Sensors That Make Buildings Smart!

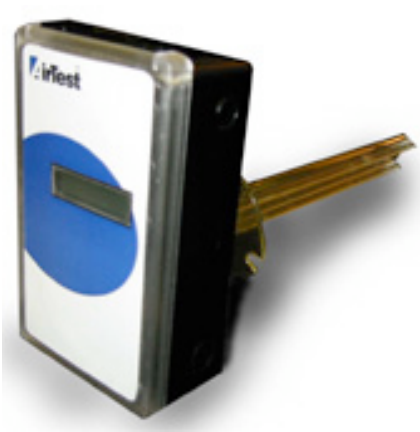
LonWorks® Compatible

ISO-9001 Manufactured

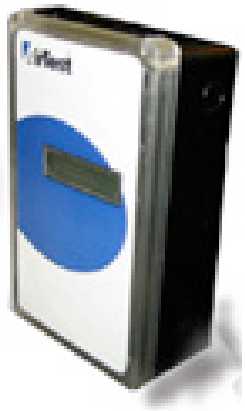
Carbon Dioxide Transmitter With Temperature For Active Space & Zone Ventilation & Temperature Control

Wall
TR9220-L

Wall
TR9220



Duct Probe
TR 9221-L



In-Duct/Outside
TR 9223-L

A Breakthrough In Simplicity And Cost!

- ✔ Attractive wall mount case with display for temperature and CO_2 levels. No-Display version also available.
- ✔ Self-calibrating sensor eliminates calibration/ maintenance requirements.
- ✔ Easy to install duct mount version with 8" aspiration probe. (No tubes to plug or clean.)
- ✔ Easy choice of voltage or current via jumper selection, relay output also available.
- ✔ Display, output range and scaling easily customized via a PC interface.
- ✔ Add-on options for Lonworks®, RS-485 network connection or 2000 point data logger.
- ✔ Gold plated optical sensor ensures long-term durability and stability.
- ✔ Purposefully built for quality - designed and built using Internationally Certified ISO 9001 processes.

Why Active Ventilation Control With CO_2?

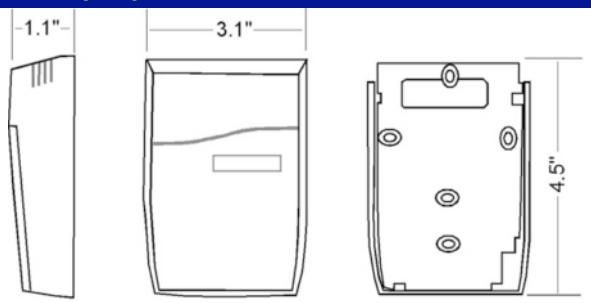
Ventilation control with CO_2 is a viable and energy efficient way of controlling ventilation to target cfm/person levels based on actual occupancy. This approach offers many advantages over the traditional approach of providing fixed ventilation based on maximum occupancy.

- ⇨ Reduce ventilation and energy costs in applications with variable occupancy.
- ⇨ In static occupancy applications, owner can continuously control ventilation rates to reflect current occupancy conditions.
- ⇨ Actively control ventilation to eliminate unintended over and under ventilation conditions resulting from post commissioning adjustment of outside air quantities.
- ⇨ Monitor and control zone ventilation efficiency and take advantage of using preconditioned transfer air from under occupied spaces for ventilation.
- ⇨ Documented CO_2 levels can provide ongoing verification that code-required ventilation rates are being maintained.

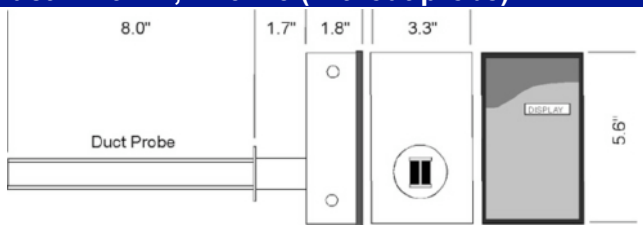
About The CO_2 And Temperature Transmitter

The TR9200 is a state of the art monitor for zone ventilation and temperature control. Versions for wall or duct mount are available. Outputs are user configurable via an easy to use PC interface. The need for calibration has been eliminated through use of a unique self-calibration algorithm that has been proven in over 8 years of use.

