VESDA Power Supplies - Installation and Commissioning

1. Introduction

This document describes the installation and commissioning of the models: VPS-220 2 amp LaserPLUS/LaserSCANNER PSU, VPS-215 1.5 amp LaserCOMPACT PSU.

2. Warnings

Read this section before commencing installation.

- The mains supply cable should be a minimum of 1mm^2 copper controlled by a 5A fuse.
- An appropriate disconnect device shall be provided as part of the building installation.
- This equipment must be earthed.
- Check that the panel has been mounted at least 2 metres away from pager systems or any other transmitting equipment.
- All installation work should be carried out by suitably qualified and trained personnel in accordance with local codes and standards (e.g. for the UK use the recommendations of BS5839 Part 1 and the current edition of the IEE wiring regulations).
- Batteries are electrically live at all times, take great care never to short circuit the battery terminals.
- Do not attempt to remove battery lid or tamper with the battery internal workings. Electrolyte is a highly corrosive substance, and presents significant danger to yourself and to anything else it touches. In case of accidental skin or eye contact, flush the affected area with plenty of clean, fresh water and SEEK IMMEDIATE MEDICAL ATTENTION. VRLA batteries are “low maintenance” requiring no electrolyte top-up or measurement of specific gravity.
- If required, clean the battery case with a cloth that has been soaked or dampened with distilled water. Do not use organic solvents (such as petrol, paint thinner, benzene or mineral spirits) which can substantially weaken the case.
- Do not incinerate batteries. If placed in a fire, the batteries may rupture, with the potential to release hazardous gases and electrolyte. VRLA batteries contain substances harmful to the environment. Exhausted batteries must be recycled.
- The battery is designed to power the load for a minimum of 24 hours after mains failure. After this the PSU will disconnect the load to protect the battery from deep discharge. A small control current will continue to be drawn from the battery and it is recommended that the mains supply be restored or the battery physically disconnected within the following 72 hours otherwise the battery may be damaged.

Vision Systems

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3. General Description

The LaserCOMPACT and LaserPLUS power supplies are EN54-4 compatible, comprising a combined power supply and battery charger with standby batteries in a steel enclosure. Suitable battery combinations are shown in section 7.

The units can be configured for operation at 230V AC or 110V AC.

4. Voltage Configuration

The unit is configured for operation at 230V AC when supplied. To operate at 110V AC remove the power supply from the enclosure and remove the 4 screws retaining the cover. Move the link labelled 110/230 from the 230V position to the 110V position.

Refit the lid and replace the power supply in the enclosure.

5. Installation

1. Identify the location for the PSU. Refer overleaf if positioning the PSU adjacent to the detector.
2. Check that the following are present (supplied in a bag):

Quantity	Description	Colour
2	Positive battery lead	Red
2	Negative battery lead	Black
2	Battery connection lead	Blue
1	Cable tie	
1	3.15A battery fuse	

3. Use the template overleaf to assist the positioning and marking of the PSU mounting holes. Fit suitable fixings to the wall and mount the power supply.
4. Remove the dome plugs from the required cable entry holes and gland the mains wiring in place using an appropriate cable entry hole.
5. Gland the cabling to the detector in place using an appropriate cable entry hole.
6. Connect the mains-in earth to the primary earth point on the backbox as shown overleaf. This is the right of the two earth studs and is labelled ⏚ .
7. Connect the mains-in live and neutral to the mains terminal block on the power supply as shown.
8. Connect the dc output to the VESDA detector Power terminals as shown overleaf – the VESDA detector must be configured to interpret the GPI input as a "Mains OK" if this indication is required.
9. Fit the batteries as shown. Connect the battery leads and clamp the batteries in place.

   Notes: The PSU is not activated until the mains is applied. Batteries must be connected to clear the battery fault.

10. Carefully clamp the thermistor to the left hand battery negative lead using a cable tie which is supplied. Position the thermistor close to the terminal.

6. Commissioning

1. Switch on the mains supply to the panel. The OK LED illuminates.
2. Switch off the mains supply and observe that the OK LED remains on, the fault indication switches on and the GPI is activated if connected.
3. Restore the mains supply.

