

100 - 130W, Rugged, Triple-output, Industrial Quality DC/DC Converter with Wide Input Range DCW 163-F1 Series



- Triple output with common RTN
- V2, V3 semi-regulated
- Rugged industrial quality
- Conduction/convection cooled
- Full electronic protection
- Field-proven design in a wide range of applications
- Wide input range

This rugged, industrial quality, wide input range DC/DC converter uses field-proven technology to generate the specified output power. The unit has one fully regulated and two tracking outputs. It is a mature design with a track record in numerous applications. Cooling is via baseplate to a heat-sinking surface and by natural convection. Additional ruggedizing and conformal coating are available for applications that require higher immunity to shock, vibration and humidity. Low component count, large design headroom, and the use of components with established reliability result in a high MTBF. The unit is manufactured at our plant under strict quality control. Railway grade versions of this design that meet EN 50155 are also available.

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
2250VDC input to output
500VDC output to chassis

Standards

Designed to meet EN 60950-1 and related standards

EMI

EN55022 Class A conducted and radiated with margins

Switching Frequency

47KHz \pm 2KHz

Output Voltages

V1: $5.1V \pm 0.05V/10A$
V2: $+12V \pm 0.5V/2A$
V3: $-12V \pm 0.5V/2A$
(common return)
Above is one possible output configuration.
Please discuss the required output parameters with factory.

Redundancy diode

None

Line/Load Regulation

V1: $\pm 1%$ combined from 10% load to full load
V2, V3: $\pm 5%$ with min 10% load on V1

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 hiccup mode short-circuit protection.

Output Overvoltage Protection

V1: Double regulator loop
OVP setting: $5.6V \pm 0.2V$
V2: Transzorb clamp
V3: Transzorb clamp

Efficiency

Typ.78% at full load depending on output voltages

Operating Temperature Range

0 to $+ 50^{\circ}C$ full specification
Extended temperature ranges available

Temperature Drift

0.03% per $^{\circ}C$, over operating temperature range

Cooling

Conduction via base plate and additional natural air convection

Environmental Protection

Basic ruggedizing
Optional heavy ruggedizing and conformal coating is available

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 - 95% non-condensing

MTBF

130,000 hours @ $45^{\circ}C$
Demonstrated MTBF is significantly higher

Indicators

None

Control Input

None

Alarm Output

None

Package/Dimensions (WxHxD)

F1: 114 x 51 x 201mm
(4.5" x 2" x 7.9") including terminal block and flanges
Mounting holes are clear

Weight

0.8kg (1.8 lbs)

Connections

9-pole barrier-type terminal block, 3/8" spacing

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice

Terminal Block Pin-out

| DC OUTPUTS | | | | | | GND | DC INPUT | |
|------------|---|----|---|----|---|-----|----------|---|
| V3 | | V2 | | V1 | | ⏏ | + | - |
| + | - | + | - | + | - | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Please note that the above specifications set only generic guidelines for the design. Customizing and enhancements are possible. Please contact us with your specific requirements.

Designer and manufacturer of quality converters, inverters, DC-output UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BABT-approved Facility.

ABSOPULSE
ELECTRONICS LTD.

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 | <http://www.absopulse.com>