SEZ7656E1045B

BACnet[™] MS-TP RTU Terminal Equipment Controller with IAQ Control Installation Guide For Commercial Zoning Systems



CONTENTS

Installation	2
Location	2
Installation	2
Theory of Operation	3
Features overview	З
BACnet System Overview	4
Terminal, Identification and Function	5
Wiring	5
Screw terminal arrangement and wiring	5
Typical Applications	6
Main outputs wiring	7
Configuring and Status Display Instructions	8
Status display	9
User interface	10
User configuring instructions menu	10
Local keypad interface	10
Installer Configuration Parameter Menu	13
Fresh Air Damper Control Sequences	18
Economizer Control Mode Only	18
Economizer Mode and Fresh Air Measurement Station	19
Economizer Mode and CO2 Level Control	20
Economizer Mode, CO2 Level Control and Fresh Air Measurement Station	21
Specifications	22
Drawing & Dimensions	23



INSTALLATION

Remove the security screw on the bottom of Terminal Equipment Controller cover.

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

Location

- 1. Should not be installed on an outside wall.
- 2. Must be installed away from any direct heat source.
- 3. Should not be installed near an air discharge grill.
- 4. Should not be affected by direct sun radiation.
- 5. 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 PCB locking tabs (fig. 2).
- 2. Pull out cables 6" out from the wall.
- 3. Wall surface must be flat and clean.
- 4. Insert cable in the central hole of the base.
- 5. Align the base and mark the location of the two mounting holes on the wall. Install proper side of base up.
- 6. Install anchors in the wall.
- 7. Insert screws in mounting holes on each side of the base (fig. 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 end.
- 10. Insert each wire according to wiring diagram.
- 11. Gently push excess wiring back into hole (fig. 3).
- 12. Re-Install wiring terminals in their correct locations (fig. 3).
- 13. Re-install the cover (top side first) and gently push extra wire length back into the hole in the wall.
- 14. Install security screw.



• When 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 improper 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 or installer or 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-1 Opening the Cover



Figure-2 Opening the PCB



Figure-3 Terminal Block Reinstall

THEORY OF OPERATION

The SEZ7656 series uses a Schneider Electric proprietary adaptive logic algorithm to control the space temperature. This algorithm controls the heating 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 temperature offset associated with traditional, differential-based On-Off thermostats.



Figure-2 On-Off Mechanical vs PI Electronic Control

Features and benefits overview

- 7 day schedule models, 2 or 4 events.
- C02 control logic based on fresh air volume or fresh air damper position.
- Fresh air damper output for building CO₂ level control.
- Gas, oil or electric system compatibility.
- 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.
- 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.

- A 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.
 - **RemNSB:** 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 purposed.
- 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 SEZ7656X1045B roof top controllers. Combined, they are designed for operating typical; single or multistage RTU's 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 to total number of nodes (individual Com addresses) to 34. RTU 1 would have 10 zones under its command, RTU 2 would have 10 zones under its command and RTU 3 would have 11 zones under its command.



Typical BACnet[™] Zoning System Installation

4

TERMINAL, IDENTIFICATION AND FUNCTION

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	С	Power supply of controller, common side. Also used as reference for the analog BPD output when used (Delivered from the RTU).
6- Heat Switch Leg	RH	 24 VAC switched leg for the heating stages. If heating stages are part or RTU, install a jumper across RC & RH. If heating stages are part of separate equipment with a different power supply, feed external switched power leg through RH without installing a jumper across RC & RH.
7 – Heat 1	W1	Output for heating stage number 1.
8- Heat 2	W2	Output for heating stage number 2.
9 – By-pass damper	BPD	Local analog 0 - 10 VDC by-pass damper / VFD output.
10 – Economizer Output	EC	0-10 VDC analog fresh air damper / economizer output.
11 – Static pressure	SP	Local analog 0 – 5 VDC static pressure input.
12 – Al	AI	0-10 VDC analog input for airflow transmitter
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™ Network Connections					
BACnet™ Com	Com + BACnet [™] communication bus + connection.				
BACnet™ Com	Com -	BACnet [™] communication bus – connection.			
Ref	Ref	Communication bus reference terminal. • DO NOT USE FOR OTHER THAN SERVICING ISSUES • DO NOT WIRE SHIELD TO THIS TERMINAL			

Screw terminal arrangement and wiring

SE7656E Controller Terminals



5

TYPICAL APPLICATIONS



Main outputs wiring

Wiring notes:

Note 1

If the same power source is used for the heating stages, install jumper across RC & RH. Maximum current is 2.0 amps.

