



VZ7656E1000B  
BACnet™ MS-TP RTU Terminal Equipment  
Controller with IAQ Control

## Installation Guide

For Commercial Zoning Systems

January 10<sup>th</sup>, 2012 / 028-0326-R1

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# INSTALLATION

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

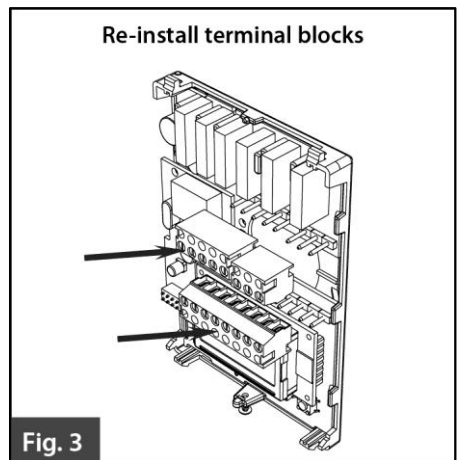
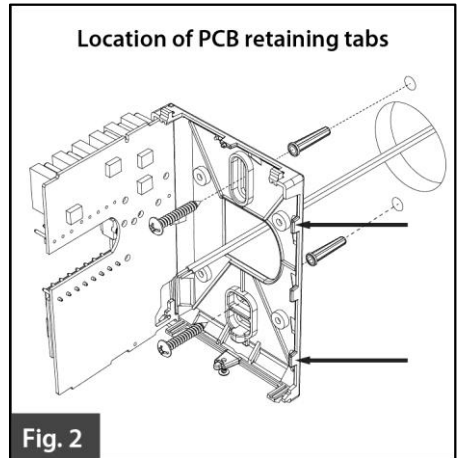
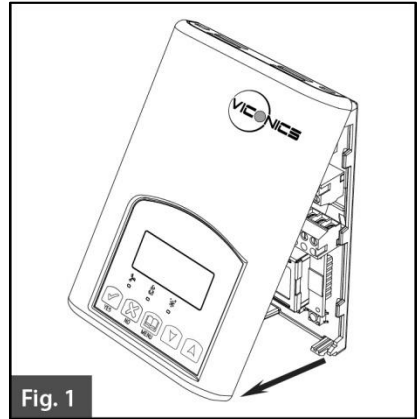
- Open unit by pulling on the bottom side of Terminal Equipment Controller (fig. 1).
- Remove wiring terminals from sticker.
- Please read the FCC ID and IC label installed in the cover upon removal of cover for the wireless products.

## 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 base in the proper orientation. Arrow on base should be facing 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 VT7000 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.

## THEORY OF OPERATION

The VZ7656 series uses a Viconics 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.

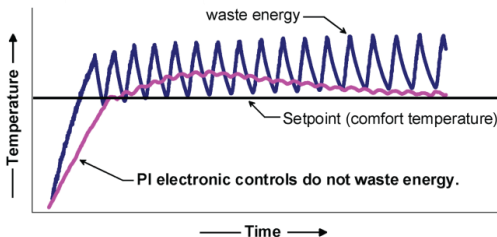


Fig.2 - On-Off mechanical control vs. PI electronic control.

### Features overview

- 7 day schedule models, 2 or 4 events.
- CO<sub>2</sub> control logic based on fresh air volume or fresh air damper position.
- Fresh air damper output for building CO<sub>2</sub> 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.

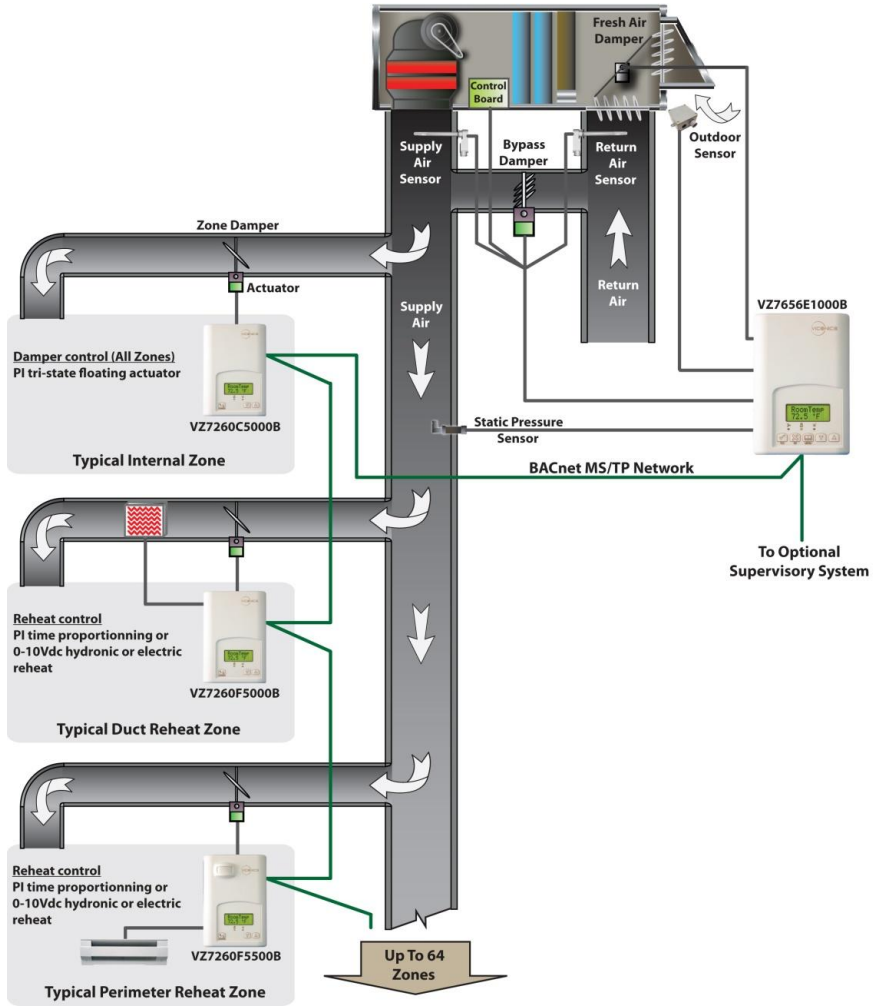
- Remote discharge air sensor input for monitoring and control purpose.
  - System efficiency feedback.
  - Discharge high limit heating lockout.
  - Discharge low limit cooling lockout.
- Remote return air sensor input for monitoring control.
  - System efficiency feedback.
  - Return high limit heating 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.

