

AEG

Power supply systems

DC 3000 CAN

Modular Switch-Mode DC/DC Converter designed for Industrial applications

**Output Rating from a single Converter:
100 A (at 24 Vdc)**



Application

The DC 3000 is a DC/DC-Converter converting either 110 Vdc or 220 Vdc to 24 Vdc with an output current of 100 A.

Applications include: 24 Vdc voltage for supplying the control-technology systems in nuclear and non-nuclear power stations, the chemical industries and power substations. The switch-mode power supply units are normally fed from the secure 110 V or 220 Vdc supply (high operating reliability).

Compact 19" technology

The switch-mode power supply unit is a pre-wired unit supplied ready for installation. The connections

are accessible from the front panel. Programming is simple with the controls and indicators installed on the front panel. It is designed as a compact 19" module of 4 height units. Consequently, redundant systems can be set up even when there is very little space available by connecting the units together in parallel using the n+1 principle.

Communication

The unit offers full functionality in stand-alone mode but can additionally be controlled and monitored via the digital CAN-BUS which is immune to interference.



>> DC 3000

Operating principle

The unit is supplied with DC voltage. From this, transistors generate an AC voltage of 75 kHz. Transfer devices are used for electrical isolation as well as adaptation of the voltage to the secondary side.

The high-frequency AC voltage is then rectified by means of rapid-acting diodes. An output filter is installed to reduce the voltage ripple. The output voltage and current are controlled by pulse-width modulation of the transistor switch on the primary side.

Key features

- Compact 19" design
- N + 1 parallel redundant systems can be provided due to the compact design as a 19" plug-in module with 4 height units
- Low inrush current
- High power density
- High efficiency
- Low voltage ripple
- Resistant to sustained short circuit
- Communication capable (CAN-Bus)

SPECIFICATION

TYPE DC 3000 CAN	110 V/24 V / 100 A G 110 G 24/100 Wrug-Cpü	220 V/24 V / 100 A G 220 G 24/100 Wrug-Cpü
Part number	300 000 0061	300 000 0117
INPUT		
Nominal input voltage	110 Vdc + 37 % - 15 %	220 Vdc + 30 % - 15 %
Inrush current	≤ rated input current	
Required mains fuse	gl 40 A	gl 25 A
OUTPUT		
Stromaufnahme	26.3 Adc	12.7 Adc
Output voltage (U1)	26.0 Vdc ± 1 %	
Output voltage (U2)	25.5 Vdc ± 1 %	
Output voltage (U3)	24.0 Vdc ± 1 %	
Output voltage (U4)	28.0 Vdc ± 1 %	
Setting range (U1 - U4)	20 to 28 Vdc	
Output current (I1 - I4)	100 Adc ± 2 %	
Setting range (I1 - I4)	5 to 100 Adc	
Efficiency, total	app. 90 %	app. 93 %
Voltage ripple	≤ 50 mVpp	
Interference voltage to CCITT	≤ 1.8 mV	
Dynamic response	≤ 5 % for sudden changes in load between 10 % - 90 % - 10 % rated output current (compensation time t < 1 ms)	

Short-circuit response	resistant to sustained short circuit, 2 x rated output current for 1s thereafter 1 x rated output current
Parallel operation	load sharing approx. 10 % with inclined characteristic line; when connected to CAN-Bus (max. 26 units) load sharing approx 1 %
Characteristic line	IU- characteristic line to DIN 41772 / DIN 41773

MONITORING AND INDICATION

Mains side monitoring	Under-voltage with switch-off, self-acknowledging
Response value	ON/OFF 93/85 Vdc ON/OFF 185/170 Vdc
Over-voltage with switch-off, self-acknowledging	
Response value	ON/OFF 150/160 Vdc ON/OFF 287/290 Vdc
Output-side monitoring systems	Over-temperature with switch-off
with LED control	Under-voltage with switch-off and self-holding response value 22.8 Vdc Over-voltage with switch-off an self-holding response value 29.0 Vdc
Indicators	mains power available, operating and fault message via LED; UA and IA via LCD- indicator
External functions	central fault signal via potential-free relay contact; external ON/OFF; external sensor lead for output voltage UA; selection 2. / 3. / 4. U - characteristic line; external value setting 0 – 4 Vdc for UA and IA with indication through LCD display; external value setting via CAN interface

MECHANICAL

Design	19" plug-in module for installation in sub-frame to DIN 41494
Ingress protection	IP 20
Mechanical strength and vibration resistance	to EN 50178 section 9.4.3.2
Equipment colour	RAL 7032 (front panel)
Dimensions W x H x D (mm)	483 x 177 x 270 (19" x 4 HU)
Weight	14.8 Kg
DC-Output conductor	M8
Earth conductor	M6
Mains connection	Phoenix-plug type HDFKV 10-VP
Communication	plug type MCVW 1.5 / 14 -ST- 3.81; supplied with unit

ENVIRONMENTAL

Type of cooling	Natural air cooling
Operating temperature range	0 °C to 45 °C (measured below the switch-mode power supply unit)
Storage temperature range	- 20 °C to + 70 °C
Environmental conditions	IEC 721 part 3 - 3 class 3K3/3Z1/3B1/3C2 /3S2 /3M2
Installation height	up to 1000 m above sea level at nominal load

STANDARDS

Interference emission	EN 61000-6-4
Interference resistance	EN 61000-6-2
Low voltage function with safe disconnection	EN 60590 -1
Approvals	CE
Certification	ISO9001



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