SENSOR ELECTRONICS

SEC IREvolution™

Infrared
Ammonia Gas Detector

HART COMMUNICATION PROTOCOL

Features

- *Reliable infrared sensing technology*
- *Virtually maintenance free*
- *Low cost of ownership, over ten years operating life*
- *Immune to poisoning and etching*
- *Designed for harsh environments*
- *Explosion proof*
- *Fast response time*
- *Smart calibration*
- *Self-compensating optics, pressure and temperature (U.S. Patents 6,414,310 and 7,132,657)*
- *No moving parts*
- *Heated optical chamber*
- *Low power consumption*
- *Operates in constant Ammonia background*
- *Operates in anaerobic atmospheres*
- *Fault indications for all failure states*
- *Routine calibrations are not required*
- *4 to 20 mA output, HART® enabled*
- *Digital Display option available*

Applications

The **SEC IREvolution™** ammonia detectors are designed to be used as an upgrade in the same applications where electrochemical sensors have been applied.

- Refrigeration
- Power generation
- Compressors
- Cold storage
- Ice arena refrigeration room
- Anhydrous ammonia

Operation / Description

SEC IREvolution™ is a complete self contained optical ammonia gas detector. 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.

SEC IREvolution™

Infrared Gas Detector

Specifications

Model: Sensor Electronics Corporation
SEC 5000 IREvolution™ Infrared
Ammonia Gas Detector

Part Numbers and Ranges:

Range	Part Number
0-1000 PPM	5100-012
0-2500 PPM	5100-011
0-10,000 PPM	5100-001
0-10% VOL	5100-013

Please note *that this list is not all-inclusive. The SEC IREvolution™ can be calibrated for most hydrocarbons, CO_2, NH_3, provided a calibration gas is available. For more information please contact Sensor Electronics Corporation.*

Detection Method: Diffusion. Compatible with Optional Sample-Draw Accessories. (requires a minimum of 1 liter per minute flow rate.)

Output (analog):
4-20 mA (Source type), HART
max. 1000 Ohm load at 24 VDC supply voltage (including field wiring)

Response Time:
T50 < 10 seconds
T90 < 20 seconds

Construction:
Anodized aluminum, 316 stainless steel

Accuracy:
+/- 5% of value or 0.5% of full scale

Repeatability:
+/- 2% of value

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

Current Draw: (at 24VDC)
Average: 210 mA Peak: 400 mA

U.S. Patent: 6,414,310
7,132,657

Installation Category: Cat. I, Pollution Degree 2

Dimensions: Length 11" Diameter 2.75" Weight 3 lbs.
Length 5: Diameter 2.75" Weight 1.8 lbs.

Certification (Pending)
CSA/NRTL Class 1, Div. 1, Groups B,C,D T5
IECEx Class 1, Zone 1, Group IIC

Unit Status Chart

Current Output	Status
4-20 mA	Normal measuring mode
0.6 mA	Unit Fault
0.8 mA	Reference channel fault
0.9 mA	Analytical channel fault
0.7 mA	Unit warm up
1.0 mA	Optics fault
1.2 mA	Zero drift fault
1.6 mA	Calibration fault
2.0 mA	Unit spanning
2.2 mA	Unit Zeroing
4.0 mA	Zero gas level
5.6 mA	10% LEL
8.0 mA	25% LEL
12 mA	50% LEL
16 mA	75% LEL
20 mA	100% LEL
20.1 – 23 mA	Over range (>100%)

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

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