

# PowerShield®



## USER MANUAL

### Defender RackMount (PSDR1500)



## INTRODUCTION

Thank you for purchasing the Defender RackMount 1500. This UPS is designed to provide safe and reliable power protection to your valuable electronic equipment. Before you start using the product, please read this user manual. It contains instructions relating to safety, installation, operation maintenance and warranty. Please keep this manual in a safe place for future use.

## PACKAGE CONTENTS

Included in the box:

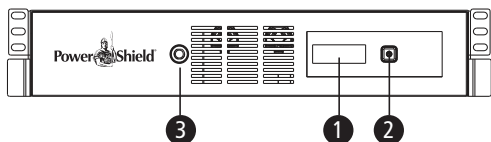
- PowerShield Defender RackMount 1500 unit
- PowerShield Defender RackMount 1500 User Manual
- USB Communication cable
- Rackmount Ears

**Note:** Before installation, please inspect the unit and make sure that no damage has occurred during transit. If any damage is found, please notify your dealer. Please keep the shipping materials in the event the product must be returned.

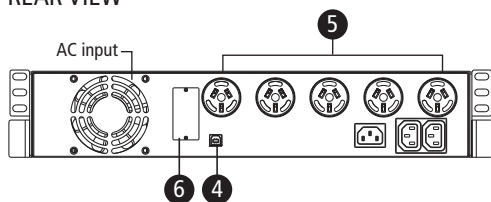
## PRODUCT OVERVIEW

The PowerShield Defender will protect your computer, telephone system and other electronic devices from various power disturbances including black and brown outs. This product features a user friendly LCD that displays the status of the product.

### FRONT VIEW



### REAR VIEW



- 1 User friendly LCD display (see 6)**  
See 'Understanding Display section for details'.
- 2 On/Off switch**  
Turn on and off unit with and without utility.
- 3 Resettable input circuit breaker**  
Breaker will trip when there is an overload or short circuit on the output of the unit.
- 4 USB interface port**  
Connect USB cable and computer. Install NetGuard UPS monitoring software for advanced power monitoring.
- 5 UPS and surge protection outlets**  
These outlets provide battery backup power when the mains power fails and unit is turned on. Connect peripherals that need battery backup protection. Do not connect laser printers.
- 6 Intelligent slot**  
The UPS is equipped with an intelligent slot to accommodate an SNMP card. When installed, the SNMP card will provide advanced communication and monitoring options for the UPS.

## INSTALLATION & START UP

- 1 Install the unit in a controlled environment area that is free from dust and has adequate air flow.



- 2 Plug the AC input cord into the wall outlet and the unit will automatically start.



- 3 NEVER Connect a laser printer / scanner to the UPS outlets. This may cause damage to the unit. The following type of equipment may cause some problems because the battery output mode of this unit is not sinusoidal; Inverter, Transformer, AC line filters and PFC power supplies.



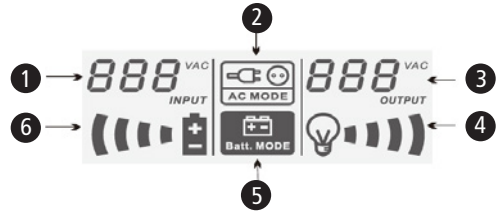
## SOFTWARE INSTALLATION

Defender RackMount 800 has HID inbuilt native Battery management compatible with Windows, Mac OSX and other OSs that support HID.

If you wish to use NetGuard monitoring software, please follow the instructions below:

- 1 Please download the latest NetGuard Monitoring software from [www.powershield.com.au/index.php/downloads](http://www.powershield.com.au/index.php/downloads).
- 2 When the installation is completed, NetGuard agent icon will appear on the Task bar.
- 3 Once installation is completed, click the plug icon found on the Task bar to start the program.

