



## SEC Millenium Carbon Dioxide Gas Detector

### Features

- *Infrared sensing technology*
- *Virtually maintenance free*
- *Low cost of ownership, over five 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*
- *Routine calibrations are not required*
- *4 to 20 mA output*
- *Many ranges available*
- *Can be coupled with SEC 3100 transmitter for network applications*
- *RS-485 communication link available*
- *Digital Display option available*

### Applications

The **SEC Millenium** 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

**Part Number:** 1420617

**Range:** 0-1% Volume  
0-2% Volume  
0-5% Volume  
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.  
Class 1, Division 1, Groups B, C and D

**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, Division 1, Groups B,C,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% 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

## Sensor Electronics Corporation

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