



SE
SENSOR
ELECTRONICS

SEC IREvolution™

Infrared **Ammonia Gas Detector**

HART
COMMUNICATION PROTOCOL

Document #1460034 Revision A

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 - No damage to sensor*
- *Operates in anaerobic atmospheres*
- *Fault indications for all failure states*
- *Frequent calibrations are not required. Zero calibrate every 12 months.*
- *4 to 20 mA output, HART® enabled option*
- *Digital display option available*
- *Can be coupled with SEC 3100 and 3120 transmitter for network applications*

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
- Poultry farms
- Cold storage
- Ice arena refrigeration room
- Anhydrous ammonia
- Chemical plant

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.

Specifications

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

Ranges Available:

Range

- 0-500 PPM (11")
- 0-1000 PPM (11")
- 0-2500 PPM (11")
- 0-10,000 PPM (5")
- 0-10% VOL (5")

Please note that this list is not all-inclusive. If you have a different range 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 Optional
max. 1000 Ohm load at 24 VDC supply voltage (including field wiring)

Response Time:

T50 < 10 seconds
T90 < 20 seconds

Construction:

Anodized aluminum

Accuracy:

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

Repeatability:

+/- 2% of value

Operating Temperature Rating:

-40° to +50°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:

IECEX: Ex db op is IIB T5 Gb

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



Sensor Electronics Corporation

12730 Creek View Avenue, Savage, MN 55378 U.S.A. • (800) 285-3651 • (952) 938-9486 • FAX: (952) 938-9617
Email: sales@sensorelectronics.com • website: www.sensorelectronics.com

Sensor Electronics Corporation reserves the right to alter specifications without prior notice.