



IDEAL POWER FOR IDEAL CHOICE

# USER'S MANUAL



## 1 INTRODUCTION

### System Description

The Product is line interactive UPS provides guaranteed battery backup power during outage and unsafe fluctuation, along with full protection from damaging surges and spikes. The UPS integrated with microprocessor controller, voltage stabilizer, LED indicators in a stand-alone unit, to provide the perfect protection to safeguard your critical devices and valued data.

### Features

- ★ Line interactive design with microprocessor controlled.
- ★ Auto restart upon AC recovery.
- ★ Equipped with 2-Steps Boost & 1-Step Buck AVR to provide stable utility voltage.
- ★ Built-in CC/CV battery charger and battery over-drain protection.
- ★ DC start function enable UPS started without AC power supplied.
- ★ Off mode charging enable UPS charge itself even power switch is OFF.
- ★ Provide lightning, surge, overload, and short circuit protection.
- ★ Battery easy replacement design (Optional).

## 2 CAUTION

- ▶ The UPS contains electricity that is potentially hazardous. Qualified or certified technician should proceed all repairs and maintenance.
- ▶ The UPS has its own internal energy source (battery). The output receptacles may be active even when the UPS is not connected to an AC supply.
- ▶ The UPS is suitable for computers and electronic equipment with linear loads, not suitable for electronic equipment with non-linear loads, such as motors & fluorescent lamps.
- ▶ Be sure to operate within the power rating of the UPS. Below 1/2 or 1/3 of the rated power is recommended for longer backup time.
- ▶ The UPS must be installed in a protected environment away from heating appliances such as a radiator or heater. **DO NOT** place the UPS near excessive humidity, under sunshine, or close to heating sources.
- ▶ If the UPS is out of order, disconnecting the power cord and contact with your dealer right away.
- ▶ The unit should be supplied by a grounded source. **DO NOT** operate the unit without a ground source.
- ▶ The UPS should be installed near to wall socket and equipment and be easily accessible.
- ▶ **DO NOT** plug the UPS's power cord into UPS's output socket. That will result in a safety hazard.

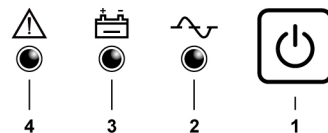
- ▶ A qualified technician or electrician in accordance with local electrical code should perform installation.

- ▶ **DO NOT** connect a laser printer or plotter to the UPS. A laser printer or plotter periodically draw significantly more power than its idle status, and may overload the UPS.

## 3 OVERVIEW

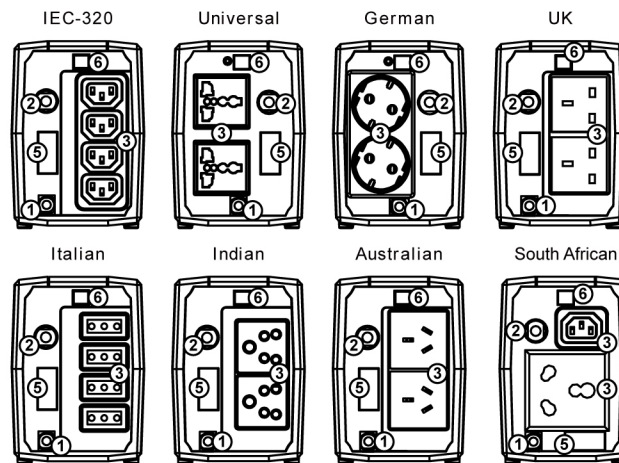
### Front Panel

1. Power Switch: ON/OFF or silence button
2. On-line LED
3. Back-up LED
4. Cut-off LED

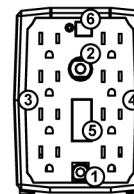


### Rear Panel

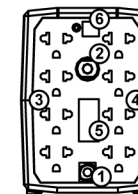
1. AC input line cord
2. AC circuit breaker
3. Backup/AVR/surge protection outlet
4. Surge protection outlet
5. Tel/Line/Modem surge protection RJ-45 port
6. Smart USB communication port



Nema5-15R



Universal Nema



## 4 OPERATION

### Turn On/Off the Unit

Turn on the UPS unit on AC mode by pressing the power switch for 1 second.  
Turn off the UPS unit on AC mode by pressing the power switch for 4 seconds.

### Connect to Utility and Charging

When UPS is connected to AC power and power switch is on, UPS will charge battery automatically.

The UPS is designed with the function of OFF-Mode Charging, so UPS will charge battery continuously when power switch is off and AC power is supplied. To power off UPS completely on OFF mode, please remove the input of AC power.

