

2500W Redundant AC-DC Power Supply System with 500W Convection Cooled Plug-in Modules, Rugged Industrial Quality HBC 419-4U19 Series

- Rugged industrial quality
- Up to 2500W per 19" shelf
- Up to 500W per module
- Front panel adjustment & LED status
- Hot insertable (hot-pluggable)
- N+1 redundancy
- Full electronic protection
- Convection cooled



**HBC 419-EH Plug-in module
(500W) 4U x 16HP x 304mm**



**Fully loaded HBC 419-4U19 system (2500W)
4U x 19" x 15"**

This power supply system is comprised of up to five rugged, industrial quality AC-DC plug-in modules. It uses field-proven topology with a track record in numerous applications to generate the required output power. Each module has a built-in redundancy diode that allows for an unlimited number of units to be paralleled for higher output power and N+1 redundant operation. The built-in redundancy also allows battery connection to the output for back-up purposes. The modules are hot insertable. Modules with different outputs can be combined into 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 heatsink block that are connected to a large heatsink on the side of each module. This also provides exceptional mechanical ruggedness. The input and output are filtered for low noise. Full electronic protection, low component count, large design headroom, and the exclusive use of components with established reliability contribute to a high MTBF. The system is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

115/230Vac $\pm 15\%$
47 - 63Hz switch selectable
Auto-ranging available
Please consult factory for other voltages and ranges

Input Protection

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

Input Isolation

2250Vdc input to chassis
4300Vdc input to output,
8mm spacing
500Vdc output to chassis
Isolation voltages correspond to input/output combination

Standards

Designed to meet EN62368-1 and related standards.

EMI

EN55032 Class A as a minimum

Switching Frequency

55kHz ± 3 kHz

Output Voltages/Currents

24Vdc/20A, 48Vdc/10,
500W per module with convection cooling
Consult factory for other voltages

Redundancy Diode

Installed on each plug-in module
Hot insertion allowed

Line/Load Regulation

Typically $\pm 1\%$ 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 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 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

MTBF

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

Indicators

On front panel of each module:
Green "Output ON" LED
connected before redundancy diode Test Points on front-panel

Control Input

Adjustment potentiometer on front-panel

Alarm Output

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

Mechanical Dimensions (W x H x D)

4U x 19" x 15" (shelf)
including connections
4U x 16HP x 304mm (plug-in modules)

Weight

Empty frame: 5.2kg
Each plug-in module: 2.54kg
Fully loaded: 17.9 kg

Connections:

H15 DIN connector on modules.
Terminal block for shelf
Other terminations available, please consult factory
LOT65 is pin compatible with the HBC419 series

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 BAPT-approved Facility.



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