VESDA VLC

Installation Guide

VLC-500 (Relays Only)
VLC-505 (VESDAnet)

May 2011
Document Number: 13718_04
Part Number: 18935

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The following typographic conventions are used in this document:

Convention	Description
Bold	Used to denote: emphasis Used for names of menus, menu options, toolbar buttons
Italics	Used to denote: references to other parts of this document or other documents. Used for the result of an action.

The following icons are used in this document:

Convention	Description
	**Caution:** This icon is used to indicate that there is a danger to equipment. The danger could be loss of data, physical damage, or permanent corruption of configuration details.
	**Warning:** This icon is used to indicate that there is a danger of electric shock. This may lead to death or permanent damage.
	**Warning:** This icon is used to indicate that there is a danger of inhaling dangerous substances. This may lead to death or permanent injury.

Contact Us

The Americas	Tel: +1 781 740 2223
Asia	Tel: +852 2297 2438
Australia and New Zealand	Tel: +61 3 9936 7000
Continental Europe	Tel: +41 55 285 99 99
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Codes and Standards Information for Air Sampling Smoke Detection

We strongly recommend that this document is read in conjunction with the appropriate local codes and standards for smoke detection and electrical connections. This document contains generic product information and some sections may not comply with all local codes and standards. In these cases, the local codes and standards must take precedence. The information below was correct at time of printing but may now be out of date, check with your local codes, standards and listings for the current restrictions.

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures; re-orientate or relocate the receiving antenna, increase the separation between the equipment and receiver, connect the equipment to a power outlet which is on a different power circuit to the receiver or consult the dealer or an experienced radio/television technician for help.

FDA

This VESDA product incorporates a laser device and is classified as a Class 1 laser product that complies with FDA regulations 21 CFR 1040.10. The laser is housed in a sealed detector chamber and contains no serviceable parts. The laser emits invisible light and can be hazardous if viewed with the naked eye. Under no circumstances should the detector chamber be opened.

FM

3611 Hazardous Approval Warning: Exposure to some chemicals may degrade the sealing of relays used on the detector. Relays used on the detector are marked “TX2-5V”, “G6S-2-5V” or “EC2-5NU”.

VESDA detectors must not be connected or disconnected to a PC while the equipment is powered in an FM Division 2 hazardous (classified) location (defined by FM 3611).

ONORM F3014

ONORM F3014, transport times for all tubes (including capillaries) must not exceed 60 seconds from any hole. This means that the pre- designed pipe networks that include capillaries cannot be used.

AS1603.8

The performance of this product is dependent upon the configuration of the pipe network. Any extensions or modifications to the pipe network may cause the product to stop working correctly. You must check that ASPIRE2 approves alterations before making any changes. ASPIRE2 is available from your VESDA ASD distributor.

AS1851.1 2005

Maintenance Standards. Wherever this document and the AS1851.1 differ, AS1851.1 should be followed in preference to this document.

FM Approved Applications

The product must be powered from VPS-100US-120, VPS-100US-220 or VPS-220 only.

Regional Regulatory Requirements and Notices

UL

For open area protection the fire alarm threshold (signal) that initiates an evacuation procedure via the Fire Alarm Panel must not be set less sensitive than 0.625%/ft. The detector can send this signal via the Fire Alarm Panel Output signal or the Pre-alarm output signal.

European Installations

The product must use a power supply conforming to EN54: Part 4.

EN54-20

The product must use a power supply conforming to EN 54-4.

The product is compliant with EN 54-20 sensitivity requirements provided the following conditions are met:

- For a Class A detector, hole sensitivity must be better than 1.5% obscuration/m and transport time less than 60 seconds
- For a Class B detector, hole sensitivity must be better than 4.5% obscuration/m and transport time less than 90 seconds
- For a Class C detector, hole sensitivity must be better than 10% obscuration/m and transport time less than 120 seconds

These limits should be verified using ASPIRE2 during the design of the sampling pipe network.

The product is compliant with EN 54-20 flow monitoring requirements provided the following conditions are met:

- The minor low and minor high flow thresholds should be set at 85% and 115% respectively

The flow through the detector predicted by ASPIRE2 should be in the range 20 to 65 lpm

Additional information:

- Class A detectors passed EN 54-20 approvals testing with 30 holes and 0.05% obscuration/m detector sensitivity
- Class B detectors passed EN 54-20 approvals testing with 36 holes and 0.09% obscuration/m detector sensitivity
- Class C detectors passed EN 54-20 approvals testing with 40 holes and 0.165% obscuration/m detector sensitivity

Approvals

- UL
- ULC
- FM
- LPCB
- VdS
- CFE
- ActivFire
- AFNOR
- VNIIPO
- CE - EMC and CPD
- EN 54-20

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

Publication history

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Contents

1 Introduction

Scope of this Guide

This guide is intended for installation technicians to be able to install, perform basic power and preliminary device checks for the VLC detector. It does not cover information for commissioning. All VESDA equipment is to be commissioned by personnel who have attended a VESDA accreditation course.

Use the checklist in Section 9 to verify that the installation has been correctly completed. Fill out the details in the checklist sheet for the site and submit it to the appropriate personnel.

CAUTION

* **The Detector must only be installed by VESDA accredited personnel.**

* **The performance of the system depends on the pipe network that was designed for the site. Any alteration to the pipe network may alter the performance of the system. The ASPIRE2™ design tool is to be used to verify the suitability of any pipe network design and subsequent alterations. ASPIRE2™ is available from your distributor**.

* **The IP rating for the VLC is IP 30. This rating indicates the device is not to be installed where there is the possibility of any water or liquid falling onto the device.**

2 Cabling Requirements

The terminals on the termination card in the VLC will accept wire sizes up to 2.5 sq mm (12 AWG).

2.1 Power Cables

Use the power ratings for the detector to determine the required wire sizes.
The power requirements for the detector to operate are as follows:-

Operating voltage	18 VDC to 30 VDC
Current consumption	225 mA max. (No Alarm)
	245 mA max. (With Alarm)

2.2 Data Cables

The recommended RS485 data cable for interconnecting to other detector units on the VESDA*net* loop is Belden 9841 (or equivalent). The cable characteristics are as follows:-

- 24 AWG, Twisted pair, Shielded, 120 ohms impedance

The maximum specified length for the RS485 cable between any two devices on the VESDA*net* network is 1300m (4000ft).

3 Product Specifications

Supply Voltage	18 to 30 VDC
Power Consumption	5.4 W quiescent, 5.9 W with alarm
Current Consumption	225 mA at 24 VDC quiescent, 245 mA with alarm
Fuse Rating	1.6 A
Dimensions (WHD)	225 mm x 225 mm x 85 mm (8 7/8 in x 8 7/8 in x 3 3/8 in)
Weight	1.9 kg (4.2 lbs)
Operating Temperature	Ambient: 0° to 39°C (32°F to 103°F) * Tested: -10° to 55°C (14°F to 131°F) * Sampled Air: -20° to 60°C (-4° to 140°F) * Humidity: 10-95% RH, non-condensing
Sampling Pipe Network	Maximum area of coverage 800sq m (8000sq.ft) Maximum Single Pipe Length 80m (max. 20 holes) Maximum branched (2) Pipe Lengths 50m each (max. 20 holes) Computer Design Tool: ASPIRE2™
Pipe Size	ID: 15-21mm (9/16in – 7/8in) OD: 25mm (1in)
Relays	3 Relays rated 2A @ 30VDC Programmable to latching or non-latching states
Relays Default Configuration	Fire Pre-Alarm Alert/Fault (Maintenance and Isolate) Programmable 0 – 60 sec time delay for each relay
IP Rating	IP30
Cable Access	4 x 25mm (1in) cable entries
Cable Termination	Screw terminal blocks (0.2-2.5sq mm, 30-12 AWG)
Sensitivity Range	0.005 to 20.00% 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 approved projects**
Key Software Features	Event log: up to 12,000 events stored on FIFO basis Smoke level, alarms and faults with time and date stamp AutoLearn: Minimum 15 minutes, maximum 15 days. Recommended minimum period 14 days. During AutoLearn thresholds are NOT changed from pre-set values.

