

MPF 048 1K01

DC/DC CONVERTER

Description

This converter is designed to supply control equipments in locomotives. It is possible to adjust output voltage from 5 VDC to 24 VDC with an external potentiometer.

Input Specifications

Product reference	MPF 048 1K01
Nominal input voltage	72 VDC
Input voltage range	50 to 90 VDC
Input transients voltage	43 VDC during 100 ms 101 VDC during 1 s
Reverse input voltage protection	Yes, by reverse diode + external micro circuit breaker
Inrush current limitation	Yes, by NTC

Output Specifications

Product reference	MPF 048 1K01
Nominal output voltage	From 5 to 24 VDC
Output voltage ripple p-p (WB 0 to 30 MHz)	< 100 mV
Nominal output current	2 A
Crossed regulation (load + line)	< 5%
Nominal output power	48 W
Efficiency	70% under 5 VDC 80% under 24 VDC
Thermal protection	No
Switching frequency	> 50 kHz, fixed
Output current limitation	< 1,2 I nominal
Overvoltage protection	No
Permanent short circuit protection	Yes

Environmental Details

Product reference	MPF 048 1K01
Operating temperature range	-25°C to +70°C
Derating	No
Storage temperature range	-40°C to +85°C
Temperature coefficient	< $2 \cdot 10^{-4}$ /°C
Relative humidity at 40°C	95%
Cooling	Natural convection
Insulation resistance	> 100MΩ, 500 VDC (Input / Output)
Dielectric strength	2 100 VDC (Input / Ground)
MTBF (UTE C 80-810)	> 1 000 000 h at 40°C
Coating	PCB coated with varnish
Protection index	IP 20

Applicable Norms

Item	Reference	Level	Compliance
Conducted emissions	EN 55011	A	X
Electrostatic discharges	EN 61000-4-2	6 kV contact	X
Radiated immunity. Magnetic field	EN 61000-4-3	20 V/m	X
Fast transients	EN 61000-4-4	2 kV	X
Burst commun mode and differential mode	EN 61000-4-5	2 kV	X
Radiated immunity. Inductive magnetic field	EN 61000-4-6	3 Vrms	X
Railway	EN 50155		X
Salt spray test	EN 68000-2-11		X
Damp heat test	EN 68000-2-30		X
Cold test	EN 68000-2-1		X
Dry heat test	EN 68000-2-1		X

Mechanical Characteristics

Product reference	MPF 048 1K01
Box material	Extruded in aluminium
Potting	No
Dimension	120 x 130 x 40 mm
Weight	450 g
Fixing	2 x Ø7 mm
Input connector	Faston
Output connector	Faston

Technical Drawing

- NOTES
1. All dimensions in mm
 2. Specifications subject to change without notification

