Powerstar UPS

Mission Critical UPS Mil

POWERSTAR INC.

Operations / Maintenance Manual

Model: PS1503 1500VA Tower UPS

dated 2/13 approved by navy

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Section 1

SAFETY INFORMATION

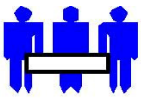
The Uninterruptible Power Supply (UPS) is designed to prevent blackouts, brownouts, sags, and surges from reaching your computer and other valuable electronic equipment. The UPS filters out small utility line fluctuations and isolates your equipment from large disturbances by internally disconnecting from the utility line. The UPS provides continuous power from its internal battery until the utility line returns to safe levels.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the warranty.

Handling Safety

The UPS requires two people for installation due to its weight. To lighten the UPS, you may remove the battery while you position it.

 <18 kg (<40 lb)

 32–55 kg (70–120 lb)

 18–32 kg (40–70 lb)

 >55 kg (>120 lb)

This equipment is intended for installation in a temperature-controlled indoor area free of conductive contaminants.

Electrical Safety

- To reduce the risk of fire, connect only to a circuit provided with a 15 Amp maximum branch circuit over current protection in accordance with the National Electrical Code ANSI/NFPA or country specific electrical code.
- Do not work alone under hazardous conditions.
- Check that the power cord(s), plug(s), and sockets are in good condition.
- To reduce the risk of electric shock when grounding, disconnect the equipment from the AC power outlet before installing or connecting to other equipment. Reconnect the power cord only after all connections are made.
- Use one hand, whenever possible, to connect or disconnect signal cables to avoid a possible shock from touching two surfaces with different electrical grounds.
- Connect the equipment to a three wire AC outlet (two poles plus ground). The receptacle must be connected to appropriate branch circuit/mains protection (fuse or circuit breaker). Connection to any other type of receptacle may result in a shock hazard.
- In order to maintain compliance with the EMC directive, output cords attached to the UPS should not exceed 10 meters in length.

De-energizing Safety

- The equipment has an internal energy source (battery), the output may be energized when the unit is not connected to an AC power outlet.
- To de-energize pluggable equipment, press the OFF button. Disconnect the equipment from the AC power outlet. Unplug the battery connector. Push the button labeled 

to de-energize the capacitors.
- Pluggable equipment includes a protective earth conductor that carries the leakage current from the load devices (computer equipment). Total leakage current must not exceed 3.5 mA.
- Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended.

Battery Safety

- This equipment contains potentially hazardous voltages. Do not attempt to disassemble the unit. The only exception is for equipment containing batteries. Battery replacement using the procedures below is permissible. Except for the battery, the unit contains no user serviceable parts. Repairs are to be performed only by factory trained service personnel.
- Do not dispose of batteries in a fire. The batteries may explode.
- Do not open or mutilate batteries. They contain an electrolyte that is toxic and harmful to the skin and eyes.
- Do not connect the terminals of a battery or battery pack with a wire or other electrically conductive objects.
- To avoid personal injury due to energy hazard, remove wristwatches and jewelry such as rings when replacing the batteries. Use tools with insulated handles.
- Replace batteries with the same number and type of batteries or battery packs as originally installed in the equipment.
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Battery Replacement

Contact Powerstar Inc @ www.powerstarinc.com for information on replacement battery sets. NSN approval needed.

SECTION 2

Unpacking

Inspect the UPS upon receipt.

Check the package contents. The package contains the UPS, and an accessories kit containing one CD, one serial cable, one USB cable.

The UPS is shipped with the battery connected.

Positioning the UPS

Place the UPS where it will be used.

The UPS is heavy select a location sturdy enough to handle the weight.

You must install the UPS in a protected area that is free of excessive dust and has adequate airflow. If this is a tower unit, ensure the side air vents on the UPS are not blocked.

Allow at least one inch of space on both sides.

