

# Ventostat<sup>®</sup> T8002-ACD Series CO<sub>2</sub> Transmitters



## Features:

- 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 (T8002-ACD-2K). Field calibration also available if desired.
- Lifetime CO<sub>2</sub> calibration guarantee when using ABC Logic™.
- Mounting plate with two-piece terminal blocks provides quick, easy wiring.
- Gas permeable, water resistant CO<sub>2</sub> diffusion filter prevents particulate and water contamination of the sensor.
- Locking screw secures cover and sensor to the mounting bracket for tamper resistance.
- Dual simultaneous analog outputs (V & mA) available for CO<sub>2</sub>.
- Sensors are shipped factory calibrated.
- Modern enclosure with customized branding available.



The Telaire Ventostat T8002-ACD and T8002-ACD-2K are wall mounted sensors that provide CO<sub>2</sub> control even when a building management system is not in place, using the relay feature. These two units are designed to be used in specific areas such as indoor growing areas, conference rooms, classrooms, meeting halls, etc.

Even though the sensors are designed for wall mount configurations, some sensors can also be configured for "in-duct" mount. For in-duct, the sensor is mounted inside the duct to control an entire air-handling zone. All wall mount sensors are compatible with accessory enclosures. The Ventostat controller offers a SPDT relay (normally open or closed) and can be custom programmed to a specific measurement and output range using the UIP software interface (T2072) or on-board keypad (display units).

### **ABC Logic™ Self-Calibration Program**

CO<sub>2</sub> controllers use the patented ABC (automatic Background Calibration) Logic self-calibration system that virtually eliminates the need for manual calibration in applications where the indoor CO<sub>2</sub> 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, 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 industrial sources of CO<sub>2</sub> in the building such as breweries or wineries.

### **Ventostat ACD Calibration**

Ventostat ACD series offers flexibility for field calibration. Zero calibration using Nitrogen and Single-Point Calibration using a reference sensor can be performed in less than 15 minutes. When using a reference sensor, the ambient air concentration is measured by the reference sensor, and then the Ventostat ACD is calibrated using the ambient air as calibration gas. In both cases, calibration is performed using the keypad only. This allows easy field calibration for applications where this is necessary.

### **Lifetime Calibration Guarantee with ABC Logic**

Telaire is serious about minimizing maintenance, so each sensor comes with a lifetime calibration guarantee. If a Telaire ACD sensor with ABC Logic drifts out of calibration range, it can be sent back to Telaire for a free factory calibration. Further information on the guarantee is available on our web site.

### **User Interface Program (UIP)**

All Ventostat ACD series controllers can be connected to a PC using the UIP T2072 Windows® program. Simply connect to the sensor using the onboard RJ45 jack and you can adjust the output scaling, elevation adjustment, relay setpoint, relay dead-band, select linear or proportional exponential output, perform single-point or two-point calibration, and check ppm levels. Display units can also be adjusted using the keypad.

## **Ventostat ACD**

### **T8002-ACD**

Default configuration

CO<sub>2</sub> voltage and current output range 0 to 5000 ppm CO<sub>2</sub>

Display range 0 to 9999 ppm CO<sub>2</sub>

ABC Logic is disabled

### **T8002-ACD-2K**

Default configuration

CO<sub>2</sub> voltage and current output range 0 to 2000 ppm CO<sub>2</sub>

Display range 0 to 9999 ppm CO<sub>2</sub>

ABC Logic is enabled

# Ventostat T8002-ACD Specifications

## Enclosure Specifications

### Sensing Method

- Non-dispersive infrared (NDIR) absorption
- Gold-plated optics
- Patented ABC Logic self calibration algorithm

### Sample Method

Diffusion

### Measurement Range

- 0 to 2000 ppm factory default (T8002-ACD-2K)
- 0 to 5000 ppm (T8002-ACD)
- Adjustable to 10,000 ppm

### Accuracy

#### T8002-ACD-2K

±40 ppm CO<sub>2</sub> or 3% of the reading (whichever is greater) @72°F (22°C) when compared against factory certified reference\*

#### T8002-ACD

±80 ppm CO<sub>2</sub> or 4% of the reading (whichever is greater) @72°F (22°C) when compared against factory certified reference

### Non-Linearity

< 1% of FS

### Stability

With ABC Logic enabled (default setting for T8002-ACD-2K) <2% FS over the life of the sensor (typical 15 years)

With ABC Logic disabled (default setting on T8002-ACD) <100 ppm or 5% of the reading annual, not to exceed 250 ppm or 25% of the reading (whichever is greater) over 10 years

