

USER GUIDE

# Patriot Pro II<sup>®</sup>

400VA, 750VA and 1000VA



English . . . . .1

# Patriot Pro II<sup>®</sup>

400VA, 750VA and 1000VA

## User Guide

LTM-1325A

© Copyright 1999, Best Power. All rights reserved.



---

# If You Have a Question

---

Best Power is committed to outstanding customer service. Worldwide Service is happy to help you with your problems or questions. A service technician is available 24 hours a day, 365 days a year. Just call Worldwide Service or the nearest Best Power office, or send a fax to the Worldwide Service Fax number. Please have your unit's serial number available when you call; this number is on the back of the unit.

If you prefer you can contact Best on the World Wide Web to get more product information.

Best's toll free Fax-on-Demand service is also available 24 hours a day to give you access to technical notes and product information.

.....Worldwide Service:	1-800-356-5737 (U.S., Canada) or 1-608-565-2100
.....Worldwide Service FAX:	1-608-565-7642 or 1-608-565-2509
.....World Wide Web Site:	<a href="http://www.bestpower.com">http://www.bestpower.com</a>
.....Sales Fax on Demand:	1-800-487-6813 (U.S. and Canada)
.....Service Fax on Demand:	1-608-565-9499 ext. 9000

Best Power Offices Section (see Table of Contents) lists Best offices around the world.

Best Power reserves the right to change specifications without prior notice.

---

# Table of Contents

---

Safety Instructions .....	2
UPS Features .....	3
Quick Startup .....	4
Symbols, LEDs and Audible Beeps .....	5
Troubleshooting .....	7
Replacing the Batteries .....	8
Replacement Instructions - 400VA Models .....	9
Replacement Instructions - 750VA and 1000VA Models .....	10
Communication Port .....	11
Pinouts .....	11
Specifications .....	12
Warranty .....	13
Best Power Offices .....	16
Appendix A: Adjusting Voltage Settings .....	17

## Trademarks

---

Windows is a registered trademark of Microsoft Corporation.

All other brand and product names are trademarks or registered trademarks of their respective holders.

---

# Safety Instructions

---

## IMPORTANT SAFETY INSTRUCTIONS! SAVE THESE INSTRUCTIONS!

This User Guide contains important instructions for your Patriot Pro II that must be followed during installation and maintenance of the UPS and batteries.



### CAUTION!

Whenever the unit's On/Off is "On," there may be dangerous voltage present at the unit's outlets. This is true because the unit's battery supplies power even if the unit is not plugged into the wall outlet. The unit contains dangerous voltages.

To reduce the risk of electric shock, install in a temperature-controlled and humidity-controlled indoor area free of conductive contaminants.

The power supply cord is intended to serve as the disconnect device. The socket-outlet shall be near the equipment and shall be easily accessible.

With the exception of user replaceable batteries, all servicing of this equipment must be performed by qualified service personnel.

Before maintenance or repair, all connections must be removed. Before maintenance, repair or shipment, the unit must be completely switched off and unplugged or disconnected.

The installation and use of this product must comply with all national, federal, state, municipal or local codes that apply. For assistance, call Best Power's Worldwide Service or your local Best Power office.

Refer to your Patriot Pro II Safety Information Manual for additional safety instructions.

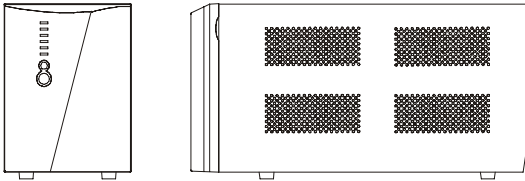
If the Patriot Pro II unit has been damaged during shipment, call your vendor immediately.

*If the Patriot Pro II unit is stored, the batteries should be recharged every 6 months. If stored above 25 ° Celsius (77 ° Fahrenheit), recharge the batteries more often.*

