



# SINEWAVE

INVERTER

USER'S  
MANUAL





**AN ISO 9001:2000 COMPANY**

*Congratulations on selecting Micro Controller Based MICROTEK Sinewave Inverter & subsequently joining the family of the millions of satisfied users of Microtek Products.*

*Before using this Inverter, 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 INVERTER 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 SINEWAVEINVERTERS** 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.

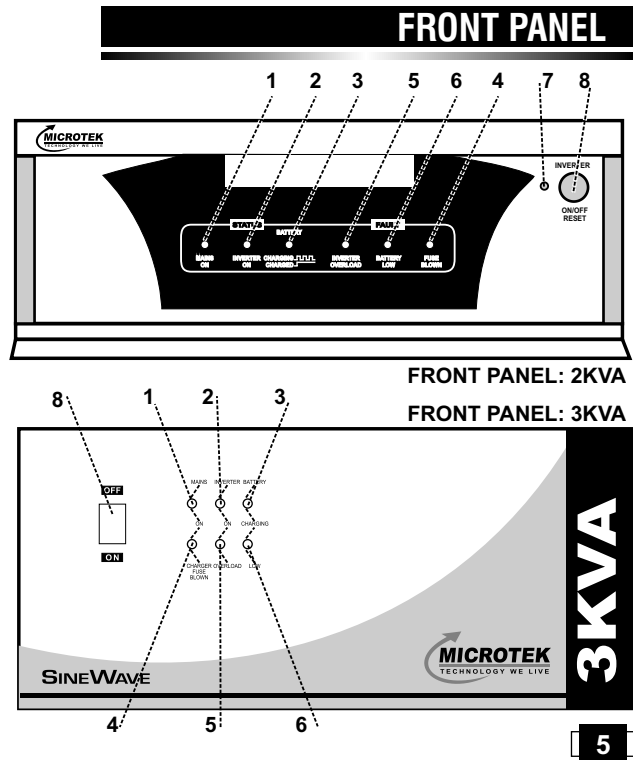
- ◆ MICRO-CONTROLLER / DSP BASED Intelligent Control Design.
- ◆ Pure Sine Wave Output.
- ◆ PWM Controlled multistage ATM (Automatic Trickle Mode) Charging.
- ◆ Display Indications (Status & Fault)
- ◆ Smart Overload Sense and Short Circuit Protection
- ◆ Easily Serviceable
- ◆ Auto Reset Feature

### I. LED Indications

1. Mains ON.
2. INVERTER on Backup.
3. Battery Charging.
  - \* LED Continuously Glows when Charged.
  - \* LED Blinks when Battery is Charging.
4. Fuse Blown.
5. INVERTER Overload.
6. Battery Low.
7. Switch On/Off Indication.

### II. Switch

8. Power On / Off & Reset.

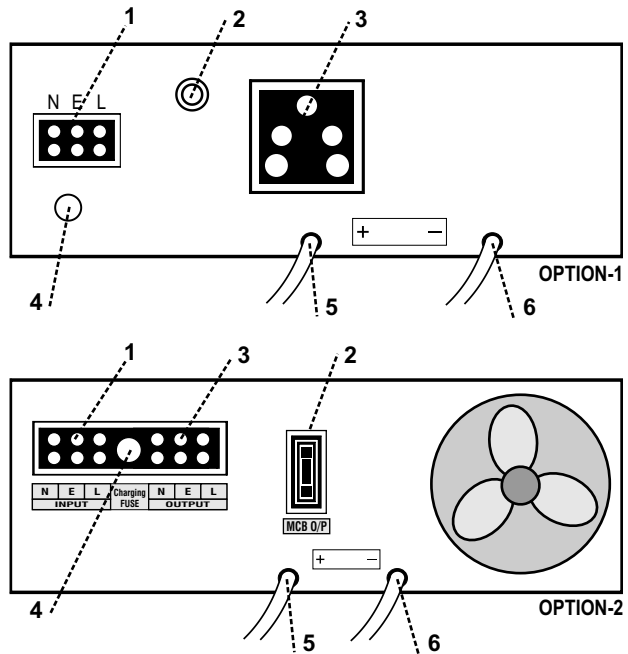


## BACK PANEL - 2KVA

1. Input Terminal Block for Mains AC input.
2. Circuit Breaker/MCB (20Amp for Sinewave Inverter 2KVA) for Mains overload/Short Circuit Protection.
3. Output Socket/Terminal Block for load.
4. Fuse (10Amp. Slow Blow) for Charger.
5. (+) Positive Battery Lead. { Sinewave 2KVA / 36V Batt. Sys. }
6. (-) Negative Battery Lead.

