VESDA-E Remote Accessories Product Guide

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Scope

The VESDA-E Remote Accessories Product Guide provides a comprehensive description of features, technical specifications, components of the system and their functions. It also provides installation specifications, configuration, cabling and powering up the VESDA-E Remote Accessories.

The VESDA-E Remote Accessories Product Guide is written for everyone who are involved with the design specifications, maintenance and purchase of VESDA-E Remote Accessories systems. It is assumed that anyone using this product has the knowledge and appropriate certification from local fire and electrical authorities.

Document Conventions

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 injury.

Contact Us

www.xtralis.com

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 The information below was correct at time of printing but may now be out of date, check with your local codes, standards, and listings for the current restrictions.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; reorientate 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.

Honeywell International

12 Clintonville Rd,
Northford CT 06472
Tel +1 203-484-7161

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 as determined by ASPIRE software. The detector can send this signal via the Fire Alarm Panel Output signal or the Pre-alarm output signal.

Product Listings

- UL
- ULC

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

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Product Security Advice

Warning: Failure to comply with the requirements below exposes the system to malicious interference which could disable smoke reporting.

Avertissement : Le non-respect des exigences suivantes expose le système à des interférences malveillantes qui pourraient désactiver le signalement de la fumée.

Scan the QR code to access the latest security advice available from: https://xtralis.com/11825

Commissioning Requirements

- All VESDAnet wiring and connection ports must be secured against unauthorized access.
- Ethernet ports must ONLY be connected to networks which are secure and physically or logically separate from business IT infrastructure.
- VESDA-E Remote Accessories and VESDA-E devices including HLIs must not be accessible from the Internet. Any provision of remote access to VESDA-E Remote Accessories must be subjected to a full cyber security risk assessment and regular review.
- Passwords must be chosen in line with the guidelines in the detector user guide and provided to trusted users only.
- Default PIN codes must be changed as part of the initial configuration.
- Access to PCs on which Xtralis VSC or VSM configuration software and system configuration information are installed must be restricted to authorized persons if saved passwords are used.
- Xtralis PC software such as VSC or VSM, must only be installed on PCs with current active Windows support from Microsoft.
- Product should be checked prior to installation to determine if there are any broken seals which may indicate unauthorised tampering. If this is the case, contact Xtralis for advice.

System Maintenance Requirements

- Do NOT use the USB port for long-term monitoring or allow it to be permanently wired to building infrastructure. It is only to be used for configuration and maintenance by authorized personnel.
- If Xtralis product requires firmware upgrade, ensure that the upgrade package is genuine and obtained directly from Xtralis.

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1 Introduction

The VESDA-E Remote Accessories are designed to provide remote access for VESDA-E detectors. The Remote Accessories extend the display and relay capabilities of the VESDA-E detector allowing for greater flexibility and connectivity with your VESDA smoke detectors. The remote mounting option is normally exercised where there is a need to monitor and/or manage a stand-alone detector or one connected to VESDAnet, from a remote location. VESDA-E Remote Accessories, when connected, can remotely acknowledge, reset, and provide USB/Ethernet access to all VESDA-E devices on the VESDAnet loop.



VESDA-E Remote Box



VESDA-E 19" Sub-Rack Remote Box

Figure 1-1: VESDA-E Remote Accessories

The VESDA-E Remote Accessories are designed to work with:

- VESDA-E series of detectors (VEP, VEP-1, VEU & VES)

The VESDA-E Remote Accessories are available in two mounting options:

- Wall Mount option - VESDA-E Remote Box (VER Models)
- Sub-Rack option - VESDA-E Sub-Rack Remote Box (VEK Models)

The user can choose below configuration options in any of the mounting options:

Product Name	No. of Relays	Product Code
VESDA-E Remote Display No Relays	0	VER-A10-0
VESDA-E Remote Display (7 Relays)	7	VER-A10-7
VESDA-E Remote Display (12 Relays)	12	VER-A10-12
VESDA-E Access Point	0	VER-A30
VESDA-E Remote Relays (7 Relays)	7	VER-A40-7
VESDA-E Remote Relays (12 Relays)	12	VER-A40-12
VESDA-E Sub-Rack Remote Display No Relays	0	VEK-A10-0
VESDA-E Sub-Rack Remote Display (7 Relays)	7	VEK-A10-7
VESDA-E Sub-Rack Remote Display (12 Relays)	12	VEK-A10-12
VESDA-E Sub-Rack Access Point	0	VEK-A30
VESDA-E Sub-Rack Remote Relays (7 Relays)	7	VEK-A40-7
VESDA-E Sub-Rack Remote Relays (12 Relays)	12	VEK-A40-12
Sub-Rack Box	0	VEK-0
19" Sub-Rack	0	VEK-0000

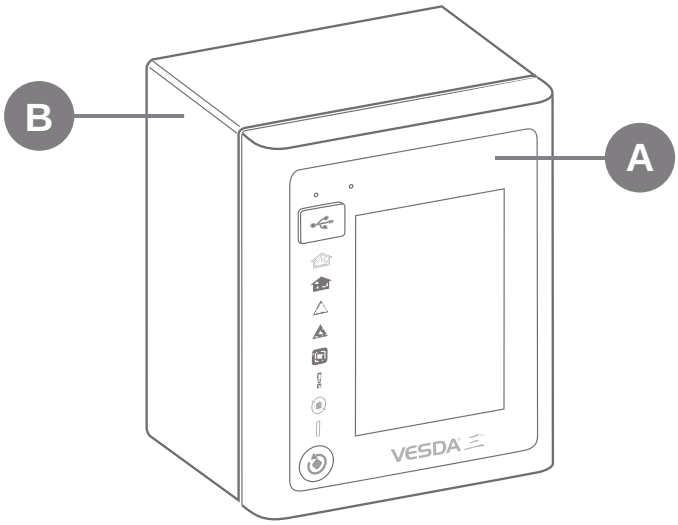
1.1 Features

- Remote indication of Fire, Faults, and status
- USB and Ethernet option for configuration of VESDA-E Remote Accessory and other devices connected in VESDAnet loop through VSC
- 3.5” colour touch screen
- Seven or Twelve relay options
- VESDA-E stand alone remote box achieves IP40 rated solid Ingress Protection
- Wall mount and 19" Rack/Din Rail mounting options
- Firmware upgrade supported

2 Product Information

2.1 VESDA-E Remote Accessory Components

The VESDA-E Remote Accessories are designed as Box modules/models with two main components (Front Fascia and Remote Back Box). The Front Fascia assembly is available with a 3.5" LCD Display option or a standard Front Fascia with a power LED only. The Remote Back Box contains all the electronic components which has specific cutouts for wall mount and Sub-Rack mount options.



Legend	
A	Front Fascia
B	Remote Back Box

Figure 2-1: VESDA-E Remote Accessory

2.2 Theory of Operation

The VESDA-E Remote Accessory is designed to provide remote access for VESDA-E series of detectors. It enables the availability of display and relay functionalities of VESDA-E detectors to more accessible and convenient place. The VESDA-E Remote Accessory is connected to VESDA-E detector via the VESDAnet. Each detector is assigned with a unique zone number from 1 to 254.

VESDA-E Remote Accessories are designed to mirror the information from a single VESDA-E detector on the VESDAnet loop. Up to 20 VESDA-E Remote Accessories can be mapped to a single detector but only one detector can be mapped to a VESDA-E Remote Accessory.



Figure 2-2: Multiple VESDA-E Remote Accessories mapped to a single detector

The VESDA-E Remote Accessory will indicate the smoke level, alarms and fault status of a mapped VESDA-E detector. It can also acknowledge and reset the detector remotely. The USB port located on the VESDA-E detector and Accessories allows for mapping and the configuration of any detectors on the loop.

The VESDA-E Remote Accessory supports Ethernet RJ45 Socket (VER-A30 and VEK-A30) enabling IP connectivity with VSC/VSM tools. A direct temporary connection to a PC is possible via the USB interface whilst Ethernet allows for permanent monitoring.

2.3 VESDA-E Remote Display Baseline (Box with Display)

The VESDA-E Remote Display Baseline for the VESDA-E Remote Accessories is designed with a 3.5" display support and LED indications of Fire, Fault and status of VESDA-E Detectors. The unit can remotely acknowledge or reset events via the Reset button. The Front Fascia has a USB port that can allow the remote configuration of VESDA-E detectors via the VESDAnet.



Figure 2-3: Front Fascia with Display Assembly

2.3.1 RESET / DISABLE / ACKNOWLEDGE Button



Figure 2-4: Reset / Disable / Acknowledge Button

The button on the VESDA-E Remote Accessories Front Fascia panel can control multiple functions on the mapped VESDA-E detector.

If there is an alarm or fault condition, pressing the button first time will acknowledge the condition. Subsequent presses will reset or disable the VESDA-E detector as shown in the table below:

Operation	Button Press
Reset the VESDA-E Detector	Press and release.
Disable the VESDA-E Detector	Press and hold the button for approximately 4 seconds, until the DISABLED LED illuminates continuously.
Enable the VESDA-E Detector	Press and hold the button for approximately 4 seconds, until the DISABLED LED turns OFF.

2.3.2 Touch Screen

The built-in 3.5” touch screen provides the current smoke graph indication with threshold levels, overall fault status, connected detector model number, location and individual faults in the main screen.

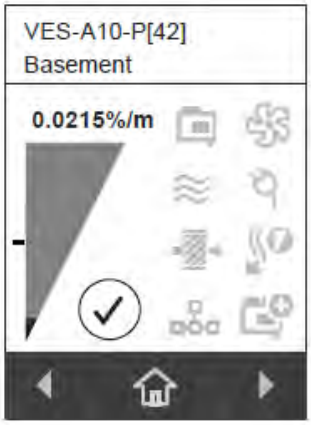


Figure 2-5: Main Screen

The accessory touch screen display is replicated from VESDA-E detector. Refer to the detector product guide for detailed information.

2.4 VESDA-E Remote Relay Baseline (Box without a display)

The VESDA-E Remote Relay for the VESDA-E Remote Accessories is designed to provide relay box terminals for large network installations. The relay units mapped to a detector can offer expansive relay options allowing users to extend additional relay configurations for the detector it is mapped to. The VESDA-E Remote Relay is used when there is a requirement for reporting and/or triggering an external device, such as a fire alarm control panel or Fire system device located away from the detector. The Remote Relays Box mirrors messages and status from the detector via the VESDAnet, then distributes messages to the programmed relays.

Additionally, VESDA-E Remote Accessories have been designed to be firmware upgradeable, allowing for new features and detectors release compatibility.

The Front Fascia has the below components:

- USB connector which can be used for configuring, commissioning and firmware upgrading of the accessory
- Firmware Upgrade Switch
- Power On / Firmware Upgrade Status LED

Caution: It is advisable to not disconnect wire cable assembly from Front Fascia Display / User Interface to avoid any failure related to Electrostatic discharge (ESD).

Attention : Il est recommandé de ne pas débrancher l'ensemble de câbles de l'affichage/interface utilisateur du panneau avant pour éviter toute défaillance liée aux décharges électriques (ESD).

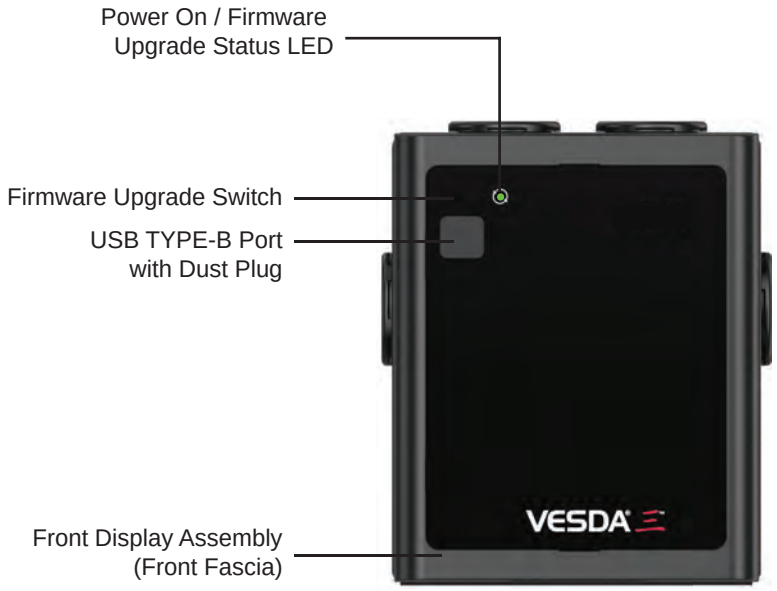


Figure 2-6: Front Fascia without Display Assembly

Figure 2-6 shows the Front Fascia of VESDA-E Remote Accessories without Display.

Note: Power On / Firmware Upgrade Status LED will be Green during Normal Operation.

2.5 VESDA-E Remote Access Point (Ethernet Connection)

The VESDA-E Remote Display Baseline for the VESDA-E Remote Accessories is designed to provide Ethernet communication via RJ45 Ethernet port for permanent network connection for VER-A30 and VEK-A30. The Ethernet port is used for configuration and/or monitoring purposes. It enables direct or routed network connection between the detector and a PC or laptop installed with VSC/VSM. Use a standard Ethernet cable when connecting the VESDA-E Remote Accessory to a network switch, router or directly to a PC or laptop.

The Front Fascia has the below components:

- USB connector which can be used for configuring, commissioning and firmware upgrading of the accessory
- Firmware Upgrade Start Switch
- Power On / Firmware Upgrade Status LED

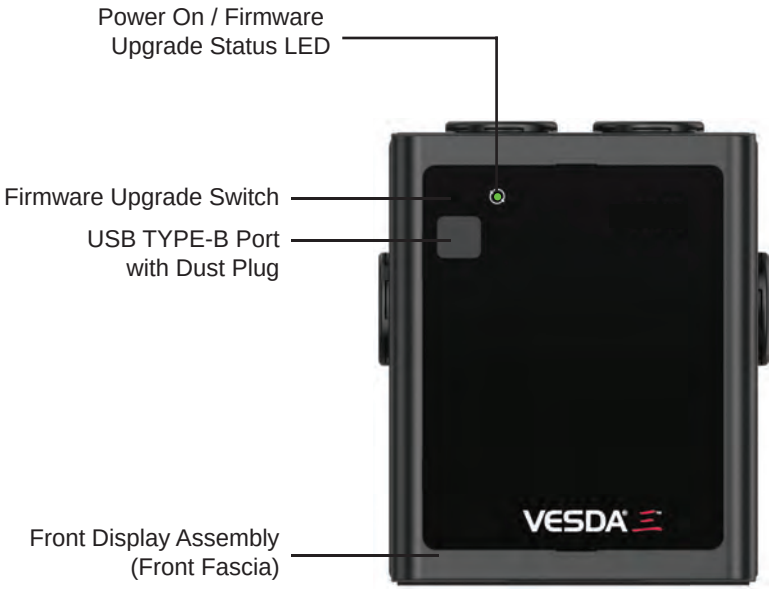


Figure 2-7: Front Fascia for Access Point

Ethernet port on Access point (VER-A30 and VEK-A30 Models) can be accessed by opening the Front Fascia in VER-A30 and at the rear side of the VEK-A30 as shown Figure 2-12 of Ethernet section.

Note: Power On / Firmware Upgrade Status LED will be Green during Normal Operation.

2.6 Communication Ports

Most of the user operations are performed using software installed on a PC connected to the VESDA-E Remote Accessory via one of the physical communication ports (USB or Ethernet). The VESDA-E Remote Accessories support USB as a standard for all variants, and Ethernet for VER-A30 and VEK-A30 variants.

The correct connection method to use depends on the purpose of connecting to the detector (Figure 2-8).

