



USPS

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Uninterruptible Switching Power Supply

SPECIFICATION

MODEL AIC-TX746024 - Customized

Uninterruptible Switching Power Supply

Company Number 5493501

VAT Number 865 0224 36

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INTRODUCTION:

This specification defines electrical performance and characteristic of USPS Model AIC-TX746024 design based on patent and refer to Intel ATX12V power supply design guide.

Each Electrical performance and characteristic as following:

1.1. Total of maximum output power per function:

For PC (+5V, +3.3V, +12V, -12V,+24V, +5VSB)	446W
446W including monitor	
For Batteries charging	14W

1.2. Software Overview: (Option)

The software interface is compliance with WIN 2000, XP UPS Monitor. It is an interface with RS-232 port, meets "UPS monitoring Dry-connector protocol".

Or, USB interface option with software disk compliance to WIN, LINUX systems.

2. INPUT

2.1. AC INPUT

2.1.0 Active PFC correction, compliant IEEE61000-3-2 D (240Vac Line)

2.1.1. FOR 100~240 VAC LINE

	Min.	rate	Max.	Units.
Vin Range	100		240	Vrms
Vin Frequency	47		63	Hz
Inrush Current (Max)		48		Apk

2.2. DC INPUT

	Min.	rate	Max.	Units.
Vin Range	18	24	28	Vdc

3. DC OUTPUT - rated (max)

	+5V	+3.3V	+12V	+24V	-12V	+5Vsb	monitor	+28Vchrg
Min/Max(A)	0.5/20	0/20	1/20	0/5	0.5	0.1/2	0/3	0.5
	120W		240W					
Watt	214W		120W	6W	10W	36W	14W	

Note: The LCD monitor is supplied from +12V. Maximum total of output : 460W



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3.1. Regulation

	Min	Nom	Max	Unit
+5V	4.75	5.00	5.25	V
+3.3V	3.14	3.30	3.46	V
+12V	11.40	12.00	12.60	V
-12V	-10.80	-12.00	-13.20	V
+24V	22.6	24	26.4	V
+5V SB	+4.75	+5.00	+5.25	V

3.2. P-P NOISE (not to exceed)

+5V	+12V	+24V	-12V	+5V SB	+3.3V
60mV	120mV	240mV	160mV	+80 mV	50mV

3.3. Over Power Protection

Total power protection: 115% ~140%

3.4. Short Circuit Protection

Short to ground or cross with each output rails, the Power supply auto shut down.

3.5. Over Voltage Protection for +5V +12V 3.3V

Trip Voltage : 5.74~7V 13.4~15.6V 3.76~4.3V

3.6. Protection Functions

- OVER CURRENT PROTECTION
- SHORT CIRCUIT PROTECTION
- OUTPUT OVER VOLTAGE PROTECTION
- OUTPUT UNDER VOLTAGE PROTECTION
- AC MAINS FAILURE AUDIO WARNING SIGNAL
- BATTERY OVER DISCHARGING PROTECTION DC 20V±0.5V
- BATTERY OVER CHARGING PROTECTION DC 28V±0.5V
- BATTERY SHORT CIRCUIT PROTECTION BREAKS THE FUSE

3.7. Rise Time Turn On Delay Normal Load

Rise Time (0.5V to 4.75V): < 17ms



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3.8. Power Good Signal

Duration: 150ms - 500ms

4. BATTERY CHARGING OUTPUT

4.1. Charging Voltage

Max Charging Voltage: 28V

4.2. Charging Current

Max Charging Current: 0.5A

5. MONITOR SUPPORT OUTPUT VOLTAGE

5.1. For LCD monitor

12Vdc @ 3.5A

5.2. Monitor Output Short Circuit Protection

Immediately shuts down

6. BOOT START CONDITION

The USPS can start if the AC mains input voltage is not less than 85% of rated, and the minimum loading of +5V is not less than 2A, +12V and +3.3V is not less than 0.3A.

And can be boot up with single AC input by meeting above separate limited input voltage.

7. BATTERY

The two sets of Lead-acid battery pack connecting in parallel. Other types of batteries such as car batteries (24V) can also be used, by special order. The backup time is proportional to the capacity of the battery.

Note: The battery kit is **NOT** an internal part of the USPS and is sold separately.

7.1. Battery Discharge Voltage

28V~19V

7.2. Battery Discharge Current

Battery Discharge Current is not larger than 35A



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7.3. Battery Low warning signal

When the battery voltage drops lower than 22V (± 0.4 Vdc), a critical beeping audio signal will sound.

7.4. Max Charging Voltage

28V

7.5. Charging Current

0.004A – 0.5A

7.6. Leakage Current

Less than or equal to 0.1 mA

7.7. Recharge time

8 hours at room temperature (25°) to replenish 50% charged. > 24 hours at room temperature (25°) to replenish 90% charged.

