Installation Instructions for VESDA Power Supply Model VPS-VEA-115UL and VPS-VEA-230UL

Operation

TThe Xtralis Model VPS-VEA-115UL and VPS-VEA-230UL are power supplies that convert a 120VAC / 60Hz or 230VAC / 50Hz respectively input to 24VDC nominal output (see specifications). They are intended for use in applications requiring UL Listing for Fire Protective Signaling. The units must be installed in accordance with the National Electric Code (NFPA70), the National Fire Code (NFPA72), and all other applicable local codes necessary for compliance with the local authority having jurisdiction.

Space is provided in the VPS-VEA-115UL and VPS-VEA-230UL power supply cabinet for up to two 12V / 35AH or 36AH batteries (configured for 24V). For a larger standby capacity in a single VESDA-E VEA installation or when more than one VESDA-E VEA detector is to be powered, use model VEA-BAT battery enclosure to house up to two 12V / 35AH or 36AH batteries or use a UL1481, ULC-S527 or UL864 Listed enclosure.

Operation Overview

The VPS-VEA-115UL and VPS-VEA-230UL is a power supply intended to power the VESDA-E VEA Detector Base Unit plus up to two (2) VESDA-E VEA Detector Stacks (see battery table). A power failure indication is provided via a dry relay contact (Form C) which transfers due to:

1. AC input loss,
2. a low AC input voltage,
3. a loss of battery voltage,
4. a short circuit of the battery leads or
5. a short circuit of any of the DC power outputs.

Refer to the wiring diagram located on the VEA unit for proper connections.

> **Note**: The screw terminals can accommodate up to two wires each, provided the wires sit under the terminal clamp on opposite sides of the screw.

Power Supply Capacity and Recommended Battery Requirements

Battery requirements and recommendations for typical power supply loads.		
VESDA-E VEA Configuration	Power Supply/Alarm Load	24 hours of standby operation and 30 minutes of alarm
Base Configuration 1xVEA-040-A00/A10 + 1x VER-A40-040-STX	1A/1.8A	24V/35AH or 36AH
Add 1xVEA-020/040-STX + 1xVER-A40-040-STX to the Base Configuration	1.9A/3.4A	24V/70AH or 72AH
Add 2xVEA-020/040-STX + 2xVER-A40-040-STX to the Base Configuration	2.8A/5A	24V/105AH or 108AH
For use with the Listed VESDA-E VEA Detector Base Units and VESDA-E VEA Detector Stacks		

Max. charging current 5.3A. Max. AMP/HOUR capacity battery for charging 108AH.

Input

VPS-VEA-115UL: 120VAC / 2.0A/60Hz

VPS-VEA-230UL: 230VAC / 1.0A/50Hz

In-rush: 4.1A

Input Fuse

5A / 250V, Bussman P/N SR-5. To replace fuse (F1), disconnect power to unit, wait 5 seconds, remove fuse by lifting it. Insert new fuse into its socket.

Output

27VDC / 2.8A

Continuous, 27VDC / 5A alarm

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Installation Instructions

Mounting:

1. Using the four mounting holes in the rear of the enclosure as a template, mark the four holes on the required mounting surface,
2. Drill holes in mounting surface to allow installation of appropriate fasteners,
3. Using appropriate fasteners, secure the VEA enclosure to the mounting surface,
4. Locate and install all required wiring conduit(s) following installation design documentation.

Wires: Connect the AC power source to a dedicated 120VAC for VPS-VEA-115UL or 230VAC for VPS-VEA-230UL branch circuit.

Note: Connect ground wire to flying green lead.

Use 14AWG minimum. This circuit is supervised. For battery and DC output power connections, use 18AWG minimum. The battery circuit is supervised. Use 22AWG minimum for the power supply trouble signaling output. This circuit is dependent on the equipment it is connected to for power limited classifi cation

Note: Keep power-limited wiring (Common Trouble wiring), separate from non power-limited wiring (AC input DC Output & Battery). Use minimum 0.25” spacing.

Supervision: To report loss of AC power, DC output circuit fault or low/no battery condition, connect wiring to the appropriate trouble contact terminals and to a supervised initiating device circuit of a fire alarm control unit, a monitoring module of an addressable signaling line circuit or other independently powered trouble indicating device.

Note: In normal operation (non fault), the Common trouble reporting relay is energized. Contact nomenclature (N.C., COM, N.O.) are shownfor normal state.

Battery hookup: In an installation using batteries external to the VPS-VEA-115UL/230UL power supply cabinet, route the wiring to the batteries in conduit or equivalent.

Note: Place batteries in the enclosure with terminals facing the front.

Maintenance: The system should be tested for proper operation as required by NFPA72, the National Fire Code, and your local authority having jurisdicton. Included in this system verifi cation should be the following tests.

Output voltage test: Under normal load conditions, the DC output voltage should be checked for proper voltage level, (27V).

Battery test: To ensure a fully charged battery (batteries) and properly operating charging circuit, under normal load conditions:

1. disconnect the 120/230VAC power source,
2. after 5 minutes, check for the specifi ed voltage at the circuit terminals marked ‘BAT’, (approx. 27V).

In multiple battery systems, isolate the battery pairs by disconnecting sufficient push-on terminals and then check for the specified voltage at the battery terminals

Diagnostic Table

Green LED	RED LED	Common Trouble (N.C. or N.O.)
ON - AC Present	ON - DC Available	Untripped - AC, DC and Battery OK
OFF - AC Fault	OFF - DC Fault, Battery Fault	Tripped - AC, DC and Battery Fault condition

www.xtralis.com

UK and Europe +44 1442 242 330 **D-A-CH** +49 431 23284 1 **The Americas** +1 781 740 2223

Middle East +962 6 588 5622 **Asia** +86 21 5240 0077 **Australia and New Zealand** +61 3 9936 7000

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