VESDA-E 19” Sub-Rack Remote Unit Installation Instructions

These installation instructions provide essential information for installing the VESDA-E Sub-Rack Remote Unit in accordance with the system design. Additional installation and product documentation are listed below in the Reference Documents section.

System Components

The VESDA-E Sub-Rack Remote Unit is shipped with the following components:

- 1 VESDA-E 19” Sub-Rack (VEK-0000)
- 1 VESDA-E Sub-Rack Remote Box (VEK-)
- 1 installation instruction sheet
- 1 VESDA Device Safety Instruction Sheet

Prerequisites

- Completed VESDA network design.
- 24V DC Power Supply, compliant with local codes and standards.
- Type A to Type B USB Interface Lead for initial configuration of this device.
- Conduit should be used in a way that is suitable to cable glands that are compliant with the IP rating of this device.
- Cable termination for Screw terminal blocks (0.2-1.5 sq mm, 24-16 AWG)
- PC or laptop installed with Xtralis VSC for initial configuration.
- Standard connection instructions for where the VESDA-E Sub-Rack Remote Unit is to be added to a corporate network.

Standards Compliance

UL and ULC

Please refer to the Regional Regulatory Requirements and Notices section in the VESDA-E Remote Accessories Product Guide (Doc. 37188).

Power Consumption

Supply Voltage	18 - 30 VDC					
	VEK-A10-0	**VEK-A10-7**	**VEK-A10-12**	**VEK-A30**	**VEK-A40-7**	**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
Relays	Contacts rated 2A @ 30 VDC (Resistive) Programmable to latch or not latch alarm or fault states					
19” Sub-Rack current	2A Max					

Environmental Requirements

- **Temperature**
  - **Ambient:** 0°C to 39°C (32°F to 102°F)
- **Humidity:** 5 to 95% RH, non-condensing

Reference Documents

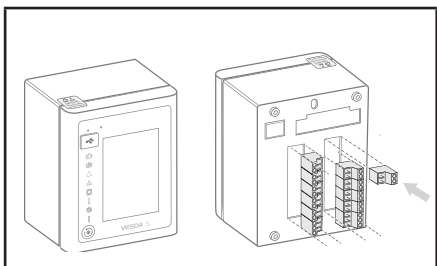
Additional installation and product information are contained in the following documents, which are available for download at www.xtralis.com.

- 37188 - VESDA-E Remote Accessories Product Guide
- 48996 - VESDA-E Remote Accessories Quick Start Guide

To visit the product’s web page, please scan this QR code:

Installation Instructions

Notes

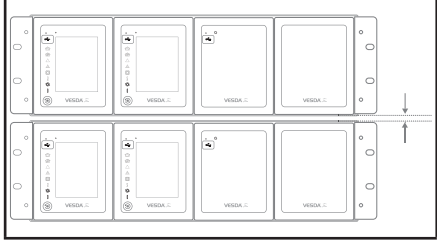


The VESDA-E 19” Sub-Rack Remote Unit is an array of 4 Sub-Rack Remote Box Models and can be mounted on a 19” Sub-Rack.

Note: It cannot operate without a fully loaded sub-rack.

Once unboxed, please ensure the Relay plugs are plugged in on the rear side of the device as shown to avoid any static charges while handling.

Note: Connections are made following the legend shown in Figure 2 Socket Locations.

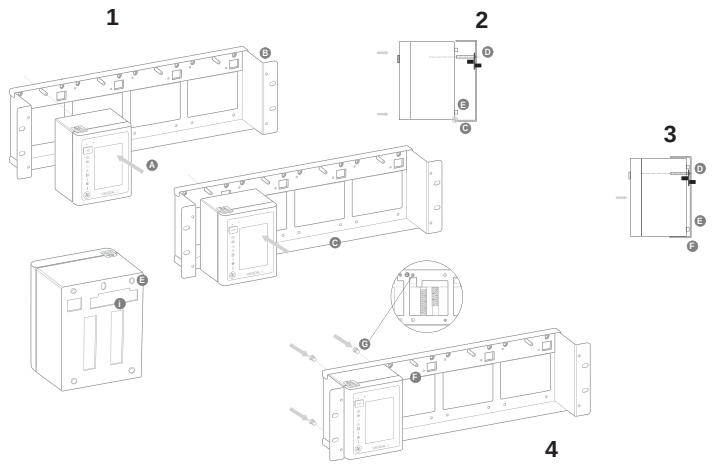


The 19” Sub-Rack can be stacked in a vertical array using Din Rails or server rack mounts system.

