



The Power of **ONE**



EASTMAN SINO SERIES

User manual

SINO900VA - 1800VA

About This Manual

Purpose

This manual describes the assembly, installation, operation and troubleshooting of this unit. Please read this manual carefully before installations and operations. Keep this manual for future reference.

Scope

This manual provides safety and installation guidelines as well as information on tools and wiring.

Safety Instructions

WARNING

This chapter contains important safety and operating instructions. Read and keep this manual for future reference.

1. Before using the unit, read all instructions and cautionary markings on the unit, the batteries and all appropriate sections of this manual.
2. Do not disassemble the unit. Take it to a qualified service centre when service or repair is required. Incorrect re-assembly may result in a risk of electric shock or fire.
3. To reduce risk of electric shock, disconnect all wirings before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
4. CAUTION - Only qualified person can install this device with battery.
5. For optimum operation of this UPS, please follow required spec to select appropriate cable size. It's very important to correctly operate this UPS.
6. Be very cautious when working with metal tools on or around batteries. A potential risk exists to drop a tool to spark or short circuit batteries or other electrical parts and could cause an explosion.
7. Please strictly follow installation procedure when you want to disconnect AC or DC terminals. Please refer to INSTALLATION section of this manual for the details.
8. Fuses are provided as over-current protection .
9. GROUNDING INSTRUCTIONS -This UPS should be connected to a permanent grounded wiring system. Be sure to comply with local requirements and regulation to install this UPS.
10. NEVER cause AC output and DC input short circuited. Do NOT connect to the mains when DC input short circuits.
11. Warning!! Only qualified service persons are able to service this device. If errors still persist after following troubleshooting table, please send this UPS back to local dealer or service centre for maintenance.

Do's and Don'ts

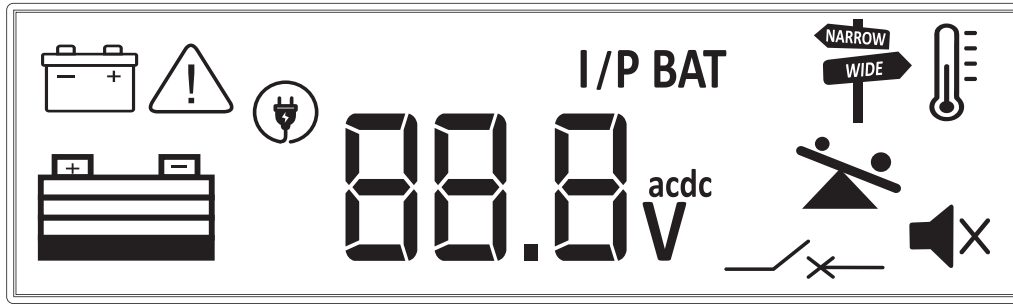


1. Check the battery polarity & connect the product accordingly:
 - Connect black wire to -ve terminal of battery.
 - Connect red wire to +ve terminal of battery.
2. First connect battery to the product. Only after this connect the product with mains.
3. Heavy power load should be bypassed from product connection.
4. Fit all connections tightly.
5. Install the product in covered space with proper ventilation.
6. Use proper and standard plugs for connections.
7. Product should be installed in well ventilated place.
8. Product and battery should be kept in a trolley.
9. Always use recommended battery Ah and number of battery.
10. Keep one foot gap between back of product and wall or any obstruction.
11. Ensure all vents of the connected battery are not obstructed.
12. Please contact to authorized service person in case of any issue in product performance.
13. Disconnect battery & Mains connection before servicing.
14. Product and Batteries should be kept in a dry place.



1. Never connect product to battery without checking correct polarity of battery wires from the product & battery terminals.
2. Never connect electricity (mains) without connecting battery with product.
3. Never connect all the load with the product.
4. Never leave the loose connections.
5. Never install the product under the sky, in tight space, near water tank or kitchen.
6. Never use loose or nonstandard plugs for connections.
7. Never cover or place anything on product.
8. Never place product and battery on floor or product on battery.
9. Never use un recommended battery.
10. Never obstruct the fan ventilation.
11. Never blocks the vents of the connected battery.
12. Do not try to open or repair the product on your own as it may electrocute.
13. Do not use any liquid or detergent powder for cleaning the product.
14. Product should not be kept in dusty, humid or suffocated environment.