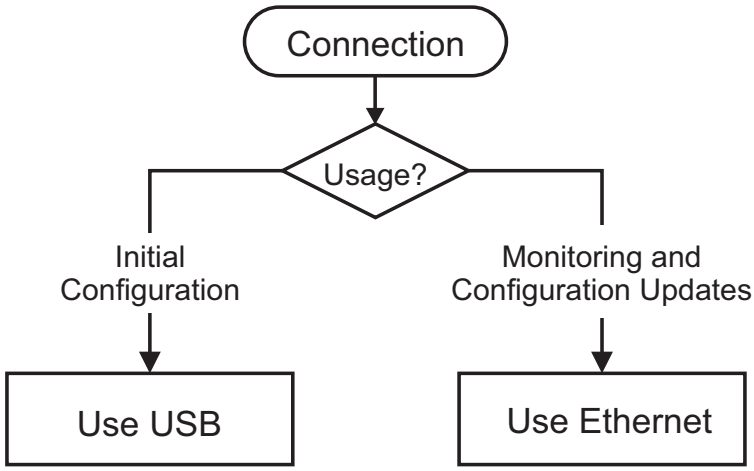


Figure 2-8: Connection Method

2.6.1 USB

The USB port is used for configuration purposes ONLY. It allows direct connection between a VESDA-E Remote Accessory and a PC or a laptop running the Xtralis VSC software. The USB also supports firmware upgrade. The USB connection is located on the front panel as shown in Figure 2-9.

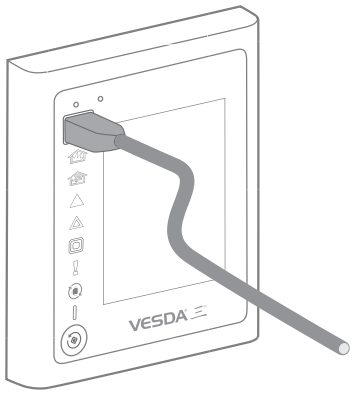


Figure 2-9: USB TYPE-B Port Connection

Direct connection between the VESDA-E Remote Accessory and the PC installed with Xtralis VSC can be made using a Type A to Type B USB interface lead as shown below.



Figure 2-10: Type A to Type B USB Interface Lead

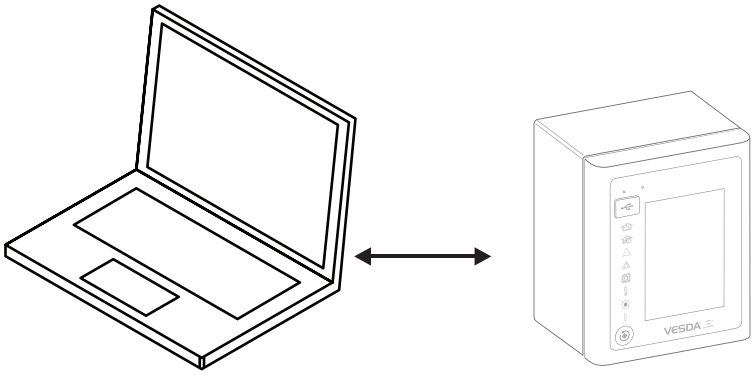


Figure 2-11: Connecting a VESDA-E Remote Accessory to a laptop via USB

Note: The USB port must not be used for permanent field connection.

2.6.2 Ethernet

The Ethernet port is used for configuration and/or monitoring purposes. It enables direct or routed network connection between the VESDA-E Remote Accessory and a PC or laptop installed with Xtralis VSC/VSM.

Use a standard Ethernet cable when connecting the VESDA-E Remote Accessory to a network switch, router or directly to a PC or laptop. Ethernet port can be accessed by opening the Front Fascia in VER-A30 and at the rear side of VEK-A30 as shown in Figure 2-9.

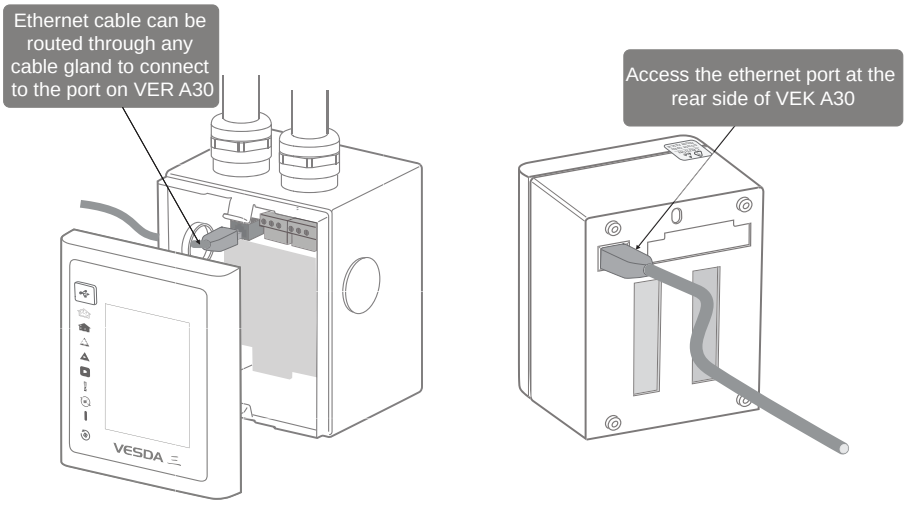


Figure 2-12: Accessibility for Ethernet Port for VER-A30 and VEK A30

2.7 VESDAnet

VESDAnet is a bidirectional data communication network between connected VESDA-E devices. VESDAnet connectivity is available on all VESDA devices.

It is recommended that RS 485 (Belden 9841 - 120 Ohm) twisted pair cables be used for including the devices in the network.

The network cables are terminated at the VESDAnet A and B Terminals. Cabling from one VESDA-E device is brought into the detector at one terminal and looped out to another device on VESDAnet from the other terminal.

Notes:

- The polarity of the data wires must be maintained throughout the network.
- In order for the detector to be able to detect ground faults on the VESDAnet wiring, the Ground Reference.

The VESDAnet also supports configuring the VESDA-E Remote Accessories from Xtralis VSC software. Figure 2-13 shows the interconnection of VESDAnet port:

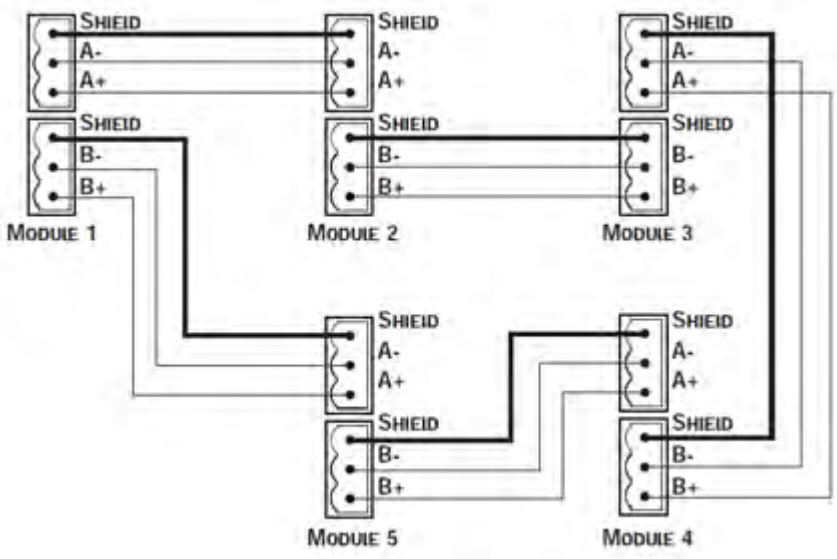


Figure 2-13: VESDAnet connection

Note: Refer to the VESDA-E Communications Guide for further information.

2.8 Specifications

Table 2-1: VESDA-E Remote Accessories Specifications

Specification	Value					
Supply Voltage	18 to 30 VDC (24 VDC Nominal)					
Power Consumption	**VER-A10-0 and VEK-A10-0**	**VER-A10-7 and VEK-A10-7**	**VER-A10-12 and VEK-A10-12**	**VER-A30 and VEK-A30**	**VER-A40-7 and VEK-A40-7**	**VER-A40-12 and VEK-A40-12**
Max Power (with Alarm)	2.112 W	3.35 W	4.14 W	1.159 W	2.593 W	2.77 W
Peak Current (with Alarm)	0.09 A	0.14 A	0.17 A	0.0483 A	0.106 A	0.12 A
Operating Conditions	**Temperature:** • **Ambient:** 0°C to 39°C (32°F to 102°F) **Humidity:** • 5-95% RH, non-condensing					
Storage Conditions (Non-operational)	• **Humidity:** Dry (<95%) • **Temperature:** 0° to 85°C • Must not be exposed to sunlight or other radiation sources					
Relays	• Contacts rated 2A @ 30 VDC (Resistive) • Programmable to latch or not latch alarm or fault states					
Model	**VESDA-E Remote Box**		**VESDA-E Sub-Rack Remote Box**		**19" Sub-Rack Unit**	
Dimensions (WHD)	111 mm x 131 mm x 105 mm (4.3" x 5.1" x 4.1")		105 mm x 128 mm x 109.6 mm (4.1" x 5.0" x 4.3")		482 mm x 132.5 mm x 121 mm (18.9.1" x 5.2" x 4.7")	
Weight	1.2 kgs		0.76 kgs		1.0 kgs	
IP Rating	IP40		NA		NA	
Mounting	Flat surface/ Wall Mount		19" Sub-Rack		Standard 19in Server rack/ Din Rail/ 19'" Enclosure	
Cable Access	4 Nos, Cable Entry Port Caps for IP rating recommended cable glands		Plug-n-Play mounted on a 19" Sub-Rack		Rear cables plugs-in	
Cable Termination	Screw terminal blocks (0.2-1.5 sq mm, 24-16 AWG)					
Interfaces	• USB -B (Type 2) • Ethernet (RJ45)					

3 Installation

3.1 VESDA-E Remote Box

The VESDA-E Remote Box offers the option to mount modules as standalone units. The remote mounting option is used to monitor and/or manage a standalone detector, from a remote location.

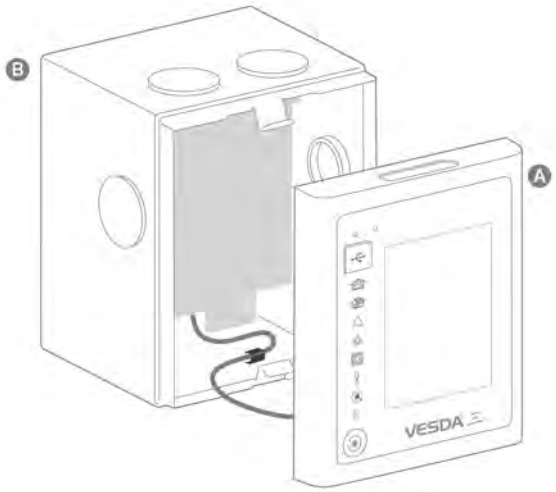


Table 3-1: VESDA-E Remote Box SKUs

Product Name	Product Code
VESDA-E Remote Display No Relays	VER-A10-0
VESDA-E Remote Display (7 Relays)	VER-A10-7
VESDA-E Remote Display (12 Relays)	VER-A10-12
VESDA-E Remote Relays (7 Relays)	VER-A40-7
VESDA-E Remote Relays (12 Relays)	VER-A40-12
VESDA-E Access Point	VER-A30

3.1.1 Product information

The VESDA-E Remote Box can be disengaged in two sub-assemblies during field installation. The Remote Back Box (A) sub-assembly houses the Communication and Remote Termination cards and the Front Fascia (B) assembly houses the Display/User Interface.



Legend	
A	Front Fascia
B	Remote Back Box

Figure 3-1: VESDA-E Remote Box

The dimensions are: 111 mm x 131 mm x 105 mm (4.3" x 5.1" x 4.1") (WHD).



Figure 3-2: VESDA-E Remote Box

3.1.2 Status LEDs

Below table shows the LED indications and their functions:

Table 3-2: LED Indicators

LED	Symbol	Description
Fire 2		The Fire 2 LED is lit when the Fire 2 Alarm is reported in mapped VESDA-E Detector.
Fire 1		The Fire 1 LED is lit when the Fire 1 Alarm is reported in mapped VESDA-E Detector.
Action		The Action LED is lit when the Action is reported in mapped VESDA-E Detector.
Alert		The Alert LED is lit when the Alert is reported in mapped VESDA-E Detector.
Disabled		The DISABLED LED is lit continuously when the mapped device is disabled and flashes once every two seconds when it's in Standby mode.
Fault		The FAULT LED flashes once every two seconds, when a fault condition is detected at the mapped VESDA-E Detector or Remote Box.
Firmware Upgrade		This LED blinks for firmware update and flashes once every two seconds.
Power		The POWER LED illuminates when the Remote Box is powered up.

Note: The LEDs are tested during the power up cycle. To manually test the LEDs, use Xtralis VSC.

Table 3-3: Remote Relay Baseline Firmware Upgrade Status LED Indicator

LED	Symbol	Description
Power		The Power LED illuminates when the Remote Box is powered up.
Firmware Upgrade		LED Turns to Amber during firmware upgrade and back to Green on upgrade completion.

Note: Used only in VER-A30, VEK-A30, VER-A40 and VEK-A40 models.

3.1.3 Mounting a VESDA-E Remote Box

The VESDA-E Remote Box can be mounted on any flat wall surface. The standalone unit is designed with two mounting options (Normal or Inverted) with flexible wire cable options as shown in Figure 3-3. For more information on the inverted mounting orientation VESDA-E Remote Box , refer to section Inverted Mounting.

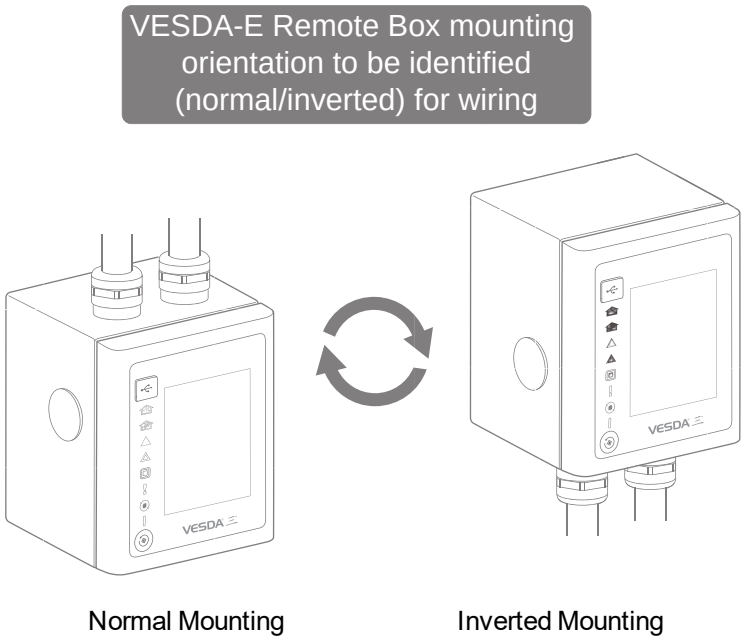


Figure 3-3: VESDA-E Remote Box Mounting Orientation

Mouting Steps:

1. For disengaging, gently pull the Front Fascia (A) by gripping hold along the recess feature provided on top to release the snaps. Make sure to avoid any tension on the connector cable wire assembly (C) connected to the Display / User Interface while pulling.
2. The Remote Back Box (B) has four cable entry ports. Determine the cable entry port that is most appropriate for use. Remove the port cap by lifting the cap using screwdriver along the recess feature (i) provided on the cap as shown in Figure 3-4.
3. Drill the required mount holes on the flat surface using the mounting template sheet provided. Secure the Remote Back Box in a horizontally straight position by aligning it to the four screw holes (# No-10 Min 1-1/2" length with Hex head Ø 9 mm (3/8") Max).
4. As per field requirements, a 25mm (1") cable glands on the Remote Back Box (B) to be used across the cable entry port.

