



The Power of **ONE**



EASTMAN SINO SERIES

User manual

SINO2200VA - 24V

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 the 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



- **Power Switch Indication**

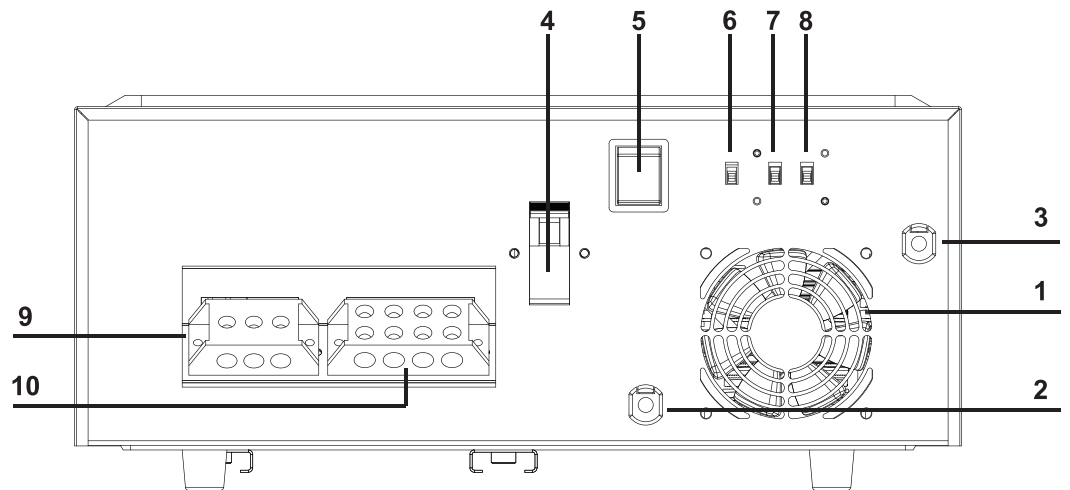
Indicates Power Switch is ON or OFF.

- **Power ON/OFF and Reset Switch**

1. When switch is OFF backup mode is inactive, Mains bypass and Charging is active. Buzzer is muted.
2. Switch ON: All functions of Product works.
3. Switch Reset: Resets the system from all fault conditions.

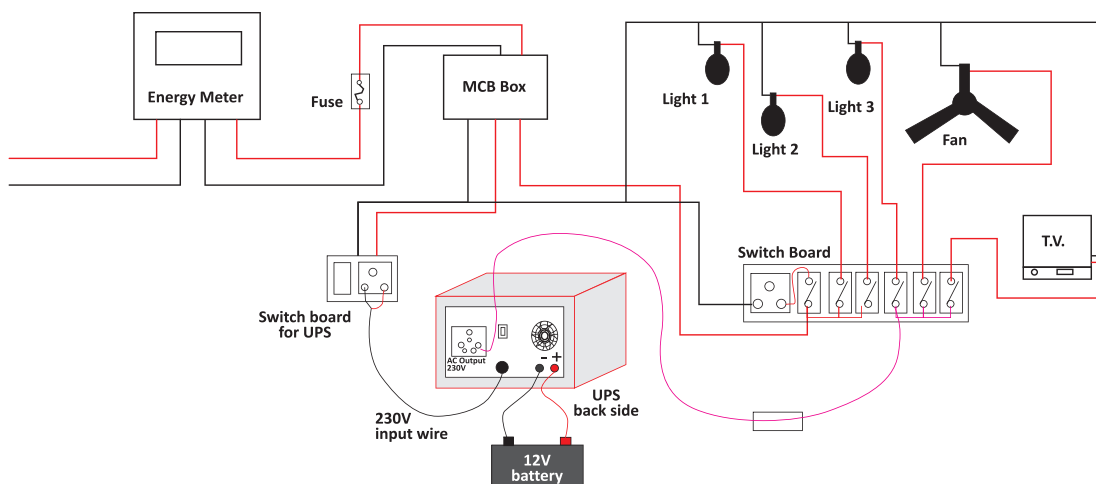
Welcome Message	"" WELCOMES to SINO 2200Va-24V Initializing... SW VERSION 0.0
UPS ON	Inverter SW ON Battery Volt=00.0V Input Range= Mains Absent Battery Selection Mode=TUB/STD Backup Mode = ON Load % -----000 O/P Volt = 000V O/P Freq = 00.0 Hz
Mains ON	AC Input = ...V, Input Freq. = ...Hz Battery Charging=00.0A Battery status= Battery Charging/Charged Battery = 00.0V, Input Range = Mains absent/Bypass Input Selection Mode= Wide/ Narrow Input range Mode = Hi/ LOW Battery Selection Mode = TUB/ STD
Overload Indication/Shutdown	OVERLOAD PLS REDUCE LOAD
Low Battery Indication/ Shutdown	LOW BATTERY = ...V PLS REDUCE LOAD
Short Circuit	Short Circuit Please Check Load
Over Temperature	Over Temp. Please Check Ventilation
MCB Trip	MCB Trip Please Reset MCB

