

Pure Sine Wave
U.P.S. System

SIC Series

User's manual

Contents

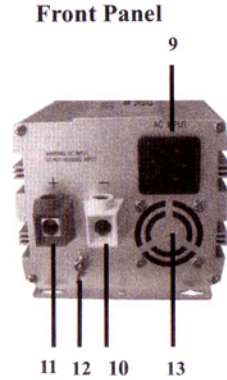
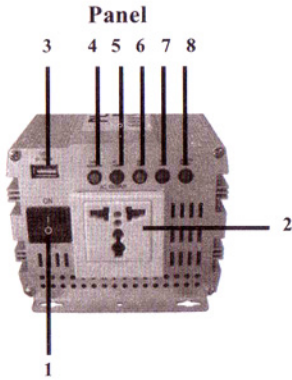
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1. Specification

Model		SIC-12060/E SIC-24060/E SIC-36060/E SIC-48060/E	SIC-12100/E SIC-24100/E SIC-36100/E SIC-48100/E	SIC-12150/E SIC-24150/E SIC-36150/E SIC-48150/E	SIC-12200/E SIC-24200/E SIC-36200/E SIC-48200/E	
Inverter	Output	Continuous Output	600W	1000W	1500W	2000W
		Surge	1200W	2000W	3000W	4000W
		Voltage	AC100V/110V/115V/120V /200V/220V/230V/240V			
		Frequency	60Hz or 50Hz			
		Waveform	Pure Sine Wave			
		Regulation	Vrms <± 3%			
		Total Harmonic Distortion	THD <3%			
		USB Output	DC 5V ±5% 500mA			
	Input	Voltage	DC 12V or DC 24V or DC 36V or DC 48V			
		Low Battery Alarm	DC 12V/ 10.5V ; DC 24V/ 21V ; DC 36V/ 31.5V ; DC 48V/ 42V			
		Low Battery Alarm	DC 12V / Selected : 10V, 11V, 11.5V DC 24V / Selected : 20V, 22V, 23V DC 36V / Selected : 30V, 33V, 34.5V DC 48V / Selected : 40V, 44V, 46V			
		High Battery Protection	DC 12V/ 15V ; DC 24V /30V; DC36V/45V; DC48V/60V			
		No Load Current	12V /650mA 24V/ 350mA 36V / 220mA 48V/170mA	12V /900mA 24V/ 500mA 36V/300mA 48V/230mA	12V/1200mA 24V/ 650mA 36V/400mA 48V/300mA	12V/ 1800mA 24V/ 950mA 36V/650mA 48V/450mA
		Efficiency	>85%	>90%	>90%	>92%
	Protection	High Temperature	Yes			
		Short-Circuit	Yes			
		Overload	Yes			
		Input Voltage	Yes			
	Intelligent Design Heat Auto Control	Fan Start : 42°C±3, Fan Stop: 38°C±3				
		High Temperature Shut Down : 63°C±3, Restart Output: 55°C±3				
AC Input	Voltage	115V:(90V-130V)±5V;		230V:(190-265V)±5V		
	Frequency	60Hz: 55-65Hz;		50Hz: 45-55Hz		
Shift Time	4ms-8ms					
Auto Mode	Synchronization & Single Phase Lock-up					
Charger Currency	Current	12V/20A, 24V/12A, 36V/9A, 48V/6A				
	Wattage	288W~345W				
	Absorption charge	14.4V ± 0. 2V, 28.8V ± 0. 2V, 43. 2V ± 0. 3V, 57. 6V ± 0. 3V				
	Floate charge	13.8V ± 0. 2V, 27.6V ± 0. 2V, 41. 4V ± 0. 3V, 55. 2V ± 0. 3V				
Indicator	Inverter : Green LED					
	Fault : Red LED					
	Over Temperature : Yellow LED					
	AC : Green LED					
Charging : Equalizing-Red LED / Floating-Green LED						
Mechanical	D*W*H(mm)	300*119*98	420*200*88	520*200*88	615*200*88	
	Weight	2.5Kgs	4.2Kgs	5.2Kgs	6.4Kgs	

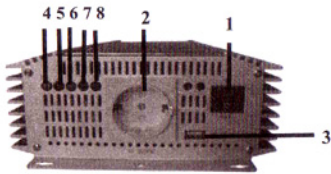
2. Panel Operations

A. SIC-600W

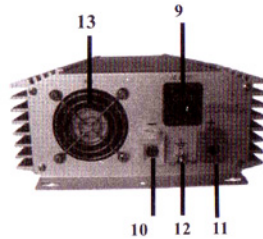


B. SIC-1000W/ SIC-1500W/ SIC-2000W

Rear Panel



Front Panel



- | | |
|----------------------------------|------------------------------------|
| 1. Power Switch | 8. Green LED— AC Inverter Power On |
| 2. AC Output Socket | 9. AC Input |
| 3. USB Socket | 10. DC Input (-) |
| 4. Green/Red LED-- Charge On | 11. DC Input (+) |
| 5. Green LED—AC Power On | 12. Grounding lug |
| 6. Yellow LED---Over Temperature | 13. Cooling fan |
| 7. Red LED—Over Load | |

⚠ Warning!

Failure to observe this instruction can cause material damage, device malfunction or danger of injuries. Fundamental safety measures should be observed when using electrical equipment.

