# **SE8600 Series User Interface Guide**

Rooftop Unit, Heat Pump and Indoor Air Quality Controller



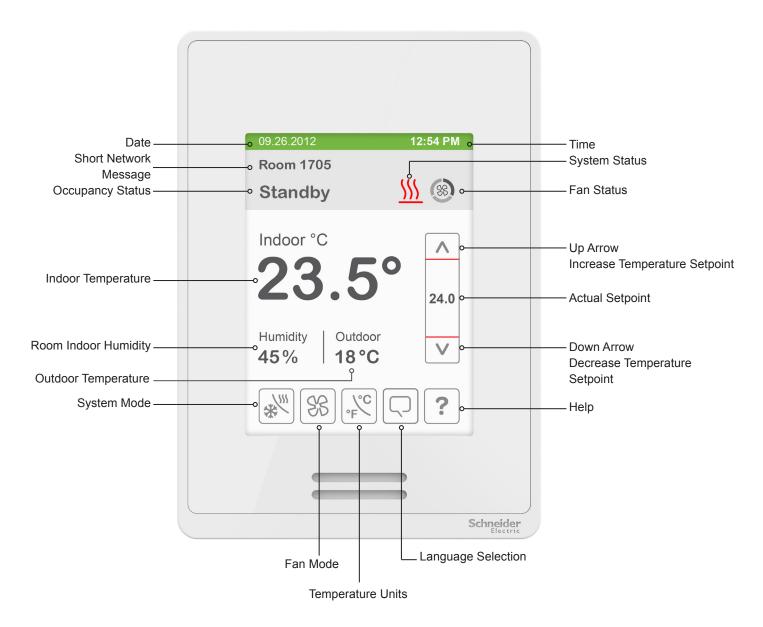
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# **HMI Display**

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



#### **General Notes**

- 1. When any change is made to a parameter, the value is automatically saved in memory when the next parameter is selected or another page is opened.
- 2. Arrows auto-increment/decrement at higher speed when holding button for more than 2.5 seconds.

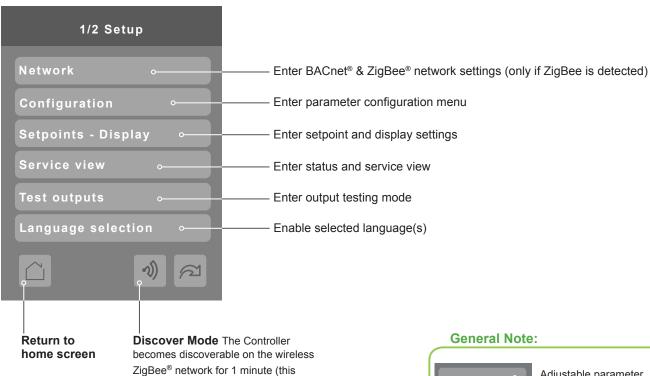
# **Enter Set-up Screen**



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 SCREEN DISPLAY 1/2**



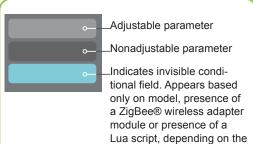
Note: The following menus show according to context:

- ZigBee menu shows if ZigBee card detected.

not configured)

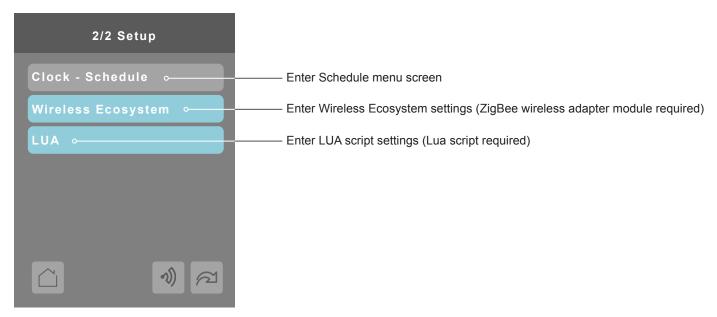
- Network choice inside does not show if no network is available

button is hidden if ZigBee® settings are

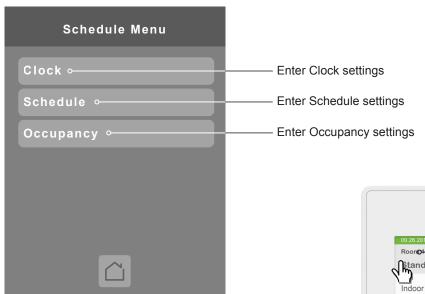


field.

#### **SET-UP SCREEN DISPLAY 2/2**



# **SCHEDULE MENU SCREEN**



**Note:** The Schedule menu screen is directly accessible from the main display if the Schedule Menu configuration parameter is enabled. See Configuration Parameters Screen 2/10 on page 19 for more information.



Touch and hold this point for 3 seconds to enter the Schedule Menu screen.

#### **CLOCK SETTINGS**

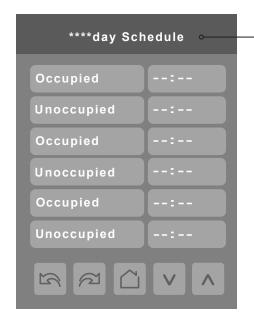
The Clock settings screen allows the device's internal time settings to be changed, including current time, standard day, month, year and weekday options, as well as choice between a 12 hour AM / PM display or a 24 hour display.



Configuration parameters default value	Significance and adjustments
Time Format Current time display format Default value: AM-PM	Choice between 12 hour AM - PM time format or 24 hour time format.  AM-PM  24 Hours  Note: Changing the value of this parameter automatically changes the format of the displayed value of the Time parameter directly below.
Time Current time display setting Default value: Begins at 12:00 AM at initial power up.	Standard time display, 12 hour AM-PM or 24 hour; format is determined by the <b>Time Format</b> parameter value.
Year Default value: 2000	Current year
Month Default value: Jan.	Current month
Day Default value: 01	Current day
Weekday Default value: Sunday	Current day of the week

#### **SCHEDULE SETTINGS**

There are 7 different schedule setting screens, one for each day of the week, titled accordingly. Each day can have different scheduled events where the room controller is set to Occupied status or back to Unoccupied status and use the appropriate setpoints, back and forth up to 3 times per day.



Screen title is identified by day of the week (Sunday through Saturday)

Configuration parameters default value	Significance and adjustments
Occupied Default value: None	Defines a time when the room controller is automatically set to use the Occupied setpoint.
	Note: There are 3 separate Occupied parameter entries
Unoccupied Default value: None	Defines a time when the room controller is automatically set to use the Unoccupied setpoint.
	Note: There are 3 separate Unoccupied parameter entries

#### **OCCUPANCY SETTINGS**

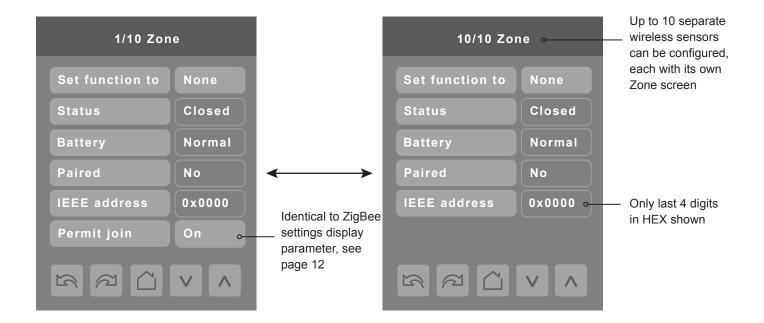
The occupancy settings screen allows you to determine how the Room Controller will determine whether it is functioning in Occupied or Unoccupied mode.



