b> Schedule Menu can only be accessed through the Setup Menu screens. Clock does not show.  <b>Choices:</b> Disabled, Enabled, Disabled no Clock and Enabled no Clock

## CONFIGURATION 10/11



\* Only for models with humidity sensor

## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Calib. temp.</b> Default value: <b>0°F</b>	<b>Calibration Room Temperature Sensor</b>  Room temperature sensor calibration. Offset can be added or subtracted to actual displayed room temperature.  <b>Range:</b> ± 5.0°F (± 2.5°C)
<b>Calib. OS temp.</b> Default value: <b>0°F</b>	<b>Calibration Outside Temperature Sensor</b>  Outside air temperature sensor calibration. Offset that can be added or subtracted to the actual displayed outdoor temperature.  <b>Range:</b> ± 5.0°F (± 2.5°C)
<b>Calib. humid.</b> Default value: <b>0.0 %RH</b>	<b>Calibrate Humidity Sensor</b>  Offset that can be added or subtracted to actual displayed humidity.  <b>Range:</b> ± 15.0 %RH
<b>RH sensor</b> Default value: <b>Internal</b>	<b>Relative Humidity Sensor</b>  Sets the source of the indoor room humidity. This parameter allows the user to designate either the Room Controller (only models supporting humidity) or any of the bound wireless devices that support humidity to act as the source for the room humidity.  <b>Internal:</b> Sets the Room Controller as the source for the room humidity.  <b>WL 1 to WL 10:</b> Sets the selected wireless ZigBee Pro device as the source for the room humidity. Only one device can be selected.  <b>WL GP:</b> Sets the selected ZigBee Green Power device as the source for the room humidity.  <b>Choices:</b> None, Internal, WL1 to WL10, and WL GP

## CONFIGURATION 11/11



## PARAMETER DETAILS

Configuration parameters default value	Significance and adjustments
<b>Erase all?</b> Default value: <b>No</b>	<b>Erase All</b>  Accepting Yes for both and then tapping 'Push to accept' returns all values to the factory default settings with the exception of the following: <ul style="list-style-type: none"><li>• COM address</li><li>• Network Units</li><li>• Network Language</li><li>• Baud Rate</li><li>• BACnet Instance</li><li>• Device Name</li><li>• Screen Contrast</li><li>• Lua Script</li></ul> <b>Note:</b> Node type in ZigBee Pro menu returns to default value (Router).
<b>Are you sure?</b> Default value: <b>No</b>	



## SETPOINTS 1/2



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Unocc. cool</b>  Default value: <b>80°F (27°C)</b>	<b>Unoccupied Cool Setpoint</b>  Cooling Temperature setpoint used by the Room Controller when in Unoccupied mode.  <b>Range:</b> 54 to 100°F (12.0 to 37.5°C)
<b>Standby cool</b>  Default value: <b>78°F (25.5°C)</b>	<b>Standby Cooling Setpoint</b>  Cooling Temperature setpoint used by the Room Controller when in Standby mode.  <b>Range:</b> 54 to 100°F (12.0 to 37.5°C)
<b>Occ. cool</b>  Default value: <b>75°F (24°C)</b>	<b>Occupied Cool Setpoint</b>  Cooling Temperature setpoint used by the Room Controller when in Occupied or Override mode.  <b>Range:</b> 54 to 100°F (12.0 to 37.5°C)
<b>Occ. heat</b>  Default value: <b>72°F (22°C)</b>	<b>Occupied Heating Setpoint</b>  Heating Temperature setpoint used by the Room Controller when in Occupied mode.  <b>Range:</b> 40 to 90°F (4.5 to 32.0°C)

<b>Standby heat</b> Default value: <b>69°F (20.5°C)</b>	<b>Standby Heating Setpoint</b> Heating Temperature setpoint used by the Room Controller when in Standby mode. <b>Range:</b> 40 to 90°F (4.5 to 32.0°C)
<b>Unocc. heat</b> Default value: <b>62°F (17°C)</b>	<b>Unoccupied Heating</b> Heating Temperature setpoint used by the Room Controller when in Occupied or Override mode. <b>Range:</b> 40 to 90°F (4.5 to 32.0°C)

## SETPOINTS 2/2



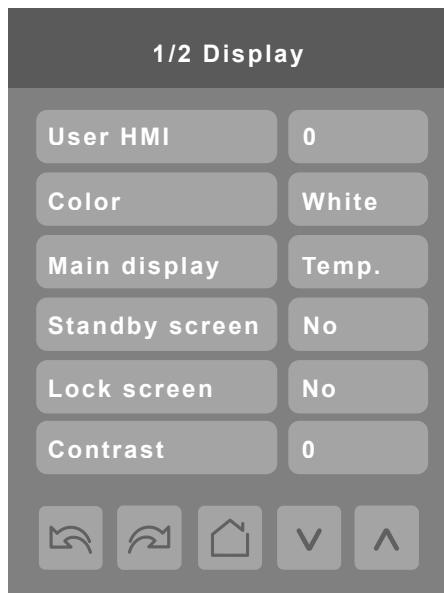
## PARAMETER DETAILS

Configuration Parameters	Default Value	Significance and Adjustments
<b>Default heat</b>  Default value: <b>72°F (22°C)</b>	<b>Default Heating Setpoint</b>  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.  <b>NOTE:</b> This functionality is only valid when Stand-by mode = Offset and "Setpoint Func" is set to "Attached".  <b>Range:</b> 65 to 80°F (18.5 to 26.5°C)	
<b>Min. deadband</b>  Default value: <b>3°F (1.5°C)</b>	<b>Minimum Deadband</b>  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)  <b>Range:</b> 2 to 5°F (1.0 to 2.5°C)	
<b>Max heating</b>  Default value: <b>90°F (32°C)</b>	<b>Heating Setpoint Limit</b>  Maximum Occupied, Unoccupied, Standby and Override Heating setpoints maximum limit.  <b>Range:</b> 40 to 90°F (4.5 to 32.0°C)	

<b>Min. cooling</b> Default value: <b>54°F (12°C)</b>	<b>Cooling Setpoint Limit</b> Maximum Occupied, Unoccupied, Standby and Override Cooling setpoint adjustment. <b>Range:</b> 54 to 100°F (12.0 to 37.5°C)
<b>Supply air SP</b> Default value: <b>55°F (12°C)</b>	<b>Supply Air Setpoint</b> Free cooling supply air setpoint when economizer mode is enabled. <b>Range:</b> 50 to 90°F (10.0 to 32.0°C)
<b>Dehum. SP</b> Default value: <b>50%RH</b>	<b>Dehumidification Setpoint</b> Used only if dehumidification sequence is enabled. <b>Range:</b> 30 to 95% RH



