

USER GUIDE

Fortress Rackmount

750 VA, 1050 VA, 1425 VA, 1800 VA, and 2250 VA



Important Notice

The UPS ground (earth) conductor carries leakage current from the loads in addition to any leakage current generated by the UPS. This UPS generates no more than 0.5 mA of current (U model), or 1 mA of current (E model). To limit the total leakage current to 3.5 mA, the load leakage must be limited to 3 mA on the U model and 2.5 mA on the E model. If you do not know the load leakage current, replace the UPS power cord with a power cord that uses a locking plug with a minimum rating of 10 A (such as IEC 309). If you do not have a matching receptacle, consult an electrician to install the proper receptacle. The three-wire receptacle that you plug the UPS into must have a good (low-impedance) ground (protective earth) connection to provide a safe path for leakage current.

F o r t r e s s[®]

Rackmount

750 VA, 1050 VA, 1425 VA, 1800 VA, and 2250 VA

User Guide

FSS-0388B

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Languages

English1

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. Trained service technicians are 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:	http://www.bestpower.com
.....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.

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Trademarks

Windows is a registered trademark of Microsoft Corporation.

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Safety Instructions

IMPORTANT SAFETY INSTRUCTIONS! SAVE THESE INSTRUCTIONS!

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

CAUTION!

Whenever the Fortress 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 the 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.

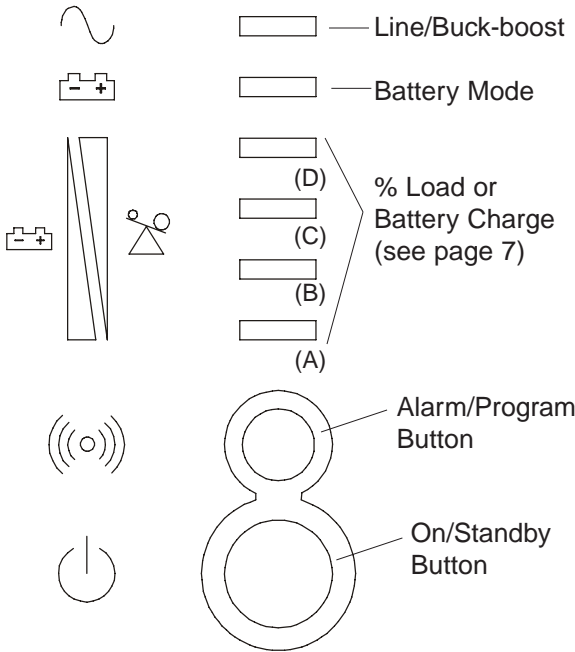
Refer to your Fortress Safety Information Manual for additional safety instructions.

If the Fortress unit has been damaged during shipment, call your vendor immediately.

If the Fortress 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

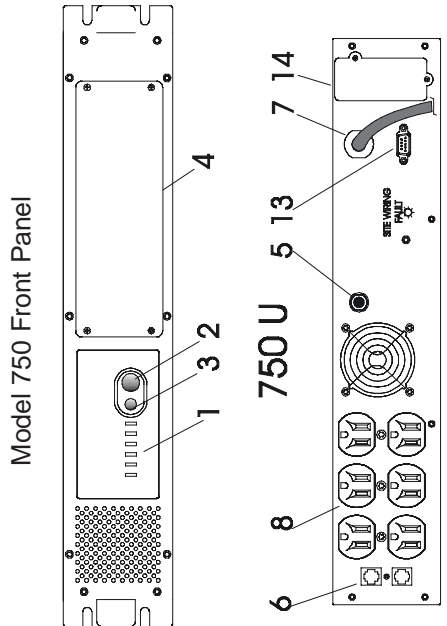
The Best Power Fortress provides protection against power problems, including power outages, brownouts, and sudden increases in power. It also provides spike suppression and line noise filtering to protect your equipment. Front panel LEDs and an audible alarm keep you aware of the unit's status. Use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



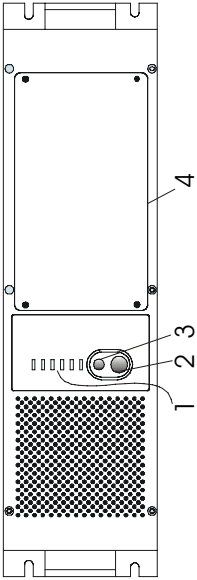
Fortress Controls and Indicators

7. Input Power Connector or Cord
8. 5-15 Outlets
11. IEC 320 Outlets
13. DB9 Communication Port
14. BestDock Access Panel

