SEZ7656F1045B

BACnet™ MS-TP RTU Terminal Equipment Controller With Modulating Heat

Installation Guide

For Commercial Zoning Systems

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INSTALLATION

Inspection

- Remove the security screw on the bottom of the Terminal Equipment Controller cover.
- Open the unit by pulling on the bottom side of the Terminal Equipment Controller (Figure-1).
- Remove the wiring terminals from the sticker.
- Please read the FCC ID and IC label installed in the cover upon removal of the cover.

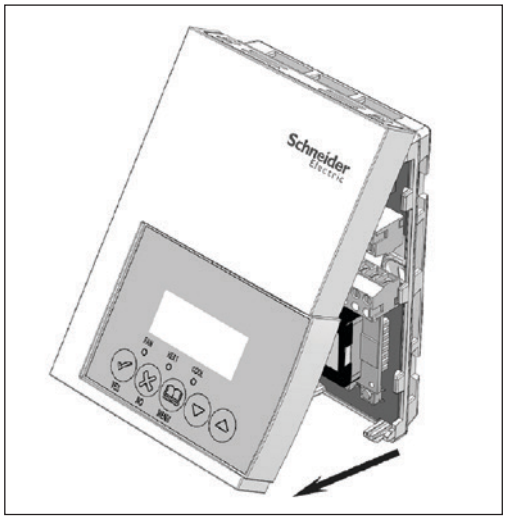

Figure-1 Opening the Cover

Location

- Do not install on an outside wall.
- Install away from any direct heat source.
- Do not install near an air discharge grill.
- Do not locate in direct sun radiation.
- Nothing should restrict vertical air circulation to the Terminal Equipment Controller.

Installation

1. Swing open the Terminal Equipment Controller PCB to the left by pressing the two PCB retaining tabs (Figure-2).
2. Pull the cables 6” out from the wall.
3. The wall surface must be flat and clean.
4. Insert the cable into the central hole of the base.
5. Align the base and mark the location of the two mounting holes on the wall. Install the proper side of the base upward.
6. Install the screw anchors in the wall.
7. Insert screws in the mounting holes on each side of the base (Figure-2).
8. Gently swing back the circuit board on the base and push on it until the tabs lock it.
9. Strip each wire 1/4 inch from the end.
10. Insert each wire according to the wiring diagram.
11. Gently push excess wiring back into the hole in the base.
12. Reinstall the wiring terminals in their correct locations (Figure-3).
13. Reinstall the cover (top side first) and gently push any extra wire length back into the hole in the wall.
14. Install the security screw.

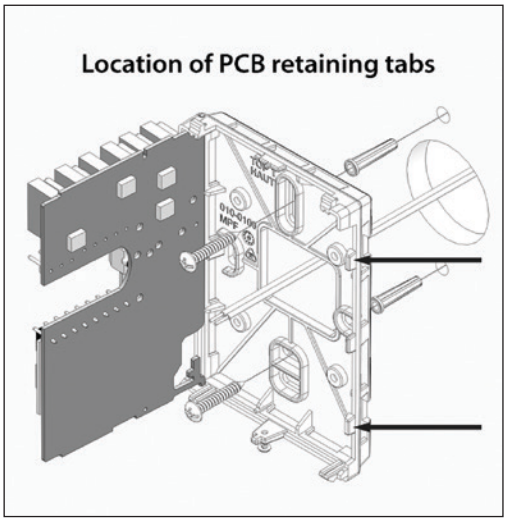

Figure-2 Opening the PCB

Notes

If replacing an existing Terminal Equipment Controller, label the wires before removal of the Terminal Equipment Controller.

Electronic controls are static sensitive devices. Discharge yourself properly before manipulating and installing the Terminal Equipment Controller.

A short circuit or wrong wiring may permanently damage the Terminal Equipment Controller or the equipment.

All SEZ7000 series Terminal Equipment Controllers are designed for use as operating controls only and are not safety devices. These instruments have undergone rigorous tests and verification prior to shipping to ensure proper and reliable operation in the field. Whenever a control failure could lead to personal injury and/or loss of property, it becomes the responsibility of the user / installer / electrical system designer to incorporate safety devices (such as relays, flow switch, thermal protections, etc...) and/or an alarm system to protect the entire system against such catastrophic failures. Tampering with the devices or unintended application of the devices will result in a void of warranty.

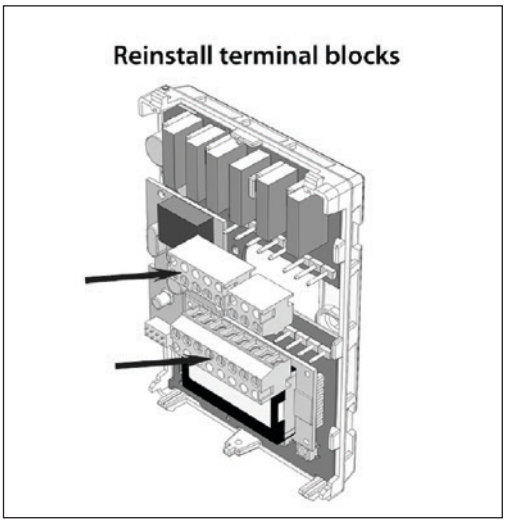

Figure-3 Terminal Block Reinstall

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OPERATION OVERVIEW

The SEZ7656X uses a Schneider Electric proprietary adaptive logic algorithm to control the space temperature. This algorithm controls the heating and/or air conditioning system to minimize overshoot while still providing comfort. It provides exceptional accuracy due to its unique PI time proportioning control algorithm, which virtually eliminates the temperature offset associated with traditional, differential-based, on-off Terminal Equipment Controllers. Note the comparison in Figure-4.

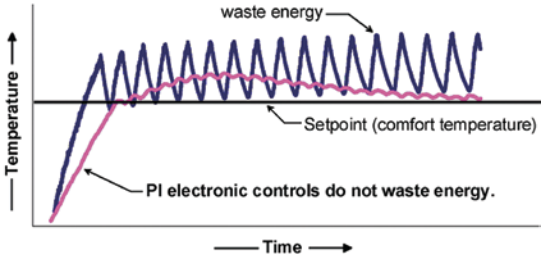

Figure-4 On-Off Mechanical vs PI Electronic Control

FEATURES OVERVIEW

- 7 day schedule models, 2 or 4 events.
- Remote outdoor sensing capability for added flexibility.

  System mode heating and cooling lockout.

  Heat pump balance point settings.

  Zone perimeter reheat lockout.
- Remote discharge air sensor input for monitoring and control purpose.

  System efficiency feedback.

  Discharge high limit heating lockout.

  Discharge low limit cooling lockout.

  Minimum supply air temperature.

  Remote return air sensor input for monitoring control.

  System efficiency feedback.

  Return high limit heating lockout.

  Return low limit cooling lockout.

