VESDA® E™

Open Area - 2,000m²
Aspirating Smoke Detection

VdS

eurofyre
LIMITED

📖 Contents

Why Choose Eurofyre?

Based in the UK, Eurofyre Ltd is a privately owned company established in 2007. Our ambition is to provide the highest possible quality and level of service to all of our customers and we strive to achieve this by providing comprehensive online literature and specific training programs together with excellent pre and post-sale technical support.

The systems we promote and supply are designed to give users time to respond to possible threats before the loss of critical infrastructure, high value assets, business downtime and, most crucially, life.

After sales support

Understand your needs

Supply the solution

Provide a suitable solution

Technical assistance

Brands We Supply & Support

VESDA®   **VESDA® E™**   **ICAM™**

Complete Air Sampling Detection System Supplier

To meet the demands of today's air sampling and life safety requirements, we have positioned ourselves as a "complete ASD system supplier" to ensure optimum customer satisfaction.

The advantage of being a complete system supplier means there are no compatibility issues when it comes to choosing an aspirated smoke detection system. By providing a complete range, such as the latest VESDA-E high sensitivity aspirating smoke detection system, we can ensure you have a one stop shop for all necessary components including the ASD unit, PSU, pipe and fittings.

Our broad range of products include:

VESDA high sensitivity aspirating smoke detection systems	✓	Ancillary devices, spare parts & consumables	✓
VESDA-E high sensitivity aspirating smoke detection systems	✓	Filters	✓
ICAM high sensitivity aspirating smoke detection systems	✓	In-line gas detection	✓
25mm pipe & fittings in red, grey and white	✓	Power supplies	✓
3/4" pipe & fittings in red	✓	Programming equipment	✓
6mm pipe & fittings	✓	Software	✓

Eurofyre Pipe & Fittings

A key element in the performance of an aspirating smoke detection system is the network of specially designed air sampling pipe that constantly and efficiently transports air from the protected areas, back to a high sensitivity smoke detector such as the VESDA-E VEP.

Our pipe and fittings range has been manufactured to comply with the requirements of BS5391 Part 1, EN 61386-1 and EN54-20 and is produced using ABS (Acrylonitrile Butadiene Styrene) which has the most suitable physical properties for aspirating smoke detection, optimising performance with tensile strength, chemical resistance, ductility, weather-ability, heat-stability and process-ability.

Our wide range of pipe and fittings has a metric standard of 25mm external diameter; however, we also stock ¾". For retro-fit installations, imperial to metric conversion adaptors can be provided, which have been designed to work with any low pressure aspirating smoke detection system.

To identify its service as 'fire', the standard colour for aspirating pipework is red. However, we recognise that red is not always the colour of choice when it comes down to aspects such as aesthetics, therefore we also stock white and grey pipe, fittings and accessories.

Eurofyre's pipe and fittings range has been specially developed to work with a wide range of aspirating smoke detection systems including ICAM, VESDA and VESDA-E.

As well as pipe and fittings, we stock a wide range of accessories such as capillary air sampling kits, air sampling fittings, in-line filters and flexible tube.

Pipe Size

25mm

27mm (3/4inch)

