

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, 125Vdc
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

0°C to 55°C for full specification without derating
Extended temperature ranges available on request

Temperature Drift

0.03% per °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 @45°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

NOT USED					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



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