



DESCRIPTION

Isolated dc/dc converter for railway rolling stock applications, according to EN50155

FEATURES

- High input voltage range
- High temperature range
- High reliability
- High input-output isolation
- Input OK LED
- Output OK LED
- Input protected against reverse polarity
- Remote sensing for outputs 1 and 2

INPUT

DC input voltage	72 / 110Vdc
DC input voltage range	50.4 ... 154Vdc
Maximum input current	<3.5A
Inrush current	< 60A
Efficiency	> 85%

OUTPUT

	1	2	3	
Output voltage	5	3.3	12	V
Voltage tolerance	3	3	3	±%
Maximum continuous current (Io)	13	15	3	A
Maximum overload current	16	18	12.5	A
Line regulation	0,5	0,5	0,5	%
Load regulation	1	1	1	%
Cross regulation	1	1	0.5	%
Temperature regulation	0.02	0.02	0.02	%/°C
Dynamic regulation	10	10	10	%
Regulation time	0.5	0.5	0.5	ms
Ripple	50	50	50	mVpp
Noise (BW 20MHz)	100	100	100	mVpp
Max. overvoltage protection	6.8	4.6	---	V
Max. remote sense	0.6	0.6	---	V
Starting delay time	300	300	300	ms
Hold-up time	10	10	10	ms

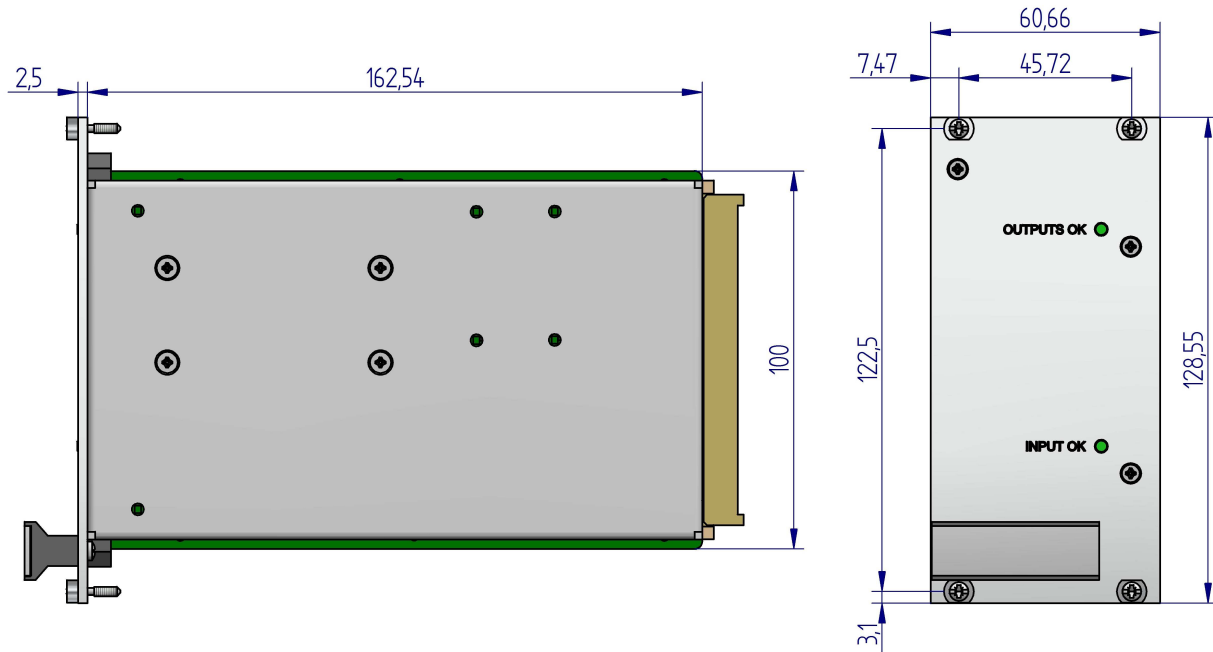
Total Output power (Po): 150,5W
Outputs reference: Outputs referenced to 0 common

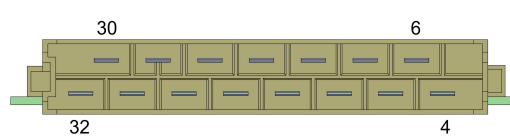
ENVIRONMENTAL

Storage temperature	-40...85°C
Operating temperature range	-25...80°C at full load
Cooling	Natural convection
Vibration	EN61373 Category 1 class A body mounted
Shock	EN61373 Category 1 class A body mounted
M.T.B.F.	600.000 h according to MIL-HDBK-217F GB 40°C
Service life	15 years
Fire and smoke regulations	NFF16-101, NFF16-102
Environmental regulations	RoHS according to directive 2002/95/EC

MECHANICAL

Mechanical shape	Euro cassette
Dimensions	3U 12Te Depth 160mm
Connections	DIN 41612 H15



	4	+V1
	6	+V1
	8	+V2
	10	+V2
	12	+sensing 1
	14	-sensing 1
	16	+sensing 2
	18	-sensing 2
	20	0V Common
	22	0V Common
	24	0V Common
	26	+V3
	28	PE (protective earth connected to the case)
	30	+Vin
32	-Vin	

EMC

Emission according to norm/s EN50121-3-2

TEST	NORM	PORT	FREQUENCY	LIMITS
Radiated emissions	EN55011	Case	30MHz-230MHz	40dB(µV/m) Qpk at 10m
			230MHz-1GHz	47dB(µV/m) Qpk at 10m
Conducted emissions	EN55011	Input	150kHz-500kHz	99dB(µV) Qpk
			500kHz-30MHz	93dB(µV) Qpk

Immunity according to norm/s

EN50121-3-2

TEST	NORM	PORT	SEVERITY	CONDITIONS	CRIT.
Radiated high-frequency	IEC61000-4-3	X/Y/Z Axis	20V/m	80...1000MHz M. 80% 1kHz	A
		X/Y/Z Axis	10V/m	1G...2GHz M. 80% 1kHz	A
		X/Y/Z Axis	5V/m	2G...2.7GHz M. 80% 1kHz	A
Conducted RF	IEC61000-4-6	Input	10V	0.15...80MHz M. 80% 1kHz	A
		Output	10V	0.15...80MHz M. 80% 1kHz	A
		Signal	10V	0.15...80MHz M. 80% 1kHz	A
Electrostatic discharge	IEC61000-4-2	Case	±8kV	Air (isolated parts)	B
		Case	±6kV	Contact (conductive parts)	B
Fast transients	IEC61000-4-4	Input	±2kV	Tr/Th: 5/50 ns	A
		Output	±2kV	Tr/Th: 5/50 ns	A
		Signal	±2kV	Tr/Th: 5/50 ns	A
Surges	IEC61000-4-5	L to L	±1kV	Tr/Th: 1.2/50µs	B
		L to PE	±2kV	Tr/Th: 1.2/50µs	B

SAFETY

Safety according to norm/s EN60950 Class I
 Dielectric strength Input/Output 3000Vac
 Dielectric strength Input/PE 1500Vac
 Dielectric strength Output/PE 500Vac

PROTECTIONS

Output/s protected against overloads and shortcircuits
 Input protected against reverse polarity
 PCB conformal coated.

BLOCKS DIAGRAM