Colour Range

Red - RAL 3020

White - RAL 9016

Grey - RAL 7011
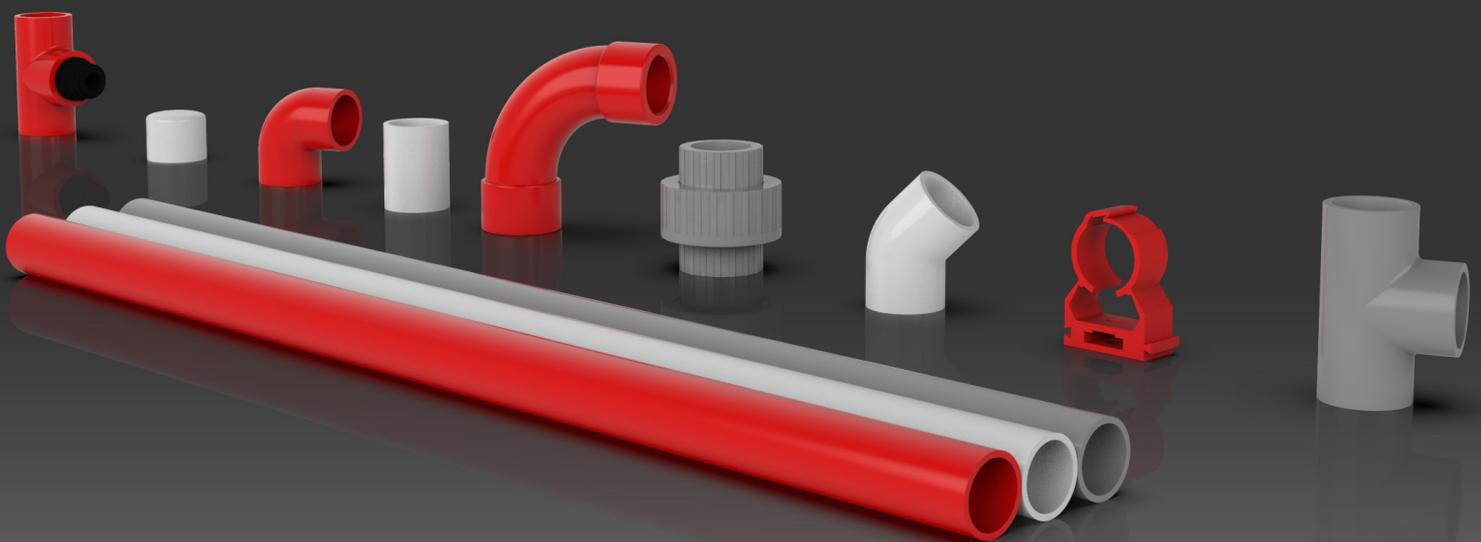
ℹ️ Air Sampling Design Assistance

The performance of an aspirating smoke detection system such as VESDA-E systems is largely dependant on the design of the pipe network that is used to transport air from the protected areas to the detector.

Eurofyre have many technical advantages to offer, one of which is the ability to provide expert assistance with the design of an air sampling pipe network.

The software that Eurofyre use to design these systems is compatible with VESDA, VESDA-E and ICAM and has been used by many system designers and installers for over 15 years. It provides the necessary tools to speed up the design process and ensure optimum network performance and installation quality. This software creates designs that are easy to implement and generates a list of all the components required and an Installation Data pack providing all the information needed to complete the installation.

❓ Assistance from Eurofyre

Fast Pipe Network Design Using the Pipe Design Wizard

1 We can quickly transcribe your pipe network design. Adding fittings such as pipe, elbows or sampling points as we tweak the design to suit. The software allows full flexibility in placement of any network components. For example, extra elbows can be introduced to direct the pipe around a ceiling beam. Once the layout is established, we enter the recommended performance criteria for the pipe network e.g. transport time, sensitivity etc. and using the Auto Balance function the software will automatically calculate sampling hole sizes (to suit the drill bit sizes you specify). Alternatively, we can manually set the hole sizes and review the predicted system performance.

The Ability to Save Environmental Design Parameters

2 One of the great time-saving features of the pipe design wizard is the ability to save environmental design parameters for particular applications. For example, certain applications require specific transport time and sampling hole pressures or certain environments have specific conditions such as low temperatures. These parameters can be saved and used in later projects.

Detailed Installation Pack

3 Once a purchase order is in place, an installation data pack which includes a series of reports that list the parameters and expected system performance will be sent direct to the customer/contractor. The data & diagrams from the installation pack can be printed or cut and pasted into other programs such as Microsoft Excel for further calculations or Microsoft Word for client reports, all of which are very useful when handing the installation over the to end-user.

Key Features

EN54:20, ISO 7240-20 approved ✓

Backward compatible with existing VESDA VLP installations ✓

Flair detection technology ✓

Multi stage filtration and optical protection ✓

Wide sensitivity range ✓

Overview

The VESDA-E VEP series of aspirating smoke detection uses advanced Flair detection technology to provide a very early warning of fire while minimising nuisance alarms. The VEP range offers absolute calibration and multi-stage filtration and optical protection with clean air barriers to provide continual detection performance. A smart on-board filter retains dust count and remaining filter life to allow maintenance to be scheduled in advance.

