

# VESDA-E VEU Installation Instructions

These installation instructions provide essential information for installing VESDA-E VEU Aspirating Smoke Detectors in accordance with the system design. Additional installation and product documentation is listed below in the Reference Documents section.

## System Components

The detector is shipped with the following components:

- 1 aspirating smoke detector
- 1 mounting bracket (optional)
- 1 mounting template
- 1 End of Line Resistor for the monitored GPI
- 1 installation instruction sheet

## Prerequisites

- A completed system design.
- A 24V DC Power Supply, compliant with local codes and standards.
- Screws and inserts that are appropriate for the mounting surface.
- Type A to Type B USB Interface Lead for initial configuration of the detector.
- Labels as specified in the system design, e.g. Sampling Point labels
- Cable glands that are compliant with the IP rating of the detector.
- Conduit, as specified in the system design.
- 0.2 mm<sup>2</sup> to 2.5 mm<sup>2</sup> (30 -12 AWG) wiring for relays.
- A PC or laptop installed with Xtralis VSC for initial configuration.
- Standard connection instructions for where the detectors are to be added to a corporate network.

## Standards Compliance

### Regional Requirements

- **UL and ULC:** For open area, open area high velocity and duct protection the fire alarm threshold (setting) that initiates an evacuation signal must be set such that the sensitivity of each sampling hole is more sensitive than 10%/m (3.2 %/ft) as determined by the ASPIRE2 software.

## Power Consumption (18 - 30 VDC Supply)

Aspirator Speed	Quiescent			In Alarm		
	Setting 1	Setting 5	Setting 10	Setting 1	Setting 5	Setting 10
VEU-A00	7.0 W	8.8 W	14.7 W	7.8 W	9.6 W	15.5 W
VEU-A10	8.2 W	10.0 W	15.8 W	10.4 W	11.6 W	16.6 W

## Environmental Requirements

- **Temperature**
  - **Ambient:** 0°C to 39°C (32°F to 102°F)
  - **Sampled Air:** -20°C to 60°C (-4°F to 140°F)
  - **Tested to:** -20°C to 50°C (-4°F to 122°F)
- **Humidity:** 10-95% RH, non-condensing

**Note:** Please consult your Xtralis representative for information on operation outside these parameters or where sampled air is continually above 0.05% obs/m (0.015% obs/ft) under normal operating conditions.

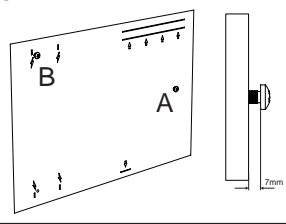
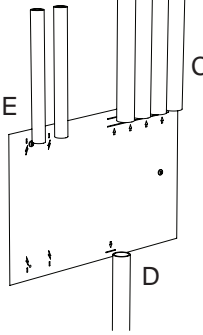
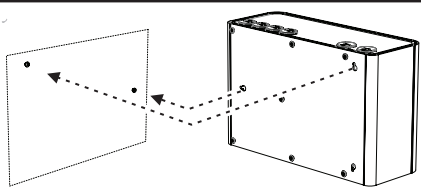
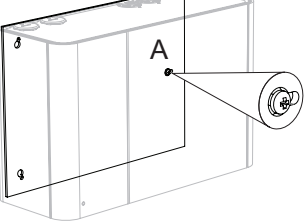
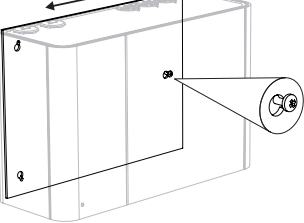
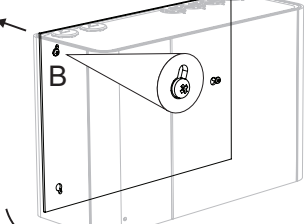
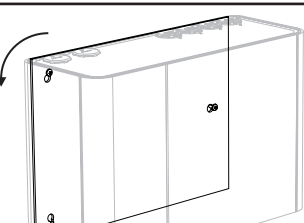
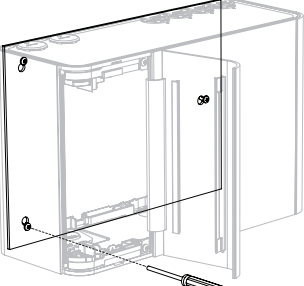
## Reference Documents

Additional installation and product information is contained in the following documents, which are available for download in the Xtralis partner extranet at [www.xtralis.com](http://www.xtralis.com).

