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CyberPower

RT650EI / RT500EI
User's Manual

K01-0000540-01

PRODUCT REGISTRATION

Thank you for purchasing a CyberPower product. Please take a few minutes to register your product at www.cyberpower.com/registration. Registration certifies your product's warranty, confirms your ownership in the event of a product loss or theft and entitles you to free technical support.

IMPORTANT SAFETY INSTRUCTIONS

(SAVE THESE INSTRUCTIONS)

This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries.

CAUTION! To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area free of conductive contaminants. (Please see specifications for acceptable temperature and humidity range).

CAUTION! To reduce the risk of electric shock, do not remove the cover except to service the battery. There are no user serviceable parts inside, except for thebattery.

CAUTION! Hazardous live parts inside can be energized by the battery even when the AC input power is disconnected.

CAUTION! The UPS must be connected to an grounded AC power outlet with fuse or circuit breaker protection. Do not plug into an outlet that is not grounded. If you need to de-energize this equipment, turn off and unplug the unit.

CAUTION! To avoid electrical shock, turn off the unit and unplug it form the AC power source before servicing the battery or installing a computer component.

CAUTION! Do not dispose of batteries in a fire. The batteries may explode.

CAUTION! Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

DO NOT USE FOR MEDICAL OR LIFE SUPPORT EQUIPMENT! CyberPower Systems does not sell products for life support or medical applications. **DO NOT** use in any circumstance that would affect operation and safety of life support equipment, any medical applications or patient care.

DO NOT USE WITH OR NEAR AQUARIUMS! To reduce the risk of fire or electric shock, do not use with or near an aquarium. Condensation from the aquarium can cause the unit to short out.

DO NOT USE THE UPS ON ANY TRANSPORTATION! To reduce the risk of fire or electric shock, do not use the unit on any transportation such as airplanes or ships. The effect of shock or vibration caused during transit and the damp environment can cause the unit to short out.

INSTALLING YOUR UPS SYSTEM

UNPACKING

Inspect the UPS upon receipt. The box should contain the following:

(a) UPS unit (b) User's manual (c) USB device cable (d) IEC to IEC power cord

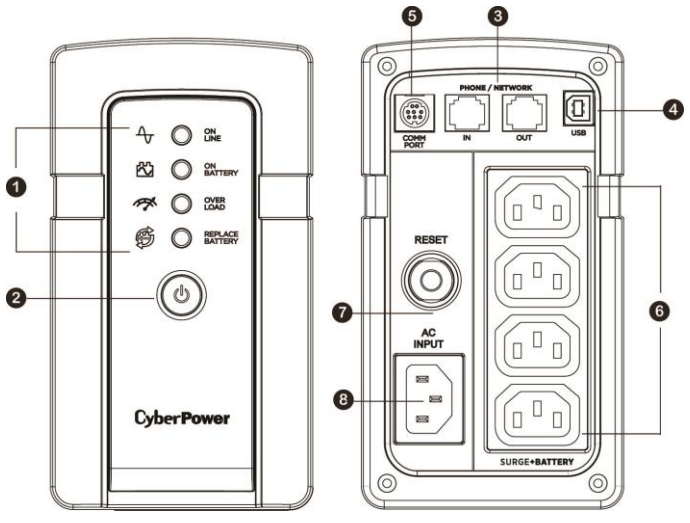
***PowerPanel® Personal Edition software is available on our website. Please visit www.cyberpower.com and go to the Software Section for free download.**

HOW TO DETERMINE THE POWER REQUIREMENTS OF YOUR EQUIPMENT

1. Ensure that the equipment plugged into the UPS does not exceed the UPS unit's rated capacity (650VA/400W for RT650EI and 500VA/300W for RT500EI). If the rated capacities of the unit are exceeded, an overload condition may occur and cause the UPS unit to shut down or the circuit breaker to trip.
2. There are many factors that can affect the amount of power that your electronic equipment will require. For optimal system performance keep the load below 80% of the unit's rated capacity.

