

## 50W, Rugged, Industrial Quality DC-DC Converter with Wide Input Range DCW 50-F0 Series



- Rugged industrial quality
- Conduction/convection cooled
- Full electronic protection
- Field-proven design in a wide range of applications
- Wide input ranges

This rugged, industrial quality DC-DC converter uses a field proven technology to generate the required output power. It is a mature design with a track record in numerous applications. 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. This chassis-mount design is also optimized for cost efficiency. Open-frame versions with a 3" x 5" printed circuit board and 1.5" heat-sink block height are also available on request. 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.

### SPECIFICATIONS

#### Input Voltage

Two standard input ranges are available:  
20 - 60Vdc or 65 - 160Vdc  
Consult factory for other input voltages and ranges

#### 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

1500VDC input to chassis,  
1500VDC input to output,  
500VDC output to chassis

#### Standards

Designed to meet EN 60950-1 and corresponding UL and CSA standards

#### EMI

EN55022 Class A with margins

#### Switching Frequency

47kHz  $\pm$ 2kHz

#### Terminal Block Pin Out

##### 20V-60Vdc input

| OUTPUT |   |          | INPUT |   |   |
|--------|---|----------|-------|---|---|
| -      | + | NOT USED | GND   | - | + |
| 1      | 2 | 3        | 4     | 5 | 6 |

##### 65V-160Vdc input

| OUTPUT |   |          | INPUT |   |   |
|--------|---|----------|-------|---|---|
| -      | + | NOT USED | GND   | + | - |
| 1      | 2 | 3        | 4     | 5 | 6 |

#### Output Voltage

12V, 24V, 48V or 125Vdc  
Other voltages and higher power rating available on request

#### Redundancy Diode

Not installed

#### Line/Load Regulation

$\pm$ 1% combined from no 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 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHzBW)

#### Output Overload Protection

Current limiting with short circuit protection (hiccup)

#### Output Overvoltage Protection

Double regulator loop and transzorb clamp

#### Efficiency

Output voltage dependent.  
Typically 80% at full load

#### Operating Temperature Range

0°C to 50°C for full specification  
Wider temperature ranges available.

#### Temperature Drift

0.03% per °C over operating temperature range

#### Cooling

Conduction via base plate to customer heatsink or chassis and/or natural convection

#### Environmental Protection

Basic ruggedizing  
Heavy ruggedizing and conformal coating as option

#### Shock/Vibration

IEC 61373 Cat 1 A&B

#### Humidity

5 – 95% non-condensing

#### MTBF

150,000 hours @ 45°C  
Demonstrated MTBF is significantly higher

#### Indicators

None

#### Control Input

None

#### Alarm Output

None

#### Package/Dimensions (W x H x L)

F0: 94 x 48 x 160 mm  
(3.7" x 1.9" x 6.3") including terminal block and flanges.  
Mounting holes are clear

#### Weight

0.55kg (1.2lbs)

#### Connections

6-pole barrier-type terminal block or 90° header pins with 0.156" spacing  
Open PCB versions are also available with header pins with 0.156 spacing, or terminal block  
PCB size: 3" x 5"

#### RoHS Compliance

Fully compliant

#### Warranty

Two years subject to application within good engineering practice

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

*OEM of industrial & railway 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" & 23" racks since 1982. Custom or standard. ABSOPULSE is a BAPT-approved facility*



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