Configuration parameters default value	Significance and adjustments
Occupancy cmd	Occupancy Command
Default value: Local occ	<b>Loc occ:</b> occupancy is determined by local sequences (either PIR or schedule, as configured under Occ. source).
	Occupied: force occupied mode.
	Unoccup: force unoccupied mode.

#### WIRELESS ECOSYSTEM

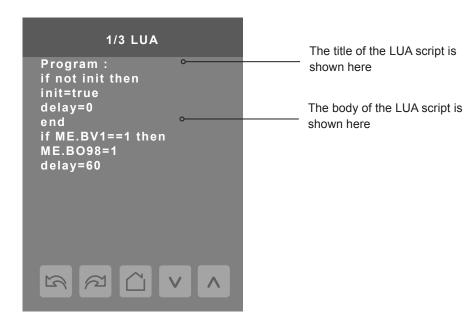
When wireless sensors are set up to communicate with a room controller, the functioning of each such sensor is described in a separate Zone screen, up to a maximum of 10 Zones. Select the appropriate type of sensor based on the required functioning using the up and down arrow keys.

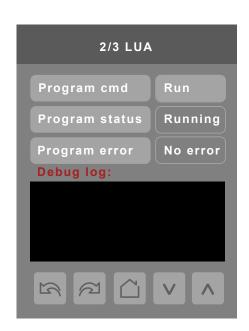


Configuration parameters default value	Significance and adjustments
Set function to	None: No sensor function configured for this zone
Describe function of specified wireless sensor	<b>Door</b> : Sensor is a door contact switch
Default value: None	Window: Sensor is a window contact switch
	Motion: Sensor is a motion sensor
	<b>Status</b> : Updates the BACnet status of the sensor, but no action is taken by the internal logic of the controller.
	<b>Remove</b> : Selecting this function clears the zone of the settings for the attached sensor. However, the sensor will automatically try to reconnect with the room controller unless it is manually reset as well.
Status	Close: Sensor in closed state (door/window only)
Current status of information received from the sensor	Open: Sensor in opened state (door/window only)
Read only	No motion: Sensor detects no motion (motion sensor only)
	Motion: Sensor detects motion (motion sensor only)
	None: No status information received from sensor.
<b>Battery</b> Current status of sensor battery, if any.	<b>Low</b> : Battery power level is low, replacement or recharge will be needed soon
Read only	Normal: Battery power level is in the normal range, replacement or recharge is not currently needed.  None: Sensor does not use a battery  No: Sensor is not paired with the room controller  Yes: Sensor is paired with the room controller  Invalid: Sensor cannot be paired.
	None: Sensor does not use a battery
Paired	No: Sensor is not paired with the room controller
Sensor pairing state	Yes: Sensor is paired with the room controller
Read only	Invalid: Sensor cannot be paired.

#### **LUA SETTINGS**

The LUA settings screens show information about any custom LUA script uploaded to the controller. LUA scripts are not programmable on the controllers, and so must be uploaded to the controllers.

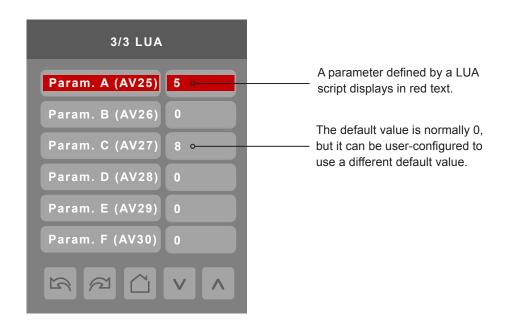




Configuration parameters default value	Significance and adjustments
Program cmd Default value: Run	Run: The LUA script is activated and will run continuously until deactivated.  Stop: The LUA script is deactivated
Program status Read only	Running: The LUA script is current active Halted: The LUA script has been stopped and is not active. Idle: The LUA script is running but is not currently taking any actions Waiting: The LUA script is running and waiting for a response.
Program error Read only	No error: No errors in the LUA script are detected.  Syntax: A syntax error in the LUA script is detected  Runtime: A runtime error has occurred while running the LUA script.  Memory: The device has run out of memory for the script

#### **LUA GENERIC PARAMETERS**

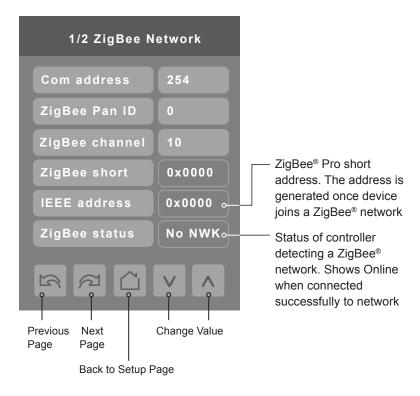
The LUA settings include six generic parameters that do not have predefined values. These can be used to represent LUA script variables. They are user configurable in their default state, but when they are assigned a value by a LUA script they become read only, and the display colour of the parameter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



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

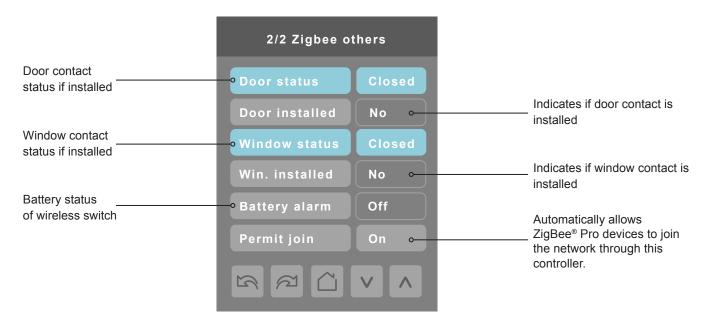
#### **ZIGBEE PRO NETWORK SETTINGS**

The ZigBee Pro set-up screen shows when a ZigBee card is detected in the model. Select the desired parameter and use up or down arrows to set the parameter to the desired value.



Configuration parameters default value	Significance and adjustments
Com address	Communication Address
Terminal Equipment Controller networking address Default value: <b>254</b>	For wireless models, the use of COM address is not mandatory.
Range value: 0 - 254	The COM address is an optional way to identify a device on the network.

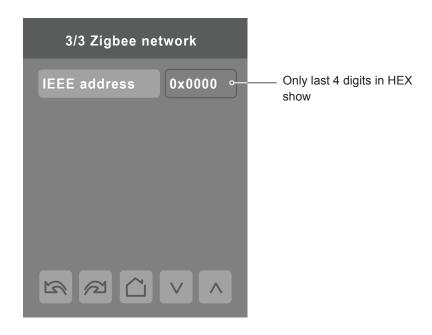
Configuration parameters default value	Significance and adjustments
ZigBee Pan ID	ZigBee Pro PAN ID
Personal Area Network Identification Default value: 0 Range value: 1 - 1000	Links specific Terminal Equipment Controllers to specific ZigBee® Pro coordinators. For every Terminal Equipment Controller reporting to a coordinator. Ensure set the SAME channel value both on the coordinator and the Terminal Equipment Controller(s).
	Default value of 0 is NOT a valid PAN ID. The valid range of available PAN ID is from 1 to 1000.
	Range 1 to 500 for centralized networked applications using a ZigBee® Pro Coordinator.
	Range 501 to 1000 is for stand-alone applications where each controller is its own coordinator for stand alone installation of wireless door and window switches.
ZigBee channel	ZigBee channel
Channel selection Default value: 10 Range value: 11 - 25	This parameter links specific Terminal Equipment Controllers to specific ZigBee® Pro coordinators. For every Terminal Equipment Controller reporting to a coordinator, ensure you set the SAME channel value both on the coordinator and the Terminal Equipment Controller(s).  Using channels 15 and 25 is recommended.
	The default value of 10 is NOT a valid channel. The valid range of available channel is from 11 to 25.
ZigBee status	ZigBee status
Read only	<ul> <li>The following read only messages show in this field:</li> <li>(Not Det): ZigBee® Pro module not detected</li> <li>(Pwr On): ZigBee® Pro module detected but not</li> </ul>
	configured  (No NWK): ZigBee® Pro configured but no network joined  (Joined): ZigBee® Pro network joined  (Online): Communicating



Note: Display returns to home screen when no activity is detected for 1 minute.

