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. A stand alone module with the intelligence to provide integral alarms. A base model 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 Certified - SIL-1
- Aluminum or 316 Stainless Steel enclosure
- Integral alarm relays – High, Low, Trouble
- 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
- Optional integral 8 amp relays

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, LanServer 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 IIB+H2 IP66. The 5100-28-IT is also SIL 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	Benefits
Local scrolling display	Ease of calibration and easy access to gas concentration, relay status and diagnostics
Non-intrusive calibration, menu driven system	Able to easily and quickly calibrate module without declassifying the area
FM Approved for performance and hazardous area operation, Class I, Div. 1, Group B, C, D. NEMA 4X rated for -40° to 176°F areas	For safe and reliable operation in hazardous areas
Flexible Modbus, 4-20mA, Sentry bus, relay interface	Easy to install in a variety of field applications plus easy to obtain critical safety information wherever needed
SIL Certified	Meets long term reliability design standards

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
Relay:	0.25 Amp. High Alarm, Low Alarm, Trouble, all SPDT
Optional Relays:	8 amp high, low
	8A @ 250 VAC, 5A @ 30VDC
Signal Output:	Sentry digital bus
	Analog 4-20 mA (Trouble, 0 mA)
	Serial RS-485 Modbus RTU

Specifications subject to change without notice

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:	Standard: Epoxy coated Aluminum
	Optional: 316 Stainless Steel
Hazardous Area Classification:	Explosion proof, Class I, Div. 1, Groups B, C, D Class I, Zone 1 Group IIB+H2 IP66, IP65, NEMA 4X
Warranty:	2 years

Approvals:

FM Approval 6320	Combustible Gas Detector Performance
FM Approval 3600	Class I Div. 1, Groups B, C, D
SIL Certified	FMEDA data for SIL-1
NFPA72 Compliant	

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 (5394-50) provides a separate gas sensor that can be mounted up to 100 feet from the transmitter and connected via a cable.

Maximum distance from sensor to transmitter: 100 feet

Ordering Information

5100-28-IT-AL   Combustible Gas Sensor Module IT Series - Aluminum
5100-28-IT-SS Combustible Gas Sensor Module IT - 316 Stainless Steel

Options

5394-50	Remote Sensor Opt
5394-61	Auxiliary Connectors
5394-62	Auxiliary Integral 8 amp Relays
5394-64	Auxiliary Multidrop Connectors
SPL53051	Cable, Remote Sensor Kit 5394-50

Calibration Accessories

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

Calibrators
High Capacity

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

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Rev. F 02//09

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