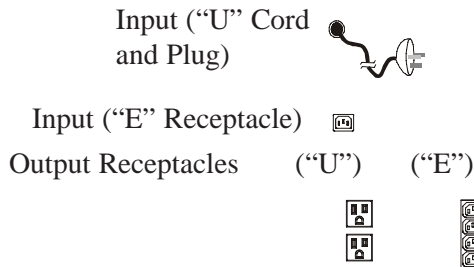
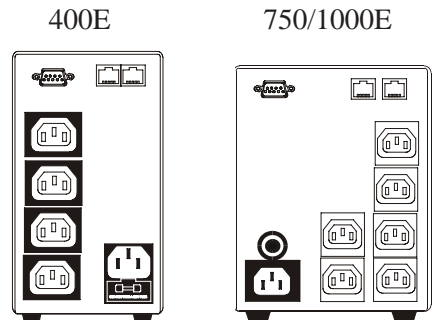
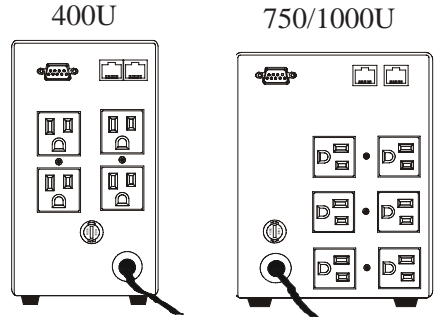
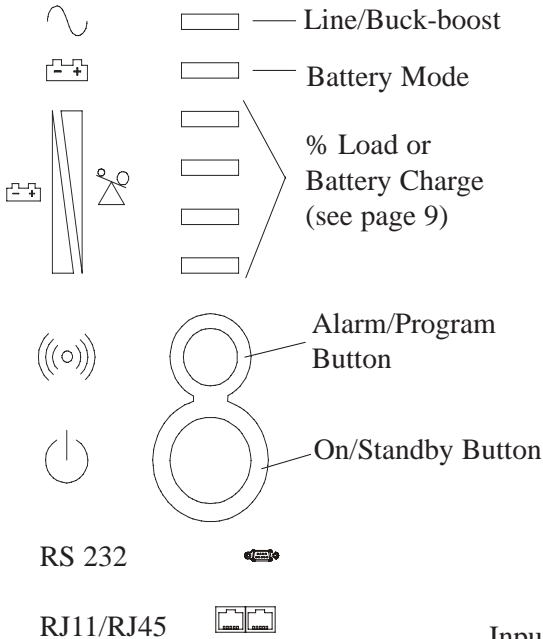
# UPS Features

The Best Power Patriot Pro II provides protection against power problems, including power outages, brownouts and sudden increases in power. It also provides spike suppression and line noise filtering to protect your equipment. Front panel LEDs and an audible alarm keep you aware of the unit's status. Use the drawings below to identify features of the unit.

## Front and Side Views of 400, 750 and 1000 Models



## Patriot Pro II Controls and Indicators



---

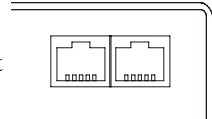
# Quick Startup

---

- 1 If your Patriot Pro II UPS has a removable power cord, connect the power cord to the back of the unit. Plug the UPS into a wall outlet.
- 2 Let the unit charge the battery for at least 8 hours. You may use the unit while the battery charges, but the battery backup runtime will be reduced until the battery is fully charged.
- 3 Note: The On/Off button must be pressed and held for about one second to turn the Patriot Pro II unit on or off. To start the unit now, press and hold the On/Off button (the bottom button on the front panel). When the unit starts, it will:
  - 3.a. Beep, then light the front panel lights, turn them off and light them again. **Next, the Patriot Pro II applies AC output to the back panel receptacles.** It then does a brief self test, and turns various front panel lights off and on.
  - 3.b. After 5 seconds or less, the self test ends. The top and bottom green lights will come on and remain on. If the unit beeps, or if the top light does not remain on, even though input power is available from the wall outlet, go to the Troubleshooting section.
- 4 Switch off the equipment you want to protect, and plug it into the outlets on the back of the Patriot Pro II.
- 5 Switch on the protected equipment, one at a time. If the UPS beeps an alarm when you start your equipment, the UPS may be overloaded. See the Troubleshooting section.

The bottom four lights on the front of the UPS show the % of the UPS' power that your equipment is using. See Symbols, LEDs and Audible Beeps Section for more information.

- 6 The RJ-11 or RJ-45 Surge Protection jacks will protect equipment that uses an RJ-11 or RJ-45 connection. Plug the 10BASE-T network connection (or phone, fax or modem line for U models) into the surge protection jack labeled "IN" on the back of the Patriot Pro II. Plug the protected equipment into the surge protection jack labeled "OUT."



RJ-11 or  
RJ-45

Network cabling is not provided. Network only on European model;













do not connect any TNV equipment such as telephone, fax or modem to the circuitry. It may only be used for network protection purposes on E models. *This connection is optional. It is not needed to use the Patriot Pro II.*

- 7 Please fill out the warranty registration card and return it to your local Best Power office. If you are in the U.S.A. or Canada and you would like to activate the Warranty for Transient Voltage Surge Suppression, please return the registration card within 10 days of installation.








# Symbols, LEDs and Audible Beeps

The front panel LEDs and an audible beep indicate the unit status. The unit beeps whenever the unit is on battery power or an alarm is present. See Table 2 for information on beep coding. In the figure below, bucking means that Patriot Pro II is reducing high input voltage, and boosting means Patriot Pro II is increasing low input voltage.

