2500W Rugged, Industrial Quality, Rack-mount AC-DC Power System with Convection Cooled Plug-in Modules
PFC 419-2.5K-4U19 Series

- Electronic power factor correction (PFC)
- Rugged industrial quality
- Up to 2500W per 19" shelf
- Up to 500W per plug-in module
- Full electronic protection
- Convection cooled
- Field-proven design
- Hot swappable, N+1 redundant

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

Fully loaded PFC 419F-2.5K-4U19 system (2500W)
4U x 19" x 15"

This is a modular, industrial quality AC-DC power supply system with power factor corrected input. It can be built with up to five, 500W plug-in modules assembled in a 4U x 19" card-frame that delivers a maximum of 2500W or 2000W with N+1 redundancy. Each hot-insertable module has a built-in redundancy diode which allows for parallel connection and N+1 redundant operation. This feature also makes the system suitable for battery charging. 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
95-264Vac (Universal) 47… 63Hz
Input Current: 7Arms max. per plug in module
Power Factor is better than 0.97 at full load for the entire input range.
Meets EN61000-3-2

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

Isolation
2250Vdc input to chassis
4300Vdcinput to output
8mm spacing
500Vdc output to chassis

Standards
Designed to meet EN62368-1 and related standards.

EMI
EN55032 Class A with margins

Switching Frequency
See plug-in module data sheet

Hold Up Time
Min. 10ms at any input for 5% drop in the output voltage

Output Voltage/Current
24V/20A, 48V/10A, 110V/4.5A or 125V/4A per module
Max output 500W per module
Max output 2500W per shelf
Consult factory for other outputs

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

Line/Load Regulation
±1.5% combined from zero 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 (20MHz BW)

Overload Protection
Rectangular current limiting with short-circuit protection (constant current)
Thermal shutdown on each module in case of insufficient cooling (self-resetting)

Output Overvoltage Protection
Each plug in module has over voltage protection

Efficiency
Output voltage dependent
Typically 80% at full load

Operating Temperature Range
0°C to 50°C for full specification
Extended temperature range available on request

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Natural air convection

Environmental Protection
Basic ruggedizing
Heavy ruggedizing and conformal coating as option

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5 – 95%, non-condensing

MTBF
135,000 hours @ 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

Controls
None
Options available

Alarm Output
Form C Module fail alarm on shelf
Optocoupler alarm on the module (C-E opens on alarm)

Package/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 Connector on plug-in module
Terminal blocks on the shelf

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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Made in Canada