Back Panel Description



1. DC FAN 1.
2. Negative (-ve) Battery Lead.
3. Positive (+ve) Battery lead.
4. Input MCB AC.
5. Bypass Switch (1. UPS, 2. BYPASS).
6. Charging Current Selection Slide Switch (1. High Current 2. Std current).
7. Mains Input Voltage Selection Slide Switch (WIDE/ NARROW) (WIDE:- 90V-300V ±10V / NARROW:-180-260V±10V)
8. Battery Voltage Selection Slide Switch (HIGH / STD OR TUB/LC/FLE). Select Appropriate Voltage as Recommended by Battery Manufacturer/supplier.
9. Input Terminal Block (NEUTRAL ,EARTH, LINE).
10. Output Terminal Block (AC Output for Domestic Load) & TDR Output For Compressor Load.

UPS Wiring Diagram For Home



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.
- A readily accessible disconnect device (like MCB or MCCB) 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 Terminal Block located on the rear panel of UPS.
- Switch on the front switch of the UPS.
- Connect AC input wire to commercial mains Socket.

Important

In the event of any instrument requiring service at our authorized service Centre, the following procedure should be adopted:-

1. The instrument must be securely packed, preferably in its original packaging. Also ensure that nothing inside packaging is damaged. Please transport the product in its original packaging to protect against shock, damage & Impact.
2. We reserve the right to charge the consignee for any damage incurred during transit.
3. The output of the UPS should never be connected to a generator or incoming utility power source.

This situation is far worse than a short circuit. If the unit survives the condition, it will shut down until correction is made.