## DISPLAY 1/2

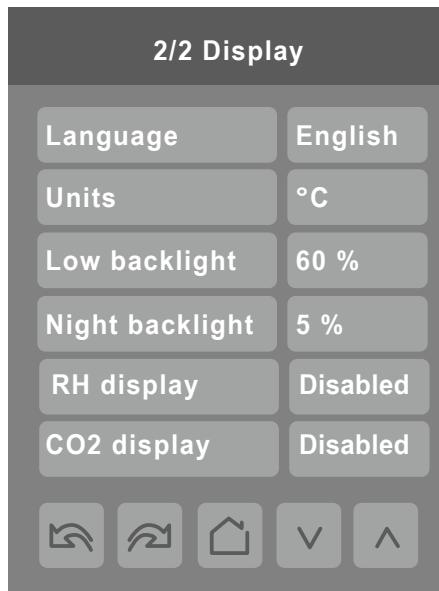


## PARAMETER DETAILS

Configuration parameters	Default Value	Significance and Adjustments
<b>User HMI</b>  Default value: <b>0</b>		<b>User HMI</b>  Sets layout of icons on the home screen for various applications. Refer to Customized screen for more information.  <b>Range:</b> 0 to 12
<b>Color</b>  Default value: <b>White</b>		<b>HMI Color</b>  Change background color of the display screen.  <b>Choices:</b> White, Green, Blue, Grey or Dark Grey
<b>Main display</b>  Default value: <b>Temp.</b>		<b>Main Display</b>  Shows temperature or setpoint on main display.  <b>Choices:</b> Temperature or Setpoint

<b>Standby screen</b>  Default value: <b>No</b>	<b>Standby Screen</b>  When the device is left unattended for 150 seconds, the standby image will appear. A custom image can be uploaded using the Uploader Tool.  <b>No:</b> No Stand by image (Screen dims when no motion is detected)  <b>Yes:</b> Stand by Image is displayed after 150 seconds  <b>Occ. Only:</b> Standby image displays after 150 seconds. Screen turns off after 30 minutes only in occupied or override mode.  <b>Screen saver:</b> Standby image displays after 150 seconds. Screen turns off after 30 minutes only in unoccupied or standby mode  <b>Choices:</b> No, Yes, Occupied Only or Screen Saver
<b>Lock screen</b>  Default value: <b>No</b>	<b>Lock Screen</b>  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: <ul style="list-style-type: none"><li>• Standby image loaded</li><li>• Standby Screen = "Yes" or "Screen Saver"</li><li>• User Password = not 0</li></ul> <b>Choices:</b> No or Yes
<b>Contrast</b>  Default value: <b>0</b>	<b>Contrast</b>  Control screen contrast and brightness.  <b>Range:</b> -5 to 5

## DISPLAY 2/2



\* These parameters are only displayed  
on models with built in humidity  
sensor

## PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
<b>Language</b> Default value: <b>English</b>	<b>Display Language</b>  Select language for main display.  <b>Choices:</b> English, French, Spanish, Chinese, Russian, Arabic, Czech, Danish, Dutch, Finnish, German, Hebrew, Hungarian, Indonesian, Italian, Japanese, Norwegian, Polish, Portuguese, Slovak, Swedish and Turkish
<b>Units</b> Default value: <b>°C</b>	<b>Temperature Scale</b>  Changes the local display units. Refer to Network Units to change the network units broadcasted over the network.  <b>Choices:</b> °C for SI or °F for Imperial.
<b>Low backlight</b> Default value: <b>60%</b>	<b>Low Backlight</b>  Sets display backlight intensity. This feature is activated (screen dims) 150 seconds after no activity on the Room Controller.  <b>Adjustable:</b> 0 to 100%.
<b>Night backlight</b> Default value: <b>5%</b>	<b>Night Backlight</b>  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.  <b>Adjustable:</b> 0 to 100%.

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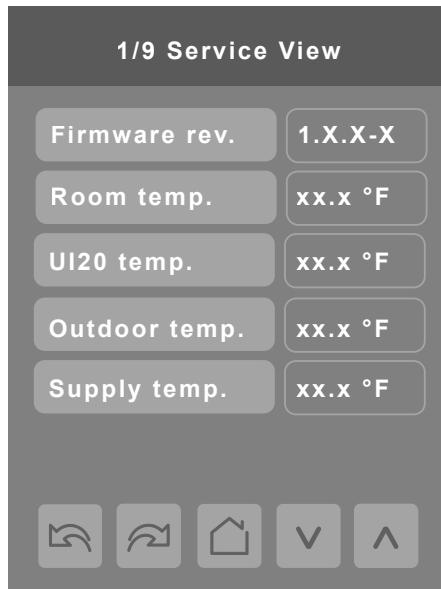
<b>RH display</b> Default value: <b>Disabled</b>	<b>Relative Humidity</b> Shows humidity level in room in %RH. <b>On:</b> Display %RH <b>Off:</b> Do not display %RH <b>Choices:</b> Enabled or Disabled
<b>CO<sub>2</sub> display</b> Default value: <b>Disabled</b>	<b>CO<sub>2</sub> Levels Display</b> Shows carbon dioxide level in room in ppm. <b>On:</b> Display CO <sub>2</sub> level <b>Off:</b> Do not display % CO <sub>2</sub> level <b>Choices:</b> Enabled or Disabled