* Product approved by UL from 0° to 38°C (32° F to 100° F)

4 Product Dimensions

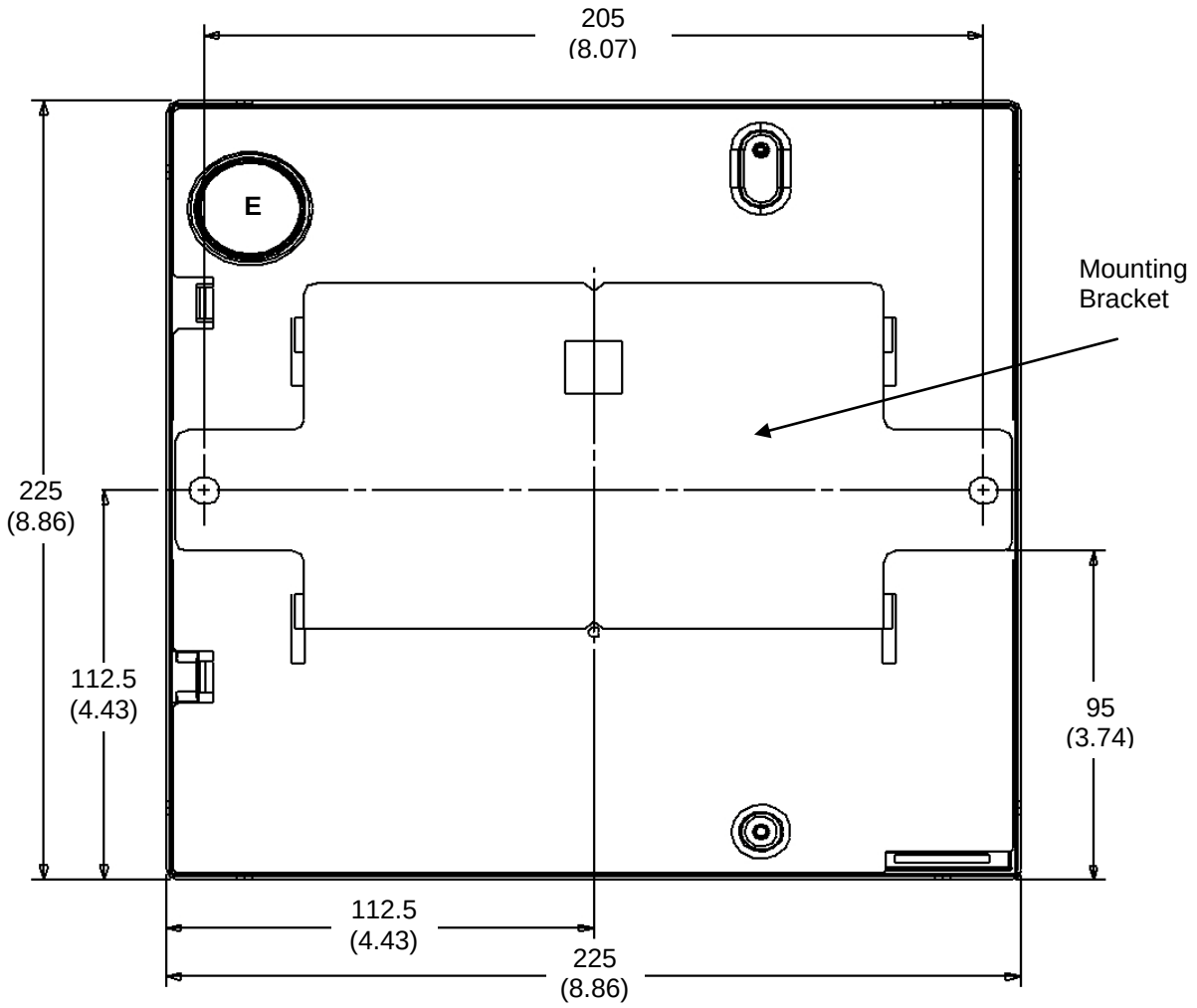


*Figure 1 Dimensions in mm (inches) of VLC with mounting Bracket (Rear View). **E**=Cable Entry Point on Rear of Enclosure*

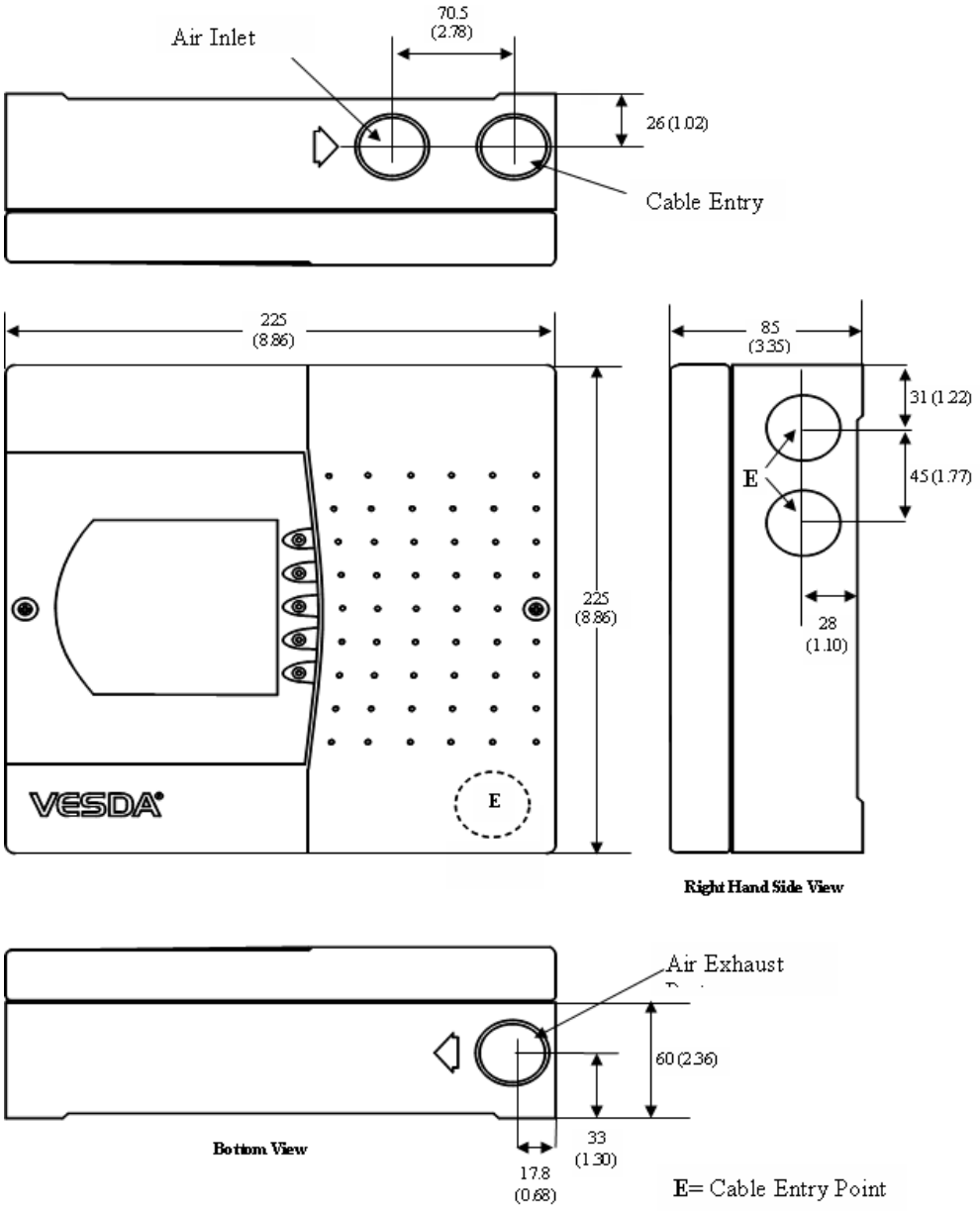


Figure 2 Dimensions in mm (inches) for the VLC

5 Battery Backup Calculations

The nominal battery voltage is **24 VDC.**

Use Table 1 to calculate and to determine the battery backup requirements for your fire detection system.