  Communication lost control function.
- Password protected configuration menu and lockable keypads for security.
- Configurable digital input for added flexibility. The input can be configured as the following:

  None: No function will be associated with the input

  Service: A backlit flashing Service alarm will be displayed on the Terminal Equipment Controller LCD screen when the input is energized. It can be tied in to the AC unit control card, which provides an alarm in case of malfunction.

  Filter: A backlit flashing Filter alarm will be displayed on the Terminal Equipment Controller LCD screen when the input is energized. It can be tied to a differential pressure switch that monitors filters.

  Rem NSB: Remote NSB timer clock input. Will disable the internal scheduling of the Terminal Equipment Controller. The scheduling will now be set as per the digital input. The menu part related to scheduling is disabled and no longer accessible. It provides low cost setback operation via occupancy sensor or from a dry contact.

  RemOVR: Temporary occupancy contact. Disables all override menu function of the Terminal Equipment Controller. The override function is now controlled by a manual remote, momentarily-closed contact. When configured in this mode, the input operates in a toggle mode. With this function enabled it is now possible to toggle between unoccupied & occupied setpoints for the amount of time set by parameter (TOccTime) temporary occupancy time.
- Automatic smart fan operation saves energy during unoccupied periods.
- Non volatile EEPROM memory prevents loss of parameters during power shortage.
- Configurable SPST output relay on scheduling models for lighting, exhaust fan or fresh air control.
- 6 hour typical reserve time for clock in case of power loss.
- Built in 0 to 10 VDC by-pass damper / VFD output logic for static pressure control.

  Built in static pressure loop control.

  0 to 5 VDC static pressure input.

Easy configuration and self-binding operation

- Easy configuration without using any special software or additional tools.
- Can be used as stand-alone or with BACnet™ MS-TP supervision controller for monitoring purposes.
- Truly scalable in terms of supported number of zones and RTU units.

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BACnet™ SYSTEM OVERVIEW

Schneider Electric SEZ7260X5x45B zone controllers are used in conjunction with the SEZ7656F1045B roof top controllers. Combined, they are designed for operating typical, single or multistage RTUs and their associated local zones. For example, a typical job layout system may feature 3 RTU controllers and a total of 31 zones. This would bring the total number of nodes (individual Com addresses) to 34. RTU 1 would have 10 zones under its command, RTU 2 would have 10 zones and RTU 3 would have 11 zones.

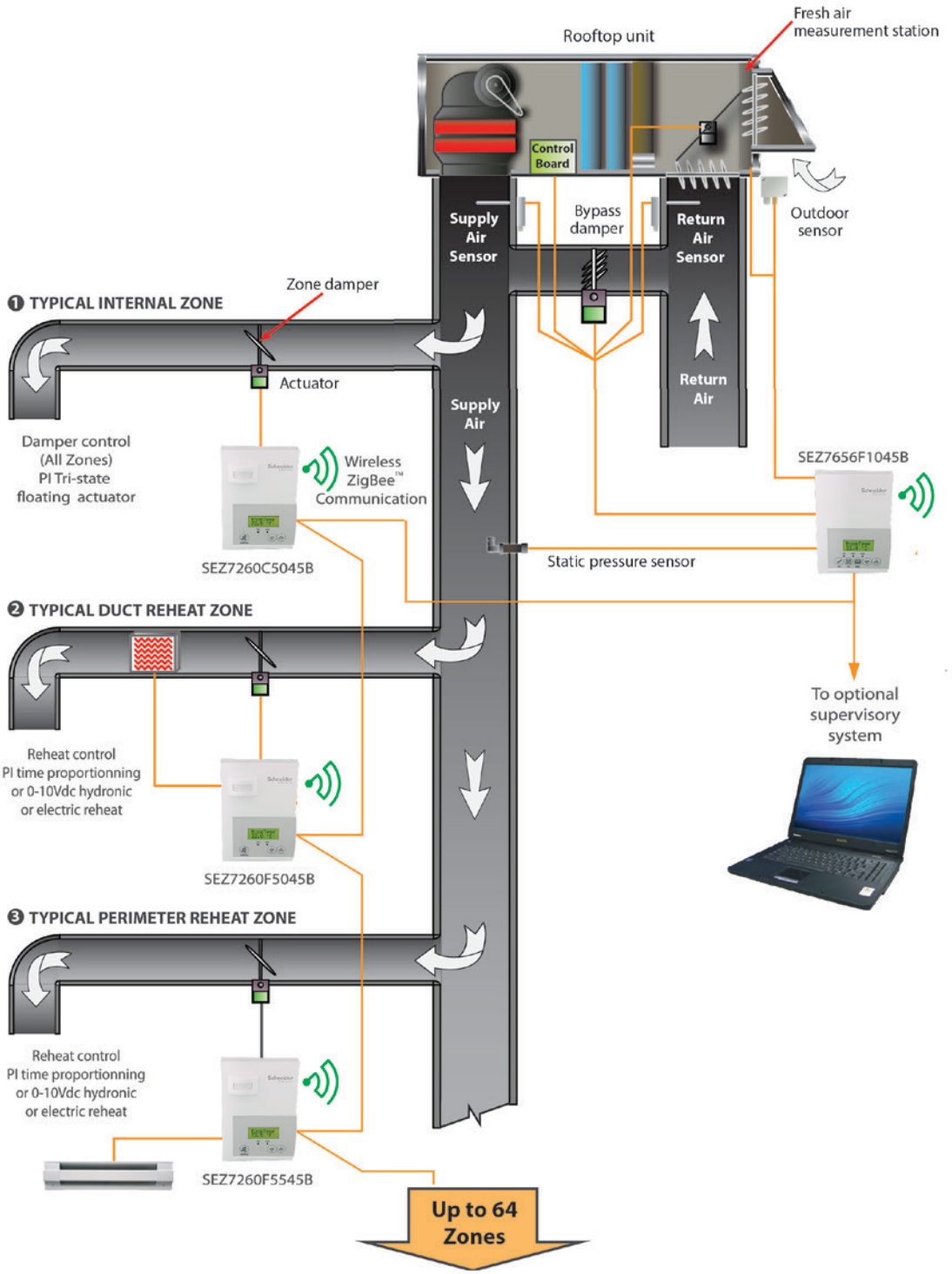

Figure-4 Typical BACnet™ Zoning System Installation

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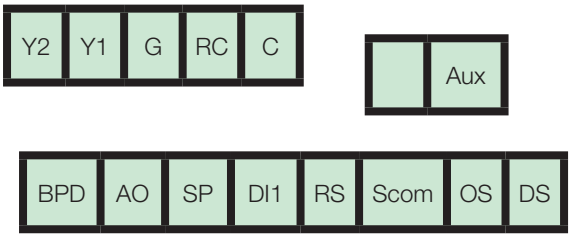
TERMINAL IDENTIFICATION