## Service View Screens

# Service View Screens

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

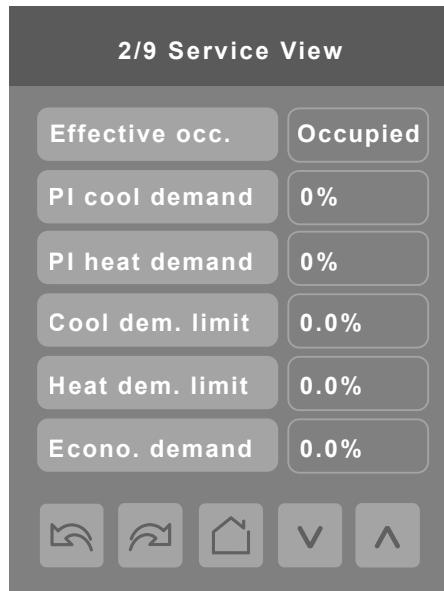
## SERVICE VIEW 1/9



## PARAMETER DETAILS

Configuration parameters	Default Value	Significance and Adjustments
<b>Firmware rev.</b> <b>Read Only</b>		<b>Firmware Revision</b> Shows Firmware version currently installed on Room Controller. Upgrading to a newer Firmware version deletes the previous Firmware version, however it is possible to set the Room Controller to an earlier Firmware version with the Uploader Tool.
<b>Room temp.</b> <b>Read Only</b>		<b>Room Temperature</b> Shows the current room temperature. The user can set one of the following temperature inputs to act as the source for the room temperature's present value:  <b>Wired:</b> Sensor across UI20 (RS) and common <b>Internal:</b> Room Controller's internal temperature sensor <b>WL 1 to WL 10:</b> Wireless ZigBee end devices <b>WL GP:</b> Wireless ZigBee Green Power end devices <b>Display Readings:</b> Wired, Internal, WL1 to WL10 and WL GP
<b>UI20 Temp</b> <b>Read Only</b>		<b>Room Temperature Sensor</b> Shows the temperature of the sensor connected to UI20 (RS) terminal.
<b>Outdoor temp.</b> <b>Read Only</b>		<b>Outdoor Temperature</b> Shows the outdoor temperature on the main screen.
<b>Supply temp.</b> <b>Read Only</b>		<b>Supply Temperature</b> Shows supply air temperature as measured by the sensor.

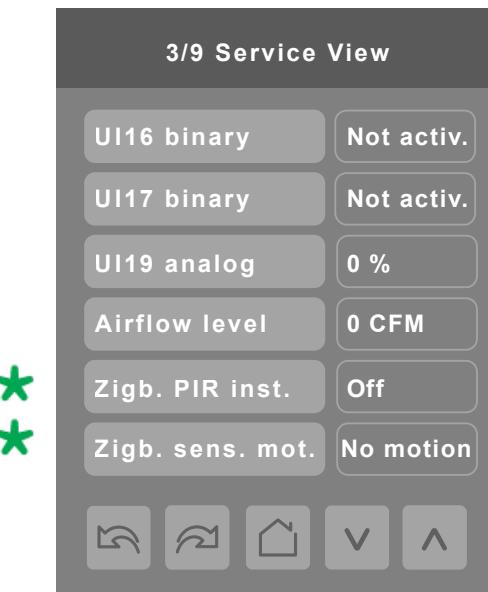
## SERVICE VIEW 2/9



## PARAMETER DETAILS

Configuration parameters	Default Value	Significance and Adjustments
<b>Effective occ.</b>	<b>Effective Occupancy</b>	
<b>Read Only</b>		Shows as occupied, unoccupied, standby or override. <b>Display Readings:</b> Occupied, Unoccupied, Override and Standby
<b>PI cool demand</b>	<b>Cooling Demand</b>	
<b>Read Only</b>		<b>Display Readings:</b> 0-100%
<b>PI heat demand</b>	<b>Heat Demand</b>	
<b>Read Only</b>		<b>Display Readings:</b> 0-100%
<b>Cool dem. limit</b>	<b>Outdoor Temperature</b>	
<b>Read Only</b>		<b>Display Readings:</b> 0-100%
<b>Heat dem. limit</b>	<b>Supply Temperature</b>	
<b>Read Only</b>		<b>Display Readings:</b> 0-100%
<b>Econo. demand</b>	Supply Temperature	
<b>Read Only</b>		<b>Display Readings:</b> 0-100%

## SERVICE VIEW 3/9



Only for models with ZigBee Pro communication module

## PARAMETER DETAILS

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

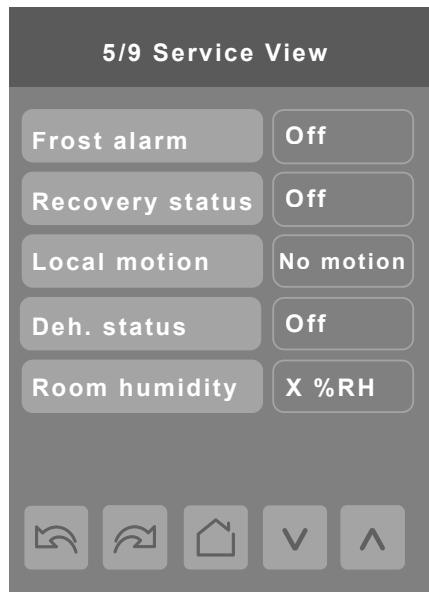
## SERVICE VIEW 4/9



### PARAMETER DETAILS

Configuration parameters	Default Value	Significance and Adjustments
<b>Window alarm</b>	<b>Window Alarm</b>	
<b>Read Only</b>		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.  <b>Display Readings:</b> On or Off
<b>Service alarm</b>	<b>Service Alarm</b>	
<b>Read Only</b>		Shows On if there is a Service alarm and shows Off if there is no Service alarm.  <b>Display Readings:</b> On or Off
<b>Filter alarm</b>	<b>Filter Alarm</b>	
<b>Read Only</b>		Shows On if there is a Filter alarm and shows Off if there is no Filter alarm.  <b>Display Readings:</b> On or Off
<b>Fan lock alarm</b>	<b>Fan Lock Alarm</b>	
<b>Read Only</b>		Shows On if there is a problem detected on the Fan.  <b>Display Readings:</b> On or Off
<b>CO<sub>2</sub> alarm</b>	<b>CO<sub>2</sub> Alarm</b>	
<b>Read Only</b>		Shows On if the CO <sub>2</sub> level (local, wired or wireless) is higher than the "Max CO <sub>2</sub> " setpoint.  <b>Display Readings:</b> On or Off
<b>Low air alarm</b>	<b>Low Air Alarm</b>	
<b>Read Only</b>		Shows if the fresh air flow is lower than the "min fresh air" setpoint.  <b>Display Readings:</b> On or Off

