VESDA Air-Sampling

Your Safety, Our Technology

VESDA VLC-EX

VLC-500-EX & 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

Listings / Approvals

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.

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

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).

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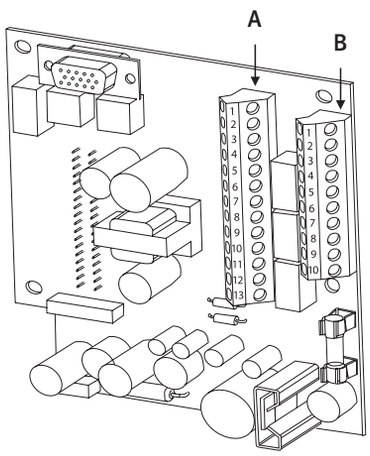
Installation Consideration

The compete 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.



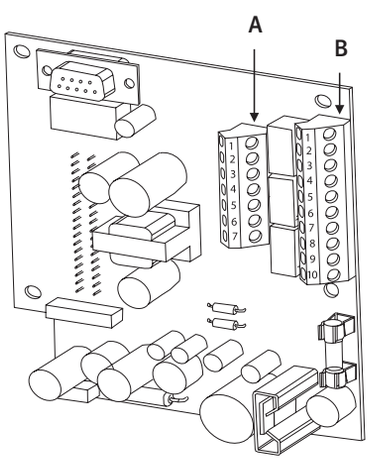
VESDA VLC Termination Card (VN)

Terminal A

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

Terminal B

1 Bias (-) (GND)
2 Reset (-)
3 Reset (+)
4 Bias (+)
5 LED (-) (GND)
6 LED (+)
7 FIRE (NO)
8 FIRE (C)
9 PRE-ALARM (NO)
10 PRE-ALARM (C)



VESDA VLC Termination Card (RO)

Terminal A

1 FIRE (NO)
2 FIRE (C)
3 PRE-ALARM (NO)
4 PRE-ALARM (C)
5 FAULT (NO)
6 FAULT (C)
7 FAULT (NC)

Terminal B

1 Bias (-) (GND)
2 Reset (-)
3 Reset (+)
4 Bias (+)
5 LED (-) (GND)
6 LED (+)
7 Power (-)
8 Power (+)
9 Power (-)
10 Power (+)

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Specification	
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	1.6A
Dimensions (WHD)	268mm x 268mm x 97mm
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 80m, 2 x 50m
Computer design tool	ASPIRE2™
Pipe	Internal Diameter 15mm–21mm External Diameter 25mm
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 20mm 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

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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	

Ordering Information

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

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

For further information visit www.hochikieurope.com/vesda