GIR900 Combustible Gas Sensor

Infrared Sensor with 0-20 mA Transmitter

Self-Contained and Explosion-Proof

Model GIR900 shown with optional junction box in red.

The SST Model GIR900 Infrared Combustible Gas Sensor is a completely self-contained device that measures the concentration of hydrocarbon gas accumulated in a protected area and transmits this information to a central point.

The GIR900 Infrared Combustible Gas Sensor uses the proven non-dispersive infrared (NDIR) principle to detect and monitor the presence of gas. Using an infrared source lamp and an optical sensor with a narrow-band filter, an analysis of the optical absorption through the gas allows the concentration of the target gas to be determined. The strong fundamental absorption band centered at 3.32 micrometers is used for the detection of hydrocarbons. This allows short optical path lengths to be used while maintaining good resolution. A second infrared sensor operating at a wavelenght not affected by the target gas is used to eliminate effects resulting from ambient and physical variations. These include temperature changes, source and filter degradation and particle scattering.

Each GIR900 includes a high-reliability microprocessor based transmitter. The transmitter converts the output from the infrared sensor elements to a standard 0-20 mA signal which may be connected to a suitable control alarm system or to any other device with a sinking 0-20 mA input. Output levels between 4-20 mA indicate the measured concentration of gas (0 to 100% LEL).

FEATURES & BENEFITS

- Infrared Sensor for Combustible Gas Detection
- Immune to contamination and poisoning
- No routine calibration required
- Low maintenance
- 0-20 mA output for connection to external equipment
- LOW alarm and HIGH alarm settings
- Voltage-free dry contact relays for local control
- Continuous background of hydrocarbon gas does not shorten life of the sensor
- Available up to IP66 rating
- Maintains calibration even after exposure to high gas concentrations
- Shipped fully assembled and pre-calibrated
- 5 Year Warranty
- Made in USA

TYPICAL GASES

- Acetone
- Butane
- Cyclohexane
- Diesel Fuel Vapor
- Ethane
- Ethylene Oxide
- Ethanol
- Hexane
- Heptane
- Jet Fuel Vapor
- Methane
- Octane
- Pentane
- Propane
- Toluene

SST SAFETY SYSTEMS TECHNOLOGY

Model GIR900 Combustible Gas Sensor

SYSTEM SPECIFICATIONS

Sensor Type:	Infrared
Poison Resistance:	Highly Resistant
Gases Detected:	Most combustible gases and vapors
Sensor Life:	Typical 10+ years
Measuring Ranges:	0-100% LEL
Accuracy:	+/- 1% LEL(CH_4)
Zero Drift:	< +/- 1/2 mV/Month
Linearity:	Effectively Linear to 100% LEL (to within 5%)
Response Time:	T_{90} <30 seconds
Modes:	Normal operation, calibration
Warranty:	5 years

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:	Electronics -40°F to 185°F (-40°C to 85°C) Sensor -40°F to 122°F (-40°C to 50°C)
Operating Humidity:	0-100% RH, non-condensing
Ingress Protection:	IP40 to IP66

MECHANICAL SPECIFICATIONS

Dimensions:	7 x 9.5 x 4.75 inches (178x241x121 mm)
Weight:	6.75 lbs. (3.06 kg) Aluminum; 17 lbs (7.7 kg) Stainless Steel
Controller Housing:	Aluminum or Stainless Steel
Sensor Housing:	Stainless Steel

ELECTRICAL SPECIFICATIONS

Input Power:	24 VDC nominal, 16 to 32 VDC 65 mA standby, 65 mA alarm
Analog Signal:	0-20 mA current source (600 Ohms or less)
	Malfunction — 0 mA
	Setup Mode/Calibrate — 2 mA
	Zero Reading — 4 mA
	0-100% LEL — 4-20 mA
	Over-range — > 20 mA
Field Connections:	4-20 mA output and power - three-wire shielded cable All connections: 22 AWG (.35 mm^2) to 12 AWG (4.0 mm^2)
Wireless Communication:	Available with optional wireless transmitter with text, e-mail notification features

ORDERING INFORMATION

Part No.	Description
900-2-AL-(Gas)	Model GIR900 Infrared Combustible Gas Sensor and Transmitter *Stainless steel*
900-2-SS-(Gas)	Model GIR900 Infrared Combustible Gas Sensor and Transmitter *Stainless steel*

Accessories

Part No.	Description
851-1	Rain shield, stainless steel (IP65)
851-5	Water spray shield (for IP66, requires 852-1)
852-1	Dust cover, stainless steel (requires 851-1)
854-1	Duct mount, stainless steel
858-1	Remote calibration adapter
859-1	Gas sensor collection cone, stainless steel
950-1	Sensor mounting junction box, Class I, Div. 1 & 2, Groups C, D (wall or ceiling mount)
950-2	Sensor mounting junction box, Class I, Div. 1, Groups A, B, C, D
857	Calibration kit (test gas sold separately)
20231-2	Stainless steel tag

Specifications subject to change without notice.

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