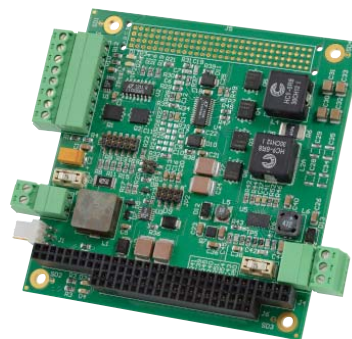


## Features

- Wide input range: +10V to +32VDC
- Battery charger supports multiple chemistries
  - MPPT charging supported for solar panels
  - NTC thermistor input to monitor temperature
  - Jumper configurable EOC and Float voltage
- UPS operation with battery pack (not included)
- Voltage outputs: +5V, +12V, and -12V
  - No minimum load required for regulation
  - Short circuit and overload protection
- -40° to +85°C operation without heatsink or fan
- Four LEDs provide visual indication of DC inputs, battery, and charger status
- Small size 3.6 x 3.8 inches (90 x 96mm)
- Other standard configurations available
- Custom configurations available in OEM quantities
- PC/104 and RoHS compliant



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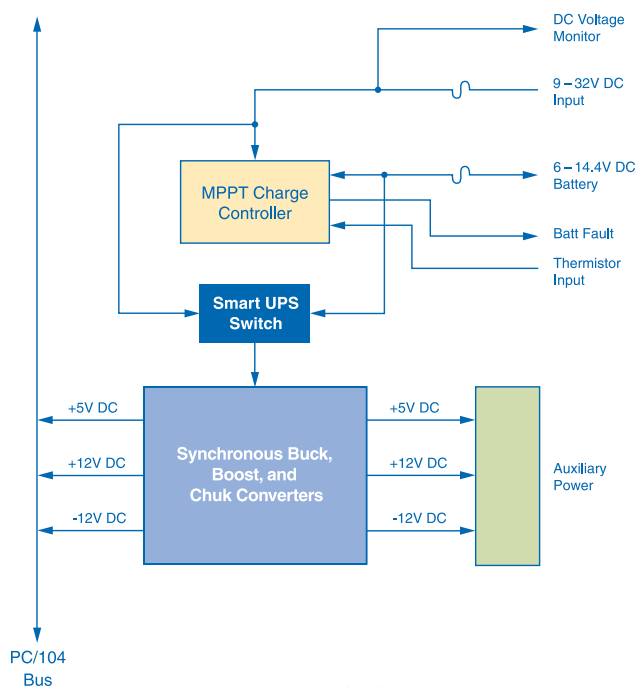


## Product Description

WinSystems' PCM-PS402-512 is a wide input range, triple output PC/104 DC/DC converter with a built-in battery charger and uninterruptable power supply (UPS) controller. Designed for harsh environments, the power supply operates from -40° to +85°C without a fan or heatsink making it ideal for industrial applications.

WinSystems' PCM-PS402-512 accepts a +10V to +32VDC input and converts it to +5V, +12V, and -12VDC outputs available on the PC/104 and auxiliary connectors. The PS402 can simultaneously charge a 6V to 12V battery while continuously monitoring the external DC input. If the input drops below the battery voltage, the PS402 logic automatically switches the input power source to the external battery providing uninterrupted power to the embedded computer and peripheral devices. When the external DC input is restored, the control logic switches back to the input and a new charging sequence commences. Four LEDs provide visual indication of DC input, battery, and charge status.

**Battery Charger** - The smart battery charger employs a CC/CV charging characteristic and provides a maximum 2A charge current. It features Maximum Power Point Tracking (MPPT) feature, useful with non-continuous power sources like solar panels and wind turbines which will servo the battery charge current based on a preset maximum power point voltage to increase charging efficiency.



PCM-PS402-512 Block Diagram

## PCM-PS402-512: PC/104 DC/DC Power Supply

The controller is capable of charging Lead Acid, Li-Ion/Polymer, LiFePO<sub>4</sub>, and SLA battery chemistries. The float voltage and charge termination schemes are jumper selectable allowing support for 6V to 12V batteries.

The charge controller has built in state-of-charge (SOC), bad battery detection, preconditioning, and end-of-charge (EOC) features. A cycle ends when the charge current drops below 200mA or a user configured EOC time limit is reached. A 10K $\Omega$  NTC thermistor input is available, which allows the charger to sense the external temperature and terminate charging when it is above or below a safe charging range.

**UPS Controller** - The UPS feature provides a fast 500nS switchover and built-in hysteresis which prevents oscillations between input and battery sources.

**Protection** - The PCM-PS402-512 has two user replaceable fuses. All fuses are rated for 7A. Each output is short circuit protected and current limited. A minimum load is not needed to bring the supply into regulation.

**Input Connectors** - Phoenix Combicon-type connectors are used on the board allowing power cables to be easily yet securely brought to the board and quickly disconnected when necessary.

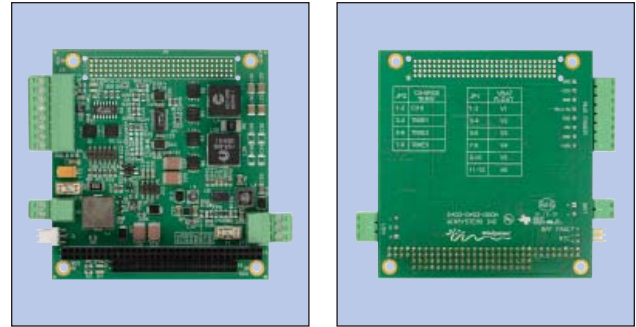
**Output Connectors** - Output voltages and ground are wired directly to their respective pins on the PC/104 and eight pin Phoenix Combicon-type auxiliary connectors.

**Rugged** - The board is designed for harsh environments and extended temperatures. It is populated with low-profile, soldered components to minimize board height, weight, and susceptibility to shock and vibration.

**Other Standard Configurations** - WinSystems offers this board in three additional versions: PC/104-*Plus* (PPM), PCI-104 (PIM), and standalone (ISM) systems. All configurations operate over the temperature range of -40° to +85°C without a fan or heatsink. Please refer to their individual data sheets for details.

**Custom Configurations** - Should your application need a special configuration, contact our Applications Engineers to discuss your requirements. We look forward to working with you.

WinSystems reserves the right to make changes to products and/or documentation without further notification. Product names of other companies may be trademarks of their respective companies.



Front and Back Picture of PCM-PS402-512

### Technical Specifications

#### Electrical

Input Voltage	+10V to +32VDC
Battery Charger	+6V to +12V @ 2A
Output Voltage	+5V @ 10A +12V @ 1A -12V @ 800mA

#### Connectors

V <sub>IN</sub>	Three pin 3.81mm pluggable
Battery	Two pin 3.81mm pluggable
PC/104	104 pin, 16-bit stackthrough
Auxiliary	Eight pin 3.81mm pluggable
Thermistor	Three pin 2.54mm friction header

#### Environmental

Operational from -40° to +85°C  
RoHS compliant

#### Mechanical

Dimensions	3.6 x 3.8 inches (90 x 96mm)
Weight	3.53 oz. (100 gm)
PC board	0.078 inches, four layer FR4

### Ordering Information

(See website for complete ordering information and accessories.)

PCM-PS402-512	PC/104 triple output DC/DC power supply with battery charger
ISM-PS402-512	Industrial triple output DC/DC power supply with battery charger
PPM-PS402-512	PC/104- <i>Plus</i> quad output DC/DC power supply with battery charger
PIM-PS402-512	PCI-104 quad output DC/DC power supply with battery charger

