



# **SINEWAVE**

**UPS<sub>EB</sub>**

**UPS<sub>SW E2</sub>**

**USER'S MANUAL**



**AN ISO 9001:2000 COMPANY**

*Congratulations on selecting Micro Controller Based MICROTEK Sinewave UPS EB / SWE<sup>2</sup> & subsequently joining the family of the millions of satisfied users of Microtek Products.*

*Before using this UPS, Please read this manual carefully to familiarize yourself with all its features, controls and safety precautions.*

**Enjoy Uninterrupted Power !**

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## THE PRODUCT

Sinewave UPS EB / SWE<sup>2</sup> is a electronic power source which stores the energy in battery/batteries connected to it when the AC source is present and converts this energy automatically to AC power when the Input AC source fails and automatically feeds generated AC power to the loads connected & returns to mains when the AC source comes back on the input side.

## SALIENT FEATURES

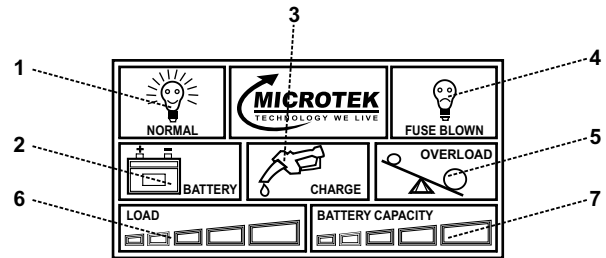
**MICRO CONTROLLER / DSP BASED DIGITAL SINEWAVE UPS EB / SWE<sup>2</sup> are designed using latest state-of-the-art Technology for Better Performance and High Reliability. The Digital Sinewave Technology used enhances the life of the battery and minimum effort has to be put for maintenance.**

- ♦ MICRO-CONTROLLER / DSP BASED Intelligent Control Design.
- ♦ Pure Sine Wave Output.
- ♦ PWM Controlled multistage ATM (Automatic Trickle Mode) Charging.
- ♦ Display Indications (Status & Fault)
- ♦ Smart Overload Sense and Short Circuit Protection
- ♦ Easily Serviceable
- ♦ Auto Reset Feature
- ♦ Mains Input Voltage Range Selection.

## FRONT PANEL- LCM-GRAPHIC LCD DISPLAY MODELS

### I. LED Indications

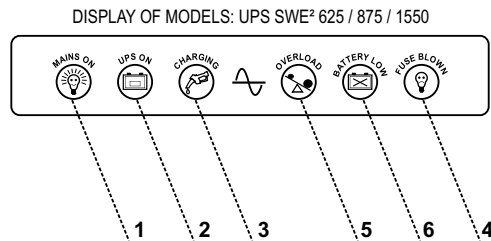
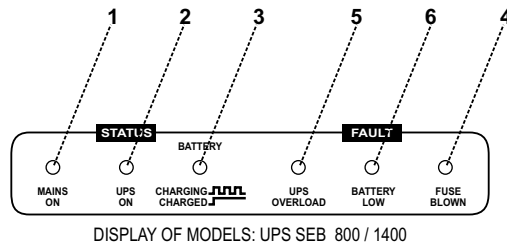
1. NORMAL - Mains ON.
2. BATTERY - Backup ON.
3. CHARGE - Battery Charging.
4. FUSE BLOWN.
5. OVERLOAD - at Output.
6. LOAD - Load Status on Backup Mode.
7. BATTERY CAPACITY / Status.



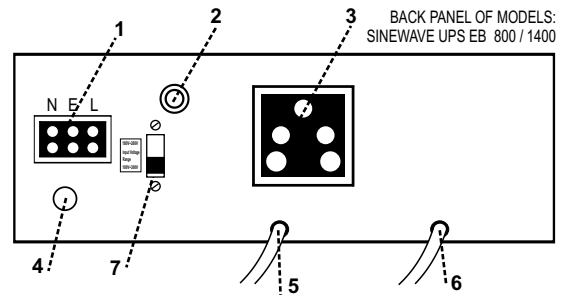
## FRONT PANEL-LED MODELS

### I. LED Indications

1. Mains ON.
2. UPS on Backup.
3. Battery Charging.  
\* LED Continuously Glows when Charged.  
\* LED Blinks when Battery is Charging.
4. Fuse Blown.
5. UPS Overload.
6. Battery Low.



