



# MICRONIX PC/104 POWER SUPPLY

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**PV-5120, 22 & 24**  
POWER SUPPLY MODULE WITH UPS  
AND UP TO 3.84 MB SSD FLASH  
PC/104-MODULES

## User Manual & Installation Guide

VERS. 1.02

DOC: M5124DM.DOC

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## Description

Micronix PV-5124 is a PC/104 Power Supply with 1.76/3.84 MB Flash SSD which provides a convenient way to supply both power and solid state disk capacity to PC/104 bus products. The flash SSD emulates a standard FDD, a complete system can thus be built from just one Micronix PV-5124 and one PC/104 CPU.

By connecting an external battery, an integrated UPS-function will provide a CPU controlled / automatic shut down procedure of the operating system. An integrated battery charger will insure maintenance of the battery during operation.

## Power Supply

PV-5124 has a high efficiency DC to DC converter with 30 Watt output capability. The Power Supply will supply +5V, +12V and -12V to the PC/104 bus.

## UPS (Uninterruptible Power Supply)

Micronix PV-5124 has an integrated battery charger and built-in UPS function with interrupt alarm outputs. It also features a CPU controlled / automatic shutdown facility for battery discharge protection. The automatic shut down procedure is initiated when both "Mains failure" and "Low battery" have been detected for 120 seconds. At the end of this "shut down time" +5V will be removed from the system. "Low battery" occurs when Vbat goes below 10.8V. The CPU controlled shut down is initiated by a user program.

See "Typical discharge/charge cycle" on page 8.

## Battery charger

The integrated battery charger will deliver a constant current(400mA) to the battery as long as the battery voltage hasn't reached 13.8V. After reaching this point, the charger will act as constant voltage source(13.5V).

See "Typical discharge/charge cycle" on page 8.

## SSD (Solid State Disk)

The SSD can emulate a diskette drive as either drive A or B with up to 3.84 MB of capacity. The SSD holds factory installed firmware, including a set-up program where you can configure the SSD during boot, and the diskette data itself.

The SSD is most useful with DOS, where you both can have a complete operating system and an application on the SSD.

Further technical information concerning: *Flashdisk*, *Set-up program and programming* can be found at our web site:

<http://www.micro-technic.com/pv5124>

## FEATURES AND SPECIFICATIONS

### Power Supply

- Output power capability: 30W(max)
- Input voltage: 8-30 VDC or  
16-30 VDC using battery charger for 12V battery
- Output voltage: +5V @5A (max)  
+12V @250mA(max)  
-12V @100mA(max)
- Line regulation(+5V) 0.3% - @low line to high line; full load
- Load regulation(+5V) 0.6% - @no load to full load; nominal input
- Load regulation(+12V) 1% - @no load to full load; nominal input
- Load regulation(-12V) 0.5% - @no load to full load; nominal input
- Ripple/noise: 150mV p-p; DC–20MHz
- LED indicators: Green LED indicating presence of +5V  
Green LED indicating presence of +12V  
Green LED indicating presence of -12V  
Green LED indicating Mains>16V

### Battery charger

- Supported battery-type: 12V lead-acid, min. 4AH
- Charging method: Constant current / constant voltage
- Charging current: 400mA
- LED indicators: Yellow LED indicating “Battery full”  
Red LED indicating “Battery low”
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### UPS

- Alarm outputs: “Mains failure” alarm interrupt  
“Battery low” alarm interrupt
- Interrupt support: INT 5,7,9,10,11,12,15 – programmable
- Automatic shut down: 120 sec after detection of both:  
“Mains failure” and “Battery low”
- CPU controlled shut down: Controlled by user-software, delayed up to 127 sec.

### SSD

- Disk capacity: PV-5122: 1.76 MB  
PV-5124: 3.84 MB
- Speed: PV5122: Read 170 KB/sec, write 20 KB/sec  
PV5124: Read 90 KB/sec, write 15 KB/sec
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### Physical / Environment

- Dimensions: 96x90x18mm
- Temperature range: Operating: -20 °C to 70 °C  
Storage: -40 °C to +85 °C
- Humidity: 0 to 90% RH, non-condensing
- Connectors: PC/104 Stack-through connectors  
Screw terminals for mains and 12V battery
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## MODEL SELECTION

