

## 900Vdc Input, 50W Rugged Industrial Quality DC-DC Converters with Wide Input Range HVI 50-F2 Series

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



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. An optional redundancy diode allows N+1 redundancy. 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

900Vdc nominal  
600V- 1200V 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

Transorb across the output

#### Efficiency

Typically 84% 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  
Heavy ruggedizing available on request

#### 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)

F2: 112 x 57 x 254 mm  
4.43" x 2.25" x 10" includes baseplate, excludes connectors.  
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	+	-	$\frac{+}{-}$	$\frac{+}{-}$	+	$\frac{+}{-}$	-	$\frac{+}{-}$
1	2	3	4	5	6	7	8	9

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change.

OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, 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. ABSOPULSE is a BABT-approved Facility.



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