

VESDA ECO™ Ex Gas Detector

Gas Detector for
Hazardous Locations

Gas Detection for Use with Aspiring Smoke Detection

Xtralis the manufacturer of the market leading VESDA aspiring smoke detection (ASD) technology has developed the industries first multi-hole aspirated gas detector.

When used with the compatible range of ASD products; VESDA ECO (Ex) provides the industries first combined aspirated smoke and gas detection system.

VESDA ECO (Ex) provides early warning of toxic, oxygen and flammable gas hazards to protect personnel and property whilst ensuring business continuity.

VESDA ECO (Ex) is approved for use within Class I Division 2 classified hazardous locations. It must be used with a similarly approved VESDA ASD and installed within the Class I Div 2 area.

Applications include:

- Battery charging rooms
- Boiler plant rooms
- Utility/ service tunnels
- Refrigerated stores and plant rooms
- Water treatment and sewerage plants
- Power generation plants
- Metal processing plants
- and more.

How It Works

VESDA ECO (Ex) uses an existing or new aspiring pipe network to actively monitor for gas escapes and build-ups.

Each VESDA ECO (Ex) gas detector can house up to two gas sensors, and additional detectors can be added easily to the pipe network to monitor more gases if required. Pre-calibrated sensor cartridges are easily replaced in the field and make converting to different gas sensors or replacing sensors a simple task.

The VESDA ECO (Ex) detector is configured using Xtralis VSC configuration software and can be remotely monitored using Xtralis VSM4 monitoring software. Both VSC and VSM can be used to download data from the on-board memory card for data analysis and trending of historical data.

Integration with other building systems, including safety systems, PLCs, HVAC and building management systems, provides real-time situational awareness for intelligent response.

VESDA ECO (Ex) by Xtralis provides significant installation and routine maintenance cost savings over conventional multi-point gas detection solutions, by reducing the number of detectors required to cover an area and by providing easy access for routine maintenance.



Features

- Approved for Class I Div 2 applications
- Toxic, Oxygen or Flammable gas detection
- Single or dual gas versions
- Factory calibrated sensor cartridges
- Integral alarm status LEDs
- Integrates with PLCs/HVAC/BMS/FACP
- Configurable relays
- 4-20 mA analog outputs
- RS485 Modbus output
- On-board event logging
- On-board fault diagnostics
- Integral gas test port
- Remote reset

Compatibility

- VESDA ASD
- ICAM ASD
- FFAST ASD
- ECO is to be used only with large bore (3/4" BSP or OD 25mm) systems, and not small bore (1/4" BSP or OD 6mm) systems

Approvals

- 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
- Hazardous Location
 - ETL approved to ISA12.12.01, CSA C22.2 No. 213
 - Class I Div 2 Groups ABC&D T4 -4°F ≤ Tamb ≤ +131°F
- SIL Rating
 - SIL 2 as per IEC 61508 (combustible gas and CO₂ versions)
 - SIL 1 as per IEC 61508 (toxic gas and oxygen version)

Note: Consult with Xtralis if the application requires removal of interferent gases.

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VESDA ECO (Ex) Ordering information

VESDA ECO (Ex) gas detectors are supplied complete with: Outer metal casing and surface mounting assembly, detector housing, sensor cartridge, data storage card and USB interface cable. Detector outputs include: relays, analogue outputs and a serial output.

Single Gas Units

Part number structure: ECO-D-B-AA-Ex

Replace AA with the relevant gas type number below:

- 11 Hydrogen (H₂) 0-100% LFL
- 12 Methane (CH₄) 0-100% LFL
- 13 Propane (C₃H₈) 0-100% LFL
- 14 Hydrogen (H₂) 0-2000 ppm
- 15 Gasoline Vapour 0-100% LFL
- 16 Pentane (C₅H₁₂) 0-100% LFL
- 20 Alcohols 0-100% LFL
- 31 Oxygen depletion only (O₂) 0-25% v/v
- 32 Oxygen depletion and enrichment (O₂) 0-25% v/v
- 41 Carbon Monoxide (CO) 0-500 ppm
- 43 Hydrogen Sulphide (H₂S) 0-100 ppm
- 44 Sulphur Dioxide (SO₂) 0-10 ppm
- 45 Nitrogen Dioxide (NO₂) 0-10 ppm
- 49 Carbon Dioxide (CO₂) 0-5% v/v

Dual Gas Unit

Part number structure: ECO-B-AA-BB-Ex

- 12 – 43 Methane and Hydrogen Sulphide

Replacement sensor cartridge part number structure: ECO-SC-AA-BB-Ex

Where SC = Sensor Cartridge, AA-BB are 1st and 2nd gas types (see above)

Installation

VESDA ECO (Ex) is designed to press fit on to the air sampling pipe. To fit VESDA ECO (Ex) simply remove a 60 mm section of pipe when using 25 mm OD air-sampling pipe work or 4" for ¾" BSP pipe.

VESDA ECO (Ex) provides total flexibility to install one or more detectors anywhere on the pipe network to enable monitoring of a specific point, zone or total area.

Specifications

Supply Voltage
18-30 VDC
Power Consumption @ 24 VDC
3.6 W (max)
Current Consumption
Typically 60 mA @ 24 VDC per sensor (Gas and quantity dependant)
Dimensions (protective enclosure)
155 mm x 135 mm x 74 mm (6.1" x 5.3" x 2.9")
Material
Enclosure 304 Stainless Steel, Detector PC/ABS
Weight
1 kg (2.2 lb) detector and enclosure combined
IP/NEMA ratings
IP54 (minimum)
Operating Conditions
Temperature typically -20°C to 50°C (-4°F to 122°F) gas dependant. O ₂ - 20°C to 55°C (-4°F to 131°F) Humidity: 10-95% RH, non-condensing
Accuracy
Typically +/- 5%
Sample Pipe Size
External Diameter 25 mm (EU), ¾" (US/CAN)
Cable Access
2 x PG9 cable glands, to suit 4.0 to 8.5 mm (0.157" to 0.335") outer cable diameter
Wire/Terminal size
1.5 mm ² 16 AWG maximum
Outputs
Four (4) programmable relays 30 VDC 1A Two 4-20 mA outputs, one per gas sensor and 2 wire RS 485 Modbus RTU
Onboard Memory Card
Micro SD card 2 GB - 8 GB (50,000+ events)

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