BASIC OPERATION

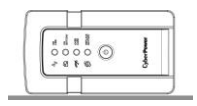
DESCRIPTION



1. LED Indicators
   The LED indicators will illuminate to show the status of power: on line, on battery, overload, replace battery.
2. Power Switch
   To turn the UPS **ON**, press the power button for approximately 2 seconds - you will hear a constant tone and release after a short beep.
   To turn the UPS **OFF**, press the power button for approximately 2 seconds - you will hear a constant tone and release after two short beeps.
   Mute mode: The audible alarm can be turned **Off** or **On** by quickly pressing the POWER button twice. The default setting is for the Alarm On. To turn the Alarm Off, quickly press the power button twice. You will hear two short beeps when the Alarm is turned Off. To turn the Alarm back On, quickly press the power button twice. You will hear a single short beep when the Alarm is turned On. *When the Alarm is turned Off, there will be no audible notification when the UPS goes to Battery mode or reaches a low battery state.
3. Communication Protection Ports
   Communication protection ports will protect any standard modem, fax, telephone line, network or Ethernet connection (RJ11/RJ45).
4. USB Port to PC
   The USB port allows connection and communication between the USB port on the computer and the UPS unit. The UPS communicates its status to the PowerPanel® Personal Edition software.
5. Communication Port to PC
   This port allows connection and communication between the UPS and computer. The UPS communicates its status to the **PowerPanel® Personal Edition** software. For information regarding ordering a serial cable for the unit, please contact technical support at CyberPower System.
   NOTE: Only one of communication port and USB port can be used as communication and control of the UPS unit at one time.
6. Battery and Surge Protected Outlets
   The unit has battery powered/surge suppression outlets to ensure temporary uninterrupted operation of your equipment during a power failure. **(DO NOT plug a laser printer, paper shredder, copier, space heater, vacuum cleaner, sump pump, or other large electrical device into the "Battery and Surge Protected Outlets." The power demands of these devices will overload and possibly damage the unit.)**
7. Circuit Breaker
   Located on the back of the UPS, the circuit breaker serves to provide overload and fault protection.
8. AC Input
   Connect the AC Power cord to a properly wired and grounded outlet.

HARDWARE INSTALLATION GUIDE

1. Your new UPS may be used immediately upon receipt. However, after receiving a new UPS, to ensure the battery's maximum charge capacity, it is recommended that you charge the battery for at least 8 hours. Your UPS is equipped with an auto-charge feature. When the UPS is plugged into an AC outlet, the battery will automatically charge when it's turned on or turned off.
   Note: This UPS is designed with a safety feature to keep the system from being turned on during shipment. The first time you turn the UPS on, you will need to have it connected to AC power or it will not power up.
2. With the UPS unit turned off and unplugged, connect your computer, monitor, and any other peripherals requiring battery backup from the SURGE & BATTERY outlets. **DO NOT plug a laser printer, paper shredder, copier, space heater, vacuum cleaner, sump pump, or other large electrical device into the "Battery and Surge Protected Outlets". The power demands of these devices will overload and possibly damage the unit.**
3. To protect a fax, phone, or modem line, connect a telephone cable from the wall jack outlet to the IN jack of the UPS. Connect a telephone cable from the UPS OUT jack to protect a modem port on the computer, a telephone, or fax machine.
4. Plug the UPS into a 2 pole, 3 wire grounded receptacle (wall outlet). Make sure the wall branch outlet is protected by a fuse or circuit breaker and does not service equipment with large electrical demands (e.g. air conditioner, refrigerator, copier, etc.). The warranty prohibits the use of extension cords, outlet strips, and surge strips in conjunction with the UPS unit.
5. If an overload is detected, an audible alarm will sound and the unit will emit one long beep. To correct this, turn the UPS off and unplug at least one piece of equipment from the battery power supplied outlets. Make sure the circuit breaker is depressed and then turn the UPS on.
6. To maintain optimal battery charge, leave the UPS plugged into an AC outlet at all times.
7. To store the UPS for an extended period of time, cover it and store with the battery fully charged. While in storage, recharge the battery every three months to ensure optimal battery life.
8. Ensure the wall outlet and UPS are located near the equipment being attached for proper accessibility.
9. The UPS can lie down on the left direction during operation. **DO NOT** lie down on the other side which may block the ventilation hole and hinder the heat dissipation.



