VESDA VLC

VLC-500 and VLC-505



Introduction

The VESDA VLC detector has been specifically designed to provide all the benefits of aspirating smoke detection, including very early warning, in single environment small areas and where space is a premium.

The VLC combines the well-proven VESDA VLP detection technology with a modified aspirator design, and incorporates them into a compact enclosure with a simplified display.

Two variants and a remote display option

The VLC is available in two versions, one that interfaces via relays only (RO) and one that interfaces via relays and VESDAnet (VN).

The VN version is compatible with the remote Display Module, which allows the current status of the detector to be reported in the most convenient location. The remote Display Module has 7 remote relays to support any combination of signalling that may be demanded by the application. The VN version allows several detectors to be linked together on VESDAnet thereby allowing one to act as a reference detector for other VESDA detectors.

Description

The VLC is made up of two parts: the main enclosure and the front cover.

The main enclosure houses all the key components of the detector. All non-serviceable items like the main processor board and detector chamber are mounted away from the general access area, protecting them during the installation and service process.

The front cover includes:

- 5 LEDs: Fire, Pre-Alarm/Alert, Fault, OK, Reset/Isolate
- Reset/Isolate Push Button (press to reset, press and hold to isolate)

Features

- Absolute smoke detection
- Wide sensitivity range
- Single pipe inlet
- Five (5) status LEDs
- Referencing
- VESDAnet communication (VN)
- Clean air barrier optics protection
- Three (3) Alarm Levels
- Three (3) Programmable Relays
- Air flow monitoring
- Optional remote display and relay capability
- Simple mounting design
- AutoLearn™

Approvals/Listings*

- UL
- ULC
- FM
- CCC
- ActivFire
- CE
- LPCB
- VdS
- NF
- VNIIPO
- EN 54-20
  - Class A (30 holes / 0.05% obs/m)
  - Class B (36 holes / 0.09% obs/m)
  - Class C (40 holes / 0.165% obs/m)

Classification of any configuration is determined using ASPIRE2.

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

*Special versions of the products are available which carry Marine Approvals. Please refer to separate data sheet (doc. no. 11655).

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VESDA VLC

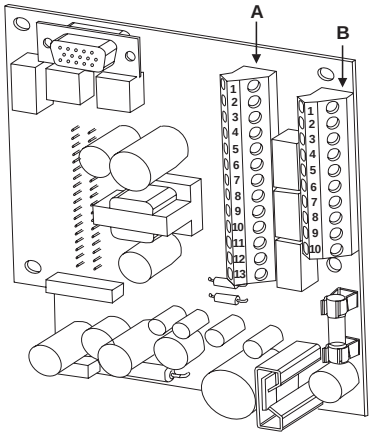
VLC-500 and VLC-505

How it works

Air is continually drawn through a simple pipe network to a central detector by a high efficiency aspirator. Air entering the unit passes a flow sensor before a sample is passed through a dual-stage dust filter (the majority of air is exhausted from the detector and back-vented to the protected area). The first stage removes dust and dirt from the air sample before it enters the chamber for smoke detection. The second, ultra-fine stage provides a clean air supply to be used inside the detection chamber to form clean air barriers, which protect the optical surfaces from contamination.

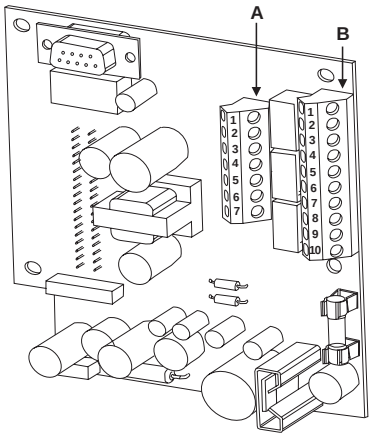
The detection chamber uses a stable, highly efficient laser light source and unique sensor configuration to achieve the optimum response to a wide range of smoke types. When smoke passes through the detection chamber it creates light scatter which is detected by the very sensitive sensor circuitry.

The status of the detector, all alarms, service and fault events, are monitored and logged with time and date stamps. Status reporting can be transmitted via simple relay connections or across the advanced VESDAnet communications network (VN version only).