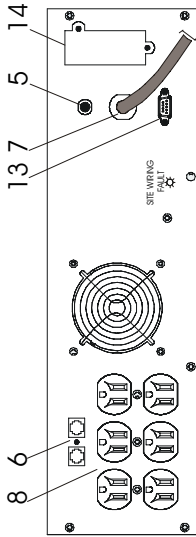
1. Status Indicators
2. On/Standby Button
3. Alarm/Program Button
4. Battery Access Panel
5. Circuit Breaker
6. RJ11/RJ45 Jacks



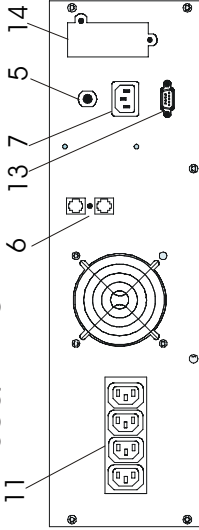
Models 1050/1425 Front Panel



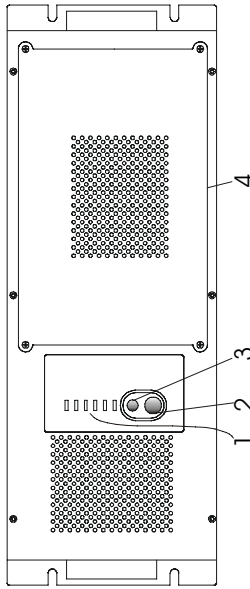
1050/1425 U



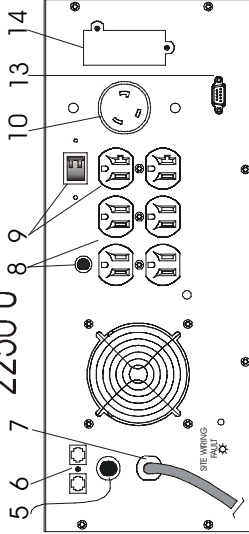
1050/1425 E



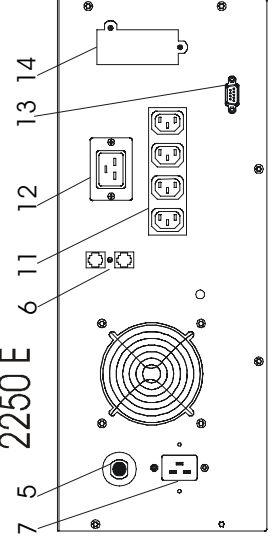
Models 1800/2250 Front Panel



2250 U



2250 E



1. Status Indicators
2. On/Standby Button
3. Alarm/Program Button
4. Battery Access Panel
5. Circuit Breaker
6. RJ11/RJ45 Jacks
7. Input Power Connector or Cord
8. 5-15 Outlets (1800 and 2250 have breaker)
9. 5-20 Outlets (2250 has breaker)
10. L5-30 Outlet
11. IEC 320 Outlets
12. CEE19 Outlet
13. DB9 Communication Port
14. BestDock Access Panel

Rack Installation

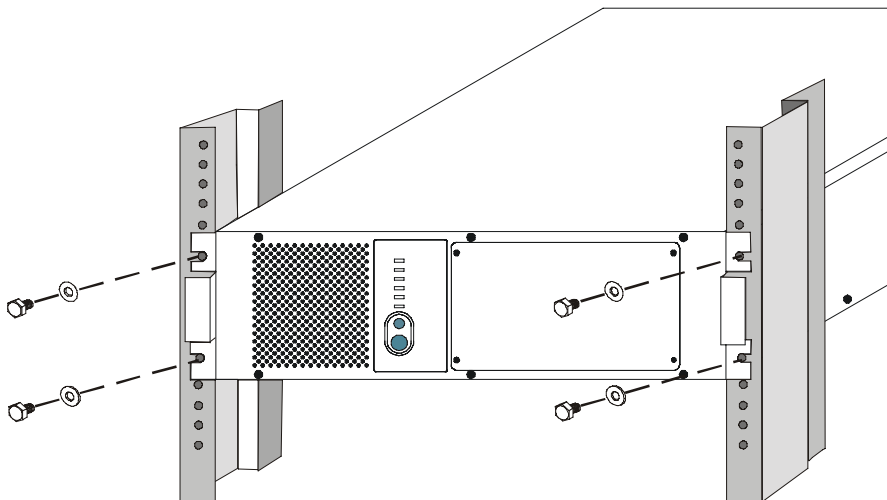
Mount the Fortress in a 19-inch (483-mm) EIA 310 C standard rack.

