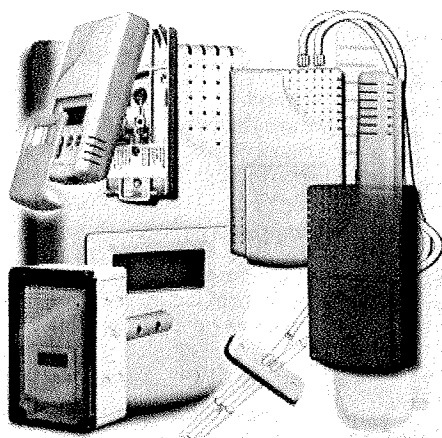


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CE

Ventostat® 8000 Series Commercial Product Operation/Installation Manual

Carbon Dioxide (CO₂) Sensors and ControllersThis Manual covers the following products:
8001 / 8001B / 8002 / 8002B / 8007 / 8008

Applications

Telaire's commercial 8000 series carbon dioxide (CO₂) sensors and controllers are ready for wall, in-duct, and outside air installations in a variety of applications including:

- CO₂ based demand controlled ventilation for controlling ventilation based on occupancy.
- Integration of CO₂ sensing with common economizer control strategies.
- Measurement of outside air CO₂ content to determine inside/outside CO₂ differential on a real time basis.
- Sensing the presence of combustion fumes in outside air intakes (CO₂ is one of the principal components of vehicle or furnace exhaust).
- Sensing excessive levels of combustion/diesel fumes in enclosed parking spaces or loading docks.

Key Features

- Telair's Patented Absorption Infrared™ gas sensing engine provides high accuracy in a compact low-cost package.
- Patented ABC Logic™ Self Calibration System eliminates the need for manual calibration in most applications.
- Gold-plated optical sensor increases sensor life and durability.
- Attractive, low-profile package with separate wiring sub-base and choice of hidden and visible displays (on display units).
- Outputs for Voltage (0-10V), mA (4-20) and on-board SPDT relay (normally open or closed).
- Select one of 10 preset outputs based on desired ventilation rate or customize output using Telair's PC based UIP software or the on-board keypad (keypad adjustment available on display units only).
- Optional black case is UL94-V5 rated which makes it suitable for in-duct mounting.
- Conformally coated electronics resist airborne contaminants (on select models).
- Versions for wall mounting, outside air sampling, harsh environment sampling, duct aspiration sampling, duct pitot sampling and in-duct mounting.
- Proportional or Exponential output signal.
- Other models available that measure both CO₂ and temperature (see 5010 and 5011 products).

ABC Logic™ Provides Automatic Calibration

Telaire's 8000 series commercial sensors use the patented ABC Logic™ (Automatic Background Calibration) self-calibration system that virtually eliminates the need for manual calibration in applications where the indoor CO₂ level drops to outside levels during unoccupied periods (e.g. during evening hours). ABC Logic™ is a special software routine in the sensor that remembers the background readings for 14 consecutive evenings and calculates if there is sensor drift and then corrects for it. ABC Logic™ will not work properly in applications where the space is unoccupied for less than four hours a day or where there are other internal sources of CO₂ such as in breweries, wineries, greenhouses or occupational health settings.

To ensure the sensor is exposed to outside carbon dioxide values during unoccupied periods, the building operator may want to extend timer based operation of the system to slightly beyond normal occupied hours. Energy usage will be minimized because the CO₂ sensor will reduce ventilation if no occupants are present. If your space is not likely to periodically drop to outside levels (e.g. 24-7 full-time occupancy or industrial source of CO₂ present), see the 8100 series Precision grade CO₂ sensors and controllers.

1. Introduction

Telaire's full range of 8000 series products is listed in Table 1 below. This manual is intended to support applications and installations using Telaire's Commercial Grade sensors as identified in the first section of the table. Further information on these and other Telaire® products may also be found on datasheets and application notes. Please contact us at (805) 964-1699 or visit our website at www.telaire.com.

Model	Mounting	LCD Display	Case Color	Compatible with 1505, 1508 and 1551	Comment
Commercial Grade CO2 Sensors (Demand Controlled Ventilation, Building Monitoring)					
8001	Wall	No	White	Yes	Best value
8001B	Wall	No	Black*	Yes	Best value
8002	Wall	Yes	White	Yes	Best value with display
8002B	Wall	Yes	Black*	Yes	Best value with display
8007	Pitot Duct Sample	No	Black**	No	Flow through sensor with dual pitot tube to insert in ductwork.
8008	Pitot Duct Sample	Yes	Black**	No	
Precision Grade CO2 Sensors (24 Hr/Day Occupancy, Agriculture, Health and Safety)					
8101	Wall	No	White	Yes	Dual beam sensor with interface for self calibration
8101B	Wall (Harsh Environments)	No	Black*	Yes	
8102	Wall	Yes	White	Yes	
8102B	Wall (Harsh Environments)	Yes	Black*	Yes	
8502	Wall 0-5% CO2	Yes	Black*	Yes	
Accessory Enclosures					
1508	Duct Mount Aspiration Box				
1505	Splash Resistant Case for Harsh Environments (High Humidity)				
1551	Outside Air/Low Temperature Enclosure to -15°F, -25°C				

