300W, Industrial Quality UPS/Battery Charger
BCH 302-F4 Series

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

This rugged, compact industrial quality DC output UPS system with external battery utilizes field-proven technology to generate the required output power. The built-in battery charger provides 300W 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 Low Battery Alarm provides warning before the disconnect circuit disengages the output. A built-in charger fail alarm 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 +/- 15% (47 - 420Hz)
jumper selectable
Battery input:
12V, 24V, 48V or 125V
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:
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
Meets EN 62368-1 and related UL and CSA standards

EMI
EN 55032 Class A with margins

Switching Frequency
55kHz ±3kHz

Output Voltages/Currents
13.8V float voltage (12V battery) or
27.6V float voltage (24V battery) or
55.2V float voltage (48V battery) or
138V float voltage (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 built in 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 (without battery)
Rectangular current limiting with hiccup type short-circuit protection
Internal safety fuse on battery input
In the case of an accidental shorting of the output, the external battery fuse shall blow.

Output Overvoltage Protection
Double regulator loop, stable and independent of the main feedback loop

Efficiency
Min 80% at full load

Operating Temperature
0°C to +50°C for full specification with natural convection cooling
Wider temperature ranges available on request

Battery Temp. Compensation
Not on this design
Available as an option

Temperature Drift
0.03% per °C over operating temperature range (without BTC)

Cooling
Conduction to customer heatsink or chassis and natural convection

Environmental Protection
Basic ruggedizing
Coating available

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5 - 95% non-condensing

MTBF
130,000h at 45°C
Demonstrated MTBF is significantly higher

Indicators
Charger ON LED visible through the cooling slots

Alarm Outputs
Charger/AC fail alarm, Fail Close
Low Battery Alarm, Fail Close
with common return

Package/Dimensions (W x H x L)
F4: 130 x 62 x 351 mm
5.1" x 2.43" x 13.82"
Includes baseplate, excludes terminals Mounting holes are clear

Weight
2.2 kg (4.9 lb) approx.

Connections
12-pole terminal block with 7.62mm spacing for all connections, including alarm

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice

Terminal Block Pin-Out

LOAD		BATTERY		ALARMS			BATTERY SENSOR		AC INPUT		
+	–	–	+	COM	L.B.A (F/C)	C.F.A (F/C)	•	•	GND ⏚	N ∿	PH ∿
1	2	3	4	5	6	7	8	9	10	11	12

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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