Do not try to mount the unit if the rack is too wide.

Install a stationary shelf or supporting angle brackets (available as standard rack hardware from electronics distributors) below the intended rack location for the Fortress. Secure the shelf or brackets at both the front and back of the rack using bolts, nuts, and washers.

Carefully lift the unit onto the shelf or brackets and slide it into the rack as shown below. The mounting holes on the sides of the front panel should match the holes in the rack.

Use bolts and washers to attach the unit securely to the rack.

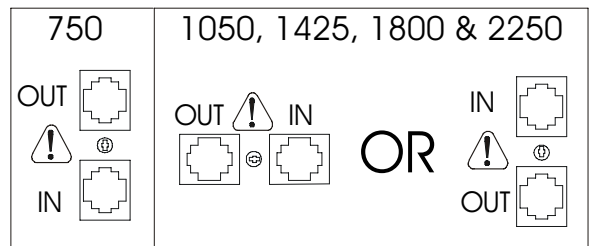


Quick Startup

- 1 If your Fortress UPS has a removable power cord, connect the power cord to the back of the unit. Plug the UPS into a wall outlet. If the Fortress is a U model, check to make sure that the rear panel Site Wiring Fault light is not lit.
- 2 Let the unit charge the battery for at least 3 hours (7 hours for 1425 VA model if it is fully loaded). You may use the unit while the battery charges, but the battery backup runtime will be reduced until the battery is fully charged.
- 3 Start the Fortress by pressing and holding the On/Standby button (large button in the center of the front panel) in for about one second. Note: To turn the unit either on or off, the On/Standby button must be pressed for about one second.
 - 3.a. When it starts, the unit beeps and lights the front panel lights, turns them off, and lights them again. **Next, the Fortress applies AC output to the back panel receptacles.** It does a brief self test, turning various front panel lights off and on.
 - 3.b. After 30 seconds or less, the self test is complete. 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 each load into the outlets on the back of the Fortress.
- 5 Switch on the protected equipment, one load 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 load capacity 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 and modem line for U models) into the surge protection jack labeled "IN" on the back of the Fortress. Plug the protected equipment into the surge protection jack labeled "OUT."



