# 1000Vdc Input, 500W Rugged Industrial Quality DC/DC Converter
# HVI 500-1K/XX-FX Series

- Rugged industrial quality
- High DC-input voltage
- Wide DC-input voltage range
- Field-proven design
- Full electronic protection
- Conduction/convection cooling
- N+1 redundancy available

This rugged, industrial quality DC-DC power converter utilizes field-proven HVI 801 topology to generate the required output power. It is based on a mature design concept with a track record in numerous applications. Cooling is by conduction via baseplate. Additional cooling is achieved by natural convection through the cooling slots. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also provides exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. An optional built-in redundancy diode allows 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. 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**
1000Vdc nominal
800-1200Vdc operating range
Other input range on request

**Input Protection**
Inrush current limiting
Varistor
Reverse polarity protection
Internal safety fuse
Lower voltage than specified minimum input will not damage unit

**Isolation**
3000VDC input to chassis
4300VDC input to output, 5600 type test
1000VDC output to chassis

**Standards**
Designed to meet EN 61010-1 and related standards

**EMI**
EN55022 Class A with margins

**Switching Frequency**
55kHz ±3kHz

**Output Voltage**
36V, 48V, 110V, 125dc
Output is floating; either terminal can be grounded
Other outputs on request

**Redundancy diode**
None
Available as option

**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% rms or 1% pp of the output voltage (20MHz BW)

**Output Overload Protection**
Rectangular current limiting with short-circuit protection (no cycling)
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**
0º C to 55º C for full specification without derating
Extended temperature ranges available on request

**Temperature Drift**
0.03% per $^{\circ}$C over operating temperature range

**Cooling**
Conduction to customer heatsink or chassis and natural convection

**Environmental Protection**
Ruggedizing
Conformal coating
Heavy ruggedizing available as option

**Shock/Vibration**
IEC 61373 Cat 1 A&B

**Humidity**
5 – 95%, non condensing

**MTBF**
130,000 hours @45º C (fans excluded)
Demonstrated MTBF is significantly higher.

**Indicators**
Green "Output ON" LED visible through cooling slots

**Control Input**
None on standard version
Available as option

**Alarm Outputs**
None.
Available as option

**Dimensions (W x H x D)**
FX: 153 x 67 x 358 mm (6" x 2.7" x 14.2") including mounting flanges and terminals

**Weight**
2.2 kg (4.9 lb)

**Connections**
12-pole barrier type terminal block with 3/8" spacing

**RoHS Compliance**
Compliant

**Warranty**
Two years subject to application within good engineering practice

**Terminal Block Pin-out**

| | | | | | OUTPUT | | INPUT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOT USED | NOT USED | NOT USED | NOT USED | NOT USED | + | − | GND ⏚ | NOT USED | + | NOT USED | − |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

**Enhancements to these general specifications and customizing can be accommodated upon request.  Specifications are subject to change.**

*Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output UPS systems, and complete rack mount systems in 19" or 23" racks.   Custom or standard.*

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