- Ensure 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 stack with minimum gap i.e. 1U hole position.

Assembling VESDA-E Sub-Rack Remote Box to the 19” Sub-Rack

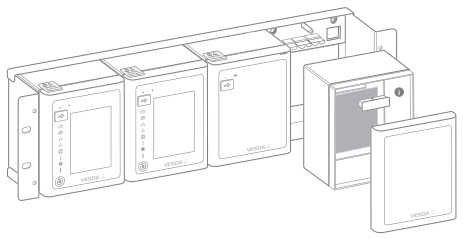
Assembling a VESDA-E 19” Sub-Rack Remote Unit



VESDA-E Sub-Rack Remote Box is designed to be flexible in its configuration option in mounting on a 19” Sub-Rack. Ensure sufficient access to the rear side of the 19” Sub-Rack.

1. The VESDA-E Sub-Rack Remote Box (A) is rested on the base metal platform of the 19” Sub-Rack (C) provided.
2. Match the locater pin (D) shown on th 19” Sub-Rack (B) to the slot feature (i) provided on the VESDA-E Sub-Rack Remote Box (A) and slide-in gently.
3. Push the VESDA-E Sub-Rack Remote Box (A) gently till the rear standoff (E) bottoms to the 19” Sub-Rack (B) inside rear face (F).
4. Secure each VESDA-E Sub-Rack Remote Box (A) from the rear side of 19” Sub-Rack (B) using four screws (G) provided.

VE Sub-Rack Remote Box Single Device

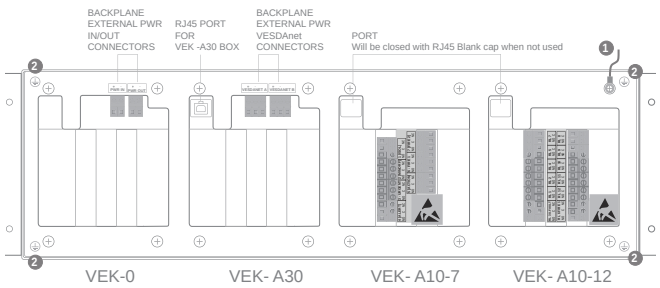


Provided is a scenario where less than 4 units of Sub-Rack Remote Boxes are used, then the subsequent empty slots in 19” Sub-Rack should be installed with a VEK-0 blank box to bridge the VESDAnet communication.

Warning: Make sure that there are Jumper card PCB installed (i) to all VEK-0 Sub-Rack Blank Box Position, otherwise the device will raise open loop fault.

Avertissement : Assurez-vous qu’un circuit imprimé de carte de couplage est installé (i) à tous les emplacements de boîtier vide de casier VEK-0. Dans le cas contraire, l’appareil déclenchera un défaut de boucle ouverte.

Field Wiring Assembled VESDA-E 19” Sub-Rack Remote Unit



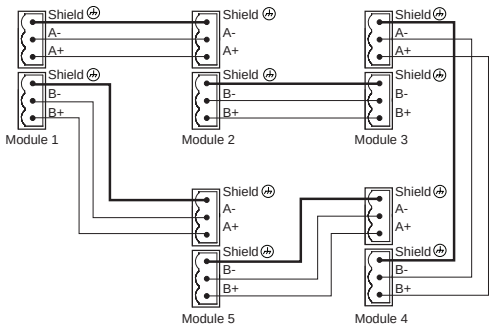
The VESDA-E 19” Sub-Rack Remote Unit provides rear access for Power, VESDAnet, Relays and Ethernet connections while the backplane interconnects the power and VESDAnet connections between various VESDA-E Sub-Rack Remote Box models stacked/assembled in a 19” Sub-Rack.

Power:

- 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.
- 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.

Connection to VESDAnet:

- The VESDAnet A & B connector at the rear side is used for loop-in/loop-out connection as below.



The diagram shows an example of the wiring for a closed VESDAnet loop, which is the recommended configuration. 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.

