

# CyberPower<sup>®</sup>

## User's Manual

OLS1000EC  
OLS2000EC  
OLS3000EC



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## IMPORTANT SAFETY INSTRUCTIONS

**This manual contains important 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 the UPS.**

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

**CAUTION!** The battery can power hazardous components inside the unit, even when the AC input power is disconnected.

**CAUTION!** The UPS should be placed near the connected equipment and easily accessible.

**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! (No User Serviceable Parts):** Risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

**CAUTION! (Non-Isolated Battery Supply):** Risk of electric shock, battery circuit is not isolated from AC power source; hazardous voltage may exist between battery terminals and ground. Test before touching.

**CAUTION!** To reduce the risk of fire, connect the UPS to a branch circuit with 10 amperes (1000 / 2000) / 16 amperes (3000) maximum over-current protection in accordance to CE requirement.

**CAUTION!** The AC outlet where the UPS is connected should be close to the unit and easily accessible.

**CAUTION!** Please use only VDE-tested, CE-marked mains cable, (e.g. the mains cable of your equipment), to connect the UPS to the AC outlet.

**CAUTION!** Please use only VDE-tested, CE-marked power cables to connect any equipment to the UPS.

**CAUTION!** When installing the equipment, ensure that the sum of the leakage current of the UPS and the connected equipment does not exceed 3.5mA.

**CAUTION!** The 1000 / 2000 / 3000 / Battery module models are only qualified maintenance personnel may carry out installations.

**CAUTION!** Do not unplug the unit from AC Power during operation, as this will invalidate the protective ground insulation.

**CAUTION!** To avoid electric shock, turn off and unplug the unit before installing the input/output power cord with a ground wire. Connect the ground wire prior to connecting the line wires!

**CAUTION!** Do not use an improper size power cord as it may cause damage to your equipment and cause fire hazards.

**CAUTION!** Wiring must be performed by qualified personnel.

## IMPORTANT SAFETY INSTRUCTIONS

**CAUTION! DO NOT USE FOR MEDICAL OR LIFE SUPPORT EQUIPMENT!** Under no circumstances this unit should be used for medical applications involving life support equipment and/or patient care.

**CAUTION! DO NOT USE WITH OR NEAR AQUARIUMS!** To reduce the risk of fire, do not use with or near aquariums. Condensation from the aquarium can come in contact with metal electrical contacts and cause the machine to short out.

**CAUTION!** Do not dispose of batteries in fire as the battery may explode.

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

**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.

**CAUTION!** The unit has a dangerous amount of voltage. When the UPS indicators is on, the units may continue to supply power thus the unit's outlets may have a dangerous amount of voltage even when it's not plugged in to the wall outlet.

**CAUTION!** Make sure everything is turned off and disconnected completely before conducting any maintenance, repairs or shipment.

**CAUTION!** Connect the Protection Earth (PE) safety conductor before any other cables are connected.

**WARNING! (Fuses):** To reduce the risk of fire, replace only with the same type and rating of fuse.

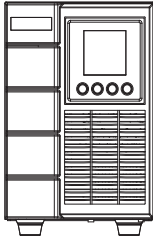
**DO NOT INSTALL THE UPS WHERE IT WOULD BE EXPOSED TO DIRECT SUNLIGHT OR NEAR A STRONG HEAT SOURCE!**

**DO NOT BLOCK OFF VENTILATION OPENINGS AROUND THE HOUSING!**

**DO NOT CONNECT DOMESTIC APPLIANCES SUCH AS HAIR DRYERS TO UPS OUTPUT SOCKETS!**

**SERVICING OF BATTERIES SHOULD BE PERFORMED OR SUPERVISED BY PERSONNEL KNOWLEDGE OF BATTERIES AND THE REQUIRED PRECAUTIONS. KEEP UNAUTHORIZED PERSONNEL AWAY FROM BATTERIES!**

# UNPACKING



UPS



User's manual



Input power cord



Output power cord(s)  
\*for selected models only

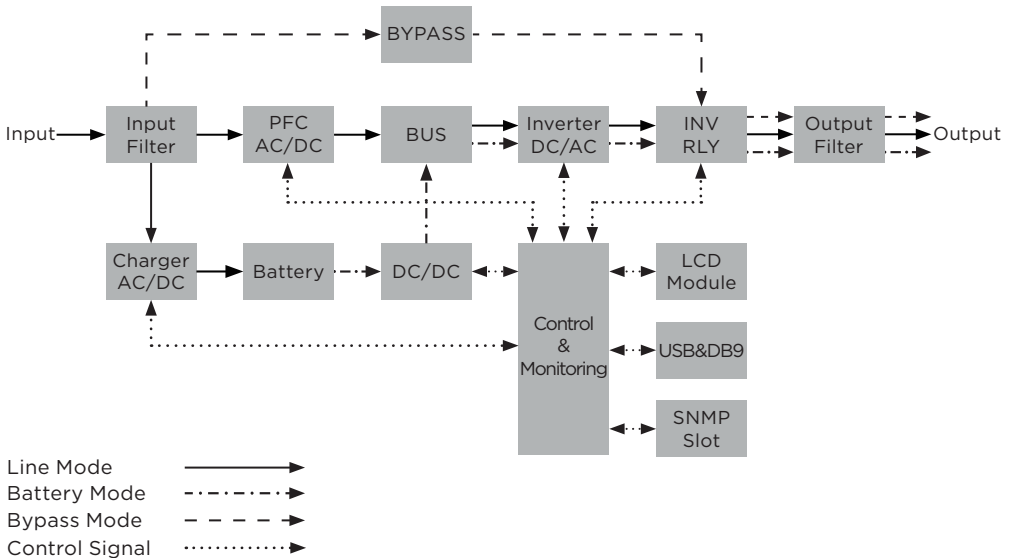


USB communication cable

PowerPanel® Business software is available on our website.  
Please visit [www.cyberpower.com](http://www.cyberpower.com) and go to the Software Section for free download.

# INSTALLING YOUR UPS SYSTEM

## SYSTEM BLOCK DIAGRAM



## HARDWARE INSTALLATION GUIDE

1. Battery charge loss may occur during shipping and storage. Before using the UPS, it's strongly recommended to charge batteries for five hours to ensure the batteries' maximum charge capacity. To recharge the batteries, simply plug the UPS into an AC outlet.
2. When using the included software, connect either the serial or the USB cable between the computer and the corresponding port on the UPS. Note: If the USB port is used, the serial port will be disabled. They cannot be used simultaneously.
3. Connect your computer, monitor, and any externally-powered data storage device (Hard drive, Tape drive, etc.) into the outlets only when the UPS is off and unplugged. DO NOT plug a laser printer, copier, space heater, vacuum, paper shredder or other large electrical device into the UPS. The power demands of these devices will overload and possibly damage the unit.
4. To protect a fax machine, telephone, modem line or network cable, connect the telephone or network cable from the wall jack outlet to the jack marked "IN" on the UPS and connect a telephone cable or network cable from the jack marked "OUT" on the UPS to the modem, computer, telephone, fax machine, or network device.
5. Press the ON/OFF switch to turn the UPS on. If an overload is detected, an audible alarm will sound and the UPS will continuously emit one beep per second. For resetting the unit, unplug some equipment from the outlets. Make sure your equipment carries a load current within the unit's safe range, (refer to the technical specifications).
6. This UPS is equipped with an auto-charge feature. When the UPS is connected to an AC outlet, the battery will automatically charge, even when the unit is switched off.

