

SER8150RxB1194

User Interface Guide

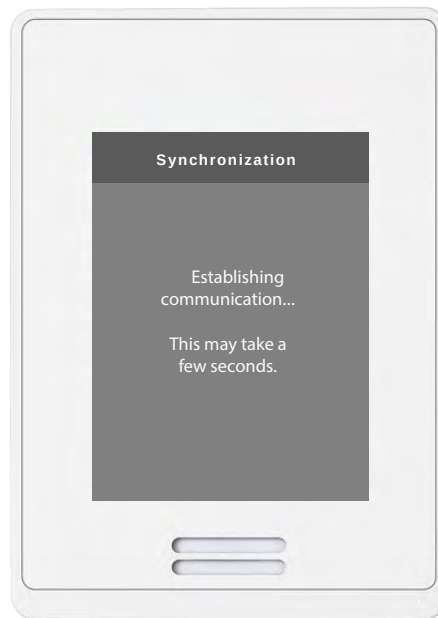
Remote Controller for Panasonic VRF Systems



Power up Remote Controller

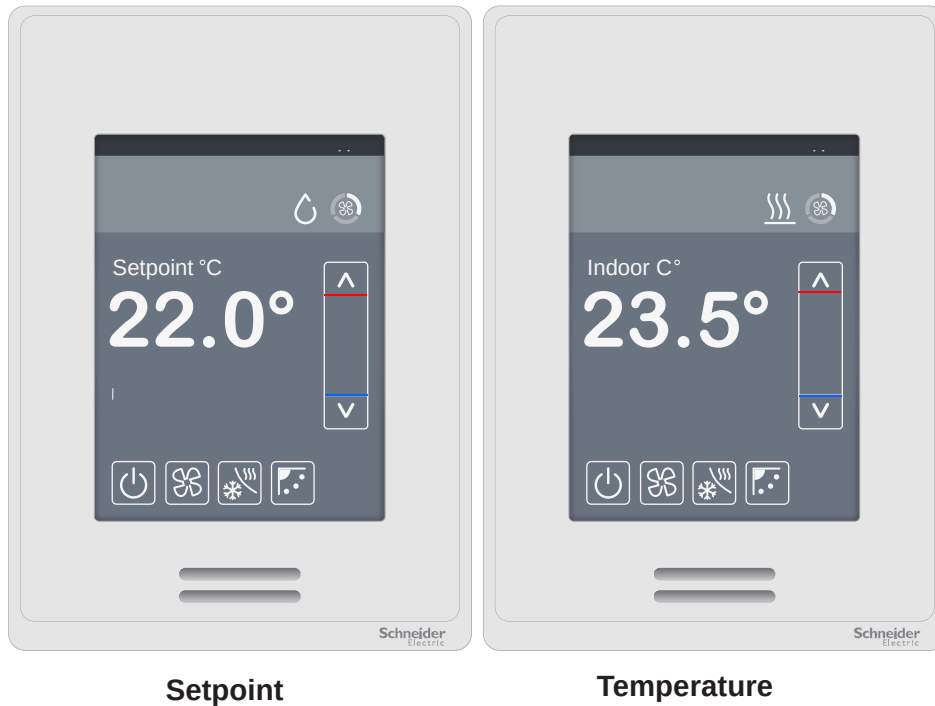
INITIAL POWER UP

When powering up the Remote Controller for the first time or if power to the Remote Controller is cut and restored, the device must establish communication with Panasonic indoor unit equipment. The synchronization between the Remote Controller and Panasonic indoor unit equipment normally takes a few seconds. When synchronization is completed, normal communication is established and the user interface screen is shown.



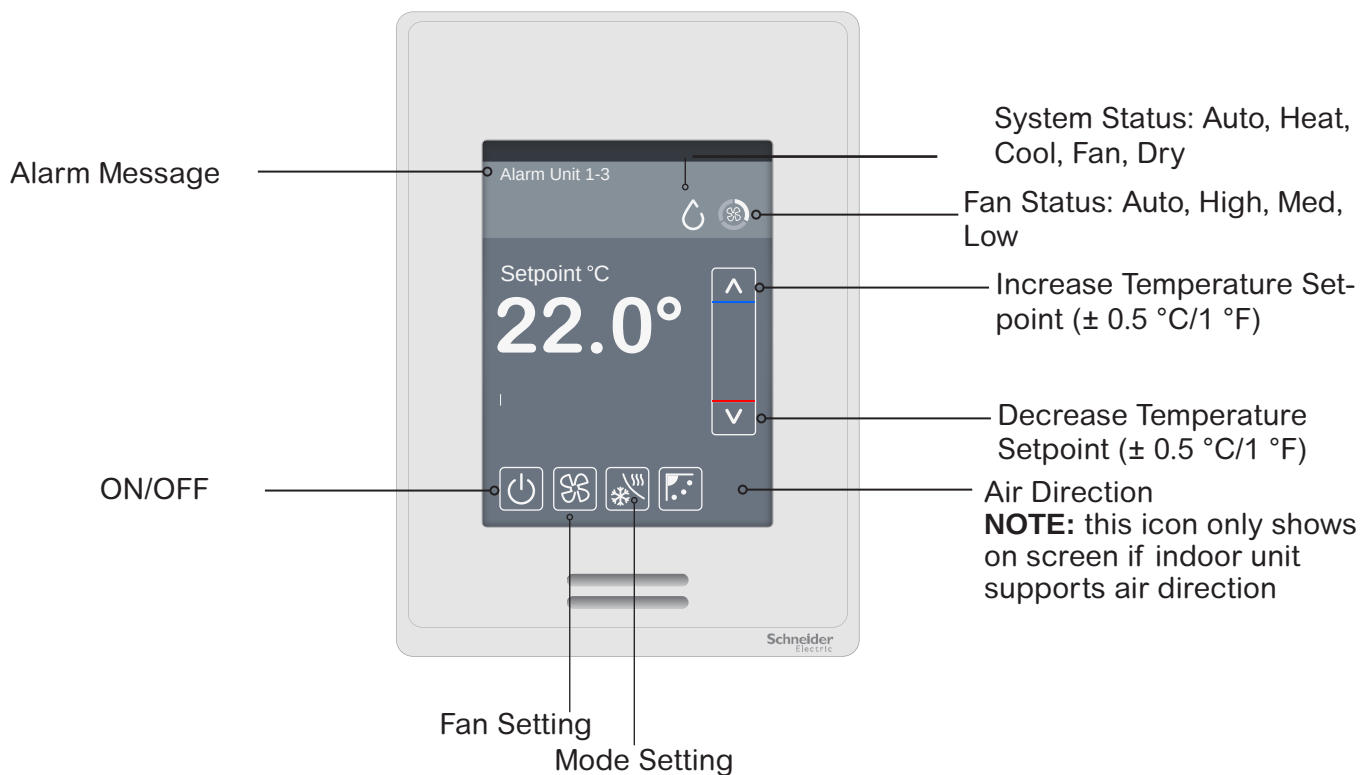
USER INTERFACE SCREEN MODES

User Interface screens can be dependent on User Settings and the master indoor unit type connected to the Remote Controller. Users can set the HMI screen to show Indoor Temperature or Setpoints.