Do not operate the UPS where the temperature and humidity are outside the specified limits. Refer to *Specifications* at the web site www.powerstarinc.com

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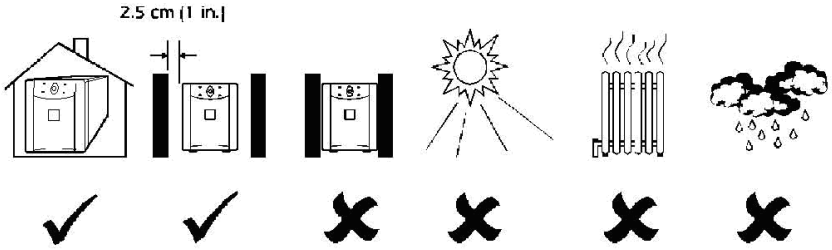
PLACEMENT



To install the-UPS, follow these basic steps.

- Connect the equipment and power to the UPS.
- Place the circuit breaker in the on position
- Install any options. (SNMP, I/O Relay)
- Turn on the UPS.

Connecting Equipment and Power to the UPS

- Connect equipment to the UPS.
- Turn on the UPS
- Press the (Test) button on the front panel to power up your UPS. This will power up connected equipment. (Make sure connected equipment is switched to the ON position.)

The UPS charges its battery when it is connected to utility power. The battery charges fully during the first four hours of normal operation.

Do not expect full run time during this initial charge period.

Accessories

The UPS is equipped with an accessory slot, visit the web site, for available accessories. If a standard accessory (such as an SNMP card) is installed on this UPS, see the Utility CD for user documentation. For additional computer system security, install PowerChutePlus® Smart-UPS monitoring software. It provides automatic unattended shutdown capabilities on most major network operating systems.

Disconnecting the Battery for Transport

Always DISCONNECT THE BATTERY before shipping in compliance with U.S. Department of Transportation (DOT) regulations. The battery may remain in the UPS; it does not have to be removed.

- Shut down and disconnect any equipment attached to the UPS.
- Disconnect the UPS from the power supply.
  - For shipping instructions and to obtain appropriate packing materials contact us at
  - www.powerstarinc.com

SECTION 3

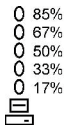
OPERATION

Front Panel Operation

Power OFF  Power ON 

The ON and OFF buttons are used to power the UPS and act as master controls for the connected equipment. Make sure connected equipment is switched to the ON position. The

UPS remains on as long as it is attached to utility power or if there is sufficient battery reserve.



The five-LED display on the left of the front panel shows the percentage of available power used by the connected equipment (load). For example, if three Led's are lit, the connected load is drawing between 50% and 67% of the UPS capacity. If all five Led's are lit, the connected load is drawing between 85% and 100% of capacity. Thoroughly test your entire system to make sure that the UPS will not become overloaded. In the graphic to the left, the load capacity threshold is listed next to the LED (values are not listed on the UPS).


The charger maintains battery charge when the UPS is plugged in and utility voltage is present.

SELF-TEST

Automatic Self-Test The UPS performs a self-test automatically when turned on, and every two weeks thereafter (by default). Refer to User Configurable Items for details on changing the default interval.
Automatic self-test eases maintenance requirements by eliminating the need for periodic manual self-tests. During the self-test, the UPS briefly operates the connected equipment on-battery. If the UPS passes the self-test, it returns to online operation.
If the UPS fails the self-test, the UPS lights the replace battery LED
and immediately returns to on-line operation. The connected equipment is not affected by a failed test. Recharge the battery for 24 hours and perform another self-test. If it fails, the battery must be replaced.

Manual Self-Test

Press and hold the (Test) button for a 4 seconds few seconds to initiate the self-test.

UTILITY POWER

During normal operation, the UPS monitors the utility power and delivers power to the connected equipment. If your system is experiencing excessive periods of high or low voltage, have a certified electrician check your facility for electrical problems.

Online

The online indicator illuminates when the UPS is supplying utility power to the connected equipment. If the indicator is not lit, the UPS is supplying battery power and the UPS sounds an alarm— four beeps every 30 seconds.

Utility Voltage

The UPS has a diagnostic feature that displays the utility voltage. Plug the UPS into the 120V utility power.

Press and hold the (Test) button to view the utility voltage bar graph display. After a few seconds the five-LED display on the right of the front panel shows the utility input voltage. Refer to the figure at left for the voltage reading (values are not listed on the UPS).

