

DCR60 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

DCR60 (isolated)

Description

The DCR60 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.

Voltage feedback is performed by transferring the error signal from the output to the primary side through an optocoupler, where the PWM circuit changes the pulse width as required to keep the voltage output stable.

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-circuit 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.

Features

- Designed according to EN50155
- Fire and smoke: EN45545-2 approved
- High input-output isolation
- Switching frequency: 140KHz
- Adjustable output voltage
- Remote sensing
- Output voltage presence LED
- Full electronic protection
- 2 years parts and labour warranty

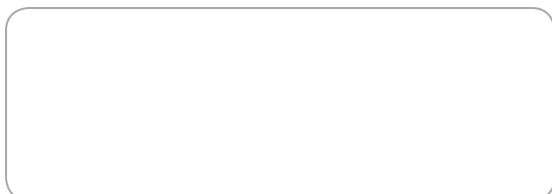
Specifications (Specifications Subject to Change Without Notice)

	24Vin 14,4V ... 30V 16,8V ... 30V ⁽¹⁾	36Vin 21,6V ... 47V 25,2V ... 47V ⁽¹⁾	48Vin 28,8V ... 60V 33,6V ... 60V ⁽¹⁾	72Vin 43,2V ... 90V 50,4V ... 90V ⁽¹⁾	110Vin 66V ... 144V 77V ... 144V ⁽¹⁾
5Vout	DCR60-24-5 50W 78%	DCR60-36-5 50W 78%	DCR60-48-5 50W 79%	DCR60-72-5 50W 79%	DCR60-110-5 50W 80%
12Vout	DCR60-24-12 60W 83%	DCR60-36-12 60W 83%	DCR60-48-12 60W 84%	DCR60-72-12 60W 84%	DCR60-110-12 60W 85%
15Vout	-	-	-	-	DCR60-110-15 60W 85%
24Vout	DCR60-24-24 60W 84%	DCR60-36-24 60W 84%	DCR60-48-24 60W 85%	DCR60-72-24 60W 85%	DCR60-110-24 60W 85%
48Vout	DCR60-24-48 60W 85%	DCR60-36-48 60W 85%	DCR60-48-48 60W 85%	DCR60-72-48 60W 85%	DCR60-110-48 60W 85%

INPUT	
Input voltage range	See table
Maximum allowed input ripple	15% Vin nom (EN50155)
OUTPUT	
Output voltage range	
V _{min} >60% V _i nom	-10% ... +0% V _o nom
V _{min} >70% V _i nom ⁽¹⁾	-10% ... +15% V _o nom ⁽¹⁾
Line regulation (I _o = nom)	< 0,2 %
Load regulation (V _{in} = nom)	< 0,2 %
Ripple	< 50 mVpp
Noise (BW = 20MHz)	< 100 mVpp
Maximum remote sensing	0,3V / pole
ENVIRONMENTAL	
Storage temperature	-40°C ... 85°C
Operating temperature range I _o : 100%	-25°C ... 60°C (-40°C ... 60°C, see note-1)
Operating temperature range I _o : 75%	-25°C ... 70°C (-40°C ... 70°C, see note-1)
Maximum Relative humidity	95% without condensation
Shock and vibration	EN61373 Category 1 class B body mounted
MTBF	650.000h @ 40°C according to IEC61709
EMC	
Emission	EN61000-6-3 EN50121-3-2
Immunity	EN61000-6-2 EN50121-3-2
SAFETY	
Safety	EN-60950 EN50155
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
MECHANICAL	
Approximate weight	500g
Dimensions	127 x 84.5 x 40mm
PROTECTIONS and CONTROL	
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

RIPEnergy AG
 Wägitalstrasse 24
 CH-8854 Siebnen
 Switzerland

Ph +41-(0)43-818 53 85
 Fax +41-(0)43-818 53 87
 www.ripenergy.ch