*UL94-5V Rated Case and Conformal Coated Electronics
 **UL 94 V rated Case Only

Telaire® Commercial Grade CO2 Sensor/Controller Models

2. Specifications

Method

Single Beam Absorption Infrared™
 Diffusion sample method (8001, 8001B, 8002, 8002B)
 Flow-Through sample method (70-120 ml/min) (8007, 8008)

Performance

Measurement Range

0-2000 ppm factory default
 Adjustable to 10,000 ppm with UIP software kit

Accuracy

±100 ppm or 7% whichever is greater

Elevation (Pressure) Correction

Add 0.13% of reading per mm Hg decrease from 760 mm Hg (On-board correction, user set with UIP software)

Response Time 0-90%

<1 minute

Warm-Up Time @ 25°C

<2 minutes

Operating Conditions

15 – 32°C (60-90°F)
 0 – 95% RH, non-condensing

Storage Temperature

-40 – 70°C

Agency Certification

FCC Part 15 Class B, CE, California Energy Commission

Input/Output

Power

18-30 VAC RMS, 50/60 Hz – half-wave rectified
 18-42 VDC polarity protected
 1.75 VA maximum average power
 2.75 VA peak power

Analog Output (Simultaneous)

0-10 VDC (100 Ohms output impedance)
 4-20 mA (RLmax = 500 Ohms)

Relay Output

Normally Open and Normally Closed (wire either way), gold bifurcated, 2A max. @ 24VAC. Adjustable setpoint, factory set at 1000 ppm, 50 ppm hysteresis

Wiring

18-28 AWG stranded copper wire only. 2 wires each for power, analog output, relay

Digital I/O

RS-232 interface for use with optional PC software and cable in UIP kit 2072

Warranty/Other

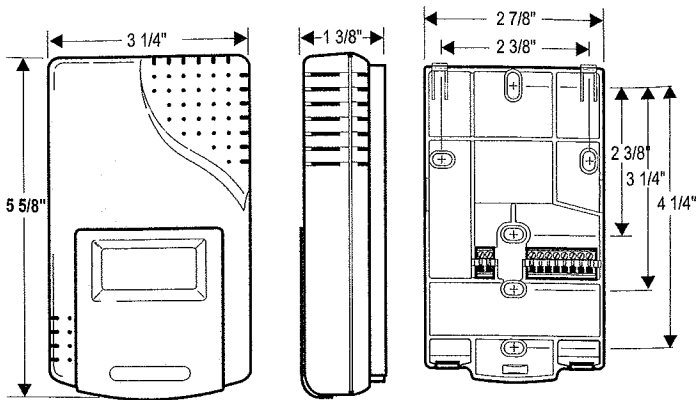
Warranty

18 months parts and labor

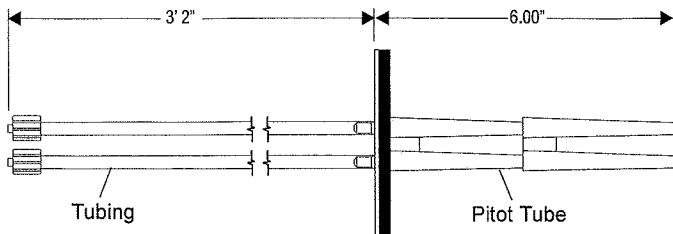
Calibration

5-year calibration guarantee

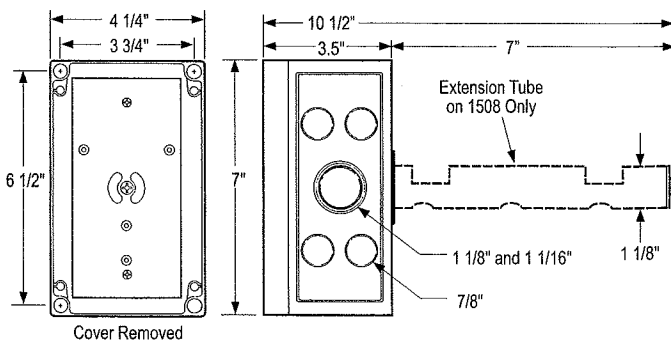
3. Dimensional Drawings



All 8000 Models come with separate mounting bracket. Middle view shown with bracket installed.