## INSTALLING YOUR UPS SYSTEM

7. To maintain an optimal battery charge, leave the UPS connected to AC electrical service at all times.
8. Before storing the UPS for an extended period of time, turn the unit OFF. Then cover it and store it with the batteries fully charged. Recharge the batteries every three months to ensure good battery capacity and long battery life. Maintaining a good battery charge will help prevent possible damage to the unit from battery leakage.
9. The UPS has one USB port (default) and one Serial port that allow connection and communication between the UPS and any attached computer running the PowerPanel® Business Edition Agent software. The UPS can control the computer's shutdown during a power outage through the connection while the computer can monitor the UPS and alter various programmable parameters. Note: Only one communication port can be used at a time. The port not in use will automatically become disabled or the serial port will be disabled if both ports are attached.
10. To avoid electric shock, turn the unit OFF and disconnect the unit from utility power before hardwiring the UPS (in/out power cord). The in/out power cord MUST be grounded.



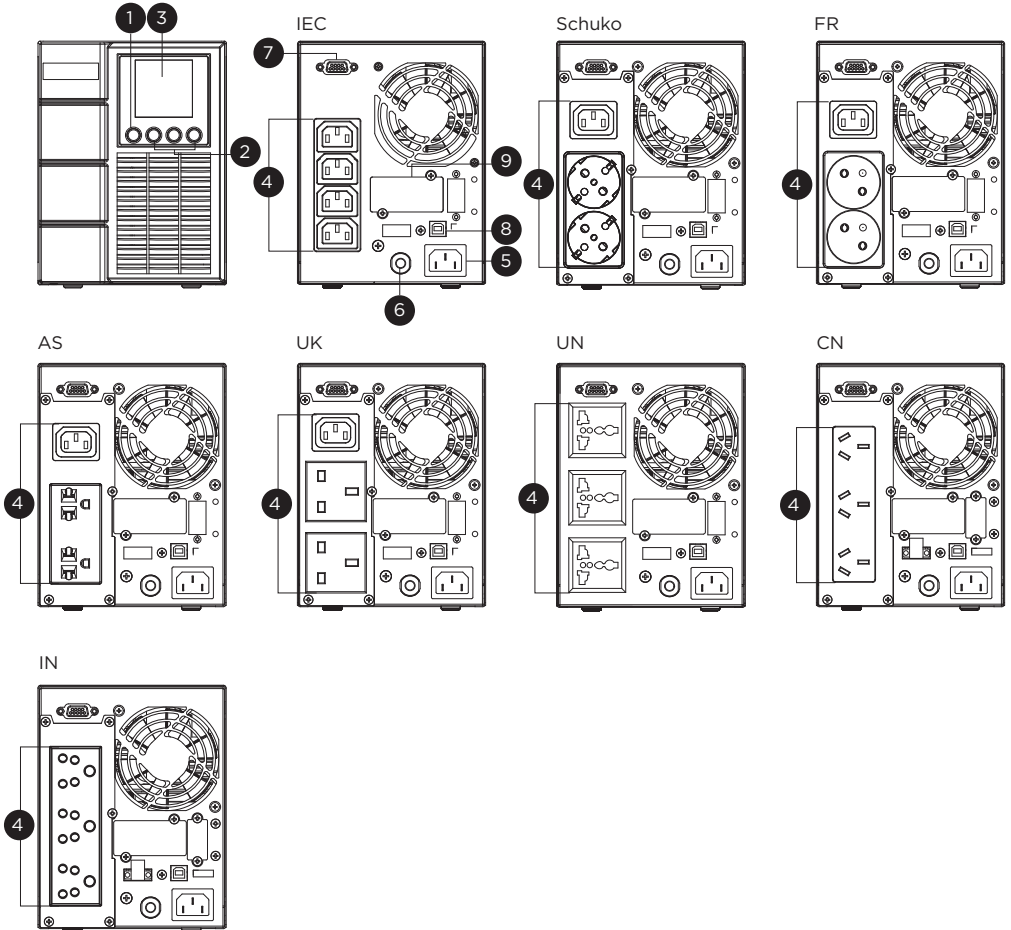
# OVERVIEW

## POWER MODULE FRONT/REAR PANEL DESCRIPTION

OLS1000EC

Front

Rear



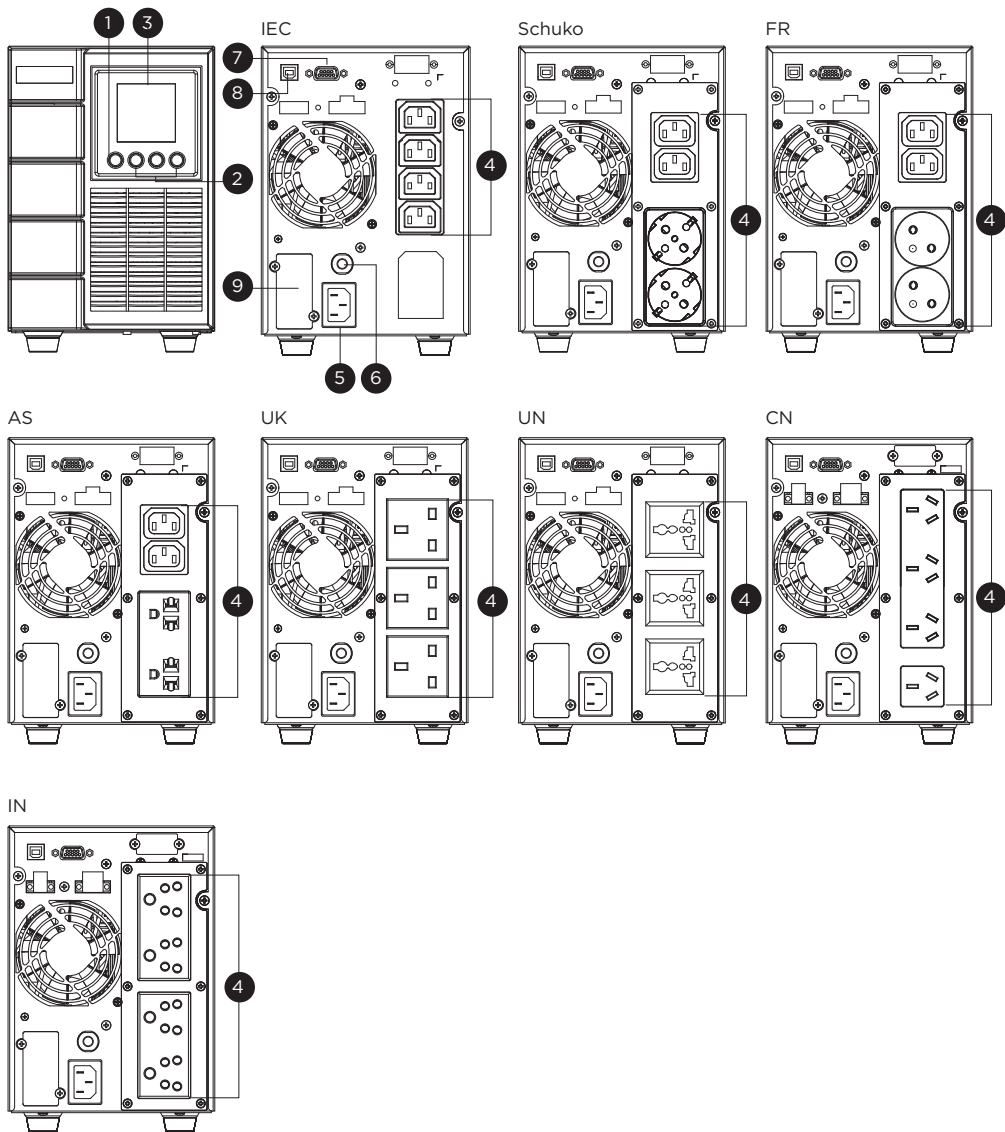
# OVERVIEW

## POWER MODULE FRONT/REAR PANEL DESCRIPTION

OLS2000EC

Front

Rear

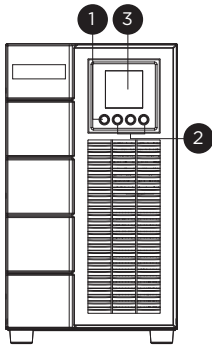


# OVERVIEW

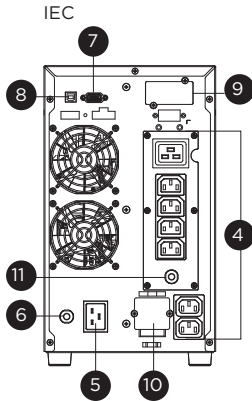
## POWER MODULE FRONT/REAR PANEL DESCRIPTION

OLS3000EC

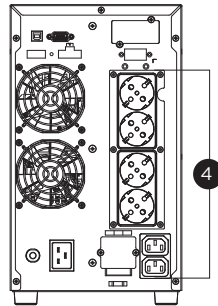
Front



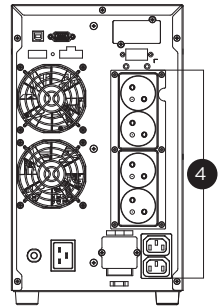
Rear



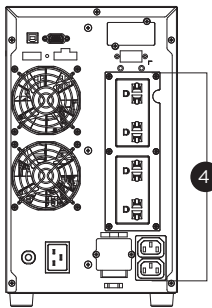
Schuko



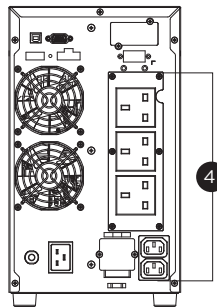
FR



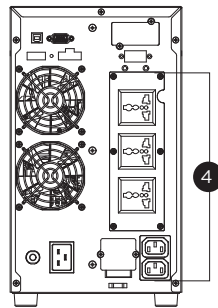
AS



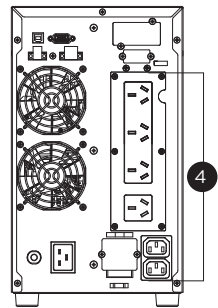
UK



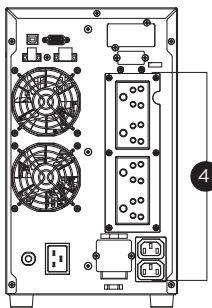
UN



CN



IN



# OVERVIEW

## **1. Power On/Off Button**

Master ON/OFF switch for the UPS.

## **2. Function Buttons**

Scroll DOWN, scroll UP, and ENTER.

## **3. UPS Status / Multifunction LCD Readout**

Shows UPS status, information, settings and events.

## **4. Battery Backup & Surge Protected Outlets**

Provide battery backup and surge protection. They ensure power is provided to connected equipment over a period of time during a power failure.