Note: For the chassis grounding requirement, use the Ring Terminal Grounding Lug (symbol 1) with a maximum outer diameter of 9 mm at any chassis grounding points (marked with ground symbol 2).

VESDA-E 19” Sub-Rack Remote Unit Installation Instructions

Wiring: Power, Relays, VESDAnet, VESDA-E Sub-Rack Remote Box

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

Avertissement : Il faut toujours couper l’alimentation des appareils avant de brancher/débrancher les con nexions électriques, de relais ou de réseau. Au cas contraire vous pouver entraîner la défaillance corruption et/ou élément de données.

Warning: Do not open the Front Fascia for the VESDA-E Sub-Rack Remote Box in any case, without any supervision of Xtralis approved field engineers to avoid any hardware/de vice failure in field Doing so may damge your electronics and Warranty can be Void. For this each device Comes with a tempered void label as shown in Figures 1.

Avertissement : N’ouvrez le panneau avant du boîtier à distance de casier VESDA-E sous aucun prétexte, sans la supervision d’ingénieurs de 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. Pour cette raison, chaque appareil est doté d’une étiquette d’annulation en cas de manipulation, comme illustrée sur la Figure 1.

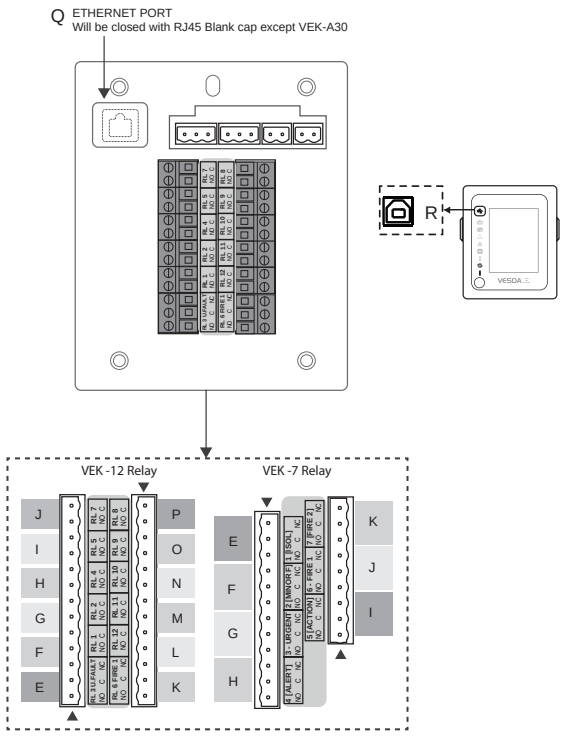


Figure 1: Socket Locations

Relays	12 Relays	7 Relays
E	3 - Urgent Fault	4 - Alert
F	1 - Disable	3 - Urgent Fault
G	2 - Minor Fault	2 - Minor Fault
H	4 - Alert	1 - Isolate (Disable)
I	5 - Action	5 - Action
J	7 - Fire 2	6 - Fire 1
K	6 - Fire 1	7 - Fire 2
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	
Communications		
Q	Ethernet (ONLY ON VEK-A30)	
R	USB	

Note: You should comply with your local codes in relation to the power supply requirements.

Caution: DO NOT CHANGE THE POSITIONS OF PLUG CONNECTORS (FOLLOW THE INSTRUCTIONS PROVIDED FOR VESDANET & RELAYS CONNECTIONS). DOING SO MAY DAMAGE YOUR HARDWARE.

Précaution : NE MODIFIEZ PAS LES POSITIONS DES CONNECTEURS ENFICHABLES (SUIVEZ LES INSTRUCTIONS FOURNIES POUR LES CONNEXIONS VESDANET ET DE RELAIS). CELA POURRAIT ENDOMMAGER VOTRE MATÉRIEL.

Caution: Operating the VESDA-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 the Product Specifications in the VESDA-E Remote Accessories Product Guide.

Précaution : Faire fonctionner l’unité à distance de casier 19” VESDA-E 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 aux Spécifications du produit dans le Guide produit des accessoires à distance VESDA-E.

Relay Wiring

Relays: The relays interface to the Fire Alarm Control Panel (FACP) to communicate faults, alarms and disabled states. Connect and terminate the required Relay Plugs following the legend shown in Figure 1. 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)**.

