

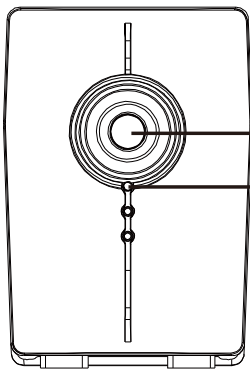
1. Package Contents

You should have received the following items inside of package:

- UPS Unit
- Quick Guide
- Communication cable (only for the model with USB/RS-232 port)
- Power cable (only for the IEC-type model)

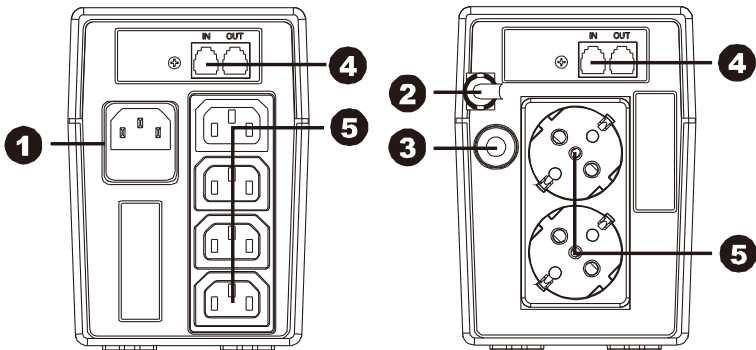
2. Product Overview

Front View:



1. Power Switch
2. UPS status LED
AC Mode: green lighting
Battery Mode: green flashing

Back View:



1. AC input with AC fuse
2. AC input
3. Circuit breaker
4. Optional network surge protection
5. Output receptacles

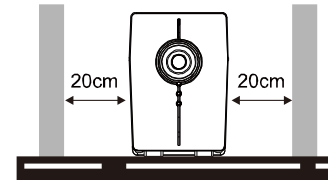
3. Installation and Initial Startup

NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged.



Placement & Storage Conditions

Install the UPS in a protected area that is free of excessive dust and has adequate air flow. Please place the UPS away from other units at least 20 cm to avoid interference. Do NOT operate the UPS where the temperature and humidity is outside the specific limits. (Please check the specs for the limitations.)



Connect to Utility and Charging

Plug in the AC input cord to the wall outlet. For the best results, suggest to charge the battery at least 4 hours before initial use. The unit charges its battery while connecting to the utility.



Connect the Loads

Plug in the loads to output receptacles on the rear panel of the UPS. Simply turn on the power switch of UPS unit, then devices connected to the UPS will be protected by UPS unit.

Connect Modem/Phone/Network for Surge Protection (Only for the model with RJ-11/RJ-45)

Connect a single modem/phone line into surge-protected "IN"

CAUTION: NEVER connect a laser printer or scanner to the UPS unit. This may cause the damage of the unit.



outlet on the back panel of the UPS unit. Connect from "OUT" outlet to the computer with another phone line cable.

Turn On/Off the Unit

Turn on the UPS unit by pressing the power switch. Turn off the UPS unit by pressing again the power switch.

4. Important Safety Warning (SAVE THESE INSTRUCTIONS)

CAUTION! To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area free of conductive contaminants. (See the specifications for the acceptable temperature and humidity range.)

CAUTION! To reduce the risk of overheating the UPS, do not cover the UPS' cooling vents and avoid exposing the unit to direct sunlight or installing the unit near heat emitting appliances such as space heaters or furnaces.

CAUTION! Do not attach non-computer-related items, such as medical equipment, life-support equipment, microwave ovens, or vacuum cleaners to UPS.

CAUTION! Do not plug the UPS input into its own output.

CAUTION! Do not allow liquids or any foreign object to enter the UPS. Do not place beverages or any other liquid-containing vessels on or near the unit.

CAUTION! In the event of an emergency, press the OFF button and disconnect the power cord from the AC power supply to properly disable the UPS.

CAUTION! Do not attach a power strip or surge suppressor to the UPS.

CAUTION! If the UPS is with metal chassis, for safety purpose, grounding is a must during UPS installation in order to reduce leakage current below 3.5A.

Attention hazardous through electric shock. Also with disconnection of this unit from the mains, hazardous voltage still may be accessible through supply from battery. The battery supply should be therefore disconnected in the plus and minus pole at the quick connectors of the battery when maintenance or service work inside the UPS is necessary.

CAUTION! Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

CAUTION! When replacing the batteries, use the same number and type of batteries.

CAUTION! Internal battery voltage is 12VDC. Sealed, lead-acid, 6-cell battery.

CAUTION! Do not dispose of batteries in a fire. The battery may explode. Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes.

CAUTION! Unplug the UPS prior to cleaning and do not use liquid or spray detergent.

CAUTION! A battery can present a risk of electric shock and high short circuit current. The following precaution should be observed before replacing batteries:

- 1) Remove watches, rings, or other metal objects.
- 2) Use tools with insulated handles.
- 3) Wear rubber gloves and boots.
- 4) Do not lay tools or metal parts on top of batteries.
- 5) Disconnect charging source prior to connecting or disconnecting batteries terminal.

5. Trouble Shooting

Use the table below to solve minor problems.

Problem	Possible Cause	Solutions
No LED display on the front panel.	Low battery.	Charge the UPS at least 6 hours.
	Battery fault.	Replace the battery with the same type of battery.
	The UPS is not turned on.	Press the power switch again to turn on the UPS.
Alarm continuously sounds when the mains is normal.	The UPS is overload.	Remove some loads first. Before reconnecting equipment, please verify that the load matches the UPS capability specified in the specs.
When power fails, back-up time is shorten.	The UPS is overload.	Remove some critical load.
	Battery voltage is too low.	Charge the UPS at least 6 hours.
	Battery defect. It might be due to high temperature operation environment, or improper operation to battery.	Replace the battery with the same type of battery.
The mains is normal but LED is flashing.	Power cord is loose.	Reconnect the power cord properly.

6. Specifications

or specifications

Model	UPS 450	UPS 650	UPS 850
CAPACITY	450 VA / 240 W	650 VA / 360 W	850 VA /480 W
INPUT			
Voltage	220/230/240 VAC		
Voltage Range	162-290 VAC		
OUTPUT			
Voltage Regulation	+/-10%		
Transfer Time	Typical 2-6 ms, 10 ms max.		
Waveform	Simulated Sine Wave		
BATTERY			
Type & Number	12 V/4.5 AH x 1	12 V/7 AH x 1	12 V/9 AH x 1
Charging Time	4-6 hours recover to 90% capacity		
PHYSICAL			
Dimension (DxWxH)	287 x 100 x 142 mm		
Net Weight (kgs)	3.55	4.25	4.9
Environment			
Humidity	0-90 % RH @ 0-40° C (non-condensing)		
Noise Level	Less than 40 dB		