Xtralis Power Supplies VPS-215-E & VPS-220-E Installation and Commissioning Instructions

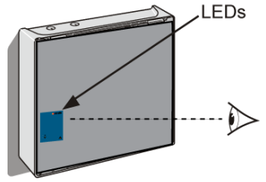
VdS G209140 CE 0786-CPD-20783

VPS-215-E & VPS-220-E are power supply units (PSU) for Xtralis Aspirating Smoke Detectors (ASD).
They are compliant with EN54-4:1997+A1:2002+A2:2006.

Xtralis VPS-215-E
(0.5A load, 7Ah max)
and
Xtralis VPS-220-E
(0.5A load, 14Ah max)

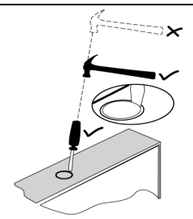
1

Location: Site the PSU indoors on a dry, flat surface in an area that is well ventilated. Where possible the panel's indicators (internal and external) should be at eye level and the unit should be installed in the same location as the ASD it powers.



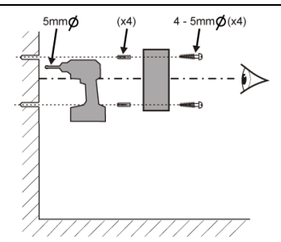
2

Knockouts: Before mounting, remove selected knockouts with a sharp light tap, using a flat broadsided screwdriver (shown right). Fill knockout holes with good quality cable glands.



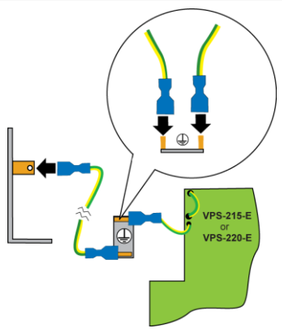
3

Mounting: Mount the metal base securely onto a wall using the four mounting holes provided. Assess the condition and construction of the wall and use No.8-10, or 4-5mm screws. Use the fixing hole template overleaf as a guide.



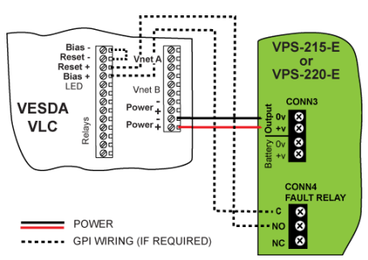
4

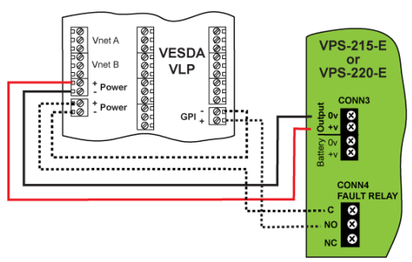
Wiring: Connect all AC cables BEFORE applying power. Maintain segregation between AC and DC cabling. All wiring should be installed in accordance with relevant national standards, e.g. IEE Wiring Regulations BS7671 in the UK. Connect the incoming AC to CONN1 (② shown overleaf) and ensure that earth straps are connected to the earth tag (shown right).

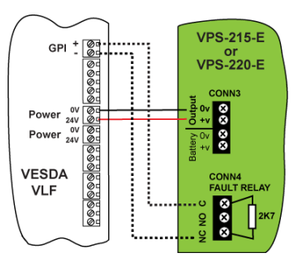


5

Connect DC: Connect the DC output to the Xtralis detector. Examples for the VESDA VLC, VLP and VLF are shown below which may use the General Purpose Input (GPI) to transmit the PSU fault signal. The VESDA detector must be configured to interpret the GPI input as a 'Mains OK' if this feature is used.

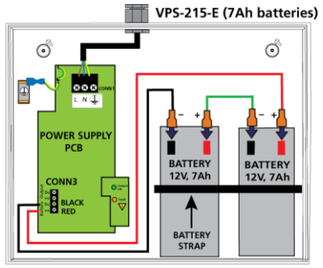


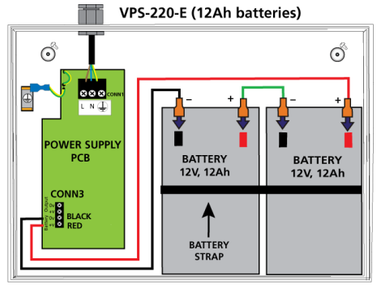


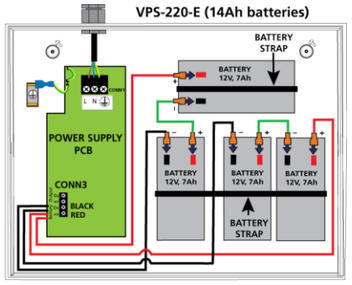


6

Connect Batteries: Secure the batteries using battery straps and connect as shown. With charged batteries the DC output ⑧ will turn on, the OK LED will illuminate and the Fault LED will also illuminate (as there is no AC input).
CAUTION: Only use good quality sealed Valve Regulated Lead Acid (VRLA) batteries. There is a risk of explosion if the batteries are replaced by incorrect types.