PV - 512XY-S

Disk capacity

0=No SSD

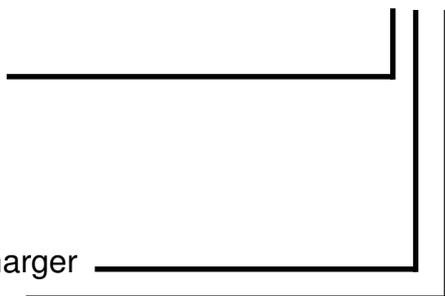
2=1.76 MB

4=3.84 MB

A = without UPS

and battery charger

S = Stack-through



## AVAILABLE MODELS

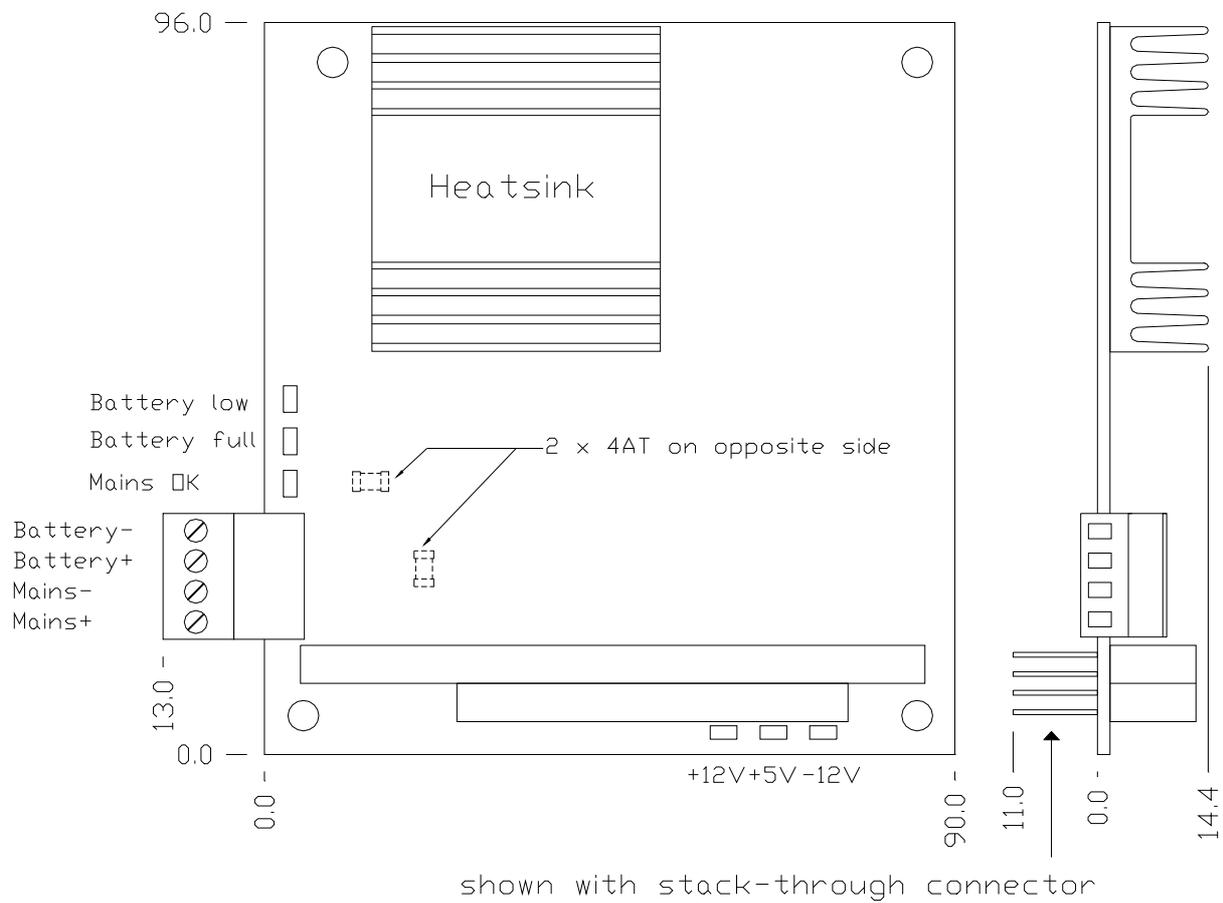
Model no.	Description/Type
PV-5120-S	PS with UPS, Stack-through
PV-5122-S	PS with UPS and 1.76 MB SSD, Stack-through
PV-5124-S	PS with UPS and 3.84 MB SSD, Stack-through
PV-5120A-S	PS, Stack-through, without UPS and battery charger.

# INSTALLATION GUIDE

## PRECAUTIONS TO ESD

Please note, that the Micronix PV modules must be handled with respect to ESD (Electrostatic Discharge). Electrostatic Discharge to the PV modules must be avoided. Before removing the module from the protection bag, the user must be discharged using a grounded wrist ribbon.

## SCHEMATIC OUTLINE



## I/O MAP AND MEMORY MAP

### I/O Map

I/O port range used is 250h-257h. Be sure that no other hardware in the system makes use of this I/O range.