7. Specification

Input	230VAC (+10%/-15%) factory default setting 110VAC (+10%/-15%) field selectable option	
Power output	18-29V DC 1.9A continuous 2A @ 25°C	18-29V DC 1.5A continuous
Load	18-29V DC 0.5A continuous 1.9A short duration (ref EN54-4)	18-29V DC 0.5A continuous 1.5A short duration (ref EN54-4)
Dimensions (H x W x D)	225 x 350 x 105.2	225 x 285 x 115.2
Weight	3.6kg (without batteries) 14.2kg (with max batteries)	2.95kg (without batteries) 8.25kg (with batteries)
Temperature	-5 to +40°C ambient	
Humidity	10-95% RH non-condensing	
IP Rating	IP30	
Batteries	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)	Yuasa NP type or equivalent: 2 x 12V, 7Ah (NP7-12)
Indications	OK - green LED Fault - yellow LED Internal and External	OK - green LED Fault - yellow LED Internal only
Fault Relay	Change-over NO-COM-NC 2A @ 30VDC	
Fuse Rating	Input – 3.15A non-serviceable Current limit > 2A Battery fuse – 3.15A (T) Battery fuse type - European Sub-miniature Anti-surge Bussmann part no. BK/ETF3.15A (Farnell part 302-9992)	
Finish	Powder coat semi-gloss	
Colour	Light grey – RAL9018	
Mounting	4 x ∅5.5mm holes on 318 x 175 centres	4 x ∅5.5mm holes on 243 x 175 centres
Part No.	VPS-220	VPS-215

8. Routine Maintenance

This section gives an outline of the maintenance schedule and activities. For further guidance refer to local codes (e.g. BS5839 part 1).

8.1 Quarterly Inspection

The following checks should be made every 3 months:

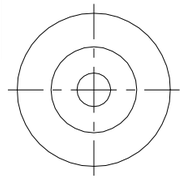
The batteries should be examined to ensure they are in good serviceable condition and are unlikely to fail before the next quarterly inspection.

8.2 Battery Replacement

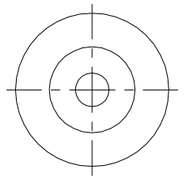
The useful life of the standby batteries in this application is three years. The batteries must be replaced after this time.

9. Location Hole Templates and Connection Diagrams

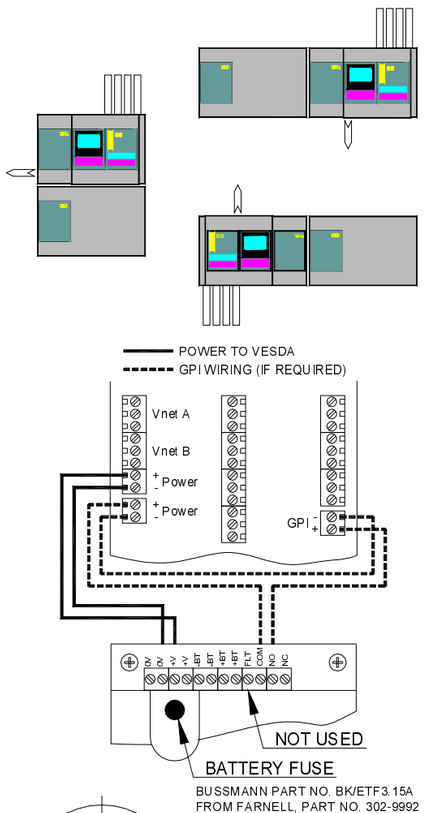
LaserPLUS/LaserSCANNER



LaserCOMPACT

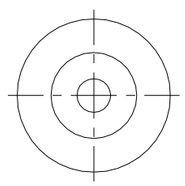


LaserPLUS/LaserSCANNER



BUSSMANN PART NO. BK/ETF3.15A
FROM FARNELL, PART NO. 302-9992

LaserPLUS/LaserSCANNER



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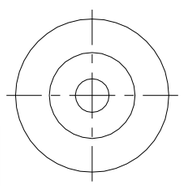
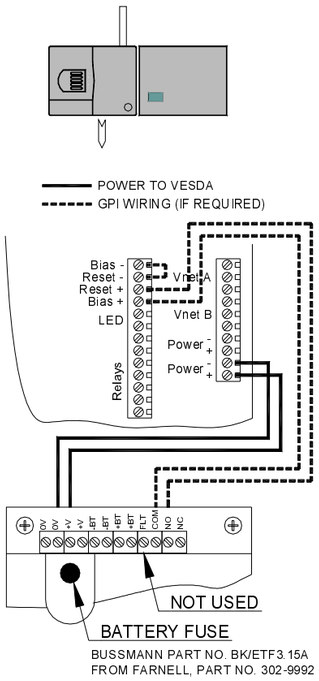


