CyberPower®

eu.cyberpowersystems.com

Professional Rack Mount UPS
1500VA/2200VA
User Manual

K01-1500E0C-02

SAFETY WARNINGS

(SAVE THESE INSTRUCTIONS)

This manual contains important safety instructions. Please read and follow all instructions carefully during installation and operation of the unit. Read this manual thoroughly before attempting to unpack, install, or operate your UPS.

This equipment can be operated by any individuals with no previous training.

The socket-outlet shall be installed near the equipment and easily accessible.

During the installation of this equipment it should be assured that the sum of the leakage currents of the UPS and the connected loads does not exceed 3.5mA.

Attention, hazardous through electric shock. Also with disconnection of this unit from the mains, hazardous voltage still may be accessible through supply from battery. The battery supply should be therefore disconnected in the plus and minus pole at the quick connectors of the battery when maintenance or service work inside the UPS is necessary.

When replacing the batteries, use batteries of the same number and type.

Do not dispose of batteries in a fire, the battery may explode.

Do not open or mutilate the battery or batteries, released electrolyte is harmful to the skin and eyes.

INSTALLING YOUR UPS SYSTEM

UNPACKING

Inspect the UPS upon receipt. The box should contain the following:UPS Unit; Rack Mount bracket x 2; Stand x2; PowerPanel® Business Edition Software Disk X 1 ; PowerPanel®Software Disk X1; Serial Interface Cable (DB-9) X 2; Serial Interface to USB Adapter X 1; Telephone Cable X 1; IEC to IEC Power Cord X 4; UPS User Manual; PowerPanel® Business Edition Software User Manual; PowerPanel®Software User Manual.

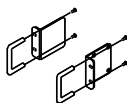### HOW TO DETERMINE THE POWER REQUIREMENTS OF YOUR EQUIPMENT

1. Insure that the equipment plugged into the battery power-supplied outlets does not exceed the UPS unit's rated capacity (1500VA/1000W for PR1500E, 2200VA/1600W for PR2200E). If rated unit capacities are exceeded, an overload condition may occur and cause the UPS unit to shut down or the circuit breaker to trip.
2. If the power requirements of your equipment are listed in units other than Volt-Amps (VA), convert Watts (W) or Amps (A) into VA by doing the calculations below. Note: The below equation only calculates the maximum amount of VA that the equipment can use, not what is typically used by the equipment at any one time. Users should expect usage requirements to be approximately 60% of below value.
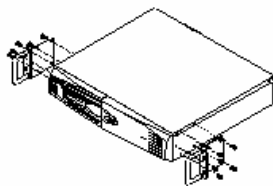
TO ESTIMATE POWER REQUIREMENTS

1. _____ Watts (W) x 2.0 = _____ VA or _____ Amps (A) x 230 = _____ VA
2. Add the totals up for all pieces of equipment and multiply this total by 0.6 to calculate actual requirements. There are many factors that can affect the amount of power that your computer system will require. The total load that you will be placing on the battery-powered outlets should not exceed 80% of the unit's capacity.

DIRECTIONS TO MOUNT THE UPS IN THE RACK

1. Assemble the handlebars to the rack mount brackets (ears) as shown in the figures, using the flat head screws (M4.0*8mm) provided.
2. Assemble the two ears to the both sides of the UPS enclosure as shown in the figures, using the flat head screws (M5.0*8mm) provided.
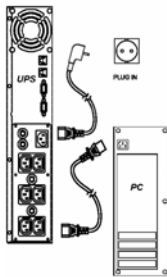3. Install the UPS at or near the bottom of the rack.