# BACNET SYSTEM OVERVIEW

Viconics VZ7260X5X00B Zone controllers are used in conjunction with the VZ7656X1000B 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

# TERMINAL, IDENTIFICATION AND FUNCTION

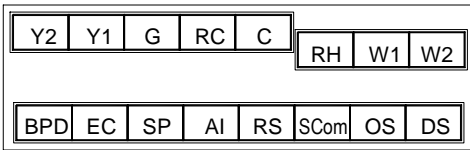
## Wiring

Terminal Use	Terminal Identification	Description
1 – Cool 2	<b>Y2</b>	Output for cooling / compressor stage number 2.
2 – Cool 1	<b>Y1</b>	Output for cooling / compressor stage number 1.
3 - Fan	<b>G</b>	Output for the fan.
4 - 24 V ~ Hot	<b>RC</b>	Power supply of controller, hot side (Delivered from the RTU).
5 - 0 V ~ Com	<b>C</b>	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	<b>RH</b>	24 VAC switched leg for the heating stages. <ul style="list-style-type: none"> <li>If heating stages are part of RTU, install a jumper across RC &amp; RH.</li> <li>If heating stages are part of separate equipment with a different power supply, feed external switched power leg through RH <b>without</b> installing a jumper across RC &amp; RH.</li> </ul>
7 – Heat 1	<b>W1</b>	Output for heating stage number 1.
8- Heat 2	<b>W2</b>	Output for heating stage number 2.
9 – By-pass damper	<b>BPD</b>	Local analog 0 - 10 VDC by-pass damper / VFD output.
10 – Economizer Output	<b>EC</b>	0-10 VDC analog fresh air damper / economizer output.
11 – Static pressure	<b>SP</b>	Local analog 0 – 5 VDC static pressure input.
12 – AI	<b>AI</b>	0-10 VDC analog input for airflow transmitter
13 - RS	<b>RS</b>	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	<b>Scom</b>	Reference input for DI 1, RS, OS & DS.
15 - OS	<b>OS</b>	Outside air temperature sensor input.
16 - DS	<b>DS</b>	Discharge air temperature sensor input.

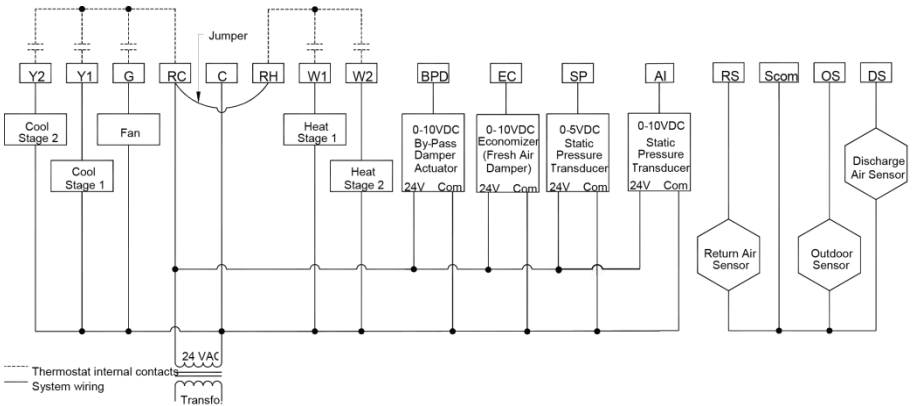
<b>BACnet™ Network Connections</b>		
BACnet™ Com	<b>Com +</b>	BACnet™ communication bus + connection.
BACnet™ Com	<b>Com -</b>	BACnet™ communication bus – connection.
Ref	<b>Ref</b>	Communication bus reference terminal. <ul style="list-style-type: none"> <li><b>DO NOT USE FOR OTHER THAN SERVICING ISSUES</b></li> <li><b>DO NOT WIRE SHIELD TO THIS TERMINAL</b></li> </ul>

# Screw terminal arrangement and wiring

## VZ7656E Controller Terminals



## 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 t Terminal Equipment Controller and the additional loads that will be wired to the Terminal Equipment Controller.

