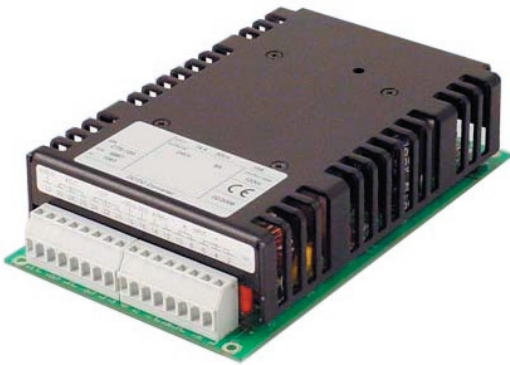


# DCR120 Series DC/DC Voltage Converter



## Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation

## Applications

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

## DC/DC Converters

DCR120 (isolated)

### Description

The DCR120 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 under voltage condition occurs, the converter is disabled, thus preventing the battery from becoming totally discharged.

### Features

- Designed according to EN50155
- Fire and smoke: EN45545-2 approved
- High input-output isolation
- Standard size Eurocard 3U
- Adjustable output voltage
- Input voltage OK LED
- Output voltage presence LED
- Remote inhibit
- Option: remote sensing or alarm
- Full electronic protection
- 2 years parts and labour warranty

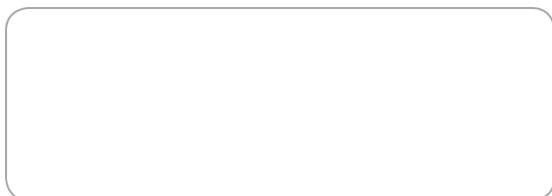
# Specifications ( Specifications Subject to Change Without Notice)

	<b>24Vin</b> 14,4V ... 30V 16,8V ... 30V <sup>(1)</sup>	<b>36Vin</b> 21,6V ... 47V 25,2V ... 47V <sup>(1)</sup>	<b>48Vin</b> 28,8V ... 60V 33,6V ... 60V <sup>(1)</sup>	<b>72Vin</b> 43,2V ... 90V 50,4V ... 90V <sup>(1)</sup>	<b>110Vin</b> 66V ... 144V 77V ... 144V <sup>(1)</sup>
<b>5Vout</b>	<b>DCR120-24-5</b> 100W 78%	<b>DCR120-36-5</b> 100W 79%	<b>DCR120-48-5</b> 100W 79%	<b>DCR120-72-5</b> 100W 79%	<b>DCR120-110-5</b> 100W 80%
<b>12Vout</b>	<b>DCR120-24-12</b> 120W 83%	<b>DCR120-36-12</b> 120W 84%	<b>DCR120-48-12</b> 120W 84%	<b>DCR120-72-12</b> 120W 84%	<b>DCR120-110-12</b> 120W 85%
<b>24Vout</b>	<b>DCR120-24-24</b> 120W 84%	<b>DCR120-36-24</b> 140W 86%	<b>DCR120-48-24</b> 140W 86%	<b>DCR120-72-24</b> 140W 86%	<b>DCR120-110-24</b> 140W 87%
<b>48Vout</b>	<b>DCR120-24-48</b> 120W 85%	<b>DCR120-36-48</b> 140W 88%	<b>DCR120-48-48</b> 140W 88%	<b>DCR120-72-48</b> 140W 88%	<b>DCR120-110-48</b> 140W 89%

<b>INPUT</b>	
Input voltage range	See table
Maximum allowed input ripple	15% Vin nom (EN50155)
<b>OUTPUT</b>	
Output voltage	See table
Output voltage adjustment	
V <sub>min</sub> >60% V <sub>i</sub> nom	-10 % ... +0 % V <sub>o</sub> nom
V <sub>min</sub> >70% V <sub>i</sub> nom	-10 % ... +15 % V <sub>o</sub> nom <sup>(1)</sup>
Line regulation (I <sub>o</sub> = nom)	< 0,2 %
Load regulation (V <sub>in</sub> = nom)	< 0,2 %
Ripple	< 50 mVpp
Noise (BW = 20MHz)	< 100 mVpp
<b>ENVIRONMENTAL</b>	
Storage temperature	-40°C ... 85°C
Operating temperature range I <sub>o</sub> : 100%	-25°C ... 60°C (-40°C ... 60°C, see note-1)
Operating temperature range I <sub>o</sub> : 75%	-25°C ... 70°C (-40°C ... 70°C, see note-1)
Operating temperature range I <sub>o</sub> : 37.5%	-25°C ... 85°C (-40°C ... 85°C, see note-1)
Maximum Relative humidity	95% with no condensation
Shock and vibration	EN61373 Category 1 class B body mounted
MTBF	500.000h @ 40°C according to IEC61709
<b>EMC</b>	
Emission	EN61000-6-3, EN50121-3-2
Immunity	EN61000-6-2, EN50121-3-2
<b>SAFETY</b>	
Safety	EN60950 -1
Dielectric strength Input/Output	3000Vac, 4200Vdc 1min.
Dielectric strength Input/Ground	1500Vac, 2100Vdc 1min.
Dielectric strength Output/Ground	1500Vac, 2100Vdc 1min.
Fire and smoke	EN45545-2
<b>MECHANICAL</b>	
Approximate weight	430g
<b>CONTROL</b>	
Remote inhibit range	5V ... 24V
Remote sense	< 0.3V per pole
Low output voltage alarm (option)	Threshold: 0.85...0.90 V <sub>o</sub> nom. Open when alarm. Isolated solid state relay: max.100mA, 160V
<b>PROTECTIONS</b>	
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

Available from:



## RIPEnergy®

The power conversion company

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