

CPA SERIES - 250 WATT

Advanced Product Release

The AC input CPA250-4530 is a hot-swap, CompactPCI® power supply which is fully compliant to the PICMG® 2.11 Power Interface Specification using a standard Positronic 47-pin connector. Extra-high current density using innovative Power-One EDGE technology allows this unit to deliver up to 40 amperes on both the +5 and +3.3 volt outputs at 50°C.

Remote sense and active current share on the +5, +3.3, and +12 volt outputs along with ORing FETs allow these units to be used in redundant, hot-swap applications.

The CPA250-4530 is feature rich, meets international safety standards, and displays the CE Mark for the Low Voltage Directive (LVD).

FEATURES

- Wide Input Range (85-264 VAC)
- Delivers 40A for the +5V and +3.3V Outputs (No Restrictions)
- Single-wire Current Share on Outputs V1, V2, and V3
- Remote Sense on Outputs V1, V2, and V3
- Overtemperature, Overvoltage, and Overcurrent Protection
- Input Good and Power Fail LED Indicators
- Power Fail and Temperature Warning Signals
- Inhibit and Enable Inputs
- Fully Compliant to PICMG® 2.11 CompactPCI® Specification
- Extra-High Current Density in Industry-Standard 3U x 8HP x 160mm Package



AC INPUT MODEL SELECTION CHART

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %pk-pk (NOTE 1)
CPA250-4530	+5V	N/A	40A	0.5%	1%	2%
	+3.3V	N/A	40A	0.5%	1%	2%
	+12V	N/A	5.5A	0.5%	1%	1.3%
	-12V	N/A	1.5A	0.5%	1%	1.3%

NOTES: 1) Maximum peak-to-peak expressed as a percentage of output voltage, 20 MHz bandwidth.

INPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Input Voltage - AC	Continuous input range.	85		264	VAC
Input Frequency		47		63	Hz
Hold-up Time		20			ms
Input Protection	Non-user serviceable, internally-located input line fuse.				
Inrush Surge Current	Internally limited by thermistor and electronic switch.			30	A
Operating Frequency	Switching frequency of main output transformer.	125		145	kHz

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OUTPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full rated load, 115 VAC.	80			%
Minimum Load; V1, V2, V3	Minimum load required to maintain regulation with no load on V4.	None			A
Minimum Load, V3	Minimum load on V3 required to maintain regulation on V4.	50% OF V4 Load			A
Ripple and Noise	Full load, 20 MHz bandwidth.	See Model Selection Chart			
Output Power	250 LFM forced-air cooling.			200	W
Output Power	400 LFM forced-air cooling.			250	W
Overshoot /Undershoot	Output voltage overshoot/undershoot at turn-on.			0	%
Regulation	Varies by output. Total regulation includes: line changes over the specified input range, changes in load starting at 50% load and changing to 100% load.	See Model Selection Chart			
Turn-on Delay	Time required for initial output voltage stabilization.		150		ms
Initial Setting Accuracy			±1		%

INTERFACE SIGNALS AND INTERNAL PROTECTION

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Overvoltage Protection	Latch style overvoltage protection.	120		130	%Vnom
Overload Protection	Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition.				
Overtemperature Protection	System shutdown due to excessive internal temperature, automatic reset.				
Power Fail (FAL#)	TTL compatible signal, open collector active low signal. Indicates any output below 90% and/or a low input <85VAC.				
Current Share	Accuracy of shared current with up to 6 parallel units. Single wire current share on V1, V2, and V3.			10	%
Remote Sense	Available on V1, V2, and V3. Total voltage compensation for cable losses with respect to the main output.			150	mV
Inhibit (INH#)	TTL-compatible signal inhibited with GND or TTL "0".				
Enable (EN#)	Contact closure to external ground to start unit. On shortest pin (last make, first break).				
Overtemperature Warning (DEG#)	Provides warning when power supply temperature exceeds rating. TTL-compatible open.				
Front Panel LED Status Indicators	Input OK (Green), Output Failure (Red).				

