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SU-KAM
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Ref No. : SU/F-7.3.3.09 (Rev. 00)

USER'S MANUAL (IFU)

MATRIX

SINE WAVE HOME UPS

Salient Features

- ◆ Sine Wave Output.
- ◆ Built-in Sealed Maintenance Free (SMF) Battery.
- ◆ Fuzzy Logic Control- A Unique & Advanced Technology.
- ◆ Smart Overload Sense and Short Circuit Protection.
- ◆ Automatic Low Battery Cutout.
- ◆ Smart SMPS based fast Battery Charger with Automatic Power Factor Correction.
- ◆ Instant Switch-over to Protect Sensitive Appliances.
- ◆ Battery Lasts 50% Longer than Ordinary Battery.
- ◆ User-friendly Graphical LED Display.
- ◆ Future Expandability Possible.
- ◆ Automatic No Load Shut Down.

GLOBAL CERTIFICATIONS:

ISO 9001 : 2000
ISO 14001:2004



Before connecting, operating, or adjusting this unit, please read this instruction booklet carefully.
Customer Care : +91 - 11 - 44231111

Terms and conditions of Warranty

- ★ SU-KAM POWER SYSTEMS LIMITED warrant to the original purchaser provided the product is still in possession of and used by the original purchaser from the date of purchase.
- ★ The warranty stands on all Electronics, Metal parts (except LED, switches, fuse and external body) for Home UPS including battery will be for a period of 12 months from the date of purchase.
- ★ The warranty will be automatically terminate on the expiry of the warranty period, even in case of the Sine Wave Home UPS not being in use in the specified period.
- ★ This warranty is valid only if it is duly signed by the authorized dealer.
- ★ The warranty will be invalidated if defects arising in company's opinion by reasons of accident, abuse, misuse, neglect, improper installation (if not undertaken by the company or its representative), fire, flood, or other act of GOD and any other natural calamities and any other unauthorized repairs done or carried out will have to be borne by the purchaser. The problem of fuse blown will not be included in the warranty of the product. The services given for the same will be paid service.
- ★ The company will not be held liable in any condition for any loss or injury or damage caused to life or property or death and disability caused to any form of life for any reason whatsoever.
- ★ The warranty will not apply if the original seals are found broken or tampered with.
- ★ Free service under the terms of warranty will be provided only by authorized representatives/dealers of the company anywhere in India.
- ★ The company expressly denies the right of any person to incur or assure for it any other liability or obligation in connection with the sale of Sine Wave Home UPS.
- ★ Claims if any, to this warranty shall be made only before courts having jurisdiction in New Delhi.
- ★ Now register your product or launch online complaints at www.su-kam.com for prompt after sales services.

Model No. :-----

Serial No. :-----

Address of Purchaser :-----

Date of Purchase :-----

Address of Dealer & :-----

Stamp :-----



Welcome to Su-Kam

Dear Customer,

Congratulations!

We thank you for your trust in Su-Kam products. We take pride in our reputation for product quality and industry proven performance. We are confident that you will be fully satisfied with its performance and that it will serve your power back-up needs. This Matrix Sine Wave Home UPS has been developed using state-of-the-art Micro controller based SineWave technology.

Su-Kam is committed to continual product improvement and feel the best way to accomplish this task is by listening to our valued customers. This commitment gets strengthened every time you buy a Su-Kam product.

Please read this manual to become familiar with its features and various applications.

IMPORTANT SAFETY INSTRUCTIONS & PRECAUTIONS

Before proceeding further kindly go through the safety instructions carefully.

1. Before using the Sine Wave Home UPS read all instructions and cautionary markings on the Sine Wave Home UPS, the Batteries and all appropriate sections of this instruction manual.
2. Do not expose Sine Wave Home UPS to rain, liquids of any type. The Sine Wave Home UPS is designed for interiors only.
3. Do not disassemble the Sine Wave Home UPS, take it to the Su-Kam Engineering Service Center when service or repair is required.
4. To reduce risk of electric shock, disconnect all the wiring before cleaning.
5. Do not cover your Sine Wave Home UPS with any cover or cloth.
6. Do not install this Sine Wave Home UPS on or near flammable materials (Plywood, Chemicals, Gasoline etc.).
7. Be extra cautious when working with metal tools on and around batteries. It could short-circuit the batteries or other electrical parts producing the spark that could cause an explosion.
8. Never disconnect the battery cables while the Sine Wave Home UPS is working.
9. Do not switch on the heavy load like Refrigerators, Motor, Cooler, etc when Sine Wave Home UPS is running on battery backup mode.
10. We recommend that you have point to point wiring of the Sine Wave Home UPS.
11. This Sine Wave Home UPS must be connected to the proper earth and permanent wiring system.





CONTENT

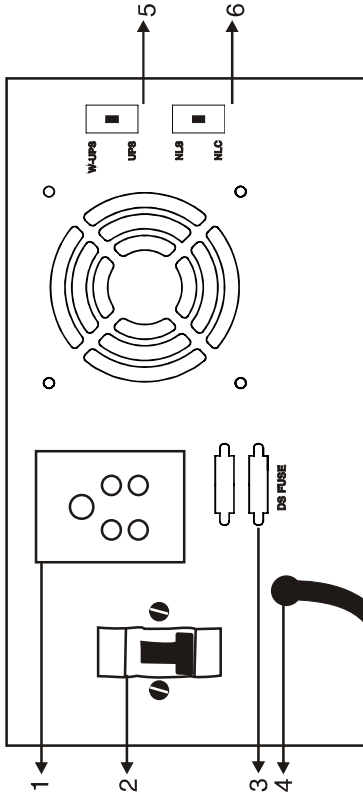
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FRONT VIEW:

On the front panel of the Home UPS there is one Power Active switch and a graphical symbol panel, for indications.