# **PARAMETER DETAILS**

Configuration parameters default value	Significance and adjustments
Permit join Default value: On	Permit Join  Changing this value to Off prevents any new ZigBee® Prodevices from joining network through this controller.

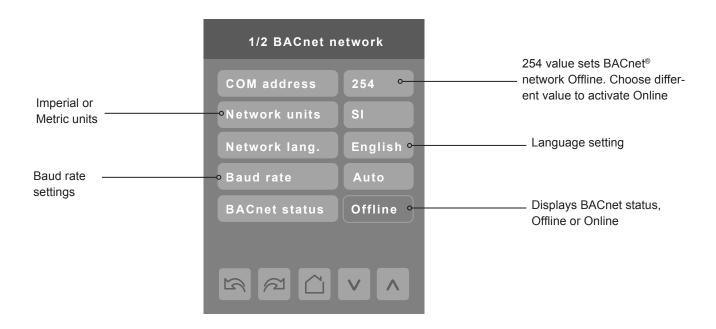


Note: The display will return to the home screen when no activity is detected for 1 minute.

Configuration parameters default value	Significance and adjustments	†ri 
IEEE address Default value = 0x0000	The extended IEEE ZigBee® node address is used to identify the device on the network.	oider Floo

#### **BACNET NETWORK SETTINGS**

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



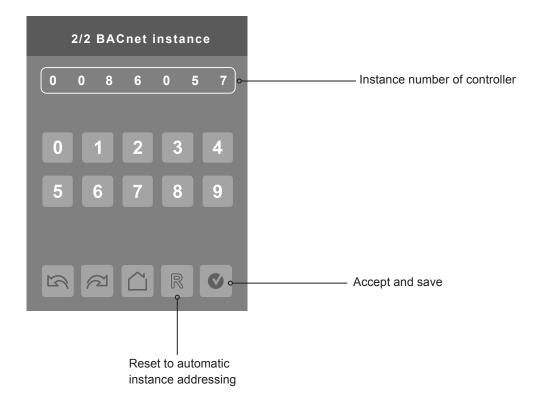
Configuration parameters default value	Significance and adjustments
Comm address	Communication Address
Terminal Equipment Controller networking address	For BACnet® MS-TP models, the valid range is from 1 to 127.
Default value: 254	Default value of 254 disables BACnet® communication for the Terminal
Range: 0 to 254	Equipment Controller.
Network units	Measurement Units
Default value: Imperial	(Imperial): network units shown as Imperial units.
	(SI): network units shown as International Metric units.
Language	Language
Default value: English	Select language for main display.
Only EN, FR and SP available for BACnet models.	Choices: English, French, Spanish, Chinese, Russian, Arabic, Bulgarian, Czech, Danish, Dutch, Finnish, German, Hungarian, Indonesian, Italian, Norwegian, Polish, Portuguese, Slovak, Swedish, Turkish
Baud rate	Baud Rate
Default value: <b>Auto</b>	(Auto): automatically detects BACnet® MS/TP baud rate.
	Other choices: (115200, 76800, 57600, 38400, 19200, and 9600). Leave the value at auto unless instructed otherwise.

#### **BACNET INSTANCE NUMBER**

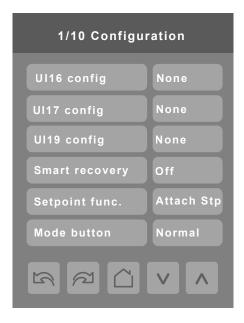
The default BACnet® instance number is generated by the model number and COM address of the controller. For example, the instance number of a SE8600U5B00 with a COM address of 57 is generated as "86057".

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

Press Reset to automatic instance addressing to reset to automatic instance addressing.



#### **CONFIGURATION PARAMETERS SCREEN 1/10**



# **PARAMETER DETAILS SCREEN 1/10**

Configuration parameters default value	Significance and adjustments
UI 16	Universal Input No. 1
Universal input no.1 configuration  Default value: <b>None</b>	<b>None</b> : No function will be associated with the input. Input can be used for remote network monitoring.
	Rem NSB: remote NSB timer clock input. The scheduling will now be set as per the binary input. It provides low cost setback operation via a dry contact
	Contact opened = Occupied     Contact closed = Unoccupied
	Window: Forces the system to disable any current heating or cooling action by the Terminal Equipment Controller. The mode stays the same and the current setpoints are the same occupied setpoints. Only the outputs are disabled. There is a Door/Window alarm displayed on the Terminal Equipment Controller to indicate to the local tenant that the door/window needs to be closed for cooling or heating to resume. Use NC contact.  • Contact opened = System disabled with local Window alarm • Contact closed = System enabled
	Service: a service alarm shows on the Terminal Equipment Controller LCD screen when input is energized.  Fan lock: a fan lock alarm will be displayed on the Terminal Equipment Controller LCD screen when the input is not
	Open contact = no airflow     Closed contacts = airflow present

# **PARAMETER DETAILS SCREEN 1/10**

Configuration parameters default value	Significance and adjustments
UI 17	Universal Input No. 2
Universal input no.2 configuration Default value: None	<b>None</b> : No function will be associated with the input. Input can be used for remote network monitoring.
	Door Dry: This configuration is only functional if universal input 16 is set to Motion NO or Motion NC or an onboard PIR sensor is used. With this sequence enabled, the occupancy is now dictated through those 2 inputs. Any motion detected will set the zone to occupied status. The zone will remain permanently in occupied mode until the door contact switch opens momentarily. The Terminal Equipment Controller will then go in stand-by mode. If more movements are detected, the occupied mode will resume. While the door is opened, any movements detected by the remote PIR sensor or the onboard PIR sensor will be ignored. Use a Normally Closed contact switching device.
	<ul><li>Contact opened = Door opened</li><li>Contact closed = Door closed</li></ul>
	Override: temporary occupancy remote override contact.
	<b>Filter:</b> a filter alarm shows on the Terminal Equipment Controller LCD screen when the input is energized.
	<b>Service:</b> a service alarm shows on the Terminal Equipment Controller LCD screen when input is energized.
UI 19	Universal Input No. 3
Universal input no.3 configuration Default value: <b>None</b>	<b>None:</b> no function associated with input though input can be used for remote network monitoring.
	CO2: the 0-10VDC input value is used as a 0-2000ppm
	CO2 level:
	0 VDC = 0ppm
	10VDC = 2000ppm
Smart recovery	Off = no smart recovery
Smart recovery enabled Default value: <b>Off</b>	The occupied schedule time is the time at which the system will restart.
Smart recovery is automatically disabled if UI 16 and / or	On = smart recovery active.
UI 17 are configured remote NSB	The occupied schedule time is the time at which the desired occupied temperature will be attained. The controller will automatically optimize the equipment start time.
	In any case, the latest a system will restart is 10 minutes prior to the occupied period time.
Setpoint func.	Setpoint function
Local setpoint settings Default value = <b>Dual SP</b>	Set the local setpoint interface for the user
	Dual SP (Dual Occupied Setpoints Adjustment)
	Attach SP (Single Occupied Setpoint Adjustment)
Mode button	Mode button
Default value: Normal	Determines whether all HVAC functions are available to user control.
	Normal: All HVAC functions available based on current application can be accessed through cycling Mode button functions
	I

