

## 600Vdc Input, 500W Rugged Industrial Quality DC/DC Converter HVI 500-FX Series

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



The rugged, industrial quality DC/DC converter series uses field proven design topology to generate the specified output power. It is a mature design with a track record in numerous applications. The unit accepts an input voltage of 600Vdc. 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. 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. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. It is manufactured at our plant under strict quality control.

### SPECIFICATIONS

#### Input Voltage

600Vdc nominal  
450 - 800Vdc 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 EN60950-1 and related standards

#### EMI

EN55022 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

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 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

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

#### Temperature Drift

0.03% per °C over operating temperature range

#### Cooling

Conduction to customer heatsink or chassis and natural convection

#### Environmental Protection

Basic 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

ALARM (option)			DC OUTPUT				DC INPUT				
FAIL OPEN	COM	FAIL CLOSED	+	+	-	-	GND	N/C	+	N/C	-
1	2	3	4	5	6	7	8	9	10	11	12



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