- 22061 - VESDA-E VEU-A00 Product Guide
- 22077 - VESDA-E VEU-A10 Product Guide

## Installation Instructions

**Attach the detector directly to the wall using the mounting template as a guide**

Secure the mounting template to the wall and insert mounting screws	
	<ul style="list-style-type: none"> <li>• Secure the mounting template to the wall in the position indicated in the system design using tape or Blu-tack.</li> <li>• Insert two M4 button head screws at positions A and B such that the screw head is protruding 7 mm from the wall.</li> </ul>
Position pipes and electrical conduit	
	<ul style="list-style-type: none"> <li>• Position the inlet pipes (C) on the marked center lines.</li> <li>• Cut the inlet air pipe to the pipe depth lines marked for 1.05" OD or 25 mm OD pipe.</li> <li>• Position the exhaust pipe (if used) (D) on the marked center line.</li> <li>• Cut the exhaust air pipe to the cut line marked for 25 mm OD pipe.</li> <li>• Position electrical conduit (E) on the marked center lines.</li> </ul>
Position the detector on the wall using the keyholes	
	<ul style="list-style-type: none"> <li>• Remove the mounting template.</li> <li>• In order to allow the detector to be positioned, retract the inlet and exhaust pipes and electrical conduit.</li> </ul>
	<ul style="list-style-type: none"> <li>• Position the right keyhole on the rear of the detector over the head of the right screw (A).</li> </ul>
	<ul style="list-style-type: none"> <li>• Slide the detector to the left to lock the detector on the screw.</li> </ul>
	<ul style="list-style-type: none"> <li>• Rotate the detector clockwise to position the large end of the detector's top-left keyhole over the head of screw B.</li> <li>• Push the detector to the wall.</li> </ul>
	<ul style="list-style-type: none"> <li>• Rotate the detector anticlockwise to lock the detector on to the screw.</li> </ul>
Secure the detector to the wall	
	<ul style="list-style-type: none"> <li>• Open the door by gently inserting an Allen key, Philips head screwdriver or flat blade screwdriver with the blade vertically oriented into the hole at bottom left, then pulling the door open.</li> <li>• Insert a screw at the small end of the detector's bottom-left keyhole.</li> <li>• Tighten the top and bottom screws.</li> <li>• Insert the pipes and electrical conduit.</li> </ul>

### Mounting with the optional Wall Bracket

Refer to the Product Guide for further information.

### Inverted Mounting

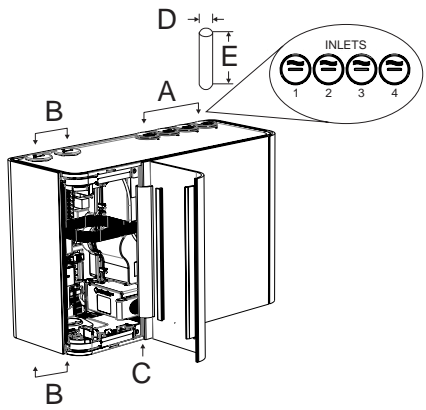
Some system designs require that the detector be inverted. Directions for correcting the orientation of the fascia for an inverted detector are available in the Product Guide.

# VESDA-E VEU Installation Instructions

## Prepare Detector: Wiring, Pipe Inlet and Exhaust Ports

Remove the appropriate plugs for electrical cable installation (B), air sampling pipe inlet ports (A), and exhaust port (C).

- Where the system design requires less than four air sampling pipe inlet ports, use ports 2 and 3 before using ports 1 and 4.
- Do not remove the plugs from holes that will not be used.
- Ensure that pipes are clean and their ends are square and smooth.



A	Inlet Port, Qty 4	25 mm (1")
B	Cable Entry Port, Qty 4	25 mm (1")
C	Exhaust Port	25 mm (1")
D	Inlet Pipe Diameter	25mm (1") OD
E	Minimum Inlet Pipe Length	500mm (19.6")

**Note:** To remove the pipe inlet and cable entry port plugs, place a large screwdriver in the large slot and twist, or use a small screwdriver in the side slots to lever the plug out.

