

# PCI 350

350 Watt CompactPCI Power Supply

 Tracewell**Power**

## ■ Features

- 350 Watts in 6U x 8HP (two slots) x 160mm
- Wide-range AC or 48 Volt DC input
- Standard PCI voltages: 5V, 3.3V,  $\pm 12V$

- Four output-current options:

|                 |                 |               |                |
|-----------------|-----------------|---------------|----------------|
| <b>5V/40A</b>   | <b>3.3V/25A</b> | <b>12V/9A</b> | <b>-12V/2A</b> |
| <b>5V/50A</b>   | <b>3.3V/25A</b> | <b>12V/9A</b> | <b>-12V/2A</b> |
| <b>3.3V/50A</b> | <b>5V/20A</b>   | <b>12V/9A</b> | <b>-12V/2A</b> |
| <b>3.3V/60A</b> | <b>5V/20A</b>   | <b>12V/9A</b> | <b>-12V/2A</b> |

- Power factor correction (PFC)
- N+1 redundant and hot swap
- Internal OR-ing diodes
- Single-wire current sharing on 5V, 3.3V, +12V outputs
- Fully shielded
- IEEE1101.10 compliant front panels
- Ruggedized mechanical design
- Optional high-profile cooling fins available on 48V input version
- UL, cUL approved
- CE mark
- EMC approved
- Two year warranty

**ISO 9001**



*PCI 350 AC input power supply shown with optional low-profile handles*

## ■ Description

The PCI 350 is a high-performance power supply for use in 6U CompactPCI computer, test and telecom systems. The PCI 350 meets all of the requirements of the PICMG CompactPCI specification plus N+1 redundant and hot swap. High-density cooling fins are positioned directly in the airstream. All input and output connections are through the backplane. LED status indicators are located on the front panel.

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## Specifications

|                                             |                                                                                                                                                                             |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output Voltage/Current Options</b> ..... | 5V/40A, 3.3V/25A, +12V/9A, -12V/2A                                                                                                                                          |
|                                             | 5V/50A, 3.3V/25A, +12V/9A, -12V/2A                                                                                                                                          |
|                                             | 3.3V/50A, 5V/20A, +12V/9A, -12V/2A                                                                                                                                          |
|                                             | 3.3V/60A, 5V/20A, +12V/9A, -12V/2A                                                                                                                                          |
| <b>Output Power</b> .....                   | DC Input: 350 Watts max                                                                                                                                                     |
|                                             | AC Input: 350 Watts max 105-264 Vac                                                                                                                                         |
|                                             | 300 Watts max 90-105 Vac                                                                                                                                                    |
| <b>Input Voltage/Current</b> .....          | AC: 100-240 Vac (90-264 Vac tolerant range), 47-63Hz,                                                                                                                       |
|                                             | 6 A max, single phase                                                                                                                                                       |
|                                             | DC: 48 Vdc (40-72 Vdc tolerant range), 12 A max                                                                                                                             |
| <b>Power Factor</b> .....                   | 0.99 typical                                                                                                                                                                |
| <b>Inrush Current</b> .....                 | AC: 40A max                                                                                                                                                                 |
|                                             | DC: 15A max                                                                                                                                                                 |
| <b>Efficiency</b> .....                     | DC input: 75% min                                                                                                                                                           |
|                                             | AC input: 65% min                                                                                                                                                           |
|                                             | Efficiency increases with line voltage                                                                                                                                      |
| <b>Holdup Time</b> .....                    | 20 msec min. from input power failure until FAIL# signal                                                                                                                    |
|                                             | drops, at full load and 90-264 Vac                                                                                                                                          |
| <b>AC Fail Warning</b> .....                | 5 msec min. continued operation after FAIL# signal drops                                                                                                                    |
| <b>Paralleling</b> .....                    | Any number of power supplies can be operated in parallel and will share 3.3V/5V/+12V current to within 10%. Remote Sense must be used when paralleling with current sharing |
| <b>Redundant/Hot Swap</b> .....             | Full power N+1 redundant and hot-swap                                                                                                                                       |
| <b>Remote Sense</b> .....                   | Compensates for up to 0.25V total distribution voltage drop on the 3.3V/5V/+12V outputs                                                                                     |
| <b>Line/Load Regulation</b> .....           | 1% max. over input range and 0-100% load except                                                                                                                             |
|                                             | -12V output which is $\pm 10\%$                                                                                                                                             |
| <b>Minimum Load</b> .....                   | None required                                                                                                                                                               |
| <b>Ripple/Noise</b> .....                   | 50 mV max. for all outputs, peak-to-peak, DC to 20 MHz                                                                                                                      |
|                                             | with coaxial probe and 0.1uF/22uF capacitors at the connector                                                                                                               |
| <b>Overshoot/Undershoot</b> .....           | None at turn-on or turn-off                                                                                                                                                 |
| <b>Turn-on Time</b> .....                   | 1 sec max. from power up. All output voltages come                                                                                                                          |
|                                             | up within 10 msec of each other.                                                                                                                                            |