#### **CONFIGURATION PARAMETERS SCREEN 2/10**



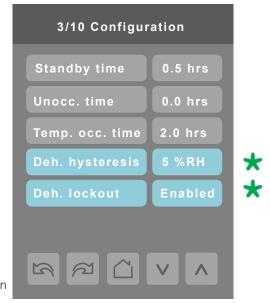
# **PARAMETER DETAILS SCREEN 2/10**

Configuration parameters default value	Significance and adjustments
Fan cont. heat	Fan control in heating mode.
Fan control Default value: <b>On</b>	When selecting <b>On</b> ; the Terminal Equipment Controller in all cases will always control the fan (terminal G).
	Valid for <b>On</b> or <b>Auto</b> fan mode
	When selecting <b>Off</b> ; the fan (terminal G), when heating stages (terminals W1 & W2) are solicited, will not be energized. The fan in this case will be controlled by the equipment fan limit control.
	Valid only for <b>Auto</b> fan mode. <b>On</b> fan mode will leave the fan always on.
	ON OR OFF
	For multi stage models, fan control applies to W1 & W2
Fan delay Default value: Off	Fan delay extends fan operation by 60 seconds after the call for heating or cooling ends.
	Valid only for <b>Auto</b> fan mode. <b>On</b> fan mode will leave the fan always on.
	Off or On
Standby mode	Standby Mode
Default value: Absolute	Choose which standby setpoints are used for control.
	Absolute: Standby entered values are used for standby mode.
	<b>Offset:</b> Occupied setpoints +/- Standby diff. used for standby mode.

# **PARAMETER DETAILS SCREEN 2/10**

Configuration parameters default value	Significance and adjustments
Standby diff.	Standby Difference
Default value: 2 °C ( 3 °F )	When Standby mode is Relative, standby setpoints are calculated as:
	Standby cool = Cool setpoint + Standby diff.
	Standby heat = Heat setpoint - Standby diff.
	Adjustable from 0.5 a 2.5 °C ( 1 - 5 °F )
Power-up delay Default value: 10 seconds	On initial power up of the Terminal Equipment Controller (each time 24 Vac power supply is removed & re-applied) there is a delay before any operation is authorized (fan, cooling or heating). This can be used to sequence start up multiple units / Terminal Equipment Controller in one location.  10 to 120 seconds
Occupancy src Default value: Motion	Occupancy Source  Motion: occupancy status is received from a motion sensor.  Schedule: occupancy status is determined by the schedule.

#### **CONFIGURATION PARAMETERS SCREEN 3/10**





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

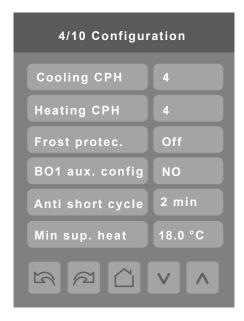
# **PARAMETER DETAILS SCREEN 3/10**

Configuration parameters default value	Significance and adjustments
Standby time	Standby Time
Default value: <b>0.5 hours</b>	Time delay between the moment where the PIR cover detects last movement in the area, and the time which the Terminal Equipment Controller stand-by setpoints become active.
	Range: 0.5 to 24.0 hours in 0.5 hours increments.
Unocc. time	Unoccupied Time
Default value: <b>0.0 hours</b>	Time delay between the moment where the Terminal Equipment Controller toggles to stand-by mode, and the time which the Terminal Equipment Controller unoccupied mode and setpoints become active.
	Factory value 0.0 hours: Setting this parameter to its default value of 0.0 hours disables the unoccupied timer. This prevents the Terminal Equipment Controller from drifting from stand-by mode to unoccupied mode when PIR functions are used.
	Range: 0.0 to 24.0 hours in 0.5 hours increments.
Temp. occ. time	Temporary Occupancy Time
Default value: <b>2 hours</b>	Temporary occupancy time with occupied mode setpoints when override function is enabled.
	Temporary Occupancy Time  Temporary occupancy time with occupied mode setpoints when override function is enabled.  When Terminal Equipment Controller is in unoccupied mode, function is enabled with either the menu or UI2 configured as remote override input.  Range: 0 - 24 hours.
	Range: 0 - 24 hours.

# **PARAMETER DETAILS SCREEN 3/10**

Configuration parameters default value	Significance and adjustments
Deh. hysteresis	Humidity Control Hysteresis
Default value: 5% RH	Used only if dehumidification sequence is enabled:
	Range: 2 to 20% RH
	Models with humidity sensor only.
Deh. lockout	Dehumidification Lockout
Default value: Enabled	Typically toggled through the network. This variable enables or disables dehumidification based on central network requirements from the BAS front end.
	Enabled: Dehumidification Authorized
	Disabled: Dehumidification Not Authorized
	Models with humidity sensor only.

#### **CONFIGURATION PARAMETERS SCREEN 4/10**



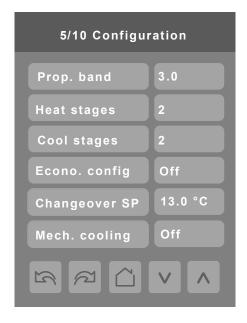
# **PARAMETER DETAILS SCREEN 4/10**

Configuration parameters default value	Significance and adjustments
Cooling CPH Cooling stages cycles per hour. Default value: 4 CPH	Sets the maximum number of cooling stage cycles per hour under normal control operation. It represents the maximum number of cycles that the equipment will turned on and off in one hour.
	Note that a higher CPH will represent a higher accuracy of control at the expense of wearing mechanical components faster.
	3 or 4 CPH
	For multi stage models, cool CPH applies to Y1 & Y2
Heating CPH Heating stages cycles per hour. Default value: 4 CPH	Will set the maximum number of heating stage cycles per hou under normal control operation. It represents the maximum number of cycles that the equipment will turn ON and OFF in one hour.
	Note that a higher CPH will represent a higher accuracy of control at the expense of wearing mechanical components faster.
	3, 4, 5, 6,7 & 8 CPH
	For multi stage models, heat cph applies to W1 & W2
Frost protec	Off: no room frost protection
Frost protection enabled  Default value: Off	On: room frost protection enabled in all system mode at: 42 °F ( 5.6 °C )
	Frost protection is enabled even in system Off mode
	Off or On

# **PARAMETER DETAILS SCREEN 4/9**

Configuration parameters default value	Significance and adjustments
BO1 aux config	Binary Output Terminal
Default value: <b>NO</b>	Output directly follows occupancy of the Terminal Equipment Controller.
	1) NO: Occ or St-By = Contact Closed / Unoccupied = Contact Opened
	2) NC: Occ or St-By = Contact Opened / Unoccupied = Contact Closed. Output to follow directly main occupancy and Fan on command.
Anti short cycle	Minimum On-Off operation time of cooling & heating stages.
Minimum On-Off operation time for stages Default value: <b>2 minutes</b>	<b>IMPORTANT</b> , anti-short cycling can be set to 0 minutes for equipment that posses their own anti cycling timer. Do not use this value unless the equipment is equipped with such internal timer. Failure to do so can damage the equipment.
	0, 1, 2, 3, 4 & 5 minutes
Min. sup. heat Only valid if HT Type is set to Analog Minimum supply heat temperature setpoint	Sets the minimum supply heat to be maintained by the controller during occupied periods (Occupied or Temporary Override).
Default value: 18.0 °C (64 °F)	From 50 °F up to 72 °F (10 °C up to 22 °C) (increments: 0.5° or 5°)

#### **CONFIGURATION PARAMETERS SCREEN 5/10**



# **PARAMETER DETAILS SCREEN 5/10**

Configuration parameters default value

Prop. band	Proportional Band Setting
Default value: 3.0	Adjusts proportional band used by the Terminal Equipment Controller PI control loop.
	<b>Note:</b> default value of 3.0 gives satisfactory operation in most normal installation cases. The use of a superior proportional band different than the factory one is normally warranted in applications where Terminal Equipment Controller location is problematic and leads to unwanted cycling of the unit. A

typical example is a wall mounted unit where Terminal Equipment Controller is installed between return and supply air feeds and is directly influenced by the supply air stream of unit.

