

Power Safety

DC 500

Modular Switch-Mode DC/DC Converter
designed for Industrial and Railway applications
Output Rating from a single Converter 20 A (at 24 Vdc)

Application

The DC 500 is a DC/DC-Converter converting 110 V DC to 24 V DC with an output current of 20 A. It is especially designed for applications with high demands on ambient temperature and vibration. In industrial applications the DC 500 is used as a converter for supplying the control technology system in power stations, the secured DC power in combination with a parallel battery, and the supply of DC-consumers. In railway applications the DC 500 is used as an onboard power supply in rail vehicles.

Compact 19" technology

With this compact design as a 19" plug-in module with a width of 17 horizontal pitches (HP) and a height of 6 height units (HU) it is easy to build up n + 1 redundant systems in a very small space.

Key features

- Input blocking diode
- Output coupling diode for selective monitoring
- Suitable for operation at - 30 °C up to + 70 °C (with de-rating from 55 °C)
- Vibration resistance in accordance with EN50155 part 10.2.11
- Easy mounting and installation
- Compact design and low weight
- Wall mounted design available as an option
- Resistant to sustained short circuit
- CE-compliant
- ISO 9001 certified



SPECIFICATION

TYPE DC 500	110 V / 24 V / 20 A G110 G24/20 Wrg-Cüx
Part Number	300000211
INPUT	
Nominal input voltage	110 Vdc + 25 % / - 30 %
Current consumption	5.3 Adc
Inrush current	≤ 2 x Nominal input current
Required mains fuse	gL 10 A
OUTPUT	
Output Voltage	24 Vdc ± 2 % static, ± 5 % dynamic
Setting range	20 to 28 Vdc
Output current	20.83 Adc ± 2 %
Voltage ripple	≤ 100 mVpp
Efficiency	88 %
Dynamic behaviour	≤ 5 % for sudden changes in load between 10 % - 90 % - 10 % of rated output current (correction rate t < 5 ms)
Short circuit response	resistant to sustained short circuit
Parallel operation	load sharing approx. 20 % with inclined characteristic curve
Characteristic line	IU- characteristic to DIN 41772 / DIN 41773
MONITORING AND INDICATION	
Mains monitoring	Under-voltage with switch-off, self-acknowledging
Response value	OFF/ON 70/77 Vdc
Response value	Over-voltage with switch-off, self-acknowledging OFF/ON 145/140 Vdc
Output monitoring	DC-Under-voltage with no Switch-off, self-acknowledging
Response value	24 Vdc
Setting range	OFF/ON 21/22 Vdc
Response value	DC-Over-voltage with switch-off, and locking 26.5 Vdc
Monitoring	Over-temperature with de-rating from + ≤ 55 °C with 10 W per °C Integrated coupling-diode for selective monitoring LED green "Function"; LED red "Failure"
External Function	Central fault alarm via potential free change over relay contact; External ON/OFF via 110 V DC Signal
MECHANICAL	
Design	19"- plug-in module for installation in sub-frame to DIN 41494
Ingress Protection	IP 20
Mechanical strength and vibration resistance	To EN50155 part 10.2.11
Equipment colour	RAL 7032 (front panel)
Dimensions W x H x D (mm)	86 x 233.4 x 163 (19" 17TE x 6 HE)
Weight	Approx. 3.5 Kg
Connection for all cables	Plug with connector and spring cage terminal (supplied with the unit)
ENVIRONMENTAL	
Type of cooling	Natural air cooling
Operating temperature range	- 30 °C to + 70 °C, (with derating from + 55 °C with 10 W pro °C)
Storage temperature	- 40 °C to + 85 °C
Environmental conditions	EN60721 part 3-5 class 5K3 / 5F / 5B1 / 5C2 / 5S2 / 5M2 with double insulated PCB
Installation height	Up to 2000 m above sea level at nominal load
STANDARDS	
Interference emission	EN61000-6-4
Interference resistance	EN61000-6-2
Approvals	CE
Certification	ISO9001

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