



Part # 53040

DC to AC 400 Watt Power Inverter Instruction Manual



CAUTION: SERIOUS SHOCK HAZARD. This inverter should only be serviced by qualified personnel.

This 400 watts power inverter converts 12-volt vehicle battery power into 110 volts of AC power. You can use this inverter in your vehicle to operate many types of appliances that use AC power such as TVs, VCRs, portable computers, power tools and lights for emergency use or camping use.

This inverter works with your vehicle's engine turned on or off (accessory mode). It provides a continuous output of up to 400 watts.

Power

To determine the amount of load that an electrical appliance will place on the inverter use the following equation: $\text{Watts} = \text{Amps} \times \text{Volts}$

Example: An appliance consumes 2.5 Amps of power to operate, how many watts will it take to power it? $\text{Watts} = \text{Amps} \times \text{Volts}$

$$\text{Watts} = 2.5 \text{ Amps} \times 110 \text{ Volts}$$

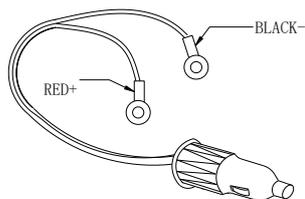
$$\text{Watts} = 275$$

This appliance would consume 275 watts from the inverter.

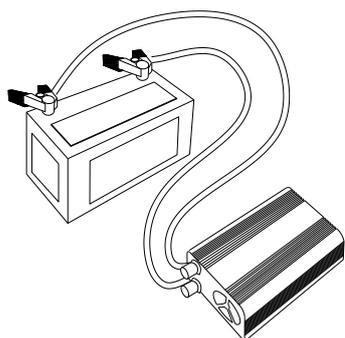
BASIC OPERATION

CAUTION: Use the right operating voltage for both input and output of the inverter. Make sure inverter is switched off before connecting or disconnecting the inverter to or from the battery.

- Powering devices with power rating:
 - **Less than 150 Watts** by connecting the cigarette lighter plug into the vehicle's cigarette lighter socket.



- **More than 150 Watts** by connecting RED terminal from inverter to + of battery terminal and connect BLACK terminal from inverter to – of battery terminal. NOTE: There will be a spark between the cable from the negative terminal of the inverter when it is first connected to the negative terminal of the battery.



- Insert the plug of your appliances into AC socket at the front of the inverter.
- Turn ON the power switch that is located at the front of the inverter, and the green LED light will light as indicator that the is working.

CAUTION:

- DO NOT USE THE INVERTER IN A POSITIVELY GROUNDED VEHICLE.
- DO NOT POWER MORE THAN 150 WATTS WHEN THE POWER INVERTER IS CONNECTED TO THE CAR CIGARETTE LIGHTER SOCKET POWER SUPPLY. DOING SO MIGHT DAMAGE YOUR VEHICLE'S FUSE OR ELECTRICAL SYSTEM.

RECOMMENDATION

- If the power inverter makes a beeping sound, turn OFF the power inverter and disconnect all appliances from the inverter and disconnect the inverter from the power supply. The beeping sound is the low battery warning, which indicates that the voltage of the battery power supply is too low to operate the inverter. Start the vehicle engine and let the battery charge before reconnecting and operating the power inverter.
- When the inverter is not in use, turn the switch to the OFF position and disconnect the inverter from the power supply.
- Disconnect the inverter before starting the vehicle's engine.

BATTERY USE

- To avoid over-discharging your vehicle's battery, disconnect the inverter from the battery, start and run the vehicle to maintain the battery voltage, reconnect the inverter to the battery.
- If you choose to connect the inverter directly to your battery terminals, it is important to connect correctly with the right polarity. Connect the positive (+) RED cable from RED terminal on the inverter to the positive (+) battery terminal and connect the negative (–) BLACK cable from the BLACK terminal on the inverter to the negative (–) battery terminal.

