

## Quick Guide



### Xtreme Inverter



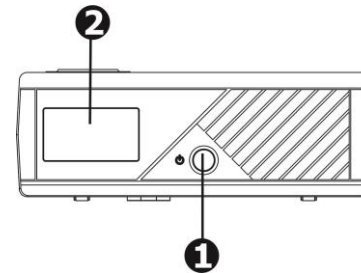
## 1. Introduction

This inverter is a compact inverter designed to power your home appliances or precious electronics. Its compact size features easy installation and high movability. Besides, its high surge capability also can handle motor-type loads such as vacuums, small freezers, or drills.

Compared with traditional inverters in the market, this inverter provides two operation modes: UPS mode and Inverter mode. At UPS mode, the inverter becomes an UPS which can provide pure power source to PC-related equipment or sensitive devices. At Inverter mode, the inverter can provide continuous power to general home appliances.

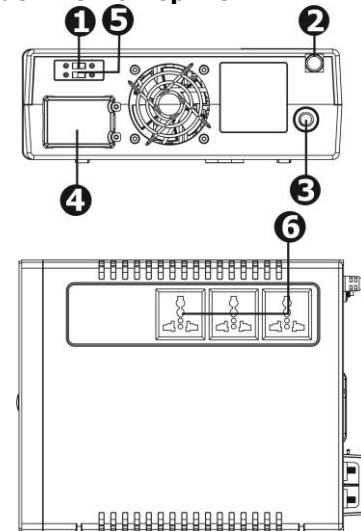
## 2. Product Overview

### Front View:



- ❶ Power Switch
- ❷ LCD Display

### Back View & Top View:



- ❶ Operation mode selector
- ❷ AC input
- ❸ Input breaker
- ❹ External battery connectors
- ❺ Charge current selector
- ❻ Output receptacles

### 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.

**WARNING!** It's very important for system safety and efficient operation to use appropriate external battery cable. To reduce risk of injury, external battery cables should be UL certified and rated for 105° C or higher. And do not use copper cables less than below cable recommendation. Below is the external battery cable reference according to system requirements.

**Table 1 Minimum Recommended Battery Cable Size versus Length**

Typical Amp.	1 meter (one-way)	Dia-mm
75 A	AWG 6(or 2*AWG10)	4.1151

**Table 2 External Battery Cable Size Reference**

AWG (American Wire Gauge Size)	Dia-mm (Diameter in millimeters)	Ohms/Kft (Ohms per 1,000ft or 304.8 meter)
0000(4/0)	11.684	0.049
000(3/0)	10.405	0.0618
00(2/0)	9.2657	0.0779
0(1/0)	8.2513	0.0983
1	7.348	0.1239
2	6.5436	0.1563
3	5.8272	0.197
4	5.1893	0.2485
5	4.6212	0.3133
6	4.1151	0.3962

**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	Xtreme 1400	Xtreme 2600
<b>INPUT</b>		
Voltage	220/230/240 VAC	
Voltage Range	170-280 VAC (Computer mode) 90-280 VAC (Inverter mode)	
<b>OUTPUT</b>		
Voltage Regulation (Inv. Mode)	+/-10%	
Transfer Time	10 ms typical	
Waveform	Simulated Sine Wave	
<b>BATTERY &amp; CHARGER</b>		
Battery Voltage	12 VDC	24 VDC
Floating Charge Voltage	13.4DC ±0.25 VDC	26.8 VDC ±0.5 VDC
Max. Charge Current	10A or 20A	
<b>PHYSICAL</b>		
Dimension (DxWxH)	293 X 231.5 X 82.5 mm	
Net Weight (kgs)	2.35	2.55

## 5. 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.

### Connect External Battery

**Step 1-** Take away the cover of external battery terminal.

**Step 2-** Following battery polarity guide printed near the battery terminal!

Place the external battery cable ring terminal over the battery terminal.

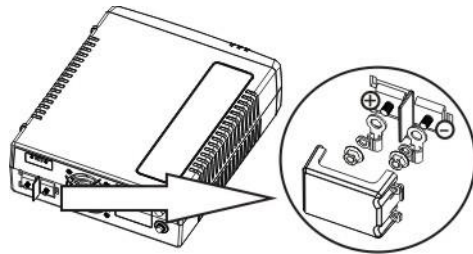
**RED cable to the positive terminal (+);**

**BLACK cable to the negative terminal (-).**

**WARNING!** Please use the appropriate battery cable. Please refer to **Important Safety Warnings Section** for the details.

**Step 3-** Tight the battery cables with the M5 nuts. Do NOT place anything between the flat part of battery terminal and the battery cable ring terminal, or overheating may occur.

(See Fig. 1)



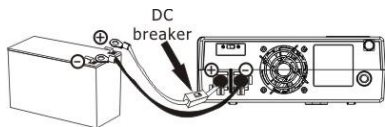
**Fig.1** Battery cable connects to the inverter

**Step 4-** Install a DC Breaker in a positive battery line. The rating of the DC Breaker must be according to the inverter's battery current (75 Amp). Keep the DC breaker off. (see Fig. 2)

**Step 5-** Connect battery cables to the external batteries.

Note: For the user operation safety, we strongly recommend that you should use tapes to isolate the battery terminals before you start to operate the unit.