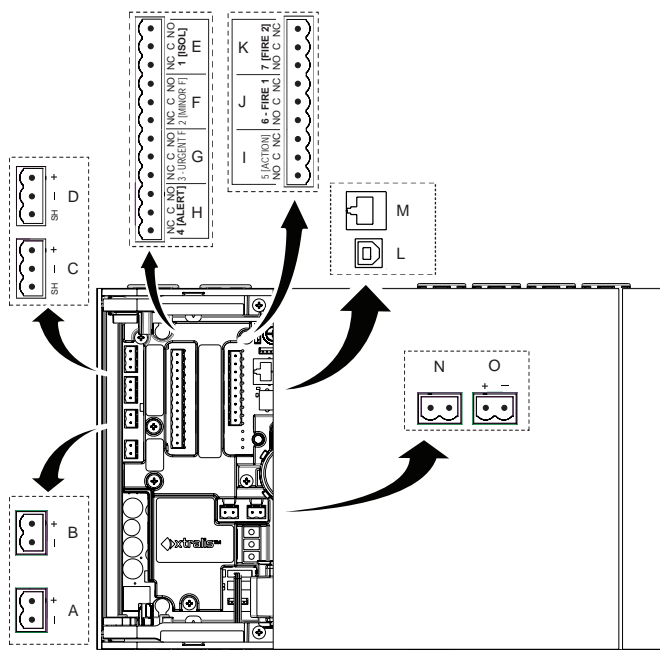
- Insert the inlet and exhaust pipes (if used) into the correct inlet ports (A) and exhaust port.
- Exhaust pipe should be as short as possible.
- Feed the electrical wiring connections through the cable entry ports.
- Use the correct cable gland size to fit into the 25 mm (1") cable entry port. Use correctly rated cable glands to maintain the required IP rating.

**Note:** Do not glue the inlet and exhaust pipe into the detector ports. The product warranty will be void if the pipes are glued.

## Wiring: Power, Relays, GPI, Loop Module, VESDAnet, Standalone Detector

**Warning:** Always switch detector power OFF before plugging/unplugging electrical, relay or network connections. Failure to do so may cause data corruption and/or component failure.

**Avertissement :** Eteignez toujours détecteur avant de brancher/débrancher les relais électriques, ou de connexions réseau. Au cas contraire vous pouvez entraîner la défaillance corruption et/ou élément de données.



Power	
A	Power Out
B	Power In
VESDAnet	
C	VESDAnet B
D	VESDAnet A
Relays	
E	1 - Isolate
F	2 - Minor Fault
G	3 - Urgent Fault
H	4 - Alert
I	5 - Action
J	6 - Fire 1
K	7 - Fire 2
Communications	
L	USB
M	Ethernet
GPI	
N	Monitored GPI
O	Unmonitored GPI

## Power and Relay Wiring

**Power:** There are two sets of power terminals on the main board. Connect a 24 VDC power supply to the PWR IN socket (B). If required, connect to another detector via the PWR OUT socket (A).

**Relays:** The relays interface to the Fire Alarm Control Panel (FACP) to communicate faults, alarms and disabled states. Relay contacts are rated 2 A @ 30 VDC, resistive. Connect as required by the system design. Use electrical wire sizes from 0.2 mm<sup>2</sup> to 2.5 mm<sup>2</sup> (30 -12 AWG). Refer to the Addressable Loop Module example.

**Warning:** Ensure that all wiring complies with manufacturer's instructions and local and national fire detection code requirements. Refer to Codes and Standards Information for Air Sampling Smoke Detection section of the detector product guide for further information on wiring compliance.

**Avertissement :** Verifier que toute les cables ont passé au nombres d'instructions du fabricant et locaux et au feu national de securited'incendie sois exiger. Adresser aux codes informations sur les normes et reglementations de detection de fume par prelevement d'air par le notice descriptive du produit pour plus de renseignements au conformite du cablage.

**Caution:** DO NOT LOOP WIRE UNDER TERMINALS WHEN WIRING DETECTORS. BREAK WIRE RUNS TO PROVIDE SYSTEM SUPERVISION OF CONNECTIVITY.

**Attention :** NE PAS RALIER LES CABLES TERMINAUX PENDANT LES CABLAGES DES FILS. POUR TOUTES LES CONNECTIONS A RELAIS, INTERROMPRE LES FILS POUR PERMETTRE LA SUPERVISION DU CABLAGE.

**Note:** For information on wiring for other types of devices that may be required by the system design, refer to the detector Product Guide and documentation accompanying the device.

