

PS04.N 24Vdc 4.5A Power Supply - Installation Instructions

INSTALLATION WARNING – This equipment MUST BE EARTHED and supplied from a switched fused 3A spur on 30mA RCD mains protection. The enclosure must be fixed internally on a vertical flat surface at a maximum ambient temperature of 45 degrees in a well ventilated area unit weighs 6.3kg. This power supply must be installed in accordance with the Wiring Regulations BS7671. Installation by qualified personnel, precluding use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge.

230v 50Hz 250VA T2A supply

WARNING DISCONNECT FROM MAINS BEFORE CARRYING OUT ANY WORK

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Features:

- Over current protection
- Short circuit protection
- Thermal overload protection
- Constant voltage regulation for battery charging
- Mains failure or low battery voltage warning, user selectable
- Relay interface to building management system
- Enclosure door 3 LED status indicators
- PCB mounted engineering status LED indicators, show:
 - Over current
 - Over temperature warning
 - Building management system relay status (Field Relay)
- Battery management electronics providing:
 - Low voltage trip to disconnect batteries and extend battery life
 - Reverse battery polarity protection
- Three fused outputs relay (FR switched) and one fused non-switched output - all with blown fuse indication from LED
- Thermostatically controlled cooling fan - cuts in at high load

Over current protection

If the load exceeds the power supply current rating, an electronic sensor detects this overload and shuts down the power supply. This is indicated by the red overload LED on the circuit board. To reset the trip condition, turn off the mains supply and wait for the LED to extinguish completely. This may take <40 seconds. Investigate and correct the fault.

Over temperature warning via red OT warning LED

If the fan stops working or the fan blades become blocked, and if running on full load, the thermal protection switch trips shutting down the power supply. The red OT warning LED will illuminate. To re-set the power supply, turn off the mains supply until the capacitors have discharged. Check the fan for correct operation before reconnecting the mains supply.

Battery management (if batteries fitted)

Under normal conditions, the batteries float at 27.6 Volts. If the mains power fails the batteries take the load. Eventually the voltage will drop to 21 Volts and a relay disconnects the batteries. This is reset automatically once the mains has been re-energized. This feature extends battery life by preventing deep discharging and prevents equipment malfunction.

User selectable warning voltage free relay contacts

The electronic voltage detection circuit is configured by selecting a link switch on the PCB. The relay will trigger as set: **MF** - Mains failure or **LB** - Low battery 23 Volts.

Field Relay – terminals +NO & +NC

Terminals FR & FR (Field Relay) can be connected to a voltage free building management system and/or access control system. Relay operation is indicated via the external yellow LED. If the field relay is used, the positive supply is from either +NC (normally closed) and/or +NO (normally open) depending on desired relay operation.



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The switched output can be changed from 'relay energized' (to make the outputs live) to 'relay de-energized' (to make outputs live) by changing a wire link on the PCB. This can be changed by removing the link on the 3 way FR terminal from NO to NC.

Cabinet dimensions in mm 465H * 255W * 90D | Weight 6.3kg (all 4 fixing holes to be used)

Commissioning Test

Prerequisites:

- Disconnect battery – if supplied with a battery
- Disconnect all supplied equipment
- Place the handbag link to LB low battery (on PCB)

Test procedure

Switch on mains power; the following indicators should be illuminated:

- Red and Green – on the front panel

Field Relay

Switch off mains power and connect a link between terminals FR & FR
 Switch on mains power – the yellow LED on front panel should now be lit
 Connect a meter between terminals 0V & +NO - this should be live at PSU output voltage
 Switch off mains power and remove the link between terminals FR & FR, switch on mains power and connect a meter between terminals 0V & +NO which should be live at PSU output voltage

Battery Functionality (Optional) – Only if Fitted

Switch off the mains power and connect the battery. Place the handbag link to MF (mains failure), switch on the mains power, then switch off. The power supply is now running on the battery. Note the green LED on the PCB will be off but the green LED on the front panel will be on. The relay contacts WNO to WNC will change over.

Tests with the Load Connected - Battery not Connected (if Supplied)

With the load connected, switch on the mains supply. The following LEDs should be on: red and green on front panel, green on the PCB and yellow (if using relay FR). This indicates the test and the power supply loading is correct.

If only the red LED is illuminated, there is a short circuit with the load connected. If the red and green LEDs on the front panel (with red (overload) LED on the PCB) are illuminated then the connected load has exceeded the power supply rated output and it must be reduced.

Front panel LED	PCB LED	Means
Red + Green	None	Normal operation
Red + Green + Yellow	None	Normal operation with field relay energized
Green only	Red if MFW*	Power supply on battery
Green + Yellow	Red if MFW*	Power supply on battery with field relay energized
Red only	Red OL	Dead short on output
Red + Green	Red	Current rating exceeded

* MFW – mains failure warning if configured



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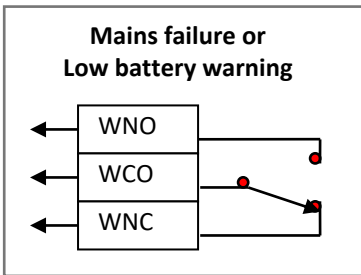
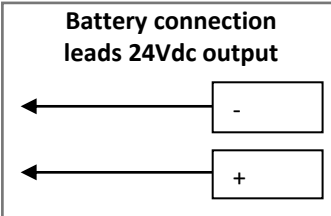
The four 'output blown' fuse indicator LEDs will illuminate only when the fuse has blown (or is missing) and a load is connected to the appropriate terminals

Terminals, connections, fuses & warning LEDs



Red Overtemp LED
allow to extinguish completely before switching mains supply back on. Indicates heat-sink temp too high or fan failure.

Red Overload LED
Power supply will be switched off in the event of overload which requires a manual reset by turning the mains supply off then waiting for the LED to extinguish completely before switching the mains supply back on

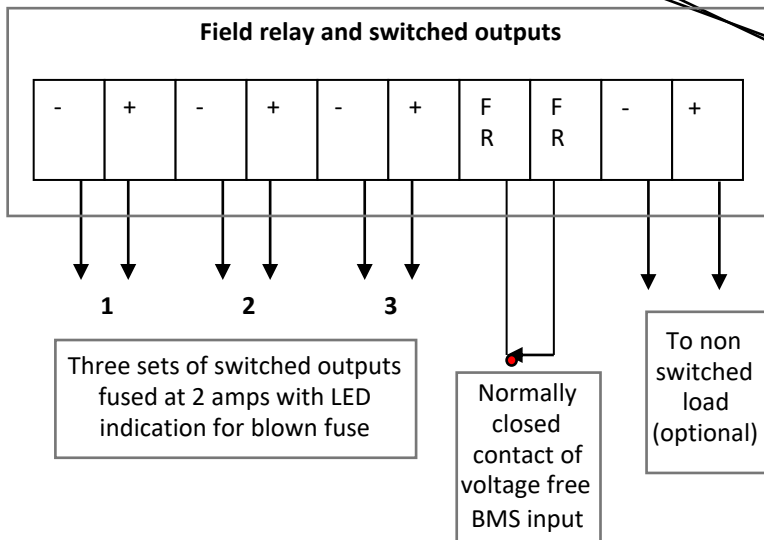


Red mains failure/Low battery warning LED

Field relay switch orientation Live (NO) De-energized (NC)

Red fuse failure LED
3 switched outputs
1 non-switched output

Non switched output fuse
7.5 Amp with red LED failure indication



3 Switched output fuses
2 Amp with red LED failure indication