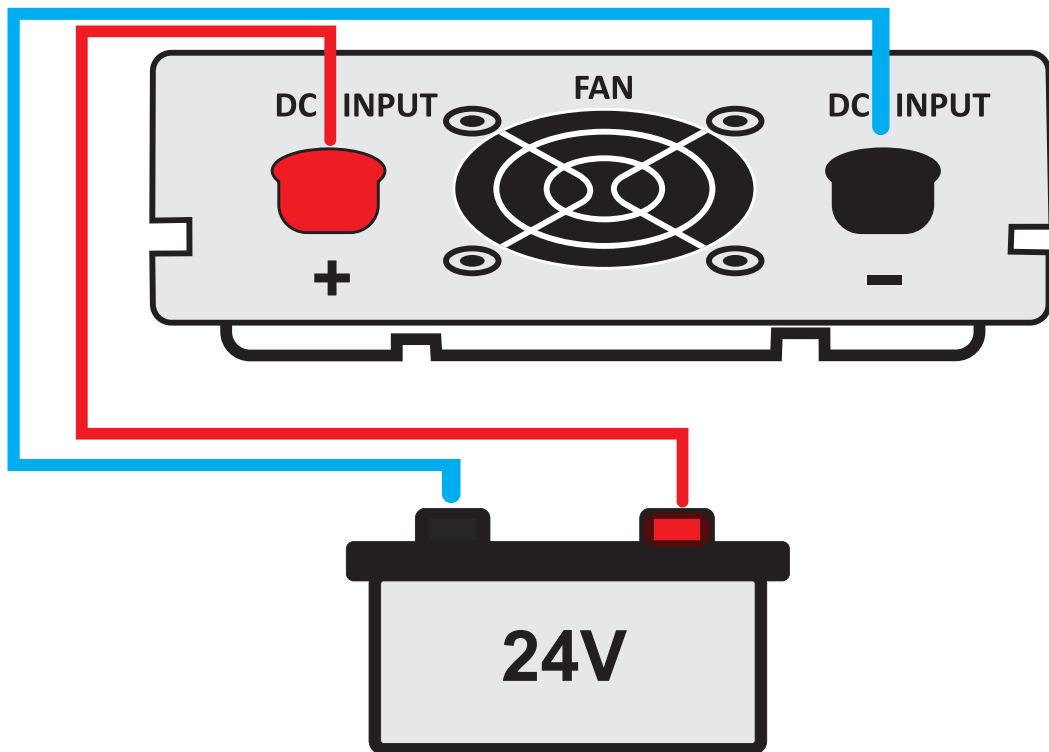
Battery Installation & Connections

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.

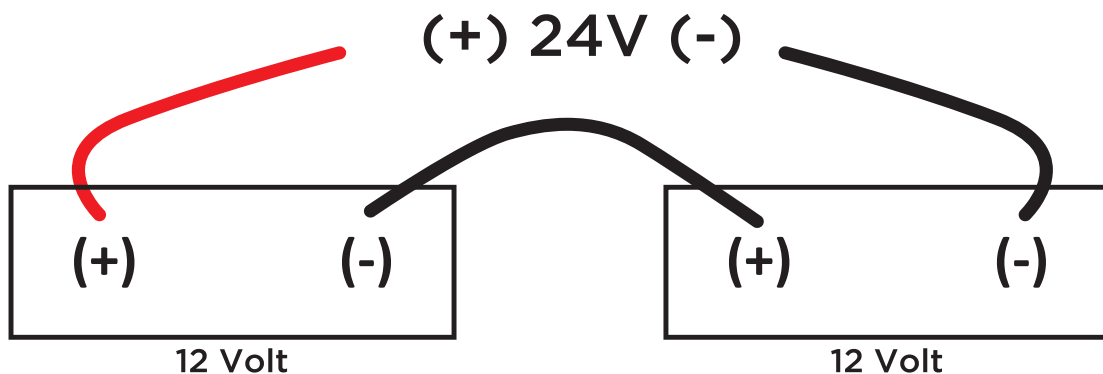
INSTALLATION SHALL BE DONE BY A KNOWLEDGEABLE PERSON.

24V UPS Connection



Connection Diagram for installation.

**Series Connection - Doubles Voltage
Amp Hours Same as Each Battery**



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

Troubleshooting

PROBLEM	POSSIBLE CAUSE	RESOLUTION
Mains supply is normal, but UPS is working on battery mode.	1. MCB Trip. 2. AC mains out of the range.	1. Reset MCB to switch on the output if trip again call electrician to check shorting in the output. 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.
No output in UPS mode	Overload Trip	Reduce the load & reset the switch at front panel.
Low Battery	Battery Discharged	Charge the battery after the mains restoration.
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	1. Cooling Fan Failed. 2. Ventilation input is blocked. 3. Temp. sensor failed.	1. Contact to service center. 2. Clean ventilation input by blower. 3. Contact to service center.

Technical Specifications

Product Specifications	900VA-12V	1050VA-12V	1200VA-12V	1800VA-24V	2200VA-24V
Mains AC Input Range (WIDE MODE)	90V-300V ± 10VAC				
Mains AC Input Range (NARROW MODE)	180V-260V ± 10VAC				
Output Voltage on Mains Mode	Same as input				
Output Voltage on UPS Mode	210V+10%, -15%				
Output Frequency in UPS Mode	50Hz ± 0.1Hz				
Switching from mains to UPS and UPS to Mains Mode	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	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				
Display	Advanced LCM				LCD

*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 Instructions

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 the risk of electric shock. Disconnect all wiring 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 the required specification to select appropriate cable size. It is very important to correctly operate this UPS.
6. Be extremely 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 regulations to install this UPS.
10. NEVER cause AC output and DC input to be short circuited. Do NOT connect to the mains when DC input short circuits.
11. Warning!! Only qualified service persons can able to service this device. If errors still persist after following the troubleshooting table, please send this UPS back to local dealer or service centre for maintenance.

