

## 600Vdc Input, 5kW Rugged, Industrial Quality DC-DC Converters HVI 5K-3U7 Series



- Rugged industrial quality
- Wide DC-input voltage range
- Field-proven design
- Full electronic protection
- Cooling by high quality built-in fans
- N+1 redundancy option

This rugged, industrial quality, high input voltage DC-DC power converter uses field proven technology to generate the required output power. The design is based on topology with a track record in numerous applications. The unit is built with two FID2000 and four KHI 1200 internal modules. A built-in redundancy diode allows for a number of 5kW converter units to be connected in parallel to achieve higher output power or N+1 redundancy. The output separation diode also makes the unit suitable for battery charging applications. The input and output are filtered for low noise. 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  
400V-800Vdc 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  
4300Vdc input-output  
5600Vdc type test  
1500Vdc 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, 48V, 110V or 125dc  
Other outputs on request  
Output is floating; either terminal can be grounded

#### Output Separation Diode

Installed internally

#### 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% Vrms or 1% Vpp 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 85% 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.  
Fans draw air into the unit

#### Environmental Protection

Basic ruggedizing  
Conformal coating  
Heavy ruggedizing available as an option

#### 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 on each internal module visible through the rear perforation

#### Control Input

None on standard version  
Available as option

#### Alarm Outputs

None  
Available as option

#### Package/Dimensions (H x W x D) 3U7 chassis-mount

132 x 432 x 382 mm  
5.2" x 17" x 15"  
Excludes connectors, mounting brackets, fans.

#### 3U7/19: 19" rack mount

132 x 483 x 382 mm  
(3U) 5.2" x 19" x 15"  
Excludes connectors, mounting brackets, fans

#### Weight

14 kg, 31 lb.

#### Connections

Input: Terminal block HV assembly  
Output: Threaded studs, M6

#### RoHS Compliance

Compliant

#### Warranty

Two years subject to application within good engineering practice  
Contamination related failures and shipping costs 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 AC/DC power supplies and battery chargers, DC/DC converters, DC-AC sine-wave inverters, phase & frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom & standard. ABSOPULSE is a BAPT-approved facility*



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