

900Vdc Input, 100W Rugged DC-DC Converter for Railway and other Heavy-duty Applications

HVT 100R-1K-F2 Series



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

This rugged, railway quality DC-DC converter utilizes field-proven HVIH50 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. 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 converters are manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

900Vdc nominal
525-1270Vdc operating 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
1500Vdc output to chassis

Standards

Designed to meet UL 508 and EN50155

Immunity

Meets criteria as requested in EN50155 and EN50121-3-2 according to following standards:
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 \pm 5kHz

Output Voltage

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

\pm 1% combined from 5% load to full load

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 2msec 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

Transorb clamp

Efficiency

Typically 87% 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 via base plate 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

110,000 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.
DIN Rail clip can be added

Weight

1.2 kg (2.6 lb)

Connections

Input/Output: Phoenix terminal FRONT 2.5-H/SA5

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

Terminal Pin-Out

VDC OUTPUT			DC INPUT		
+	-	\perp	+	-	
1	2	3	4	5	

Please note that ABSOPULSE power supplies are designed and built to customer specifications. The specifications on this data sheet are generic and will vary depending on input/output configuration and other customer requirements. Generic specifications are subject to change.

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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