CAUTION!   At least two people are required when mounting the UPS in the rack due to its weight. The battery pack may be removed while mounting it in the rack.
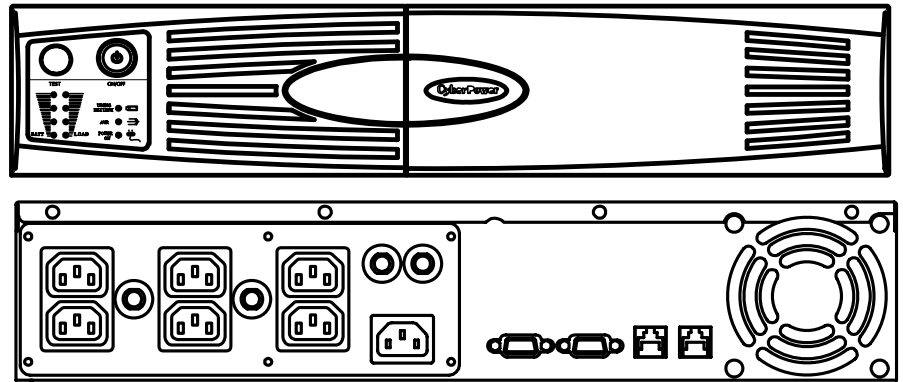
HARDWARE INSTALLATION GUIDE

1. Your new UPS may be used immediately upon receipt. However, **recharging the battery for at least four hours** is recommended to insure that the battery's maximum charge capacity is achieved. Charge loss may occur during shipping and storage. To recharge the battery, simply leave the unit plugged into an AC outlet.
2. Connect the equipment to your UPS outlets. The IEC-IEC power cords coming with the unit are used to connect your computer and monitor to the UPS. Items such as copiers, laser printers, vacuums, space heaters, or other large electrical devices should not be connected to the UPS. Please make sure that the total loads of your equipments are less than the maximum total power load of your UPS.
3. Connect the UPS and a wall outlet by using your PC power cord. Please avoid using extension cords and adapter plugs. (To maintain optimal battery charge, leave the UPS plugged in at all times.)
4. Press the UPS power button to turn it on. The "Power On" indicator will be illuminated in "Green".
5. Install your software and accessories. To use the software, simply connect the enclosed serial interface cable to the serial port on the UPS and an open serial port on the computer.

BASIC OPERATION

FRONT PANEL AND REAR PANEL DESCRIPTION

◆ **Power Switch**

Press the power button to turn the UPS ON or OFF.

◆ **Test Switch**

Press this button to perform a self test of your UPS. This UPS also performs a self test automatically when powered on. After the UPS passes the test, it returns to on-line operation. If the UPS fails the self-test, please recharge the battery for at least 4 hours and perform another self-test. If it fails after recharging the battery, please replace the battery. In battery mode, you can press this button to silence an audible alarm.

◆ **Power On Indicator**

This LED is illuminated when the utility condition is normal and the UPS outlets are providing "clean power", free of surges and spikes.

◆ **AVR Indicator**

This LED indicates that the UPS is operating in automatic voltage regulation mode. When the led is illuminated continuously, it indicates input over-voltage and the UPS unit bucks the voltage. When the led is flashed in rotation, it indicates that the UPS unit boosts input voltage.

◆ **Using Battery Indicator**

This LED illuminates during utility failure, indicating that the battery is supplying power to the battery-power supplied outlets.

◆ **Battery Level Indicator**

This indicator shows a visual indication of the battery charge. When battery capacity is under 20%, no indicator LED will illuminate. If the battery capacity is under 20% even after 8-hour charge, the batteries may be worn out.
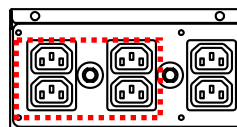
◆ **Load Level Indicators**

This indicator shows a visual indication of the UPS load. The load indicator LED will turn orange if the load is between 80% and 100%. If the load is under 20%, no indicator LED will illuminate.
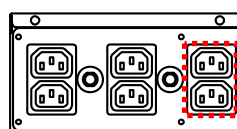
◆ **Circuit Breaker Reset for Overload Protection**

Resettable circuit breakers provide optimal overload protection.

◆ **Battery Backup and Surge Protection Outlets**

The UPS provides 4 battery powered and surge protected outlets for connected equipment to insure temporary uninterrupted operation during a power failure and against surges and spikes.

