



**MODEL GVU-3  
GAS DETECTOR  
SAMPLE GUIDE SPECIFICATION**

***Note To Specifying Engineer:***

*The GVU-3 Controller has the capability to monitor up to a maximum of three (3) Sensors. They may be either Carbon Monoxide (CO), Nitrogen Dioxide (NO<sub>2</sub>), Carbon Dioxide (CO<sub>2</sub>), or GVU-VOC sensors or any combination of these sensors.*

*CO Sensors are used for monitoring hazardous vehicle exhaust fumes from gasoline, LP, or natural gas powered engines. NO<sub>2</sub> or CO<sub>2</sub> sensors are used to monitor hazardous vehicle exhaust fumes from diesel powered engines. VOC sensors are a good indicator of diesel engine exhaust smoke.*

*Pick a sensor or a combination of sensor specification below to add to the GVU-3 Controller specification that follows.*

**GUIDE SPECIFICATION**

Provide Toxalert Model GVU-3 gas detection & control system as specified.

**REMOTE SENSOR:**

***Note To Specifying Engineer - Pick one or a combination of the following sensors.***

**Carbon Monoxide Sensor**

Provide Model GVU-CO remote Carbon Monoxide (CO) sensor as located on the drawings. The remote CO sensor shall utilize a solid state sensing element, be microprocessor based and be both temperature and humidity compensated for long life and stability. Pilot lights or LED'S (light emitting diodes) shall indicate: a) Unit normal operation/NOT in alarm. b) High CO/unit in alarm, and c) shall indicate unit malfunction.

In the unit malfunction condition the CO sensors output shall be fail-safe and indicate steady high CO condition. The CO sensor range shall be 0 to 250 ppm and shall be powered by low voltage from the GVU-3 control unit.

The sensor shall be model GVU-CO as manufactured by Toxalert International.

– AND/OR –

### Nitrogen Dioxide Sensor

Provide a GVU-NO<sub>2</sub> Nitrogen Dioxide (NO<sub>2</sub>) sensor as located on the drawings. The remote sensor shall utilize an electrochemical element and have a range of 0-10 ppm (parts per million). The sensor shall be housed in an impact-resistant, non-flammable, IP66 rated housing. The sensor response time shall reach 90% of level being sensed within 30 seconds. The sensor shall be powered by low voltage from the GVU-3 control unit and have an LED to indicate sensor okay.

The sensor shall be model GVU-NO<sub>2</sub> as manufactured by Toxalert International.

– AND/OR –

### Carbon Dioxide Sensor

Provide a Model GVU-CO<sub>2</sub> remote Carbon Dioxide (CO<sub>2</sub>) sensor as located on the drawings. The remote CO<sub>2</sub> sensor shall utilize a non-dispersive infrared optical sensor cell for long life and accurate, stable CO<sub>2</sub> sensing.

The CO<sub>2</sub> sensor range shall be 0-2000 ppm and shall be powered by low voltage from the GVU-3 control unit. Sensor repeatability shall be 20 ppm, power consumption less than 2.5 watts, and accuracy of 5% of reading.

The sensor shall be Model GVU-CO<sub>2</sub> as manufactured by Toxalert International.

– AND/OR –

### Diesel Exhaust Smoke Sensor

Provide a Model GVU-VOC diesel exhaust smoke sensor(s) as located on the drawings. The sensor shall be capable of monitoring multiple air contaminants and smoke in diesel engine exhaust. The sensor shall utilize a solid state sensing element, be microprocessor based, have 10 bit resolution, and be both temperature and humidity compensated for long life and stability. Sensor shall have internal light emitting diodes (LED) for visual indication of air quality and shall have four (4) adjustable setpoints.

The sensor shall be Toxalert Model GVU-VOC as manufactured by Toxalert International.

## **SYSTEM CONTROLLER:**

The system controller shall continuously monitor its remote sensors. When an alarm condition is detected the controller shall delay exhaust fan contact closure for 30 seconds. If the high gas condition persists for more than 30 seconds the exhaust fan contacts shall close. The minimum fan ON time shall be field settable from one to eight minutes, in one minute increments. Should the alarm condition remain after the minimum run time has timed out, the exhaust fan contacts shall remain closed (ON) and a second “alarm” set of contacts shall close.

*[The Specifying Engineer can write what should happen at this level. Normally an audible alarm is sounded and alarm light(s) are lighted.]*

The controller shall have a clock to operate the exhaust fan equipment on a time basis, without high gas level concentrations. The fans shall operate from zero to eight minutes (field adjustable

in one minute increments) per hour. This timed fan run shall be separate from the minimum run time setting.

The controller shall be designed such that in the event of a power failure the control unit shall set itself to an alarm condition and upon power restoration shall automatically activate the fan output to clear any possible accumulated toxic gases.

The controller shall include separate internal LEDs's for each remote sensor to indicate which sensor is indicating a high gas condition. The controller shall be powered by 120VAC, 60Hz, 1Amp (fused) and provide all low voltage power to remote sensors. 24VAC, 2A resistive, 1.5 inductive auxiliary relay contacts shall be provided for remote control.

The controller shall be Model GVU-3 as manufactured by Toxalert International.

*Options that can be added to the GVU-3 Controller:*

- 1) *Power "ON" Indicator on face of controller to indicate power to system.*
- 2) *LED on face of panel to indicate high gas alarm condition. One for each sensor.*
- 3) *Fan ON indicator on face of controller to indicate fan stage*
- 4) *Audible & visual alarm. Horn has silence switch.*
- 5) *Keyed panel lock.*
- 6) *Remote alarm panel.*

*Specification paragraphs for above options:*

- 1) Provide clearly labeled light emitting diodes (LED's) on the face of the controller panel to indicate the following:
  - a) Power "ON" to system – Green LED.
  - b) Red LED for each sensor to indicate high gas condition (warning level).
  - c) Red LED to indicate Alarm condition.
  - d) Amber LED to indicate Fan ON
- 2) Provide an audible alarm with a minimum sound intensity of 68dB, on the face of the control panel. Provide an "Audible Reset" push button switch to silence the audible. Audible silence circuit shall be self resetting so that after alarm is cleared the audible alarm will automatically resound on the next alarm activation.
- 3) Provide a remote alarm panel and mount where indicated on the plans. The remote alarm panel shall include a red LED alarm indicator and an audible alarm, with a minimum sound intensity of 68dB. Provide an "Audible Reset" momentary push button switch to silence the audible. The alarm LED must stay lighted as long as the alarm condition persists.