3 Safety instructions when installing

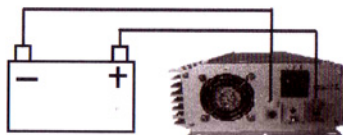
1. Before operation this device, make sure the housing and cables are not damaged.
2. Make sure the On/Off Switch is off.
3. Place the UPS in a dry, cool, clean and ventilated space
4. Make sure the device is secured.
5. Keep this UPS in a safe place and out of reach of children.

4 To Avoid Hazards and Equipment Damage

1. Do not reverse the polarity of the input connections, to prevent permanent damage to the UPS
2. Do not connect the 12V SIC series to a 24V battery.
3. Do not lay the 115V/230V mains cable and the 12V/24V/36V/48V DC cable in the same cable duct.
4. To prevent electrical shock, do not operate without connecting to the ground.
5. Make sure not to connect the city electricity 115V to 230V source or 230V to 115V source input of the UPS.
6. Danger might still occur during repair. Even if the fuse blows or protective device fails, parts of the UPS remain functional. Only qualified personnel should carry out maintenance or repair work.
7. Do not expose the device to moisture.
8. Avoid placing device near sources of heat or under direct sunlight.

5. Connections & Operations

Step 1. Connect the (+) and (-) cables from the battery to the respective terminals of the UPS.



Step 2. Plug in the AC source to UPS charger rear panel AC input socket.

Step 3. Connect the earth cable from the point of the vehicle to that of the device.

Step 4. To start the UPS, turn on the on/off switch. LED green lights on, Charger and AC power on.

Step 5. Connect consumer unit to the 115V or 230V socket in the front of the device

Step 6. Make sure the plug is firmly connected in the socket. If the connection is not firm enough, the plug will heat up and cause device damage

Step 7. Do not start the engine while the UPS is switched on, this may cause UPS to shut down. The UPS can be operated with the engine running or switched off. If it is necessary to operate the device for a long period of time, start the engine to recharge the vehicle battery.

Step 8. USB only supply output power source.

⚠ Warning!

Reversing the polarity of the cables will blow the internal fuses and possibly damage the components inside the device.

6. Electrical cables

- If cables are to be fed through metal walls or walls with sharp edges, use ducts or wire bushings to prevent cable damage.
- Do not lay cables that are loose or bent next to electrically conductive materials
- Make sure to use correct cable size.

A chart is provided below for your reference:

Max. Watt Output	Amps Req'd	Wire Gauge
600W	60A	#6 or 2×#8
1000W	100A	#4 or 2×#6
1500W	150A	#2 or 2×#4
2000W	200A	#1 or 2×#2

Connecting to the grounding lug: Connect the earth cable from the point of the vehicle to the ground, use with cable #8 wire gauge.

7 Applications and Descriptions

1. The UPS converts 12V or 24V or 36V or 48V directly shifted to an 115V or 230V Alternating Current at a frequency of 50Hz/60Hz. UPS system with AC output long time and rapid shift synchronization & phase lock functional.
2. Compared to commercial grade modified sine wave UPS, the output of pure sine wave UPS are more suitable for sensitive electronic equipments such as:

Medical instruments, Emergency power, Oxygen concentrators, Cash registers, Home Theater, High-end Stereos, Computers, Power Tools, Radios, DVD players, TV'S, Musical instruments, Recording equipment, Limousines, Buses, RVs, Precision equipment, Sensitive radio equipment, Laser printers ,Fax machines ,etc
3. The USB 5V DC output is suitable for electronic equipments such as:
Digital Camera, Cell Phone, Video Game, MP3, MP4, PDA.
4. Appliances requiring a higher output than the specified output are not be connected

(Note)

5. **Some electrical appliances (such as power drills, refrigerators, power tools, pumps, compressors and cooking appliances) often need more power than it is stated on the specification plate.**

8 Trouble Shootings

UPS Status	Alarm sounds	LED indicate	Solution
No output voltage	No sound	No Signal	<ol style="list-style-type: none"> 1. Switch on the On/Off switch 2. Switch off the UPS when cranking the engine. 3. Check if the cable from battery to the UPS is firm and tight 4. Blown fuse will cause the unit not to operate.
Battery low alarm	Bi~~~~	Red	<ol style="list-style-type: none"> 1. Check if the cable from battery to the UPS is firm and tight 2. Check the battery voltage. If it is below 10V for 12V version UPS or below 20V for 24V version UPS or below 30V for 36V version UPS or below 40V for 48V version UPS, please charge the battery or change the battery. 3. Device switches on and off. Low output voltage may be caused by overload or short circuit in output. Please reduce load. 4. Input voltage over 16V for 12V version UPS, or over 32V for 24V version or over 48V for 36V version or over 64V for 48V version. Correct the input voltage.
High Voltage alarm			
Over Temperature protection	Bi~~~~	Yellow	<ol style="list-style-type: none"> 1. Check the fan. The cooling fan will be off initially, it is temperature controlled. If the fan is functional, please make sure the unit is placed at a well-ventilated environment. 2. Reduce Load to cool down the device.
Over Loaded protection	Bi~~~~	Red	Please reduce load. Re-start the device.

9 Warranty

We warrant this product against defects in initial PCB, components and any manufacturing defects for one full year from date of purchase and will repair or replace any defective UPS. This warranty is issued only at the time of original purchase; it is non-transferable. Damage caused by accident, misuse, do-it-yourself repairs, sand, oil or water is not covered by this warranty. This is only warranty and the company makes no other warranties, express or implied, including warranties of merchant ability and fitness for a particular purpose.