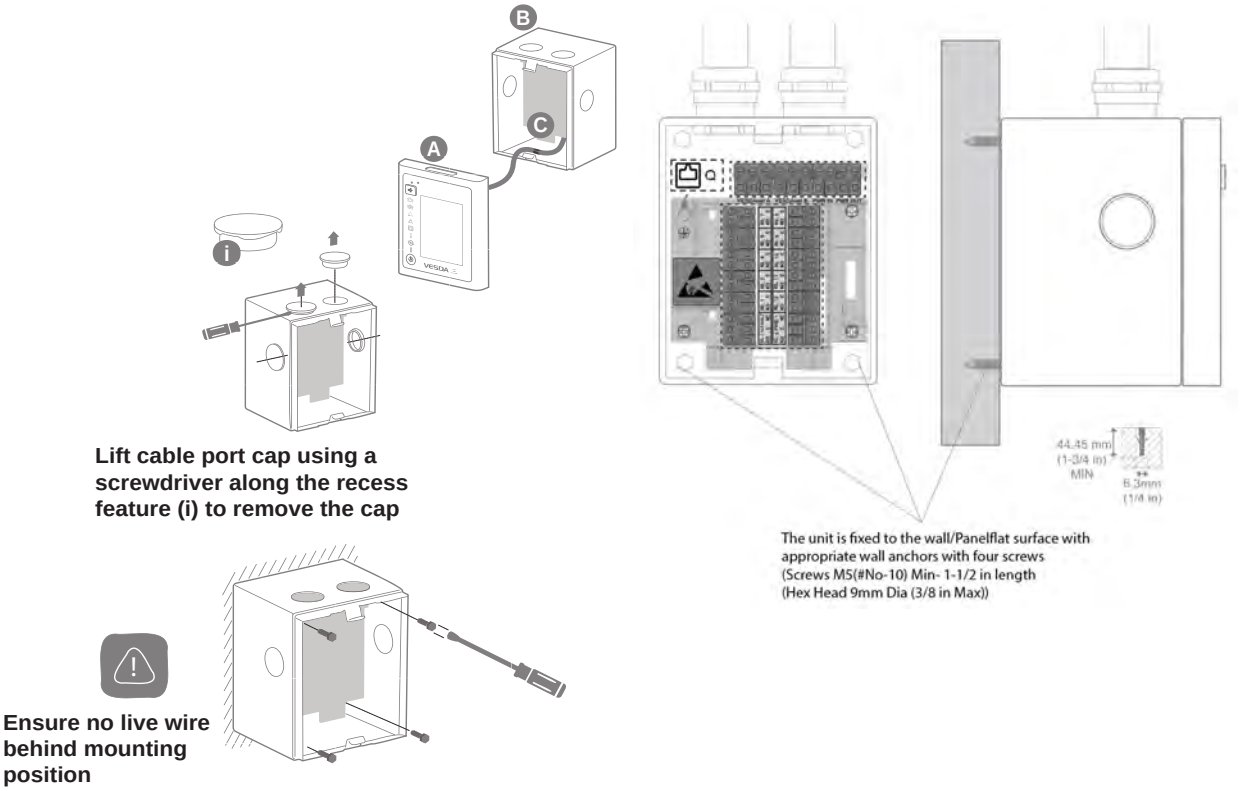


Figure 3-4: VESDA-E Remote Box Mounting

Warning: Its advisable to not disconnect the wire cable assembly from Front Fascia Display / User Interface to avoid any failure related to Electrostatic discharge (ESD).

Avertissement : Il est recommandé de ne pas débrancher l'ensemble de câbles de l'affichage/interface utilisateur du panneau avant pour éviter toute défaillance liée aux décharges électriques (ESD).

Inverted Mounting

Depending on cable entry requirements, VESDA-E Remote Box can be installed in an inverted position.

For Inverted mounting, rotate the VESDA-E Remote Box by 180 degrees to match the four mounting holes while fixing the unit to the flat surface. However the Front Fascia can still be assembled in upright same as normal orientation as shown in Figure 3-5.

Note: While engaging/disengaging the Front Fascia, ensure to avoid any tension on the cable connectors.

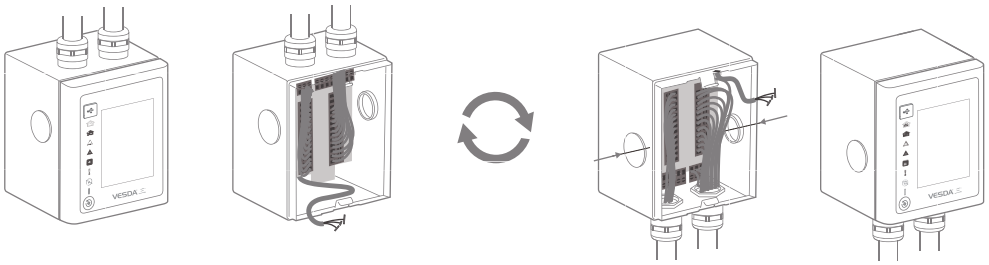


Figure 3-5: VESDA-E Remote Box Inverted Mounting

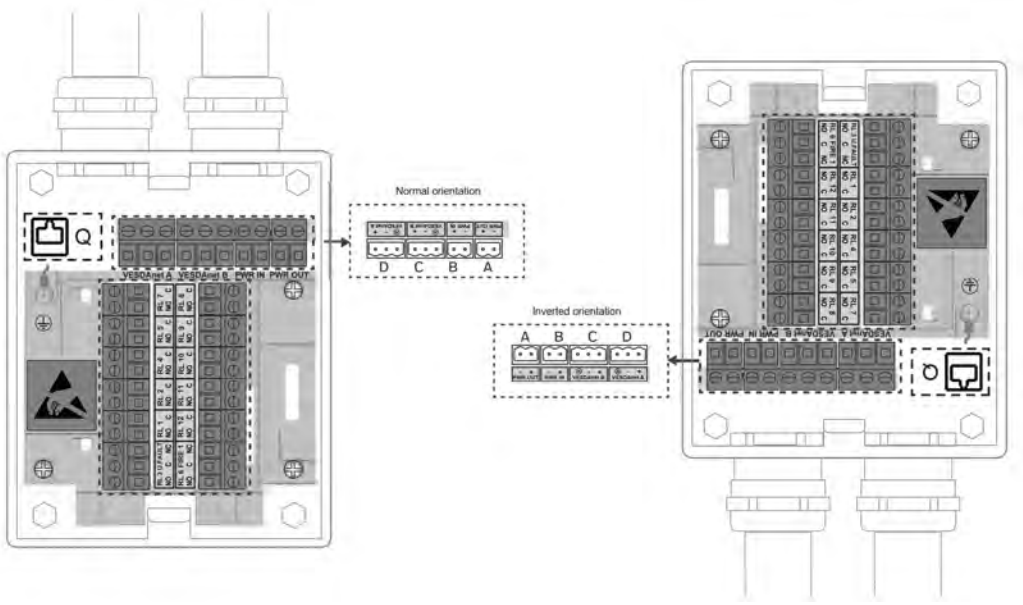


Figure 3-6: Remote Back Box Terminal Label Orientation

3.1.4 Socket Locations

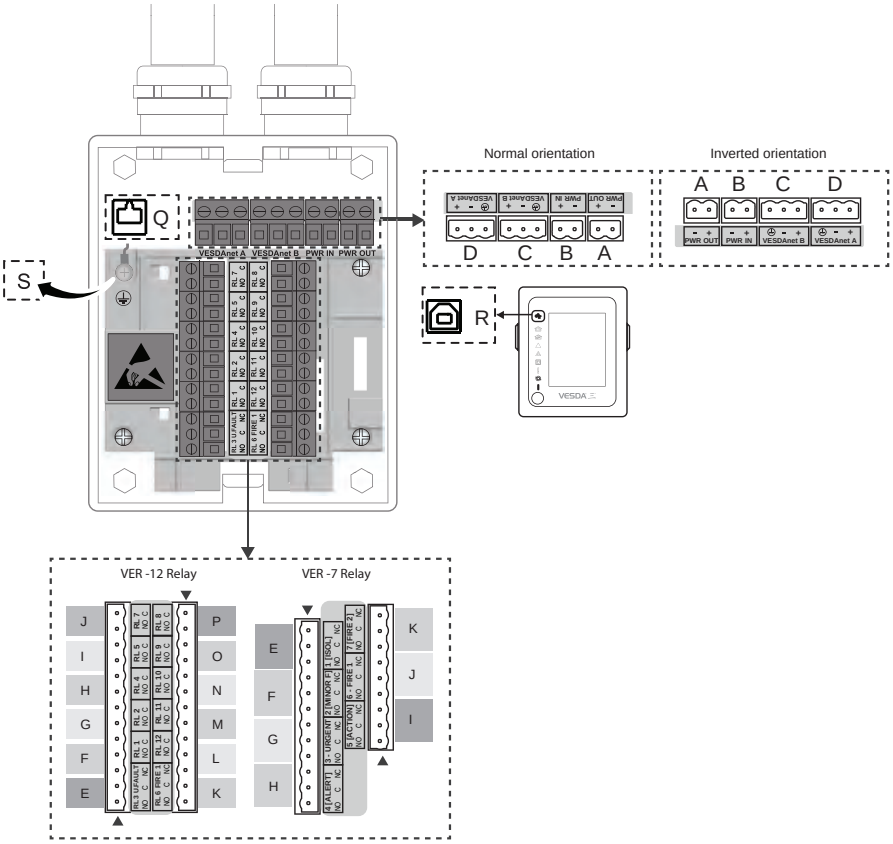


Figure 3-7: Socket Locations

Legend

Power

A	Power Out
B	Power In

VESDAnet

C	VESDAnet B
D	VESDAnet A

Relays

	12 Relays	7 Relays
E	3 - Urgent Fault	4 - Alert
F	1 - Disable	3 - Urgent Fault
G	2 - Minor Fault	
H	4 - Alert	1 - Isolate (Disable)
I	5 - Action	
J	7 - Fire 2	6 - Fire 1
K	6 - Fire 1	7 - Fire 2

Relays

	12 Relays	7 Relays
L	12 - Scanning	
M	11 - First Alarm Sector 4	
N	10 - First Alarm Sector 3	
O	9 - First Alarm Sector 2	
P	8 - First Alarm Sector 1	

Comms

Q	Ethernet (ONLY ON VER-A30)
R	USB

Chassis Ground

S	Chassis Ground Terminal For FM Hazardous locations only, connect this terminal to building ground.

3.1.5 Wiring - VESDA-E Remote Box

The Remote Back Box (B) has four cable entry ports for wiring connectors to terminals. Cable entry ports can be used in different combinations depending on the type of installation; such combinations are top cable entry port (TT), sides cable entry port (SS), or top and side cable entry port (TS).

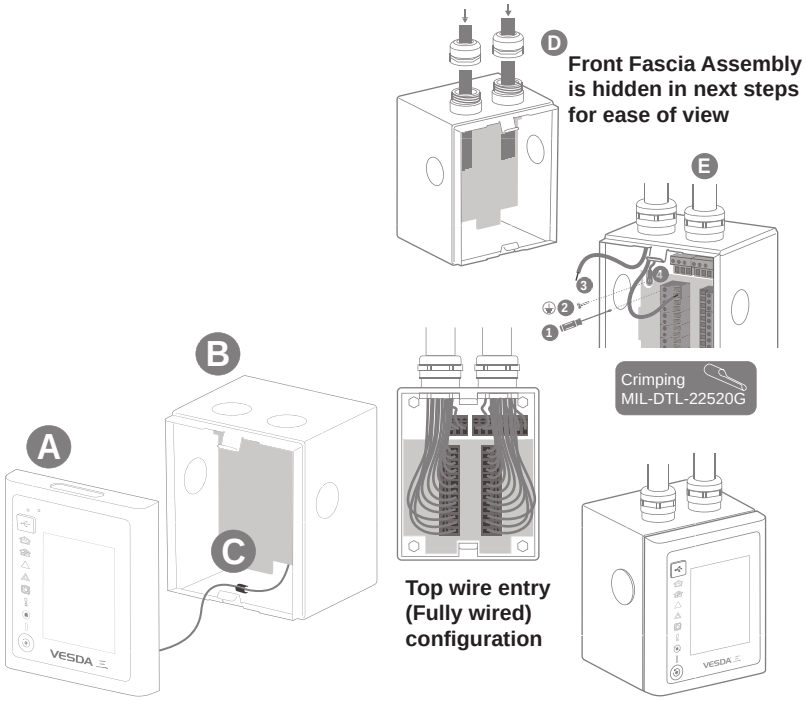


Figure 3-8: Cabling PWR, VESDAnet and Relays Terminal for VESDA-E Remote Box

The following procedures assume that the VESDA-E Remote Box orientation and cable entry are defined (Options described in sections 3.1.3):

1. Cut the cables to the required length and strip its ends. Use 25 mm (1") cable glands to suit the cable used (D) as shown in Figure 3-8 above.
2. Make sure to pull in 76-102 mm (3-4") of the cable length before fitting the conduit pipe (E) onto the cable glands on the Remote Back Box.
3. VESDA-E Remote Box can be powered with an external 24 VDC Power Supply (compliant with local codes and standards) / VESDA-E detector via designated POWER IN socket.
   Notes:
   - The VESDA-E Remote Box will not operate if the power supply polarity is reversed.
   - Use the designated POWER OUT socket to connect up to six VESDA-E Remote Box in a daisy chained manner in loop to the POWER IN socket on each subsequent VESDA-E Remote Box connected from the same power supply.
4. The VESDAnet A & B connector at the rear side is used to loop-in / loop-out connection as shown in section 2.7. Refer to Figure 3-7 for Socket Locations.
5. Connect and terminate the required Relays Socket's plugs following the legend shown for Relays' connections in Figure 3-7 to communicate faults, alarms and disabled states as per field requirements.
6. Once all the required cable wires (3) are inserted, crimp and terminate each cable to their respective connectors using a flat tip screwdriver (1) as shown in Figure 3-8.

Notes: For chassis grounding requirement for VESDA-E Remote Box , use the Ring Terminal Grounding Lug (4) of maximum outer diameter 9 mm with the same screw (2) assembled on the chassis as shown Figure 3-9. (Torque: 0.8 N-m Max).

For VER-A30, Remote Box wiring includes Ethernet cable connection which needs to be terminated to RJ45 socket as shown in Figure 2-12. For chassis grounding requirement in VER-A30 Remote Box only, use 90 Degree Ring Terminal Grounding Lug (L-Type bent) shown in Figure 3-9.



Figure 3-9: 90 Degree Ring Terminal Grounding Lug (L-Type Bent)

7. Once the Power, VESDAnet and required relay cables are connected on the Remote Back Box, position and gently push to snap-in the Front Fascia back to the Remote Back Box with a click sound.



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



Avertissement : Mettez toujours l'appareil hors tension avant de brancher/débrancher des connexions électriques, de relais ou de réseau. Le non-respect de cette instruction peut entraîner la corruption des données et/ou la défaillance des composants.



Caution: Operating theVESDA-E Remote Box when DC supply voltage is outside the specified voltage range may cause damage to internal components. For further information refer to section 2.8 for product specifications.



Attention : Faire fonctionner le VESDA-E Remote Box lorsque la tension d'alimentation CC se trouve en dehors de la plage de tension spécifiée peut provoquer des dommages aux composants internes. Pour plus d'informations, reportez-vous à la section 1 pour connaître les spécifications du produit.

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 mm² to 1.5 mm² (24 -16 AWG). Refer to section 5.3 for configuration details.

3.2 VESDA-E 19" Sub-Rack Remote Unit

VESDA-E 19" Sub-Rack Remote Unit configuration allows flexibility to install four different VESDA-E Sub-Rack Remote Box (VEK models) to be stacked in one VEK-0000, 19" Sub-Rack. In case of unused space in 19" Sub-Rack, a VEK-0 Sub-Rack Blank Box must be used to bridge the void as shown in Figure 3-12.



Figure 3-10: VESDA-E 19" Sub-Rack Remote Box Unit



Figure 3-11: VESDA-E Sub-Rack Remote Box

The VESDA-E Sub-Rack Remote Box is designed to be stacked in and powered by a standard 19" Sub-Rack using a backplane card. Each VESDA-E Sub-Rack Remote Box (VEK Model) is ordered independently and connected to a 19" Sub-Rack using the installation information within section 3.2.2.

The dimensions of the VESDA-E Sub-Rack Remote Box are: 105 mm x 128 mm x 109.6 mm (4.1" x 5.0" x 4.3") (WHD).