## **5. AC Input Inlet**

Connect the AC Power cord to a properly wired and grounded outlet.

## **6. Input Circuit Breaker**

Provide input current overload and fault protection.

## **7. Serial Port**

Serial port provides RS-232 communication between the UPS and the computer. The UPS can control the computer's shutdown during a power outage through the connection while the computer can monitor the UPS and change its various programmable settings.

## **8. USB Port**

This is a connectivity port which allows communication and control between the UPS and the connected computer. It is recommended to install the PowerPanel® Business Agent software on the PC/Server connected with the USB cord.

## **9. SNMP/HTTP Network Slot**

Slot to install the optional SNMP card for remote network control and monitoring.

## **10. Output Terminal Block**

Connect to your equipment.

## **11. Output Circuit Breaker**

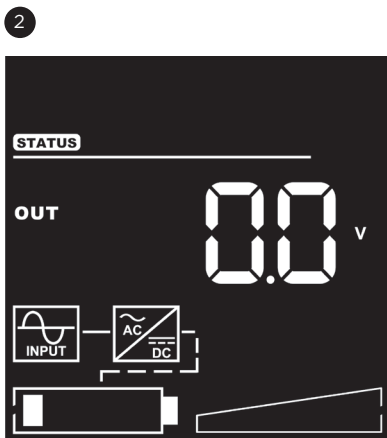
Provide output current overload and fault protection.

## UPS SYSTEM STARTUP

After completing the hardware installation of the UPS, you are now ready to connect the UPS and connect your equipment.

To start the UPS:

1. Verify that the UPS input cable or terminal blocks are connected to AC source.
2. The UPS LCD shows “Standby Mode” and fans turn on.
3. Press and hold the ON/OFF button on the UPS front panel, you will hear a constant tone for 1 second, followed by a short beep. Release the button after the short beep.
4. UPS will perform a brief self-test lasting about 15 seconds. The LCD will be lighted up during this time.
5. The UPS is operating in Battery Mode first then transfer to Line Mode if Input power is qualification and powering the output.



# USING THE UPS SYSTEM

## LCD PANEL



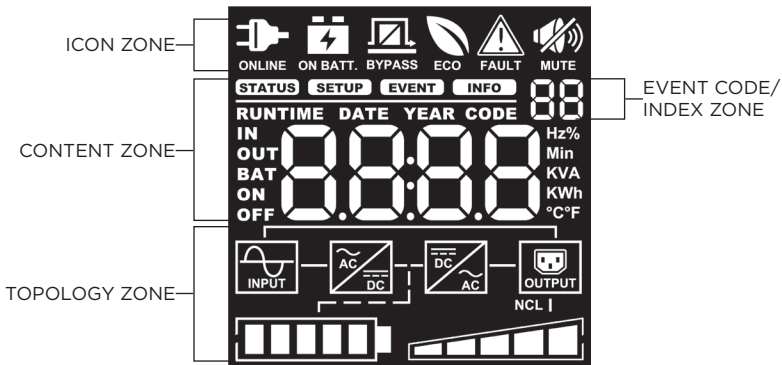
| ITEM | BUTTON | FUNCTION DESCRIPTION   |
|------|--------|--|
| 1    | ON/OFF | Press this button for at least 3 seconds to turn on or turn off UPS. |
| 2    | DOWN   | Press this button to scroll down in the LCD menu.                    |
| 3    | UP     | Press this button to scroll up in the LCD menu.                      |
| 4    | ENTER  | Press this button to select an option.                               |

Silencing the alarm:

Press any button to silence the alarm. If the alarm status changes, the alarm will override the previous alarm silencing and will beep again.