Note 2

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 3

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 4

Electromechanical contacts are to be used with the digital inputs. Electronic triacs cannot be used as mean of switching for the input. The switched leg to the input for the input to activate is terminal C (common)

Note 5

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 6

10K Type 2 NTC sensors are required.

Temperature vs. Resistance Chart for 10 Kohm NTC Thermistor

°C	°F	Kohm	°C	°F	Kohm		°C	°F	Kohm		°C	°F	Kohm		°C	°F	Kohm
-40	-40	324.3197	-20	-4	94.5149		0	32	32.1910]	20	68	12.4601		40	104	5.3467
-39	-38	303.6427	-19	-2	89.2521		1	34	30.6120]	21	70	11.9177]	41	106	5.1373
-38	-36	284.4189	-18	0	84.3147		2	36	29.1197]	22	72	11.4018]	42	108	4.9373
-37	-35	266.5373	-17	1	79.6808]	3	37	27.7088]	23	73	10.9112]	43	109	4.7460
-36	-33	249.8958	-16	3	75.3299		4	39	26.3744]	24	75	10.4443		44	111	4.5631
-35	-31	234.4009	-15	5	71.2430		5	41	25.1119]	25	77	10.0000		45	113	4.3881
-34	-29	219.9666	-14	7	67.4028		6	43	23.9172		26	79	9.5754		46	115	4.2208
-33	-27	206.5140	-13	9	63.7928		7	45	22.7861]	27	81	9.1711		47	117	4.0607
-32	-26	193.9703	-12	10	60.3980		8	46	21.7151]	28	82	8.7860]	48	118	3.9074
-31	-24	182.2686	-11	12	57.2044]	9	48	20.7004]	29	84	8.4190]	49	120	3.7607
-30	-22	171.3474	-10	14	54.1988		10	50	19.7390]	30	86	8.0694		50	122	3.6202
-29	-20	161.1499	-9	16	51.3692		11	52	18.8277]	31	88	7.7360		51	124	3.4857
-28	-18	151.6239	-8	18	48.7042		12	54	17.9636]	32	90	7.4182		52	126	3.3568
-27	-17	142.7211	-7	19	46.1933		13	55	17.1440		33	91	7.1150		53	127	3.2333
-26	-15	134.3971	-6	21	43.8268		14	57	16.3665		34	93	6.8259		54	129	3.1150
-25	-13	126.6109	-5	23	41.5956		15	59	15.6286		35	95	6.5499		55	131	3.0016
-24	-11	119.3244	-4	25	39.4921		16	61	14.9280]	36	97	6.2866]	56	133	2.8928
-23	-9	112.5028	-3	27	37.5056		17	63	14.2629]	37	99	6.0351]	57	135	2.7886
-22	-8	106.1135	-2	28	35.6316		18	64	13.6310]	38	100	5.7950]	58	136	2.6886
-21	-6	100.1268	-1	30	33.8622		19	66	13.0307]	39	102	5.5657		59	138	2.5926

 $(R_{25^{\circ}C} = 10K\Omega \pm 3\% - B_{25/85^{\circ}C} = 3975K \pm 1.5\%)$



CONFIGURING AND STATUS DISPLAY INSTRUCTIONS

Status display

The Terminal Equipment Controller features a two-line, eight-character display. There is a low backlight level that is always active and can only be seen at night.

When left unattended, the Terminal Equipment Controller has an auto scrolling display that shows the current status of the system.

Each item is scrolled sequentially with the back lighting in low level mode. Pressing any key will cause the back lighting to come on 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.

Sequence of auto-scroll status display

CLOCK STATUS	SYSTEM MODE	SCHEDULE STATUS	OUTDOOR TEMP.	ALARMS	
Monday	Sys Mode	Occurried	Outdoor		
12:00 AM	Auto	Occupied	x.x °C or °F	DAS Alarm	
	Sys Mode	Lineaguniad			
	Auto	Onoccupied			
	Sys Mode	Override		SotClock	
	Heat	Overnide		SELCIOCK	
	Sys Mode			High CO2	
	Cool				
				Com lost	

Outdoor air temperature

Outdoor air temperature display is only enabled when 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) is not displayed and indicates a opened sensor or a sensor not connected. Associated functions, such as mode lockouts and economizer function are automatically disabled.

