

600Vdc, Wide Input Range, 100W Rugged Industrial Quality DC-DC Converter HVI 109-F2 Series

- Rugged, industrial quality
- Wide DC-input voltage range
- Field-proven design
- Conduction/convection cooled (no fans)
- Full electronic protection
- N+1 redundancy available



This 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. 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. Full electronic protection, low component count, large design headroom, and the use of components with established reliability result in a high MTBF. This model is ruggedized and conformal coated for immunity to shock, vibration, humidity, moisture, dust and insects. An optional redundancy diode allows parallel connection to achieve higher output power or N+1 redundancy. Cooling is via base plate to a heat-sinking surface and by natural convection. The unit is manufactured at our plant under strict quality control. Customized versions, as well as versions that meet EN50155 railway specifications are also available.

SPECIFICATIONS

Input Voltage

600Vdc nominal
400V- 800V operating range
Wider input range on request
Idle current at no load,
600V input: 4.7mA

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
3000Vdc input to output
5600Vdc type test
1000Vdc output to chassis

Standards

Designed to meet EN 60950-1
and related standards

EMI

EN 55022 Class A with margins

Switching Frequency

83kHz \pm 5kHz

Output Voltage

24Vdc \pm 0.2/4A
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 70mVrms or 300mV
peak to peak (20MHz BW)

Output Overload Protection

Rectangular current limiting
with short-circuit protection
Current Limit: 4.5A \pm 0.4A

Output Overvoltage Protection

Internal clamp and transorb on
output

Efficiency

Typically 80% at full load

Operating Temperature Range

-25 to +55°C cold plate
temperature for full specification
Extended temperature ranges
available.

Temperature Drift

0.03% per °C over operating
temperature range

Cooling

Conduction to customer heat-sink
or chassis and natural convection

Environmental Protection

Basic ruggedizing and conformal
coating
Heavy ruggedizing available on
request

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95%, non condensing

MTBF

170,000 hours @ 45 °C
Demonstrated MTBF is
significantly higher.

Indicators

Green "Output ON" LED visible
through cooling slots

Control Input

None
Available as option

Alarm Outputs

None.
Available as option

Package/Dimensions (W x H x L)

F2: 114 x 58 x 256 mm
(4.5" x 2.3" x 10.1") including
terminal block and flanges.
Mounting holes are clear

Weight

1.2kg (2.6 lbs)

Connections

Barrier type terminal block with
3/8" spacing

RoHS Compliance

Fully compliant

Warranty

Two years subject to application
within good engineering practice

Terminal Block Pin-Out

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



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