

OFFICE

UPS

Uninterruptible Power System

Multi-device Power Protection for All Size Plugs

320VA/ 520VA

■ **USER'S MANUAL** ■

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INTRODUCTION

Please read and save this manual!

Thank you for selecting this uninterruptible power system (UPS). It provides you with a perfect protection for connected equipment. The manual is a guide to install and use the UPS. It includes important safety instructions for operation and correct installation of the UPS. If you should have any problems with the UPS, please refer to this manual before calling customer service.

Please save or recycle the packaging materials!

The UPS's shipping materials are designed with great care to provide protection within delivery. These materials are invaluable if you ever have to return the UPS for service. Damage happened during transit is not covered under the warranty.

Intelligent microprocessor control

The UPS is a microprocessor-controlled unit. This means that it operates with the newest technology, high performance and powerful function.

The UPS is an intelligent protector and provides pure, reliable AC power to the critical loads - protecting them from utility power blackout, swells, sags, surges and interference.

Furthermore, in order to save the battery energy, UPS can automatically turn it off under backup mode if none of the connected loads is operating.

Advanced battery management

The visual and audible indications of the UPS present the battery's status. Self-test function let UPS detect a weak battery before it is put into service. The UPS normally perform a self-test at power up condition.

Note: There is no guarantee that interference to radio/TV will not occur in a particular installation. If this UPS causes interference to radio or television reception, which can be determined by turning the UPS off and on, the user is encouraged to try to correct the interference by one or more of following measures:

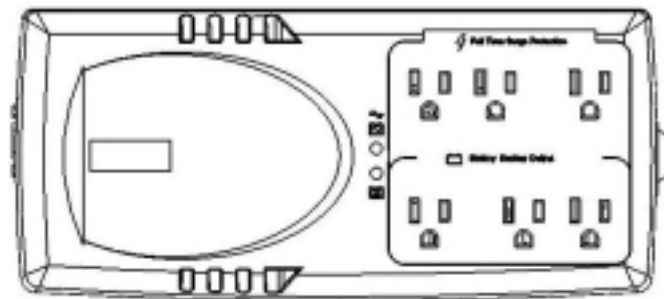
1. Connect the equipment to an outlet at a circuit different from the connected radio/TV.
2. Increase the separation between the equipment and the receiver or reorient the receiving antenna.

1. IMPORTANT SAFETY INSTRUCTIONS

- **WARNING (SAVE THESE INSTRUCTIONS):** This manual contains important instructions should be followed during installation and maintenance of the UPS and batteries.
- **WARNING:** Intend for installation in a controlled environment.
- **WARNING (Fuses):** To reduce the risk of fire, replace only with the same type and rating of fuse.
- **CAUTION (UPS Having Internal Batteries):** Risk of electric shock - Hazardous live parts inside this unit are energized from the battery supply even when the input AC power is disconnected.
- **CAUTION:** Do not dispose of batteries in a fire, the battery may explode.
- **CAUTION:** Do not open or mutilate the battery, released electrolyte is harmful to the skin and eyes. It may be toxic.
- **CAUTION:** A battery can present a risk of electric shock and high short circuit current. The following precaution should be observed when working on batteries
 - Remove watches, rings or other metal objects.
 - Use tools with insulated handles.
 - Wear rubber gloves and boots.
 - Do not lay tools or metal parts on top of batteries.
 - Disconnect charging source prior to connecting or disconnecting battery terminals.
- Servicing of batteries should be performed or supervised by personnel knowledge of batteries and the required precautions. Keep unauthorized personnel away from batteries.
- When replacing batteries, replace with the same number and type.

2. PRESENTATION

Top View



The style of cover depends, it's just for reference only.

2.1 "Power On" Indicator

Power On indicator illuminates when utility power's condition is normal.

2.2 Check Battery Indicator

This illuminates indicating weak battery. Recharge the battery for at least four hours. If after recharging this still illuminates, replace the battery by following the instructions in the manual.(You can plug out then check battery)

2.3 Outlets Design for AC Adapters

Allows two AC power adapter blocks to be plugged into the UPS without blocking adjacent outlets.