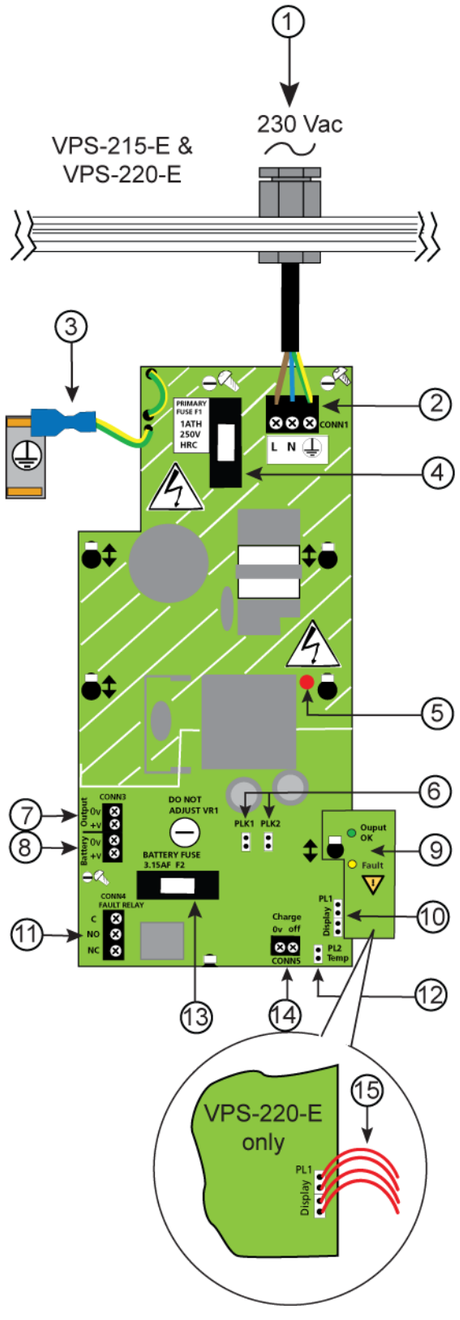
7

Commissioning: Switch on the AC supply to the PSU. The OK LED should stay lit and the Fault LED should turn off.
Check the fault relay is energized (short circuit between C and NO terminals ⑪). Switch off the AC supply and confirm correct operation of LEDs and relay – see table right. Restore the AC supply. Disconnect the batteries and confirm correct operation of LEDs and relay – see table right.

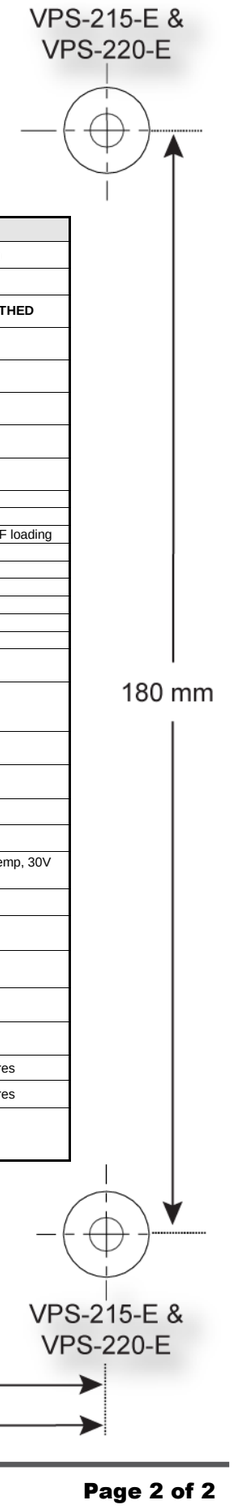
AC	Batteries	OK LED	Fault LED	Fault relay	Fault terminals
ON	OK (Healthy)	ON	OFF	ON	NO-C=short
OFF		ON	ON	OFF	NC-C=short
ON	Not OK (Discharged or Disconnected or Faulty)	ON	ON	OFF	NC-C=short
OFF		OFF	OFF	OFF	NC-C=short

8

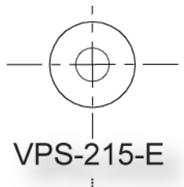
Normal Operation/Fault Finding: The table in Step 7 provides a summary of the normal operation of the PSU when the battery and/or AC supply fails. When the AC supply fails, the DC output is maintained for at least 24 hours as long as the batteries are in good condition. Damage to the batteries as a result of deep discharge is prevented by turning the DC output off (load shed mode) when the battery voltage falls below approximately 21V. Should this happen the DC output will not be restored until the AC supply is re-established OR fully charged batteries have been installed. However, the terminal voltage of the discharged batteries measured after the PSU has entered load shed mode may be greater than 21V because the voltage can recover when the battery is not under load. Never leave the batteries connected for prolonged periods without an AC supply connected because, during load shed mode, there is a monitoring current Imin (<12mA) which, over several days, will drain the batteries to the point they are damaged.

