

1kW Rugged, Industrial Quality Plug-in AC/DC Power Supply Module

PFC 419F-EH Series



- Electronic power factor correction (PFC)
- Rugged industrial quality
- Full electronic protection
- Fan cooling
- Field-proven design
- Hot swappable, N+1 redundant

This rugged, industrial quality AC/DC plug-in module with power factor corrected input uses field proven topology to deliver up to 1kW output power. It is a mature design with large design headroom and is rated for operation over the specified temperature range without de-rating. Cooling is by two high quality built-in fans. The module is hot-insertable and has a built-in redundancy diode which allows for parallel connection and N+1 redundant operation. A fail open type optocoupler output fail alarm is included. This design is optimized for low component count and high efficiency. Full electronic protection and the use of components with established reliability results in a high demonstrated MTBF confirmed by a track record in numerous applications. The module is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

95-264Vac (Universal) 47... 63Hz
 Input Current: 14Arms 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

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

Isolation

2250VDC input to chassis
 4300VDC input to output
 8mm spacing
 1000VDC output to chassis

Standards

Designed to meet EN60950-1 and related standards.

EMI

EN 55032 Class A with margins

Switching Frequency

100kHz \pm 5kHz input stage
 55kHz \pm 3kHz output stage

Hold-Up Time

Minimum 5ms at full load for 5% drop of output voltage at nominal input

Output Voltage/Current

48Vdc/20A, 110V/9A or 125V/8A
 1000W continuous
 Output is floating, either terminal can be grounded
 Consult factory for other outputs

Redundancy Diode

Installed internally
 Hot insertion allowed

Line/Load Regulation

\pm 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 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHz BW)

Overload Protection

Current limiting with short-circuit protection (no hiccup)
 Thermal shutdown in case of insufficient cooling (self resetting)

Output Overvoltage Protection

Second regulator loop completely stable and independent of the main regulator loop

Efficiency

Output voltage dependent
 Typically 80% at full load

Operating Temperature

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

By two high quality built in fans

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

115,000 hours @45°C
 Demonstrated MTBF is significantly higher.
 Fans are not included.

Indicators

On front panel of the module:
 Green "Output ON" LED connected before redundancy diode

Control Input

None
 Options available

Alarm Output

Module Fail alarm by optocoupler
 C-E fail open

Package/Dimensions (W x H x D)

4U x 16HP x 304mm

Weight

2.2kg (4.9 lbs)

Connections:

H15 DIN connector

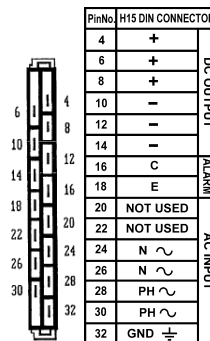
RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

Pin-out drawing, H15 connector



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. opulse is a BABT-approved Facility.



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