The UPS starts a self-test as part of this procedure. The self-test does not affect the voltage display.
The display indicates the voltage is between the displayed value on the list and the next higher value. For example, with three Led's lit, the input voltage is between 114 and 124 VAC.
If no Led's are lit and the UPS is plugged into a working AC power outlet, the line voltage is extremely low.
If all five Led's are lit, the line voltage is extremely high and should be checked by an electrician.
AVR Trim This LED illuminates to indicate the UPS is compensating for a high utility voltage.

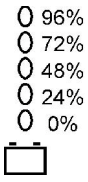
AVR Boost This LED illuminates to indicate the UPS is compensating for a low utility voltage.

BATTERY POWER

If the utility power fails, the UPS can provide power to the connected equipment from its internal battery for a finite period. The UPS sounds an alarm—four beeps every 30 seconds—while operating on battery power. The alarm stops when the UPS returns to online operation.

On Battery

When the on battery power indicator is lit the UPS is supplying battery power to the connected equipment.



The five-LED display on the right of the front panel shows the present charge of the UPS battery as a percentage of the battery capacity. When all five Led's are lit, the battery is fully charged. The Led's extinguish, from top to bottom, as the battery capacity diminishes. Refer to the figure at left for the battery capacity threshold (values are not listed on the UPS).

As a low battery warning, any Led's illuminated (for the given capacity) flash and the UPS beeps. The low battery warning default setting can be changed from the rear panel or through the optional PowerChute software. Refer to Default Settings below for details.

- Overload The UPS emits a sustained alarm tone and the LED illuminates when an overload condition occurs (that is, when the connected equipment exceeds the specified "maximum load" as defined in Specifications at www.powerstarinc.com. The alarm remains on until the overload is removed.

The UPS continues to supply power as long as it is on-line and the breaker does not trip; but, the UPS will not provide power from batteries in the event of a utility voltage interruption. Disconnect nonessential equipment from the UPS to eliminate the overload. If a continuous overload occurs while the UPS is on-battery, the unit turns off output in order to protect the UPS from possible damage.

- Replace Battery Failure of a battery self-test causes the UPS to emit short beeps for one minute and the replace battery LED illuminates. LED flashes indicate the battery is disconnected. The UPS repeats the alarm every five hours. Perform the self-test procedure after the battery has charged for 24 hours to confirm the replace battery condition. The alarm stops if the battery passes the self-test.

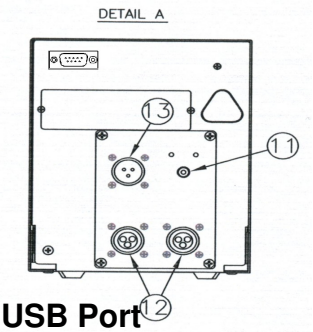
SHUTDOWN MODE (VIA SOFTWARE OR AN ACCESSORY)

In shutdown mode, the UPS stops supplying power to the connected equipment, waiting for the return of utility power. If there is no utility power present, external devices (such as servers) connected to the computer interface or the accessory slot can command the UPS to shut down. This normally is done to preserve battery capacity after the shutdown of protected servers. The UPS scrolls the front panel indicators sequentially in shutdown mode.

REAR PANEL

BASIC CONNECTORS

Serial Port Power management software and interface kits can be used with the UPS. Use only interface kits supplied or approved. The serial port  has been modified for use with the TriSense interface. If used, connect the interface cable to the DB9 port. Secure the connector screws to complete the connection.



USB Port

Power management software and interface kits can be used with the UPS. If used, connect the interface cable to the USB port. 

Use a supplied cable to connect to the Serial Computer Interface Port. DO NOT use a standard serial interface cable since it is incompatible with the UPS connector.
If both a Serial and USB Computer Interface Port are provided they cannot be used simultaneously.

TVSS Screw ground

The UPS features a transient voltage surge-suppression (TVSS) screw for connecting the ground lead on surge suppression devices such as telephone and network line protectors.

