

Model No. 011-1949-2



150W POWER INVERTER



SAVE THESE INSTRUCTIONS! - This manual contains important safety and operating instructions. Read all instructions and follow them with use of this product.

**INSTRUCTION
MANUAL**

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AC POWER

AC output voltage (nominal)	115 V, 60 Hz
Maximum continuous power	150 W
5 minutes AC output power	150 W
Peak Power	300 W
AC output frequency	60 ± 1 Hz
AC output waveform	Modified sine wave

DC POWER

USB output (3 USB +1 type C)	5 V / 7.2 A total
No load current draw (at 12 V)	< 0.2 A
Efficiency (maximum)	85%
Low-voltage shutdown	10.0 – 11.0 V
High-voltage shutdown	15.0 – 16.3 V

PHYSICAL SPECIFICATIONS

Ambient operating temperature range	0–40°C (32–104°F)
Dimensions (L x W x H)	6 1/2 x 3 9/16 x 1 9/16" (166 x 90 x 40 mm)
Weight	1 lb 8 oz (0.68 kg)

This manual contains information that relates to PROTECTING PERSONAL SAFETY and PREVENTING EQUIPMENT PROBLEMS. It is very important to read this manual carefully and understand it thoroughly before using the product.

DANGER!

Potential hazard that will result in serious injury or loss of life.

WARNING!

Potential hazard that could result in serious injury or loss of life.

CAUTION!

Potential hazard that may result in moderate injury or damage to equipment.

IMPORTANT!

Installation, operation, or maintenance information that is important but not hazard related.

WARNING!

- **HEATED SURFACE.** The power inverter housing may become uncomfortably warm, and can reach up to 60°C (140°F) under extended high power operation.
- Do not operate the power inverter if it has been dropped or damaged in any way.
- Always disconnect the device by pulling on the plug itself, not the power cable.
- The device must be fastened so that it does not cause a safety hazard in case of collision or hard braking.
- Route the power cable so that it does not interfere with the driver of the vehicle when plugged into the 12 V outlet.
- Prevent the power supply cable from hanging over sharp edges.
- Using improper voltage may result in damage to the device and possible injury to the user. The correct voltage is listed on the rating plate.
- Never leave the outlet unattended during operation.

CAUTION!

- Do not connect live AC power to the power inverter's AC outlets. The power inverter will be damaged even if it is switched off.
- Avoid placing the power inverter on or near heating vents, radiators or other sources of heat. Do not place the power inverter in direct sunlight (e.g. on the vehicle's dashboard) in order to prevent an overheat shutdown caused by high temperatures. Do not use the outlet in temperatures over 40°C (104°F).
- Do not insert foreign objects into the power inverter's outlets or ventilation openings.

CAUTION!

- **DO NOT USE** the power inverter with the following equipment:



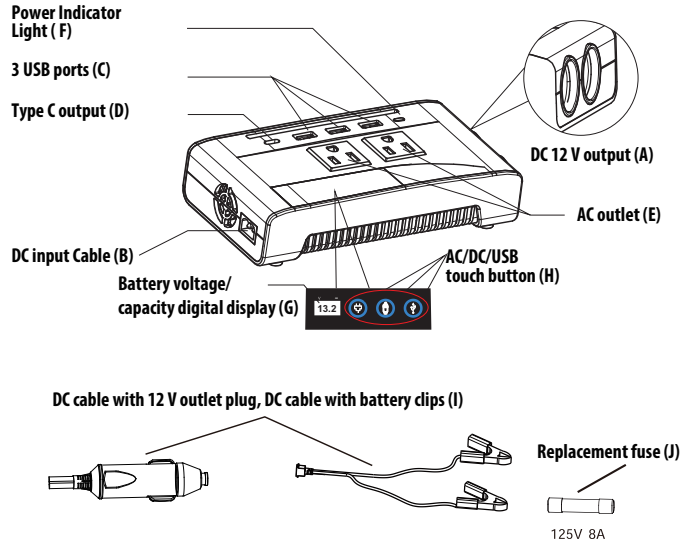
Small battery-operated devices such as rechargeable flashlights, some rechargeable shavers, and night lights that are plugged directly into an AC receptacle to recharge. The device can be damaged if connected to the power inverter. Always recharge batteries using a separate battery charger.



