

# cPCI350DC

## CompactPCI SERIES

**POWER: 350 Watt**

**SIZE: 6U x 8HP**

**COMPLIANCE: PICMG2.11 R1.0**

**C&D TECHNOLOGIES**  
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## PRODUCT DATA SHEET



## FEATURES

- 6U X 8HP
- 36-75 VDC INPUT RANGE
- 350 WATT CONTINUOUS OUTPUT POWER
- COMPLIES WITH PICMG™ 2.11 R1.0 WITH 47 PIN I/O CONNECTOR
- OUTPUTS INDIVIDUALLY PROTECTED AGAINST OVERLOADS; AUTOMATIC RECOVERY
- HOT-SWAP CAPABLE
- PCI VOLTAGE ARCHITECTURE (5V, 3.3V, +12V, -12V)
- NO MINIMUM LOAD

The cPCI350DC is a high-reliability, 350 watt power supply for 6U Compact PCI™ systems. Developed to support hot-swap, redundant operation, the cPCI350DC 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. Operating from 36-75V<sub>DC</sub>, this unit was developed with high-availability (HA) telecommunications applications in mind. Active 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 8HP package and complement of agency approvals provide for a complete power solution for your CompactPCI™ system requirements.

## AGENCY APPROVALS PENDING



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# INPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Operating Voltage	V <sub>in</sub>		36		75	V <sub>DC</sub>
Input Voltage With Stand			34		75	V <sub>DC</sub>
Inrush Current		36V <sub>DC</sub> input		18		APK
		72V <sub>DC</sub> input		36		APK

## Current Share

Active current sharing is employed on outputs V1, V2, and V3. Accuracy exceeds 10% of maximum rated load.  $N_{max} = 4$ . Output V4 to share within 40% of maximum rated load by means of droop response.

## Remote Sense

Outputs V1, V2, and V3 capable of compensating up to 0.5V<sub>DC</sub> 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

350W continuous maximum, with 400lfm airflow at a maximum ambient of 50°C. Output power derates linearly to 175W at 70°C ambient or 200lfm of airflow at 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

Output V1 OVP set at  $6.0V \pm 0.5V_{DC}$ . Output V2 OVP set at  $4.3V \pm 0.5V_{DC}$ . The power supply will shut down and latch off under an OVP fault condition. Restart of the unit is accomplished by cycling of the input power.

## Over Temperature Protection

Thermal switch shuts down the power supply in the event that critical temperatures are exceeded. Unit will automatically restart when acceptable temperatures are restored.

## 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.

## Power Fail Warning (FAL#)

Secondary referenced, active low, TTL compatible signal indicates output failure.

## 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.

## Fault Indicator

Red LED will be ON if output voltages are not within specification.

## Power Present LED

Green LED will be ON when input voltage is present and above the minimum requirement.

## Cooling

400 lfm of airflow required to maintain full output power at 0-50°C ambient. At 200 lfm, the output power is derated to 175W.

## Temperature

0-70°C operating range with full output power achievable over the range of 0-50°C. Between 50°C and 70°C, output power derates linearly from 350W to 175W. 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.

## Hot Swap Capability

Design Verification Testing (DVT) confirms that voltage excursions on the output buses resulting from insertion/extraction events do not exceed +/-5%. However, routing of power and signal lines in the mating backplane is critical to minimization of such excursions. In addition, performance can be critically affected by load characteristics including negative resistance, resistance, and reactive components. While the control loop responses have been designed for optimum hot-swap performance over a wide range of load characteristics, there may be instances where the voltage excursions exceed published specification. In such cases, the control loop responses can be modified to perform optimally.

## OUTPUT VOLTAGE/CURRENT RATINGS

OUTPUT NUMBER	V <sub>OUT</sub> RATED OUTPUT VOLTAGE	I <sub>OUT</sub> RATED OUTPUT CURRENT	
		MIN	MAX
V1	+5.0VDC	0 A	50A*
V2	+3.3VDC	0 A	40A*
V3	+12.0VDC	0 A	12A
V4	-12.0VDC	0 A	2A

**NOTES:** Outputs share common return.  
\*Combined current output of V1 and V2 not to exceed 50A.

## COMMON OUTPUT SPECIFICATIONS

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Voltage Adjustment		V1 and V2 only		±5		%
Temperature Coefficient	TC				0.02	%/°C
PARD		20MHz bandwidth all outputs				1% P-P or 50 mv P-P whichever is greater
Output Power		50°C max temp.			350	W

## TOTAL REGULATION

OUTPUT	LIMIT
V1 & V2	+4 / -2 %
V3 & V4	±4 %

### MECHANICAL

SHOCK: MIL-STD-810d, Method 516.3, Procedure 1.

VIBRATION: MIL-STD-810d, Method 514.3, Procedure 1.

