Protecting Underground Utility Tunnels from Invisible Dangers

Utility tunnels are the life blood of industry, supplying critical power and data for operations and service continuity. These tunnels, particularly those used for the transportation of utilities, such as piped gas and electricity, present specific hazards because of flammable or toxic gas leaks, oxygen deficiency, overheated cables, and smoldering electrical fires. A fire or gas leak in these areas can lead to catastrophic consequences and cost millions of dollars in disruptions and lost business.

Conventional point-type systems for smoke or gas monitoring must be distributed along the length of the tunnel to ensure good coverage. Therefore, a large number of separate detectors are required in addition to electrical power and signal cables, all of which make underground installation difficult and complex. Point detectors also become easily contaminated in underground tunnels due to airborne dust. Such harsh environmental conditions require smoke and gas detection that is robust yet easy to maintain.

Introducing VESDA ECO by Xtralis

Extending its world-renowned VESDA Aspirating Smoke Detection (ASD) technology, Xtralis is pleased to introduce the industry's first system to combine ASD with gas detection and environmental monitoring.

VESDA ECO provides reliable gas detection and environmental monitoring as well as very early warning fire detection in utility tunnels to protect life, assets and business continuity.

Benefits of ASD Combined with Gas Detection and Environmental Monitoring:

- 24/7 protection with active air sampling for the earliest warning of smoke and reliable gas detection
- Simplified gas detection with lower installation costs through the use of the existing VESDA ASD pipe network
- Multiple gas sampling points for better area coverage
- Full integration with Xtralis VSC and VSM4 software simplifies configuration and management
- Direct interface to FACP, HVAC and BMS using relays, 4-20 mA or Modbus outputs
- Reliable detection even in harsh environments

VESDA ECO™
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Aspirating Smoke Detection with Gas Detection and Environmental Monitoring

Time to Respond Because of Early Warning

- VESDA ECO enables smoke detection at the incipient stage of a fire, i.e., overheating cable insulation in a heavily populated cable tray or rack.
- Active air sampling means earlier detection of carbon monoxide (CO), methane (CH_4) or other gases (depending on the type of utility and services) through the use of the VESDA distributed sampling pipe network.
- Monitoring of oxygen levels maintains air quality for personnel working in the tunnel.
- Reliable performance even in dirty or dusty environments through the use of engineered internal and external filters.

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 with the industry's only optical clean-air bleed to ensure detector performance and longevity.
- VESDA ECO is based on the world's No. 1 ASD system, which is backed by decades of successful operation in numerous applications and environments.

Flexible System Integration

- Provides real-time smoke and gas data for an appropriate and staged response, including local alarm annunciation, alarm notification to a control room, and automatic ventilation system activation.
- 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 fire alarm control panels (FACP), BMS, PLCs, and HVAC systems.
- Full compatibility with Xtralis VSC and VSM4 software provides greater value because end users do not have to learn to operate additional software packages.

Industry's Lowest Cost of Ownership

- VESDA ECO avoids the need to locate sensitive, electrical-monitoring apparatuses in the hazardous section of the tunnel, allowing the ECO detectors to be mounted close to the tunnel entrances or exits — or even outside the tunnel for easy access and maintenance.
- VESDA ASDs can be located at a centralized location to enable easy access and maintenance.
- A VESDA ECO detector can be added easily to an existing VESDA ASD pipe network without complex system redesign or rewiring.
- An ECO detector can house up to two gas sensors, and more detectors can be added if detection of additional gases is required.
- VESDA detectors do not require regular calibration. VESDA ECO detectors can be easily calibrated — either manually or automatically based upon the application.

Suitable for:

- Telecommunications and IT
- Government
- Power Generation and Utilities
- Commercial and Industrial
- Transportation
- Manufacturing

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