



## SP500 SERIES AC-DC SWITCHING POWER SUPPLY



**SP500W Series AC-DC Switching Power Supply**  
(Open Frame or Covered with Cooling Fan Option)  
Single or Multiple Outputs Available

### APPLICATIONS

CME's AC-DC power supply family operates over a universal input range of 85-264Vrms and 47-63 Hz/400 Hz and are suitable for world-wide deployment. Active Power Factor Correction is incorporated to a level >0.98 enabling compliance to IEC/EN61000-3-2. Single and multiple outputs of 48V, 36V, 28V, 24V, 15V 12V to 3.3V are available to facilitate the use of Distributed Power Architectures and battery backup, and to directly drive components such as electronic/electrical modules, fans, motors, pumps, lamps, and actuators.

CME's ruggedized AC-DC and DC-DC converters and filters are designed for a wide range of industrial applications including those required to withstand harsh environments: factory automation and process equipment, industrial motion control, communications equipment, information displays, railway and transportation systems, and power generation systems.

All CME power supplies are module design, high reliability, and high efficiency, flexible and configurable, with wide output voltage adjustment range and can be easily customized to meet the special power and output voltage requirements.

### DESCRIPTION

U.S. power supply developer/manufacturer, CME, a company with a wide range of industrial switching power supplies from 200W to 1800W that can be customized for various industry and military applications, has launched a new industrial power supply series. The 500W, SP500 series power supplies provide various AC-DC switching power supply models from single to quad outputs with standard DC outputs: 3.3V, 5V, 12V, 15V, 24V, 28V and 48V, plus 24 volt fan outputs. All four models accept a universal input of 90 to 264 VAC and have a typical full load efficiency of 84 to 89%.

The CME SP500 series is a modular design with flexible power sharing between outputs. The output power and voltages are configurable according to the customer specific output requirements.

Features include, remote sense and remote inhibit, plus remote power fail and DC power good indication. Standard model comes with building in and top-mounted fan in or on enclosed case.

### KEY FEATURES & BENEFITS

- Universal AC input / Full range, 90 to 264 VAC, Frequency range of 47 to 63 Hz , 400 Hz ( $\pm$  40 Hz)
- Size (L x W x H): 8.0" x 5.0" x 1.75"
- Active Power Factor Correction (PFC) PF >0.95
- Protections: Short circuit / Overload / Over voltage / Over current / Over temperature
- Forced air cooling with option of top mounted fan.
- Output Power: 500W with forced air; 200W convection
- No minimum load required
- Wide output adjustable range
- power on signal output with CH1
- Built-in remote ON-OFF control CH2, CH3, CH4
- Fits 1U Applications
- Wide Operating Temperature: -40 °C to +55 °C
- Safety Compliance: IEC60950-1 CB report, UL60950-1, TUV EN60950-1
- EMI/EMC Compliance: EN55022 (CISPR22) Class A, EN61000-3,-4; -5, Level 3, and MIL-STD-461
- 1 year warranty; subject to application within good engineering practice

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500W AC-DC Switching PS Datsheet 071218(D)

