

# USER'S MANUAL (IFU)

## PURE SINE WAVE HOME UPS

### Salient features

- ◆ Pure Sine wave output to run all the appliances
- ◆ 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
- ◆ Peak Power output 300%
- ◆ User-friendly Graphic display
- ◆ Future Expandability possible

#### 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 .

Customer Care : +91 124 4170561-566

*Dear Customer,*

Congratulations for choosing Su-Kam Pure SineWave Home UPS! This Pure Sine Wave Home UPS has been developed using state-of-the-art Micro controller based technology.

Some of the distinguishing features of the Su-Kam Pure SineWave Home UPS :

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>◆ Pure Sine Wave output to run all the appliances</li> <li>◆ Fuzzy logic control- a unique &amp; advanced technology</li> <li>◆ Smart Overload Sense and Short Circuit Protection</li> <li>◆ Smart SMPS based fast battery charger with automatic power factor correction</li> </ul> | <ul style="list-style-type: none"> <li>◆ User Friendly Graphical display</li> <li>◆ Peak Power output 3 times</li> <li>◆ Very Fast Switch over time, Provides long power back-up, both for your PC and home appliances</li> <li>◆ Future Expandability possible</li> <li>◆ Automatic Low Battery Cutout</li> </ul> |
|---|--|

This manual will help you to better understand your Pure SineWave Home UPS, 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). You can also 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 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.

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**

## CONTENT

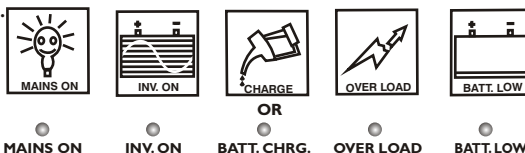
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## KNOWING YOUR HOME UPS

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

Su-Kam's Home UPS is a truly futuristic concept. It works as an offline (Stand-by) UPS having options of user-selectable mains voltage (narrow / wide window) and switch over time from mains to backup mode or vice-versa. It ensures continuous supply of power from the battery bank whenever mains supply from utility power is not available.

### FRONT VIEW:



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

1. **MAINS ON** : This graphical symbol, when lit, indicates that incoming mains is available.
2. **INV. ON** : This graphical symbol, is lit when the incoming mains is not available and the output is from Home UPS.
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 Home UPS is operating on mains and the load connected through the Home UPS exceeds the specified limits prescribed for the Home UPS. 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, when glows indicates that the battery voltage has gone down to the lower limit during discharge. After this indication HOME UPS will shut down automatically after few minutes. During this the buzzer gives a continuous beep.
  
6. **OVERLOAD/SHORT CIRCUIT** : This graphical symbol, when glows indicates that either Short circuit has occurred or there is Overload on the Home UPS . The Home UPS 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 HOME UPS 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:

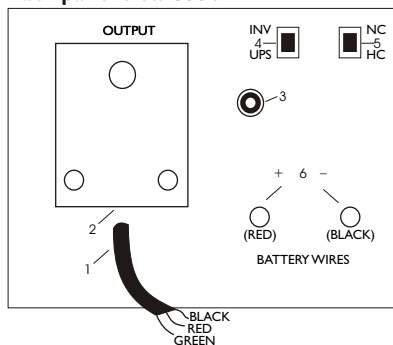
The Home UPS has two battery wires coming out from the rear side, a Fuse Holder, two toggle switches, an output Socket and an input mains Cable (or input terminal block). Connect the two battery wires to the terminals of the battery, the red colored to the positive terminal and black colored to the negative one. A three core input cable is used to connect the home UPS to the 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 Home UPS.

**Note :** 1. Position the Toggle Switch(4) at the rear panel to Narrow Window (UPS) mode if you want to run PC load otherwise always place the switch to Wide Window (INV) mode.

2. Position the Toggle switch(5) to HC mode during frequent power cuts for fast charging of battery otherwise place to NC mode.

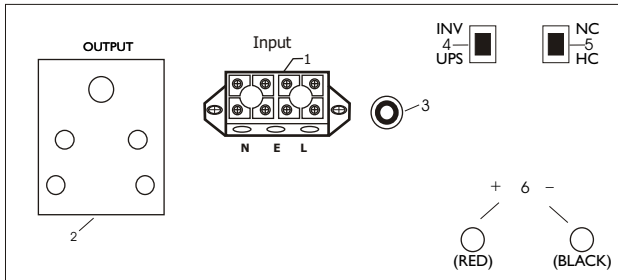
## REAR VIEW:

### Back panel view 800VA



1. 3 Core Input Wire (Mains Input for Home UPS).
2. 15A AC Output Socket.
3. F6.3A/250V (Fast Blow) Fuse.
4. Toggle Switch for Narrow Window (UPS) / Wide Window (INV) mode.
5. Toggle Switch for Normal Charging Current (NC) / High Charging Current (HC) mode.
6. Battery Wires 1m long.

**Back panel view | 400VA**



1. Input terminal block (Mains Input for Home UPS).
2. 15A AC Output Socket.
3. T10A/250V (Slow Blow) Fuse.
4. Toggle Switch for Narrow Window (UPS) / Wide Window (INV) mode.
5. Toggle Switch for Normal Charging Current (NC) / High Charging Current (HC) mode
6. Battery Wires 1m long.

