750Vdc Input, 100W Rugged DC-DC Converter for Railway and other Heavy-duty Applications
HVI-100R-F2 Series

- Field-proven rugged design
- For train and mobile applications
- Regulated and adjustable output
- Conduction/convection cooled (no fans)
- Full electronic protection
- Wide input range (EN50155)

This rugged, railway quality DC-DC converter utilizes field-proven technology to generate the required output power. It is a mature design with a track record in numerous applications. The converter is designed to meet EN50155 for electronic equipment used on railway rolling stock. It accepts an input voltage of 750Vdc (525V-975Vdc range), the traction voltage typically required for mass transit vehicles such as trams, metros and light rail, and for mining locomotives. 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
750Vdc
525V-975Vdc range
Other outputs on request

Input Protection
Inrush current limiting
Varistors
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 EN60950-1 and EN50155

Immunity
Meets criteria as requested in EN50155 and EN50121-3-2 according to:
EN61000-4-2 (ESD)
EN61000-4-3 (RF Immunity)
EN61000-4-4 (Fast Transients)
EN50155 (Surge)
EN61000-4-6 (Conducted Imm.)
EN50155 (Voltage Variations)

EMI
EN50121-3-2

Switching Frequency
47kHz ±5kHz

Output Voltage
12V, 24V, 48V or 110Vdc
Output is floating; either terminal can be grounded
Other outputs on request

Redundancy Diode
None
Available as option

Line/Load Regulation
±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 (@ 20MHz BW)

Output Overload Protection
Rectangular current limiting with short-circuit protection (hiccup)

Output Overvoltage Protection
Second regulator loop, completely stable and independent of main regulator loop
Transzorb clamp

Efficiency
Typically 80% at full load

Operating Temperature Range
-25°C to +55°C 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
Ruggedizing
Conformal coating

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5 – 95% non-condensing

MTBF
130,000 hours at 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

Dimensions (W x H x D)
F2: 114 x 58 x 256 mm
(4.5" x 2.3" x 10.1") including mounting flanges and terminals
Mounting holes are clear.

Weight
1.2 kg (2.6 lb)

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

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

Enhancements to these general specifications can be accommodated upon request. Designed to meet common approval requirements

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. ABSOPULSE is a BABT-approved Facility.

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Made in Canada