Battery chargers used in power tools. These chargers display a **WARNING LABEL** stating that there are dangerous voltages at the charger's battery terminals.

- Do not insert foreign objects into the power inverter outlets or ventilation openings.
- The power inverter must only be connected to a battery that has a nominal output of 12 V. It will not operate if connected to a 6 V battery and may be damaged if connected to a battery with 16 V or more.
- **REVERSE POLARITY.** Power connections from a 12 V battery to the power inverter must be positive to positive and negative to negative. A reverse polarity connection (positive to negative) will blow a fuse in the power inverter and might permanently damage the unit. Damage caused by a reverse polarity connection is not covered by your warranty.

- Disconnect the power cable whenever the engine is switched off for extended periods of time. In some vehicles, the power does not turn off after the engine has been switched off. If the plug is left connected, the vehicle battery might become discharged or damaged.
- Using the power inverter for extended periods of time can completely discharge the vehicle battery.
- When using a mobile power outlet continuously inside a vehicle that is not running, the engine should be started at least once an hour for 10—15 minutes to keep the battery from discharging. Do not start a vehicle in a closed garage, as the carbon monoxide in the exhaust is fatal.
- Power inverters work best with a battery that is in good condition and fully charged. A weak battery will be drained easily if demands are too high. This could leave you stranded so be sure to check the battery's condition before using a power inverter in a stationary vehicle.



Note: If three USB ports and One Type C output are powered simultaneously, the total output is 5 V /7.2 A.

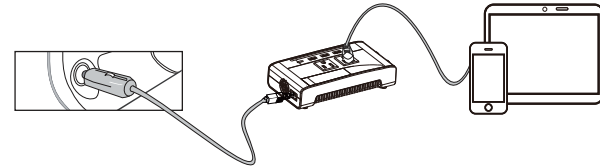
If only one type C or one USB is powered. The output can be 2.1 A at maximum. Touch AC button (⏻), the power indicator light (F) will be on, it indicates two AC outlets are ready for use.

Touch DC button (⏻), DC outlet light will be on, it indicates two DC outlets are ready for use.

Touch USB button (⏻), USB/type outlets are ready for use.

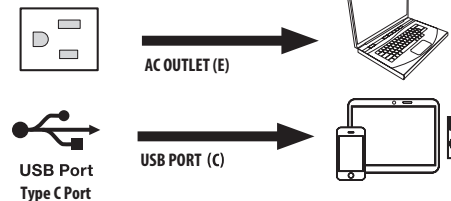
The power inverter is an electronic device that converts the low-voltage **12 V** (direct current) from a battery, such as those found in cars, motor homes, boats or other similar power sources, to the conventional **115 V** (alternating current) like you have in your home. Do not connect this power inverter to batteries below 6 V and above 16 V as it might get damaged.

This conversion process allows you to run standard household devices such as portable music/mp3 players, cell phones, digital cameras, handheld video games, portable work lights, portable DVD players battery chargers, stereo systems, laptop computers. This power inverter uses a modified sine wave that delivers power consistent and efficient enough to run most devices adequately.



Options for connecting devices to the power inverter

According to the wattage of the devices and their features, you can choose to connect the device to the:



Determining the maximum load of connected devices

WARNING!

DO NOT overload your power inverter! Overloading the power inverter, even for a short time, could result in serious damage to the power inverter and/or to the connected device.

A few simple steps are necessary to avoid overloading the power inverter:

- Identify all devices that you would like to power.
- Add up the total wattage of devices that will be powered. The wattage can be found on the individual device's rating plate, as well as in the instruction manual.

IMPORTANT!

