

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

AC 3000 CAN

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 |

AC 3000 CAN

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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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