

DCR1000 Series DC/DC Voltage Converter



fan cooling version

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

DCR1000 (isolated)

Description

The DCR1000 series consists of DC-DC converters with a galvanic isolation input-output and fixed switching frequency.

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 overloads 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
- Adjustable output voltage
- Input & Output OK LEDs
- Remote sensing
- Remote inhibit
- Output failure alarm
- Full electronic protection
- ORing FET option
- Cooling: conduction, convection or fan cooling
- 2 years parts and labour warranty

Specifications (Specifications Subject to Change Without Notice)

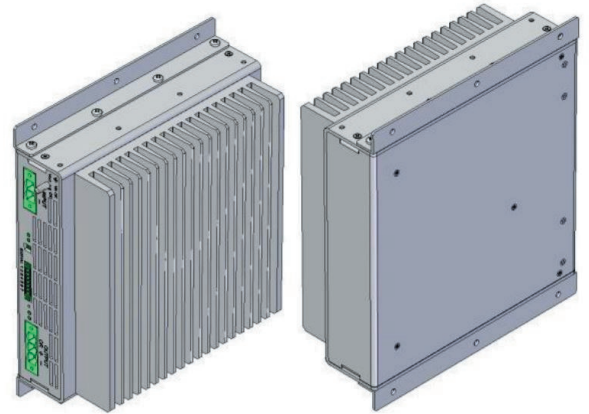
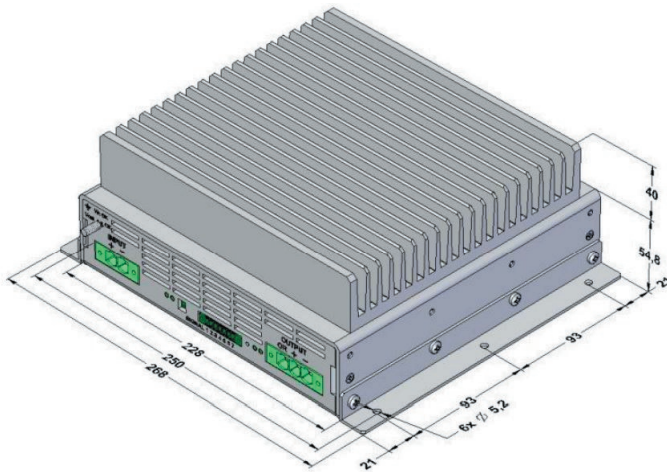
	24 Vin 14.4 ... 30V 16.8 ... 30V (1)	36Vin 21,6V ... 45V 25,2V ... 45V ⁽¹⁾	48 Vin 28.8 ... 60V 33.6 ... 60V (1)	72 Vin 43.2 ... 90V 50.4 ... 90V (1)	110 Vin 66 ... 144V 77 ... 144V(1)
24Vout	DCR1000-24-24 1000W 88%	DCR1000-36-24 1000W 89%	DCR1000-48-24 1000W 91%	DCR1000-72-24 1000W 91%	DCR1000-110-24 1000W 92%
48Vout	DCR1000-24-48 1000W 89%	DCR1000-36-48 1000W 90%	DCR1000-48-48 1000W 91%	DCR1000-72-48 1000W 92%	DCR1000-110-48 1000W 93%
72Vout	DCR1000-24-72 1000W 89%	DCR1000-36-72 1000W 91%			