Steady: Patriot Pro II is operating on AC line.				Blinking: Patriot Pro II is bucking or boosting input AC line.
Steady: Patriot Pro II is operating on batteries.				
<p>AC Line Operation: A, B, C and D indicate per cent of full load.</p> <p>A, B, C &amp; D with D flashing, load = 110% or higher.</p> <p>A, B, C &amp; D = 75 - 100%</p> <p>A, B &amp; C = 50 -75%</p> <p>A &amp; B = 25 - 50%</p> <p>A = 0 - 25%</p>	<p>Battery Operation: A, B, C and D indicate battery charge.</p> <p>A, B, C &amp; D = 75 - 100%.</p> <p>B, C &amp; D = 50 - 75%</p> <p>C &amp; D = 25 - 50%</p> <p>D = 0 - 25%; when D is flashing, less than 2 minutes of runtime remain.</p>	     	<p> <b>Blinking = ALARM Condition</b></p> <p>C = UPS shutdown due to output overload time-out.</p> <p>B = UPS failed the battery test.</p> <p>B &amp; C = UPS shutdown due to command from communication (RS232, remote shutdown or External SNMP)</p> <p>A &amp; B = UPS shutdown due to main relay failure or output short circuit</p> <p>A = UPS Fault (overcharge)</p>	

**Table 1: Symbols and LEDs**

Symbols and LEDs	What It Means
 AC LINE (Green)	<b>Steady:</b> Acceptable input power is present. The unit is running on line power. <b>Off:</b> No input power is present or the unit is switched off.
 LINE CORRECTION (Green)	<b>Blinking:</b> The unit is boosting or bucking utility power. <b>Boost</b> = Automatically increases low input power to prevent the unit from switching to battery. <b>Buck</b> = Automatically decreases high input power to prevent the unit from switching to battery.
 BATTERY MODE (Yellow)	The unit is running on battery power.
 OVERLOAD, (D LED) (Yellow)	<b>Output Overload:</b> Refer to Tables 2 and 3.
 WARNING, (D LED) (Yellow)	<b>Replace the Battery or UPS Fault.</b> Refer to Tables 2 and 3.

To silence an alarm, press the **ALARM SILENCE** button on the front panel. The beep will stop, but the alarm light will stay on. **Note:** Silencing the alarm does not solve the problem that caused it. See Tables 2 and 3.

If your Patriot Pro II runs on batteries frequently because the input utility line varies often, you may want to adjust your Patriot Pro II to accept wider voltage variations before switching to batteries. Appendix A describes how to adjust the Patriot Pro II from the front panel in response to specific utility power problems. You should have an electrician check your nominal line voltage and determine if the problem is due to a “Surge” (high) voltage or “Brownout” (low) voltage. Changing the setting without this knowledge could make the problem worse.

**Table 2: Audible Beeps**

<b>Number of Beeps</b>	<b>What It Means</b>
1 every 10 seconds	<b>Line Loss:</b> The unit is on battery power. See Table 3 for more information.
2 every 10 seconds	<b>Low Battery Alarm:</b> The unit was running on battery power and shut down due to very low battery voltage. The unit will restart automatically when acceptable power returns.
3 every 10 seconds	<b>Replace the Battery:</b> The battery needs to be replaced. See “Replacing the Batteries.”
3 every 5 minutes	<b>Battery Undercharged:</b> While on line operation, low battery voltage indicates that the battery will provide minimal backup time.
0.5 second beep, re-occurring every 1 second	<b>Output Overload:</b> Too much load equipment.
Continuous	<b>UPS Fault:</b> UPS internal failure

# Troubleshooting

If you have a question or problem, the troubleshooting table may help. (See Table 3.) If you need assistance, phone Best Power's Worldwide Service or your local Best Power office. Please have the model number and serial number (located on the rear of the unit) available.

If the unit must be returned, Best Power will give you a Return Materials Authorization (RMA) number. Phone Best Power for an RMA number before returning the unit for any reason.

**Table 3: Troubleshooting**

<b>Problem</b>	<b>Possible Reasons</b>	<b>What To Do</b>
Yellow BATTERY LED on, green LINE LED off, one beep every 10 seconds.	<ol style="list-style-type: none"> <li>1. Utility power outage.</li> <li>2. Loose plug.</li> <li>3. Tripped circuit breaker.</li> <li>4. Power cord failure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Wait for power to return.</li> <li>2. Make sure the power cord is connected.</li> <li>3. Reset the circuit breaker.</li> <li>4. Phone Best Power's Worldwide Service.</li> </ol>
Yellow BATTERY LED on, green LINE LED off, two beeps every 10 seconds.	Very low battery voltage.	Plug the unit into a working wall outlet for at least 8 hours to allow the batteries to charge. After recharge, if the Patriot Pro II will not operate on batteries, or Patriot Pro II beeps twice every 10 seconds on batteries, phone Best Power's Worldwide Service.
Green LINE LED on, Yellow WARNING LED on, three beeps every ten seconds.	Unit has failed the battery test.	Turn the unit off and then on to reset the "Replace Battery" alarm and LEDs. Replace the battery. See "Replacing the Batteries" on page 8.
Green LINE LED on, Yellow WARNING LED off, three beeps every five minutes.	Battery not charged following a power outage.*	Use the unit on utility power; wait for full recharge. The beeps automatically stop when the battery is charged to allow for a safe shutdown.
Yellow OVERLOAD LED is blinking, one beep every second.	The power required by the equipment is too high.	<ol style="list-style-type: none"> <li>1. Remove load equipment.</li> <li>2. Reduce load level until the beeping stops.</li> </ol>
Yellow WARNING LED on. Continuous beep.	<ol style="list-style-type: none"> <li>1. Output short circuit.</li> <li>2. UPS Fault</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove load and reset UPS.</li> <li>2. Phone Best Power's Worldwide Service.</li> </ol>

\* If the Patriot Pro II's battery does not recharge after 24 hours in the 3-beeps/5 minute alarm state, the alarm changes to 3 beeps/10 seconds, indicating the battery must be replaced.

