BF362-3 (24 V DC, 3 A)

VdS G215022 CE 0786-CPR-21419

EN54-4 Boxed Power Supply Unit (PSU) Installation Instructions

THIS EQUIPMENT MUST ONLY BE INSTALLED AND MAINTAINED BY A SUITABLY SKILLED AND TECHNICALLY COMPETENT PERSON. THE PSUs ARE CLASS 1 EQUIPMENT AND MUST BE EARTHED.

BF362-3 is a boxed Mains to regulated DC power supply providing 3 A @ 24 Vdc. Combining the functions of a power supply unit, battery charging unit and battery monitoring unit, it is fully compliant with EN 54-4:1997 + A1:2002 + A2:2006 and conforms to the relevant EU-Directives and EU-Regulation: (EU) No. 305/2011 – Construction Product Regulation; 2006/95/ECC low voltage directive and 2004/108/ECC EMC directive.
The PSU is an approved product by the VdS and carrys the CE mark.

INSTALLATION

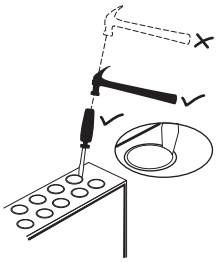
Location

The power supply must be sited indoors on a dry, flat surface in an area that is well ventilated. Ideally the panel indicators should be at eye level and the ambient light level should allow the status of the indicators to be clearly seen.

Mounting

Using the five mounting holes provided, mount the metal base securely onto a wall. Assess the condition and construction of the wall and use suitable screw fixings. The mounting holes are suitable for use with No.8-10 or 4-5 mm countersunk screws. Any dust or swarf created during the mounting process must be kept out of the enclosure and care must be taken not to damage any wiring or components.

Wiring and Cable Entry



All wiring should be installed in accordance with the current edition of the IEE Wiring Regs (BS 7671), or the relevant national standards. The requirement for the Mains supply to the panel is fixed wiring, using 3-core cable (no less than 1 mm² and no greater than 2.5 mm²), or a suitable three conductor system fed from an isolating switched spur, fused at 3 A.

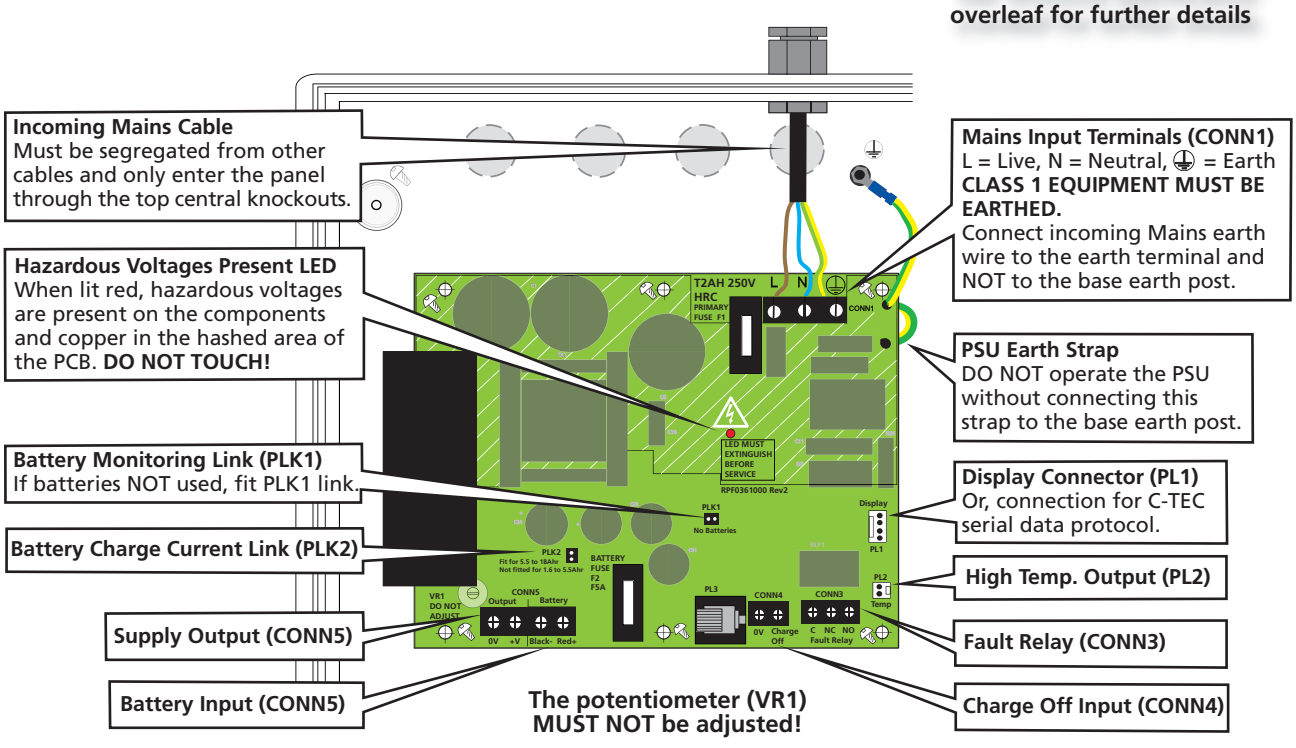
In order to maintain cable segregation, the incoming Mains cable should be fed into the panel via the top centre knockouts (provided on the metal base). Knockouts should be removed with a sharp, light tap using a 6 mm flat-bladed screwdriver, as shown in the diagram (see right). Always ensure that if a knockout is removed, the hole is filled with a good quality 20 mm cable gland. Any unused knockouts must be securely blanked off.