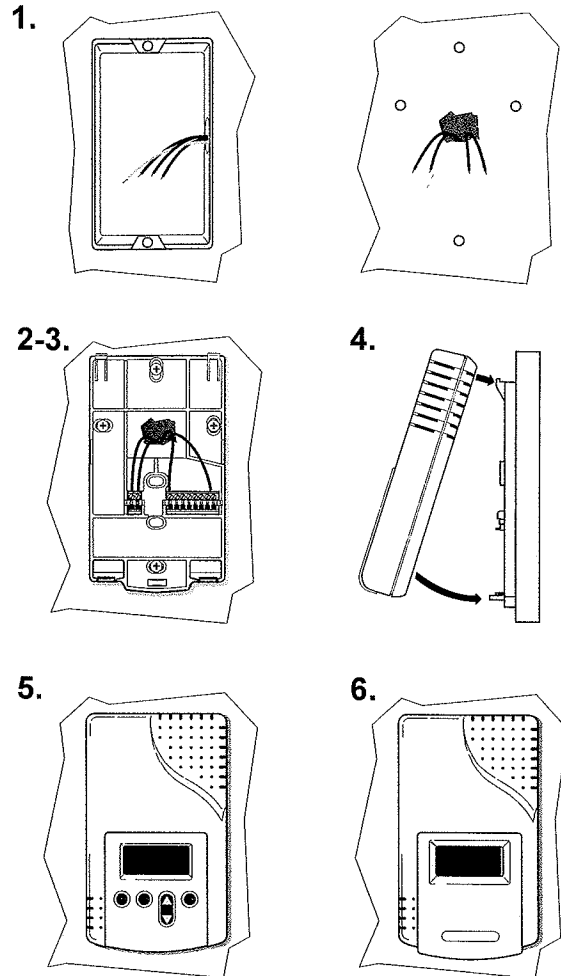
8007/8008 Duct Mount. Sensors are shipped with 3 feet of tubing and pitot probe. Illustration shows tubing and pitot.



1505, 1508 and 1551 Enclosures for 8000 Series. Enclosure housing is the same size for all 1500's with the exception of the 1508 which includes extension tube (as shown in illustration).

4. Installing The Sensor

Basic Installation of the Mounting Plate and Sensor



1. Prepare for installation by using the mounting holes configured for US or European junction boxes.
2. Use the mounting plate as a template to mark mounting holes.
3. Secure the Mounting Plate to the wall or junction box and make necessary wire connections.
4. Mount the Controller on the base by aligning the top clips and then securing to the bottom clips. A "snap" sound will indicate that the sensor is secure. The sensor will now have power. A 2 minute warm-up will take place. After 2 minutes, the sensor will stabilize and display the "Normal Mode" (current CO₂ readings).
5. At this point one of nine preset programs or one custom channel can be selected for operation. Refer to "8. Configuring the Sensor."
6. Finish installation by sliding the cover over the menu keys and secure with the supplied screw.

5. Sensing Duct CO₂ Concentrations

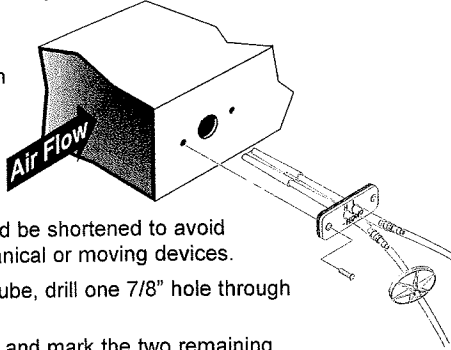
Duct-Mounting the 8001B and 8002B

The 8001B and 8002B have the UL94-V5 rated black case and are specifically designed for mounting inside the return air ductwork. When mounting these products inside the ductwork, seal the hole around the wires and leave the duct insulation in place to prevent condensation which may damage the sensor. Otherwise, follow the basic instructions in Section 4.

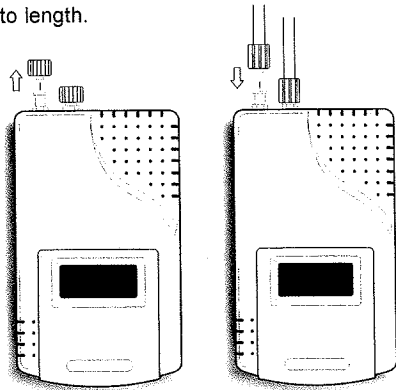
Pitot Tube Installation for the 8007 and 8008

First, install the mounting plate and base as shown in Section 4. Then, install the pitot tube assembly as follows:

Note: The length of the Tygon[®] tubing is three feet. In order to maintain optimum accuracy, the tubing should not be lengthened. If the sensor is mounted closer than three feet, the excess tubing should be shortened to avoid interference with mechanical or moving devices.



1. To mount the pitot tube, drill one 7/8" hole through the duct.
2. Insert the pitot tube and mark the two remaining holes for the mounting screws.
3. Punch or drill the two marked holes.
4. Note the direction of airflow in the duct.
5. Note the marking on the pitot tube flange and insert so that it is properly aligned with the airflow.
6. To ensure an air tight seal, make sure the mounting surface of the duct is clear of dirt or obstructions. Then, attach the pitot tube to the duct with sheet metal screws or rivets.
7. On top of the sensor, unscrew the protective caps from the tube connectors.
8. Check the length of the tubing before attaching to the sensor. The tubing should connect without stretching or pulling. If the length is long enough to create a loop or bind in the tubing, it should be shortened.
9. To shorten the tubing, remove the connectors that attach to the sensor and cut the tubing to length.
10. Replace the tubing connectors by using a twisting or screwing motion. Verify the connection is secure.
 Note: If the tubing length has been shortened, be sure the in-line filter is replaced on the pitot tube connector marked with an "H".
11. Complete the installation by screwing the tube connectors to the input ports on the sensor. The tubing connectors can be attached to either input port. It will not affect the performance of the sensor.