	NORMAL LOAD @ 24 V DC			FULL ALARM LOAD @ 24 VDC		
EQUIPMENT	**LOAD (mA)**	**QTY**	**TOTAL (mA)**	**LOAD (mA)**	**QTY**	**TOTAL (mA)**
VLC	**225**			**245**		
Remote Display						
Other 24V loads						
	TOTAL (mA)			**TOTAL (mA)**		
			X			X
	STANDBY HOURS			**ALARM HOURS**		
			=			X 1.06
STANDBY CAPACITY (mAHr)				**ALARM CAPACITY (mAHr)**		

TOTAL CAPACITY = STANDBY + ALARM (mAHr)	
DIVIDE BY 1000	
MULTIPLY BY BATTERY FACTOR 1.25	**AHr**

Table 1. Calculations to determine the battery backup requirements

6 Installation

6.1 Check Procedure Before Installation

(a) Do not install your VLC if there are any signs of shipping damage to the product. Inform your distributor if there is any damage.

(b) Check the model of the VLC is correct as per the design specifications for the site. Refer to the model number located on the bottom of the detector enclosure.

(c) Identify the location where the detector is to be mounted. The VLC can be mounted on a wall or a suitable secure surface. There are two allowable mounting positions (see Figure 3) for the VLC:

- Mounting the device with the **air inlet pipe on the top** of the box and with the air exhaust pipe at the bottom. (Normal Orientation)
- Mounting the device with the **air inlet pipe at the bottom** of the box and with the air exhaust pipe on the top. (Inverted Orientation)

(d) Verify that the selected mounting location is suitable to fit the detector by test fitting the VLC onto the actual mounting position. Ensure there is 150mm (6in) of clear space around the air inlet pipe and cable entry points to allow for pipe and conduit entry.

(e) Verify that the cable entry points and the sampling air pipes are at the correct locations.

(f) Determine the type of fasteners required to attach the mounting bracket onto the mounting surface. The size of the screw holes on the mounting plate is 8mm (1/3in).

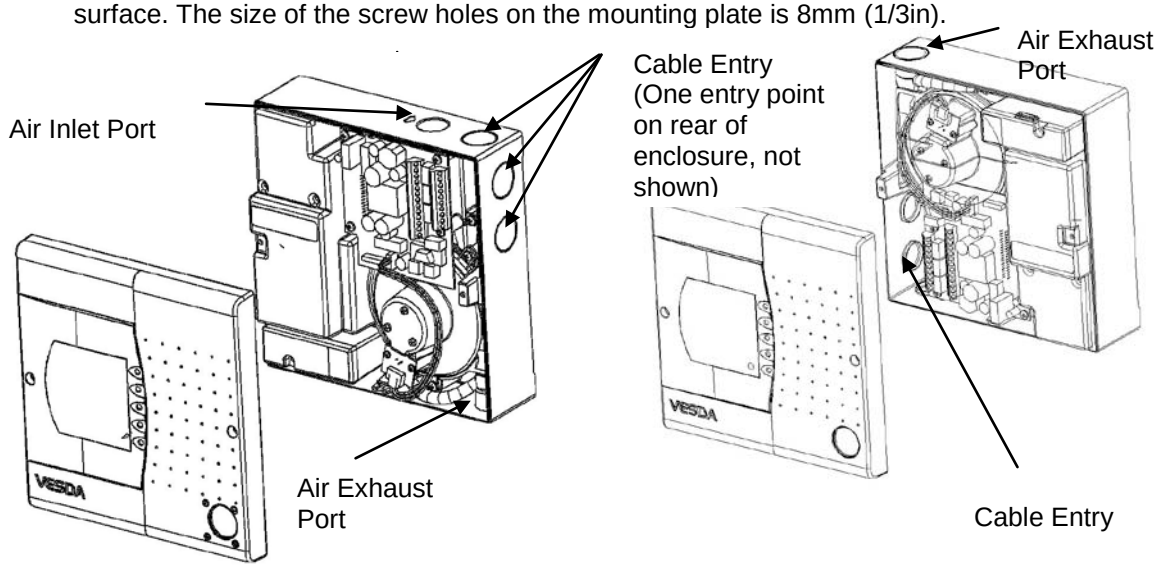


Figure 3 VLC Orientation, Normal (left), Inverted (right)

6.2 Removal of Front Cover

(a) Unscrew the two Philips head screws located on the left and right hand sides of the front cover.

(b) Remove the cover. The front cover is held to the main enclosure with a plastic tie. There is a cable loom labelled **LED CARD** that connects the termination card in the enclosure to the LED card located behind the front cover. If you need to separate the front cover from the main enclosure perform steps (c) to (d), otherwise go to step 6.3.

(c) Remove the LED CARD cable connector from its socket on the termination card.

(d) Twist the plastic tie by 90 degrees on the cover side and slip the tie out through the slot.

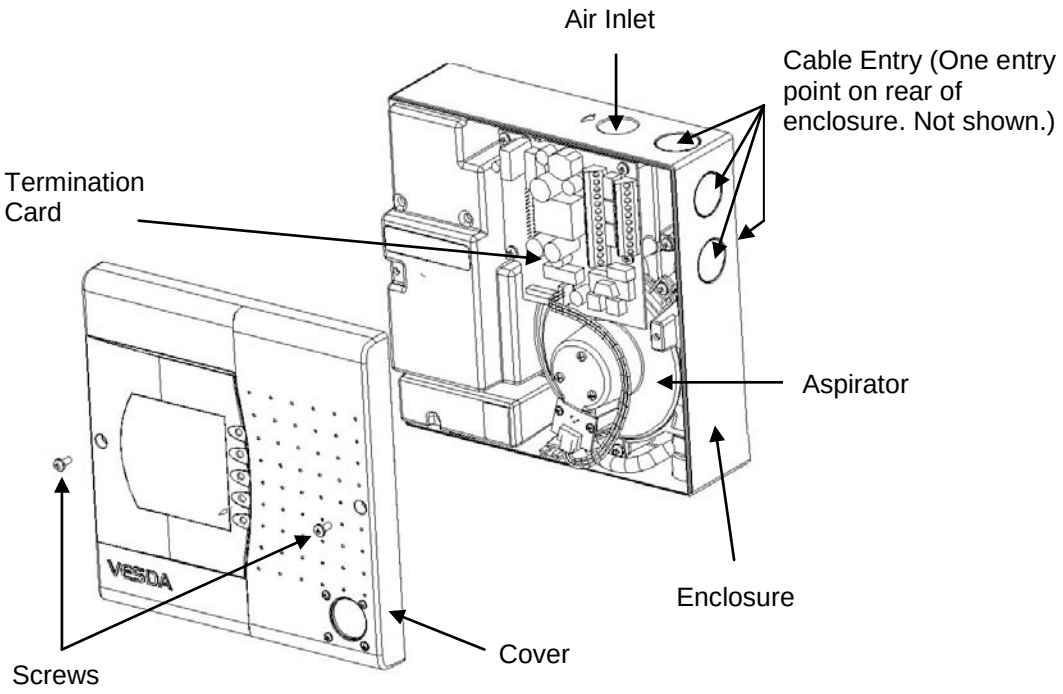


Figure 4 VLC with Front Cover removed. (Normal Orientation).

6.3 Removal of Plastic Plugs for Cable Entry

(a) Determine the cable entry holes to be used. Refer to Figure 4.

