VESDA® VLC Marine by Xtralis™

VLC-50000-MRN
VLC-50500-MRN

Introduction

The VESDA VLC detector has been tested and certified to provide all the benefits of aspirating smoke detection, including very early warning, in Marine Environments. This has been achieved through additional testing to ensure the performance of the product in challenging marine applications.

The Marine products have been approved by Lloyd's Register*. They are rated IP30 so, where applicable, it is recommended that the detector is housed in an IP66 enclosure (available from Xtralis).

As with the standard VESDA VLC, the Marine version combines the well-proven VESDA Laser detection technology, dual-stage air filtration technology and a reliable aspirator design, and incorporates them into a compact enclosure with a simplified display.

Two variants and a remote display option

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

Description

The VESDA 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)

* Lloyd's Register

Applications defined as Marine, offshore and industrial use in environmental categories ENV1, ENV2 and ENV3 as described in Lloyd's Register Test Specification No. 1:2002. The specified standard to which the type approval relates is EN54-20:2006.

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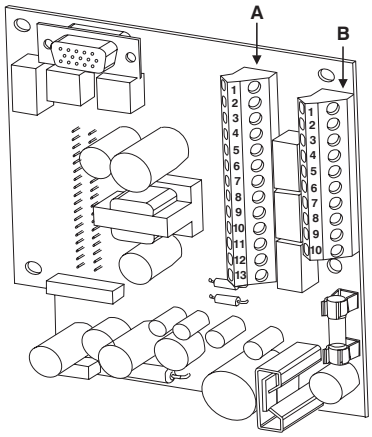
How it works

Air is continually drawn through holes and 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 can be back vented to the protected area when required). 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.

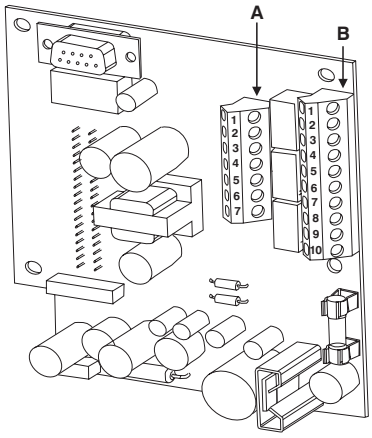
The detection chamber uses a stable, highly efficient laser light source and unique sensor configuration to achieve the optimum response to a wide range of smoke types. When smoke passes through the detection chamber it creates light scatter which is detected by the very sensitive sensor circuitry.

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).



VESDA 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)	



VESDA 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 – Marine VN	VLC-50500-MRN
VESDA VLC – Marine RO	VLC-50000-MRN
Remote Display – VESDA VLC Marine	VRT-J0000-MRN
IP66 Detector Enclosure (incl fittings)	020-050

Specifications

Supply voltage:
18 to 30VDC

Power consumption:
5.4W quiescent, 5.9W with alarm

Current consumption:
225mA quiescent, 245mA with alarm

Fuse rating:
1.6A

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

Weight:
1.9kg (4.2lbs.)

Operating conditions:
Tested to -25°C to 70°C (-13°F to 158°F)
Ambient 5°C to 70°C (41°F to 158°F) (recommended)
Sampled Air -20°C to 60°C (-4°F to 140°F)
Humidity 10 to 95% RH, non-condensing
Approved for use in bridge and deck zones, and ENV3 environments
Exposure to corrosive atmosphere may invalidate warranty

Sampling network:
Maximum area of Coverage 800sq.m (8000sq.ft)

Maximum pipe lengths:
1 x 80m, 2 x 50m

Computer design tool:
ASPIRE2™

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

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

IP rating:
IP30 (IP66 enclosure optional addition)

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

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

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)

Software features:
Event log: Up to 12,000 events stored on FIFO
Smoke level, 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 (24VDC):
Standby, Mains OK or Reset/Isolate

www.xtralis.com

The Americas +1 781 740 2223 **Asia** +852 2916 8894 **Australia and New Zealand** +61 3 9936 7000
Continental Europe +32 56 24 1951 **UK and the Middle East** +44 1442 242 330

Doc. no. 11655_06 Part: 30129

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