

BENNING

World Class Power Solutions



TEBECHOP

DC / DC Converter



TEBECHOP

Switch Mode DC-Converter

I. General

This range of Switch mode DC-DC-Converters has been developed to convert voltages from a central 110 V DC or 220 V DC battery power source to 24, 48 or 60 V DC.

The DC / DC Converters are used for decentralised 24 V systems in Power Stations and 48 V telecommunication loads.

II. Salient features

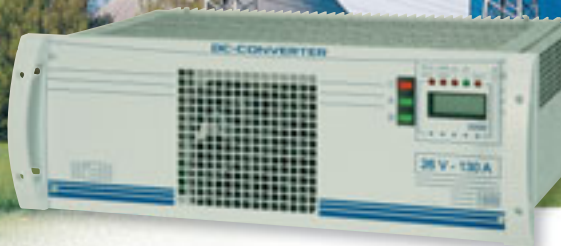
- Output characteristic IU
- Efficiency $\geq 90\%$
- Radio interference level B (EN 50022)
- Ripple $\leq 1\%$ pp (post smoothing, if required)
- Excellent transient response
- Short-circuit current $2 \times I_{Nom}$.

III. Function

Basic components of the DC / DC Converter are Mosfet transistors which convert the DC input to high frequency AC and a transformer to give galvanic isolation and the required output voltage. The rectification is achieved using high speed diodes. A special choke reduces the ripple of the output voltage to $\leq 1\%$ pk to pk.

The DC Converter is equipped with a microprocessor sub-assembly for control and monitoring, it also has an interface for remote communications with the MCU 2500.

The graphic LCD in the front panel indicates current, voltage, data address, as well as the operating status of the system. Operation and fault indicators are available on the front panel.



DC-Converter 26 V - 130 A



DC-Converter 26 V - 65 A

IV. Application

As described earlier DC / DC Converters are often used in power stations and sub stations to supply decentralised control systems. Redundancy is available by connecting several DC / DC Converters in parallel. Each Converter is fitted with a diode in the output to avoid feedback of a fault into another parallel running Converter.

To increase the short circuit current of the system, a capacitor bank can be connected to the output. With this solution the fuse tripping time can be shortened to clear downstream faults.

The capacitor bank, as well as input and output fuses will be built into a steel cabinet.

As an option, the unit can be equipped with a front door. The door is available with a Plexiglas window to allow monitoring of the units operation and status. If the MCU monitoring unit is used, the unit is integrated into the front door.

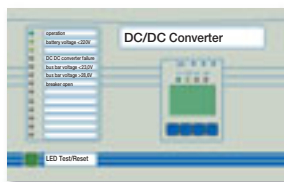
The cabinet protection is IP 20. The standard finish is a powder coating in RAL 7035.

The DC / DC Converter systems are suitable for telecommunication loads as the output meets all industrial regulation and requirements.

The required frequency weighed noise voltage of 2 mV by 800 Hz is achieved as well as the EMV requirements to EN 55011.

Supervisory equipment with visual display:

- DC overvoltage/undervoltage switch off at the input and output
- DC undervoltage at the input and output
- Overload and short circuit monitoring option with delayed switch-off
- Temperature monitoring with advance warning at 90 degrees C and automatic switch-off when heat sink temperature reaches 110 degrees C. (Unit automatically switches on after cool down)
- Common alarm via potential free contacts
- All alarms are transmitted to the interface via the internal bus



MCU 2500
display and operation unit

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Switch Mode DC-Converter

V. Technical Data

Input voltage	110 V + 20 % - 15 % 220 V + 20 % - 15 %	Operating conditions	environmental temperature 0 °C to + 40 °C rel. air humidity max. 75 % max. altitude 1000 m over NN
Max. allowable ripple	10 % pp	Dimensions	19" plug-in (see typetable)
Nominal direct current	see typetable	Weight	see typetable
Nominal output voltage	see typetable	Finish	front panel RAL 7035
Voltage stability	± 1 % over the total load range		
Setting range	± 5 %		
Voltage ripple	≤ 1 % pp		
Nominal output current	see typetable		
Short circuit reaction	short circuit proof		
Efficiency	≥ 90 %		
Fuse protection	external only		
Instruments	switchable digital instrument for output voltage and output current		
Connection	input voltage via plug output voltage via 8 mm thread bolt		

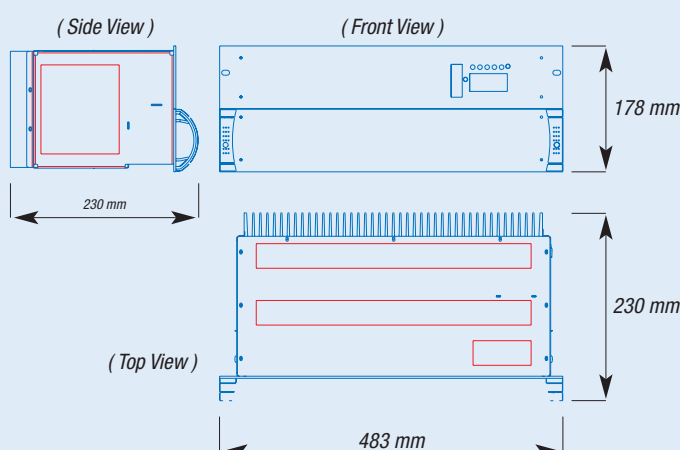


Tebechop cabinet, (Open)

Typetable

Input Voltage	Input Current	Output Voltage	Output Current	Output Power	Dimensions H x W x D	Weight	Type
(V)	(A)	(V)	(A)	(W)	(mm)	(kg)	
110	17	26	65	1680	178 x 483 x 230	10,2	G 110 G 26/ 65 Wr-PCE
110	15/16	48/60	25	1500	178 x 483 x 230	10,2	G 110 G 48-60/ 25 Wr-PCE
220	8,5	26	65	1680	178 x 483 x 230	10,2	G 220 G 26/ 65 Wr-PCE
220	8,5/10	48/60	30	1800	178 x 483 x 230	10,2	G 220 G 48-60/ 30 Wr-PCE
220	17	26	130	3360	178 x 483 x 230	10,2	G 220 G 26/ 130 Wr-PCE

Dimensions Diagram



Electronic Fuse ES 32

To effectively size and design an emergency power distribution unit, selectivity is one of the most important factors to be considered. This means that a selectively operating protection system with a clear grading has to be available. For this purpose we have developed the "Electronic Fuse ES 32".

For further information, please order leaflet ES 32.




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