### LCD Display introduction:

There are 4 display Zones: ICON, CONTENT, EVENT CODE/INDEX and TOPOLOGY.



### ICON ZONE:

In the top area, there are 6 ICONS for displaying the UPS working status, Fault (Warning) and Mute.

### CONTENT ZONE:

The Content area is on the middle screen.

The top of Content area is for displaying UPS Menu.

The bottom area is the UPS status which depends on different UPS status to provide different information included Input / Output / Battery / Load parameters. Please refer to **APPENDIX** chapter for LCD Word Comparison Table.

### EVENT CODE/INDEX ZONE:

In the upper right corner of the Content area, there are two seven-segment displays to show the event code when UPS fault. Besides, this area will show the index of setup, event and information menu.


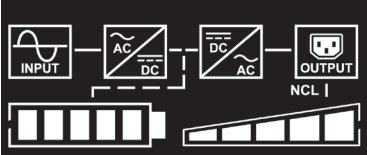



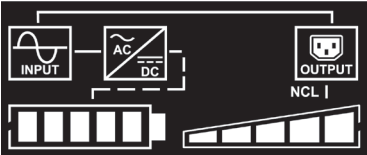

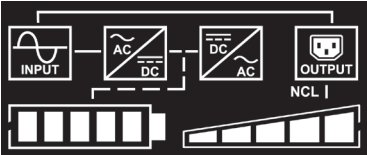


### TOPOLOGY ZONE:

The Content area is on the bottom screen.

In this area, there are 6 TOPOLOGYS for displaying the UPS working status. The topology will be lighted up when the area is working.

# USING THE UPS SYSTEM

## LCD SCREEN - ICON DESCRIPTION

| UPS MODE  | MODE DESCRIPTION  | UPS TOPOLOGY: MODE DISPLAY  |
|---|---|---|
| <p>Line Mode</p>          | <p>UPS is operating in Line Mode. The UPS is operating and protecting the equipment normally.</p>   |   |
| <p>Battery Mode</p>       | <p>UPS is operating in Battery Mode. A utility power failure has occurred. The UPS is using battery power to work and protect the equipment.</p>  |   |
| <p>Bypass Mode</p>        | <p>UPS is operating in Bypass Mode. A Warning or Fault has been detected and the UPS transfers output to utility power.</p>   |   |
| <p>ECO Mode</p>          | <p>UPS is operating in ECO (Economy) Mode. If Bypass quality is within the ECO mode setting specifications, the UPS will operate in Bypass until input power is disqualified per set specifications. At that time the UPS will automatically switch to Line Mode.</p> |  |
| UPS STATUS  | STATUS DESCRIPTION  |   |
| <p>Fault (Warning)</p>  | <p>A Warning or Fault has been detected and the UPS transfers output to utility power.</p>  |   |
| <p>Mute</p>             | <p>The audible alarm is disabled.</p>   |   |

# USING THE UPS SYSTEM

## FUNCTION TREE

### Menu

| Status           | Setup                 | Event Logs  | Information         |
|------------------|-----------------------|-------------|---------------------|
| Output Voltage   | Output Voltage        | Log Item 1  | UPS Rating          |
| Output Frequency | Sync Frequency Window | Log Item 2  | MCU Version         |
| Input Voltage    | Bypass V Window       | Log Item 3  | Model Name          |
| Input Frequency  | Bypass Condition      | Log Item 4  | Date & Time         |
| Output Load      | ECO Mode              | Log Item 5  | Next Battery Change |
| Output Ampere    | Manual Bypass         | Log Item 6  | IP Address          |
| Output Watt      | Audible Alarm         | Log Item 7  | Subnet Mask         |
| Output VA        | Generator Mode        | Log Item 8  | Gateway             |
| Load Energy      | Communication         | Log Item 9  | MAC                 |
| Battery Voltage  | Converter Mode        | Log Item 10 | ESC                 |
| Battery Capacity | Screen Saver          | Log Item 11 |                     |
| Battery Runtime  | Clear Event Log       | Log Item 12 |                     |
|                  | Reset Replace Battery | ESC         |                     |
|                  | IP Address            |             |                     |
|                  | Reset Load Energy     |             |                     |
|                  | Battery Test          |             |                     |
|                  | Alarm Test            |             |                     |
|                  | Indicator Test        |             |                     |
|                  | Fan Test              |             |                     |
|                  | Date & Time           |             |                     |
|                  | Automatic Restore     |             |                     |
|                  | Mandatory Power Cycle |             |                     |
|                  | Recharged Delay Time  |             |                     |
|                  | Recharged Capacity    |             |                     |
|                  | Startup Delay         |             |                     |
|                  | Period Battery Test   |             |                     |
|                  | Low Battery Threshold |             |                     |
|                  | Low Runtime Threshold |             |                     |
|                  | ESC                   |             |                     |







# USING THE UPS SYSTEM

## MAIN MENU: FUNCTION SELECT

1. Press the "ENTER" button in the Status function or select the "ESC" selection in the Setup/Event/Info function to enter the Main Menu.
2. The function block will blink when enter the Main Menu.
3. Press the "UP" and "DOWN" buttons to select the function.
4. Press the "ENTER" button to enter the selected function.

The Main Menu has 4 icons of different function listed in the table below.

| FUNCTION SELECT MENU | ICON  | DESCRIPTION  |
|----------------------|---|--|
| UPS STATUS           |  | Displays the UPS status.   |
| SET UP               |  | Displays the UPS Set Up items that can be configured by the user.  |
| EVENT LOGS           |  | Displays the 12 most recent events, by event count, time (Year/Month/Day Hour: Minute), and event description. |
| INFORMATION          |  | Displays the UPS information.  |

### (1) STATUS

There are 12 types of UPS status Readout available for display.

