

240W, Rugged, Industrial Quality DC/DC Converters with Wide Input Ranges

DCW 240-F3 Series

- Rugged industrial quality
- Field-proven design
- Regulated output
- Conduction/convection cooling (no fans)
- Full electronic protection
- N+1 redundancy by built in diode as option



This rugged, industrial quality power converter utilizes 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. An optional built-in redundancy diode allows for parallel and N+1 operation. A Form C output fail alarm is 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

48Vdc (42-56V)
125Vdc (105-145V)
250Vdc (205-300V)
350Vdc (290-420V)
Consult factory for other voltages

Input Protection

Inrush current limiting
Varistor
Reverse polarity protection by
Series diode
Internal safety fuse
Lower input voltages than specified
minimum will not damage the unit

Isolation

Corresponding to input/output
voltage, minimum:
1500VDC input to chassis,
3000VDC input to output,
500VDC output to chassis

Standards

Designed to meet EN60950-1
and corresponding standards

EMI

EN55022 Class A with margins

Switching Frequency

47kHz \pm 3kHz

Output Voltage

24V, 48V, 110V or 125Vdc
Total output power 240W
continuous
Output is floating; either terminal
can be grounded
Consult factory for other voltages

Redundancy Diode

Installed on request

Line/Load Regulation

\pm 1% combined from no load to full
load including redundancy diode

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% Vrms
(20MHz BW)

Output Overload Protection

Rectangular current limiting with
short circuit protection (hiccup)
Thermal shutdown with automatic
reset in case of insufficient cooling

Output Overvoltage Protection

Double regulator loop. Second
loop completely stable and
independent of main regulator
loop

Efficiency

Typically 85% at full load
depending on input/output
combination

Operating Temperature Range

0 °C to 50 °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

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

Indicators

Green output ON LED visible
through cooling slots

Control Input

None

Alarm Output

Output Fail Form C contacts
installed on request

Package/Dimensions (W x H x L)

F3: 132mm x 64mm x 300mm
(5.2" x 2.5" 11.8") including terminal
block and mounting flanges
Mounting holes are clear

Weight

2 kg (4.4 lb)

Connections

12-pole barrier type terminal block
with 3/8" spacing

RoHS Compliance

Compliant

Warranty

Two years subject to application
within good engineering practice

Terminal Block Pin-Out

		DC OUTPUT				ALARM (OPTION)			DC INPUT		
NOT USED	NOT USED	+	+	-	-	FAIL OPEN	COM	FAIL CLOSED	GND	-	+
1	2	3	4	5	6	7	8	9	10	11	12



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