◆ **Backup Power for Critical Loads**

The UPS provides 2 battery powered, surge protected outlets for the most critical connected equipment and insures temporary uninterrupted operation of connected equipment during a power failure.

NOTE: When the UPS is overloaded, the UPS will interrupt power supply to the other 4 battery outlets and leave these 2 outlets for critical loads uninterrupted.
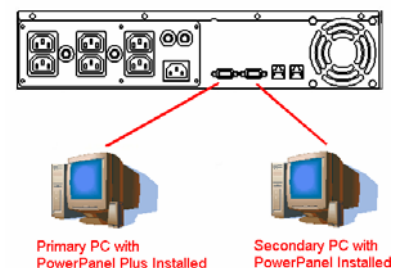
◆**Ethernet(RJ-45) Network Protection Ports**

These ports are the protection for your computer network cables.

IN   OUT

◆ **Serial Port to PC**

Professional Rack Mount UPS provides two serial ports to allow connection and communication between the UPS and two computers.

The two serial ports allow connection and communication from the DB-9 serial or USB port on the computer to the UPS unit. These interfaces are also compatible with the UPS service provided by **Windows 98, Windows ME, Windows 2000, Windows NT, Windows XP, Windows Server2003**

Primary PC with PowerPanel Plus Installed   Secondary PC with PowerPanel Installed

The Primary computer (with PowerPanel® Business Edition install ed) is the computer that you will use to control the UPS and make any change to the operation of the UPS. The Secondary computer (with PowerPanel® installed) is unable to exhibit any control over the UPS.

When there is a power failure, the Primary computer will start to shutdown after a user controlled delay. Once the Primary computer shuts down, the UPS will signal the secondary computer and initiate a shutdown. The secondary computer will then shut down. Once the secondary computer has completed its shutdown, the UPS will power off.

BATTERY REPLACEMENT AND STORAGE

CAUTION! Read and follow the **IMPORTANT SAFETY INSTRUCTIONS** before servicing the battery. **Service the battery under the supervision of personnel knowledgeable of batteries and their precautions. Keep unauthorized personnel away from batteries.** If you have questions, **contact your dealer or call the number in this manual** for information on battery replacement.
CAUTION! Use only the specified type of battery. See your dealer for replacement batteries.
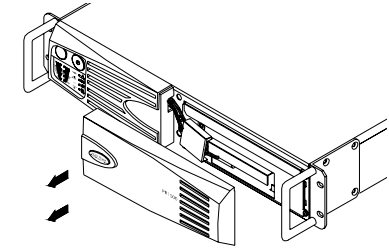**CAUTION!** The battery may present the risk of electrical shock. **Do not dispose of batteries in a fire**, as it may explode. Follow all local ordinances regarding proper disposal of batteries.
CAUTION! Do not open or mutilate the batteries. Release electrolyte is harmful to the skin and eyes and may be toxic.
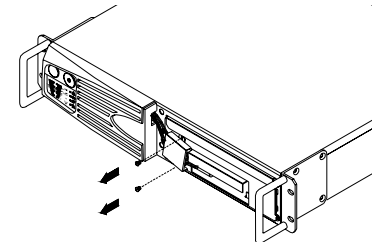**CAUTION!** A battery can present a high risk of short circuit current and electrical shock. **Take the following precautions before replacing the battery**:
 1. Remove all watches, rings or other metal objects.
 2. Only use tools with insulated handles.
 3. **DO NOT** lay tools or other metal parts on top of battery or any battery terminals.
 4. Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source of ground. **CONTACT WITH A GROUNDED BATTERY CAN RESULT IN ELECTRICAL SHOCK!** The likelihood of such shock will be reduced if such grounds are removed during installation and maintenance (applicable to a UPS and a remote battery supply not having a grounded circuit).
 5. Batteries are consider **HAZARDOUS WASTE** and must be disposed of properly. Contact your local government for more information about proper disposal and recycling of batteries.
 6. Turn off and unplug all connected equipment.
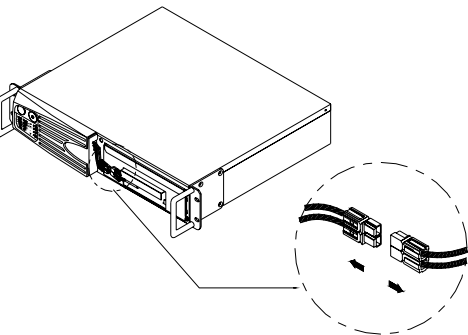 7. Turn the UPS off and unplug it from the AC power source.
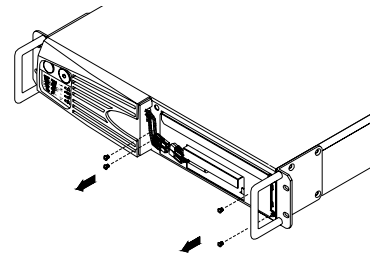
BATTERY REPLACEMENT PROCEDURE:

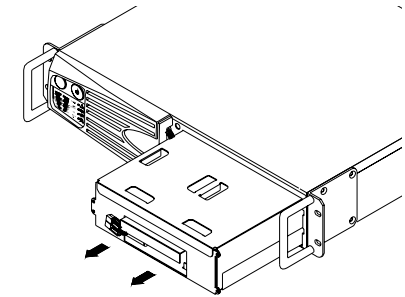1. Remove the right side front panel.

2. Remove the two retaining screws of the cable protection cover then remove the cover.

3. Disconnect the black and red cable.
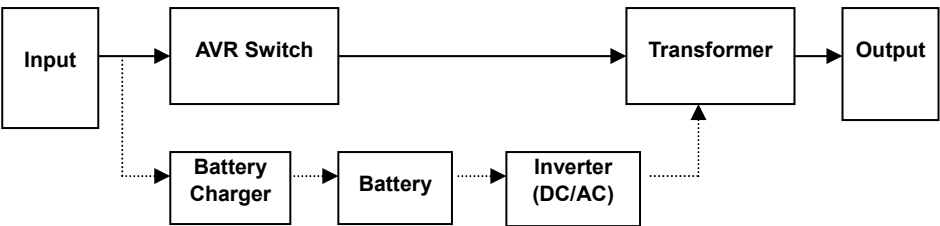

4. Remove the four retaining screws.

5. Pull the battery pack out from the unit.
6. Slide a new battery pack into the unit. Assemble the screws, cover, cable and front panel in the reverse sequence of above steps.

REMINDER: Recharge the unit for 4 – 8 hours to ensure the UPS performs expected runtime.

STORAGE

First turn off your UPS and disconnect its power cord from the wall outlet. Disconnect all cables connected to the UPS to avoid battery drain. To store your UPS for an extended period, cover it and store with the battery fully charged. Recharge the battery every three months to insure battery life. If the battery remains uncharged for an extended period of time, it may suffer permanent loss of capacity.

Block Diagram

TROUBLE SHOOTING

Problem	Possible Cause	Solution
The UPS does not perform expected runtime.	Batteries are not fully charged.	Recharge the battery by leaving the UPS plugged in.
	Battery is slightly worn out.	Contact Cyber Power Systems at service@cyberpower-eu.com
The UPS will not turn on.	The on/off switch is designed to prevent damage by rapidly turning it off and on.	Turn the UPS off. Wait 10 seconds and then turn the UPS on.
	The unit is not connected to an AC outlet.	The unit must be connected to a 220-240V 50/60Hz outlet.
	The battery is worn out.	Contact Cyber Power Systems at service@cyberpower-eu.com
	Mechanical problem.	Contact Cyber Power Systems at service@cyberpower-eu.com
Outlets do not provide power to equipment	Circuit breaker is tripped due to overload.	Turn the UPS off and unplug at least one piece of equipment. Wait 10 seconds, reset the circuit breaker and then turn the UPS on.
	Batteries are discharged	Allow the unit to recharge for at least 4 hours.
	Unit has been damaged by a surge or spike.	Contact Cyber Power Systems at service@cyberpower-eu.com
PowerPanel® Business Edition or PowerPanel® is inactive (all icons are gray).	The serial/USB cable is not connected.	Connect the serial/USB cable to the UPS unit and an open serial port on the back of the computer. You must use the cable that came with the unit.
	The serial/USB cable is connected to the wrong port.	Try another serial/USB port of your computer.
	The unit is not providing battery power.	Shut down your computer and turn the UPS off. Wait 10 seconds and turn the UPS back on. This should reset the unit.
	The serial cable is not the cable that was provided with the unit.	You must use the cable included with the unit for the software.