VESDA-E VEP detectors offer four alarm levels, a wide sensitivity range and use flow fault thresholds for each port to support changeable airflow conditions, making this range of detectors suitable for a host of applications.

Approvals

The VESDA-E VEP and components are fully approved by VdS and bears the CE mark to show that they comply with all the applicable Directives including the CPR, EMC and the Low Voltage Directive (LVD).

VdS

"In automatic fire detection and fire alarm systems"

0786-CPR-21346/7

VdS Approval No. G 214010
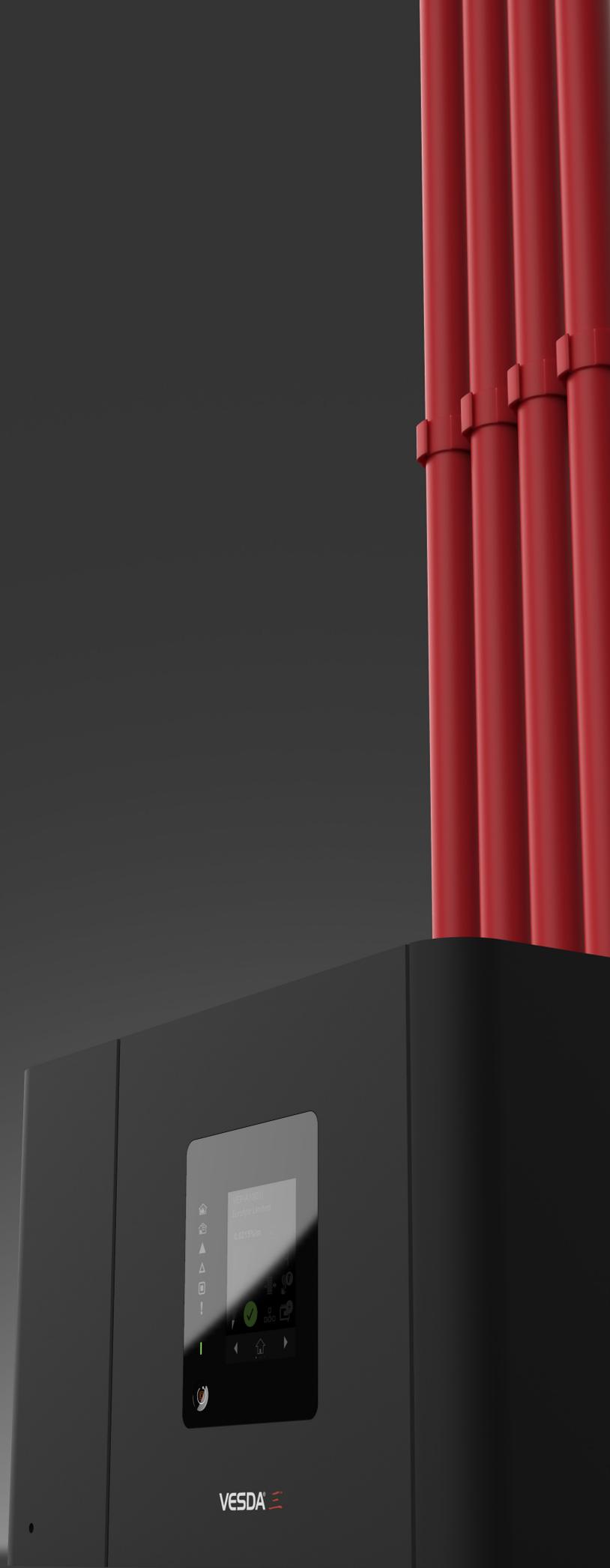
🏭 Typical Applications

The VESDA-E VEP is an aspirating smoke detector (ASD) that provides early warning of fire conditions by drawing air samples through a large-bore tube air-sampling network. This flexibility makes VESDA-E VEP detectors extremely flexible for use in a wide range of applications including:

Application		Application	
Accommodation	✓	Marine	✓
Hotels	✓	Nuclear Facilities	✓
Shops	✓	Oil & Gas	✓
Offices	✓	Portable Switch Rooms	✓
Correctional Facilities	✓	Power Generation	✓
Clean Rooms	✓	Records Storage	✓
Cold Storage	✓	Retail	✓
Cultural/Heritage	✓	Transportation	✓
Data & Telecom	✓	Wind Power Generation	✓
Education	✓	Warehousing	✓
Hospitals & Healthcare	✓	Underground Parking	✓
Insurance	✓	Utilities	✓

❓ How Does The VEP Work?