DEFAULT SETTINGS

Voltage Sensitivity

The UPS detects line voltage distortions (such as spikes, notches, dips, and swells) as well as distortions caused by operation with inexpensive fuel-powered generators. By default, the UPS reacts to distortions by transferring to on-battery operation to protect the connected equipment. Where power quality is poor, the UPS may frequently transfer to on-battery operation. If the connected equipment can operate normally under such conditions, reduce the sensitivity setting to conserve battery capacity and service life.

To reduce UPS sensitivity, press the voltage sensitivity button ⦿. Use a pointed object (such as a pen) to do so. Press the button once to set sensitivity to medium. Press it again to set sensitivity to low. Press the button a third time to reset to high sensitivity. You also can change the sensitivity level through software.

☼ high Brightly lit: UPS is set to high sensitivity.
☼ medium Dimly lit: UPS is set to medium sensitivity.
● low Off: UPS is set to low sensitivity.

Low Battery Warning Level

☼ 7 min Off: Low battery warning interval is about seven minutes
☼ 5 min Dimly lit: Low battery warning interval is about five minutes
● 2 min Brightly lit: Low battery warning interval is about two minutes

The low battery warning beeps to indicate low on- battery run time. It beeps periodically (approximately three times per minute) when less than seven minutes of run time remain. The beeps are continuous when only two minutes of run time remain.
This may not be enough time to shut down some protected computer systems. To change the warning interval default setting, press the (Test) voltage sensitivity button while pressing and holding the front-panel button.

FAULT INDICATORS
Input Circuit Breaker
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If the circuit breaker located on the back of the UPS trips, reduce the load on the UPS by unplugging equipment and resetting the circuit breaker.

Site Wiring Fault LED: ON DELTA POWER SYSTEMS THIS LED FUNCTION IS DISABLED

On-Battery Operation

The UPS will switch to battery operation automatically if the utility power fails. While running on-battery, an internal alarm sounds (periodic beeps). IF THE UPS SWITCHES TO BATTERY MODE IT WILL REPORT THE CONDITION TO THE TRI SENSE CARD.

Press the button 

on the front panel to silence the UPS alarm (for the current alarm only). You can change the audible indicator if you are using the PowerChute software.
If the utility power does not return, the UPS continues to supply power to the connected equipment until exhausted.

DETERMINING ON BATTERY RUN TIME

UPS battery life differs based on usage and environment. It is recommended that the battery/batteries are changed once every three-five years for standard batteries and every 8-10 years if the UPS is supplied with the premium battery set.

SECTION 4

USER CONFIGURABLE ITEMS

NOTE: SETTING THESE ITEMS REQUIRES SOFTWARE OR OPTIONAL HARDWARE.			
FUNCTION	**FACTORY DEFAULT**	**USER SELECTABLE CHOICES**	**DESCRIPTION**
Automatic Self-Test	Every 14 days (336 hours)	Every 7 days (168 hours), On Startup Only, No Self-Test	This function sets the interval at which the UPS will execute a self-test. Refer to your software manual for details.
UPS ID	UPS_IDEN	Up to eight characters to define the UPS	Use this field to uniquely identify the UPS for network management purposes.
Date of Last Battery Replacement	Manufacture Date	Date of Battery Replacement	Reset this date when you replace the battery module.
Minimum Capacity Before Return from Shutdown	0 percent	15, 30, 45, 50, 60, 75, 90 percent	The UPS will charge its batteries to the specified percentage before return from a shutdown.
Sensitivity	High	Medium, Low	Set lower than high sensitivity to avoid lowered battery capacity and service life in situations where the connected equipment can tolerate minor power disturbances.
Duration of Low Battery Warning	2 minutes	5, 8, 11, 14, 17, 20, 23 minutes	This function sets the time before shutdown at which the UPS issues a low battery warning. Set it higher than the default if the operating system needs more time for shutdown.
Alarm Control	Enable	Mute, Disable	User can mute a present ongoing alarm or disable all existing alarms permanently.
Shutdown Delay	90 seconds	0, 180, 270, 360, 450, 540, 630 seconds	This function sets the interval between when the UPS receives a shutdown command and when shutdown occurs.
Synchronized Turn-on Delay	0 seconds	60, 120, 180, 240, 300, 360, 420 seconds	The UPS will wait the specified time after the return of utility power before turn-on (for example, to avoid branch circuit overload).

