

# 100W, Rugged Dual-output DC/DC Converter for Railway and other Demanding Environments DCW 102R Series



- Field-proven rugged design
- For train and mobile applications
- Conduction/convection cooled
- Full electronic protection
- Wide selection of input/output combinations

The DCW 102R Series rugged, dual-output DC/DC converter uses a field proven topology to generate up to 100W output power. It is a mature design with a track record in hundreds of applications. The series is rated for operation over a -25 to +70°C temperature range without derating. It is cooled by conduction via baseplate to a heatsinking surface and by natural convection. These models are fully ruggedized and conformal coated for immunity to shock, vibration, humidity, moisture, dust and insects. This chassis-mount design is optimized for low component count and high efficiency. The use of components with established reliability results in a demonstrated MTBF exceeding 1,000,000 hours. The DCW 102R is manufactured at our plant under strict quality control. Customized versions are also available.

## SPECIFICATIONS

### Input Voltage

48Vdc (28 – 74V)  
72Vdc (42 – 110V)  
110Vdc and 96Vdc (57 – 168V)  
Other inputs on request

### 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  
3000Vdc input to output  
1500Vdc output to chassis

### Standards

Designed to meet IEC60950 and EN50155

### Immunity

Meets criteria of EN50155 and EN50121-3-2 including:  
EN 61000-4-2 (ESD)  
EN 61000-4-3 (RF Immunity)  
EN 61000-4-4 (Fast Transients)  
EN 50155 (Surge)  
EN 61000-4-6 (Conducted Imm.)  
EN 50155 (Voltage Variations)

### EMI

EN55022 Class B and  
EN50121-3-2 conducted and radiated

### Switching Frequency

47KHz +/- 2KHz

### Output Voltage/Current

V1: 12Vdc +/- 0.1V/4A  
V2: 12Vdc/4A  
Both outputs are floating and isolated from each other.  
Either terminal can be grounded.  
Other outputs on request

### Redundancy diode

None

### Line/Load Regulation

V1: +/- 1% combined  
V2: +/- 6% combined

### Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

### Output Ripple/Noise

Better than 30mVrms or 100mVpp (20MHz BW) on both outputs

### Output Overload Protection

Current limiting with hiccup type short circuit protection

### Output Overvoltage Protection

Double regulator loop and transzorb

### Efficiency

Min 80% at full load

### Operating Temperature

-25 to +70°C cold-plate temperature

### Temperature Drift

0.03% per °C over operating temperature range

### Cooling

Conduction to customer heatsink or chassis and natural convection

### Environmental Protection

Ruggedizing  
Conformal coating

### Shock/Vibration

Designed to meet IEC 61373  
Cat 1 A&B

### Humidity

5 – 95% non-condensing

### MTBF

Min. 150,000 hours @45°C

### Indicators

None

### Control Input

None

### Alarm Output

None

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

F0: 86.4 x 48.3 x 154.9 mm  
(3.4" x 1.9" x 6.1") including terminal block and flanges  
Mounting holes are clear

### Weight

0.55kg (1.2 lb)

### Connections

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

### RoHS

Fully compliant

### Warranty

Two years subject to application within good engineering practice

**Enhancements to these general specifications can be accommodated upon request.**

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



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