INPUT	
Input voltage range	See table
Maximum input ripple	5% Vrms, 15% Vpp
Typical efficiency at full load	See table
OUTPUT	
Voltage adjust range	-10...0% Vout nom / (1) -10...+15% Vout nom
Line regulation	< 0,2 %
Load regulation	< 0,2 %, 2.5 % for ORing FET option
Ripple	< 50 mVpp
Noise (BW 20MHz)	< 100 mVpp
Max. overvoltage protection	< 140% Vout nom
Max. remote sense	0,3V / pole
Total Output power (Po):	See table
AMBIENT	
Storage temperature	-40°C ... 85°C
Operating temperature range Io: 100%	-25°C ... 55°C (-40°C ... 55°C, see note-1)
Operating temperature range Io : 63%	-25°C ... 70°C (-40°C ... 70°C, see note-1)
Cooling	Internal forced air controlled (see options)
Relative humidity	95% with no condensation
MTBF (at 40°C and 75% load)	350.000h acc.to IEC61709 Cooling options R, V, D 250.000h acc.to IEC61709 Cooling option C
Service life	20 years @ 40°C, 75% load (Option F fan maintenance at 10 years is required)
EMC	
Emission according to norm/s	EN61000-6-3 (EN50121-3-2)
Immunity according to norm/s	EN61000-6-2 (EN50121-3-2)
SAFETY	
Safety according to norm/s	EN60950
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 (Pending)
MECHANICAL	
Weight	2.5kg, 5kg for the convection cooling option
CONTROL	
Remote inhibit input range	15 ... 143 Vdc
Alarm contacts	1A @ 24Vdc, 0.3A @ 150Vdc, 1A @ 125Vac
Local: Input OK, Output OK	Green LEDs
PROTECTIONS	
Against overloads and short-circuits	Current limiting
Against output over-voltages	Shutdown (reset by input switch off)
Against over-temperature	Shutdown with self-recovery
Against reverse input voltage	Input fuse (Active protection with option H)
Against input under-voltage	Under-voltage lock-out
Against Input over-currents	Input fuse

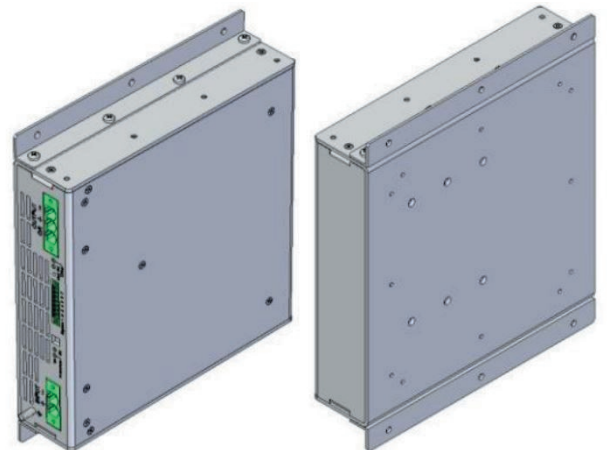
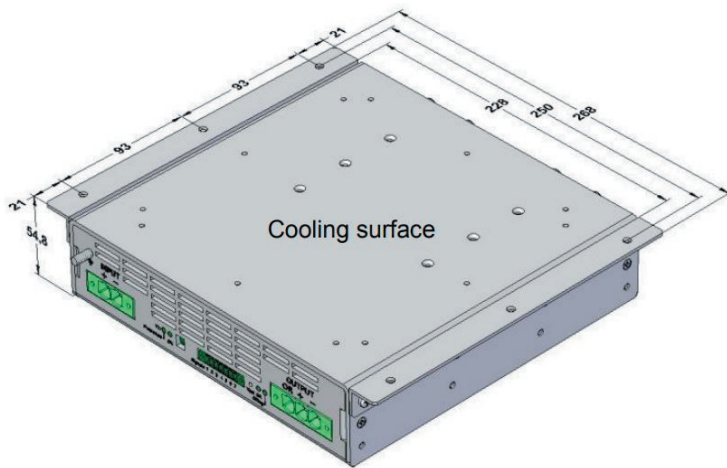
Note-1: The unit can start up and work at an ambient temperature of -40°C with the following restrictions:

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

Enclosure



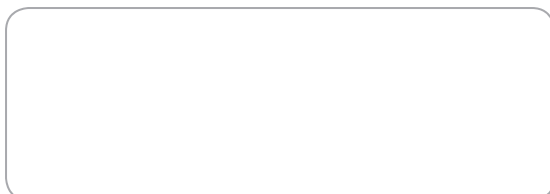
Convection cooling version (weight 5kg)



Conduction cooling version (weight 2.5kg)

OPTIONS	OPTION CODE
Fan cooling (2 fans with speed control)	-C
Fan redundancy cooling (4 fans with a duty cycle = 50%)	-R
Convection cooling	-V
Conduction cooling	-D
ORing FET for redundancy Includes a passive current sharing by voltage drop < 2.5%	-XO
<ul style="list-style-type: none"> • Hold up time 10ms (EN50155 class S2) • Active protection against input reverse polarity • Active inrush current limiter: $I(\text{inrush}) < 3 \cdot I(\text{input nominal})$ 	-XH

Available from:



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