---

# Replacing the Batteries

---

Patriot Pro II's batteries are user-replaceable and can be replaced while the Patriot Pro II has AC input applied and powers the loads. This means that, if necessary, you can replace the batteries while the UPS is running. Before you replace the batteries, make sure that you read the safety information below.

**Note:** If you have a power outage while you are replacing the batteries, the UPS will not be able to run on battery power and your protected equipment will shut down.



The batteries used in the UPS and battery pack can produce dangerous voltage and high current. Therefore, the batteries may cause severe injury if their terminals contact a tool or the UPS cabinet. Be very careful to avoid electrical shock and burns from contacting terminals while you replace the batteries.

Batteries contain caustic acids and toxic materials and can rupture or leak if mistreated. Remove rings, metal wristwatches and other jewelry. Do not carry metal objects in your pockets: these objects could fall into the UPS.

Never allow any tool to contact both a battery terminal and the UPS cabinet or another battery terminal. Do not lay tools or metal parts on top of batteries.

To ensure continued superior performance from your UPS and to maintain proper charger operation, you must replace the UPS batteries with the same number and type of batteries. These batteries must be the same type as the original batteries: valve-regulated, low maintenance. The replacement batteries should have the same voltage and ampere-hour rating as the original batteries.

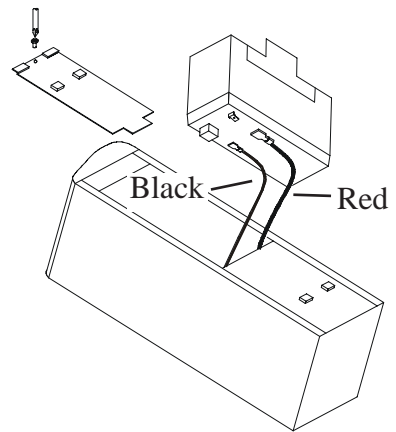
Assume that old batteries are fully charged. Use the same precautions you would use when handling a new battery. Do not short battery terminals with a cable or tool! Batteries contain lead. Many areas have regulations about disposing of used batteries. Please dispose of old batteries properly. **DO NOT** dispose of batteries in a fire because the batteries could explode. Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

This equipment may produce ozone. Take precautions to ensure that the concentration of ozone is limited to a safe value (0.1 ppm {0.2 mg / m<sup>3</sup>} calculated as an 8-hour time-weighted average).

## Replacement Instructions - 400VA Models

---

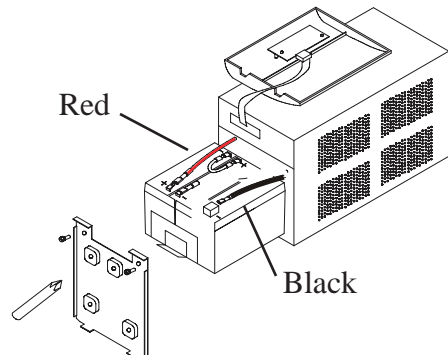
- 1 Phone Best Power's Worldwide Service to order a replacement battery pack. It must be the same type and rating as the original battery. See *Battery* information in Specifications.
- 2 If it is necessary, the battery may be replaced while the Patriot Pro II is running with the protected equipment attached. **Option:** You may switch off and unplug the protected load equipment from the Patriot Pro II. Then, turn off the Patriot Pro II and disconnect the line cord.
- 3 On the bottom of the Patriot Pro II, remove the Phillips screw at the end of the battery door and slide the door off.
- 4 Use the flap attached to the battery to lift it out of the unit.
- 5 Disconnect the battery cables from the old battery. Dispose of the old battery properly.
- 6 Connect the battery cables to the new battery: red to positive (+), black to negative (-). Carefully install the battery back into the Patriot Pro II.
- 7 Slide the battery door back into place and secure with the Phillips screw removed in step 3.
- 8 **If you followed the option in Step 2:** Reconnect the line cord to the Patriot Pro II unit and turn the unit on. Reconnect the load equipment. Switch on the protected load equipment one piece at a time.



