

SEC 3000

Toxic Gas Detector



Explosion Proof version

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 moved to the field location
- Compact low cost design
- Corrosion resistant 316 stainless steel housing construction
- Long life electrochemical sensors
- Temperature compensated sensor
- Helps combat moisture buildup on the sensor cells
- Drift Tracking intelligently identifies and removes drift from output signal
- O.N.R. (Output Noise Rejection) identifies noise at the output and removes it
- Certified for use in Hazardous locations

Applications

The **SEC 3000 Toxic Gas Detectors** are designed and built for Canadian winters where extreme temperatures require a robust and highly accurate device within any hazardous locations.

- 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) and 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.

Closed loop sensor element heater allows the original sensor element temperature specification to be extended to operate in lower external ambient temperatures.

The industry standard 4-20 mA 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.

Specifications

Model: Sensor Electronics Corporation | SEC 3000 Hazardous Gas Detector

Available Gases:

Oxygen	Ozone	Germane	Hydrogen Sulfide
Methanol	Chlorine	Carbon Monoxide	Hydrogen Fluoride
Ammonia	Arsine	Phosphine	Hydrogen Chloride
Nitric Oxide	Diborane	Sulfur Dioxide	Hydrogen Cyanide
Bromine	Formaldehyde	Nitrogen Dioxide	Hydrogen Selenide
Fluorine	Ethylene	Chlorine Dioxide	Hydrogen Peroxide

Please note that this list is not all-inclusive. For more information please contact **Protek Safety & Controls Ltd.**

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

Construction: 316 Stainless Steel

Accuracy: +/- 5%

Lower Detectable Limit: 1% of Full Scale

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: 80mA @ 24Vdc with heated sensor cell

Approvals:

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



Installation Category: Cat. I, Pollution Degree 2

Gas Type	Range*	Part Numbers	Operating Temp	Operating Humidity	Warranty Period
Carbon Monoxide:	100 ppm	301600100MH-F012	-40°C to 50°C	0-99% NC	2 Years
Hydrogen Sulfide:	100 ppm	3024D00100MH-F012	-55°C to 50°C	15-90% NC	2 Years **
Methanol:	100 ppm	303940100MH-F012	-40°C to 50°C	10-95% NC	2 Years
Methyl Mercaptan:	50 ppm	3024A0050MH-F012	-40°C to 50°C	0-99% NC	2 Years
Nitric Oxide:	100 ppm	302500100MH-F012	-40°C to 50°C	0-99% NC	2 Years
Nitrogen Dioxide:	20 ppm	302600020MH-F012	-40°C to 50°C	0-99% NC	2 Years
Oxygen:	25 %	301900025VH-F012	-40°C to 50°C	5-95% NC	2 Years
Sulfur Dioxide:	20 ppm	302700020MH-F012	-40°C to 50°C	0-99% NC	2 Years

*SEC 3000 Sensors may be available in other ranges

** -55°C Factory Function Tested / -40°C Certified Temperature



UDM-002



UNV-SEPKIT-001



UNV-SEPKIT-004

Accessories	Part Numbers
Single Channel Display	UDM-001
Dual Channel Display	UDM-002
Sensor Separation Kit	UNV-SEPKIT-001
-55°C Sensor Separation Kit	UNV-SEPKIT-004
Single OR Dual Display Multi Wire Option(s)*	UDM-MWO-00X-X
2-3 Wire Retro Fit Sensor Separation Kit**	UDM-MWO-SEPKIT
Calibration Cup	CC/SG-02

*See UDM-MWO Literature for part numbers

2-3 Wire Retro Fit Sensor Separation Kit **ONLY to be used with **UDM-MWO Series**.

Status	Current Output
Unit Fault	0.0 mA
Unit Warm Up	0.8 mA
Zero Drift: Fault	1.2 mA
Calibration Fault	1.6 mA
Unit Spanning	2.0 mA
Unit Zeroing	2.2 mA
Normal Measuring Mode	4-20mA
Zero Gas Level	4.0 mA
10% Full Scale	5.6 mA
25% Full Scale	8.0 mA
50% Full Scale	12.0 mA
75% Full Scale	16.0 mA
Full Scale	20.0 mA
Over-Range	>20.0 mA

*Unit Status Chart