(b) Use your thumb to push out the hole plugs from inside the enclosure.

6.4 Securing the Mounting Bracket

Warning	**Make sure that there are no electrical wires or plumbing behind the mounting position before drilling. Ensure the mounting position is flat.**

(a) Place the mounting bracket onto the surface and mark out the two mounting screw holes. Refer to Figure 5 for dimensions. Use a spirit level to ensure the bracket is level.

(b) Use the appropriate fasteners to suit the mounting surface. Secure the bracket to the surface.

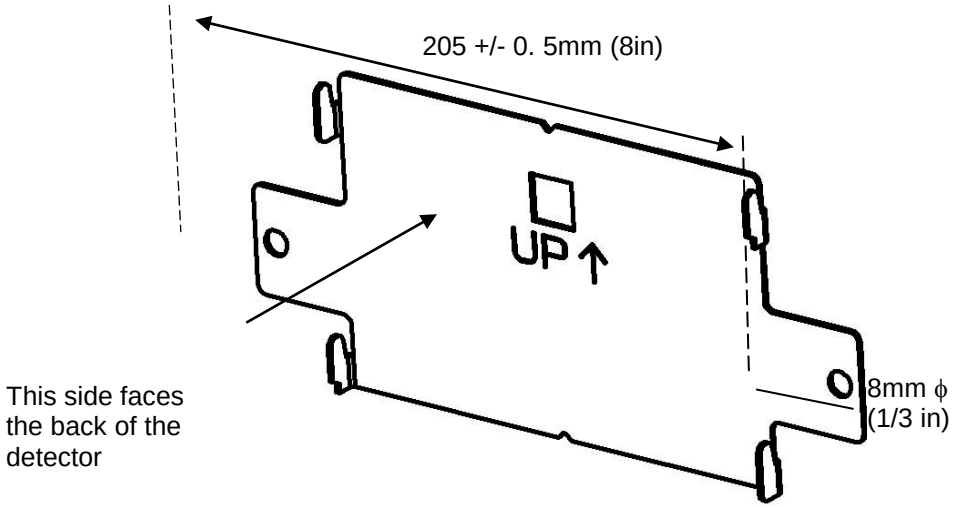


Figure 5 Hole Dimensions and Orientation of Mounting Bracket

6.5 Attaching the Detector onto the Bracket

(a) Determine the required orientation for the VLC.

(b) Mount the detector onto the bracket by placing the four rectangular slots located on the rear of the detector onto the four bracket tabs. Refer to Figure 6.

(c) Slide the device downwards until it locks onto the tabs and screw in the anti tamper screw. Refer to Figure 7 for screw location.

(d) Check the unit does not slide off its bracket.

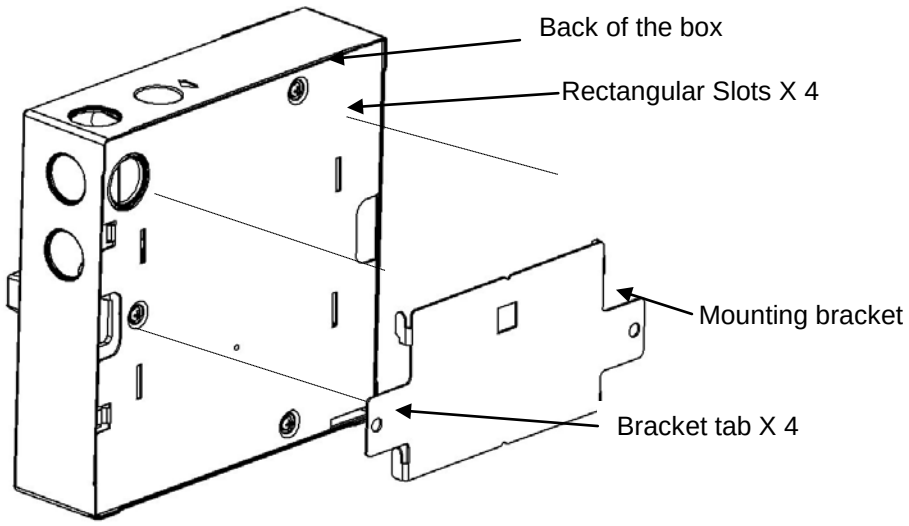


Figure 6 Mounting the Detector onto the Mounting Bracket

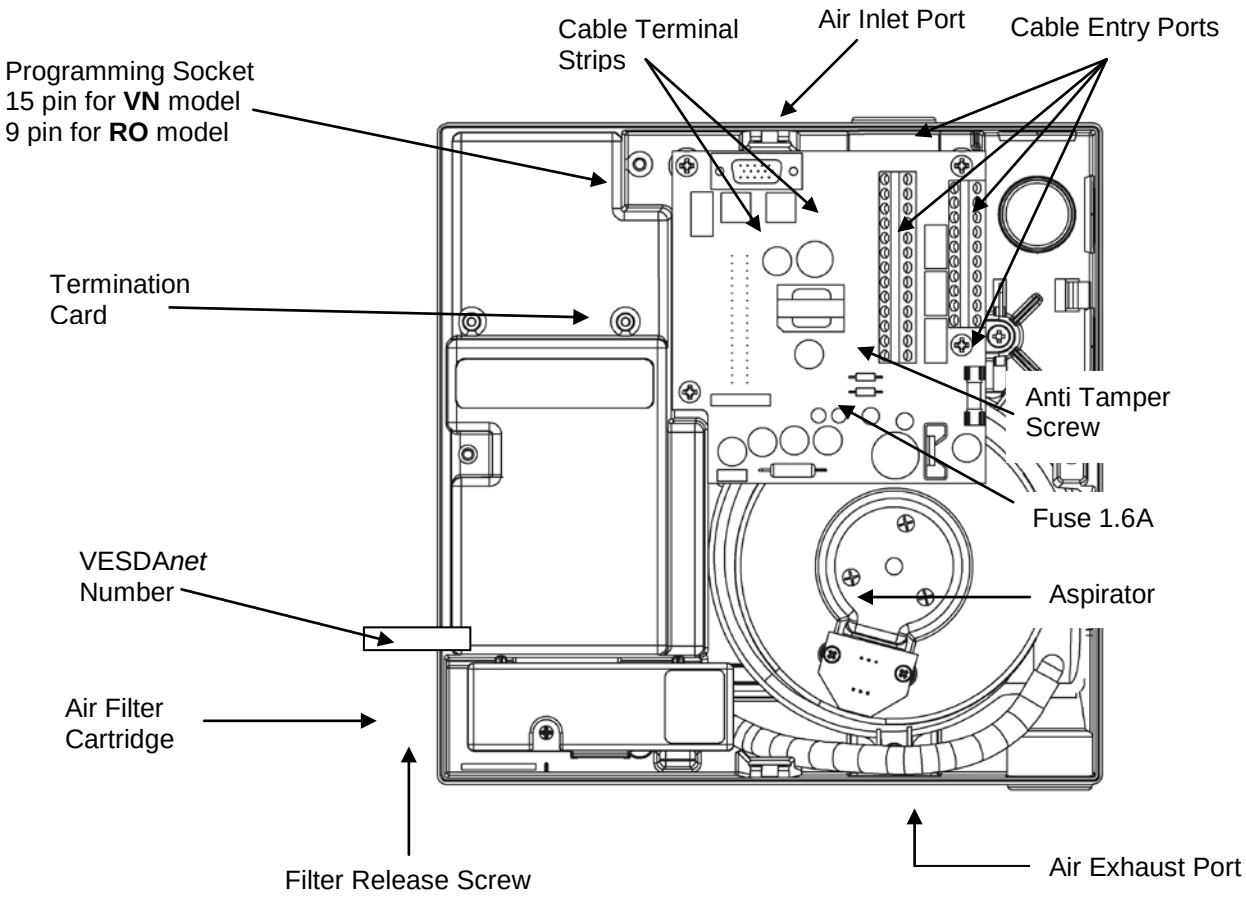


Figure 7 Location of Anti Tamper Screw and other Components inside the Enclosure

6.6 Connecting the Air Sampling Pipe

The air inlet port is designed to fit a standard pipe of 25mm (1in) OD. A tapering of the air inlet port prevents the pipe from being inserted beyond 15mm (5/8in).