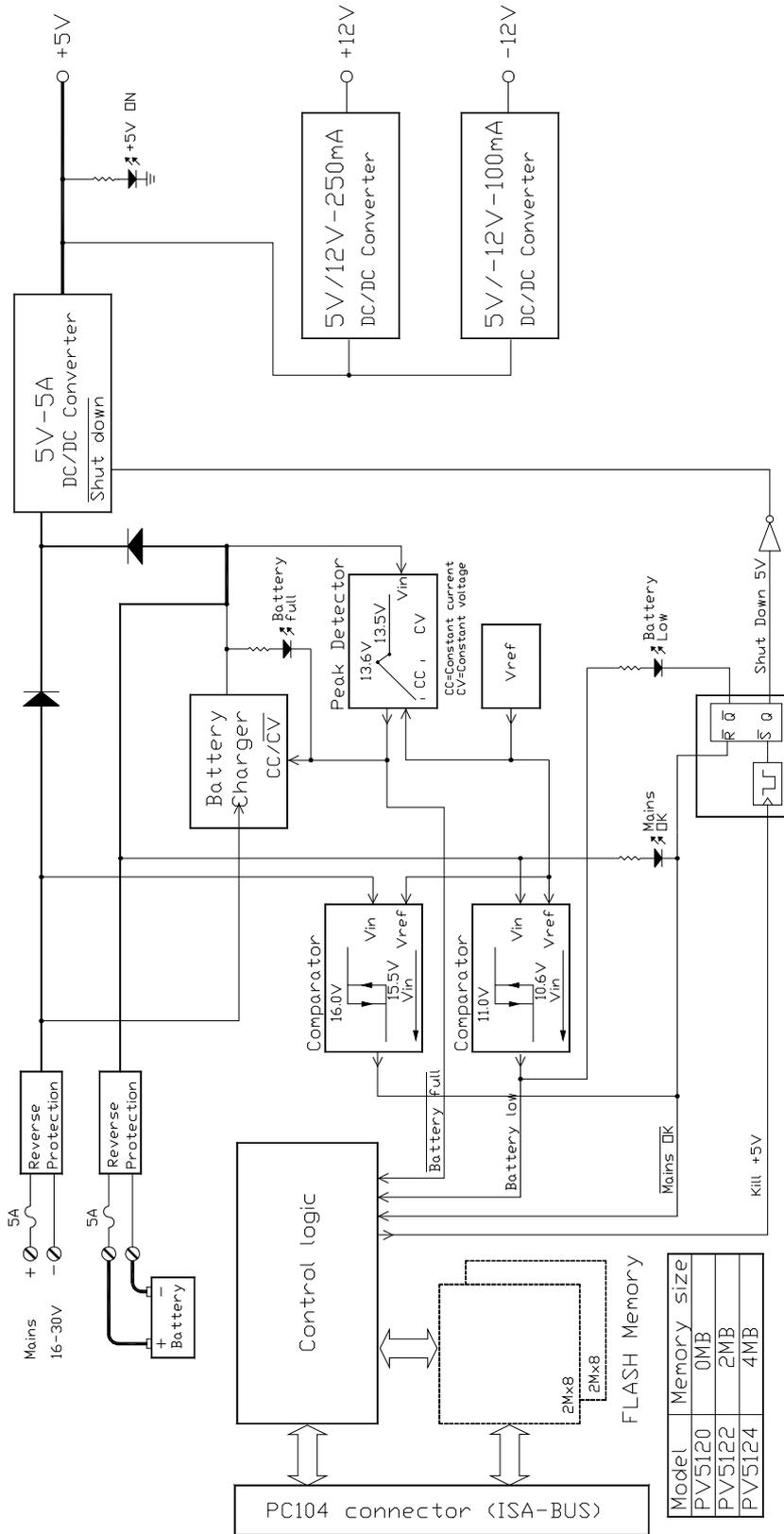
### Memory Map

PV-5120 uses no memory range.

PV-5122 & PV5124 uses memory range D0000h-D7FFFh.

Be sure that no other hardware in the system makes use of this memory range. If your system BIOS set-up has ROM BIOS shadowing functions, you may enable shadowing in the D0000h-D3FFFh range to improve flashdisk performance. You should not enable shadowing in the D4000h-D7FFFh range. If your system BIOS only allows to enable/disable shadowing in the whole D0000h-D7FFFh range, you must disable it.