In some cases, the wattage might not be listed on the devices you want to connect to the mobile power outlet. In that case, calculate the wattage using the following equation:

$$\text{VOLTS} \times \text{AMPERE} = \text{WATTS}$$

Formula: 120 Volts x X Amperes = XXXX Watts

Example: 120 Volts x 0.5 Amperes = 60 Watts

CAUTION!

Understand the difference between rated (running) wattage and surge (starting) wattage.

The **RATED (RUNNING) WATTAGE** is the average amount of power that a device consumes continuously.

The **SURGE (STARTING) WATTAGE** is the amount of power that a device consumes at start-up for a limited period of time (2–3 seconds). Some devices (e.g. induction motors of drills and fans) may have a start-up surge of 3 to 7 times the rated wattage.

IMPORTANT!

The power inverter can supply momentary surge power that is higher (300 W) than its maximum power rating (150 W). Some products with a rated wattage lower than the maximum power rating for your power inverter may still exceed the power inverter's surge capability and trigger an overload shutdown.

Products rated with the following power and surge ratings or less can be connected to the mobile power outlet.

POWER RATING	MAXIMUM WATTAGE
5 min max. power rating	150 W
Continuous power rating (RATED WATTAGE)	150 W
Surge rating max. (SURGE WATTAGE)	300 W

Wattage of commonly used devices

IMPORTANT!

The wattages given on next page are estimates. The actual wattage required for your devices may differ from those listed. Be sure to check the specific wattage requirements on the rating label and in the operating instructions of devices to be used.

PRODUCTS	WATTS REQUIRED
Portable music device	10 W
Digital camera	10 W
Handheld gaming device	20 W
Smart phone/tablet	20-30 W
Laptop	60 W
13" television	100 W

NOTE: Power requirements for product examples are estimates only. To calculate the wattage of a product, use the following equation: amperage x 115.

IMPORTANT!

Add up the total wattage of devices to be powered.

TAKE INTO CONSIDERATION THE SURGE WATTAGE REQUIRED BY ELECTRICAL MOTORS AS WELL AS THE RATED WATTAGE.

Example:

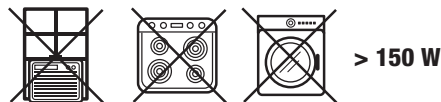
These devices can be operated simultaneously.

DEVICE	SURGE (STARTING) WATTAGE MAX. 300 W	RATED (RUNNING) WATTAGE MAX. 150 W
Cell Phone	25	25
Laptop	50	50
Total wattage used	75	75

These devices usually **CAN** be connected to the power inverter:



These devices usually **CANNOT** be connected to the power inverter, as they might have a start-up surge or continuous rating that is too high.



IMPORTANT!

The device is not suitable for professional or industrial use.

Before you start

- Unpack the power inverter. Inspect the unit for damage. If the unit has been damaged, contact the retailer immediately.

The carton should contain:

- Power inverter
- Owner's manual
- DC cable with 12 V outlet, DC cable with battery clips
- 1 replacement fuse
- 2 screws
- 1 adhesive sticker
- Check the power inverter's identification label to ensure that you have purchased the intended model and that it has the required specifications for its intended use.

Positioning of the power inverter:

Position the power inverter on a flat and stable surface in a location that is:

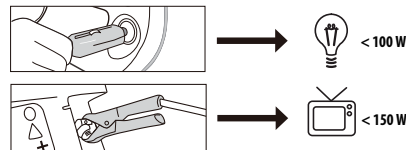
DRY	Do not expose to water, rain, moisture, snow or spray.
COOL	Operate the power inverter in ambient temperatures between 0°C and 40°C (32°F and 104°F). Keep it away from heating vents and direct sunlight. We recommend using the outlet in environments not exceeding 25°C (77°F).
WELL-VENTILATED	For proper cooling, allow at least 2" (5 cm) of clearance around the outlet.
CLEAN	Choose a location that is free of any debris that could get into the outlet.
SAFE	Do not install the power inverter in a compartment with batteries or flammable liquids, such as gasoline, or explosive vapours.