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:

8

Sequence of manual-scroll status display:

Manual scroll 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.

CLOCK STATUS	SYSTEM MODE	SCHEDULE STATUS	OUTDOOR TEMP.	ALARMS	
Monday	Sys Mode	Occupied	Outdoor	DAS Alarm	
12:00 AM	Off	Occupica	x.x °C or °F	D/ 10 / flamm	
	Sys Mode	Line counted			
	Auto	Unoccupied		FA AIIM	
	Sys Mode	Override		SatCloak	
	Cool	Overnde		SELCIUCK	
	Sys Mode				
	Heat			mign CO2	
				Com lost	

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 O	When cooling is ON , the C OOL LED will illuminate.

9

CURRENT ZONE SEQUENCE	RETURN AIR TEMP	DISCHARGE AIR TEMP	CURRENT STATIC PRESSURE	FRESH AIR LEVEL
Zone Seq Off	RA Temp xx.x °C or °F	DA Temp xx.x °C or °F	Pressure x.x WC or Pa	FA Level xxxxxCFM
Zone Seq Cool				
Zone Seq Cool				

EFFECTIVE PI HEAT DEMAND AT RTU	EFFECTIVE PI COOL DEMAND AT RTU	EFFECTIVE CO2 LEVEL AT RTU	HIGHEST PI HEAT DEMAND ZONE ADDRESS	HIGHEST PI COOL DEMAND ZONE ADDRESS	HIGHEST CO2 LEVEL ZONE ADDRESS
Heat Out	Cool Out	CO2 Lvl	Heat MAC	Cool MAC	CO2 MAC
xxx %	xxx %	xxxx ppm	xxx	xxx	xxx

DAS Alarm	Indicates that the discharge air temperature is either too low or too high.
FA Alarm	Indicates that the Fresh Air Level 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.
High CO2	Indicates that the CO2 Level value is higher than the Max CO2 parameter value.
Com Lost	The communication between devices has been lost (No Communication)

USER INTERFACE

User configuring instructions menu

The SEZ7656X series of controllers feature an intuitive, menu-driven, backlit LCD display that walks users and installers 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 depressing the MENU key. The status display automatically resumes after exiting the user-configuring menu.

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

Ex.: Press yes key to change cooling temperature setpoint Use the up or down arrow to adjust cooling setpoint

Each of the sections in the menu is accessed and configured using 5 keys on the controller cover. The priority for the alarms is as follows:

Local Keypad Interface

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

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 lit display will turn off automatically after 45 seconds.

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



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.

C) System mode setting

Sys mode set Y/N

This menu is accessed to set system mode operation. Use $\blacktriangle \lor$ to set value, yes key to confirm.

Sys mode	Off mode
off	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	Cooling mode
cool	Cooling operation mode only.
Sys mode	Heating mode
heat	Heating operation mode only

D) Schedule set (2 events)



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 configured per day.
- Occupied & unoccupied periods can be set for each day.

MONDA SCHED	Y TIMER ULE SET	TUESDA SCHED	AY TIMER ULE SET	WEDN TIN SCHED	IESDAY NER ULE SET	OTHER DAYS ARE IDENTICAL
Monday set? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Tuesday set? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Wednesda set? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Selects the day to be scheduled or modified
		Use YES I	key to access d jump to r	ay scheduling next day.	, NO key to	
Occupied day? Y/N	NO next → YES down ↓	Occupied day? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Occupied day? Y/N	NO next → YES down ↓	YES = Daily schedules will be accessed NO = Unoccupied mode all day
		Use YES I	key to access d jump to r	ay scheduling next day.	, NO key to	
		Copy previous? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Copy previous? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	YES = Will copy previous day schedule NO = Daily schedules will be accessed
		Use YES	key to copy pro new time valu	evious day, No e for each day	O key to set /.	
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	e, 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	e, YES key to	confirm	

Note: 12:00 PM = Noon

12:00 AM = Midnight

Ex. #1 Office building closed all weekend

11

	Peric Ever	od 1 nt 1	Peri Eve	od 1 nt 2	
	Occupied		Unoco	upied	
	Cool Heat		Cool	Heat	Della
Setpoint	72 °F (22.2°C)	70 °F (21°C)	80 °F (26.6°C)	62 °F (16.6°C)	Occupancy
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

* Configuring 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 the unoccupied set point until 7:00 AM Monday.

