VESDA VLS

The VESDA VLS is similar to the standard VESDA VLP detector, but also includes a valve mechanism in the inlet manifold and software to control the airflow from the four sectors (pipes). This configuration enables a single VESDA zone to be divided into four separate sectors, for example, distinguishing between separate voids within a room.

How It Works

The VLS draws air from all sectors in use. If the smoke level reaches the Adaptive Scan Threshold, the VLS quickly scans each pipe to identify which pipe is carrying smoke. If more than one pipe is transporting smoke, the sector with the highest smoke concentration is designated as the First Alarm Sector (FAS).

Once Fast Scan is completed and the FAS identified, the VLS continues to closely monitor all four sectors (pipes) to monitor fire growth and maintain full protection of the area.

There are four alarm levels (Alert, Action, Fire 1 and Fire 2) for each sector (pipe) and the sensitivity for each alarm level can be set to ensure the optimum alarm thresholds are applied for each sector.

The VLS Display

The VLS display has a bar graph to indicate the overall smoke level, alarm threshold and fault indication. The bar graph displays the individual sector smoke levels during the scanning sequence. There is an extra LED to indicate that a First Alarm Sector (FAS) has been identified and an extra function to the Silence Button to allow for Manual Scan to be initiated.

The VLS display module can be mounted into the VLS front cover or remotely into a 19in subrack or a remote box.

Relay Options

The VLS detector can be fitted with a programmable 7 or 12 relay Termination card. Relays may be mounted in a remote box or in a 19in subrack.

VESDAnet™

The status of the detector, and all alarm, service and fault events, are transmitted to displays and external systems via VESDAnet, VESDA’s fault tolerant communications protocol. The VESDAnet loop provides a robust bi-directional communication network between devices, even allowing continued operation during single point wiring failures. It also provides system programming from a single location and forms the basis of the modular nature of the VESDA system.

AutoLearn™ and Referencing

The VLS has both the AutoLearn™ and Referencing software functions to ensure optimum operation in different environments and to eliminate the occurrence of nuisance alarms.

AutoLearn monitors the ambient environment and sets the most appropriate alarm thresholds (Alert, Action, Fire 1, Fire 2) during the commissioning process.

Referencing ensures external pollution to a protected environment does not interfere with the true smoke level being detected.

Features

- Individual pipe identification
- Adaptive Scan Threshold
- Wide sensitivity range
- Laser based smoke detection
- VESDAnet™ communication
- 4 alarm levels per sector
- High efficiency aspirator
- Clean air barrier optics protection
- Easy to replace air filter
- 7 or 12 programmable relays option
- AutoLearn™
- Referencing
- Event log
- Recessed mounting

Listings/Approvals

- UL
- ULC
- FM
- CCC
- ActivFire
- CE
- LPCB
- VdS
- NF-SSI (www.marque-nf.com)
- VNIIPO
- EN 54-20
  - Class A (40 holes / 0.08% obs/m)
  - Class B (40 holes / 0.23% obs/m)
  - Class C (60 holes / 0.65% obs/m)

Classification of any configuration is determined using ASPIRE.

Regional approvals listings and regulatory compliance vary between VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.
**Detectors**

- VLS detector with two blank plates and a Scanner Display module. 7 relays version: VLS-700
- VLS detector with a centrally mounted LCD Programmer module and a Scanner Display module. 7 relays version: VLS-214
- VLS detector with two blank plates and a Scanner Display module. 12 relays version: VLS-304
- VLS detector with a centrally mounted LCD Programmer module and a Scanner Display module. 12 relays version: VLS-214
- VLS detector with FOIK, 7 relays version: VLS-700

**Accessories**

- Remote Programmer: VRT-100
- VESDA VLS display with a remote termination card. 7 relays: VRT-400
- VESDA VLS display with a remote termination card. No relays: VRT-700
- Includes blank plate with a remote mounting box. 7 relays version for VLS: VRT-800
- Includes blank plate with a remote mounting box. 12 relays version for VLS: VRT-900
- Hand-held Programmer: VHH-100

**Spare Parts**

- VESDA/VLS Display Module: VSP-004
- Filter Cartridge: VSP-005
- VESDA/VLS Chassis Assembly, includes Scanning Manifold: VSP-007
- Recessed Mounting Kit (optional): VSP-010
- Aspirator for VESDA/VLS: VSP-013
- VLS Screw Cover - Pack of 2: VSP-020
- Filter Cartridge - Pack of 20: VSP-025
- VESDA-VLS Mounting Bracket: VSP-028
- 12 Relay Remote Termination Card (RCT12): VSP-208
- Exhaust Deflector - Black: VSP-540