WARNING: DO NOT ATTEMPT TO CONNECT THE MAINS SUPPLY TO THE POWER SUPPLY UNLESS ALL COMPONENTS ARE SECURELY INSTALLED IN ITS ENCLOSURE!

Terminate the Mains cable at the power supply's connector block CONN1 (see Figure 1 below).

Figure 1 - Power Supply PCB Layout and Connection Details

See Technical Specification overleaf for further details



Batteries

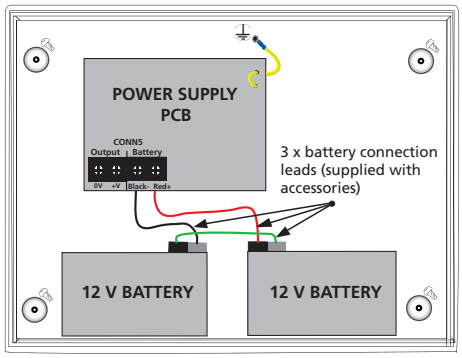
CAUTION: There is a risk of explosion if incorrect batteries are used. Always dispose of used batteries in accordance with the battery manufacturers instructions.

The power supply is designed for use with good quality, sealed, VRLA batteries with the following characteristics:

24 V (12 cell) System	
Final Voltage @ Discharge Current:	<= 21.0 V @ (0.1 x capacity) A
Float Charge Voltage:	27.3 V @ 20 °C, charging deviation ± 0.3 V
Battery Temp. Compensation:	-3 mV/cell/°K rise

Position and connect 2 x 12 V batteries, shown in diagram (right).

Note: On a standard 'as-supplied' unit, PLK1 ('Battery Monitoring' link) is NOT fitted and a fault will occur on initial power-up if fully charged batteries are NOT connected.



