VESDA-E VEP Installation Instructions

These installation instructions provide essential information for installing VESDA-E VEP 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
- 1 mounting template for directly mounting the detector to the mounting surface
- 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.
- Conduit, as specified in the system design.
- 0.2 mm² to 2.5 mm² (24 - 14 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

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 ASPIRE software.

European Installations

EN 54-20

The product must use a power source conforming to EN 54-4 and EN60890-1 Section 2.5.
- 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 3% obscuration/m and transport time less than 90 seconds
- For a Class C detector, hole sensitivity must be better than 8% obscuration/m and transport time less than 110 seconds

These limits should be verified using ASPIRE 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 ASPIRE must be greater than 20 L/m.

Power Consumption (18 - 30 VDC Supply)

<table>
<thead>
<tr>
<th>Aspirator Speed</th>
<th>Quiescent</th>
<th>In Alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEP-A00-1P</td>
<td>8.8 W</td>
<td>10.0 W</td>
</tr>
<tr>
<td>VEP-A00-P</td>
<td>7.0 W</td>
<td>9.6 W</td>
</tr>
<tr>
<td>VEP-A10-P</td>
<td>8.2 W</td>
<td>10.4 W</td>
</tr>
</tbody>
</table>

Environmental Requirements

- **Temperature**: Ambient: 0°C to 38°C (32°F to 102°F)
- **Sampled Air**: -20°C to 60°C (-4°F to 140°F)
- **UL**: -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.
- 22060 - VESDA-E VEP-A00 Product Guide
- 22071 - VESDA-E VEP-A10 Product Guide

Installation Instructions

Notes: These limits should be verified using ASPIRE during the design of the sampling pipe network.

Position the mounting bracket as specified by the system designer

- Position the mounting bracket (A) to allow sampling pipes (B) and electrical conduit (C) to line up horizontally with the alignment marks (D) and vertically with the appropriate pipe depth line.
- 3/4 inch IPS (1.05 inch OD) sampling pipe should vertically align with the top depth line (E).
- 25 mm OD sampling pipe should vertically align with the bottom depth line (F).
- Hold the plate in position and mark positions for 5 screw holes (G) on the mounting surface. Remove the plate and drill holes. Insert plugs if required.

Attach the detector directly to the mounting surface

- Use screws and inserts that are appropriate for the mounting surface and the weight of the detector.

Secure the detector to the wall using the mounting bracket

- Align the mounting plate with the holes. Ensure that the plate is level.
- Insert and tighten two screws (B) in the keyhole slots (C) followed by three screws (D) in the remaining slots.
- Align the mounting studs (A) on the rear of the detector with the mounting stud slots on the mounting bracket.
- Ensure that the center stud (B) is in its slot.
- Slide the detector (C) down until the top of the detector is flush with the top of the mounting bracket.

Secure the detector to the mounting bracket

- Open the door on the front of the detector by inserting a thin screwdriver (A) into the hole at bottom left of the door (B) and firmly pushing perpendicular to the door surface to release the door latch.
- Remove the tape covering the partially inserted locking screw (C).
- Tighten the locking screw.

Secure the detector to the mounting surface

- This provides more information for further information.

Note: Do not mount the detector with a sideways orientation.
- Ensure the mounting surface is flat as this allows an air tight seal to be achieved between the sampling pipe and the tapered air inlet pipes on the detector.
- Refer to the detector Product Guide for information on inverted mounting.

- Ensure that there is sufficient clearance to mount the detector, noting the location of air sampling pipes and cable entry points. Due to the rigid nature of the plastic pipe, installation must provide for sufficient movement in all pipework (air inlet, air exhaust and cable pipes) to allow pipe ends to be easily fitted and removed.
  - A: Minimum 50 mm (2 in.) below ceiling level.
  - B: The detector can be mounted directly against a wall or obstruction.
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).
- For VEP-P detectors, where the system design requires less than four air sampling pipe inlets, use ports 2 and 3 before using ports 1 and 4.
- For VEP-IP detectors, use port number 1.
- Do not remove the plugs from inlet ports that will not be used.
- Ensure that pipes are clean and their ends are square and smooth.

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 toutes les cables ont passe au nume d’instructions du fabricant et locaux et au feu national de securite incendie sols exiger. Addresser 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 conforme du cabling.

Note:
Remove the appropriate plugs for electrical cable installation (B), air sampling pipe inlet ports (A), and consent of Xtralis.

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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. “Marine OK” is the default setting. A closed contact signals GPI ON and open contact signals GPI OFF.

Power and Relay Wiring

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

Relays: The relays interface to the Fire Alarm Control Panel (FACP) and alarm communications and disabled states. Relay contacts are rated 2A @ 30 VDC, resistive. Connect as required by the system design. Use electrical wire sizes from 0.2 mm² to 2.5 mm² (24-14 AWG). Refer to the Addressable Loop Module example.

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 Xtras 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 device's instructions and local and national fire detection code requirements. Ensure that the exhaust is open, the pipes are clear and all sampling holes have been drilled.

Comminging
Carry out a smoke test. Refer to the product guide for further information.

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.

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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.

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 8841) be used for connecting 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.

FM Hazardous Locations
Suitable for Class I, Div 2, Groups A,B,C and D. T5 (Ta = 0°C to +40°C)

Ensure grounding ‘ring’ connector is assembled and wired into ground terminal. See diagram below.

Standpipe Network

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

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

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