VESDA-E VES SERIES

Intelligent Aspiration Detectors for UL 268 7th edition applications

Built on the Flair detection technology and years of application experience, VESDA-E VES detectors deliver very early warning with the best in class dust rejection throughout its lifetime.

The VESDA-E VES is similar to the flagship VESDA-E VEP aspirating smoke detector, but also includes a valve mechanism in the inlet manifold and software to control the airflow from the four sectors (pipes). The VESDA-E VES is UL268, 7th Edition compliant.

This configuration enables a single zone to be divided into four separate sectors, for example, distinguishing between separate aisles within a data room. The VES enables the user to locate the source of smoke by identifying the first sector to reach the Alert level. The detector then continues to sample from all sectors to monitor fire growth and will report separate alarm levels for each sector. The VES provides four individually configurable alarm levels (Alert, Action, Fire 1, and Fire 2) for sector 1 (sectors 2, 3 and 4 automatically assume the same values that are set in sector 1) allowing optimum protection in a wide range of applications.

VES detectors achieve consistent performance over their lifetime via absolute calibration. In addition, the VES delivers a range of revolutionary features that provide user value.

HOW IT WORKS

Similar to the regular VES mechanism of operation, the intelligent VES draws air from all sectors in use. If the smoke level reaches the Adaptive Scan Threshold, the intelligent VES quickly scans each sector to identify which sector is carrying smoke. The first sector to reach the alert level is designated as the First Alarm Sector (FAS) and this sector is signaled to the user on the detector display. If two or more sectors reach the alert level, 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 intelligent VES continues to closely monitor all four sectors to track fire growth and maintain full protection of the area.

On the fire alarm panel side, if two or more sectors are at different alarm levels, then general alarms corresponding to each threshold (Alert, Action, Fire 1, or Fire 2) will be raised by the panel but the sector carrying the highest smoke concentration will be shown on the panel display. Similarly, if two or more sectors are having the same alarm level, then the sector which was reported first by the detector will be shown on the panel display.

FEATURES AND BENEFITS

- Sector addressability for up to four sectors
- Adaptive scan threshold
- Flair detection technology delivers reliables very early warning in a wide range of environments with minimal nuisance alarms
- Multi-stage filtration and optical protection with clean air barriers ensures lifetime detection performance
- Four configurable alarm levels for sector 1 (sectors 2, 3 and 4 will automatically assume the same values that are set in sector 1) and a wide sensitivity range deliver optimum protection for the widest range of applications
- Intuitive LCD display provides instant status information for immediate response
- Flow fault thresholds per port accommodate varying airflow conditions
- Smart on-board filter retains dust count and remaining filter life for predictable maintenance
- Extensive event log (20,000 events) for event analysis and system diagnostics
- AutoLearn™ smoke for reliable and rapid commissioning.
- Backward compatible with VLS
- Ethernet for connectivity with Xtralis® software for configuration, secondary monitoring, and maintenance
- USB for PC configuration and firmware upgrade using a memory stick
- Two GPIs (monitored/unmonitored) with fix mapping to detector reset function
- Field replaceable sub-assemblies enable faster service and maximum uptime

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FLAIR DETECTION TECHNOLOGY

Flair is the revolutionary new detection chamber that forms the core of the Intelligent VESDA-E VES Series, providing better detection, fewer nuisance alarms, higher stability, increased longevity and particle characterization. Direct imaging of the sampled particles using a CMOS imager combined with multiple photo-diodes allow vastly more data about the observed particles. The Intelligent VESDA-E VES Series features a robust IP40-rated enclosure and is equipped with a powerful aspirator that provides a total pipe length of 560 m (1,837 ft).

Two models are available, a VES-A00-P-HON-UL Intelligent aspiration smoke detector with LEDs and a VES-A10-P-HON-UL Intelligent aspiration smoke detector with a LED and LCD display. The VES display home page has a bar graph to indicate the smoke level and adaptive scan threshold. Fault icons are also included to indicate various fault conditions. When the adaptive scan threshold is exceeded, the VES display automatically transitions to the Sector status page to indicate the smoke level and alarm level per sector. If alarms are configured as latched, alarm indication per sector will be retained until Reset is applied. The VES display can only return to the home page under user control. They provide standard detection coverage to protect up to 21,520 sq.ft (2,000 sq.m) subject to system design and local regulatory requirements.

