

1000W, Convection Cooled, Rugged, Industrial Quality DC/DC Converter

BAP 1K-U7712



- Rugged industrial quality
- Field-proven internal modules
- Cooling by convection only (no fans or forced air)
- Full electronic protection
- Dual output available

This rugged, industrial quality DC/DC converter series generates up to 1kW output power with convection cooling (no fans). Several units can be paralleled for higher output power. It is housed in a compact, ruggedly constructed 7" x 7" x 12" chassis. The design has large design headroom and is rated for operation over a wide temperature range without de-rating. The unit is built with two BAP 65F internal modules, which have a well-established track record in numerous other heavy duty applications. Each internal module generates a minimum of 500W. This modular construction provides inherent redundancy; the failure of one internal module would result in a 50% drop in output power while the unit remains functional at 500W. This design can also be used as a 500W redundant power supply. Two independent fully regulated outputs of 500W each are also possible. Full electronic protection eliminates failure due to abnormal operating conditions, including application errors. The input and output are filtered for low noise. Additional ruggedizing and conformal coating are available for applications that require high immunity to shock, vibration and humidity. Other options include a Form C output fail alarm to indicate module failure, as well as remote shutdown. Low component count and the use of components with established reliability result in a high MTBF. Versions designed to meet EN 50155 railway specifications are also available.

SPECIFICATIONS

Input Voltage

48Vdc (42-56V)
72Vdc (60-82V)
110Vdc (90-130V)
125Vdc (105-145V)
250Vdc (210-280V)
Other inputs on request

Input Protection

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

Input Isolation

Depends on the required input/output combination
At minimum:
1500Vdc input to chassis,
2250Vdc input to output,
500Vdc output to chassis

Standards

Designed to meet EN60950 and related UL & CSA standards

EMI

EN 55022 Class A as minimum

Switching Frequency

55kHz +/- 3kHz

Output Voltage

24V/40A, 48V/20A, 110V/9A,
125V/8A are standard
Output is floating, either terminal can be grounded
Other outputs on request

Redundancy diode

Installed internally on each internal module

Line/Load Regulation

Better than $\pm 1.5\%$ 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

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

Output Overvoltage Protection

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

Efficiency

Typically min 85% at full load depending on input/output combination

Operating Temperature

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

Temperature Drift

0.03% per °C over operating temperature range

Cooling

By convection only

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

140,000 hours @ 45°C
Demonstrated MTBF is significantly higher.

Indicators

Green "Output ON" LED visible through the cooling slots

Control Input

Optional

Alarm Outputs

Not installed on standard version
Optional Form C output fail alarm

Package/Dimensions (WxHxL)

U7712: 173 x 173 x 314mm
(6.8" x 6.8" x 12.4")

Mounting holes are clear.
The mounting brackets can be installed on any side.

Weight

6 kg (13 lb)

Connections

Barrier type terminal blocks.

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice

Enhancements to these general specifications 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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