Power Safety

AC 7000

Modular switch-mode rectifier designed for industrial applications

Output Rating from a single rectifier:

220 A (at 24 Vdc) 125 A (at 48 Vdc) 60 A (at 106 Vdc)

30 A (at 212 Vdc)

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 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. The connections can be accessed from the front panel. The controls and display elements are installed on the front of the device. The extremely high level of efficiency means it has a compact structure as a 19" fully featured withdrawable part with 5 or 6 height units. It is prepared for installation in sub racks to DIN 41494.

Operating principle

The unit is powered by three phase AC voltage which is converted into a smoothed DC voltage. Transistors create an AC voltage of 75 kHz from it. Transfer devices are used for electrical isolation as well as adaptation of the voltage to the secondary side. The high frequency AC voltage is rectified using fast diodes. An output filter is installed in order to reduce the voltage ripple. The output voltage and the output current are controlled by pulse width modulation of the transistor switch on the primary side.



Key features

Extremely compact design and low weight

- High power-to-weight ratio
- Low start current
- High efficiency
- High power factor
- · Low voltage ripple
- Resistant to sustained short circuit
- Excellent dynamic characteristics



AC 7000: Specification

## STATE NUMBER ## STATE NUMB	TYPE	D400 G24/220 BWrg-CFü	D400 G48/125 BWrg-CFü	D400 106/60 BWrg-CFü	D400 G212/30 BWrg-CFü
Nominal input voltage 3 x 400 Vac ± 10 % 3 x 10 x 40 vac ± 10 x 47-63 lt ± 57-63 lt ± 47-63 lt ± 57-63 lt ± 57	Part number				
Frequency 47-63 12	INPUT				
Current consumption 3 x 10.5 Auc 3 x 11.5 Auc 3 x 12 Auc 3 x 12 Auc 3 x 12 Auc much current Executed majors (ice) UTPUT	Nominal input voltage	3 x 400 Vac ± 10 %	3 x 400 Vac ± 10 %	3 x 400 Vac ± 10 %	3 x 400 Vac ± 10 %
Instant current	Frequency	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
Required mains fuse 18	Current consumption	3 x 10.5 Aac	3 x 11.5 Aac	3 x 12 Aac	3 x 12 Aac
## STATE ST	Inrush current	≤ rated input current			
Dutput villarge	Required mains fuse	gL 16 A			
Setting range 18-22 Valc 105-125 Valc 115-20	OUTPUT				
Output current 220 Adc ± 2 % 125 Adc ± 2 % 60 Adc ± 2 % 30 Adc ± 2 % Schtling range 150-200 Adc 75-125 Adc 25-60 Adc 17-30 Adc Number of battery cells 11-12 23-24 53-55 106-110 lead acid inckel cadmium on request) 9 1 2 2 2 2 <t< td=""><td>Output voltage</td><td>26.8 Vdc ± 1%</td><td>53.5 Vdc ± 1%</td><td>118.2 Vdc ± 1%</td><td>236.4 Vdc ± 1%</td></t<>	Output voltage	26.8 Vdc ± 1%	53.5 Vdc ± 1%	118.2 Vdc ± 1%	236.4 Vdc ± 1%
Setting angp 150-220 Ade 75-125 Ade 25-60 Ade 17-30 Ade Number of battery cells 11-12 23-24 53-55 106-110	Setting range	18-32 Vdc	35–62 Vdc	105-135 Vdc	180-280 Vdc
Number of battery cells 11-12 23-24 53-55 106-110 lead acid (nickel cadnium on request)	Output current	220 Adc ± 2 %	125 Adc ± 2 %	60 Adc ± 2 %	30 Adc ± 2 %
Ised acid (incket cadmium on request)	Setting range	150-220 Adc	75–125 Adc	25-60 Adc	17-30 Adc
Power factor 0.92 0.94 0.92 0.93 0.93 0.91 91 91 91 91 91 91 91	Number of battery cells	11–12	23-24	53-55	106-110
Principal content Prin	lead acid (nickel cadmium on request)				
Interference voltage to CCITT-A filter Dynamic characteristics \$ 5 % for sudden changes in load between 10 %-90 %-10 % IA/ rated [Settling time t < 10 ms] Short circuit response resistant to sustained short circuit, 1 x rated output current Parallel operation Unlimited number, load distribution approx. 10 % Characteristic line UL characteristic curve to DIN 41772/DIN 41773 MONITORING AND INDICATION Monitoring systems Output-side monitoring systems Operation by LED: set point internal/external by LED; UA and IA with indication by LED MECHANICAL Design 19' fully featured plug-in unit for installation in sub-rack to DIN 41494 Ingress protection IP 20 Mechanical strength and vibration resistance Equipment colour Robustical strength and vibration resistance Equipment colour Michael Systems (19' % 6 HUs) (19' %	Power factor	0.92	0.94	0.92	0.93