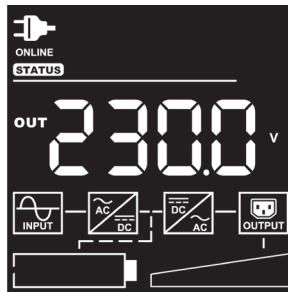
1. Select "UPS Status" Icons
2. Press the "ENTER" button to enter the "UPS Status".
3. Press the "UP" and "DOWN" buttons to scroll through the "UPS Status" items shown in the table below.
4. Press the "ENTER" button to return to the Main Menu.

| UPS STATUS ITEMS | DATA DISPLAYED                     | DESCRIPTION  |
|------------------|------------------------------------|--|
| OUTPUT VOLTAGE   | = XXX.XV                           | Displays the Output Voltage  |
| OUTPUT FREQUENCY | = [XX.XHz] / [CXX.XHz] / [nXX.XHz] | Displays the Output Frequency. [CXX.XHz] represents converter mode. [nXX.XHz] represents generator mode. |
| INPUT VOLTAGE    | = XXX.XV                           | Displays the Input Voltage   |
| INPUT FREQUENCY  | = XX.XHz                           | Displays the Input Frequency   |
| OUTPUT LOAD      | = XXX%                             | Displays the Output Load as a Percentage of Maximum Load   |
| OUTPUT CURRENT   | = X.XA                             | Displays the Output Current  |
| OUTPUT WATT      | = XXXXW                            | Displays the Output Wattage  |

## USING THE UPS SYSTEM

| UPS STATUS ITEMS | DATA DISPLAYED                         | DESCRIPTION   |
|------------------|--|---|
| OUTPUT VA        | = XXXXVA                               | Displays the Output VA  |
| LOAD ENERGY      | = [XXXWh]/<br>[XXXXKWh]/<br>[XXXXKKWh] | Display UPS Load Energy Consumption. [XXXWh] represents the load energy < 1kWh. [XXXXKWh] represents the load energy >999Wh and < 1kWh. |
| BATTERY VOLTAGE  | = XXX.XV                               | Displays the Battery Voltage  |
| BATTERY CAPACITY | = XXX%                                 | Displays the Estimated Percentage of Battery Capacity   |
| BATTERY RUNTIME  | = XXXM                                 | Displays the Estimated Battery Runtime in Minutes   |

**Example : Output Voltage 230.0V**



# USING THE UPS SYSTEM

## (2) SET UP

There are 28 UPS items that can be Set Up by the user.

1. Press the “UP” and “DOWN” buttons to select the “SETUP” ICON.
2. Press the “ENTER” button to enter the “SETUP” function.
3. Press the “UP” and “DOWN” buttons to scroll to the “SETUP” option.
4. When selecting the submenu item, the code number will be exhibited.
5. Press the “ENTER” button to select the “SETUP” submenu items shown in the table below.
6. Press the “UP” and “DOWN” buttons to scroll through the different parameters.
7. Press the “ENTER” button to select the parameter you want to set up.
8. You may be prompted “Save” to save the selection, if so press the “ENTER” button to save the setting. Some options are saved and started automatically. (See the following table and screen for additional details.)
9. Press the “ESC” to cancel or return to the previous SET UP menu.

| INDEX | SET UP ITEMS     | AVAILABLE SETTINGS  | DEFAULT SETTING |
|-------|------------------|---|-----------------|
| 01    | Output Voltage   | =[208V] [220V] [230V] [240V]<br>Sets UPS output voltage   | 230V            |
| 02    | Sync Freq Window | Range= [+/- 1%] [+/- 2%] [+/-3%] [+/- 4%] [+/- 5%]<br>[+/- 6%] [+/- 7%] [+/- 8%]<br>Sets output synchronization frequency range<br>If input line frequency is outside this range, the UPS will lock in at the nominal frequency.  | +/- 5%          |
| 03    | Bypass V Window  | Range= [+10%][+15%] / [-10%][-15%][-20%]<br>Sets Bypass Voltage range   | +10%/-15%       |
| 04    | Bypass Condition | [Check Freq/Volt] [Check Volt Only] [No Bypass]<br>Bypass Condition:<br>The default setting [Check Freq/Volt] means the UPS will check the following specifications (1) and (2) when UPS has fault and needs transfer to Bypass.<br><br>The setting [Check Volt Only] means the UPS will check the following specification (1) when UPS has fault and needs transfer to Bypass.<br>(1) Bypass voltage is inside the range of "Bypass V Window".<br>(2) Bypass frequency is inside the range of "Sync Freq Range".<br><br>The setting [No Bypass] means the UPS is forbidden to transfer to Bypass when UPS has fault. | Check Freq/Volt |

## USING THE UPS SYSTEM

| INDEX | SET UP ITEMS          | AVAILABLE SETTINGS   | DEFAULT SETTING |
|-------|-----------------------|--|-----------------|
| 05    | ECO Mode              | [Disable] [Voltage= +/-15%] [Voltage = +/-10%]<br>When ECO mode is enabled the UPS will check the following specifications of Bypass quality<br>(1) Bypass voltage is inside the [V Range= +/-10%] (default setting) or [V Range= +/-15%].<br>(2) Bypass frequency is inside the +/-3Hz range of output nominal frequency. | Disable         |
| 06    | Manual Bypass         | [Disable] [Enable]<br>When performing UPS maintenance, the user can manually transfer the connected load to Bypass without interrupting the output to the connected equipment.   | Disable         |
| 07    | Audible Alarms        | [Disable] [Enable] [Only Bat Low]<br>User can [Disable] or [Enable] the buzzer sound.  | Enable          |
| 08    | Generator Mode        | [Disable] [Enable]<br>When the UPS input power source is a generator set the UPS will operate normally without transferring to Battery Mode when this is [Enable].   | Disable         |
| 09    | Communication         | [Disable] [Enable]<br>All communication ports on the UPS are [Disable] or [Enable]   | Enable          |
| 10    | Converter Mode        | [Disable][Output Freq = 50Hz] [Output Freq = 60Hz]<br>Sets [Output Freq = 50Hz] [Output Freq = 60Hz] to convert the input frequency to required output frequency.  | Disable         |
| 11    | Screen Saver          | [Disable] [1 Minute] [5 Minutes]<br>Sets the amount of time the LCD screen stays on after no user input. The [Disable] option keeps the LCD screen on at all times.  | 5 Minutes       |
| 12    | Clear Event Log       | [Activate?]<br>Clears all the events stored in the LCD Control Panel Event Log.  | None            |
| 13    | Reset Replace Battery | [Clear] [Setup]<br>Manually reset the Battery Replacement date.  | None            |
| 14    | IP Address            | [DHCP] [Manual]<br>Select [Mode:Manual] to set IP Address, Subnet Mask and Gateway to network interface (RMCARD) or select DHCP to set automatically.  | DHCP            |

