

**Proven Performance
Proven Technology
Proven Support**

Information Technology (IT) at the component level! An **Infrared (IR) Combustible Gas Sensor Module** is network-enabled to provide the interface needed to your plant-wide control system, whether it be 4-20 mA, Modbus, HART, relay contacts or SentryBus. This USA-made, stand-alone smart gas sensor module is loaded with features you need. As usual, Sierra Monitor 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
- Modbus RTU RS-485 interface
- 4-20 mA output
- HART interface
- SMC Sentry digital bus interface
- Optional Integral 8 AMP alarm relays – Alarm, Warning
- Aluminum or 316 Stainless Steel enclosure
- Annual calibration frequency
- %LEL or % volume
- Interface to multiple protocols
- Integral scrolling LED display
- 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, HART, 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	Electrical Data:	Power consumption: 3 watts
Performance:			Connection type: 3 or 4 wire
Dual Range:			Input voltage: 24 VDC nominal: 10-30VDC
Default:	0-100% LEL Methane	Operating Range:	Ambient Temp Range: -4° to 140°F
User Setting:	0-100% by vol. Methane		(-20° to 60°C)
Repeatability:	+/-1% LEL		Relative Humidity: 0-95% Non-Condensing
Accuracy:	+/- 1% for 0-50% LEL range +/- 2% for 51-100% LEL range	Construction:	
Sensor Life:	Typically >5 years	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)
Heated Sensor:	Heated cell to prevent condensation	Weight:	(Al) 2.7 lb. (1.3 Kg) --- (SS) 5.4 lb. (2.6 Kg)
Response Time:	T60<10sec	Module Enclosure:	Epoxy coated Aluminum or 316 Stainless Steel
Linearity:	+/-1% LEL	Sensor Housing:	AL or SS (same as enclosure)
Zero Drift:	+/-1% LEL/month	Hazardous Area	
Output:		Classification:	Explosion proof, Class I, Div. 1, Groups B, C, D Class I, Zone 1 Group IIC, IP66, IP65, NEMA 4X, T6 TA = - 40°C to 85°C II2 GD, Ex d IIC 2 years
Display:	Fixed and Scrolling LED	Warranty:	
Signal Output:	Sentry digital bus Analog 4-20 mA (Trouble, 2.5 mA), Calibration (1.5mA) Serial RS-485 Modbus RTU 0.25 Amp. Trouble	Approvals:	FM Approval 6320 Combustible Gas Detector Performance FM Approval 3600 Class I Div. 1, Groups B, C, D SIL-2 Certified Certified by Lloyd's Register (IEC 61508) NFPA72 Compliant CSA For enclosure in hazardous locations
Relay:			
Options:			
Relays:	8 amp Alarm, Warning 8A @ 250 VAC, 5A @ 30VDC Board includes auxiliary connection for Sentry multiplexing		
HART	Termination board includes HART, Modbus RS-485, 4-20mA, Digital Input, 2A Relay output, No Sentry Bus		

Specifications subject to change without notice


Ordering Information

Model	Enclosure	Relay/Connection	Gas Type	Protection	Remote
5100-28-IT - XX		- XX	- XX	- X	- X
	- A1 = AL 3/4" NPT	- 01 = No Relays (std.)	- 01 = Methane (std.)	- 0 = Standard	- 0 = None
	- A2 = AL M20 x 1.5	- 02 = Relays Option			- 1 = Remote
	- S1 = SS 3/4" NPT	- 05 = HART Option			Sensor
	- S2 = SS M20 x 1.5				

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