## Replacement Instructions - 750VA and 1000VA Models

---

- 1 Phone Best Power's Worldwide Service to order a replacement battery pack. It must be the same type and rating as the original batteries. See *Battery* information in Specifications.
- 2 If it is necessary, the batteries may be replaced while the Patriot Pro II is running with the protected equipment attached. **Option:** You may switch off and unplug the protected load equipment from the Patriot Pro II. Then, turn off the Patriot Pro II and disconnect the line cord.
- 3 Pull the top of the plastic front cover forward, then release the bottom of the front cover and carefully pull it away from the unit. Place the front cover, with the LED panel and ribbon cable attached, on top of the unit so it is out of your way while replacing the batteries.
- 4 Remove the two screws from the interior panel to gain access to the batteries.
- 5 Disconnect the red and black cables from the used battery pack.
- 6 Use the label attached to the batteries to remove the batteries from the Patriot Pro II.
- 7 Slide the new batteries into the unit. Reconnect the cables to the new battery pack: red to positive (+), black to negative (-).
- 8 Position the battery cables so they will not be pinched by the interior panel. Install the panel with the screws. Carefully snap the front cover, with the attached LED panel and ribbon cable, back onto the unit. Dispose of old batteries properly.
- 9 **If you followed the option in step 2:** Reconnect the line cord to the Patriot Pro II and turn the unit on. Reconnect the load equipment. Switch on the protected load equipment one piece at a time.



---

# Communication Port

---

The Patriot Pro II is plug-and-play compatible with Windows 95.

The Patriot Pro II comes equipped with CheckUPS II power management software. An interface cable for the following systems is provided.

SCO UNIX/XENIX	UNIX and Compatible Systems	OS/2
Windows 3.X, 95 and NT	Novell NetWare	

---

## DB-9 Pinouts

---

- Pin 1** *RS232 Receive Data:* Receives incoming RS232 communication data.
- Pin 2** *RS232 Transmit Data:* Sends outgoing RS232 communication data.
- Pin 3** *Normally Open On Battery Contact:* A normally open contact that closes 15 seconds (pulls to Common) after the UPS switches to battery power.
- Pin 4** *Common:* The signal ground for all signal pins.
- Pin 5** *Normally Open Low Battery Alarm Contact:* A normally open contact that closes (pulls to Common) during a Low Battery Alarm. This tells CheckUPS II and other shutdown software when to start a computer shutdown.
- Pin 6** *Plug and Play Sense for Windows 95.*
- Pin 7** *Remote Shutdown:* Shorting this pin to Common for at least 5 seconds while the UPS is operating on battery, shuts the UPS off after 120 seconds.
- Pin 8** *Normally Closed On Battery Contact:* A normally closed contact that opens 15 seconds (releases from Common) after the UPS switches to battery power.
- Pin 9** *Unused.*

Contacts consist of open collector circuits capable of switching up to +30 VDC 6 mA resistive load.

---

# Specifications

---

Best Power reserves the right to change specifications without prior notice.

**Line Transient Protection:** Passes ANSI/IEEE C62.41 Category A testing.

**Safety Compliance:** *Model U:* Tested to UL1778; tested to electrical standards of UL1449, and CAN/CSA C22.2 No. 107.1 M95.

*Model E:* TÜV/GS listed.

**EMC Compliance:** *Model U:* FCC Part 15, Class B

*Model E:* EN 55022, Class B; CE EMC directive

**Noise (RF) Suppression:** Full-time EMI/RFI filtering.

**Efficiency:** > 95% on line.

**Capacity VA/Watts:** 400VA / 250W; 750VA / 470W; 1000VA / 630W

**Voltage Nominal:** *Model U:* 120 VAC, *Model E:* 230 VAC

**Voltage Range:** *Model U:* 0 to 160 VAC, operating on battery and buck/boost; 96 to 146 VAC operating on buck/boost only.

*Model E:* 0 to 300 VAC, operating on battery and buck/boost, 188 to 270 VAC operating on buck/boost only.

**Frequency:** 50/60 Hz auto-sensing 55 - 65 Hz (60 Hz); 45 - 55 Hz (50 Hz) (50/60 Hz  $\pm$  0.5 Hz on battery.)

**Minimum Runtime (minutes):** *400VA Model:* Full load: 4.5 minutes. Half load: 17 minutes.

*750VA Model:* Full load: 4.5 minutes. Half load: 17 minutes.

*1000VA Model:* Full load: 4.5 minutes. Half load: 15 minutes

**Transfer Time:** 2-6 ms typical.

**Telephone line surge suppression for U models:** per Bellcore 1089: 1.2/50msec waveform,  $\pm$  2kV peak, Compliant to UL497A.

**Battery:** Sealed, maintenance-free, valve-regulated, UL 924 recognized.

*400 VA Models:* One 12 V, 9.0 AH battery.

*750 VA Models:* Two 12 V, 7.0/7.2 AH batteries.

*1000 VA Models:* Three 6 V, 12.0 AH batteries.

**Automatic Battery Test:** Automatic battery test occurs upon startup and every 14 days thereafter. Alarm will sound if the battery fails this test.

