

## TR2000 – LonWorks® Communicating Electrochemical CO Transmitter



### Low Cost – Long Life – Low Profile

The TR-2000 delivers all the advantages of electrochemical sensing in a durable, long life (5 year) package that is priced to compete against less accurate MOS/Solid State sensors. The loop powered sensor delivers a linear 4-20 ma output that is easily integrated into any building control, ventilation or alarm application. The low profile design can be attached to any single gang electrical box and features a low cost replaceable sensor element.

#### Why The TR-2000?

- ✓ Electrochemical performance at a MOS (solid state) price. One-half to two-thirds the cost of comparable electrochemical sensors.
- ✓ Two-wire, loop powered for easy integration with EMS & DDC Systems.
- ✓ Five year life vs 18 months for most other electrochemical sensors.
- ✓ High accuracy sensor, +/- 5% of measurement.
- ✓ Linear output over complete 0-200 ppm range. Custom ranges available.
- ✓ Low profile, attractive enclosure that can be mounted in any single gang J box.
- ✓ Low cost replacements sensor elements minimizes long term operating costs.

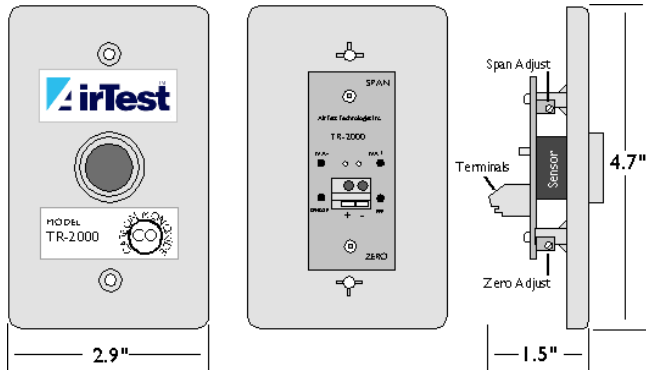
#### AirTest Electrochemical Vs MOS/Solid State

- ✓ Higher accuracy in the 0-50 ppm range means more energy savings for ventilation control in vehicle operation and parking areas.
- ✓ No temperature or humidity interference eliminates seasonal drift of sensors.
- ✓ Much less sensitive to other gases and less likely to be poisoned.
- ✓ Significantly less long term drift means less maintenance.
- ✓ Consistent linear output between sensors means specialized operational curves and control points are not necessary.

## CO And Parking Garages

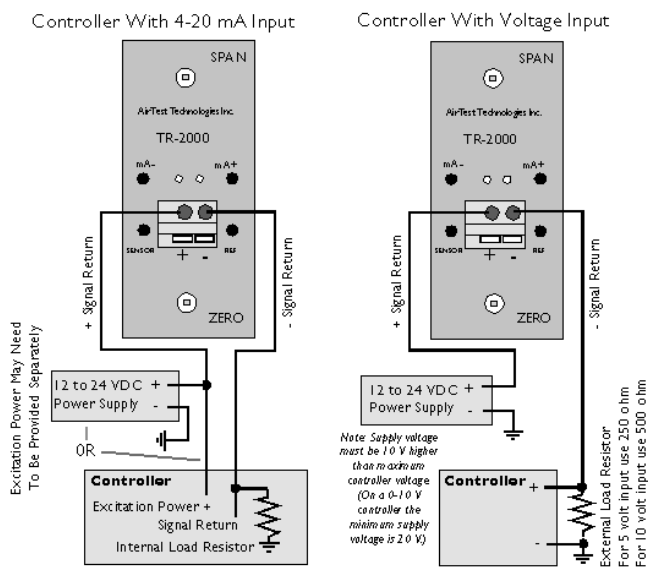
Most local codes require a very high rate of ventilation (1.5 to 2 cfm.sq ft) in enclosed parking and areas involving vehicle repair and operation. This must be provided during all hours of use. A Carbon Monoxide sensor can reduce fan energy costs by acting as an occupancy sensor for automobiles. Most codes allow fans to be intermittently operated as long as levels do not exceed 30 or 50 ppm CO (check your local code).

## TR- 2000Dimensions



The TR2000 can be installed on a standard single-gang electrical box. A 2" deep PCV box is also provided with the sensor.

## TR- 2000Wiring



## Other Gas Sensors For Vehicle Applications

**TR-1000**  
MOS/Solid State  
CO



**TR-3200**  
Electro-chemical  
NO<sub>2</sub>  
(Diesel)



**TR-9500**  
Infrared  
CO<sub>2</sub>  
(Combustion Odors)



**TR-5200**  
Catalytic Bead  
Combustibles  
(Propane, Natural Gas)



## Specifications

### General

**Sensing Method:** Electrochemical

**Approval:** CSA

**Sensor Rated Life:** 5 years

**Temp Operating Conditions:** -4 to 122° F (-20 to 50°C),

**Humidity Operating Conditions:** 0 to 90% RH

**Storage Conditions:** -40 to 158°F (-40 to 70°C)

### 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<sub>90</sub> = <1 minutes (diffusion)

**Warm Up Time:** < 2 minutes

### Power

**Input:** 12-30 VDC,

**Power Consumption:** 20 mA

### Outputs

**Adjustment:** Span & Zero

**Output Signal:** 4 - 20 mA

**Terminal Wire Size:** 16 - 22 AGW

## Optional Fan & Alarm Controllers

### CT-1000 Single Channel Controller

- High & Low Relays (5A)
- 2 Adjustable Set Points
- User Adjustable Time Delay
- LED's for Power, Low & High Alarm
- Cost Effective



### CT-2100 Dual Channel Controller

- Inputs For 2 Gas Transmitters
- 2 Sets of High & Low Relays (10A)
- Fault & Alarm Relay
- LED's For Power, Fault & 2 Alarms
- Adjustable Set Points
- User Adjustable Time Delay
- Cost Effective



### CN-9000 Custom Controller

- Custom Designed Platform
- 3 to 200 Inputs
- Variety Of Control Outputs
- Can Include LED's, Displays, Horns & Strobes
- Designed To Needed Specifications



**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!