

400/700 WATT MSW INVERTER

	Model	
Specifications	HI-400P	HI-700P
Continuous Output power	400W	700W
Minimum Input Voltage	11.7V	11.7V
Low Voltage input warning alert (beeping alert)	11.9V	11.9V
Output Voltage	240V	240V
Output Frequency	50HZ	50HZ
Output Waveform	Modified Sine Wave	Modified Sine Wave
Efficiency (Full Load)	≥85%	≥85%
No Load Current Draw	≤0.1A	≤0.15A
USB Output	5V (2.4A) x 2	5V (2.4A) x 2
Inbuilt Protection	Low and high input voltage protection Overheating protection Overloading protection Short circuit protection	Low and high input voltage protection Overheating protection Overloading protection Short circuit protection
Input Cable Type	70cm AWG11 (4.17mm) 100% copper fully insulated	70cm AWG8 (8.37mm) 100% copper fully insulated
Operating Temperature Range	-10°C→40°C	-10°C→40°C
Cooling	twin brushless fan (automatic operation)	twin brushless fan (automatic operation)

Manufactured and packaged for SRGS PTY LTD ABN 23 113 230 050
751 Gympie Road, Lawnton, Queensland 4501, Australia
MADE IN CHINA

Value you can trust

400/700 WATT MSW INVERTER

INSTRUCTION MANUAL

GENERAL PRODUCT SAFETY PRECAUTIONS

- SCA Modified Sine Wave inverters are designed for **indoor use only**, and are not water resistant or waterproof. Do not expose the inverter to water or liquids.
- To reduce risk of hazard, do not cover or obstruct the ventilation openings on the front or back of the inverter. Ensure ventilation is adequate and any vent holes in the battery or inverter are not blocked or obstructed.
- Do not install the inverter in a zero-clearance compartment. Overheating may result causing the thermal protection to shut the unit down until a safe temperature is reached. To avoid a risk of fire and electric shock make sure that existing wiring is in good electrical condition, and that wire size is not undersized (See suggested minimum cable size below). Do not operate the inverter with damaged or substandard wiring.
- This equipment contains components which can produce arcs or sparks. To prevent fire or explosion do not install in sealed compartments containing batteries or flammable materials or in locations which require ignition protected equipment. This includes any space containing gasoline-powered machinery, fuel tanks; joints, fittings, or other connection between components of the fuel system.

SAFETY / WARNING FOR PERSONS

To avoid any personal injury please read the safety instructions below.

- This power inverter is not intended for use by children or infirm persons without supervision.
- Always wear the appropriate Personal Protective Equipment (PPE) when working near batteries. This includes gloves and eye protection.
- Do not use naked flame near a battery. Batteries generate explosive gases during the charging process that may explode.
- Never smoke or light cigarettes near a battery.
- Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery.

A lead-acid battery produces a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.

- Do not place tools on top of a battery or allow tools to fall onto a battery.
- Ensure a well ventilated area is used when installing this inverter near batteries.
- These inverters **do not contain serviceable parts**. To avoid a hazard ensure that any damage to the unit, cable or plugs are replaced by the manufacturer or service agent/ qualified technician.
- Do not disassemble the inverter. The warranty will be void if this instruction is ignored.
- For use with 12v automotive battery types only. Not suitable for 24v batteries or 24v electrical systems.

FIRST AID

- For advice, contact the Poisons Information Centre in Australia (PH: 13 11 26) or the National Poisons Centre in New Zealand (PH: 0800 764 766)
- If battery acid makes contact with the skin or clothing, wash immediately with soap and water.
- If battery acid makes contact with the eyes, hold eyelids apart and flush the eye continuously with fresh running water for at least 15 minutes or until the Poisons information centre advises you to stop.
- If battery acid is swallowed, **do not** induce vomiting. Drink a glass of water and seek medical assistance.

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INTRODUCTION

SCA Modified Sine Wave inverters are designed to efficiently and reliably power a wide range of 230/240V household appliances from a 12V automotive power source. Correct installation is imperative to get the best performance from your inverter. Please read this operation manual fully prior to installation, and keep in a safe location for later reference. Please pay special attention to **SAFETY** and **WARNING** statements in the manual, to prevent personal injury or damage to the inverter or connected equipment.

IMPORTANT: When using a power inverter it is important to remember that the inverter is drawing power from the battery and the battery levels should be monitored. A second, or separate, battery is ideal, as well as a means of charging the battery such as a generator or solar system. If you are running an inverter from your vehicle starting battery the vehicle should be run regularly to recharge the battery to prevent a flat battery and a stranded vehicle. Power inverters running at full load will quickly deplete even the largest automotive batteries. Please consider the maximum load and running time of the appliance and how you are planning on recharging the battery before installing and using this inverter.