Note** **Where it is common practice to use ¾ inch pipe which has a 1 1/16 inch OD, a suitable adaptor should be used to connect the pipe to the inlet manifold. Such an adaptor is supplied with the VLC in the appropriate territories.

a) De-burr and square off the end of the sampling air pipe. Ensure the pipe is free from swarf.

b) Remove the plugs from the inlet and exhaust ports.

c) Insert the pipe into the inlet port ensuring a firm fit. DO NOT glue this connection.

d) Pipe the exhaust when necessary.

Caution	**DO NOT GLUE THE AIR INLET AND EXHAUST PIPE CONNECTION – THIS ACTION WILL VOID YOUR WARRANTY** **Glued connections makes disconnecting the air sampling pipe from the VLC for maintenance extremely difficult and will result in damage to the equipment.**

6.7 Cabling Using Glands and Conduits

6.7.1 Using Glands

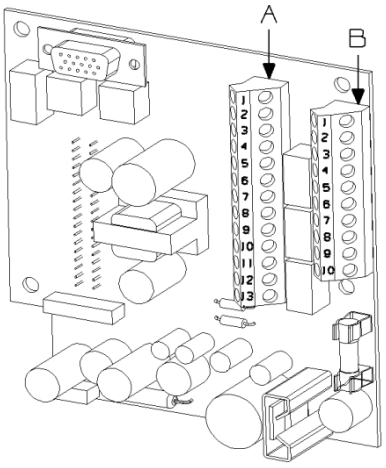
(a) If using cable glands, use the correct gland size to fit the 25mm (1in) ∅ cable entry hole.

(b) Run the wires through the glands and into the VLC enclosure. Use your local codes and electrical standards for cabling.

6.7.2 Using Conduits

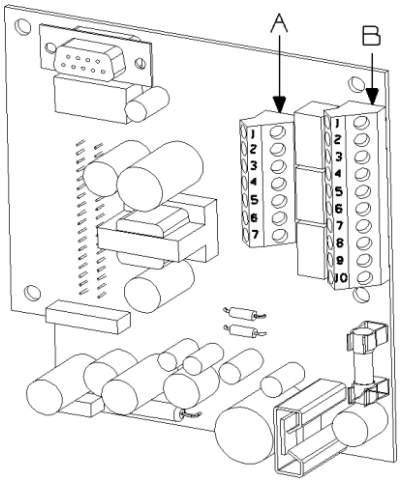
(a) Terminate the conduits at the cable entry holes on the sides of the box using the appropriate conduit connectors.

(b) Run the wires through the conduits and into the VLC enclosure. Use your local codes and electrical standards for cabling.



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)		

Figure 8 Terminal Pins Location on Termination Card for VN model



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 (+)

NC = Normally Close
NO = Normally Open
C = Common

*Figure 9 Terminal Pins Location on Termination Card for **RO** Mode*

6.8 Procedure to Terminate Wires to the Termination Card

Use the appropriate wiring standards for your country or use the following suggested procedure listed below.

(a) Strip off 5 to 10mm (1/5 to 2/5 in) of outer insulation from each wire.
(b) Twist wire strands together for multi-stranded wire only.
(c) Insert wire into terminal.
(d) Tighten terminal screw.
(e) Check the wire is firmly attached to the terminal.
(f) Ensure no bare wires are exposed at the terminals. The wire insulation must reach to the end of the terminal.
(g) Check the terminations are correct by referring to the appropriate circuit diagrams in this guide.

6.9 Terminating the Power Wires to the Termination Card

a) Refer to Figure 8 or Figure 9 for the power terminals location on the termination card.

b) Connect the power wires to the Power terminals as shown in Figure 10.

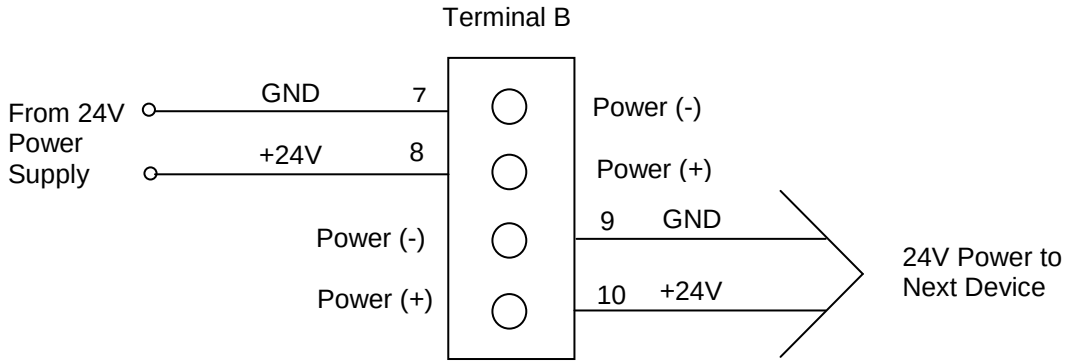


Figure 10 Wire Connection Details for Power

6.10 Connecting the VESDA*net* Wires to the Termination Card (VN model only)

a) Refer to Figure 8 for the network terminals location on the termination card.

b) Connect the VESDA*net* wires as shown in Figure 11. This diagram is only an example for five detectors. This wiring method is similar for two or more detectors.

c) Maintain the wiring polarity throughout the network and **do not leave any VESDA*net* terminals unconnected.**

NOTE: While an Open Loop configuration is possible (refer to System Design Manual), it is strongly recommended that the Closed Loop configuration be installed to achieve a fault tolerant loop

NOTE: When a VN model detector is not used in a VESDA*net* loop and is to be used as a stand-alone detector the VESDA*net* terminals must be wired as per Figure 12.

