

# Power Safety

## AC 2000

Modular switch-mode rectifier  
designed for industrial applications

**Output Rating from a single rectifier:**  
65 A (at 24 Vdc)  
15 A (at 106 Vdc)

### Application

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 as well as on-board power supplies for rail vehicles and ships as well as power supply to telecommunications systems.

### Compact in 19" technology

The switch-mode power supply unit operates according to an IU characteristic line to DIN 41772/DIN 41773. It is a pre-wired unit supplied ready for installation. The connections are accessible from the front panel. The controls and display elements are installed at the front of the unit. Due to its high efficiency, it is designed as a compact 19" plug-in module of 4 height units. It is fully equipped for installation in sub-racks to DIN 41494.

### Operating principle

The single phase mains AC voltage is transformed to smoothed DC voltage for 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, the potential separation and the voltage adjustment take place at 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 design and low weight
- Low mounting depth
- High power density
- Low inrush current
- Sinusoidal input current
- High efficiency
- Low voltage ripple
- Resistant to sustained short circuit
- Excellent dynamic response



# AC 2000: Specification

TYPE AC 2000 CAN	24 V/65 A E230 G24/65 BWrg-Cü	106 V/15 A E230 G106/15 BWrg-Cü
Part number	37204101	37204301
<b>INPUT</b>		
Nominal input voltage	230 Vac + 10 % - 15 %	230 Vac + 10 % - 15 %
Current consumption	8.8 Aac	8.8 Aac
Frequency	47-63 Hz	47-63 Hz
Inrush current	≤ rated input current	
Required mains fuse	gL 16 A	
<b>OUTPUT</b>		
Output voltage	26.8 Vdc ± 1 %	118.2 Vdc ± 1 %
Setting range	22-29 Vdc	105-135 Vdc
Output current	65 Adc ± 2 %	15 Adc ± 2 %
Setting range	40-65 Adc	10-15 Adc
Voltage ripple	≤ 20 mVPP	≤ 20 mVPP
Number of battery cells lead acid (Nickel cadmium on request)	11-12	53-55
Power factor	0.99	0.99
Efficiency total (%)	86.5	88.5
Interference voltage to CCITT	≤ 1.0 mV	
Dynamic response	≤ 5 % for sudden changes in load between 10 % - 90 % - 10 % rated output current (compensation time t < 1 ms)	
Short circuit response	Permanent proof against short circuit, 1 x rated output current	
Parallel operation	Number unlimited, load sharing approx. 10 %	
Characteristic line	IU characteristic to DIN 41772/DIN 41773	
<b>MONITORING AND INDICATION</b>		
Mains-side monitoring systems	Over/under-voltage with switch-off, self-acknowledging	
Output-side monitoring systems	Over-temperature with switch-off, self-acknowledging	
with LED indication	DC under-voltage without switch-off, self-acknowledging, DC over-voltage with switch-off and self-holding	
Indicators	LED operation; internal/external set value by LED, UA and IA via analogue measuring instruments	
External functions	Central fault signal via potential-free relay contact, ON/OFF via external potential-free contact; external sensor lead for output voltage UA, external setting 0 to 4 Vdc for UA or IA with LED indication	
<b>MECHANICAL</b>		
Design	19" module for installation in sub-frame to DIN 41494	
Ingress protection	IP 20	
Mechanical strength and vibration resistance	To EN 50178	
Equipment colour	RAL 7035 (front panel)	
Dimensions W x H x D (mm)	483 x 177 x 206 (19" x 4 HU)	483 x 177 x 206 (19" x 4 HU)
Weight	11.8 kg	11.8 kg
DC-output bolt-terminal	M8	M6
Earth bolt-terminal	M6	M6
Mains connection	Angle plug type GDM2011, supplied with unit	
Signal interface	Plug type MCWW 1.5/14-ST-381, supplied with unit	
<b>ENVIRONMENTAL</b>		
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	- 30 °C to + 70 °C	
Environmental conditions	EN 60721 part 3 - 3 class 3K3/3Z1/3B1/3C2/3S2/3M2	
Installation height	Max. 1000 m above sea level at nominal load	
<b>STANDARDS</b>		
Interference emission	EN 61000-6-4	
Interference resistance	EN 61000-6-2	
Low voltage function with safe disconnection	EN 60950-1	
Safe electrical disconnection	EN 50178 EN 60950-1	
Approvals	CE	
Certification	ISO9001	

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PERFECT IN FORM AND FUNCTION

**AEG**