VESDA® VLI by Xtralis™

VLI-880, VLI-885



The VESDA VLI by Xtralis is an industry first early warning aspirating smoke detection (ASD) system, designed to protect industrial applications and harsh environments of up to 2000m^2 (20,000 sq. ft.).

Long life, intelligent, fail-safe technology

The VLI detector combines a fail-safe Intelligent Filter (patent pending) with an advanced clean-air barrier for optics protection allowing the use of absolute detection and a long detection chamber life without the need for re-calibration.

The Intelligent Filter:

- effectively reduces the level of pollution in the air sample before it enters the detection chamber, which dramatically extends the operational life of the detector in harsh and polluted environments.
- is fully monitored, therefore providing consistent sensitivity over the entire operational life of the detector.

Installation, Commissioning and Operation

The VLI detector features a robust IP54-rated enclosure which provides protection against dust ingress and water splash. In the majority of applications this eliminates the need to use expensive external IP enclosures, thus simplifying and reducing the cost of installation.

The VLI detector is equipped with a powerful aspirator that provides a total pipe length of 360m (1200 ft). It is fully supported by the Xtralis ASPIRE2, VSC and VSM4 software applications which facilitate ease of pipe network design, system commissioning and maintenance together with compatibility with existing VESDA installations.

The AutoLearn™ commissioning assistant reduces setup time and ensures optimum alarm and flow thresholds in a range of environments.

The VLI detector features a standardised industry BACnet over Ethernet communication protocol for remote monitoring and programming and connection to building management systems (BMS) and automation devices. This translates to direct cost savings on integration and monitoring.

The VLI detector is inherently less prone to nuisance alarms due to the intelligent filter, lint trap, sub-sampling probe and secondary filter. Coupled with its modular design, VLI offers a lower total cost of ownership over the life of the product.

Features

- Up to 2000m^2 (20,000 sq. ft.) coverage
- Up to 4 inlet pipes
- Total pipe length up to 360m (1200 ft)
- Five (5) high intensity status LEDs for greater visibility
- Robust absolute smoke detection
- Patented Intelligent Filter
- Lint Trap to capture fibrous particulates
- Sub-sampling Probe (inertial separator)
- Secondary Filter
- Clean air barrier for optics protection
- Referencing
- AutoLearn™ Smoke and Flow
- Clean Air Zero™
- Air-path monitoring
- Five (5) relays (Fire, Fault and 3 configurable)
- Relays configurable as latching or non-latching
- Expandable GPI and relays
- Ultrasonic flow sensing
- Xtralis VSC, Xtralis VSM4 and ASPIRE2 software support
- IP54 Enclosure
- Easy mounting through steel support bracket
- Modular field replaceable parts for ease of servicing
- BACnet over Ethernet
- Local USB configuration port
- Easy cable termination access
- Imperial and metric pipe ports
- Rubberized finish to external housing

Listings / Approvals

- UL
- ULC

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How it works

Air is continually drawn through the pipe network and into the VLI detector by a high efficiency aspirator. The air sample passes four (4) sets of ultrasonic flow sensors before being passed through the Intelligent Filter. The Intelligent Filter incorporates an innovative flow splitting arrangement where a smaller unfiltered portion is passed through another set of ultrasonic flow sensors and a larger portion of the sample passes through a HEPA filtration medium. This arrangement dramatically reduces the amount of contaminants entering the aspirator and the detection chamber, thus extending detector life.

Filter loading is constantly monitored which enables the detector to "intelligently" maintain the sensitivity, hence ensuring consistent and reliable operation over time. This is achieved by comparing the readings from the four (4) sets of ultrasonic flow sensors at the detector air inlets to the readings from that in the unfiltered path and measuring the split of the airflow ratio as the filter load changes.