These detectors are compatibly listed for use with the XLS120, XLS140-2, and XLS3000 fire alarm control panels and operate in FlashScan® mode only.

An Intelligent VESDA-E VES Series detector connects to the SLC loop of compatible intelligent fire alarm control panels using FlashScan protocol to communicate up to five levels of events for display and use in control-by-event system programming. Using the SLC connection, the system operator can also review real-time status information such as alarms and faults. The system operator can also put an Intelligent VES Series detector into service mode, or reset airflow baselines.

Intelligent VES Series detectors support multiple sensitivity modes with four alarm levels. Day/Night/Weekend mode enables technicians to configure alarm thresholds based on routine changes in the environment.

CONNECTIVITY AND CONFIGURATION

VESDA-E detectors offer Ethernet connectivity as a standard feature. The detector can be added to a corporate network allowing devices installed with Xtralis® configuration and monitoring applications (VSC/VSM/iVESDA) to connect to the detector via the network. VSC is used for configuration and VSM is used for both configuration and monitoring. iVESDA is used for remote monitoring on mobile devices. Xtralis pipe network design tool Aspire is intuitive application to create a pipe network tailored to meet site specific requirements.

BACKWARD COMPATIBILITY

The Intelligent VESDA-E VES Series is compatible with existing VESDA installations. The detector occupies the same mounting footprint, pipe, conduit and electrical connector positioning as VESDA VLS.

FLASHSCAN CAPABILITIES

An Intelligent VESDA-E VES Series detector connects to the SLC loop of compatible intelligent fire alarm control panels using FlashScan protocol to communicate up to five levels of events for display and use in control-by-event system programming. Using the SLC connection, the system operator can also review real-time status information such as alarms and faults. The system operator can also put an Intelligent VES Series detector into service mode, or reset airflow baselines.

- Intelligent VES Series detectors support multiple sensitivity modes with four alarm levels. Day/Night/Weekend mode enables technicians to configure alarm thresholds based on routine changes in the environment.
- VES-A00-P-HON-UL and VES-A10-P-HON-UL connect to the Signaling Line Circuit (SLC) loop of the XLS120, XLS140-2, and XLS3000. For these detectors, panel firmware version 25 or higher is required.
- Detector trouble reporting at panel.

XLS3000/XLS-NCA2 CAPABILITIES

- Displays the real-time read status of percent of alarm.
- Put Intelligent VESDA-E VES Series detectors into Service Mode, shutting the device down for maintenance.
- Reset airflow baselines for an Intelligent VESDA-E VES Series detector.
- Displays the specific pipe address of alarm events detected by VES.

AGENCY LISTINGS AND APPROVALS

The file number(s) below reference the specific listings for the modules in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

UL Listed: S5198, Vol27.

STANDARDS AND CODES

The VES complies with the following UL Standards:

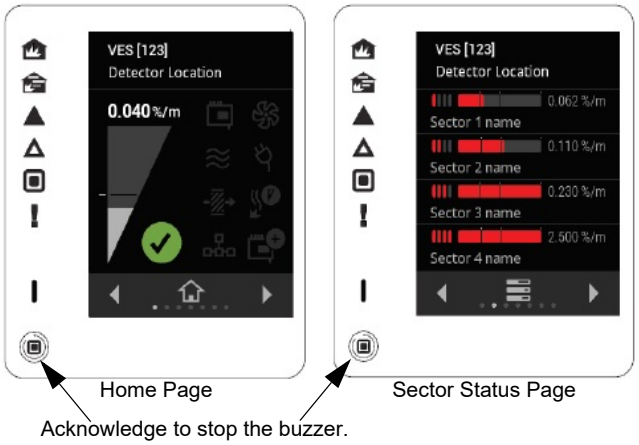
UL 268 7th ed.

PRODUCT LINE INFORMATION

VES-A00-P-HON-UL: Intelligent aspiration smoke detector with LED display with pipe addressability, 4 pipe, covers up to 21,520 square feet.

VES-A10-P-HON-UL: Intelligent aspiration smoke detector with LED and LCD display with pipe addressability, 4 pipes, covers up to 21,520 square feet. Compliant with UL268 7th edition.