High Transfer Point	230V models: 253VAC 120V models: 127VAC	230V models: 257, 261,265VAC 120V models: 130, 133,136VAC	To avoid unnecessary battery usage, set the high transfer point higher if the utility voltage is chronically high and the connected equipment is known to work under this condition.
Low Transfer Point	230V models: 208VAC 120V models: 106VAC	230V models: 204, 200, 196VAC 120V models: 103, 100, 97VAC	Set the low transfer point lower if the utility voltage is chronically low and the connected equipment can tolerate this condition.
Output Voltage	230V models: 230VAC	230V models: 220, 240VAC	230V models ONLY, allow the user to select the output voltage.

SECTION 5

STORAGE AND MAINTENANCE

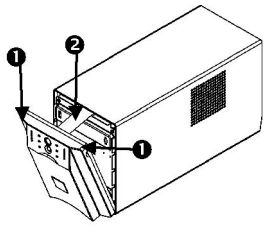
STORAGE CONDITIONS

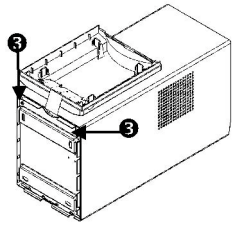
Store the UPS covered and positioned as for proper functioning, in a cool, dry location, with its batteries fully charged. Disconnect any cables connected to the computer interface port to avoid unnecessary battery drainage.

EXTENDED STORAGE

At -15 to +30 ℃ (+5 to +86 ℉), charge the UPS battery every six months. At +30 to +45 ℃ (+86 to +113 ℉), charge the UPS battery every three months.
Once the battery is disconnected, the loads are not protected from power outages.

REMOVING THE FRONT BEZEL AND BATTERY MODULE





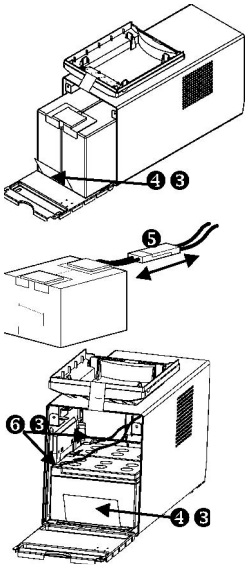
The battery module is accessible from the front of the UPS. This procedure requires a Phillips screwdriver.

1. Remove the two front cover plate screws

2. Remove the two screws located on each side of the front cover
3. Remove the front bezel. Use both hands and grasp the finger clips on either side of the bezel Pull it towards you. The bezel will unsnap from the top of the UPS. (Note the ribbon cable that attaches the front panel PCB to the main PCB. Do Not remove this cable. The bezel will still be engaged at the bottom of the unit. Carefully disengage the bezel from the hooks at the bottom of the UPS.
4. Set the bezel with the ribbon cable attached on top of the UPS. You will reinstall the bezel later.
5. Use a screwdriver to remove the two screws located at the top corners of the face plate . Set the screws aside in a safe place. You will replace them later.
6. Open the face plate to access the battery inside the battery compartment.

The battery module is heavy use caution when handling

1. The battery module is connected to the UPS by way of cables inside the battery compartment. To remove the battery module from the UPS, grasp the clear plastic label e and pull the battery module toward you.
2. Pull the battery module out of the compartment so that the back of the module is flush with the outer edges of the UPS.
3. Disconnect the battery module connector 0.