Front Panel Description

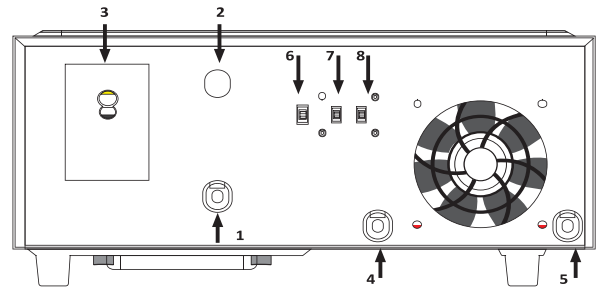


SYMBOL	INDICATION	SYMBOL	INDICATION	SYMBOL	INDICATION
	MAINS ON		WARNING		BATTERY CHARGING/ DISCHARGING STATUS
	BACKUP MODE		OVER LOAD		NARROW/WIDE MODE
	INPUT VOLTAGE/BATTERY VOLTAGE/OUL/Sct/OtP/ Lob/Cbt/OFF		CIRCUIT BREAKER TRIPED		OVER TEMPERATURE
					BUZZER MUTE

Back Panel Description

PURPOSE

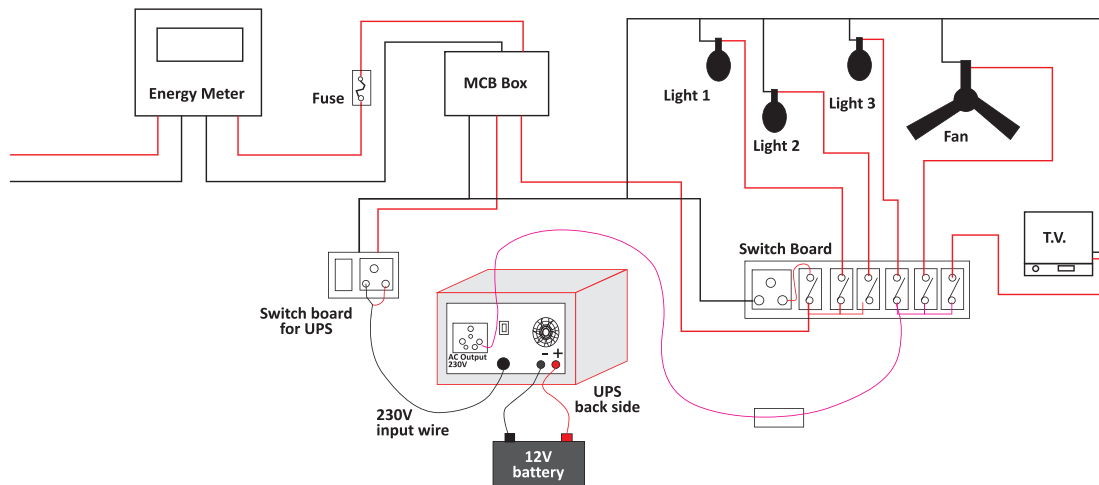
1. Mains input cord.
2. Resettable Circuit Breaker for mains.
3. Output Socket for Load.
4. Negative Battery Lead.
5. Positive Battery Lead.
6. Slide switch to select the charging current.
 - High Charging.
 - Standard Charging.
7. Slide Switch for mains Input Voltage Range. (WIDE: - 90-300V±10V/ NARROW: - 180-260V±10V) Selection.
8. Battery Voltage Selection. (High/ STD or TUB/LC/FLE). Select appropriate Voltage as recommended By the battery manufacturer/Supplier.



CAUTION

Proper selection of switch position is recommended based on the battery manufacturers specifications, for proper backup and also to avoid any damaged to the battery due to wrong selection.

