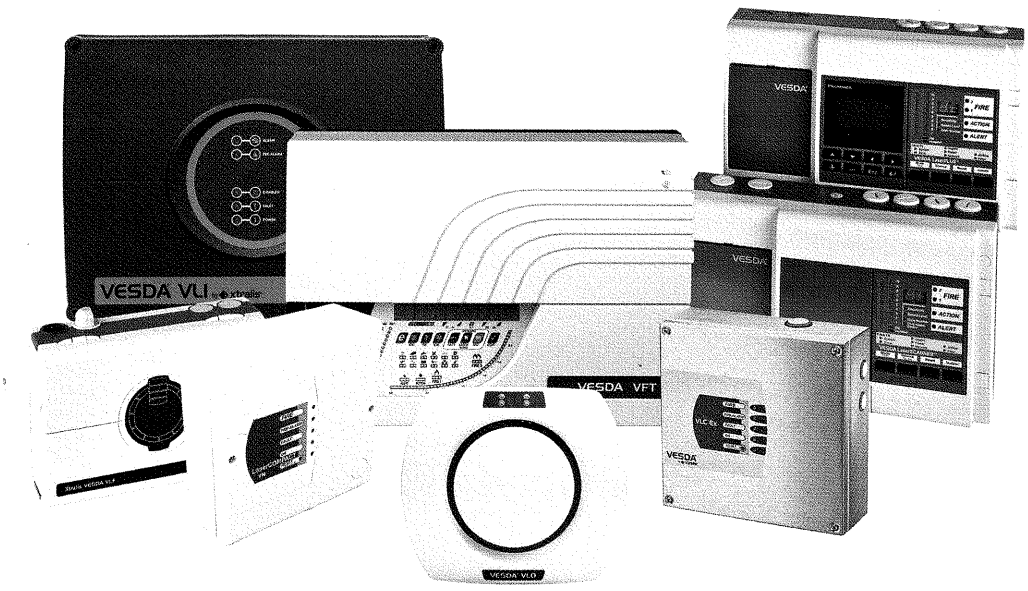
VESDA®

by xtralis®

The World's No. 1 Brand of Aspirating Smoke Detection



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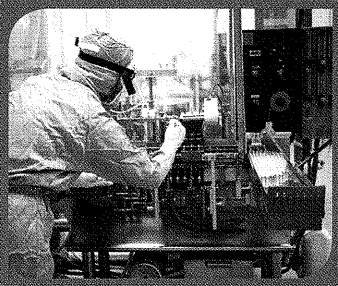




The Seven Reasons for **VESDA**

1 When business continuity is paramount

Is uptime a key business goal? Is service provision critical?

VESDA very early warning smoke detectors provide the earliest warning of a potential fire which buys time to investigate, intervene and avoid business disruption in addition to damage, downtime and the cost of a suppression release. Such early warning is critical for:

- Telecommunications facilities
- Server rooms
- Financial data centers
- Utilities
- Clean rooms
- Power generation facilities

2 When smoke is difficult to detect

Is high airflow diluting smoke, preventing it from reaching the ceiling so it can be detected? Is the smoke being trapped in ducts, pockets or voids? Is smoke stratifying into a mushroom cloud below a high ceiling, making it difficult to detect?

VESDA sampling points can be placed at the return air grille or in equipment cabinets to detect smoke as it is carried by the air. In large, open spaces, sampling points can be placed where the smoke goes — often some distance below the ceiling level. Suitable for:

- Server rooms
- Clean rooms
- Telecommunications facilities
- Warehouses
- Atria
- Indoor stadiums
- Theaters
- Convention centers

3 When maintenance access is difficult

Is the area to be protected inaccessible? Does maintenance on traditional fire detection systems cause disruptions and inconvenience your business?

VESDA detectors can be mounted in accessible locations to enable easy maintenance. Only the sampling pipe network is placed in the inaccessible area. Ideal for:

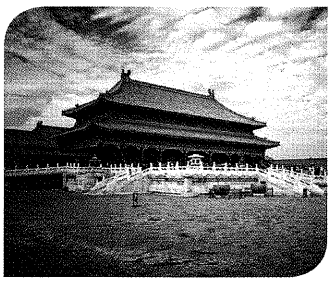
- Ceiling voids and sub-floor spaces
- Prisons and detention facilities
- Elevator shafts
- Ducts
- Production areas

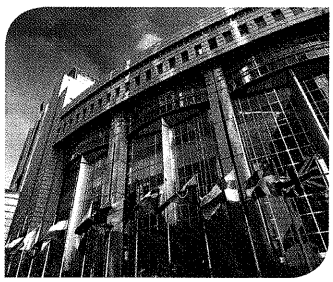
4 When unobtrusive detection is required

Is it important to preserve the internal design/ decoration of the building? Is vandalism a problem with the current smoke detection system?