REPLACING THE BATTERY

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.**

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 they may explode. Follow all local ordinances regarding proper disposal of batteries.

CAUTION! Do not open or mutilate the batteries. Released electrolyte is harmful to the skin and eyes and may be toxic.

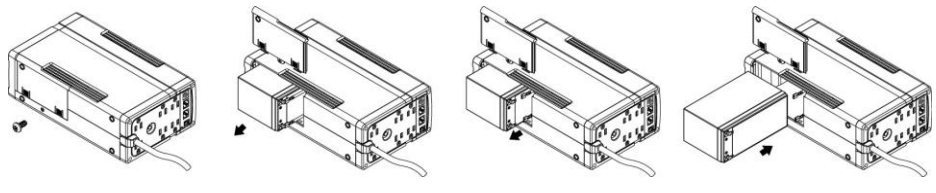
CAUTION! A battery can present a high risk of short circuit current and electrical shock. Take the following precautions before replacing the battery:

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. Wear rubber gloves and boots.
5. 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)

■ TO REPLACE THE BATTERY

1. Turn off and unplug all connected equipment.
2. Unplug it from the AC power source.
3. Turn the UPS on its side.
4. Remove the retaining screw.
5. Slide the battery compartment cover completely off of the unit.
6. Remove the battery from the compartment.
7. Disconnect the battery wires from the battery.
8. Install the replacement battery by connecting the red wire and black wire to the positive (+) and negative (-) terminal of the battery.
9. Put the battery back into the compartment.
10. Slide back the battery compartment cover and tighten the retaining screw.
11. Charge the unit for 8 hours to fully charge the battery.



DEFINITIONS FOR ILLUMINATED LED INDICATORS

On Line	On Battery	Overload	Replace Battery	Alarm	CONDITION
On	Off	Off	Off	Off	Normal
Off	On	Off	Off	Beep twice every 30 seconds	**Utility Failure**– The UPS is providing power to battery protected outlets from its battery.
Off	Flash	Off	Off	Rapid Beeping every 1/2 second	**Utility Failure** – The UPS is providing battery power. Rapid beeping indicates the unit will run out of power shortly.
Off	Off	One Flash every 5 seconds	Off	Constant tone	**Overload Fault** – Occurs when connected equipment exceeds the listed capacity of the UPS. Turn the UPS off, unplug at least one piece of equipment from battery outlets, wait 10 seconds, reset the circuit breaker and turn the unit on.
Off	Off	On/Flash	Off	Constant tone	**Short Fault** (two flashes every 5 seconds) – Unplug at least one piece of equipment from battery outlets and turn the UPS on again. **UPS Fault** (constantly illuminate) – Contact CyberPower Systems for support.
On/Off	Off/On	Flash	Off	Beep every one second	**Charger Fault** (three flashes every 5 seconds) – Contact CyberPower Systems for support.
On	Off	Off	Flash	Beep every two seconds in 30 seconds	**Battery is worn out or disconnected** – Make sure the battery is connected or replace a new battery.

CYBERPOWER GREENPOWER UPS™ TECHNOLOGY

CyberPower's Green Commitment

CyberPower is dedicated to the development of green products, and has adopted Green practices throughout its business, including: membership in Climate Savers Computing Initiative (CSCI), accordance with the Restriction on Hazardous Substances (RoHS), Waste Electrical and Electronic Equipment (WEEE) protocols, as well as ISO 14001 and IECQ QC080000. CyberPower pledges to provide the advanced energy solution for the environment and become a leading eco-friendly organization in the UPS industry.

ENERGY-SAVING TECHNOLOGY

Reduce Energy Cost with GreenPower UPS™ Technology

CyberPower's goal is not only to provide eco-friendly products but also to bring the best value for consumers. The advanced energy-saving design improves the operating efficiency and eliminates waste energy consumption. As a result, consumers will enjoy significant energy cost savings with the adoption of **GreenPower UPS™** technology.

