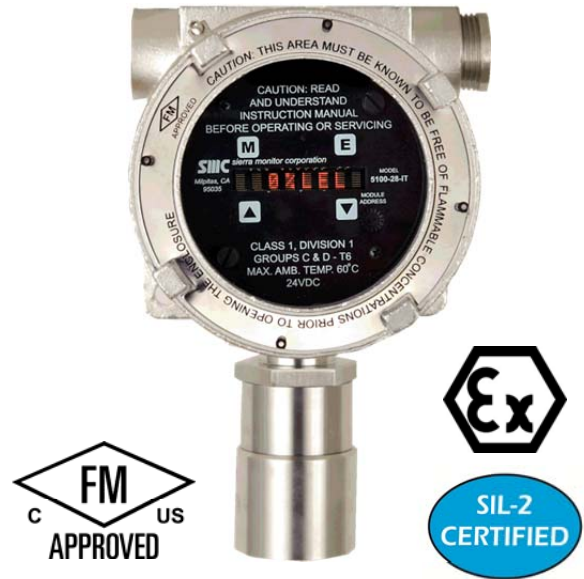*Proven Performance*
Proven Technology
Proven Support

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 alarm relays – Alarm, Warning and Trouble
- 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 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 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
  User Setting: 0-100% by vol. Methane
  Repeatability: +/-1% LEL
  Accuracy: +/- 1% for 0-50% LEL range
   +/- 2% for 51-100% LEL range
  Zero Drift: +/- 1% full scale per month
   @ 20°C (68°F) ambient,
   (max +/- 3% full scale per year)
  Sensor Life: Typically >5 years
  Heated Sensor: Heated cell to prevent condensation
  Response Time: T90<10sec*
Output:
  Display: Fixed and Scrolling LED
  Signal Outputs: Sentry digital bus
   Analog 4-20 mA Linear
     3-wire Non-Isolated
     4-wire Isolated
   Serial RS-485 Modbus RTU
  Relay : Optional
Options:
  Relays: 5 amp Alarm, Warning (0.25 amp Trouble)
   5A@ 250 VAC, 5A@ 30VDC (Alarm, Warning)
   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
  Remote Sensor: Up to 100 feet (30.4m)
Power:
  Power consumption: 3 watts
  Input voltage: 24 VDC nominal: 10-30VDC

Operating Range:
  Ambient Temp Range: -40° to 140°F (-40° to 60°C)
  Relative Humidity: 0-99% Non-Condensing
Construction:
  Dimensions: (H x W x D)
   (A1 & A2) 7.8 x 5.7 x 3.9 in. (19.8 x 14.5 x 9.9 cm)
   (S1 & S2) 7.5 x 4.4 x 4.9 in. (19 x 11 x 12 cm)
  Weight:
   (A1 & A2) 3.4 lb. (1.5 Kg)
   (S1 & S2) 7.2 lb. (3.3 Kg)
  Enclosure: Epoxy coated Aluminum or 316 Stainless Steel
  Housing: AL or SS (same as enclosure)
  Hazardous Area
  Classification: Explosion proof, Class 1, Div. I, Groups C, D
   Class I, Zone 1
   Group IIC, IP66, IP65, NEMA 4X, T6
   TA = - 40°C to 85°C II2 GD, Ex d IIC
  Warranty: 2 years
Approvals:
  ATEX II 2 G, Ex d IIB+H2 T6 Gb, Ta = -20°C to 60°C
  FM Approval 6320 Combustible Gas Detector Performance
  FM Approval 3600 Class I Div. 1, Groups C, D
  SIL-2 Certified Certified by Lloyd's Register (IEC 61508)
  CSA For enclosure in hazardous locations
  ABS Certificate of Compliance
  CQST Certificate for China
  CCOE/PESO Certificate for India

Specifications subject to change without notice

* T60<10 sec NRTL Approved option for noise suppression

Ordering Information:

Model 5100-28-IT	Enclosure - XX	Relay/Connection Output - XX	Gas Type - XX	Sensor Protection - X	Remote Option - X	Approvals - X
	- A1 = AL ¾" NPT	- 01 = No Relays (std)	- 01 = Methane (Std.)	- 0 = Standard	- 0 = None	- F = FM
	- A2 = AL M20 x 1.5	- 02 = Relays Option		- 2 = Conformal Transmitter	- 1 = Remote Sensor	- C = ATEX
	- S1 = SS ¾" NPT	- 05 = HART Option				
	- S2 = SS M20 x 1.5					

Accessories:
5311-00 Rainshield
5311-02 Rainshield with calibration port

Calibration Accessories:
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

Authorized Distributor:
GasDetectorsUSA.com
Houston, TX USA
832-615-3588
sales@GasDetectorsUSA.com