

# cPCI200DC

## 180/225 Watt, 3U x 4HP CompactPCI



- 3U X 4HP
- 36-72 VDC Input Range
- 180/225 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 Voltage Architecture (5V, 3.3V, +12V, -12V)
- IPMI Capability (Available on Part Numbers cPCI200D-3 and 4)

The cPCI200DC is a family of high-reliability, 200 watt power supplies for 3U Compact PCI™ systems. Developed to support hot-swap, redundant operation, the cPCI200DC Series is designed for compliance with PICMG™ 2.11 R1.0 *Power Interface Specification* with 47-pin I/O connector. Available with IPMI functionality (part numbers cPCI200D-3 and cPCI200D-4), 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

INPUT	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
	Input Operating Voltage	$V_{in}$			36		72
Input Voltage Withstand				34		75	VDC
Inrush Current	$I_i$		36VDC input		< 20		APK
			72VDC input		< 40		APK
Efficiency	$\eta$		48VDC input, full load		70		%

OUTPUT	OUTPUT NUMBER	$V_{out}$ RATED OUTPUT VOLTAGE	$I_{out}$ RATED OUTPUT CURRENT OUTPUT			REGULATION
			Min	A*	B**	
	V1	+5.0VDC	0A	18.0 A <sup>1</sup>	27.0 A	+4 / -2%
	V2	+3.3VDC	0A	27.0 A	27.0 A <sup>1</sup>	+4 / -2%
	V3	+12.0VDC	0A	4.0 A <sup>1</sup>	4.0 A <sup>1</sup>	+/-10%
	V4	-12.0VDC	0A	4.0 A <sup>1</sup>	4.0 A <sup>1</sup>	+/-10%
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
PARD		20MHz bandwidth all outputs				50 mV <sub>P-P</sub> or 1.5% P-P whichever is greater
Output Power		50°C max temp., 300lfm airflow			180/225	W
Minimum Load		V1 (config A, 180W)	500			mA
		V2 (config B, 225W)	500			mA

- NOTES:** Outputs share common return.  
 \* Total output power not to exceed 180W.  
 \*\* Total output power not to exceed 225W.  
 1 Maximum combined power not to exceed 90 Watts.

## SPECIFICATIONS, ALL MODELS

### Transient Response

For a step load change of 50%-100%-50%, the peak output excursion will not exceed 10% of nominal voltage, and will recover to within 1% of nominal voltage within 500 microseconds.

### Current Share

Active current sharing on Outputs V1 and V2. Accuracy better than 10% of maximum rated load. Primary referenced.

### Remote Sense

Outputs V1 and V2 are capable of compensating >50mV 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

180W (Output configuration A) / 225W (Output configuration B) continuous maximum, with 300lfm airflow at a maximum ambient of 50°C. Derate to 90W/110W at 70°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

Outputs V1 and V2 have Over Voltage Protection at 125% typical (135% max.) of nominal.

### Over Temperature Protection

Outputs are 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.

### Remote Inhibit (INH#)

Secondary referenced, active low, TTL compatible signal inhibits all outputs upon activation.

### IPMI Option

#### Available on Models cPCI200D-3 and cPCI200D-4

An I<sup>2</sup>C 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. For a complete specification of the firmware solution refer to Application Note ACAN-02 on our website.

### 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 (+/-10°C, typ). 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

300lfm of airflow required to maintain full output power at 0-50°C ambient.

### Temperature

Full output power achievable over the range of 0-50°C. Storage temperature limits are -20 to +85°C.

### Altitude

Operating: -200 to +10,000 feet with ambient temperature derating above 5,000 feet in accordance with the adiabatic lapse rate (approximately 2C per 1000 feet).

