

3kW Rugged, Industrial Quality Rack-mount DC/DC Power System with 1kW Modules

BAP 3K-CR2U/19-3 Series

- Rugged industrial quality
- Up to 3000W per 2Ux19" shelf
- Full electronic protection
- Cooling by built-in fans
- Field-proven design
- Hot swappable, N+1 redundant



BAP 65F module: 3.2" x 5.1" x 13"
(depth excludes connector)



2U x 19" stainless steel cradle with 3 x BAP 65F modules

This modular, heavy-duty DC/DC converter system is built with three 1000W BAP 65F power modules assembled in a 2Ux19" stainless steel, rack-mount cradle (CR 2U/19-3). The cradle is constructed with high-grade stainless steel and mechanical features that allow for easy insertion and removal of the BAP 65F modules. A built-in redundancy diode in each module allows for parallel connection and N+1 redundant operation. The system delivers a maximum of 3000W or 2000W with N+1 redundancy. Each module has a built-in fan which provides sufficient airflow for operation at the specified temperature without de-rating. The fans draw air into the unit and the exhaust exits at the rear of the unit. The cradle has no motherboard; the input and output cables are plugged directly into the module. This contributes to the cost-effectiveness of this design. The modules can also be used as stand-alone units – mounting hardware is available. Full electronic protection, generous design headroom and the use of components with established reliability results in a high demonstrated MTBF confirmed by a track record in numerous applications. The system is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage per Module

24Vdc (21-30V) 750W max
48Vdc (42-60V)
72Vdc (60-82V)
110Vdc (90-130V)
125Vdc (105-145V)
250Vdc (210-280V)
Other voltages and ranges are available on request

Input Protection

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

Isolation

1500Vdc input to chassis
2250Vdc input to output
700Vdc output to chassis

Standards

Designed to meet EN60950-1 and related standards

EMI

EN 55032 Class A with margins

Switching Frequency per Module

55kHz ±3kHz

Output Voltage/Current per Module

24V/40A, 48V/20A or 125Vdc/8A per module with fan cooling
Output is floating, either terminal can be grounded
Other outputs on request

Redundancy Diode

Installed internally on each module
Hot replacement 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% peak to peak of the output voltage (20MHz BW)

Output Overload Protection

Rectangular current limiting with short-circuit protection
Thermal shutdown with automatic reset in case of insufficient cooling (self-resetting)

Output Overvoltage Protection

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

Efficiency

Input/output voltage dependent
Typically 85-90% at full load

Operating Temperature

0°C to 50°C ambient for full specification
Extended temperature range available on request

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Each module has one high quality built-in fan

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

130,000 hours @45°C per module.
Demonstrated MTBF is significantly higher.
Fans are not included.

Indicators

Diagnostic Output ON LED visible through the rear perforation

Controls

None
Options available

Alarm Output

Each module has an Output Fail alarm with Form C contact

Package/Dimensions (H x W x D)

Stainless steel rack-mount cradle, CR 2U/19-3: 2U x 19" x 15"
BAP 65F modules in M3512: 3.2" x 5.1" x 13" (81 x 129 x 330 mm)
Depth excludes connector and handle

Weight

M3512: 2.8kg (6lb)
2U system with cradle and three BAP 65F modules: 12.5kg (27.5lb) approx.

Connections

Input: Anderson connector SB50
Output: Anderson connector SB120
Alarm: Phoenix connector MSTBA2.5/3-G-5.08

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice
Contamination related failures and shipping costs excluded.

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

Designer and manufacturer of quality converters, inverters, 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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