Connecting the power inverter**IMPORTANT!**

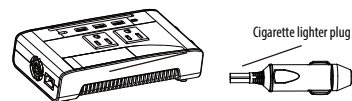
Prior to connecting to the power source:

Make sure that the total wattage of the devices you are planning to connect to the power inverter does not exceed the maximum load of the respective power outlet:

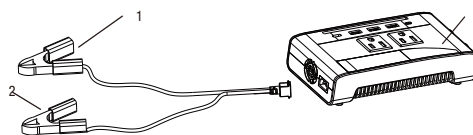
LOAD CONNECTED (W)	CONNECTION WITH LIGHTER PLUG	CONNECTION WITH CAR BATTERY
Continuous load under 100 W	Yes	Yes
Continuous load between 100 and 150W	No	Yes

**Using the DC cable with 12 V outlet (150 W unit)**

Due to the limitations of 12 V outlets in vehicles or boats, the power inverter should only be used to supply AC power to products that require 100 W (about 0.8 A) or less

**Using the DC cable with battery clips (150 W unit)**

If your application requires more than 100 W (but less than 150 W continuous) or has a high start-up surge, please use the battery clips.



- Connect the unit to a vehicle's accessory outlet or other 12 V DC power source, the blue power light will illuminate and deliver AC power to the outlets. If the blue power light is not illuminated, a faulty condition exists. Please refer to the troubleshooting section of this instruction manual.

- Plug the AC produces) you wish to operate into the AC outlets), one at a time.
- The power inverter will automatically shut down when the battery voltage drops to 10 -11 V. This prevents the battery from being damaged. After auto shutdown, the light will turn off.
- If an electronic appliance is rated than 150 W, the power indicator light (F) will be off. The power inverter doesn't resume work until the rated load is under 150W.
- If the power inverter exceeds a safe operating temperature, due to insufficient ventilation or a high temperature environment, the light will turn off and the power inverter will automatically shut down.
- Should a defective battery charging system cause the battery voltage to rise to dangerously high levels, the power inverter will automatically shut down and the light will turn off.
- The cooling fan on the 150 W unit is designed to operate when the internal temperature exceeds the power inverter's ambient operating temperature.
- In the event of high/low battery voltage or overheating, the power inverter will automatically shut down.

CAUTION!

Switch the power inverter off and disconnect it from the 12 V outlet when it is not in use.

IMPORTANT!

When the power inverter is switched off, it draws no current from the battery. When the power inverter is switched on without any load connected to it, the Bar draws approx. 0.3 A from the battery. This low current draw will eventually discharge the battery.

Using the USB port



USB Port

Plug the USB-powered device into the inverter's USB port (C) and operate normally.

IMPORTANT!

This unit's USB charging port does not support data communication. It only provides 5 V/7.2 A DC power to an external USB-powered device. Not all mobile phones are provided with a charging cable. Data cables are not supported by this device. Please check with your mobile phone dealer for the correct charging cable.

Automatic safety features

The power inverter includes the following automatic safety features to ensure safe and trouble-free operation:

- Vehicle battery low-voltage automatic shutdown: activated when the battery voltage drops to 10-11 V, to protect the battery from being damaged.
- Vehicle battery high-voltage automatic shutdown: activated when the battery voltage rises to a dangerously high level due to a defective battery.
- Overload protection with automatic shutdown: activated when a device rated more than 150 W is plugged into the power inverter.
- Overheat protection with automatic shutdown: activated in case the power inverter overheats due to improper ventilation or a high ambient temperature.
- Output short-circuit protection: activated in case of a short circuit in the connected device.
- Built-in fan: activated when a significant amount of power increases the internal temperature and it exceeds its ambient operating temperature.
- Replaceable 8 A fuse: used for continued protection against a risk of fire or electric shock and should be replaced manually, if necessary.

**WARNING!**

Before cleaning, make sure the power inverter is switched off and disconnected from the power source.