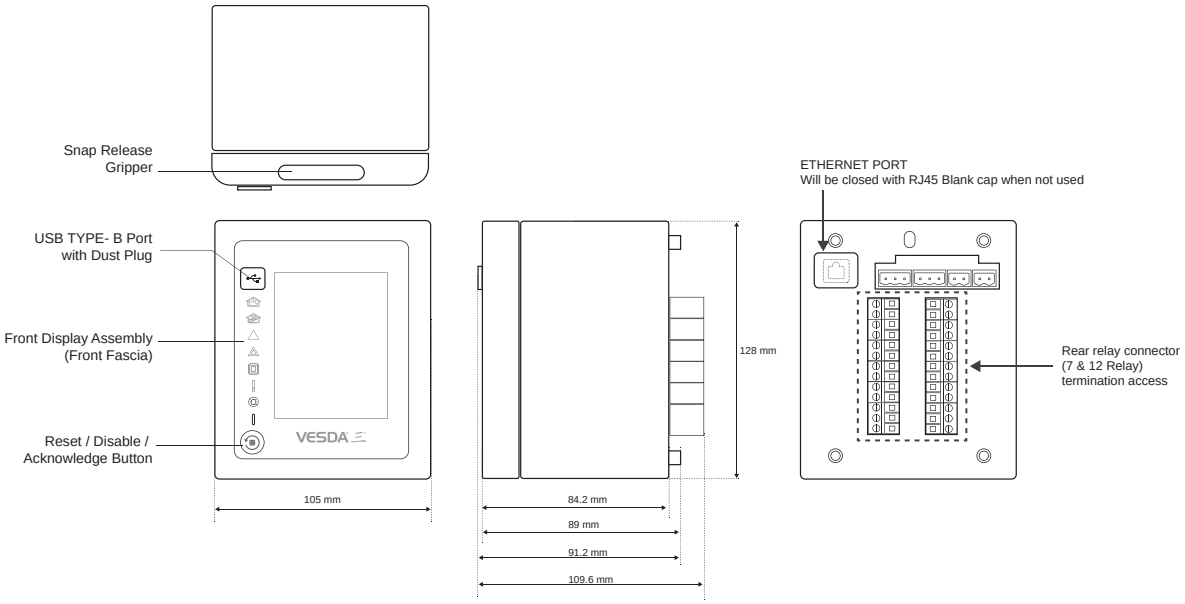


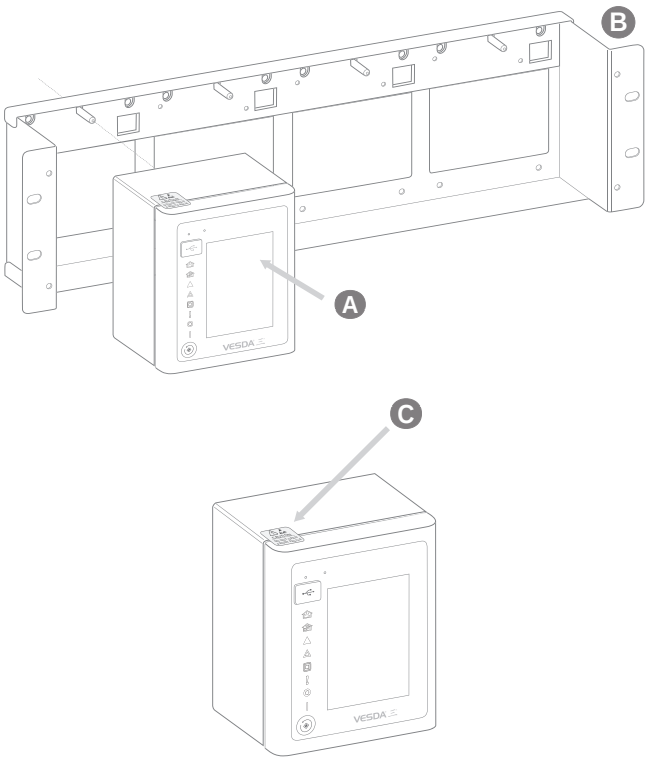
Figure 3-12: VESDA-E Sub-Rack Remote Box

Table 3-4: VESDA-E Sub-Rack Remote Box SKUs

Product Name	Product Code
VESDA-E Sub-Rack Remote Display No Relays	VEK-A10-0
VESDA-E Sub-Rack Remote Display (7 Relays)	VEK-A10-7
VESDA-E Sub-Rack Remote Display (12 Relays)	VEK-A10-12
VESDA-E Sub-Rack Remote Relays (7 Relays)	VEK-A40-7
VESDA-E Sub-Rack Remote Relays (12 Relays)	VEK-A40-12
VESDA-E Sub-Rack Access Point	VEK-A30
Sub-Rack Blank Box	VEK-0
19" Sub-Rack	VEK-0000

3.2.1 Product information

The field assembled VESDA-E 19" Sub-Rack Remote Unit comes in two sub-assemblies during field installation. The VESDA-E Sub-Rack Remote Box (A) houses the Communication and Remote Termination cards along with its Display/User Interface which will be mounted on the 19" Sub-Rack (B).



Legend	
A	VESDA-E Sub-Rack Remote Box
B	VEK-0000, 19" Sub-Rack (19" Sub-Rack)
C	Tampered Void Caution Label

Figure 3-13: VESDA-E Sub-Rack Remote Box along with 19” Sub-Rack

Note: For installation, VEK-0000, 19" Sub-Rack is a compulsory model while ordering any of the VESDA-E Sub-Rack Remote Box (VEK Models) is optional. However, one VEK-0000, 19" Sub-Rack will require four VESDA-E Sub-Rack Remote Boxes to be used for commissioning.

Caution: Do not open the Front Fascia of the VESDA-E Sub-Rack Remote Box in any case, without supervision from Xtralis approved field engineers to avoid any hardware/device failure in field. Doing so may damge your electronics and warranty can be void. Each VESDA-E Sub-Rack Remote Box comes with a Tampered Void Caution Label as shown in Figure 3-12 and Figure 3-14.

Attention : N'ouvrez le panneau avant du VESDA-E Sub-Rack Remote Box sous aucun prétexte, sans la supervision d'ingénieurs de site Xtralis agréés pour éviter la défaillance matérielle/de l'appareil sur le site. Le non respect de ces instructions pourrait endommager vos circuits électroniques et la garantie pourrait être annulée. Chaque VESDA-E Sub-Rack Remote Box est doté d'une étiquette de précaution pour annulation en cas de manipulation comme illustré sur les Figure 3-12 et Figure 3-14.



Figure 3-14: Tempered Void Caution Label

A total of four combinations of VESDA-E Sub-Rack Remote Box can be plug-n-play mounted on a 19" Sub-Rack which makes this a modular connected design. The front section of the 19" Sub-Rack houses the VESDA-E Sub-Rack Remote Box. The Power, VESDAnet, 7 or 12 relays and ethernet ports can be accessed from rear side of the VESDA-E 19" Sub-Rack Remote Unit as shown in Figure 3-15.



Figure 3-15: Four VESDA-E Sub-Rack Remote Box models mounted on 19" Sub-Rack

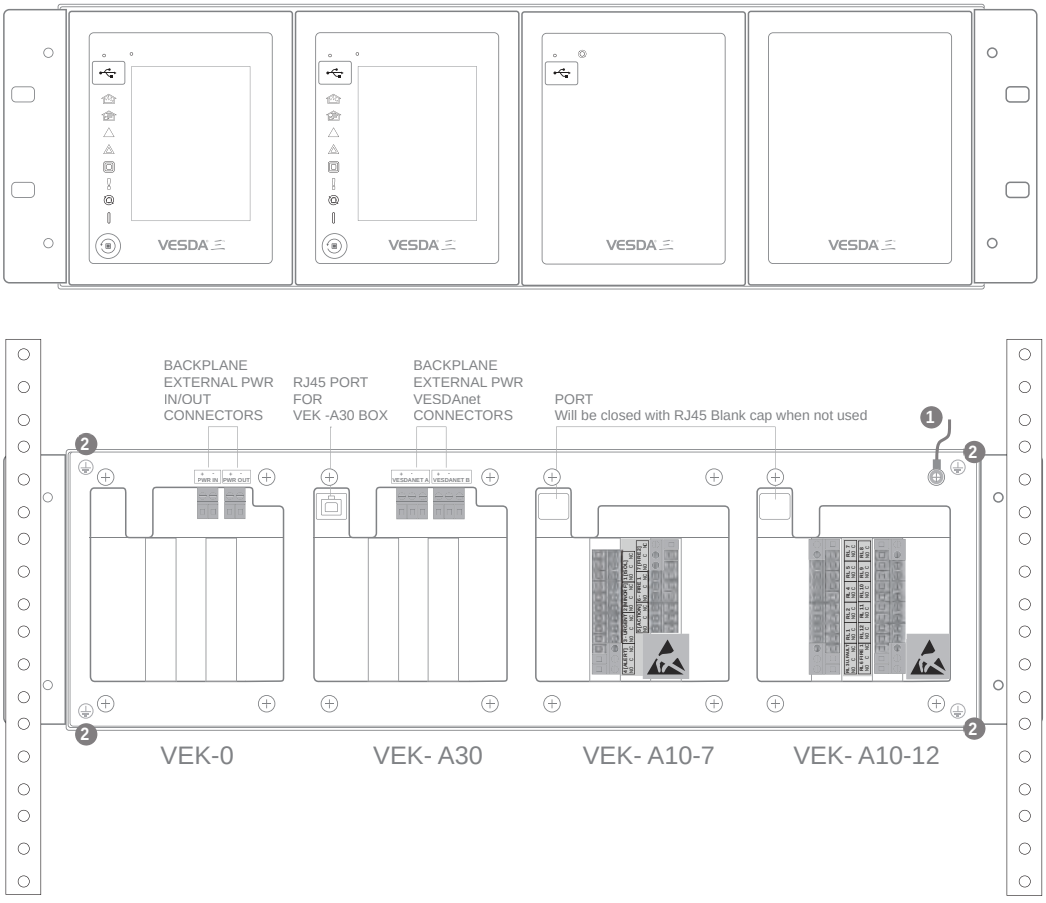


Figure 3-16: The Front/Rear section of the VESDA-E 19" Sub-Rack Remote Unit

3.2.2 Assembling a VESDA-E 19" Sub-Rack Remote Unit

VESDA-E Sub-Rack Remote Box can be plug-n-play mounted on a 19" Sub-Rack as shown below:

Note: Make sure you have access to rear side of the 19" Sub-Rack assuming that the mounting plan for 19" Sub-Rack and cable entries are defined.

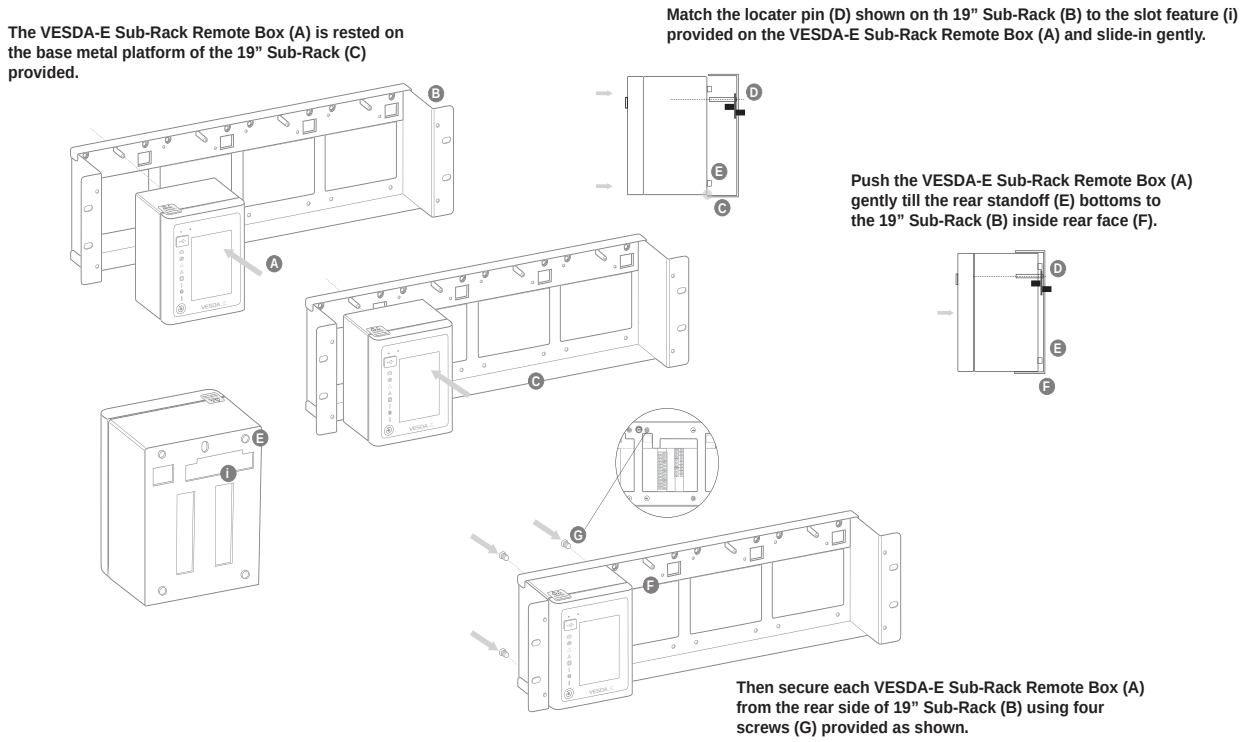


Figure 3-17: VESDA-E Sub-Rack Remote Box Assembly on the 19" Sub-Rack

Further, this 19" Sub-Rack Remote Box can be secured to a standard 19" Server Rack/Din Rail Mounts System using four screw bolts. Other mounting options include the 2 and 5 glazed boxes used in Europe.

The details on various mounting scenario for 19" Sub-Rack is discussed in section 4.

3.2.3 Field Wiring Assembled VESDA-E 19" Sub-Rack Remote Unit

The VESDA-E 19" Sub-Rack Remote Unit provides rear access for Power, VESDAnet, Relays and Ethernet connections while the backplane card interconnects the power and VESDAnet connections between various VESDA-E Sub-Rack Remote Box models stacked/assembled in a 19" Sub-Rack.

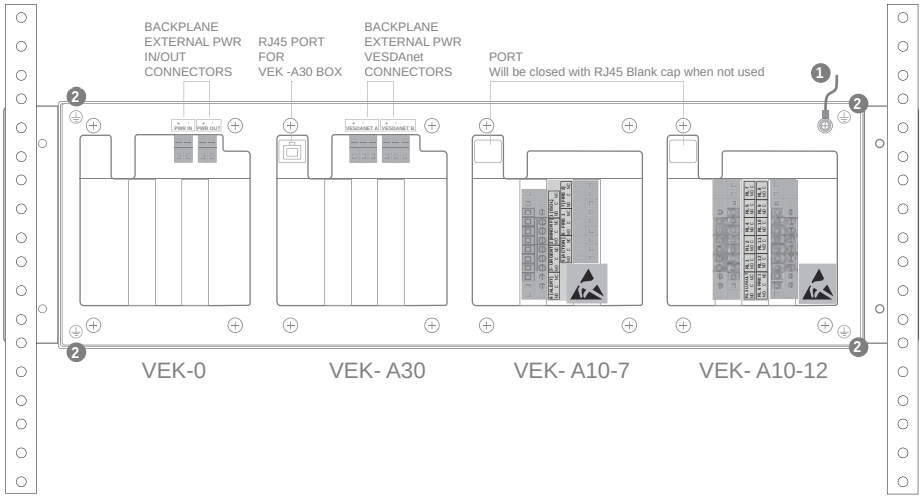


Figure 3-18: An example of configuration of Rear cabling View for the VESDA-E 19" Sub-Rack Remote Unit

1. The VESDA-E 19" Sub-Rack Remote Unit can be powered with an external 24 VDC Power Supply (compliant with local codes and standards) / VESDA-E detector via designated PWR IN socket at rear side.
   Note: The VESDA-E 19" Sub-Rack Remote Unit will not operate if the power supply polarity is reversed.
2. Use the designated PWR OUT socket to connect up to three VESDA-E 19" Sub-Rack Remote Units in a daisy chained manner for vertical stack mounting to the PWR IN socket on each subsequent VESDA-E 19" Sub-Rack Remote Unit connected from the same power supply.
3. The VESDAnet A & B connector at the rear side is used for loop-in/loop-out connection. Refer to section 2.7 for details.
4. For VEK-A30 Sub-Rack Remote Box access, use the Ethernet/RJ45 port at rear side for configuration and/or monitoring purposes.
5. Connect and terminate the required Relays Socket's Plugs connections following the legend shown for Relays' connections in Figure 3-7 to communicate faults, alarms and disabled states as per field requirements accessed at the rear side of an individual VESDA-E Sub-Rack Remote Box.