## Remote sensor accessories

Model no.	Description
S2020E1000	Outdoor temperature sensor
S2060A1000	Averaging temperature sensor
S2000D1000	Duct mounted temperature sensor

Remote mount temperature sensors use 10K NTC thermistor.

## Temperature vs. Resistance Chart for 10 Kohm NTC Thermistor

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

°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

**S2000D1000**; remote duct mounted temperature sensor c/w junction box.

This sensor can be used for:

- Remote return air temperature sensing with the sensor mounted on the return air duct.
- Outside air temperature sensing with the sensor installed in the fresh air plenum.
- Supply air temperature sensing.



Fig.10 – Remote Duct Mounted Temperature Sensor

**S2060A1000**; remote averaging duct mounted temperature sensor c/w junction box.

This sensor can be used for:

- Remote averaging return air temperature sensing with the sensor mounted on the return air duct.
- Outside air temperature averaging sensing with the sensor installed in the fresh air plenum.
- Supply air temperature averaging sensor for economizer models with the sensor in the mixing plenum.



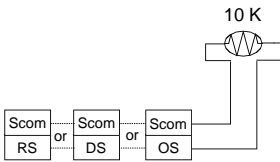
## S2020E1000; outdoor air temperature sensor

This sensor can be used for:

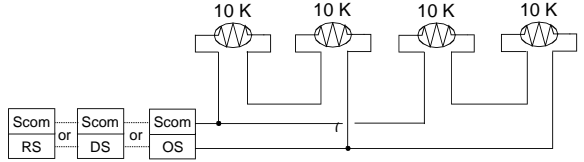
- Outside air temperature sensing with the sensor installed directly exposed to the elements.
- Sensor uses a water resistant NEMA 4 ABS enclosure for outdoor applications.

### WIRING S2000D1000, S2060A1000 and S2020E1000

#### Remote wiring 1 sensor



#### Remote wiring 4 sensors



## 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 TEMPERATURE	ALARMS
Monday 12:00 AM	Sys mode auto	Occupied	Outdoor x.x °C or °F	DAS Alarm
	Sys mode off	Occupied hold		FA Alarm
	Sys mode heat	Unoccup		SetClock
	Sys mode cool			High CO2
				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:

### 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 Temperature	Alarms (if detected)
Monday 12:00 AM	Sys Mode Off	Occupied	Outdoor xx.x °C or °F	DAS Alarm
	Sys Mode Auto	Unoccupied		FA Alarm
	Sys Mode Cool	Override		SetClock
	Sys Mode Heat			High CO2
				Com Lost

Current Zone Sequence	Return Air Temperature	Discharge Air Temperature	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 Heat				

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  
xxx %

Cool Out  
xxx %







CO2 Lvl  
xxxx ppm

Heat MAC  
xxx

Cool MAC  
xxx

CO2 MAC  
xxx

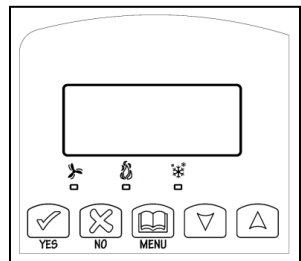
<b>DAS Alarm</b>	Indicates that the discharge air temperature is either too low or too high.
<b>FA Alarm</b>	Indicates that the Fresh Air Level is either too low or too high.
<b>SetClock</b>	Indicates that the clock needs to be reset. There has been a power failure which has lasted longer than 6 hours.
<b>High CO2</b>	Indicates that the CO <sub>2</sub> Level value is higher than the Max CO <sub>2</sub> parameter value.
<b>Com Lost</b>	The communication between devices has been lost (No Communication)

When any of the <b>fan</b> is <b>ON</b> , the <b>FAN LED</b> will illuminate	 
When <b>heating</b> is <b>ON</b> , the <b>HEAT LED</b> will illuminate	 
When <b>cooling</b> is <b>ON</b> , the <b>COOL LED</b> will illuminate	 

## USER INTERFACE

### User configuring instructions menu

The VZ7656X series of controllers feature an intuitive, menu-driven, back-lit 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.






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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

	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. 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	Schedules setting	Clock setting
Override schd Y/N	Sys mode set Y/N	Schedule set Y/N	Clock set Y/N
Appears only in unoccupied mode			
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.

## B) System mode setting

Sys mode  
set Y/N

This menu is accessed to set system mode operation. Use ▲ ▼ to set value, yes key to confirm.