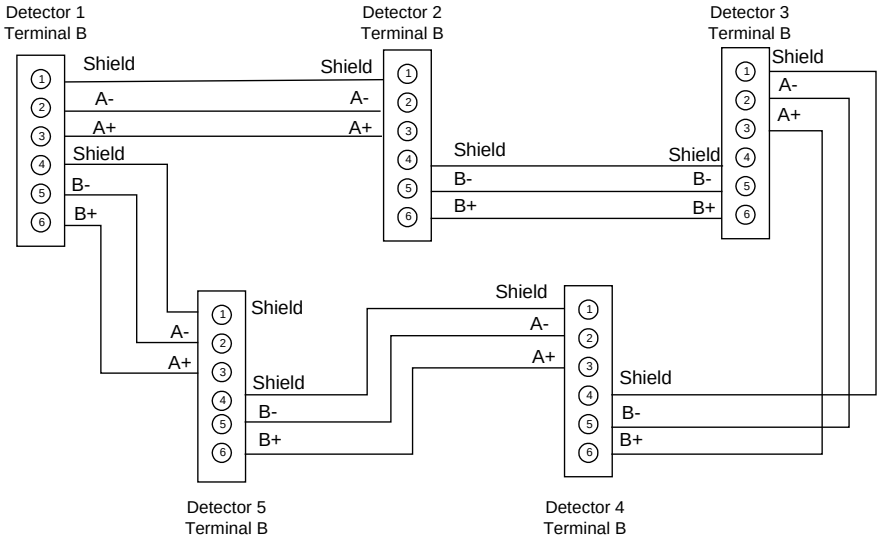


Figure 11 Wire Connection Details for VESDAnet

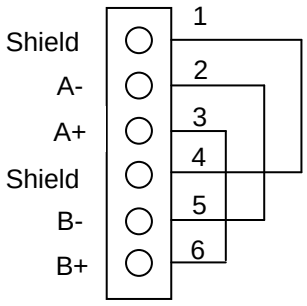
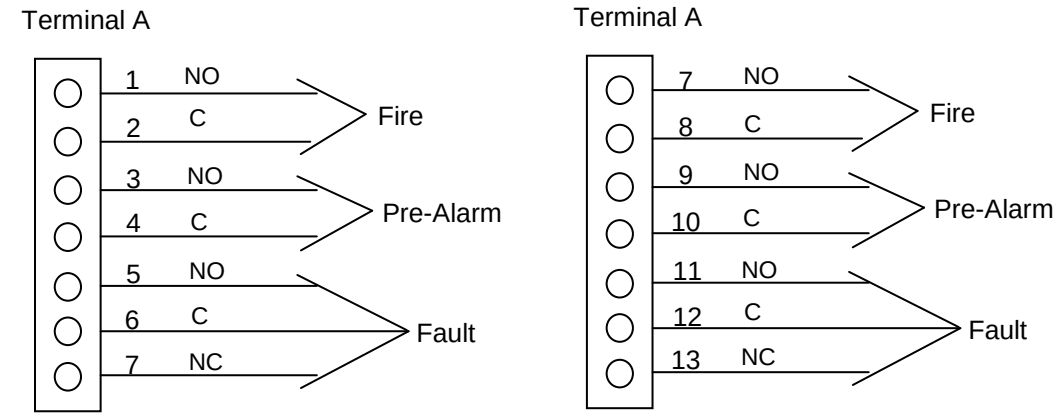


Figure 12 Wire Connection Details for VESDAnet Loop

6.11 Terminating the Relay Wires to the Termination Card

a) Refer to Figure 8 or Figure 9 for the relay terminals location on the termination card.

b) Connect the relay wires to the terminals as per Figure 13 and your site requirements.



Terminal pin location for **RO**

Terminal pin location for **VN** model

Figure 13 Wire Connections Details for Relays

6.12 Terminating the Auxiliary Wires to the Termination Card

a) Refer to Figure 8 or Figure 9 for the Reset, LED and Bias terminals on the termination card for the **RO** or **VN** model.

b) The function for these outputs are as follows:-

LED +/-	This output terminal provides a maximum of 5V, 15mA via a 220 ohm resistor to power a remote LED.
Bias +/-	This output provides a 10V supply via a 1Kohm resistor to power the remote Reset/Isolate switch when connected as per Figure 14.
Reset +/-	This input terminal has three functions, (Mains OK, Standby and Reset) and requires an input voltage supply between 5V to 24VDC to operate.

c) Terminate the RESET, LED and Bias wires as per your site requirements or with reference to Figure 14

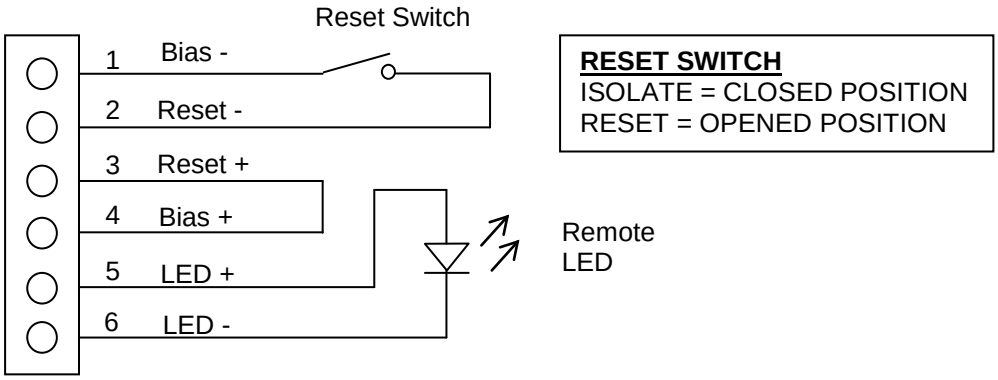


Figure 14 Wire Connection Details for Auxiliaries

6.13 Closing Up the VLC

a) Tie all wires together into neat looms using cable ties.

b) Reattach the front cover to the plastic tie and connect the **LED CARD** connector to the socket on the termination card if you have removed the cover and the connector.

c) Perform the power up as per section 7 and preliminary checks as per section 8.

d) Close up the VLC and secure the cover with the two screws.

6.14 Pipe Bonding Check

a) Check all the plastic pipe connecting joints are fully sealed and bonded with glue to eliminate unwanted air leaks. If applicable, check all metal pipe joints are sealed.

b) Check the pipe joint at the air inlet to the VLC in not bonded and fits firmly into the air inlet socket.

c) Check all pipes are securely attached to a mounting surface with the proper fasteners.

d) Check the number and sizes of the sampling air holes on the pipes are correct.

e) Check the routing of the pipes is correct with reference to the site plan.

7 Power Up

Caution Powering up the system must be done by VESDA accredited personnel.

7.1 Power Up the System

(a) Remove the 1.6A fuse on the termination card.

(b) Turn on the power to the detector.

(c) Check the DC voltage at the **Power** terminals on the termination card is between **18 VDC to 30 VDC**. Disconnect the power immediately if the supply voltage is above **30VDC** or less than **18VDC** and troubleshoot the fault.

(d) Replace the fuse when the measured voltage is OK. The system takes approximately 15 seconds to power up during which time an LED test sequence is performed.

(e) If the system fails to power up:-

- Check all the power wires are securely connected to the Power terminals.
- Check the polarities of the power wires are correctly terminated.
- Check for a blown fuse on the termination card. Refer to Figure 7 for the fuse location.

Note: The detector may show faults immediately after power up and this is normal. Reset the unit by pressing the RESET switch on the front cover of the detector to unlatch the relays and fault lights. The fault light on the front cover will light up and this is normal. Proceed to section 8.

8 Preliminary System Checks

Perform the following preliminary system checks before commissioning.

(a) Logging onto the system with a PC or a LCD Programmer. See section 8.1.

(b) Normalise the airflow. See section 8.2

(c) VESDA*net* communication checks for VN models only. See section 8.3

(d) Basic pass/fail smoke test. See section 8.4

8.1 Logging On to the System

Check with your distributor for the User level and PIN number to log on to the system.

8.1.1 Logging On with a PC

- **To program the VLC (RO) detector with a PC**

a) Connect the RS232 data cable from the PC output port to the 9 pin programming socket on the termination card in the detector.

b) Run VESDA System Configurator (VSC) from the PC.

c) Enter your User level and PIN number.

- **To program the VLC (VN) detector with a PC**

a) A **PC-LINK HLI** device must be connected between the PC and the 15-pin VESDA*net* socket to program the VN model detector.

b) Connect the RS232 data cable from the PC output port to the 9-pin socket on the PC-Link HLI device.

c) Connect the 15-pin output port of the PC-LINK HLI device to the 15-pin VESDA*net* socket on the termination card in the detector or to any remote VESDA*net* sockets if wired to the detector.

d) Run VSC from the PC.

e) Enter your User level and PIN number.

8.1.2 Logging On with a LCD Programmer (For VN Model Only)

Connect the programmer lead to either one of the following sockets.

- To the 15-pin, programming socket on the termination card

OR

- To a remote VESDA*net* socket within the VESDA*net* loop

Wait for the programmer to power up. Log in your User level and PIN number into the programmer.

8.2 Normalise the Air Flow and Clearing Air Flow Faults

a) List all the VESDA*net* numbers for all detectors to be normalized.

b) Go to section 8.2.1 for LCD programming or section 8.2.2 for PC programming.

c) It takes approximately 11 minutes for the system to normalise during which time the Green OK LED flashes twice every second to indicate that normalisation is in progress.

d) Check the airflow level is approximately 100% when normalisation is completed.

e) Press the Reset/Isolate button on the front cover to reset the detector after Normalisation. All the fault lights should go off. If any of the fault lights are lit consult the Status menu on the programmer or the Active Event List on the VSC program to determine the faults and consult your System Design Manual to rectify.

f) If the unit fails to normalise it is because the measured airflow may be too low. Check for blockages in the sampling air pipe and check that the exhaust plug has been removed.