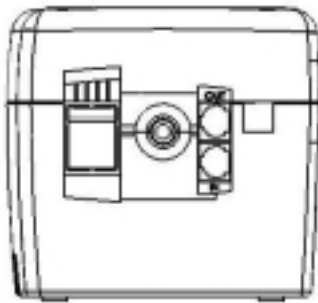
2.4 Battery Power-Supplied Outlets

Provide instantaneous back-up power and full-time surge protection to your equipment. Ensure temporary uninterrupted operation of your equipment during power failure.

2.5 Full-time Surge Protection Outlets

Provides full-time surge protection to your equipment. Prevent surge from traveling through your system through unprotected peripherals.

Side View



Left side



Right side

(RS232 connector only for model with "S" suffix)

2.6 Power Switch

Can be used as the master on/off switch of your equipment by leaving your equipment connected to UPS and switched on.

2.7 Circuit Breaker

Serves as an overload and fault protection. This is a critical component of the advanced UPS surge protection circuit.

2.8 "Phone Jack" Communications Protection Ports

UPS's exclusive communication protection ports will protect any standard modem, PBX System or 10 Base T connection ports.

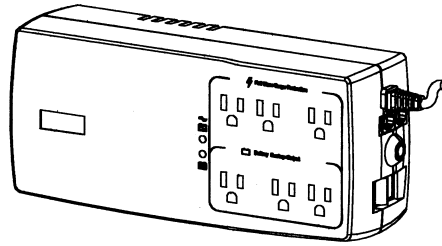
2.9 RS-232 Interface port

Provide both RS-232 and UPS-MON software to support NOVELL, UNIX, DOS, WINDOWS and other operating systems.

2.10 Wall Mounting Slots (on Reverse)

Allow the unit to be mounted to a wall or other solid structure on two mounting screws.

3. INSTALLATION



The style of cover depends, it's just for reference only.

3.1 Recharge the battery

UPS may be used by anyone immediately upon receipt. The battery is fully charged before shipped from the factory. However, user is recommended to recharge the battery at least four hours before using UPS. Energy loss may occur during shipping or long duration storage. To recharge the battery, simply let UPS be plugged into an AC outlet and switch it on.

3.2 Connect the loads

Plug your primary equipment (e.g. computer, monitor and critical data storage device, etc.) to the Battery Power-Supplied outlets. Plug your peripheral equipment (e.g. printer, scanner, fax, or audio device) to the Full-time Surge Protection outlets. Do not plug laser printer to the UPS, as its power demand is much higher than typical peripherals and may cause the circuit breaker to trip.

3.3 Connect the telephone

If you wish to protect a fax or a modem, connect the telephone cable from the wall outlet to the "IN" jack. Connect the telephone cable (provided) from the "OUT" jack to the fax or modem. To protect a 10Base-T (UTP) network interface, obtain and use a UTP cable to connect the "OUT" jack to your computer.

3.4 Connect to the utility power

Plug UPS to a 2-pole, 3-wire grounding receptacle. Make sure the branch is protected and does not service equipment requiring heavy electricity (e.g. refrigerator, air conditioner, copier, etc.). Avoid using extension cords; if used, make sure they are rated for at least 15 Amps (A).

3.5 UPS self-test

UPS will conduct a self-test once switched on it each time. Do not add or take off any equipment while UPS conducts self-test; await it until the Power indicator lights up. Besides this, switch on your equipment after switch on UPS.

3.6 Battery auto-charging

If low battery situation is detected during self-test, UPS will automatically stop any process and charge the battery.

3.7 Auto restart feature

UPS is equipped with Auto Restart feature. It will activate when the battery level becomes too low to sustain its operation and the utility is not present. UPS will switch itself to waiting mode, waiting for utility switch itself on and recharge its battery. If the user is away during a utility failure, UPS will manage to return to normal function and recharge its battery when utility power returns.

3.8 Overload protection

If an overload situation is detected during self-test, UPS audible alarm will activate, emit a long beep and automatically shut down the system. Unplug at least one piece of equipment from the Battery Supplied Outlets. Switch off UPS, wait 5 seconds and check to make sure the circuit breaker is set then switch on, again.

