

Poison-Tolerant Catalytic Sensor for Flammable Gas and Vapor Detection



Control Instruments' advanced Catalytic Sensor gives you fast, reliable and accurate performance even in the toughest environments.

CONTROL INSTRUMENTS' advanced Catalytic Sensor sets a new standard for safe, reliable and accurate flammable gas detection in all kinds of environments.

With its fast response time, high linearity, and long-life design, you'll find this sensor the ideal choice for a wide variety of area monitoring and other applications.

Plus, because of its unique tolerance to silicones, plasticizers and other inhibiting poisons, this is the only Catalytic Sensor available that will continue to respond faithfully and precisely even when exposed continuously to the worst contaminants.

Here are just a few of the features that put Control Instruments' Catalytic Sensor in a class by itself:

*Fast, Accurate, Reliable
Under All Conditions*

Control Instruments' Catalytic Sensor is designed to give you stable, true readings whatever the ambient environment. Superior engineering insures fast, linear response even when there are sudden changes in temperature, pressure and humidity.

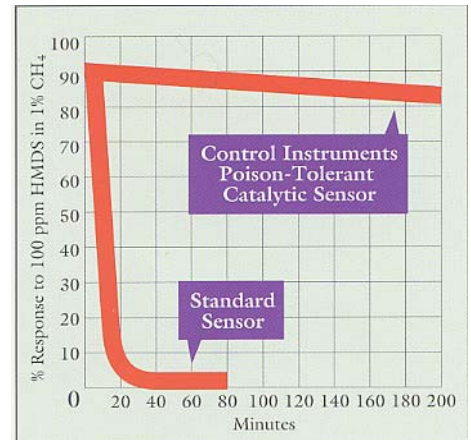
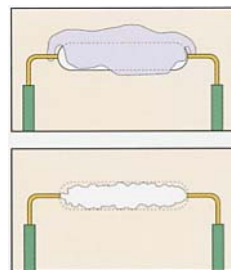
Hexamethyldisilazane (HMDS) is considered the most powerful contaminate to catalytic sensors. But even when subjected to continuous HMDS concentrations of 5, 20 and 100 PPM, Control Instruments' poison-tolerant sensor shows no significant loss of response.

In its standard configuration, the Catalytic Sensor uses the diffusion sampling method, with a typical response time (for methane) of under 12 seconds – well within the standards of both Factory Mutual System and the ISA. An optional drawn sample assembly is also available where you require additional control over sample delivery.

The Best Poison Resistance in a Catalytic Sensor

Control Instruments' Catalytic Sensor has an advanced, proprietary design that gives it superior tolerance against the effects of a wide range of poisons and inhibitors. Unlike standard sensors that degrade quickly because of element coating or corrosion, this

Typically, catalytic sensor elements quickly become coated (top) or corroded (bottom) by poisons. Control Instruments' sensor greatly reduces both kinds of contamination.



Catalytic Sensor is highly resistant to:

- Silicones and Organometallics, including:
 - Hexamethyldisilazane/HMDS
 - Tetra Ethyl Lead
 - Diborane
 - Silane
 - RTV Sealants
- Halogenated Hydrocarbons and Halogen Compounds, including:
 - Chlorine/ Cl₂
 - Flourine/ F₂
 - Bromine/ B₂
 - Iodine/ I₂
- Sulfur Compounds, including:
 - Hydrogen Sulfide/ H₂S
 - Sulfur Dioxide/ SO₂

(Note: even this Catalytic Sensor is subject to some inhibited function over time. If your application needs 100% resistance to poison, we recommend our PrevEx[®] Flammability Analyzer.)

*Long Life,
Reduced Maintenance*

With Control Instruments' Catalytic Sensor, you'll quickly find that your maintenance needs are greatly reduced from the start.

To begin with, Control Instruments' integrated manufacturing—design through production all under one roof—insures you of top sensor construction with no moving parts.

The Catalytic Sensor's enhanced poison tolerance also offers you less downtime, lower maintenance and replacement costs, and a reduced schedule for calibration checks.

*Explosion – Proof Design
And Construction*

Control Instruments' Catalytic Sensor is designed for uniformly dependable performance under a range of extreme conditions. All electronics in the sensor assembly are potted to minimize exposure to the environment.

Sensor bodies are constructed of either aluminum or stainless steel. The advantage of stainless steel is its resistance to highly



corrosive elements, salt atmosphere and its durability in high temperature conditions.

The sensor assembly has a junction box for convenient connection into a plant's electrical wiring system. It can be installed indoors or outdoors and can be located in a hazardous area rated Class 1, Division 1, Groups A, B, C and D as defined by Article 500 of the National Electric Code.