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

## C) Schedule set (2 events)

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

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 configured per day.
- Occupied & 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 ↓	Wednesday set? Y/N	No next → Yes down ↓	Selects the day to be scheduled or modified	
-----------------	----------------------------	------------------	----------------------------	--------------------	----------------------------	---	--

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	
-------------------	----------------------------	-------------------	----------------------------	-------------------	----------------------------	--	--

Yes key to access day scheduling, No key to jump to next day

Copy Y/N Previous	Yes next → No down ↓	Copy Y/N Previous	Yes next → No down ↓	Yes = Will copy previous day schedule No = Daily schedules will be accessed	
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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	
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Use ▲▼ to set value, Yes key to confirm

Note: 12:00 PM = Noon  
12:00 AM = Midnight

Typical examples of a 2 event office schedule

**Ex. #1 Office building closed all weekend**

Event	Period #1 - Event #1	Period #1 - Event #2
	<b>Occupied</b>	<b>Unoccupied</b>
<b>Monday</b>	7.00 AM	6.00 PM
<b>Tuesday</b>	7.00 AM	6.00 PM
<b>Wednesday</b>	7.00 AM	6.00 PM
<b>Thursday</b>	7.00 AM	6.00 PM
<b>Friday</b>	7.00 AM	6.00 PM
<b>Saturday</b>	12.00 PM *	12.00 PM *
<b>Sunday</b>	12.00 PM *	12.00 PM *

Daily Occupancy
Day time only
Day time only
Day time only
Day time only
Day time only
Day time only
Unoccupied
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**

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

**D) 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 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.

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
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
Yes key to access day scheduling, No key to jump to next day						
		Copy Y/N Previous	Yes next → No down ↓	Copy Y/N Previous	Yes next → No down ↓	Yes = Will copy previous day schedule No = Daily schedules will be accessed
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						

### Ex. #1. Four event retail establishment schedule

Event	Period 1 - Event 1		Period 1 - Event 2		Period 2 - Event 3		Period 2 - Event 4		Daily Occupancy
	Cool 72°F	Heat 70°F	Cool 80°F	Heat 62°F	Cool 72°F	Heat 70 °F	Cool 80°F	Heat 62 °F	
Monday	7.00 AM		5.00 PM		12.00 PM *		12.00 PM *		Day time only
Tuesday	7.00 AM		5.00 PM		12.00 PM *		12.00 PM *		Day time only
Wednesday	7.00 AM		5.00 PM		12.00 PM *		12.00 PM *		Day time only
Thursday	7.00 AM		5.00 PM		7.00 PM		10.30 PM		Day/evening time only
Friday	7.00 AM		5.00 PM		7.00 PM		10.30 PM		Day/evening time 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.

### E) Clock/Day Settings















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	No next → Yes down ↓	Day set? Y/N	No next → Yes down ↓	12/24hrs set? Y/N	No = exit Yes down ↓
Time 0:00	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 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 PARAMETERS DEFAULT VALUE		SIGNIFICANCE AND ADJUSTMENTS		
<b>PswrdSet</b> Configuration parameters menu access password Default value = <b>0</b> 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		
<b>RTC MAC</b> Zone Controller Controller network address  Default Value: <b>4</b>		RTC MAC address must be unique for the entire network.  <b>1 to 255</b> (Increments: 1 or 10)  For BACnet™ models valid range to use is from 1 to 127.		
<b>RTC Baud</b> RTC Controller Communication Baud Rate  Default Value: 4 = <b>Auto</b>		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).		
<b>Lockout</b> Keypad lockout levels  Default value = <b>0 No lock</b>		0 = No lock 1 = Low level 2 = High level		
USER KEY FUNCTIONS				
LEVEL	Global Unocc Override	System mode setting	Schedules setting	Clock setting
0				
1				
2				
<b>pwr del</b> Power-up delay  Default value = <b>10 seconds</b>		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.  <b>10 to 120 seconds</b>		

<p><b>ContrTyp</b> Sets how the Zones attached to the RTU controller vote to determine the actual system mode of operation.</p> <p>(Heat or Cool)</p> <p>Default Value: <b>1 = AV_H3</b></p>	<p>This parameter will select the type of operation required for the RTU based on the size of the system. Please refer to the Viconics Zoning System Guide for recommended settings.</p> <p>Only the Zones that actually have values above 0% in their (<b>PIHT Wei &amp; PICL Wei</b>) configuration parameters will be able to vote on the RTU operational mode calculation.</p> <p><b>0 =Highest:</b> The highest PI Heating or PI Cooling demand from the selected voting zones will dictate heating or cooling operation of the RTU controller.</p> <p><b>1 = AV_H3:</b> 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.</p> <p><b>2 = AV_H5:</b> 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.</p>
<p><b>Dis HL</b> Discharge air temperature high limit</p> <p>Default: <b>120°F</b></p>	<p>Discharge air high temperature value at which the heating stages will be locked out.</p> <p><b>70°F to 150°F (21°C to 65°C)</b> (increments: 0.5° or 5°)</p>
<p><b>Dis LL</b> Discharge air temperature low limit</p> <p>Default: <b>45°F</b></p>	<p>Discharge air low temperature value at which the cooling stages will be locked out.</p> <p><b>35 to 65°F (2.0°C to 19.0°C)</b> (increments: 0.5° or 5°)</p>
<p><b>Anticycl</b> Minimum On-Off operation time for stages</p> <p>Default value = <b>2 minutes.</b></p>	<p>Minimum On-Off operation time of cooling &amp; heating stages.</p> <p><b>IMPORTANT, anti-short cycling can be set to 0 minutes for equipment that possess their own anti cycling timer. Do <u>not</u> use this value unless the equipment has the above mentioned internal timer. Failure to follow this guideline may lead to damaged equipment.</b></p> <p><b>0, 1, 2, 3, 4 &amp; 5 minutes.</b></p>
<p><b>Heat cph</b> Heating stages cycles per hour</p> <p>Default value = <b>4 C.P.H.</b></p>	<p>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.</p> <p>Note that a higher C.P.H will represent a higher accuracy of control at the expense of wearing down mechanical components faster.</p> <p><b>3, 4, 5, 6,7 &amp; 8 C.P.H.</b></p>