## USING THE UPS SYSTEM

| INDEX | SET UP ITEMS          | AVAILABLE SETTINGS   | DEFAULT SETTING |
|-------|-----------------------|--|-----------------|
| 15    | Reset Load Energy     | [Activate]<br>Reset Load Energy Consumption (KWH) value.   | None            |
| 16    | Battery Test          | [Activate]<br>Starts a manual battery test, UPS will operate 10 seconds on Battery mode to check battery condition.  | None            |
| 17    | Alarm Test            | [Activate]<br>Starts a manual Alarm test, buzzer will sound for 5 seconds.   | None            |
| 18    | Indicator Test        | [Activate]<br>Starts a manual Indicator test.  | None            |
| 19    | Fan Test              | [Activate]<br>Starts a manual Fan test, UPS will operate fan with full speed 5 seconds.  | None            |
| 20    | Date & Time           | [----] [--:--] [--:--]<br>set Year/Month/Day Hour: Minute: Second to UPS or get Date & Time from PPBE (Agent) or RMCARD automatically.   | None            |
| 21    | Automatic Restore     | [Disable] [Enable]<br>User can [Disable] or [Enable] the auto restart function.  | Enable          |
| 22    | Mandatory Power Cycle | [Disable] [Enable]<br>User can [Disable] or [Enable] the Mandatory power cycle function.   | Disable         |
| 23    | Recharged Delay Time* | [0 Minute] [1 Minute] [2 Minutes] [3 Minutes]<br>[5 Minutes] [10 Minutes] [20 Minutes] [30 Minutes]<br>[60 Minutes]<br>When the utility power restores, the UPS will start to recharge until the specified delay is expired before restoring output power. | 0 Minute        |
| 24    | Recharged Capacity*   | [0%] [15%] [30%] [45%] [60%] [75%] [90%]<br>When the utility power restores, the UPS will start to recharge until the specified battery capacity is met before restoring output power.   | 0%              |
| 25    | Startup Delay         | [0 Minute] [1 Minute] [2 Minutes] [3 Minutes]<br>[4 Minutes] [5 Minutes] [6 Minutes] [7 Minutes]<br>[8 Minutes] [9 Minutes] [10 Minutes]<br>When the utility power restores, the UPS will delay the restoration of output power.                           | 0 Minute        |

## USING THE UPS SYSTEM

| INDEX | SET UP ITEMS            | AVAILABLE SETTINGS  | DEFAULT SETTING |
|-------|-------------------------|---|-----------------|
| 26    | Period Battery Test     | [Disable] [1 Week] [2 Weeks] [3 Weeks] [4 Weeks]<br>Sets the battery test period.                                     | Disable         |
| 27    | Low Battery Threshold** | [20%][25%] [30%][35%][40%][45%][50%][55%]<br>[60%][65%]<br>Sets the capacity to alarm battery low.                    | 20%             |
| 28    | Low Runtime Threshold** | [0 Minute][1 Minute][2 Minutes][3 Minutes].....<br>[29 Minutes][30 Minutes]<br>Sets the Runtime to alarm battery low. | 5 Minutes       |

\* UPS will restore output when reaches the setting of "Recharged Delay Time" **and** "Recharged Capacity" at the same time.

\*\* The battery low alarm triggers when "27. Low Battery Threshold" **or** "28. Low Runtime Threshold" is reached.

**Example: Index 01, SETUP: Output Voltage to 220V then press enter to save the setting.**



# USING THE UPS SYSTEM

## (3) EVENT LOGS

The UPS will record the 12 most recent system events in the Event Log.

1. Select “EVENT” Icons.
2. Press the “ENTER” button to enter the “Event Logs”.
3. Press the “UP” and “DOWN” buttons to scroll through the “Event Logs”. The UPS will record events listed in the table below.

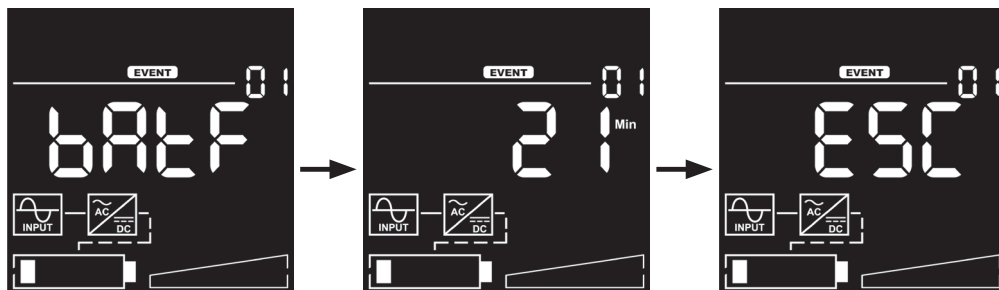
| INDEX | EVENT DISPLAYED | DESCRIPTION   |
|-------|-----------------|---|
| XX    | Event Content   | Event description [Please check the Event Code List.] |

4. When selecting the submenu item, the index which represents the sequence will be exhibited.
5. Press the “ENTER” button to see the event code and event date/time.

| INDEX | EVENT DISPLAYED  | DESCRIPTION   |
|-------|--|---|
| XX    | [C-XX]<br>(XXD)(XXH)(XXM) /<br>[- - - -] [---:--] [---:--] | Event Code Number :<br>[C-XX]<br><br>Event date and time :<br>(XXD)(XXH)(XXM) (without PowerPanel® Business or RMCARD)<br><br>[- - - -] [---:--] [---:--] [Year][Month. Day][Hour: Minute]<br>(with PowerPanel® Business or RMCARD) |

6. Press the “ESC” to return to the Main Menu.

### Example: Event 1: Battery Failure / 21min ago



# USING THE UPS SYSTEM

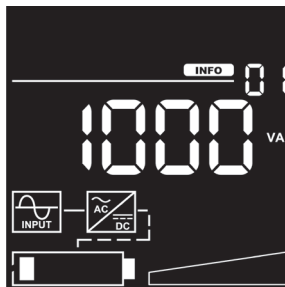
## (4) INFORMATION

There are 9 UPS Information items that can be tested by the user.

1. Select “INFO” Icons.
2. Press the “ENTER” button to enter the “INFO”.
3. Press the “UP” and “DOWN” buttons to scroll through the “INFO” items shown in the table below.
4. Press the “ESC” to return to the Main Menu.

| INDEX | INFORMATION ITEMS | DATA DISPLAYED                          | DESCRIPTION                            |
|-------|-------------------|---|--|
| 01    | UPS Rating        | XXXXVA/XXXXW                            | Displays the UPS Rating                |
| 02    | MCU Version       | [XXXX]                                  | Displays the UPS MCU Firmware Version  |
| 03    | Model Name        | [OLSX] [000E] [RT2U] [A ]               | Displays the UPS Model Name            |
| 04    | Date and Time     | [- - - -]<br>[- . - - -]<br>[- - : - -] | Displays the present Date & Time       |
| 05    | Next BATT Change  | [- - - -]<br>[- . - - -]                | Displays the next Battery Change Date. |
| 06    | IP                | [1.XXX] [2.XXX]<br>[3.XXX] [4.XXX]      | Display the network IP address         |
| 07    | Subnet Mask       | [1.XXX] [2.XXX]<br>[3.XXX] [4.XXX]      | Display the network Subnet Mask        |
| 08    | Gateway           | [1.XXX] [2.XXX]<br>[3.XXX] [4.XXX]      | Display the network Gateway            |
| 09    | MAC               | [XX.XX] [XX.XX] [XX.XX]                 | Display the network card MAC address   |