DIMENSIONS: 6U x 8HP x 160mm  
(see drawing on Pg. 4)

### EMC & SAFETY

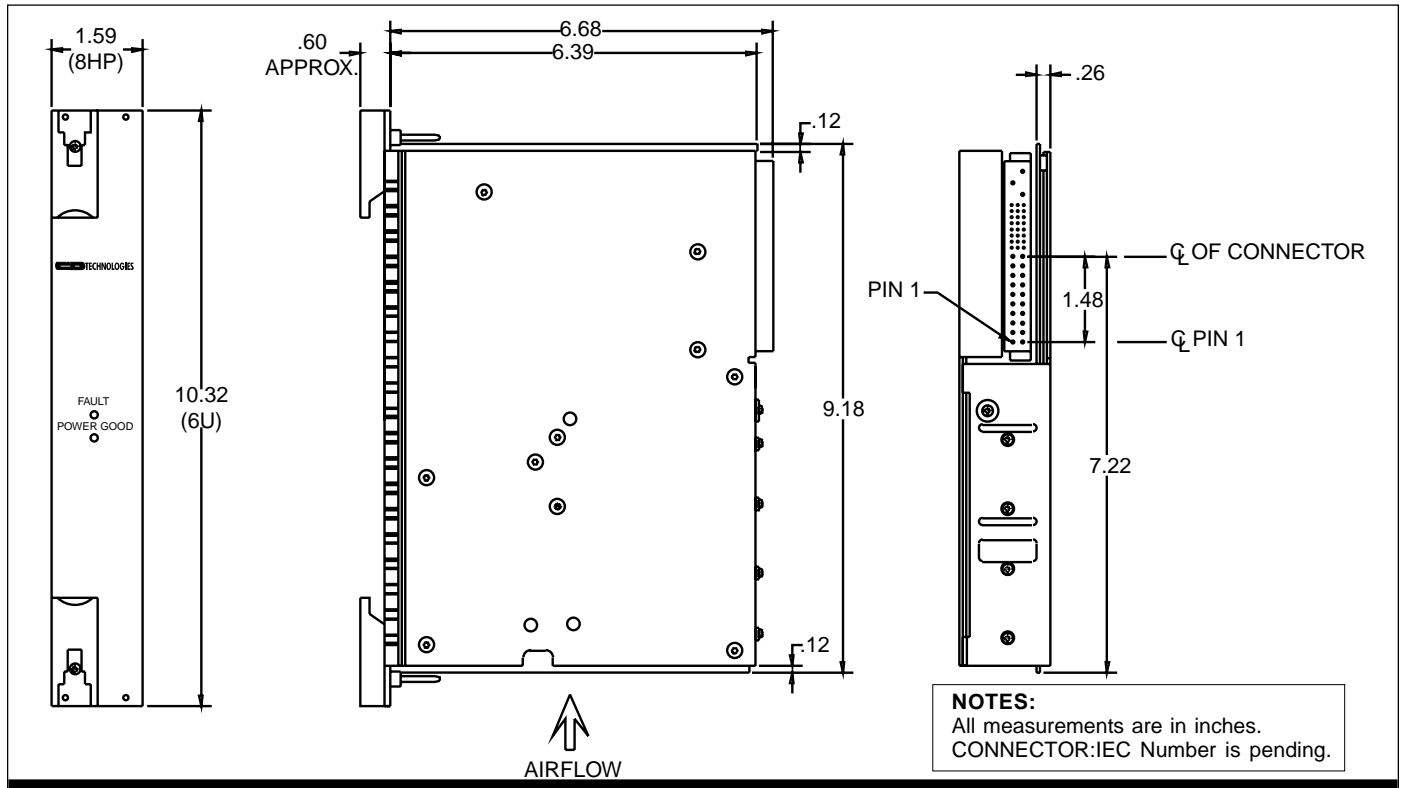
EMI: NEBS Compliant

Safety Agency Ratings  
Input Voltage: 48 VDC  
Input Current: 15A  
Input Power: 540W

### AGENCY APPROVALS

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

# 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 <sup>3</sup>	Reserved <sup>3</sup>
24	M	RTN	V4 Return
25	M	GA0 <sup>4</sup>	Geographic Address Bit 0
26	M	RESERVED	Reserved
27	S	EN#	Enable
28	M	GA1 <sup>4</sup>	Geographic Address Bit 1
29	M	V1ADJ <sup>4</sup>	V1 Adjust
30	M	V1 SENSE	V1 Remote Sense
31	M	GA2 <sup>4</sup>	Geographic Address Bit 2
32	M	V2ADJ <sup>4</sup>	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 <sup>4</sup>	Serial Communication Receive; Clock
38	M	DEG#	Degrade Signal
39	M	INH#	Inhibit
40	M	IPMB SDA <sup>4</sup>	Serial Communication Transmit; Data
41	M	V2 SHARE	V2 Current Share
42	M	FAL#	Fail Signal
43	M	IPMB PWR <sup>4</sup>	System Management Power
44	M	V3 SHARE	V3 Current Share
45	L	CGND	Chassis Ground (safety ground)
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)  
 (3) PICMG™ 2.11 has reserved Pin 23 for future designation -- the cPCI350 uses this pin for synchronous start, required when N>1 for N+1 redundant configurations.  
 (4) This function not available in the cPCI350DC.