USER INTERFACE SCREEN - TYPICAL

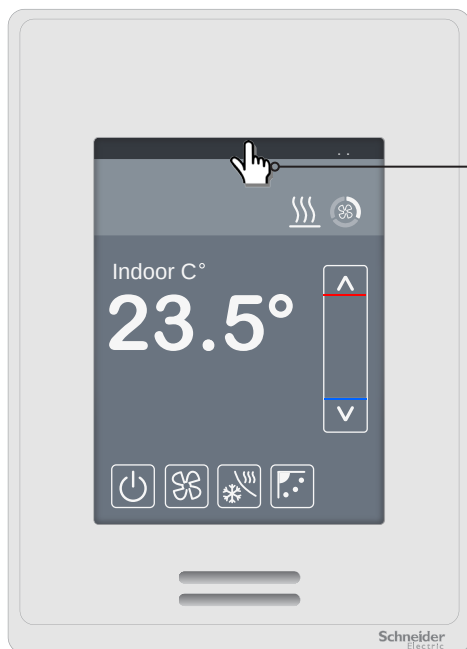
The below shows a typical HMI screen when set to Indoor Temperature



Access Remote Controller

ENTER SET UP MODE

The user or the installer can access the parameter settings for the Remote Controller. A password can be set for parameters that can be accessed by the user or the installer. Refer to the below illustration to access Remote Controller.

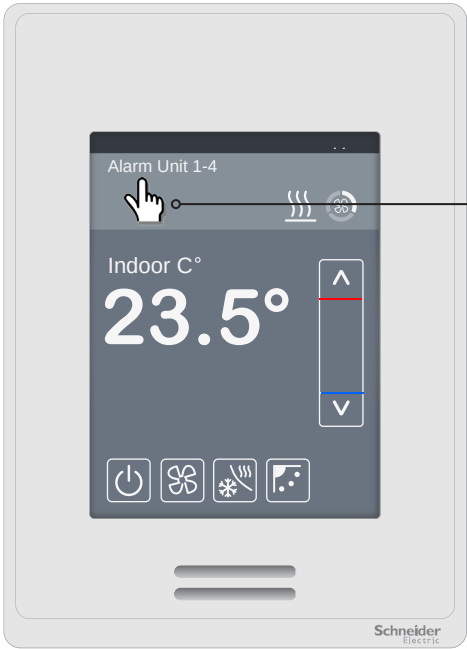


Touch and hold this point for 3 seconds to enter setup mode

Note: hold finger tip close to top edge of screen.

ALARM UNIT

The Alarm Unit message shows on the standby screen if there is an alarm associated with any Indoor Unit.

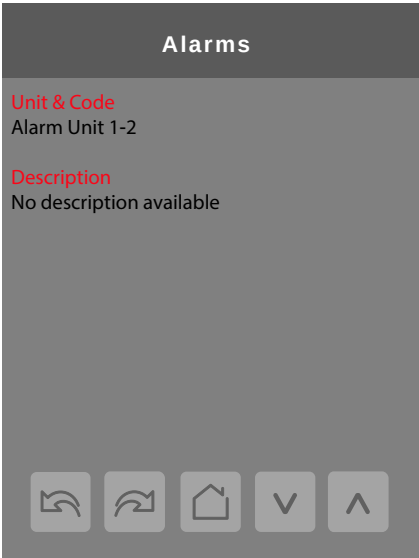


Touch and hold Alarm Unit to enter Alarms screens.

Short alarm message on HMI includes two parts: Alarm Unit number and Alarm code.
Example: Alarm Unit 1-4: E09

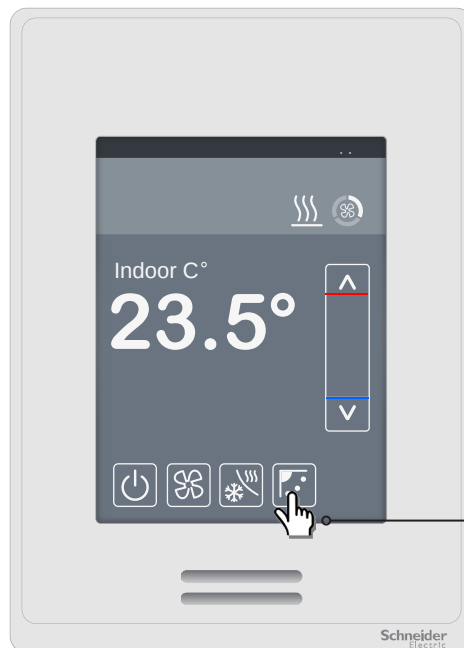
ALARM UNIT MESSAGE

The below shows an example Alarm message on the Remote Controller.



AIR DIRECTION

The Remote Controller has five individual (F1 - F5) states of air direction for Heat, Cool, Fan and Auto modes. Available Air Direction states are dependant on the type of Panasonic equipment connected to the Remote Controller.

