

500W UPS/Battery Charger, Rugged Industrial Quality BCH 500-F4 Series



- Rugged, industrial quality
- Field-proven design
- Conduction/convection cooled - no fan
- Full electronic protection
- Charger Fail Alarm
- Made in North America

This rugged, industrial quality DC-output UPS system with external battery uses field-proven high-frequency technology to generate the required output power. The built-in battery charger provides 500W total power for the output and for float charging the battery. A built-in charger fail alarm (Form C) indicates either failure of the charger circuit or loss of AC-input power. The battery input is protected against accidental reverse battery connection by a crossbar diode and internal safety fuse. The battery must be fused externally, directly at the battery. Cooling is by conduction via baseplate. Additional cooling is achieved by natural convection through the cooling slots. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also provides exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. The unit is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

Mains Input:

115/230Vac $\pm 15\%$ (47 - 420Hz)
jumper selectable

Battery Input:

12V, 24V, 48V or 125V battery
Other inputs available on request

Input Protection

AC Input

Inrush current limiting
Varistor
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Battery Input:

Crossbar diode
Internal battery safety fuse
Warning: Battery must be fused externally, directly at the battery

Input Isolation

2250VDC input to chassis
4300VDC input to output,
8mm spacing
500VDC output to chassis

Standards

Designed to meet EN 60950-1 and related standards

EMI

EN55032 Class A with margins

Switching Frequency

55kHz ± 3 kHz

Output Voltages

13.8V (for 12V battery) or
27.6V (for 24V battery) or
55.2V (for 48V battery) or
138V (for 125V battery)
Output is floating, either terminal can be grounded
Other outputs available on request

Output Separation Diode

Installed internally

Line/Load Regulation

$\pm 1.5\%$ combined from no load to full load including output separation diode

Output Ripple/Noise

Better than 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHz BW)

Overload Protection

Rectangular current limiting with hiccup mode short circuit protection
Thermal shut-down with automatic recovery in case of insufficient cooling
Internal battery safety fuse on battery input

Output Overvoltage Protection

Double regulator loop, stable and independent of the main feedback loop

Efficiency

Typically 80 - 90% at full load depending on output

Operating Temperature

0°C to +50°C for full specification with natural convection cooling
Extended temperature range available

Battery Temp. Compensation

Not included on this design
Available as option.

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction to customer heat-sink or chassis and natural convection

Environmental Protection

Basic ruggedizing
Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5-95% non-condensing

MTBF

150,000h at 45°C
Demonstrated MTBF is significantly higher

Indicators

Charger ON LED visible through cooling slots

Control input

None

Alarm Outputs

Charger Fail Form C

Package/dimensions (W x H x L)

F4: 130 x 62 x 351 mm
5.1" x 2.43" x 13.82"
Dimensions include mounting flanges/baseplate, exclude connectors.
Mounting holes are clear

Weight

2.2 kg (4.9 lb) approx.

Connections

12-pole barrier type terminal block with 3/8" spacing for all connections. Common terminals for load and battery.

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice.

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change.

OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility.



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