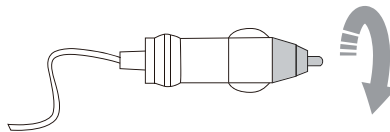
- The exterior of the device should be cleaned periodically with a damp cloth or sponge and a mild soap solution.
- Be sure vents and fans are free of dust or debris.
- Never immerse the device in water or any other liquid.
- For cleaning, never use corrosive detergents, wire brushes, abrasive scourers, or metal or sharp objects.
- Store the device in a cool, dry, location that is protected from moisture and out of the reach of children.

Maintaining battery condition

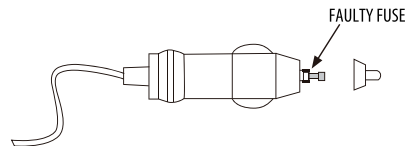
- Vehicle batteries are designed to provide brief periods of very high current needed for engine starting. They are not intended for constant deep discharge.
- The battery operating time depends on:
 - the charge level of the battery,
 - the battery capacity,
 - the amount of power drawn by the devices that are connected to the mobile power outlet.
- With an average load of about 150 W connected to the power inverter, consider that the engine should be started at least once an hour for 10-15 minutes to keep the battery from discharging.
- If you need to start the engine to recharge the battery, first disconnect the power inverter from the battery or the cigarette lighter socket
- Once the engine is running, the power inverter can be connected to the cigarette lighter socket again.

Fuse replacement**WARNING!**

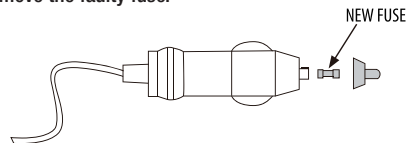
For continued protection against risk of fire or electric shock, replace only with a fuse of the same type and rating (125 V, 8 A).



Screw off the upper cover of the 12 V outlet plug.



Remove the faulty fuse.



Insert a new fuse and screw the cover of the plug back on.

The power inverter is equipped with protective shut-down features.
The details are listed in the following table:

PROTECTION	POSSIBLE CAUSE	SOLUTION
Low battery low-voltage shutdown	Voltage drops to: 10.0–11.0 V = shutdown. This protects the battery from being over-discharged.	Recharge the battery.
High- Voltage shutdown	A defective battery charging system can cause the battery voltage to rise to high levels (15.0–16.3 V). Although the power inverter has a protection against high voltage, it might still be damaged if the input voltage were to exceed 16 V.	Disconnect the connected devices. Verify that the charging system is properly regulated and the battery is 12V nominal.
Overload shutdown	If you connect a device that is rated too high or a load that draws excessive surge power, the power inverter shuts down.	Use a product with a power rating within the power inverter's continuous power rating range (see Operation).
Overheat shutdown	The power inverter shuts down automatically if it exceeds its safe operating temperature.	<ul style="list-style-type: none"> • Switch the power inverter off and disconnect it from the 12 V outlet. • Disconnect all connected devices and a the power inverter to cool for at least 15 minutes. • Use a brush to clear any blocked ventila holes. • Move the power inverter to a cooler place. Reduce the load if continuous operation is required.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The connected device does not switch on.	The battery is defective.	Check the battery and replace it if required.
	The power inverter is damaged and needs to be repaired.	Have the power inverter repaired by an authorized service centre.
	Connection to the power inverter or 12 V outlet is not tight.	Check all connections. Make sure the connection is correct and tight.
Measured power inverter output is too low.	The battery voltage is too low.	Recharge the battery.
No power to inverter.	Blown fuse.	Replace fuse.
Buzz in the audio system.	Inadequate internal power supply filtering of stereo system.	Use an audio system with a high-quality filter.
Television interference.	TV signals are weak.	<ul style="list-style-type: none"> • Adjust the orientation of the power inverter, television, antenna and cables. • Maximize TV signal strength by using a better antenna and use shielded antenna cable where possible. • Try a different TV model.

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