## SERVICE VIEW 5/9



## PARAMETER DETAILS

Configuration parameters	Default Value	Significance and Adjustments
Frost alarm	<b>Frost Alarm</b>	
<b>Read Only</b>	Shows if Frost Alarm active or not.  <b>Display Readings:</b> On or Off	
Recovery status	<b>Recovery Status</b>	
<b>Read Only</b>	Shows if Frost Alarm active or not.  <b>Display Readings:</b> On or Off	
Local motion	<b>Local Motion</b>	
<b>Read Only</b>	Shows if Frost Alarm active or not.  <b>Display Readings:</b> Motion or No Motion	
Deh. status	<b>Dehumidification Status</b>	
<b>Read Only</b>	Shows if dehumidification is active or not.  <b>Display Readings:</b> On or Off	
Room humidity	<b>Room Humidity</b>	
<b>Read Only</b>	Shows percentage of humidity in room from selected local or wireless devices. Refer to RH sensor parameter to select RH source.  <b>Display Readings:</b> %RH	

## SERVICE VIEW 6/9



## PARAMETER DETAILS

Configuration parameters Default Value	Significance and Adjustments
<b>UO9 config</b>	<b>UO9 Configuration</b>
<b>Read Only</b>	Shows Analog, Binary, Relay RC or Relay RH
<b>UO10 config</b>	<b>UO10 Configuration</b>
<b>Read Only</b>	Shows Analog, Binary or Relay RC
<b>UO11 config</b>	<b>UO11 Configuration</b>
<b>Read Only</b>	Shows Analog or Binary
<b>UO12 config</b>	<b>UO12 Configuration</b>
<b>Read Only</b>	Shows Analog or Binary

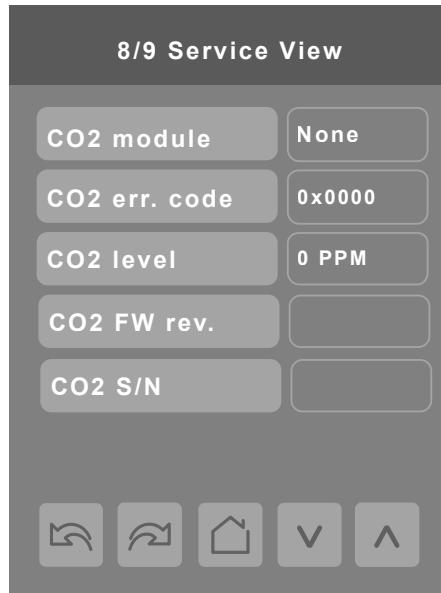
## SERVICE VIEW 7/9



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>UI19 type</b>	<b>UI19 Input Type</b>
<b>Read Only</b>	Shows Thermistor, Binary or Voltage
<b>UI20 type</b>	<b>UI20 Input Type</b>
<b>Read Only</b>	Shows Thermistor, Binary or Voltage
<b>UI22 type</b>	<b>UI22 Input Type</b>
<b>Read Only</b>	Shows Thermistor, Binary or Voltage
<b>UI23 type</b>	<b>UI23 Input Type</b>
<b>Read Only</b>	Shows Thermistor, Binary or Voltage
<b>UI24 type</b>	<b>UI24 Input Type</b>
<b>Read Only</b>	Shows Thermistor, Binary, Voltage or Reserved

## SERVICE VIEW 8/9



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>CO<sub>2</sub> module</b> <b>Read Only</b>	<b>CO<sub>2</sub> Module</b> Shows if CO <sub>2</sub> value is being ready from internal sensor, wired sensor or CO <sub>2</sub> sensor module. <b>Display Readings:</b> None, Local, Error and Wireless
<b>CO<sub>2</sub> err. code</b> <b>Read Only</b>	<b>CO<sub>2</sub> Error Code</b> Error code 0x0001 shows if there is an error with the sensor.
<b>CO<sub>2</sub> level</b> <b>Read Only</b>	<b>CO<sub>2</sub> Level</b> Shows CO <sub>2</sub> level in ppm. <b>Display Readings:</b> 0 to 2000
<b>CO<sub>2</sub> FW rev.</b> <b>Read Only</b>	<b>CO<sub>2</sub> Firmware Revision</b> Shows the Firmware version of the installed CO <sub>2</sub> sensor module.
<b>CO<sub>2</sub> S/N</b> <b>Read Only</b>	<b>CO<sub>2</sub> Serial Number</b> Shows the serial number of the installed CO <sub>2</sub> sensor module.

## SERVICE VIEW 9/9



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

For example, when a VT8600U5B00 Room Controller with a MAC address of 41 is connected to a network, its default Device Name is VT8600UxB00-41 and its default BACnet Device ID is 86041.

# Test Outputs Screens

## TEST OUTPUTS 1/2



**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:** 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.

**Note 3:** 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

## TEST OUTPUTS 2/2



Note: 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.

**CASE A:** screen 2/2 display is dependent on Control type configuration. If mode is set to On/Off, binary options show.

**CASE B:** screen 2/2 display is dependent on Control type configuration. If mode is set to Analog, analog options show.

# Language Selection Screens

## LANGUAGE SELECTION 1/4 TO 4/4

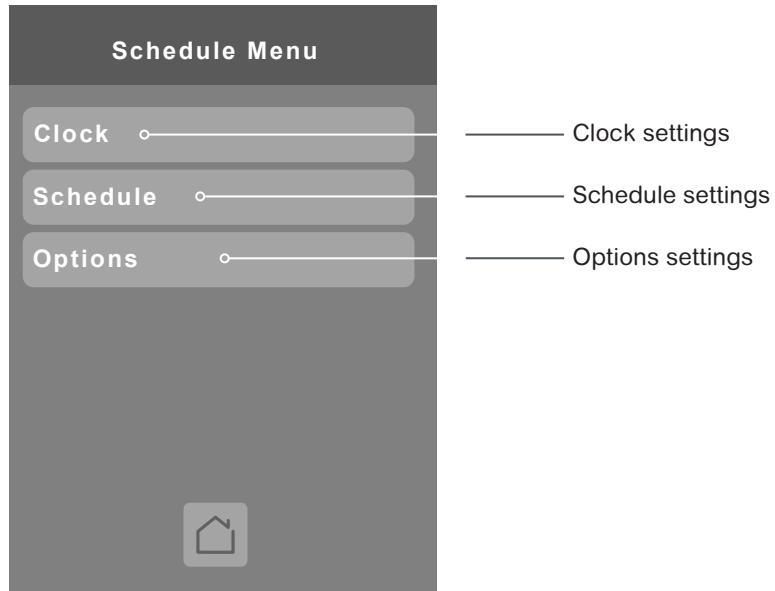


Only English, French, Spanish, Chinese, and Russian are enabled by default and are accessible to users cycling through languages on the display settings menu screen. To change the language selection settings, tap a language on the screen and then use the arrow buttons to disable or enable it.