A VESDA system can be installed with capillary sampling tubes, which are barely discernible to the human eye. The detectors can be placed in a cupboard or utility area. Great for:

- Modern offices
- Heritage buildings
- Cathedrals
- Prisons and detention centers
- Art galleries and museums
- Prestigious residences







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5 When evacuation is a challenge

Will the building be open to the general public? Will it house people who need extra help during an evacuation? Is evacuation difficult due to crowds or limited exits? What is the business impact of an evacuation?

The very early warning that VESDA systems provide allows the maximum time for evacuation. This is critical for:

- Shopping centers
- Hospitals
- Stadiums
- Underground tunnels
- Heritage buildings
- Facilities for children and the elderly

6 When suppression systems are present

Is suppression release costly and disruptive?

The very early warning provided by VESDA systems allows early intervention to prevent suppression releases. The multiple alarm levels of VESDA systems can be used to trigger different responses at different stages of a fire — from controlling air conditioning to initiating a suppression release. Applicable for:

- Communications hubs
- Server rooms
- Command stations
- Switch rooms

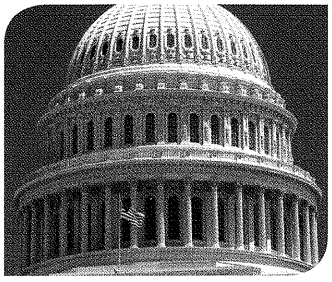
7 When environmental conditions are difficult

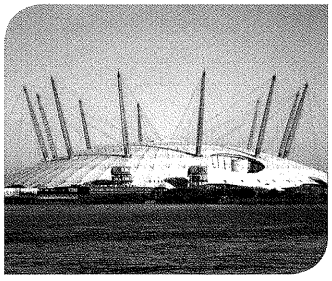
Are high background levels or industrial activities present in the area to be protected?

VESDA VLI detector, with its ruggedized enclosure and patented long-life, fail-safe intelligent filter technology, is specifically designed for industrial applications with harsh and difficult environments. The VLI detectors can be installed within the sampling area or remote from the detection area with only the sampling pipes located in the protected area. The sampled air can be filtered, warmed or cooled before reaching the detector. Ideal for:

- Mines
- Water treatment plants
- Manufacturing and processing plants
- Fertilizer plants
- Power generation facilities
- Textile plants
- Timber, pulp and paper plants
- Transportation







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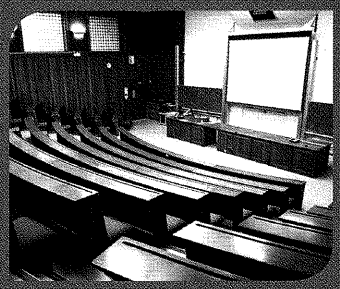
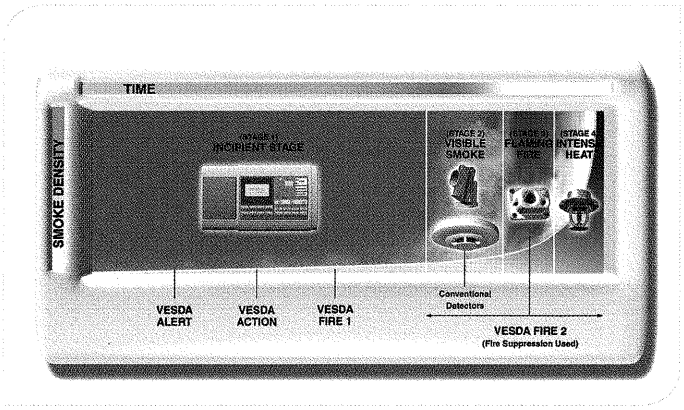


VESDA Aspirating Smoke Detection (ASD)

The world's no. 1 ASD brand

VESDA very early warning smoke detection solutions provide the earliest possible warning of an impending fire hazard. VESDA buys time to investigate an alarm and initiate an appropriate response to prevent injury, property damage or business disruption. And because VESDA has the industry's widest sensitivity range and multi-level alarms, even minute levels of smoke can be detected before a fire has time to escalate.