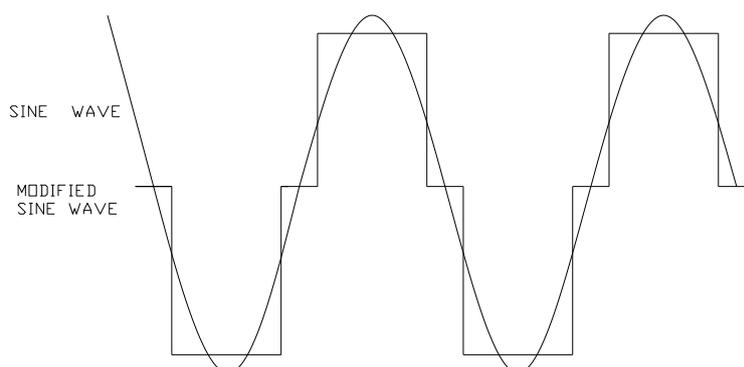
CAUTION:

THE FOLLOWINGS OPERATION WILL DAMAGE THE UNIT:

- CONNECTING THE WIRES TO THE INCORRECT TERMINALS CAUSES REVERSE POLARITY (Fuse will blow and user will need to replace the fuse)
- CONNECTING THE BATTERY CHARGER TO THE BATTERY WITHOUT FIRST DISCONNECTING THE INVERTER.
- OPERATING THE INVERTER AND BATTERY IN OR AROUND WATER.

MEASURING THE AC VOLTAGE

The output waveform of the AC output is a MODIFIED SINE WAVE. To measure the AC output voltage, you must have a TRUE RMS VOLTMETER.



SAFETY PRECAUTION

- Do not open the case of the inverter. The high voltage inside the unit is the same type of power as our electrical outlets at home. Opening the case can cause electrical shock which can cause severe injury or death.
- Do not let the cord of the inverter or any appliance's cord get wet.
- Do not operate the inverter in or around water. The voltage of the unit makes electrical shock hazard if operated in wet conditions which can cause severe injury or death.
- Do not connect the AC inverter directly to another AC power source.
- Keep it away from children, this inverter produces 110 AC power which is the same as AC wall outlets and should be used with extreme caution.
- Allow at least 2 inches of clearance around the inverter for airflow.
- If you operate the inverter in a moving vehicle, you need to secure the inverter to prevent it from shifting while the vehicle is moving.
- If there is any problem with the inverter, turn the switch off and disconnect it from the battery.

TROUBLE SHOOTING

TROUBLE/INDICATION	POSSIBLE CAUSE	SUGGESTED REMEDY
-No AC output: - the Green LED light is not on	-DC input below 10 Volts(12-volt input)	-Recharge or replace battery
-No AC output --inverter is cold	-Poor connection with the battery.	-Disconnect load from inverter. Reconnect the unit to the cigarette socket.
-Shut down after operating for a long time	-Over-temperature -Low Battery Charge	-Disconnect the inverter and put aside for while to let inverter cool. -Charge battery.
-Shut down after operating a short time and inverter is cold	-Over-Load	-Reduce the wattage of the inverter's load

DESCRIPTIONS:

400W Continuous Power: - Inverter can be used to power appliances that require up to 400 watts of power to operate.

800W Peak Power: - Inverter can be used to power appliances that require more power during start up, up to 800 watts, but only up to 400 watts of power to operate. (such as TVs and motor-power equipments).

Low Battery Alarm: - The inverter sounds an audible alarm and then turns itself off if the source battery voltage becomes too low.

Auto shutdown/reset protection: - If the inverter becomes overheated it temporarily shuts itself down to protect itself from overheating.

Overload/Short Circuit Protection: - The inverter automatically turns itself off if the connected load is too high or if it shorts.

AC Outlet: - Allows you to plug in an appliance for AC power.

Fan: - Helps remove heat from the inverter. The sound of the fan running a air moving through the inverter is normal.

HEAT DISPERSAL

The inverter generates heat while it is working. This is normal. However, if the inverter gets too hot while working, it will turn off by itself.

Position the inverter where air flows freely around it to allow the heat to disperse.

The inverter's thermal protection prevents it from operating when its temperature exceeds 140+/-9 °F (60+/-5°C). Noise from the fan operating to cool the inverter is normal.

SPECIFICATION

Name	Description
Input	12V (10-15V) DC
Output	110VAC
Output frequency	60Hz
Output waveform	Modified Sine Wave
Output receptacles	Two 3-prong grounded sockets.
Continuous power	400 watts
Surge power	800 watts
Best efficiency	Approx. 90%
No load current	<0.3A
Battery low shutdown	10+/-0.5VDC
Battery low alarm	10.5+/-0.5VDC
Thermal shutdown	140+/-9°F (60+/-5°C)
DC fuse	40A external fuse