TOXALERT™ DATA SHEET

INFRARED COMBUSTIBLE GAS TRANSMITTER TOX-COMB/IR

FEATURES:

- **Low Maintenance** – No span calibration required. Zero calibration is a quick, non-intrusive procedure.
- **Flexible** – Many parameters are user adjustable, including gas to be detected.
- **Rugged Design** – Conformally coated electronics, nickel plated optics, and intelligent instrument design protects components against corrosion, moisture, and harsh industrial environments.
- **Extensive Self Diagnostics** – Instrument compensates for detector contamination and aging. Optics are heated to prevent moisture formation. Sensor, software, and electronics are checked at least twice a second. Detailed fault codes aid in troubleshooting.
- **Multiple Output Choices** – 4-20mA and leave outputs are standard features. Relays with user adjustable set/reset points, and time delays are available as an option.
- **Large LCD Display** – Shows gas concentration and trouble codes.

TOX-COMB/IR SENSOR

APPLICATION:

The Model Tox-COMB/IR is a rugged, reliable solution for hydrocarbon gas detection. Designed with extensive user input, the instrument is extremely flexible, easy to use, and easy to maintain. The Tox-COMB/IR is suitable for most applications where catalytic bead detectors are currently used as well as some applications where catalytic sensors will not work.

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PRINCIPLE OF OPERATION:

An infrared source emits pulses of radiation into the instruments "optical bench," which contains a known volume of gas. This radiation is reflected onto two sensors, one tuned to measure a wavelength absorbed by organics and the other tuned to a reference band that is not absorbed. The outputs of the detectors are compared and used to compute gas concentration. Fault conditions are detected by the sensors when radiation intensity falls below a threshold level for a set period of time.

USE AND MAINTENANCE:

Minimum maintenance is necessary. All span information is present at the factory, and never needs to be adjusted. Zero calibration is a quick, non-intrusive procedure. On-board diagnostics continuously check transmitter electronics, optics, and software for faults and indicate corrective action should a fault be detected. The field serviceable infrared emitter is replaced with a simple plug-in connection.

SPECIFICATIONS:

- **Sensor Type:** Non-dispersive infrared
- **Range:** 0-100%
- **Linearity:** ±2% below 40% full scale
  ±5% from 40% to 110% full scale
- **Repeatability:** ±2% below 40% full scale
  ±5% from 40% to 110% full scale
- **Response Time:** T90 < 5 seconds (without rainshield)
- **Operating Temperature:** -40ºF to 140ºF (-40ºC to 60ºC)
- **Operating Humidity:** 0 to 100% RH
- **Startup Time:** 30 seconds
- **Calibration:** Span: none (factory set)
  Zero: every 3 to 6 months

- **Electrical Data:**
  Input Voltage: 18-28 VDC
  Power Consumption: 3.1 W, nominal / 4.0 W, max
  Wiring: 3 wire; 18-22 AWG nominal

- **Unit Construction:**
  Enclosure Material: Copperfree cast aluminum based epoxy finish
  Physical: 9" H x 5 ½" W x 3 ¾" D
  Mounting style: Surface
  Enclosure: Explosion proof; UL/FM/CSA, Class 1 Group B, C, D, / Class 2 Group E, F, / Class 3 Nema-9E, F, G,; IP66
  Weight: 6.5 pounds

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