The filtered and unfiltered portions are recombined as they exit the Intelligent Filter. A portion of the recombined air sample is then passed through the sub-sampling probe (inertial separator) and secondary filter. This ensures that larger dust particles are unable to pass through the probe and filter arrangement, hence they are exhausted out of the detector. This configuration eliminates nuisance alarms caused by larger dust particles and extends detection chamber life. A third filter within the detection chamber assembly delivers a clean air barrier which protects the optical surfaces from contamination, further extending detector life and ensuring absolute calibration.

The detection chamber uses a stable, highly efficient laser light source and unique sensor configuration to achieve optimum response to a wide range of smoke types. The presence of smoke in the detection chamber creates light scattering which is detected by the very sensitive sensor circuitry and then converted to an alarm signal.

The status of the detector, all alarms, service and fault events, are monitored and logged with time and date stamps. Status reporting can be transmitted via relay outputs, across VESDAnet (VN version only) or BACnet.

Clean Air Zero

Clean Air Zero is a user-initiated feature which is primarily intended to safeguard against nuisance alarms. This is achieved by introducing clean air into the detection chamber and taking a reference reading. This reading is then offset against the actual environmental background to maintain consistent absolute smoke detection.

Ordering Information

VESDA VLI	VLI-880
VESDA VLI with VESDAnet[1]	VLI-885
VESDA VLI Remote Display 7 Relays	VRT-Q00
VESDA VLI Remote Display No Relays	VRT-T00

Spare Parts

VLI Intelligent Filter	VSP-030
VLI Secondary Foam Filter	VSP-031
VLI Aspirator	VSP-032
VLI Chamber Assembly	VSP-033
VLI VESDAnet Card	VSP-034

Notes:

1. Please contact your nearest Xtralis office for availability.

Specification

Supply voltage:
18 to 30 VDC

Power consumption:
10 W quiescent, 10.5 W with alarm (max)

Current consumption:
415 mA quiescent, 440 mA with alarm (max)

Fuse rating:
1.6 A

Dimensions (WHD):
426.5 mm x 316.5 mm x 180 mm
(16.8 in x 12.5 in x 7.1 in)

Weight:
6.035 kg (13.3 lbs)

Operating conditions:
Tested to -10°C to 55°C (14°F to 131°F)
Recommended Detector Ambient: 0°C to 39°C
Sampled Air: -20°C to 60°C (-4°F to 140°F)
Humidity: 10% to 95% RH, non-condensing

Sampling network:
Maximum area of Coverage 2000 m^2 (20,000 sq.ft)
Minimum total airflow: 40 l/m
Minimum airflow per pipe: 20 l/m

Maximum pipe lengths:
Total Pipe Length: 360 m (1200 ft)
Maximum Single Pipe Length: 120m (350 ft)

Computer design tool:
ASPIRE2™

Pipe:
Internal Diameter 15 mm - 21 mm (9/16"–7/8")
External Diameter 25 mm (1")

Relays:
5 Relays rated 2 A @ 30 VDC
Fire (NO), Fault (NC), Configurable (NO)

IP rating:
IP54

Cable access:
4 x 25 mm (1") cable entries

Cable termination:
Screw Terminal blocks 0.2–2.5 sq mm (30–12 AWG)

Sensitivity Range:
0.005% - 20.0% obs/m (0.0015% - 6.4% obs/ft)

Threshold setting range:
Alert: 0.05%-1.990% obs/m (0.016%-0.637% obs/ft)
Action: 0.1%-1.995% obs/m (0.032%-0.638% obs/ft)
Fire1: 0.15 %-2.0% obs/m (0.048% - 0.64% obs/ft)
Fire2: 0.155 % - 20.0% obs/m (0.05% - 6.4% obs/ft)*
*Limited to 4% obs/ft for UL

Software features:
Event log: Up to 18,000 events stored in FIFO format
Smoke level, user actions, alarms and faults with time and date stamp
AutoLearn: Min 15 minutes, Max 15 days.
Recommended minimum 14 days.
While AutoLearn is in progress, thresholds are NOT changed from pre-set values.

Configurable general input (5 - 30 VDC):
External Reset, Mains OK, Standby, Isolate, Use Night-time Threshold, Reset + Isolate, Inverted Reset

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