

IT Combustible Infrared  
Sensor Module  
Model TOX540-28-IT

**Proven Performance**  
**Proven Technology**  
**Proven Support**

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
- 4-20mA 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 4-20 mA 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.

### Features

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

### 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

## 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 10-30 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

*Specifications subject to change without notice*



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

### Accessories

Rainshield  
Rainshield with calibration port