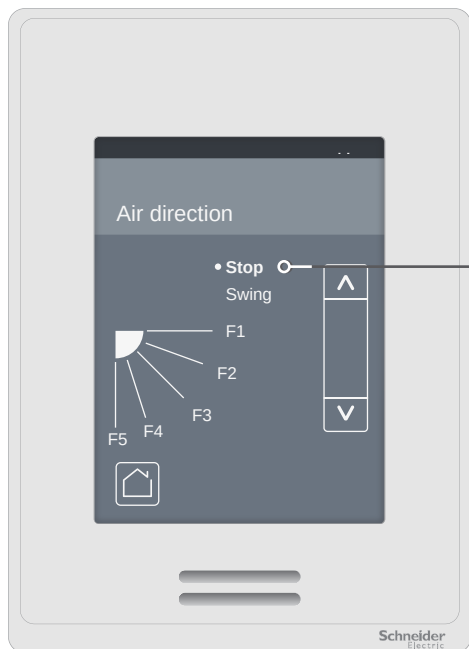


NOTE: F1-F5: supports Heat, Cool, Fan, Dry and Auto for Heat and Fan

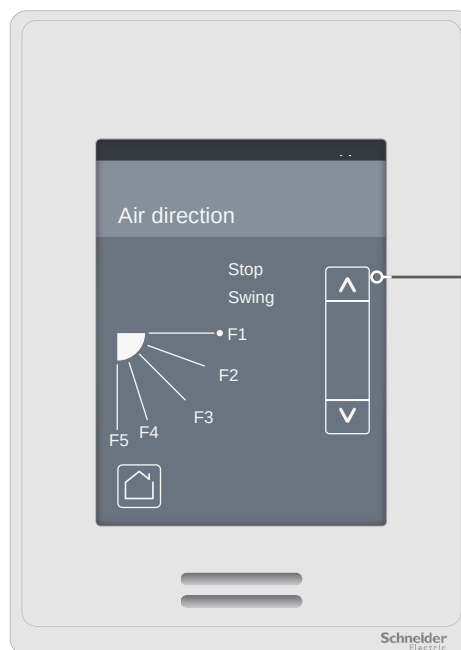
F1 - F3: supports Cool and Auto(Cool)

Touch icon to access Air Direction screen

NOTE: this icon only shows on screen if IDU supports air direction



Stop
No air direction

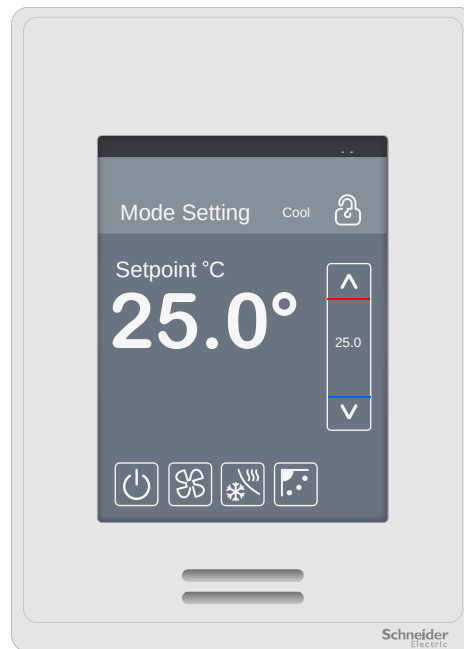


State
Use Up/
Down
arrows to set
air direction
state

LOCKOUT

The mode lockout is set according to Panasonic unit requirements as follows.

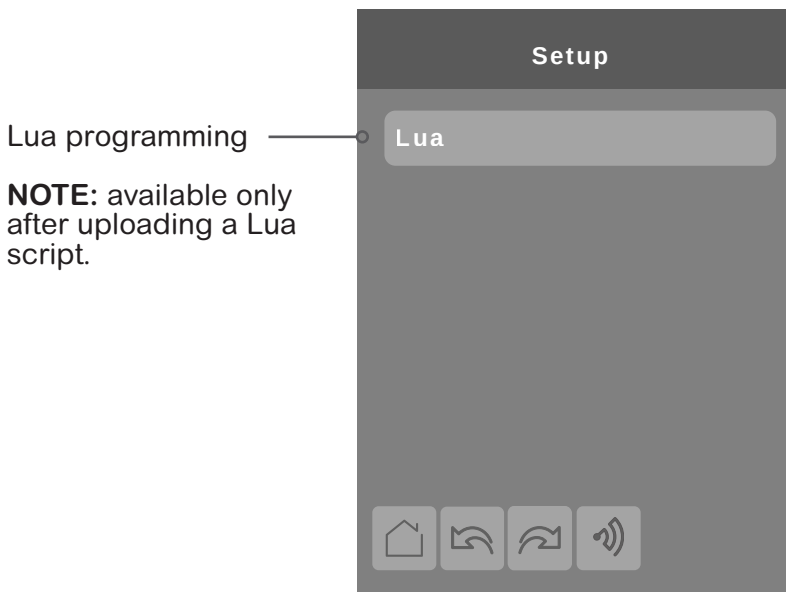
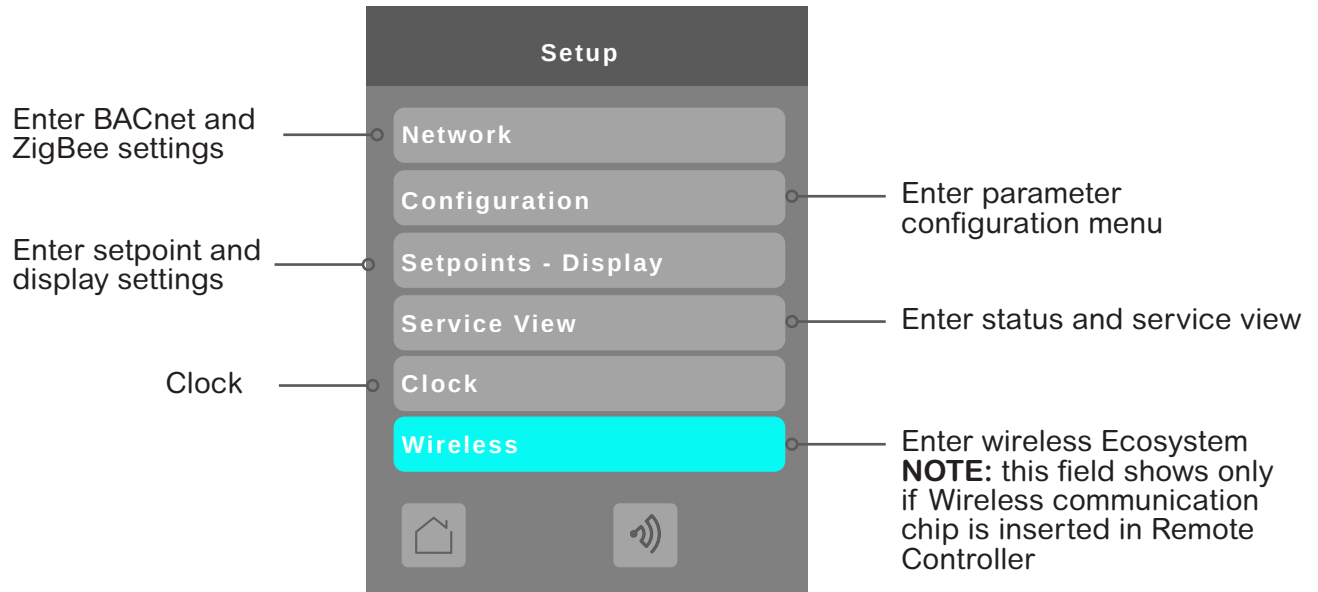
- **Case 1:** lock Auto mode when indoor unit does not support Auto mode.
- **Case 2:** lock Heat mode when indoor unit prohibits Heat mode.
- **Case 3:** lock Cool and Dry mode when indoor unit prohibits Cool and Dry mode.