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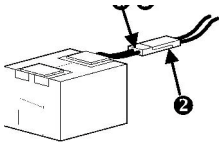
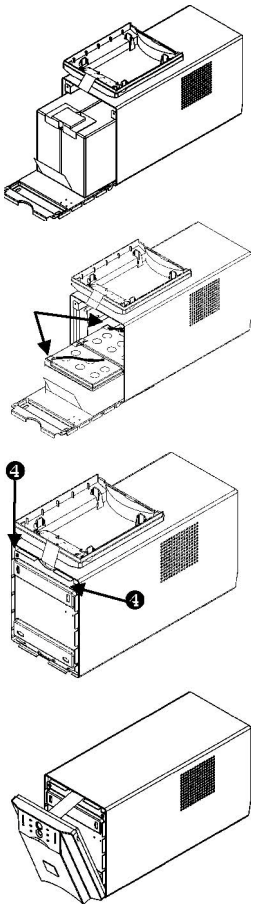
REPLACING THE BATTERY MODULE



1. Facing the front of the UPS, locate the battery cables and connector jack to the rear of the battery module compartment. Locate the battery cables and connector plug

on the rear of the battery module. Align the new battery module with the compartment opening.

2. To connect the battery connector plug to the battery jack, push the plug into the jack 8 so the metal pieces inside each part are touching. Press firmly to ensure a tight connection. Make sure that the battery connector plug is resting in the lower, back part of the battery module compartment.
Slide the battery module into the compartment making sure that the front edge of the battery is flush with the front edge of the battery compartment.



1. Close the face plate and replace the screws removed in Step 2 & 5 of Removing the Front Bezel and Battery Module procedure.
2. Replace the front bezel. Align the slots on the bottom of the bezel with the hooks on the bottom, front of the UPS and gently snap the bezel into place.
3. Replace the front cover plate screws removed in Step 1 of Removing the Front Bezel and Battery Module procedure.

Section 6

Troubleshooting

Use the chart below to solve minor UPS installation problems. Contact Powerstar Technical Support Staff at www.powerstarinc.com 1-800-209-5556 or 3019480713 for advanced assistance.

PROBLEM AND POSSIBLE CAUSE	SOLUTION
UPS WILL NOT TURN ON	
ON button not pushed. UPS not connected to AC power supply. UPS input circuit breaker tripped. Very low or no utility voltage. Battery not connected properly.	Press the ON button once to power the UPS and the connected equipment. Check that the power cable from the UPS to the utility power supply is securely connected at both ends. Reduce the load on the UPS by unplugging equipment and resetting the circuit breaker (on the back of UPS) by pressing the plunger in. Check the AC power supply to the UPS by plugging in a table lamp. If the light is very dim, have the utility voltage checked. Check that the battery connectors are fully engaged.
UPS WILL NOT TURN OFF	
Internal UPS fault.	Do not attempt to use the UPS. Unplug the UPS and have it serviced immediately.
UPS OPERATES ON BATTERY ALTHOUGH NORMAL LINE VOLTAGE EXISTS	
UPS input circuit breaker tripped. Very high, low, or distorted line voltage. Inexpensive fuel powered generators can distort the voltage.	Reduce the load on the UPS by unplugging equipment and resetting the circuit breaker (on the back of UPS) by pressing the plunger in. Move the UPS to a different outlet on a different circuit. Test the input voltage with the utility voltage display. If acceptable to the connected equipment, reduce the UPS sensitivity.
UPS BEEPS OCCASIONALLY	
Normal UPS operation.	None. The UPS is protecting the connected equipment.
UPS DOES NOT PROVIDE EXPECTED BACKUP TIME	
The UPS battery is weak due to a recent outage or is near the end of its service life.	Charge the battery. Batteries require recharging after extended outages. They wear faster when put into service often or when operated at elevated temperatures. If the battery is near the end of its service life, consider replacing the battery even if the replace battery LED indicator is not yet lit.
ALL INDICATORS ARE LIT AND THE UPS EMITS A CONSTANT BEEPING	
Internal UPS fault. The UPS is overloaded.	Do not attempt to use the UPS. Turn the UPS off and have it serviced immediately. Check the UPS load display. Unplug unnecessary equipment, such as printers.
FRONT PANEL INDICATORS FLASH SEQUENTIALLY	
The UPS has been shut down remotely through software or an optional accessory card.	None. The UPS will restart automatically when utility power returns.
ALL INDICATORS ARE OFF AND THE UPS IS PLUGGED INTO A WALL OUTLET	
The UPS is shut down and the battery is discharged from an extended outage.	None. The UPS will return to normal operation when the power is restored and the battery has a sufficient charge.
THE REPLACE BATTERY LED IS LIT	
Weak battery. Replacement battery not connected properly.	Allow the battery to recharge for at least four hours. Then, perform a self-test. If the problem persists after recharging, replace the battery. Check that the battery connectors are fully engaged.