Terminal Use	Terminal Identification	Description
1 – Cool 2	Y2	Output for cooling / compressor stage number 2.
2 – Cool 1	Y1	Output for cooling / compressor stage number 1.
3 - Fan	G	Output for the fan.
4 - 24 V ~ Hot	RC	Power supply of controller, hot side (Delivered from the RTU).
5 - 0 V ~ Com	C	Power supply of controller, common side. Also used as reference for the analog BPD output when used (Delivered from the RTU).
7 – Not Used	Not Used	Not Used
8- Auxiliary Output	AU	Auxiliary output used to disable economizer damper minimum position or control lighting during unoccupied periods.
9 – By-pass damper	BPD	Local analog 0 - 10 VDC by-pass damper / VFD output.
10 – Analog Heat Output	AO	0-10 VDC analog heating output.
11 – Static pressure	SP	Local analog 0 – 5 VDC static pressure input.
12 - DI1	DI	Configurable extra digital input. See parameter section for more information.
13 - RS	RS	Return air temperature sensor input. If sensor fails, controller will use the on-board thermistor sensor to control if the communication is lost.
14 - Scom	Scom	Reference input for DI 1, RS, OS & DS.
15 - OS	OS	Outside air temperature sensor input.
16 - DS	DS	Discharge air temperature sensor input.
BACnet™ Network Connections		
BACnet™ Com	Com +	BACnet™ communication bus + connection.
BACnet™ Com	Com -	BACnet™ communication bus – connection.
Ref	Ref	Communication bus reference terminal. o DO NOT USE FOR OTHER THAN SERVICING ISSUES o DO NOT WIRE SHIELD TO THIS TERMINAL

MAIN OUTPUTS WIRING

Screw Terminal Arrangement - SEZ7656F



Wiring Notes

Note 1. If auxiliary output is used to toggle occupancy of the electronic control card inside the equipment, configure the relay parameter (Aux cont) to the N.O. setting. A second relay can be added for additional functionality of the occupancy output.

Note 2. Analog outputs and inputs use a half-bridge rectifier. Reference of the control signal is the Common of the power supply of the Terminal Equipment Controller (Terminal C).

Note 3. Electromechanical contacts are to be used with the digital inputs. Electronic triacs cannot be used as a means for switching of the input. The switched leg to the input for the input to activate is the Common (Terminal C).

Note 4. The transformer of the unit provides power to the Terminal Equipment Controller and the additional loads that will be wired to the Terminal Equipment Controller.

Note 5. 10K Type 2 NTC sensors are required.

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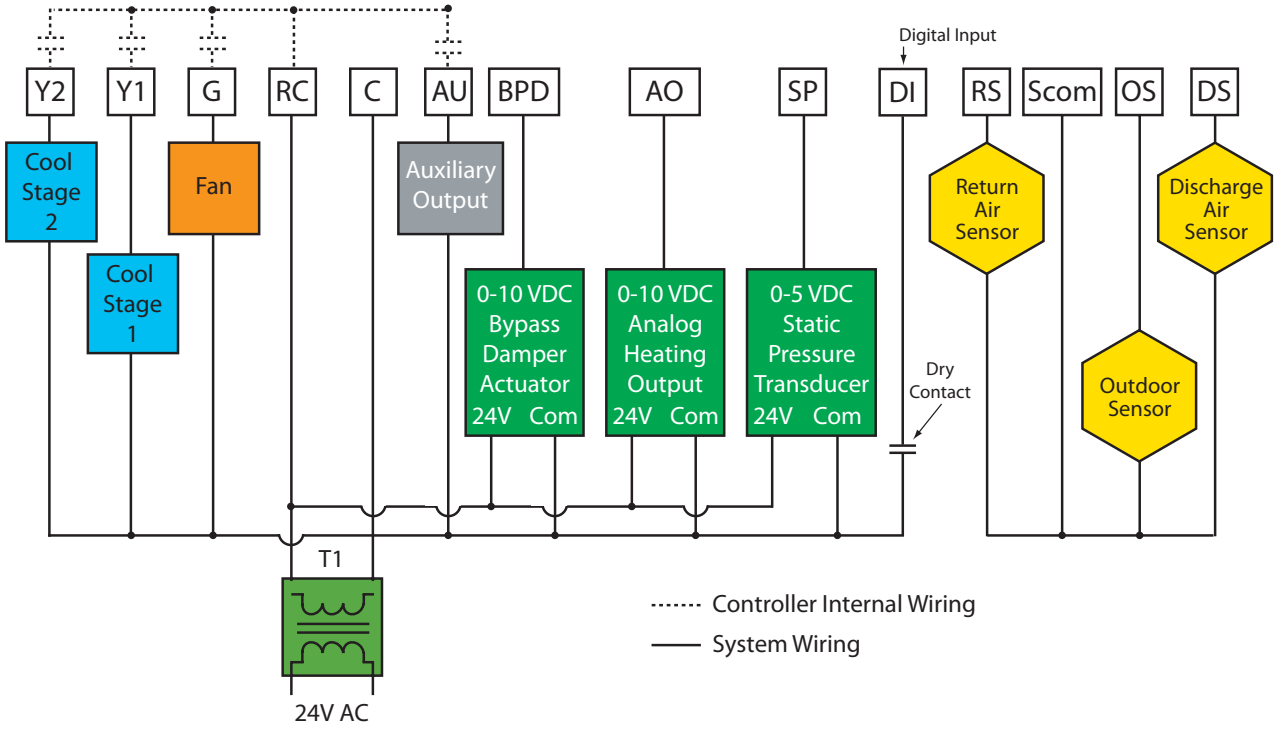
TYPICAL APPLICATIONS

