

DC-DC Converter DCDC50-24-5

For Rail & Industrial Applications

Specification



Picture may differ from actual device

General

Safety	DIN EN 60950, VDE 0805 Overload- and Short-circuit protected
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Electrical Characteristics:

Input

Input Voltage Nominal	$U_E = 24 \text{ VDC}$
Stat. Voltage Tolerance	$\pm 30\%$ (16,8 – 31,2 VDC)
Dyn. Voltage Tolerance	$\pm 40\%$ (14,4 – 33,6 VDC)
Ripple	15%

Output

Output Voltage	5 VDC, isolated, "floating"
Voltage Tolerance	$< \pm 1\%$
Dyn. Regulation Tol.	$< \pm 2\%$
Ripple	$< 100 \text{ mV}_{pp}$ (50 MHz 50 Ω)
Noise	$< 200 \text{ mV}_{pp}$ (200 MHz 50 Ω)
Start-up Delay time	$< 200 \text{ ms}$
Output Current	$I_A = 0-10 \text{ A}$
Current Limitation	$I_S = 1,1 \times I_{A \text{ max.}}$
Overload Characteristic	permanent short circuit secured
Parallel Operation	for Output Power Up-grade Possible with disconnected Sense Pin's
Output Power	50 W
Efficiency	$> 85\%$ @ U_{Nom}

Ambient Characteristic:

Ambient Temperature	-40 to +85°C, Class TX according DIN EN50155
Relative Humidity	max. 95%, with timely condensing (in combination with Option: -1: Coating)
Cooling	Ext. Forced Cooling / e.g. Fan Level below Module Carrier
Derating	without external cooling from +50°C / 2,5% per 1°C
Protection	Input Current = Fuse 6,3 AT; Reverse polarity protection at the Input; OVP at the Output = $U_A + \text{Tol.} + 10\%$

EMC-Emission:

Conductive	according DIN EN 50121-3-2
Radiated	according DIN EN 50121-3-2

EMC-Immunity:

Transient / Surge	1,8 kV according DIN EN 50121-3-2	12 Ω
Burst	2 kV according DIN EN 50121-3-2	
Electro Magnetic Field	20 V/m according DIN EN 50121-3-2	

Insulation Test:

Input to Ground	1500 V_{eff} 1 min.
Output to Ground	1500 V_{eff} 1 min.
Input to Output	1500 V_{eff} 1 min.
Creeping distance	$> 2,5 \text{ mm}$ according DIN EN 50124 PD3

Shock- and Vibration:

Vibration reliability	acc. DIN EN 50155 and EN 61373
Frequency Range	5-150 Hz
Transfer Frequency	8 Hz
Amplitude Acceleration Below of the Transfer Frequency	2 mm
Amplitude Acceleration Above of the Transfer Frequency	5 m/s^2
Shock Reliability	50 m/s^2 all 3 Axis acc. DIN EN 61373 (extended)
MTBF	$> 750.000 \text{ h}$ @ 40°C

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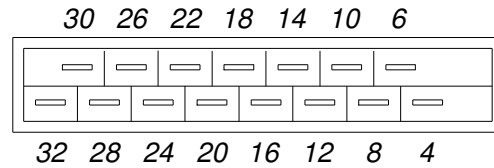
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Signal:

Optical Signals	LED's (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	2 mm Test Contacts at the Front panel

Pin Assignments:



Connection Characteristics:

Connector	H15 DIN 61612; rear side
Pin Assignments	see Table 1

Mechanical Characteristic:

Dimension	19"-Alu Cassette, 3U, 7 TE
Weight	385 g
Protection	IP 20

Warranty Time

24 Month

Order Code

DCDC50-24-5

Options:

-1	Formal Coating add. Glued components
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Table 1:

Pin	Function	Abbreviation
4	Not connected	N.C.
6	Sense positive	S+
8	Not connected	N.C.
10	Output Voltage positive	$U_A +$
12	Output Voltage positive	$U_A +$
14	Output Voltage negative	$U_A -$
16	Output Voltage negative	$U_A -$
18	Sense negative	S-
20	Remote ON/OFF	Inhibit E/A
22	Not connected	N.C.
24	Input Voltage negative	$U_E -$
26	Input Voltage negative	$U_E -$
28	Input Voltage positive	$U_E +$
30	Input Voltage positive	$U_E +$
32	Protective Earth	PE