PROBLEM AND POSSIBLE CAUSE	SOLUTION
UPS WILL NOT TURN ON	
ON button not pushed. UPS not connected to AC power supply. UPS input circuit breaker tripped. Very low or no utility voltage. Battery not connected properly.	Press the ON button once to power the UPS and the connected equipment. Check that the power cable from the UPS to the utility power supply is securely connected at both ends. Reduce the load on the UPS by unplugging equipment and resetting the circuit breaker (on the back of UPS) by pressing the plunger in. Check the AC power supply to the UPS by plugging in a table lamp. If the light is very dim, have the utility voltage checked. Check that the battery connectors are fully engaged.
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ALL INDICATORS ARE LIT AND THE UPS EMITS A CONSTANT BEEPING	
Internal UPS fault. The UPS is overloaded.	Do not attempt to use the UPS. Turn the UPS off and have it serviced immediately. Check the UPS load display. Unplug unnecessary equipment, such as printers.
FRONT PANEL INDICATORS FLASH SEQUENTIALLY	
The UPS has been shut down remotely through software or an optional accessory card.	None. The UPS will restart automatically when utility power returns.
ALL INDICATORS ARE OFF AND THE UPS IS PLUGGED INTO A WALL OUTLET	
The UPS is shut down and the battery is discharged from an extended outage.	None. The UPS will return to normal operation when the power is restored and the battery has a sufficient charge.
THE REPLACE BATTERY LED IS LIT	
Weak battery. Replacement battery not connected properly.	Allow the battery to recharge for at least four hours. Then, perform a self-test. If the problem persists after recharging, replace the battery. Check that the battery connectors are fully engaged.

SERVICE

If the UPS requires service follow these steps:
1. Review the problems discussed in the *Troubleshooting* section of this manual to eliminate common problems.
2. Verify that no circuit breakers are tripped. A tripped circuit breaker is the most common UPS problem.
3. If the problem persists, contact Customer Service through the web site, .
Note the model number of the UPS, the serial number. If you call Customer Service, a technician will ask you to describe the problem and try to solve it over the phone, if possible. If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
If the UPS is under warranty, repairs are free. If not, there is a repair charge.

Prepare the UPS for shipment to the repair center

- Pack the UPS in its original packaging or other suitable packaging.
- Pack the UPS properly to avoid damage in transit. Never use Styrofoam beads for packaging.
- Damage sustained in transit is not covered under warranty.
- Mark the RMA# on the outside of the package.
- Return the UPS by insured, prepaid carrier to the address given to you by Customer Service.

Disconnect the battery before shipping in compliance with U.S. Department of Transportation (DOT) regulations. The battery may remain in the UPS; it does not have to be removed.

CONTACTING

Refer to the information provided at www.powerstarinc.com

REGULATORY AGENCY APPROVALS

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 there own expense.

LIMITED WARRANTY

Powerstar Inc warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. Products must be returned with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way.

EXCEPT AS PROVIDED HEREIN, Powerstar Inc MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchase. Any special warranties will be specified in the purchase agreement..
EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL POWERSTAR INC BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, Powerstar is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise.

