

# USER'S MANUAL (IFU)

**HIGH FREQUENCY PURE SINE WAVE INVERTER**  
**800VA/1400VA**

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## Salient features

- ◆ Micro controller based technology using MOSFET
- ◆ SMPS Battery Charger
- ◆ Smart overload sense and short circuit protection
- ◆ Automatic low battery cutout
- ◆ Low charger ripple voltage to enhance battery life
- ◆ Great power saving
- ◆ User Friendly Graphical Display
- ◆ Light weight with sleek aesthetic looks
- ◆ Pure Sine Wave output to run all appliances satisfactory

### GLOBAL CERTIFICATIONS:

**ISO 9001 : 2000**  
**ISO 14001:2004**

R&D  
Recognised  
by  
MINISTRY OF SCIENCE & TECHNOLOGY  
GOVERNMENT OF INDIA

Before connecting, operating, or adjusting this unit, please read this instruction booklet carefully .

*Dear Customer,*

We feel immense pleasure while introducing Su-Kam High Frequency Pure Sine Wave Inverter designed and developed using state-of-the-art Microcontroller based technology using MOSFET.

The distinguishing features of the Su-Kam High Frequency Pure Sine Wave Inverter are:

<ul style="list-style-type: none"> <li>◆ Pure Sine wave output to run all the appliances</li> <li>◆ High Frequency operation hence light weight with sleek aesthetic looks</li> <li>◆ Smart Overload Sense and Short Circuit Protection</li> <li>◆ Automatic Low Battery Cutout</li> <li>◆ Lesser water topping required</li> </ul>	<ul style="list-style-type: none"> <li>◆ Pure DC current SMPS charger, increases 50% battery life</li> <li>◆ Peak Power output 4 times</li> <li>◆ User Friendly Graphical Display</li> <li>◆ Future Expandability possible</li> <li>◆ Lesser components so higher reliability</li> </ul>
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This manual will help you to better understand your Pure Sine Wave Inverter, increase your convenience in using it and maximize its benefits for you.

Feel free to contact our authorized dealer or us at [info@su-kam.com](mailto:info@su-kam.com) or visit our website [www.su-kam.com](http://www.su-kam.com) anytime for any clarification or more information. We value your suggestions and comments. Su-Kam is committed to continual product improvement and feel the best way to accomplish this task by listening our valued customers. This commitment gets strengthened every time you buy a Su-Kam product.

We appreciate the support you have shown us through the purchase of our product. Please read this manual to become familiar with its features and various applications.

**Regards,  
Su-Kam Power Systems Limited**

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## KNOWING YOUR INVERTER

Now let's begin the journey to explore various aspects of your Su-Kam High Frequency Pure Sine Wave Inverter. Welcome aboard!

In its most basic form, an Inverter transforms Direct Current (DC) to Alternating Current (AC). The battery bank with the Inverter acts as a reservoir to ensure continuous supply of power whenever mains supply from utility power is not available.

### FRONT PANEL:



MAINS ON    INV. ON    BATT. CHRG.    OVER LOAD    BATT. LOW

On the front panel of the Inverter there is one ON/OFF power active switch, and a graphic symbol panel for indications.

1. **MAINS ON** : This graphical symbol, when glows, indicates that the incoming mains is available.
2. **INV. ON** : This graphical symbol, when glows indicates that the incoming mains is not available and the output is from Inverter.
3. **BATT. CHARGING / CHARGED** : This graphical symbol shows that the mains line is coming and side by side the charging of batteries is also taking place. This graphical symbol glows intermittently during charging and glows continuously when battery is charged.
4. **FUSE BLOWN** : Mains fuse blows off when the Inverter is operating on mains and the load connected through the Inverter exceeds the specified limits prescribed for the Inverter. In this case, at once reduce the extra load and replace the glass fuse given at back to restore the mains line. During this stage, the Mains ON graphic symbol glows intermittently with buzzer beeps .

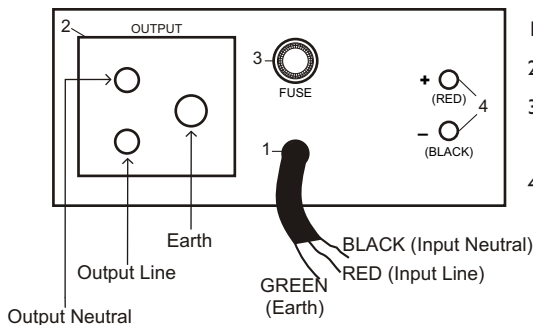
5. **BATT.LOW** : This graphical symbol shows that the battery voltage goes down to a low limit during discharge. After this indication Inverter will shut down automatically after a few minutes. During this stage graphical symbol glows and the buzzer gives continuous beep.
  
