# U P S

**U n i n t e r r u p t i b l e P o w e r S y s t e m**

**250VA/ 350VA/ 500VA/ 650VA/ 850VA**
**800VA/ 1000VA/ 1200VA**

# User's Manual

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**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.

## 1. IMPORTANT SAFETY INSTRUCTIONS

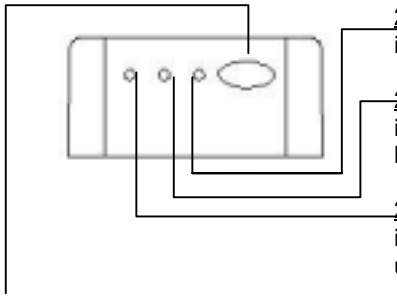
- **WARNING (SAVE THESE INSTRUCTIONS):** This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries.
- **WARNING (Controlled Environment)** : Intend for installation in a controlled environment.
- **CAUTION**: Do not dispose of batteries 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 knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.
- When replacing battery, replace with same type.

# 2. PRESENTATION

The UPS is a standby uninterruptible power system (UPS). When utility input is normal, the UPS would provide surge protection and energy to charge the internal battery. If the utility input is abnormal, the UPS can supply AC power to the load immediately.

(1). Utilizes microprocessor based controls, it will minimizes the dependency on hardware. Beside this, it maximizes system flexibility and optimizes the assurance of reliability.
(2). Automatic frequency selection to match with utility power.
(3). Hi-grade battery charger to prolong battery's life and fully charge the battery.
(4). With actual overload protection both in line and battery mode.

**Front View**



**2.1 "LINE" indicator (Green):** The indicator will illuminate when the utility input is normal.

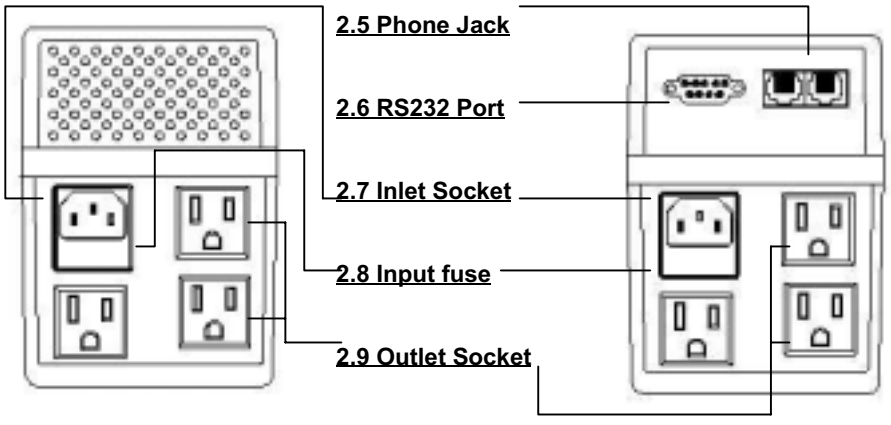
**2.2 "BACKUP" indicator (Yellow):** The indicator illuminates when the power is supplied from the batteries.

**2.3 "REPLACE BATTERY" indicator (Red):** The indicator illuminates when the battery is no longer useful and must be replaced.

**2.4 "ON/OFF/TEST/SILENCE" button:** No matter the UPS plugged in or not. Press the "ON/OFF/TEST/SILENCE" button till the beep stop turn on or turn off the UPS. It also activates the UPS's self-test by press the bottom less than 1 second.

In back up mode, press the bottom about 1 second to activate the UPS's silence function. (800VA/ 1000VA/ 1200VA models only.)

**Rear View**




**(For models 800VA/ 1000VA/ 1200VA only)**

# 3. INSTALLATION

**3.1 Inspection:** Inspect the UPS upon receipt. The packaging is recyclable; save it for reuse or dispose of it properly.

**3.2 Placement:** Install the UPS in controlled area with adequate air flowing and free of excessive dust. Do not operate the UPS at outdoor area.

**3.3 Utility Power:** The input power cord needs to connect the rear inlet socket of the UPS and plug into a socket on the wall. Please notice the voltage of utility power should match with the UPS. (For example, the rating voltage of UPS is 110V/(220V), the input utility power should be the same as 110V/(220V) .)

