



CSA Performance Approved

**SE**  
**SENSOR**  
ELECTRONICS

## **SEC Millenium** **Infrared Hydrocarbon** **Gas Detector**

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### **Features**

- *Reliable infrared sensing technology*
- *Virtually maintenance free*
- *Low cost of ownership, greater than 10 year life expectancy*
- *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 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.

### Specifications

**Model:** Sensor Electronics Corporation  
SEC MILLENIUM Infrared Hydrocarbon Gas Detector

<b>Available gases:</b>	Propane	Propylene
	Methane	n-Butane
	Gasoline	Ethanol
	Ethylene	Methanol
	Pentane	Hexane
	Isobutane	Toluene
	P-Xylene	MEK
		Ethane
		Isopropyl Alcohol
		Aeromatic 150
		Cyclopentane
		Methyl Amyl Ketone
		Tert-Butyl Acetate

*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.*

**Part Numbers:**

Methane PN: 49000000100L12	(0-100% LEL)
Methane PN: 49000000050L12	(0-50% LEL)
Methane PN: 49000000100V12	(0-100% VOL)
Propane PN: 49000100100L12	(0-100% LEL)
Propane PN: 49000100100V12	(0-100% VOL)
Propane PN: 49000100100U12	(0-100% UEL)
Aeromatic 150 PN: 49000200100L12	(0-100% LEL)
Ethane PN: 49000300100L12	(0-100% LEL)
Ethanol PN: 49000400100L12	(0-100% LEL)
Ethylene PN: 49000500100L12	(0-100% LEL)
Gasoline PN: 49000600100L12	(0-100% LEL)
Hexane PN: 49000700100L12	(0-100% LEL)
Isobutane PN: 49000800100L12	(0-100% LEL)
Isopropyl Alcohol (IPA) PN: 49000900010L12	(1-100% LEL)
Methanol PN: 49001000100L12	(0-100% LEL)
N-Butane PN: 49001100100L12	(0-100% LEL)
Pentane PN: 49001200100L12	(0-100% LEL)
Methyl Amyl Ketone PN: 49001400100L12	(0-100% LEL)
Cyclopentane PN: 49002500100L12	(0-100% LEL)
Propylene PN: 49002900100L12	(0-100% LEL)
Toluene PN: 49003700100-L12	(0-100% LEL)
P-Xylene PN: 4900400100-L12	(0-100% LEL)
Tert-Butyl Acetate PN: 49003400100-L12	(0-100% LEL)

**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

**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  
Conforms to UL2075, Methane 0-100% LEL

**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%)



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