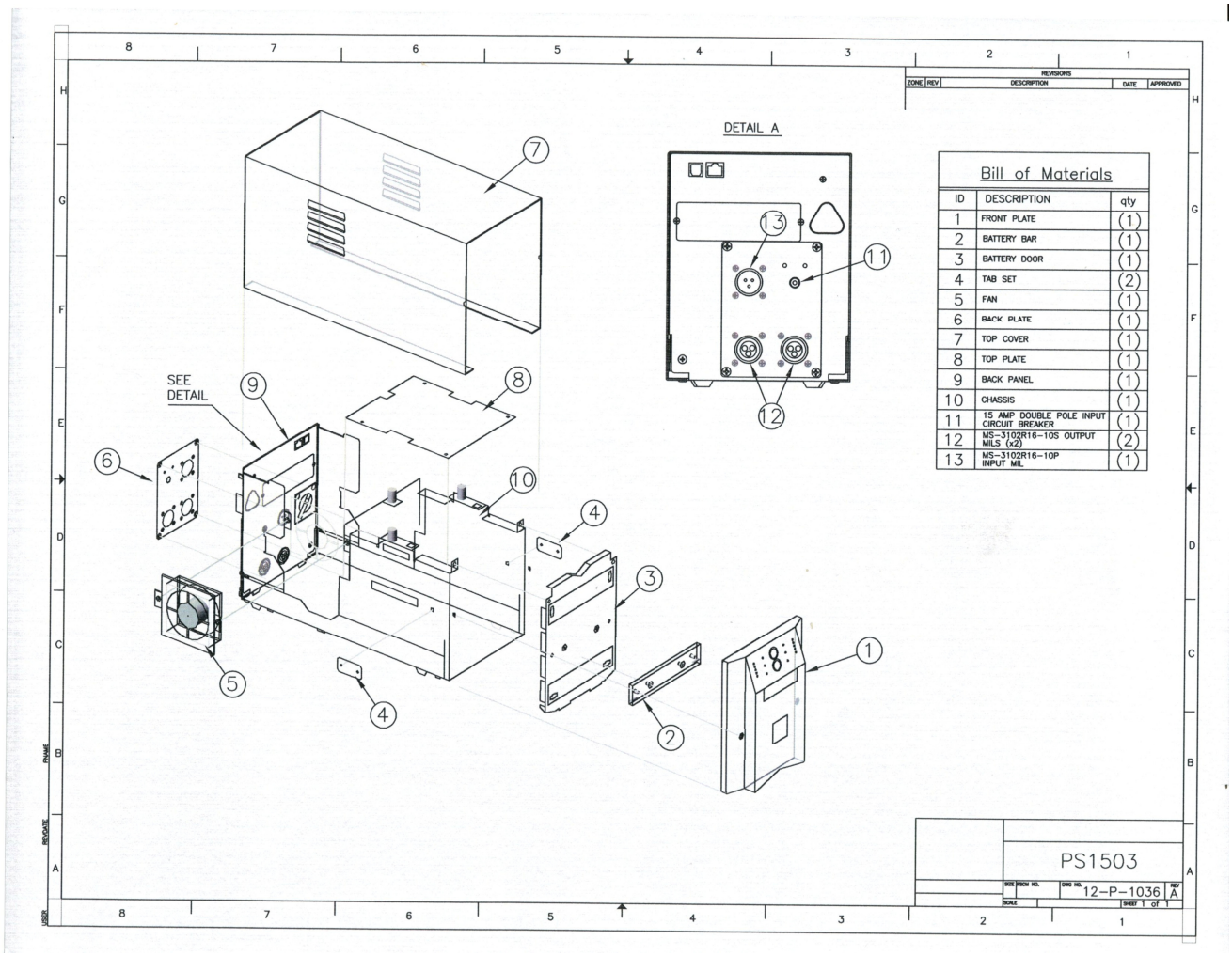
This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take corrective actions.
120V MODELS

LISTED LR63938 42C2

警告使用者:
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

RADIO FREQUENCY INTERFERENCE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when from an extended outage. the battery has a sufficient charge. and mil 901


DETAIL A
SEE DETAIL
Bill of Materials
ID | DESCRIPTION | qty
1 | FRONT PLATE | (1)
2 | BATTERY BAR | (1)
3 | BATTERY DOOR | (1)
4 | TAB SET | (2)
5 | FAN | (1)
6 | BACK PLATE | (1)
7 | TOP COVER | (1)
8 | TOP PLATE | (1)
9 | BACK PANEL | (1)
10 | CHASSIS | (1)
11 | 15 AMP DOUBLE POLE INPUT CIRCUIT BREAKER | (1)
12 | MS-3102R16-10S OUTPUT MILS (x2) | (2)
13 | MS-3102R16-10P INPUT MIL | (1)
PS1503
12-P-1036
A