**Battery Recharge Time (to 95% of capacity):** *400VA, 750VA and 1000VA:* 8 hours. Recharge time is lowered with reduced load.

**Overcurrent Protection (on line):** *U Models:* Fused

*E Models:* 400VA: Fused

750 and 1000VA: Fused and Circuit Breaker

**Input Fault Current (maximum):** *400E Models:* 6 A. *750E and 1000E Models:* 15 A



**AC input Plug/Cord Information:**

400 U - NEMA 5-15P, cord attached.	400 E - C14, recessed plug.
750 U - NEMA 5-15P, cord attached.	750 E - C14, recessed plug.
1000 U - NEMA 5-15P, cord attached.	1000 E - C14, recessed plug.

**AC Output Distribution:**

400 U - (4) NEMA 5-15R.	400 E - (4) C13 (10A)
750 U - (6) NEMA 5-15R.	750 E - (6) C13. (10A)
1000 U - (6) NEMA 5-15R.	1000 E - (6) C13 (10A)

**Load Compatibility:** Can support 100% power factor corrected, switch-mode power supply load.

**Audible Noise:** < 40 dBA at one meter.

**Ventilation:** Air around the unit must be free of dust, chemicals or other materials that corrode or contaminate. Air must be free to move around the unit.

**Operating Temperature:** 32° - 104° F (0° - 40° C).

**Storage Temperature:** 5° - 122° F (-15° to +50° C). Battery life is reduced above 77° F (25° C).

*If the Patriot Pro II unit is stored, the batteries should be recharged every 6 months. If stored above 77° F (25° C), recharge the batteries more often.*

**Humidity:** 0% - 95% RH (non-condensing).

**Altitude:** 3000m (10,000 ft max.)

<b>Dimensions (Height x Width x Length):</b>	400VA:	6 x 4 x 14.25 in.	(155 x 100 x 363 mm)
	750VA:	8.25 x 6.5 x 14.25 in.	(213 x 163 x 363 mm)
	1000VA:	8.25 x 6.5 x 14.25 in.	(213 x 163 x 363 mm)

<b>Weight:</b>	400:	17.5 lbs. (7.5 kg)
	750:	31 lbs (14 kg)
	1000:	35.5 lbs. (16 kg)

# Warranty

## LIMITED TWO YEAR WARRANTY Standard Warranty For All Purchases

BEST POWER, a division of SPX Corporation (hereinafter called BEST POWER) warrants that each product sold by BEST POWER is compatible with existing commercially available computer equipment with enclosed power supplies and is free from defects in materials and workmanship under normal use and service.

This warranty is applicable only to the initial retail purchaser (PURCHASER), and is not transferable. The duration of this warranty is two (2) years from the date of the first retail sale or the date of delivery to the PURCHASER, whichever occurs first, subject to the following conditions.

If the PURCHASER discovers within the duration of this warranty a failure of the product to perform compatibly with presently existing computer equipment or a defect in material or workmanship, the PURCHASER must promptly notify BEST POWER in writing within the duration of the warranty or not later than one month after expiration of the warranty. BEST POWER's obligation under this warranty is

limited to the replacement or repair, subject to the conditions specified below, of such product returned intact to BEST POWER which shall appear to BEST POWER, upon inspection, to have been either incompatible or defective. Replacement or repair will be made at BEST POWER's Worldwide Service, Highway 80, Necedah, Wisconsin 54646, U.S.A. Such repair or replacement shall be at BEST POWER's expense. This warranty does not cover any taxes which may be due in connection with replacement or repair, nor any installation, removal, transportation or postage costs. These expenses will be paid by PURCHASER. If BEST POWER is unable to repair or replace the product to conform to this warranty after a reasonable number of attempts, BEST POWER will refund the purchase price. Remedies under this warranty are expressly limited to those specified above.

TO THE EXTENT ALLOWED BY LAW, BEST POWER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. TO THE EXTENT ALLOWED BY LAW, BEST POWER SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, INJURIES TO PROPERTY, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT.

Some states do not allow limitations on how long an implied warranty lasts, so that the above limitation on duration of implied warranties may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. You are advised to consult applicable state laws.

No warranty is made with respect to other products sold by BEST POWER which do not bear the name BEST POWER, and no recommendation of such other product shall imply or constitute any warranty with respect to them. This warranty does not cover repair or replacement because of damage from unreasonable use (for example only, damage from road hazard, accident, fire or other casualty, misuse, negligence, or incorrect wiring) and any use or installation not in conformance with instructions furnished by BEST POWER, or repairs or replacements needed because of modifications or parts not authorized or supplied by BEST POWER.

## **LIMITED WARRANTY**

---

### **Transient Voltage Surge Suppression Circuitry (For U.S. and Canadian Purchasers Only)**

BEST POWER, a division of SPX Corporation ("BEST POWER") hereby warrants the transient voltage surge suppression circuitry in each FERRUPS®, FORTRESS®, PATRIOT®, UNITY/I™, CITADEL®, or SPIKEFREE™ product (hereinafter called "Product") sold by it for installation in the United States of America and Canada to be free from defects in material and workmanship under normal use and service for the lifetime of the Product, beginning with the date of sale to the initial retail purchaser, subject to the following conditions.