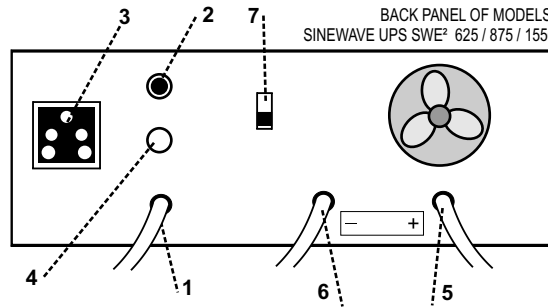
## BACK PANEL



1. Input Terminal Block for Mains AC input.
2. Circuit Breaker (10Amp for Sinewave UPS EB 800 model, and 15Amp for Sinewave UPS EB 1400 model.) for Mains overload/Short Circuit Protection.
3. Output socket for load.
4. Fuse (10Amp. Slow Blow) for UPS.
5. (+) Positive Battery Lead.  $\left. \begin{array}{l} \text{In case of Sinewave UPS EB 800 : 12V Batt. Sys.} \\ \text{In case of Sinewave UPS EB 1400 : 24V Batt. Sys.} \end{array} \right\}$
6. (-) Negative Battery Lead.  $\left. \begin{array}{l} \text{In case of Sinewave UPS EB 800 : 12V Batt. Sys.} \\ \text{In case of Sinewave UPS EB 1400 : 24V Batt. Sys.} \end{array} \right\}$
7. Slide Switch for Mains Input Voltage Range Selection.

## BACK PANEL

BACK PANEL OF MODELS:  
SINEWAVE UPS SWE<sup>2</sup> 625 / 875 / 1550



1. Mains Input Lead for AC input.
2. Circuit Breaker (7Amp for UPS SWE<sup>2</sup> 625 model, 10Amp for Sinewave UPS SWE<sup>2</sup> 875 model, and 15 Amp for Sinewave UPS SWE<sup>2</sup> 1550 model.) for Mains overload/ Short Circuit Protection.
3. Output socket for load.
4. Fuse (10Amp. Slow Blow) for UPS.
5. (+) Positive Battery Lead.  $\left. \begin{array}{l} \text{In case of Sinewave UPS SWE}^2 \text{ 625/875 : 12V Batt. Sys.} \\ \text{In case of Sinewave UPS SWE}^2 \text{ 1550 : 24V Batt. Sys.} \end{array} \right\}$
6. (-) Negative Battery Lead.  $\left. \begin{array}{l} \text{In case of Sinewave UPS SWE}^2 \text{ 625/875 : 12V Batt. Sys.} \\ \text{In case of Sinewave UPS SWE}^2 \text{ 1550 : 24V Batt. Sys.} \end{array} \right\}$
7. Slide Switch for Mains Input Voltage Range Selection.

## TROUBLE SHOOTING

### Problem

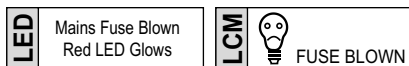
### Possible Cause / Action Suggested

1. Main Supply is Normal but:-

a) **UPS is working on battery**



b) **Fuse Blown**



c) No output from UPS

a) Dead wall socket. Line AC input connections are loose / not proper.

b) Check Glass Fuse at the rear. If blown change it to 10Amp rating. If fuse still blows call authorised service engineer.

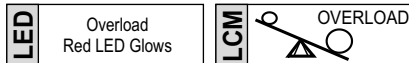
c) **Check Circuit Breaker/Glass fuse** at the rear. Please reset the circuit breaker, or if the fuse is blown, replace it with 10Amp rating fuse. If Circuit Breaker trips or fuse blows again, call electrician to check shorting in the load wiring.

2. UPS trips frequently at Backup mode.

The load is more. Reduce the load and reset the inverter.

3. UPS Mode but no power:-

a) Overload



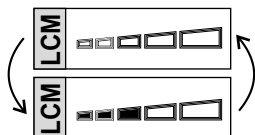
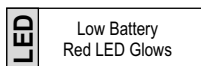
a) Reduce the load and turn the reset switch on the front panel ON-OFF-ON.