Remote Controller Parameters

SETUP

The Setup screen allows the User to access, change, and edit the parameters on the Remote Controller.



NETWORK

The image shows a network configuration interface. At the top, there is a dark header with the word "Network" in white. Below the header, there are four buttons arranged in a 2x2 grid. The top row contains "Optional prot." and "Zigbee". The bottom row contains "Wire protocol" and "BACnet". At the bottom of the interface, there are five navigation icons: a back arrow, a forward arrow, a home icon, a checkmark, and an up arrow.

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Optional prot. READ ONLY	Optional Protocol None: No ZigBee card detected ZigBee: ZigBee card detected
Wire protocol Default value: BACnet	Wired Protocol None: No wired protocol configured BACnet: Enable BACnet network protocol Modbus: Enable Modbus network protocol Choices: None, BACnet or Modbus

ZIGBEE NETWORK SCREEN 1/3

1/3 Zigbee Network

COM address

254

Node type

Coord.

ZigBee PAN ID

25

ZigBee channel

15

ZigBee short

0x0000

ZigBee status

Online

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
COM address Default value: 254	COM Address Remote 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
Node type Default: Router	Node type Select Coordinator for stand-alone installation and for use of wireless door and window switches. Router cannot be used at this time. This is a future option. Choices: Coordinator or Router
ZigBee Pan ID Default value: 0	ZigBee® Pan ID Personal Area Network Identification that links specific Remote Controllers to specific ZigBee® coordinators. For every Coordinator, use a different PAN ID. NOTE: The default value of 0 is NOT a valid PAN ID. Range: 1 to FFFE

ZigBee channel Default value: 10	ZigBee Channel The default value of 10 is NOT a valid channel. The valid range of available channel is from 11 to 25. Using channels 15 and 25 is recommended. Range: 10 to 25
ZigBee short Default value: 0 READ ONLY	ZigBee Short Address ZigBee short address. The unique address is generated once a router device joins a ZigBee network. This feature is for diagnostic purposes and not used when "Node type" is set to Coordinator.
ZigBee status READ ONLY	ZigBee Status Not det: ZigBee module not detected Pwr on: ZigBee module detected but not configured No NWK: ZigBee configured but no network joined Joined: ZigBee network joined Online: Communicating

ZIGBEE NETWORK SCREEN 2/3



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Door installed READ ONLY	Door Sensor Installed Not used. Future option.
Win. installed READ ONLY	Window Sensor Installed Not used. Future option.
Low bat. alarm READ ONLY	Low Battery Alarm Shows an alert when one or more sensors has a low battery alarm. Status: Off or On
Permit join Default value: Off	Permit Join Coordinator: When permit join shows Off, no new ZigBee devices can join the network. Router: Must set to On to join a coordinator network. Important: Set to off after joining process is completed to prevent and new devices from joining. The permit join automatically goes back to "Off" after 3 hours. Status: Off or On

ZIGBEE NETWORK SCREEN 3/3



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
IEEE address READ ONLY	IEEE Address The extended IEEE ZigBee node address identifies the device on the network.

BACNET NETWORK SCREEN 1/2

1/2 BACnet Network

COM address

254

Network units

SI

Baud rate

Auto

BACnet status

Offline

Time source

IDU











PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Comm address Default value: 254	Communication Address Remote Controller networking address. For BACnet® MS-TP models, the valid range is from 1 to 127. Default value of 254 disables BACnet® communication for the Remote Controller. Range: 0 to 254
Network units Default value: SI	Measurement Units Imperial: network units shown as Imperial units. SI: network units shown as International Metric units. Choices: Imperial or SI
Baud rate Default value: Auto	BACnet Baud Rate Leave the value at Auto unless instructed otherwise as this automatically detects BACnet® MS/TP baud rate. Choices: Auto, 115200, 76800, 57600, 38400, 19200, and 9600
BACnet status READ ONLY	BACnet Status Read only value showing if a BACnet Network is detected or not. Status: Online or Offline
Time source Default value: IDU	Time Source Determines if Remote Controller receives time source information from BACnet Automation Server or from Panasonic indoor unit. The Panasonic indoor unit does not require any time to perform the action. When Time source is set to indoor unit, the Remote Controller receives the time from either the Panasonic Room Controller or from another Room Controller installed in another group connected to the same outdoor unit. Status: IDU or BACnet

BACNET INSTANCE NUMBER

The default BACnet® instance number is generated by the model number and COM address of the Remote Controller.

