

# VESDA ECO: A NEW APPROACH TO GAS DETECTION

## AN ALTERNATIVE TO FIXED-POINT GAS DETECTORS

Many commercial and industrial facilities are prone to hazards associated with flammable and toxic gases or oxygen-deficient atmospheres. Conventional fixed-point gas detectors traditionally have been used to detect gas leaks and generate alarms to protect personnel and property.

However, the effectiveness of these detectors is dependent on proper placement, which is highly dependent on the gas being detected as well as many other environmental factors including air flow, gas pressure, temperature, harshness of the environment, etc.

Achieving optimum gas detection often requires adding additional gas detectors within a given space to increase the likelihood of detecting a leak. This strategy, while effective, significantly increases the initial installation and long-term service and maintenance costs. VESDA ECO eliminates this inherent disadvantage. VESDA ECO overcomes these shortcomings because it is a multi-hole air-sampling gas detection system that provides cost-effective 24/7 active air sampling for the early detection of gas leaks – even in the toughest of environments such as those found in industrial/manufacturing facilities.

## ACTIVE DETECTION PROVIDES BETTER PROTECTION

Built on the proven VESDA® aspirating smoke detection (ASD) technology, VESDA ECO overcomes the fundamental limitations of fixed-point gas detectors to ensure early and reliable gas detection so an appropriate preventative or emergency response can be taken, before it is too late.

As air from a given area is drawn to the VESDA ECO detector, it can be conditioned to remove moisture, dirt, particulates and other contaminants. This continuous, active air sampling, enabled by the use of a VESDA ASD and pipe network with multiple sampling holes, dramatically increases the ability to detect a gas release quickly and in a wider range of environments, even in areas with high air flows.



- » Better detection and protection
- » Lower initial installation costs
- » Lower operating and maintenance costs





## LOWER INSTALLATION & OPERATING COSTS

In addition to providing better area coverage and more reliable gas detection through 24/7 active air sampling in even the harshest environments, VESDA ECO reduces the total cost of system installation, maintenance and service.

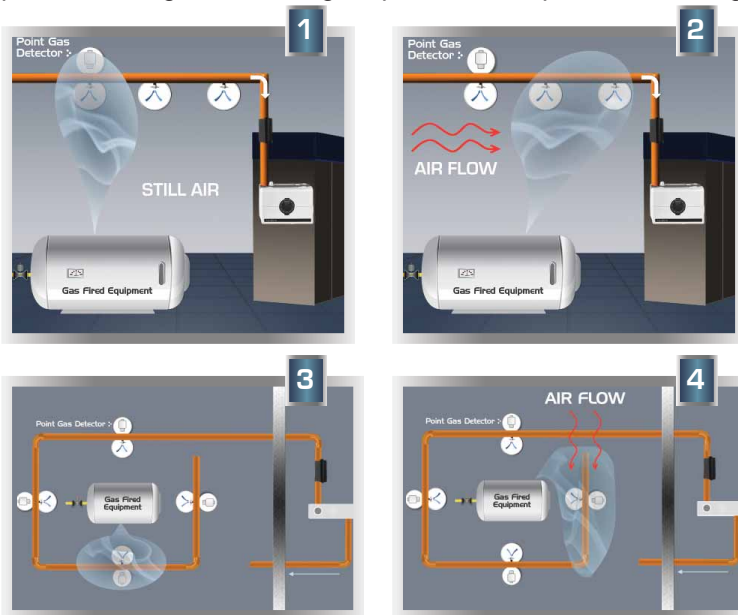
The solution can be added easily to a new VESDA ASD system or retrofitted to an existing VESDA ASD system without major construction or electrical cabling and conduit. Initial installation savings of 45 percent and projected long-term operating and maintenance cost savings of 75 percent have been realized when using VESDA ASD and VESDA ECO compared to conventional spot smoke and fixed-point gas detectors.

VESDA ECO also easily integrates to fire alarm control panels, programmable logic controllers, HVAC systems and building management systems for real-time situational awareness and intelligent emergency response. And it can be used in demand- controlled ventilation applications to save energy and reduce energy costs by ventilating areas only when required and not continuously.

## MULTI-HOLE ASPIRATING GAS DETECTION DELIVERS BETTER AREA COVERAGE AND DESIGN FLEXIBILITY

The design of a gas detection system greatly impacts its ability to reliably detect a gas leak. The number of gas detectors required and their placement is totally dependent on the risk assessment and ability to predict where a gas leak will occur. The very nature of an “accidental” gas release precludes the ability to precisely locate a detector at the point to ensure a leak will be detected.

VESDA ECO’s multi-point air-sampling gas sampling pipe network adds another level of confidence to the gas detection system’s design and placement. Figures 1 through 4 provide examples of this design tolerance.



Figures 1 + 2 – Demonstrate better area coverage and protection delivered by VESDA ECO in variable air-flow environments where a spot (point) type gas detector may “miss” a gas leak depending on its placement and the air flow. Figures 3 + 4 – Demonstrate the design flexibility of VESDA ECO. Knowing where a leak will occur is always a judgement call. In this example, four conventional point gas detectors are required to cover the same area as one VESDA ECO detector. VESDA ECO provides a more cost-effective solution.

## SUITABLE FOR A WIDE RANGE OF APPLICATIONS

- Battery rooms for the detection of hydrogen
- Boiler rooms for the detection of natural gas or LPG
- Control centers in refineries for detection of methane or hydrogen sulfide ingress
- Road tunnels for the detection of carbon monoxide and nitrogen dioxide
- Building utility rooms for the detection of natural gas or LPG
- Elevator shafts for the detection of methane or carbon monoxide
- Warehouse roof spaces for the detection of natural gas from space heaters
- Laboratories for the detection of various flammable and toxic gases
- Enclosed vehicle parking/loading docks for the detection of carbon monoxide and nitrogen dioxide
- And more...

## APPROVALS

### CE

#### Electrical safety:

Conforms to ANSI/UL Std 61010-1; Certified to CAN/CSA Std C22.2 No. 61010-1; EN 61010-1

#### EMC:

FCC 47CFR Part 15B class B; ICES 003; EN 50270

#### Others:

LCPB, VdS, AFNOR compatible for use with Xtralis EN54-20 approved ASD; LOM approved to UNE 23300 (CO & CO+NO<sub>2</sub>); AQISQ – CMC Pattern Approval; CCCF – CFE, GB:15322.1; VNIIPO; Hazardous area, ATEX, ANSI/ISA, CSA (pending)