NOTIFIER® by Honeywell

Notifier Intelligent **VESDA-E VES** SLC with VESDAnet Detectors

For UL 268 7th Edition Applications

General

The Notifier Intelligent VESDA-E VES SLC with VESDAnet detectors, VES-A00-P-NTF-VN and VES-A10-P-NTF-VN (referred to as 2nd Generation detectors) have an integrated Signaling Line Circuit (SLC) module to communicate with Notifier Fire Alarm Control Panels (FACP) directly over the SLC loop. The 2nd Generation detectors are variants of the conventional VESDA-E VES detectors with built-in SLC interface module.

The SLC connectivity and SLC address occupancy on the 2nd Generation detectors is backward compatible with the 1st Generation detectors which are the VES-A00-P-NTF-UL and VES-A10-P-NTF-UL. The 2nd Generation detectors have new features which are mainly VESDAnet communication and UL 268 7th Edition compliance, hence the addition of the "-VN" suffix to the model number, where the "VN" stands for VESDAnet communication.

The UL 268 7th Edition introduces a new level of performance for smoke detectors aiming to improve the life safety of the building occupants and reduce nuisance alarms.

HOW IT WORKS

Similar to the regular VES mechanism of operation, the intelligent 1st and 2nd Generation VES SLC detector 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 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

- 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 ensure 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.

Intelligent VESDA-E VES-A10-P-NTF-VN

- 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
- Field replaceable sub-assemblies enable faster service and maximum uptime
- Providing both SLC and VESDAnet connectivity
- Supporting three modes of operation (SLC mode, VESDA-E Conventional Mode and VESDA-E Mimic Mode)
- The different modes of operation allow for supporting Notifier HLI (VHX-1420-HFS) connectivity under non-SLC modes

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 1.706 ft (520 m).

Two models are available, a VES-A00-P-NTF-VN Intelligent aspiration smoke detector with LEDs and a VES-A10-P-NTF-VN 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 NFS-320, NFS2-640, and NFS2-3030 FACPs and operate in FlashScan® mode only.

An Intelligent VESDA-E VES Series detector connects to the SLC loop of compatible intelligent FACPs 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.

CONNECTIVITY AND CONFIGURATION

VESDA-E detectors offer connectivity to corporate networks via Ethernet, allowing for devices installed with Xtralis monitoring and configuration software to connect to the detector.

MODES OF OPERATION

1. VESDA-E SLC Mode:

Under this mode, the 2nd Generation detector uses SLC communication for primary reporting. Furthermore, VESDAnet is available for centralized configuration and monitoring. The configuration and command parameters under FACP control are not available on Xtralis VSC. Use of the Notifier HLI (VHX-1420-HFS) under this mode is prohibited for primary reporting.

2. VESDA-E Conventional Mode:

Under this mode, the 2nd Generation detector behaves the same as the conventional VES detector. The primary reporting is done either via the Notifier HLI (VHX-1420-HFS) on VESDAnet or through Relays and monitor modules. The SLC communication is disabled which means that all the controls from the SLC interface are revoked.

3. VESDA-E Mimic Mode:

Under this mode, the 2nd Generation detector behaves the same as a conventional VLS detector. The primary reporting is done either via the Notifier HLI (VHX-1420-HFS) on VESDAnet or through Relays and monitor modules. The SLC communication is disabled which means that all the controls from the SLC interface are revoked. This mode is provided for legacy VESDA-L replacement (VLP / VLC / VLS).

FLASHSCAN CAPABILITIES

An Intelligent VESDA-E VES Series detector connects to the SLC loop of compatible intelligent FACPs 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-NTF-VN and VES-A10-P-NTF-VN connect to the SLC loop of NFS-320, NFS2-640, and NFS2-3030. For these detectors, panel firmware version 25 or higher is required.
- Detector trouble reporting at panel.