### Temperature Dependence

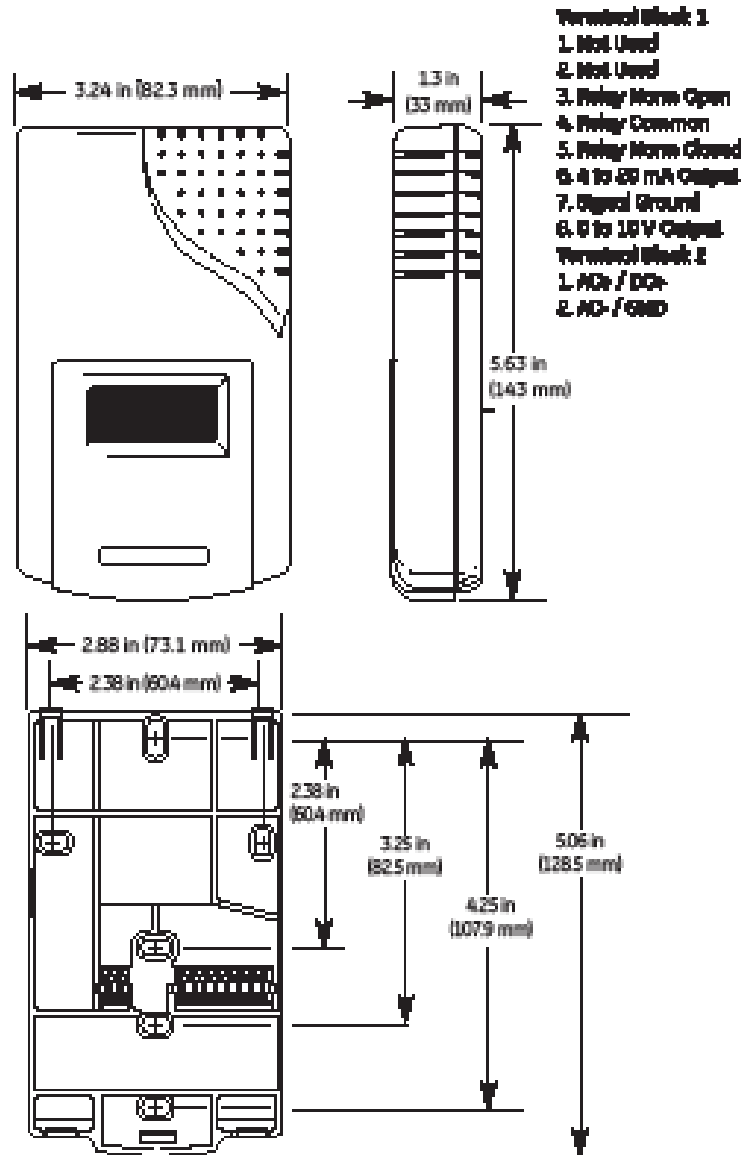
±0.2% FS per °C (±0.11% per °F)

### Pressure Dependence

0.13% of reading per mm Hg

### Response Time

< 2 minutes for 90% step change



Ventostat 8200-ACD Dimensions

#### Terminal Block 1

1. Not Used
2. Not Used
3. Relay Normally Open
4. Relay Common
5. Relay Normally Closed
6. 4 to 20 mA Output
7. Signal Ground
8. 0 to 10 V Output

#### Terminal Block 2

1. AO+ / DO+
2. AO- / GND

### Warm-up Time

- < 2 minutes (operational)
- 10 minutes (maximum accuracy)

### Operating Conditions

- 32°F to 122°F (0°C to 50°C)
- 0 to 95% RH, non-condensing

### Storage Conditions

-4°F to 158°F (-20°C to 70°C)

# Ventostat T8002-ACD Specifications

## Calibration Interval

- With ABC Logic enabled calibration not required. Lifetime calibration guarantee
- With ABC Logic disabled recommended annual nitrogen or single point calibration

## Output

### Analog

- 0 to 10 V (100  $\Omega$  output impedance) and
- 4 to 20mA (RL maximum 500  $\Omega$ ) available simultaneously

### Relay

SPDT, gold bifurcated, 2 A maximum @ 24 V.  
Relay threshold 1000 ppm, dead band 50 ppm (factory set) user-configurable

### Digital

RS232 communicates with Telaire CO<sub>2</sub> View and UIP software

*\*The sensor employs ABC (Automatic Background Calibration) Logic, a patented self-calibration technique used in applications where concentrations will drop to outside ambient conditions (approximately 400 ppm) at least 3 times in a 14 day period, typically during unoccupied intervals. Specified accuracy is achieved after 14 days of continuous operation.*

*Note: ABC Logic is factory set to ON for T8002-ACD-2K and OFF for T8002-ACD. Users can change the setting from the control buttons.*

## Accessories

- 1505 Water Resistant Enclosure for Harsh Environments
  - 1551 Outside Air Enclosure for Temperatures to -40°F (-40°C)
  - 1508 Aspiration Box for Duct Mounting
  - 2072 UIP for Customizing Settings and Calibration
  - 2075 Calibration Kit for Performing Zero and Span Calibration.
- Factory calibration available – Call for details.



[www.ge-mcs.com](http://www.ge-mcs.com)

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