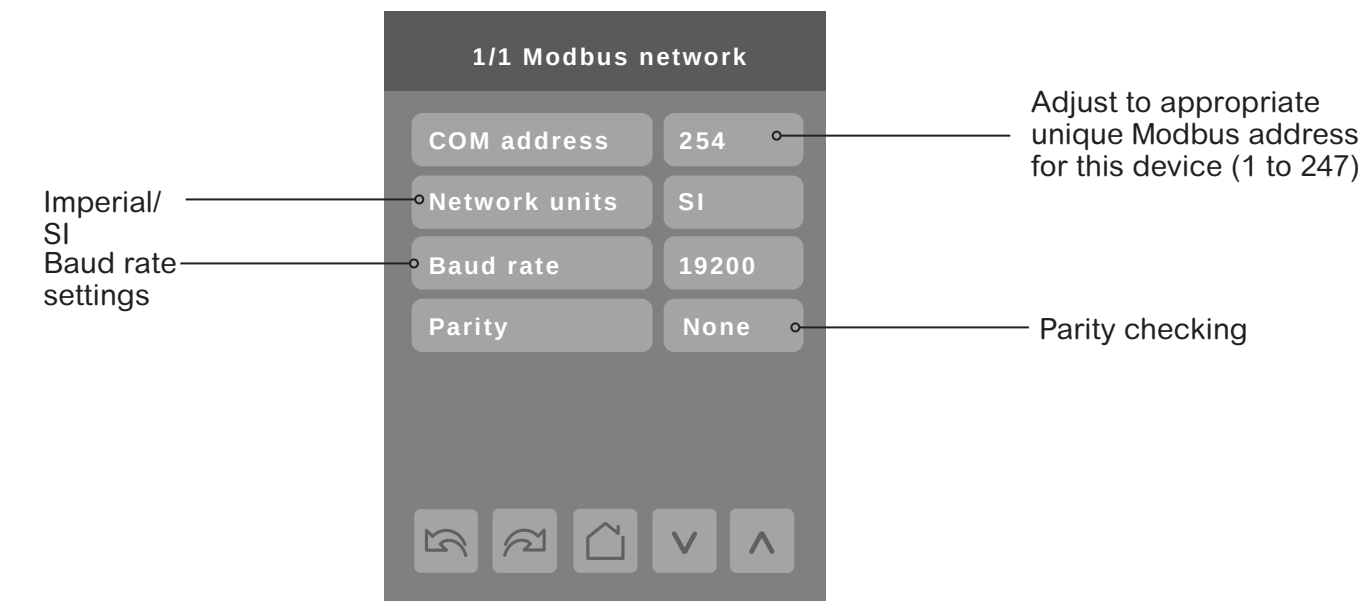
The default instance number appears first. To change the instance number, use number pad and press Accept and save.

Press **R** to reset to automatic instance addressing. Each device over a large BACnet network must have a unique instance number. This number is shown on most SCADA systems, to properly identify end devices.

The screenshot shows a configuration screen titled "2/2 BACnet Instance". At the top, a white box displays the current instance number "0081006". Below this is a numeric keypad with buttons for digits 0 through 9. At the bottom, there are five function buttons: a left arrow, a right arrow, a house icon, an "R" icon for reset, and a checkmark icon for save/accept.

MODBUS NETWORK SETTINGS

Modbus network set-up screen shows when Modbus is detected in model. Select desired parameter and use up or down arrow to set parameter to desired value.



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. Range: 0 to 254
Network units Default value: SI	Measurement Units 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 Leave the value as is unless instructed otherwise as this automatically detects Modbus baud rate. Choices: 4800, 9600, 19200, 38400, 57600
Parity Default value: Even	Parity Parity checking of the data character frame. Choices: None, Odd and Even

CONFIGURATION PARAMETERS SCREEN 1/3

The values on Configuration 1/3 screen are read only on the HMI. The values can only be changed via BACnet or the Panasonic Unit.



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
ON/OFF Default value: Allowed READ ONLY	Allowed: makes icon visible on user screen Prohibited: removes icon on user screen Status: Allowed or Prohibited
Fan mode Default value: Allowed READ ONLY	Fan Mode Prohibited: removes icon on user screen Allowed: makes icon visible on user screen Status: Allowed or Prohibited
Mode prohib. Default value: Allowed READ ONLY	Mode Prohibited: removes icon on user screen Allowed: makes icon visible on user screen Status: Allowed or Prohibited
Air dir. prohib. Default value: Allowed READ ONLY	Air Direction Prohibited: removes icon on user screen Allowed: makes icon visible on user screen Status: Allowed or Prohibited

Setpoint Default value: Allowed READ ONLY	Setpoint Prohibited: removes icon on user screen Allowed: makes icon visible on user screen Status: Allowed or Prohibited
Sensor ctrl Default value: IDU	Sensor Control Source IDU: System control is from the temperature reading from the suction side of the indoor unit Local: System control is from the Remote Controller embedded temperature sensor (on the wall) Choices: IDU or Local

CONFIGURATION PARAMETERS SCREEN 2/3

2/3 Configuration

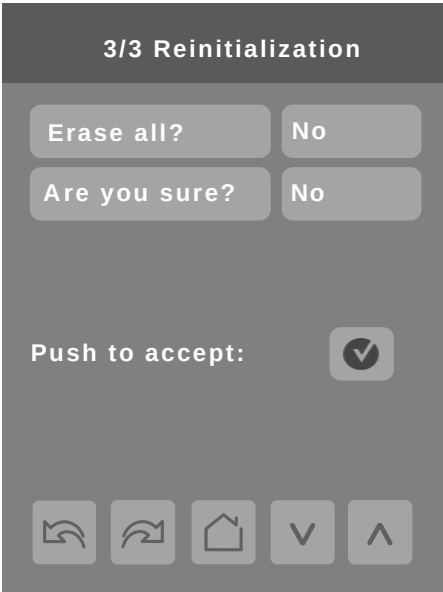
Main password	0
User password	0
Clock menu	0
Calib temp.	0.0 °C
Calib humid.	0.0 %RH

Navigation icons: Back, Forward, Home, Down Arrow, Up Arrow

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Main password Default value: 0	Main Password Installer password. This parameter sets a protective access password to prevent unauthorized access to configuration menu parameters. Default value of 0 does not lock access configuration menu. Range: 0 - 9999.
User Password Default value: 0	User Password This parameter sets a protective access password to prevent user unauthorized access to main screen adjustments. Default value of 0 does not prompt a password. Range: 0 - 9999.
Clock menu Default value: Enabled	Clock Menu Toggles activation of clock menu direct access Enabled: Clock Menu is directly accessible from the main screen via a touch in the upper corner. Disabled: Clock Menu can only be accessed through the Setup Menu screens. En. no. clk: Clock Menu is directly accessible from the main screen via a touch in the upper corner. Clock does not show. Dis. no. clk: Clock Menu can only be accessed through the Setup Menu screens. Clock does not show. Choices: Disabled, Enabled, Disabled no Clock, Enabled no Clock
Calib. temp. Default value: °C	Calibration Temperature Room temperature sensor calibration. Offset can be added or subtracted to actual displayed room temperature. Range: ± 5.0 °F, 1.0 °F increments (± 2.5 °C, 0.5 °C increments) Note: dependant on type of Panasonic equipment connected to the Remote Controller.
Calib. humid. Default value: 0.0 %RH Models with humidity sensor only.	Humidity Sensor calibration Offset that can be added/subtracted to actual displayed humidity. Range is : ± 15.0 %RH.