LOCATION OF 2 x 12 V BATTERIES AND CONNECTION OF BATTERY LEADS TO POWER SUPPLY PCB

TECHNICAL SPECIFICATION

POWER SUPPLY SPECIFICATION			**BF362-3 (24 V DC, 3 A)**		
Mains supply voltage	Rated current	VA:	230 Vac, 50/60 Hz	810 mA	187 VA
Max. continuous current (including charging):			3 A. Efficiency at full load = 83%.		
Battery charge capacity (C):			7 Ah to 18 Ah		
Power rating:			I max a = 2 A (PLK2 link fitted) I max b = 3 A, charging turned off via CONN4 short I min = 12 mA approx.		
Maximum internal battery resistance:			Ri max = 600 mohm		
Maximum output voltage (Mains on):			V max = 30 V		
Minimum output voltage (with Mains off):			V min = 19.2 V		
Output ripple voltage (peak-to-peak):			450 mV @ 30 MHz bandwidth, 350 mV with a 100 nF loading.		
Mains supply/battery charger monitored for failure:			YES		
Batteries monitored for disconnection and failure:			YES		
FUSES					
Mains supply fuse (F1):			2 A, T, HRC, 20 mm ceramic (T=Timed Delay; HRC= High Rupture Current <equivalent> HBC=High Breaking Capacity)		
Battery fuse (F2):			5 A, F, HRC, 20 mm ceramic (F = Fast Acting)		
POWER SUPPLY PCB CONNECTIONS					
Mains Input (CONN1):			Three Mains supply input terminals: Live, Neutral & Earth		
Fault Relay (CONN3):			Isolated relay output rated 1 A @ 50 V		
Charge Off Input (CONN4):			Disablement of the battery charge, enabling the charge current to be used at the output during heavy load periods, volt-free short to 0 V to disable charger. Maximum cable length = 2.5 m.		
Supply Output (CONN5):			24 Vdc output for auxiliary equipment at PSU's rated output of 3 A		
Battery Input (CONN5):			Connection to the Valve Regulated Lead Acid (VRLA) batteries		
PL1:			Connector to a display card or OEM equipment. Uses C-TEC serial data protocol (Document No. DFU0003631).		
PL2:			High Temperature Output. Operates at approx. 55°C internal box temperature, 30 V, 200 mA max. current sink.		
PLK1:			'Battery Monitoring' link. Fit link if batteries NOT used.		
PLK2:			'Battery Charge Current' link. Fitted for 7 Ah to 18 Ah (1 A charge).		
INDICATORS					
Panel indicators (LEDs):			SUPPLY PRESENT (Green) – Indicates the supply is present at the output. GENERAL FAULT (Amber) – Indicates a fault is present on the PSU. Call the engineer. AUXILIARY FAULT (Amber) – Indicates a fault with an auxiliary unit (user-definable). 19 to 30 V, 3.5 to 6 mA.		
Power Supply PCB (LED):			Hazardous Voltages Present (Red)		
PHYSICAL ATTRIBUTES					
Dimensions:			404 mm (width) x 404 mm (height) x 110 mm (depth)		
Weight / Construction:			5.25 Kg (without batteries) / Metal lid and base		
Enclosure finish:			RAL7035 textured		
ACCESSORY PACK					
1 x Instructions – Document No. DFU0003615 (this document); 1 x 2 A T HRC, 20 mm ceramic fuse (spare Mains fuse F1); 1 x 5 A F HRC, 20 mm ceramic fuse (spare battery fuse F2); 1 x link for PLK1 or PLK2; 1 x battery connection kit.					
OPERATING CONDITIONS					
The power supply enclosure has an IP30 rating (to EN60529:1992) and is designed for indoor use only. The components are selected to operate within their specification when the environmental conditions outside the enclosure comply with class 3k5 of the latest edition of IEC 721-3-3:1978. Temperature range: -5°C to +40°C. Maximum relative humidity: 95%.					
CERTIFICATES & DECLARATION OF PERFORMANCE to (EU) No. 305/2011, CPR (Certificates and DoPs are available for download on C-TEC's website)					
VdS Approval No.: G215022			CE Cert. No.: 0786-CPR-21419		Declaration of Performance: DOP0000046

E&OE. No responsibility can be accepted by the manufacturer or distributors of these power supplies for any misinterpretation of this instruction, or for the compliance of the system as a whole. The manufacturers policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice.

Approved Document No. DFU0003615 Rev 2

Manufacturer: Computionics Limited (C-TEC), Challenge Way, Martland Park, Wigan, Lancashire WN5 0LD. www.c-tec.co.uk
Niederlassung Deutschland: C-TEC Germany Limited, Virchowstr. 32, D-33332 Gütersloh. www.c-tec-germany.de