SEZ7656F1045B



REMOTE SENSORS

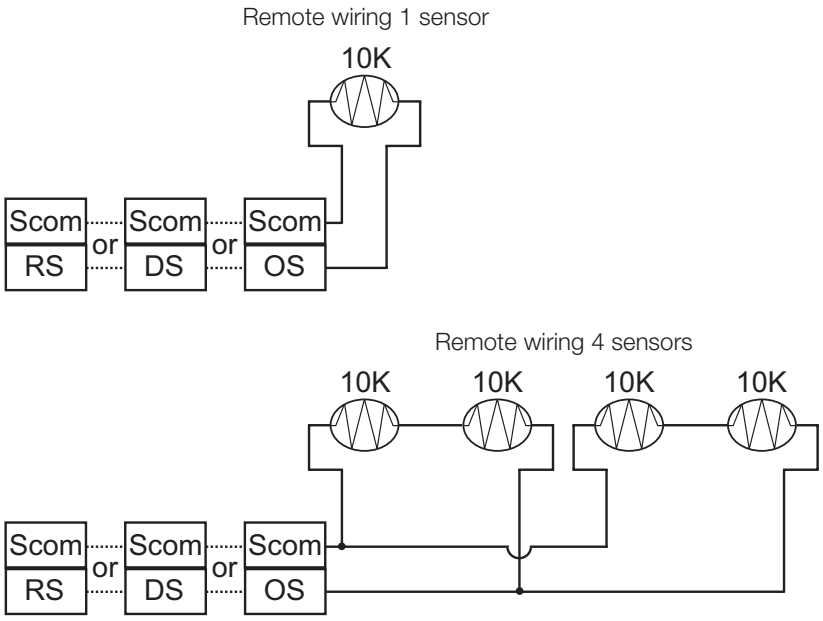


Figure-5 Wiring for Remote Temperature Sensors

Temperature vs. resistance chart for 10 Kohm NTC thermistor

°C	°F	Kohm
-40	-40	324.3197
-35	-31	234.4009
-30	-22	171.3474
-25	-13	126.6109
-20	-4	94.5149
-15	5	71.2430
-10	14	54.1988
-5	23	41.5956
0	32	32.1910
5	41	25.1119
10	50	19.7390
15	59	15.6286
20	68	12.4601
25	77	10.0000
30	86	8.0694
35	95	6.5499
40	104	5.3467
45	113	4.3881
50	122	3.6202
55	131	3.0016

($R_{25°C}$ = 10KΩ±3%, B25/85°C = 3975K±1.5%)

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CONFIGURING / STATUS DISPLAY INSTRUCTIONS

Status Display

The TEC (Terminal Equipment Controller) features a two-line, eight-character display. A low-level, always active backlight can be seen only at night.

Left unattended, the TEC shows an auto scrolling display that indicates the status of the system. Each item is scrolled one by one with the back lighting in low level mode. Pressing any key will cause the back light to increase to high level.

Manual scrolling of each menu item is achieved by pressing the YES (scroll) key repetitively. The last item viewed will be shown on the display for 30 seconds before returning to automatic scrolling. Temperature is automatically updated when scrolling is held.

FAN	When any of the fan speeds are ON, the FAN LED will illuminate.
HEAT	When heating & reheat is ON, the HEAT LED will illuminate.
COOL	When cooling is ON, the COOL LED will illuminate.

Outdoor air temperature

- The outdoor air temperature display is only enabled when the outdoor air temperature sensor is connected.
- A maximum range status display of 50 °C (122 °F) indicates a shorted sensor. Associated functions, such as mode lockouts and economizer function are automatically disabled.
- A minimum range status -40 °C (-40 °F) indicates an open-circuited sensor or a sensor not connected. Associated functions, such as mode lockouts and economizer function are automatically disabled.

Sequence of auto-scroll status display

CLOCK STATUS	SYSTEM MODE	SCHEDULE STATUS	OUTDOOR TEMP.	ALARMS
Monday 12:00 AM	Sys mode auto	Occupied	Outdoor x.x °C or °F	Service
	Sys mode off	Occupied hold		DAS Alarm
	Sys mode heat	Unoccup		SetClock
	Sys mode cool			Filter
				Com Lost

Alarms

- If alarms are detected, they will automatically be displayed at the end of the status display scroll.
- During an alarm message display, the back lit screen will light up at the same time as the message and shut off during the rest of the status display.
- Two alarms maximum can appear at any given time. The priority for the alarms is as follows:

Service	Indicates that there is a service alarm as per one of the configurable digital inputs (DI1 or DI2).
DAS Alarm	Indicates that the discharge air temperature is either too low or too high.
SetClock	Indicates that the clock needs to be reset. There has been a power failure which has lasted longer than 6 hours.
Filter	Indicates that the filters are dirty as per one of the configurable digital inputs (DI1 or DI2).
Com Lost	The communication between devices has been lost (No Communication).

Sequence of manual-scroll status display

Press the Yes (scroll) key to scroll through each menu repetitively. The last item viewed remains on the display for 30 seconds until automatic scrolling starts. Temperature is automatically updated when scrolling is held.

CLOCK STATUS	SYSTEM MODE	SCHEDULE STATUS	OUTDOOR TEMP.	ALARMS
Monday 12:00 AM	Sys mode auto	Occupied	Outdoor x.x °C or °F	Service
	Sys mode off	Occupied hold		DAS Alarm
	Sys mode heat	Unoccup		SetClock
	Sys mode cool			Filter
				Com Lost

Current Zone Sequence	Return Air Temperature	Discharge Air Temperature	Current Static Pressure
Zone Seq Off	RA xx.x °C or °F	DA xx.x °C or °F	Pressure x.x WC or Pa
Zone Seq Cool			
Zone Seq Heat			

Effective PI Heat Demand at RTU	Effective PI Cool Demand at RTU	Highest PI Heat Demand Zone Address	Highest PI Cool Demand Zone Address
Heat Out xxx %	Cool Out xxx %	Heat MAC xxx	Cool MAC xxx

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USER INTERFACE

User Configuring Instructions Menu

The SEZ7656X series of Terminal Equipment Controller feature an intuitive, menu-driven, back-lit LCD display that walks users through the configuring steps, making the configuring process extremely simple. This menu is typically accessed by the user to set the parameters such as the clock time set, the schedule time events and the system mode.

It is possible to bring up the user menu at any time by pressing the MENU key. The status display automatically resumes after exiting the user-configuring menu.

If the user pauses at any time during configuring, Auto Help text is displayed to help and guide the user through the usage and configuring of the Terminal Equipment Controller.

Example: Press the YES key to change the cooling temperature setpoint. Use the Up/Down Arrow keys to adjust the cooling setpoint.

Each of the sections in the menu is accessed and configured using 5 keys on the Terminal Equipment Controller cover.

When left unattended for 45 seconds, the display will resume automatic status display scrolling.

To turn on the back light, press any key on the front panel. The back light will turn off when the Terminal Equipment Controller is left unattended for 45 seconds.

Local Keypad Interface

	The **YES** key is used to confirm a selection, to move onto the next menu item and to manually scroll through the displayed information.
	The **NO** key is used when you do not desire a parameter change, and to advance to the next menu item. May also be used to toggle between heating and cooling setpoints.
	The **MENU** key is used to access the Main User Menu or to exit the menu.
	The **DOWN ARROW** key is used to decrease a temperature setpoint and to adjust the desired values when configuring the Terminal Equipment Controller.
	The **UP ARROW** key is used to increase a temperature setpoint and to adjust the desired values when configuring the Terminal Equipment Controller.

Sequence of User Menu

OVERRIDE RESUME	SYSTEM MODE SETTING	SCHEDULE SETTING	CLOCK SETTING
Override schd? Y/N (Appears only in unoccupied mode)	Sys mode set? Y/N	Schedule set? Y/N	Clock set? Y/N
Cancel ovrd? Y/N (Appears only in override mode)			

A) Override an unoccupied period

Override schd? Y/N

This menu will appear only when the Terminal Equipment Controller is in This menu will appear only when the controller is in unoccupied mode. The unoccupied mode is enabled either by the internal timer scheduling or by a network unoccupied command on the occupancy object.

