

## 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)  
125Vd (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

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

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 BABT-approved facility.*



#### ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario. K0A 1L0. CANADA

Tel: +1-613-836-3511 | Fax: +1-613-836-7488

E-mail: [absopulse@absopulse.com](mailto:absopulse@absopulse.com) | <http://www.absopulse.com>