**3.4 Connection:** The employed equipment's power cords (such as computer) are plugged into the sockets on the rear panel.

# 4. OPERATION

**4.1 Switch on:** When utility input is connected to the UPS, press "ON" button at "OFF" mode and keep pressing until the beep stops. After that, connect the electrical cords of the equipment that is going to be used such as computer or monitor with the terminal at the rear panel of UPS.

**Attention**: At "BACKUP" mode, UPS can be automatically turned off if none of the connected loads is operating. (No Load shut down function)

**CAUTION**: Never connect a laser printer or plotter to the UPS with other computer equipment. A laser printer or plotter periodically draws significantly more power than its idle status, and may overload the UPS.

**4.2 Switch off:** Press the "OFF" button at "LINE" or "BACKUP" modes and keep pressing more than 1 second to turn off the UPS.

**4.3 Silence:** When UPS is under "BACKUP" mode, press the "SILENCE" button about 1 second to silence the audible alarm. (The function is disabled when UPS is under condition of "LOW BATTERY" or "OVERLOAD")

**4.4 Self-test function:** Press the "TEST" button at "LINE" mode about 1 second, UPS will perform self-test procedure automatically.

# 5. ALARM

**5.1 "BACKUP" (slow alarm):** When the UPS is working under "BACKUP" mode, the UPS would emit audible alarm. The alarm stops when the UPS is return to "LINE" mode operation.

**Attention:** The alarm of "BACKUP" is going to beep every 2 seconds. (Slow-speed beep).

**Attention:** The UPS provides mute function for the warning. When the beeping sound occurs, press "ON" to stop it; and press "ON" again to resume the sound.

**5.2 "LOW BATTERY" (rapid alarm):** In the "BACKUP" mode, when the energy of battery becomes to lower level. (about 20%~30%) The UPS beeps rapidly until the UPS shuts down from battery exhaustion or returns to "LINE" mode operation.

**Attention:** The alarm of the batteries caused by low voltage beeps every 0.5 second.

**Attention:** The rapid alarm under "LOW BATTERY" condition cannot be muted.

**5.3 "OVER LOAD" (continuous alarm):** When the UPS is working under overload condition (the connected loads exceed the maximum rated capacity), the UPS will emit continuous alarm to warn an overload condition. In order to protect the unit and the loads, the UPS will be automatic turn off. Please disconnect nonessential devices from UPS to eliminate the overload alarm.

# 6. SOFTWARE AND INTERFACE PORT

**6.1 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, Windows 98, Windows NT V3.5 or later, Novell Netware, Linux,and others. Call your dealer for more information on computer OS compatible solutions.

**6.2 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 recognizes. 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!

**6.3 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 models 800VA/ 1000VA/ 1200VA only.

# APPENDIX A TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | ACTION TO TAKE |
|---|---|---|
| UPS cannot turn on<br>LED not light | ON/OFF/TEST/SILENCE button not pushed or push-time too short | Press the ON/OFF/TEST/SILENCE button more than 1 second |
| | Battery voltage less than 10V | Recharge the ups at least 6 hours |
| | PCB failure | Replace the PCB, call for service |
| | Load less than 20W at battery mode | Normal condition, "No load shutdown function" is active. |
| UPS always at battery mode | Power cord lose | Plug in the power cord |
| | AC FUSE burn out | Replace the AC fuse |
| | Line voltage too high, too low or black out | Normal condition |
| | PCB failure | Replace PCB, call for service |
| Back up time too short | battery not fully charged | Recharge the UPS at least 6 hours |
| | PCB failure | Replace PCB, call for service |
| Buzzer continuous beeping | Overload | Remove some loads |

