

500W, Industrial Quality UPS/Battery Charger BCH 500 Series



- Rugged, industrial quality
- Field-proven design
- Conduction/convection cooled - no fan
- Fully protected
- Made in North America

The BCH 500 is a compact, industrial quality DC output UPS system with external battery. 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. Low component count, large design headroom, and the use of components with established reliability result in a high MTBF. The unit is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

Mains Input:

115/230Vac +/- 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 and
related standards

EMI

EN55022 Class A with margins

Switching Frequency

55kHz +/- 3kHz

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

±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 heatsink
or chassis and natural convection

Environmental Protection

Basic ruggedizing
Additional ruggedizing and
conformal coating available

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 64 x 353 mm
(5.1" x 2.5" x 13.9") including
terminal block and flanges
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

Fully compliant

Warranty

Two years subject to application
within good engineering practice.



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