SE SENSOR ELECTRONICS

SEC 3000
Toxic Gas Detector

Explosion Proof version
(shown above)

Features

- **Stand alone gas detector with 4-20 mA output**

- Compatible with the Universal Display Module (UDM series) or the SEC 3100 & SEC 3120 Display Modules

- **Smart sensor design - Sensor elements can be calibrated in a shop location and move to the field location**

- Compact low cost design

- **Corrosion resistant 316 stainless steel housing construction**

- Long life electrochemical sensors

- **Temperature compensated sensor**

- Optional closed loop sensor element heater allows the original sensor element temperature specification to be extended to operate in lower external ambient temperatures. It also helps combat moisture buildup on the sensor cells.

- **Certified for use in Hazardous locations**

Industries

- Petrochemical
- Medical
- Semi Conductor
- Mining
- Pulp and Paper
- Offshore
- Fertilizer

- LNG & LPG Processing
- Waste Water
- Water Treatment
- Chemical
- Automotive
- Pharmaceutical
- Refrigeration

Operation / Description

The SEC 3000 gas detector is a simple and compact yet ruggedly designed toxic gas detector for use in hazardous locations. It is compatible with the Universal Display Module (UDM series) or the SEC 3100 & SEC 3120 Display Modules to simplify the calibration process, parameter set-up and provide the user a remote gas level indicating display. These display modules communicate with the SEC 3000 detector via its digital communication output.

The SEC 3000 sensor module retains operating parameters and calibration settings. Once the sensor module is plugged into the gas detector, the sensor module automatically uploads current information to the control board in the SEC 3000.

The industry standard 4-20mA analog output provides gas level readings plus fault diagnostic and calibration signal levels. The digital output is used to connect to the display modules. The entire detector utilizes self-diagnostics, identifies problems and continuously transmits status.

Model: Sensor Electronics Corporation | SEC 3000 Hazardous Gas Detector

Detection Technology: Electrochemical, Galvanic

Detection Method: Diffusion (1 liter per minute sample flow rate recommended)

Output (analog): 4-20 mA (source type), max. 1000 Ohm load at 24 VDC supply voltage

Output (Digital): Communciation wire to interface to Universal Display Module (UDM series) or the SEC 3100 & SEC 3120 Display Modules

Construction: 316 Stainless Steel

Accuracy: +/- 5%

Lower Detectable Limit: 1% of Full Scale (Under Ideal Conditions)

Recommended Minimum Alarm Setting: 5% of Full Scale (Under Ideal Conditions)

Temperature Rating: Toxic gas sensors temperature range may vary. See Common Gas List Table below

Operating Voltage Rating: 24 VDC - Operating range: 8 to 32 VDC measured at the detector head

Power Consumption: < 2.0 Watts Max (includes Heated Sensor Option)

Max Current Draw: 50 mA @ 24 VDC without heated sensor option, 80mA @ 24Vdc with heated sensor option

Approvals:
CSA: Class 1, Div 1, Groups B,C,D, T6 (Flameproof Version)

CSA
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Common Gas List

Gas Type	Typical Range*	Warranty Period	Operating Temp **	Operating Humidity
Carbon Monoxide (CO)	100ppm	2 yr	-40°C to 50°C	0-99% non-condensing
Hydrogen Sulfide (H_2S)	100ppm	2 yr	-55°C to 50°C	15-90% non-condensing
Methanol (CH_3OH)	100ppm	2 yr	-40°C to 50°C	10-95% non-condensing
Methyl Mercaptan (CH_4S)	50ppm	2 yr	-40°C to 50°C	0-99% non-condensing
Nitric Oxide (NO)	100ppm	2 yr	-40°C to 50°C	0-99% non-condensing
Nitrogen Dioxide (NO_2)	20ppm	2 yr	-40°C to 50°C	0-99% non-condensing
Oxygen (O_2)	25% vol	2 yr	-40°C to 50°C	5-95% non-condensing
Sulfur Dioxide (SO_2)	20ppm	2 yr	-40°C to 50°C	0-99% non-condensing

*SEC 3000 Sensors may be available in other ranges, consult factory
** With SEC sensor element heater installed

Unit Status Chart

Current Output	Status
0.0 mA	Unit fault
0.8 mA	Unit warm up
1.2 mA	Zero drift fault
1.6 mA	Calibration fault
2.0 mA	Unit spanning
2.2 mA	Unit zeroing
4-20 mA	Normal measuring mode
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	Full scale
>20 mA	Over-range

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