# DUOSENSE Modbus

## VEHICLE EMMISIONS GAS DETECTOR



### Key Features

- CO/NO2 specific sensor technology. No false alarms
- Uses two electrochemical sensors
- 5-8 year CO, 2-3 year NO2 cell life average in most applications
- RS-485 Modbus RTU communications
- Polycarbonate enclosure with steel safety cage
- For wall mount or pillar mount installations
- Accurately monitor OSHA/NIOSH/ACGIH exposure limits
- Real-time continuous monitoring for early warning
- Detection range of 0-200 ppm CO, 0-10 ppm NO2
- LCD screen and pushbuttons for intuitive setup and operation
- Compatible with the M255 gas detection control panel

---

## Carbon Monoxide and Nitrogen Dioxide detector combo.
## Perfect solution for vehicle emmisions ventilation control applications.

---

The DuoSense-M CO/NO2 sensor is equipped with both carbon monoxide and nitrogen dioxide sensing elements to provide accurate readings of toxic levels, with no false alarms. Useful for ventilation activation, alarm notification and audio/visual signaling devices.

The DuoSense-M communicates via Modbus RTU compatible with the M255 Modbus control panel. 4,000 feet per Modbus channel on four channels provides installation flexibility and large detector capacity.

The CO and NO2 gas sensors are not affected by drastic temperature or humidity variations. Expect an average cell life of 5+years for CO and 2-3 years for NO2 in most applications.

---

## Applications

- Warehouses
- Parking garages
- Loading Docks
- Air Quality Monitoring
- Vehicle Maintenance Buildings
- Ventilation Ducts
- Tunnels
- Underground Storage

## Benefits

- Low cost
- Simple operation
- Rugged and reliable

## Warehouse Mounting Kit

Makes mounting easy and protects the sensor from damage. Also included are an aluminum mounting plate, safety cage, 1/2" LB conduit body and 36" straps for pillar mounting.



**CTi GAS DETECTION SPECIALISTS**

**CTi**

## One unit for both toxic gases

Designed for warehouses, parking garages, and other spaces where toxic combustion engine exhaust poses a risk to personnel. The DuoSense-M CO/NO2 sensor detects gas in the concentration ranges for OSHA/NIOSH/ACGIH compliance.

The standard DuoSense-M sensor is designed to work anywhere, and at a lower base-model price than most competing models. Each circuit board is sealed in conformal coating, protecting electronic components and copper tracing from corrosion. A specially vented polycarbonate enclosure inside a steel safety cage protects the sensor from accidental damage.
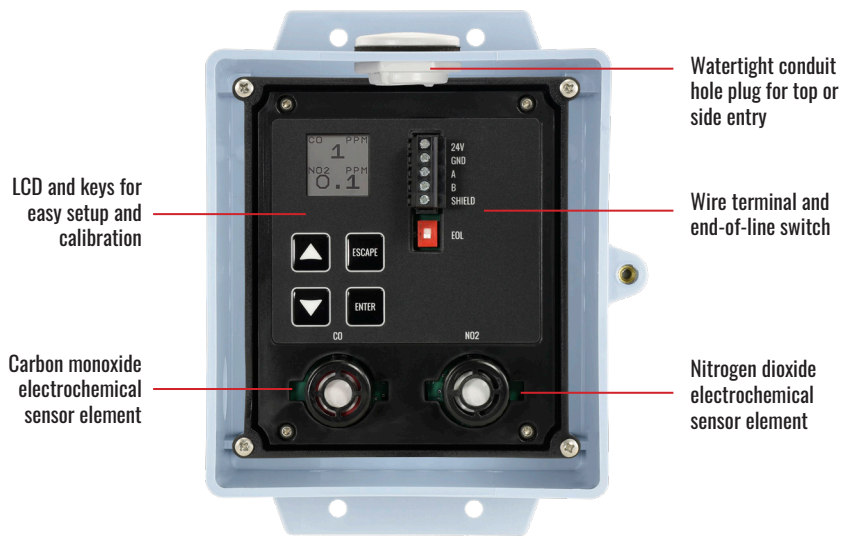
Each DuoSense-M detector monitors a 50' radius (7,500 square ft).

Refer to Uniform Mechanical Code, Uniform Building Code and other authorities having jurisdiction for ventilation requirements, along with audio/visual and other alarm notification requirements.

## Ordering Information

The **DUOSENSE-M** is delivered calibrated and ready to install. Use the model numbers below to order.

**Order #:**  DUOSENSE-M-W  (detector and warehouse kit) (standard)
DUOSENSE-M  (detector without warehouse kit)
SENS-CO-EC  (carbon monoxide replacement cell)
SENS-NO2-EC  (nitrogen dioxide replacement cell)
M255  (gas detection control panel)



LCD and keys for easy setup and calibration

Carbon monoxide electrochemical sensor element

Watertight conduit hole plug for top or side entry

Wire terminal and end-of-line switch

Nitrogen dioxide electrochemical sensor element

---

## SPECIFICATIONS
Due to ongoing research and product improvement, specifications are subject to change

**Input Power:**
+24 VDC, 10 mA

**Detection Principle:**
Electrochemical

**Detection Method:**
Diffusion

**Gases:**
Carbon Monoxide (CO)
Nitrogen Dioxide (NO2)

**Ranges:**
0/200 ppm (CO)
0/10 ppm (NO2)

**Communications:**
Modbus RTU, 9600 baud rate

**Linearity:**
+/- 1% of full-scale

**Repeatability:**
+/- 1% of full-scale

**Response Time:**
T50 = less than 60 seconds
T90 = less than 120 seconds

**Accuracy:**
+/- 5% of full-scale value, but dependent on calibration gas accuracy and time since last calibration

**Zero Drift:**
Less than 0.1% of full-scale per month, non-cumulative

**Span Drift:**
Generally less than 2% per month (CO)
Generally less than 5% per month (NO2)

**Temperature Range:**
-4°F to +122°F  (-20°C to +50°C)

**Humidity Range:**
15% to 90% RH

**Wiring Connections:**
RS-485 communication cable, 22 AWG, 2-conductor twisted pair, shielded, stranded, with drain wire (Alpha Wire 6460 or equivalent). up to 4000 ft. Power cable, 18 AWG, 2-conductor, shielded, stranded with drain wire (General Cable C2534A or equivalent). See manual for power cable length recommendations.

**Terminal Block Plugs:** (Field Wiring)
12-26 AWG, torque 4 lbs-in

**Enclosure:**
NEMA 3RX injection-molded, washdown-duty polycarbonate sensor housing with hinged lid and captive screw.  For non-classified areas. Chrome-plated steel safety cage.  Aluminum mounting plate.

**Dimensions:**
11.25" high x 8.65" wide x 4.4" deep

**Weight:**
5 lbs

**Certification:**
SGS listed to UL 61010-1, and CSA C22.2 No. 61010-1-12

**Warranty:**
3-years (including sensor elements)

SGS
C   US