**NOTE:** English is always enabled.



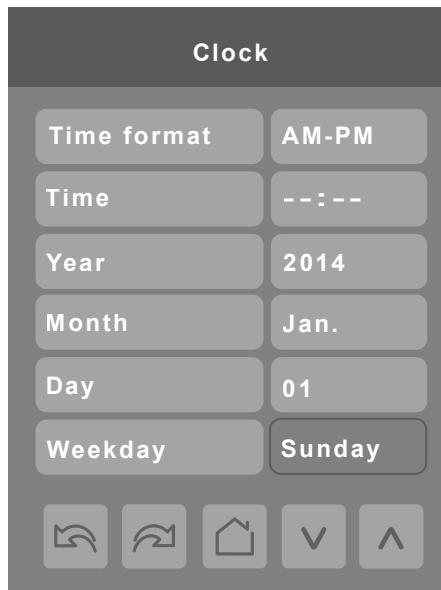
# Clock - Schedule Menu



**Note:** The Clock- Schedule Menu screen is directly accessible from the main set-up 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
<b>Time Format</b> Default value: <b>AM-PM</b>	<b>Time Format</b>  Current time display format. Choice between 12 hour (AM - PM) time format or 24 hour time format.  <b>Note:</b> Changing the value of this parameter automatically changes the format of the displayed value of the time parameter.  <b>Choices:</b> AM-PM or 24 Hours
<b>Time</b> Default value: <b>current time at power up</b>	<b>Time</b>  Standard time display, 12 hour AM-PM or 24 hour format determined by the Time Format parameter value.
<b>Year</b> Default value: <b>2014</b>	<b>Year</b>  Current year  <b>Range:</b> 2000 - 2100
<b>Month</b> Default value: <b>Jan.</b>	<b>Month</b>  Current month  <b>Range:</b> Jan. - Dec.
<b>Day</b> Default value: <b>1</b>	<b>Date</b>  Current date  <b>Range:</b> 1 - 31
<b>Weekday</b> Default value: <b>Monday</b> <b>Read Only</b>	<b>Current Day</b>  Automatically set based on data received from Year/Month parameters.  <b>Range:</b> Monday - Sunday

# Schedule

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

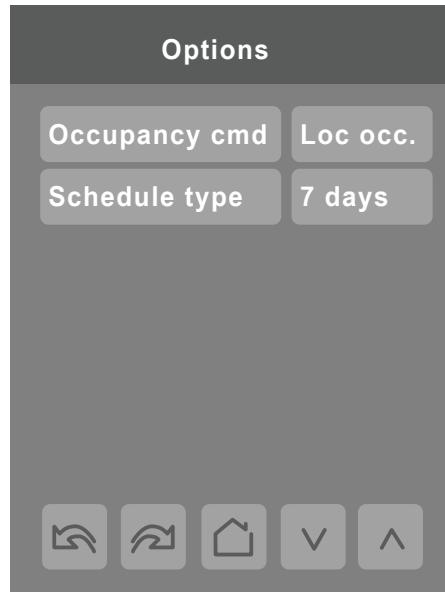


## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Occupied 1 - 3</b> Default value: <b>None</b>	<b>Occupied 1 - 3</b> Defines a time when the Room Controller is automatically set to use the Occupied setpoint. <b>Note:</b> There are 3 separate Occupied parameter entries <b>Range:</b> 00:00 - 24:00
<b>Unoccupied 1 - 3</b> Default value: <b>None</b>	<b>Unoccupied 1 - 3</b> Defines a time when the Room Controller is automatically set to use the Unoccupied setpoint. <b>Note:</b> There are 3 separate Occupied parameter entries <b>Range:</b> 00:00 - 24:00

# Options

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



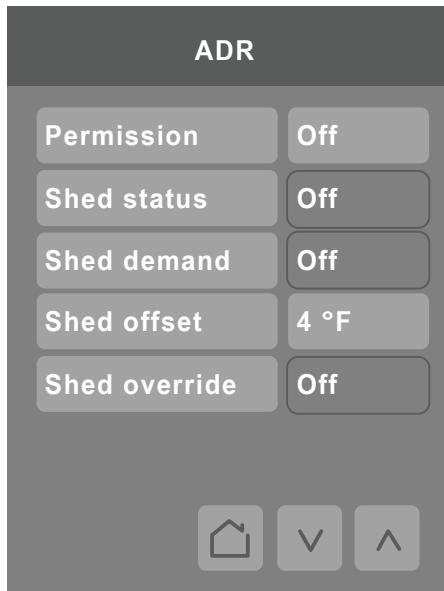
## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Occupancy cmd</b>  Default value: <b>Local occ</b>	<b>Occupancy Command</b>  <b>Loc occ:</b> occupancy is determined by local sequences (either PIR or schedule, as configured under Occ. source).  <b>Occupied:</b> force occupied mode.  <b>Unoccup:</b> force unoccupied mode.  <b>Choices:</b> Loc occ, Occupied or Unocc.
<b>Schedule type</b>  Default value: <b>7 days</b>	<b>Schedule Type</b>  <b>7 days:</b> Independent scheduling identified by day of the week (Sunday - Saturday)  <b>5+1+1 days:</b> Weekdays scheduling and Independent Weekend scheduling identified as Weekdays, Saturday and Sunday  <b>5+2 days:</b> Weekdays scheduling and Weekend scheduling identified as Weekdays and Weekend  <b>Choices:</b> 7 days, 5+2 days or 5+1+1