Warning: Ensure that all wiring complies with manufacturer’s instructions, local and national fire detection code requirements. Refer to Codes and Standards Information section in the VESDA-E Remote Accessories Product Guide for further information on wiring.

Avertissement : Adresser aux codes informations sur les normes et reglementations de detection de fume par le notice descriptive du produit pour plus de renseignements au conformite du cablage.

Caution: DO NOT LOOP WIRE UNDER TERMINALS WHEN WIRING VESDA-E SUB-RACK REMOTE BOX.

Précaution : NE FAITES PAS DE BOUCLES AVEC LES FILS SOUS LES BORNES LORS DU CÂBLAGE DU BOÎTIER À DISTANCE DE CASIER VESDA-E.

Attention : NE PAS RALIER LES CABLES TERMINAUX PENDANT LES CABLAGES DES FILS.

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

RESET / DISABLE / ACKNOWLEDGE Button

This button on the VESDA-E Remote Accessories Front Fascia can control multiple functions on the connected VESDA-E Detector/devices.
If there is an alarm or fault condition, pressing the button first time will acknowledge the condition. Subsequent presses will reset or disable the detector.

Communications

- **USB:** The USB port (R) is used for initial configuration and local maintenance or servicing of the VESDA-E Sub-Rack Remote Box using a PC or laptop installed with Xtralis VSC software. Install Xtralis VSC prior to connecting the VESDA-E Sub-Rack Remote Box to the computer. This ensures that the required USB drivers are present.
- **Ethernet:** The Ethernet port (Q) is used for permanent network connection to the VEK-A30, 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 Cat 6 Ethernet lead when connecting the VEK-A30 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 VEK-A30 access password using Xtralis VSC.

Power Up

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 (B).

Note: The VESDA-E Remote Box will not operate if the power supply polarity is reversed.

Product Overview

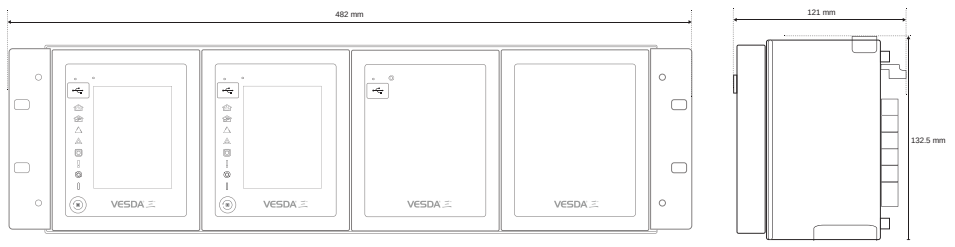
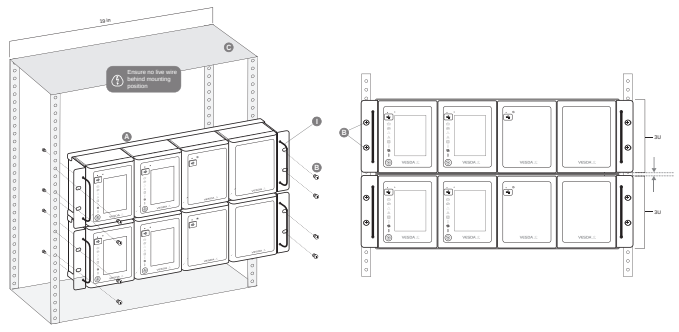


