Redundant, Industrial Quality DC-DC Converter System with 200W Plug-in Modules
BAP 236-3U19 System

- Rugged industrial quality
- 3U x 19” x 13” shelf
- 200W per module, up to 1200W per 19” shelf
- Hot insertable (hot-pluggable)
- Front panel adjustment & LED status
- Cooling by natural air convection
- Full electronic protection
- Field-proven design
- N+1 redundant

BAP 236-EH plug-in module (200W)
3U x 14HP x 220mm

Fully loaded BAP 236 system
3U x 19” x 13”

This modular, industrial quality redundant DC-DC converter system with plug-in modules uses field-proven topology to generate the required output power. The system can be built with up to six 200W, BAP 236-EH plug-in converter modules assembled in a 3U x 19” card-frame. It delivers up to 1200W or 1000W with N+1 redundancy. Each hot-insertable module has a built-in redundancy diode which allows for an unlimited number of units to be paralleled for higher output power and N+1 redundant operation. This feature also makes the system suitable for battery charging. Modules with different outputs can be combined in one shelf to create a multi-output system. The plug-in modules are cooled by natural air convection. Heat generating components are installed on an aluminum heat-sink block which is connected to the large heat-sink on the side of each module. Full electronic protection, large design headroom and the use of components with established reliability contribute to high demonstrated MTBF. The system is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage
24Vdc (21 – 30V)
48Vdc (42 – 60V)
125Vdc (88 – 140V)
Please consult factory for other voltages and ranges

Input Protection
On each plug-in module:
Inrush current limiting
Varistor
Reverse polarity protection
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Input Isolation
According to input and output voltage minimum of:
1500Vdc input to chassis
2250Vdc input to output,
500VDC output to chassis
Isolation voltages correspond to input/output combination

Standards
Designed to meet EN60950-1 and corresponding standards

EMI
EN 55032 Class A as a minimum

Switching Frequency
55KHz ±3KHz

Output Voltages/Currents
12V/16A, 24V/8A, 48V/4.1A
or 125V/1.6A
200W per plug-in module with convection cooling
Consult factory for other voltages

Redundancy Diode
Installed on each plug-in module
Hot insertion allowed

Line/Load Regulation
Typically ±1% combined from no load to full load including redundancy diode

Dynamic Response
Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple/Noise
Better than 0.2% RMS or 1% of output voltage peak to peak (20HZ BW)

Output Overload Protection
Rectangular current limiting with short-circuit protection (no hiccup)
Thermal shutdown in case of insufficient cooling (self -resetting)

Output Overvoltage Protection
Double regulator loop. Second loop completely stable and independent of main regulator loop

Efficiency
Typically 85% at full load depending on input/output combination

Operating Temperature
0 to +50°C for full specification
Extended temperature range available with derating

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Natural air convection

Environmental Protection
Basic ruggedizing
Conformal coating and full ruggedizing as option

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5 – 95%, non condensing

MTBF
150,000 hours at 45°C per plug-in module.
Demonstrated MTBF is significantly higher

Indicators
On front panel of the module:
Green “Output ON” LED connected before redundancy diode

Controls
Adjustment potentiometer on front-panel of each module

Alarm Output
Form C module fail alarm on the shelf.
Optocoupler alarm on the module

Package/Dimensions (H x W x D)
3U x 19” x 13” (shelf) including connections
3U x 14HP x 220mm (module)

Weight
Shelf fully loaded with six modules: 10.2kg (22.5lb)
Open frame: 3.4kg (7.5 lb)
Module: 1.2 kg (2.5 lb)

Connections:
H15 DIN connector on modules
Terminal block for shelf
Other terminations on request

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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