ADR Screens

# Automatic Demand Response (ADR)

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



## PARAMETER DETAILS

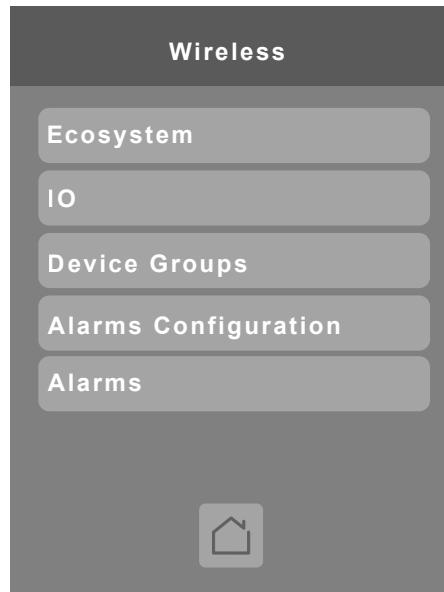
Configuration Parameters	Default Value	Significance and Adjustments
<b>Permission</b> Default value: <b>Off</b>		<p><b>Automatic Demand Response Permission</b></p> <p>Used to permit the ADR to be applicable or not to change the Room Controller setpoints setting or not.</p> <p><b>Off:</b> The Load Shedding Demand will not be permitted.  <b>On:</b> The Load Shedding Demand will be permitted.</p> <p><b>Choices:</b> On or Off</p>
<b>Shed status</b> Default value: <b>Off</b> <b>Read Only</b>		<p><b>Load Shedding Status</b></p> <p>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.</p> <p><b>Off:</b> Load Shedding Demand is not activated.  <b>On:</b> Load Shedding Demand is activated.</p> <p><b>Display Readings:</b> On or Off</p>
<b>Shed demand</b> Default value: <b>Off</b> <b>Read Only</b>		<p><b>Load Shedding Demand</b></p> <p>Sets the request to initiate Load Shedding. This demand can only be set through BACnet by the local Utility company.</p> <p><b>Off:</b> No Load Shedding Demand is received or the Shedding demand is disabled.  <b>On:</b> Received the Load Shedding Demand or received the signal to activate Load shedding.</p> <p><b>Display Readings:</b> On or Off</p>

<b>Shed offset</b> Default value: <b>4°F (2°C)</b>	<b>Load Shedding Offset</b> 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. <b>Choices:</b> 4°F to 10°F (2°C to 5.5°C)
<b>Shed override</b> Default value: <b>Off</b> <b>Read Only</b>	<b>Load Shedding Override</b> 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. <b>On:</b> Rejects or cancels shed load demand request from utility company (setpoints remain the same). <b>Off:</b> Allows shed load demand request from utility company (setpoint will change according to shed offset) <b>Display Readings:</b> On or Off



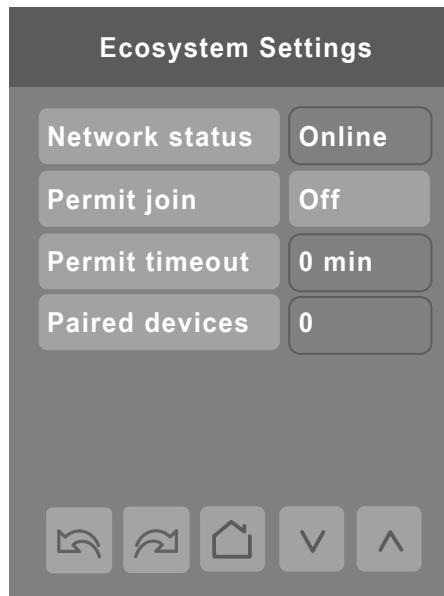
# Wireless Menu Options

The Wireless screen shows only if the optional ZigBee communication module is installed. Up to 11 devices can be added to the Device Groups for each Room Controller.



# 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 11 devices (including 1 ZigBee Green Power device) can be paired to each Room Controller. Tap forward arrow to obtain information on each paired ZigBee device.



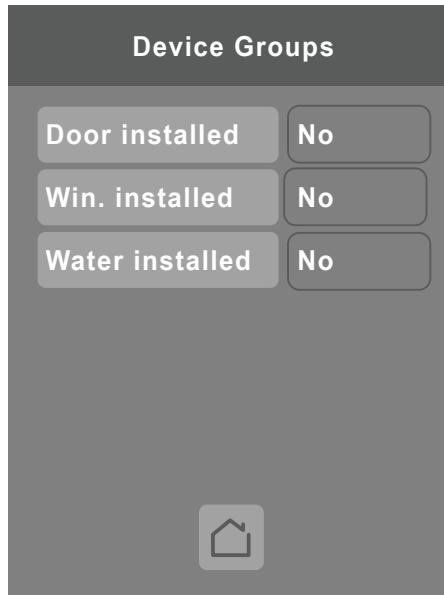
## PARAMETER DETAILS

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

<b>Permit timeout</b> Default value: <b>0</b> <b>Read Only</b>	<b>Permit Join Timeout</b>  Allows devices to join the Coordinator Room Controller for 180 minutes from the moment it is set to ON. Once the timer elapses, no devices will be able to join the network.  <b>NOTE:</b> Permit Join parameter must be set to 'On' to enable this feature.  <b>Range:</b> 0 or 180 minutes
<b>Paired devices</b> Default value: <b>0</b> <b>Read Only</b>	<b>Paired ZigBee Devices</b>  Shows the number of Zigbee devices currently paired with the Room Controller. A maximum of 10 ZigBee Pro devices and 1 ZigBee Green Power device can be paired with each Room Controller (total of 11 paired devices per Room Controller).  <b>Display Readings:</b> 0 to 11 devices

# Device Groups

This screen is a subset of the Ecosystems screen and shows if a particular sensor is paired with the Room Controller.



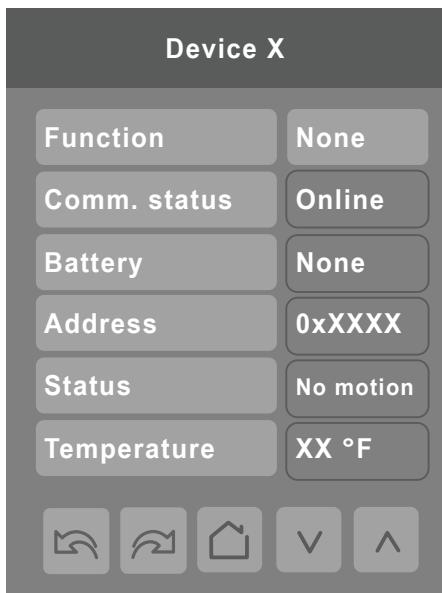
## PARAMETER DETAILS

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

# Device X

This screen is a subset of the Ecosystems screen and shows data for each paired Zigbee device. The temperature parameter is only visible for ZigBee devices capable of measuring temperature readings. Up to 11 Device screens can show.