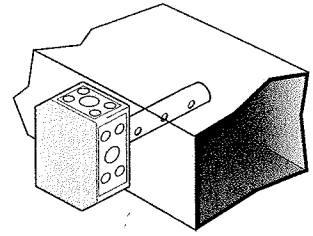


6. Accessory Enclosures

Model 1508 Duct Mount Enclosure (Aspiration Box)

Any 8001 or 8002 product can be installed inside a Model 1508 Duct Mount Enclosure to measure CO₂ concentrations in the ductwork.

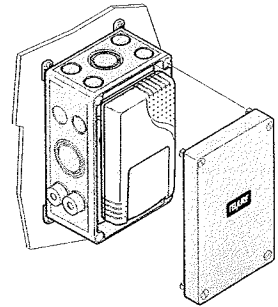
The enclosure is mounted outside the ductwork for ease of maintenance and operation. Wiring connections are made by running conduit through a knockout and then attaching the wires to the sensor mounting plate as discussed in Section 3. The Model 1508 is lightweight, durable, and can be installed in minutes. Refer to the Model 1508 Duct Mount Enclosure installation instructions for complete details.



Model 1551 Outside Air Measurement Enclosure

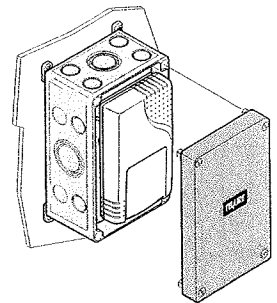
The Model 1551 Outside Air Measurement Enclosure allows you to measure outside air CO₂ concentrations with an 8001 or 8002 sensor. This NEMA-3R weatherproof enclosure has two functions for your ventilation system: to control the system by directly comparing the outside and indoor CO₂ levels, and to prevent diesel exhaust fumes from entering indoor environments by reacting to fast rising, high CO₂ concentrations. Internal heat

stabilizers allow the sensor to make accurate outdoor CO₂ measurements over an extended temperature range. Refer to the Model 1551 Outside Air Measurement Enclosure installation instructions for complete details.



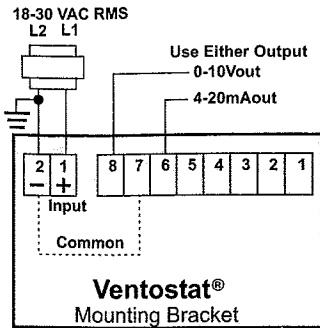
Model 1505 Harsh Environment Enclosure

The Model 1505 Harsh Environment Enclosure allows you to measure CO₂ levels with an 8001 or 8002 sensor in extreme environments where the sensor might be subjected to condensation or water spray such as those found in greenhouses or breweries. The 1505 is NEMA-3R rated like the 1551, but it does not have the internal heat stabilizers. Refer to the Model 1505 Harsh Environment Enclosure installation instructions for complete details.