**Specifications**

- **Supply Voltage:** 18–30 VDC
- **Power Consumption @ 24 VDC:**
  - No Display or Programmer
  - Aspirator @ 3000 rpm: 6.34 W
  - Aspirator @ 4200 rpm: 7.32 W
  - Quiescent: 6.34 W
  - With Alarm: 7.32 W
- **Dimensions (WHD):**
  - 350 mm x 225 mm x 125 mm (13.8 in x 8.9 in x 4.9 in)
- **Weight:**
  - 4.0 kg (9 lbs) including Display and Programmer modules
- **Operating Conditions:**
  - Tested to: -10°C to 55°C (*14°F to 131°F*)
  - Detector Ambient: 0°C to 39°C (32°F to 104°F) (Recommended)
  - Humidity: 10% to 95% RH, non-condensing
- **Storage Conditions (non-operational):**
  - Battery life: Up to 2 years
  - Temperature: 0° to 85° C (32° to 185°F)
- **Sampling Network:**
  - Maximum length per pipe: 100m (328 ft)
  - Aggregate pipe length: 200 m (656 ft)
  - Minimum flow per pipe: 15 liters/min.
  - Pipe Modelling Design Tool: ASPIRE™
- **Area Coverage:**
  - Up to 2000 m² (21520 sq. ft.)
- **Programmable Relays:**
  - 7 or 12 Relays option
  - Contacts rated 2 A @ 30 VDC
  - Default: 7 Relays: NO/NC contacts Alert, Action, Fire 1, Fire 2, Maintenance, Urgent Fault & Isolate
  - Default: 12 Relays: 10 x NO, 2 x NC contacts Alert, Action, Fire 1, Fire 2, Maintenance, Urgent Fault & Isolate, First Alarm
- **IP Rating:** IP30
- **Power Consumption @ 24 VDC:**
  - Aspirator @ 3000 rpm: 6.34 W
  - Aspirator @ 4200 rpm: 7.32 W
  - Quiescent: 6.34 W
  - With Alarm: 7.32 W
- **Current:**
  - 240 mA
  - 260 mA
  - 280 mA
  - 300 mA
  - **Supply Voltage:** 18–30 VDC
- **Power Consumption @ 24 VDC:**
  - No Display or Programmer
  - Aspirator @ 3000 rpm: 6.34 W
  - Aspirator @ 4200 rpm: 7.32 W
  - Quiescent: 6.34 W
  - With Alarm: 7.32 W
- **Current:**
  - 240 mA
  - 260 mA
  - 280 mA
  - 300 mA
- **Dimensions (WHD):**
  - 350 mm x 225 mm x 125 mm (13.8 in x 8.9 in x 4.9 in)
- **Weight:**
  - 4.0 kg (9 lbs) including Display and Programmer modules
- **Operating Conditions:**
  - Tested to: -10°C to 55°C (*14°F to 131°F*)
  - Detector Ambient: 0°C to 39°C (32°F to 104°F) (Recommended)
  - Humidity: 10% to 95% RH, non-condensing
  - Please consult your Xtralis office for operation outside these parameters or where sampled air is continually above 0.05% obs/m
  - Temperature: 0° to 85° C (32° to 185°F)
- **Storage Conditions (non-operational):**
  - Battery life: Up to 2 years
  - Temperature: 0° to 85° C (32° to 185°F)
    - Must not be exposed to sunlight or other radiation sources
- **Sampling Network:**
  - Maximum length per pipe: 100m (328 ft)
  - Aggregate pipe length: 200 m (656 ft)
  - Minimum flow per pipe: 15 liters/min.
  -Pipe Modelling Design Tool: ASPIRE™
- **Area Coverage:**
  - Up to 2000 m² (21520 sq. ft.) depending on local codes and standards
- **Programmable Relays:**
  - 7 or 12 Relays option
  - Contacts rated 2 A @ 30 VDC
  - Default: 7 Relays: NO/NC contacts Alert, Action, Fire 1, Fire 2, Maintenance, Urgent Fault & Isolate
  - Default: 12 Relays: 10 x NO, 2 x NC contacts Alert, Action, Fire 1, Fire 2, Maintenance, Urgent Fault & Isolate, First Alarm
- **IP Rating:** IP30
- **Cable Access:** 8 x 25 mm (1 in)/knockouts in various positions
- **Cable Termination:**
  - Screw terminals 0.2–2.5 mm (1/32 in)
- **Sensitivity Range:**
  - 0.005%–20% obs/m (0.0016%–6.25% obs/ft)
- **Alarm Threshold Setting Range:**
  - Alert: 0.005%–1.990% obs/m (0.0016%–6.218% obs/ft)
  - Action: 0.010%–1.995% obs/m (0.0031%–6.234% obs/ft)
  - Fire: 0.010%–20% obs/m (0.0031%–6.250% obs/ft)
  - Fire 2: 0.020%–20.00% obs/m (0.0063%–6.250% obs/ft)
  - *Limited to 12% obs/m (4% obs/ft) in UL mode
- **Software Features:**
  - Event Log: Up to 18,000 events stored on FIFO basis.
  - AutoLearn: Minimum 15 minutes, maximum 15 days.
  - Recommended minimum period 1 day. During AutoLearn thresholds are NOT changed from pre-set values.
  - Referencing: Compensation for external ambient conditions.
  - Four Alarm Levels (per sector pipe): Alert, Action, Fire 1 & Fire 2.
  - Two Fault Warning Levels: Maintenance and Major fault.
  - Software Programmable Relays: 7 or 12.
  - Event reporting via VESDAnet or Event Log.
  - Adaptive Scan Threshold: Detector selects the appropriate scan threshold automatically.