Ex. #2 Commercial building which is occupied all weekend

	Perio Ever	od 1 nt 1	Peri Eve	od 1 nt 2	
	Occu	pied	Unoco	upied	
	Cool	Heat	Cool	Heat	Deilu
Setpoint	72 °F (22.2°C)	70 °F (21°C)	80 °F (26.6°C)	62 °F (16.6°C)	Occupancy
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 A	AM **	11.59	PM **	Occupied
Sunday	12.00 A	AM **	11.59	PM **	Occupied

** 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.

E) Schedule set (4 events)



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

WEDNESDAY

F) Clock/Day Settings



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

12

T SET	IME TING	[SE]	DAY ITING	TIME F	ORMAT TING
Time set? Y/N	NO next → YES down ↓	Day set? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	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

MONDA	Y TIMER ULE SET	TUESDA SCHED	Y TIMER	TIN	MER ULE SET	OTHER DAYS ARE IDENTICAL
Monday set? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Tuesday set? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Wednesda set? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Selects the day to be scheduled or modified
		Use YES	key to access d jump to i	ay scheduling next day.	, NO key to	
Occupied day? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	Occupied day? Y/N	NO next → YES down ↓	Occupied day? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	YES = Daily schedules will be accessed NO = Unoccupied mode all day
		Use YES	key to access d jump to ı	ay scheduling next day.	, NO key to	
		Copy previous? Y/N	NO next → YES down ↓	Copy previous? Y/N	$\begin{array}{l} \text{NO next} \rightarrow \\ \text{YES down} \downarrow \end{array}$	YES = Will copy previous day schedule NO = Daily schedules will be accessed
		Use YES k	ey to copy previ time value f	ious day, NO l for each day.	key to set new	
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	e, 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 valu	e, 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	e, 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 valu	e, YES key to	confirm	

Ex. #1. Four event retail establishment schedule

	Perio Ever	od 1 nt 1	Peri Eve	od 1 nt 2	Perio Ever	od 2 nt 3	Peri Eve	od 2 nt 4	
	Occu	pied	Unoco	cupied	Occu	pied	Unoco	upied	
	Cool	Heat	Cool	Heat	Cool	Heat	Cool	Heat	Deilu
Setpoint	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)	Occupancy
Monday	7.00	7.00 AM		5.00 PM		12.00 PM *		12.00 PM *	
Tuesday	7.00	AM	5.00	5.00 PM		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	5.00 PM		7.00 PM		10.30 PM	
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

* Scheduling events to the same time will cancel the last period and leave the controller in unoccupied mode.

INSTALLER CONFIGURATION PARAMETER MENU

- Configuration can be done through the network or locally at the Terminal Equipment Controller.
- To enter configuration, press and hold the middle button "Menu" for 8 seconds
- If a password lockout is active, "Password" is prompted. Enter password value using the "up" and "down" arrows and press "Yes" to gain access to all configuration properties of the Terminal Equipment Controller. A wrong password entered will prevent local access to the configuration menu.
- Once in the configuration menu, press the "No" button repetitively to scroll between all the available parameters.
- When the desired parameter is displayed, press "Yes" to adjust it to the desired value using "up" and "down" arrows. Once set, press "Yes" to scroll to the next parameter.

