



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*
- *Frequent calibrations are not required. Zero calibrate every 12 months.*
- *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, Div 1, Groups B, C, D, T5

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



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