SEC 2000
Gas Detector

Features

- *Designed for hazardous environments*
- *Low-cost installation*
- *Over 20 different gases detected*
- *CSA/NRTL approved*
- *Combustible detector UL approved*
- *Industry standard 4-20 mA output*
- *RS-485 digital output*
- *User friendly, one person calibration*
- *Provides continuous self-diagnostics*
- *Combustible, toxic and oxygen deficiency detectors*
- *Retains operating parameters and calibration settings when powered down*
- *Operates with SEC Supervision Plus Hazard Event Monitoring Software*
- *Inexpensive non-display units available*
- *Relays can be set to turn on alarms, shut doors, turn on fans*

Applications

- Petrochemical Refineries
- Compost Facilities
- Semi-Conductor Industry
- Mining
- Pulp and Paper Mills
- Oil Rig Platforms
- Buildings
- Automotive Industry
- Engine Test Rooms
- LNG & LPG Facilities
- Sewage Industry
- Water Treatment Plants
- Parking Garages
- Chemical Industry
- Nuclear Industry
- Fertilizer Industry
- Tunnels
- Medical Facilities

Operation

The SEC 2000 is a digital gas detector, that is designed to detect one of a number of gases, display the concentration of that particular gas, and provide an alarm when gas concentrations reach preset levels. The SEC 2000 will operate as a stand-alone gas detector with its own relay outputs and LED display. An industry standard 4-20 mA output enables the SEC 2000 to be connected to analog systems, such as PLC, DCS, and TMR systems.

The SEC 2000 operating parameters (relay action, alarm set values, sensor configuration, etc.) can be viewed or changed using the SEC 2500 Hand Held Programmer or SEC Supervision Plus software. The 2500 can communicate anywhere on the network with any SEC 2000 using either an infrared link, an RS-485 data highway, or by plugging directly into any SEC 2000.

An RS-485 digital output enables the SEC 2000 to communicate to a PC running Supervision Plus software or SEC 4100 System Monitor. The SEC 2000 network is formed by connecting a single twisted shielded pair of cable wires, reducing cabling and installation costs.

A push-button magnetic switch is used to perform a non-intrusive calibration. The calibration sequence is user-friendly and requires only one person.

The SEC 2000 retains operating parameters and calibration settings when powered down. An on-board microprocessor provides continuous self-diagnostics and identifies problems using fault codes. Four (4) 8 amp SPDT relays respond to Low, Mid and High gas alarms as well as any fault conditions. Calibration gas values can be changed without opening the SEC 2000 housing, using the magnetic push-button switch for calibration.

SEC 2000

Gas Detector

Specifications

Detection Method
Combustible Gas - Infrared & Catalytic -LEL
Toxic Gases - Electrochemical
Oxygen - Galvanic

Sampling Method
Diffusion, optional sample-draw

Alarms
Visual indication and relay contacts for low, mid, high and fault

Output (digital)
RS-485 LAN

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

Relay Operation
Selectable latching or non-latching
Selectable normally energized or
normally de-energized (except fault)
Selectable alarm relay off delays
Manual relay control

Housing Construction
Electronics - epoxy coated explosion-proof aluminum housing
Sensor - anodized explosion-proof aluminum housing, optional stainless steel

Operating Voltage
24 VDC. Operating 18 to 32 VDC (measured at detector head)

Power Consumption

Combustible -	2.5 Watts nominal
	3.6 Watts maximum
Toxic gases and oxygen -	2.5 Watts nominal
	3.6 Watts maximum

Temperature Rating
-40˚ to +70˚C
Toxic gas sensors temperature range may vary please consult with Sensor Electronics.

Relay, Type and Rating
SPDT: 8 Amps @ 250 VAC
8 Amps @ 30 VDC

CSA/NRTL Certification
Toxic and Oxygen
Class I, Division 1, Groups B, C and D
CSA file # LR 95495

RFI
Tested to military standard 462C

Housing Dimensions
6.5 (W) x 7 (L) x 6.5 (H) inches
{165 (W) x 178 (L) x 165 (H) mm}

Weight
Approximately 7 lbs {3.2 Kg.}

Available Standard Gases*

Combustible	(LEL)	Carbon Monoxide	(CO)
Oxygen	(O_2)	Germane	(GeH_4)
Hydrogen	(H_2)	Silane	(SiH_4)
Ammonia	(NH_3)	Phosphine	(PH_3)
Nitric Oxide	(NO)	Sulfur Dioxide	(SO_2)
Bromine	(Br_2)	Nitrogen Dioxide	(NO_2)
Fluorine	(F_2)	Chlorine Dioxide	(ClO_2)
Arsine	(AsH_3)	Hydrogen Sulfide	(H_2S)
Ozone	(O_3)	Hydrogen Fluoride	(HF)
Chlorine	(Cl_2)	Hydrogen Chloride	(HCl)
Phosgene	($COCl_2$)	Hydrogen Cyanide	(HCN)
Diborane	(B_2H_6)	Hydrogen Selenide	(H_2Se)
Formaldehyde	(HCHO)	Hydrogen Peroxide	(H_2O_2)
Ethylene Oxide	(ETO)		

*For sensitivity range and additional gases please contact Sensor Electronics.

Other Products Available:

Infrared Hydrocarbon Gas Detectors
Non-Explosion Proof Gas Detectors
Process Gas Analyzer
Data Logging/Graphics Software Packages
Portable Automatic Fire Fighting Systems
Halotron Systems
Twin Agent Units
Dry Chemical Mobile and Stationary Units

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