Ups Wiring Diagram For Home



Installation

RECEIPT OF SYSTEM

When the UPS is received, please carry out visual check for any damage during transport. Please immediately contact Service person, Dealer or Transport agency for following conditions occur.

Any damage observed, either external or internal.

Any accessory is missing or damaged.

POSITIONING AND INSTALLATION

The system must be installed in a dry & clean room. To have proper ventilation, the user must ensure enough air exchange in the room. Never install the equipment near liquids or in an excessively damp environment never block the ventilation grates. We are suggesting the distances require to be UPS:

- Minimum distance from the rear wall = 500 mm
- Minimum distance from the top = 500 mm
- Minimum distance from the front wall = 500 mm

ELECTRICAL CONNECTION

- Keep the Battery, Grid Input & Output must be disconnected from the UPS. Connect Grid Input & Battery supply to UPS.
- Ensure the correctness of the battery supply polarity.
- Ensure proper earthing of the equipment.
- Connect load cables.
- After complete installation to power up system press front ON/OFF switch.
- After Connecting Mains Supply switch ON the GRID MCB.

STORAGE

When the System is not installed immediately, it must be stored carefully in a horizontal position, as indicated on the packing and conserved in a dry and sheltered room. Cover it with an envelope so that it is protected from dust. If the period of UPS installation is over 6 months, be sure to charge batteries for at least 8 hours before the first use.