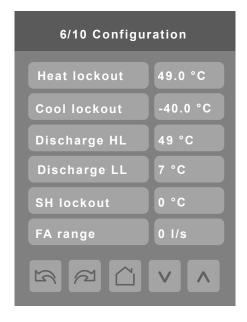
Significance and adjustments

Value	Effective Prop	oortional 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

# **PARAMETER DETAILS SCREEN 5/10**

Configuration parameters default value	Significance and adjustments
Heat stages Number of heating stages. Applicable to 2 stage models only	Will revert the operation of 2 stages Terminal Equipment Controller to single stage operation only when the second heating step is not needed.
Default value: 2 stages	1 or 2 stages
Cool stages	Will revert the operation of 2 stage Terminal Equipment Controller to single
Number of cooling stages Default value: 2 stages	stage operation only when the second cooling step is not needed.  1 or 2 stages
Econo. config	Controls the activity of the economizer functionality
Economizer configuration Default value: <b>Off</b>	On Economizer is activated Off Economizer is deactivated
Changeover SP	In Cooling mode.
Changeover setpoint Default value: 55 °F (13.0 °C)	The outside air temperature value at which the cooling will be switched over from mechanical (compressor) to free cooling (economizer)
	14 to 70 °F (-10.0 to 21.0 °C)
Mech. cooling Mechanical cooling allowed Default value: Off	In Cooling mode. Allows the operation of the mechanical cooling if the free cooling (economizer) cannot maintain the cooling setpoint.  Off Typically applies when the MS (mixed air temperature sensor) is installed after the mechanical cooling refrigeration coils. In this case, mechanical cooling will never operate at the same time as free cooling.  On Typically applies when the MS (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.  Off or On

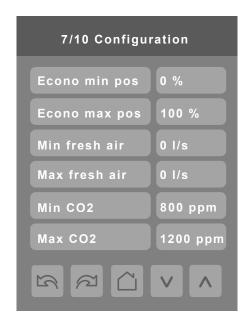
#### **CONFIGURATION PARAMETERS SCREEN 6/10**



# **PARAMETER DETAILS SCREEN 6/10**

Configuration parameters default value	Significance and adjustments
Heat lockout Outside air temperature heating lockout Default value: 120 °F (49 °C)	Disables heating stage operation based on outdoor air temperature. Function will only be enabled if OS (outside air temperature sensor) is connected. From -15 °F up to 120 °F (-26 °C up to 49 °C)
Cool lockout Outside air temperature mechanical cooling lockout. Default value: -40 °F (-40 °C)	Disables cooling stage operation based on outdoor air temperature.  On economizer model, free cooling will not be disabled by this function.  Function will only be enabled if OS (outside air temperature sensor) is connected.  From -40 °F up to 95 °F (-40 °C up to 35 °C)
<b>Discharge HL</b> Discharge air temperature high limit Default value: <b>120 °F (49 °C)</b>	Discharge air high temperature value at which the heating stages will be locked out.  70°F to 150°F (21°C to 65°C) (increments: 0.5° or 5°)
Discharge LL Discharge air temperature low limit Default value: 45°F (7 °C)	Discharge air low temperature value at which the cooling stages will be locked out.  35 to 65°F (2.0°C to 19.0°C) (increments: 0.5° or 5°)
SH lockout Only valid if HT Type is set to Analog Outside air temperature supply heat lockout Default value = 32 °F (0 °C)	Disables heating operation based on outdoor air temperature.  From -15 °F up to 120 °F (-26 °C up to 49 °C)  (increments: 5° or 50°)
FA Range FA range upper limit value Default value: 0 CFM	Sets the upper limit of the CFM range. This parameter should be set based on the rooftop unit size. If set to 0 CFM, the fresh air damper control will be based on the Min/Max CO2 and Min/Max Pos values. See Damper Position section for more details 0 to 20 000 CFM (0 to 9438 L/s), 10 or 100 increments

#### **CONFIGURATION PARAMETERS SCREEN 7/10**



Significance and adjustments

#### **PARAMETER DETAILS SCREEN 7/10**

Configuration parameters default value

55%

64%

60%

68%

Configuration parameters default value					Significance and adjustments						
Econo min pos Minimum Fresh Air Damper/Econo Default value: 0%	omizer P	osition		fre Ma	ode (Far esh air da	n is ON). amper po alues set	This valusition ba	ie is also sed on th	used to ne Min/M	only in C determin lax CO2 Position s	e the
				0%	0% to 100%, +/- 1 increments						
Econo max pos  Maximum Fresh Air Damper/Economizer Position  Default value: 100%				mo da va	Maximum fresh air damper position. Effective only in Occupied mode (Fan is ON). This value is used to determine the fresh air damper position based on the Min/Max CO2 and Min/Max Pos values set. See Fresh Air Damper Position section for more details.						
				0%	0% to 100%, +/- 1 increments						
<b>Note:</b> Schneider Electric RTU HP IAQ Room Controller products and documentation for air damper position and output is based on 0-10 VDC analog actuators. 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 2-10 Vdc actuators.											
Outside air percentage	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
Setting for 0-10 Vdc Actuator	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
Setting for 2-10 Vdc Actuator	20%	24%	28%	32%	36%	40%	44%	48%	52%	56%	60%
Outside air percentage	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%	]

Setting for 0-10 Vdc Actuator

Setting for 2-10 Vdc Actuator

70%

76%

65%

72%

75%

80%

80%

84%

85%

88%

90%

92%

95%

96%

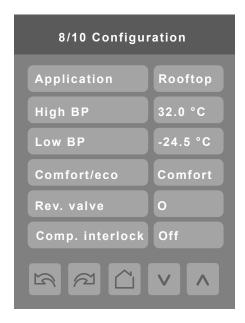
100%

100%

# **PARAMETER DETAILS SCREEN 7/10**

Configuration parameters default value	Significance and adjustments
Min fresh air Minimum Fresh Air Value Default value: 0 CFM	Minimum fresh air required. Effective only in Occupied mode (Fan is ON). This value is used to determine the fresh air damper position based on the Min/Max CO2 and Min/Max FA values (if FA Range is set to other than 0 CFM). See Fresh Air Damper Position section for more details.
	0 to 20 000 CFM (0 to 9438 l/s, the value set cannot exceed the value of FA Range parameter), 10 or 100 increments
Max fresh air  Maximum Fresh Air Value  Default value: 0 CFM	Maximum fresh air allowed. Effective only in Occupied mode (Fan is ON). This value is used to determine the fresh air damper position based on the Min/Max CO2 and Min/Max FA values set (if FA Range is set to other than 0 CFM). See Fresh Air Damper Position section for more details.
	0 to 20 000 CFM (0 to 9438 l/s, the value set cannot exceed the value of FA Range parameter), 10 or 100 increments
Min CO2 Minimum CO2 Level Default value: 800 ppm	Minimum CO2 Level required. Effective only in Occupied mode (Fan is ON). This value is used to determine the fresh air damper position based on the Min/Max CO2 and Min/Max Pos values set. See Fresh Air Damper Position section for more details.
	0 to 2000 ppm, 10ppm increments
Max CO2 Maximum CO2 Level Default value: 1200 ppm	Maximum CO2 Level allowed. Effective only in Occupied mode (Fan is ON). This value is used to determine the fresh air damper position based on the Min/Max CO2 and Min/Max Pos values set. See Fresh Air Damper Position section for more details.  0 to 2000 ppm, 10ppm increments