<p><b>Cool cph</b> Cooling stages cycles per hour Default value = <b>4 C.P.H.</b></p>	<p>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.</p> <p>Note that a higher C.P.H will represent a higher accuracy of control at the expense of wearing down mechanical components faster.</p> <p><b>3 or 4 C.P.H.</b></p>
<p><b>Deadband</b> Minimum deadband Default value = <b>2.0 °F (1.1 °C)</b></p>	<p>Minimum deadband value between the heating and cooling setpoints.</p> <p>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.</p> <p><b>2, 3 or 4 °F ( 1.0 to 2.0 °C )</b></p>
<p><b>Units</b> Sets the display scale of the controller Default value = <b>Imp</b></p>	<p><b>0 = SI</b> for Celsius / Pa pressure scale. <b>1 = Imp</b> for Fahrenheit / in. WC pressure scale.</p>
<p><b>fan del</b> Fan delay Default value = <b>Off</b></p>	<p>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. <b>Off or On</b></p>
<p><b>CO2 ctrl</b> CO2 Control Type configuration Default value = <b>AV_H3</b></p>	<p>Determines the value of CO2 to be used for control of the fresh air damper.</p> <p><b>Highest:</b> The highest value among the zones with CO2 sensors is used.</p> <p><b>AV_H3:</b> The average of the three highest values among the zones with CO2 sensors is used.</p> <p><b>AV_H5:</b> The average of the 5 highest values among the zones with CO2 sensors is used.</p>
<p><b>ToccTime</b> Temporary occupancy time Default value = <b>3 hours</b></p>	<p>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 or DI2 configured as remote override input. <b>0,1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 &amp; 12 hours</b></p>
<p><b>Cal RS</b> Room air temperature sensor calibration Default value = <b>0.0 °F or °C</b></p>	<p>Offset that can be added/subtracted to actual displayed room temperature <b>± 5.0 °F ( ± 2.5 °C )</b></p>

<b>Cal OS</b> Outside air temperature sensor calibration Default value = <b>0.0 °F or °C</b>	Offset that can be added/subtracted to actual displayed outside air temperature <b>± 5.0 °F ( ± 2.5 °C )</b>
<b>H stage</b> Number of heating stages installed at RTU. Default value = <b>2 stages</b>	Will revert the operation of 2 stage controllers to a single stage when the second heating step is not needed. <b>1 or 2 stages</b>
<b>C stage</b> <b>VZ7656R1000B models only</b> Number of cooling stages installed at RTU. Default value = <b>2 stages</b>	Will revert the operation of 2 stage controllers to a single stage when the second cooling step is not needed. <b>1 or 2 stages</b>
<b>H lock</b> Outside air temperature heating lockout Default value = <b>120 °F (49 °C)</b>	Disables heating stage operation based on outdoor air temperature. Function will only be enabled if OS ( outside air temperature sensor ) is connected. <b>From -15 °F up to 120 °F (-26 °C up to 49 °C)</b>
<b>C lock</b> Outside air temperature mechanical cooling lockout. Default value = <b>-40 °F (40 °C)</b>	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. <b>From -40 °F up to 95 °F ( -40 °C up to 35 °C )</b>
<b>2/4event</b> Number of events configuration Default value = <b>2 event</b>	<b>2 events</b> , will set up scheduling for the following Event 1 is for Occupied setpoints Event 2 is for Unoccupied setpoints <b>4 events</b> , 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
<b>FA Range</b> FA range upper limit value Default value = <b>0 CFM</b>	Sets the upper limit of the CFM range. This parameter should be set based on the rooftop unit size. If set to 0 CFM, the fresh air damper control will be based on the Min/Max CO2 and Min/Max Pos values. See Damper Position section for more details. <b>0 to 20 000 CFM (0 to 9438 L/s), 10 or 100 increments</b>