8.2.1 Using a LCD Programmer (For VN Model only)

a) Refer to the LCD menu tree supplied with each VLC (VN) detector.

b) Select the detector to be normalised from the displayed list of devices.

c) Select Setup by Zone/Type menu ↵ Normalise ↵ Start ↵ (↵ = Enter Key).

d) To check the airflow level, go to the Normalise or Status menu after normalising.

8.2.2 Using a PC

a) From the View menu select Device View.

b) Select the detector to be normalised from the displayed list of devices.

c) From the Device menu, select Normalize Air Flow to start the function.

d) To check the airflow level, select the Current Flow command under Device menu after normalising.

8.3 VESDAnet Communication Check (For VN Model only)

Note: This test verifies the VESDA*net* system is functioning and all devices connected on VESDA*net* are communicating.

a) List all VESDA*net* numbers for all devices connected onto the communication loop.

b) Go to section 8.3.1 for LCD programming or section 8.3.2 for PC programming.

c) Verify the VESDA*net* number for each device on the network is shown on the list.

d) If there are some devices not found on the display list, check the VESDA*net* cabling to all the devices is correct.

8.3.1 Using LCD Programmer

a) Go to Show Wiring Order menu and press ↵.

b) Check the displayed list shows all the connected devices and the *VESDAnet* number for each device is correct.

c) Check for any devices not connected and troubleshoot if necessary.

8.3.2 Using a PC

a) Select Device list from the View menu.

b) Check the displayed list shows all the connected devices and the *VESDAnet* number for each device is correct.

c) Check for any devices not connected and troubleshoot if necessary.

8.4 Basic Pass/Fail Smoke Test

Note: This test verifies the detector will sense smoke. It does not replace any appropriate commissioning test.

(a) Isolate the detector by pressing the Reset key for more than 2 seconds.

(b) Check the Reset/Isolate LED lights up.

(c) Inject smoke into any sampling air hole.

(d) Wait for one of the red LEDs on the front panel to light up.

(e) If the LED does not light up contact a fully trained accredited VESDA engineer.

(f) Reset the detector by pressing the Reset switch once when the smoke test passes.

9 Installation Checklist

Site Name:……

Zone:……

Detector Serial Number/s:……

Perform the following checks listed below to ensure that all the necessary items are completed before handing over to a commissioning engineer.

INSTALLATION CHECKS	Yes	No
1. Was the VLC detector intact in the box?	☐	☐
2. Is the VLC securely locked onto its mounting bracket?	☐	☐
3. Is the air sampling pipe connected to the air inlet manifold and NOT glued?	☐	☐
4. Have the power wires been connected to the correct terminals on the termination card?	☐	☐
5. Have the alarm signalling cables been terminated to the correct terminals on the termination card?	☐	☐
6. Have the VESDA*net* cables been connected to the correct terminals on the termination card? (If Applicable)	☐	☐
7. Have the plugs at the inlet and exhaust port been removed and the exhaust pipe (if fitted) not glued?	☐	☐
8. Has the cover been replaced correctly?	☐	☐
9. Has the Basic Pass/Fail test been performed?	☐	☐
10. Is the air sampling pipework installed and checked as per the site plans?	☐	☐

Installation of your VLC is now complete.

Name of Installer:……..

Signature:.....……

Date: ……

10 Maintenance and Parts Replacement

To maintain the VLC at its peak performance the maintenance schedule given below should be followed.

To work effectively the VLC Detector needs to be supported by a well designed Pipe Network.

The Maintenance Schedule includes the maintenance required for the Pipe Network.

Maintenance Check	Monthly	Six Monthly	Annually	Bi-Annually
Power Supply[1]	X			
Filter Inspection[2]			x	
Check Pipe Network		X		
Clean Sampling Point				X
Flush Pipe Network[2]				X
Pipe Integrity Smoke Test			X	
Check Pipe Flow			X	

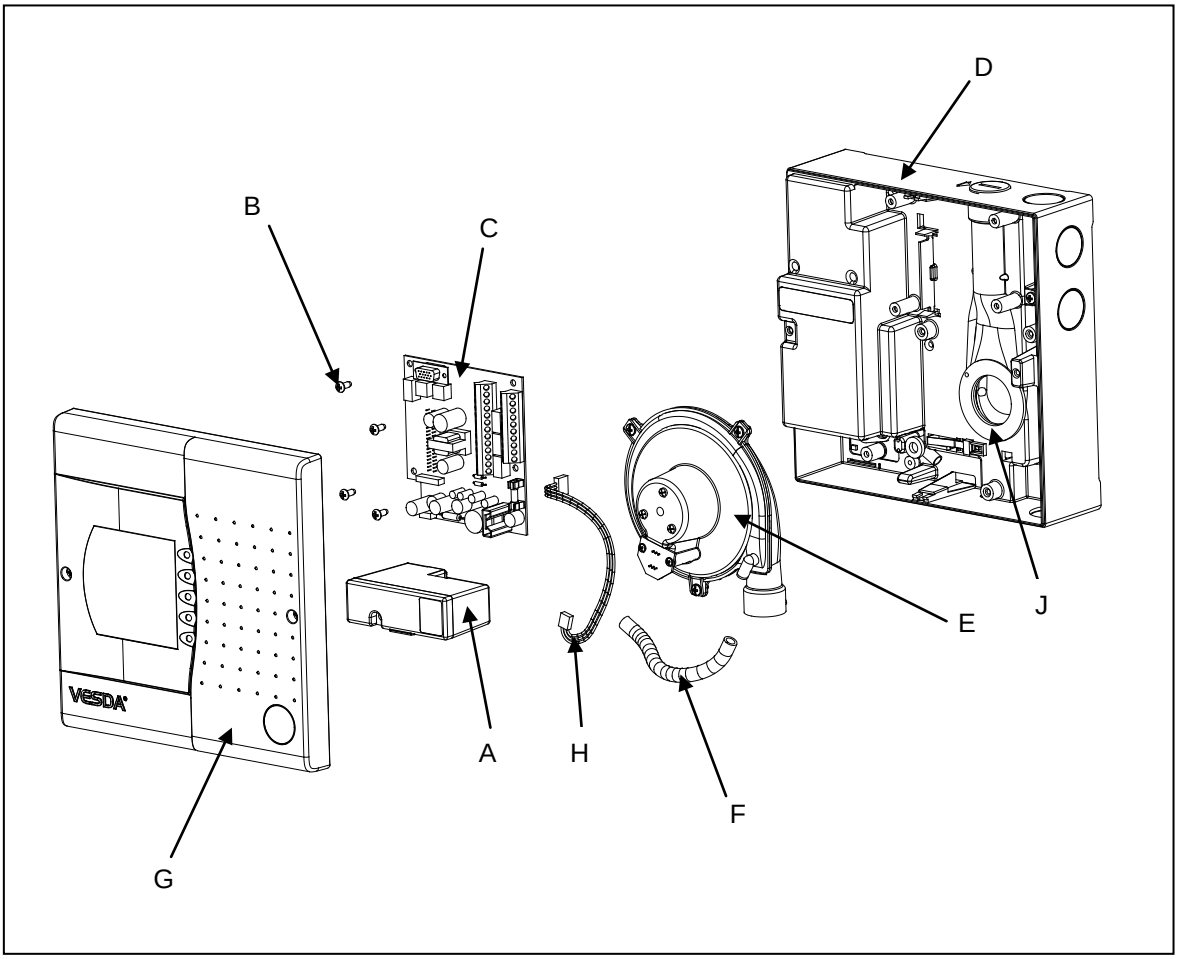
1. Depends upon Regional Codes and Standards
2. May require more frequent maintenance depending upon the environment