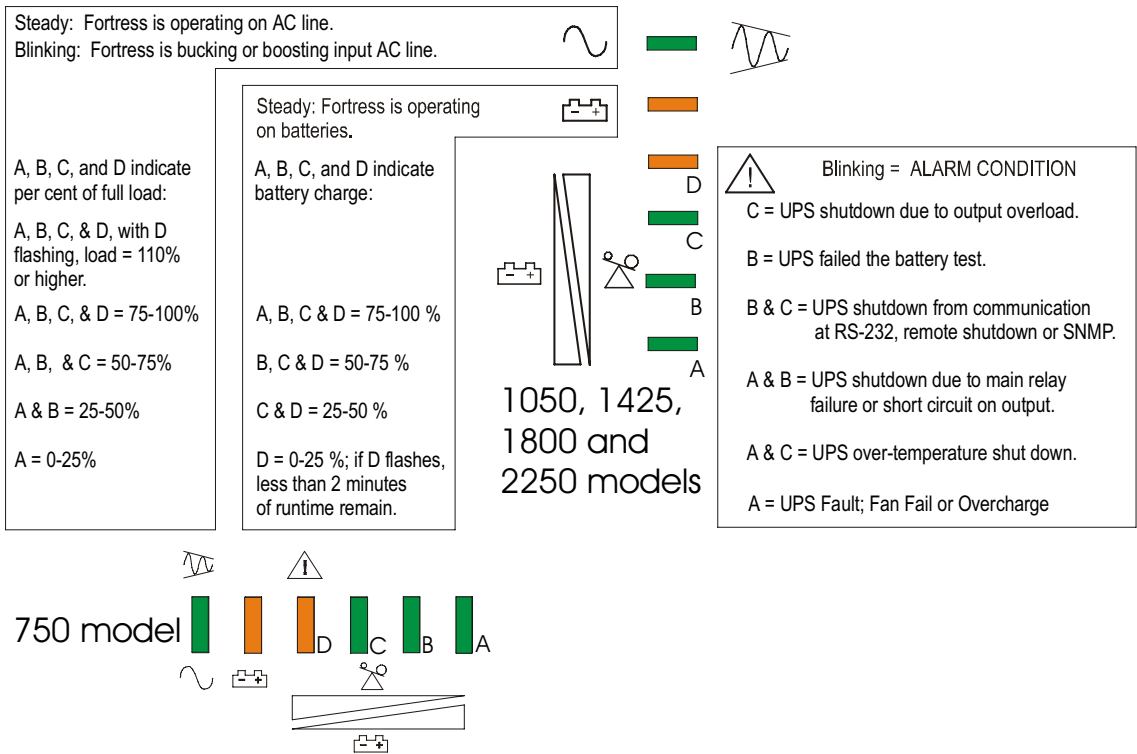
RJ-11 or RJ-45 Jacks

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 Fortress.*

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 indicators (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 1 for information about the LEDs and Table 2 for information about beep coding. In the figure below, bucking means that Fortress is reducing high input voltage, and boosting means Fortress is increasing low input voltage.



An LED on the rear panel of the U model Fortress (labeled Site Wiring Fault) lights to indicate a wiring fault in the circuit to which the Fortress is connected. If this LED is on, the outlet needs to be checked and repaired by an electrician. Do not use this outlet until it has been repaired and verified safe.

Table 1: Symbols and LEDs

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

If your Fortress runs on batteries frequently because the input utility line varies often, you may want to adjust your Fortress to accept wider voltage variations before switching to batteries. Appendix A describes how to adjust the Fortress 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.

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.

Table 2: Audible Beeps

Number of Beeps	What It Means
1 every 10 seconds	Line Loss: The unit is on battery power. See Table 3 for more information.
2 every 10 seconds	Low Battery Alarm: 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 5 minutes	Replace the Battery: The battery needs to be replaced. See “Replacing the Batteries” on page 10.
1 beep every second	Output Overload: Too much load equipment.
Continuous	<p>1) Output Short Circuit 2) Starting Fault: Input voltage out of range when unit is turned on. 3) UPS Fault: UPS internal failure.</p>

The Fortress's BestDock communication slot accepts optional communication cards, like the internal BestLink SNMP/WEB adapter. The insertion of a card into the BestDock communication slot replaces the normal communication channel from the Fortress's DB-9 Communication Port. The DB-9 port becomes the connection point for configuring the card in the BestDock.

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

Problem	Possible Reasons	What To Do
Yellow BATTERY LED on, Green LINE LED off, one beep every 10seconds.	1. Utility power outage. 2. Loose plug. 3. Tripped circuit breaker. 4. Power cord failure.	1. Wait for power to return. 2. Make sure the power cord is connected. 3. Reset the circuit breaker. 4. Phone Best Power's Worldwide Service.
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 Fortress will not operate on batteries, or Fortress beeps twice every 10 seconds on batteries, phone Best Power's Worldwide Service.
Yellow WARNING LED on, Green LINE LED on, three beeps every five minutes.	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 10.
Yellow OVERLOAD LED on, one beep every second.	The power required by the equipment is too high.	1. Remove load equipment. 2. Reduce load level until the beeping stops.
Yellow WARNING LED on. Continuous beep.	1. Output short circuit. 2. UPS Fault	1. Remove load and reset UPS. 2. Phone Best Power's Worldwide Service.

Replacing the Batteries

Fortress's batteries are user-replaceable and can be replaced while the Fortress 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.

CAUTION!

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 and metal wristwatches or 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.