If DI1 is configured to operate as a remote temporary override contact, this menu will be disabled.

Answering yes to this prompt will cause the all the zones attached to the RTU controller to go into occupied mode for an amount of time equal to the parameter “TOccTime” (1 to 12 hours).

B) Resume regular scheduling

Cancel ovrd? Y/N

This menu does not appear in regular operation. It will appear only when the controller is in override mode.

Answering “Yes” to this question will cause all the zones attached to the RTU controller to resume the regular configured scheduling of the RTU controller schedule.

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C) System mode setting

Sys mode set ? Y/N

This menu is accessed to set system mode operation. Use the arrow ▲▼ keys to set the value, the YES key to confirm the change.

Sys mode off	**Off mode** Normal cooling or heating operation disabled.
Sys mode auto	**Automatic mode** Automatic changeover mode between heating and cooling operation based on local zone demands voting for RTU system operation.
Sys mode cool	**Cooling mode** Cooling operation mode only.
Sys mode heating	**Heating mode** Heating operation mode only.

D) Schedule set (2 events)

Scheduling can have 2 or 4 events per day. This is set in the configuration menu as per parameter (2/4 event).

Schedule set? Y/N

This section of the menu permits the user to set the weekly schedule for all the zones attached to the RTU controller. Each day can be tailored to specific schedules if needed.

- 2 events can be scheduled per day.
- Occupied and unoccupied periods can be set for each day.

MONDAY TIMER SCHEDULE SET		TUESDAY TIMER SCHEDULE SET		WEDNESDAY TIMER SCHEDULE SET		OTHER DAYS ARE IDENTICAL
Monday set? Y/N	NO next → YES down ↓	Tuesday set? Y/N	NO next → YES down ↓	Wednesda set? Y/N	NO next → YES down ↓	Selects the day to be scheduled or modified
		Use YES key to access day scheduling, NO key to jump to next day.				
Occupied day? Y/N	NO next → YES down ↓	Occupied day? Y/N	NO next → YES down ↓	Occupied day? Y/N	NO next → YES down ↓	YES = Daily schedules will be accessed NO = Unoccupied mode all day
		Use YES key to access day scheduling, NO key to jump to next day.				
		Copy previous? Y/N	NO next → YES down ↓	Copy previous? Y/N	NO next → YES down ↓	YES = Will copy previous day schedule NO = Daily schedules will be accessed
		Use YES key to copy previous day, NO key to set new time value for each day.				
Occupied 00:00 AM	Use ▲▼ To set value	Occupied 00:00 AM	Use ▲▼ To set value	Occupied 00:00 AM	Use ▲▼ To set value	Sets Event # 1 Occupied time will activate Occupied setpoints
		Use ▲▼ to set value, YES key to confirm				
Unoccup 00:00 AM	Use ▲▼ To set value	Unoccup 00:00 AM	Use ▲▼ To set value	Unoccup 00:00 AM	Use ▲▼ To set value	Sets Event # 2 Unoccupied time will activate Unoccupied setpoints
		Use ▲▼ to set value, YES key to confirm				

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Example 1: Office building closed all weekend

Day	Period 1 Event 1	Period 1 Event 2	Daily Occupancy
	Occupied	Unoccupied	
Monday	7.00 AM	6.00 PM	Daytime only
Tuesday	7.00 AM	6.00 PM	Daytime only
Wednesday	7.00 AM	6.00 PM	Daytime only
Thursday	7.00 AM	6.00 PM	Daytime only
Friday	7.00 AM	6.00 PM	Daytime only
Saturday	12.00 PM *	12.00 PM *	Unoccupied
Sunday	12.00 PM *	12.00 PM *	Unoccupied

Notes

*Scheduling consecutive events to the same time will cause the controller to choose the last event as the time at which it will set its schedule. In the above example, the controller will control to the unoccupied set point until 7:00 AM Monday.

Example 2: Commercial building occupied all weekend

Day	Period 1 Event 1	Period 1 Event 2	Daily Occupancy
	Occupied	Unoccupied	
Monday	8.00 AM	5.00 PM	Daytime only
Tuesday	8.00 AM	5.00 PM	Daytime only
Wednesday	8.00 AM	5.00 PM	Daytime only
Thursday	8.00 AM	5.00 PM	Daytime only
Friday	8.00 AM	5.00 PM	Daytime only
Saturday	12.00 AM **	11.59 PM **	Occupied
Sunday	12.00 AM **	11.59 PM **	Occupied

Notes

12:00 PM = Noon and 12:00 AM = Midnight **To schedule a day as occupied for 24 hours, set that day occupied time to 12:00 AM and Unoccupied time to 11:59 PM There will be a 1 minute unoccupied period every night at 11:59 PM with this schedule configuration.

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E) Schedule set (4 events)

Schedule set? Y/N

This section of the menu permits the user to set the weekly schedule for all the zones attached to the RTU controller. Each day can be tailored to specific schedules if needed.

- 4 events can be scheduled per day.
- Occupied and Unoccupied periods can be set for each day.
- Scheduling the 3rd & 4th events to the same time will cancel the last period.

MONDAY TIMER SCHEDULE SET		TUESDAY TIMER SCHEDULE SET		WEDNESDAY TIMER SCHEDULE SET		OTHER DAYS ARE IDENTICAL
Monday set? Y/N	NO next → YES down ↓	Tuesday set? Y/N	NO next → YES down ↓	Wednesda set? Y/N	NO next → YES down ↓	Selects the day to be scheduled or modified
		Use YES key to access day scheduling, NO key to jump to next day.				
Occupied day? Y/N	NO next → YES down ↓	Occupied day? Y/N	NO next → YES down ↓	Occupied day? Y/N	NO next → YES down ↓	YES = Daily schedules will be accessed NO = Unoccupied mode all day
		Use YES key to access day scheduling, NO key to jump to next day.				
		Copy previous? Y/N	NO next → YES down ↓	Copy previous? Y/N	NO next → YES down ↓	YES = Will copy previous day schedule NO = Daily schedules will be accessed
		Use YES key to copy previous day, NO key to set new time value for each day.				
Occupied 00:00 AM	Use ▲▼ To set value	Occupied 00:00 AM	Use ▲▼ To set value	Occupied 00:00 AM	Use ▲▼ To set value	Sets Event # 1 Occupied time will activate Occupied setpoints
		Use ▲▼ to set value, YES key to confirm				
Unoccup 00:00 AM	Use ▲▼ To set value	Unoccup 00:00 AM	Use ▲▼ To set value	Unoccup 00:00 AM	Use ▲▼ To set value	Sets Event # 2 Unoccupied time will activate Unoccupied setpoints
		Use ▲▼ to set value, YES key to confirm				
Occupie2 00:00 AM	Use ▲▼ To set value	Occupie2 00:00 AM	Use ▲▼ To set value	Occupie2 00:00 AM	Use ▲▼ To set value	Sets Event # 3 Occupied time will activate Occupied setpoints
		Use ▲▼ to set value, YES key to confirm				
Unoccup2 00:00 AM	Use ▲▼ To set value	Unoccup2 00:00 AM	Use ▲▼ To set value	Unoccup2 00:00 AM	Use ▲▼ To set value	Sets Event # 4 Unoccupied time will activate Unoccupied setpoints
		Use ▲▼ to set value, YES key to confirm				

