The VESDA VLF-500 detector is a very early warning smoke detector designed to protect small, business-critical environments of less than 500 m² (5,380 sq. ft.).

The detector works by continually drawing air into sampling holes in a pipe network. The air is filtered and passed into a detection chamber where light scattering technology detects the presence of very small amounts of smoke. Detector status information is communicated on the detector display and via relays or optional interface cards.

**Out-of-the-box operation**

The VLF can be installed and commissioned out-of-the-box without the need for a special interface or software programming tools.

In operation, the unique Smoke Dial™ display provides the user with an instant understanding of a smoke event, even from a distance. Should a fault occur, the user simply opens the field service door and activates the Instant Fault Finder feature to determine the specific fault condition. This information can then be passed onto their fire service company, ensuring that service technicians arrive onsite fully prepared.

**Ultrasonic Flow Sensing**

The patent-pending Ultrasonic Flow Sensing used in the VLF provides a direct reading of the sampling pipe flow rate. The system is immune to air temperature and pressure changes and is unaffected by contamination. The VLF is the first air sampling smoke detector to use ultrasonic flow sensing.

**Features**

- Out-of-the-Box Installation and Commissioning
- Ultrasonic Airflow Sensing
- Laser-Based Absolute Smoke Detection
- Pre-engineered pipe network designs
- Programmable Alarm Thresholds
- Clean air barrier optics protection
- Instant Recognition Display
- Instant Fault Finder™
- AutoLearn™ Smoke
- AutoLearn™ Flow
- Field Service Access Door
- Multiple Event Logging in separate logs
- Event log – up to 18000 events
- Offline/online configuration capability
- Up to 500 m² (5,380 sq. ft.) coverage*

**Listings/Approvals**

- UL
- ULC
- CCC
- FM
- ActivFire
- CE
- LPCB
- VdS
- VNIIPO
- NF
- EN 54-20
  - Class A (30 holes / 0.05% obs/m)
  - Class B (30 holes / 0.15% obs/m)
  - Class C (30 holes / 0.32% obs/m)

Classification of any configuration is determined using ASPIRE.

Regional approvals listings and regulatory compliance vary between VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.
Specifications

Input Power
Voltage: 24V DC Nominal (18-30 V DC)
Current @ 24 VDC: 410 mA nominal, 490 mA in alarm

Dimensions (W x H x D)
256 mm x 183 mm x 92 mm (10 1/8 in x 7 1/8 in x 3 5/8 in)

Weight
Approx. 2 kg (4.4 lbs)

IP Rating
IP30

Mounting
Upright, inverted or horizontal

Operating Conditions*
Ambient:
0°C to 30°C (32°F to 86°F)*

Tested (EN54-20):
-10°C to 55°C (14°F to 131°F)

Sampled Air**: -20°C to 50°C (-4°F to 140°F)

Humidity:
5% to 95% RH, non-condensing

Sampling Network
Maximum pipe lengths:
1 x 50 m (150 ft) (Max. 24 holes)
2 x 30 m (90 ft) per branch (Max. 12 holes per branch)

Sampling Hole Options:
Pre-Engineered Option or Maximum Pipe length in accordance with Pipe Modelling Design Tool (ASPIRE™)

Air Inlet Pipe
Accepts both metric and American standard pipe sizes
Metric: 25 mm (1.05 in.) American Pipe: IPS 21 mm (¾ in.)

Area Coverage
Up to 500 m² (5,380 sq. ft.) depending on local codes and standards

Relay Outputs
3 changeover relays (Fire 1, Action, Fault), Contacts rated 2A @ 30 VDC (max)
NO/NC Contacts

Cable Access
3 x 25 mm (1” ID) in. cable entries (1 rear entry, 2 top entry)

Cable Termination
Screw Terminals 0.2-2.5 mm² (30-12 AWG)

Interfaces
Shown in Terminal Block Connections diagram, to right, plus an RS232 Programming Port.

General Purpose Input (GPI) interface offers:
- Reset, Disable, Standby
- Alarm set 1, Alarm set 2
- External Input functions.

Alarm Threshold Setting Range
Fire 1, Fire 2
Individual Alarm Delays
Two Alarm Threshold Settings

Display
- 4 Alarm State Indicators
- Smoke Level Indicator
- Reset, Disable and Test Controls

Event Log
Up to 1800 events, time and date stamped in separate, non-volatile, logs for:
- Smoke Level, Flow Level, Detector Status and Faults

AutoLearn Smoke & Flow
- Automatically set acceptable alarm thresholds for both smoke and flow levels
- Minimum 15 minutes, maximum 15 days (default 14 days)
- During AutoLearn, thresholds are NOT changed from pre-set values

Warranty Period
2 years

Ordering Information:
VLF-500-00: VESDA VLF. English language set, English display labels
VLF-500-01: VESDA VLF. European language set, International display labels
VLF-500-02: VESDA VLF. English + Asian language set, International display labels
VLF-500-04: VESDA VLF. English + Russian language set, International display labels
VLF-500-05: VESDA VLF. English + Eastern Euro language set, International display labels
VIC-010: VESDAAnet Interface Card
VIC-020: Multifunction Control Card (MCC)
VIC-030: Multifunction Control Card (MCC) with Monitored Powered Output (MPO)
VSP-005: Filter Cartridge
VSP-715: Aspirator for VESDA VLF-500

Display

The display provided to the user includes a Smoke Dial™ and alarm and status indicators.

When the field service access door is open, the user has access to the RESET ( ), DISABLE ( ), and Instant Fault Finder functions.

Legend of fault indicators
1 Filter 6 External Device/PSU
2 Aspirator 7 Interface card
3 High flow 8 Field wiring
4 Low flow 9 AutoLearn Fail
5 n/a 10 Detector failure

Terminal Block Connections

Approvals Compliance
Please refer to the Product Guide for details regarding compliant design, installation and commissioning.

www.xtralis.com
UK and Europe +44 1442 242 330 D-A-CH +49 431 23284 1 The Americas +1 781 740 2223
Middle East +922 6 588 5822 Asia +86 21 5240 0077 Australia and New Zealand +61 3 9536 7000
The contents of this document are provided on an "as is" basis. No representation or warranty (either express or implied) is made to the completeness, accuracy or timeliness of the contents of this document. The manufacturer reserves the right to change designs or specifications without obligation and without further notice. Except as otherwise provided, all warranties, express or implied, including without limitation any implied warranties of merchantability and fitness for a particular purpose are expressly excluded.

VESDA is a trademark of Xtralis and/or its subsidiaries in the United States and/or other countries. Other brand names mentioned herein are for identification purposes only and may be trademarks of their respective holder(s). Your use of this document does not constitute or create a licence or any other right to use the name and/or trademark and/or logo.

This document is subject to copyright owned by Xtralis. You agree not to copy, communicate to the public, adapt, distribute, transfer, sell, modify or publish any contents of this document without the express prior written consent of Xtralis.