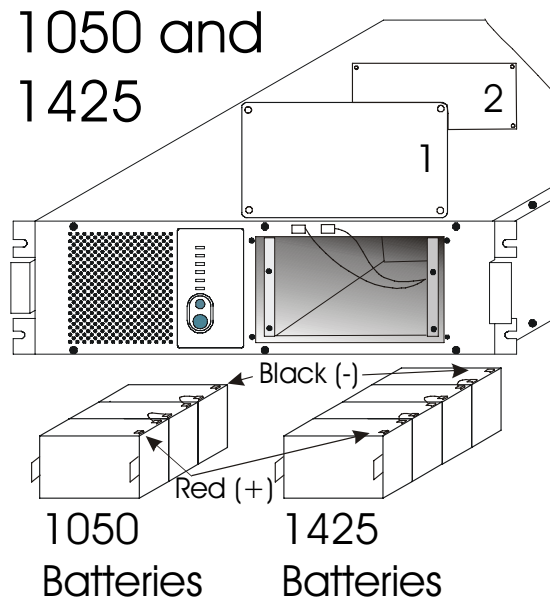
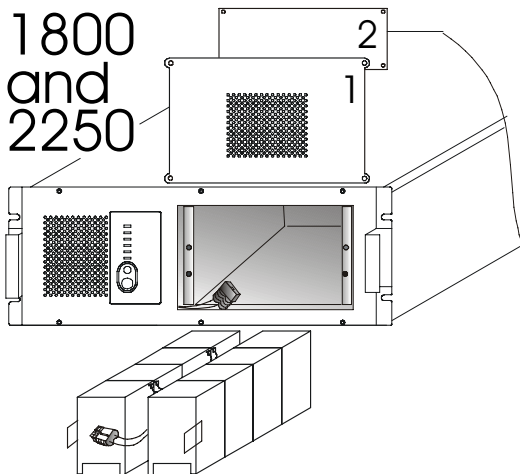
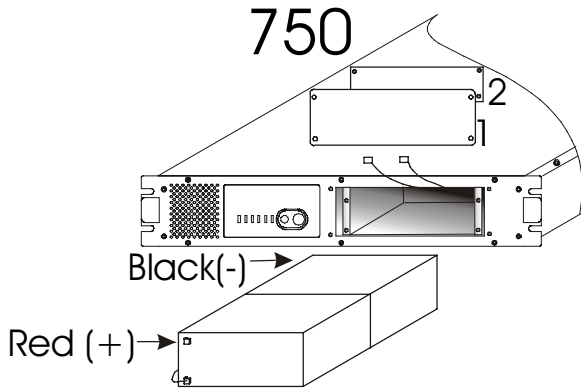
To ensure continued superior performance of your UPS and to maintain proper charger operation, you must replace the UPS batteries with the same number and type of batteries. These batteries must be the same type as the original batteries: valve-regulated, low maintenance. The replacement batteries should 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 / m³} calculated as an 8-hour time-weighted average).

Battery Replacement Instructions

- 1 Phone Best Power's Worldwide Service to order a replacement battery pack. It must be the same type and rating of the original batteries. See *Battery* information in Specifications.
- 2 If it is necessary, the batteries may be replaced while the Fortress is running with the protected equipment attached. **Option:** You may switch off and unplug the protected load equipment from the Fortress. Then, turn off the Fortress and disconnect the line cord.
- 3 Use the drawings below to identify the location on the battery pack in the model Fortress that you have.
- 4 Remove the screws holding the exterior battery access panel (1) to the front panel. Set the screws and panel aside.
- 5 Remove the screws holding the interior panel (2) to the battery chamber. Use care to avoid dropping screws inside the unit. Set the screws and panel aside.



- 6 Use the tabs attached to the batteries to remove the batteries from the Fortress. Do not pull batteries out by pulling on battery terminals or cables.
- 7 Disconnect the red and black cables from the used battery pack.
For 1800 and 2250 models: Disconnect the battery plug from the cable jack in the unit. Dispose of old batteries properly.
- 8 Reconnect the cables to the new battery pack; red to positive (+), black to negative (-).
For 1800 and 2250 models: Plug the battery cable into the unit's cable jack.
- 9 Position the battery cables so they will not be pinched by the interior panel or the battery pack. Slide the battery pack into the unit.
- 10 Use the screws removed earlier to re-install the interior panel to the battery chamber and the exterior panel to the front panel.
- 11 **If you followed the option in step 2:** Reconnect the line cord to the Fortress and turn the unit on.
- 12 Reconnect the load equipment. Switch on the protected load equipment one piece at a time.