MEASURING POWER REQUIREMENTS

Most electrical equipment will have a label advising of the maximum power consumption in Amps (A) or Watts (W). To calculate requirements add all the power consumptions for the total of all items you want to power from the inverter, and ensure the total consumption does not exceed the capacity of the chosen power inverter, use the below formula.

AMPS X VOLTS = WATTS
WATTS / VOLTS = AMPS

Example:

If you have an appliance rated at 0.9 Amps, multiply this by 230 Volts (AS/NZ3000.2, AS/NZ60038) and you will get a consumption rating of 207 Watts.

0.9 Amps x 230 Volts = 207 Watts

Please Note: *Resistive loads* (such as incandescent lamps) are the easiest items to power up with an inverter. Inductive motors (electric motors without brushes) power tools and some televisions may require up to 6 times the consumption rating to power up. We recommend you buy a larger model than you think you'll need (at least 10% to 20% more than your largest load).

CAUTION: ENSURE THE CAPACITY OF YOUR DEVICE DOES NOT EXCEED THE INVERTER MAXIMUM RATING.

APPLICATION EXAMPLES

This inverter has safety systems to prevent damage to the inverter or connected device in the event the connected load is too large, however care should still be taken when selecting the types of items to power from an inverter. For more information see **Inbuilt Safety Protections**.

- Power tools – circular saws, drills, grinders, sanders, buffers, air compressors, battery charger.
- Office equipment – computers, laptop power supply, printers, monitors, facsimile machines, scanner.
- Household items – vacuum cleaners, fans, fluorescent and incandescent lights, shavers, sewing machines.
- Kitchen appliances – coffee makers, blenders, mixers, toasters.
- Home entertainment electronics – televisions, DVD, game consoles, stereos, musical instruments.
- USB 5V devices such as phones and tablets may be operated directly from the 2 x 2.4A USB outlets on the front panel.

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INSTALLATION

The power inverter should be installed in a location that meets the following requirements:

Dry – Do not allow water to drip or splash on the inverter.

- **Cool** – The inverter can operate between 0 degrees Celsius and 40 degrees Celsius, however the cooler the better.
- **Safe** – Do not install in a sealed battery compartment or other areas where flammable fumes may exist, such as fuel storage areas or engine and sealed battery compartments.
- **Ventilated** – Allow at least 30mm of clearance around the inverter for air flow. Ensure the ventilation openings on the rear and front of the unit are not obstructed.
- **Dust** – Do not install the Inverter in a dusty environments where dust, wood particles or other fillings/shavings are present. Dust can be pulled into the unit when the cooling fan is operating.
- **Storage** – Avoid excessive cable lengths but do not install the Inverter in the same compartment as batteries. Also do not mount the Inverter where it will be exposed to the gases produced by the battery. These gases are very corrosive and prolonged exposure also will damage the Inverter.
- **Wiring** - Use the recommended wire lengths and sizes in the below table. Do not exceed the rated maximum cable length of 2M.

Recommended minimum cable size

Model	HI-400W	HI-700W
Provided Cable (700mm)	AWG11 (4.17mm) 100% copper	AWG8 (8.37mm) 100% copper
700mm to 2M	AWG8 (8.37mm) 100% 100% copper	AWG6 (13.3mm) 100% copper

DIAGRAM

Before installing the inverter, make sure the main switch is "OFF".

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WARNING! Shock Hazard

Before proceeding further, carefully check that the Inverter is NOT connected to any batteries, and that all wiring is disconnected from any electrical sources. Do not connect any AC appliances until after the unit has been connected to a DC source and checked for correct operation. The INPUT terminals of the inverter are to be connected ONLY to a 12V power source.

DC Wiring Connections:

Follow this procedure to connect the battery cables to the DC input terminals of the Inverter.

Cable Length & Gauge: Cables should be as short as possible (ideally using the provided cables) enough to handle the required current by the inverter. If the cables are not an adequate gauge, (either too narrow or too long); the inverter will suffer lower performance such as poor surge capability and frequent low input voltage warnings and shutdowns. This is due to DC voltage drop, the longer or narrower the cables the greater the voltage drop. If longer input cables are required (we recommend to NOT exceeding 2M in length using the above cable gauge guide) use a longer 240V extension lead to the appliance or reposition the inverter.

Please Note: SCA Modified Sine Wave inverters are fitted with a low voltage alarm that will beep at 11.9V. If the inverter operation is continued and the source battery reaches 11.7V, all output power will stop (low voltage cut off protection). This will protect both the source battery, and the 240V appliance from possible damage. When the inverter shuts down at 11.7V, it will not automatically power back on. Switch the inverter power switch off and back on again after the input voltage has restored.

- Connect the cables to the power input terminals on the rear panel of the inverter. The red terminal is Positive (+) and black terminal is Negative (-). Tighten nuts to clamp the wires securely. DO NOT OVERTIGHTEN.

