

Power Safety

DC 3000 CAN

Modular switch-mode converter
designed for industrial applications



Output rating from a single converter:
100 A (at 24 Vdc)



PERFECT IN FORM AND FUNCTION

AEG

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Application

The DC 3000 from AEG Power Solutions 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.

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
- High power density
- High efficiency
- Low voltage ripple
- Low inrush current
- Resistant to sustained short circuit
- Communication capable (CAN-Bus)
- Single mode or parallel mode also without CAN-Bus
- CE-compliant



TYP DC 3000 CAN		110 V/24 A/100 A	220 V/24 V/100 A
Type designation		G110 G24/100 Wrug-Cpü	G220 G24/100 Wrug-Cpü
Order-number		3 000 000 061	3 000 000 117
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			
Current consumption		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 < 5 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, load sharing approx 5 %	
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
Response value		Over-voltage with switch-off, self-acknowledging	
Response value		ON/OFF 150/160 Vdc	ON/OFF 290/300 Vdc
Output-side monitoring systems with LED control		Over-temperature with switch-off	
		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 via potential-free relay contact; 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	

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MECHANICAL		
Design	19" plug-in module for installation in sub-frame to DIN 41494	
Degree of protection	IP 20	
Mechanical strength and vibration resistance	to EN 50178, section 9.4.3.2	
Equipment colour	RAL 7035 (front panel)	
Dimensions W x H x D (mm)	483 x 177 x 270 (19" x 4 HU)	
Weight (kg)	14.8	
DC-Output conductor	thread bolt M8	
Earth conductor	thread bolt 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	0 °C bis 45 °C, (measured below the switch-mode power supply unit)	
Storage temperature	-20 °C to 70 °C	
Environmental conditions	EN 60721 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	ISO 9001	

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