Configuration para default value	imeters	Signif	icance and adjustm	ents		
PswrdSet This Configuration parameters menu acce access password will n Default value = 0 menu No password prompted Rang BTC MAC BTC		This p access will no menu. Rang	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 Cont network address Default Value: 4	roller	RTC M 1 to 2 For BA	1AC address must be 55 (Increments: 1 or 1 ACnet™ models valid r	unique for the entire n 0) ange to use is from 1	etwork. to 127.	
RTC Baud RTC Controller Comr Baud Rate Default Value: 4 = Au	munication I to	This p 0 = 96 1 = 19 2 = 38 3 = 76 4 = Au	arameter will set the n 500 KBps 200 KBps 3400 KBps 800 KBps ito Bauding (Baud Rat	etwork's baud rate. e will match detected	Baud Rate).	
Lockout0 =Keypad lockout levels1 =Default value = 0 No lock2 =		0 = No lock 1 = Low level 2 = High level				
		U	SER KEY FUNCTION	IS		
LEVEL	Global Unocc Override		System mode setting	Schedules setting	Clock setting	
0	Unlocked		Unlocked	Unlocked	Unlocked	
1	Unlocke	d	Locked	Locked	Unlocked	
2	Unlocked Unlocked		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 - 120 seconds
CntrlTyp Sets how the Zones attached to the RTU controller vote to determine the actual system mode of operation. (Heat or Cool)	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
Default Value: 1 = AV_H3	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.
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°)
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.
Heat cph Heating stages cycles per hour	Will set the maximum number of heating 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.
Default value = 4 C.P.H.	Note that a higher C.P.H will represent a higher accuracy of control at the expense of wearing down mechanical components faster. 3. 4. 5. 6.7 & 8 C.P.H.
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.
Deadband	Minimum deadband value between the beating and cooling setpoints
Minimum deadband Default value = 2.0 ° F (1.1 ° C)	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 Ostet inte display scale of the controller 0 = SI for Celsius / Pa pressure scale. 1 = imp for Fahrenheit / in. WC pressure scale 1 = imp for Fahrenheit / in. WC pressure scale 2 = Marking State of the controller Default value = Imp Fan delay Default value = Off CO2 cetrl CO2 Control Type configuration Default value = AV_H3 Default value = B hours Temporary occupancy time Default value = 3 hours Default value = Con "For "C Cal RS Room air temperature sensor calibration Default value = 0.0 "For "C Default value = 2 stages Numbor of heating stages installed at RTU. Default value = 2 stages Default value = 2 stages Vill revert the operation of		
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Default value = 120 °F (43 °C)From -15 °F up to 120 °F (-26 °C up to 49 °C)C lockDisables 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.Default value = -40 °F (40 °C)From -40 °F up to 95 °F (-40 °C up to 35 °C)	Number of cooling stages installed at RTU. Default value = 2 stages H lock	Disables heating stage operation based on outdoor air temperature.
C lockDisables 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.Default value = -40 °F (40 °C)From -40 °F up to 95 °F (-40 °C up to 35 °C)	Number of cooling stages installed at RTU. Default value = 2 stages H lock Outside air temperature heating lockout	Disables heating stage operation based on outdoor air temperature. Function will only be enabled if OS (outside air temperature sensor) is connected.
Outside air temperature mechanical cooling lockout.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.Default value = -40 °F (40 °C)From -40 °F up to 95 °F (-40 °C up to 35 °C)	Number of cooling stages installed at RTU. Default value = 2 stages H lock 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)
Default value = -40 °F (40 °C) From -40 °F up to 95 °F (-40 °C up to 35 °C)	Number of cooling stages installed at RTU. Default value = 2 stages H lock Outside air temperature heating lockout Default value = 120 °F (49 °C) C lock	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) Disables cooling stage operation based on outdoor air temperature.
From -40 °F up to 95 °F (-40 °C up to 35 °C)	Number of cooling stages installed at RTU. Default value = 2 stages H lock Outside air temperature heating lockout Default value = 120 °F (49 °C) C lock Outside air temperature mechanical cooling below t	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) 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 applied if OS (autside air temperature sensor) is
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15

