

**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 Sentry, 4-20 mA or Modbus output. This is a stand alone module with the intelligence to provide integral alarms, already loaded with features you need. A gas detector with a **Sierra Monitor** pedigree, **Factory Mutual** approved and ready to **Manage Your Gas Risk**. The 5100-28-IT provides all the built-in features desired by instrumentation and safety professionals, including:

- FM Approval for performance and safety
- SIL-2 Certified
- 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
- SMC Sentry digital bus interface
- Option for non-Methane gas configuration
- Annual calibration frequency
- Interface to multiple protocols
- Remote alarm reset
- Optional remote sensor

The 5100-28-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 Sierra Monitor's Sentry Controller. As part of a Sentry system the user gains capability of system Modbus serial communications, extensive diagnostic features, area and zone alarm management, WebServer interface and multiplexing sensor connections.



Factory Mutual (FM) Approval for performance, electrical safety and environmental parameters including Class I, Div. 1, Groups B, C, D and Class I, Zone 1, Group IIC. The 5100-28-IT is also SIL-2 Certified and meets NFPA-72 requirements for gas detectors.

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
- ◆ Network compatible with Modbus, 4-20mA, Sentry bus, relay interface
- ◆ FM Approved for performance and hazardous area operation, Class I, Div. 1, Group B, C, D, with NEMA 4X enclosure rated for -40° to 176°F areas
- ◆ SIL-2 Certified
- ◆ 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: Sentry digital bus
 Analog 4-20 mA (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
 Board includes auxiliary connection for Sentry multiplexing

Options:
Auxiliary Connection: Internal connection board when daisy chain for Sentry multiplexing installations
Auxiliary RS-485 Multidrop: Internal connection board provides additional terminals for In/Out RS-485 terminals

Electrical Data:
 Power consumption: 3 watts
 Connection type: 3 or 4 wire
 Input voltage: 24 VDC nominal: 10-30VDC
Operating Range:
 Ambient Temp Range: -4° to 140°F (-20° to 60°C)
 Relative Humidity: 5-99%
Construction:
 Dimensions: (Al) 8.1 x 4.8 x 4.9 in. (21 x 12 x 12.cm)
 (SS) 7.5 x 4.4 x 4.9 in. (19 x 11 x 12 cm)
 Weight: (Al) 2.7 lb. (1.3 Kg) --- (SS) 5.4 lb. (2.6 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 II2 GD, Ex d IIC
Warranty: 2 years
Approvals: FM Approval 6320 Combustible Gas Detector Performance Class I Div. 1, Groups B, C, D
 FM Approval 3600 Certified by Lloyd's Register (IEC 61508)
 SIL-2 Certified
 NFPA72 Compliant
 ATEX, CSA For enclosure in hazardous locations

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	Protection	Remote
5100-28-IT	-XX - AL - SS	-XX - 01 = No Relays - 02 = Relays/Aux. Conn. - 03 = Aux Connection - 04 = Aux RS-485	-XX - 01 = Methane (standard) - 02 = Ethanol - 03 = Propane - 04 = Butane - 05 = Ethylene - 06 = Pentane - 07 = Hexane	-X - 0 = Standard - 1 = Marine - 2 = Conformal	-X - 0 = None - 1 = Remote Sensor

Calibration Accessories

5358-01 Calibration Head, Standard
 5360-00 Calibration Gas Delivery Fitting

Accessories

5311-00 Rainshield
 5311-02 Rainshield with calibration port

Calibrators High Capacity

1250-01 Gas Sensor Calibration Kit, Type A
 1260-02 Combustible Gas 50% LEL Gas Cylinder Type A
 1260-00 Combustible Gas 50% LEL Gas Cylinder Type A