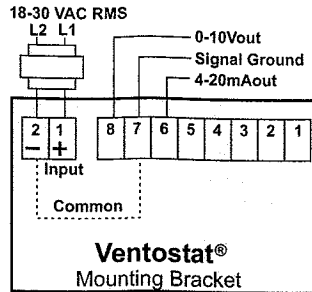


7. Typical Wiring Diagrams

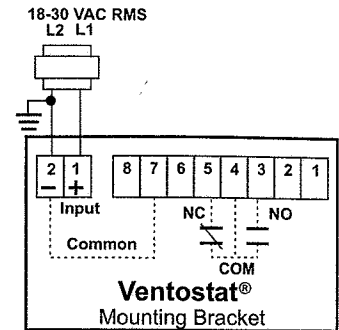
AC Power 3-Wire System



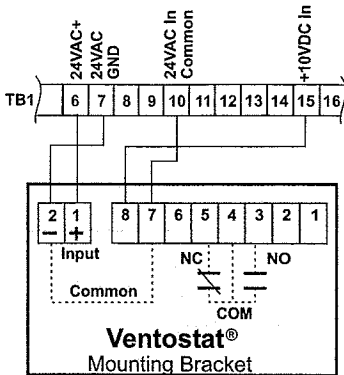
Isolated AC Power 4-Wire System



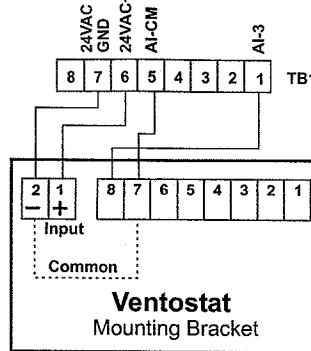
Using the Relay Contacts



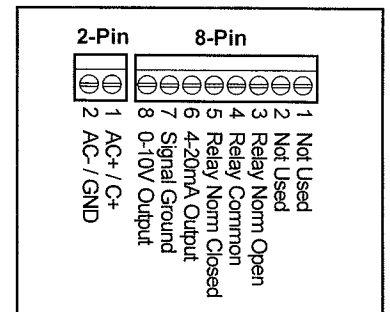
Lennox L-Series



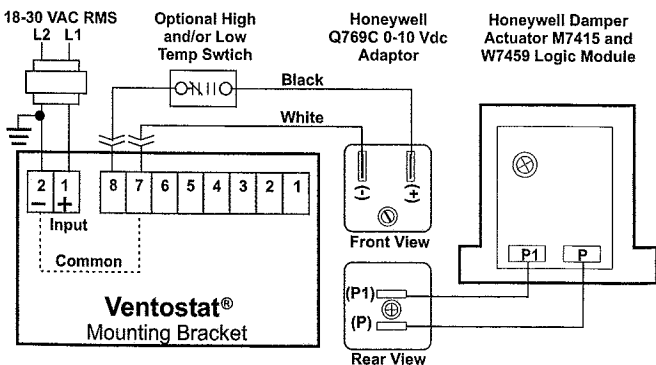
Lennox L-Series with Johnson Controls Metasys UNT or Facilitator FA-UNT



8-Pin and 2-Pin Terminal Block Pin Designations on the Ventostat Mounting Bracket



Honeywell M7415 Damper Actuator with W7459 Logic Module

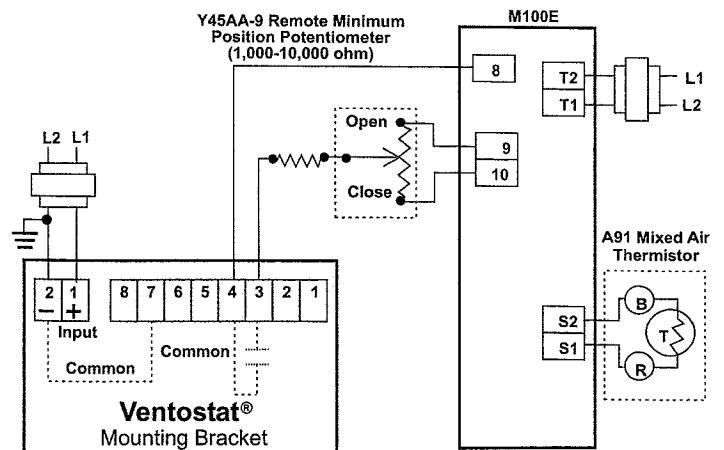


Set minimum position potentiometer to twice the design load. For example, if the space is designed for 30 people at 15 cfm/person, adjust the minimum position potentiometer at the economizer logic to 900 cfm. This will allow the economizer to introduce 450 cfm (1000 ppm CO2 level) at the design load. The CO2 sensor should use "STDSET#1."

NOTE:

24V- Do not use HVAC unit transformer. Provide 24V by non-grounding transformer.

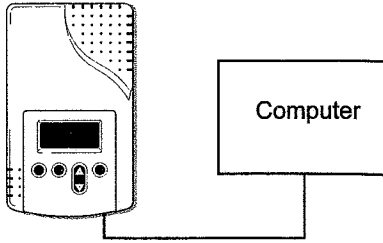
Johnson Controls M100E Economizer Actuator with R81EAA-2 Interface Board



8. Configuring the Sensor

Adjustable Sensor Settings

The Telaire 8000 series uses a 16 Bit microprocessor that allows the design to incorporate a number of adjustable features at no additional cost. These adjustments can be made using the keypad on display units or by the PC based UIP program that communicates to the sensor via a custom RS232 interface cable.



Factory Settings:

The standard factory settings are the typical settings used when a CO₂ sensor is connected to a building control system. If the installation is somewhat unique or specialized, the user can customize certain characteristics of the sensor. For example, non-factory settings may be applicable when the sensor is being connected to equipment that has a fixed input range (e.g actuators used with economizer systems).

Outlined below are the adjustable parameters of the sensor and the factory setting. In addition to these adjustable features, the programming interface allows for a fast and simple adjustment of sensor calibration.