**1) Single battery connection(Refer to Fig. 2):** When using a single battery, its voltage must be equal to the Nominal DC Voltage of the unit (see below Table 1).

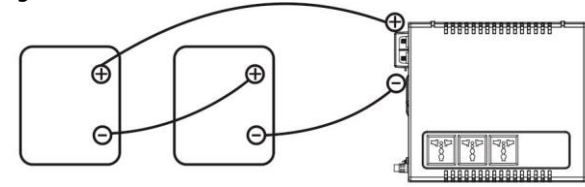


**Fig. 2**

**Table 1**

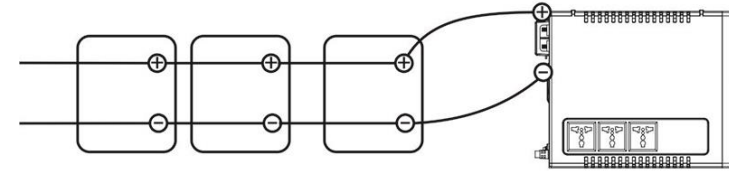
Model	Nominal Battery DC Voltage
Xtreme 1400	12 VDC
Xtreme 2600	24 VDC

**2) Multiple batteries in series connection(Refer to Fig. 3):** All batteries must be equal in voltage and amp hour capacity. The sum of their voltages must be equal to the nominal DC Voltage of the unit.



**Fig 3**

**3) Multiple batteries in parallel connection(Refer to Fig. 4):** Each battery's voltage must be equal to the Nominal DC Voltage of the unit.



**Fig 4**

**Step 6-** Make sure to connect the polarity of battery side and the unit correctly.

**Positive pole (Red) of battery to the positive terminal (+)of the unit.**

**Negative pole (Black) of battery to the negative terminal (-) of the unit.**

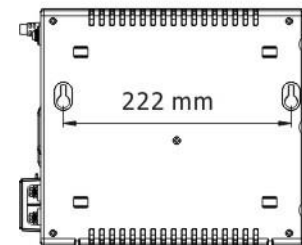
**Step 7-** Put the covers back to the external battery terminals.

**Step 8-** Take the DC breaker on.

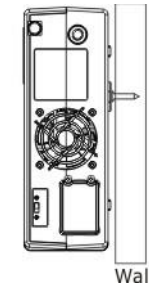
### Mounting the Unit

The unit can be mounted to a wall surface. Please follow below steps:

1. Turn off the unit before mounting.
2. Select an appropriate mounting location. Use a horizontal line and the length of the line must be 222 mm and mark the two ends on the wall. (see chart 1)
3. Drill two marks by screws.
4. Mount the unit by positioning the key-hole slots over the mounting screws. (see chart 2)



**Char 1**





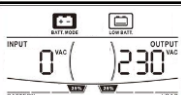
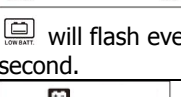

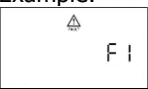

**Chart 2**

## 6. Operation

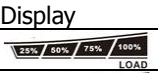


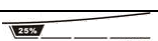
### Power On/Off

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.

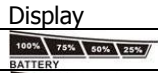

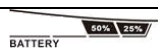
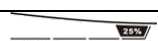
### LCD Display & Audible Alarm

Status		LCD Display	Alarm
Line mode	Unit at power on.		Off
	Unit at power off.		Off
Battery mode	Battery weak	 and The battery icon will flash every 2 second.	Sounding every 1 sec.
	None weak-battery		Off
Fault mode		The mark  <b>FAULT</b> and fault code will be displayed. Short fault: F0 Overload fault: F1 Battery bad: F2 High output voltage: F3 Main Relay Stick:F4 Fan fault: F5 Example: 	Continuously sounding for 30 min. and then alarm off.
The unit is overload.		The mark  will flash every second.	Sounding every 0.5 sec.

#### Load level indicator:

Display	Load Level
	75%~100%
	50%~75%
	25%~50%
	0%~25%

#### Battery level indicator:

Display	Battery Level
	battery voltage $\geq$ 12.5V (25V)
	12.5V (25V) > battery voltage $\geq$ 11.5V (23V)
	11.5V (23V) > battery voltage $\geq$ 11.0V (22V)
	battery voltage < 11.0V (22V)

## Operation Mode Selector

a). "UPS": setting for conventional electrical appliance.

If you select this mode, the unit's input utility range will be 170~280Vac as normal home UPS. If the utility is higher or lower than this range, the unit will transfer to inverter mode automatically. And you can connect the computer systems or other precision home equipment when you select this operation mode.

b). "INV.": setting for energy saving

If you select this mode, the unit's input utility range will be extended to 90~280Vac. If the utility is higher or lower than this range, the unit will transfer to inverter mode automatically. So, you can connect the home equipments, such as light bulb, fluorescent tube, fan, or TV on this mode.

**Caution!!** If you select the "INV." mode and connect the computer to the output of the unit, the computer may reboot if the input voltage is too low to be accepted.

## 7. Trouble Shooting

Use the table below to solve minor problems.

Problem	Possible Cause	Solutions
Utility power is normal but the unit is in inverter 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.
Nothing is 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.
Inverter fault and restart circularity.	The unit is overload.	Verify that the load matches the capability specified in the specification.
	Output short circuit.	Check the load which connect to the unit, and eliminate short circuit load.

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