

## Introduction

The Simplex VESDA-E VEU IDNet series aspirating smoke detectors are the premium detector of the VESDA-E range. With an ultra-wide sensitivity range 15 times greater than VESDA VLP, and provision for more sampling holes, VEU detectors provide increased coverage of at least 40% in high airflow applications. Longer linear pipe runs and extended branched pipe network configurations cater to applications with higher ceilings, providing an increased coverage of up to 80%. You can conveniently mount VEU detectors for ease of service and maintenance. In addition, the VEU delivers a range of revolutionary features that provide user value.

### VESDA-E VEU aspirating smoke detector with onboard IDNet addressable communications

- Compatible with Simplex 4007ES, 4010ES, and 4100ES fire alarm control units (FACU).
- Adds IDNet communications to the VESDA-E VEU aspirating smoke detectors.
- Communicates status information, and receives commands from the host FACU.

### Flair detection technology

Flair is the revolutionary detection chamber that forms the core of the VESDA-E VEU, providing higher stability and increased longevity. It provides better detection and fewer nuisance alarms with direct imaging of the sampled particles using a CMOS imager, combined with multiple photodiodes.

### Installation, commissioning, and operation

VESDA-E VEU features an IP40-rated enclosure. The aspirator provides a total pipe length of 2,001 ft (610 m). Out-of-the-box operation is possible with AutoConfig which initiates airflow normalization. Xtralis ASPIRE and VSC software applications fully support the VEU, for easy pipe network design, system commissioning, and maintenance. You can initiate the AutoLearn smoke and flow from the VSC.

### The host FACU operations include the following:

- Initiate detector reset
- Request standby mode
- Request disable mode
- Airflow normalization
- Silence detector

### The host FACU information received includes the following:

- Four alarm states: alert pre-alarm, action pre-alarm, fire 1, fire 2
- Urgent fault status, minor fault status, and standby status
- Analog values for smoke obscuration percentage and detector fault code

### VESDAnet™

VESDA devices communicate on VESDAnet, a bi-directional communication network that provides continued redundant operation even during single point wiring failures. VESDAnet enables centralized configuration, control, maintenance, and monitoring.

### Ethernet and Wi-Fi connectivity

Ethernet and Wi-Fi connectivity are standard features of VESDA-E detectors. You can add the detector to a corporate network so that Wi-Fi enabled tablet devices and PCs installed with Xtralis monitoring and configuration software can connect to the detector through the network.

## Listings reference

- UL
- FDA
- FCC
- CSFM

## Features



Figure 1: Simplex VESDA-E VEU IDNet detector with 3.5 in. display, four-pipe: 4098-VEU-A10



Figure 2: Simplex VESDA-E VEU IDNet detector with LEDs, four-pipe: 4098-VEU-A00

The Simplex VESDA-E VEU IDNet series of aspirating smoke detectors deliver a range of features that provide unsurpassed detection performance, flexibility, field programmability, connectivity, and reduced total cost of ownership. These features include the following:

- Flair detection technology, for reliable early warning in a wide range of environments with minimal nuisance alarms
- Multi stage filtration and optical protection with clean air barriers, for lifetime detection performance
- Four alarm levels and an ultra-wide sensitivity range, for optimum protection for the widest range of applications
- An intuitive LCD icon display, providing instant status information for immediate response
- Flow fault thresholds for each port, accommodating varying airflow conditions
- A smart onboard filter tracks dust count and remaining filter life for predictable maintenance
- An extensive log of up to 20,000 events for analysis and system diagnostics
- AutoLearn™ smoke and flow for reliable and rapid commissioning
- Ethernet for connectivity with Xtralis software for configuration, secondary monitoring, and maintenance
- Industry first aspirating detector secondary monitoring and maintenance through Wi-Fi
- USB port for PC configuration, and firmware upgrade using a memory stick
- Two pre-configured GPIOs, one monitored, for flexible remote control
- Field-replaceable sub-assemblies, for faster service and maximum uptime

\* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7259-0026:0508, for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable, contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

## VESDA-E 4098-VEU-A10 3.5 in. display reference

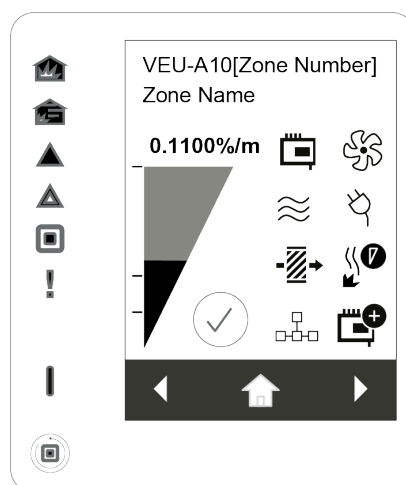


Figure 3: VESDA-E 4098-VEU-A10 3.5 in display

Table 1: LED symbol reference

Symbol	Description
	Fire 2
	Fire 1
	Action
	Alert
	Disabled
	Fault
	Power

Table 2: Home page symbol reference

Symbol	Description
	Smoke and alarm threshold levels
	Detector OK
	Detector fault
	Aspirator fault
	Airflow fault
	Power fault
	Filter fault
	Smoke chamber fault
	VESDAnet fault
	StaX module fault