Note: For the chassis grounding requirement, use the Ring Terminal Grounding Lug with a maximum outer diameter of 9 mm at any chassis grounding points (Marked with Ground Symbol (2)).



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



Avertissement : Mettez toujours l'appareil hors tension avant de brancher/débrancher des connexions électriques, de relais ou de réseau. Le non-respect de cette instruction peut entraîner la corruption des données et/ou la défaillance des composants.



Caution: Operating theVESDA-E 19" Sub-Rack Remote Unit when DC supply voltage is outside the specified voltage range may cause damage to internal components. For further information refer to section 2.8 for product specifications.



Attention : Faire fonctionner le VESDA-E 19" Sub-Rack Remote Unit lorsque la tension d'alimentation CC se trouve en dehors de la plage de tension spécifiée peut provoquer des dommages aux composants internes. Pour plus d'informations, reportez-vous à la section 2.8 pour connaître les spécifications du produit.

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 mm² to 1.5 mm² (24 -16 AWG)**. Refer to section 5.3 for configuration details.

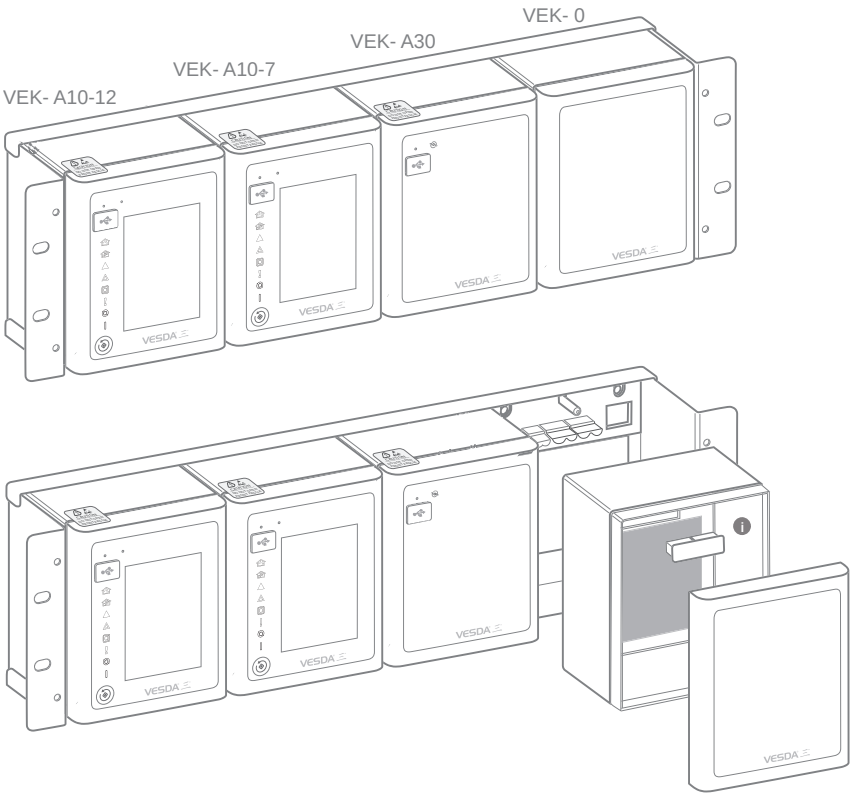


Figure 3-19: An example of 19" Sub-Rack with Jumper card

Up to four VESDA-E Sub-Rack Remote Boxes can be mounted on a 19" Sub-Rack. When less than four VESDA-E Sub-Rack Remote Boxes are mounted, the user shall install a VEK-0 Sub-Rack Blank Box along with a jumper card in an unused space/empty slots to bridge the void as shown in Figure 3-19.

Caution: Make sure that there is a jumper card PCB installed as shown in Figure 3-19 (i) to all VEK-0 Sub-Rack Blank Box position, otherwise the device will raise open loop fault.

Attention : Assurez-vous qu'un circuit imprimé de carte de couplage est installé comme illustré sur la Figure 3-19 (i) à tous les emplacements de boîtier vide de casier VEK-0. Dans le cas contraire, l'appareil déclenchera un défaut de boucle ouverte.

3.2.4 Removing/Replacing a VESDA-E Sub-Rack Remote Box from a VESDA-E 19" Sub-Rack Remote Unit

Removing/Replacing a VEK-0 (Sub-Rack Blank Box) from a VESDA-E 19" Sub-Rack Remote Unit

Replacing or moving VEK-0 (Sub-Rack Blank Box) from the 19" Sub-Rack in the existing installation is shown in Figure 3-20. Before removing, ensure that you have access to the rear side of the VESDA-E 19" Sub-Rack Remote Unit and **make sure to always switch the device power OFF and remove all rear PWR IN/PWR OUT, VESDAnet Connections and Chassis Grounding Ring Terminal**.

1. All VEK-0 (Sub-Rack Blank Box) are provided with a Jumper card (i) for bridging the connections. Gently pull the Front Fascia (A) and carefully remove the Jumper card by pulling it.
2. Access the rear side of VESDA-E 19" Sub-Rack Remote Box (B) and remove four screws (C) of the VEK-0, Sub-Rack Blank Back Box (D) as shown in Figure 3-20.
3. Gently Push the VEK-0, Sub-Rack Blank Back Box (D) from the rear side to displace it from its position and pull it out to replace it with any VESDA-E Sub-Rack Remote Box as shown in Figure 3-20 below.

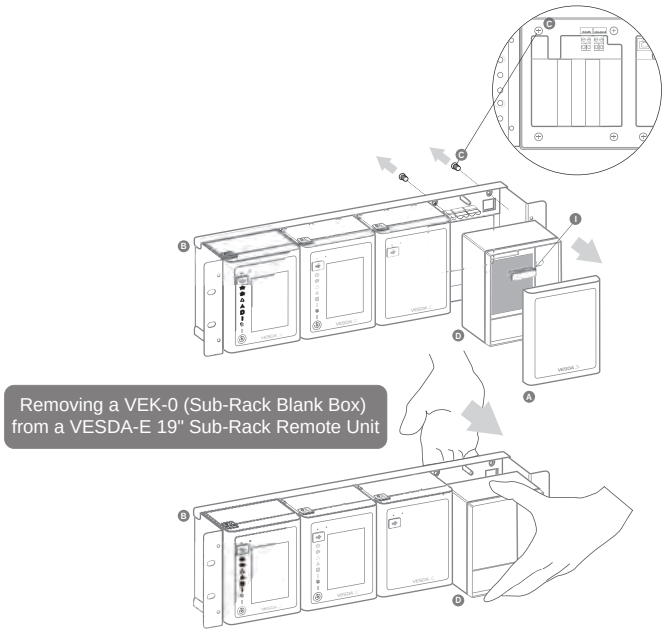


Figure 3-20: Removing a VEK-0 (Sub-Rack Blank Box) from a VESDA-E 19" Sub-Rack Remote Unit

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

Avertissement : Mettez toujours l'appareil hors tension avant de brancher/débrancher des connexions électriques, de relais ou de réseau. Le non-respect de cette instruction peut entraîner la corruption des données et/ou la défaillance des composants.

Removing/Replacing a VESDA-E Sub-Rack Remote Box from a VESDA-E 19" Sub-Rack Remote Unit

In case the user wants to replace /change the position of an existing model of VESDA-E Sub-Rack Remote Box from the VESDA-E 19" Sub-Rack Remote Unit. This can be done as shown in Figure 3-21.

First, ensure that you have access to the rear side of the VESDA-E 19" Sub-Rack Remote Box to remove it from the mounting position on panel/Rack/Din Rail Mount Enclosure.

1. **Make sure to always switch the device power OFF and remove all rear PWR IN/PWR OUT, VESDAnet** on 19" Sub-Rack along with Relays and **Chassis Grounding Ring Terminal** cabling on the the individual VESDA-E 19" Sub-Rack Remote Box (E) to be replaced.
2. Turn the VESDA-E 19" Sub-Rack Remote Box (B) to remove four screws (C) of the VESDA-E Sub-Rack Remote Boxx (E) to be replaced at the rear side.
3. Gently push the VESDA-E Sub-Rack Remote Box (E) from the rear side to displace it from its position.
4. Pull the VESDA-E Sub-Rack Remote Box (E) by griping hold along the recess feature on the Front Fascia of the VESDA-E Sub-Rack Remote Box as shown in Figure 3-21.
5. Replace or change the desired slot position of the VESDA-E Sub-Rack Remote Box (E) and install back, as shown in Figure 3-21. Refer to Assembly section 3.2.2 for details on installation and section 3.2.3 for Field Wiring.

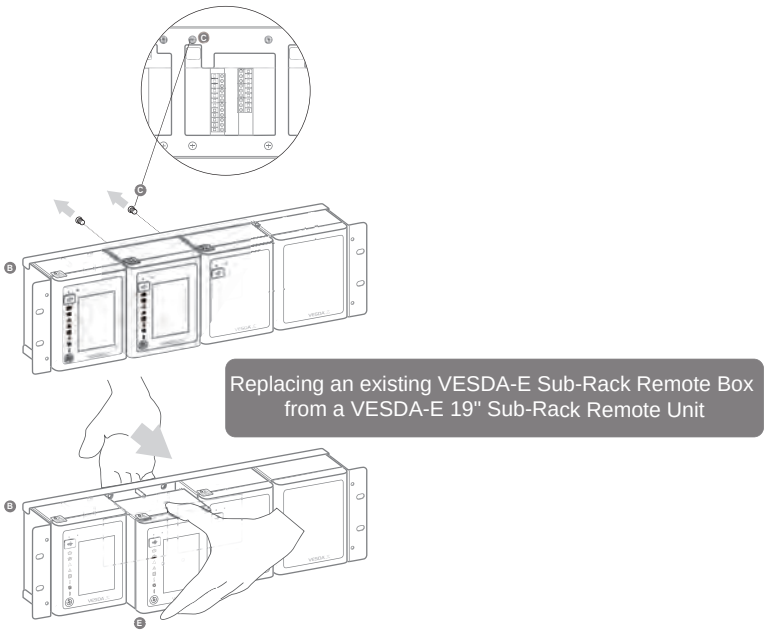


Figure 3-21: Replacing an existing VESDA-E Sub-Rack Remote Box from a VESDA-E 19" Sub-Rack Remote Unit

Caution: Do not open the Front Fascia of the VESDA-E Sub-Rack Remote Box in any case without the supervision of Xtralis-approved field engineers to avoid any hardware/device failure in the field. Doing so may damage your electronics, and the warranty can be void. Each VESDA-E Sub-Rack Remote Box comes with a tempered void label as shown in Figure 3-14 and Figure 3-15.

Attention : N'ouvrez le panneau avant du VESDA-E Sub-Rack Remote Box sous aucun prétexte, sans la supervision d'ingénieurs de site Xtralis agréés pour éviter la défaillance matérielle/de l'appareil sur le site. Le non-respect de ces instructions pourrait endommager vos circuits électroniques et la garantie pourrait être annulée. Chaque VESDA-E Sub-Rack Remote Box est doté d'une étiquette de précaution pour annulation en cas de manipulation comme illustré sur les Figure 3-14 et Figure 3-15.

3.3 Power Connections

The power terminals on the VESDA-E Remote Accessories shall be connected to a 24 VDC power supply. The four power terminals enable power to be brought to the remote termination card via a single wire pair and looped out to another device via another wire pair. The modules have reverse polarity protection to minimize the risk of reverse power connection to the modules. The modules will not operate when the supply is reversed.

Caution: Operating a module when DC supply voltage is outside the voltage range may cause damage to the device.

Attention : Faire fonctionner un module lorsque la tension d'alimentation CC se trouve en dehors de la plage de tension peut endommager l'appareil.

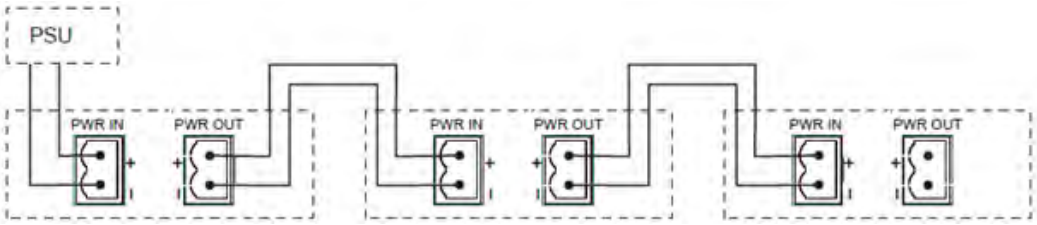


Figure 3-22: Multiple modules powered by a single power supply

4 Mounting options for VESDA-E 19" Sub-Rack Remote Box

4.1 Option 1: Installing VESDA-E 19" Sub-Rack Remote unit onto a 19" Server Rack

The 19" Sub-Rack is secured by bolts to a Standard 3U Sub-Rack system. If the 19" Sub-Rack is to be mounted onto a wall, first fasten the optional wall mounting bracket to the wall and then install the VESDA-E 19" Sub-Rack Remote unit onto the wall mounting bracket.

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

Avertissement : Mettez toujours l'appareil hors tension avant de brancher/débrancher des connexions électriques, de relais ou de réseau. Le non-respect de cette instruction peut entraîner la corruption des données et/ou la défaillance des composants.

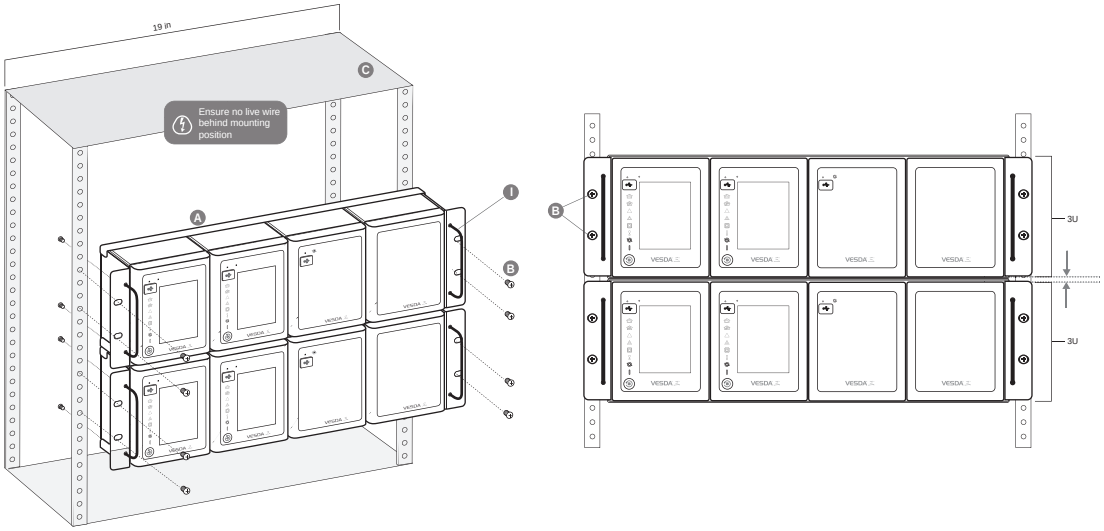


Figure 4-1: VESDA-E 19" Sub-Rack Remote Unitonto a 19" Server Rack

Ensure that the assembled VESDA-E 19" Sub-Rack Remote Unit mount holes align with the 19" Server Rack /Din rail mount holes position for continuous repetition for one above the other vertical stack mounting as shown in Figure 4-1.