### DC Start

Turn on the UPS unit on Battery mode by pressing the power switch for 1 second.  
Turn off the UPS unit on Battery mode by pressing the power switch for 4 seconds, and UPS will be completely turned off in 10 seconds. Wait another 10 seconds to press power switch for 1 second if you want to turn on the UPS again.

### Buzzer

Buzzer will beep when UPS is on Battery mode or having fault situations.  
Mute the buzzer by pressing power switch once. Restart the Buzzer by pressing power switch once again.

## 5 BATTERY CHARGING AND STORAGE

The UPS is shipping from Factory with internal full-charged battery, but battery power might be lost during the transportation. So please plug in the AC input line cord to wall outlet. For best result, charge the battery for at least 10 hours before initial use.

| Storage Temperature          | Recharge Period | Charging Duration |
|------------------------------|-----------------|-------------------|
| -15°C to 30°C (5°F to 86°F)  | Every 6 Months  | 10 Hours          |
| 30°C to 45°C (86°F to 113°F) | Every Month     | 10 Hours          |

## 6 INDICATION TABLE

### ► Battery Mode

| Status                          | Back-up LED<br>(Yellow)                                                                                                   | On-line LED<br>(Green) | Cut-off LED<br>(Red)             | Buzzer                            |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------|-----------------------------------|
| Battery normal<br>& Load normal | LED is ON when<br>UPS is on Battery<br>mode; LED flash<br>twice every 4<br>seconds when<br>battery and load<br>are normal | LED is OFF             | Depends on<br>fault<br>condition | Beeps<br>twice every<br>8 seconds |
| Battery low<br>voltage          | LED flash 4 times<br>every second                                                                                         |                        |                                  | Beeps 4<br>times every<br>second  |

### ► AC Mode

| Status                    | Back-up LED<br>(Yellow) | On-line LED<br>(Green)               | Cut-off LED<br>(Red)             | Buzzer           |
|---------------------------|-------------------------|--------------------------------------|----------------------------------|------------------|
| Battery fully<br>charged  | LED is OFF              | LED is ON                            | Depends on<br>fault<br>condition | Buzzer is<br>OFF |
| Battery 70-90%<br>charged |                         | LED flash<br>once every<br>8 seconds |                                  |                  |
| Battery 50-70%<br>charged |                         | LED flash<br>once every<br>4 seconds |                                  |                  |
| Battery 30-50%<br>charged |                         | LED flash<br>once every<br>2 seconds |                                  |                  |
| Battery 0-30%<br>charged  |                         | LED flash<br>once every<br>second    |                                  |                  |

### ► OFF Mode

| Status                                       | Back-up LED<br>(Yellow)        | On-line LED<br>(Green)                  | Cut-off LED<br>(Red)       | Buzzer        |
|----------------------------------------------|--------------------------------|-----------------------------------------|----------------------------|---------------|
| AC input disconnected                        | LED is OFF                     | LED is OFF                              | LED is OFF                 | Buzzer is OFF |
| AC input normal:<br>Battery is in charging   |                                | LED flash once every 2 seconds          | Depends on fault condition |               |
| AC input normal:<br>Battery is fully charged |                                | LED is OFF                              |                            |               |
| UPS working schedule: Set via Smart USB port | LED flash once every 2 seconds | Refer to On-line LED (Green) of AC mode | LED is OFF                 |               |

### ► Fault

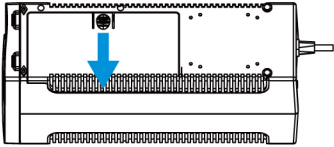
| Status                  | Back-up LED<br>(Yellow)                  | On-line LED<br>(Green) | Cut-off LED<br>(Red)               | Buzzer           |
|-------------------------|------------------------------------------|------------------------|------------------------------------|------------------|
| Over<br>temperature     | Depends on AC input or<br>load condition |                        | LED is OFF                         | Rapid<br>beeping |
| Overload                |                                          |                        | LED flash<br>twice every<br>second | Constant<br>tone |
| Output short<br>circuit |                                          |                        | LED is ON                          | Rapid<br>beeping |

## 7 CHANGE BATTERY

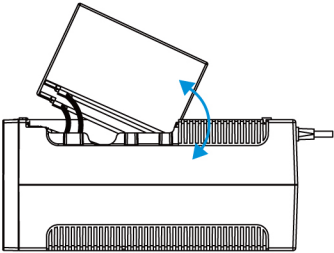
**Remark:** Only available for battery easy replacement design model UPS.