NFS2-3030/NCA-2 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/ULC Listed: S5198 vol 27

CSFM: 7259-0028:0517

Standards and Codes

These listings and approvals below apply to the VESDA-E VES. 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 268 7th Edition

UL 268A 4th Edition

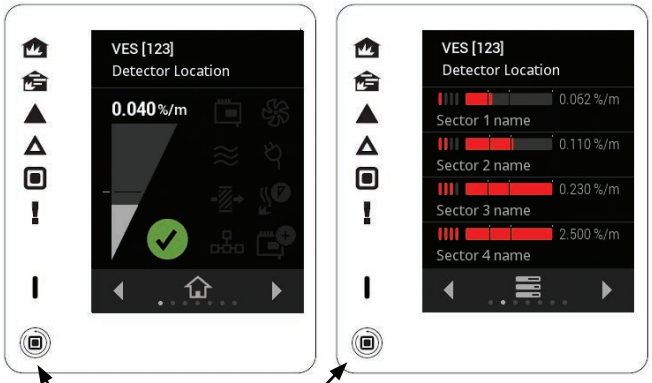
ULC-S529 4th Edition

Product Line Information

VES-A00-P-NTF-VN: Intelligent aspiration smoke detector with LED display with pipe addressability, 4 pipe, covers up to 21.520 sq. ft.

VES-A10-P-NTF-VN: Intelligent aspiration smoke detector with LED and LCD display with pipe addressability, 4 pipes, covers up to 21.520 sq. ft.

User Interface Display



Home Page

Sector Status Page

Acknowledge to stop the buzzer.

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

SPECIFICATIONS

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

Supply Voltage Range	18-30 VDC (24 V Nominal)					
	VES-A00-P-NTF-VN			**VES-A10-P-NTF-VN**		
Maximum Power Consumption[1]						
– Quiescent:	0.89 A			0.89 A		
– In Alarm:	0.92 A			0.92 A		
Nominal Power Consumption @ 24 VDC:						
– Aspirator Setting	**1**	**5**	**10**	**1**	**5**	**10**
– Power (Quiescent)	0.31 A	0.41 A	0.64 A	0.33A	0.43 A	0.68 A
– Power (In Alarm)	0.35 A	0.45 A	0.66 A	0.38 A	0.47 A	0.72 A
SLC Current Consumption:	0.005 A					
Dimensions (WxHxD)	13.8 in x 8.9 in x 5.3 in (350 mm x 225 mm x 135 mm)					
Weight	10.69 lbs (4.85kg)			10.91 lbs (4.95kg)		
Operating Conditions[2]	Ambient: 32°F to 100°F (0°C to 38°C) Sampled Air: -4°F to 140°F (-20°C to 60°C)[3] Humidity: 5% to 95% RH, non-condensing					
Storage Conditions (Non-operational)	Humidity: Dry (<95%) Temperature: 0° to 85°C Must not be exposed to sunlight or other radiation sources					
Relays	12 programmable relays Contacts rated 2 A @ 30 VDC (Resistive)					
GPIs	Unmonitored GPI: In the SLC mode of operation, the Unmonitored GPI is pre-configured to the Remote Reset function Monitored GPI: In the SLC mode of operation, the Monitored GPI is pre-configured for the Mains OK Signal In the other modes of operation, the GPIs are programmable					
Connection to the Fire Alarm Control Panel	Direct connection to the SLC loop through recommended wiring					
Cable termination	Screw terminal blocks (0.2-2.5 sq mm, 24-14 AWG) SLC connection from IFC card terminal block (0.2-2.5 sq mm, 24-14 AWG)					
Measurement Range	0.0000 to 11.09% obs/ft (0.000 to 32% obs/m)					
Sensitivity Range	0.0015 to 6.575% obs/ft (0.005 to 20% obs/m)					

[1] Maximum current measured is from the supply voltage that generates the highest current.

[2] Please consult your Notifier representative for information on operation outside these parameters or where sampled air is continually above 0.015% obs/ft (0.05% obs/m) under normal operating conditions.

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

ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING QUALITY SYSTEMS

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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