As the No. 1 ASD brand specified by fire professionals around the world, VESDA is synonymous with reliable, high-performance fire detection.

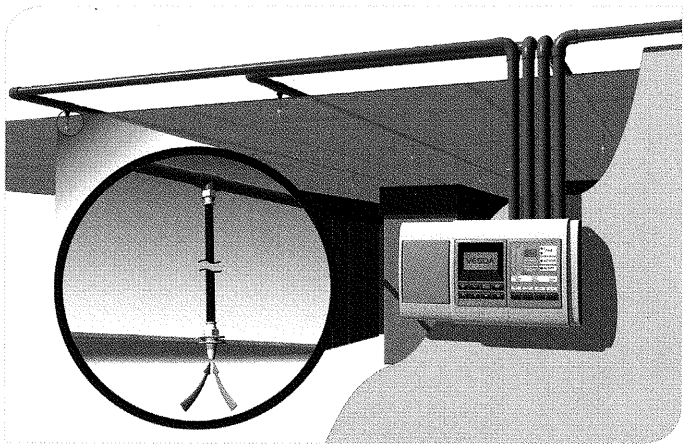


This diagram shows the progression of a fire over time. Note that the incipient stage of a fire provides the widest window of opportunity to detect and control the spread. VESDA detectors can be configured to generate multiple alarms within the incipient stage. They also can be configured to generate an additional alarm (Fire 2) at the advanced stages of a fire. This feature is unique to VESDA and takes advantage of its wide sensitivity range that enables one detector to monitor the entire progression of a fire.

How VESDA works

VESDA works by continuously drawing air into a distributed pipe network via a high-efficiency aspirator. The air sample then passes through a dual-stage filter. The first stage removes dust and dirt from the air sample before it enters the laser detection chamber. The second, ultra-fine stage provides an additional clean-air supply to keep the detector's optical surfaces free from contamination, ensuring consistent absolute detection and long detector life as well as minimizing nuisance alarms.

From the filter, the air sample goes through the detection chamber where it is exposed to a laser light source. When smoke is present, light is scattered within the detection chamber and is instantly identified by the highly sensitive receiver system. The signal is then processed and presented via a bar-graph display, alarm threshold indicators and/or graphic display. VESDA detectors are able to communicate this information to a fire alarm control panel, a software management system, or a building management system via relays or a High Level Interface (HLI).



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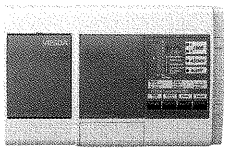
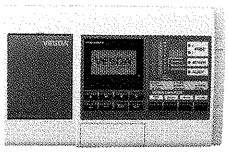
VESDA Product Range

VESDA VLS



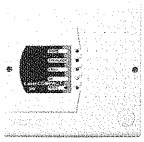
The VESDA VLS locates the origin of smoke by identifying the sector (pipe) with the highest level of smoke and then continues to sample air from all sectors to monitor fire growth. The VESDA VLS also provides four alarm levels for each individual pipe (Alert, Action, Fire 1 and Fire 2) and provides individual pipe addressability and settings. It protects areas up to 2,000 m² (20,000 sq. ft.).

VESDA VLP



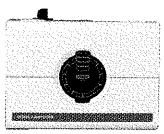
The VESDA VLP is the flagship in the VESDA product range. Like all VESDA detectors, it detects fire at the earliest possible stage and reliably measures very low to high concentrations of smoke. It has the world's widest sensitivity range of 0.005 to 20% obs/m (0.0015 to 6% obs/ft). VESDA VLP supports four configurable alarm levels (Alert, Action, Fire 1 and Fire 2) and protects areas up to 2,000 m² (20,000 sq. ft.).

VESDA VLC



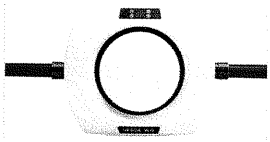
VESDA VLC offers protection for small to medium areas that require cost-effective very early warning. It offers the same wide sensitivity range as the VESDA VLP and VESDA VLS — 0.005 to 20% obs/m (0.0015 to 6% obs/ft). The VESDA VLC supports three configurable alarm levels (Alert, Pre-Alarm and Fire) and comes in two versions. One version interfaces via relays only (RO) and the other across either relays or VESDAnet (VN).