CONFIGURATION PARAMETERS SCREEN 3/3



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Erase all? Default value: No	Erase All Answering Yes on both and pressing the Accept button erases all values and sets the values to factory default values with exception of the following: COM address ZigBee® Pro Pan ID ZigBee® Pro channel Network units Network language Baud rate BACnet® instance Device name Screen Contrast
Are you sure? Default value: No	

SETPOINTS SCREEN 1/2

READ ONLY →

1/2 Setpoints

High cool dem.	30 °C
Low cool dem.	21 °C
High heat dem.	27 °C
Low heat dem.	16 °C

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
High cool dem. Default value: retrieved from IDU READ ONLY	High Cool Demand Range: 16-30 °C (61 ° - 86 °F)
Low cool dem. Default value: retrieved from IDU READ ONLY	Low Cool Demand Range: 16-30 °C (61 ° - 86 °F)
High heat dem. Default value: retrieved from IDU READ ONLY	High Heat Demand Range: 16-30 °C (61 ° - 86 °F)
Low heat dem. Default value: retrieved from IDU READ ONLY	Low Heat Demand Range: 16-30 °C (61 ° - 86 °F)

SETPOINTS SCREEN 2/2

READ ONLY →

2/2 Setpoints

High dry dem.

26 °C

Low dry dem.

18 °C

High auto dem.

25 °C

Low auto dem.

22 °C

↶

↷

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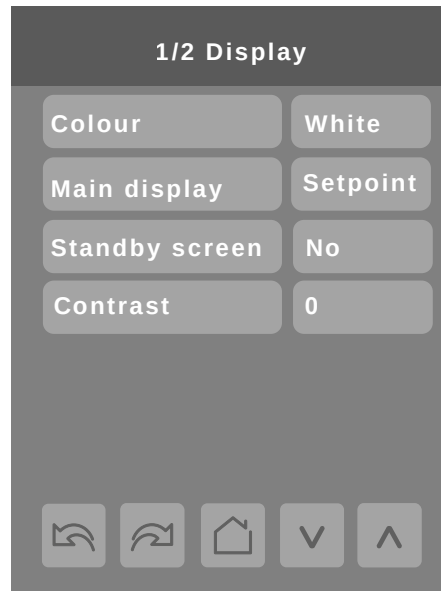
▼

▲

PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
High dry dem. Default value: retrieved from IDU READ ONLY	High Dry Demand Range: 16-30 °C (61 °- 86 °F)
Low dry dem. Default value: retrieved from IDU READ ONLY	Low Dry Demand Range: 16-30 °C (61 °- 86 °F)
High auto dem. Default value: retrieved from IDU READ ONLY	High Automatic Demand Range: 16-30 °C (61 °- 86 °F)
Low auto dem. Default value: retrieved from IDU READ ONLY	Low Automatic Demand Range: 16-30 °C (61 °- 86 °F)

DISPLAY SCREEN 1/2



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Colour Default value: White	Screen Colour Change background colour Choices: White, Green, Blue, Grey, Dark Grey
Main display Default value: Setpoint	Main Display Toggle between what shows on the main screen between the temperature or setpoint. Choices: Temperature or Setpoint
Standby screen Default value: No	Standby Screen* When the device is left unattended for 2 minutes background backlight dims. Installers can load a custom image for brand identification. Choices: No, Yes, Occupied Only NOTE: Screen Saver. Screen saver is recommended. See disclaimer on following page.
Contrast Default value: 0	Contrast Control screen contrast and brightness: 0 is least bright, most contrast; 5 is most bright, least contrast. Range: -5 to 5

*Disclaimer

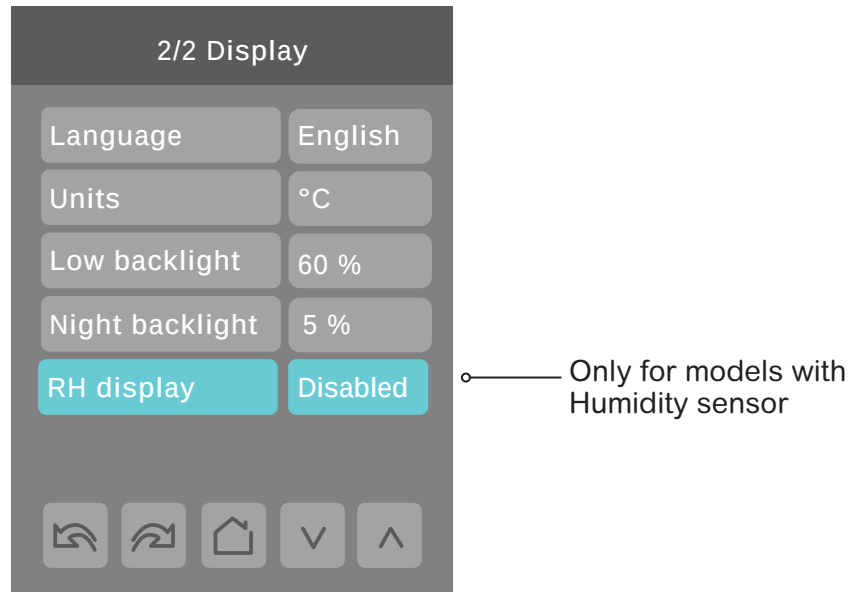
Standby screen: The Remote Controller incorporates TFT-type LCD technology, and therefore, necessary precautions are required to prevent the phenomenon of image retention (residual image) from occurring.

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 Sav** setting on the **Standby screen** selection from the setup menu **Setpoints - Display' on screen 1/2 Display**. 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 Remote Controller in poorly ventilated areas, or in areas that may create excess heat around the display.

