



# 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 m V
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	< 2.10 <sup>-4</sup> /°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 common 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

- All dimensions in mm
- Specifications subject to change without notification