This warranty is applicable only to the initial retail purchaser (hereinafter called PURCHASER), is not transferable, and is limited to the following remedies:

1. The replacement or repair of the transient voltage surge suppression circuitry in each Product that is returned intact to BEST POWER and which shall appear to BEST POWER upon inspection to have been defective in material or workmanship or to have been damaged through normal use;
2. The reimbursement to the PURCHASER of up to \$25,000 per occurrence of documented physical

damage to specified computer equipment connected to a Product where such damage could have been prevented by transient voltage surge suppression circuitry as detailed in BEST POWER's specification for the Product sold.

This warranty is made in addition to BEST POWER's Limited Two Year Warranty.

This warranty does not include any taxes which may be due in connection with replacement or repair nor any installation, transportation or postage costs. These expenses will be paid by PURCHASER.

Replacement or repair will be made at BEST POWER's Worldwide Service, Highway 80, Necedah, Wisconsin 54646, U.S.A.

This warranty does not cover repair or replacement because of damage from unreasonable use (damage from road hazards, accident, fire or other casualty, misuse, negligence, incorrect wiring) and any use or installation not in conformance with instructions furnished by BEST POWER, or repairs or replacements needed because of modifications or parts not authorized or supplied by BEST POWER.

This warranty is operable only upon the written acceptance by BEST POWER of an application by the PURCHASER on BEST POWER's standard form for the above warranty coverage for the Product sold. In such application, the PURCHASER shall represent that the Product sold has been properly installed and grounded in accordance with instructions received from BEST POWER, and the PURCHASER shall also specify the computer equipment to which the Product sold has been connected and the location of the computer equipment. This warranty will not apply to any equipment not specified in the application by the PURCHASER as protected equipment.

EXCEPT AS EXPRESSLY SET FORTH IN THIS WARRANTY AND BEST POWER'S LIMITED TWO YEAR WARRANTY, BEST POWER MAKES NO OTHER WARRANTIES, AND TO THE EXTENT ALLOWED BY LAW, BEST POWER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

REMEDIES UNDER THIS WARRANTY ARE EXPRESSLY LIMITED TO THE REPAIR OR REPLACEMENT OF PRODUCTS AND THE REIMBURSEMENT SPECIFIED ABOVE, AND TO THE EXTENT ALLOWED BY LAW ANY CLAIMS FOR LOSS ARISING OUT OF THE FAILURE OF PRODUCTS TO PERFORM FOR ANY PERIOD OF TIME, OR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR OTHER ECONOMIC LOSS ARE EXPRESSLY EXCLUDED.

Some states do not allow limitations on how long an implied warranty lasts, so that the above limitation on duration of implied warranties may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. You are advised to consult applicable state laws.

---

# Best Power Offices

---

Best Power  
P.O. Box 280  
Necedah, Wisconsin 54646 U.S.A.  
Telephone: 1-608-565-7200  
Toll-free: 1-800-356-5794 (U.S.A. and Canada)  
FAX: 1-608-565-2221  
International FAX: 1-608-565-7675

Best Power Technology Mexico, S.A. de C.V.  
Golfo de Riga, 34  
Colonia Tacuba  
México D.F. 11410  
MÉXICO  
Telephone: (52) 5 527-8009  
1-800-711-8978  
FAX: (52) 5 399-1320

Best Power Technology, Pte. Ltd.  
19 Neythal Road  
SINGAPORE 628584  
Telephone: (65) 265 6866  
FAX: (65) 265 6636

Sola Australia Ltd.  
13 Healey Road  
Dandenong Victoria 3175  
AUSTRALIA  
Telephone: (61)-3-9706-5022  
FAX: (61)-3-9794-9150  
E-mail: sola@solaust.com.au

Best Power Technology Limited  
BEST House  
Wykeham Industrial Estate  
Moorside Road  
Winchester  
Hampshire  
SO23 7RX  
ENGLAND  
Telephone: (44) 1962 844414  
Toll-Free: 0800 378444  
FAX: (44) 1962-841846

Best Power Technology Germany GmbH  
Am Weichselgarten 23  
D-91058 Erlangen  
GERMANY  
Telephone: (49) 9131-77700  
Toll-Free: 0130-84-7712 (in Germany)  
FAX: (49) 9131-7770-444

Borri Elettronica Industriale Srl  
Via de Lavoratori, 124  
20092 Cinisello Balsamo (Mi)  
Milan, ITALY  
Telephone: (39) 02-6600661-2  
FAX: (39) 02-6122481

# Appendix A: Adjusting Voltage Settings

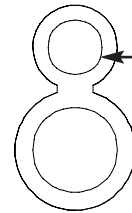
When the unit is not sounding an alarm, you can use the button shown below to change the following:

- Nominal Voltage — The normal voltage the UPS is programmed to expect, and the nominal UPS output voltage under line loss conditions.
- Buck — The input voltage at which the Patriot Pro II decreases voltage before providing output because the input voltage is too high.
- Boost — The input voltage at which the Patriot Pro II increases voltage before providing output because the input voltage is too low.
- Transfer to Inverter — The point at which the UPS switches to inverter (battery power), either because AC input voltage is very low or because it is very high.

