



Highlights

- >> 250 Watt AC, Removable, Hot Swap, Load Sharing Power Supply for CompactPCI®

- >> Delivers a Combined Total of 40A for the 5 V and 3.3 V Outputs (No Minimum Load Restrictions)

- >> Protection Features:
 - Output Overvoltage
 - Output Overcurrent
 - Overtemperature Protection

- >> Status LEDs: Power Fail, Input Good

- >> Status Output Signals: (DEG#), (FAL#)

- >> Remote Sense and Active Share on +3.3 V, +5 V, +12 V

- >> Inhibit (INH#) and Enable (EN#) Inputs (Open Drain, TTL-Compatible)

- >> PICMG® 2.11-Compliant 47-Pin Connector

The CPC6303 Hot-Swap AC Power Supply is a highly reliable, modular package designed for AC power input systems. Extra-high current density allows this unit to deliver up to 40 amperes combined, on either the +5 or +3.3 volt outputs at 50 °C.

This highly dense, hot-swap, redundant supply is ideally suited for telecommunications, industrial automation, and a variety of embedded computer applications that utilize the CompactPCI® 3U x 8HP x 160 mm form factor.

The universal input voltage range is 90 to 264 V AC at 47 to 63 Hz with remote sense and active current sharing. Four outputs are capable of providing total combined power of 250 W for +3.3 V DC, +5 V DC, and ±12 V DC with independent output regulation. The low-cost unit meets the electrical and mechanical requirements of the PICMG® specification for CompactPCI systems. It uses a PICMG 2.11-compliant 47-pin power connector to provide efficient, effective connectivity, and is UL listed and CE-certified. The CPC6313 250 W, Hot-Swap DC Power Supply is available as the DC input alternative (36 to 75 V DC).

Design Elements

Operation

The CPC6303 250 W power supply utilizes switching technology to achieve its small size and large power output. An EMI-filtered universal input automatically accepts AC input voltages from 90 to 264 V. Optionally, two or more power supplies can be used to implement an N+1, load sharing, fault-tolerant system.

Load Sharing and N+1 Redundancy

Two power supplies can share the same output load. These two supplies each supply approximately 50 percent of the total output power during normal operation, although either is capable of powering the entire system in the event that the other should fail (with a 250 W load). This feature increases overall system reliability by sharing the load responsibilities. Additional power supplies may be used to implement true N+1 load sharing (i.e., a 500 W system requires two power supplies, plus a third for redundancy).

Hot-Swap and Fault Tolerance

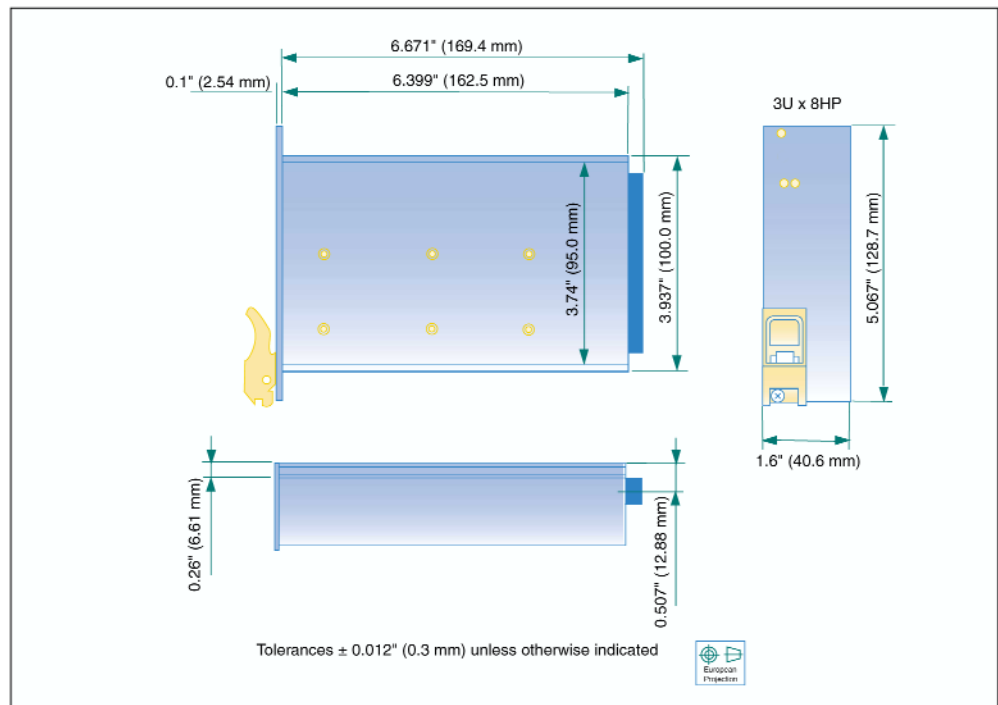
The power supplies can be inserted or removed from the system without disturbing operation or reducing the reliability of any associated devices. Likewise, a failed power supply will not disturb the operation of the system if a redundant power supply is operating in the system.