1. **MAINS ON** : This symbol indicates that incoming mains is available display glows continuously. If mains fuse blown then display blinking with buzzer beep.
2. **INV. ON** : This symbol indicates that incoming mains is not available and output power is from Battery.
3. **BATT. CHARGING / CHARGED** : This white graphical glows intermittently during charging and glows continuously when battery is charged.
4. **O.L. / SHORT CIRCUIT** : This graphical symbol shows that either Short circuit has occurred or there is overload on the Battery mode. The Home UPS resets itself automatically and makes 8 attempts in case of overload and 4 attempts in case of short circuit. During overload or short circuit this graphical symbol glows and the buzzer gives an intermittent beeps.
5. **LOW BATT.** : Home UPS will shut down automatically after a few minutes. During this stage the graphical symbol glows and the buzzer beeps continuously and battery is discharged.
6. **POWER ACTIVE SWITCH** : The ON/OFF switch in the front is to be pressed inside to ensure that the Home UPS SWITCH ON in the event of mains failure and connected load is run by Home UPS.
7. **NO LOAD SHUT DOWN INDICATION** : No load shut down can be activated by positioning the switch (given at back panel) towards NLS position. In this case, if load is < 5% then system will shut down automatically. In this condition Inverter ON LED glows continuously and charge LED blinks once in 5 seconds. System will reconnect the load after 20 seconds if load > 5%. No load shut down can be disabled by positioning the switch towards NLC position.

REAR VIEW:



BLACK
RED
GREEN

1. Output Socket 6A/250V AC
2. Input MCB 6A/240V AC
3. Auto DC Fuse 2 X 40 A
4. 3 Core Mains Lead 7.5A/250V AC
5. Toggle Switch for Narrow Window (UPS) / Wide Window (W-UPS) mode
6. Toggle Switch for No Load Continue (NLC) / No Load Shut down (NLS) mode.

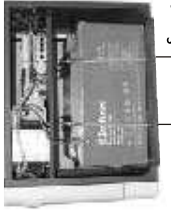
INSTRUCTIONS FOR INSTALLING THE BATTERY

Step A :-



1. Open all screws remove top cover, if already open than start from next step.

Step D :-



2. Push the battery with help of battery handle.

3. Place the battery carefully in cabinet.

Support Clamps

Step B :-



Step E :-



4. Place the holding clamps of battery and tight screws (4 Nos) from front & back side of the battery.

5. Tight battery terminals with battery wire.

Step C :-



Step F :-



6. Place the cover of the Home UPS & tight all the screws.

TROUBLE SHOOTING

Symptoms	Rectifications
Main power is coming. Home UPS shows mains fuse blown on its display panel.	Reduce the load and replace or reset the fuse of specified ratings given at rear side of the Home UPS.
No power during backup mode.	(1) Check if low battery graphic symbol is glowing, switch OFF the Home UPS by power active switch. Allow the battery to charge when the mains is resumed before running the Home UPS on battery again. (2) Check if overload/short circuit graphic symbol is glowing. Reduce load and reset the Home UPS by PowerActive switch.
Home UPS does not operate.	Check the battery connections and the mains connections
Home UPS trips frequently at backup mode.	Reduce the load and restart Home UPS through Power Active Switch.

Symptoms	Problem	Remedy
There is no output power	(1) Low Battery.	Check condition of batteries and recharge.
	(2) Loose or corroded batt. Connections.	Check and clean all connections.
	(3) Loose AC output connection.	Check all AC output connections.
System shuts down after 20 sec no display at all	Output of Home UPS is wired back to its own input.	Check for proper AC input and output wiring.
Low/High AC output voltage	Measuring with the Digital Voltmeter.	Meter must be a true RMS reading meter.
Low surge power	Weak batteries, battery cable too long.	Refer to cable and battery recommendations in this manual.

TECHNICAL SPECIFICATIONS

MODEL CAPACITY	MATRIX
	650VA/12V

VOLTAGE RANGE NARROW WINDOW-UPS MODE (185V-265V ± 10V)

Mains A.C. Low cut	185 ± 10V
Mains A.C. Low cut Recovery	190 ± 10V
Mains A.C. High cut	265 ± 10V
Mains A.C. High cut Recovery	260 ± 10V

VOLTAGE RANGE WIDE WINDOW- W-UPS MODE (105V-285V ± 10V)

Mains A.C. Low cut	105 ± 10V
Mains A.C. Low cut Recovery	120 ± 10V
Mains A.C. High cut	285 ± 10V
Mains A.C. High cut Recovery	275 ± 10V

OUTPUT PARAMETER

Mains Output Frequency	Same as Input (45 Hz-55Hz)
Output Frequency	50.0 Hz. ± 0.1 Hz
Output Voltage with Full Load	200V-230V ± 25V
Overload	Above 110%
Short Circuit protection	>250% Load (Few msec)

BATTERY CHARGING

FLC based SCR charging with Soft start over full range of mains 140V to 285V ± 10V	
Charging Current	8.0A/10A. ± 2.0 Amp
Charging Boost Voltage	14.2V ± 0.2V each Battery
Charging Float Voltage	13.6V ± 0.2V each Battery
Battery Lower Voltage Cut	10.2V ± 0.2V each Battery (Depending on Load)
Recommended Battery capacity	70AH-90AH

Dimension (W X D X H) in mm	243 x 460 x 360
Weight(Kg)	35.6

Note: Specifications subject to change without prior Notice