### Example: Index 1, UPS Rating





## USING THE UPS SYSTEM

### EVENT CODE LIST

| EVENT CODE | EVENT CONTENT       | LCD DISPLAY | DESCRIPTION   |
|------------|---------------------|-------------|---|
| 01         | Over Charge         | 08CH        | The Battery has been charged too High voltage.                          |
| 02         | Charger Failure     | CHGF        | The Battery Charger has malfunctioned.                                  |
| 04         | Battery Low         | bAtL        | The Battery has been discharged to low level.                           |
| 05         | Battery Failure     | bAtF        | The UPS has detected battery failure.                                   |
| 06         | BAT Disconnected    | bAtd        | The UPS has not detected batteries.                                     |
| 07         | Service Battery     | SbAt        | The Battery Replacement Date has reached the maintenance period.        |
| 12         | Load Over Set%      | LLAL        | The UPS has detected Output Watt or VA has exceeded user set parameter. |
| 21         | Output short        | OPSt        | The UPS has detected output short.                                      |
| 22         | Output Overload     | OPOL        | The UPS has detected Output Watt or VA are too High.                    |
| 30         | Inverter Fault      | InvF        | The inverter has malfunctioned.   |
| 31         | High Output Voltage | H IOP       | The UPS has detected Inverter voltage too High.                         |
| 32         | Low Output Voltage  | LOOP        | The UPS has detected Inverter voltage too Low.                          |
| 33         | Over Temperature    | 08tP        | The UPS has detected internal temperature too High.                     |
| 34         | Fan Error           | FRnE        | The UPS has detected a fan malfunction.                                 |
| 35         | Rear Fan Error      |             | The UPS has detected a rear fan malfunction.                            |
| 36         | Middle Fan Error    |             | The UPS has detected a middle fan malfunction.                          |
| 37         | Front Fan Error     |             | The UPS has detected a front fan malfunction.                           |

## USING THE UPS SYSTEM

### EVENT CODE LIST

| EVENT CODE | EVENT CONTENT           | LCD DISPLAY | DESCRIPTION  |
|------------|-------------------------|-------------|--|
| 40         | Bus Fault               | BUSF        | The UPS has detected DC Bus too High or Low.   |
| 41         | Bus Fault +High         |             | The UPS has detected +DC Bus too High.   |
| 42         | Bus Fault +Low          |             | The UPS has detected +DC Bus too Low.  |
| 43         | Bus Fault -High         |             | The UPS has detected -DC Bus too High.   |
| 44         | Bus Fault -Low          |             | The UPS has detected -DC Bus too Low.  |
| 50         | Input Power Fail        | IPPF        | The UPS has detected input voltage or frequency out of range.                                  |
| 51         | Input V+Hz out of range |             | The UPS has detected input voltage and frequency out of range.                                 |
| 52         | Input V out of range    |             | The UPS has detected input voltage out of range.   |
| 53         | Input Hz out of range   |             | The UPS has detected input frequency out of range.   |
| 54         | Line Abnormal           | L IAb       | The UPS has detected the utility is out of range when the UPS is running auto-restart process. |
| N/A        | Ready ON                | t dOn       | The UPS has been turned on.  |
| N/A        | Shutdown                | SHUT        | The UPS has been shutdown.   |
| N/A        | Sleep Mode              | SLPn        | The UPS has been entered sleep mode.   |
| N/A        | Battery Test            | bAtT        | The Batteries have been tested.  |



## USING THE UPS SYSTEM

### LCD WORD INDEX



| WORD | LCD DISPLAY | DESCRIPTION                                   |
|------|-------------|---|
| NO   | n0          | NO Bypass/NO IP Address                       |
| ENA  | EnA         | Enable  |
| DIS  | d IS        | Disable                                       |
| ACT  | ACT         | Activate                                      |
| SAVE | SAVE        | Save  |
| ESC  | ESC         | Escape  |
| VOFE | VOFE        | Bypass condition: Check Voltage and Frequency |
| OLVO | OLVO        | Bypass condition: Check only Voltage          |
| OLBL | OLBL        | Buzzer enable only battery Low                |
| CLER | CLER        | Clear   |
| SETU | SETU        | Setup   |
| EPO  | EPO         | Emergency power off                           |
| ROO  | ROO         | Remote On/Off                                 |
| DHCP | dHCP        | IP address: DHCP                              |
| MANU | MANU        | IP address: Manual                            |
| BATE | bATE        | Battery test                                  |
| ALTE | ALTE        | Alarm test                                    |
| INTE | INTE        | Indicator test                                |
| FATE | FATE        | Fan test                                      |
| NULL | nULL        | NULL  |

## TROUBLESHOOTING

LCD will use FAULT ICON with RED to indicate the Fault or Warning status.

| EVENT CODE | WARNING          | ICON  | POSSIBLE CAUSE   | SOLUTION   |
|------------|------------------|---|--|--|
| N/A        | Battery Mode     | <br>(Yellow) | UPS is operating on battery power.   | Save your data and perform a controlled- shutdown.   |
| 01         | Over Charge      | <br>(Red)   | Battery is overcharged.  | Remove battery connector and check charger voltage.  |
| 04         | Battery Low      |   | UPS is operating on battery power and the alarm triggers when the set percentage of battery capacity or remaining back-up time is reached.<br><br>UPS will be shutting down soon due to extremely low battery voltage. | UPS will restart automatically when acceptable utility power returns.  |
| 05         | Battery Failure  |   | UPS has failed in Battery Test.  | Check battery connector and battery fuse.<br>Contact technical support to replace the battery.   |
| 06         | BAT Disconnected |   | Missing battery power.   | Check battery connector and battery fuse.  |
| 07         | Service Battery  |   | The Battery Replacement Date has reached the recommended 3 year maintenance period.  | If batteries have been recently replaced, then reset the Battery Replacement Date using PowerPanel® Business Edition-Agent software, RMCARD interface or through the LCD control panel on the UPS (See LCD Setting Configuration). |
| 12         | Load Over XXX%   |   | Your equipment requires more power than the setting in the Power Management Software (Power Panel® Business) will allow.   | Shut off the non-essential equipment or increase the level in the Power Management Software.   |

## TROUBLESHOOTING

| EVENT CODE | WARNING          | ICON   | POSSIBLE CAUSE  | SOLUTION   |
|------------|------------------|--|---|--|
| 21         | Output Short     | <br>(Red)   | Output short circuit.   | Your attached equipment may have problems, please remove them and check again.   |
| 22         | Output Overload  |  | Your equipment requires more power than the UPS can provide. If the UPS is in Line Mode then it will transfer to Bypass Mode; if the UPS is in Battery Mode it will shutdown. | Shut off non-essential equipment. If this solves the overload problem, the UPS will transfer to normal operation.                            |
| 33         | Over Temperature |  | High temperature sensor activates protection.   | Check the fan for operation and if the ventilation hole has been covered.  |
| 54         | Line Abnormal    |  | Utility power is out of range for the UPS to auto-restart.  | Check whether voltage or frequency of utility power is out of range.   |
| EVENT CODE | FAULT            |  | ICON  | POSSIBLE CAUSE   |
| 02         | Charger Failure  | <br>(Red) | Charger has failed.   | Contact CyberPower for assistance.   |
| 31         | High Output V    |  | Output voltage is too high.   | Shut down UPS and turn off input breaker. Contact CyberPower for assistance.   |
| 32         | Low Output V     |  | Output voltage is too low.  |  |
| 40         | Bus Fault        |  | Internal DC bus voltage is too high or too low.   |  |
| 34         | Fan Error        |  | Internal Fan has failed.  | Perform a Fan Test and check the Alarm. If the Alarm continues, Shut down UPS and turn off input breaker. Contact CyberPower for assistance. |

# MAINTENANCE

## Storage

To store your UPS for an extended period, cover it and store with the battery fully charged. Recharge the battery every three months to ensure battery life.