<p><b>Prog rec</b></p> <p>Progressive recovery enabled</p> <p>Default value = <b>Off</b></p> <p>Progressive recovery is automatically disabled if BI 1 is configured remote NSB</p>	<p><b>Off</b>, = no progressive recovery.</p> <p>The programmed occupied schedule time is the time at which the system will restart and send the occupied status to the attached zones.</p> <p><b>On</b>, = progressive recovery active.</p> <p>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.</p>
<p><b>Occ CL</b></p> <p>Return air sensor network lost occupied heating setpoint</p> <p>Default: <b>72°F</b></p>	<p>If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint.</p> <p><b>40 to 90°F (4.5°C to 32°C)</b> (increments: 0.5° or 5°)</p>
<p><b>Occ HT</b></p> <p>Return air sensor network lost occupied heating setpoint</p> <p>Default: <b>72°F</b></p>	<p>If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint.</p> <p><b>40 to 90°F (4.5°C to 32°C)</b> (increments: 0.5° or 5°)</p>
<p><b>Unocc CL</b></p> <p>Return air sensor network lost unoccupied cooling setpoint</p> <p>Default: <b>82°F</b></p>	<p>If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint.</p> <p><b>54 to 100°F (12°C to 37.5°C)</b> (increments: 0.5° or 5°)</p>
<p><b>Unocc HT</b></p> <p>Return air sensor network lost unoccupied heating setpoint</p> <p>Default: <b>65°F</b></p>	<p>If network communication is lost with the zone controllers, the return air sensor will control the RTC to maintain this setpoint.</p> <p><b>40 to 90°F (4.5°C to 32°C)</b> (increments: 0.5° or 5°)</p>
<p><b>Sp range</b></p> <p>Static Pressure sensor range</p> <p>Default: <b>0</b></p>	<p>Static pressure transducer range. Voltage input range is 0 to 5 VDC.</p> <p><b>0 = 0 to 1.5 in WC</b>  <b>1 = 0 to 2 in WC</b>  <b>2 = 0 to 3 in WC</b>  <b>3 = 0 to 4 in WC</b>  <b>4 = 0 to 5 in WC</b></p>

<p><b>Pressure</b></p> <p>Static Pressure setpoint</p> <p>Default: <b>0.8"WC</b></p>	<p>Bypass damper will maintain this supply static pressure set point.</p> <p>Please refer to the Viconics Zoning System Guide for recommended settings.</p> <p><b>0 to 2 in WC (0 Pa to 500 Pa)</b> (increments: 0.1" WC or 25 Pa)</p>
<p><b>SP Cntrl</b></p> <p>Static Pressure Control Type</p> <p>Default: <b>BPD</b></p>	<p>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.</p> <p><b>BPD (By-Pass Damper): 10VDC when fan is Off</b></p> <p><b>VFD (Variable Frequency Drive): 0VDC when fan is Off</b></p>
<p>Chngstpt</p> <p>Changeover setpoint</p> <p>Default value = <b>55 °F ( 13.0 °C )</b></p>	<p>In <i>Cooling</i> mode.</p> <p>The outside air temperature value at which the cooling will be switched over from mechanical ( compressor ) to free cooling ( economizer )</p> <p><b>14 to 70 °F ( -10.0 to 21.0 °C )</b></p>
<p><b>mix stpt</b></p> <p>Mixed air setpoint</p> <p>Default value = <b>55 °F ( 13.0 °C )</b></p>	<p>Free cooling mixed air setpoint when economizer mode is enabled.</p> <p><b>50 to 90 °F ( 10.0 to 32.0 °C )</b></p>
<p><b>Min Pos</b></p> <p>Minimum Fresh Air Damper/Economizer Position</p> <p>Default value = <b>0%</b></p>	<p>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.</p> <p><b>0% to 100%, 1 or 10 increments</b></p>

<p><b>Max Pos</b></p> <p>Maximum Fresh Air Damper/Economizer Position</p> <p>Default value = <b>100%</b></p>	<p>Maximum fresh air damper position. Effective only in Occupied mode (Fan is ON). This value is used to determine the fresh air damper position based on the Min/Max CO<sub>2</sub> and Min/Max Pos values set. See Fresh Air Damper Position section for more details.</p> <p><b>0% to 100%, 1 or 10 increments</b></p>
<p><b>Min FA</b></p> <p>Minimum Fresh Air Value</p> <p>Default value = <b>0 CFM</b></p>	<p>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 CO<sub>2</sub> and Min/Max FA values (if FA Range is set to other than 0 CFM). See Fresh Air Damper Position section for more details.</p> <p><b>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</b></p>
<p><b>Max FA</b></p> <p>Maximum Fresh Air Value</p> <p>Default value = <b>0 CFM</b></p>	<p>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 CO<sub>2</sub> 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.</p> <p><b>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</b></p>
<p><b>Min CO<sub>2</sub></b></p> <p>Minimum CO<sub>2</sub> Level</p> <p>Default value = <b>800 ppm</b></p>	<p>Minimum CO<sub>2</sub> 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 CO<sub>2</sub> and Min/Max Pos values set. See Fresh Air Damper Position section for more details.</p> <p><b>0 to 2000 ppm, 10 or 100 increments</b></p>
<p><b>Max CO<sub>2</sub></b></p> <p>Maximum CO<sub>2</sub> Level</p> <p>Default value = <b>1200 ppm</b></p>	<p>Maximum CO<sub>2</sub> 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 CO<sub>2</sub> and Min/Max Pos values set. See Fresh Air Damper Position section for more details.</p> <p><b>0 to 2000 ppm, 10 or 100 increments</b></p>

