

IT Combustible Infrared Sensor Module

MODEL TOX540-28-IT

GENERAL DESCRIPTION:

Information Technology (IT) at the component level! An infrared (IR) Combustible Gas Sensor Module with the brilliance to provide, 4-20 mA or Modbus output. This can be a stand alone module with the intelligence to provide integral alarms, already loaded with features you need. A gas detector with a Toxalert pedigree. The TOX540-28-IT provides all the built-in features desired by instrumentation and safety professionals, including:

- Aluminum or 316 Stainless Steel enclosure
- Optional Integral 8 AMP alarm relays—Alarm, Warning
- Integral scrolling LED display
- 4-20 mA output
- Modbus RTU RS-485 interface
- Option for non-Methane gas configuration
- Annual calibration frequency
- Remote alarm reset
- Optional remote sensor

The TOX540-28-IT can be used as a 4-20ma component or as a Modbus RTU node. For higher level system capability the module can interface directly to a Toxalert Controller. As part of a Toxalert system the user gains capability of system integrity, extensive diagnostic features, area and zone alarm management.

How it Works

Most combustible gases absorb infrared light energy at defined wavelengths, providing an absorption signature for that gas. The principle of an infrared detector is based upon the absorption of the infrared light at a specific wavelength as it passes through the gas. The more of the absorbing gas that is present, the more light is absorbed. The detector measures the energy from an infrared light beam at a wavelength that is absorbed by the gas and compares it to the energy emitted by the source. The difference in energy received by the detector indicates the level of gas in the atmosphere.



BENEFITS:

Able to easily and quickly calibrate module without declassifying the area

Easy to install in a variety of field applications plus easy to obtain critical safety information wherever needed

For safe and reliable operation in hazardous areas

Meets long term reliability design standards

Ease of calibration and easy access to gas concentration, relay status and diagnostics

FEATURES:

- Non-intrusive calibration, menu driven system
- 4-20mA, relay interface and Network compatible with Modbus
- Local scrolling display

SPECIFICATIONS:

Sensor type: Infrared, Dual Wavelength

Performance:

Dual Range:

Default: 0-100% LEL Methane or Propane

User Setting: 0-100% by vol. Methane

Other Gases: % LEL Ethanol, Ethylene, Hexane, Butane, Propane, Pentane

Repeatability: +/-1% LEL

Response Time: <10 sec.to 60% full scale

Accuracy: +/- 1% for 0-50% LEL range
+/- 2% for 51-100% LEL range

Sensor Life: Typically >5 years

Output:

Display: Fixed and Scrolling LED

Signal Output: Analog 4-20mA (Trouble 2.5 mA), Calibration (1.5mA)
Serial Rs-485 Modbus RTU

Relay: 0.25 Amp. Trouble

Optional Relays: 8 amp Alarm, Warning
8A @ 250 VAC, 5A @ 30VDC

Electrical Data:

Power Consumption: 3 watts

Connection Type: 3 or 4 wire

Input Voltage: 24 VDC nominal 10-3 VDC

Operating Range:

Ambient Temp Range: -4° to 140°F
(-20° to 60°C)

Relative Humidity: 5-99%

Construction:

Dimensions: (A1) 8.1 x 4.8 x 4.9 in. (21 x 12 x 12 cm)
(S1) 7.5 x 4.4 x 4.9 in. (10 x 11 x 12 cm)

Weight: (A1) 2.7 lb. (1.3 kg) – (S1) 5.4 lb (2.7 Kg)

Housing: Epoxy Coated Aluminum or 316 Stainless Steel

Hazardous Area

Classification: Explosion Proof, Class I, Div. 1, Groups B, C, D Class I, Zone 1
Group IIC, IP66, IP65, NEMA 4X
TA = - 40°C to 85°C IIC GD, Ex d IIC

Warranty: 1 year

**REMOTE SENSOR OPTION**

It is often necessary to sample the combustible gas at some distance from the gas sensor module. The IT Series enables the user to mount the sensor remotely from the transmitter without the need for expensive and high-maintenance sample pumps. The remote Sensor Option provides a separate gas sensor that can be mounted up to 100 feet from the transmitter and connected via a cable included.

ORDERING INFORMATION

| Model | Enclosure | Relay Connction -XX | Gas Type -XX | Remote -X |
|--------------|-----------|-------------------------|-------------------------------------|----------------------------|
| TOX540-28-IT | -XX | - 01 = No Relays (Std.) | - 01 = Methane (standard) | - 0 = None (Standard) |
| | - A1 | - 02 = Relays/Option. | - 02 = Ethanol | - 1 = Remote Sensor Option |
| | - S1 | - 03 = Hart Protocol | - 03 = Propane | |
| | | | - 04 = Butane | |
| | | | - 05 = Ethylene | |
| | | | - 06 = Pentane | |
| | | | - 07 = Hexane | |
| | | | - 99 = Custom Type Refer to Factory | |

Accessories

Rainshield

Rainshield with calibration port

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