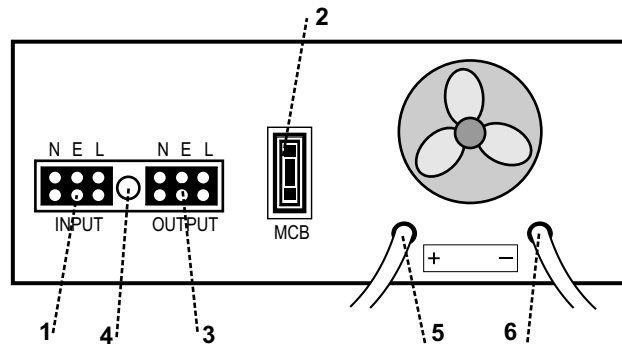
### IMPORTANT:

While installing the inverter, Keep minimum distance of 1feet from the wall, so that air can circulate freely.



## BACK PANEL - 3KVA

1. Input Terminal Block for Mains AC input.
2. MCB (20Amp for Sinewave Inverter 3KVA) for Mains overload/Short Circuit Protection.
3. Output Terminal Block for load.
4. Fuse (10Amp. Slow Blow) for Charger.
5. (+) Positive Battery Lead. { Sinewave 3KVA / 48V Batt. Sys. }
6. (-) Negative Battery Lead.



### IMPORTANT:

While installing the inverter, Keep minimum distance of 1feet from the wall, so that air can circulate freely.

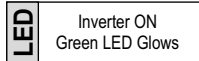
## TROUBLE SHOOTING

### Problem

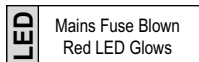
### Possible Cause / Action Suggested

1. Main Supply is Normal but:-

a) **Inverter is working on battery**



b) **Fuse Blown**



c) No output from Inverter

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.

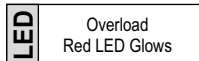
c) **Check Circuit Breaker/Glass fuse** at the rear. Please reset the circuit breaker, or if the fuse is blown, replace it with 10Amp rating fuse. If Circuit Breaker trips or fuse blows again, call electrician to check shorting in the load wiring.

2. Inverter trips frequently at Backup mode.

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

3. Inverter Mode but no power:-

a) Overload



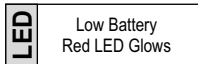
a) Reduce the load and turn the reset switch on the front panel ON-OFF-ON.

## TROUBLE SHOOTING

### Problem

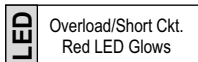
### Possible Cause / Action Suggested

#### b) Low Battery



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

#### c) Short Circuit



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. Inverter does not operate.

a) Check the battery connections and the mains connections.

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

c) Internal problem, call authorised service personnel.



## TECHNICAL SPECIFICATIONS

MODEL SINEWAVE INVERTER	SW 2KVA / SW 3KVA
Input voltage	100V~300V (Wide input voltage range)
	180V~260V (Normal input voltage range) (Optional)
Output Voltage on Mains mode	Same as input
Output Voltage on Inverter mode	220V + 5% -10%
Output frequency on Inverter mode	50 Hz $\pm$ 1 Hz
Switching from Mains to Inverter and from Inverter to mains	Automatic
Output waveform on mains mode	Same as Input
Output waveform on Inverter 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	<b>2KVA:</b> > 80% at 1400W Bulb Load / 36V DC <b>3KVA:</b> > 82% at 2100W Bulb Load / 48V DC
Inverter Overload / Short Circuit	$\geq$ 110% / >250%
Browns out mains voltage	100V $\pm$ 40V
Technology	MICRO CONTROLLER / DSP BASED DESIGN
Auto Reset Feature	Yes
<b>MAX. LOAD CONDITION set at 230V/50Hz AC Input: 2KVA/1400Watt/RL Load , 3KVA/2100Watt/RL Load</b>	

## **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 One year 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 12 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 Inverters, 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 Inverters:-

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

## **SAFETY INSTRUCTIONS**

Always connect the Inverter 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 Inverter output in emergency, use switch on the Front panel. Also disconnect the mains cord and battery wires.

Avoid installing the Inverter in open, excessively humid place or where there is water. Care must be taken to ensure that the Inverter 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 Inverter. Always ensure that objects containing liquid are avoided near the unit.

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

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

## **IMPORTANT**

In the event of any instrument requiring service at our authorised service center, 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 Inverter 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: 011-25479982-85 E-mail: power.support@microtekdirect.com**

**\*All disputes subject to Delhi jurisdiction only.**



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