VLC Termination Card (VN)

Terminal A		Terminal B	
1	Bias (-) (GND)	1	Shield
2	Reset (-)	2	VESDAnet-A (-)
3	Reset (+)	3	VESDAnet-A (+)
4	Bias (+)	4	Shield
5	LED (-) (GND)	5	VESDAnet-B (-)
6	LED (+)	6	VESDAnet-B (+)
7	FIRE (NO)	7	Power (-)
8	FIRE (C)	8	Power (+)
9	PRE-ALARM (NO)	9	Power (-)
10	PRE-ALARM (C)	10	Power (+)
11	FAULT (NO)		
12	FAULT (C)		
13	FAULT (NC)		



VLC Termination Card (RO)

Terminal A		Terminal B	
1	FIRE (NO)	1	Bias (-) (GND)
2	FIRE (C)	2	Reset (-)
3	PRE-ALARM (NO)	3	Reset (+)
4	PRE-ALARM (C)	4	Bias (+)
5	FAULT (NO)	5	LED (-) (GND)
6	FAULT (C)	6	LED (+)
7	FAULT (NC)	7	Power (-)
		8	Power (+)
		9	Power (-)
		10	Power (+)

Ordering Information

Product	Part number
VESDA VLC – VESDAnet	VLC-505
VESDA VLC – Relays Only	VLC-500
Remote Display (relays)	VRT-J00
Remote Display (no relays)	VRT-K00
Remote Relays (no display)	VRT-500

Approvals Compliance

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

Specifications

Supply voltage:
18 to 30 VDC

Power consumption:
5.4 W quiescent, 5.9 W with alarm

Current consumption:
225 mA quiescent, 245 mA with alarm

Fuse rating:
1.6 A

Dimensions (WHD):
225 mm x 225 mm x 85 mm (8 7/8" x 8 7/8"x 3 3/8")

Weight:
1.9 kg (4.2 lbs.)

Operating conditions:
Ambient: 0°C to 39°C (32°F to 103°F) *
Tested: -10°C to 55°C (14°F to 131°F)
Sampled Air: -20°C to 60°C (-4°F to 140°F)
Humidity: 10% to 95% RH, non-condensing

Storage conditions (non-operational):
Humidity: Dry (<95%)
Temperature: 0° to 85° C (32°F to 185°F)
Must not be exposed to sunlight or other radiation sources

Sampling network:
Maximum area of coverage
- Code compliant: 800 m² (8000 sq.ft)
- Maximum (120sec transport time): 2,370 m² (25,500 sq.ft). Local code requirements shall take precedence

Maximum pipe lengths:
1 x 80 m (260ft), 2 x 50 m (164ft)

Computer design tool:
ASPIRE2™

Pipe:
Internal Diameter 15 mm–21 mm (9/16"–7/8")
External Diameter 25 mm (1")

Relays:
3 Relays rated 2 A @ 30 VDC
Fire (NO)
Pre-Alarm (NO)
Alert/Fault (Maintenance & Isolate) (NC/NO)
Configurable as latching or non-latching

IP rating:
IP30

Cable access:
4 x 25 mm (1") cable entries

Cable termination:
Screw Terminal blocks 0.2–2.5 sq mm (30–12 AWG)

Alarm sensitivity range:
0.005% to 20% obs/m (0.0015% to 6.25% obs/ft)

Threshold setting range:

Alert:	0.005%–1.990% obs/m (0.0015%–0.6218% obs/ft)
Pre-Alarm:	0.010%–1.995% obs/m (0.0031%–0.6234% obs/ft)
Fire:	0.015%–20.00% obs/m (0.0046%–6.25% obs/ft)*

*Limited to 4% obs/ft for UL

Software features:
Event log: Up to 12,000 events stored in FIFO format
Smoke level, user actions, alarms and faults with time and date stamp
AutoLearn: Minimum 15 minutes, maximum 15 days. Recommended minimum 14 days.
During AutoLearn thresholds are NOT changed from pre-set values.

Configurable general input (24 VDC):
Standby, Mains OK or Reset/Isolate

* Product UL listed for use from 0°C to 38°C (32°F to 104°F)

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