Example 1: Four event retail establishment schedule

	Period 1 Event 1		Period 1 Event 2		Period 2 Event 3		Period 2 Event 4		
	Occupied		Unoccupied		Occupied		Unoccupied		
Setpoint	Cool	Heat	Cool	Heat	Cool	Heat	Cool	Heat	Daily Occupancy
	72 °F (22.2°C)	70 °F (21°C)	80 °F (26.6°C)	62 °F (16.6°C)	72 °F (22.2°C)	70 °F (21°C)	80 °F (26.6°C)	62 °F (16.6°C)	
Monday	7.00 AM		5.00 PM		12.00 PM *		12.00 PM *		Daytime only
Tuesday	7.00 AM		5.00 PM		12.00 PM *		12.00 PM *		Daytime only
Wednesday	7.00 AM		5.00 PM		12.00 PM *		12.00 PM *		Daytime only
Thursday	7.00 AM		5.00 PM		7.00 PM		10.30 PM		Day/Eve only
Friday	7.00 AM		5.00 PM		7.00 PM		10.30 PM		Day/Eve only
Saturday	12.00 PM *		12.00 PM *		12.00 PM *		12.00 PM *		Unoccupied
Sunday	12.00 PM *		12.00 PM *		12.00 PM *		12.00 PM *		Unoccupied

Notes

* Scheduling events to the same time will cancel the last period and leave the Terminal Equipment Controller in unoccupied mode

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F) Clock / Day Settings

Clock set? Y/N

This section of the menu permits the user to set the time and day.

TIME SETTING		DAY SETTING		TIME FORMAT SETTING	
Time set? Y/N 0:00	NO next → YES down ↓	Day set? Y/N	NO next → YES down ↓	12/24hrs set? Y/N	NO = Exit YES down ↓
Time 00:00	Use ▲▼ To set value	Day Monday	Use ▲▼ To set value	12/24hrs 12 hrs	Use ▲▼ To set value

INSTALLER CONFIGURATION PARAMETER MENU

Configuration can be performed through the network or locally at the Terminal Equipment Controller.

Enter configuration

Press and hold the middle key (MENU) for eight seconds.

Password

If a password lockout is active, “Password” is prompted. Enter a password value using the up/down
arrow keys and then press the middle (MENU) key again to gain access to all configuration properties of the Terminal Equipment Controller. Entering an incorrect password will prevent local access to the configuration menu.

Scroll parameters

Press the NO key repetitively to scroll between all the available parameters.

Adjust parameter

When the desired parameter is displayed, press the YES key to select it, then use the up/down arrow keys to adjust it to the desired value.

Save new value

To acknowledge and save the new value, press the YES key again. The next parameter will be displayed.

Configuration interface

	The **YES** key is used to confirm a selection, to move onto the next menu item and to manually scroll through the displayed information.
	The **NO** key is used when you do not desire a parameter change, and to advance to the next menu item. May also be used to toggle between heating and cooling setpoints.
	The **MENU** key is used to access the Main User Menu or to exit the menu.
	The **DOWN ARROW** key is used to decrease a temperature setpoint and to adjust the desired values when configuring the Terminal Equipment Controller.
	The **UP ARROW** key is used to increase a temperature setpoint and to adjust the desired values when configuring the Terminal Equipment Controller.

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CONFIGURATION PARAMETERS

Default Value	Significant Adjustments
PswrdSet Configuration parameters menu access password Default: 0 No password prompted	This parameter sets a password access to prevent unauthorized access to the configuration menu parameters. A default value of "0" will not prompt a password or lock the access to the configuration menu. Range is: 0 to 1000
RTC MAC Zone Controller network address Default Value: 4	RTC MAC address must be unique for the entire network. 1 to 255 (Increments: 1 or 10) For BACnet™ models valid range to use is from 1 to 127.
RTC Baud RTC Controller Communication Baud Rate Default Value: 4 = Auto	This parameter will set the network's baud rate. 0 = 9600 KBps 1 = 19200 KBps 2 = 38400 KBps 3 = 76800 KBps 4 = Auto Bauding (Baud Rate will match detected Baud Rate).
lockout Keypad lockout levels Default value = 0 (No lock)	0 = No lock 1 = Low level 2 = High level

USER KEY FUNCTIONS

LEVEL	Global Unoccupied Override	System mode setting	Schedules setting	Clock setting
0	Unlocked	Unlocked	Unlocked	Unlocked
1	Unlocked	Locked	Locked	Unlocked
2	Locked	Locked	Locked	Unlocked

pwr del 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
CntrlTyp Sets how the Zones attached to the RTU controller vote to determine the actual system mode of operation. (Heat or Cool) Default Value: 1 = AV_H3	This parameter will select the type of operation required for the RTU based on the size of the system. Please refer to the Schneider Electric Zoning System Guide for recommended settings. Only the Zones that actually have values above 0% in their (PIHT Wei & PICL Wei) configuration parameters will be able to vote on the RTU operational mode calculation. **0 =Highest:** The highest PI Heating or PI Cooling demand from the selected voting zones will dictate heating or cooling operation of the RTU controller. **1 = AV_H3:** The average of the 3 highest PI Heating or PI Cooling demands from the selected voting zones will dictate heating or cooling operation of the RTU controller. **2 = AV_H5:** The average of the 5 highest PI Heating or PI Cooling demands from the selected voting zones will dictate heating or cooling operation of the RTU controller.