Adjustment	Range	Factory Setting
Altitude Above Sea Level	0-10,000 Ft	0 Ft
ABC Logic™	On/Off	On
Select Standard Setting	1 to 9	1
Customize Setting		
PPM Range	0-10,000	0-2,000
Output Range	4-20mA / 0-10V	4-20mA / 0-10V
Proportional/ Exponential Output	Select One	Proportional
Relay Setpoint	0-10,000 PPM	1000 PPM
Relay Hysteresis	0-10,000 PPM	50 PPM

8000 Series Adjustment Parameters and Factory Settings

When to use the programming features on the sensor

Altitude:

All Telaire 8000 series products are calibrated at sea level. As altitude increases, the density of the air around us slightly decreases. This natural phenomenon affects the accuracy of all gas sensors and introduces an error of approximately -3% of the reading per 1,000 ft of elevation. Much of the urbanized world is at an elevation of less than 1000 ft meaning that altitude has very little effect on the reading and no adjustment is necessary. However, users in locations significantly higher than sea level such as Denver, Colorado may want to consider adjusting for elevation based on altitude to have the most accurate reading. The altitude setting can be adjusted on the unit in 500 ft increments.

ABC Logic™ Self Calibration System:

All Telaire 8000 series commercial sensors are factory set with the ABC Logic™ (ABC = Automatic Background Calibration) (formerly called TEMA) Self Calibration feature ON. This feature allows the sensor to continually recalibrate itself when the indoor concentrations drop to outside levels while the building is unoccupied. Generally a building must be regularly unoccupied (with the exception of cleaning or maintenance staff) for 4 hours or more for this self-calibration system to operate properly. Under these conditions, ABC Logic™ should maintain sensor calibration over the lifetime of the sensor. The ABC Logic™ should be turned OFF where a building is continuously occupied 24 hours per day, or where there could be significant sources of non-occupant related CO₂ such as greenhouses, breweries and other industrial and food processing applications.

Pre-Programmed Settings:

In addition to the factory setting for the 8000 series sensors, there are 9 standard settings that can easily be selected using the keypad (display units only) or the PC based UIP Program. The chart below describes each of the settings. The definitions for some of the terms used in the chart are described in more detail as part of the custom settings section to follow.

Settings 1, 2 and 3 are applicable for automated or computerized building control systems.

Settings 4 to 7 are specifically designed for operation with economizer controls and actuators where a 0-10 VDC signal will provide 0-100% outside air modulation. These control settings provide different modulation ranges depending on the target cfm-per-person ventilation rate desired. As described below the exponential setting is best used in applications that have large volumes of air and people such as auditoriums, gyms and large conference areas.

Setting 8 is intended for use in applications related to occupational health and safety where users may want to measure concentrations in relation to the 5000 ppm 8 hour exposure levels established by OSHA (Occupation Safety and Health Administration).

Setting 9 is intended for use in parking garages where CO₂ can be used as an indicator of the presence of combustion fumes. As part of most types of combustion, CO₂ is generated at a rate that is 50 times or more of other more harmful contaminants. This is particularly the case with the extensive use of catalytic converters that tend to remove most of the carbon monoxide from vehicle exhaust. The 700 ppm setting should maintain levels of other exhaust contaminants well below levels of concern.

Custom Settings:

In addition to the 9 standard settings programmed into the 8000 series, users can also custom program the sensor for their own application. Outlined below is a brief description of each of the adjustable custom settings:

Setting No	Type of Equipment	Type of Output	Ventilation Rate (cfm/ Person)	Analog Output	CO ₂ Control Range (ppm)	Optional Relay Setpoint (ppm)	Relay Hysteresis (ppm)
1	Interface w/Standard Building Control System	Proportional	Any	0-10V 4-20mA	0-2000	1000	50
2	Interface w/Standard Building Control System	Proportional	Any	2-10V, 7-20 mA	0-2000	1000	50
3	Interface w/Standard Building Control System	Exponential	Any	0-10V 4-20mA	0-2000	1100	50
4	Economizer (Hvac)	Proportional	15	0-10V 4-20mA	0-1100	1100	50
5	Economizer (Hvac)	Proportional	20	0-10V 4-20mA	0-900	900	50
6	Economizer (Hvac)	Exponential	15	0-10V 4-20mA	0-1100	1100	50
7	Economizer (Hvac)	Exponential	20	0-10V 4-20mA	0-900	900	50
8	Health & Safety	Proportional	NA	0-10V 4-20mA	0-9999	5000	500
9	Parking/Air Intakes/ Loading Docks	Proportional	NA	0-10V 4-20mA	0-2000	700	50

Standard Sensor Settings Available Via the Keypad (Display Units Only) or PC Based UIP Interface (All Units).

- **Control Range:** The range that will correspond to the analog signal output range. The range consists of a low level and a high level in ppm. Setting this range does not limit the actual measurement or display range.
- **Analog Output Range:** Can be expressed in V or mA. This range will correspond to the range of CO₂ concentrations established in the measurement range. On the 8000 series, a V and mA output is selected based on the wiring terminals. It is possible to simultaneously connect to both the V and mA outputs.

- Proportional or Exponential Control: Proportional (linear) control increases the signal output in proportion to the increase in CO₂ concentrations for the measurement range and analog output range selected. Exponential control provides an output function that is exponential over the selected range of the sensor. The effect of the exponential output is to initially introduce more ventilation to the space as concentrations are at the lower level of the control range. The exponential output is particularly useful for areas of potential high occupancy and high air volume where significant time may be required for CO₂ levels to build up. Potential applications include arenas, gyms, auditoriums and large conference areas. Examples of both types of outputs are provided below.