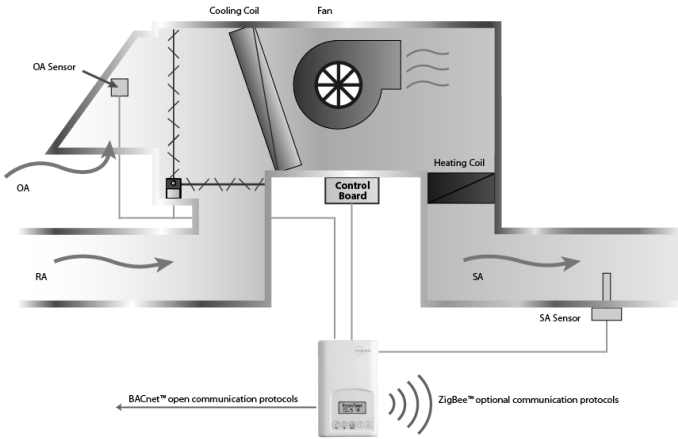
# FRESH AIR DAMPER CONTROL SEQUENCES

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 CO<sub>2</sub> 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 CO<sub>2</sub> parameter value must be greater than Min CO<sub>2</sub> Parameter value.**
- **Max FA parameter value must be greater than Min FA Parameter value.**

## Economizer Control Mode Only



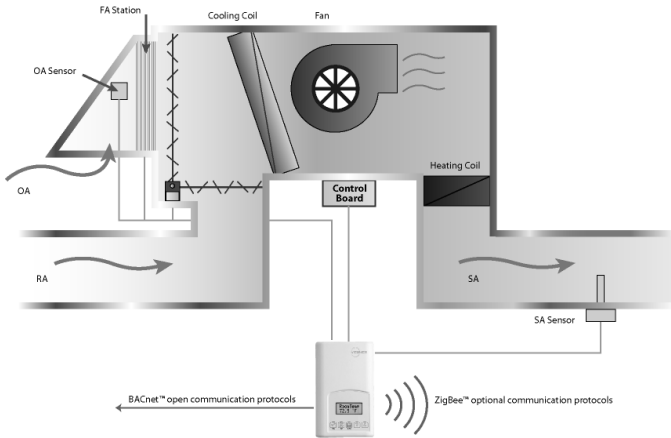
If the fresh air damper is to be used only for free cooling purposes (economizer mode, without fresh air measurement station or CO<sub>2</sub> control), only the Min Pos parameter and the free cooling sequence will be active.

- **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.



## Economizer Mode and Fresh Air Measurement Station



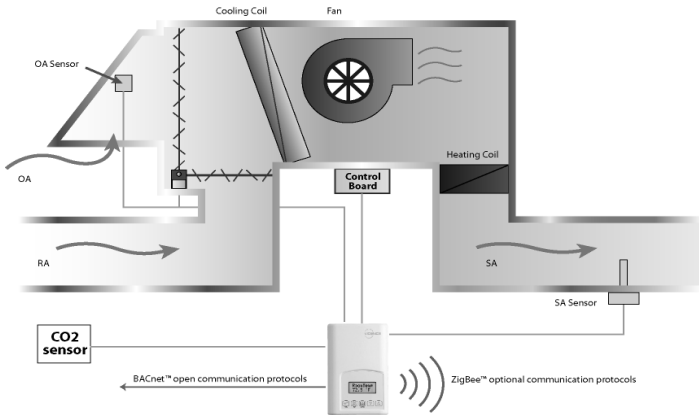
If the fresh air damper is to be used for both free cooling and minimum fresh air volume control (economizer mode and fresh air measurement station, but without CO<sub>2</sub> level control), only the Min FA parameter and the free cooling sequence will be active.

- **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 10000 CFM, set FA Range to 10000.

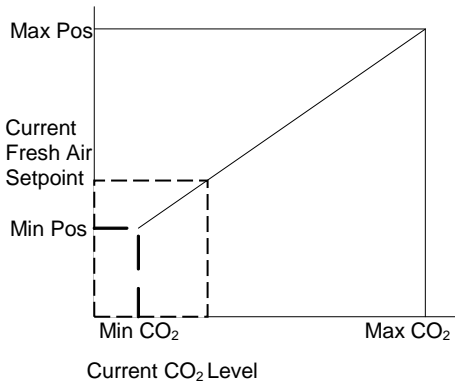
This will set the relationship of **0 VDC = 0 CFM** and **10VDC = 10000 CFM**.

## Economizer Mode and CO<sub>2</sub> Level Control



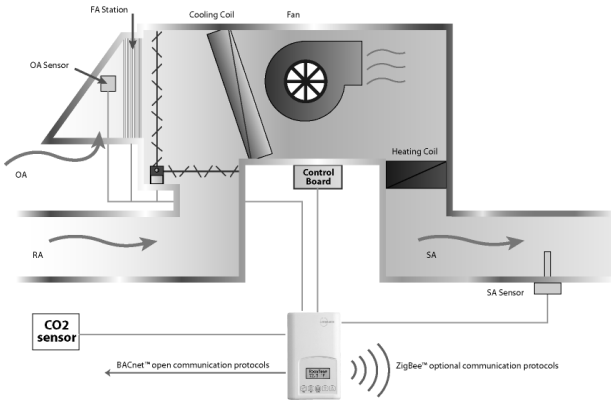
If the fresh air damper is to be used for both free cooling and CO<sub>2</sub> level control (economizer mode and CO<sub>2</sub> level control, but without fresh air measurement station), only the Min Pos, Max Pos, Min CO<sub>2</sub> and Max CO<sub>2</sub> parameters as well as the free cooling sequence will be active.