Communication Port

The Fortress is plug-and-play compatible with Windows 95.

The Fortress comes equipped with CheckUPS II power management software. Instructions included with the CheckUPS II CD tell you how to install the software. An interface cable for the following systems is provided.

SCO UNIX/XENIX
Windows 3.X, 95 and NT

UNIX and Compatible Systems
Novell NetWare

OS/2

Best Power offers interface kits that allow you to connect many other computer systems to the Fortress communication port. For the following computer systems, or specific information on Best Power interface kits, call Best Power's Worldwide Service or your local Best Power dealer.

Banyan VINES
Lantastic v4.0

IBM RS/6000 AIX
LAN Manager/Server v2.0

IBM AS/400 special

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:* Connecting 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 UL1449; listed to UL1778, and CAN/CSA C22.2 No. 107.1 M91.
Model E: TÜV/GS listed.

EMC Compliance: *Model U:* FCC Class A; except 750 VA model complies to FCC Class B.
Model E: CISPR 22 Class B, Vfg 243-91/46-92 B, EN55022, CE Mark Self-certified to: CE Marking Directive 93/68/EEC, Low Voltage Directive 73/23/EEC

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

Efficiency: > 95% on line.

Capacity VA/Watts: 750VA / 450W; 1050VA / 670W; 1425VA / 950W; 1800VA / 1260W;
2250VA / 1600W.

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): 750, 1050, 1425, and 2250VA Models: Full load: 5 minutes.
Half load: 12 minutes.
1800VA Models: Full load: 7.5 minutes. Half load: 22 minutes.

Transfer Time: 4 ms typical.

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

Site Wiring Fault Indicator for U Models: Back panel LED indicates phase reversal fault in input utility line.

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

750 VA Models: Two 12 V, 7.0/7.2 AH batteries. Nominal Voltage is 24 VDC.
1050 VA Models: Three 12 V 7.0/7.2 AH batteries. Nominal Voltage is 36 VDC.
1425 VA Models: Four 12 V 7.0/7.2 AH batteries. Nominal Voltage is 48 VDC.
1800 VA Models: Eight 6 V, 12.0 AH batteries. Nominal Voltage is 48 VDC.
2250VA Models: Eight 6 V, 12.0 AH batteries. Nominal Voltage is 48 VDC.

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): 750 VA, 1050 VA, 1425 VA, 1800 VA and 2250 VA: 3 hours;
1425 VA: 7 hours with output fully loaded. Recharge time is lower with reduced load.

Overcurrent Protection (on line): All Models: Circuit Breaker.

Input Fault Current (maximum): 750E and 1050E Models: 15 A. 1425E Model: 26.1 A.
2250E Models: 35 A.

AC input Plug/Cord Information:

750 U - NEMA 5-15P, cord attached.	750 E - CEE 22, recessed plug.
1050 U - NEMA 5-15, cord attached.	1050 E - CEE 22, recessed plug.
1425 U - NEMA 5-15, cord attached.	1425 E - CEE 22, recessed plug.
1800 U - NEMA 5-15, cord attached.	
2250 U - NEMA L5-30, cord attached.	2250 E - CEE 19, recessed plug.

AC Output Distribution:

750 U - (6) NEMA 5-15R.	750 E - (4) CEE 22.
1050 U - (6) NEMA 5-15R.	1050 E - (4) CEE 22.
1425 U - (6) NEMA 5-15R.	1425 E - (4) CEE 22.
1800 U - (4) NEMA 5-15R, (2) NEMA 5-20R.	
2250 U - (4) NEMA 5-15R, (2) NEMA 5-20R, (1) NEMA L5-30R.	2250 E - (4) CEE 22, (1) CEE 19.

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

Audible Noise: < 45 dBA at one meter, except 2250 model which is < 55 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 Fortress unit is stored, the batteries should be recharged every 6 months.
If stored above 77° F (25° C), recharge the batteries more often.*

Humidity: 5% - 95% RH (non-condensing).