## UNDERSTANDING LCD DISPLAY



- 1 Input Voltage
- 4 Load level indicator
- 2 On line mode Icon
- 5 On battery mode Icon
- 3 Output voltage
- 6 Battery level indicator

STATUS	LCD	STATUS
On line operation	240 <sup>VAC</sup> INPUT   AC MODE   240 <sup>VAC</sup> OUTPUT ((( ))   🔋   🔌	Utility is stable and the unit is supplying its power from utility. No beep.
AVR operation	215 <sup>VAC</sup> INPUT   AC MODE   240 <sup>VAC</sup> OUTPUT ((( ))   🔋   🔌	The unit is boosting/bucking input voltage. Online mode icon flashes every 1 sec. No beep.
On battery operation	0 <sup>VAC</sup> INPUT   Batt. MODE   240 <sup>VAC</sup> OUTPUT ((( ))   🔋   🔌	There is power disturbances/blackout. The unit is supplying power from battery. Two beeps every 30 seconds.
Battery remain time	bat   88 ((( ))   🔋   🔌	The normal display of battery and battery remaining time will alternate once per 5s.
Low battery status	0 <sup>VAC</sup> INPUT   Batt. MODE   218 <sup>VAC</sup> OUTPUT ((( ))   🔋   🔌	Battery capacity becomes low. On battery mode icon flashes. Rapid beep at one sec intervals. The unit is about to shut down.
Overload status	236 <sup>VAC</sup> INPUT   AC MODE   234 <sup>VAC</sup> OUTPUT ((( ))   🔋   🔌	Total output power has exceeded the maximum power rating of the unit. Load level indicator flashes. Constant beeping.
Fault mode	0 <sup>VAC</sup> INPUT   Batt. MODE   0 <sup>VAC</sup> OUTPUT ((( ))   🔋   🔌	Please call for assistance when this indicator appears.
Standby mode	241 <sup>VAC</sup> INPUT   Batt. MODE   0 <sup>VAC</sup> OUTPUT ((( ))   🔋   🔌	On/Off button has not been pressed and the unit is connected to utility. Battery is being recharged. No Beep.

## BATTERY REPLACEMENT

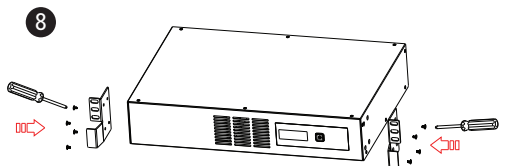
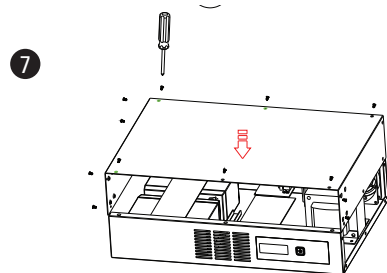
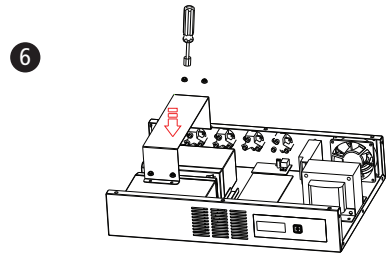
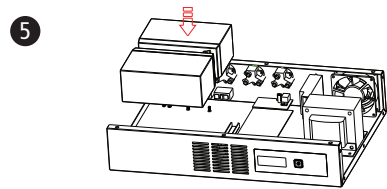
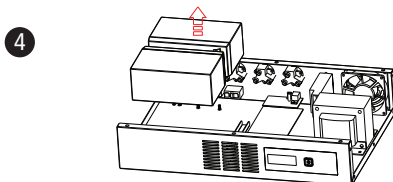
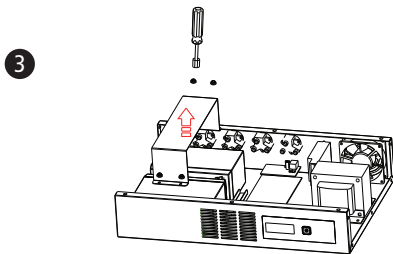
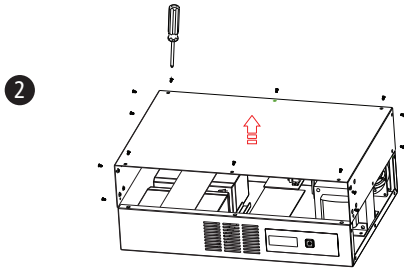
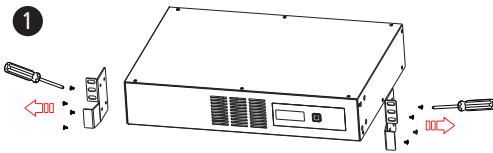
The Defender RackMount 1500 has a user replaceable battery feature. Please read the warning on the back page about battery safety and follow the steps carefully shown below. Please use only a PowerShield approved battery to maximize the performance of the unit.