SAFETY, REGULATORY, AND EMI SPECIFICATIONS

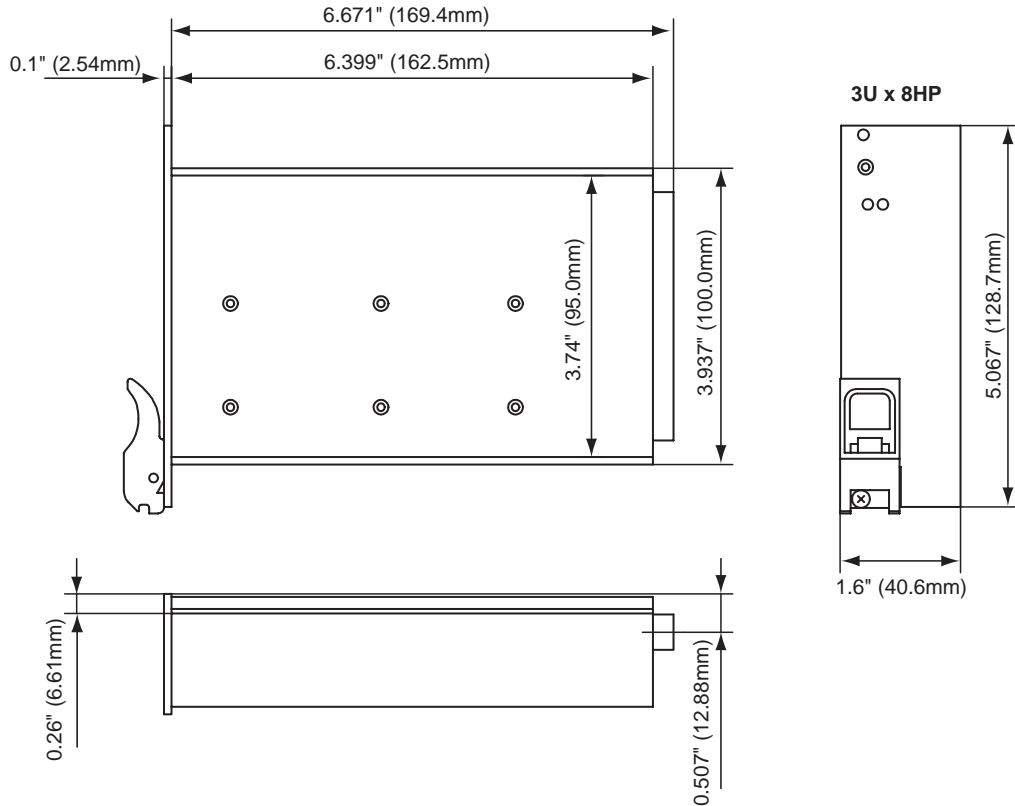
PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Agency Approvals	UL1950. cUL1950. EN60950 (TÜV).		Approved		
Dielectric Withstand Voltage	Input to Output per EN60950.	4243			VDC
Electromagnetic Interference	EN55022 / CISPR 22 - Conducted. Radiated.	A A			Class
ESD Susceptibility	Per EN61000-4-2, level 4.	8			kV
Radiated Susceptibility	Per EN61000-4-3, level 3.	10			V/M
EFT/Burst	Per EN61000-4-4, level 3.	±2			kV
Input Surge	Per EN61000-4-5, level 3.		Line to Line Line to Ground	1 2	kV
Conducted Disturbance	Per EN61000-4-6, level 2.			3	V
Insulation Resistance	Input to Output.		10		MΩ

ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Altitude	Operating. Non-Operating.			10k 40k	ASL Ft. ASL Ft.
Operating Temperature	With 400 LFM forced-air cooling Derate linearly above 50°C by 2.5% per °C.	At 100% load: At 50% load:	0	50 70	°C °C
Storage Temperature			-40	85	°C
Relative Humidity	Non-Condensing.	5		95	%RH
Shock	Peak acceleration.			20	GPK
Vibration	Random vibration, 10 Hz to 2 kHz, 3 axis.			6	GRMS

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OVERALL SIZE: 5.07"H x 1.60"W x 6.40"D (128.7mm x 40.6mm x 162.5mm)
WEIGHT: 1.75 lb (0.8 kg)



Tolerances $\pm 0.012"$ (0.3mm) unless otherwise indicated.



For the Most Up-To-Date Information

www.power-one.com

24 Hours/Day—7 Days/Week

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PIN ALLOCATION CHART

PIN	PIN-LENGTH TYPE (NOTE 1)	SIGNAL NAME	DESCRIPTION	PIN	PIN-LENGTH TYPE (NOTE 1)	SIGNAL NAME	DESCRIPTION
1-4	M	V1	V1 OUTPUT	32	M	NC	NOT CONNECTED
5-12	M	RTN	V1 and V2 RETURN	33	M	V2 SENSE	V2 REMOTE SENSE
13-18	M	V2	V2 OUTPUT	34	M	S RTN	SENSE RETURN
19	M	RTN	V3 RETURN	35	M	V1SHARE	V1 CURRENT SHARE
20	M	V3	V3 OUTPUT	36	M	V3SENSE	V3 REMOTE SENSE
21	M	V4	V4 OUTPUT	37	M	NC	NOT CONNECTED
22	M	RTN	SIGNAL RETURN	38	M	DEG#	DEGRADE SIGNAL
23	M	RESERVED	RESERVED	39	M	INH#	INHIBIT
24	M	RTN	V4 RETURN	40	M	NC	NOT CONNECTED
25	M	NC	NOT CONNECTED	41	M	V2SHARE	V2 CURRENT SHARE
26	M	RESERVED	RESERVED	42	M	FAL#	FAIL SIGNAL
27	S	EN#	ENABLE	43	M	NC	NOT CONNECTED
28	M	NC	NOT CONNECTED	44	M	V3SHARE	V3 CURRENT SHARE
29	M	NC	NOT CONNECTED	45	L	CGND	CHASSIS GROUND
30	M	V1SENSE	V1 REMOTE SENSE	46	M	ACN	AC INPUT NEUTRAL
31	M	NC	NOT CONNECTED	47	M	ACL	AC INPUT LINE

NOTE 1) L = Long-Length Pins, M = Medium-Length Pins, S= Short-Length Pins

NUCLEAR AND MEDICAL APPLICATIONS Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the President of Power-One, Inc.

TECHNICAL REVISIONS The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.