Going on Vacations

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

Instrument Description

Eastman Sino Series External Battery UPS

- Double Battery (24V) System.

SINO 2200VA-24V

Recommended Ah 150Ah and Above





AMPS MIDDLE EAST FZ LLC
#703, 7TH Floor, Deira Twin Tower,
Baniyas Square, Deira, Dubai (UAE)

EASTMAN AUTO & POWER LTD.
ASF Towers, 249, Udyog Vihar Phase-4,
Gurugram, Haryana-122016, India

GUANGDONG EASTMAN NEW ENERGY CO., LTD
#1602, Meilan business centre, Intersection of Xixiang Avenue
and Qianjin Second Road, Bao'an, District, Shenzhen-518102, China



The Power of **ONE**



EASTMAN SINO SERIES

User manual

SINO2200VA - 24V

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 the 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



- **Power Switch Indication**

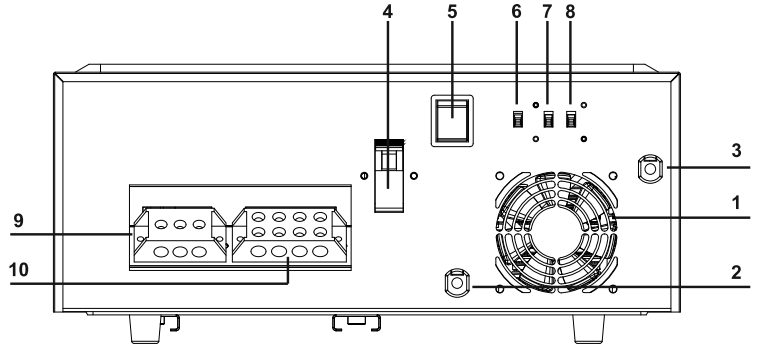
Indicates Power Switch is ON or OFF.

- **Power ON/OFF and Reset Switch**

1. When switch is OFF backup mode is inactive, Mains bypass and Charging is active. Buzzer is muted.
2. Switch ON: All functions of Product works.
3. Switch Reset: Resets the system from all fault conditions.

Welcome Message	"" WELCOMES to SINO 2200Va-24V Initializing... SW VERSION 0.0
UPS ON	Inverter SW ON Battery Volt=00.0V Input Range= Mains Absent Battery Selection Mode=TUB/STD Backup Mode = ON Load % ----000 O/P Volt = 000V O/P Freq = 00.0 Hz
Mains ON	AC Input = ...V, Input Freq. = ...Hz Battery Charging=00.0A Battery status= Battery Charging/Charged Battery = 00.0V, Input Range = Mains absent/Bypass Input Selection Mode= Wide/ Narrow Input range Mode = Hi/ LOW Battery Selection Mode = TUB/ STD
Overload Indication/Shutdown	OVERLOAD PLS REDUCE LOAD
Low Battery Indication/ Shutdown	LOW BATTERY = ...V PLS REDUCE LOAD
Short Circuit	Short Circuit Please Check Load
Over Temperature	Over Temp. Please Check Ventilation
MCB Trip	MCB Trip Please Reset MCB

Back Panel Description



1. DC FAN 1.
2. Negative (-ve) Battery Lead.
3. Positive (+ve) Battery lead.
4. Input MCB AC.
5. Bypass Switch (1. UPS, 2. BYPASS).
6. Charging Current Selection Slide Switch (1. High Current 2. Std current).
7. Mains Input Voltage Selection Slide Switch (WIDE/ NARROW) (WIDE:- 90V-300V ±10V / NARROW:-180-260V±10V)
8. Battery Voltage Selection Slide Switch (HIGH / STD OR TUB/LC/FLE). Select Appropriate Voltage as Recommended by Battery Manufacturer/supplier.
9. Input Terminal Block (NEUTRAL ,EARTH, LINE).
10. Output Terminal Block (AC Output for Domestic Load) & TDR Output For Compressor Load.

UPS Wiring Diagram For Home

