

300Vdc Input, 2500W Rugged, Industrial Quality DC-DC Converter HBC 2K5-XX-3U3 Series



- Rugged industrial quality
- Single phase 300Vdc input
- Cooling by high quality built in fans
- Full electronic protection
- Field-proven design topology
- Internal redundancy

This rugged, industrial quality dc/dc power converter uses field-proven topology to generate up to 2500W output power. The unit is built with HBH65F internal power modules with a track-record in numerous heavy-duty applications. Built-in redundancy diodes separate the internal modules and provide inherent internal redundancy. The loss of one internal module reduces the input power by 33%, but the unit remains operational. The redundancy diodes also allow for parallel connection of several units to achieve higher output power. They also make the unit suitable for battery charging applications. Cooling is by high quality built-in fans, which provide 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. Optional heavy ruggedizing is available for operation in severe environments. The input and output are filtered for low noise. Full electronic protection, low component count, large design headroom, and the use of components with established reliability contribute to a high MTBF. AC-input versions of this design are also available. The unit is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

300Vdc (270-350Vdc)
Other DC inputs are also available
230Vac or 115Vac inputs upon request

Input Protection

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

Input Isolation

2250Vdc input to chassis
4300Vdc input to output
8mm spacing
Min. 700Vdc output to chassis, corresponding to output voltage

Standards

Designed to meet EN60950-1 and corresponding standards

EMI

EN 55022 Class A with margins

Switching Frequency

55kHz \pm 5kHz

Hold Up Time

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

Output Voltages

24V/100A, 28V/90A, 48V/52A, 56V/45A, 110V/23A, 125V/20A or 250V/10A
Output is floating, either terminal can be grounded
Other outputs and higher power versions on request

Redundancy Diode

Installed for separation of the internal modules

Line/Load Regulation

\pm 1% combined from zero load to full load

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
Thermal shutdown with automatic reset in case of insufficient airflow

Output Over-voltage Protection

Double regulator loop completely stable and independent of main loop

Efficiency

Min 80% at full load depending on input/output configuration

Operating Temperature

0°C to 50°C for full specification
Wider range available on request

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Forced air by high quality built-in fans

Environmental Protection

Basic ruggedizing
Conformal coating
Heavy ruggedizing on request

Shock/Vibration

IEC61373 Cat 1 A&B

MTBF

90,000 hours @45°C (fan excluded)
Demonstrated MTBF is significantly higher.

Indicators

Diagnostic Output ON LED on each internal module visible through the rear perforation.

Control Input

None on standard version
Available on request

Alarm Output

None on standard version
Available on request

Package/Dimensions (W x H x D)

3U3 chassis: 187 x 132 x 407mm (7.4" x 5.2" x 16")
Dimensions include terminal blocks and fans and exclude mounting brackets

Weight

Approx. 7kg (15 lb)

Connections

Input: Terminal block
Output: Terminal block or threaded studs

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice
Contamination related failures not covered

Please note that ABSOPULSE power supplies are designed and built to customer specifications. The specifications on this data sheet are generic and will vary depending on input/output configuration and other customer requirements. Generic 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



ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario | K0A 1L0 | CANADA

Tel: +1-613-836-3511 | Fax: +1-613-836-7488

E-mail: absopulse@absopulse.com | <http://www.absopulse.com>