|                                    |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Over-Voltage</b> .....          | Shutdown at 130% of nominal Vout. Recycle power to reset                                                                                                                       |
| <b>Over-Temperature</b> .....      | Shutdown upon internal heatsink temperatures exceeding limits. Recycle power to reset                                                                                          |
| <b>Current Limiting</b> .....      | All outputs protected against overload and short circuit. Straight-line current limiting, does not fold-back or latch-up during startup or load transients. Automatic recovery |
| <b>Safety</b> .....                | UL, cUL, and CB report UL1950 and EN60950                                                                                                                                      |
| <b>EMC</b> .....                   | Emissions below EN55022 class A and EN61000-3-2, 3.                                                                                                                            |
|                                    | Immunity to EN61000-4-2, 4, 5                                                                                                                                                  |
| <b>Input Fuse</b> .....            | Internal fusing included                                                                                                                                                       |
| <b>Output Isolation</b> .....      | All outputs and control signals are SELV circuits                                                                                                                              |
|                                    | referenced to GND with reinforced insulation to the AC primary. GND should be connected to chassis ground in the system.                                                       |
| <b>Leakage Current</b> .....       | 1.0 mA max. at 240 Vac                                                                                                                                                         |
| <b>Dielectric Strength</b> .....   | AC: 2200 Vdc from input to chassis ground                                                                                                                                      |
|                                    | DC: 500 Vdc from input to chassis ground                                                                                                                                       |
| <b>Indicators</b> .....            | Green LED indicating INPUT OK                                                                                                                                                  |
|                                    | Red LED indicating a power supply FAULT                                                                                                                                        |
| <b>Connector</b> .....             | Positronic part no. PCI38M400A1                                                                                                                                                |
|                                    | Mating connector part no. PCI38F300A1                                                                                                                                          |
| <b>Cooling</b> .....               | 15 cfm/400 lfm forced air required through power supply cooling fins and enclosure                                                                                             |
| <b>Operating Temperature</b> ..... | -20°C to 50°C operating temperature with specified air                                                                                                                         |
|                                    | flow. Derate output power with reduced airflow conditions (consult factory)                                                                                                    |
| <b>Storage Temperature</b> .....   | -40°C to 85°C                                                                                                                                                                  |
| <b>Shock/Vibration</b> .....       | Ruggedized construction                                                                                                                                                        |

Note: Specifications subject to change without notice

## PCI 350 Status Indications

| Condition                  | Power Supply On/Off | Input OK LED | Fault LED | FAIL # |
|----------------------------|---------------------|--------------|-----------|--------|
| EN# low, Inputs/Outputs OK | ON                  | ON           | OFF       | OPEN   |
| INH# signal low            | OFF                 | ON           | ON        | LOW    |
| INH# high, EN# high        | OFF                 | ON           | ON        | LOW    |
| Inhibit switch depressed   | OFF                 | ON           | ON        | LOW    |
| Low AC or DC input         | OFF                 | OFF          | ON*       | LOW    |
| Internal over-temperature  | OFF                 | ON           | ON        | LOW    |
| Output under-voltage       | OFF**               | ON           | ON        | LOW    |
| Output over-voltage        | OFF**               | ON           | ON        | LOW    |
| Output short circuit       | OFF**               | ON           | ON        | LOW    |