An air sampling pipe network collects samples from the protected area. The integrated aspirator draws air into the sampling pipe(s).

The air from each sampling pipe passes through an air flow sensor and then a sample of the air is drawn into the smoke detection chamber via the sampling module, after first passing through the replaceable filter.

A further filter provides filtered clean air to protect the optical surfaces inside the detection chamber from contamination.

The detection chamber uses a short wavelength laser light source in conjunction with photo-diodes and advanced imaging technology to achieve optimum response to a wide range of smoke types.

If the detected smoke is higher than the set alarm thresholds it is reported as an Alert, Action, Fire 1 or Fire 2 alarm condition.

Air is exhausted from the VEP-A00 and may be vented back into the protected zone.

Alarms can be signalled via Relays and VESDAnet. Ethernet and WiFi can be used for configuration and secondary monitoring, and a USB interface is provided for initial setup.

The detector has a LED user interface. A series of LEDs display Alarm, Fault, Disable and detector power on status. A button allows the user to Reset or Disable the detector.

Key Knowledge

Since pioneering Aspirating Smoke Detection (ASD) technology nearly 30 years ago, VESDA has been recognised as the best in the world, protecting personnel, irreplaceable assets and mission critical infrastructure in the world's most iconic locations.

VESDA-E is the most advanced, reliable, and flexible ASD system ever produced.

Pipe Lengths

VESDA-E VEP is equipped with a powerful aspirator that enables use of a total of 560m (branched) of sampling pipe in the four pipe model.

Linear Pipe Length Configurations

1 Pipe	110m (361 ft)
2 Pipes	100m (328ft)
3 Pipes	80m (262ft)
4 Pipes	70m (230ft)

Class Sensitivity

Max. Number of Holes Per Class

Class A	40 Holes
Class B	80 Holes
Class C	100 Holes

Multi Stage Filtration

The VESDA-E detector uses a two-stage filter to protect the optics of the detection head. The filter is made in a compact construction and is intended for single use. The filter removes dust and other dirt from the sucked air creating a protective barrier for the optics.

🌀 Flair Detection Technology

Flair is the revolutionary new detection chamber that forms the core of VESDA-E VEP, providing better detection, fewer nuisance alarms, higher stability, increased longevity and particle characterisation. The technology offers increased sensitivity – up to 15 times greater than VESDA VLP. The Flair Technology focuses on improving key aspects related to smoke detection including:

Detection Performance
  - Vastly better sensitivity
  - Faster response time

Detection Reliability
  - Operating temperature stability
  - Minimising nuisance alarms

Consistent Performance Over Time
  - During long term exposure to dust

Efficiency of Operation
  - Power consumption per unit area

🔄 AutoLearn™

The VESDA-E VEP has been designed to simplify commissioning processes. The AutoLearn functions allow the unit to assess its environment and setup appropriate alarm and flow thresholds.

Smoke
During the AutoLearn Smoke process, the detector determines the average smoke and peak smoke obscuration levels and sets suitable alarm thresholds for the operating environment. This process will minimize nuisance alarms due to normal environmental background variations.

Flow
During the AutoLearn Flow process, the detector normalises the airflow and then monitors over time the average, maximum and minimum air flow levels and sets suitable air flow thresholds that will not give rise to nuisance flow faults due to normal flow variations.