- For easy handling, use appropriate 3.5" Rack handle on the holes provided (i) using 2 Nos M4 (Hex/Pan head Ø 8 mm (5/16") max.) (i') from rear side of 19" Sub-Rack Remote Box (A).
- Hold the VESDA-E 19" Sub-Rack Remote Unit (A) in the correct position in the standard server rack (C) as shown in 4 above, and mount to the 19" Sub-Rack Remote Box with four bolts (B) (4Nos, up to Hex/Pan head Ø 12 mm (15/32") max.).
- Connect the Power, VESDAnet on 19" Sub-Rack and Relay cabling to the individual VESDA-E Sub-Rack Remote Box through the rear side access. Refer to section 3.2.3 for more details on Field Wiring.
- Similarly, multiples of 19" Sub Rack Remote Box unit (A) can be stacked one upon the other at regular 3U hole interval depending on the standard 19" server rack as shown above.

For removal, make sure to always switch the device power OFF and remove all rear PWR IN/PWR OUT, VESDAnet & Relays cabling and Chassis Grounding Ring Terminal to unscrew and gently pull the VESDA-E 19" Sub-Rack Remote Box from the Server Rack.

It's recommended to use a 3.5" D type center handle or 1.5" H rack handle for ease of assembling / dissembling of 19" Sub-Rack Remote Unit from the Server Rack which is also helpful in pulling out the 19" Sub-Rack Remote Box to access the rear screws on the individual VESDA-E Sub-Rack Remote Boxes for removal/replacement purposes.

4.2 Option 2: Installing VESDA-E 19" Sub-Rack Remote Unit into a 2 and 5 glazed boxes

Ensure that the assembled VESDA-E 19" Sub-Rack Remote Unit mount holes align with the Panel Hinge Door Mount holes position for continuous repetition stack with minimum gap i.e., depends as per number of VESDA-E 19" Sub-Rack Remote Unit to be mount.

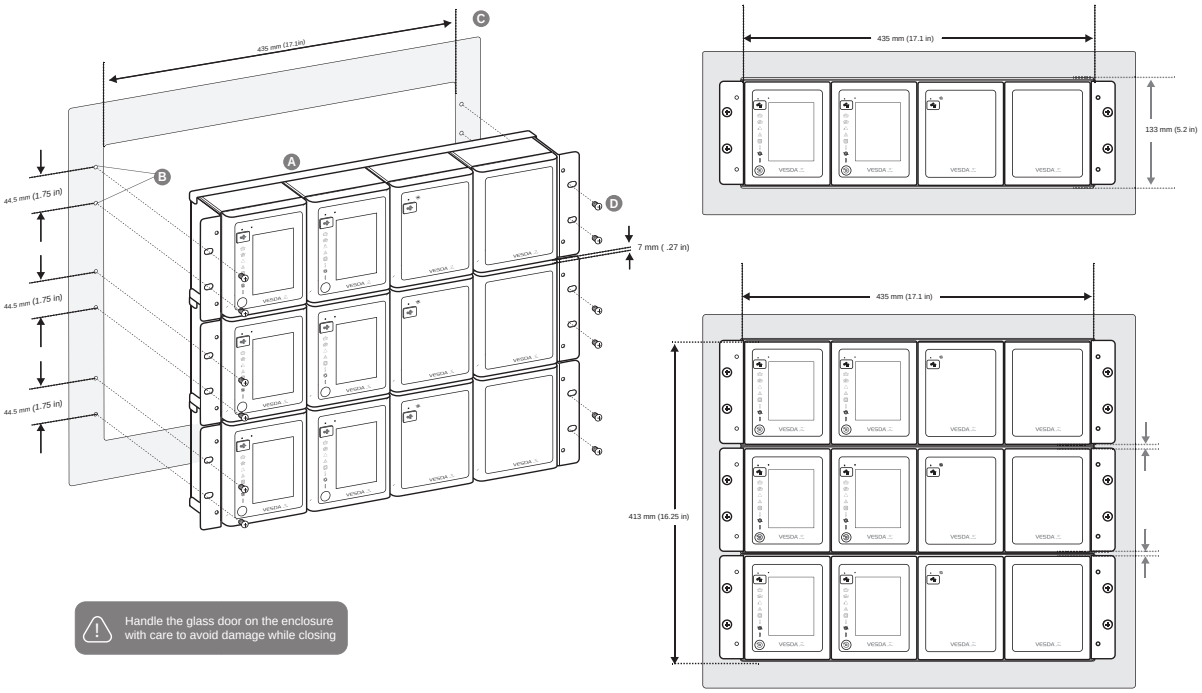


Figure 4-2: VESDA-E 19" Sub-Rack Remote Unit onto Panel/Hinge Door Mount

The dimensions required for the cut-out for single VESDA-E 19" Sub-Rack Remote Unit:
435 mm x 133 mm x 127 mm (17.1" x 5.2" x 5.0") (WHD).

- For easy handling, use appropriate 3.5" Rack handle.
  Caution: Take care that there is sufficient space of 50mm (2") available for Handle clearance or min 25mm (1") in case handle is removed if space restrictions apply for the glass door closure.
- Hold the VESDA-E 19" Sub-Rack Remote Unit (A) and insert from front side in on the Panel/hinge door (C) cut-out position to match the 4 mount holes (B) on panel/Hinge door (C) for bolting with screws (D) (4Nos, up to Hex/Pan head Ø 12 mm (15/32") max.) of 19" Sub-Rack Remote Box (A).
- Connect the Power, VESDAnet on 19" Sub-Rack and Relay cabling to the individual VESDA-E Sub-Rack Remote Box through the rear side access. Refer to section 3.2.3 for more details on Field Wiring.

For removal, make sure to switch the device power OFF and remove all rear PWR IN/PWR OUT, VESDAnet, Relays Cabling and Chassis Grounding Ring Terminal to unscrew and gently pull the VESDA-E 19" Sub-Rack Remote Unit from the Panel/Hinge Door Mount.



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



Avertissement : Mettez toujours l'appareil hors tension avant de brancher/débrancher des connexions électriques, de relais ou de réseau. Le non-respect de cette instruction peut entraîner la corruption des données et/ou la défaillance des composants.

4.3 Option 3: Installing VESDA-E 19" Sub-Rack Remote Unit onto Panel/Din Rail Mount Enclosure

Ensure that the assembled VESDA-E 19" Sub-Rack Remote Unit mount holes align with Box from Panel/Din Rail Mount enclosure mount holes position for continuous repetition stack with minimum gap.

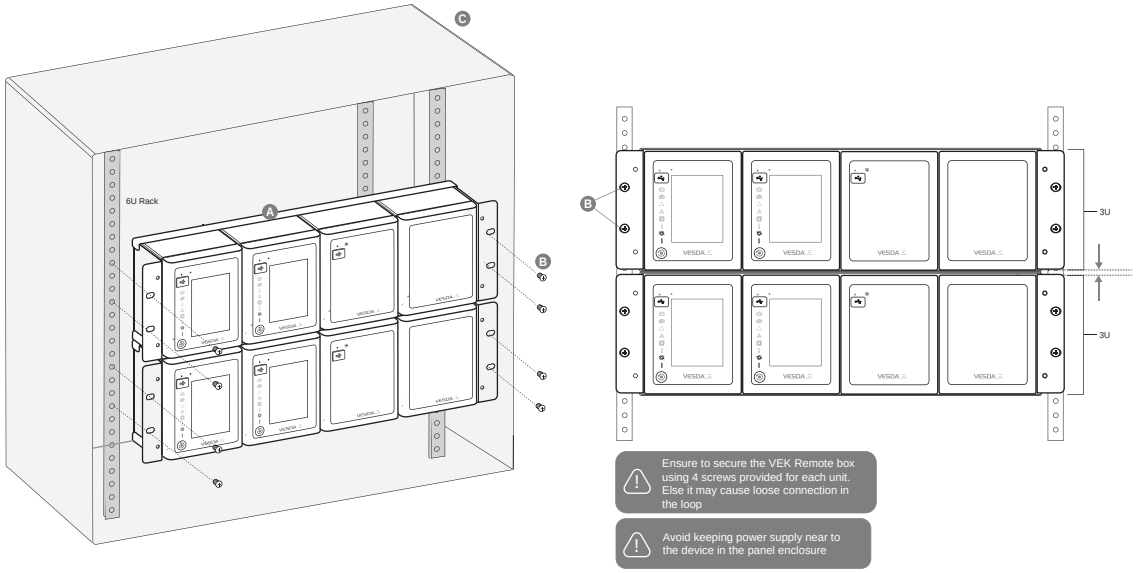


Figure 4-3: VESDA-E 19" Sub-Rack Remote Unit onto Panel/Din Rail Mount enclosure

- For easy handling, use appropriate 3.5" Rack handle.
  Caution: Take care that there is sufficient space of 50mm (2") available for handle clearance or min 25 mm (1") in case handle is removed. If space restrictions apply for the glass door closure make sure to leave sufficient space of 50-65 mm (2-2.5") at rear side of VESDA-E 19" Sub-Rack Remote Unit (A) for routing of rear cabling access in the enclosure.
- Route all the cables along the channelization available on the panel/din rail mount enclosure (C). Connect the Power, VESDAnet on 19" Sub-Rack and Relay cabling to the individual VESDA-E Sub-Rack Remote Box through the rear side access. Refer to section 3.2.3 for more details on Field Wiring.
- Hold the VESDA-E 19" Sub-Rack Remote Unit (A) in the correct position leaving minimum Gap of 1-2 hole position on the Panel/Din Rail Mount enclosure (C) and mount with four bolts (B) (4Nos, up to Hex/Pan head Ø 12mm (15/32") max.).

For removal, make sure to switch the device power OFF and remove all rear PWR IN/PWR OUT, VESDAnet, Relays Cabling and Chassis Grounding Ring Terminal to unscrew and gently pull the VESDA-E 19" Sub-Rack Remote Unit from the Panel/Din Rail Mount enclosure.

Note: Other mounting options include the 2 and 5 glazed boxes used in Europe.



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



Avertissement : Mettez toujours l'appareil hors tension avant de brancher/débrancher des connexions électriques, de relais ou de réseau. Le non-respect de cette instruction peut entraîner la corruption des données et/ou la défaillance des composants.

5 Configuration

The VESDA-E Remote Accessories are initially configured using Xtralis VSC software installed on a PC directly connected to the USB port as shown in Figure 5-1. It is necessary to connect to the detector in order to configure it. After initial configuration, it can be configured from VSC over Ethernet or VESDAnet port. USB connection shall not be used for permanent connection. Permanent connection for secondary monitoring shall be through Ethernet only.

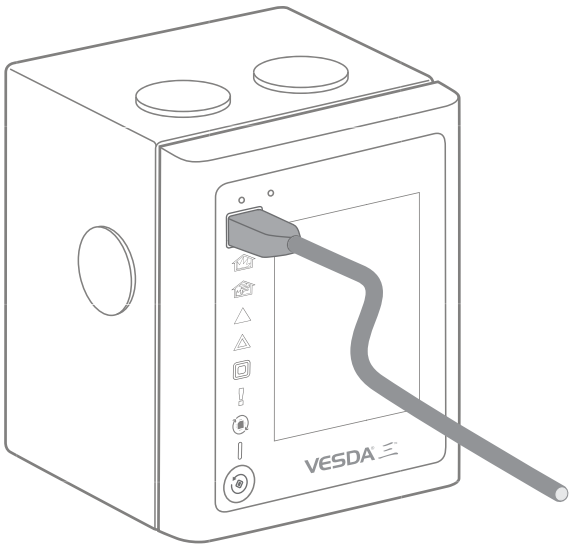


Figure 5-1: USB TYPE-B Port Connection

Refer to the detector product guide for connecting VSC tool to the detector or VESDA-E Remote Accessory over USB, Ethernet or VESDAnet.

5.1 Commands

The following commands can be executed from the accessory via buttons or using the Xtralis VSC software

Table 5-1: Accessory Commands

Command	Description	Execute From	
		A button on the Accessory	Xtralis VSC Software
Disable (Isolate)	The Disable command disables all the output relays associated with the detector. The aspirator remains active.	✔	✔
Enable	The Enable command enables all of the output relays associated with the detector.	✔	✔
Reset	The command unlatches all latched alarms and faults and returns relays to their normal state. Clears the Xtralis VSC active event list.	✔	✔
Silence	Silence the alarm conditions.	✔	✔
Return to Factory Defaults	Restores the configuration of the detector to the initial factory default values.		✔

5.2 Configuration Options

The VESDA-E Remote Accessory can be configured using the Xtralis VSC software. The following sections describe the configuration options available in Xtralis VSC software.

5.2.1 General Options

The general options are to set basic identification information of the VESDA-E Remote Accessory.

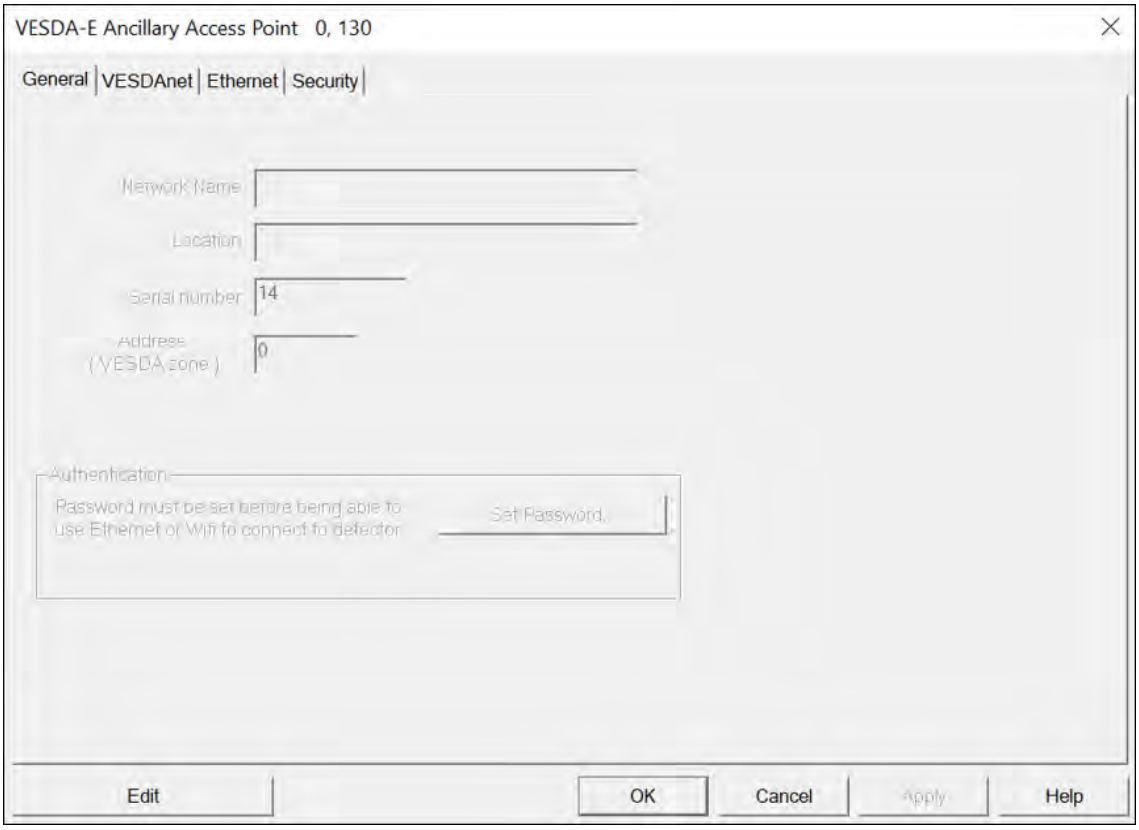


Figure 5-2: General Options

The General configuration options are as follows:

- **Network Name:** The name of the VESDAnet network. (The user can leave this blank if desired).
- **Location:** A description of the physical location of the detector.
- **Serial Number:** The serial number of the device. This is factory set and cannot be changed.
- **VESDA-E Zone:** The unique zone number used to link this VESDA-E Remote Accessory with a detector.
- **Detector Type:** Select the type of the detector logically connected to the ancillary.
- **Ancillary device Relay config:** Select the relay behavior. The relay configuration can be selected to follow from detector or select custom assignment ancillary. The relay configuration needs to be checked and updated if custom config option is selected.