\* If the input is below approx. 20 V, the FAULT LED will not illuminate

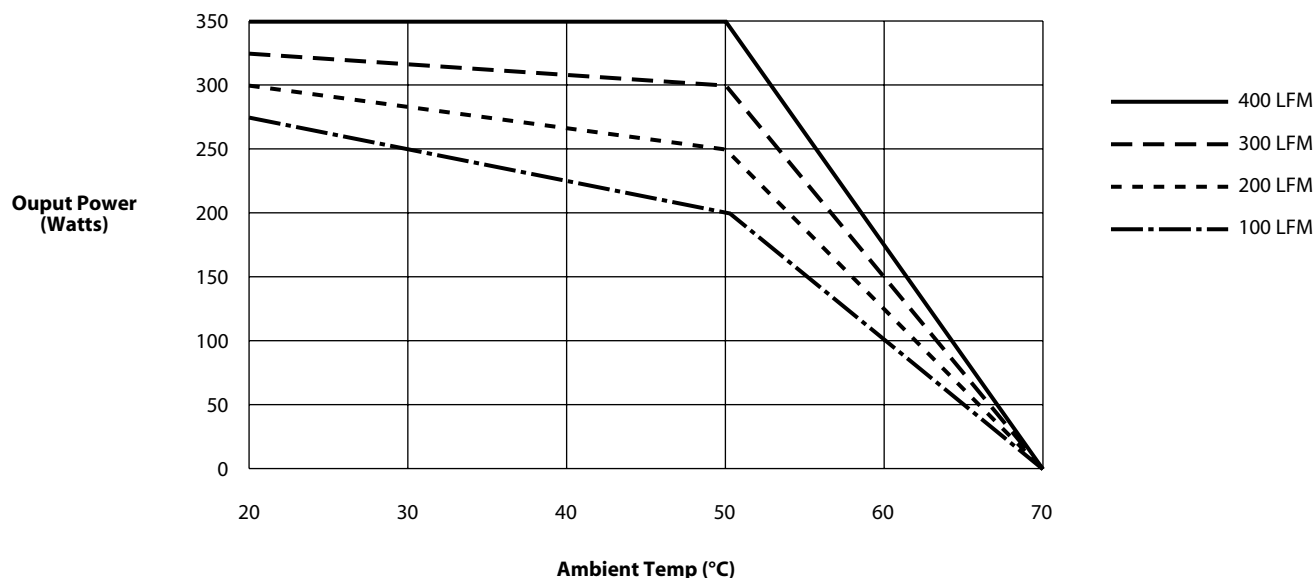
\*\* Typically, only the output exhibiting the fault conditions will be off

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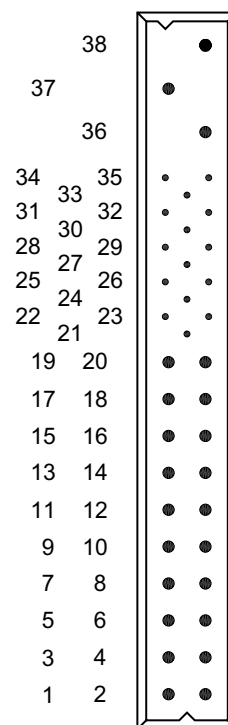
## ■ Output Power vs Temperature and Airflow



Note: LFM is the airflow in feet per minute through the power supply fins and enclosure

## ■ Connector Pinout

| Pin # | Signal | Pin # | Signal | Description                                                                                           |
|-------|--------|-------|--------|-------------------------------------------------------------------------------------------------------|
| 1     | +5V    | 24    | +5S    | Remote sense for +5V oputput                                                                          |
| 2     | +5V    | 25    | EN#    | Connect to GND to enable power supply                                                                 |
| 3     | +5V    | 26    | -SENSE | Remote sense return for +3.3V, + 5V, +12V outputs                                                     |
| 4     | +5V    | 27    | +3.3S  | Remote sense for +3.3V output                                                                         |
| 5     | GND    | 28    | RSVD   | RESERVED                                                                                              |
| 6     | GND    | 29    | DEG#   | Open collector, low output when power supply is within 10° C of shutting down due to over-temperature |
| 7     | GND    | 30    | +12S   | Remote sense for +12V output                                                                          |
| 8     | GND    | 31    | INH#   | Connect to GND to inhibit power supply                                                                |
| 9     | GND    | 32    | +5I    | Connect to paralleled power supply for +5V current sharing                                            |
| 10    | GND    | 33    | +3.3I  | Connect to paralleled power supply for +3.3V current sharing                                          |
| 11    | GND    | 34    | +12I   | Connect to paralleled power supply for +12V current sharing                                           |
| 12    | GND    | 35    | FAIL#  | Open collector, low output when power supply has failed                                               |
| 13    | +3.3V  | 36    | CGND   | Chassis ground                                                                                        |
| 14    | +3.3V  | 37    | N      | Neutral (AC) or 48V return (DC)                                                                       |
| 15    | +3.3V  | 38    | L      | Line (AC) or -48V (DC)                                                                                |
| 16    | +3.3V  |       |        |                                                                                                       |
| 17    | GND    |       |        |                                                                                                       |
| 18    | +12V   |       |        |                                                                                                       |
| 19    | RSVD   |       |        |                                                                                                       |
| 20    | RSVD   |       |        |                                                                                                       |
| 21    | -12V   |       |        |                                                                                                       |
| 22    | GND    |       |        |                                                                                                       |
| 23    | GND    |       |        |                                                                                                       |



