# *TR2000-W Wireless Electrochemical CO Ventilation Control System*
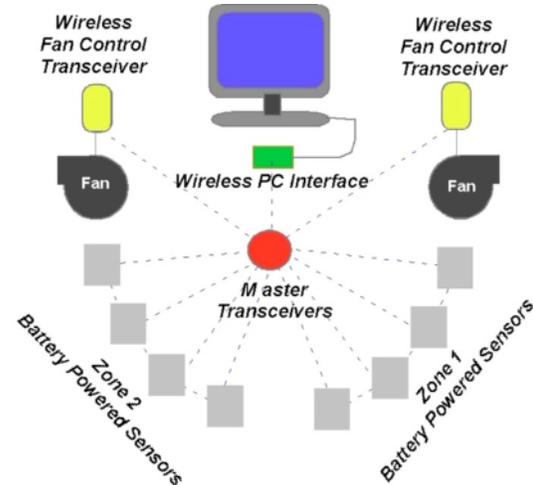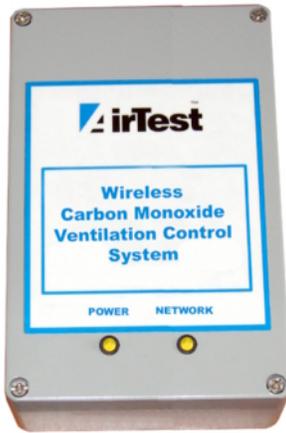
Cut Energy Costs to Operate Garage Exhaust Fans by up to 90%

Enclosed parking areas use a high rate of ventilation to protect against an unhealthful level of carbon monoxide build-up, generally during all hours of use. A carbon monoxide sensing and control system operates fans only as necessary to effectively control CO levels on a real time basis and reduces fan operation costs up to 90% with a typical 12 to 18 month payback.

About the AirTest Wireless System

✔ Reduces installation cost by eliminating the need for installation of wiring and conduit.

✔ Secure and interference-free communication is assured via a frequency hopping, two-way message confirmation based communication protocol.

✔ Configured and controlled via software that can use an existing or dedicated PC. (RS232 or USB interface required, Windows 2000 or higher).

✔ CO specific that utilizes a stable, instrument-grade electrochemical sensor.

✔ Cannot be fooled or poisoned by other gases or affected by humidity, which can affect other CO sensor technologies.

✔ Designed for low range concentrations (0-50 ppm) critical for garage ventilation control.

✔ Sensor covers up to 7000 square feet. Indicator light shows when sensor is connected to network.

✔ Sensing points can easily be added or removed from the network.

✔ Highly portable and quickly removed for use in alternative locations. Ideal for leased parking areas.

✔ Easy to set up and operate. Sensors elements have a five-year life and can easily be replaced.

✔ System has a fail-safe program and will indicate any system malfunction and automatically activate fans.

Installation Requirements

Hard wired connections are required for the fan control transceivers and at a PC, which provides control for the wireless system. Diagnostic LEDs on every sensor indicate an active connection to the wireless network. The network is self configuring, so sensor nodes can easily be added or removed after initial installation.

TR- 2000W Major Components

1. Sensor/Transceiver: Each CO sensor, placed every 5,000 to 7,000 square feet, incorporates a wireless transmitter that broadcasts the local CO reading every 5 minutes.

2. Master Transceiver: Every floor has at least one Master Transceiver that communicates between all sensors. This transceiver requires continuous low voltage DC power supply.

3. Fan Control Transceiver: When CO concentrations reach target levels within a particular zone, a signal is relayed to the Fan Control Transceiver that provides a relay or analog output to control a fan. This component can be battery power or powered directly by a low voltage DC power supply.

4. Controller/PC Interface Transceiver: All incoming CO readings are collected at this transceiver and passed onto a PC that operates the controlling software. Fan control signals are sent out via this transceiver to fan Control Transceivers.

5. PC Controller: The system control is provided by software installed on a continuously operating PC on Windows 2000 or greater. This can be a dedicated PC for control or one used for multiple purposes already installed in the space.
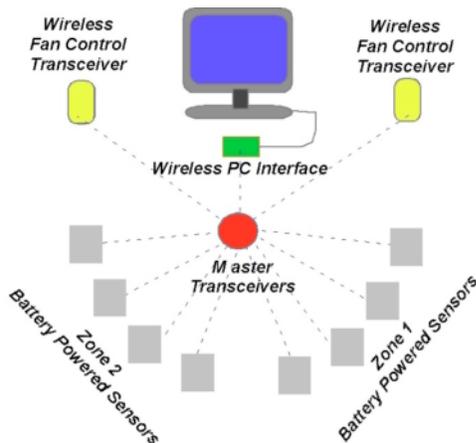
Specifications

General
Sensing Method: Electrochemical
Sensor Rated Life: 5 years
Temp Operating Conditions: -4 to 122º F (-20 to 50ºC),
Humidity Operating Conditions: 0 to 90% RH
Storage Conditions: -40 to 158ºF (-40 to 70ºC)

Performance
CO Measurement Range: 0-200 ppm (factory adjustable to 500 ppm)
Repeatability: +/- 5% of measured value
Linearity: +/- 5% of measured value
Recommended Calibration: 12 months
Response Time: T_{90} = <1 minutes (diffusion)
Warm Up Time: < 2 minutes

Power
Sensor/Transceiver: 4 AA batteries (replaced annually)
All Other Transceivers: 4.5 to 14 Volts DC

Outputs
Fan Control Transceiver: Low voltage relay (2A@24V)
Controller/PC InterfaceTransceiver: RS-232

Wireless
Operating Frequency: 902 to 928
Modulation: Frequency hopping, spread spectrum
Communication Range: 300 ft indoors
Transmitter Power: 25 mW max
Data Rate: 38.4 kbaud max
Duty Cycle: 5 min
Antenna: Internal
Approvals: Unlicensed, FCC part 15 approved

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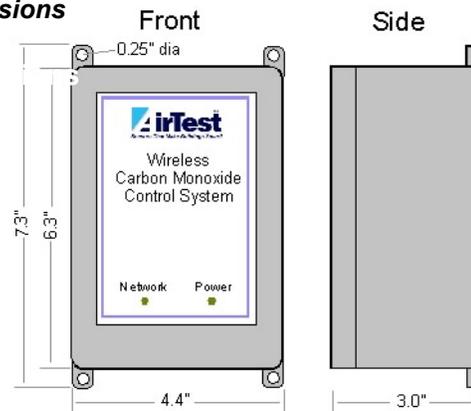
AirTest™ Technologies Inc. specializes in the application of cost effective, state-of-the-art gas monitoring technology to ensure the comfort, security, health and energy efficiency of buildings.

Sensors That Make Buildings Smart!

Specifications Subject to Change Without Notice