

600Vdc Input, 50W Rugged Industrial Quality DC-DC Converters with Wide Input Range HVI 50-F1 Series



- Rugged, industrial quality
- High DC-input voltage
- Wide DC-input voltage range
- Field-proven design
- Conduction/convection cooled (no fans)
- Full electronic protection

The rugged, high input voltage, industrial quality DC-DC converters utilize field proven design topology to generate the specified output power. To ensure high reliability and long operating life, all critical components on the primary side are designed and tested for corona inception levels that are significantly higher than the operating voltages. 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. The unit is manufactured at our plant under strict quality control. The industrial quality design can also be adapted for railway and solar applications.

SPECIFICATIONS

Input Voltage

600Vdc nominal
450V- 800V operating range
Wider input range on request

Input Protection

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

Isolation

3000Vdc input to chassis
4300Vdc input to output
5600Vdc type test
700Vdc output to chassis

Standards

Designed to meet EN60950-1 and corresponding standards

EMI

EN 55032 Class A with margins

Switching Frequency

47kHz \pm 3kHz

Output Voltage

12V, 24V or 48Vdc
Output is floating; either terminal can be grounded
Other outputs on request

Redundancy Diode

None
Available as option

Line/Load Regulation

\pm 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 hiccup type short-circuit protection

Output Over-voltage Protection

Transzorb across the output

Efficiency

Typically 80% at full load

Operating Temperature Range

0°C to 50°C cold plate temperature 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

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95%, non-condensing

MTBF

130,000 hours @ 45 °C
Demonstrated MTBF is significantly higher.

Indicators

Green "Output ON" LED visible through cooling slots

Control Input

None

Alarm Outputs

None.

Package/Dimensions (W x H x L)

F1: 112.4 x 51 x 197.5 mm
4.425" x 2" x 7.8" " includes baseplate, excludes terminals.
Mounting holes are clear

Weight

0.8 kg (1.8lb)

Connections

9-pole, barrier type terminal block with 3/8" spacing

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

Terminal Pin-Out

VDC OUTPUT				VDC INPUT				
NOT USED	+	-	GND	NOT USED	+	NOT USED	- COM	NOT USED
1	2	3	4	5	6	7	8	9

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

OEM of professional quality AC/DC power supplies and battery chargers, DC/DC converters, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard.



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