



CSA Performance Approved

**SE**  
**SENSOR**  
ELECTRONICS

## SEC Millenium Infrared LC (Long Chain) Hydrocarbon Gas Detector

Document #1460028 Revision A

### Features

- *Reliable infrared sensing technology*
- *Virtually maintenance free*
- *Low cost of ownership, over 15 years operating life*
- *Immune to poisoning and etching*
- *Designed for harsh environments*
- *Explosion proof*
- *Rugged stainless steel construction*
- *Fast response time*
- *Smart calibration*
- *Patented self-compensating optics*
- *No moving parts*
- *Heated optical chamber*
- *Low power consumption*
- *Operates in constant hydrocarbon background*
- *Operates in anaerobic atmospheres*
- *Fault indications for all failure states*
- *Routine calibrations are not required*
- *4 to 20 mA output*
- *0 to 100% LFL detection range*
- *Can be coupled with SEC 3100 and 3120 transmitter for network applications*
- *RS-485 communication link available*
- *Digital Display option available*

### Applications

The **SEC Millenium** hydrocarbon detectors are designed to be used as an upgrade in the same applications where catalytic bead sensors have been applied.

- Refineries
- Drilling and production platforms
- Fuel loading facilities
- Oil well logging
- LNG/LPG processing and storage facilities
- Gas turbines
- Chemical plants
- Compressor stations
- Wastewater treatment facilities
- Transportation facilities

### Operation / Description

**SEC Millenium** is a complete self contained optical hydrocarbon gas detector. The sensing and reference elements are self-compensating for optical integrity and other signal inhibitors. The industry standard 4 - 20 mA analog output provides remote alarm, fault and calibration signals.

# SEC Millenium

## Infrared Gas Detector

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### Specifications

**Model:** Sensor Electronics Corporation  
SEC Millenium Infrared LC  
Hydrocarbon Gas Detector

**Available gases:**

Diesel PN: 49001600100L012 (0-100% LEL)  
Jet A PN: 49001700100L012 (0-100% LEL)  
Kerosene PN: 49001500100L012 (0-100% LEL)  
JP5 PN: 49002600100L012 (0-100% LEL)  
JP8 PN: 49002700100L012 (0-100% LEL)  
Dimethyl Ether PN: 49002800100L012 (0-100% LEL)  
Propane with rejection to Methane PN: 49001805000M012 (0-5000 ppm)  
Heptane PN: 49004200100L12 (0-100% LEL)  
Butanol PN: 49004900199-L12 (0-100% LEL)  
Alcohol PN: 49005000100-L12 (0-100% LEL)  
Cyclohexane PN: 49005100100-L12 (0-100% LEL)  
Isobutyl Isobutyrate PN: 49005200100-L12 (0-100% LEL)  
Cyclohexylamine PN: 49005500100-L12 (0-100% LEL)

**Please note** that this list is not all-inclusive. The SEC Millenium can be calibrated for most hydrocarbons, provided a calibration gas is available. For more information please contact Sensor Electronics Corporation.

**Detection Method:** Diffusion - Optional sample draw (requires a minimum of 1 liter per minute flow rate.)

**Output (analog):**

4-20 mA (Source type),  
max. 1000 Ohm load at 24 VDC supply voltage

**Response Time:**

T50 < 5 seconds  
T90 < 10 seconds

**Construction:**

316 stainless steel  
Optional nickel plated aluminum

**Accuracy:**

+/- 3% LFL, 0 to 50% LFL (Lower Flammable Limit)  
+/- 5% LFL, 51 to 100% LFL

**Operating Temperature Rating:**

-40° to +70° C at 0 to 99% RH (non-condensing)

**Operating Range:**

18 to 32 VDC measured at the detector head

**Power Consumption:**

5 Watts Max

**Max Current Draw: (at 24VDC)**

Average: 210 mA Peak: 400 mA

**Approvals:**

C22.2 No. 152-M1984 (R1997)  
Performance Tested  
Class 1, Division 1, Groups B, C and D

**Installation Category:** Cat. I, Pollution Degree 2

**Weight:** 5 lbs. (2.3 kg.)

### Unit Status Chart

Current Output	Status
4-20 mA	Normal measuring mode
0.0 mA	Unit Fault
0.2 mA	Reference channel fault
0.4 mA	Analytical channel fault
0.8 mA	Unit warm up
1.0 mA	Optics fault
1.2 mA	Zero drift fault
1.6 mA	Calibration fault
2.0 mA	Unit spanning
2.2 mA	Unit Zeroing
4.0 mA	Zero gas level
5.6 mA	10% LEL
8.0 mA	25% LEL
12 mA	50% LEL
16 mA	75% LEL
20 mA	100% LEL
20.1 – 23 mA	Over range (>100%)

### Other Products Available

Gas Detectors – Explosion proof  
Gas Detectors – Non-explosion proof  
Infrared Gas Detectors  
Process Gas Analyzers  
Dual Gas Analyzers  
Portable Fire Suppression Systems:  
Dry Chemical  
Halotron  
Twin Agent  
Stationary Fire Suppression Systems



### Sensor Electronics Corporation

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