Quick Guide

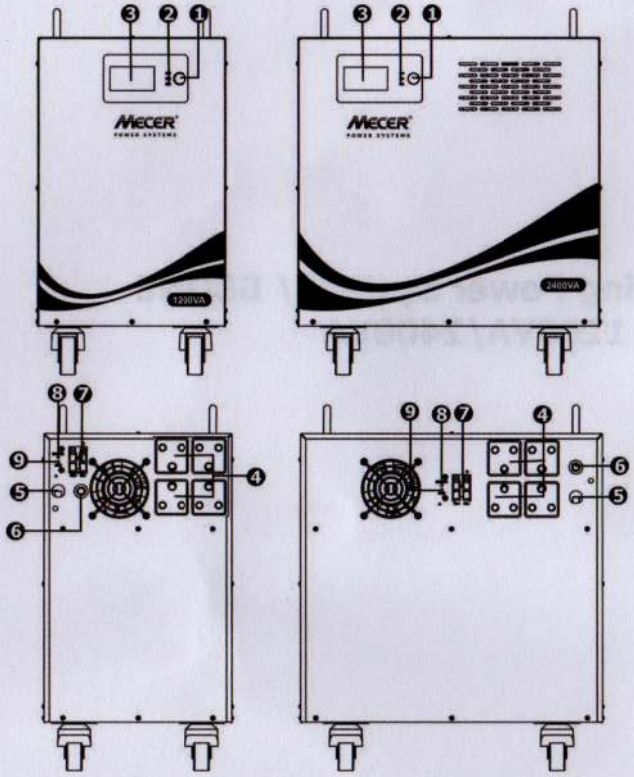
Uninteraping Power System / BBONE
1200VA/2400VA

V. 2.0

1. Introduction

Thank you for purchasing the Uninteraping Power System / BBONE. This simple Uninteraping Power System / BBONE is designed to power your home appliances or precious 3C electronics. With optional solar charger, it can convert solar power to battery power and provide continuous power to connected equipment during night time.

2. Product Overview



1. Power Switch
2. Status indicators
3. LCD display
   Please see the Operation section for the details of LED and LCD display.
4. Output receptacles
5. AC input
6. Circuit breaker
7. Solar panel terminal (option)
8. Solar charging indicator (option)
9. Charger fault indicator (option)

3. Important Safety Warning (SAVE THESE INSTRUCTIONS)

Before using the inverter, please read all instructions and cautionary markings on the unit, this manual and the batteries.

General Precaution-

Conventions used:
WARNING! Warnings identify conditions or practices that could result in personal injury;
CAUTION! Caution identify conditions or practices that could result in damaged to the unit or other equipment connected.

CAUTION! The unit is designed for indoor use. Do not expose this unit to rain, snow or liquids of any type.

CAUTION! To reduce risk of injury, only use qualified batteries from qualified distributors or manufacturers. Any unqualified batteries may cause damage and injury. Do NOT use old or overdue batteries. Please check the battery type and date code before installation to avoid damage and injury.

CAUTION! Do not disassemble the inverter. Contact with the qualified service center when service or repair is required.

WARNING! Provide ventilation to outdoors from the battery compartment. The battery enclosure should be designed to prevent accumulation and concentration of hydrogen gas at the top of the compartment.

CAUTION! Use insulated tools to reduce the chance of short-circuit when installing or working with the inverter, the batteries, or other equipments attached to this unit.

CAUTION! For battery installation and maintenance, read the battery manufacturer's installation and maintenance instructions prior to operating.

Personnel Precaution -

CAUTION! Careful to reduce the risk or dropping a metal tool on the batteries. It could spark or short circuit the batteries and could cause an explosion.

CAUTION! Remove personal metal items such as rings, bracelets, necklaces, and watches when working with batteries. Batteries can produce a short circuit current high enough to make metal melt, and could cause severe burns.

CAUTION! Avoid touching eyes while working near batteries.

CAUTION! Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

CAUTION! NEVER smoke or allow a spark or flame in vicinity of a battery.

CAUTION! If a remote or automatic generator start system is used, disable the automatic starting circuit or disconnect the generator to prevent accident during servicing.

