

SENSOR ELECTRONICS

MADE IN THE USA

SEC 3000 Gas Detector

Document #1460046 Revision B ECO 000335

Features

- *Compact low cost design*
- *Intrinsically safe & explosion proof*
- *Universal control board*
- *Interchangeable sensor modules for combustible, oxygen and toxic gases*
- *Temperature compensated sensor*
- *Stand alone gas detector with 4-20 mA output*
- *Corrosion resistant 316 stainless steel housing construction*
- *Long life electrochemical and catalytic bead sensors*
- *Can be coupled with either SEC 3100 or SEC 3120 Transmitter*
- *Optional heater with closed loop temperature control ensures accuracy in low temperature applications*
- ***New 3000 AI***
  - *-- Drift Tracking intelligently identifies and removes drift from output signal*
  - *-- O.N.R. (Output Noise Rejection) identifies noise at the output and removes it*

Industries

- *Petrochemical*
- *Medical*
- *Semi Conductor*
- *Mining*
- *Pulp and Paper*
- *Offshore*
- *Fertilizer*
- *LNG & LPG Processing*
- *Waste Water*
- *Water Treatment*
- *Chemical*
- *Automotive*
- *Pharmaceutical*
- *Refrigeration*

Operation

The SEC 3000 gas detector is a unique design combining intrinsically safe and explosion proof approved standards. This allows for quick and simple field installation of a calibrated sensor module into the gas detector in hazardous locations with power applied.

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. Changing to a different type of gas sensor is accomplished by only changing the sensor module board. The existing housing and wiring remains intact.

An industry standard 4-20 mA analog output provides remote alarm, fault and calibration signals. The entire unit utilizes self-diagnostics, identifies problems and continuously transmits status.

The SEC 3000 can be used in conjunction with the SEC 3100 or SEC 3120 explosion proof or DIN non-explosion proof transmitters. The SEC 3100 and SEC 3120 have a backlit LCD display, non-intrusive local calibration, 4-20 mA output, non-intrusive local configuration, optional relays, RS485 interface and intrinsic barrier.

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Specifications

Detection Method:
Electrochemical, Galvanic or Catalytic Bead

Sampling Method:
Diffusion
Optional sample draw (requires 1 liter per minute sample flow rate)

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

Output (Digital):
Interactive Interface Available On The Calibration (White) Wire

Construction:
316 Stainless Steel Explosion Proof

Accuracy:
+/- 5%

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

Recommended Minimum Alarm Setting:
10% of Full Scale

Temperature Rating:
Toxic gas sensors temperature range may vary.
Please consult with Sensor Electronics.
Approved Ambient Temperature (Ta): -40˚C to +50˚C

Operating Voltage:
24 VDC ⎓ Operating range: 8 to 32 VDC
measured at the detector head
See Approvals section for approved operating voltages

Power Consumption
1.6 Watt Max.

Max. Current Draw
50 mA (at 24 VDC)
60 mA at 24 VDC (Catalytic Bead H2)

Approvals:
18V-32 VDC
CSA: Class 1, Div 1, Groups B,C,D, T6 (Flameproof Version)
IECEx: Ex d IIB+H2 T4 Gb (Flameproof Version)

10.4-26.34 VDC w/ IS Barrier
CSA: Class 1, Div 1, Groups A,B,C,D,T4 (Intrinsically Safe)
IECEx: Exia IIC T4 Ga (Intrinsically Safe)

Installation Category:

Partial Gas List

Oxygen	(O2)	Carbon Monoxide	(CO)
Hydrogen	(H2)	Germane	(GeH4)
Ammonia	(NH3)	Silane	(SiH4)
Nitric Oxide	(NO)	Phosphine	(PH3)
Bromine	(Br2)	Sulfur Dioxide	(SO2)
Fluorine	(F2)	Nitrogen Dioxide	(NO2)
Arsine	(AsH3)	Chlorine Dioxide	(ClO2)
Ozone	(O3)	Hydrogen Sulfide	(H2S)
Chlorine	(Cl2)	Hydrogen Fluoride	(HF)
Phosgene	(COCl2)	Hydrogen Chloride	(HCl)
Diborane	(B2H6)	Hydrogen Cyanide	(HCN)
Formaldehyde	(HCHO)	Hydrogen Selenide	(H2Se)
Ethylene Oxide	(ETO)	Hydrogen Peroxide	(H2O2)

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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