



## DCR240 RAILWAY DC/DC CONVERTER

### SERIES DCR240

The DCR240 series consists of PWM DC-DC converters, with a galvanic isolation between input and output. The converters operate at a fixed switching frequency and use push-pull converter topology.

There are two options to choose:

- 1 - With remote sensing
- 2 - With low output voltage alarm

For maximum regulation, the remote sensing terminals can be connected to the load. This will allow a power cable voltage drop of up to 0.3 V on each cable to be offset.

The device is protected against overload and short-circuits by means of a current limiting circuit.

The device is also protected against reverse polarity input voltage, and the input fuse blows if an improper connection is made.

When a converter input undervoltage condition occurs, the converter is disabled, thus preventing the battery from becoming totally discharged.

### APPLICATIONS

- Railway Applications
- Transportation
- Mining
- Oil Rigs
- Military Applications
- Marine / Automotive / RV
- Electric Utilities and Substations
- Telecom Power Plants
- Manufacturing Locations
- Steel Mills
- Industrial Controls
- OEM Applications

### FEATURES

- Designed according to EN50155
- Fire and smoke: EN45545-2 approved
- Standard size Eurocard 3U
- High input-output isolation
- Adjustable output voltage
- Input voltage OK LED
- Output voltage presence LED
- Remote inhibit
- Protection against overloads and short-circuits
- Protection against input undervoltage
- Option: remote sensing or alarm



High frequency technology



Light weight, compact size



Full electronic protection



Extended temperature range



Convection Cooling (no Fan)



Remote inhibit



Optional Output fail alarm (Form B)

## SPECIFICATIONS

	24Vin 14,4V ... 30V 16,8V ... 30V <sup>(1)</sup>	36Vin 21,6V ... 47V 25,2V ... 47V <sup>(1)</sup>	48Vin 28,8V ... 60V 33,6V ... 60V <sup>(1)</sup>	72Vin 43,2V ... 90V 50,4V ... 90V <sup>(1)</sup>	110Vin 66V ... 144V 77V ... 144V <sup>(1)</sup>	220Vin 132V ... 275V 154V ... 275V <sup>(1)</sup>
5Vout	<b>DCR240-24-5</b> 180W 80%	<b>DCR240-36-5</b> 180W 80%	<b>DCR240-48-5</b> 180W 80%	<b>DCR240-72-5</b> 180W 81%	<b>DCR240-110-5</b> 180W 81%	-
12Vout	<b>DCR240-24-12</b> 240W 83%	<b>DCR240-36-12</b> 240W 83%	<b>DCR240-48-12</b> 240W 84%	<b>DCR240-72-12</b> 240W 88%	<b>DCR240-110-12</b> 240W 86%	-
24Vout	<b>DCR240-24-24</b> 240W 87%	<b>DCR240-36-24</b> 280W 87%	<b>DCR240-48-24</b> 280W 88%	<b>DCR240-72-24</b> 280W 90%	<b>DCR240-110-24</b> 280W 91%	<b>DCR240-220-24</b> 280W 91%
48Vout	<b>DCR240-24-48</b> 240W 88%	<b>DCR240-36-48</b> 280W 88%	<b>DCR240-48-48</b> 280W 89%	<b>DCR240-72-48</b> 280W 90%	<b>DCR240-110-48</b> 280W 92%	-

Input	
Input voltage range	See table
Input undervoltage shutdown	55% to 60% Vi nom
Maximum input ripple	15% Vin nom (EN50155)
Output	
Output voltage range	
Vimin>60% Vi nom	-10% ... +0% Vo nom
Vimin>70% Vi nom <sup>(1)</sup>	-10% ... +15% Vo nom <sup>(1)</sup>
Line regulation (Io = nom)	<0.2%
Load regulation (Vin = nom)	<0.2% (Io: 0...100%)
Ripple	< 50 mVpp
Noise (BW = 20MHz)	< 100 mVpp
Maximum remote sensing	0,3V / pole
Environmental	
Storage temperature	-40°C ... 85°C
Operating temperature full load	-25°C ... 60°C (-40°C ... 60°C, see note-1)
Operating temperature 75% load	-25°C ... 70°C (-40°C ... 70°C, see note-1)
Operating temperature 37.5% load	-25°C ... 85°C (-40°C ... 85°C, see note-1)
Maximum Relative humidity	95% without condensation
Shock and vibration	EN61373 Category 1 class B body mounted
MTBF	400.000h @ 40°C according to IEC61709

EMC	
Immunity according to	EN61000-6-2 / EN50121-3-2
Emissions according to	EN61000-6-3 / EN50121-3-2
Safety	
Safety according to	EN60950, EN50155
Dielectric strength: Input / output	3000Vac, 4200Vdc 1min.
Dielectric strength: Output / ground	1500Vac, 2100Vdc 1min.
Dielectric strength: Input / ground	1500Vac, 2100Vdc 1min.
Fire and smoke	EN45545-2:2013 + A1:2015
Mechanical	
Weight	640 g
Dimensions	220 x 100 x 38.5mm
Protections	
Against overloads and short-circuits	Current limiting
Against reverse input voltage	Input fuse
Against input under-voltage	Under-voltage lock-out
Against Input over-currents	Input fuse

Note-1: The unit can start up and work at an ambient temperature of -40°C with the following restrictions:

- 1) Do not actuate over the connectors below -25°C.
- 2) The output ripple can rise up to 150mVpp at -40°C