# APPENDIX B.1 SPECIFICATIONS

| MODEL | | 250 | 350 | 500 | 650 | 850 |
|---|---|---|---|---|---|---|
| INPUT | Capacity | 250 VA | 350 VA | 500 VA | 650 VA | 850 VA |
| | Voltage | 100V +20%, -15% at line input<br>115V/220V +/-20% at line input<br>100V +15%, -20% at line input | | | | |
| | Frequency | 50 or 60Hz +/- 10% (auto sensing) | | | | |
| OUTPUT | Voltage (on battery) | Simulated sine wave like rating voltage, +/-5% | | | | |
| | Frequency (on battery) | 50 or 60Hz +/- 0.3Hz | | | | |
| | Transfer Time | 2/4 milliseconds, including detection | | | | |
| PROTECTION And FILTERING | Spike Protection | 180-1080 joules(optional), 2ms | | | | |
| | Overload Protection | UPS automatic shutdown if overload exceeds 105% of nominal at 20 seconds 120% at 10 seconds and 130% at 3 seconds | | | | |
| | Unit Input | Fuse for overload & short circuit protection | | | | |
| | Short Circuit | UPS output cut off immediately or input fuse Protection | | | | |
| BATTERY | Type | Sealed, maintenance-free lead acid | | | | |
| | Typical Recharge Time | 6 hours (to 90% of full capacity) | | | | |
| | Back up Time (minutes) (PC with 15" monitor) | 5-15 | 7-17 | 10-25 | 15-30 | 18-33 |
| PHYSICAL | Net weight Kg(lbs) | 2.6 (5.7) | 2.6 (5.7) | 3.6 (7.9) | 3.7 (8.1) | 3.8 (8.3) |
| | Dimension(mm)WxDxH | 97*265*135<br>3.8"*10.4"*5.3" | | | | |
| | Input Inlet | IEC 320 power inlet | | | | |
| | Receptacles | NEMA5-15R(115V)<br>IEC320 female appliance coupler(220V) | | | | |

| | | |
|---|---|---|
| ALARM | Battery Back-Up | Slow beeping sound (once per 2 seconds) |
| | Battery Low | Rapid beeping sound (once per 0.5 second) |
| | Overload | Continue beeping sound |
| ENVIRONMENT | Ambient operation | 3,500 meters max. elevation, 0-95% humidity non-condensing, 0-40℃ |
| | Audible Noise | <40dBA(1 meter from surface) |
| | Storage condition | 15,000 meters max. |

# APPENDIX B.2 SPECIFICATIONS

| | MODEL | 800 | 1000 | 1200 |
|---|---|---|---|---|
| INPUT | Capacity | 800 VA | 1000 VA | 1200 VA |
| | Voltage | 100V +20%, -15% at line input<br>115V/220V +/-20% at line input<br>100V +15%, -20% at line input | | |
| | Frequency | 50 or 60Hz +/- 10% (auto sensing) | | |
| OUTPUT | Voltage (on battery) | Simulated sine wave like rating voltage, +/-5% | | |
| | Frequency (on battery) | 50 or 60Hz +/- 0.3Hz | | |
| | Transfer Time | 2/4 milliseconds, including detection | | |
| PROTECTION And FILTERING | Spike Protection | 180-1080 joules(optional), 2ms | | |
| | Overload Protection | UPS automatic shutdown if overload exceeds 105% of nominal at 20 seconds 120% at 10 seconds and 130% at 3 seconds | | |
| | Unit Input | Fuse for overload & short circuit protection | | |
| | Short Circuit | UPS output cut off immediately or input fuse Protection | | |
| BATTERY | Type | Sealed, maintenance-free lead acid | | |
| | Typical Recharge Time | 6 hours (to 90% of full capacity) | | |
| | Back up Time (minutes) (PC with 15" monitor) | 20-35 | 25-40 | 30-45 |
| INTERFACE | RS232 Interface | Bi-directional communication port | | |
| PHYSICAL | Net weight Kg(lbs) | 4.9 (10.8) | 4.9 (10.8) | 4.9 (10.8) |
| | Dimension(mm)WxDxH | 97*320*135<br>3.8"*12.6"*5.3" | | |
| | Input Inlet | IEC 320 power inlet | | |
| | Receptacles | NEMA5-15R(115V)<br>IEC320 female appliance coupler(220V) | | |
| ALARM | Battery Back-Up | Slow beeping sound (once per 2 seconds) | | |
| | Battery Low | Rapid beeping sound (once per 0.5 second) | | |
| | Overload | Continue beeping sound | | |
| ENVIRONMENT | Ambient operation | 3,500 meters max. elevation, 0-95% humidity non-condensing, 0-40℃ | | |
| | Audible Noise | <40dBA(1 meter from surface) | | |
| | Storage condition | 15,000 meters max. | | |

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