NOTE: **The frequency of maintenance checks could vary depending upon local codes and standards and the environment of the installation.**

WARNING: **While a VESDA Zone has been isolated, no fire warnings will be issued by the VLC and any fire will go unreported. Prior to any maintenance or testing:**

1. **Inform appropriate supervising authority about the risk associated with isolating a VESDA Zone.**
2. **Ensure that any ancillary devices dependent on the VLC Detector is/are enabled by the isolation before work is begun.**

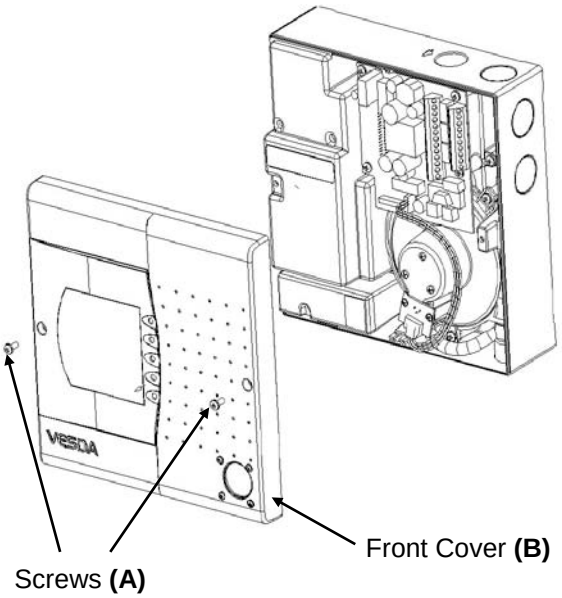
10.1 Exploded view of VLC components



A) Air Filter Cartridge
B) Termination Card Screws (4)
C) Termination Card
D) Main Enclosure
E) Aspirator
F) Sample Air Hose
G) Front Cover
H) Aspirator Cable Loom
J) Manifold Outlet Flange

10.2 Opening the Detector

1. Undo two Philips head screws on front cover (A).
2. Open front cover (B) and allow cover to hang by the attached plastic strap.



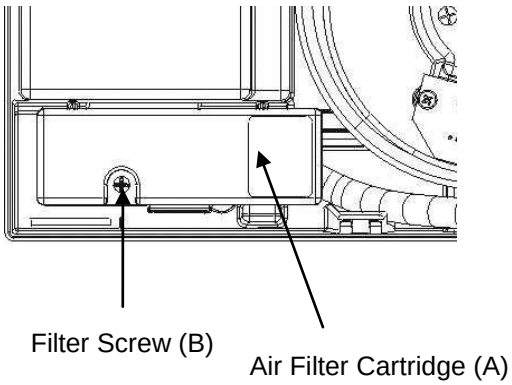
10.3 Closing the Detector

1. Replace the front cover over detector enclosure ensuring the plastic strap and cable loom is not wedged between cover and enclosure.
2. Tighten the two screws (A)

10.4 Replacing the Air Filter Cartridge

Disassembly

1. Locate the air filter cartridge (A) inside the detector compartment.
2. Undo the recessed Philips head filter screw (B).
3. Lift out the air filter cartridge.



Assembly

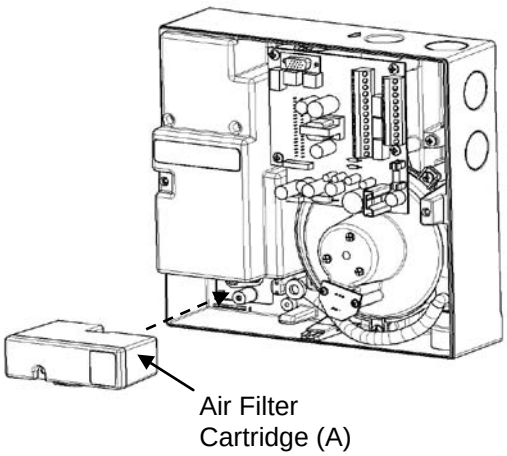
1. Insert a new air filter cartridge (A).
2. Tighten filter screw (B).
3. Reset the filter counter by connecting a LCD programmer or a PC with VSC software to the programming socket.
4. Using a LCD programmer (VN version only):

   a) Enter your user level and PIN number to Log ON to the detector.
   b) Initiate the New Filter command located under the Filter menu.

5. Using a PC only (Applicable to RO version) or Using a PC with a PC-Link HLI (Applicable to VN version only):

   a) Enter your user level and PIN number to Log ON to the detector.
   b) Initiate Reset Filter Settings command located under the Device menu.

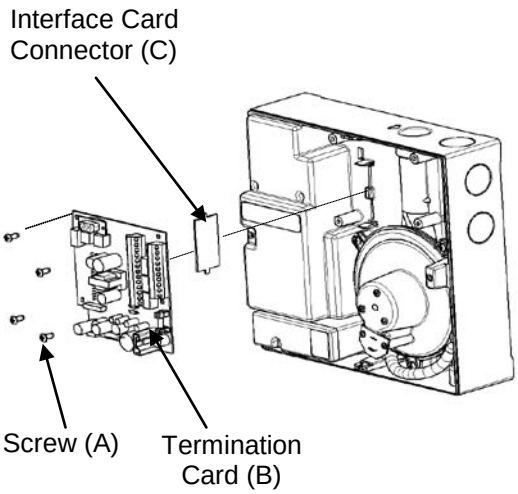
6. Close up the detector.

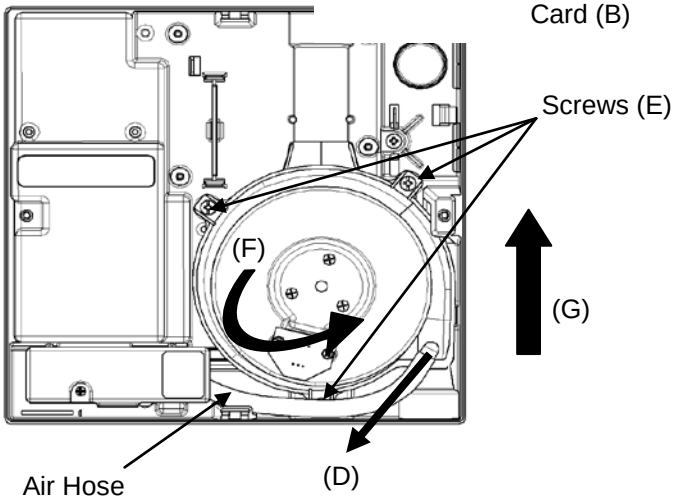


10.5 Replacing the Aspirator

Disassembly

1. Remove the four screws (A) securing the termination card.
2. Disconnect the aspirator cable loom from the connector on the aspirator.
3. Gently pull out termination card (B) from interface card (connected behind).
4. Be careful not to dislodge any wires connected to the termination card.
5. Leave the termination card suspended by its wires.





6. Pull off the air hose from aspirator pipe (D).
7. Undo three Philips head screws securing aspirator (E). Screws are captive and do not come off the aspirator.
8. Turn aspirator anti-clockwise (F) using the exhaust port as the pivot point.
9. Push aspirator upward (G) and remove.

Assembly

1. Check the new aspirator has a gasket on the inlet flange and three attached screws
2. Wipe manifold outlet flange surface (J) if dirty.
3. Do the reverse of disassembly
4. Secure aspirator with three screws
5. **Connect removed air hose** to pipe on aspirator. Ensure a tight fit over the pipe.
6. Insert Termination Card (B) into interface card (C)
7. Secure the termination card with four screws
8. Connect aspirator cable connector to socket on aspirator. Connector is polarised and only be inserted one way
9. Check all wires are secured to their connectors or terminals
10. Power ON the detector and check the aspirator is running
11. Close the detector.

END OF GUIDE