4. Specifications

MODEL	1200	2400
CAPACITY	1200 VA / 720 W	2400 VA / 1440 W
INPUT		
Voltage	230 VAC	
Voltage Range	90-280 VAC	
OUTPUT		
Voltage Regulation (Batt. Mode)	+/-10%	
Transfer Time	20 ms typical	
Waveform	Simulated Sine Wave	
BATTERY		
Battery Type and Numbers	12 V 100Ah x 1	12 V 100Ah x 2
SOLAR CHARGER (OPTIONAL)		
Charging Current	50 A max.	
Maximum PV Array Open Circuit Voltage	60 VDC	
PHYSICAL		
Dimension (DxWxH) mm	392X250X450	345X400X450
Net Weight (kgs)	40.5	75.8

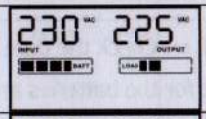
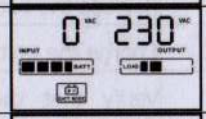
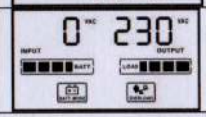
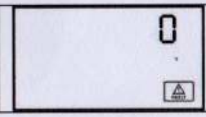
5. Operation

Power On/Off

Once the inverter has been properly installed, press the power switch to turn on the unit. The unit will work automatically in line mode or inverter mode according to input utility power's status. When press the power switch again, the unit will be turned off.

LED Indicators & Audible Alarms

There are three indicators (Green/Red/Yellow) in the front panel of the unit.

Status	LCD	Indicator	Alarm
Power on: when the unit is powered on, it will enter this mode for 3 seconds.		Three LEDs are on for few seconds.	Off
Standby Mode: the bypass output and charger are turn on.		Floating charging: Green LED steady flash every 10 seconds Constant charging mode: Green LED quickly flashing.	Off
Line Mode	 icon flashes when AVR is working.	Floating charging: Green LED on. Constant charging mode: Green LED flashing.	Off
Overcharging in Line Mode		Red LED flashes every four seconds.	Continuously sounding
Battery Mode		Yellow LED on.	Off
Low battery in Battery Mode	 LOW BATT. and ■ icons will flash.	Yellow LED flashes every second.	Sounding every 2 seconds
Overload: when connected load is over 110% AC mode		Red LED flashes every 0.5 second.	Sounding every 0.5 second
Battery Mode			
OVERLOAD and ■■■■ icons will flash.			
Fault Mode		Red LED on.	Continuously sounding

6. Trouble Shooting

Use the table below to solve minor problems.

Problem	Possible Cause	Solutions
Utility power is normal but the unit is in battery mode.	AC input power cord is not connected well.	Check AC input power connection.
	Input breaker is activated.	Reset the input breaker.
When power fails, the backup time is shorten.	The unit is overload.	Remove some non-critical loads.
	Battery voltage is too low.	Charge the unit at least 8 hours.
	Battery capacity is not full even after charge the unit for at least 8 hours.	Check the date code of the battery. If the batteries are too old, replace the batteries.
No LED display on the front panel when the utility power is normal.	The unit is not turned on.	Press power switch to turn on the unit.
	Battery is not connected well.	Check the external battery cable and terminal. Make sure all the battery connections to the unit are all correct.
	Battery defect.	Replace the batteries.
	Battery voltage is too low.	Charge the unit at least 8 hours.
The unit is in fault and restart circularly.	The unit is overload.	Verify that the load matches the capability specified in the specification.
	Output is short circuited.	Check the loads and remove loads which cause short circuit.

If there is any abnormal situations occur, which doesn't list above, please call the service people immediately for professional examine.

7. Installation

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

Connect to Utility and Charge

Plug in the AC input cord to the wall outlet. The unit will automatically charge the connected external battery even though the unit is off.

Optional Installation for Solar

Following installation only applies when optional solar charger module been purchased and installed into the unit.

Connect to Solar Panel

To prevent any damage to the solar charger, please DO select the solar panel and battery capacity according to recommended specifications below.

Solar Panel	Recommended Spec				
Maximum Output Voltage (Vm)	25 VDC for 1200VA, 50 VDC for 2400VA *1200VA: Maximum open-circuit voltage (Voc) < 40V 2400VA: Maximum open-circuit voltage (Voc) < 60V				
Maximum output current (Im)	50Amp	40Amp	30Amp	20Amp	10Amp
Suggested battery capacity	≧250Ah	≧200Ah	≧165Ah	≧135Ah	≧100Ah

Step 1- Connect one cable to the positive(+) pole of solar panel and solar charger positive (+) terminal.

Step 2- Connect the other cable to the negative (-) pole of solar panel and solar charger negative (-) terminal.

Step 3- Check the solar charging indicator. If the green LED flashes, it means that batteries are charged by solar power. When the batteries are fully charged, the green LED will be lighting. If there is no solar power available, the green LED will be off. If any fault occurs on charger, the red LED will light up. (See following chart)