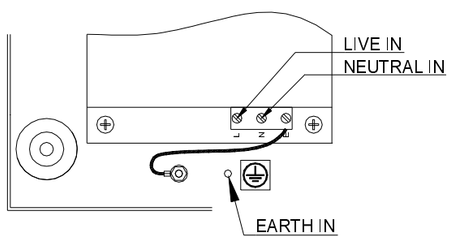
EXHAUST PORT

LaserCOMPACT

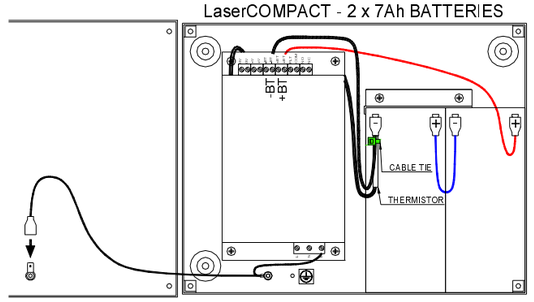


BUSSMANN PART NO. BK/ETF3.15A
FROM FARNELL, PART NO. 302-9992

LaserPLUS/LaserSCANNER/
LaserCOMPACT



LaserCOMPACT - 2 x 7Ah BATTERIES



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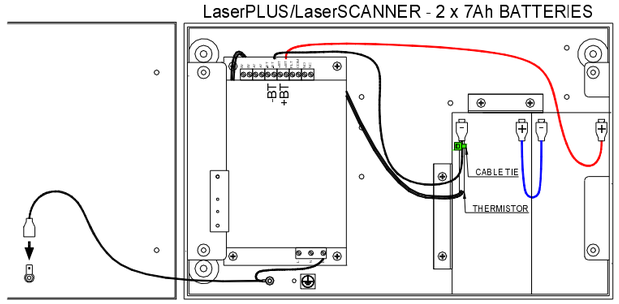
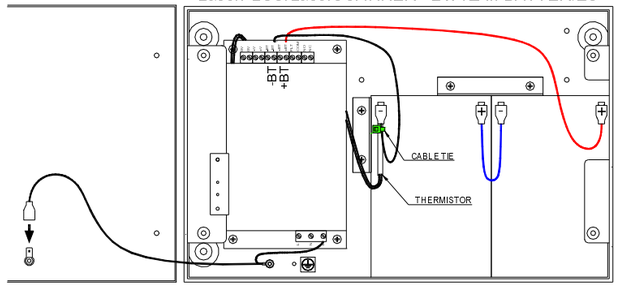
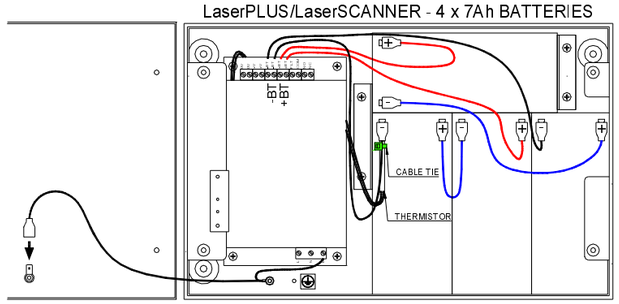


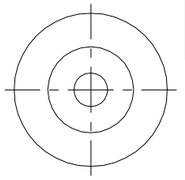
LaserPLUS/LaserSCANNER - 2 x 12Ah BATTERIES



LaserPLUS/LaserSCANNER - 4 x 7Ah BATTERIES



LaserPLUS/LaserSCANNER
LaserCOMPACT



LaserPLUS/LaserSCANNER
LaserCOMPACT