

## 600Vdc Input, 2kW Rugged, Industrial Quality DC-DC Converters HVI 2K-3U3 Series



- Rugged field-proven design
- For heavy-duty industrial applications
- Wide DC-input voltage range
- Redundancy diode
- Full electronic protection
- Cooling by high quality built-in fans

This rugged, industrial quality DC-DC converter uses field proven topology to generate the required output power. The unit is built with one FID 2000 and three KHH 1200 internal modules. The input and output are filtered for low noise. The output separation diode also makes the unit suitable for battery charging applications. To ensure high reliability and long operating life, all critical components on the primary side are designed and tested for corona inception levels, which are significantly higher than the operating voltages. High quality built-in fans provide sufficient airflow for operation within the specified temperature range without de-rating. The fans draw air into the unit, and exhaust at the terminal side of the unit. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also ensures exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headroom, and the exclusive use of components with established reliability contribute to a high MTBF. The unit is manufactured at our plant under strict quality control.

### SPECIFICATIONS

#### Input Voltage

600Vdc nominal  
450V-800V operating range  
Other input range 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

#### Isolation

3000Vdc input-chassis  
3000Vdc input-output  
5600Vdc type test  
1000Vdc output-chassis

#### Standards

Designed to meet EN62368-1 and related standards

#### EMI

EN55032 Class A with margins

#### Switching Frequency

55kHz  $\pm$ 3kHz

#### Output Voltage

24V, 36V, 48V or 110Vdc  
Output is floating; either terminal can be grounded  
Other outputs on request

#### Redundancy Diode

Included for the separation of the internal modules

#### Line/Load Regulation

$\pm$ 1% combined from zero load to full load including output separation 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% pp of the output voltage (@ 20MHz BW)

#### Output Overload Protection

Rectangular current limiting with short-circuit protection (no hiccup)  
Thermal shutdown in case of insufficient airflow (self-resetting)

#### Output Overvoltage Protection

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

#### Efficiency

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

#### Operating Temperature Range

0°C to 50°C for full specification  
Wider range available as option

#### Temperature Drift

0.03% per °C over operating temperature range

#### Cooling

Forced air by high quality built-in fans and conduction to customer heat sink or chassis.  
Fans draw air into the unit.

#### Environmental Protection

Basic ruggedizing  
Conformal coating

#### Shock/Vibration

IEC 61373 Cat 1 A&B

#### Humidity

5 – 95% non-condensing

#### MTBF

85,000 hours @45 °C (fans excluded)  
Demonstrated MTBF is significantly higher.

#### Indicators

Green "Output ON" LED visible through rear perforation

#### Control Input

None on standard version  
Available as option

#### Alarm Outputs

Not installed  
Module fail alarm  
Form C contacts as option

#### Package/Dimensions (W x H x D)

3U3: 132 x 187 x 381 mm  
5.2 x 7.4 x 15" enclosure size without terminals and mounting hardware.  
19" rack mounting hardware is also available.

#### Weight

6.5kg (14 lbs.)

#### Connections

Input: Terminal block  
Output: Threaded studs, M6

#### RoHS Compliance

Compliant

#### Warranty

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

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.



#### ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario. K0A 1L0. CANADA  
Tel: +1-613-836-3511 | Fax: +1-613-836-7488

<https://absopulse.com/contact> | <https://www.absopulse.com>