600Vdc Input, 2kW Rugged, Industrial Quality DC/DC Converter
HVI 2K-3U3

- Rugged industrial quality
- Wide DC-input voltage range
- Field-proven design
- Full electronic protection
- Fan cooling
- N+1 redundancy possible

This rugged, industrial quality power converter system uses field proven topology to generate up to 3000W output power, depending on input/output combination. The unit is built with internal modules. It is a mature design with a track record in numerous applications. It accepts an input voltage of 600Vdc. An optional built-in redundancy diode would allow for a number of 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. 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. Built-in fans provide sufficient airflow for operation at the specified temperature without de-rating. Full electronic protection, low component count, large design headroom, and the use of components with established reliability result in a high MTBF. The series 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 EN 60950-1 and related standards

EMI
EN55022 Class A with margins

Switching Frequency
55kHz ±3kHz

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

Redundancy Diode
Included for the separation of the internal modules

Line/Load Regulation
Better than ±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% 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 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 and conformal coating
Full 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
Not on standard version
Available as option

Control Input
None on standard version
Available as option

Alarm Outputs
None
Available as option

Package/Dimensions (H x W x D)
3U3: 132 x 187 x 407 mm
5.2 x 7.4 x 16" including terminal block and mounting flanges
Mounting holes are clear

Weight
Approx7 kg (15 lb)

Connections
Input: Terminal block
Output: Threaded studs, M6

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice

The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.

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.

HELIOS
POWER SOLUTIONS

www.heliosps.com