📶 Advanced and Effective Response

VEP provides best in class connectivity including WAN and Wireless. iVESDA application provides real time and remote access to VEP allowing advance service preparation saving time and money and avoiding multiples service visits.
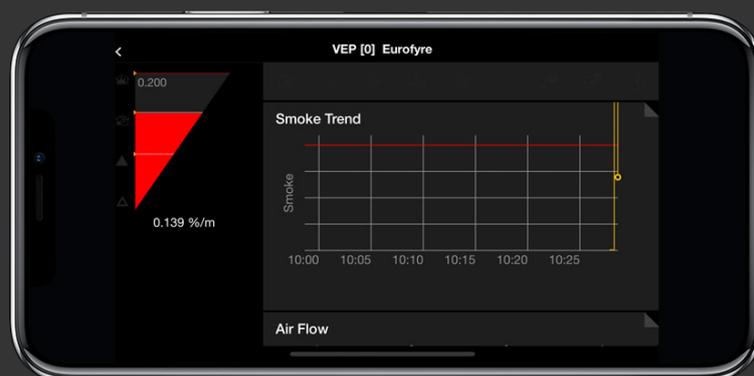
⇄ Backward Compatible

As detection technology advances, smoke and heat detection becomes increasingly sophisticated. New methods, components and algorithms mean that fire detection is more efficient, more reliable and more cost-effective than ever before.

❓ Why do Aspirating Smoke Detectors Need Updating?

While many older aspirating smoke detection devices are still as effective as they have ever been, the frequency of failures or servicing requirements may have steadily increased over time. This may be more apparent in devices used in dusty or dirty environments or those that have not been properly maintained.

A typical failure results in unplanned maintenance or total replacement; this can be a costly exercise as well as cause disruption to building operation.

ℹ️ VESDA-E VEP

VESDA-E VEP is fully compatible with existing VEDSA installations and occupies the same pipe, conduit, mounting footprint and electrical positioning as VESDA VLP. VEP is also compatible with existing VESDAnet installations, allowing both VESDA-E and legacy detectors to be monitored via the latest iVESDA application.

VESDA-E VEP

The VESDA-E VEP series of smoke detectors bring the latest and most advanced detection technology to provide very early warning and the best nuisance alarm rejection to a wide range of applications. Built on the Flair detection technology and years of application experience, VEP detectors deliver absolute calibration for lifetime performance and a range of revolutionary new features that deliver user value.

Flair Detection Technology
Flair is the revolutionary new detection chamber that forms the core of VESDA-E VEP, providing better detection, fewer nuisance alarms, higher stability, increased longevity and particle characterisation. Direct imaging of the sampled particles using a CMOS imager combined with multiple photo-diodes allow vastly more data that can be used to derive actionable information about the observed particles using analytics.

Installation, Commissioning and Operation
VESDA-E VEP is equipped with a powerful aspirator that provides a total pipe length of 560 m (1,837 ft). Out of box operation is made possible with AutoConfig which allows airflow normalisation and AutoLearn Smoke and Flow to be initiated from within the detector. VEP is fully supported by the ASPIRE-E and Xtralis VSC software applications which facilitate ease of pipe network design, system commissioning and maintenance.

Ethernet and WiFi Connectivity
VESDA devices communicate on VESDAnet which provides a robust bidirectional communication network allowing continued redundant operation even during single point wiring failures. VESDAnet enables primary reporting, centralized configuration, control, maintenance and monitoring.

Backward Compatibility
VESDA-E VEP is compatible with existing VESDA installations. The detector occupies the same mounting footprint, pipe, conduit and electrical connector positioning as VESDA VLP. VEP is also compatible with existing VESDAnet installations allowing monitoring of both VESDA-E and legacy detectors via the latest iVESDA application.

Ordering Information

VEP-A00-P	VEP-A10-P
VESDA-E VEP with LEDs, 4 Pipe	VESDA-E VEP with 3.5" Display, 4 Pipe

ⓘ VESDA-E Power Supplies

VESDA-E Power Supply Units are uniquely designed to complement the style and appearance of VESDA-E aspirating smoke detectors (ASD) and are technically matched to provide sufficient current and battery charging capacity to meet the requirement of EN54-4. The STX variants are VdS approved and CE marked to EN54-4 so are particularly suitable for use in territories where these approvals are required. They may also be suitable in territories where ISO 7240-4 is required.

Designed with the same width, colour and styling of the VESDA-E detectors, the power supplies visually blend with the VESDA-E detectors. They feature the same curved profile and also incorporate an internal channel which accommodates the exhaust of the VESDA-E detectors. This is particularly useful when it is necessary to run the exhaust pipe back to the protected area (back-venting).

