

DC-DC Converter DCDC50 Series

For Rail & Industrial Applications

Specification

General

Safety DIN EN 60950, VDE 0805
overload- and short-circuit protected

Electrical Characteristics

Input

Input voltage nominal 24V_{DC}
110V_{DC}

Stat. voltage tolerance ±30% (16,8-31,2V_{DC}, 77-143 V_{DC})
Dyn. voltage tolerance ±40% (14,4-33,6V_{DC}, 66-154 V_{DC})
Ripple 15%

Output

Output voltage nominal 48V_{DC}
Output voltage isolated, "floating"
Voltage tolerance <±1%

Dyn. regulation tol. <±2%
Ripple <100mV_{PP} (50MHz 50Ω)

Noise <200mV_{PP} (200MHz 50Ω)
Start-up delay time <200ms

Output current I_A = 0-1A
Current limitation I_S = 1,2 x I_{A MAX}

Overload characteristic permanently short-circuit-proof

Parallel operation possible for output power upgrade

Output power 50W
Efficiency >85% at U_{NOM}

Ambient Characteristic

Ambient temperature -40 to +85°C, class TX according
DIN EN50155

Relative humidity max. 95%, condensation tolerable from
time to time (with optional coating)

Cooling external forced cooling / e.g. fan level
below module carrier

Derating without external cooling from +50°C /
2,5% per 1°C

Protection input current =
16 AT fuse at 24V_{DC}
3,15 AT fuse at 110V_{DC}
(high breaking capability);
reverse polarity protection at the input;
OVP at the output = U_A + tol. +10%



Picture may differ from actual device

EMC-Emission

Conductive according to
DIN EN 50121-3-2

Radiated according to
DIN EN 50121-3-2

EMC-Immunity

Transient/Surge 1,8kV according to
DIN EN 50121-3-2, 12Ω

Burst 2kV according to
DIN EN 50121-3-2

Electromagnetic field 20 V/m according to
DIN EN 50121-3-2

Insulation Test

Input to ground 1500V_{EFF} 1min.
Output to ground 1500V_{EFF} 1min.
Input to output 1500V_{EFF} 1min.

Creepage distance >2,5mm according to
DIN EN 50124 PD3

Shock and Vibration

Vibration reliability according to DIN EN 50155
and EN 61373

Frequency range 5-150Hz
Transfer frequency 8Hz

Amplitude acceleration
Below the transfer
Frequency 2mm

Amplitude acceleration
above the transfer
frequency 5m/s²

Shock reliability 50m/s² all 3 axes
according to DIN EN 61373
(extended)

MTBF >750.000h at 40°C

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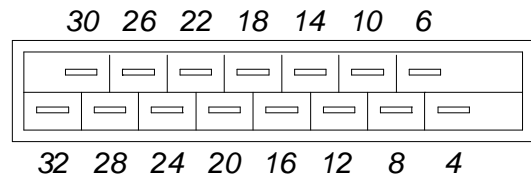
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Specification

Signal

Alarm contact	optocoupler signal contact for output voltage o.k.
Optical signals	LEDs (green) for U_E ; U_A
Remote ON/OFF	inhibit ON >13V to U_N or open; OFF <5V to 0V
Test point for U_A	2mm test jacks at the front panel

Pin Assignments



Connection Characteristics

Connector	H15 DIN 41612; rear side
Pin Assignments	see table 1

Mechanical Characteristic

Dimensions	19"-alu cassette, 3U, 10TE
Weight	570g
Protection	IP 20

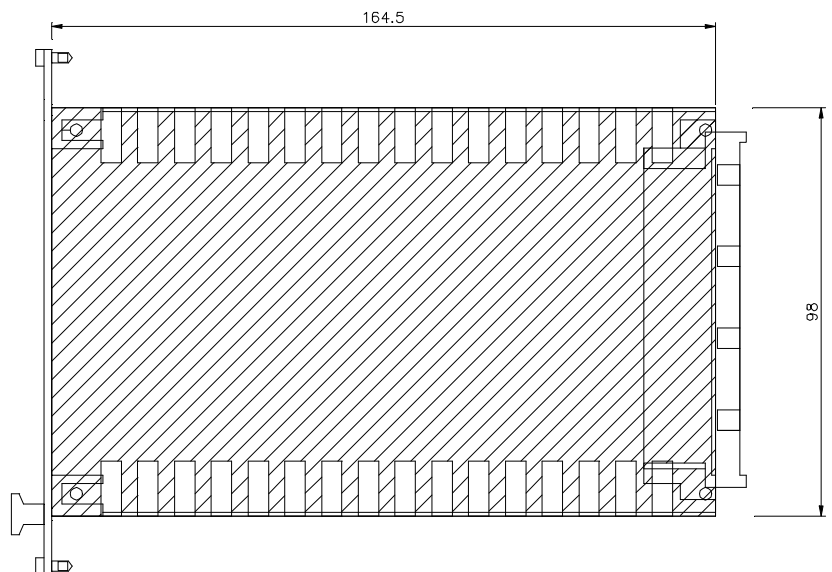
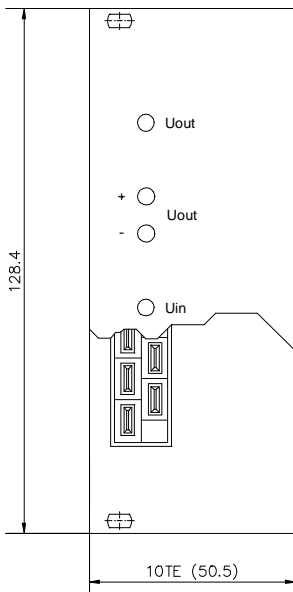
Warranty Time 24 months

Order Code DCDC50-24-48
DCDC50-110-48

(Optional formal coating and add. glued components.)

Table 1

Pin	Function	Abbreviation
4	Output voltage positive	+ U_A
6	Output voltage positive	+ U_A
8	Output voltage reference	0V U_A
10	Output voltage reference	0V U_A
12	Not connected	n.c.
14	Not connected	n.c.
16	Signal contact emitter	U_A o.k. / E
18	Signal contact collector	U_A o.k. / C
20	Not connected	N.C.
22	Remote ON/OFF	Inhibit E/A
24	Protective earth	PE
26	Input voltage positive	+ U_E
28	Input voltage positive	+ U_E
30	Input voltage reference	0V U_E
32	Input voltage reference	0V U_E



All dimensions in mm