

The T8041 and T8042 are CO₂ 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 CO₂ 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.

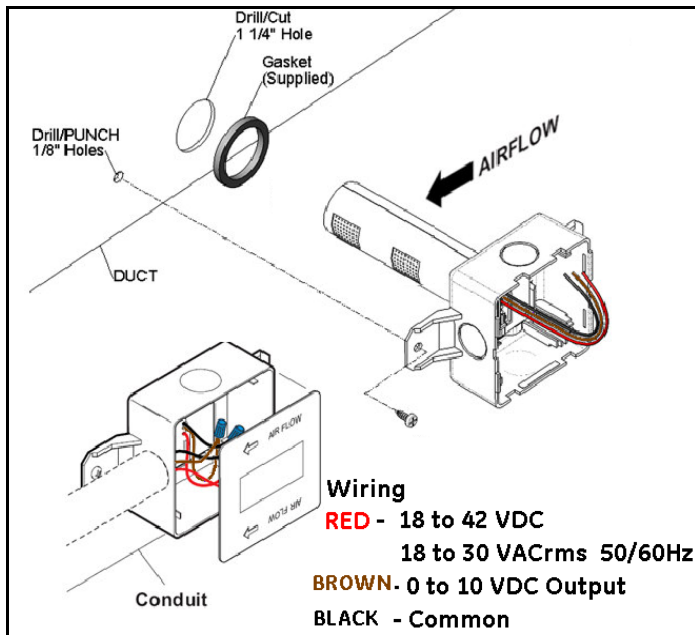


Figure 1: T8041 Installation

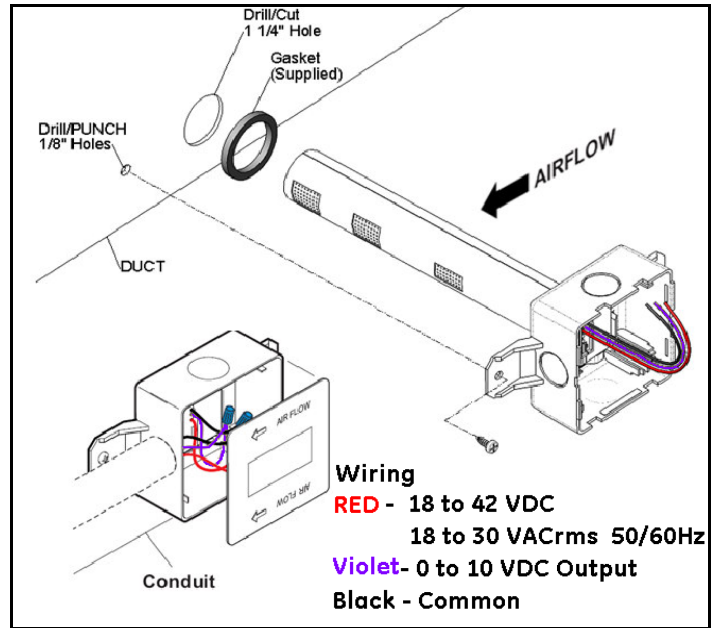


Figure 2: T8042 Installation

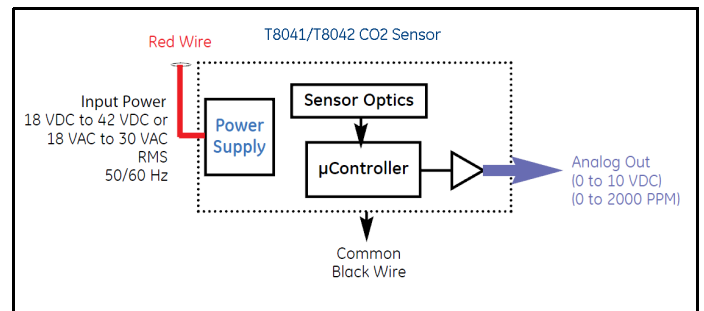


Figure 3: Wiring



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

EN61000-6-3

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 CO₂ (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.