SEC Millenium

Infrared Hydrocarbon Gas Detector

CSA Performance Approved

Features

- **Reliable infrared sensing technology**
- Virtually maintenance free
- **Low cost of ownership, greater than 15 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
- **Span calibrations are not required. Zero calibration recommended every 12 months**
- 4-20mA Output
- **Standard 0 to 100% LEL detection range, 100% By Volume ranges available**
- Compatible with the Universal Display Module (UDM series) or the Sec 3100 & SEC 3120 Display Modules
- **Built in calibration nipple**

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 4-20mA analog output provides gas level readings plus fault diagnostic and calibration signal levels.

Specifications

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

Available Gases:

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

***Please note** that this list is not all-inclusive. For more information please contact Sensor Electronics Corporation.*

Detection Method: Diffusion - (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% LEL from 0% to 50% LEL & +/-5% LEL from 51% to 100% LEL

Temperature Range:
Certified Temperature Range: -40° to +70°C
Factory Function Tested: -55° to +70°C
0 to 99% RH (non-condensing)

Operating Voltage Range: 18-32Vdc

Nominal 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
Conforms to UL2075, Methane 0-100% LEL

Installation Category: Cat. I, Pollution Degree 2

Weight: 5 lbs. (2.3 kg.)

Part Numbers

Methane PN:	49000000100FL12	(0-100% LEL)
Methane PN:	49000000050FL12	(0-50% LEL)
Methane PN:	49000000100FV12	(0-100% VOL)
Propane PN:	49000100100FL12	(0-100% LEL)
Propane PN:	49000100100FV12	(0-100% VOL)
Propane PN:	49000100100FU12	(0-100% UEL)
Aeromatic 150 PN:	49000200100FL12	(0-100% LEL)
Ethane PN:	49000300100FL12	(0-100% LEL)
Ethanol PN:	49000400100FL12	(0-100% LEL)
Ethylene PN:	49000500100FL12	(0-100% LEL)
Gasoline PN:	49000600100FL12	(0-100% LEL)
Hexane PN:	49000700100FL12	(0-100% LEL)
Isobutane PN:	49000800100FL12	(0-100% LEL)
Isopropyl Alcohol (IPA) PN:	49000900010FL12	(1-100% LEL)
Methanol PN:	49001000100FL12	(0-100% LEL)
N-Butane PN:	49001100100FL12	(0-100% LEL)
Pentane PN:	49001200100FL12	(0-100% LEL)
Methyl Amyl Ketone PN:	49001400100FL12	(0-100% LEL)
Cyclopentane PN:	49002500100FL12	(0-100% LEL)
Propylene PN:	49002900100FL12	(0-100% LEL)
Toluene PN:	49003700100-FL12	(0-100% LEL)
P-Xylene PN:	4900400100-FL12	(0-100% LEL)
Tert-Butyl Acetate PN:	49003400100-FL12	(0-100% LEL)
Methyl Siloxane PN:	49005300100-FL12	(0-100% LEL)

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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