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CONFIGURATION PARAMETERS

Default Value	Significant Adjustments
Dis HL Discharge air temperature high limit Default: 120°F	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°)
Dis LL Discharge air temperature low limit Default: 45°F	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°)
DI 1 Digital input 1 configuration Default value = None	Open contact input = function not energized. Closed contact input = function energized. **None:** No function will be associated with the input. **Rem NSB:** Remote NSB timer clock input. Will disable the internal scheduling of the controller. The scheduling will now be set as per the digital input. The time is still displayed as information, but the menu part related to scheduling is disabled and no longer accessible. Open contact = occupied RTU operation mode. Closed contacts = unoccupied RTU operation mode. **RemOVR:** Temporary override remote contact. Disables all override menu functions of the RTU controller. The override function is now controlled by a manual remote momentarily closed contact. When configured, in this mode the input toggles between unoccupied and override. With this function enabled it is now possible to toggle between unoccupied & occupied RTU operation modes for the amount of time set by the parameter "TOccTime." (Temporary occupancy time). When override is enabled, an override status message will be displayed. **Filter:** a back-lit flashing filter alarm will be displayed on the controller LCD screen when the input is energized. **Service:** a back-lit flashing service alarm will be displayed on the controller LCD screen when the input is energized.
Anticycl Minimum on/off operation time for stages Default value = 2 minutes	Minimum On/Off operation time of cooling & heating stages. IMPORTANT, anti-short cycling can be set to 0 minutes for equipment that possess their own anti cycling timer. Do not use this value unless the equipment has the above mentioned internal timer. Failure to follow this guideline may lead to damaged equipment. 0, 1, 2, 3, 4 & 5 minutes.
Min SH Minimum supply heat temperature setpoint Default value = 64 °F (18 °C)	Sets the minimum supply heat to be maintained by the controller during occupied periods (Occupied or Temporary Override). 50 °F to 72 °F (10 °C up to 22 °C) (increments: 0.5° or 5°) **IMPORTANT:** To be active, the Minimum Supply Air Temperature control logic requires the following conditions to be fulfilled: -Controller in Occupied mode -Controller in Heat mode -Outdoor Temperature < SH Lock setting -Discharge Air Temperature < Dis HL setting

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CONFIGURATION PARAMETERS

Default Value	Significant Adjustments
Cool cph Cooling stages cycles per hour Default value = 4 C.P.H.	Will set the maximum number of cooling stage cycles per hour under normal control operation. It represents the maximum number of cycles that the equipment will be turned on and off in the span of an hour. Note that a higher C.P.H will represent a higher accuracy of control at the expense of wearing down mechanical components faster. 3 or 4 C.P.H.
Deadband Minimum deadband Default value = 2.0 °F (1.1 °C)	Minimum deadband value between the heating and cooling setpoints. Used only with the setpoints used during communication failure (ComLost Alarm) while operation is under the return air sensor. If modified, it will be applied only when any of the setpoints are modified. 2, 3 or 4 °F (1.0 to 2.0 °C)
Units Sets the display scale of the controller Default value = Imp	0 = SI for Celsius / Pa pressure scale. 1 = Imp for Fahrenheit / in. WC pressure scale.
fan del Fan delay Default value = Off	Fan delay extends fan operation by 60 seconds after the call for heating or cooling ends. Valid only for Auto fan mode. “On” fan mode will leave the fan always on. Off or On
TOccTime Temporary occupancy time Default: 3 hours	Temporary occupancy time with occupied mode setpoints when override function is enabled. When the Terminal Equipment Controller is in unoccupied mode, function is enabled with either the menu or DI1 configured as remote override input. 0,1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12 hours
Cool min Minimum cooling set point limit Default: 54 °F (12 °C)	Minimum occupied & unoccupied cooling set point adjustment. Cooling set point range is: 54 to 100 °F (12.0 to 37.5 °C)
Cal RS Room air temperature sensor calibration Default value = 0.0 °F or °C	Offset that can be added/subtracted to actual displayed room temperature ± 5.0 °F (± 2.5 °C)
Cal OS Outside air temperature sensor calibration Default value = 0.0 °F or °C	Offset that can be added/subtracted to actual displayed outside air temperature ± 5.0 °F (± 2.5 °C)
SH lock Outside air temperature supply heat lockout Default value = 32 °F (0 °C)	Disables heating operation based on outdoor air temperature. Please refer to the Schneider Electric Zoning System Guide for recommended settings. From –15 °F up to 120 °F (-26 °C up to 49 °C) (increments: 5° or 50°)
C stage SEZ7656R1045B models only Number of cooling stages installed at RTU. Default value = 2 stages	Will revert the operation of 2 stage controllers to a single stage when the second cooling step is not needed. 1 or 2 stages

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CONFIGURATION PARAMETERS

<table>
<tr><th>Default Value</th><th>Significant Adjustments</th></tr>
<tr><td>H lock
Outside air temperature heating lockout
Default value = 120 °F (49 °C)</td><td>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) (increments: 5° or 50°)</td></tr>
<tr><td>C lock
Outside air temperature mechanical cooling lockout.
Default value = -40 °F(-40 °C</td><td>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)</td></tr>
<tr><td>2/4event
Number of events configuration
Default value = 2 event</td><td>2 events, will set up scheduling for the following
Event 1 is for Occupied setpoints
Event 2 is for Unoccupied setpoints
4 events, will set up scheduling for the following
Event 1 is for Occupied setpoints
Event 2 is for Unoccupied setpoints
Event 3 is for Occupied setpoints
Event 4 is for Unoccupied setpoints</td></tr>
<tr><td>Aux cont
Auxiliary contact configuration
Default value = N.O. normally open</td><td>This contact can be used to energize peripheral devices such as: lighting equipment, exhaust fans, economizers, etc.
This contact will operate in parallel with the internal occupied/unoccupied schedule of the Terminal Equipment Controller or the remote NSB contact if DI1 or DI2 is used.
When the system is in OFF mode, the contact will remain in its unoccupied status independently of the occupied / unoccupied schedule.
<table><tr><th>Configured</th><th>Contact occupied status</th><th>Contact unoccupied status</th></tr><tr><td>N.O.</td><td>Closed</td><td>Opened</td></tr><tr><td>N.C.</td><td>opened</td><td>Closed</td></tr></table></td></tr>
<tr><td>Prog rec
Progressive recovery enabled

Default value = Off

Progressive recovery is automatically disabled if BI 1 is configured remote NSB</td><td>Off, = no progressive recovery.
The configured occupied schedule time is the time at which the system will restart and send the occupied status to the attached zones.
On, = progressive recovery active.
The configured occupied schedule time is the time at which the desired occupied temperature setpoints will be attained at the Zones. The RTU controller will automatically optimize the equipment start time.</td></tr>
<tr><td>Occ CL
Return air sensor network lost occupied cooling setpoint
Default: 75°F</td><td>If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint.
40 to 90°F (4.5°C to 32°C)
(increments: 0.5° or 5°)</td></tr>
<tr><td>Occ HT
Return air sensor network lost occupied heating setpoint
Default: 72°F</td><td>If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint.</td></tr>
<tr><td>Unocc CL
Return air sensor network lost unoccupied cooling setpoint
Default: 82°F</td><td>If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint.
54 to 100°F (12°C to 37.5°C)
(increments: 0.5° or 5°)</td></tr>
</table>