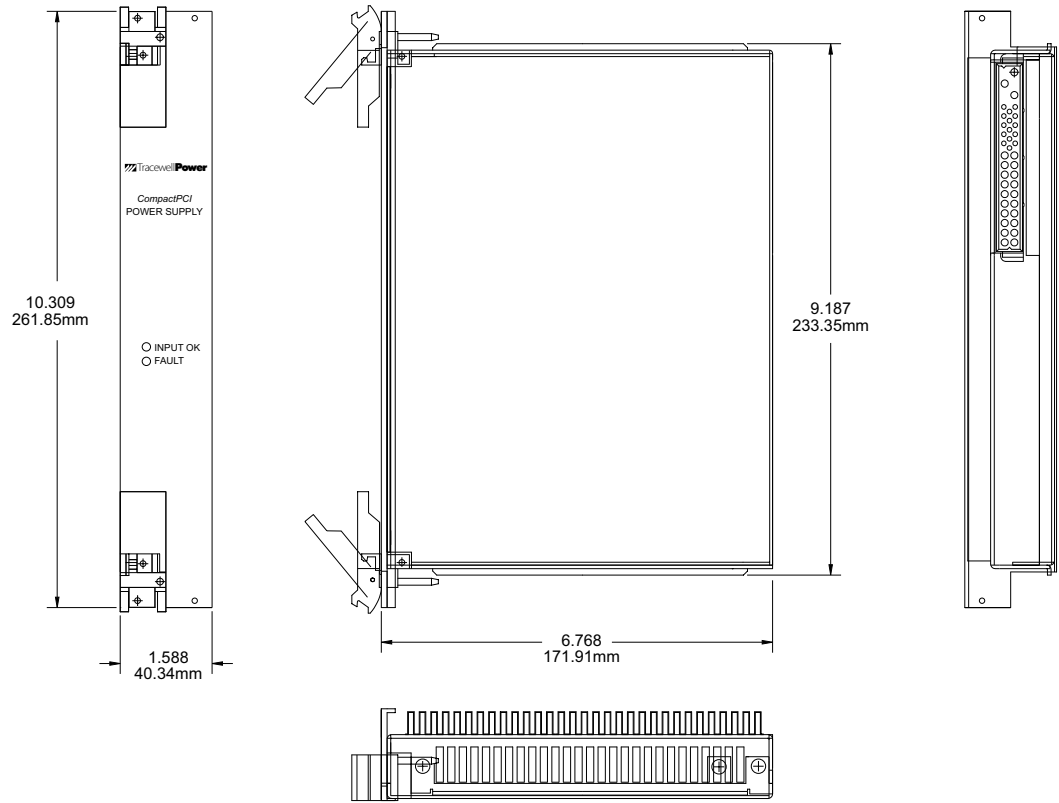
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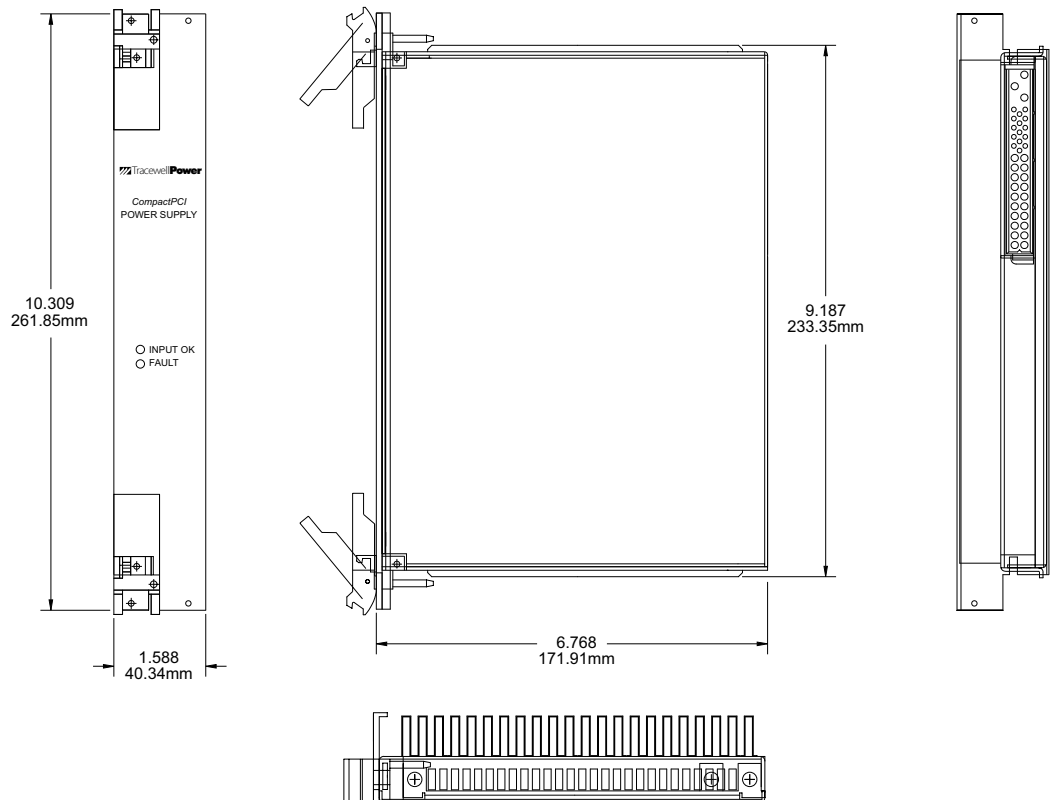