3.9 Optimal battery status

To maintain the optimal battery charge, leave UPS plugged in and switched on at all time.

3.10 Self-protection feature

UPS is equipped with self-protection feature preventing people from playing with the unit to subsequently damaging the unit. It is programmed so that once switched off, the user must wait 5 seconds before switching UPS on again.

3.11 Storage

To store UPS, cover it and store it with the battery fully charged. During extended storage, recharge the battery every three months to ensure battery life.

3.12 Power failure

When the event of power failure occurs after turning on UPS, and prior to the self-test sequence, UPS will automatically shut down and not restart until utility power is restored. This is necessary to check the quality of power that is delivered to your connected equipment.

Inspect the UPS upon receipt. The packaging is recyclable; keep it for reuse or disposed of properly.

4. OPERATION

4.1 Simple test

It is recommended that the user perform a simulation test when using UPS for the first time or when adding an additional piece of equipment. Conduct a simulation-test: first, switch on UPS and wait for the power indicator to light up, then simply unplug UPS to simulate the event of utility failure.

4.2 Check the power requirement of your equipment

4.2.1. Make sure the total power of your equipment does not exceed rating capacity.

4.2.2. Also make sure the equipment you plugged into the Battery Power-Supplied outlets does not require total power exceeding the capacity of the UPS. Otherwise, overload may occur and cause the circuit breaker to trip. If the power requirement of your equipment differs from VA, convert the requirement power into VA by doing the calculations below:

4.2.3. If the power requirement of your equipment is listed other than VA, convert the requirement into VA by doing the calculations below.

___ Watt (W) X 1.67 = ___ VA, or ___ Amps(A) X 120= ___ VA

4.3 Limited rating power of UPS

When utility failure occurs, the battery power outlets will supply power to your equipment from its battery and the alarm will beep once every 5 seconds. Be sure that your equipment is running under the limited rating power. To restore the utility by plugging UPS back in to the existing power source. Repeat the test a few times to make sure UPS works properly and to find out the expected runtime.

4.4 Checking table for Buzzer, LED and Status.

BUZZER	CHECK BATTERY LED	INV/LINE LED	STATUS
OFF	OFF	OFF	DC START IDLE
OFF	OFF	GREEN	AC MODE
ALARM 1.5'S	ORANGE	GREEN	SELF TEST
ALARM 5'S	ORANGE	GREEN	BATTERY BAD
ALARM	OFF	OFF	OVER LOAD
ALARM	ORANGE	GREEN ON : 1'S OFF : 1'S	CHARGE FAILED
ON : 1'S OFF : 4'S	OFF	GREEN ON : 1'S OFF : 4'S	INVERTER MODE
ON : 1'S OFF : 1'S	OFF	GREEN ON : 1'S OFF : 1'S	BATTERY LOW
ALARM	ORANGE ON1'S OFF1'S	GREEN ON : 1'S OFF : 1'S	UPS FAILED
OFF	OFF	GREEN ON : 1'S OFF : 4'S	BATTERY LOW S/D

5. SOFTWARE AND COMPUTER INTERFACE

5.1 Power Monitoring Software

The UPS-MON series software (or other power monitoring software) is applied standard RS-232 interface to perform monitoring functions, and then provides an orderly shutdown of a computer in the event of power failure. Moreover, UPS-MON displays all the diagnostic symptoms on monitor, such as Voltage, Frequency, Battery level and so on. The software is available for DOS, Windows 3.1x, Windows 95/97, Windows NT V3.5 or later, Novell Netware and others. Call your dealer for more information on computer OS compatible solutions.

5.2 Interface Kits

A series of interface kits is available for operation systems that provide UPS monitoring. Each interface kit includes the special interface cable required to convert status signals from the UPS into signals which individual operating system recognize. The interface cable at UPS side must be connected to REMOTE PORT, at computer side can be either COM 1 or COM 2. The other installation instructions and powerful features please refer to READ.ME file.

CAUTION: Use only factory supplied or authorized UPS monitoring cable!