# SP500 AC-DC SWITCHING POWER SUPPLY

## SPECIFICATIONS

		SP500 Product Family								
INPUT	Voltage Range	90 to 264 VAC								
	Frequency Range	47 to 63 Hz , 400 ± 40 Hz								
	Power Factor	PF>0.98/115VAC PF>0.95/230VAC at full load (Typical)								
	Efficiency	84-89% (Typical)								
	AC Current	6A/115VAC 3A/230VAC (Typical)								
	In-rush Current	40A peak @ 230 VAC, cold start @ 25°C (Typical)								
	Leakage Current	<0.5 mA max at 230 VAC/60 Hz								
OUTPUT	OUTPUT NUMBER	Output 1			Output 2			Output 3/4		
	DC Voltage (Note.2)	+28V	+48V	+3.3V	+5V	+12V	+15V	-5V / +5V	-12V / +12V	-15V / +15V
	Rated Current	+18A	+10.5A	+10A	+10A	+4A	+3A	-1A / +1A	-0.4A / +0.4A	-0.3A / +0.3A
	Rated Power	500W total								
	Ripple & Noise (P – P max.) (Note.3)	280mV	480mV	60mV			100mV			
	Voltage Adjustment Range (Note.4)	22.4 - 33.6V	38.4 - 57.6V	+10/- 20%			N/A			
	Line Regulation (max)	+/-1%		+/-1%			+/-1%.			
	Load Regulation (max)	+/-1.5%		+/-1%			+/-1.2%			
	Setup Time, Rise Time	50ms at full load max. 25ms at full load max.								
	Hold-up Time	20ms at full load typical								
PROTECTION	Overload	105 – 140%								
		Protection type : recovers automatically after fault condition is removed								
	Over Voltage	CH1: 125-145% nominal output								
		Protection type : converter shut down output voltage, re-power on to recover								
Over Temperature	+100°C ±5°C Base plate temperature									
	Protection type : Shut down output voltage, recovers automatically after temperature goes down									
ENVIRONMENT	Temperature	Operating: -40 to +55°C ambient; Storage: -50 to +85°C								
	Humidity	Operating: Up to 95% RH non-condensing								
	Vibration	5 to 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC  (Note 5)	Safety Standards	IEC60950-1 CB report, UL60950-1, TUV EN60950-1								
	Withstand Voltage	Input – Output:3KVAC Input -FG:1.5KVAC Output -FG:0.5KVAC								
	Isolation Resistance	Input – Output, Input -FG, Output -FG:100M Ohms / 500VDC / 25°C / 70% RH								
	EMC Emission	Compliance to EN55022 (CISPR22) Class A/ MIL-STD-461, CE102, CS101, CS114, RE102, and RS103								
	EMC Immunity	Compliance to EN61000-3,-4; -5, Level 3								
Signal and logical control	Enable	CH2, CH2&CH3								
	Power good indicator	CH1								
OTHERS	MTBF	>500,000 hours demonstrated at full load and 25°C ambient conditions								
	Dimension	8 in x 5 in x 1.75 in (L x W x H)								
	Weight	2.3 lbs. Approx.								
NOTES	<p>1. All parameters NOT specially mentioned are measured at rated load and 25°C of ambient temperature.</p> <p>2. 12V output series is available, please consult CME customer service.</p> <p>3. With 20MHz of bandwidth and 10 µF (tantalum capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and full load ranges.</p> <p>4. output adjustment set up by manufacturing</p> <p>5. The power supply is considered a component which will be installed into final equipment. The final equipment must be re-confirmed that it still meets EMC directives.</p>									

**ORDER INFORMATION**

Model Ordering Information for SP500 Product Family							
Model Number	Output1	Maximum Load Forced Air	Output2	Maximum Load	Output 3/4	Maximum Load	Fan option
SP500-28XX-X	28 V	18A					
SP500-48XX-X	48 V	10.5A					
For a two output 28V or 48V model, select either A, B, C, or D for Output 2 from list below (e.g., SP500-28DX-X, SP500-48BX-X)							
A			3.3 V	+10A			
B			5 V	+10A			
C			12 V	+4A			
D			15 V	+3A			
For four output models, select A, B, C, or D above, then select Outputs 3/4 as listed below in E, F, or G (e.g., SP500-28DF-X)							
E					-5V / +5V	-1A / +1A	
F					-12V / +12V	-0.4A / +0.4A	
G					-15V / +15V	-0.3A / +0.3A	
Finally, for any model chosen above, select either with or without fan option as noted below (e.g., SP500-48XX-Z, SP500-28DF-Y)							
Y							Without
Z							On top

**NOTE:** The main outputs are 28V and 48VDC for all models. For single output models, either SP500-28XX-X and SP500-48XX-X would be selected leaving "XX" as is, but changing suffix "-X" to either SP500-28XX-Y or SP500-48XX-Z to indicate without or with fan (i.e., Y or Z respectively). For any combination of multiple outputs requirements as selected above, just add the suffix(es) as instructed after SP500-28 or SP500-48. For example, SP500-28AX-Y is a two (2) output power supply without fan; and SP500-28CG-Z, means the power supply will have four (4) outputs: 28V, 12V, and -15V / +15V and come with fan on top. For the multiple output models, the total output power is limited to 500W that the four (4) outputs will share total power 500W. For all models, the fan option is with or without fan (either Y or Z designator in the suffix). The output power and output voltages for each output can be customized, please contact sales at CME: sales@custom-mfg-eng.com.

**Pin Assignments**

<b>J1: AC Input Terminal</b>		<b>J2: DC Output Terminal</b>			
Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment
1	AC Line	1	COM	5	COM
2	AC Neutral	2	COM	6	CH2
3	FG (Chassis)	3	CH1	7	CH3
		4	CH1	8	CH4
<b>J3: Remote Control &amp; Power on signal Terminal</b>					
Pin No.	Assignment				
1	CH1 Power on Signal				
2	CH3&CH4 Enable				
3	CH2 Enable				
4	COM				