**Warning: High voltage - Risk of Electric Shock**

**CAUTION!** Only use replacement batteries that are certified by Cyber Power Systems. Use of incorrect battery type is an electrical hazard that could lead to explosion, fire, electric shock, or short circuit.

**CAUTION!** Batteries contain an electrical charge that can cause severe burns. Before servicing batteries, please remove any conductive materials such as jewelry, chains, wrist watches, and rings.

**CAUTION!** Do not open or mutilate the batteries. Electrolyte fluid is harmful to the skin/eyes and may be toxic.

**CAUTION!** To avoid electric shock, turn off and unplug the UPS from the wall receptacle before servicing the battery.

**CAUTION!** Only use tools with insulated handles. Do not lay tools or metal parts on top of the UPS or battery terminals.

## Replacement Batteries

Please refer to the front side of the UPS for the model number of the correct replacement batteries. For battery procurement, log onto [www.cyberpower.com](http://www.cyberpower.com), or contact your local dealer.

When the Replace Battery the LCD displays Service Battery, use PowerPanel® Business Edition Agent software or log on to the RMCARD to perform a runtime calibration to verify battery capacity is sufficient and acceptable.

**CAUTION!** Batteries replacement must be performed by qualified personnel.

## Battery Disposal



**Do Not Discard**

Batteries are considered hazardous waste and must be disposed of properly. Contact your local government for more information about proper disposal and recycling of batteries. Do not dispose of batteries in fire.

## TECHNICAL SPECIFICATIONS

| Models                      | OLS1000EC   | OLS2000EC | OLS3000EC |
|-----------------------------|---|-----------|-----------|
| <b>Configuration</b>        |   |           |           |
| Capacity (VA)               | 1000  | 2000      | 3000      |
| Capacity (Watts)            | 800   | 1600      | 2400      |
| Form Factor                 | Tower   |           |           |
| Energy-saving Technology    | Yes, ECO Mode Efficiency $\geq$ 95%   |           |           |
| <b>Input</b>                |   |           |           |
| Input Voltage Range         | 80- 300 Vac   |           |           |
| Input Frequency Range       | 40-70Hz   |           |           |
| Input Power Factor          | $\geq$ 0.99   |           |           |
| Cold Start                  | Yes   |           |           |
| <b>Output</b>               |   |           |           |
| Output Waveform             | Pure Sine Wave  |           |           |
| Output Voltage              | 208, 220, 230, 240Vac $\pm$ 1%  |           |           |
| Output Frequency            | 50 / 60Hz (Auto-Sensing or Configurable) $\pm$ 0. 5Hz *   |           |           |
| Transfer Time (Typically)   | 0ms   |           |           |
| Rated Power Factor          | 0.9   |           |           |
| Harmonic Distortion         | THD < 3% at Linear Load, < 5% at Non-linear Load  |           |           |
| Crest Factor                | 3 : 1   |           |           |
| ECO Mode Voltage Regulation | $\pm$ 10%, $\pm$ 15% (Configurable)   |           |           |
| <b>Protection</b>           |   |           |           |
| Surge Protection            | Surge Suppression $\geq$ 345(Joules)  |           |           |
| Overload Protection         | Line Mode:<br>105-110% Overload warning only<br>110-120% Warning, transfer to bypass after 60s<br>>120% Transfer to bypass immediately<br><br>Battery Mode:<br>105-110% Overload warning only<br>110-120% Warning, shutdown after 10s<br>>120% Shutdown immediately |           |           |
| Short Circuit Protection    | UPS Output Cut off Immediately / Circuit Breaker Protection   |           |           |



































## TECHNICAL SPECIFICATIONS

| Models                                 | OLS1000EC  | OLS2000EC       | OLS3000EC       |
|--|--|-----------------|-----------------|
| <b>Battery</b>                         |  |                 |                 |
| Specifications                         | (2) 12V  | (4) 12V         | (6) 12V         |
| Recharge Time (Typically)              | 4 Hours  |                 |                 |
| Sealed, Maintenance Free               | Yes  |                 |                 |
| <b>Status Indicators</b>               |  |                 |                 |
| LCD Screen                             | Graphic LCD  |                 |                 |
| Audible Alarms                         | Battery Mode, Battery Test Fail, Battery Low, Overload, UPS Fault, Over Charged, Fan Failure |                 |                 |
| <b>Environment</b>                     |  |                 |                 |
| Operating Temperature                  | 32°F to 104°F ( 0°C to 40°C)   |                 |                 |
| Operating Relative Humidity            | 20 to 90% Non-Condensing   |                 |                 |
| <b>Management &amp; Communications</b> |  |                 |                 |
| On-Device Features                     | Self Test, Auto-Charge, Auto-Restart, Auto-Overload Recovery                                 |                 |                 |
| Connectivity Ports                     | (1) Serial Port (RS232), (1) USB Port  |                 |                 |
| SNMP/HTTP Capable                      | (1) Expansion Port (With optional RMCARD 205)  |                 |                 |
| <b>Software</b>                        |  |                 |                 |
| Power Management Software              | PowerPanel® Business   |                 |                 |
| <b>Physical</b>                        |  |                 |                 |
| Dimension (WxHxD)mm                    | 140 x 191 x 327  | 151 x 225 x 394 | 196 x 337 x 416 |
| Net Weight (kg)                        | 13.2   | 14.8            | 17.5            |

\* Within 50/60HZ  $\pm 5\%$  by default, the output frequency is synchronization with input mains. User can adjust the acceptable range for output frequency ( $\pm 1, 2, 3, 4, 5, 6, 7, 8\%$ ). When UPS work on Converter Mode, the output frequency is regulated at 50/60Hz  $\pm 0.5\%$  with load derating by 40%.



## APPENDIX - LCD WORD COMPARISON TABLE

| WORD | LCD DISPLAY   | WORD | LCD DISPLAY   | WORD | LCD DISPLAY   | WORD | LCD DISPLAY  |
|------|---|------|---|------|---|------|--|
| 0    |    | A    |    | L    |    | V    |  |
| 1    |    | B    |    | M    |    | W    |  |
| 2    |    | C    |    | N    |    | X    |  |
| 3    |    | D    |    | O    |    | Y    |  |
| 4    |    | E    |    | P    |    |      |  |
| 5    |    | F    |    | Q    |    |      |  |
| 6    |   | G    |   | R    |   |      |  |
| 7    |  | H    |  | S    |  |      |  |
| 8    |  | I    |  | T    |  |      |  |
| 9    |  | J    |  | U    |  |      |  |





# Cyber Power Systems, Inc.

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