- 1 Shutdown all connected equipment and turn the UPS off by pressing on/off button.
- 2 Disconnect input cord from mains and remove all output cords from the UPS.

- 3 Remove Red (Positive) and Black (Negative), and jumper link between the two batteries. Connect Red (Positive) and Black (Negative), and jumper link between the two new batteries.

Note: you may see a small spark when you connect the red wire to the battery. This is normal.

- 4 Please recharge the unit for 6 hours before you turn the unit on.



## STORAGE AND MAINTENANCE

### MAINTENANCE

Defenders contain no user-serviceable parts other than battery pack. If the battery service life (3–5 years at 25°C ambient temperature) has been exceeded, the batteries must be replaced.

**Be sure to deliver the spent battery to a recycling facility or ship it to your dealer in the replacement battery packing material.**

Please contact your dealer or visit the PowerShield website: [www.powershield.com.au/support](http://www.powershield.com.au/support).

### STORAGE

Before storing, charge the UPS 6 hours. Store the UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

STORAGE TEMPERATURE	RECHARGE FREQUENCY	CHARGING DURATION
–25°C–40°C	Every 3 months	1–2 hours
40°C–45°C	Every 2 months	1–2 hours

## TROUBLESHOOTING

Please follow the trouble shooting section below. If the problem cannot be resolved, please check PowerShield FAQ web page or call our customer support for further assistance.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
LCD display not lit	Low battery	Recharge the unit for at least 6 hours and try to start it again.
	Battery may be faulty	Replace the battery with PowerShield battery kit.
	Input circuit breaker tripped	Check if the circuit breaker on front panel has tripped, wait 5 minutes, reset, and check again.
Continuous beeping while mains input power is normal	The unit may be overloaded	Remove some equipment that is connected to UPS outlets and check load level indicator on LCD display.
Continuous beeping while UPS operating	The battery is low/ faulty	Replace the battery with PowerShield battery kit.
Backup time is short/ none when power fails	The unit maybe overloaded	Remove some equipment that is connected to UPS outlets and check load level indicator on LCD display.
	Low battery	Recharge the unit for at least 6 hours and try to start it again.
	Battery may be faulty	Replace the battery with PowerShield battery kit.
The unit stays on battery when the utility is normal	Input circuit breaker tripped	Check if the circuit breaker on front panel has tripped, wait 5 minutes, reset, and check again.
	Input power cord may be loose	Reconnect the power cord to wall outlet properly.

## TROUBLESHOOTING

<b>MODEL</b>	PSDR1500
<b>CAPACITY</b>	1500VA/900W
Input Voltage (Nominal)	240VAC
Input Voltage Range	177-290 VAC
Frequency Range	50/60Hz $\pm$ 5Hz
Output Voltage	240 VAC
Output Voltage Regulation	240 VAC $\pm$ 10%
Frequency	AC mode tracks utility
Frequency Range (Batt. Mode)	50Hz or 60Hz $\pm$ 1Hz
Transfer Time	Typical 2–6ms, 10ms max
Waveform (Batt. Mode)	Simulated Sine Wave
Battery Type & Number	12V 9Ah (x2)
Typical Recharge Time	6 Hours recover to 90% capacity
Full Protection	Overload, discharge and overcharge protection
Safety	EN62040-1:2008, IEC60950-1:2006
EMC	EN62040-2:2006
Temperature and Humidity	0–40°C, 0–90% RH (non-condensing)
Noise Level	<40dB (no fan)
Dimensions (D x W x H) mm	300 x 438 x 86
Net Weight	13.8 kg

Note: Fan is generally off, it will activate when the UPS is on battery and over temperature.