#### **CONFIGURATION PARAMETERS SCREEN 8/10**



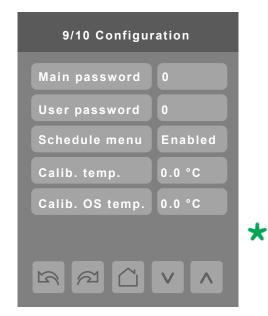
# **PARAMETER DETAILS SCREEN 8/10**

Configuration parameters default value	Significance and adjustments
Application	Controls whether the operating logic for a rooftop application or
Type of application	a heat pump application is used.
Default value = Rooftop	Rooftop or Heatpump
High BP	In Heating or Auto mode, it is the outside air temperature value
High balance point	at which the auxiliary heat will be cut off. Above that value, only
Default value = 90 °F (32.0 °C)	the heat pump will be used to maintain the heating setpoint
Function will only be enabled if OS (outside air temperature sensor) is connected.	34 to 90 °F ( 1.0 to 32.0 °C )
Low BP	In Heating, Cooling or Auto mode, it is the outside air
Low balance point	temperature value at which the heat pump operation will be cut
Default value = -12 °F (-24.5 °C)	off. Below that value, only the auxiliary heat will be used to
	maintain the heating setpoint
	-40 to 30 °F ( -40 to -1.0 °C )

# **PARAMETER DETAILS SCREEN 8/10**

Configuration parameters default value	Significance and adjustments
Comfort/eco	Sets the operation and interaction mode of the heat pump with
Comfort or economy mode	the auxiliary heat.
Default value = Comfort	<b>Comfort mode</b> : In Heating mode. If the heat pump is not able to satisfy the heating setpoint, the auxiliary heat will be 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 will be energized to satisfy only when the temperature has dropped 2.0 °F (1.1 °C) below the heating setpoint. Selecting economy mode will add a deadband between the heatpump & 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 will be eliminated and the auxiliary heat will maintain the true heating setpoint alone.
Rev. valve	Heat pump reversing valve operation
Reversing valve operation	O: will energize the valve in cooling operation.
O/B	B: will energize the valve in heating operation
Default value = <b>O</b>	O or B
Comp. interlock Compressor/auxiliary interlock	Sets the operation and interaction mode of the heat pump with the auxiliary heat.
Default value = <b>Off</b>	Interlock Off: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat will be 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)
	Interlock On: In Heating mode, if the heat pump is not able to satisfy the heating setpoint, the auxiliary heat will be energized and the heat pump will be 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  Off or On

#### **CONFIGURATION PARAMETERS SCREEN 9/10**





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

# **PARAMETER DETAILS SCREEN 9/10**

Configuration parameters default value	Significance and adjustments
Main password	Main Password
Default value: 0	Installer password. This parameter sets a protective access password to prevent unauthorized access to configuration menu parameters.
	Default value of 0 does not prompt a password or lock access configuration menu.
	Range: 0 - 9999.
User Password	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.
Schedule menu Default value: Enabled	<b>Enabled</b> The Schedule Menu is directly accessible from the main screen via a touch in the upper corner (see page 4).
Toggles activation of schedule menu direct access	<b>Disabled</b> The Schedule Menu can only be accessed through the Setup Menu screens
Calib. temp.	Calibration Temperature
Default value: 0.0 °C or °F	Room temperature sensor calibration. Offset can be added or subtracted to actual displayed room temperature.
	Range: ± 2.5 °C, 0.5 °C increments (± 5.0 °F, 1.0 °F increments).
Calib. OS temp.	Calibration Outside Temperature
Default value: 0.0 °C or °F	Outside air temperature sensor calibration. Offset that can be added/subtracted to the actual displayed outdoor temperature.
	Range: ± 2.5 °C, 0.5 °C increments (± 5.0 °F, 1.0 °F increments).

#### **CONFIGURATION PARAMETERS SCREEN 10/10**



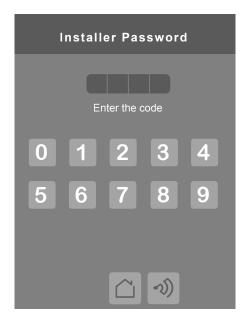
# **PARAMETER DETAILS SCREEN 10/10**

Configuration parameters default value	Significance and adjustments
Erase all?	Erase All
Default value: <b>No</b>	Answering Yes on both and pressing the Accept button erases all values and changes to factory default values everything
	except the following network related values:
	COM address
	ZigBee® Pro Pan ID
Are you sure?	ZigBee® Pro channel
Default value: <b>No</b>	Network units
	Network language
	Baud rate
	BACnet® instance
	Device name
	Screen Contrast

#### **PASSWORD SETTINGS**

The following shows you how to set-up the password for the Installer and User

#### **Installer Password**



- 1. Installer password prompt shows only if password value is greater than 0000. A password value of 0000 disables installer password but does not restrict access to configuration options.
- 2. Installer password prompt automatically disappears after 10 seconds if no value is entered.
- 3. An error code is automatically generated if incorrect password is entered.
- 4. Installer is permitted access to all Installer functions and menus when correct password is entered.

**NOTE:** when the schedule menu is enabled OR when the 5th button is set to schedule or custom, the clock, occupancy command, schedule or custom pages are NOT password-protected. Always use a system password when the Room Controller is in regular use to avoid inadvertent changes of the Room Controller logic.

#### **User Password**

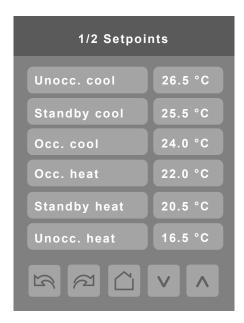
- User password prompt shows only if password value is greater than 0000. A password value of 0000 disables user password but does not restrict access to local user functions.
- User password prompt automatically disappears after 10 seconds if no value is entered.
- User is permitted access to controller interface to change any allowed settings when correct password is entered.
- 4. Password lock resumes after 1 minute of non activity.



#### PASSWORD PARAMETER DETAILS

Configuration parameters default value	Significance and adjustments
Main password	Installers Password
Default value: 0	Parameter sets a protective access password to prevent unauthorized access to the configuration menu parameters. A default value of 0 does not prompt a password or lock access to configuration menu.
	Range: 0 to 9999.
User password	User Password
Default value: 0	Parameter sets a protective access password to prevent User unauthorized access to main screen adjustments. A default value of 0 does not prompt for a password.
	Range: 0 to 9999.

#### **SETPOINT SETTINGS 1/2**



# **SETPOINT PARAMETER DETAILS**

Configuration parameters default value	Significance and adjustments				
Unocc. cool.	Unoccupied Cooling				
Default value: 26.5 °C (80 °F)	Unoccupied cooling setpoint range: 2.0 to 37.5 °C (54 to 100 °F).				
Standby cool.	Standby Cooling				
Default value: 25.5 °C (78 °F)	The value of this parameter should be set between occupied and unoccupied cooling setpoints. Ensure difference between standby and occupied value can be recovered in a timely fashion when movement is detected in the zone.				
	Stand-by cooling setpoint range: 12.0 to 37.5 °C (54 to 100 °F).				
Occ. cool.	Occupied Cooling				
Default value: 24.0 °C (74 °F)	Cooling setpoint range: 12.0 to 37.5 °C (54 to 100 °F).				
Occ. heat.	Occupied Heating				
Default value: 22.0 °C (72 °F)	Heating setpoint range: 12.0 to 37.5 °C (54 to 100 °F).				
Standby heat.	Standby Heating				
Default value: 20.5 °C (69 °F)	The value of this parameter should be set between occupied and unoccupied heating setpoints. Ensure difference between standby and occupied value can be recovered in a timely fashion when movement is detected in the zone.				
	Stand-by heating setpoint range: 4.5 to 32.0 °C (40 to 90 °F).				
Unocc. heat.	Unoccupied Heating				
Default value: 16.5 °C (62 °F)	Unoccupied heating setpoint range: 4.5 to 32.0 °C (40 to 90 °F).				