*Highly Effective for
Area Monitoring*

The Catalytic Sensor is excellent for flammable gas monitoring in many applications, including these:

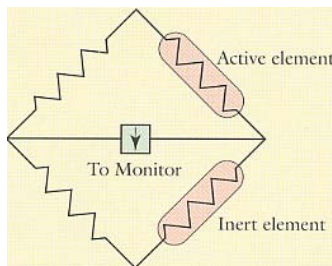
- Open Zone Monitoring:
 - Warehouses
 - Engine Testing Rooms
 - Battery Rooms
- Chemical/Petrochemical Plants
- Drilling Rigs
- Production Platforms
- Gas Processing Plants
- Waste Water Facilities
- Refineries
- Storage Tanks
- Pulp Mills

The sensor detects a hazardous condition by direct sampling of the atmosphere through the sensor flame arrester. There are no moving parts or pumps. A collar protects the sensor from environmental conditions and also provides a means for field calibration. A flame arrester is positioned in front of the detector elements providing operating safety with fast and effective sample diffusion.

Find Out More Today

Whatever your flammable gas monitoring application, Control Instruments' Catalytic Sensor is sure to impress you. For detailed information and system specifications, or to arrange a demonstration, call today.

How the Catalytic Sensor Works



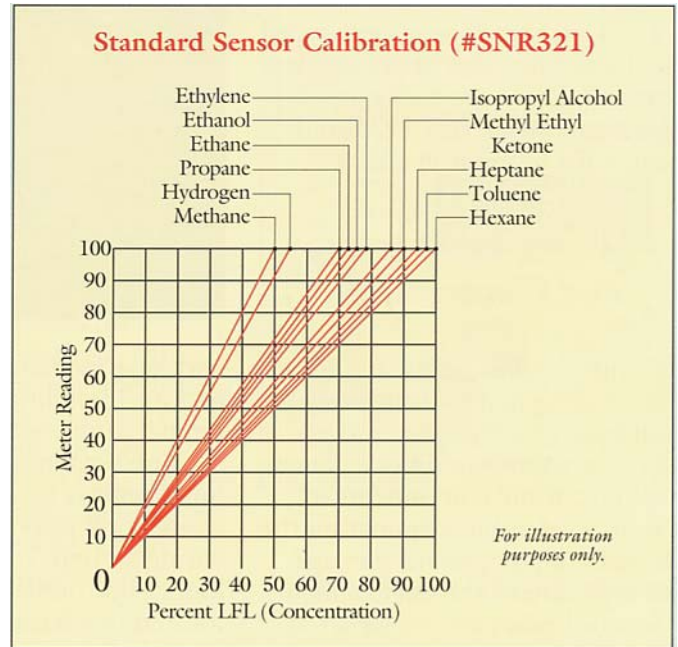
A catalytic sensor consists of two matched, heated Coristor elements arranged in a Wheatstone bridge – one catalytically active and inert. The active element is sensitive to all flammable

gases, while the inert one compensates for ambient temperature and pressure changes and physical properties of the sample gas. When a flammable gas sample comes in contact with the active Coristor element, this heated element catalytically oxidizes the gas. The resulting thermal reaction is displayed in terms of 0-100% Lower Flammable Limit (LFL) on the control monitor meter.



**Control Instruments®
Corporation**

Detector Type	Catalytic Sensor for flammable Gas Detection
Calibration	0-100% Lower Flammable Limit (LFL)
Accuracy	± 3% full scale reading or ± 10% of applied gas concentration <i>Meets ISA-SP12.13 Performance Requirements for Combustible Gas Detectors</i>
Repeatability	Within 1% full scale reading
Zero Stability	Less than 2% drift in 30 days
Response Time	Less than 12 seconds for methane <i>Consult for response compensation to 3 seconds</i>
Filament Life	One Year Minimum Average 5 years
Temperature Limits	Operating -40°C to 75°C (-40°F to 170°F) Storage -35°C to 55°C (-30°F to 130°F)
Sensor Part #	Anodized Aluminum, Part #SNR480 (Element Only: Part #SNR321) Stainless Steel, Part #SNR481 (Element Only: Part #SNR334)
Sensor Rating	Explosion Proof Class 1, Division 1, Groups A, B, C, D
FM Approval	Aluminum Sensors #SNR321/ SNT321 & Stainless Steel Sensors



Dimensions

Optional Accessories

#SNR334/SNT334 have
Factory Mutual Approval when used
with CIC's Approved Monitors
7"L x 3 1/8"H x 3 3/4"W
(178 mm x 80mm x 95mm)
Drawn Sample Assembly, Diffusion
High Temperature Sensor (-40°C to
120°C/ -40°F to 250°F), Aluminum
Weather Baffle

SPECIFICATIONS SUBJECT TO CHANGE



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Corporation**

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