## Unmonitored GPI

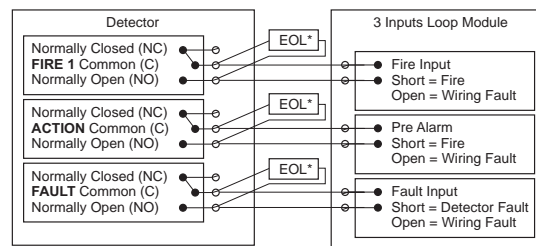
The Unmonitored GPI is a programmable input which can be configured to initiate a number of different actions, including, by default, a Remote Reset function.

## Monitored GPI

The monitored GPI senses contact closure and is configurable to initiate the same actions as the unmonitored GPI. "Mains OK" is the default setting. A closed contact signals GPI ON and open contact signals GPI OFF.

A 10K end of line resistor is used to allow the detector to monitor for open circuit faults in the wiring from the detector to the contact.

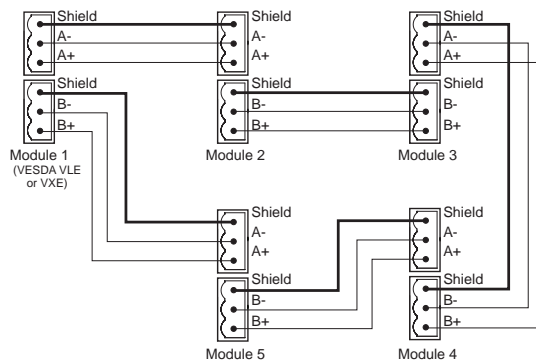
## Connection to Addressable Loop Module for Reporting Alarms and Faults



This wiring example is for wiring VESDA detectors to a typical third party Input Loop Module with three inputs.

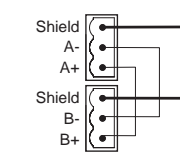
This is an example drawing. Refer to the appropriate product manual for the exact wiring details of the third party equipment.

## Connection to VESDAnet



The diagram shows an example of the wiring for a closed VESDAnet loop, which is the recommended configuration. Remove the factory default A and B links from the VESDAnet sockets (C and D) prior to connecting the detector to the VESDAnet. It is recommended that 120 Ohm twisted pair cables (e.g. Belden 9841) be used for including the devices in the network, with a maximum length between devices of 1.2 km. The polarity of the data wires must be maintained throughout the network.

## Standalone Detector



The diagram below shows the factory default wiring for VESDAnet sockets (C and D) as required for a detector that is not connected to a VESDAnet.

- Leave as is, or replace if it has been removed.

## Communications

- **USB:** The USB port (L) is used for initial configuration and local maintenance or servicing of the detector using a PC or laptop installed with Xtralis VSC software. Install Xtralis VSC prior to connecting the detector to the computer. This ensures that the required USB drivers are present.
- **Ethernet:** The Ethernet port (M) is used for permanent network connection to the detector, and provides a gateway to any other devices on the VESDAnet network. An Ethernet lead can be routed through the cable entry ports and plugged into the Ethernet port. Use a standard Ethernet lead when connecting the detector to a network switch, router or directly to a PC or laptop. Ethernet connection must be configured using a USB connection prior to use. Set the detector access password using Xtralis VSC.
- **WiFi:** The WiFi module allows connection of laptops installed with Xtralis VSC to the detector, and provides a gateway to any other devices on the VESDAnet network. WiFi must be enabled and configured using a USB connection prior to use. Set the detector access password using Xtralis VSC.

## Sampling Pipe Network

Complete the pipe network installation in accordance with the system design. Refer to the detector Product Guide and the VESDA Pipe Network Installation Guide for general information regarding pipe network installation.

- Ensure that the exhaust is open, the pipes are clear and all sampling holes have been drilled.

## Power Up

Connect 24 VDC power to the Power In terminals (2). Close front door.

## Configuration

For initial configuration, use a USB connection and the Xtralis VSC software.

- For networked detectors, set the IP address and subnet mask according to standard building instructions.
- Set the Pipes in Use value in the Airflow configuration options.
- Set the aspirator RPM to the value specified in the system design.
- Let the detector run for approximately 2 minutes and confirm that the pipe raw flow rates (L/min) match the ASPIRE2 predictions using Xtralis VSC.
- Normalize the airflow. This takes approximately 10 minutes, after which the pipe flow rates (%) should be close to 100%.
- Reset the detector. It should now be running without faults.

## Commissioning

- Carry out Smoke Test. Refer to the VESDA Commissioning Guide for further information.

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