



The T8041 and T8042 are CO<sub>2</sub> transmitters designed to be installed in HVAC return air ducts. The technology is based on the absorption of light in a gold-plated reflective light pipe or waveguide diffusion gas chamber. A gas permeable PTFE filter prevents particulate and water contamination of the sensor. Light is absorbed in proportion to the CO<sub>2</sub> concentration and the

remaining light is measured and converted into an analog signal.

## Installation Instructions

1. Before installing the sensor, note the direction of the airflow. Ensure all mounting holes are sealed tightly.
2. Drill/cut one 1-1/2" hole and punch/drill two 1/8" holes for mounting screws.
3. Slide the sensor into 1 1/2" hole and secure with #10 sheet metal screws.
4. Connect the conduit and make necessary wire connections.
5. Install lid, and ensure it snaps into place.

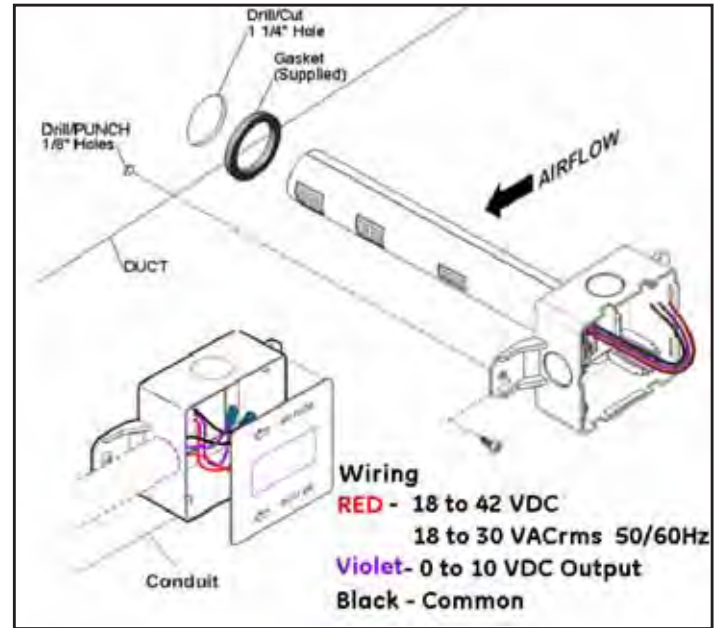


Figure 2: T8042 Installation

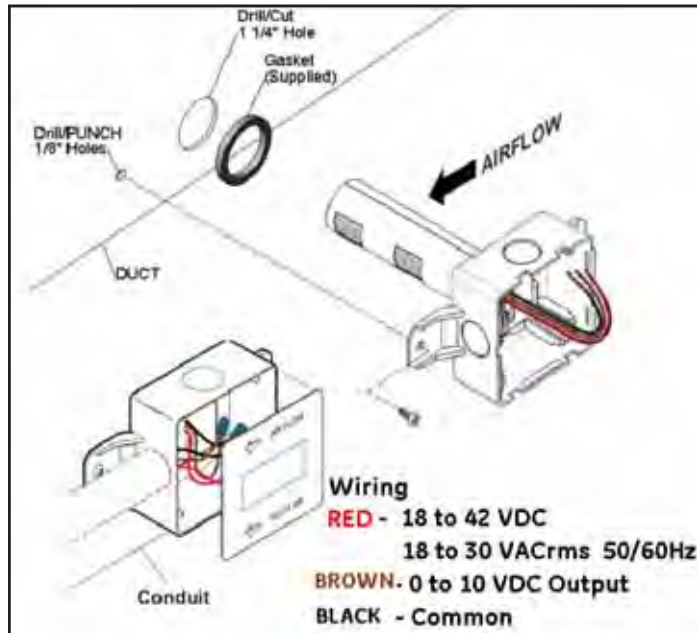


Figure 1: T8041 Installation

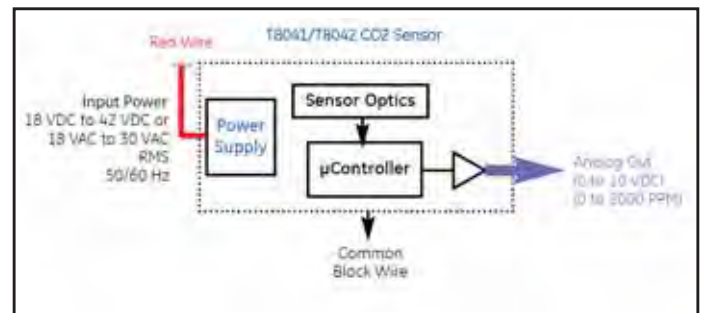


Figure 3: Wiring

## Specifications

### Measurement Range

0-2000 PPM factory calibrated

### Duct Air Velocity

0 to 1500 ft/min (0 to 450 meter/min)

### Temperature Dependence

0.2% of full scale per °C

### Stability

<2% of full scale over the life of the sensor (10 years typical)

### \*Accuracy

±40 ppm +3% of reading @ 22°C (72°F) when compared with a factory certified reference

### Non-linearity

<1% of full scale @ 22°C (72°F)

### Pressure Dependence

0.13% of reading per mm of mercury

### \*Calibration

Sensors will be calibrated at zero and span at the factory. Calibration in the field will not be required. Sensors will be shipped with ABC Logic™ turned on.

### Response Time

Three minutes typical for a 90% step change at low duct speeds

### Sampling Rate

Every two seconds

### Warm-up Time

< two minutes (operational); 10 minutes to achieve maximum accuracy

## Certifications

RoHS compliance  
FCC Part 15,B

CE EMC EN61000-6-2, class B, criterion B\*

\*Deviations of the output signal may occur during strong electrical fast transients on the power line

Enclosure flammability rating – UL94-5VA

## Operating Conditions

- Temperature: 0°C to 50°C (32°F to 122°F)
- Humidity: 0 to 95% relative humidity, non-condensing

## Storage Conditions

-40°C to 70°C (-40°F to 158°F)

## Output

Voltage 0 to 10 VDC; 0 to 2000 ppm CO<sub>2</sub> (100 ohm output impedance)

## Power Supply Requirements

18 to 30 VAC RMS, 50/60 Hz or 18 to 42 VDC, polarity protected.

## Power Consumption

Typical values (1.65 watts peak, 0.65 watts avg. @ 42 VDC)

\*Note: The Telaire product line offers patented ABC Logic™ software for self correction of drift to better than ±20 ppm per year. The system is virtually free of maintenance and typically has a lifetime of more than 10 years.

## Physical Requirements

### Dimensions:

Probe Length: T8041 4.09 in (10.38 cm)  
T8042 8.07 in (20.51 cm)

Probe Diameter: 1.24 in (3.15 cm)

Junction Box Depth: 1.58 in (4.02 cm)

Junction Box H x L: 3.05 in x 3.05 in (7.46 cm x 7.46 cm)

Color: Grey (GY6275)

## Installation Kit

Included with the transducer are wire nuts, mounting screws and installation instructions.

## Your Distributor:

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**Advanced Sensors**