

150W, Rugged Dual-output, Railway Quality DC/DC Converter for DCW 202R Series

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



The DCW 202R Series rugged, dual-output DC/DC converter uses a field proven technology to generate up to 150W continuous power, depending on the input/output configuration. It has two fully independent regulated isolated outputs. Cooling is via baseplate to a heatsinking surface and by natural convection. Ruggedizing and conformal coating provide added immunity to shock, vibration and humidity. Low component count, large design headrooms, and the use of components with established reliability result in a high MTBF. The unit meets the requirements of EN 50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

24Vdc (15 - 34V)
48Vdc (29 - 67V)
72Vdc (43 - 101V)
96Vdc (58 - 135V)
110Vdc (66 - 154V)
Other inputs upon 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
1500Vdc between outputs

Standards

Designed to meet EN60950 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

V1: Any voltage 5V to 125Vdc
V2: Any voltage 5V to 125Vdc
Both outputs are fully regulated
The outputs are floating, either terminal can be grounded
Returns are separated.
Other voltages on request

Redundancy diode

None
Available as option

Line/Load Regulation

+/- 1% combined from no load to full load on both outputs

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 hiccup type short circuit protection on both outputs

Output Overvoltage Protection

Double regulator loop and transzorbs on both outputs

Efficiency

80 to 90% at full load depending on input/output configuration

Operating Temperature

-25°C to +55°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

IEC 61373 Cat 1 A&B

Humidity

5 - 95% non-condensing

MTBF

Min. 140,000 hours @45°C
Demonstrated MTBF is significantly higher

Indicators

"Output On" LED visible through cooling slots

Control Input

None

Alarm Output

None
Available as option

Package/Dimensions (W x H x L)

F1W: 163 x 51 x 200 mm
(6.4" x 2" x 7.9") including terminal block and flanges.
Mounting holes are clear

Weight

1.4kg (3 lb)

Connections

Barrier-type terminal block, 3/8" spacing

RoHS

Fully compliant

Warranty

Two years subject to application within good engineering practice

Terminal Block Pin-Out

OUTPUT									INPUT		
V1		NOT USED	V2		NOT USED	NOT USED	NOT USED	NOT USED	GND		
-	+		-	+					⏏	+	-
1	2	3	4	5	6	7	8	9	10	11	12

Enhancements to these general specifications and customizing can be accommodated upon request. Specifications subject to change.