7.8. Backup time (24V/3.0Ah package in 5.25" bay x 2)

Full Load: about 3 Minutes

Typical PC Load: 4 -15 Minutes

The typical load is the loading for dual Pentium IV 3.06 Ghz system with 1GB RAM, 4 Hard Disk drive, 1 CD ROM drive and a 15" LCD monitor.

Test conditions:

At room temperature (25°) with fully charged battery. A battery will be defined as fully charged after spending two discharge/charge cycles (per cycle over 16 hours).

8. TRANSFER TIME

Backup Transfer Time: 0 ms for Vdc out to PC Main unit.

Transfer time for AC loading (CRT Monitor only) when AC fail: Less than 8~14ms.

9. TOTAL EFFICIENCY (TYPICAL)

Normal Mode: >70%

Backup Mode: >65% with fully charged batteries.

10. ENVIRONMENTAL

The USPS is capable of withstanding the following:



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10.1. Temperature range

Operating:.....0? to 40?

Storage:-20? to 55? (with battery)

Storage Duration: Max 6 months with battery (battery needs to be recharged if stored over 6 months).

When the battery is operated in temperatures lower than or equal to 10? , the back up time will be shorter than when it is operating at 20? .

10.2. Humidity:

Operating:..... 85% non-condensing

Storage: 95% non-condensing

10.3. Altitude

Operating:..... Up to 2000 meters (max)

Storage: Up to 3000 meters (max)

10.4. Vibration

No obvious mechanical vibration

11. REGULATORY STANDARDS AND REQUIREMENTS

11.1. Safety

USA:..... 60950,

Europe:..... LVD EN60950

11.2. EMC

FCC part 15 class B (DOC)

EN 55022; EN55024 98; EN61000-3-2 D

11.3. MEAN TIME BETWEEN FAILURE (MTBF)

The calculated mean time between failures for the USPS is greater than 80,000 hours when operate under the following conditions: (fans and battery excepted)

Ambient temperature:.....25?

Loading:..... 100% rated load

Normal mode:..... 95% by AC supply, working duty cycle



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Backup mode:.....5% by battery, working duty cycle

The calculation refers to the Bellcore Technical Reference TR-TSY-000332
"Reliability Prediction procedure for Electrical Equipment".

12. ISOLATION

12.1. Isolation impedance

Between AC Input and DC Output: 50 Mega ohms

Between Virtual AC Output for monitor and Battery: 50 Mega ohms

12.2. Isolation voltage:

Between AC Input and Grounding:..... 1500Vac for 1 Min.

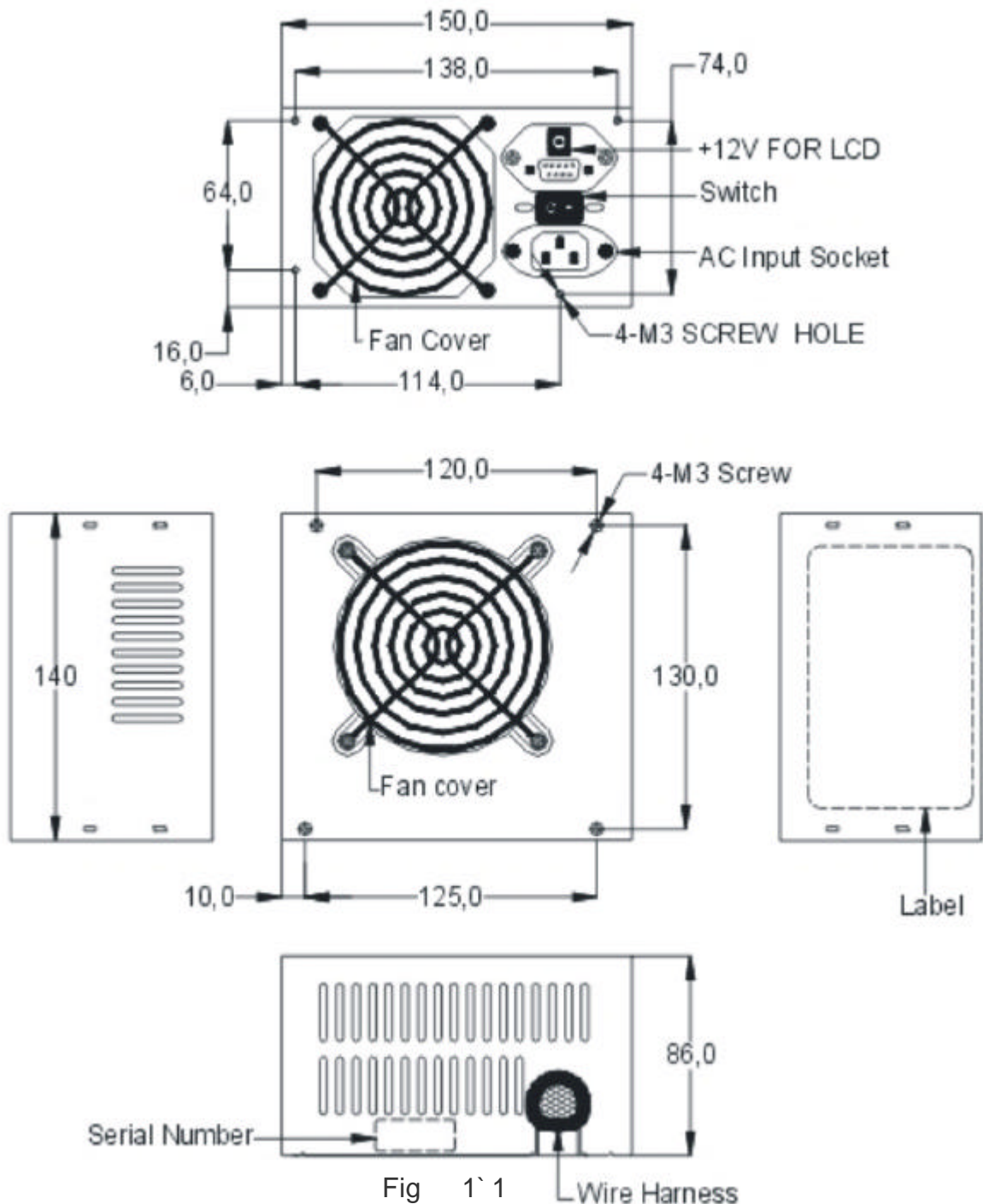
Between AC Input and DC Outputs: 4250Vdc for 1 Min.