VESDA VLF



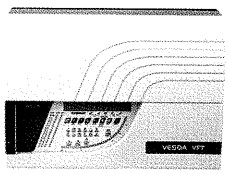
The VESDA VLF delivers advanced and cost-effective very early warning for small environments. The VESDA VLF-250 model protects areas up to 250 m² (2,500 sq. ft.), and the VESDA VLF-500 model covers up to 500 m² (5,000 sq. ft.). In addition to world leading and well-established VESDA features VESDA VLF provides a new range of features and built-in intelligence for quick installation, commissioning and servicing.

VESDA VLQ



The VESDA VLQ detector is a cost-effective ASD solution that meets the unique needs of numerous small area applications of up to 100 m² (1,000 sq. ft.). Examples of these include Telco landline remote offices, base station controllers, remote base stations, small server room and many other small important rooms. VLQ combines the benefits of very early warning with simplified and flexible ASD offering at the lowest total cost of ownership possible.

VESDA VFT



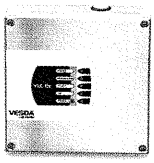
The VESDA VFT is a unique and versatile high-sensitivity ASD that is capable of pinpointing the source of incipient smoke to speed response, enhance investigation, and minimize business disruption and downtime. This advanced detector provides intelligent addressibility to identify up to 15 protected areas via microbore tubes.

VESDA VLI



The VESDA VLI is an industry first early warning aspirating smoke detection system, designed to protect industrial applications including mining, manufacturing, power generation facilities, waste treatment plants and more up to 2000 m² (20,000 sq. ft.). The VLI detector combines a patented fail-safe Intelligent Filter with Clean Air Zero and clean-air barrier for optics protection complementing absolute detection and providing longer detection chamber life all enclosed in a robust IP66-rated enclosure.

VESDA VLC-EX



The VESDA VLC-EX detector has been specifically designed to provide all the benefits of aspirating smoke detection, including very early warning, for the protection of hazardous applications with Zone 2 classification. It offers the same wide sensitivity range as the VESDA VLP and VESDA VLS — 0.005 to 20% obs/m (0.0015 to 6% obs/ft). The VESDA VLC-EX supports three configurable alarm levels (Alert, Pre-Alarm and Fire) and comes in two versions. One version interfaces via relays only (RO) and the other across either relays or VESDAnet (VN). The VLC-EX incorporates the well-proven VESDA VLP detection technology into an IP54 rated stainless steel enclosure.

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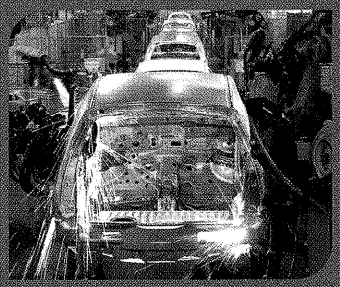
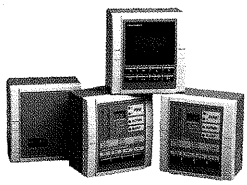




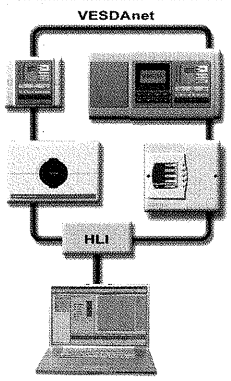
VESDA Accessories

Remote Displays and Programmers



The VESDA display module monitors and reports the status of a detector, providing visual representation of smoke levels along with all alarm and fault conditions. The menu-driven VESDA Programmer allows the user to conveniently configure, commission and maintain the VESDA system, as well as program each individual detector.

VESDAnet™



VESDAnet is a comprehensive, fault-tolerant, "closed," two-wire communications loop that links VESDA detectors, displays, programmers and remote relay modules on a daisy-chained loop. VESDAnet enables a number of units to be programmed together from one or more locations and automatically detects communication failures. It also easily interfaces with systems external to the network, such as intelligent fire alarm panels and building management systems.