Dynamic characteristics \$ 5 % for sudden changes in load between 10 % 90 % -10 % IA rated (settling time t < 10 ms) Short circuit response resistant to sustained short circuit, 1 x rated output current Parallel operation Unlimited number, load distribution approx. 10 % (Characteristic line Unlimited number, load distribution approx. 10 % (Characteristic line Unlimited number, load distribution approx. 10 % (Characteristic line Unlimited number, load distribution approx. 10 % (Characteristic curve to DIN 41772/DIN 41773) MONITORING AND INDICATION Mains-side monitoring systems Phase failure; over-voltage/under-voltage with shut-off, auto-acknowledgement Outputs-side monitoring systems Over-temperature with shut-off, auto-acknowledgement Outputs-side monitoring systems Operation by LED; set point internal/external by LED; UA and IA via analog measuring instruments External functions Group fault message via floating relay contact; external sensor cable output voltage UA; external set point specification 0 to 4 Vdc for UA and IA, with indication by LED MECHANICAL Design 19° fully featured plug-in unit for installation in sub-rack to DIN 41494 (Ingress protection of the Value of UA and IA, with indication by LED MECHANICAL Design 19° fully featured plug-in unit for installation in sub-rack to DIN 41494 (Ingress protection of UA vdc for UA and IA, with indication by LED MECHANICAL Design 19° fully featured plug-in unit for installation in sub-rack to DIN 41494 (Ingress protection of UA vdc for UA and IA, with indication by LED MECHANICAL Design 19° fully featured plug-in unit for installation in sub-rack to DIN 41494 (Ingress protection of UA vdc for UA and IA, with indication by LED MECHANICAL Polity fully featured plug-in unit for installat	Efficiency total (%)	89	91	91	91
Synamic characteristics \$ 5 % for sudden changes in load between 10 % 50 % -10 % IA rated	Interference voltage to CCITT-A filter	≤ 1.0 mV	≤ 1.8 mV		
Parallel operation Unlimited number, load distribution approx. 10 % Characteristic line Ul characteristic curve to DIN 41772/DIN 41773 MONITORING AND INDICATION	Dynamic characteristics				
Parallel operation Unlimited number, load distribution approx. 10 % Characteristic line Ul characteristic curve to DIN 41772/DIN 41773 MONITORING AND INDICATION	Short circuit response				
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Design 19" fully featured plug-in unit for installation in sub-rack to DIN 41494 Ingress protection IP 20		ON/OFF via external floating contact; external sensor cable output voltage UA;			
Design 19" fully featured plug-in unit for installation in sub-rack to DIN 41494 Ingress protection IP 20		externa	al set point specification 0 to 4 Vo	dc for UA and IA, with indication	by LED
Ingress protection	MECHANICAL				
Mechanical strength and vibration resistance EN 50178	Design	19" fully featured plug-in unit for installation in sub-rack to DIN 41494			
Equipment colour RAL 7035 (front panel) Dimensions W x H x D (mm) 483 x 265.9 x 400 (19" x 6 HUs) 483 x 221.4 x 400 (19" x 5 HUs) 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 40.0	Ingress protection				
Dimensions W x H x D (mm)	Mechanical strength and vibration resistance	EN 50178			
(19" x 6 HUs) (19" x 5 HUs	Equipment colour	RAL 7035 (front panel)			
Weight (kg) 32.5 31.5 30.0 30.0 DC output Rail with hole Ø 11 Threaded bolt M10 Threaded bolt M8 Threaded bolt M6 Threaded bolt	Dimensions W x H x D (mm)	483 x 265.9 x 400	483 x 221.4 x 400	483 x 221.4 x 400	483 x 221.4 x 400
DC output Rail with hole Ø 11 Threaded bolt M10 Threaded bolt M8 Threaded bolt M6 Protective conductor M8 thread Threaded bolt M6 Threaded bol		(19" x 6 HUs)	(19" x 5 HUs)	(19" x 5 HUs)	(19" x 5 HUs)
DC output Rail with hole Ø 11 Threaded bolt M10 Threaded bolt M8 Threaded bolt M6 Protective conductor M8 thread Threaded bolt M6 Threaded bol	Weight (kg)	32.5	31.5	30.0	30.0
Mains connection Angle plug type GDME 3013, included in scope of delivery Connector type MVSTBR 2,5/10-ST-5.08, included in scope of delivery ENVIRONMENTAL Type of cooling Operating temperature O °C-45 °C O °C-45 °C O °C-45 °C O °C-40 °C Storage temperature -30 °C to +70 °C Ambient conditions EN 60721 part 3 - 3 class 3K3/3Z1/3B1/3C2/3S2/3M2 Installation altitude 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 60950-1 Safe electrical disconnection EN 50178 EN 60950-1 Approvals	DC output	Rail with hole Ø 11	Threaded bolt M10	Threaded bolt M8	Threaded bolt M6
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Safe electrical disconnection EN 50178 EN 60950-1 Approvals CE					
Approvals CE					
	Certification	ISO9001			

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