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



## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Function</b> Default value: <b>None</b>	<b>ZigBee Device Function</b>  Shows status of installed ZigBee device.  <b>None:</b> No status reported to Room Controller <b>Window:</b> Window sensor installed <b>Door:</b> Door sensor installed <b>Motion:</b> Device set to detect motion <b>Status:</b> Updates the BACnet status of the sensor. No action is taken by the Room Controller. <b>Remove:</b> Removes device from Device list <b>Water:</b> Water Leak sensor installed  <b>Choices:</b> None, Window, Door, Motion, Status, Remove and Water
<b>Comm. status</b> Default value: <b>Offline</b> <b>Read Only</b>	<b>Communication Status</b>  Shows if device is communicating with Room Controller  <b>Not paired:</b> Device not paired <b>Online:</b> Device paired and online <b>Offline:</b> Device paired but offline <b>Invalid:</b> Device was paired and Room controller detected a communication error (selected function does not match paired sensor functionality).  <b>Display Readings:</b> Not paired, Online, Offline and Invalid
<b>Battery</b> Default value: <b>None</b> <b>Read Only</b>	<b>Wireless Device Battery</b>  Shows current status of battery in wireless device.  <b>Display Readings:</b> None, Normal or Low

<b>Address Read Only</b>	<b>Wireless Device Address</b>  Shows short address of ZigBee Pro end device
<b>Status Read Only</b>	<b>Wireless Device Status</b>  Shows the following status of ZigBee end device: <ul style="list-style-type: none"><li>• <b>None:</b> N/A</li><li>• <b>Closed:</b> Door and Window Sensors</li><li>• <b>Opened:</b> Door and Window Sensors</li><li>• <b>No Motion:</b> Motion Sensor only</li><li>• <b>Motion:</b> Motion Sensor only</li><li>• <b>Normal:</b> Water Leak Sensor only</li><li>• <b>Leak:</b> Water Leak Sensor only</li></ul>
<b>Temperature Read Only</b>	<b>Wireless Device Temperature</b>  Displays the temperature value received from the wireless device. If the wireless device does not support temperature measurement, this object is not displayed .

# Device Green Power

This screen is a subset of the Ecosystems screen and shows data for a paired Zigbee Green Power device. The temperature parameter is only visible for ZigBee devices capable of measuring temperature readings.

**NOTE:** This screen is only visible when the Room Controller is paired with a ZigBee Green Power device.



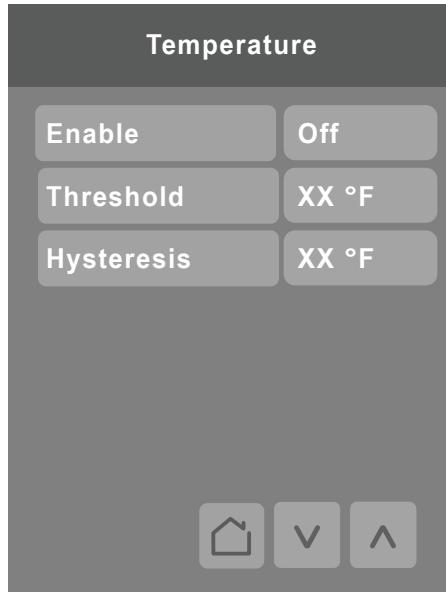
## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Function</b> Default value: <b>None</b>	<b>ZigBee Device Function</b>  Shows presence of installed ZigBee Green Power device. Only 1 ZigBee Green Power device can be paired to each Room Controller.  <b>None:</b> No device paired to Room Controller <b>Remove:</b> Removes device from Device Green Power group <b>T, rH:</b> Temperature and Humidity sensor paired to Room Controller <b>T, rH, CO<sub>2</sub>:</b> CO <sub>2</sub> sensor paired to Room Controller  <b>Choices:</b> None, Remove, T, rH or T, rH, CO <sub>2</sub>
<b>Comm. status</b> Default value: <b>Off</b> <b>Read only</b>	<b>Communication Status</b>  Shows communication statuses between Room Controller and ZigBee Green Power device.  <b>Not paired:</b> Room Controller is not paired with any wireless ZigBee Green Power device. <b>Online:</b> Shows Room Controller is communicating with wireless ZigBee Green Power device. <b>Invalid:</b> Room Controller is communicating with device not using ZigBee Green Power protocol. <b>Offline:</b> Shows Room Controller is not communicating with wireless ZigBee Green Power device. <b>Paired:</b> Room Controller is paired with wireless ZigBee Green Power device but there is no wireless communication between the Room Controller and the device.  <b>Display Status:</b> Not paired, Online, Invalid, Offline and Paired

<b>Battery</b> Default value: <b>None</b> <b>Read only</b>	<b>Wireless Device Battery</b> Shows current status of battery in wireless device.  <b>Display Readings:</b> None, Normal or Low
<b>Address</b> <b>Read only</b>	<b>Wireless Device Address</b> Shows unique address of ZigBee end device
<b>Temperature</b> <b>Read only</b>	<b>Wireless Device Temperature</b> Shows current temperature on Room Controller display screen as detected by device.

# Temperature Alarm Configuration

This screen is a subset of the Ecosystems screen and triggers an alarm only for the Water sensors with temperature measurement.

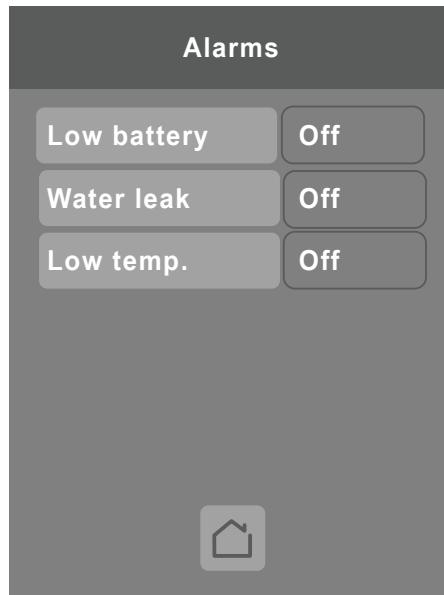


## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Enable</b> Default value: <b>Off</b>	<b>Temperature Alarm Enabled</b>  Enables wireless device to alert Room Controller if temperature value reaches defined value in a particular.  <b>Choices:</b> On or Off
<b>Threshold</b> Default value: 40 °F (4.5 °C)	<b>Temperature Alarm Threshold</b>  Sets alarm threshold for system temperature sensors.  <b>Range:</b> 32 to 45 °F (0 °to 7 °C)
<b>Hysteresis</b> Default value: 4°F (2°C)	<b>Temperature Alarm Hysteresis</b>  <b>Choices:</b> 0 to 10°F (0 to 5.5 °C)

# Alarms

This screen is a subset of the Ecosystems screen and shows data for each paired Zigbee device.