VESDA Pipe



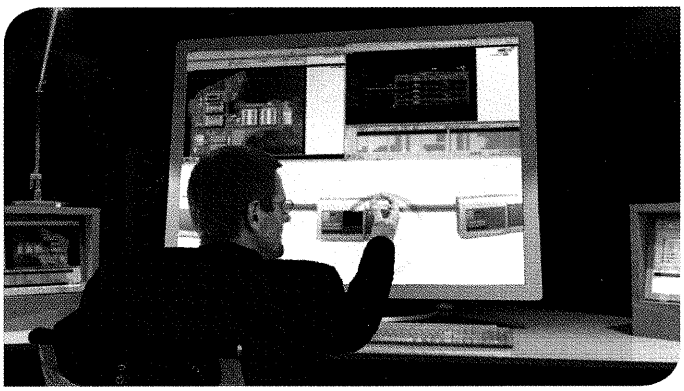
A key element in the performance of a VESDA ASD system is the sampling pipe network that actively transports air from the protected area to the detector. VESDA offers an extensive range of pipe and fittings to suit all application needs, ensuring a quality system is installed every time.

Some pipes and fittings are not available in certain countries. Please check with your local Xtralis office prior to ordering.

VESDA Software

Xtralis VSM4™

The VSM software package allows the user to monitor, configure and control a VESDA system from a central location via a VESDAnet communication loop or directly to VESDA detectors. Real-time and historical events for a single detector or multiple networks of detectors can be collected over a local- or wide-area network. The data then can be processed and presented in either report or graphical format — even graphically on site floor plans.



Xtralis VSC™

The VSC software package can be used to configure, commission and maintain VESDA detectors. The software provides high-level programming flexibility through its on-line and off-line configuration capabilities. Rapid diagnostic abilities, concurrent configuration views, compare/merge functionality, and simultaneous smoke-trend graphing of multiple detectors are other standard features designed to simplify operation and installation setup.

VESDA ASPIRE2™

VESDA ASPIRE2 is the latest version of VESDA sampling pipe network design and modeling software. It aids in the design and evaluation process for basic to very complex pipe-network layouts. Key features, such as design wizards, 3-D isometric views, an automated design verification process, and a new AutoBalance capability, ensure that a tailored pipe layout is easily achieved. The Installation Data Pack (IDP) generates a series of reports with parameters, required materials and expected system performance so installation and commissioning engineers receive this information clearly.

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VESDA Detector Configurations

