

# 100W, Universal Input UPS/Battery Charger

## BCH 100 Series



- Rugged industrial quality
- Conduction/convection cooled - no fan
- Fully protected
- Field proven design
- Low battery disconnect circuit

The BCH 100 is a compact DC output UPS system with external battery. The built-in battery charger provides 100W total power for the output and for float charging the battery. The unit has a low battery disconnect circuit to prevent damage to the battery by low discharge during prolonged AC failure. A built-in charger fail alarm (F/O or F/C) indicates either failure of the charger circuit or loss of AC input power. Any additional options are eliminated to keep the cost for this series low. 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 to the battery. Low component count and the use of components with established reliability result in a high MTBF. The unit is manufactured at our plant under strict quality control.

### GENERIC SPECIFICATIONS

#### Input

##### Mains Input:

95Vac to 264Vac universal 47 - 63Hz

##### Battery Input:

12V, 24V or 48V battery

#### 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:

Internal safety fuse and crossbar diode

Low battery disconnect circuit disengages battery

**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

Meets EN 55022 Class A with margins

#### Switching Frequency

47kHz +/- 2kHz

#### Output Voltages/Currents

13.8V float voltage (12V battery) or

27.6V float voltage (24V battery) or

55.2V float voltage (48V battery)

Output is floating, either terminal can be grounded

Consult factory for other voltages

#### 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 without derating. Extended temperature range available

#### Battery Temp. Compensation

Not available on this design

#### 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 F/O or F/C only (two terminals)

#### Package/dimensions

F1: 114 x 51 x 201 mm (4.5" x 2" x 7.9") including terminal block and flanges  
Mounting holes are clear

#### Weight

0.8 Kg (1.8 lb) approx.

#### Connections

9-pole barrier type terminal block with 3/8" spacing for all connections

#### RoHS Compliance

Fully compliant

#### Warranty

Two years subject to application within good engineering practice.



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