## WARRANTY AND SERVICE

### WARRANTY CONDITIONS

The standard warranty is TWO (2) years from the date of purchase. The standard PowerShield procedure is to replace the original unit with a factory refurbished unit. PowerShield will ship the replacement unit once the defective unit has been received by the service department, or cross ship upon the receipt of a valid credit card number. The customer pays for shipping the defective unit to PowerShield. PowerShield pays ground freight transportation costs to ship the replacement to the customer within Australian capital cities metro areas only.

### WARRANTY SERVICE PROCESS

- 1 Review the problems discussed in the troubleshoot section of this manual to eliminate common problems.
- 2 Verify that no input/output circuit breaker is tripped.  
A tripped circuit breaker is the most common problem.
- 3 If the problem still persists, please call 1300-305-393 for technical support or fill in the form in PowerShield web page for on line technical support. Following details are needed for warranty claims.
  - Model number
  - Serial number
  - The date of purchase

- 4 Be prepared to troubleshoot the problem over the phone with PowerShield technical support.
- 5 If technical support found that the product is defective, then the technical support will issue a Return Material Authorization Number (RMA#)
- 6 If the unit is under warranty, repair is free. If not there is a repair charge.
- 7 Pack the unit in its original packaging. Pack properly to avoid damage during transit. Damage sustained in transit is not covered under warranty.
- 8 Mark the RMA# on the outside of the package.
- 9 Return the defective unit by insured, prepaid carrier to the address given to you by Technical support.

**Please register your warranty by visiting [www.powershield.com.au](http://www.powershield.com.au)**

## SAFETY CAUTION

**Please read carefully the following safety instructions before using the Defender RackMount 1500.**

### **ATTENTION: Electrical Safety**

- To prevent the risk of fire and electric shock, install the product in a controlled temperature and humidity indoor area where it is free from conductive contaminants.
- To reduce the risk of overheating, please ensure the cooling vent holes are unobstructed, avoid exposing the unit to direct sunlight, or installing the unit near heat emitting appliances such as heaters or furnaces.
- This product is not approved for medical equipment, or life-support systems. As this unit output is not sinusoidal, please do not connect AC line filters, motors, microwave ovens, vacuum cleaners and other inductive / capacitive equipment or similar. This equipment might damage the unit.
- Do not plug the unit input cord to into its own output.
- Do not place any liquids on the top or adjacent to the unit. Please ensure no liquids or foreign objects entering the unit.
- Proper grounding is essential during installation of the unit in order to limit the leakage current below 3.5mA.
- Hazardous voltage present even when the unit is disconnected from the mains. Hazardous voltages may still be present through the supply from the battery. Battery connections should be disconnected when servicing the product.
- There are no serviceable parts inside the unit. Please do not attempt to open enclosure for modification or service, other than replacing the battery. Any modification whatsoever to this unit will void product warranty.

### **ATTENTION: Battery Safety**

- When replacing the batteries, always use the same quantity and type of batteries.
- Do not dispose of batteries in a fire as they may explode.
- Do not open or mutilate the battery as released electrolyte may be harmful to the skin and eyes.
- A battery can present a risk of electric shock and high short circuit current.
- Battery replacement should be only undertaken by competent personnel.
- The following precautions should be observed before replacing batteries.
  - 1 Remove watches rings and other metal objects.
  - 2 Use proper tools with insulated handles.
  - 3 Keep tools or metal objects away from the batteries.
  - 4 Make sure that the UPS is turned completely OFF.
  - 5 Disconnect mains supply prior to connecting or disconnecting battery terminals.