**IMPORTANT SAFETY INSTRUCTIONS**

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

**General Precautions:**

1. Before using the Home UPS read all instructions and cautionary markings on the Home UPS, the Batteries, all appropriate section of this instruction manual.
2. Do not expose Home UPS to rain, liquids of any type. The Home UPS is designed for interiors only.
3. Do not disassemble the Home UPS, 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 Home UPS with any cover or cloth.
7. Do not install this Home UPS 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 Home UPS 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 Home UPS 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:**

- Do not switch on the heavy load TV, Refrigerators, Motor, Cooler, etc when Home UPS is running on battery backup and is in UPS mode. This may cause rebooting of your computer.
- Avoid connecting the stabilizer between utility power and Home UPS. The AVR of stabilizer may cause your computer to reboot.
- We recommend that you have point to point wiring of the Home UPS.
- **GROUNDING INSTRUCTIONS:** This Home UPS must be connected to a grounded, permanent wiring system.

## TROUBLE SHOOTING

Symptoms	Rectifications
<b>Main Power is coming. Home UPS shows mains fuse blown on its display panel</b>	Reduce the load and replace the glass fuse of specified rating given at the rear side of the Home UPS.
<b>No Power during backup mode</b>	Check if low battery LED is glowing, switch OFF the Home UPS by power active switch. Allow the battery to charge before running the Home UPS on battery again.
	Check if overload/short circuit LED is glowing. Reduce load and reset the Home UPS by Power Active switch.
<b>Home UPS does not operate</b>	Check the battery connections.
<b>Home UPS trips frequently at back up mode</b>	Reduce the load and restart the Home UPS through the power active switch.

Symptoms	Problem	Remedy
<b>There is no output power</b>	Low Battery	Check condition of batteries & recharge
	Loose or corroded battery connections	Check and clean all connections
	Loose AC output connections	Check all AC output connections
<b>System shut down after 20 sec, no display</b>	Output of Home UPS is wired back to its own input	Check the proper AC input and output wiring
<b>Low/High AC output voltage</b>	Measuring with the wrong voltmeter	Meter must be a true RMS reading meter
<b>Low surge power</b>	Weak batteries or battery cables too long	Refer to cable and battery recommendations in this manual

**TECHNICAL SPECIFICATIONS**

MODEL	STURDY	FALCON/FALCON-i	PROTON	SMILEY/SMILEY-i
CAPACITY	600VA/12V	800VA/12V	800VA/12V	1400VA/24V

**VOLTAGE LIMITS NARROW WINDOW (UPS MODE)**

Mains A.C. Low Cut	185 ± 5V
Mains A.C. Low Cut Recovery	190 ± 5V
Mains A.C. High Cut	265 ± 5V
Mains A.C. High Cut Recovery	260 ± 5V

**VOLTAGE LIMITS WIDE WINDOW (INV MODE)**

Mains A.C. Low Cut	105 ± 5V
Mains A.C. Low Cut Recovery	120 ± 5V
Mains A.C. High Cut	285 ± 5V
Mains A.C. High Cut Recovery	275 ± 5V

**OUTPUT PARAMETER**

Mains Output Frequency	Same as Input (45Hz-55Hz)
Output Frequency	50.0 Hz. ± 0.1 Hz
Output Voltage with Full Load	220V/200V ± 10V
Waveform	Sine Wave
Overload	Above 110%
Short Circuit Protection	>250% Load (Few msec)

**BATTERY CHARGING**

SMPS based charger with Automatic Power Factor Correction				
Maximum Charging Current Limit	9.0 ± 1.0 Amp, 13 ± 1.0 Amp for HC mode			
Charging Boost Voltage	13.9V ± 0.2V per battery			
Charging Float Voltage	13.6V ± 0.2V per battery			
Battery Lower Voltage Limit	10.0V ± 0.2V per battery			
Recommended Battery Capacity	135AH-180AH			
Number of Batteries	1	1	1	2

<b>MODEL</b>	<b>STURDY</b>	<b>FALCON/FALCON-i</b>	<b>PROTON</b>	<b>SMILEY/SMILEY-i</b>
<b>CAPACITY</b>	<b>600VA/12V</b>	<b>800VA/12V</b>	<b>800VA/12V</b>	<b>1400VA/24V</b>

### TECHNOLOGY

Microcontroller based state-of-the-art technology using MOSFETs

Fuzzy Logic Control Technology

### ENVIRONMENT

Storage Temp.	0-50°C
Operating Temp.	0-40°C
Humidity	0-90% Non-condensing

<b>Dimension (W X D X H) in mm</b>	<b>272X275X122</b>	<b>272X275X122 / 280X270X123</b>	<b>300X300X130</b>	<b>392X310X170 / 400X296X170</b>
<b>Weight (Kg)</b>	<b>9.3Kg</b>	<b>10.2 Kg</b>	<b>10.40 Kg</b>	<b>16.9 Kg</b>

**Note : Specifications subject to change without prior notice.**

REV.08-06-07

*Technical  
Specification*

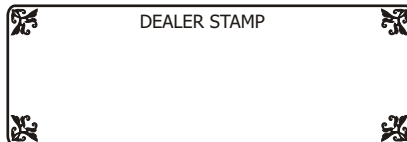
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*Terms and conditions of warranty*

- ★ 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 Home UPS 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 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 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 Home UPS.
- ★ 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

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09940634442  
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