Dimensions (Height x Width x Depth): 750 VA: 3.5 in. x 17.6 x 18.7 (88 x 448 x 475 mm)
1050 & 1425VA: 5.3 in. x 17.6 x 18.7 (133 x 448 x 475 mm)
1800 & 2250 VA: 7.0 in. x 17.6 x 18.7 (178 x 448 x 475 mm)

Weight: 750: 39.6 lbs. (18.0 kg) 1425: 57.2 lbs. (26.0 kg)
1050: 51.3 lbs (23.3 kg) 1800 & 2250: 86.0 lbs. (39.1 kg)

Warranty

LIMITED TWO YEAR WARRANTY Standard Warranty For All Purchases

BEST POWER, a division of General Signal Power Systems, Inc. (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 General Signal Power Systems, Inc. (“BEST POWER”) hereby warrants the transient voltage surge suppression circuitry in each FERRUPS®, FORTRESS®, PATRIOT®, PATRIOT® PRO, 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.

Appendix A: Adjusting Voltage Settings

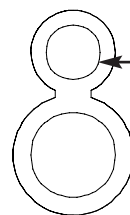
When the unit is not sounding an alarm, you can use the Alarm/Program button shown below to change the following:

- 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 Fortress decreases voltage before providing output because the input voltage is too high.
- Boost — The input voltage at which the Fortress 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 batteries.
To change the values, follow these steps:

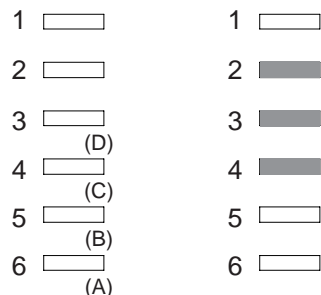
1. Press the button shown until LEDs on the front of the Fortress blink. After the LEDs blink, three will stay lit and the Fortress will beep for one second.
2. The LEDs that are lit show which voltage settings are selected. The LEDs are numbered in the drawing below to help you identify them. Tables 4 and 5 on page 19 show the voltage settings for each possible combination of LEDs.



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

For example, the U model default setting has LEDs 2, 3, and 4 lit (see diagram). You will find this combination of LEDs in the first row of Table 4. This row shows the following:

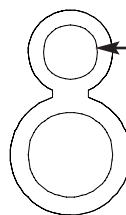
- With 96 volts input or lower, the Fortress switches to battery power.
- When input voltage drops to 109, the Fortress begins to increase (boost) the output voltage.
- 120 is the nominal or expected input voltage.
- When input voltage rises to 130, the Fortress begins to decrease (buck) the output voltage.
- With 146 volts input or higher, the Fortress switches to battery power.



LED Numbers

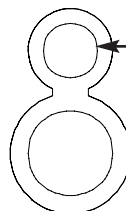
Default Setting

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, press **(for about 1 second)** and release the button to move to the next combination of LEDs. **If you hold the button in longer than 10 seconds, the Fortress will save the setting that is displayed.** Continue pressing and releasing the button until the proper LEDs are lit.



Press this button BRIEFLY to scroll through the settings.

4. Once the correct LEDs are lit, **press and hold** the button for **10 seconds** to save your changes. If the Fortress 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 (750, 1050, 1425, 1800, and 2250 VA)

LEDs Lit	To Inverter (Input AC is Low)	Boost	Nominal Voltage	Buck	To Inverter (Input AC is High)
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 (750, 1050, 1425, and 2250 VA)

LEDs Lit	To Inverter (Input AC is Low)	Boost	Nominal Voltage	Buck	To Inverter (Input AC is High)
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

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) 5-399-0369
FAX: (52) 5-399-1320

Best Power Technology, Pte. Ltd.
30 Prinsep St. #07-00
LKN Prinsep House
SINGAPORE 188647
Telephone: (65) 430 6168
FAX: (65) 430 6170

Sola Australia Ltd.
13 Healey Road
Dandenong Victoria 3175
AUSTRALIA
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BEST House
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Toll-Free: 0800 378444
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Am Weichselgarten 23
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Telephone: (49) 9131-77700
Toll-Free: 0130-84-7712 (in Germany)
FAX: (49) 9131-7770-444

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

For Users in the United States only

For 750 VA Model U

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 1050, 1425, 1800, and 2250 VA Model U

Note: This equipment has been tested and found to comply with the limits for a Class A digital 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For Users in Canada only

For 750 VA Model U

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

Cet appareil numerique de la Classe B respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

For 1050, 1425, 1800, and 2250 VA Model U

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

Cet appareil numerique de la Classe A respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

