



# SafEye

LAMP TYPE IR OPEN PATH GAS DETECTOR

# 300 SERIES



WELL-PROVEN HIGH RELIABILITY



## MAIN FEATURES

### PROVEN TECHNOLOGY

Used in highly sensitive areas to detect low gas concentration levels to activate alarms measures only when specific hazardous concentration levels are exceeded.

### COST SAVING

One system can replace several point detectors up to 49.5ft (30m). Low cost of ownership, much lower installation cost!

### FAST RESPONSE

High sensitivity and fast response to Hydrocarbon gases.

### HARSH ENVIRONMENT

Specially designed to perform under extreme conditions such as high-speed airflows, vibrations, humidity and corrosive gases where point detectors may not be effective.

### LOW MAINTENANCE

High reliability, simple installation, alignment and maintenance, equipment not subject to poisoning.

### STANDARD INTERFACE OPTIONS

Standard 4-20 mA outputs or RS-485 output to allow networking (up to 64 detectors) to a central monitoring/PC system.

This feature also enables easy maintenance, local and remote diagnostic tools.



IR Open Path (Line Of Sight) Gas Detection System provides sensitive (LEL level) monitoring of hydrocarbon gases such as methane, butane, etc.

SafEye 300 Series Open Path Gas Detector monitors hydrocarbon gases at low concentrations over an optical path of up to 49.5ft (30m). The system has a response time of up to 10 seconds with an option for faster gas detection of 2 seconds at short ranges.

The light source is lamp type with two Hz frequencies employing a special filter and software to eliminate false alarms from hydrocarbon fires and IR radiation. This system is recommended for



use in air duct applications and indoor sites, especially in air intake and exhaust of turbine engines ducts and other hazardous areas to detect low gas concentration and to provide an alarm when specific hazardous concentration levels are exceeded.

The SafEye system, due to its special optics design, provides for an alignment tolerance of  $\pm 1.5^\circ$  in all directions and is protected against false gas reading and alarms which are caused by partial obscuration and blocking, misalignment, vibration, flexing or tilts.

An optional RS-485 output provides data communication for a single system or a network (as many as 64 detectors) to a host computer for central monitoring.

The SafEye gas detection system contains built-in temperature sensors located in the gas sensor compartment. Each SafEye unit is factory calibrated through the entire operating temperature range. The temperature compensating mechanism allows correct operation in changing and extreme temperatures while maintaining the system's accuracy. Its internal microprocessor will automatically compensate for low signals with its internal Automatic Gain Control (AGC).

The SafEye system can be factory calibrated to a gas mixture most probable to leak in a specific location. This results in the most accurate gas concentration measurement.

## GENERAL SPECIFICATIONS

|  |   |                                |         |                |         |
|--|---|--------------------------------|---------|----------------|---------|
| <b>Detection Range and Response Time</b>   | Model No.   | 301                            | 302     | 351            | 352     |
|  | Distance (ft)   | 2-11.6                         | 10-49.5 | 2-11.6         | 10-49.5 |
|  | Distance (m)  | 0.6-3.5                        | 3-15    | 0.6-3.5        | 3-15    |
|  | Response Time   | 2 sec.                         | 10 sec. | 2 sec.         | 10 sec. |
|  | Detected Gas  | C <sub>1</sub> -C <sub>8</sub> |         | Ethylene / LPG |         |
| <b>Immunity to False Alarm</b>             | Does not produce false alarm by hydrocarbon flames and most IR radiation sources. |                                |         |                |         |
| <b>Spectral Response</b>                   | 3.0-4.0 μm  |                                |         |                |         |
| <b>Sensitivity Range</b>                   | 0-5 LEL.m Standard<br>0-2 LEL.m by dip-switch setting<br>0-1 LEL.m Option         |                                |         |                |         |
| <b>Displacement/Misalignment Tolerance</b> | ±1.5°   |                                |         |                |         |
| <b>Drift</b>                               | Long-term ±5% of full scale   |                                |         |                |         |
| <b>Temperature Range</b>                   | -40°F (-40°C) to 158°F (70°C)   |                                |         |                |         |

## ELECTRICAL SPECIFICATIONS

|                                      |  |
|--------------------------------------|--|
| <b>Power Supply</b>                  | Standard - 24 VDC (18-32 VDC)  |
| <b>Power Consumption</b>             | Detector: 150mA @ 24 VDC (200 mA Peak)<br>Source: 100mA @ 24 VDC (220 mA Peak)   |
| <b>Electrical Connection</b>         | 2 x 3/4" - 14NPT conduits<br>or 2 x M25 x 1.5 mm ISO   |
| <b>Electrical Input Protection</b>   | Complete electrical interface protection against reversed polarity voltage, surges and spikes according to MIL-STD-1275A |
| <b>Electromagnetic Compatibility</b> | EMI/RFI protected CE Marked  |