TECHNICAL SPECIFICATIONS

Model	PR1500E	PR2200E
Capacity (VA)	1500VA	2200VA
Capacity (Watts)	1000W	1600W
Input		
Input Voltage Range	220-240Vac	
Frequency Range	50/60 Hz	
Output		
On Battery Output Voltage	Pure Sine Wave at 230Vac +/- 7%	
On Battery Output Frequency	50/60 Hz	
Overload Protection	On Utility: Circuit Breaker, On Battery: internal current limiting	
Surge Protection and Filtering		
Lightning / Surge Protection	Yes	
Network Protection	RJ45 (One In/One Out)	
Physical		
Total # of UPS Receptacles	6	
Maximum Dimensions	43.3cm*8.8cm*38.8cm	
Weight (Kg)	26.4	32.1
Battery		
Sealed Maintenance Free Lead Acid Battery	12V / 7AHx4	12V / 9AHx4
User Replaceable	Yes, Hot Swappable Battery Pack	
Typical Recharge Time	8 Hours	
Warning Diagnostics		
Indicators	Power On, Using Battery, AVR, Load Level, Battery Level	
Audible Alarms	On Battery, Low Battery, Overload, Self-test	
Environmental		
Operating Temperature	+32°F to 95°F (0°C to 35°C)	
Operating Relative Humidity	0 to 95% NON-CONDENSING	
Communication		
PowerPanel® Business edition Software	Windows 98/ME/2000/NT/XP, Server 2003	
Management		
Auto-Charger	Yes	
Auto-Restart	Yes	
USB	Yes	
SNMP/HTTP network function	Optional	

DEFINITIONS FOR ILLUMINATED LED INDICATORS

Power On	AVR	Using Battery	Circuit Breaker	Alarm	Condition
On	Off	Off	Set	Off	Normal
On	Slow flash	Off	Set	Off	**AVR-** Max. boost 13% of input voltage for output regulation while input voltage is from 8% to 15% under nominal.
On	Rapid flash	Off	Set	Off	**AVR-** Max. boost 26% of input voltage for output regulation while input voltage is from 15% to 26% under nominal.
ON	On	Off	Set	Off	**AVR-** Max. buck 11% of input voltage for output regulation while input voltage is from 8% to 26% over nominal.
Off	Off	On	Set	Two Beeps	**Utility Failure-** The UPS is providing battery power to the outlets.
Off	Off	On	Set	Rapid Beeps	**Utility Failure-** The UPS is providing battery power. Rapid beeps indicate the battery will run out of charge within a few minutes.
On/Off	On/ Off /Flash	On/Off	Set	Long Beep	**Overload-** Please turn the UPS off and unplug at least one piece of equipment from the UPS. Wait 5 seconds, reset the circuit breaker and restart the UPS.
Off	Off	On	Up	Long Beep	**Overload-** Please turn the UPS off and unplug at least one piece of equipment from the UPS. Wait 5 seconds, reset the circuit breaker and restart the UPS.
Off	Off	Off	Set	Off	**Surge Protection Malfunction-** Power surge has damaged the unit. Please contact CyberPower Systems.

For more information, visit eu.cyberpowersystems.com or contact

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