

Redundant DC-DC Converter System with 500W Plug-in Modules for Industrial Applications BAP 419-4U19 Series

- Rugged industrial quality
- 4U x 19" x 15" shelf
- 500W per module or 2500W per 19" shelf
- Front panel adjustment & LED status
- Hot-insertable (hot-pluggable)
- N+1 redundancy
- Full electronic protection
- Field-proven design in wide range of applications



BAP 419-EH plug-in module (500W)
4U x 16HP x 304mm



Fully loaded BAP 419-4U19 system
4U x 19" x 15"

This modular, 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 five 500W plug-in modules assembled in a 4U x 19" card-frame. It delivers a maximum of 2500W or 2000W 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. Each plug-in module is cooled by natural air convection. Heat generating components are installed on an aluminum heatsink block, which is connected to the large heatsink on the side of each module. Full electronic protection, low component count, large design headroom, and the exclusive use of components with established reliability contribute to a high MTBF. It 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

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

Input Isolation

1000VDC input to chassis and
1500VDC input to chassis
500VDC output to chassis
as a minimum
Isolation voltages correspond to input/output combination

Standards

Designed to meet EN 60950-1 and related standards

EMI

EN 55022 Class A with margins

Switching Frequency

55KHz ±3KHz

Output Voltages/Currents

24V/20A, 48V/10A or 125V/4A
500W per module with convection cooling
Consult factory for other voltages

Redundancy Diode

Installed on each plug-in module

Line/Load Regulation

Typically ±1% combined from no load to full load (depending on output voltage)

Dynamic Response

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

Output Ripple/Noise

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

Output Overload Protection

Rectangular current limiting with short circuit protection (constant current)
Thermal shutdown with automatic recovery in case of reduced airflow

Output Overvoltage Protection

Second regulator loop

Efficiency

85% typical depending on the input/output configuration

Operating Temperature

0°C to +50°C (standard model with convection cooling)
Extended temperature range available

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

MTBF

180,000 hours at 45°C per plug-in module.
Demonstrated MTBF is significantly higher

Indicators

Output ON LED
Test Points on front-panel

Controls

Adjustment potentiometer on front-panel

Alarm Output

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

Mechanical

4U x 16HP x 304 mm (module)
4U x 19" x 15" (shelf)
including connections

Connections:

H15 DIN connector on modules
Terminal block for shelf
Other terminations available, please consult factory

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice

Enhancements to these general specifications and customizing can be accommodated upon request. Specifications are subject to change.

Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BABT-approved Facility.



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