VPS-220-STX, 0.5A Load / 14Ah Batteries (max)
This is the shallower unit within the range with a depth and width matching the VESDA-E detectors. Internally is an EN54-4 approved Power Supply rated to provide a 0.5 Amp continuous 24 Vdc supply while also charging the batteries (not supplied) which can be a 7, 12 or uniquely, 14 amp/hr arrangement. The unit is therefore able to power the VESDA-E VEP range of detectors for over 24 hours.

VPS-250-STX, 2A Load / 24Ah Batteries (max)
This is the deeper unit designed for installation with a VESDA-E VEU detector running at fan speeds upto 10. The internal charger is EN54-4 approved and is rated to provide a 2 Amp continuous 24 VDC supply. There is space for up to 24Ah batteries (not provided).
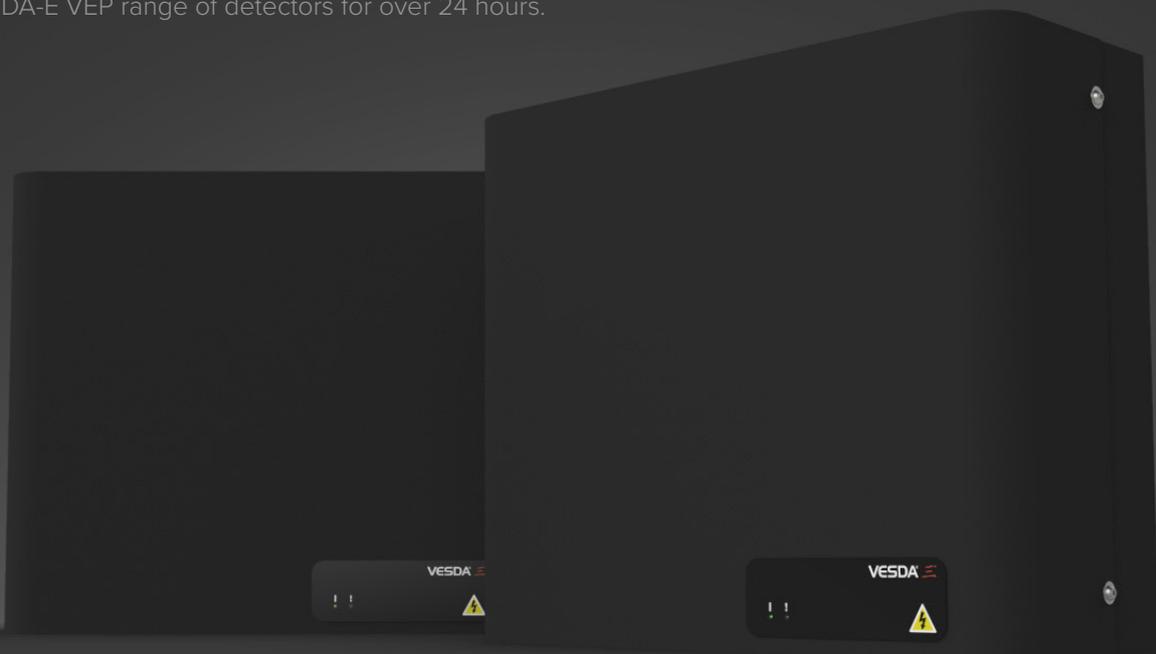
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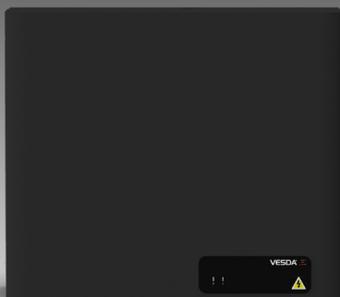
VPS-220-STX

VESDA-E 0.5A 7-14Ah PSU, Black
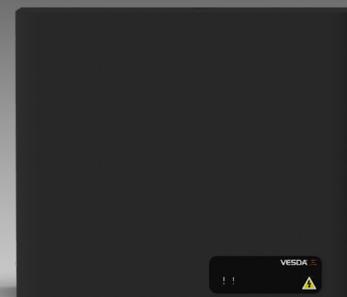
VPS-250-STX

VESDA-E 2A 12-24AH PSU, Black

Representative

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