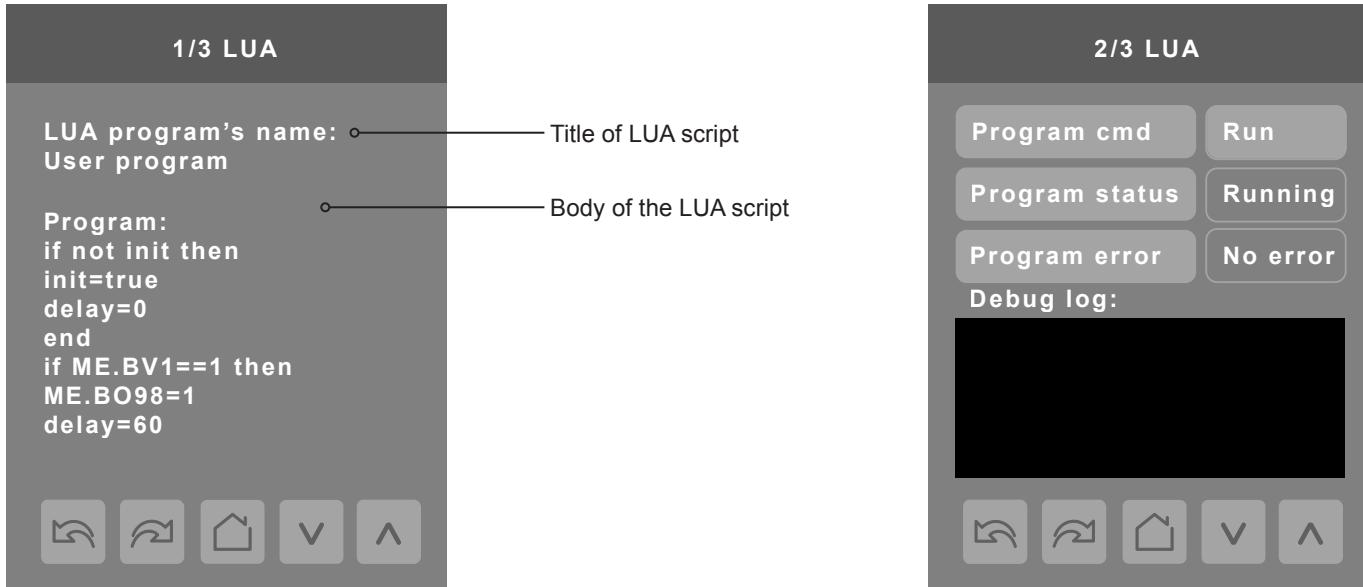
## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Low battery</b> <b>Read Only</b>	<p><b>Low Battery Alarm</b></p> <p>Shows if any wireless paired device has a low battery status (On) or no paired device has low battery (Off).</p> <p><b>Choices:</b> On or Off</p>
<b>Water leak</b> <b>Read Only</b>	<p><b>Water Leak Sensor Status</b></p> <p>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).</p> <p><b>Choices:</b> On or Off</p>
<b>Low temp.</b> <b>Read Only</b>	<p><b>Low Temperature Alarm</b></p> <p>Shows if any water sensor paired device has detected a low temperature (On) or no low temperature detected in any of the water sensor paired devices (Off).</p> <p><b>Choices:</b> On or Off</p>

# LUA Screens

# Lua Settings

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.

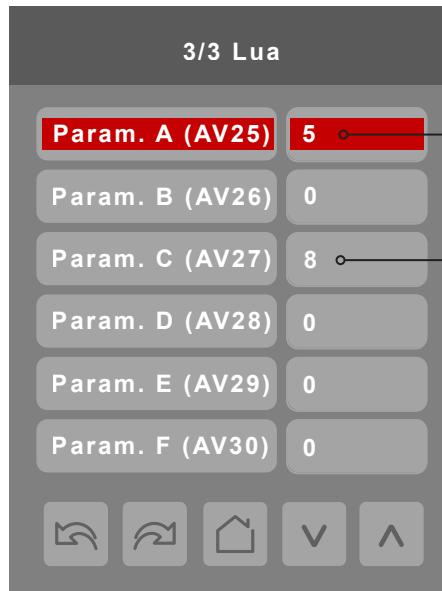


## PARAMETER DETAILS

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

# LUA Generic Parameters

The LUA settings include six 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 defined by Lua script displays in red text.

Default value is normally 0, but can be configured to use a different default value.

## PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
<b>Parameter A</b> Default value: 0	<b>AV25</b>  Default value can be changed by user. The value(s) of this parameter depends on what is assigned to it using the LUA script function
<b>Parameter B</b> Default value: 0	<b>AV26</b>  Default value can be changed by user. The value(s) of this parameter depends on what is assigned to it using the LUA script function
<b>Parameter C</b> Default value: 0	<b>AV27</b>  Default value can be changed by user. The value(s) of this parameter depends on what is assigned to it using the LUA script function
<b>Parameter D</b> Default value: 0	<b>AV28</b>  Default value can be changed by user. The value(s) of this parameter depends on what is assigned to it using the LUA script function
<b>Parameter E</b> Default value: 0	<b>AV29</b>  Default value can be changed by user. The value(s) of this parameter depends on what is assigned to it using the LUA script function
<b>Parameter F</b> Default value: 0	<b>AV30</b>  The value(s) of this parameter depends on what is assigned to it using the LUA script function

# SECTION 3

Appendix

## Appendix A: Terminal Correspondence

The terminals of an VT8600 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 VT7300 series and the VT8600 series. Consult the table below to verify the appropriate terminal when replacing a VT7600 Room Controller with a VT8600 Room Controller.

VT7000		VT8600	
Terminal name	Terminal ID	Terminal name	Terminal ID
Binary Input 1	BI1	Universal Input 16	UI16
Binary Input 2	BI2	Universal Input 17	UI17
Universal Input 3	UI3	Universal Input 19	UI19
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