Note: The detector option shall not be used if the firmware version of the connected detector is lower than V05.38.

5.2.2 VESDAnet Options

The VESDAnet options provide the ability to control network data transmission behaviour for VESDAnet connections.

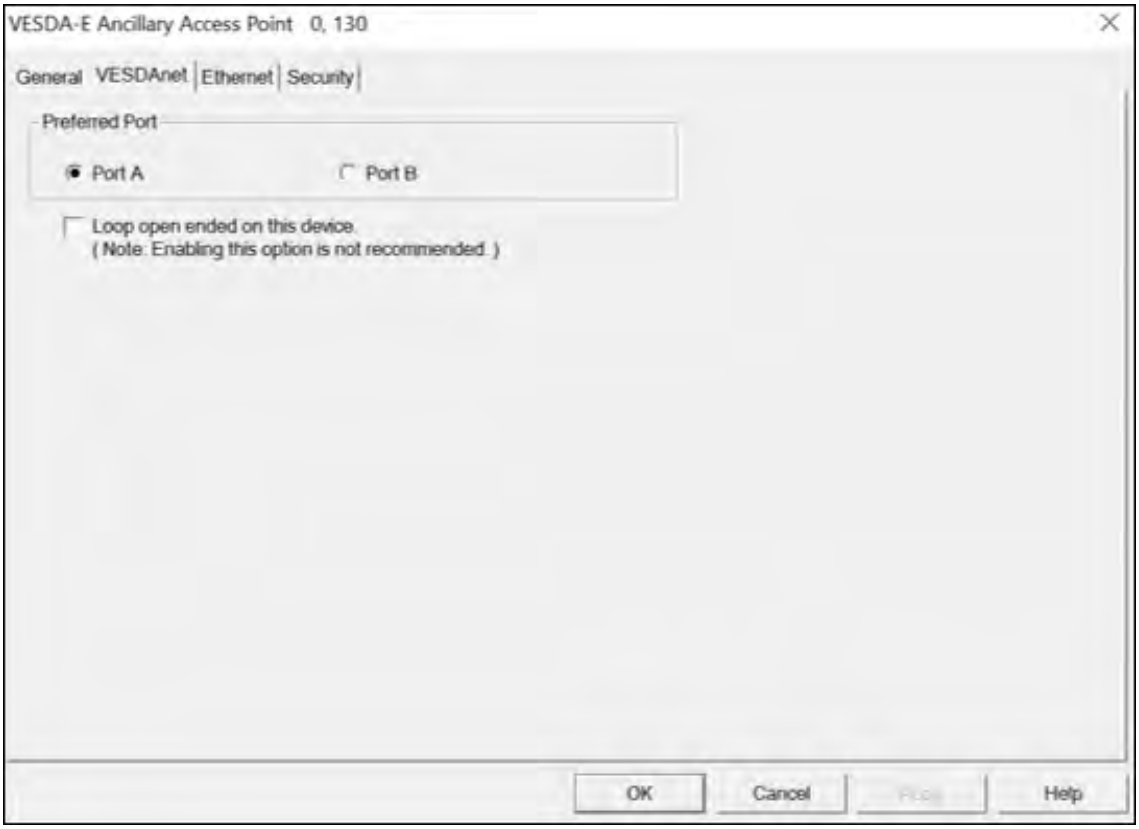


Figure 5-3: VESDAnet Options

The Communications configuration options are as follows:

- **Preferred Port:** The preferred VESDAnet port to be used to transmit network data from this device. The non-preferred port is used if for some reason transmissions on the preferred port fail. For best performance in large networks, this setting should be randomly distributed between connected devices.
- **Loop Open Ended on This Device:** This should be checked if the network has been wired so either VESDAnet port A or VESDAnet B is not connected on this detector. (Xtralis recommends that VESDAnet ports A and B are always connected so this option should normally not be checked).
- **Minimum interval between status events:** The minimum time interval between status updates for the selected detector.

5.2.3 Ethernet Options

The Ethernet options provide the ability to configure the detector to join an existing wired Ethernet network using the normal building network connection process or be directly connected to a PC or laptop. The Ethernet option tab will be only available for Ancillary access point.

Note: To monitor the device via Ethernet, a password must be set from General tab.

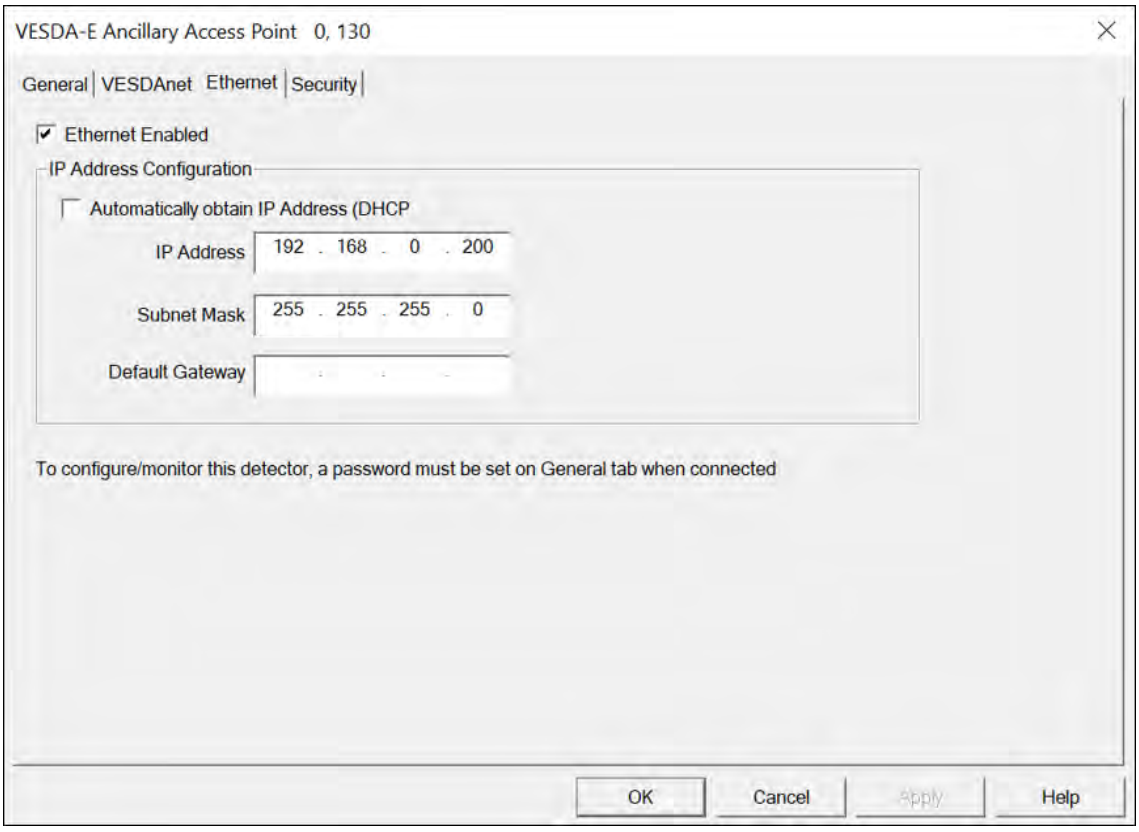


Figure 5-4: Ethernet Options

The Ethernet configuration options are as follows:

Ethernet Enabled: Tick to enable Ethernet for use.

Dynamic IP Address Configuration

- **Automatically obtain IP Address:** Selects whether the VESDA-E Remote Accessory uses a static IP address or automatically obtains an address from a DHCP server available on the building network. If this option is selected, the IP address, Subnet Mask and Default Gateway fields are disabled. Once the IP address has been successfully obtained by the accessory, it is displayed on the detail status screen.

Static IP Address Configuration

- **IP Address:** IPV4 static address. This address must be used when creating a connection profile for the accessory in Xtralis VSC.
  - The default IP address is 192.168.0.200. This allows direct connection between a PC or Laptop and the Accessory using a standard Ethernet cable.
  - Prior to connecting the accessory to a router or other gateway device, the default address must be changed to an address in the range used by the router. This can be done by connecting to the detector using the USB port.
- **Subnet Mask:** The subnet mask for the network.
- **Default Gateway:** The IP address of the router or other gateway device that is servicing the network.

Note: Contact your network administrator if you are not sure of which option to select.

5.2.4 Security Options

The security options page allows you to define the security settings associated with USB and Ethernet connections.

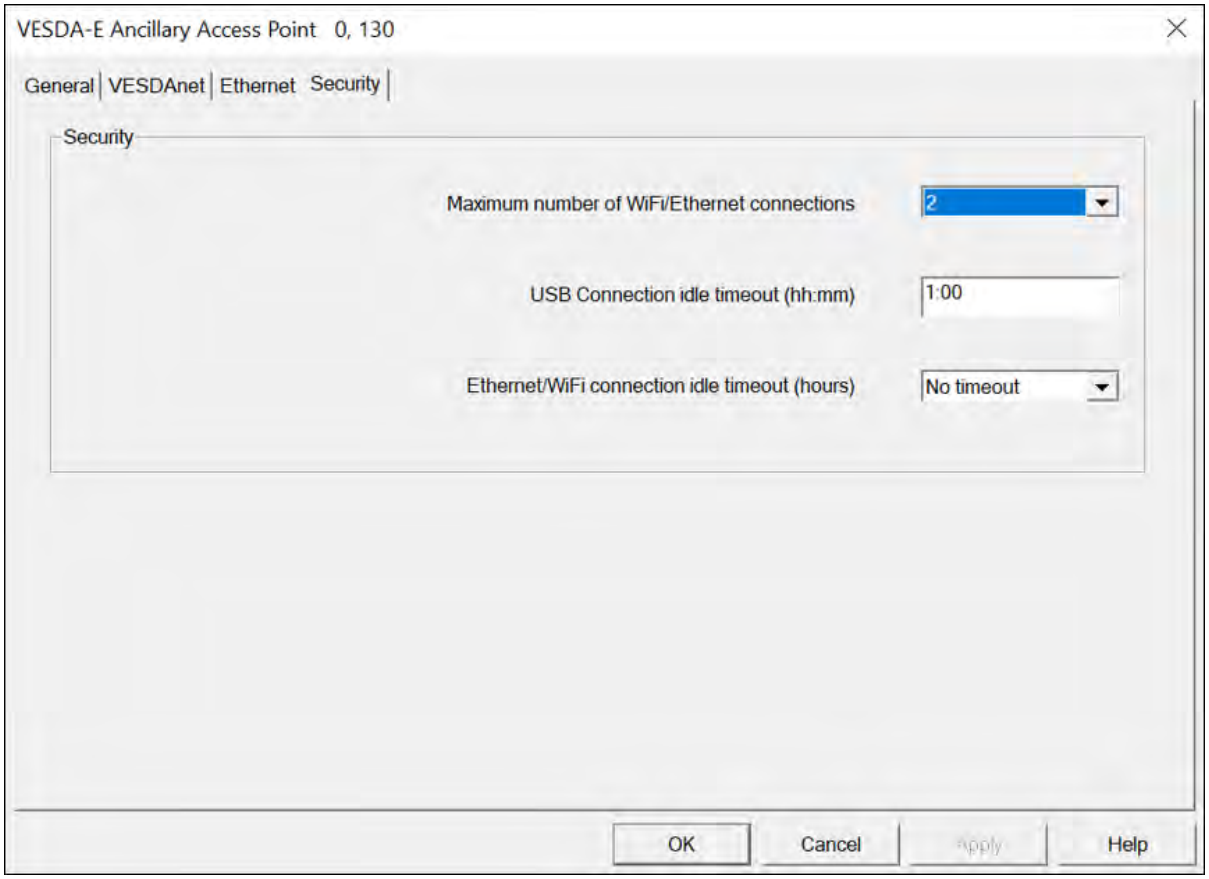


Figure 5-5: Security Options

- **Maximum number of Ethernet connections:** The number of connections which can be running at any time. This option is available only for Ancillary Access point.
- **USB Connection Idle Timeout (minutes):** The USB connection will be dropped after no activity from the user on Xtralis VSC for this period of time.
- **Ethernet connection idle timeout (hours):** Ethernet connections will be dropped after no activity from the user on Xtralis VSC on the connection for this period. The user can also choose the option of no timeout. This option is available only for Ancillary Access point.

5.3 Relays

The relays, located on the relay card, interface to the Fire Alarm Control Panel (FACP) to communicate faults, alarms and disabled states. The relay can be configured in two modes:

1. **Follow the detector:** in this mode, the state of the relays are controlled directly by detector. The relays will be energized / de-energized based on the configuration of the detector with the only difference in relay 3 (Urgent Fault Relay). Relay 3 (Urgent Fault Relay) will be de-energized when there is a fault reported in the detector or ancillary.
2. **Custom Configuration:** in this mode, each individual relay in the VESDA-E Remote Accessory can be configured using Xtralis VSC tool. The function of the relay, energized / de-energized state and latching state can be configured individually. Each relay can be assigned to one or more functions. Relays 3 and 6 are permanently set for Urgent Fault and Fire 1 respectively.

Table 5-3 below illustrates the default assignments of functions (conditions) to relays and summarizes the default behavior of each relay. Section 5.3.1 describes how to configure the relay behavior using Xtralis VSC.

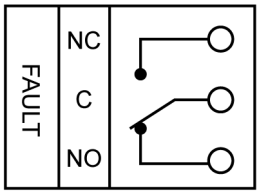
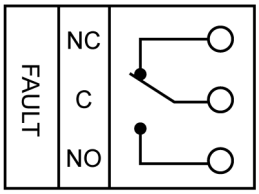
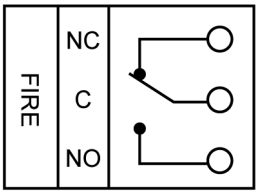
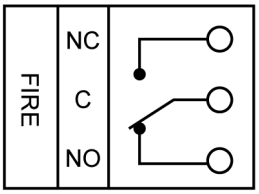
Fire 1 Relay

If a VESDA-E Remote Accessory relay is to be used to signal fire alarm to the Fire Alarm Control Panel (FACP) then the Fire 1 relay must be used.

Urgent Fault and Fire 1 Relay Terminals

The Urgent Fault relay is energized during normal operation while the Fire 1 relay is only energized when a Fire1 is detected. The operation of these two relays is summarized in the following table.

Table 5-2: Urgent Fault and Fire Relay Operation

URGENT FAULT Relay		Fire 1 Relay	
No Fault (Energized)	**Fault or Unpowered State**	**No Fire (De-energized)**	**Fire**
			

Relay Assignments and Behaviour

- Relays 1, 2, 4, 5, 7, 8, 9, 10, 11, 12 are fully configurable.
- Relays 3 and 6 are fixed to Urgent Fault and Fire 1 respectively. These relays may be assigned additional conditions.
- Relays 3 and 6 are changeover relays. (SPDT (1 Form C)) All the other relays are single pole single throw (SPST-NO (1 Form A)).

Table 2-3 below illustrates the default assignments of functions (conditions) to relays and summarizes the default behavior of each relay. Section 2.6.1 describes how to configure the relay behavior using Xtralis VSC.

Table 5-3: Default Relay function

7 Relays	12 Relays	Default Function	Default State
1	1	Isolate	Not Energized
2	2	Minor Fault	Energized
3	3	Urgent Fault	Energized
4	4	Alert	Not Energized
5	5	Action	Not Energized
6	6	Fire 1	Not Energized
7	7	Fire 2	Not Energized

Table 5-3: Default Relay function (continued...)

7 Relays	12 Relays	Default Function	Default State
	8	First Alarm Sector 1	Not Energized
	9	First Alarm Sector 2	Not Energized
	10	First Alarm Sector 3	Not Energized
	11	First Alarm Sector 4	Not Energized
	12	Scan	Not Energized

5.3.1 Relay Options

The Relay options page provides the ability to determine which alarm or fault condition is assigned to each relay and whether each condition is latched. In addition, each relay can be configured Normally Energized or Normally De-Energized.