#### **SETPOINT SETTINGS 2/2**



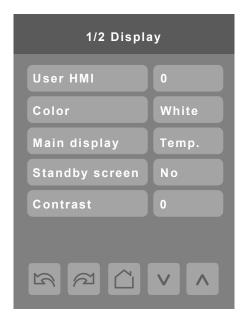


Parameter only displayed on models with built in humidity

# **SETPOINT PARAMETER DETAILS**

Configuration parameters default value	Significance and adjustments
Default heat	Default Heat
Default value: 22.0 °C (73 °F)	Used for hospitality applications in stand-alone mode only. When devices are in deep unoccupied mode, any movement detected by PIR resets actual occupied set points to fresh room default setting.  Default setpoint is used to write to Heating setpoint when thermostat goes to Unoccupied mode.  Cooling setpoint is set according to Min. deadband; 18.0 to 26.5 °C (65 to 80 °F).  Parameter is only used when Stand-by mode = Offset.
Min. deadband	Minimum Deadband
Default value: 1.5 °C (3 °F)	Minimum deadband value between heating and cooling setpoints applied only when any setpoints are modified. Range: 1.0 to 2.5 °C, 0.5 °C increments (2, 3, 4 or 5 °F, 1.0 °F increments).
Max heating	Maximum Heating
Default value: 32 °C (90 °F)	Maximum occupied and unoccupied heating setpoint adjustment.  Range: 4.5 to 32.0 °C (40 to 90 °F).
Min. cooling	Minimum Cooling
Default value: 12.0 °C (54 °F)	Minimum occupied and unoccupied cooling setpoint adjustment. Range: 12.0 to 37.5 °C (54 to 100 °F).  Free cooling supply air setpoint when economizer mode is enabled. 50 to 90 °F (10.0 to 32.0 °C)  Dehumidification Setpoint  Used only if dehumidification sequence is enabled: Range is: 30-95% RH (models with humidity sensor only).
Supply air SP	Free cooling supply air setpoint when economizer mode is
Default value: 13.0 °C (55 °F)	enabled.
	50 to 90 °F (10.0 to 32.0 °C)
Dehum. SP	Dehumidification Setpoint
Default value: 50% RH	Used only if dehumidification sequence is enabled:
	Range is: 30-95% RH (models with humidity sensor only).

# **DISPLAY SETTINGS 1/2**



# **DISPLAY PARAMETER DETAILS**

Configuration parameters default value	Significance and adjustments	
User HMI	User HMI	
Default value: 0	Select user HMI type.	
	Range: <b>0 to 11</b> .	
Colour	White	
Default value: White	Change text colors according to set font colors.	
Main display	Main Display	
Default value: <b>Temp</b> .	Shows temperature setpoint	
Standby screen	Standby Screen	
Default value: <b>No</b>	When the device is left unattended for 2 minutes background backlight dims.	
	Installers can load a custom image for brand identification.	
Contrast	Controls the screen contrast and brightness.	
Default value: 0	0 is least bright, most contrast; 5 is most bright, least contrast.	
	Range: -5 to 5	

### **User HMI for Hospitality**

## Hospitality 0



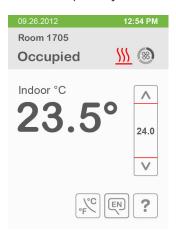
- Setpoint adjustment
- · System mode setting
- Fan mode setting
- Local unit scale adjustment
- Local user language
- User help menu

# Hospitality 1



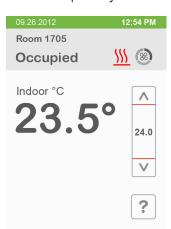
- Setpoint adjustment
- · System mode setting
- Fan mode setting
- User help menu

# Hospitality 2



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

# Hospitality 3



- Setpoint adjustment
- User help menu

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

# Hospitality 4



 Fully locked interface with no user settings

# Hospitality 5

09.26.2012	12:54 PM
Room 1705	
Occupied	<u></u> (8)
Indoor °C 23.5	24.0
****	?

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

# Hospitality 6



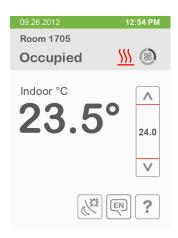
- Setpoint adjustment
- · System mode setting
- Fan mode setting
- Local unit scale adjustment
- · User help menu

# Commercial 7



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

### Commercial 8



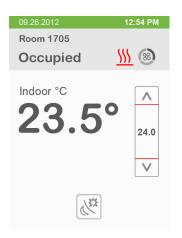
- Setpoint adjustment
- Unoccupied mode override
- Local user language
- User help menu

## Commercial 9



- · Setpoint adjustment
- Unoccupied mode override
- · User help menu

### Commercial 10



- · Setpoint adjustment
- Unoccupied mode override
- · User help menu

### Commercial 11



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

#### Note:

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

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

## **Other Functions**



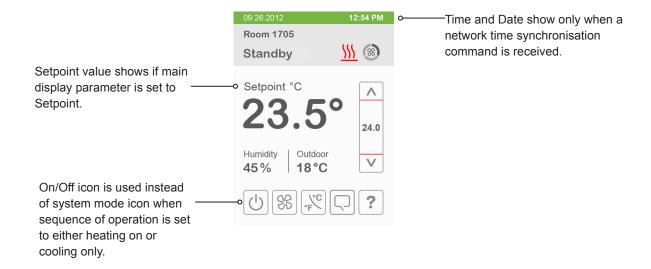




Local humidity only shows on models with the humidity sensor present and when enabled by configuration property RH Display.

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

# **Heating only configuration**

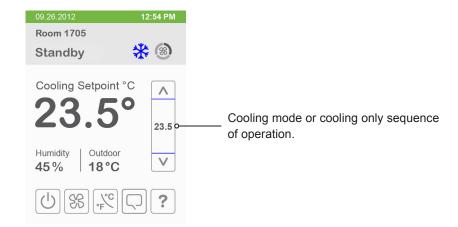


## Setpoint adjustment for cooling mode

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.

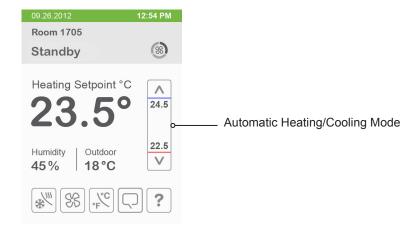


## **Setpoint Adjustment for Heating Mode**

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.



