
NITROGEN DIOXIDE SENSOR DIESEL EXHAUST GAS DETECTOR

MODEL GVU-NO₂

TYPICAL INSTALLATIONS:

- Parking Garages
- Bus Garages
- Fire Stations
- Warehouses
- Car Dealers
- Vehicle Maintenance & Storage
- Highway Departments
- Utilities
- Public Works
- Tunnels

GENERAL DESCRIPTION:

The model GVU-NO₂ nitrogen dioxide sensor is designed to interface with Toxalert International GVU series control units. The Model GVU-NO₂ utilizes an electrochemical sensing element and is designed for ambient monitoring applications. It is intended for use in fixed monitoring installations, and therefore continuous operation. The GVU-NO₂ has an effective range of 0-10 ppm. The sensor module requires a four-wire connection from a controller that provides a nominal 24VDC power source, common and return signal input. The GVU-NO₂ has indicators for power on, fault status and high NO₂.

The Toxalert Nitrogen Dioxide (NO₂) Transmitter combines safety and energy savings. A common producer of NO₂ is diesel engine exhaust. Diesel exhaust is a known cancer causing agent as reported in the U.S. Department of Health and Human Services' *Current Intelligence bulletin 50* dated August 1988. An electrochemical cell is required to measure such small amounts of NO₂. The device's sensor is capable of measuring NO₂ in increments of 0.1 ppm.



Model GVU-NO₂

FEATURES:

- Power on indication
- High NO₂ Indication
- Fault Indicator
- Low voltage class two (2) wiring
- Convenient diagnostics
- Simple maintenance
- Operating range meets OSHA standard

SPECIFICATIONS

- **Type:** Electro-chemical cell diffusion barrier type
- **Range:** 0 to 10 ppm nitrogen dioxide in air
- **Response Time:** 30 seconds to 90% indication
- **Typical life:** Two years in normal service
- **Accuracy:** +/-5% of full scale
- **Resolution:** 0.1 ppm
- **Operating Temperature:** 4° to 122°F
(-20°C to 50°C)
- **Relative Humidity:** 15 to 90% RH non-condensing

ELECTRICAL DATA:

- **Input voltage:** 24 VDC (provided from GVU control Unit)
- **Wiring:** 4 wire non-isolated

UNIT CONSTRUCTION:

- **Mounting:** Conduit 1/2" and 3/4" NPT or flexible cable
- **Housing:** Polystyrene, impact-resistant, non flammable, IP66
- **Physical:** 5.11" x 5.11" x 2.95" (13.0 x 13.0 x 7.5 cm)
- **Weight:** 14.2 oz.

INSTALLATION INSTRUCTIONS

1. INSTALLATION *(For specific details see sensor manual)*

Locate a mounting location away from direct fresh air intakes, and mount vertically on wall or support column approximately 3 to 6 feet above floor. Refer to figures 1 and 2; Table 1 and 2 and installation instructions in GVU series control unit data sheet and install the GVU-NO₂ sensor as follows.

2. MOUNTING SENSOR

Install the module housing onto the end of the supply conduit and bolt into position as required.

3. SENSOR WIRING

WARNING: To prevent fire or shock hazard, turn off power source to control unit before making connections. Comply with all local building codes and ordinances.

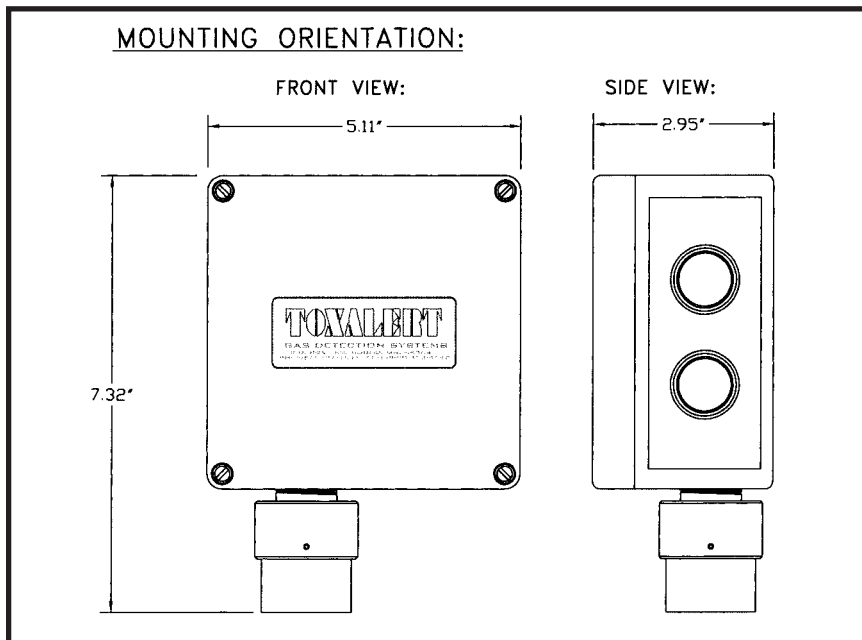


Figure 1:

INSTALLATION INSTRUCTIONS

NOTE: Refer to Figure 2 and Tables 1 and 2. Use shielded cable to interconnect sensor and control unit if metal conduit is not used, or if conduit also contains AC wiring.

- 1.) Measure distance between sensing unit and control unit and select proper wire or larger wire from Table 1.
- 2.) Run wiring between control and sensing unit and into enclosure through access holes. Connect wires from terminal blocks in sensing unit to control unit per Table 2 and GVV series control unit data sheet.

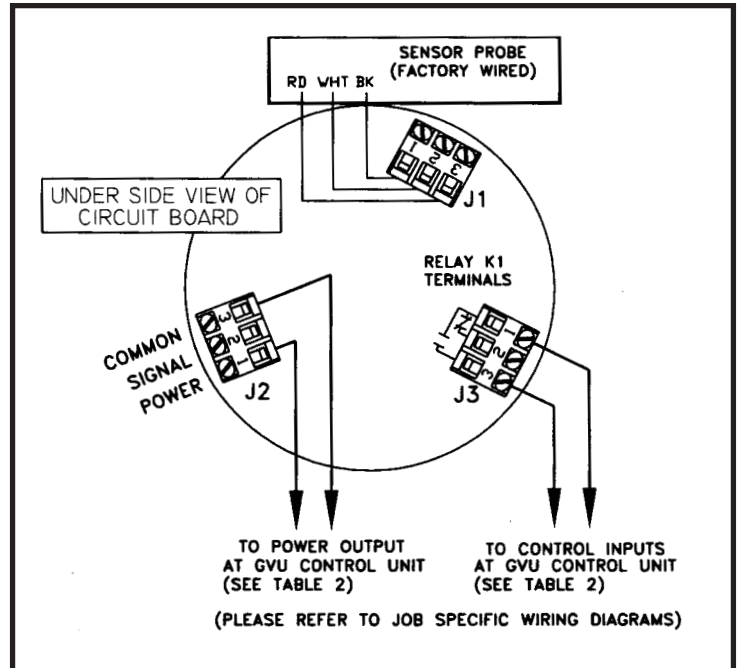


Figure 2:

4. START-UP

Reference Installation Manual

- 1.) Verify all wiring connections are correct.
- 2.) Electronics replacement - Carefully fit the electronics over the two posts in the enclosure and tighten the captive panel screws.
- 3.) Apply Power
- 4.) Green power indicator should light
- 5.) Replace Cover
- 6.) Allow 1 hour to warm-up

TABLE 1

AWG	DO NOT EXCEED
#22 Wire	500 Ft. Sensor to Controller
#20 Wire	800 Ft. Sensor to Controller
#18 Wire	1300 Ft. Sensor to Controller
#16 Wire	2000 Ft. Sensor to Controller

TABLE 2**WIRING CONNECTIONS****GVU-NO₂****CONTROL UNITS****SENSOR****GVU-1****GVU-3**

J2-1	TB11-24 VDC (+)	TB3-H (+24VDC)
J2-3	TB11-24 VDC (-)	TB3-N (-24VDC)
J3-1	TB2-1	TB1-A1, B1, C1
J3-3	TB2-7	TB1-A7, B7, C7
**	TB2-5	TB1-A5, B5, C5

** Shield of cable (if used) should be connected at control unit only. Make sure sensor end is taped and isolated from terminals or metal

GVU SERIES PRODUCTS:

CONTROLLERS -

GVU-1	Control unit for use with one sensor
GVU-3	Control unit for use with one to three remote sensors
GVU-6	Control unit for use with one to six remote sensors
GVU-12	Control unit for use with one to twelve remote sensors
GVU-18	Control unit for use with one to eighteen remote sensors

REMOTE SENSORS -

GVU-CO	Remote carbon monoxide sensor
GVU-CO ₂	Remote carbon dioxide sensor
GVU-NO ₂	Remote nitrogen dioxide sensor
GVU-VOC	Remote smoke/air quality sensor