## ■ Dimensions

AC and 48V  
Input Versions



Optional High-Profile  
Cooling Fin Version  
(48V input only)



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PCI Industrial Computer Manufacturer's Group

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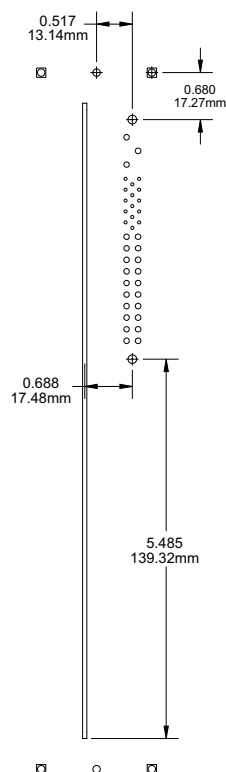


## Backplane Connector Location

Power backplanes are available for both the AC and 48V power supplies: 2-slot (for one power supply) and 4-slot (for two power supplies). Consult factory for details.

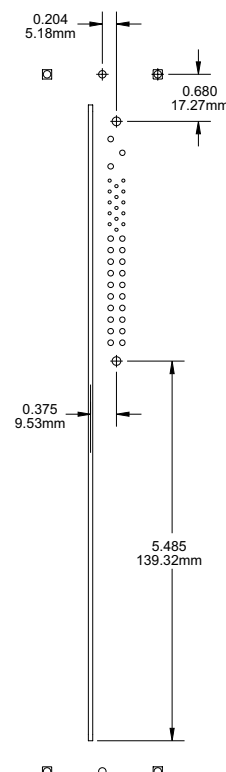
### AC and 48V Input Versions

BACKPLANE POWER CONNECTOR LOCATION VIEWED FROM THE FRONT OF THE CAGE



### Optional High-Profile Cooling Fin Version (48V input only)

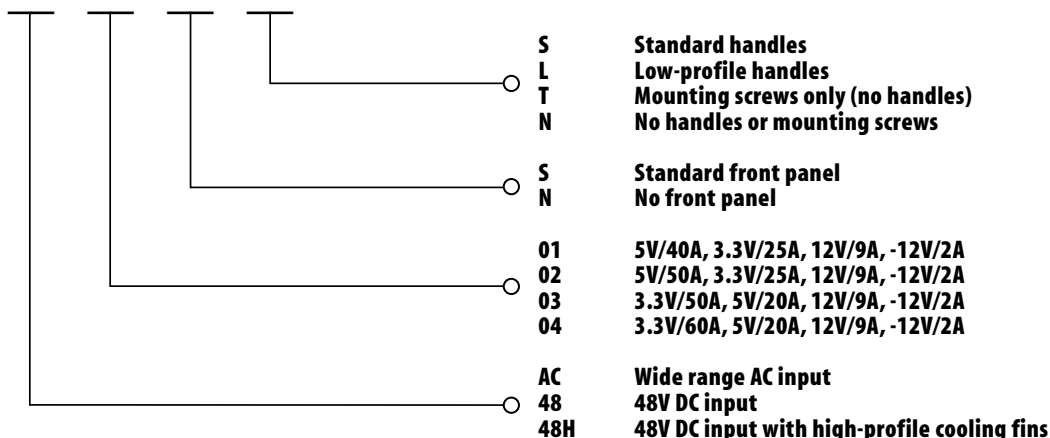
BACKPLANE POWER CONNECTOR LOCATION VIEWED FROM THE FRONT OF THE CAGE



Note: Please reference Section 4 (Mechanical Requirements) of the CompactPCI Specification PICMG 2.0 R2.1

## Configuration

PCI350 -



**Example:** PCI350-AC01SL AC version with 01 output configuration, standard front panel and low profile handles