Features	VLP	VLS	VLC VESDAnet (VN)	VLC Relays Only (RO)	VLF 250/500	VLQ	VFT-15	Industrial VESDA VLI	VLC-EX
Worldwide Certificates	LPCB, VdS, AFNOR, UL, ULC, UL268A (in-duct application), FM, NY-MEA, CSFM, ActivFire, CCCF, VNIIPO, CPR					UL, ULC, LPCB, VNIIPO, CPR	VdS, UL, ULC, FM, AFNOR, VNIIPO, CPR	UL, ULC, FM, ActivFire, LPCB, VdS, CPR	ATEX, IECEx, UL, FM, CPR
Hazardous Area Approval (FM Class 1, Div 2, Groups A, B, C, D)	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes
Min Fire 1 Threshold	0.015% obs/m (0.0046% obs/ft)				0.025% obs/m (0.008% obs/ft)	0.15% obs/m (0.046% obs/ft)	0.01% obs/m (0.003% obs/ft).	0.15%/m (0.046%/ft)	0.015% obs/m (0.0046% obs/ft)
Detection Range	0.005 - 20% obs/m (0.0015 - 6.0% obs/ft)				0.025 - 20% obs/m (0.008 - 6.0% obs/ft)	0.005 - 3.0% obs/m (0.0015 - 0.915% obs/ft)	0.001 - 20% obs/m (0.0003 - 6.0% obs/ft)	0.005 - 20.0% obs/m (0.0015 - 6.0% obs/ft)	0.005 - 20% obs/m (0.0015 - 6.0% obs/ft)
Two Stage Filter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Patented Intelligent Filter Secondary Foam Filter Sub-sampling Probe	Yes
Area Coverage (Maximum)	2,000 m² (20,000 sq ft)	2,000 m² (20,000 sq ft)	800 m² (8,000 sq ft)	800 m² (8,000 sq ft)	250/500 m² (2,500/5,000 sq ft)	100 m² (1,000 sq. ft)	1,500 m² (15,000 sq ft)	2,000 m² (20,000 sq. ft)	800 m² (8,000 sq.ft)
Multiple Pipe Addressability	No	Up to 4	No	No	No	No	Up to 15	No	No
Total Number of Alarm Thresholds	4 (Day/Night)	16 (Day/Night)	3	3	4 (Day/Night)	2	60 (Day/Night)	4 (Day/Night)	3
Relay Outputs	7	7 or 12 relays	3	3	3 (Expandable to 6)	3	5 (Expandable to 21)	5	3
On-board Memory (Max. Events)	18,000	18,000	12,000	12,000	18,000	Up to 1,000	Up to 20,000	18,000	12,000
Flow Sensor Circuit (one per pipe inlet)	4	4	1	1	1	1	1 + 1 in chamber	5	1
IP Rating	IP30	IP30	IP30	IP30	IP30	IP30	IP30	IP66	IP54
AutoLearn™ (Smoke/Flow)	Yes (Smoke)	Yes (Smoke)	Yes (Smoke)	Yes (Smoke)	AutoLearn Smoke™ AutoLearn Flow™	Yes (Smoke)	No	AutoLearn Smoke™ AutoLearn Flow™	Yes (Smoke)
EN54-20 Max. no of Holes (Class A / B / C)	30 / 60 / 100	40 / 40 / 60	30 / 36 / 40	30 / 36 / 40	VLF 250 12 / 12 / 12; VLF 500 30 / 30 / 30	4 / 4 / 4	15 / 15 / 15	24 / 28 / 60	30 / 36 / 40
Bar Graph/Indicator LED	Local or Remote (20 segment bargraph display)	Local or Remote (20 segment bargraph display)	Local (5 on-board LEDs). Remote (20 segment bargraph display)	Local (5 on-board LEDs)	Local (7 on-board LEDs 10 Segment Circular Display) Remote display when fitted with VESDAnet card	Local (5 onboard LEDs) 2x7-segment LED display	Yes	Local (5 on-board LEDs) Remote display for VLI-885	As per VLC (VN) & VLC (RO)
Programming Tools - On-board Programming module - Handheld Programmer - PC Software (VSC, VSM)	Yes	Yes	Yes	Programmed via RS232 direct connection to PC using VSC™	Programmed via RS232 direct connection to PC using VSC™ or Programmer when VN card is fitted	Onboard DIP switches Xtralis QSC	On-board programmer and PC Software (VSC/VSM4)	BACnet over Ethernet Local USB configuration port Connection to PC using VSC/VSM4 Programmer for VLI-885	As per VLC (VN) & VLC (RO)
VESDAnet™									
Max. No. of devices/ detectors per loop	200/100	200/100	200/100	N/A	200/100 (with VN Card)	N/A	N/A	200/100 (VLI-885)	200/100 (VN version)
Max. Distance between Devices	1,300 m (4,000 ft)	1,300 m (4,000 ft)	1,300 m (4,000 ft)	N/A	1,300 m (with VN Card)	N/A	N/A	1,300 m (4,000 ft) (VLI-885)	1,300 m (VN version)
Computer-based Management via VSM	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes	Yes (VN version)
Remote Relay Modules - 7 relay version - 12 relay version	VRT-500 N/A	VRT-501 VRT-900	VRT-500 N/A	N/A	VRT-500 N/A	N/A	N/A	VRT-500 N/A	VRT-500 (VN version)
Compatible Remote Bargraph Displays - Display, 7 relays - Display, 12 relays - Display, no relays	VRT-200 N/A VRT-600	VRT-400 VRT-800 VRT-700	VRT-J00 N/A VRT-K00	N/A	VRT-V00 N/A VRT-W00 (with VN Card)	N/A	N/A	VRT-Q00 N/A VRT-T00 (VLI-885)	As per VLC (VN) & VLC (RO)

About Xtralis

Xtralis® is the leading global provider of converged solutions for the early detection and remote visual verification of fire, gas and perimeter threats.

Our technologies prevent disasters by giving users time to respond before life, critical infrastructure or business continuity is compromised. We protect high-value and irreplaceable assets belonging to the world's top governments and businesses. Our brands include the VESDA-E – the next generation of aspirating smoke detection technology; VESDA® – the world's No.1 very early warning aspirating smoke detection (ASD) systems; ICAM™ for flexible ASD; ECO™ – Gas detection & environmental monitoring modules for VESDA & ICAM systems; OSID™ – easy to use smoke detection for open areas; ADPRO® –passive infrared sensors, perimeter, multi-site, and enterprise security; HeiTel™ – digital video remote monitoring; and, ASIM® – intelligent traffic detection.

To learn more, please visit us at www.xtralis.com.

Learn more: **www.xtralis.com/vesda**

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UK and Europe +44 1442 242 330 D-A-CH +49 431 23284 1 The Americas +1 781 740 2223

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