## OUTPUTS

|               |  |                 |  |
|---------------|--|-----------------|--|
| <b>4-20mA</b> | The 4-20mA current output is source configuration<br>Resistance Loop 100-600 Ω   |                 |  |
| <b>RS-485</b> | Serial communication for full control with maintenance and trouble shooting facility can be integrated for a network of max 64 detectors |                 |  |
| <b>Relays</b> | Type   | Normal Position | Maximum Ratings  |
|               | Alarm  | SPDT            | NO, NC   |
|               | Accessory  | SPST            | Open   |
|               | Fault  | SPST            | Closed   |
|               |  |                 | 2A at 30VDC or 0.5 at 250 VAC<br>5A at 30VDC or 250VAC<br>5A at 30VDC or 250 VAC |

## MECHANICAL SPECIFICATIONS

|                                |   |                                |                              |
|--------------------------------|---|--------------------------------|------------------------------|
| <b>Dimensions</b>              | 5.2" (132mm) x 5.2" (132mm) x max. 11" (280mm)  |                                |                              |
| <b>Weight</b>                  | Al. Encl.   | Detector: max 8.8 lb (4 kg)    | Source: max 10.8 lb (4.9 kg) |
|                                | St. Encl.   | Detector: max 14.3 lb (6.5 kg) | Source: max 16.7 lb (7.6 kg) |
| <b>Mechanical Design</b>       | The standard detector housing is heavy-duty, copper-free (less than 1%) aluminum. The housing is finished in white epoxy enamel and is also available in 316L Stainless Steel* upon request.<br>* Carries an additional charge. |                                |                              |
| <b>Environmental Standards</b> | Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical shock, High Temp, Low Temp   |                                |                              |
| <b>Water and Dust Tight</b>    | IP66 and 67<br>NEMA 250 6P  |                                |                              |

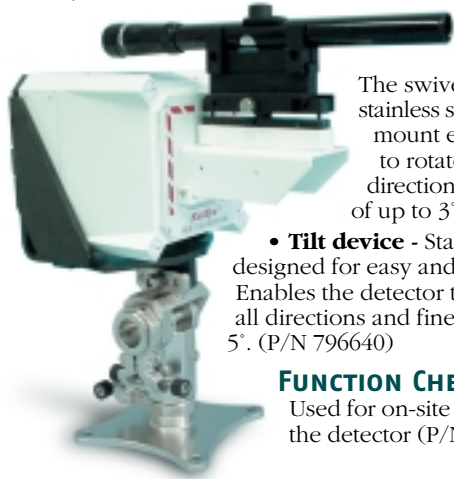
## HAZARDOUS AREA APPROVALS

|                       |   |
|-----------------------|---|
| <b>ATEX / Cenelec</b> | EX II 2G EExd IIB + H <sub>2</sub> T6 (55°C)<br>EX II 2G EExde IIB + H <sub>2</sub> T6 (55°C) |
| <b>UL</b>             | UL No. - E209870, Class I Groups C and D Hazardous Location                                   |

Specifications subject to changes

## ACCESSORIES

The following optional accessories designed for the SafEye system are available.



### MOUNTING

#### • Swivel mount -

The swivel mount is made of stainless steel 316L. The swivel mount enables the detector to rotate up to 30° in all directions and fine alignment of up to 3°. (P/N 794765).

• **Tilt device** - Stainless steel 316L, designed for easy and precise alignment. Enables the detector to rotate up to 30° in all directions and fine alignment of up to 5°. (P/N 796640)

### FUNCTION CHECK FILTER

Used for on-site functional testing of the detector (P/N 794260).

### ALIGNMENT TELESCOPE

Is used for simple on-site alignment of the detector with the light source. (P/N 794110)

### MAGNETIC SWITCH

The magnetic mode selector is used in the field to change the detector's modes for alignment and calibration procedures (P/N 790285).



## TYPICAL APPLICATIONS

The SafEye system provides reliable gas and vapor detection in particular hazardous areas, such as:

- Engine and turbine air intake and exhaust modules.
- Petrochemical and chemical storage and production areas.
- Storage and loading of hazardous materials and waste areas.
- Paint-booths and paint production.
- Bus terminals (switching from diesel to natural gas)

## CONTACT INFORMATION

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