DISPLAY SCREEN 2/2



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Language Default value: English	Display Language Select language for main display. Choices: English, French, Spanish, German, Italian, Polish
Units Default value: °C	Network Units Sets temperature value units. Choices: °C for Celsius, °F for Fahrenheit.
Low backlight Default value: 60%	Low Backlight Set display backlight intensity after 2 minutes of keyboard inactivity. Adjustable: 0 to 100%.
Night backlight Default value: 5%	Night Backlight Set display backlight intensity after 2 minutes of keyboard inactivity. 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%.
RH display Default value: Disabled/Enabled Models with humidity sensor only	Relative Humidity Shows humidity level in room in %RH On: Displays %RH on HMI screen Off: Does not display %RH on HMI screen Status: Enabled, Disabled

SERVICE VIEW SCREENS

READ ONLY



1/6 Service View

Firmware rev.	XXXX
Room temp.	xx.x °C
Outdoor temp.	xx.x °C
Room humidity	xx.x %RH



- Firmware revision
- Room temperature
- Outdoor temperature
- Room humidity level

READ ONLY



2/6 Service View

Local motion	Motion
Zigb. PIR inst.	Off
Zigb. sens	No motion



- Motion/No Motion
- ZigBee PIR installed
- ZigBee Sensor status

SERVICE VIEW SCREENS

READ ONLY →

3/6 Service View

Refr. circuit A	0	○	Refrigeration Circuit
Indoor unit A	0	○	Indoor Unit
Refr. circuit B	0		
Indoor unit B	0		
Refr. circuit C	0		
Indoor unit C	0		



READ ONLY →

4/6 Service View

Refr. circuit D	0	○	Refrigeration Circuit
Indoor unit D	0	○	Indoor Unit
Refr. circuit E	0		
Indoor unit E	0		
Refr. circuit F	0		
Indoor unit F	0		



SERVICE VIEW SCREENS

**READ
ONLY**

5/6 Service View

Refr. circuit G	0	☐	Refrigeration Circuit
Indoor unit G	0	☐	Indoor Unit
Refr. circuit H	0		
Indoor unit H	0		

**READ
ONLY**

6/6 Service view

Device name:
SER8150xxxxx-

Graphic Library Revision:
1.0.0

The Model number is the BACnet® device name automatically assigned from factory and is automatically combined with live BACnet instance number. This name can be modified from the BACnet **dev** Object.

CLOCK FUNCTIONS

The Clock time depends on whether any Room Controllers or BACnet Server (through BACnet) acts as the time source. For a Stand-alone system the Time Source is determined either by BACnet or the indoor unit. The Remote Controller never acts as the time source.

Stand-alone System

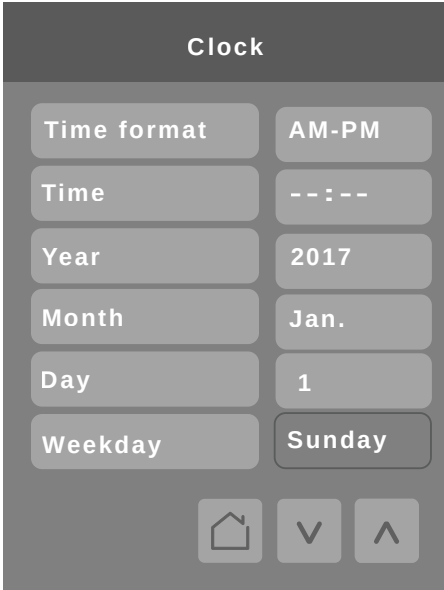
For a stand-alone system the indoor unit acts as the time source and the Remote Controller does not poll any time from the indoor unit. The Remote Controller only receives the broadcasted time set by another Remote Controller in the same group or other groups connected with its group by U1/U2.

BACnet Integrated System

The Remote Controllers connected to BACnet (BACnet as their time source) will have their time set through the BACnet network. In this condition, no time data is sent to indoor unit through broadcasting, and the Remote Controller will not update from any received broadcasting time when time source is set as BACnet. Also, if the user manually changes the time on Remote Controller, the time does not get sent out.

CLOCK

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

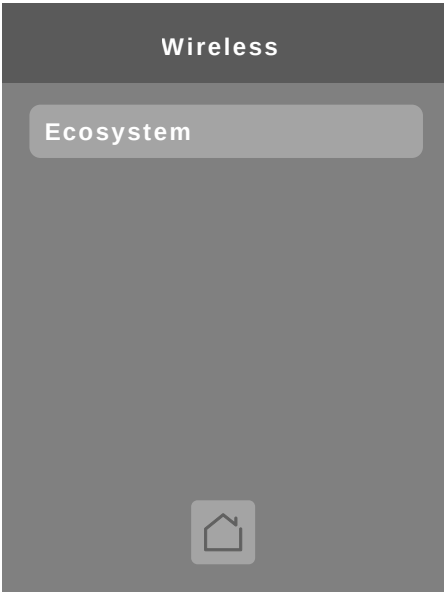


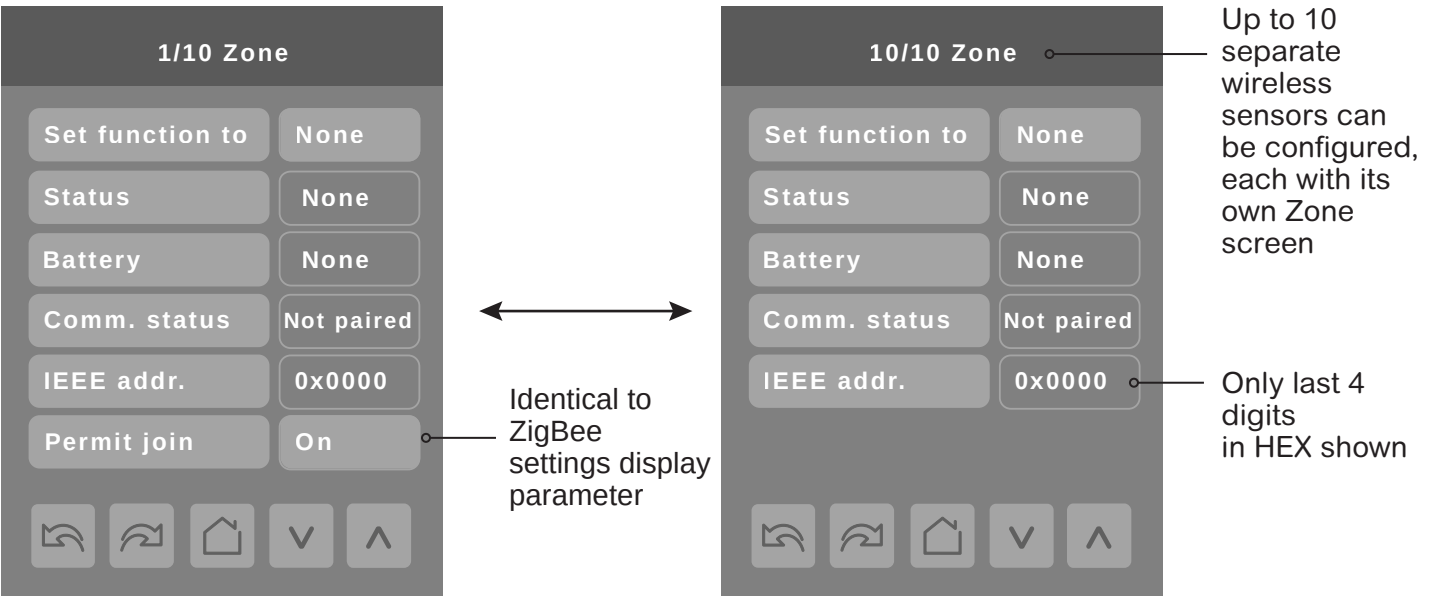
PARAMETER DETAILS

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: 2014	Year Current year Range: 2000 - 2099
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	Day Current day. Day is set automatically when year, month and date are set. Range: Monday - Sunday

WIRELESS

When wireless sensors are set up to communicate with a Remote Controller, the function of each such sensor is described in a separate Zone screen, up to a maximum of 10 Zones. Refer to next page for details.