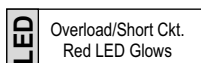
## TROUBLE SHOOTING

### Problem

**b) Low Battery**



**c) Short Circuit**



### Possible Cause / Action Suggested

b) Battery has discharged. Recharge the battery after the mains restoration.

c) Check the wiring and reduce the load and turn the reset switch on the front panel ON-OFF-ON.

4. Backup time less.

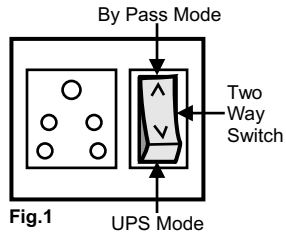
a) Check battery water and charge the battery with mains minimum for 8-12 hours. If still less backup, get the battery checked up from authorised service personnel.

5. UPS does not operate.

a) Check the battery connections and the mains connections.

b) Internal problem. Bypass the UPS as explained in next section and call authorised service personnel.

c) AC Glass fuse blown. Check the fuse at the rear and replace if blown.



1. Input Plug. 2. Output Plug. 3. To Load.

**Fig.1** - Use a two way bypass switch externally & Simply make it ON to Bypass Mode.

**OR**

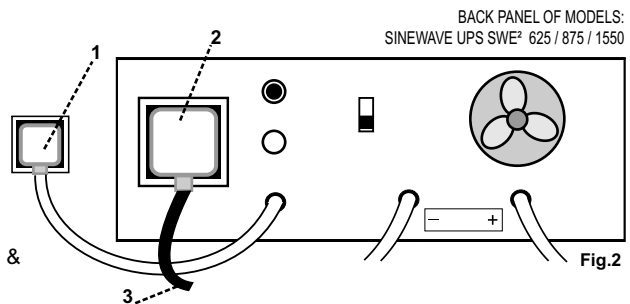
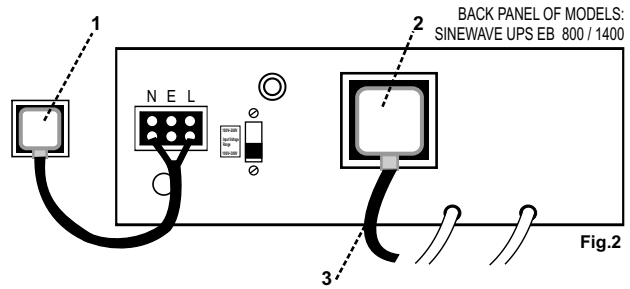
**Fig.2** - Alternatively the UPS can be bypassed by connecting the O/P plug (which connects the load to the UPS) directly to the socket on the wall from where the UPS input has been taken. Care must be taken to ensure that the **UPS-ON SWITCH has been switched off** in order that the battery does not discharge.

To bypass the UPS follow the following steps:

1. Remove input plug from the wall socket,
2. Remove output plug from the UPS's output socket, &
3. Insert output plug into the wall socket.

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## BYPASSING THE UPS



## TECHNICAL SPECIFICATIONS

MODEL SINEWAVE UPS EB/SWE <sup>2</sup>	UPS SEB / MEB 800, 1400	UPS SWE <sup>2</sup> 625, 875, 1550
Input voltage	100V~300V (Wide input voltage range)	
	180V~260V (Normal input voltage range)	
Output Voltage on Mains mode	Same as input	
Output Voltage on UPS mode	210V ± 5%	
Output frequency on UPS mode	50 Hz ± 0.1 Hz	
Switching from Mains to UPS and from UPS to mains	Automatic	
Output waveform on mains mode	Same as Input	
Output waveform on UPS mode	PURE SINE WAVE	
Battery charging current	Constant charging approx 10% of the rated battery current in AH	
Charger	Power Factor Controlled Boost Technology	
Efficiency	> 80%	> 83%
UPS Overload / UPS short circuit	110% / 300%	
UPS Transfer Time	≤ 15 msec.	
Browns out mains voltage	100V ± 40V	
Technology	MICRO CONTROLLER / DSP BASED DESIGN	
Auto Reset Feature	Yes	

*NOTE:- Because of a policy of continuous product improvement, the specifications are subject to change without notice.*

## **SERVICING**

In the unlikely event of your facing problem that has not been sorted out by troubleshooting, kindly contact your authorised dealer and give details of the problem along with the serial number and the date of installation. This would enable a prompt action on part of the authorised service personnel and cause minimum down time.

