SE SENSOR ELECTRONICS

SEC Millenium
Carbon Dioxide Gas Detector

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Features

- *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*
- *Compact & lightweight*
- *Fast response time*
- *Smart calibration*
- *Self-compensating optical bench*
- *No moving parts*
- *Heated optical chamber*
- *Low power consumption*
- *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*
- *Many ranges available*
- *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 Carbon Dioxide Gas Detectors** are designed to be used where a rugged, explosion proof, ultra reliable device is required.

- Gas Storage
- Injection Oil Recovery
- Industrial Process Control
- Food Processing/Packaging
- Greenhouses
- Bottling Plants

- Water Industry
- Environmental Chambers
- Laboratories
- Breweries/Wineries
- HVAC (DCV, Energy Management)
- Engine Test Cells

Operation / Description

SEC infrared carbon dioxide detector is a single source dual wavelength instrument. 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 Carbon Dioxide Gas Detector

Range: 0-0.5% Volume 4900135000M12 (5,000 ppm)
0-1% Volume 49001300001V12 (10,000 ppm)
0-2% Volume 49001300002V12 (20,000 ppm)
0-5% Volume 49001300005V12 (50,000 ppm)
Alternate ranges are available.

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%   0 to 50% Full Scale
+/- 5%   51 to 100% Full Scale

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:
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% Full Scale
8.0 mA	25% Full Scale
12 mA	50% Full Scale
16 mA	75% Full Scale
20 mA	100% Full Scale
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