



Catalytic Combustible Gas Sensor

DESCRIPTION

The new family of Det-Tronics catalytic combustible gas sensors provides unmatched flammable gas detection performance in harsh environments and challenging conditions.

The heart of the catalytic sensor consists of a pair of computer matched pellistors (beads) that provide identical electrical resistance in clean air. When flammable gas is present, the active bead catalyzes the combustible gas molecules, while the inactive (reference) bead balances the reaction and compensates for normal changes in the ambient environment. The sophisticated design and construction of Det-Tronics catalytic sensors provides excellent sensitivity, response time, and resistance to physical shock and vibration.

All Det-Tronics catalytic gas sensors are now poison-resistant, and are constructed with a new, one-piece 316 stainless steel housing. Other new features include an integral thermal barrier to prevent bead interaction, and a new sinter bonding technique to ensure superior protection against electromagnetic interference. All sensors are provided with a chemically etched identification and approvals label that will withstand exposure to harsh outdoor industrial environments.

Det-Tronics catalytic sensors can be used for detection of virtually all combustible and flammable gases, including hydrogen, and are compatible with the entire line of Det-tronics combustible gas transmitters and controllers.

FEATURES AND BENEFITS

- New one piece design with integral thermal barrier
- New sinter bonded flame arrestor provides superior EMI protection
- 316 stainless steel housing
- Excellent impact and vibration resistance
- Standard poison-resistant performance rating
- Chemically etched identification and approvals label on sensor
- FMR/CSA/CENELEC Approvals
- Extended operating temperature range
- Complete electrical and mechanical compatibility with existing gas products
- Comprehensive list of conversion K factors for proper calibration available
- Full two year warranty
- 3/4 inch NPT or 20 mm thread types
- Six inch or optional 30 inch wire lead lengths
- Constant voltage or constant current sensor types available.

SPECIFICATIONS

| | |
|------------------------------|--|
| Temperature Range* | -67°F to +302°F (-55°C to +150°C). |
| Humidity Range | 0 to 99% RH, non-condensing. |
| Response Time | 50% full scale in < 10 seconds with 100% LFL applied. 90% full scale in < 30 seconds with 100% LFL applied. 60% full scale in < 10 seconds with 100% methane by volume in air (CSA flooding test). |
| Recovery Time | < 30 seconds after exposure to pure methane. |
| Linearity | 0 to 50% LFL: ±3% LFL. 51 to 99% LFL: ±5% LFL. |
| Repeatability | ±1% LFL. |
| Long Term Stability | <u>Zero</u> : < 1% LFL per month. <u>Span</u> : < 1% LFL per month in clean air. |
| Temperature Stability | < ±5% LFL: -13°F to +167°F (-25°C to +75°C). < ±10% LFL: -40°F to -13°F (-40°C to -25°C). |
| Sensor Life | 3 to 5 years, when environment is free of substances and conditions known to be detrimental to catalytic sensing elements. |
| Storage Life | Indefinite, when stored in unopened original packaging. |
| Calibration Cycle | 90 days typical. |
| RFI/EMI Immunity | Refer to selected transmitter specification. |
| Dimensions | L = 2.0 inches (5.1 cm) W = 1.7 inches (4.3 cm). |


* Materials suitable for installation in this range



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SPECIFICATIONS (continued)

| | |
|----------------------|---|
| Certification | FMR /CSA: Class I, Div. 1, Groups B, C & D. Explosion-proof verified: -40°F to +257°F (-40°C to +125°C). Performance verified: -40°F to +167°F (-40°C to +75°C). |
| | CENELEC: CE 0539  II 2 G EEx d IIC T3, T5 DEMKO 02 ATEX 131323 X T5 (T _{amb} = -40°C To +75°C) T3 (T _{amb} = -55°C to +125°C). Special conditions for safe use ("X"): Performance T _{amb} rating = -40°C to +75°C. Must be used in conjunction with CENELEC certified Det-Tronics combustible gas detector control unit for compliance with EN61779 Series Standards. CGS must be mounted to EEx 'd' (P _{ref} ≤ 20 bar) or EEx 'e' enclosure. Intermittent exposure to 125°C (500 hours). |
| | NOTE: Ensure sensor hazardous (classified) location rating is applicable for the intended use. |

ORDERING INFORMATION

When ordering, please specify:

| Model | Description |
|---------------|---|
| CGSS1A6V2R1XX | 3/4 inch, 6 inch leads, constant voltage |
| CGSS1A6C2R1XX | 3/4 inch, 6 inch leads, constant current |
| CGSS1A3V2R1X | 3/4 inch, 30 inch leads, constant voltage |
| CGSS1A3C2R1X | 3/4 inch, 30 inch leads, constant current |
| CGSS1C6V2R1X | M20, 6 inch leads, constant voltage |
| CGSS1C6C2R1X | M20, 6 inch leads, constant current |
| CGSS1C3V2R1X | M20, 30 inch leads, constant voltage |
| CGSS1C3C2R1X | M20, 30 inch leads, constant current |

Specifications subject to change without notice.