

VESDA VLC-EX

VLC-500-EX and VLC-505-EX



Features

- Suitable for Zone 2 applications
- 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™
- IP54 rated stainless steel enclosure

Approvals/Listings

- ATEX
 - ⊕ II 3G
 - EN 60079-0:2009 and EN 60079-15:2010
 - Ex ic nA nC IIB T5 Gc IP54
 - 10°C ≤ Ta ≤ +55°C
 - Certificate No: ITS 14 ATEX 48089X
 - QAN: ITS 11 ATEX Q7454
- IECEx
 - ⊕ II 3G
 - IEC 60079-15 Ed4.0
 - and IEC 60079-0 Ed6.0
 - Ex ic nA nC IIB T5 Gc IP54
 - 10°C ≤ Ta ≤ +55°C
 - Certificate No: IECEx ITS 14.0050X
 - QAR: GB/ITS/QAR 11.0016/00

Note: IIC rating is no longer available but remains current for existing installations.
Regional approvals listings and regulatory compliance vary between VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.

Introduction

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.

The VLC-EX combines the well-proven VESDA VLP detection technology with a modified aspirator design, and incorporates them into an IP54 rated stainless steel enclosure.

Two variants and a remote display option

The VLC-EX 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-EX is enclosed in a stainless steel housing which is comprised of the main enclosure and the front cover.

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

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How it works

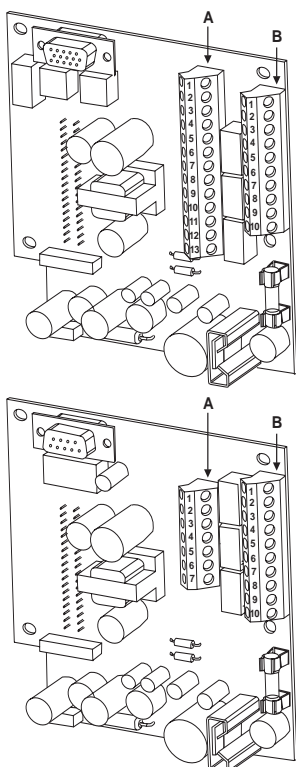
Air is continually drawn through the pipe network to a central detector by a high efficiency aspirator. Air entering the unit passes a flow sensor before a sample is passed through a dual-stage dust filter. The first stage removes dust and dirt from the air sample before it enters the chamber for smoke 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 exhausted air from the detector is returned to the protected area (an exhaust pipe must be fitted to avoid any exhausted air venting into the stainless steel enclosure).

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).

Installation Consideration

The complete installation must be made within a Zone 2 area and that aspiration from a Zone 2 area into a safe area is not permitted. The area should be moderately clean with little or no dust present and a metal inline filter should be installed.



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 (+)

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):

268 mm x 268 mm x 97 mm

Weight:

4.9 kg

Operating conditions:

Ambient: -10°C to 55°C

Tested: -10°C to 55°C

Sampled Air: -20°C to 60°C

Humidity: 10% to 95% RH, non-condensing

Storage Temperatures (non-operational):

Humidity: Dry (<95%)

Temperature: 0°C to 85°C

Must not be exposed to sunlight or other radiation sources

Sampling network:

Maximum area of Coverage 800 sq.m

Maximum pipe lengths:

1 x 80 m, 2 x 50 m

Computer design tool:

ASPIRE2™

Pipe:

Internal Diameter 15 mm–21 mm

External Diameter 25 mm

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: IP54

Enclosure: Grade 304 stainless steel

Cable access:

2 x 20 mm cable entries

Cable glands and blanking plugs NOT supplied

Cable termination:

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

Alarm sensitivity range:

0.005% to 20% obs/m

Threshold setting range:

Alert: 0.005%–1.990% obs/m

Pre-Alarm: 0.010%–1.995% obs/m

Fire: 0.015%–20.00% obs/m

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 1 day.

During AutoLearn thresholds are NOT changed from pre-set values.

Configurable general input (24 VDC):

Standby, Mains OK or Reset/Isolate

Approvals Compliance

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

Ordering Information

Product	Part number	Product	Part number
VLC-505 (VN) EXn Zone 2	VLC-505-EX	Remote Display (relays)*	VRT-J00
VLC-500 (RO) EXn Zone 2	VLC-500-EX	Remote Display (no relays)*	VRT-K00
Metal Inline Filter	VSP-850-M	Remote Relays (no display)*	VRT-500

* for VLC-505-EX only and to be installed in non-hazardous areas.