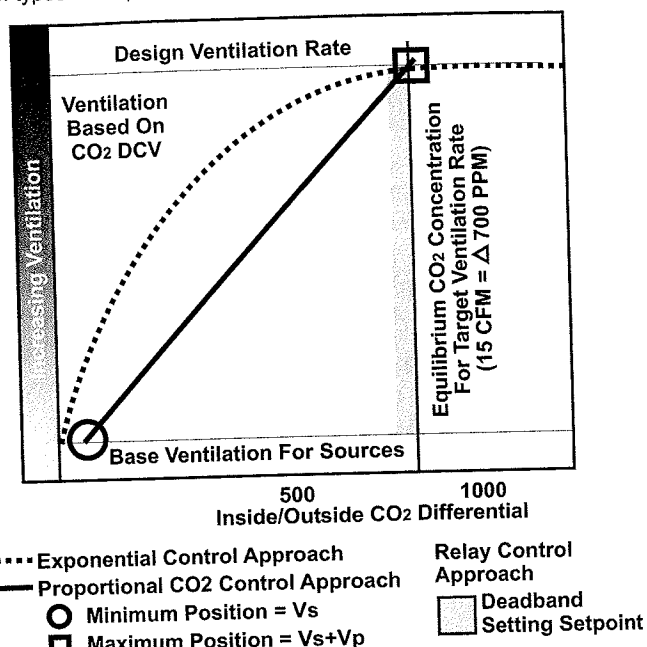


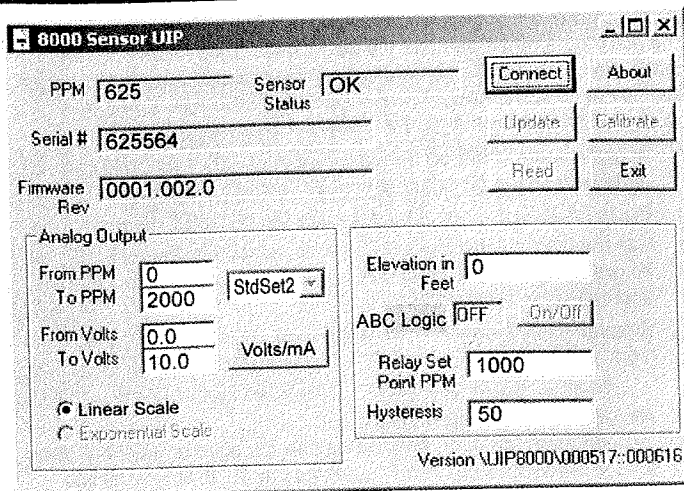
Figure 2. Proportional and Exponential Control

- Relay Set Point: Establishes the level at which the on-board relay will activate. The relay is a double pole single throw (DPST) relay that allows the user to operate the relay normally open or normally closed based on the selection of wiring terminals connected on the sub-base.
- Relay Hysteresis (Deadband): Is the point at which the relay will deactivate. It is entered as a ppm value below the setpoint. A sensor with a relay setting of 1000 and a hysteresis of 50 would activate at 1000 ppm and deactivate at 950 ppm.

9. Adjusting the Sensor with the UIP Program

The UIP 8000 (Model 2072) is a User Interface Program designed to work with Ventostat 8000 series ventilation controllers. The program offers a Windows interface which enables the user to make quick, easy adjustments to the output, elevation, relay setpoint, hysteresis and more. It can also be used, along with calibration gases, to calibrate the sensor. This program is especially useful for the units without a display (8001 and 8007).

The 8002 and 8008 sensors have a display and pushbuttons to allow you to review and change the sensor's operating parameters. The UIP8000 program allows you to make these same adjustments to all 8000 series sensors regardless of whether they have a display and pushbuttons. The UIP accessory package comes with the program and cables for connecting the sensor to a laptop computer that has a serial communications port. Simply plug the computer cable into the sensor's RJ45 connector and the program is ready to use.



Screen Shot of Main UIP Screen

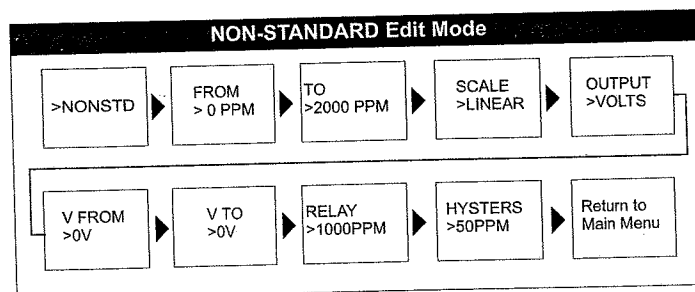
When you first start up the UIP8000 program, it displays the main UIP screen shown above. For complete instructions, refer to the UIP8000 Operating Manual shipped with the accessory package.