Figure 2: VESDA-E 19” Sub-Rack Remote Unit

Mounting Options for VESDA-E 19” Sub-Rack Remote Unit

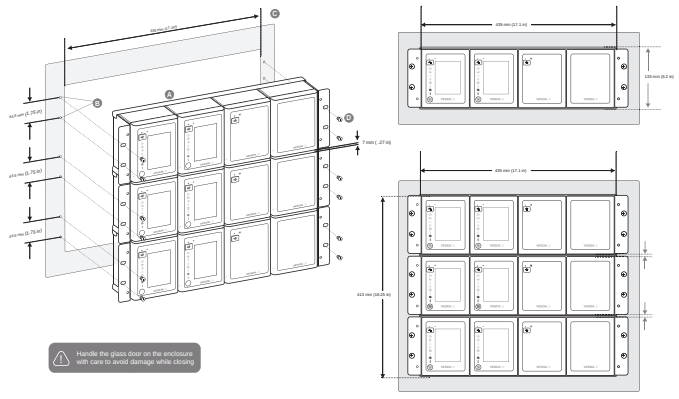
The VESDA-E 19” Sub-Rack Remote Unit to be secured by bolts (4Nos, up to Hex/Pan head Ø 12 mm (15/32”) max.) to any Standard 3U Sub-Rack system mounts. For easy handling, use appropriate 3.5” Rack handle on the holes provided (i) using 2 Nos M4 (Hex/Pan head Ø 8 mm (5/16”).

Scenario 1: VESDA-E 19” Sub-Rack Remote Unit onto a 19” Server Rack



- Hold the VESDA-E 19” Sub-Rack Remote Unit (A) in the correct hole matching position in the standard server rack (C), and mount to the 19” Sub-Rack Remote Box unit with four bolts (B) shown.
- 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.
- Once the VESDA-E 19” Sub-Rack Remote Unit are mounted, route all the cables along the walls/ channels available on Server Rack and bundle using cable tie to tie the loose cables where necessary and plug the designated connectors for the Power, VESDAnet and Relay.

Scenario 2: VESDA-E 19” Sub-Rack Remote Unit into a 2 and 5 glazed boxes

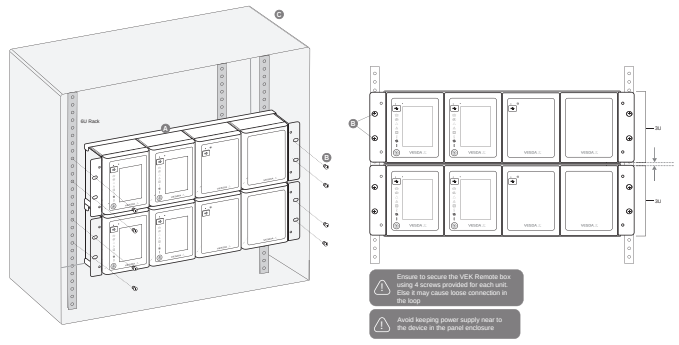


Caution: Take care that there is sufficient space of 50mm (2”) available for Handle clearance or min 25mm (1”) in case handle is removed if space restrictions apply for the glass door closure.

Précaution : Veillez à ce qu’il y ait un espace suffisant de 50 mm (2”) disponible pour le jeu de la poignée ou minimum 25 mm (1”) au cas où la poignée est déposée si des restrictions d’espace s’appliquent pour l’enceinte à porte vitrée.

- Insert the VESDA-E 19” Sub-Rack Remote Unit (A) to match the 4 mount holes (B) on panel/Hinge door (C) for bolting with screws (D).
- Once the VESDA-E 19” Sub-Rack Remote Unit are mounted, route all the cables along the multiple knock-outs drilled as per field wiring on the swing frame and bundle using cable tie to tie the loose cables where necessary and plug the designated connectors for the Power, VESDAnet and Relay.

Scenario 3: VESDA-E 19” Sub-Rack Remote Unit onto Panel/Din Rail Mount Enclosure



Caution: Ensure sufficient space of 50mm (2”) is 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.

Précaution : Veillez à ce qu’il y ait un espace suffisant de 50 mm (2”) disponible pour le jeu de la poignée ou minimum 25 mm (1”) au cas où la poignée est déposée. Si des restrictions d’espace s’appliquent pour l’enceinte à porte vitrée, assurez-vous de laisser un espace suffisant de 50-65 mm (2-2.5”) à l’arrière de l’unité à distance de casier 19” VESDA-E (A) pour l’accès à l’acheminement du câblage arrière dans l’enceinte.

- Route all the cables along the multiple knock-outs drilled as per field wiring on the Panel/Din Rail Mount enclosure (C) and bundle using cable tie to tie the loose cables where necessary and plug the designated connectors for the Power, VESDAnet and relay.
- Hold the VESDA-E 19” Sub-Rack Remote Unit (A) in the correct position leaving minimum Gap of 1-2 Bottom hole position as shown on the Panel/Din Rail Mount enclosure (C) and secure with four bolts (B).

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