## Specifications

**Table 3: VESDA-E 4098-VEU specifications**

Specification	Rating					
Supply voltage	18 VDC to 30 VDC (24 V nominal)					
Peak current	1.5 A					
Maximum current consumption	Quiescent: 0.84 A In alarm: 0.88 A					
Power consumption at 24 VDC	4098-VEU-A00			4098-VEU-A10		
Aspirator setting	1	5	10	1	5	10
Power (quiescent)	0.28 A	0.36 A	0.59 A	0.32 A	0.40 A	0.63 A
Power (in alarm)	0.32 A	0.40 A	0.63 A	0.35 A	0.43 A	0.66 A
Weight	10.88 lb (5.39 kg)			10.88 lb (5.39 kg)		
Dimensions (W x H x D)	13.8 in. x 8.9 in. x 5.3 in. (350 mm x 225 mm x 135 mm)					
Ethernet Active Add	0.01 A					
Wi-Fi Active Add	0.02 A					
Operating conditions	Ambient: 32°F to 100°F (0°C to 38°C ) Sampled air: -4°F to 140°F (-20°C to 60°C), see note 1 Humidity: 5% to 95% RH, non-condensing					
Maximum area coverage	69,965 sq. ft. (6,500 m <sup>2</sup> ), see note 2					
Minimum airflow for each pipe	15 l/m					
Pipe lengths depending on number of pipes in use	One pipe 525 ft (160 m)		Two pipes 492 ft (150 m)	Three pipes 426.5 ft (130 m)	Four pipes 312 ft (95 m)	
Maximum pipe lengths	Total pipe length, with branches: 2,001 ft (610 m)					
StaX	PSU, Auto Pipe Clean					
Number of holes	96					
Computer design tool	ASPIRE					
Pipe	Inlet: External diameter 1 in. or 25 mm (3/4 in IPS) Exhaust: External diameter 1 in. or 25 mm (3/4 in IPS) through adaptor					
Relays	Seven pre-configured relays (non-latching states) Contacts rated 2 A at 30 VDC (resistive)					
Connection to the FACU	Direct connection to the IDNet loop through recommended wiring					
IP rating	IP40					
Cable access	Four 1.02 in. (26 mm) cable entries					
Cable termination	Screw terminal blocks 24 AWG to 14 AWG (0.2 mm <sup>2</sup> to 2.1 mm <sup>2</sup> )					
IDNet connection from IFC card terminal block	18 AWG to 14 AWG (0.75 mm <sup>2</sup> to 2.5 mm <sup>2</sup> )					
Dynamic range	0.0000% obs/ft to 10% obs/ft (0.0000% obs/m to 32% obs/m)					
Sensitivity range	0.0003% obs/ft to 6.25% obs/ft (0.001% obs/m to 20% obs/m )					
Threshold setting range	Alert: 0.0003% obs/ft to 0.625% obs/ft (0.001% obs/m to 2.0% obs/m) Action: 0.0003% obs/ft to 0.625% obs/ft (0.001% obs/m to 2.0% obs/m) Fire1: 0.0003% obs/ft to 0.625% obs/ft (0.001% obs/m to 2.0% obs/m) Fire2: 0.0003% obs/ft to 6.25% obs/ft (0.001% obs/m 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					

### Note:

1. The sampled air temperature reaches detector ambient temperature upon entry into the detector. Refer to Xtralis design guides and application notes for sampled air pre-conditioning.
2. System design and regulatory requirements may restrict the monitoring area to a lesser amount.

**Table 4: IDNet communications compatibility reference**

Specification		Rating	
Communications reference	Details	IDNet addressable communications, with communications circuit isolated from input power, and controller-to-head communications	
	Compatibility reference, review for addition to installed systems	IDNet communications source	Firmware or revision
		4100ES and 4010ES FACUs	System firmware 6.02.02 or higher
		4007ES FACU	
		4010ES Main System Subordinate 2 w/IDNet2 (MSS2)	All revisions of firmware
		4010ES Extended System Subordinate (ESS)	
		4007ES NAC Power Supply (NACPS)	
		4007ES IDNAC Power Supply (IDNAC)	
		IDNet 2+2	
Addressing		Set IDNet base address through Xtralis VSC software. For four-pipe systems, the next sequential addresses are automatically assigned.	

## Product selection and ordering information

**Table 5: VESDA-E 4098-VEU product selection**

PID	Description
4098-VEU-A00	VESDA-E VEU with LEDs - Simplex
4098-VEU-A10	VESDA-E VEU with 3.5 in. display - Simplex

**Table 6: Spare parts**

PID	Description
VSP-960	VESDA-E mounting bracket
VSP-961	VESDA-E exhaust adaptor US
VSP-962	VESDA-E filter
VSP-962-20	VESDA-E filter, 20 pieces
VSP-963	VESDA-E aspirator
VSP-964-04	VESDA-E smoke detection chamber, MK4
VSP-965	VESDA-E sampling module