## **WARRANTY**

Microtek International P. Ltd., warrants each instrument to be free from defects in materials and workmanship for a period of Two years after initial delivery. This obligation is limited to servicing any instrument or part returned to the authorised service center for that purpose and to making good any parts thereof which shall, within the warranty period, be returned to the company or authorised Service center under a written intimation and which to the company's satisfaction be found defective. The company reserves the right to decide as to whether the repair work should be carried out in the company's service center or at site or at any other place.

The freight incurred for to and fro dispatch will have to be borne by the customer and the transit risk for the material will rest with the customer.

The warranty does not extend to any parts of the instrument which have been subjected to misuse or accident. Further, this warranty does not extend to any instrument which has been tampered with by any agency not authorized by the company.

The warranty will last for a period of 24 months from the date of initial delivery/dispatch of the instrument if used within its specifications. The warranty for the replaced components will lapse along with that of the main instrument.

## WARRANTY

MICROTEK International P. Ltd., reserves the right to make changes in design and specifications without notice and without any obligation to install such changes on units previously supplied.

In no event will MICROTEK International P. Ltd., its distributors / dealers be liable for consequential damages or for any expenses incurred by the buyer or user, due to use or sale of products sold by MICROTEK International P. Ltd., directly or through its authorised Distributors / dealers or any third party.

Until superceded otherwise or in contractual form this warranty is made expressly in lieu of all other liabilities and obligations on part of MICROTEK International P. Ltd.

Title to the Instrument passes to the buyer upon delivery to the common carrier.

### POST WARRANTY ANNUAL MAINTENANCE CONTRACT

For Microtek SINEWAVE UPS EB / UPS SWE<sup>2</sup>, Microtek Offers Annual Maintenance Contract to save you from any inconvenience in case of a product failure. Various options are available in select cities for all models of Microtek SINEWAVEUPS EB / UPS SWE<sup>2</sup>:-

***For Details, Contact nearest Microtek Branch or e-mail at: [power.support@microtekdirect.com](mailto:power.support@microtekdirect.com)***

## **SAFETY INSTRUCTIONS**

Always connect the UPS to a two pole, three-wire grounding mains socket. The socket must be connected to appropriate branch protection (fuse/circuit-breaker). Connection to any other type of socket may result in a shock hazard.

To switch off the UPS output in emergency, use switch on the Front panel. Also disconnect the mains cord and battery wires.

Avoid installing the UPS in open, excessively humid place or where there is water. Care must be taken to ensure that the UPS is kept away from heat-emitting appliances such as a heater, blower, oven etc. The unit must also be placed in a manner that it avoids exposure to sunlight. The place of installation should be well-ventilated and easily accessible for servicing.

Foreign objects and water must not enter the UPS. Always ensure that objects containing liquid are avoided near the unit.

Place the Battery Compartment as near as possible to the UPS.

Always Switch Off the UPS and disconnect mains when disconnecting the battery.

## **IMPORTANT**

In the event of any instrument requiring service at our authorised service centre, the following procedure should be adopted.

1. The instrument must be securely packed, preferably in its original packing.
2. The instrument should be despatched on Freight-prepaid basis duly insured.
3. One of our Service / Sales Executive should be informed of the goods Receipt No. and date of despatch along with the name of carrier.
4. The above procedure should only be adopted on the advise of one of our Service / Sales Executive or Dealer.
5. We reserve the right to charge the consignee for any damage incurred during transit.

## **GOING ON VACATIONS**

1. Must put the UPS ON/OFF Switch in OFF Position.
2. Mains Input should remain connected to keep the battery always in charged condition.

In case of any "Customer Support" requirement kindly contact the nearest Microtek Authorised Dealer or Microtek Branch/Service Centre, specifying following details:

- (i) **Model Number & Serial Number of product.**
- (ii) **Name & phone no. of the contact person with full address & e-mail ID if any.**
- (iii) **Reported problem/description of complaint.**

**Note:-** (a) Refer all servicing queries to Microtek Authorised Dealer or Microtek Service Centres only.

(b) Please take care that Serial Number is kept intact and that the product is not allowed to be fiddled (opened) by any unauthorised person; otherwise the warranty will be void.

**Service H.O. Tel:** 011-42733333 **E-mail:** power.support@microtekdirect.com

\*All disputes subject to Delhi jurisdiction only.



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