- **The FA Range parameter should be set to 0 CFM.**
- **Set AI1 parameter to CO<sub>2</sub> (0 VDC = 0ppm ; 10VDC = 2000ppm)**
- **Min Pos, Max Pos, Min CO<sub>2</sub> and Max CO<sub>2</sub> parameters should be set according to the required setting.**



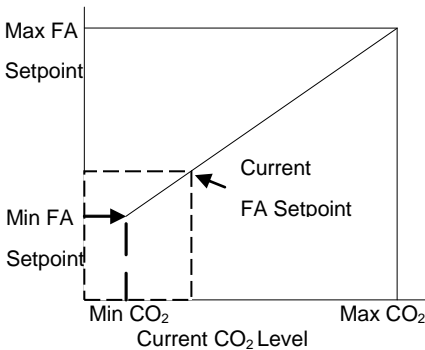
The highest value between free cooling demand output and interpolation output for the fresh air setpoint will be the output to the fresh air damper.

## Economizer Mode, CO<sub>2</sub> Level Control and Fresh Air Measurement Station



If the fresh air damper is to be used for both free cooling and CO<sub>2</sub> level control with a fresh air measurement station, only the Min FA, Max FA, Min CO<sub>2</sub> and Max CO<sub>2</sub> 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 AI2 input (0-5 VDC input)**
- **Min FA, Max FA, Min CO<sub>2</sub> and Max CO<sub>2</sub> 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 CO<sub>2</sub> level will be the output to the fresh air damper

# SPECIFICATIONS

## Terminal Equipment Controller power requirements:

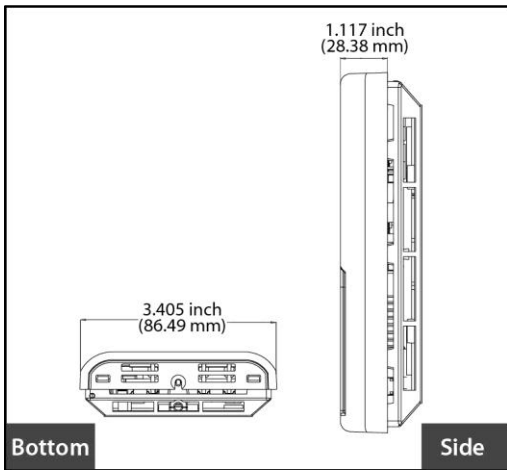
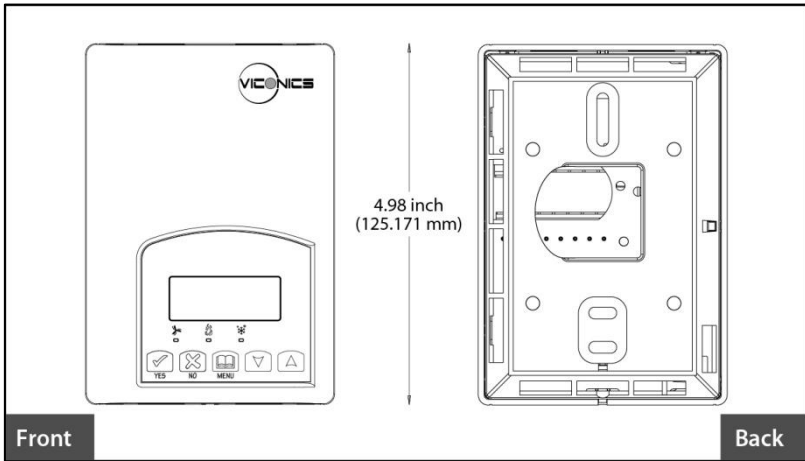
Terminal Equipment Controller power requirements:	19-30 VAC 50 or 60 Hz; 2 VA Class 2 RC to RH jumper 2.0 Amps 48VA max.
Operating conditions:	0 °C to 50 °C ( 32 °F to 122 °F ) 0% to 95% R.H. non-condensing
Storage conditions:	-30 °C to 50 °C ( -22 °F to 122 °F ) 0% to 95% R.H. non-condensing
Sensor:	Local 10 K NTC thermistor
Resolution:	± 0.1 °C ( ± 0.2 °F )
Temperature control accuracy:	± 0.5 °C ( ± 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, Scsm
Digital inputs:	Dry contact across terminal D11
By-Pass damper and economizer analog outputs rating	0 to 10 VDC into 2KΩ resistance min
By-Pass damper and economizer analog outputs accuracy	± 3% typical
Wire gauge:	18 gauge maximum, 22 gauge
Approximate shipping weight:	0.75 lb ( 0.34 kg )
Agency Approvals all models:	<b>UL:</b> UL 873 (US) and CSA C22.2 No. 24 (Canada), File E27734 with CCN XAPX (US) and XAPX7 (Canada) <b>Industry Canada:</b> ICES-003 (Canada) <b>FCC:</b> Compliant to CFR 47, Part 15, Subpart B, Class A (US) <b>CE :</b> EMC Directive 2004/108/EC (Europe Union) <b>C-Tick:</b> AS/NZS CISPR 22 Compliant (Australia / New Zealand) Supplier Code Number N10696
Agency Approvals all models:	<b>FCC:</b> Compliant to: Part 15, Subpart B, Class (US)
Agency Approvals Wireless models:	

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 UNDESIRE OPERATION



Please check with your local government for instruction on disposal of this product

# DRAWING & DIMENSIONS



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