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CONFIGURATION PARAMETERS

Default Value	Significant Adjustments
Unocc HT Return air sensor network lost unoccupied heating setpoint Default: 65°F	If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint. 40 to 90°F (4.5°C to 32°C) (increments: 0.5° or 5°)
Sp range Static Pressure sensor range Default: 0	Static pressure transducer range. Voltage input range is 0 to 5 VDC. 0 = 0 to 1.5 in WC 1 = 0 to 2 in WC 2 = 0 to 3 in WC 3 = 0 to 4 in WC 4 = 0 to 5 in WC
Pressure Static Pressure setpoint Default: 0.8"WC	Bypass damper will maintain this supply static pressure set point. Please refer to the Schneider Electric Zoning System Guide for recommended settings. 0 to 2 in WC (0 Pa to 500 Pa) (increments: 0.1" WC or 25 Pa)
SP Cntrl Static Pressure Control Type Default: BPD	Depending on the setting of this parameter, the 0-10VDC pressure control output (labeled BPD) will either have a 0VDC or 10VDC output when the fan is Off. BPD (By-Pass Damper): 10VDC when fan is Off FD (Variable Frequency Drive): 0VDC when fan is Off

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SPECIFICATIONS

Terminal Equipment Controller power requirements:	19-30 VAC 50 or 60 Hz; 2 VA Class 2; RC to RH jumper, 2.0 Amps 48 VA maximum
Operating conditions	0 °C to 50 °C (32 °F to 122 °F) 0% to 95% R.H. non-condensing
Storage conditions	-30 °C to 50 °C (-22 °F to 122 °F) 0% to 95% R.H. non-condensing
Temperature sensor	Local 10 K NTC thermistor
Temperate sensor resolution	± 0.1 °C (± 0.2 °F)
Control accuracy	± 0.5 ° C (± 0.9 °F) @ 21 °C (70 °F) typical calibrated
Occ, Stand-By and Unocc cooling set point range	12.0 to 37.5 °C (54 to 100 °F)
Occ, Stand-By and Unocc heating set point range	4.5 °C to 32 °C (40 °F to 90 °F)
Room and outdoor air temperature display range	-40 °C to 50 °C (-40 °F to 122 °F)
Proportional band for room temperature control	Cooling & Heating: Default: 1.1°C (2°F)
Digital input	Dry contact across terminal DII1
Analog outputs rating (BPD & AO)	0 to 10 VDC into 2KΩ resistance min.
Analog outputs accuracy:	± 3% typical
Wire gauge	18 gauge max. 22 gauge min.
Approximate shipping weight	0.75 lb (0.34 kg)
Agency Approvals all models	UL: UL 873 (US) and CSA C22.2 No. 24 (Canada), File E27734 with CCN XAPX (US) and XAPX7 (Canada) Industry Canada: ICES-003 (Canada)
Agency Approvals all models	FCC: Compliant to CFR 47, Part 15, Subpart B, Class A (US) CE : EMC Directive 2004/108/EC (Europe Union) C-Tick: AS/NZS CISPR 22 Compliant (Australia / New Zealand) Supplier Code Number N10696
Agency Approvals Wireless models	FCC: Compliant to: Part 15, Subpart C
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.	
Please check with your local government for instruction on disposal of this product.	

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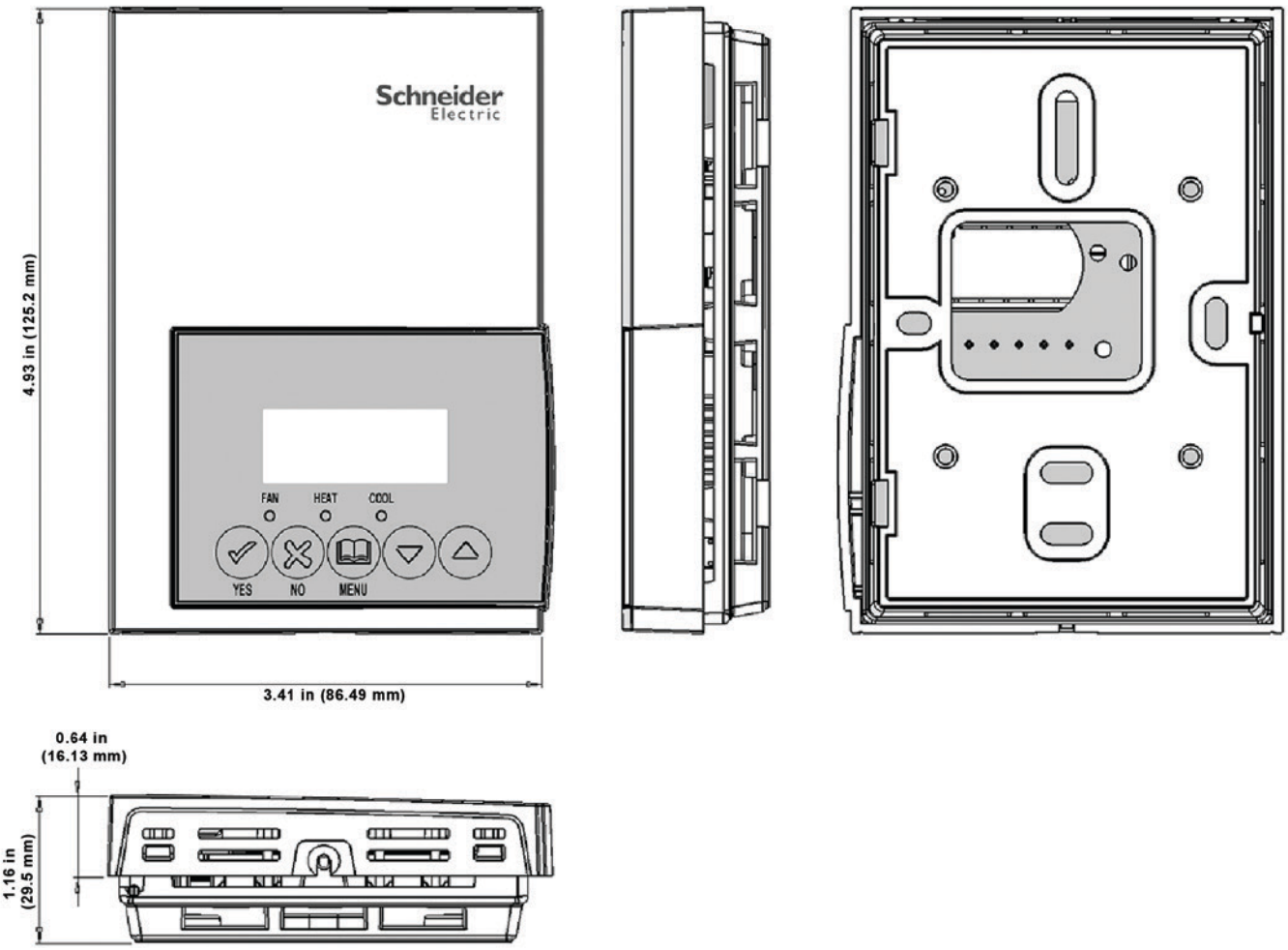
DIMENSIONAL DRAWING



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