- Ensure the inverter is switched off.
- Connect the inverter power input cables DIRECTLY to a suitably sized 12V automotive battery. Connect the Red (+) Positive lead to the Positive battery lug. Connect the Black (-) Negative lead to the Negative battery lug.
- Switch on inverter using main switch and check operation of LED lights on front panel. A green LED indicates power is on and inverter is functioning. (Power will not output from the AC outlets unless power button is pressed on the LED remote display panel)

Please Note: Periodically check and tighten the nuts on the DC input terminals to ensure a solid connection.

POWER INVERTER OPERATION

Once the SCA Modified Sine Wave inverter has been correctly installed, appliances can be plugged into the AC and USB outlets and operated.

- Turn on the main Red switch to power up the inverter (USB power will turn on also with Red switch ON)
- Check 230/240V appliance is suitably sized for inverter capacity and plug into 230/240V AC outlet.

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Pease Note: Continued operation of the inverter will result in 240V power output shutdown once the source battery voltage reaches 11.7V. Care should be taken to ensure the source battery remains charged if running refrigerators and medical devices where uninterrupted power is required.

MAINTENANCE

Very little maintenance is required to keep your SCA Modified Sine Wave inverter operating properly. You should clean the exterior of the unit periodically with microfiber cloth to prevent accumulation of dust and dirt.

CAUTION: ALWAYS ENSURE INVERTER IS SWITCHED OFF AND POWERED DOWN PRIOR TO ANY EXTERIOR CLEANING

If dust is accumulating around the rear cooling fans on the unit, this can be cleaned by lightly vacuuming or gently wiping with a clean dry microfiber cloth. DO NOT use wet cleaning methods around the fan to prevent possible electric shock.

Frequently asked questions:

Q. Why does the inverter turn itself off?
A. Check that the SCA Modified Sine Wave inverter is not overloaded or that the source battery has enough voltage.

Q. Is the SCA Modified Sine Wave inverter(400W & 700W MODELS ONLY) Reverse Polarity Protected?
A. No. If you accidentally connect the inverter to the battery incorrectly (reverse polarity) a large current will be drawn by the inverter which could damage internal sensitive electronic components. Always double-check the battery polarity before making any connections.

Q. Can I run my CPAP or RPAP Machine off an inverter connected to a source battery.
A. Please check with your Medical Equipment provider to ensure that your equipment is safe to run off the SCA Modified Sine Wave inverter.

INBUILT SAFETY PROTECTION SYSTEMS

- **Overload Protection:** Will occur when the load connected to the inverter is greater than the inverters rating. If the overload is 110% or greater than maximum inverter capacity, the red LED on front panel will illuminate and output power will be cut. This protection state will automatically reset once overload has been removed.
- **Over Temperature Protection:** Will occur when the internal inverter temperature goes above 65 C, the red LED on front panel will illuminate, a warning beeper will also activate, and output power will be cut off. If this occurs, power down the device and inverter and leave the unit to cool down. Check for operation of the cooling fans, and they are not blocked by dust or debris.
- **Overvoltage Protection:** If the source battery voltage goes above 15.5V, the red LED on front panel will illuminate and output power will be cut off (there will be no beeping warning). Overvoltage indicates a problem with the source battery or charging system, and it should be checked immediately to prevent damage to the source battery. This protection will automatically reset one the overvoltage state is removed.
- **Low Voltage Protection:** If the source battery level falls below 11.9 V, a low voltage input alert will beep along with a red flashing LED light on the display indicating the battery should be charged.

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WARRANTY

This product is guaranteed against defects for a period of 12 months from date of purchase. This warranty is provided by SRGS PTY LTD, ABN 23 113 230 050 of 751 Gympie Rd Lawton QLD 4501 Ph (07) 3482 7500. Supercheap Auto will offer a repair, replacement product or store credit if the product is assessed as being defective during the warranty period. To claim under this warranty, take this product to the Front Service Desk of your nearest Supercheap Auto store. For store locations, visit www.supercheapauto.com.au (AUS) or www.supercheapauto.co.nz (NZ). You will need your receipt or proof of purchase. Additional information may be requested of you to process your claim. Should you be not able to provide proof of purchase with a receipt or a bank statement, identification showing your name, address and signature may be required to process your claim. This product may need to be sent to the manufacturer to assess the defect before determining any claim. Faults or defects caused by product modification, misuse and abuse, normal wear and tear or failure to follow user instructions are not covered under this warranty. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. Any expenses incurred relating to the return of this product to store will normally have to be paid by you. For more information contact your nearest Supercheap Auto store. The benefits to the consumer given by this warranty are in addition to other rights and remedies of the Australian Consumer Law in relation to the goods and services to which this warranty relates.