6. **OVERLOAD/SHORT CIRCUIT** : This graphical symbol shows that either Short circuit has occurred or there is Overload on the Inverter. The Inverter resets itself automatically and makes 8 attempts in case of overload and 4 attempts in case of short circuit to turn on again, if the overload or short circuit continues even after these attempts, it turns off permanently and will turn on only after ON/OFF power active switch is turned OFF and then turned ON. In the event of unsuccessful attempts it automatically shuts down. During overload or short circuit, graphical symbol lights up and the buzzer gives beep. The beep is intermittent in case of overload and short circuit. If there is short circuit at the output, the Inverter will turn off permanently after a few attempts. It can be reset by removing short circuit and then switching OFF and ON the power active switch.

## BACK PANEL:

The Inverter has two battery wires coming out from the rear side, a Fuse Holder, an output Socket and an input mains Cable. We connect the two battery wires to the terminals of the battery, the red colored to positive terminal and the black colored to the negative. A three core input cable is used to connect the Inverter to incoming AC Mains. Ensure that incoming phase (or line) is connected to line (Red wire), neutral is connected to neutral (Black Wire) and earth is connected to earth (Green Wire). After this the output is connected through the output socket at the rear of the Inverter.

**Note : Do not connect Input and Output neutral together in any case during installation.**

### Rear View of 800/1400 VA



1. 3 Core Input Wire (Mains Input for Inverter)
2. 15A AC Output Socket.
3. F6.3A/250V (Fast Blow) Fuse for 800VA  
F10A/250V (Fast Blow) Fuse for 1400VA
4. Battery Wires.

## IMPORTANT SAFETY INSTRUCTIONS

***Before proceeding further kindly go through the safety instructions carefully.***

### **General Precautions:**

1. Before using the Inverter read all instructions and cautionary markings on the Inverter, the Batteries, all appropriate section of this instruction manual.
2. Do not expose Inverter to rain, liquids of any type. The Inverter is designed for interiors only.
3. Do not disassemble the Inverter, take it to a Su-Kam Engineering Service Centre when service or repair is required. Opening by unqualified personnel entails electric shock or fire hazard.
4. To reduce risk of electric shock, disconnect all wiring before cleaning.

### **5. Warning-Risk of Explosive gases**

**WORKING IN THE VICINITY OF A LEAD ACID BATTERY MAY BE DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL OPERATION.**

#### **Provide ventilation to outdoors from the Battery compartment.**

The battery enclosures should be designed to prevent accumulation and concentration of hydrogen gas in “pockets” at the top of the compartment.

Vent the battery compartment from the highest point. A sloped lid can also be used to direct the flow to the vent opening location. To reduce the risk of battery explosion, follow all the instructions of batteries supplier or any equipment you intend to use in the vicinity of batteries.

6. Do not cover your Inverter with any cover or cloth.
7. Do not install this Inverter on or near flammable materials (plywood, Chemicals, gasoline etc.).
8. Be extra cautious when working with metal tools on and around batteries. It could short-circuit the batteries or other electrical parts, producing a spark that could cause an explosion.
9. Remove conductive jewelry such as rings, bracelets, necklaces and watches when working with a battery. A battery can produce a short-circuit current high enough to weld a ring or causing severe burns.

**IMPORTANT PRECAUTIONS:**

The output side of the Inverter AC wiring should never be connected to a generator or incoming utility power. This condition is far worse than a short circuit. If the unit survives this condition, it will shut down until correction is made.

**Note :** Never disconnect the battery cables while the Inverter is delivering power or battery charger is operating. The Power Active Switch has no effect on the charger; it turns off only the power output during backup mode. To disconnect the batteries for service:

- (a) turn off the power switch.
- (b) disconnect all AC power.
- (c) disconnect all the battery cables.



**Special Notices:**

- It is recommended to have point to point wiring of the Inverter.
- The Inverter Charger is for use with a nominal battery supply voltage of 12V DC for 800VA and 24V DC for 1400VA.
- No AC or DC disconnects are provided as an integral part of this inverter. Both AC and DC disconnects must be provided as part of system installation.
- No over current protection for the battery supply is provided as an integral part of this inverter. Over current protection of the battery cables must be provided as part of the system installation.
- No over current protection for the AC output wiring is provided as an integral part of this inverter. Over current protection of the AC output wiring must be provided as part of the system installation.
- **GROUNDING INSTRUCTIONS:** This Inverter must be connected to a grounded, permanent wiring system.