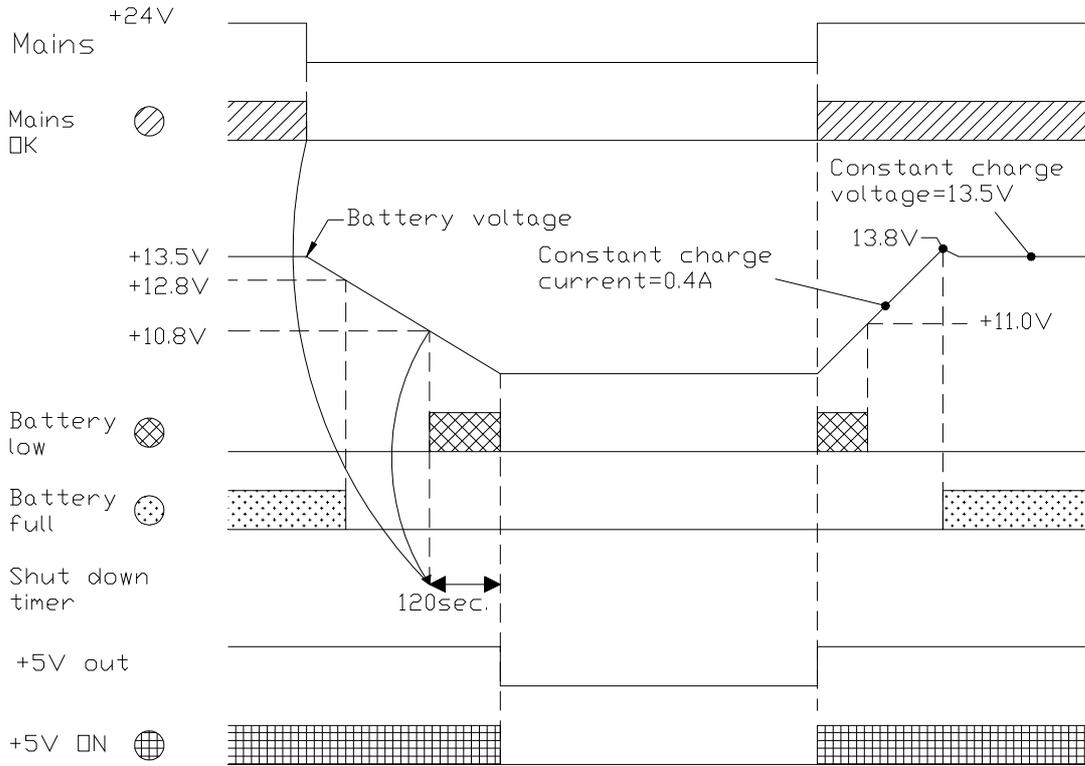
# SCHEMATIC



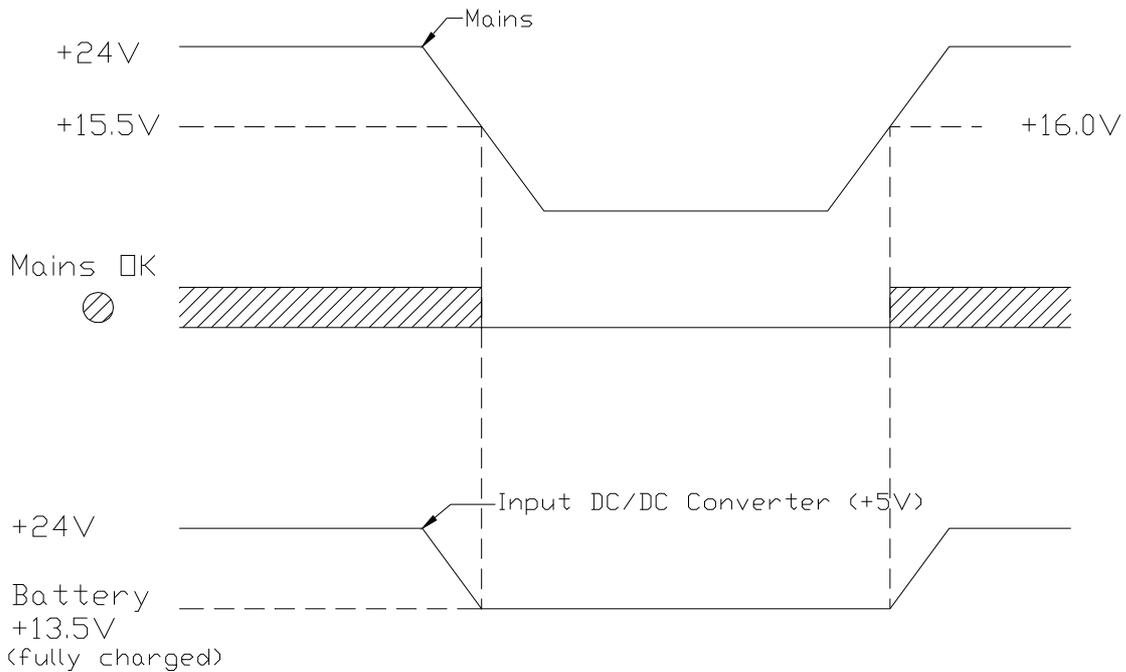
Schematic PV512X

Model	Memory size
PV5120	0MB
PV5122	2MB
PV5124	4MB

UPS TIMING



Typical discharge/charge



Short time dropout of mains