Between Monitor AC output and Battery: 4250Vdc for 1 Min.

13. MECHANICAL

13.1. Dimensions and Wiring

Dual standard P/S II dimension and output wiring of ATX connectors.



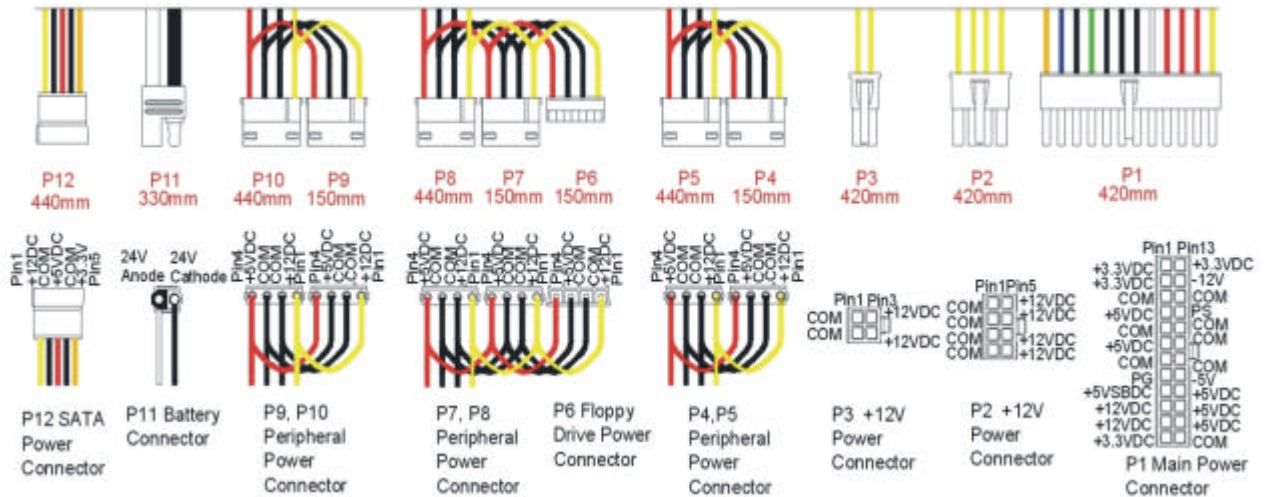


Fig 2

13.2. AC Input / Output

At the rear of the USPS: 2 CEE-22 sockets.

14. PACKING AND SHIPPING

Packing is adequate to provide protection against damage, breakage or loss during shipment and is of the type that is not destroyed when opening.

Standard industry OEM packaging: 10 pieces per Carton. Modified packaging requirements will be quoted on an individual basis.

15. NUCLEAR AND MEDICAL APPLICATIONS

USPS PRODUCTS ARE NOT AUTHORIZED FOR USE AS A CRITICAL COMPONENT IN LIFE SUPPORT SYSTEMS, EQUIPMENT USED IN HAZARDOUS ENVIRONMENTS OR NUCLEAR CONTROL SYSTEMS WITHOUT WRITTEN APPROVAL OF AIC TECHNOLOGY (EUROPE) LTD.

16. TECHNICAL REVISIONS

The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.