IMPORTANT: For current software release, NO embedded sequence of operation is provided to manage Remote Controller behavior according to ZigBee sensors status. It is the responsibility of the Integrator to write and upload a Lua script that provides expected behavior according to sensor status. It is also their responsibility to verify complete operation compliance according to specific project requirements.

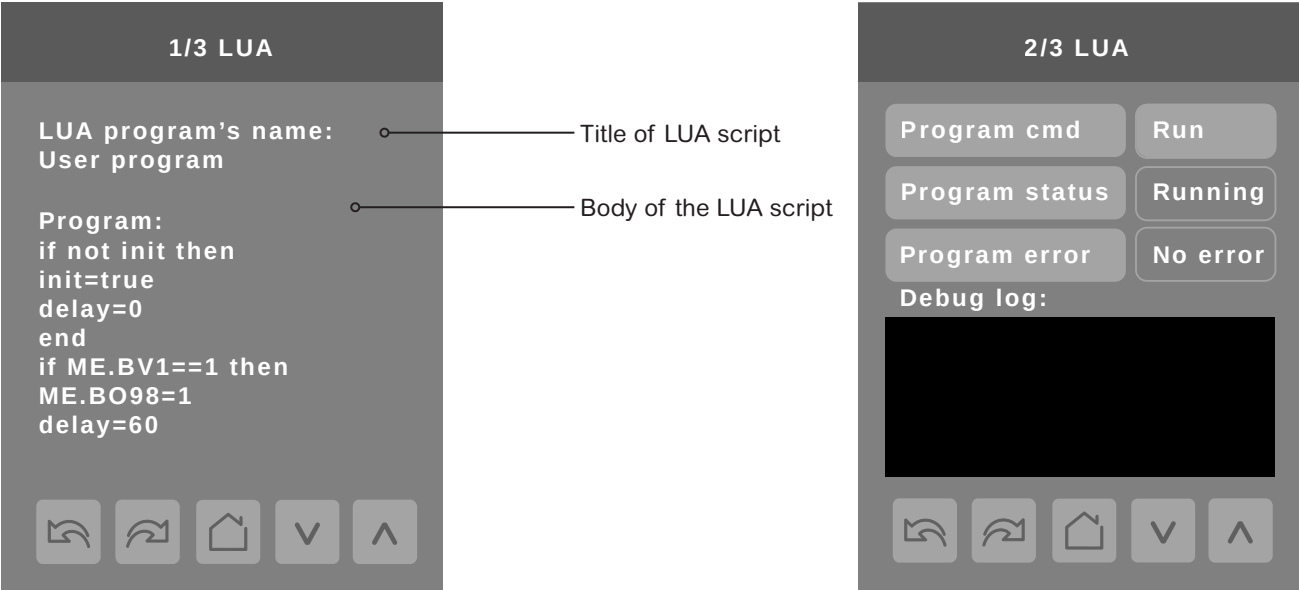
PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Set function to Default value: None	Wireless Zone Set Function Describe function of specified wireless sensor. None: No sensor function for this zone Door: Sensor is a door contact switch Window: Sensor is a window contact switch Motion: Sensor is a motion sensor Status: Updates the BACnet status of the sensor. No action is taken by Remote Controller. Remove: Clears zone of all settings for the attached sensor. However, the sensor will automatically try to reconnect with the Remote Controller unless it is manually reset as well. Choices: None, Window, Door, Motion, Status, Remove
Status READ ONLY	Wireless Zone Status Current status of information received from the sensor Close: Sensor in closed state (door/window only) Open: Sensor in opened state (door/window only) No motion: Sensor detects no motion (motion sensor only) Motion: Sensor detects motion (motion sensor only) None: No status information received from sensor.

Battery READ ONLY	Wireless Zone Battery Current status of sensor battery Low: Replacement or recharge required soon Normal: Normal range. Replacement or recharge not currently needed. None: Sensor does not use a battery
Comm. Status READ ONLY	Comm. Status Sensor pairing state. Status: Not paired, Online, Invalid, Offline
IEEE addr. READ ONLY	IEEE Address Shows network address of the sensor after successful pairing.
Permit join READ ONLY	Permit Join Allows Remote Controller to bind with sensor Choices: On or Off

LUA SETTINGS

The LUA settings screens show information about any custom LUA script uploaded to the Remote Controller. LUA scripts are not programmable on the Remote Controller. The Uploader Tool is required to load a Lua script to the Remote Controller. Use up/down arrow to scroll through scripts (maximum 10 - requires A/S Server).



PARAMETER DETAILS

Configuration Parameters Default Value	Significance and Adjustments
Program cmd Default value: Run	Program Command Run: LUA script activated and runs continuously 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 Choices: 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 Choices: No error, Syntax, Runtime, Memory, Yield, Double err.

LUA GENERIC PARAMETERS

The Lua settings include six generic parameters that do not have predefined values. These can be used to represent Lua script variables. They are user configurable in their default state, but when assigned a value by a Lua script they become read only, and the display color of the parameter changes to red. These parameters can be modified through BACnet as Analog Values (AVs). These parameters can also be configured to receive information from ZigBee sensors.

3/3 Lua

Param. A5

Param. B0

Param. C8

Param. D0

Param. E0

Param. F0

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
Parameter A Default value: 0	Parameter A 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
Parameter B Default value: 0	Parameter 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
Parameter C Default value: 0	Parameter C 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
Parameter D Default value: 0	Parameter D 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
Parameter E Default value: 0	Parameter E 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
Parameter F Default value: 0	Parameter F The value(s) of this parameter depends on what is assigned to it using the LUA script function