SPECTREX

SafEye AIR DUCT

300 SERIES GAS DETECTION SYSTEMS FOR

- Faster response and more reliable results
- More effective and more economical...

  Compared to 'Point' Type Detectors or 'Sample Draw' Systems!

Reliable High Speed Detection

Main Features

High Sensitivity

- Alarm up to 0.5 LEL.m
- 5 times more sensitive than the normal Open Path equipment

Fast Response

- Fast response time of typically 2 sec., max. 5 sec.
- 5 to 10 times faster than the commonly used Open Path detector and 20-50 times faster than the Point Detector.

Low Maintenance

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

Proven Technology

Used in air ducts on FPSO's and offshore rigs for British Petroleum (BP), Shell and ABB Lummus for turbines, air intakes, etc.

Harsh Environment

Specially designed to perform under extreme conditions such as high-speed airflows, high temperatures (up to 185˚F (85˚ C)), humidity and corrosive gases, where point detectors may not be effective.

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.

SafEye 300 Duct Open Path Detectors were specially designed and are widely used to monitor and alarm against ingress of hazardous gas concentrations into air intakes of turbine engines and HVAC air ducts. Formation and migration of gas clouds and their possible penetration into safe places, control rooms, turbine engines, etc. is a substantial risk that needs to be addressed.

Users, designers and safety and operational engineers are increasingly required to provide for adequate and fast detection and alarm to protect these hazards.

For duct applications, over a small path across an air inlet, the system is designed to respond with a very high sensitivity, full scale of 1 LEL.m for 2-6.6 ft. (0.6-2 m) wide inlet.

The SafEye 300 Duct system, due to its special optics design, provides for a misalignment tolerance of 2° 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.

Each SafEye unit is factory calibrated in a temperature cycle run at 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 300 Duct system can be factory calibrated to gas mixtures that are associated with offshore production and processing and onshore installations.

General Specifications

Detected Gases	Simultaneous detection of C1-C8 flammable gases
Detection Range and Response Time	Model 301 Distance 2-11.5ft (0.6-3.5m) Response Time Typically 2 sec., max. 5 sec.
Immunity to False Alarm	Not influenced by solar radiation, hydrocarbon flames, other external IR radiation sources, high airflows and high loaded streams
Spectral Response	3.0-4.0 µm
Sensitivity Range	0-2.5 LEL.m Standard; 0-1 LEL.m by software
Misalignment Tolerance	±2˚
Drift	Long-term ±5% of full scale
Temperature Range	-40˚F (-40˚C) to 185˚F (85˚ C)

Electrical Specifications

Power Supply	24 VDC (18-32 VDC)
Power Consumption	Detector: 200mA @ 24 VDC (250 mA Peak) Source: 250mA @ 24 VDC (450 mA Peak)
Electrical Connection	2 x 3/4" - 14NPT conduits
Electrical Input Protection	According to MIL-STD-1275B
Electromagnetic Compatibility	EMI/RFI protected CE Marked

Outputs

0-20mA Sink (source option) configuration	Maximum load 600Ω at 18-32V DC 4-20mA Gas reading 4mA Normal, zero reading 2mA Obscuration/misalignment /beam block 1mA Zero calibration mode 0mA Fault
HART Protocol	HART communications on the 0-20mA analog current (FSK)- used for maintenance, configuration changes and asset management
RS-485	The RS-485 input/output provides complete data information to a PC and receives control commands from the PC or handheld unit

Relays

	Type	Normal Position	Maximum Ratings
Alarm	SPDT	NO, NC	2A at 30V DC
Accessory	SPST	Open	2A at 30V DC
Fault	SPST	Closed	2A at 30V DC

Mechanical Specifications

Dimensions		5.2" (132mm) x 5.2" (132mm) x max. 4.7" (120mm)
Weight	Al. Encl.	Detector: max 8.7 lb (3.7 kg) Source: max 8.58 lb (3.9 kg)
Mechanical Design		The standard detector housing is heavy-duty, copper-free (less than 1%) aluminum. The housing is finished in white epoxy enamel
Environmental Standards		Designed to meet MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical shock, High Temp, Low Temp
Water and Dust Tight		IP66 and 67 per EN60529 NEMA 250 6P

Hazardous Area Approvals

FM	Class I, Division 1, Groups B, C and D, Dust Ignition proof for Class II, Division 1, Groups E, F and G. Performance per Class no. 6325
Reliability	SIL2 per IEC61508 (TUV)

Accessories

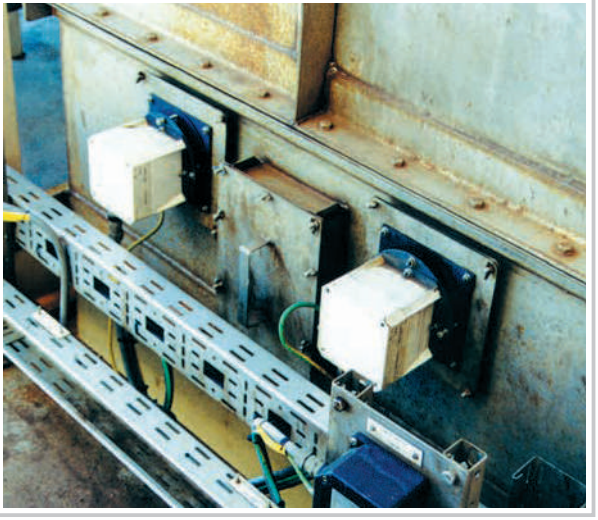
The following optional accessories designed for the SafEye system are available.

Duct Mounting
The duct mount interfaces between the detector and the duct surface.

The duct mount enables the detector's alignment up to 3° in all directions (P/N 794716).

Commissioning / Alignment Kit for standard and duct type units is required for commissioning and future maintenance checks. Only one kit is required per site.

The kit includes an Alignment Telescope P/N 794110, a Magnetic Mode Selector P/N 790285 and a Function Check Filter P/N 794220-1÷5 for system testing along with socket keys for access to units (P/N 792247).



Air Duct Installation on ETAP Platform in the North Sea

Typical Applications

Offshore Oil & Gas Rigs and FPSOs; Onshore Oil & Gas Terminals; Storage Farms and Filling Stations; Petrochemical and Chemical Industries; Power Utilities and Turbines areas; Automotive, Painting, Printing, Pharmaceutical Industries and many more.

Specific applications include:

- HVAC ducts (Heating Ventilation Air Conditioning) in accommodations areas
- Air ducts in process areas
- Stacks and exhaust towers
- Compressors and generators enclosures
- Curing ovens and drying equipment, printing equipment
- Engine & Turbine air intake and exhaust
- Air intake to safety enclosures
- Paint-booths and paint production and drying processes
- Air ventilation shafts

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