

ENGINEERING QUALITY AND RELIABILITY

# GIR904 NOVA-SENSOR *ELITE*

## INFRARED COMBUSTIBLE GAS DETECTOR

SELF-CONTAINED AND EXPLOSION-PROOF



The SST Model GIR904 is an “intelligent,” highly versatile and reliable industrial gas detector designed for the toughest job and able to be used in the harshest environments. This detector uses the Non-Dispersive Infrared (NDIR) principle to detect and monitor the presence of gas. In comparison to catalytic bead sensors, the NDIR sensor is immune to contamination and poisoning, able to operate in the absence of oxygen or in enriched oxygen, able to operate in continuous presence of gas and tend to outlast catalytic sensors.

The display screen on the NOVA-Sensor *ELITE* continuously displays operating status and the actual concentration of gas in percentage of the Lower Explosive Limit (% LEL). This reading is converted to a standard 4-20 mA signal, which may be connected to any remote device for remote display or logging. Relay contacts are provided which transfer when the gas concentration exceeds the LOW ALARM and HIGH ALARM set points. Typical set points are adjusted by the installer upon installation and may be reset later by authorized personnel. The relays are suitable for controlling local HVAC equipment, alarm signal devices or for equipment shutdown. Fault relays contacts are also available which operate upon loss of power or internal failure of the unit.

### FEATURES & BENEFITS

- Infrared Sensor for Combustible Gas Detection
- Immune to contamination and poisoning
- No routine calibration required
- Low maintenance
- 4-20 mA output for connection to external equipment
- LOW alarm and HIGH alarm settings
- Voltage-free dry contact relays for local control
- Explosion-proof approved electronics housing
- Sensor in stainless steel housing
- Available up to IP66 rating
- Bright LCD screen displays target gas concentration in % LEL
- Magnetic switch initiates test or calibration sequence
- Built-in automatic sensor replacement/maintenance and calibration reminder
- Step-by-step on-screen calibration instructions for ease of use and maintenance
- Shipped fully assembled and pre-calibrated
- 5 Year Warranty
- Made in USA

### TYPICAL GASES

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



23282 MILL CREEK DRIVE | STE. 215 | LAGUNA HILLS | CA 92653 | USA  
TEL: 1-949-583-1857 | FAX: 1-949-340-6643  
EMAIL: SALES@SAFETYSYS.COM | WWW.SAFETYSYS.COM

MODEL GIR904 COMBUSTIBLE GAS DETECTOR

SYSTEM SPECIFICATIONS

|                           |   |
|---------------------------|---|
| <b>Sensor Type:</b>       | Infrared  |
| <b>Poison Resistance:</b> | Highly Resistant  |
| <b>Gases Detected:</b>    | Most combustible gases and vapors   |
| <b>Sensor Life:</b>       | Typical 10+ years   |
| <b>Measuring Ranges:</b>  | 0-100% LEL  |
| <b>Accuracy:</b>          | +/- 1% LEL(CH <sub>4</sub> )  |
| <b>Zero Drift:</b>        | < +/- 1/2 mV/Month  |
| <b>Linearity:</b>         | Effectively Linear to 100% LEL (to within 5%)   |
| <b>Response Time:</b>     | T <sub>90</sub> <30 seconds   |
| <b>Modes:</b>             | Normal operation, set-points, calibration, set-up   |
| <b>Warranty:</b>          | 5 years   |
| <b>Approvals:</b>         | Explosion-proof approved housing<br>Class I, Division I, Groups A B C D; Class I, Zone I, AEx d IIC; Type 4X<br>ATEX: II 2G Ex d IIC Gb |

ENVIRONMENTAL SPECIFICATIONS

|                               |  |
|-------------------------------|--|
| <b>Operating Temperature:</b> | Electronics -40°F to 185°F (-40°C to 85°C)<br>Sensor -40°F to 266°F (-40°C to 130°C) |
| <b>Operating Humidity:</b>    | 0-100% RH, non-condensing  |
| <b>Ingress Protection:</b>    | IP40 to IP66   |

MECHANICAL SPECIFICATIONS

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



Specifications subject to change without notice.

ELECTRICAL SPECIFICATIONS

|                                |  |
|--------------------------------|--|
| <b>Input Power:</b>            | 24 VDC nominal, 16 to 32 VDC<br>92 mA standby, 120 mA alarm  |
| <b>Relay Contact Ratings:</b>  | 6 amps @ 28 VDC or 300 VAC resistive<br>1/8 HP @ 120/240VAC  |
| <b>Analog Signal:</b>          | 0-20 mA (600 Ohms or less)<br>Malfunction 0 mA<br>Setup Mode/Calibrate 4 mA<br>Zero Reading 4 mA<br>0-100% LEL 4-20 mA<br>Over-range > 20 mA                 |
| <b>Display:</b>                | Graphic Liquid Crystal Display<br>Displays target gas concentration in % LEL;<br>Flashing screen in alarm mode;<br>Low brightness setting in power save mode |
| <b>Field Connections:</b>      | 4-20 mA output - three-wire shielded cable<br>All other connections: 22 AWG (.35 mm <sup>2</sup> )<br>to 12 AWG (4.0 mm <sup>2</sup> )                       |
| <b>Wireless Communication:</b> | Available with optional wireless transmitter with text, e-mail notification features   |

ORDERING INFORMATION

| Part No.     | Description  |
|--------------|--|
| 904-(Gas)    | Model GIR904 Combustible Gas Detector<br><i>Electronics in aluminum housing<br/>Sensor in stainless steel housing</i>        |
| 904-(Gas)-SS | Model GIR904 Combustible Gas Detector<br><i>Electronics in stainless steel housing<br/>Sensor in stainless steel housing</i> |

Accessories

|       |  |
|-------|--|
| 851-1 | Rain shield, stainless steel (IP65)              |
| 851-5 | Water spray shield<br>(for IP66, requires 852-1) |
| 852-1 | Dust cover, stainless steel<br>(requires 851-1)  |
| 854-1 | Duct mount, stainless steel                      |
| 858-1 | Remote calibration adapter                       |
| 859-1 | Gas sensor collection cone, stainless steel      |
| 850-4 | Remote sensor mounting junction box              |
| 857   | Calibration kit (test gas sold separately)       |
| 10121 | Spare calibration/test key                       |