**NOTE: Do not connect Input and Output neutral together in any case during installation.**

## TROUBLE SHOOTING

Symptoms	Rectifications
Main power is coming. Inverter shows mains fuse blown on its display panel	Reduce the load and replace the glass fuse of specified ratings given at rear side of the Inverter.
No power during backup mode	(1) Check if low battery graphic symbol is glowing, switch OFF the Inverter by power active switch. Allow the battery to charge when the mains is resumed before running the Inverter on battery again. (2) Check if overload/short circuit graphic symbol is glowing. Reduce load and reset the Inverter by PowerActive switch.
Inverter does not operate	Check the battery connections and the mains connections
Inverter trips frequently at backup mode	Reduce the load and restart Inverter 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 Inverter is wired back to its own input.	Check for proper AC input and output wiring.
Low/High AC output voltage	Measuring with the wrong type 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.
Unit is excessively hot	Internal cooling fan is not working.	Contact authorised Su-Kam service engineer.

**TECHNICAL SPECIFICATIONS**

<b>MODEL</b>	SLEEKY <sub>DX</sub>	
<b>CAPACITY</b>	800VA/12V	1400VA/24V

**VOLTAGE LIMITS**

Mains A.C. Low cut	115 ± 5V
Mains A.C. Low cut Recovery	125 ± 5V
Mains A.C. High cut	285 ± 5V
Mains A.C. High cut Recovery	270 ± 5V

**OUTPUT PARAMETER**

Mains Output Frequency	Same as Input (45 Hz-55Hz)
Inverter Mode Output Frequency	50.0 Hz. ± 0.1 Hz
Inverter Mode Wave form	Sine Wave
Overload	Above 110%
Short Circuit protection	>300% Load (Few msec)

**BATTERY CHARGING**

SMPS Based Charger with Pure DC Current Charging		
Maximum Charging Current Limit	10 ± 1.0 Amp	
Charging Float/Boost Voltage	13.7V ± 0.1V per 12V battery	
Battery Lower Voltage Limit	10.3V ± 0.2V per 12V battery	
Recommended Battery capacity	135AH-165AH,12V	
Number of Batteries	1	2

**TECHNOLOGY**

Microcontroller based state-of-the-art technology using highly reliable MOSFET
SMPS Based Pure DC charger

**ENVIRONMENT**

Storage Temperature	0-50°C
Operating Temperature	0-40°C
Humidity	0-90% Non-Condensing

<b>Dimension (W x D x H) in mm</b>	<b>320x285x102</b>	<b>320x285x122</b>
<b>Weight (Kg)</b>	<b>4.5Kg</b>	<b>5.7Kg</b>

### *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 parts (except LED's, switches and external body) for Inverter will be for a period of 24 months.
- ★ The warranty will be automatically terminate on the expiry of the warranty period, even in case of the Inverter 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 is in no way are will be held liable 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 Inverter.
- ★ Claims if any, to this warranty shall be made only before courts having jurisdiction in New Delhi.
- ★ Please send your query or Complaint to [info@su-kam.com](mailto:info@su-kam.com)

#### WARRANTY CARD

Model No. : -----  
 Serial No. : -----  
 Name of Purchaser : -----  
 Address : -----  
 Date of Purchase : -----  
 Dealer's Name : -----



# SU-KAM OFFICES ADDRESSES

## Hyderabad

Plot No. 81, Syndicate Bank Colony  
West Marredally  
Secunderabad-500 026  
Andhra Pradesh  
Tel.: +91-40-32986828, 09347006004  
9392044929  
E-mail: hyd@su-kam.com

## Bangalore

H.No.449, Ground Floor, 7 th Cross,  
6th Main, MICO Layout, BTM II Stage,  
Bangalore 560076  
Karnataka  
Tel: 080-32961610, 09341444693  
E-mail : bangalore@su-kam.com

## Chennai

14/50, Gandhi Road, Arumbakkam,  
Chennai- 600106  
Tamil Nadu  
Tel.: 044-32984497, 09344614009  
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## Pune

Sr. No. 173/2 A, Shop No. 8 & 9,  
Suryavanshi Towers  
Behind Suyoba Kanyalaya,  
Bhekaraninagar, Phursungi Taluka, Haveli  
Pune 418302  
Tel. : 020-32303900, 09370586864  
E-mail: pune@su-kam.com

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## Vadodara

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Indi Estate (GIDC)  
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## Indore

25, S D A Compound  
Lasutia Thana, Devas Naka  
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Madhya Pradesh  
Tel: +91 9329560222, 9301157800  
E-mail: indore@su-kam.com

## Ludhiana

Shop No. 15, Anmol Market  
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Ludhiana 141002  
Punjab  
Tel: +91 9317547976, 9317547978  
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## Ranchi

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## Jaipur

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## Jammu

76/6, Trikuta Nagar  
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Jammu 180012  
J & K  
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## Ghaziabad

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9305191976, 9313777563  
E-mail: ghaziabad@su-kam.com