**Note:** Make sure you want to change these values *before* you start the procedure below. Once you press the button shown for 10 seconds, the values will change to the default values, and any previous changes you have made will be lost. If you have a question, contact the nearest Best Power office, or call Worldwide Service at 1-800-356-5737 or 1-608-565-2100.

Do not change voltage settings when unit is operating on inverter. To change the values, follow these steps:

1. Press the button shown until the LEDs on the front of the Patriot Pro II blink. After the LEDs blink, three will stay lit and the Patriot Pro II will beep for one second.
2. The LEDs that are lit show which voltage settings are selected. The LEDs are numbered in the drawing below to help you identify them. Tables 4 and 5 show the voltage settings for each possible combination of LEDs.



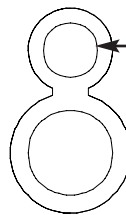
Press this button for 10 seconds (until all of the lights blink).

For example, by default, LEDs 2, 3 and 4 will be lit (see diagram). If your UPS is a U model, you will find this combination of LEDs in the first row of Table 4. This row shows the following:

- With 96 volts input or lower, the Patriot Pro II switches to battery power.
- When input voltage drops to 109, the Patriot Pro II begins to increase the output voltage.
- 120 is the nominal or expected input voltage.
- When input voltage rises to 130, the Patriot Pro II begins to decrease the output voltage.
- With 146 volts input or higher, the Patriot Pro II switches to battery power.

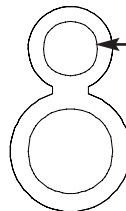
1	<input type="checkbox"/>	1	<input type="checkbox"/>
2	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>
3	<input type="checkbox"/>	3	<input checked="" type="checkbox"/>
4	<input type="checkbox"/>	4	<input checked="" type="checkbox"/>
5	<input type="checkbox"/>	5	<input type="checkbox"/>
6	<input type="checkbox"/>	6	<input type="checkbox"/>
<b>LED Numbers</b>		<b>Default Setting</b>	

3. Use the appropriate table on the next page to decide which combination of settings you need; note which LEDs must be lit for this combination. Then **briefly (about 1 second)** press the button shown to move to the next combination of LEDs. **If you hold the button in longer than 10 seconds, the Patriot Pro II will save the setting that is displayed.** Continue pressing the button until the proper LEDs are lit.



Press this button  
BRIEFLY to  
scroll through the  
settings.

4. Once the correct LEDs are lit, **continue to hold** the button for **10 seconds** to save your changes. If the Patriot Pro II is running on AC input power, the display will change back to the percent of full load. The new values will take effect after the display returns to normal mode.



Press this button  
for 10  
SECONDS to  
save your  
changes.

**Table 4: Voltage Settings for U Models (400U, 750U, and 1000U)**

<b>LEDs Lit</b>	<b>To Inverter (Input AC is Low)</b>	<b>Boost</b>	<b>Nominal Voltage</b>	<b>Buck</b>	<b>To Inverter (Input AC is High)</b>
2, 3, 4 (Default)	96	109	120	130	146
1, 3, 4	96	109	120	138	156
2, 3, 5	90	104	120	130	146
1, 3, 5	90	104	120	138	156
3, 4, 5	90	104	110	120	130
2, 4, 5	90	104	110	130	146
3, 4, 6	90	96	110	120	130
2, 4, 6	90	96	110	130	146
1, 2, 4	96	109	128	146	156
1, 2, 5	90	104	128	146	156

**Table 5: Voltage Settings for E Models (400E, 750E, and 1000E)**

<b>LEDs Lit</b>	<b>To Inverter (Input AC is Low)</b>	<b>Boost</b>	<b>Nominal Voltage</b>	<b>Buck</b>	<b>To Inverter (Input AC is High)</b>
2, 3, 4	200	222	240	250	284
1, 3, 4	200	222	240	264	290
2, 3, 5	188	210	240	250	284
1, 3, 5	188	210	240	264	290
3, 4, 5 (Default)	188	210	230	244	270
2, 4, 5	188	210	230	250	284
3, 4, 6	180	200	230	244	270
2, 4, 6	180	200	230	250	284
4, 5, 6	165	188	208	222	244
3, 5, 6	165	188	208	244	270

For Users in the United States only:

For all “U” Models

Note: This equipment has been tested and found to comply with the limits for a Class B device pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For Users in Canada only:

For all “U” Models

This Class B interference causing equipment meets all requirements of the Canadian Interference Causing Equipment Regulations ICES-003.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.