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

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.
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

<table>
<thead>
<tr>
<th>Current Output</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-20 mA</td>
<td>Normal measuring mode</td>
</tr>
<tr>
<td>0.0 mA</td>
<td>Unit Fault</td>
</tr>
<tr>
<td>0.2 mA</td>
<td>Reference channel fault</td>
</tr>
<tr>
<td>0.4 mA</td>
<td>Analytical channel fault</td>
</tr>
<tr>
<td>0.8 mA</td>
<td>Unit warm up</td>
</tr>
<tr>
<td>1.0 mA</td>
<td>Optics fault</td>
</tr>
<tr>
<td>1.2 mA</td>
<td>Zero drift fault</td>
</tr>
<tr>
<td>1.6 mA</td>
<td>Calibration fault</td>
</tr>
<tr>
<td>2.0 mA</td>
<td>Unit spanning</td>
</tr>
<tr>
<td>2.2 mA</td>
<td>Unit Zeroing</td>
</tr>
<tr>
<td>4.0 mA</td>
<td>Zero gas level</td>
</tr>
<tr>
<td>5.6 mA</td>
<td>10% Full Scale</td>
</tr>
<tr>
<td>8.0 mA</td>
<td>25% Full Scale</td>
</tr>
<tr>
<td>12 mA</td>
<td>50% Full Scale</td>
</tr>
<tr>
<td>16 mA</td>
<td>75% Full Scale</td>
</tr>
<tr>
<td>20 mA</td>
<td>100% Full Scale</td>
</tr>
<tr>
<td>20.1 – 23 mA</td>
<td>Over range (&gt;100%)</td>
</tr>
</tbody>
</table>

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