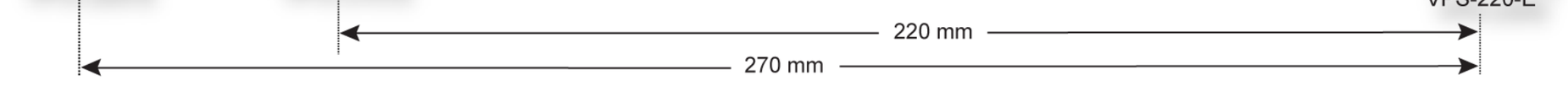


Attention (UK): This PSU regularly checks the battery's internal resistance in accordance with EN 54-4/A2. When batteries are stored their internal resistance increases over time and may indicate a fault when first fitted to this PSU despite them having sufficient capacity to support the load without mains connected. If this fault occurs we recommend replacing the batteries; however it *may* be possible to recover the faulty batteries by cycling them as follows. Leave the load connected, turn the mains supply off and allow the batteries to discharge until the load is automatically disconnected. Then re-connect the mains and allow the batteries to recharge for at least 24 hours. If the Fault light does not go out in this time, repeat the cycle several times.



Legend	Description (UK)	Description (FR)	Beschreibung (DE)	Descriptión (ES)	Descrizione (IT)	Value
①	AC supply					230Vac, 50/60Hz (tested +10% / -15%)
②	AC supply input terminals					L=LIVE, N=Neutral, ⏚=Earth
③	PSU earth strap: connect to enclosure earth tag					**PSU is CLASS 1 AND MUST BE EARTHED**
④	AC supply fuse (F1): high rupturing capacity, ceramic					1A HRC, 20mm
⑤	Red LED: **Hazardous voltages in PCB hashed area**					Hazardous voltages = ⚠
⑥	PLK1 Charge current link. Remove if using batteries <7Ah (Minimum 2Ah)					
	PLK2 Battery monitoring link. Fit if batteries NOT used					
⑦	Power output (maximum and battery cut off voltage)					24Vdc (V max = 30V, V min = 19.5V)
	I max a & I max b with PLK1 fitted					0.5A
	I max a & I max b with PLK1 NOT fitted					1A (non EN54-4 certified)
	Output ripple voltage (peak-to-peak)					1.2V@30MHz bandwidth, 600mV 100nF loading
⑧	Battery connection to VRLA batteries					
	Maximum internal battery resistance					Ri max = 1500mΩ
	I min: Monitoring current in load shed					<12mA
	AC supply/battery charger monitored					✓
	Batteries monitored					✓
	Charging is temperature compensated					✓
	VPS-215-E battery size (Yuasa NP type or equivalent)					2 x 12V, 7Ah (NP7-12)
	VPS-220-E battery size (Yuasa NP type or equivalent)					2 x 12V, 7Ah (NP7-12) or 2 x 12V, 12Ah (NP12-12) or 4 x 12V, 7Ah (NP7-12)
⑨	VPS-215-E indications: Internal only. Output OK (Green LED), Fault (Yellow LED)					Output OK = ● Fault = ⚠
	VPS-220-E indications: External only. Output OK (Green LED), Fault (Yellow LED)					Output OK = ● Fault = ⚠
⑩	PL1: 4-way display connector					
⑪	Fault relay: isolated relay output					Change-over NO-COM-NC 1A@50V
⑫	PL2: high temperature output (unused)					Operates at approx 55°C internal box temp, 30V 200mA max current sink.
⑬	Battery fuse (F2): fast, glass					3.15A F, 20mm
⑭	Charge Off Input: Disablement of battery charger when closed (unused)					
⑮	Wiring loom to Display PCB (VPS-220-E only)					
	VPS-215-E dimensions (H x W x D) VPS-215-E weight (without batteries)					286 x 226 x 113mm 2.5kg
	VPS-220-E dimensions (H x W x D) VPS-220-E weight (without batteries)					351 x 255 x 110mm 3kg
	VPS-215-E mounting					4 x Ø5mm holes on 220 x 180mm centres
	VPS-220-E mounting					4 x Ø5mm holes on 270 x 180mm centres
	Temperature range Maximum relative humidity (RH) Ingress protection (IP) Rating					-5°C to +40°C ambient 95% RH IP30





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