O/A assess	•
2/4 event	2 events, will set up scheduling for the following
Number of events	Event 1 is for Occupied setpoints
configuration	Event 2 is for Unoccupied setpoints
Default value = 2 event	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
FA Range	Sets the upper limit of the CFM range. This parameter should be set
FA range upper limit value	based on the rooftop unit size. If set to 0 CFM, the fresh air damper
Default value = 0 CFM	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
Prog rec	Off, = no progressive recovery.
Progressive recovery enabled	The programmed occupied schedule time is the time at which the system
Default value = Off	will restart and send the occupied status to the attached zones.
automatically disabled if BI 1	On, = progressive recovery active.
is configured remote NSB	The programmed 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.
Occ CL	If network communication is lost with the zone controllers, the return air
Return air sensor network lost	sensor will control the RTC to maintain this setpoint.
occupied heating setpoint	40 to 90°F (4.5°C to 32°C)
Default: 72°F	(increments: 0.5° or 5°)
Occ HT	If network communication is lost with the zone controllers, the return air
Return air sensor network lost	sensor will control the RTC to maintain this setpoint.
occupied heating setpoint	40 to 90°F (4.5°C to 32°C)
Default: 72°F	(increments: 0.5° or 5°)
Unocc CL	If network communication is lost with the zone controllers, the return air
Return air sensor network lost	sensor will control the RTC to maintain this setpoint.
unoccupied cooling setpoint	54 to 100°F (12°C to 37.5°C)
Default: 82°F	(incremente: 0.5° or 5°)
Unocc HT	If network communication is lost with the zone controllers, the return air
unoccupied heating setpoint	
Default: 65°F	40 to 90 F (4.5 C to 52 C)
	(increments: 0.5° or 5°)
Sp range	Static pressure transducer range. Voltage input range is 0 to 5 VDC.
Static Pressure sensor range	0 = 0 to 1.5 in WC
Default: 0	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 Prossure cotroint	Bypass damper will maintain this supply static pressure set point.
	Please refer to the Schneider Electric Zoning System Guide for
Default: 0.8"WC	recommended settings.
	0 to 2 in WC (0 Pa to 500 Pa)
	(increments: 0.1" WC or 25 Pa)

16

SP Cntrl Static Pressure Control Type Default: BPD	Depending on the setting of this parameter, the 0-10VDC pressure control output (labled BPD) will either have a 0VDC or 10VDC output when the fan is Off.
	BPD (By-Pass Damper): 10VDC when fan is Off
	VFD (Variable Frequency Drive): 0VDC when fan is Off
Chngstpt Changeover setpoint Default value = 55 °F (13.0 °C)	In <i>Cooling</i> mode. 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)
mix stpt Mixed air setpoint Default value = 55 °F (13.0 °C)	Free cooling mixed air setpoint when economizer mode is enabled. 50 to 90 °F (10.0 to 32.0 °C)
Min Pos Minimum Fresh Air Damper/ Economizer Position Default value = 0%	Minimum fresh air damper position. Effective only in Occupied mode (Fan is ON). This value is also 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.
Mars Da -	Variation for the design and then Effective and the Operation and the
Max Pos Maximum Fresh Air Damper/ Economizer Position Default value = 100%	(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 100%, 1 or 10 increments
	0% to 100%, 1 or 10 increments
Min FA Minimum Fresh Air Value Default value = 0 CFM	0% to 100%, 1 or 10 increments 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.
Min FA Minimum Fresh Air Value Default value = 0 CFM	 0% to 100%, 1 or 10 increments 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
Min FA Minimum Fresh Air Value Default value = 0 CFM Max FA Maximum Fresh Air Value Default value = 0 CFM	 0% to 100%, 1 or 10 increments 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 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.
Min FA Minimum Fresh Air Value Default value = 0 CFM Max FA Maximum Fresh Air Value Default value = 0 CFM	 0% to 100%, 1 or 10 increments 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 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 FA Minimum Fresh Air Value Default value = 0 CFMMax FA Maximum Fresh Air Value Default value = 0 CFMMin CO2 Minimum CO2 Level Default value = 800 ppm	 0% to 100%, 1 or 10 increments 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 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 Minimum 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 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.
Min FA Minimum Fresh Air Value Default value = 0 CFM Max FA Maximum Fresh Air Value Default value = 0 CFM Min CO2 Minimum CO2 Level Default value = 800 ppm	 0% to 100%, 1 or 10 increments 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 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/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 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, 10 or 100 increments
Min FAMinimum Fresh Air ValueDefault value = 0 CFMMax FAMaximum Fresh Air ValueDefault value = 0 CFMMin CO2Minimum CO2 LevelDefault value = 800 ppmMax CO2Maximum CO2 LevelDefault value = 1200 ppm	 0% to 100%, 1 or 10 increments 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 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 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 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, 10 or 100 increments 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.