FUNCTION SETUP GUIDE – SENSITIVITY SETUP

In line mode, the AC input voltage may not be stable all the time, to prevent the connected equipment from damage caused by the unexpected voltage fluctuations, please adjust the sensitivity of the unit by the steps as follows:

1. Please make sure that the UPS is in LINE MODE.
2. To Enter the Sensitivity Setup mode, press the Power Button for 10 seconds until all indicators flash 2 seconds rapidly.
3. The unit will show the current sensitivity setting, as shown in the following table.
4. To select Low Sensitivity setting: shortly press power button until one red indicator (the last one) illuminate.
5. To select Medium Sensitivity setting, press the power button until both red indicators (the third and fourth from the top) illuminate.
6. To select High Sensitivity setting, press the power button until yellow and both red indicators (bottom three) illuminate.
7. To set up a level of sensitivity, hold down the power button until the green indicator (the first one) illuminates.
8. Once in setup mode, if there is no action within 5 seconds, the unit will exit setup mode, no setting is done.

Indicators Illuminate	Sensitivity	Input Voltage Range	Description
1 (Red)	Low	176 – 272 Vac	If the connected equipment can tolerate more power events (example: unstable power often associated with stormy weather), select Low Sensitivity and the UPS will go to Battery Mode less often.
2 (Yellow, Red)	Medium (Default)	192 – 264 Vac	The UPS will go to Battery Mode if the input voltage is beyond the range.
3 (Green, Yellow, Red)	High	200 – 254 Vac	If the connected equipment is more sensitive to power events, select High Sensitivity and the UPS will go to Battery Mode more often.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Circuit breaker button is projecting from the back of the unit.	Circuit breaker has been tripped due to an overload.	Turn the UPS off and unplug at least one piece of equipment. Wait 10 seconds, reset the circuit breaker by pressing the button, and then turn the UPS on.
The UPS does not perform expected runtime.	Battery not fully charged.	Recharge the battery by leaving the UPS plugged in.
	Battery is worn out.	Please contact CyberPower Systems about replacement batteries.
The UPS will not turn on.	The on/off switch is designed to prevent damage from 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 230V 50/60Hz outlet.
	The battery is worn out.	Please contact CyberPower Systems about replacement batteries.
	Mechanical problem.	Please contact CyberPower Systems.
	The frequency is outside of the operating range of 50/60±3Hz.	Turn the UPS off. Make sure the frequency range is within 50/60±3Hz. Or you can turn the UPS on in battery mode.
PowerPanel® Personal Edition is inactive (all icons are gray).	The USB cable is not connected.	Connect the USB / serial cable to the UPS unit and an open USB / serial port on the back of the computer. You must use the cable that came with the unit. NOTE: Only one of communication port and USB port can be used as communication and control of the UPS unit at one time.
	The USB cable is connected to a bad USB port.	Check for a different USB port and plug the cable in.
	The unit is not providing battery power.	Shutdown your computer and turn the UPS off. Wait 10 seconds and turn the UPS back on. This should reset the unit.

Additional troubleshooting information can be found at "Support" at www.cyberpower.com

TECHNICAL SPECIFICATIONS

Model	RT500EI	RT650EI
Capacity	500 VA / 300W	650 VA / 400W
Input		
Nominal Input Voltage	230Vac	
Input Frequency	50/60Hz ± 3Hz	
Ouput		
On-Battery Output Voltage	230Vac ± 10%	
On-Battery Output Frequency	50/60Hz ± 1% (Auto-sensing)	
On-Battery Output Wave Form	Simulated Sine wave	
Status Indicators		
Indicators	On Line, On Battery, Overload, Replace Battery	
Audible Alarms	On Battery, Low Battery, Overload	
Environment		
Operating Temperature	32°F to 113° F / 0° C to 45° C	
Operating Relative Humidity	0 to 95% non-condensing	
Physical		
Size (W x H x D)	3.6" x 6.5" x 11.0"	
Net Weight	4.08 kg	4.58 kg
Battery		
Battery	Sealed Maintenance Free Lead Acid Battery	
User Replaceable	Yes	
Typical Battery Recharge Time	8 hours typical from total discharge	
Typical Battery Life	3 to 6 years, depending on number of discharge/recharge cycles	
Communication		
PowerPanel® Personal Edition Software	Windows 10 / 8 / 7 / Vista / XP / 2000, Server2012 / 2008 / 2003, Linux	
Certification		
Certification	CE	

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