Power Factor Correction

Power factor correction is utilized on the CPC6303 to conserve power and decrease energy costs. The power factor correction circuitry also achieves reduced power line harmonics.

CPC6303

250-Watt Hot-Swap AC Power Supply



CPS Series - 250-Watt

Status LEDs

Two status LED indicators is visible from the front of the power supply. The green "INPUT" LED indicates that the input voltage is present. The red "FAULT" LED indicates a failed power supply or input source.

Remote Sense

Remote sense on the +3.3 V, +5 V and +12 V power supply outputs compensate for connector, backplane, and wiring voltage drops.

Inhibit/Enable Inputs

The Inhibit (INH#) input signal on the rear connector will turn off the outputs when connected to logic ground. The Enable (EN#) input must be connected to logic ground for the proper operation of the supply; this signal input is used as the last-mate/first-break contact for hot-swap operation. Both signals are open-drain TTL-compatible inputs.

System Notification

Two fault outputs are available on the rear connector for system notification. One output (DEG#) is an open-drain, low-true signal that indicates the internal temperature is approaching the maximum internal operating temperature. If action does not reverse the internal temperature rise, the supply will shut off the outputs. The second output (FAL#) is an open-drain, low-true signal that indicates whether any of the outputs have failed and/or the input voltage has dropped less than 85 V AC.

Warranty

One year.

CPC6303

Technical Specifications



Input Specifications

- Input voltage range: 90 to 264 V AC
- Input frequency range AC: 47 to 63 Hz
- Hold-up time: 20 ms
- Input protection: Internal input line fuse
- Inrush surge current: 30 A max, cold-start
- Internal switching frequency: 125 to 145 kHz

Output Specifications

Output Voltage	Output Current	Line Regulation	Load Regulation	Load Regulation
+5 V	40A*	0.5%	1%	2% **
+3.3 V	40A*	0.5%	1%	2% **
+12 V	5.5 A	0.5%	1%	1.3% **
-12 V	1.5 A	0.5%	1%	1.3% **

*The combined current between the 3.3 V and the 5 V can not exceed 40 A supply.

** Maximum peak-to-peak expressed as a percentage of output voltage, 20 MHz bandwidth.

- Efficiency: 79 to 81% at full rated load, 115 V AC
- Minimum load (3.3 V, 5 V, +12 V, -12 V): None
- Minimum load on +12 V required to maintain regulation on -12 V: 75% of -12 V load
- Output power at 250 LFM forced-air cooling: 200 W
- Output power at 400 LFM - 250 W
- Overshoot/undershoot at turn-on: 0%
- Turn-on delay: 2 s to initial output stabilization
- Initial setting accuracy: $\pm 1\%$

Internal Protection

- Overvoltage protection: 120 to 130% Vnom (latch-style overvoltage protection)
- Overload protection: Fully protected against output overload and short circuit, with automatic recovery upon removal of overload condition
- Overtemperature protection: System shutdown due to excessive internal temperature, automatic reset

MTBF

- >400,000 hours per Bellcore 332 Issue 6

Environmental

- Operating temperature at 100% load: 0 to 50°C (32 to 122°F)
- Operating temperature at 50% load: 0 to 70°C (32 to 159°F)
- Storage temperature: -40 to 85°C (-40 to 185°F)
- Non-condensing relative humidity: 5 to 95%
- Shock at peak acceleration: 20GPK
- Random vibration at 10Hz to 2KHz: 6GRMS
- Operating altitude: 3.05 km (10,000 ft)
- Non-operating altitude: 12.19 km (40,000 ft)
- Weight: 0.8 kg (1.75 lb)
- Overall size: 128.7 mm H x 40.6 mm W x 178.1 mm D (5.07 in. x 1.60 in. x 6.40 in.)

Safety Agency Approvals

- UL/cUL 60950
- EN60950
- CE MARK (LVD)

Radiated and Conducted RFI

- Meets FCC Class A
- EN55022/CISPR 22 Class A

Dielectric Withstand Voltage

- 4243 V DC (input to output per EN60950)

ESD Susceptibility

- 8 kV per EN61000-4-2, level 4

Radiated Susceptibility

- 10 V/M per EN61000-4-3, level 3

EFT/Burst

- ± 2 kV per EN61000-4-4, level 3

Line-to-Line Input Surge

- 1 kV per EN61000-4-5, level 3

Line-to-Ground Input Surge

- 2 kV per EN61000-4-5, level 3

Conducted Disturbance

- 3V per EN61000-4-6, level 2

Insulation Resistance (Input to Output)

- 10 Mohms

Ordering Information

>> PT-CPC6303-12056

250W AC, Hot-swap
Power Supply



Contact Information

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