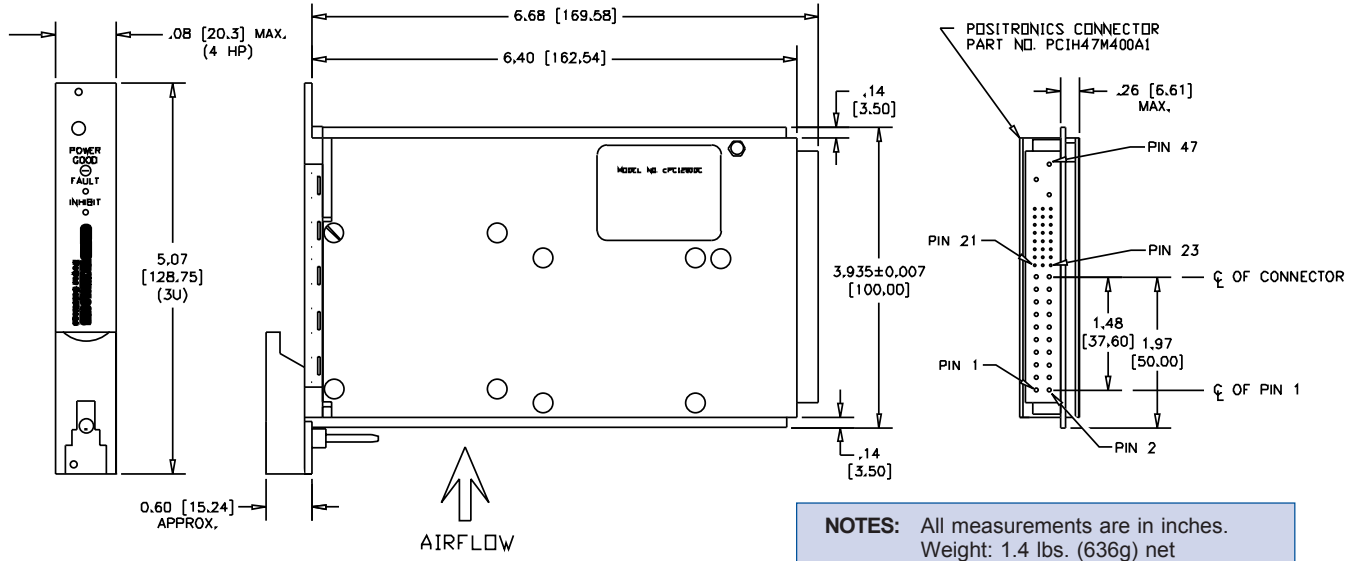
### Inhibit Indicator LED (Yellow)

A yellow LED will be ON when the outputs are inhibited.

## IPMI/IPMB POWER SUPPLY SATELLITE CONTROLLER FEATURES AVAILABLE ON PART NUMBERS cPCI200D-3 AND cPCI200D-4

- Complies with IPMI V1.5 Rev 1.1 and IPMB V1.0
- Complies to PICMG 2.9 (CompactPCI Systems Management Specification)
- 8 analog inputs configured for monitoring voltages and currents on power supply outputs V1 - V4
- Monitors the state of the thermal sensor
- Output inhibit can be controlled by IPMI commands
- Self Test with LED indicator (can be read and overridden by IPMI commands)
- 6 programmable thresholds on each analog sensor
- Each threshold on each sensor can be enabled to generate event messages if that threshold is crossed
- Thermal sensor can be enabled to generate event messages
- Responds to all mandatory IPMI commands and numerous optional commands as indicated in the functional specification
- Firmware can be upgraded via the IPMB bus
- Includes Device SDR's (Sensor Data Records) - These specify the type of sensor for each input (voltage, current, temperature, etc.) as well as the conversion formulas from raw ADC data to voltages, currents, etc.
- Includes FRU data such as model number, serial number and firmware creation date

# MECHANICAL



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

Pin # <sup>1</sup>	Staging <sup>2</sup>	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:** 3U x 4HP x 160mm (see Mechanical above)

## EMC & SAFETY

**EMI:** NEBS Compliant to GR1089 conducted emissions limit  
ETSI Compliant to ETS 300-386 conducted emissions limit

**Safety Agency Ratings**      **180 Watt**      **225 Watt**

Input Voltage:                      36-72 VDC                      36-72 VDC

Input Current:                      7A                                      9A

Input Power:                        260W                                320W

### Agency Approvals Pending

UL1950/CSA950, EN60950, CE Mark.

(Low Voltage Directive)

## ORDERING INFORMATION

PART NUMBER	POWER	+5V	+3.3V	+12V	-12V	IPMI
cPCI200D-4	225 W	27A	27A	4A	4A	YES
cPCI200D-3	180 W	18A	27A	4A	4A	YES
cPCI200D-2	225 W	27A	27A	4A	4A	NO
cPCI200D-1	180 W	18A	27A	4A	4A	NO

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