

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 transorb 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



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