

# Ammonia Detection for Refrigeration Equipment, Cold Stores and Freezers

## Reduce Operating Costs by Increasing the Service Life of Ammonia Detection Systems

Ammonia-based refrigeration systems are used throughout the brewing, soft drinks, dairy and food processing industries during the storage and distribution of finished goods. While these systems prolong the life of the end product and ensure product quality, ammonia represents a potential flammable and toxic risk.

Ammonia detection systems are often deployed in line with international regulations designed to monitor toxic levels and alarm before concentrations exceed published occupational exposure limits.

However one aspect of ammonia electro-chemical cell sensing technology is that its' operational life is adversely compromised if subjected to a continuous background concentration of ammonia. Background concentrations of only a few parts per million (PPM) will shorten the operating life to a matter of a few months or even weeks. This in turn leads to a substantial increase in the operational and maintenance costs related to detector cell replacement.

## Introducing VESDA ECO™ by Xtralis

Extending its world-renowned VESDA aspirating smoke detection (ASD) technology, Xtralis has introduced the industry's first system to combine ASD with gas detection and environmental monitoring. VESDA ECO uses a VESDA pipe network to actively sample air for the presence of smoke as well as flammable or toxic gases.

By drawing ammonia samples into the system as part of active air sampling, VESDA ECO brings into affect a known and quantifiable dilution ratio of fresh air, thus reducing the cells exposure to ammonia. This unique technology also ensures occupational exposure alarms thresholds are activated in accordance with local codes.

## VESDA ECO Benefits

1. Potential to reduce the number of ammonia cells needed through the unique ASD pipe network and sampling system
2. Reduction in maintenance costs through cell life extension and the reduced need for cell re-calibration
3. Added benefit of reliable very early warning smoke detection with the proven laser-based VESDA ASD technology, now coupled with ammonia detection
4. Ability to monitor several gas species in addition to ammonia, such as natural gas (methane), propane, carbon monoxide and hydrogen with a single VESDA ECO system

All these benefits are delivered through the deployment of the unique VESDA ECO by Xtralis gas detection system.



# Aspirating Smoke Detection with Gas Detection and Environmental Monitoring

## Time to Respond Because of Early Warning

- Active air sampling means earlier detection of smoke and gas threats through the use of the VESDA distributed sampling pipe network.
- Early detection provides time to react to emergencies while maintaining air quality for the public and personnel.

## Reliable Performance

- The delivery of an air/gas sample is guaranteed because each sampling pipe is individually monitored for air-flow fault through the VESDA smoke and VESDA ECO gas detectors.
- Absolute smoke measurement is provided with the industry's only optical clean-air bleed to ensure detector performance and longevity.
- VESDA ECO is built on the world's No. 1 ASD system, which is backed by decades of successful operation in numerous applications and environments including refrigerated storage.

## Flexible System Integration

- Real-time smoke and gas data is provided for an appropriate and staged response, including local alarm annunciation, alarm notification, and demand-controlled ventilation for energy cost savings.
- Smoke and gas data can be gathered at a number of various control points through the use of a wide range of high- and low-level interfaces, including FACP, BMS, PLCs and HVAC systems.
- Full compatibility with Xtralis VSC and VSM4 management software provides greater value because end users do not have to learn to operate additional software packages.

## Industry's Lowest Cost of Ownership

- A VESDA ECO detector can be added easily to an existing VESDA pipe network without complex system redesign or rewiring.
- A VESDA ECO detector can house up to two gas sensors, and more detectors can be added if the detection of additional gases is required.
- VESDA ASD detectors do not require regular calibration, and VESDA ECO detectors can be easily calibrated — either manually or automatically, based upon the application.



## How Can VESDA ECO Benefit Your Business?

- 24/7 dual early warning gas and smoke detection
- Better area coverage and protection through multi-hole air sampling
- Simplified installation, maintenance and service
- Lower total cost of ownership
- Simplified configuration and management using Xtralis VSC and VSM software
- Direct interface to FACP, HVAC and BMS using relays, 4-20 mA or Modbus outputs

Coupled with our design and engineering services, Xtralis offers customers a tailored ammonia detection system to enhance business continuity and protect employees from the effects of toxic gases.

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