



This manual provides safety, installation and operation instructions which will guide you to the best performance of your equipment. Please read and keep this manual.

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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 and battery easy replacement 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.

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.

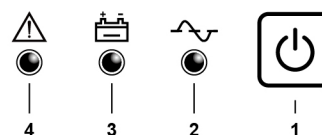
A qualified technician or electrician in accordance with local electrical code should perform installation.

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

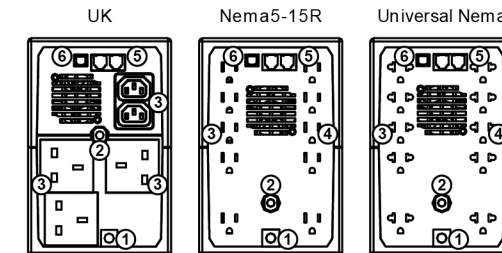
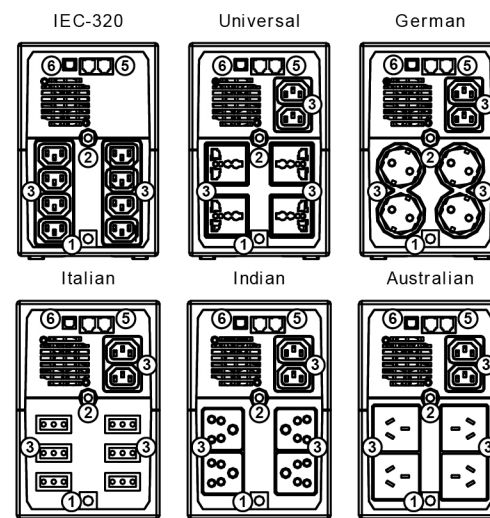
Front Panel

- Power Switch: ON/OFF or silence button
- On-line LED
- Back-up LED
- Cut-off LED



Rear Panel

- AC input line cord
- AC circuit breaker
- Backup/AVR/surge protection outlet
- Surge protection outlet
- Tel/Line/Modem surge protection RJ-45 port
- Smart USB communication port



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

AC Mode

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

OFF Mode

Status	Back-up LED (Yellow)	On-line LED (Green)	Cut-off LED (Red)	Buzzer
AC input disconnected	LED is OFF	LED is OFF	LED is OFF	Buzzer is OFF
AC input normal: Battery is in charging		LED flash once every 2 seconds	Depends on fault condition	
AC input normal: 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	

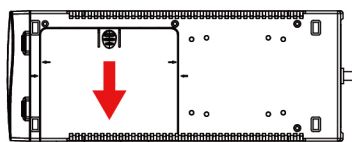
Fault

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

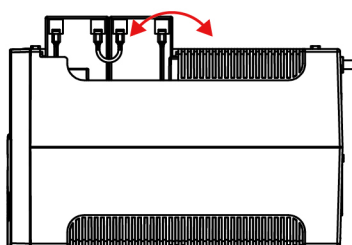
7 CHANGE BATTERY

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

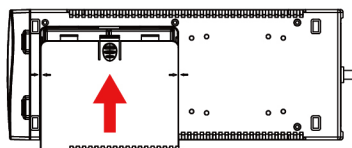
- Turn the UPS over, and slide the battery compartment cover off the battery housing.



- 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.



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

9 SPECIFICATION

INPUT

Voltage	110/115/120VAC or 220/230/240VAC
Voltage Range	-30% +25%
Frequency	50/60Hz auto-sensing

OUTPUT

Capacity	Label specified
Voltage Regulation (Battery Mode)	+/-10%
Frequency	50/60Hz +/-1Hz
Waveform	Simulated sinewave
Transfer Time	<6ms (typical)

BATTERY

Voltage	24VDC
Recharge Time	5 hours to 90% after fully discharged
Safety Protection	Over charge and over discharge protection
Advance Battery 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 ; 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)	343*135*208mm