17

FRESH AIR DAMPER CONTROL SEQUENCES

The fresh air damper can be controlled through more than one sequence to achieve different control strategies such as free cooling (economizer mode), minimum fresh air control and CO2 level control. Here are the control sequences available:

Note: For the sequences mentioned below, the following conditions must be met in order for the sequences to be performed as stated:

- Max Pos parameter value must be greater than Min Pos Parameter value.
- Mac CO2 parameter value must be greater than Min CO2 Parameter value.
- Max FA parameter value must be greater than Min FA Parameter value. Economizer Control Mode Only

Economizer Control Mode Only



If the fresh air damper is to be used only for free cooling purposes (economizer mode, without fresh air measurement station or CO2 control), only the Min Pos parameter and the free cooling sequence will be active.

- The FA Range parameter should be set to 0 CFM. (Default Value = 0 CFM)

- Set the Chngstpt parameter to desired value which free cooling is enabled. (Default Value = 55°F)

If the outside air temperature is greater than the changeover setpoint, then normal mechanical cooling will be used. If the outside air temperature is less than or equal to the changeover setpoint, then free cooling will be enabled and mechanical cooling stages will be locked out.





If the fresh air damper is to be used for both free cooling and minimum fresh air volume control (economizer mode and fresh air measurement station, but without CO2 level control), only the Min FA parameter and the free cooling sequence will be active.

- The FA Range parameter should be set to a value higher than 0 CFM (0 CFM disables the fresh air control).
- Min FA (minimum fresh air) parameter should be set to the desired level.

The FA Range parameter value should be set to the maximum capacity of the fresh air measurement station. Therefore the relationship between air volumes and input signals can be established. For example, if the fresh air station capacity is 10450 CFM, set FA Range to 10450.

This will set the relationship of 0 VDC = 0 CFM and 10VDC = 10450 CFM.

19



Economizer Mode and CO₂ Level Control

If the fresh air damper is to be used for both free cooling and CO2 level control (economizer mode and CO2 level control, but without fresh air measurement station), only the Min Pos, Max Pos, Min CO2and Max CO2 parameters as well as the free cooling sequence will be active.

- The FA Range parameter should be set to 0 CFM.
- Set AI1 parameter to CO2 (0 VDC = 0ppm ; 10VDC = 2000ppm)
- Min Pos, Max Pos, Min CO2 and Max CO2 parameters should be set according to the required setting.



The highest value between free cooling demand output and interpolation output for the fresh air setpoint will be the output to the fresh air damper.

20



Economizer Mode, CO, Level Control and Fresh Air Measurement Station

If the fresh air damper is to be used for both free cooling and CO2 level control with a fresh air measurement station, only the Min FA, Max FA, Min CO2 and Max CO2 parameters as well as the free cooling sequence will be active.

- The FA Range parameter should be set to something other than 0 CFM.
- Use an air flow transmitter to read fresh air level with Al2 input (0-5 VDC input)
- -Min FA, Max FA, Min CO2 and Max CO2 parameters should be set according to the required setting.



The highest value between free cooling demand output and interpolation output for the fresh air setpoint based on the CO2 level will be the output to the fresh air damper.

21

SPECIFICATIONS

Terminal Equipment Controller power requirements	19-30 VAC 50 or 60 Hz; 2 VA Class 2 RC to RH jumper 2.0 Amps 48VA max.
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
Sensor	Local 10 K NTC thermistor
Resolution	±0.1 °C (±0.2 °F)
Temperature control accuracy	\pm 0.5 ° C (\pm 0.9 °F) @ 21 °C (70 °F) typical calibrated
Contact output rating	Relay outputs: 30 VAC, 1 Amp. Maximum, 3 Amp. In-rush.
Occ, Stand-By and Unocc cooling setpoint range	12.0 to 37.5 °C (54 to 100 °F)
Occ, Stand-By and Unocc heating setpoint 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)
Supply air temperature range:	-40 °C to 65 °C (-40 °F to 150 °F)
Static pressure and air flow analog inputs	0-5 VDC across AI, SP, Scom
Digital inputs	Dry contact across terminal DI1
By-Pass damper and economizer analog outputs rating	0 to 10 VDC into $2K\Omega$ resistance min
By-Pass damper and economizer 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 B, Class (US)
THIS DEVICE COMPLIES WITH PART 15 OF THE F CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE INTERFERENCE RECEIVED, INCLUDING INTERFE	FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY RENCE THAT MAY CAUSE UNDESIRED OPERATION.
Please check with your local government for instruction on disposal of this product.	

DIMENSIONAL DRAWING









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