10. Adjusting Sensor with On-Board Keypad

(Display Units Only)

Button Functions:

- | | |
|-----------|-------------------------------------|
| [CLEAR] | - Resets Menu |
| | - Returns to Normal Mode |
| [MODE] | - Toggles to Next Menu Item |
| [ENTER] | - Press to Lock Menu |
| [UP/DOWN] | - Increase/Decrease Selection Value |



Flowchart Showing Sequence of Non-Standard Edit Mode

Altitude Correction and ABC Logic™ (On/Off):

1. After 2 minute warm-up period, press [CLEAR] + [MODE] and hold (at least 5 seconds) until the sensor enters the edit mode.
2. The first menu will be the Altitude correction. The adjustments will increase/decrease in 500 ft. increments. To do this use the [UP/DOWN] Rocker Button to adjust to the proper altitude.
3. Press [ENTER] to lock in value then press [MODE] to proceed to ABC Logic™.
4. Use the [UP/DOWN] Rocker Button to switch to ON or OFF.
5. Press [ENTER] to lock in value then press [MODE] to proceed to Normal Mode.

Note: It is recommended that the ABC Logic™ feature be left ON for the best sensor operation.

Selecting a Pre-Programmed Setting:

The pre-programmed settings shown in Table 3 are factory set and cannot be changed. These settings can be selected from the Standard Settings (STDSET) menu. The Altitude and ABC Logic™ features can be changed without entering the Standard Settings (STDSET) menu.

1. After 2 minute warm-up period, press [CLEAR] + [MODE] and hold (at least 5 seconds) until the sensor enters the edit mode.
2. Press [MODE] 2 times. You will enter the STDSET menu.
3. Use the [UP/DOWN] Rocker Button to select the desired pre-programmed number. Refer to "8. Configuring the Sensor" for the appropriate setting number.
4. Press [ENTER] to lock in selection then press [MODE] to return to Normal Mode.

For Non-Standard (Custom) Settings:

The non-standard (custom) settings can be changed at any time after the sensor is powered up. The 7 variables are: PPM Range, Scale (proportional or exponential), Output (V or mA), Output Range V, Output Range mA, Relay Setpoint, and Relay Hysteresis. The Altitude and ABC Logic™ features can be changed without entering into the Non-Standard (NONSTD) menu.

1. After 2 minute warm-up period, press [CLEAR] + [MODE] and hold (at least 5 seconds) until the sensor enters the edit mode.
2. Press [MODE] 2 times. You will enter the STDSET menu.
3. Use the [UP/DOWN] Rocker Button to toggle to the NONSTD menu.
4. Press [MODE] to move through the variables. Use the [UP/DOWN] button to toggle to desired setting.
5. Press [ENTER] to lock in the selection then press [MODE] to continue to the next variable.

11. Troubleshooting Guide

Symptom

- LCD Display is blank after the 2 minute warm-up period (8002 and 8008 models).

Remedy

- Remove the sensor from the wiring plate and check the voltage on pins 1 and 2 of the 2-pin terminal block. The voltage should be: 18-30 VAC RMS or 18-42 VDC.
- Ensure that the sensor pins that connect to the 2-pin terminal block are not broken, bent, or damaged.
- If the LCD display is still blank after replacing the sensor on the mounting plate, call Telaire or your distributor/dealer for a return authorization number.

Symptom

- Green light is not illuminated (8001 and 8008 models) after the two minute warm-up period.

Remedy

- Remove the sensor from the wiring plate and check the voltage on pins 1 and 2 of the 2-pin terminal block. The voltage should be: 18-30 VAC RMS or 18-42 VDC.
- Ensure that the two pins on the sensor that connect to the 2-pin terminal block are not broken, bent, or damaged.
- If the green light is still not illuminated after replacing the sensor on the mounting plate, try verifying the sensor operation using the UIP8000 computer interface or checking the output signal on the building automation system.
- If there is not an output signal, call Telaire or your distributor/dealer for a return authorization number.

Symptom

- Suspect the sensor is out of calibration.

Remedy

- Compare the sensor reading to a Telaire 7001 hand-held CO₂ monitor, or
- Take another sensor from the building and replace the suspect sensor to see if the readings are similar, or
- Connect the sensor outdoors (if possible). The readings should be between 350 and 450 ppm, or
- Connect the sensor to nitrogen gas from a Model 2075 calibration kit. The reading should be close to zero.
- If the sensor proves to be out of calibration, calibrate the sensor according to the instructions included in your calibration kit or return the sensor to Telaire for factory calibration (call for a return authorization number).

Symptom

- Relay does not actuate at the proper setpoint.

Remedy

- Using the LCD menu or the UIP8000 computer interface, verify that the relay setpoint is correct.
- Return the sensor to normal operating mode, and breathe into the sensor to raise the ppm value above the relay setpoint.
- If the relay does not actuate at the proper setpoint, call Telaire or your distributor/dealer for a Return Authorization (RA) number.

Warranty

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