## **CUSTOMIZABLE COLOR OPTIONS**







White

Green

Blue





Dark Grey

Grey

## **DISPLAY SETTINGS 2/2**



\*

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

# **DISPLAY PARAMETER DETAILS**

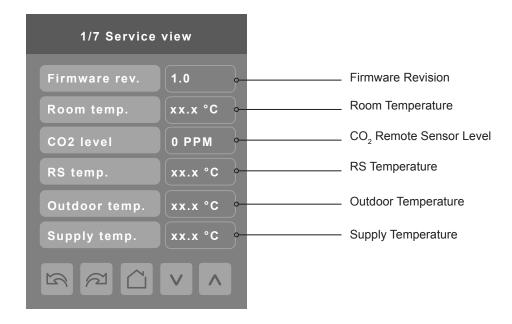
Configuration parameters default value	Significance and adjustments	
Language	Language	
Default value: English	Select language for main display.	
	Choices: English, French, Spanish, Chinese, Russian, Arabic, Bulgarian, Czech, Danish, Dutch, Finnish, German, Hungarian, Indonesian, Italian, Norwegian, Polish, Portuguese, Slovak, Swedish, Turkish	
Units	Temperature Units	
Default value: °C	Sets default local scale value when Terminal Equipment Controller powers up.	
	°C for Celsius. °F for Fahrenheit.	
Low backlight	Backlight Display	
Default value: 60%	Set display backlight intensity after 2 minutes of keyboard inactivity.	
	Adjustable: 0 to 100%.	

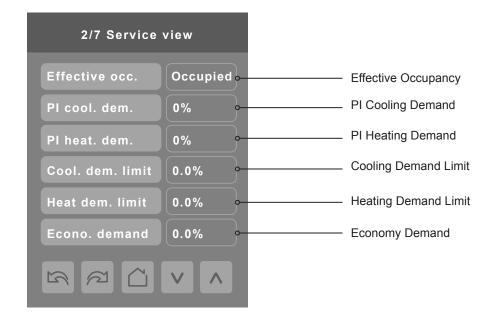
# **DISPLAY PARAMETER DETAILS**

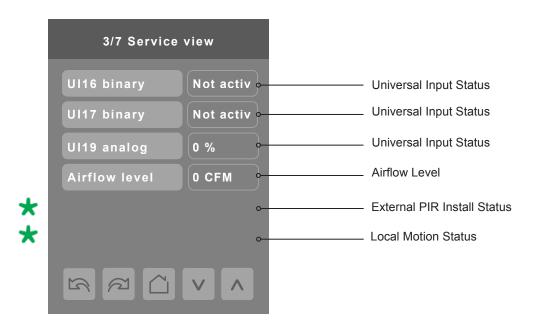
Configuration parameters default value	Significance and adjustments	
Night backlight	Night Backlight Display	
Default value: 5%	Set display backlight intensity after 2 minutes of keyboard inactivity.	
	Adjustable: 0 to 100%.	
	Parameter only available for models with motion/light detectors. The screen 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.	
RH display	Relative Humidity Display	
Default value: Disabled	Enables display of humidity below room temperature on the display	
	(On): Display %RH. (Off): Do not display %RH.	
	Models with humidity sensor only	

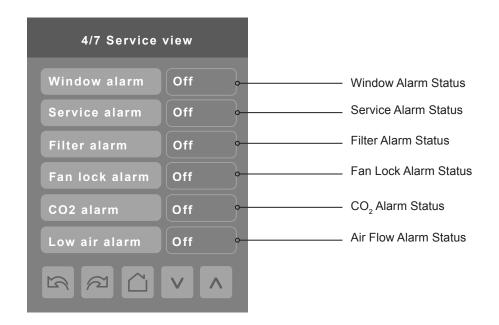
#### **SERVICE SCREEN VIEWS**

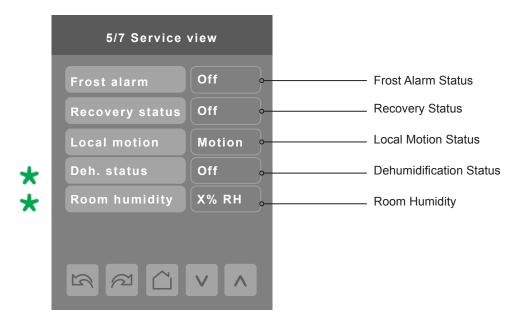
The service view screens show the current status of certain points locally at the controller. These points can also be viewed through the network. Service view allows service contractor to visualize the status of key functionality to correctly diagnose operational system issues.

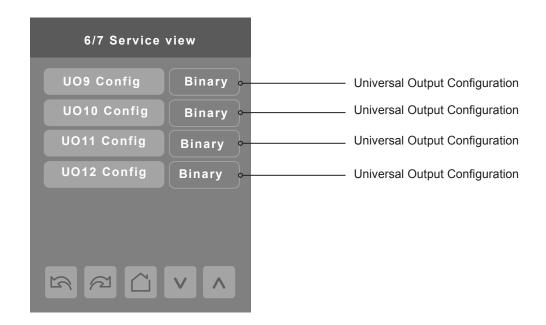


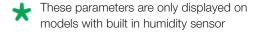


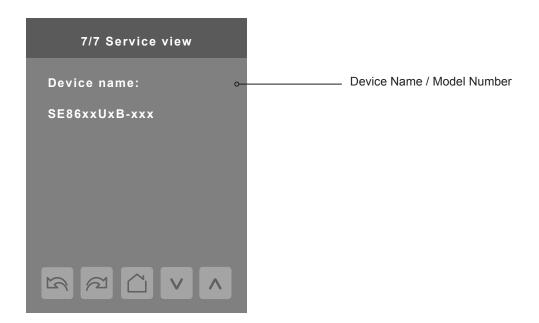








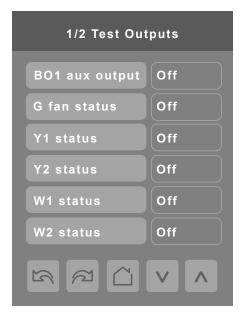




The Model Number is the BACnet® device name automatically assigned when using the current BACnet® addressing scheme based on the MAC address. The network can update and change the device BACnet® name. If changed, the new updated BACnet® device name shows on the screen.

For example, when a SE8600U5B00 thermostat with a MAC address of 41 is connected to a network, its default Device Name is SE8600UxB00-41 and its default BACnet Device ID is 86041.

#### **TEST OUTPUTS**



**Note 1:** The test output screen allows manual override of specified outputs. When any BACnet® network priority array includes a value, the status background shows in red. 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. Refer to the BACnet® integration guide for more details.

**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 insure safe operation during usage.

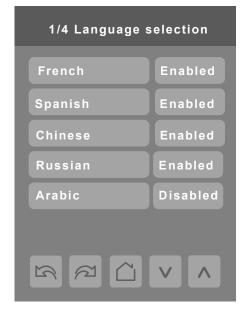
## **TEST OUTPUTS**



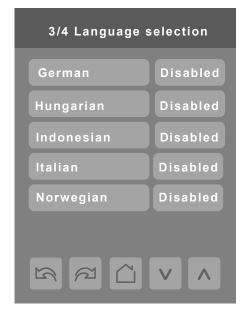
Note: screen Test outputs are LIVE. Any output gets displayed immediately for any value change according to the following:

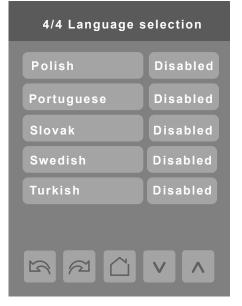
- 1. If any BACnet priority array (1 16) includes a value, the displayed state background shows in red.
- 2. When toggling a value on the screen, the output directly energizes according to the selected value.
- 3. You can override any output if you bypass the Bacnet array (1 16).
- 4. It is not possible to modify the set Bacnet array values.
- 5. 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.

#### LANGUAGE SELECTION









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

## **APPENDIX A: TERMINAL CORRESPONDANCE**

The terminals of an SE8600 are identified differently and have a wider range of possible functions compared to those of any of the SE7000 series Room Controllers. Nonetheless, there is a direct correspondence of functions between the terminals of the SE7000 series and the SE8600 series. Consult the table below to verify the appropriate terminal when replacing a SE7000 Room Controller with a SE8600 Room Controller.

SE7000		SE	SE8600	
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	Ul22 - SS	