5.3 The characteristics of computer interface port

The computer interface port has the following characteristics:

The communication port on the back of the UPS may be connected to host computer. This port allows the computer to monitor the status of the UPS and control the operation of the UPS in some cases. Its major functions normally include some or all of the following:

To broadcast a warning when power fails.

To close any open file before the battery is exhausted.

To turn-off the UPS.

Some computers are equipped with a special connector to link with the communication port. In addition, special plug-in cord may be needed. Some computers may need special UPS monitoring software. Contact your dealer for the details on the various interface Kits.

Attention: The software and Interface port function for the model name with "S" suffix only.

APPENDIX A TROUBLESHOOTING

UPS has a self-protect feature that prevents the UPS from being damaged as a result of overheating. If UPS temperature is high (above 55°C), wait for the UPS to cool down.

Problems	Possible Cause	Solution
Full-time Surge Protection outlets stop providing power to the equipment	Circuit breaker button popped up as a result of overload.	Unplug at least one piece of equipment from the Full-time Surge Protection outlets. Switch off UPS, wait 5 seconds, reset the circuit breaker (press down breaker button), then switch on UPS.
UPS doesn't perform to its expected runtime.	Battery undercharged or depleted due to frequent power outages.	Recharge the battery by leaving the UPS plugged in and switched on.
	The power required by your equipment slightly exceeds the capacity of the UPS.	Unplug at least one piece of equipment from the UPS outlets.
	The battery is slightly worn-out.	Consider replacing the battery.
UPS cannot be turned on.	Special UPS is designed to prevent damage from flipping.	Switch UPS off, wait for 5 seconds, then switch UPS on.
	The battery is worn-out.	Replace the battery by following the instructions in this manual.
	Mechanical problem.	Contact your sales representative.

APPENDIX B SPECIFICATIONS

MODEL		KOF320	KOF520S
INPUT	Capacity	320VA	520VA
	Voltage	97+/-3Vac~132+/-3Vac or 180+/-3Vac~264V+/- 3Vac	
	Frequency	50 or 60Hz +/- 5Hz (auto sensing)	
OUTPUT	Voltage (on battery)	Simulated sine wave at 120V or230V +/-10%	
	Frequency (on battery)	50 or 60Hz +/- 0.5Hz	
	Transfer Time	2-4 milliseconds typically	
PROTECTION And FILTERING	Spike Protection	320 joules, 2ms	
	EMI/RFI Filter	10dB at 0.15MHz, 50dB at 30MHz	
	Overload Protection	UPS automatic shutdown after 20 seconds if overload exceeds 110% of nominal and 2 seconds for 120%	
	Tel/Fax/Modem 10Base-T Cable Port	Single line(2 wires, RJ11) or network(UPT,11/RJ45) compatible jacks	
	Short Circuit	UPS output cut off immediately or input circuit breaker protection	
BATTERY	Type	HR1214W	HC1221W
	Typical Recharge Time	4 hours (to 90% of full capacity)	
	Protection	Automatic self-test & discharge protection, replace battery indicator	
	Back up Time (PC with 15" monitor)	5-13 minutes	15-28 minutes
PHYSICAL	Net weight Kg (lbs)	3.5(7.7)	5(11)
	Shipping weight Kg (lbs)	4.2(9.25)	5.7(12.56)
	Dimension(mm)WxDxH	278x124x83	278x124x118
	Input Inlet	IEC 320 power inlet	
	Receptacles	NEMA5-15R(100-120V)/ IEC320 female appliance coupler(220-240V) 3 for UPS, 3 for surge protection	
ALARM	Battery Back-Up	Slow beeping sound (once per 5 seconds)	
	Battery Low	Rapid beeping sound (once per 1 second)	
	Overload	Continue beeping sound	
INTERFACE	RS232 Interface	None	Bi-directional communication port
ENVIRONMENT	Ambient operation	3,500 meters max. elevation, 0-95% humidity non-condensing, 0-40°C	
	Audible Noise	<40dBA(1 meter from surface)	
	Storage condition	15,000 meters max.	

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