**Note:** Small sparks may occur during battery connection, this is normal.

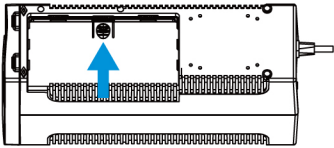
1. Turn the UPS over, and slide the battery compartment cover off the battery housing.



2. LIFT the battery out of the compartment, and disconnect wires from battery positive (+) and negative (-) terminals. Get a new battery and make sure to re-connect wires to positive and negative terminals correctly.



3. Aligned all arrows marks and slide the battery compartment cover back onto the battery housing. Double check if battery compartment is well-locked.



## 8 TROUBLESHOOTING

Check UPS with below steps when you face UPS failure problem:

- ♦ Is the power switch of UPS turned on?
- ♦ Is UPS plugged into a working wall outlet?
- ♦ Is line voltage within the rating specified?
- ♦ Is circuit breaker on the UPS back panel active?
- ♦ Is UPS overloaded?
- ♦ Is UPS battery not fully charged?

Use the table below to solve the UPS operation problems. If the problems cannot be resolved, please provide model name, serial number, date of purchase, date of the problem occurred and full description of the problem including load status, UPS LED status, UPS buzzer status, installation environment...etc. when call for service.

| Problem                                            | Probable Cause                        | Solution                                                                                                                  |
|----------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| UPS will not turn on<br>and LED is not ON          | Battery voltage is less<br>than 10VDC | Charge the UPS at least<br>5 hours                                                                                        |
|                                                    | PCB is failure                        | Call for service to replace<br>the PCB                                                                                    |
| UPS is always on<br>Battery Mode                   | Power cord is loose                   | Reconnect the power cord<br>properly                                                                                      |
|                                                    | Circuit breaker is<br>tripped         | Reset the circuit breaker<br>on the UPS back panel                                                                        |
|                                                    | PCB is failure                        | Call for service to replace<br>the PCB                                                                                    |
| Backup time is<br>shortening                       | Battery is not fully<br>charged       | Charge the UPS at least<br>5 hours                                                                                        |
|                                                    | Battery defect                        | Replace the battery with<br>same type of battery                                                                          |
| Buzzer beeps<br>constant tone when<br>AC is normal | UPS is overloaded                     | Remove some loads first.<br>Make sure the equipment<br>plugged in to the UPS is not<br>overloading the capacity of<br>UPS |

## 9 SPECIFICATION

| INPUT                                |                                                                                    |
|--------------------------------------|------------------------------------------------------------------------------------|
| Voltage                              | 110/115/120VAC or 220/230/240VAC                                                   |
| Voltage Range                        | Label specified                                                                    |
| Frequency                            | 50/60Hz auto-sensing                                                               |
| OUTPUT                               |                                                                                    |
| Capacity                             | Label specified                                                                    |
| Voltage Regulation<br>(Battery Mode) | +/-10%                                                                             |
| Frequency                            | 50/60Hz +/-1Hz                                                                     |
| Waveform                             | Simulated sinewave                                                                 |
| Transfer Time                        | <6ms (typical)                                                                     |
| BATTERY                              |                                                                                    |
| Voltage                              | 12VDC                                                                              |
| Recharge Time                        | 5 hours to 90% after fully discharged                                              |
| Safety Protection                    | Over charge and over discharge protection                                          |
| Advance Battery<br>Management        | Yes                                                                                |
| INDICATORS                           |                                                                                    |
| LED                                  | AC normal (Green), Backup(Yellow), UPS Cut-off(Red)                                |
| Alarm                                | Buzzer ON for battery mode, low battery, overload, fault                           |
| PROTECTION                           |                                                                                    |
| Short circuit                        | Line Mode: AC breaker and electronic circuit ;<br>Battery Mode: electronic circuit |
| Over-temperature                     | Thermal switch                                                                     |
| Over/Under Voltage                   | Yes                                                                                |
| Surge Protection                     | 175 Joules                                                                         |
| SAFETY/REGULATORY                    |                                                                                    |
| Safety Approvals                     | EN 62040-1                                                                         |
| EMC Compliance                       | EN 62040-2                                                                         |
| PHYSICAL                             |                                                                                    |
| Operating Temperature                | 0°C to 40°C (5°F to 104°F)                                                         |
| Related Humidity                     | 0 to 95% non-condensing                                                            |
| Audible Noise                        | < 40dB at 1M                                                                       |
| Dimension(D*W*H)                     | 315.5*100*141mm                                                                    |