Wall: TR9220



Duct: TR9221, TR9223 (without probe)



About The AirTest-Interface (AI) Program

All AirTest™ CO_2 products can be easily customized in a number of ways using AirTest's PC program called "AI". An inexpensive cable is used to connect the monitor serial port (see Wiring Access). Adjustments can be made in a few seconds and include: LCD display options, measurement range and output range.

Ordering Information

Model	TR9220	TR9220-L	TR9220-R	TR9220-RL	TR9221	TR9221-L	TR9221-R	TR9221-RL	TR9223	TR9223-L	TR9223-RL	TR9224 (-40F)
Feature	Wall Mount				Duct Probe				In-Duct/ Outdoor			
Temp	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Display		✓		✓		✓		✓		✓	✓	
Relay			✓	✓			✓	✓			✓	

*For Lonworks® add "-LON" to suffux, For RS485 add "-485" to suffix.

Other AirTest CO_2 Products

AirTest™ also offers other programmable CO_2 monitors that offer additional capabilities including:

- ⇨ Measurement of humidity or dew point,
- ⇨ Measurement up to 20% CO_2,
- ⇨ The ability to receive inputs from other sensors,
- ⇨ Integrated thermostat and economizer functionality,
- ⇨ A variety of enclosures for industrial and other uses.
- ⇨ Sensors with programmable PLC controller functions

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Specifications

General

CO_2 Detection Method: Gold Plated Non-Dispersive Infrared Optical Sensor with Automatic Baseline Correction for Self-Calibration. Diffusion Sampling.
Certification: CE, EMC89/336/EEC,CA Energy Commission, ISO-9001 Certified Manufacturer
Temperature Measurement: Thermistor With Linear Output
Transmitter Rated Life: 15 years
Operating Conditions: 32 to 122º F (0 to 50ºC), 0 to 95% RH
Storage Conditions: -40 to 158º F (-40 to 70º C

Performance

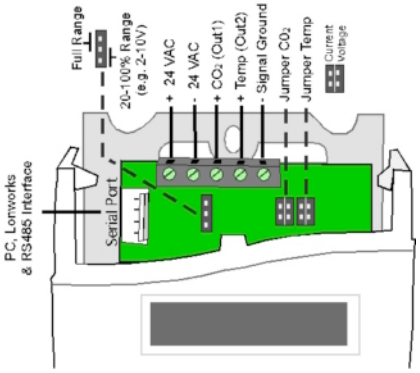
CO_2 Measurement Range: 0-2000 ppm (factory set),
Optical Sampling Path Length: 4.7" (12 cm)
CO_2 Accuracy: ± 1% of measurement range + 3% of measured value (± 50 ppm @ 1,000 ppm)
Calibration: Self Calibrating, Calibration Not Required
Response Time: T_{90} = <2 minutes (diffusion)
Temperature Measurement Accuracy: +/ 0.9º F (0.5º C)

Power

Input: 18-30 VAC, 50-60 hz (half-wave rectified)
Average Power Consumption: 3 Watts average

Outputs

Adjustment: All outputs including display values shown, measurement range, analog output range and relay set point can be easily adjusted by the user or your distributor using a PC or PDA and the AirTest™ Interface(AI) program.
Digital Display: CO_2 Concentrations in ppm, Temperature in •F or ºC. (User selectable with PC Interface)
Linear Analog Outputs: (CO_2 =Out1, Temp = Out2) jumper selectable for VDC or mA
0 to 10 VDC R_{OUT} < 100 ohm, 0 to 5 VDC R_{LOAD} >5k ohm,
4 to 20 mA R_{LOAD} < 500 ohm
Relay Option: Isolated, NO, 1mA/5V up to 1A/50VAC/24VDC
Lonworks® Option: C02, Temperature
RS-485 Option: Network capability for up to 30 units (Custom protocol: contact AirTest™ or Distributor for details).
Add On Datalogger Option: Plug in 2000 point Logger.
Wiring Access: remove top front panel of sensor to access wiring terminals. Access can be protected with locking screw.



CE

Covered By US Patents: 6194735, 6016203, other patents pending

AirTest™ Technologies Inc. specializes in the application of cost effective, state-of-the-art gas monitoring technology to ensure the comfort, security, health and energy efficiency of buildings.

AirTest™
Sensors That Make Buildings Smart!