

# DCW50R SERIES

Rail DC/DC Converters Single Output: 50 Watts



## General Specifications

<b>Input Voltage</b>	<b>24VDC</b> ( 15 ~ 34 ) <b>36VDC</b> ( 22 ~ 51 ) <b>48VDC</b> ( 29 ~ 67 ) <b>72VDC</b> ( 43 ~ 101 ) <b>96VDC</b> ( 58 ~ 135 ) <b>110VDC</b> ( 66 ~ 154 ) ♦ Other voltages on request
<b>Input Protection</b>	Reverse polarity protection. Inrush current limiting Lower voltage than specified will not damage unit
<b>Isolation</b>	Input - Output 3000vdc Input – Chassis 1500vdc Output – Chassis 1500vdc
<b>Efficiency</b>	Model dependent , typically 80-90%
<b>Output voltage</b>	See tables
<b>Output Power</b>	50 watts
<b>Voltage Adjust.</b>	Customer specified
<b>Immunity</b>	EN50155 & EN50121-3-2 EN61000-4-2 ESD EN61000-4-3 RF Immunity EN61000-4-4 Fast Transients EN50155 Surge & Voltage variations EN61000-4-6 Conducted Immunity
<b>EMI</b>	EN5022 Class B Conducted & Radiated
<b>Switching Freq.</b>	47kHz ±5kHz
<b>Regulation</b>	±1% Line / Load combined
<b>Dynamic Response</b>	Max ±5% deviation for 10% - 50% load step with 1msec recovery
<b>Ripple &amp; Noise</b>	Typically 1% pk-pk or 0.2% RMS of output voltage ( 20MHZ BW )
<b>Overload Protection</b>	Current limiting, with hiccup type short-circuit protection
<b>Overvoltage Protection</b>	Double regulator loop & Transorb across output
<b>Operating Temp.</b>	-25°C to +70°C cold plate temperature
<b>Cooling</b>	Conduction cooling / Convection cooling
<b>Environmental Protection</b>	Ruggedizing and Conformal coating of PCB.
<b>Shock &amp; Vibration</b>	IEC61373 Cat 1 A & B and Cat 2
<b>Humidity</b>	5-95% non-condensing, higher ration option
<b>MTBF</b>	>150,000 hrs

## Features

- ♦ Designed to rail standards EN50155 & EN50121
- ♦ Rugged design for on-board train applications
- ♦ Wide input voltage range
- ♦ Convection / Conduction cooled: No fans
- ♦ Fully isolated input – output 3000VDC
- ♦ Over voltage protection
- ♦ Overload and short circuit protection
- ♦ MTBF > 150,000hrs
- ♦ Specials input / output combinations on request.
- ♦ Other mechanical styles on request

## Description

The **DCW50R** series dc/dc converters are designed for use on Rail Rolling Stock and for many extremely harsh environments.

This rugged, industrial quality DC/DC converter uses a field proven topology to generate up to 50W continuous power.

It is a mature design with a track record in hundreds of applications. The series has large design headroom and it is rated for operation over a -25 to +70oC temperature range.

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 high demonstrated MTBF.

Customized versions are also available.

Model	Input Options V	Output Options V A	Power W
<b>DCW50R</b>	24V, 36V	12V 4A	50W
	48V, 72V	24V 2A	
	96V, 110V	48V 1A	
		110V 0.45A	

- ♦ Final part numbers will be factory allocated to reflect customer input & output requirements.
- ♦ Any output from 12-125V is possible.

<b>LED / Indicator</b>	Optional
<b>Alarm output</b>	Optional on some models
<b>Connector</b>	6 pole barrier-type terminal block with 3/8"spacing. ( optional cover )
<b>Dimensions</b>	94 x 48 x 160mm (F0 ) W x H x L (includes terminal block & mounting flanges)
<b>Weight</b>	0.6kg