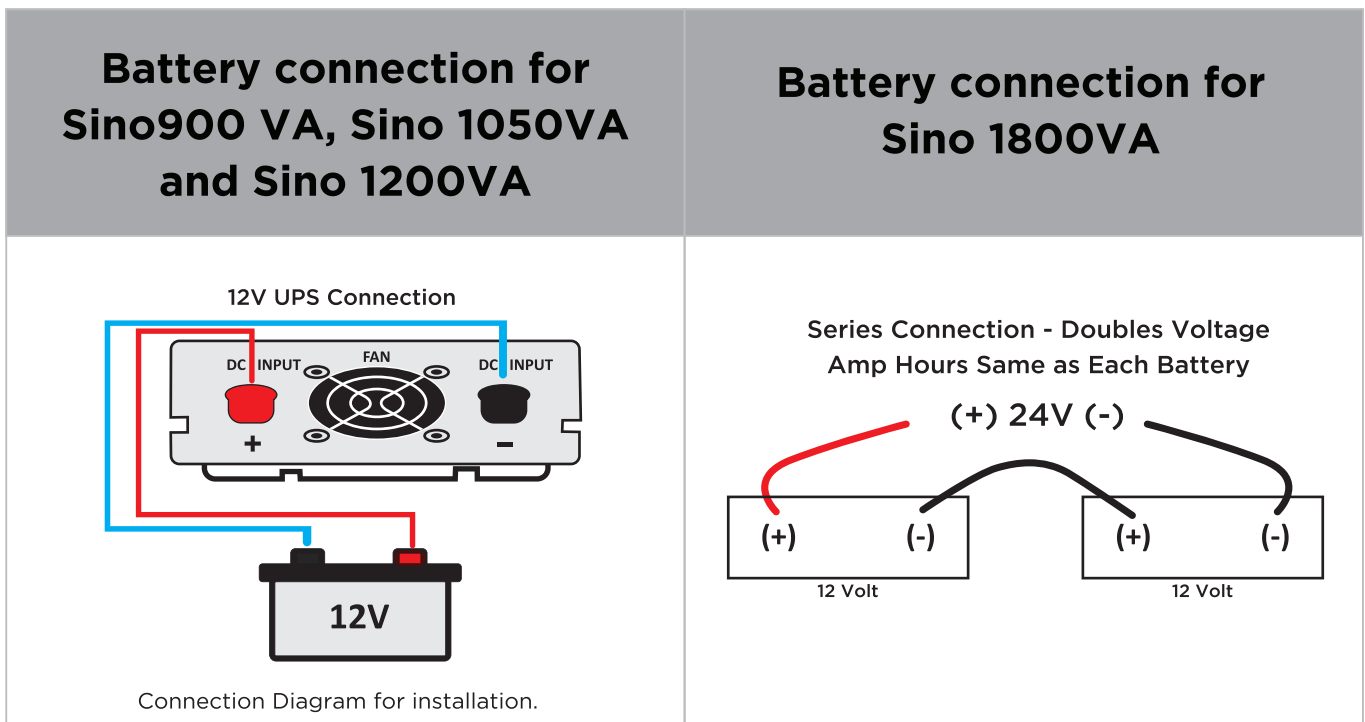
Battery Installation & Connections

CAUTION

Battery polarity must be checked before connections. Wrong polarity connections with UPS will cause Reverse Protection Fuse Blown and may lead to fire hazards.

INSTALLATION SHALL BE DONE BY A KNOWLEDGEABLE PERSON.

Take Precaution while connecting the thimble of Battery cable to battery post, avoid short circuit by Spanner etc.



Steps For UPS Installation

TO BE DONE BY AN AUTHORISED SERVICE PERSON.

- Switch off the supply to the distribution point to which the UPS unit to be connected.
- For extra safety also remove the fuses from the line. Make absolutely sure with measurement that there is no power.
- A readily accessible disconnect device must be incorporated in all fixed input wiring. The disconnect device shall have a contact separation of at least 3mm. The UPS has automatic back feed isolation but for extra safety a warning label can be added on the primary power isolator installed remote from the UPS to warn electrical maintenance.
- Connect the battery/ batteries to UPS as per its requirement.

- Keep the front switch of UPS on OFF Position.
- Connect the Load wire to the right hole of output socket located on the rear panel of UPS.
- Switch on the front switch of the UPS.
- Connect AC input wire to commercial mains Socket.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	RESOLUTION
Low battery backup	<ol style="list-style-type: none"> 1. System overload. 2. Battery deteriorated. 3. Battery is not fully charged. 4. Battery charger fail. 5. High ambient temp. 	<ol style="list-style-type: none"> 1. Check overload condition. 2. Check battery status. 3. Contact our Service Executive. 4. Maintain ambient Temp. as per spec.
Output under / Over voltage	<ol style="list-style-type: none"> 1. Output short circuit 2. Control board failed. 3. Overload. 	<ol style="list-style-type: none"> 1. Check Load. 2. Contact to Service Center. 3. Reduce the Load.
UPS over temperature	<ol style="list-style-type: none"> 1. High ambient temp. 2. Output overload. 3. UPS cooling fan fail. 4. Ventilation Input is blocked. 	<ol style="list-style-type: none"> 1. Check UPS room ventilation is proper. 2. Reduce the load. 3. Contact our service center. 4. Clean ventilation input by blower fan.
No output in UPS mode	Overload trip	Reduce the load & reset the switch at front panel.
Short Circuit/ Overload	Output short	Check or reduce the output load & turn the reset switch on the front panel. call electrician to check shorting.
Over temperature	<ol style="list-style-type: none"> 1. Cooling fan failed. 2. Ventilation input is blocked. 3. Temp. sensor failed. 	<ol style="list-style-type: none"> 1. Contact to service center. 2. Clean ventilation input by blower. 3. Contact to service center.
Mains supply is normal, but ups is working on battery mode	<ol style="list-style-type: none"> 1. CB trip. 2. AC mains out of range. 	<ol style="list-style-type: none"> 1. Reset the circuit breaker to switch on the output, if trip again call electrician to check shorting in the output circuit. 2. Check the Ac mains input voltage, which should be In 90V-300V range.
UPS trips frequently at UPS mode	Overload	Reduce the load & reset The UPS

Technical Specifications

Input Voltage (Wide Mode)	90V-300V ± 10V
Input Voltage (Narrow Mode)	180V-260V± 10V
Output Voltage on Mains Mode	Same as input
Output voltage on UPS Mode	210V + 10%, -15%
Output frequency on UPS Mode	50Hz ± 0.1Hz
Switching from mains to UPS and from UPS to Mains	Automatic
Output Waveform on Mains mode	Same as input
Output Waveform on UPS mode	Sine Wave
Battery Charging Current	Constant charging approx 10% of the rated battery current in AH
Charger	CCCV
UPS overload/UPS Short Circuit	110%/300%
UPS Transfer Time	<=15msec
Technology	MICRO CONTROLLER BASED DESIGN
Auto Reset Feature	Yes
Operating Temperature	-10°C to +45°C

***NOTE:-**

- Power factor may vary depending upon the load.
- Because of a policy of continuous product improvement, specification are subject to change without notice.

