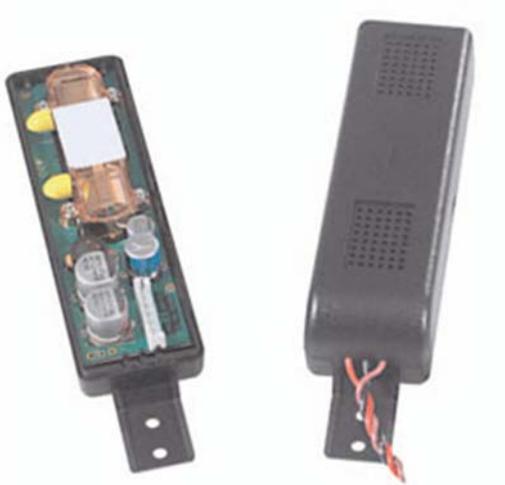![GreenTrol Automation Inc.]

Analog Output In-duct CO$_2$ Sensor for Compatible GreenTrol Controllers

❑ NDIR CO$_2$ sensing technology

❑ 0 to 2,000 ppm range

❑ ABC logic ensures long-term calibration stability

❑ 0-10 VDC output

❑ Small footprint

❑ Install in ducts or in plenums

❑ Compatible with all GreenTrol application specific controllers that accept an analog input from a CO$_2$ sensor

❑ Connects directly to the power input terminals of compatible GreenTrol application controllers

√ Use with GreenTrol outdoor airflow controllers to provide advanced CO$_2$-DCV or ASHRAE 62.1 compliant population-based DCV

√ Demonstrate compliance with ASHRAE Standards 62.1, 90.1 and 189.1

√ Satisfy LEED requirements

√ Maintain acceptable indoor air quality

√ Save energy

The TA-A8031-D is a small footprint, low cost, CO$_2$ sensor designed to be mounted inside of a duct or plenum.

The sensor is typically mounted in the return air duct or plenum near or at the air handler prior to the introduction of outdoor air.

When combined with a GreenTrol outdoor air controller, this CO$_2$ sensor can be used to improve traditional CO$_2$ demand control ventilation by using a unique control algorithm that resets the outdoor air setpoint between user defined upper and lower airflow limits (not damper positions) to maintain the space

CO$_2$ level. This control method eliminates the under- and over-ventilation that is prevalent with traditional CO$_2$-DCV.

An even more advanced control method uses the measured airflow rate and CO$_2$ level to estimate the population and calculates the required outdoor airflow, thus meeting the actual requirements of ASHRAE Standard 62.1.

ABC logic ensures years of calibration free operation in applications where the population goes to near zero during unoccupied periods.

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TA-A8031-D_ProductData_r1a

TA-A8031-D Technical Specifications

Functionality

CO_2 Measurement: Provides the CO_2 level to the analog input of a GreenTrol application controller that accepts an analog CO_2 sensor input

CO_2 Sensor

Technology: Telaire Non Dispersive Infrared (NDIR)
Range: 0 to 2,000 ppm
Required Duct Air Velocity: 0 to 1,500 FPM [7.62 m/s]
Accuracy: ±40 ppm + 3% of reading, @72° F [22°C]
Non-linearity: <1% of full scale
Pressure Dependence: 0.33% of reading per 0.1 in. [2.54 mm] Hg
Response Time: <3 minutes for 90% step change typical
Warmup Time: 2 minutes operational, 10 minutes to achieve maximum accuracy

Analog Output

AO1

Assignment: Linear CO_2 output signal
Range: 0-10VDC

Environmental Limits, Power Requirements & Dimensions

Environmental Limits
   Temperature: 32 to 122 ⁰F [0 to 50 ⁰C]
   Humidity: 5 to 95%
Power Requirement: 24 VAC (22.8 to 26.4 under load) @1.65V-A
Flammability Classification: UL-94V-5
Dimensions: 3.83H x 0.74W x 0.94D in. [18.7 x 29.7 x 23.8 mm]