USER INTERFACE DISPLAY



Sector status page	
	
Display element	**Description**
	Sector Alarm Level
	Sector Smoke Level bargraph including alarm threshold indicators
	User-configured Sector Name

Symbol	LED
	Fire 2
	Fire 1
	Action
	Alert
	Disabled
	Fault
	Power
	Smoke and Alarm Threshold Levels
	Detector OK
	Detector Fault
	Aspirator Fault
	Airflow Fault
	Power Fault
	Filter Fault
	Smoke Chamber Fault
	Communication Fault
	StaX Module Fault

VESDA-E VES SERIES TECHNICAL SPECIFICATIONS

The following specifications apply to all Intelligent VESDA-E VES Series Detectors

Supply voltage	18-30 VDC (24 V Nominal)					
	VES-A00-P-HON-UL			VES-A10-P-HON-UL		
Maximum current consumption						
- Normal Operation:	0.79 A			0.83 A		
- In Alarm	0.83 A			0.86 A		
- Peak Current:	1.5 A			1.5 A		
Detector current consumption @ 24 VDC:						
- Aspirator setting	1	5	10	1	5	10
- Normal operation[1]	0.28 A	0.35 A	0.58 A	0.30 A	0.38 A	0.61 A
- In alarm[1]	0.32 A	0.40 A	0.63 A	0.34 A	0.42 A	0.65 A
SLC current consumption:	Current drawn from SLC loop: 0.008 A					
Dimensions (WHD)	13.8 in x 8.9 in x 5.3 in (350 mm x 225 mm x 135 mm)					
Weight	10.4 lb (4.7 kg)			10.6 lb (4.8 kg)		
Operating conditionsNovember 11, 2021	Ambient: 32°F to 100°F (0°C to 38°C) Sampled Air: -4°F to 140°F (-20°C to 60°C)[2] Humidity: 5% to 95% RH, non-condensing					
Area coverage	21,520 square feet (2,000 m^2)					
Min. airflow per pipe	20 l/m					
Pipe length (linear	919 ft (280 m) [3]					
Pipe length (branched)	1,706 ft (520 m) [3]					
Pipe lengths (depending on number of pipes in use):	2 Pipe	3 Pipe	4 Pipe			
	328 ft (100 m)	262 ft (80 m)	230 ft (70 m)			
Maximum pipe lengths	Total Pipe Length (with branches): 1837 ft (560 m)[2]					
Maximum number of holes	98 [3]					
Computer design tool	ASPIRE					
Pipe length (linear)	919 ft (280 m) [3]					
Pipe length (branched)	1,837 ft (560 m) [3]					
Pipe	Inlet: External diameter 25 mm or 1.05 in (3/4 in IPS) Exhaust: External diameter 1.05 in or 25 mm (3/4 in IPS) via adapter					
Relays	12 preconfigured relays Contacts rated 2 A @ 30 VDC (Resistive)					
IP rating	IP40					
Cable access	1.02 in (4 x 26 mm) cable entries					
Cable termination	Screw Terminal blocks 0.2–2.5 sq mm (24–14 AWG)					
Dynamic range	0.0000% to 10% obs/ft (0.000% to 32% obs/m)					
Sensitivity range	0.0016% to 6.25% obs/ft (0.005% to 20% obs/m)					
Threshold setting range	Alert: 0.0016% to 0.625% obs/ft (0.005% to 2.0% obs/m) Action: 0.0016% to 0.625% obs/ft (0.005% to 2.0% obs/m) Fire1: 0.0031% to 0.625% obs/ft (0.010% to 2.0% obs/m) Fire2: 0.0063% to 6.25% obs/ft (0.020% to 20.0% obs/m)					
Software features	Event log: Up to 20,000 events Smoke level, user actions, alarms and faults with time and date stamp AutoLearn: Detector learns alarm thresholds and flow fault thresholds by monitoring the environment.					

[1] If Ethernet port is in use, add an additional 10mA.

[2] Sampled air temperature shall reach detector ambient temperature upon entry into detector. Refer to Xtralis Design Guides and Application Notes for sampled air preconditioning.

[3] Subject to agency confirmation.

Country of origin: Malaysia

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