Safety

GENERAL

- Read safety notes carefully and thoroughly before operation to ensure correctly use and save this manual properly.
- Installation, maintenance & repair of the equipment should be undertaken by trained, experienced and authorized service personnel or electrical personnel.
- The handling, installation & maintenance of the battery associated with this equipment must be done in accordance with the instructions & safety precautions given by the battery manufacturer. The risk of a possible electrocution is possible when the battery is connected to the UPS. Therefore, do not forget to disconnect the batteries, grid and load before any service is to be done on the UPS.
- To disconnect, remove the battery fuse holder, turn off all MCB, located at the rear of UPS.

We request you to read the Manual prior to installation, performing start-up procedures or system operation or maintenance. Should you require any assistance with more information on installation, please call on our nearest service.

SAFETY WARNINGS

Environment

UPS packing must be recycled in compliance with regulations Battery contains Lead

and is dangerous substance for the environment hence same shall be dispose of by Govt. approved agency only.

Safety for persons:

- The System devices generate large leakage current; grounding of the UPS is necessary before connecting power. Therefore, connect to ground prior to commissioning. Improper connection may damage the device and lead to injuries.
- Hazardous voltage levels are present within the UPS. UPS should be opened by qualified engineer only.
- After the UPS shut down, a dangerous voltage will be present on the battery termination.

Safety for product:

- Suitable upstream protection must be installed with easy access to operators. UPS shall not be installed near liquid or with rooms exceeding specified room temperature and humidity. Place the UPS in a room with proper ventilation and safe distance. All ventilation apertures must be kept free and clean. Refer to manual to perform installation.
- Avoid installing the UPS in location under direct sunlight, running water, or excessive humidity.
- Routine preventive check shall be done.
- Store the UPS in its original Packing, Ensure the arrow on the box is pointing vertically upward direction.
- Store it in a dry location. Storage temperature must be between -10 to 70°C.
- Suitable handling equipment shall be used for handling of UPS.
- The route/passage up to the installation site and the actual foundation location must be capable of supporting the weight of the UPS and its accessories.
- The interior of the UPS, after it is installed, has hazardous AC & DC voltages on exposed terminals and printed circuit boards. This Condition prevails even when all the switches are OFF.

OPERATING INSTRUCTIONS

To Start the System

- Connect earth to the system.
- Check tightness of all power terminals outside of the Cabinet.
- Ensure Battery voltage and Polarity and then connect it to the System. Now turn on UPS through switch.
- While connecting Grid supply, please ensure line & neutral before connection.

To Shut down the System

- Disconnect Grid from the System.
- Switch off the UPS through switch.
- Disconnect System Output Connection.
- Then finally, disconnect the battery connection from the system.

Preventive Maintenance

We would like to inform you that specialized periodic maintenance (with yearly frequency) is recommended for the UPS, in order to offer optimum UPS, in or to offer optimum operating efficiency and avoid downtime of the equipment by authorized service engineer. Maintenance consists of accurate functional checks on electronic and mechanical parts with replacement of parts subject to wear if necessary (typically batteries, fans and capacitors).

Going On Vacations

Must put the UPS ON/OFF switch in the off Position.

INSTRUMENT DESCRIPTION

Eastman Sino Series External Battery UPS

- Single Battery (12V) & Double Battery (24V) System.

SINO 900VA-12V

Recommended Ah 150Ah and Above

SINO 1050VA-12V

Recommended Ah 150Ah and Above

SINO 1200VA-12V

Recommended Ah 200Ah and Above

SINO 1800VA-24V

Recommended Ah 150Ah and Above



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