

200W, Rugged DC-DC Converter for Railway and other Demanding Environments DCW 200R-F2 Series



- EN50155 input ranges
- For train and mobile applications
- Conduction/convection cooled – no fan
- Full electronic protection
- Field-proven rugged design

This rugged, railway quality DC-DC converter uses 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. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. The series meets the requirements of EN50155 for electronic equipment used on railway rolling stock. The DCW 200R-F2 is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage (nominal/range)

110Vdc (66-154V)
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
3000Vdc input to output
1500Vdc output to chassis

Standards

Designed to meet EN60950-1 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

EN50121-3-2

Switching Frequency

47kHz \pm 2kHz

Output Voltage/Current

24V, 48V or 110Vdc
200W continuous
Derating may be required depending on input voltage
Consult factory for other voltages and higher power rating

Redundancy diode

None

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 (20MHZ BW)

Overload Protection

Current limiting with short circuit protection (hiccup)

Output Overvoltage Protection

Double regulator loop
Transzorb across the output

Efficiency

Output voltage dependent
Typically 85% at full load

Operating Temperature

-25 to +70°C cold-plate temperature for full specification

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction via base plate to customer heat-sink or chassis and natural convection

Environmental Protection

Basic ruggedizing
Conformal coating
Heavy ruggedizing available as option

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing

MTBF

Min. 160,000 hours @45°C
Demonstrated MTBF is significantly higher

Indicators

Green "Power ON" LED, visible through the cooling slots

Control Input

None

Alarm Output

None
Available as option

Package/Dimensions (W x H x L)

F2: 114 x 58 x 256 mm
(4.5"x 2.3" x 10.1") including terminal block and flanges.
Mounting holes are clear

Weight

1.2 kg (2.6 lb) approx

Connections

9-pole barrier type terminal block with 3/8" spacing for input/output

RoHS

Compliant

Warranty

Two years subject to application within good engineering practice

Terminal Block Pin Out

DC OUTPUT					DC INPUT			
NOT USED	NOT USED	NOT USED	-	+	NOT USED	$\frac{\square}{\square}$	-	+
1	2	3	4	5	6	7	8	9

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 and railway AC/DC power supplies and battery chargers, DC/DC converters, DC-AC sine-wave inverters, phase & frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom & standard. ABSOPULSE is a BAPT-approved facility



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