VESDA-E VEP/VEU Custom Relay View

Figure 5-6 and Figure 5-7 depict the Relay Conditions for 7 and 12 Relays configuration for VESDA-E Remote Accessories.

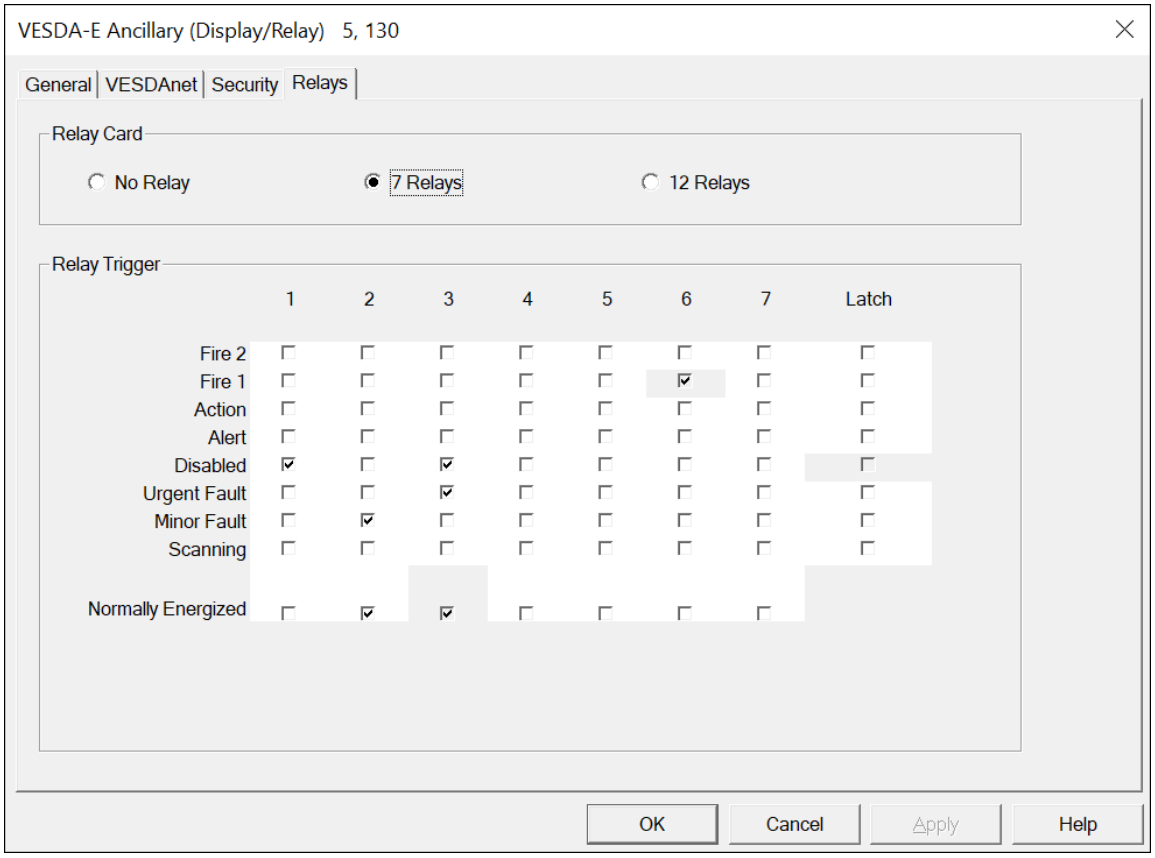


Figure 5-6: Relay Conditions (VEP/VEU example) - 7 Relays

VESDA-E VES Custom Relay View

For configuration of relays for VES detectors that are mapped to VESDA-E Remote Accessories with relay solutions, users have the option to customize relays across each of the different sectors that VES offers.

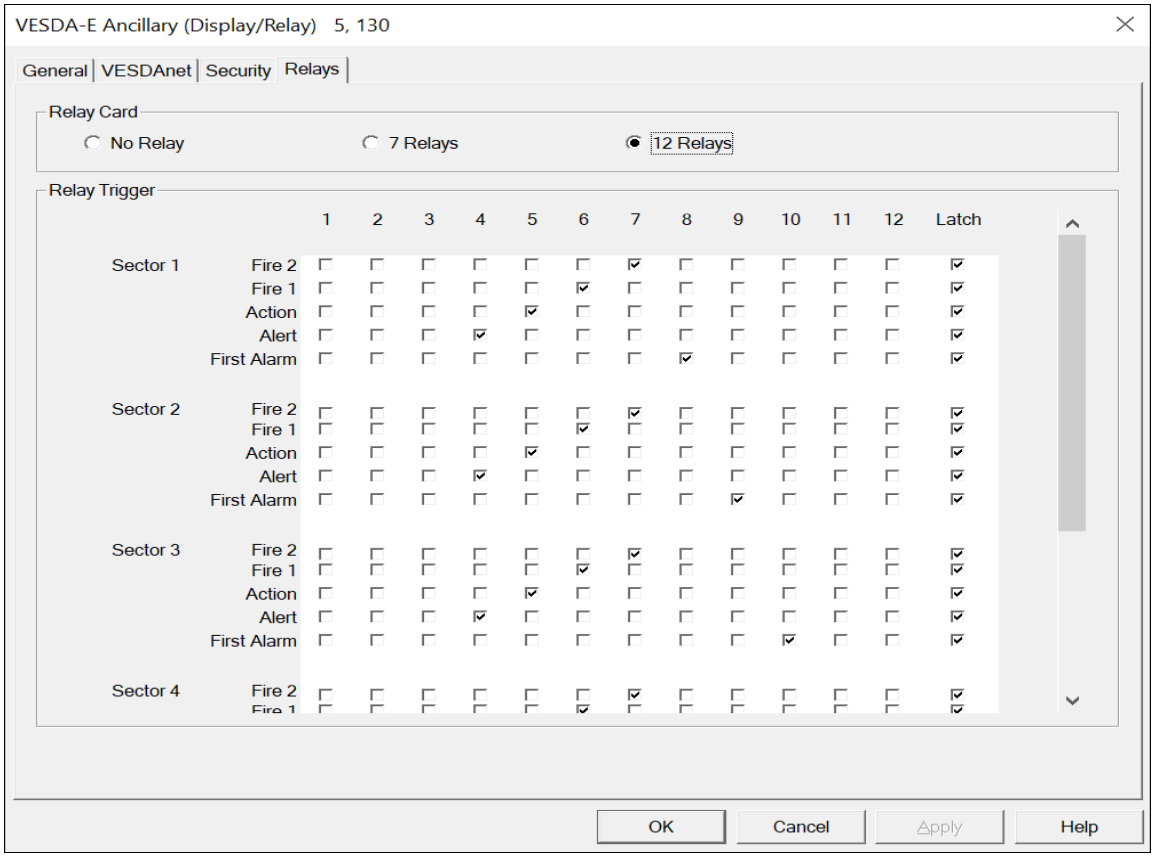


Figure 5-7: Relay Conditions – 12 Relays

Standard Configuration options

Normally Energized: The Normally Energized or Normally De-Energized setting of each relay can be configured using the checkbox in the Normally Energized row:

- If checked the relay is set Normally Energized.
- If unchecked the relay is set Normally De-energized.

In the Normally De-energized mode, no drive is applied to the relay coil until the assigned condition such as Alert or Fire 1 occurs. The Normally Energized mode is the opposite. Drive is removed from the relay coil when the condition occurs. The default mode of the relays is listed in Table 5-3.

Latching: If the cause of a condition is removed (for example, smoke decreases below the threshold) and latching is enabled, the detector “remembers” the condition and holds the corresponding relays and displays in the active state as though the cause of the condition were still active.

Latching can be enabled for any alarm condition or for urgent or minor fault by checking the corresponding latching checkbox to the right of the condition.

Beep: The VESDA-E Remote Accessory buzzer can be configured using the checkboxes under heading "Beep". If checked the buzzer will beep when the condition occurs.

6 Troubleshooting and Maintenance

If the VESDA-E Remote Accessory identifies a fault condition, the Fault LED on the front panel illuminates and the buzzer beeps once every 30 seconds if configured from VSC tool (for accessory with display). The fault relay contacts will open to indicate the fault in accessory with relays.

The Xtralis VSC software can be used to obtain specific information on the event to enable further investigation and correction of the fault. The Xtralis VSC Online Help contains descriptions of each fault and recommended corrective actions.

6.1 Troubleshooting with the Front Panel Display

The main screen of the VESDA-E Remote Accessory with display features a range of fault indicators. When a fault is generated, the respective indicator will illuminate.

Table 6-1: Fault Indicators

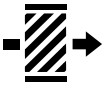
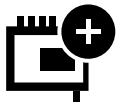
Icon	Icon Definition	Description
	Smoke and Alarm Threshold Levels	General fault for Smoke and Alarm Threshold levels raised from the detector end only.
	VESDA Detector OK	General fault for detector operation condition raised from the detector end only.
	Detector Fault	General detector fault in the paired detector. For example, an electronics hardware fault, or fault test procedure in progress.
	Aspirator Fault	Aspirator fault in the paired detector. For example, the aspirator impeller cannot rotate due to contamination, or the aspirator has an electrical fault.
	Airflow Fault	Airflow fault in the paired detector. For example, Airflow not within the expected range.
	Power Fault	Power fault in the paired detector. For example, Mains Power failure.
	Filter Fault	Filter fault in the paired detector. For example, the filter is not inserted, or requires replacement.
	Smoke Chamber Fault	Smoke detection fault in the paired detector. For example, a Smoke Sensor or Sampling Module hardware failure. This indicator will also be lit when the AutoLearn Smoke function is canceled due to an alarm occurring during the AutoLearn process
	VESDAnet Fault	Communications fault. For example, disconnected wiring on VESDAnet.

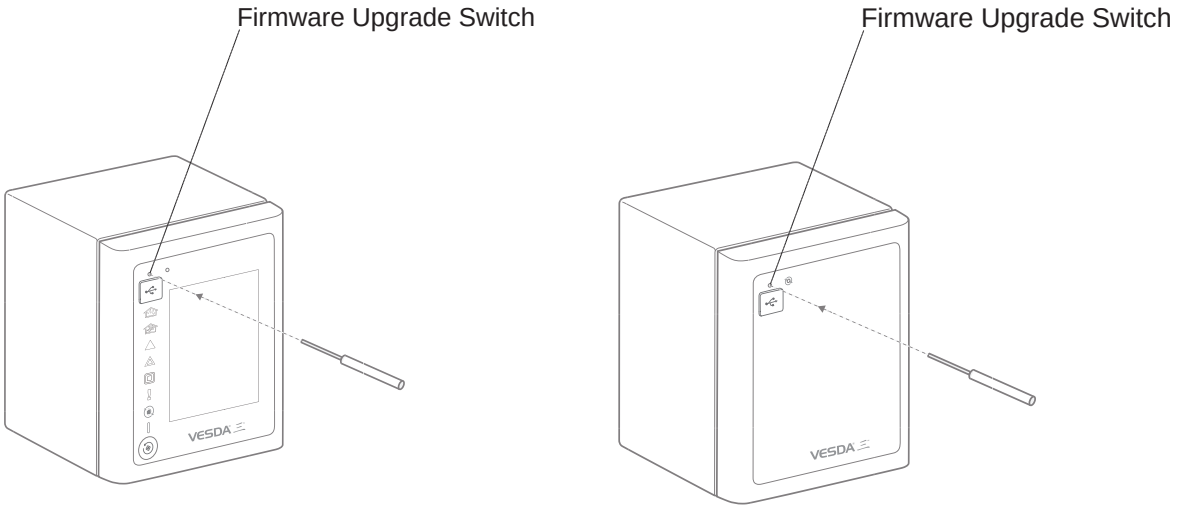
Table 6-1: Fault Indicators (continued...)

Icon	Icon Definition	Description
	StaX Module Fault	Expansion Module fault in the paired detector. For example, any expansion module connected with the detector or accessory is missing.

6.2 Firmware Upgrade

VESDA-E Accessory units are field upgradable. If a VESDA-E Accessory requires firmware upgrade, ensure that the upgrade package is genuine and obtained directly from Xtralis.

To start the firmware upgrade of the VESDA-E Accessory, plug the USB stick with firmware upgrade package to the USB port and press the Firmware Upgrade Switch for 10 seconds as shown in Figure 2-6. The status of firmware upgrade is indicated by the Firmware Upgrade LED as shown in Figure 2-5 for Remote Display and figure 2-9 for Remote Relay Baseline.



Accessing the Firmware Upgrade Switch using a pin hole screwdriver

6.2.1 Upgrade Indication for Remote Display Baseline

The firmware upgrade LED will be flashing during firmware upgrade and switch OFF on completing the firmware upgrade. The display will be blank, the system will reboot a couple of times during firmware upgrade and will show home screen once the firmware upgrade is completed. Check the firmware version using Xtralis VSC tool to confirm the new version is upgraded successfully.

Table 6-2: Remote Display Baseline Firmware Upgrade Status LED Indicator

LED	Symbol	Description
Firmware Upgrade		LED flashes during firmware upgrade and turns OFF on upgrade completion.

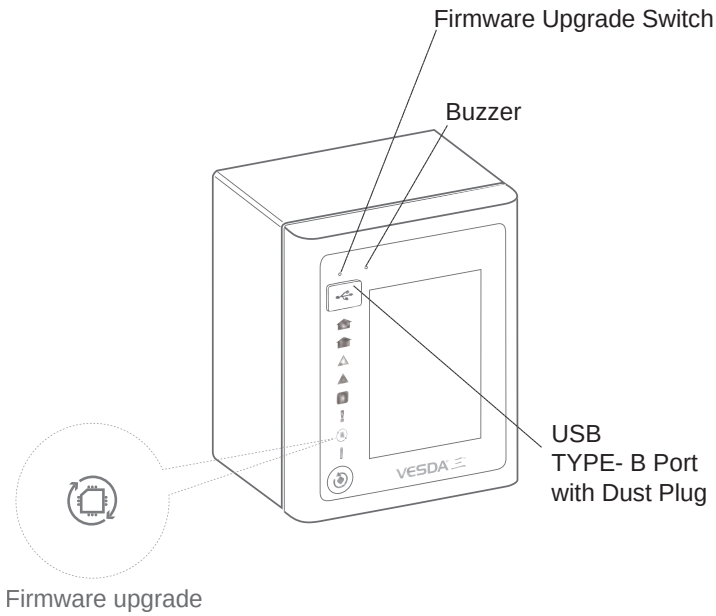


Figure 6-1: VESDA-E Remote Box

6.2.2 Upgrade Indication for Remote Relay Baseline

The color of the firmware upgrade LED will change from Green to Amber during firmware upgrade. The system will reboot couple of times during upgrade process. The color of the firmware upgrade LED will change back to Green on firmware upgrade completion. Check the firmware version using Xtralis VSC tool to confirm the new version is upgraded successfully.

Table 6-3: Remote Relay Baseline Firmware Upgrade Status LED Indicator

LED	Symbol	Description
Firmware Upgrade		LED Turns to Amber during firmware upgrade and back to Green on upgrade completion.

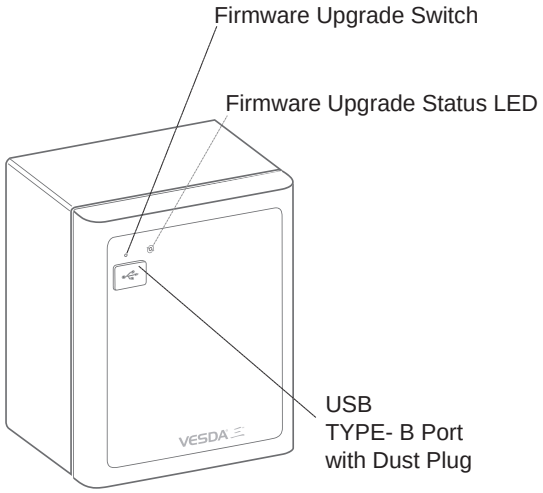


Figure 6-2: VESDA-E Remote Box with Firmware Upgrade LED and Firmware Upgrade Switch

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Doc. No. 37188_A3
Part No. AD37188-002
February 2024

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