C&D TECHNOLOGIES
Power Solutions

Corporate: www.cdtechno.com
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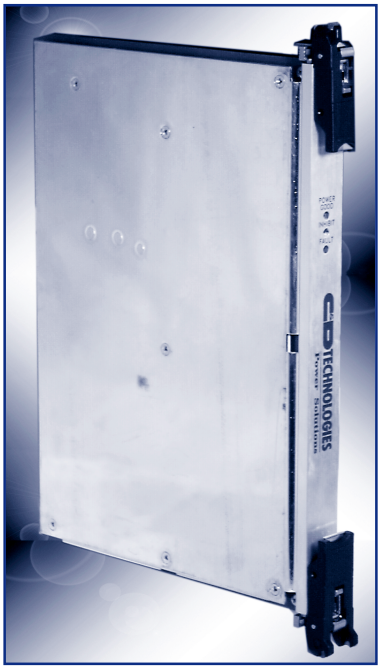
cPCI500DC

500 Watt, 6U x 4HP, CompactPCI



- 6U X 4HP
- 36-72 VDC Input Range
- 500 Watt Continuous Output Power
- Complies with PICMG 2.11 R1.0 with 47 Pin I/O Connector
- Hot-Swap Capable
- Outputs Individually Protected Against Overloads; Automatic Recovery
- PCI VoltageArchitecture (5V, 3.3V, +12V, -12V)
- IPMI Capability
- No Minimum Load

The cPCI500DC is a high-reliability, 500 watt power supply for 6U Compact PCI™ systems. Developed to support hot-swap, redundant operation, the cPCI500DC is designed for compliance with PICMG™ 2.11 R1.0 *Power Interface Specification* with 47-pin I/O connector, as well as the underlying CompactPCI™ standards. Available with IPMI functionality, this unit was developed with high-availability (HA) telecommunications applications in mind. Current sharing and internal ORing diodes are included to support these and other applications requiring reliable, hot-swap performance and N+1 redundant configuration. The 4HP package and complement of agency approvals provide for an advanced, high-density, high-efficiency power solution for your CompactPCI™ system requirements.

SPECIFICATIONS, ALL MODELS

	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT	Input Operating Voltage	Vin		36		72	VDC
	Input Voltage Withstand			34		75	VDC
	Inrush Current	I_i	36VDC input		10		APK
			72VDC input		20		APK
	Efficiency	η	48VDC input, 500W load		80		%

	OUTPUT NUMBER	VOUT RATED OUTPUT VOLTAGE	IOUT RATED OUTPUT CURRENT OUTPUT Min	A*	B*	REGULATION
OUTPUT	V1	+5.0VDC	0A	55.0 A	30.0 A	+/-1%
	V2	+3.3VDC	0A	30.0 A	60.0 A	+/-1%
	V3	+12.0VDC	0A	11.0 A	11.0 A	+/-1%
	V4	-12.0VDC	0A	1.75 A	1.75 A	+3, -3%

	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
OUTPUT	Temperature Coefficient	TC				0.02	%/°C
	PARD		20MHz bandwidth all outputs			50 mV_{P-P} or 1.5% P-P whichever is greater	
	Output Power		50°C max temp.			500	W

* Total output power not to exceed 500 Watts

SPECIFICATIONS, ALL MODELS

Transient Response
For a step load change of 50%-100%-50%, the peak output excursion will not exceed 8% of nominal voltage, and will recover to within 1% of nominal voltage within 200 microseconds.

Current Share
Active current sharing is employed on Outputs V1, V2 and V3.

Remote Sense
Outputs V1, V2, and V3 are capable of compensating up to 0.3VDC of line drop. Unit automatically reverts to local sensing in the event that the sense leads are opened for any reason. Unit is protected against reversed or shorted sense leads.

Output Power
500W continuous maximum, with 400lfm airflow at a maximum ambient of 50°C.

Overload Protection
Outputs are individually protected against overloads and indefinite short circuit with automatic recovery upon removal of the fault condition.

