

Power Safety

AC 3000 CAN

Modular switch-mode rectifier
designed for industrial applications



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



PERFECT IN FORM AND FUNCTION

AEG

Power Safety

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Applications

For all Industrial applications. Provides secured DC power in combination with a parallel battery, for supply of all types of DC consumers including constant voltage and current sources.

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.

Its boasts a compact design as a 19" module with a height 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.

Easy operation

The switch mode power supply is a pre-wired unit. The connections can be easily accessed from the front panel. Programming is simple thanks to the controls and indicators which are installed on the front panel.

Operating principle

The single phase alternating mains voltage is converted to a smoothed DC voltage taking account of sinusoidal current consumption. This allows it to achieve a power factor of > 0.99 . From this, transistors generate an AC voltage of 100 kHz. With the assistance of transformers, potential separation and the voltage adjustment are on 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 weight
- High power density
- Sinusoidal input current
- High efficiency
- Low inrush current
- Outstanding dynamic response
- Low voltage ripple
- Temperature compensated battery charging
- Resistant to sustained short circuit
- Communication capable (CAN-BUS)
- Stand-alone mode even without CAN-BUS
- Illuminated LCD-display

TYPE AC 3000 CAN	24 V/100 A E 230 G 24/100 BWFrg-Cpü
Part number	3 720 51 03
INPUT	
Nominal input voltage	230 Vac \pm 15 %
Frequency	47–63 Hz
Current consumption	13.4 Aac
Inrush current	\leq rated input voltage
Required mains fuse	gl 16 A
OUTPUT	
Output voltage	
Maintenance charge (U1)	26.76 Vdc \pm 1 % (2.23 V/cell)
High-power charge (U2)	28.8 Vdc \pm 1 % (2.40 V/cell)
Battery test (U3)	22.2 Vdc \pm 1 % (1.85 V/cell)
Setting range (U1–U3)	20–30 Vdc
Output current (I1–I3)	100 Adc \pm 2 %
Setting range (I1–I3)	5–100 Adc
Output voltage (U4)	31.8 Vdc \pm 1 % (2.65 V/cell)
Setting range (U4)	20–32.4 Vdc
Output current (I4)	50 Adc \pm 2 %
Setting range (I4)	5–80 Adc
Number of battery cells lead acid (Nickel cadmium on request)	12
Efficiency, total	88 % with 30 V/100 A; 91 % with 30 V/40 A (part load)
Voltage ripple	\leq 50 mVpp
Interference voltage to (CCITT)	\leq 1.8 mV
Power factor	0.99
Dynamic response	\leq 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, 1 x rated output current
Parallel operation	31 units when connected to CAN-BUS, load distribution approx. 5 %
Characteristic line	IU characteristic to DIN 41772/DIN 41773
MONITORING AND INDICATION	
Mains-side monitoring	Over/under-voltage with switch-off, self acknowledging
Output-side monitoring systems	Excess temperature with automatic power reduction
With LED display	DC under-voltage without shut-off, auto-acknowledgement; DC over-voltage with shut-off and locking
Indicators	Mains power available, operating and fault message via LED; UA and IA via LCD indicator
External functions	Group fault message via floating relay contact; ON/OFF via external floating contact; external sensor cables output voltage UA; temperature-dependent voltage control with optionally available active sensor; selection of 2 nd /3 rd /4 th U characteristic line; ex. Set-point specification 0 to 4 Vdc for UA and IA with LCD indicator; ex. Set-point specification via CAN interface

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TYPE AC 3000 CAN	24 V/100 A E 230 G 24/100 BWFrg-Cpü
MECHANICAL	
Design	19" plug-in module for installation in subframe to DIN 41494
Ingress 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	17.7 kg
DC output	Thread bolt M8
Conductor	Thread bolt M6
Mains connection	Angle plug type GDM 2010, supplied with unit
Signal interface	Plug typ 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, 0 °C to 40 °C when installed in cabinet
Storage temperature range	-20 °C to +70 °C
Environment conditions	EN 60721 part 3-3 class 3K3/3Z1/3B1/3C2/3S2/3M2
Installation height	Max.1000 m above sea level, at nominal load
STANDARDS	
Interference emission	To EN 61000-6-4
Interference resistance	To EN 61000-6-2
Low voltage function with safe disconnection	To EN 60950-1
Approvals	CE
Certification	ISO9001

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