

Introduction

The Simplex VESDA-E VEP IDNet series of smoke detectors use advanced detection technology to provide early warning and nuisance alarm rejection to a wide range of applications. Built on the Flair detection technology and years of application experience, VEP detectors perform consistently over their lifetime through absolute calibration.

VESDA-E VEP aspirating smoke detector with onboard IDNet addressable communications

- Compatible with Simplex 4007ES, 4010ES, and 4100ES fire alarm control units (FACU).
- IDNet communications added to the VESDA-E VEP 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 VEP, 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 photo-diodes.

Installation, commissioning, and operation

With the VESDA-E VEP aspirator, you can use of a total of 427 ft (130 m) of sampling pipe in the one pipe model and 1,542 ft (470 m) of pipe in the four pipe model. Out-of-the-box operation is possible with AutoConfig which initiates airflow normalization. Xtralis ASPIRE and VSC software applications fully support the VEP, 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, and 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.

Listings reference

- UL
- FDA
- FCC
- CSFM

Features



Figure 1: Simplex VESDA-E VEP IDNet detector with LEDs, one-pipe: 4098-VEP-A00-1P



Figure 2: Simplex VESDA-E VEP IDNet detector with 3.5 in. display, four-pipe: 4098-VEP-A10-P

The Simplex VESDA-E VEP IDNet series of aspirating smoke detectors deliver a range of features that provide user value, including the following:

- One-pipe and four-pipe models are available for different applications
- 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 a 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 retains 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
- USB port for PC configuration, and firmware upgrade using a memory stick
- Two pre-configured GPIs, 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 VEP 3.5 in. display reference

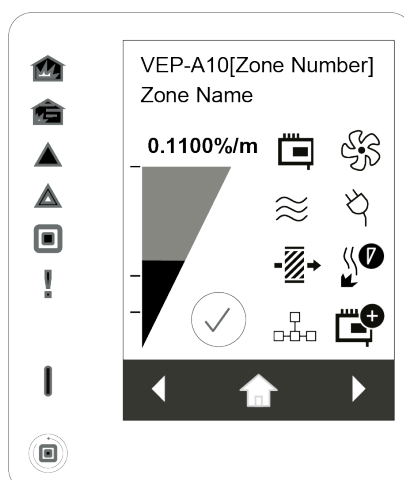


Figure 3: VESDA-E VEP 3.5 in display

Table 1: Display symbol reference

Symbol	Description
	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
	VESDAnet fault
	StaX module fault

Specifications

Table 2: VESDA-E VEP -VEP specifications

Specification	Rating						
	One-pipe VEP			Four-pipe VEP			
Supply voltage	18 VDC to 30 VDC (24 V nominal)						
Maximum current consumption	Quiescent: 0.53 A						
	In alarm: 0.57 A						
Peak Current	1.5 A						
Power consumption at 24 VDC	4098-VEP-A00-1P			4098-VEP-A00-P		4098-VEP-A10-P	
Aspirator setting	1	5		1	5	1	5
Power (quiescent)	0.32 A	0.32 A		0.28 A	0.36 A	0.32 A	0.40 A
Power (in alarm)	0.35 A	0.35 A		0.32 A	0.40 A	0.35 A	0.43 A
Weight	9.90 lbs (4.49 kg)			9.90 lbs (4.49 kg)		10.12 lbs (4.59 kg)	
Area coverage	10,764 sq. ft. (1,000 m ²)			21,528 sq. ft. (2,000 m ²)			
Pipe length (linear)	312 ft (95 m)			919 ft (280 m)			
Pipe length (branched)	427 ft (130 m)			1,542 ft (470 m)			
Pipe lengths depending on number of pipes in use	One pipe			One pipe	Two pipes	Three pipes	Four pipes
	312 ft (95 m)			361 ft (110 m)	328 ft (100 m)	262 ft (80 m)	230 ft (70 m)
StaX	PSU			PSU, Auto Pipe Clean			
Number of holes	22			80			
Minimum airflow for each pipe	15 l/m						
Ethernet Active Add	0.01 A						
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)						
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						
	Humidity: 5% to 95% RH, non-condensing						
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 ² to 2.1 mm ²)						
IDNet connection from IFC card terminal block	18 AWG to 14 AWG (0.75 mm ² to 2.5 mm ²)						
Dynamic range	0.0000% obs/ft to 10% obs/ft (0.000% obs/m to 32% obs/m)						
Sensitivity range	0.0016% obs/ft to 6.25% obs/ft (0.005 obs/m to 20% obs/m)						
Threshold setting range	Alert: 0.0016% obs/ft to 0.625% obs/ft (0.005% obs/m to 2.0% obs/m)						
	Action: 0.0016% obs/ft to 0.625% obs/ft (0.005% obs/m to 2.0% obs/m)						
	Fire1: 0.0031% obs/ft to 0.625% obs/ft (0.010%o bs/m to 2.0% obs/m)						
	Fire2: 0.0063% obs/ft to 6.25% obs/ft (0.020% obs/m to 20.0% obs/m)						
Software features	Event log with up to 20,000 events						
	Smoke level, user actions, alarms, and faults with time and date stamp						
	AutoLearn learns alarm thresholds and flow fault thresholds by monitoring the environment						

Note: 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.

Table 3: IDNet communications compatibility reference

Specification	Rating
Details	IDNet addressable communications, with communications circuit isolated from input power, and controller-to-head communications
	IDNet communications source
	4100ES and 4010ES FACUs
	4007ES FACU
	4010ES Main System Subordinate 2 w/IDNet2 (MSS2)
	4010ES Extended System Subordinate (ESS)
	4007ES NAC Power Supply (NACPS)
	4007ES IDNAC Power Supply (IDNAC)
Addressing	IDNet 2+2
	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 4: Simplex VESDA-E VEP IDNet detector product selection

PID	Description
4098-VEP-A00-1P	VESDA-E VEP, one pipe with LEDs - Simplex
4098-VEP-A00-P	VESDA-E VEP with LEDs - Simplex
4098-VEP-A10-P	VESDA-E VEP with 3.5 in. display - Simplex

Table 5: 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