Over Voltage Protection
All outputs have over voltage protection at 125% typical (135% max.) of nominal.

Over Temperature Protection
Outputs are individually protected against over temperature. Outputs will automatically restore upon recovery to acceptable temperatures.

Output Fault Isolation
Output isolation diodes are present in all outputs to isolate faults within a failed power supply.

IPMI Option
An I^2C board is available as a factory-installed option to provide an IPMI interface to the SM bus. Status functions include output voltage and current levels as well as the DEG warning. Output inhibit control can be toggled under software command. See Application Note ACAN-02 for satellite controller specification, ACAN-03 for firmware update procedure and ACAN-04 for test procedure.

Remote Inhibit (INH#)
Secondary referenced, active low, TTL compatible signal inhibits all outputs upon activation.

Power Fail Warning (FAL#)
Open collector signal indicates output failure. Active low.

Enable (EN#)
Short pin on connector will enable power supply output when the mating pin is grounded. Supply will not power up until this pin is engaged to its mate in the backplane. Unit output will be inhibited as pin is disengaged from the mating connector.

Temperature Warning (DEG#)
Open collector indicates internal temperatures are approaching the thermal shutdown limit. Active low.

Fault Indicator LED
A red LED will be ON if output voltages are not within specification.

Power Present LED
A green LED will be ON when input voltage is present and above the minimum requirement.

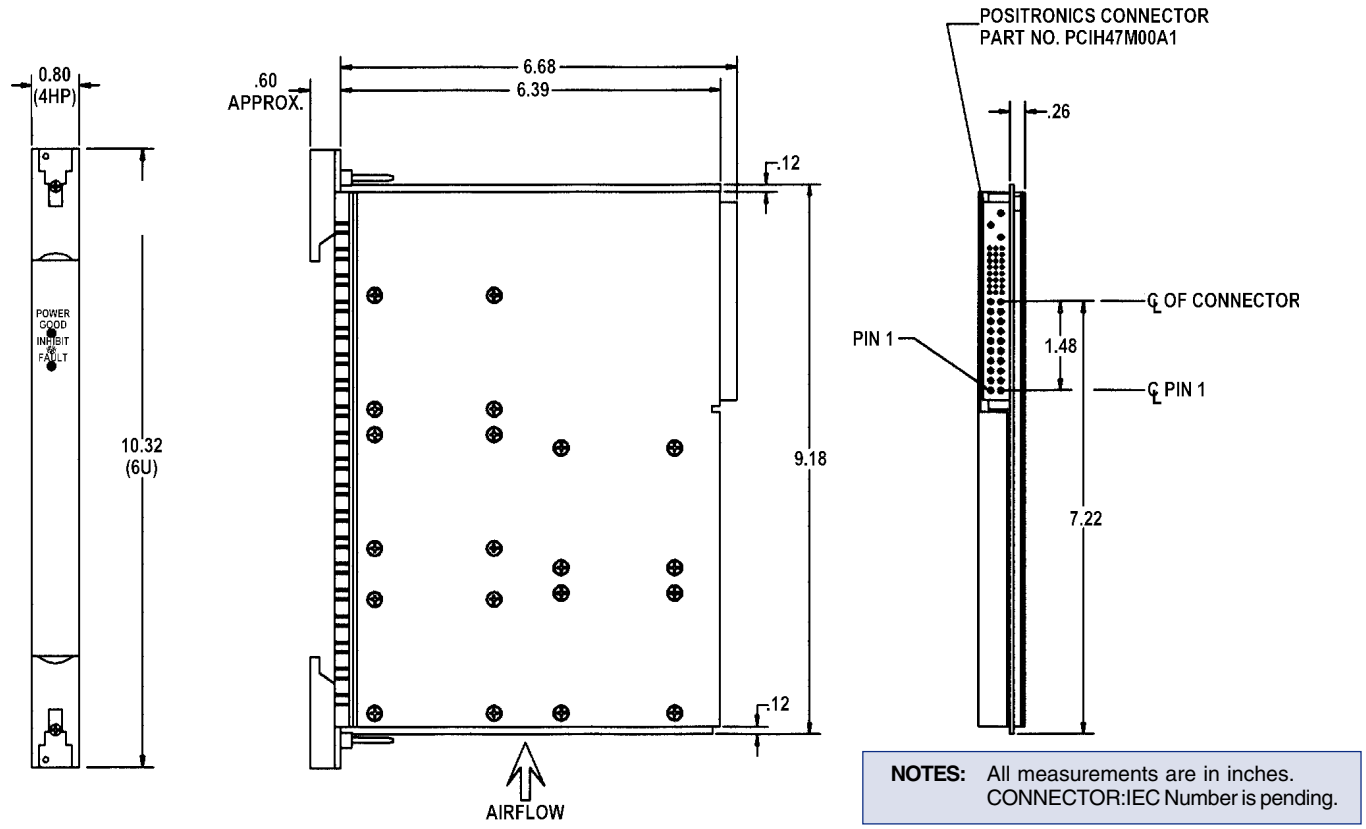
Cooling
400lfm of airflow required to maintain full output power at 0-50°C ambient. Additional data on operation below 400lfm is available in Application Note ACAN-01.

