

Carbon Dioxide (CO₂) Duct Mount Transmitter



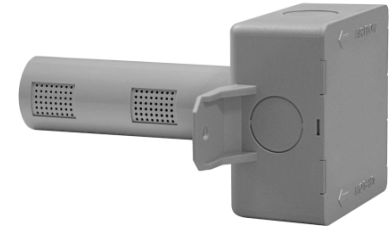
I-8041/2

DESCRIPTION

Carbon dioxide (CO₂) transmitter for measuring CO₂ levels in air ducts.

APPLICATION

To sense Carbon Dioxide (CO₂) in air ducts in a wide variety of commercial applications such as demand controlled ventilation in buildings, schools, theaters, etc., and transmit to any compatible electronic analog control, DDC/PLC control or automation system in accordance with ASHRAE standards.



FEATURES

- Continuous monitoring
- 0-2,000 ppm CO₂
- 0-10 VDC Signal
- 24 VAC or 24 VDC power
- Two probe lengths
- With PTFE filter
 - prevents sensor particulate and water contamination
- Simple installation
- No maintenance required***
- Lifetime calibration guarantee***



CA Energy Commission
Certified



SPECIFICATIONS

Electrical

Power supply 18-30 VAC RMS, 50/60 Hz, half-wave rectified, or 18-42 VDC, polarity protected

Power consumption 1.8 VA, max. average, 3.3 VA peak

Carbon Dioxide

Sensor Performance

Gas detected Carbon Dioxide (CO₂)

Sensor element Single beam absorption infrared (NDIR), gold plated optics

- protection Gas permeable PTFE filter

Gas sampling method Diffusion sampling

Range 0-2,000 ppm CO₂, factory calibrated

Accuracy ± 40 ppm plus 3% of reading, @ 72°F (22°C) when compared against a certified reference

Temperature dependence 0.2% FS/°C

Stability < 2% of FS over sensor life

Non-linearity < 1% of FS @ 72°F (22°C)

Altitude dependence Calibrated for 1000 ft above sea level, add 0.13% of reading per mmHg decrease from 760 mmHg

Sampling rate Every 2 sec.

Response time < 3 minutes for 90% step change

Calibration interval Not required, built-in automatic self-calibration software, ABC Logic™***

Sensor life expectancy 10+ years, normal service

Type of Control

General Continuous proportional analog sensor

Analog outputs
- CO₂ (1) 0-10 VDC, 100 Ω output impedance

Warm-up time
- operational 2 minutes
- max accuracy 10 minutes

Environmental

Air duct velocity 0 to 1,500 ft/min (0 to 450 m/min)

Permissible ambient
- humidity 0 to 95% RH, non-condensing related to altitude dependence
- working pressure 32°F to 122°F (0°C to 50°C)
- working temperature -40°F to 158°F (-40°C to 70°C)
- storage temperature

Physical

Enclosure
- material Plastic, UL 94-5 VA
- color Gray
- junction box cover Snap-on
- installation Duct mounted w/probe

Dimensions
- junction box 3.0 x 3.0 x 1.6 in (76 x 76 x 40 mm)
- probe diam 1.24 in (31.4 mm)
- probe length part # I-8041 4.09 in (104 mm)
part # I-8042 8.07 in (205 mm)

*** ABC Logic™ Automatic Background Calibration, is a patented self-calibration technique designed to be utilized in applications where concentrations will drop to outside ambient conditions, about 400 ppm CO₂, at least 3 times in a 14-day period, typically during unoccupied periods. Full accuracy is achieved after two weeks of operation.

SPECIFICATIONS

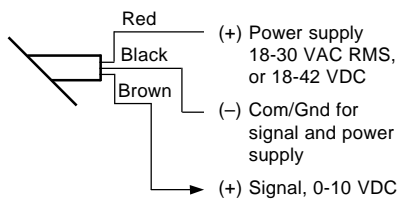
Type of Control (cont...)	
Wire connection	Pig tail wires, 3 conductors, color coded
Wire size	Min. 28 AWG (0.08 mm ²); Max. 18 AWG (0.75 mm ²)
Wire distance	Loop resistance 500 Ohms max. (= wire resistance plus controller input resistance)
Weight	0.6 lb. (0.27 kg)
Installation Location	Duct mount
Manufacturing	ISO 9001 Certified
Approvals/Listings	CE FCC Part 15, Class B California Energy Commission RoHS Compliant
Warranty	18 months material and workmanship

ORDERING INFORMATION

I-8041	CO ₂ transmitter, duct mount, w/ 4" probe length, 0-10 VDC output
I-8042	CO ₂ transmitter, duct mount, w/ 8" probe length, 0-10 VDC output

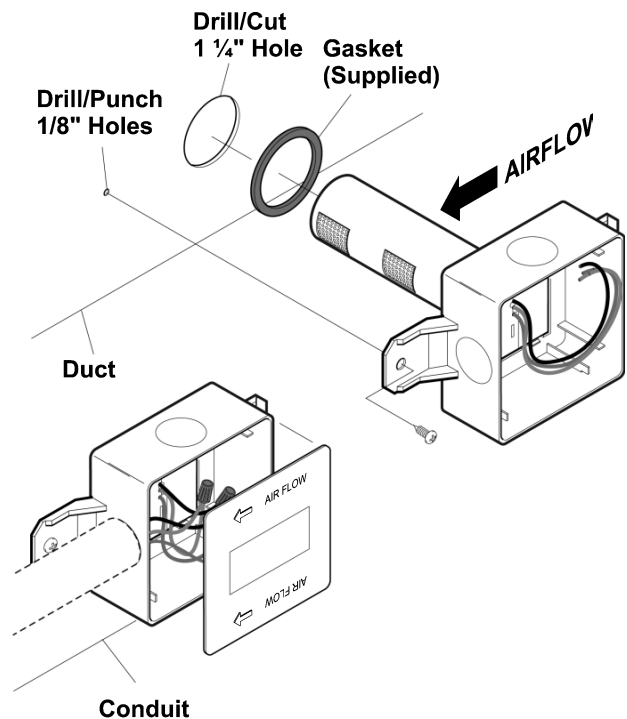
WIRING CONFIGURATION

I-8041



Recommended
• Twisted, shielded wire

INSTALLATION



1. Before installing sensor, note the direction of the airflow. Ensure all mounting holes are sealed tightly.
2. Drill/Cut one 1 1/2" hole / Punch/Drill one 1/8" hole.
3. Slide sensor into 1 1/2" hole and secure with screws.
4. Connect conduit and make necessary wire connection
5. Install lid, ensure it snaps into place.