Temperature
Full output power achievable over the range of 0-50°C. Storage temperature limits are –20 to +85°C. Additional data on operation above 50°C is available in Application Note ACAN-01.

Altitude
Operating: -200 to +10,000 feet with ambient temperature derating above 5,000 feet in accordance with the adiabatic lapse rate.

Inhibit Indicator LED (Yellow)
A yellow LED will be ON when the outputs are inhibited.

MECHANICAL



PIN ASSIGNMENT: Pin assignment consistent with PICMG™ 2.11R1.0 specification. The table below details the PICMG™ assignment.

Pin # [1]	Staging [2]	Signal Name	Description
1-4	M	V1	V1 Output
5-12	M	RTN	V1 and V2 Return
13-18	M	V2	V2 Output
19	M	RTN	V3 Return
20	M	V3	V3 Output
21	M	V4	V4 Output
22	M	RTN	Signal Return
23	M	RESERVED	Reserved
24	M	RTN	V4 Return
25	M	GA0	Geographic Address Bit 0
26	M	RESERVED	Reserved
27	S	EN#	Enable
28	M	GA1	Geographic Address Bit 1
29	M	V1ADJ	V1 Adjust
30	M	V1 SENSE	V1 Remote Sense
31	M	GA2	Geographic Address Bit 2
32	M	V2ADJ	V2 Adjust
33	M	V2 SENSE	V2 Remote Sense
34	M	S RTN	Sense Return
35	M	V1 SHARE	V1 Current Share
36	M	V3 SENSE	V3 Remote Sense
37	M	IPMB SCL	IPMB Serial Clock Line
38	M	DEG#	Degrade Signal
39	M	INH#	Inhibit
40	M	IPMB SDA	IPMB Serial Data Line
41	M	V2 SHARE	V2 Current Share
42	M	FAL#	Fail Signal
43	M	IPMB PWR	IPMB Power Input
44	M	V3 SHARE	V3 Current Share
45	L	CGND	Chassis Grnd (Safety Grnd)
46	M	ACN/+DC IN	AC Input Neutral/+DC Input
47	M	ACL/-DC IN	AC Input Line/-DC Input

NOTES: (1) Pin numbers correspond to the female backplane connector.
(2) L = Long Length Pin (First Make, Last Break); M = Medium Length Pins; S = Short Length Pins (Last Make, First Break)

MECHANICAL

Shock: MIL-STD-810d, Method 516.3, Procedure 1.
Vibration: MIL-STD-810d, Method 514.3, Procedure 1.
Dimensions: 6U x 4HP x 160mm (see Mechanical above)

EMC & SAFETY

EMI: NEBS Compliant
ETSI Compliant

Safety Agency Ratings

Input Voltage: 48 VDC
Input Current: 15A
Input Power: 620W

Agency Approvals

UL1950/CSA950, EN60950, CE Mark.
(Low Voltage Directive)

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