Protective features

Low battery alarm - An alarm will sound when the voltage from the battery drops to 10.5 volts DC. This indicates that the battery the PowerSource is connected to will require recharging. (If connected to a vehicle battery, starting the vehicle engine should be sufficient) The Powersource will automatically shutdown if its voltage is allowed to drop to 9.5 volts DC or below.

Over voltage protection - The PowerSource will automatically shutdown if the input voltage exceeds 15 volts DC.

Reverse polarity protection - Reverse polarity (incorrect battery connection) may result in the blowing of the internal blade fuses. If this occurs immediately, disconnect the battery. The internal blade fuses will need to be checked by a qualified electrician if the PowerSource does not continue to work.

Overload protection - The PowerSource will automatically shut down if the continuous power draw exceeds its maximum rating of the PowerSource.

Temperature protection - If the temperature of the internal heat sink reaches >65oC the Powersource will shut down automatically. Allow the PowerSource to cool before using again.

Troubleshooting guide

Problem	Possible Cause	Suggested Remedy
Low output voltage	PowerSource is overloaded	Reduce load, not exceeding maximum rating
Low battery alarm on all the time	Inadequate power or excessive voltage drop	Check connections from battery to PowerSource
	Poor battery condition	Replace battery
No Power output	PowerSource not fully warmed up	Turn the PowerSource switch on and off repeatedly until the appliance has started.
	Internal fuses have blown	Fuse replacement (qualified electrician only)
	PowerSource in thermal shutdown condition	Allow to cool (10 Minutes)
	Low battery voltage	Charge or replace battery

Specifications

PowerSource Model	RINV1000	RINV2000
Max. Continuous power (Watts) $^1/_2$ hour only	1000w	2000w
Continuous Power	800w	1600w
Peak Power (Watts) 0.01 Seconds	2000w	4000w
Standby current (AMPS)	< 0.5A	< 0.8A
Waveform	Modified sine wave	Modified sine wave
Efficiency Ω	Approximately 90 %	Approximately 90 %
Input Voltage Range	10v – 15v DC	10v – 15v DC
AC Socket	3 Pin mains	3 Pin mains
Fuse	30 amps (x 4)	30 amps (x 8)

Ω Percentage of battery power converted to mains voltage power.
'e' & 'CE' approved

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PowerSourcePro

User Manual

RINV1000
RINV2000

Introduction

The Ring PowerSource is an electronic device that converts a low voltage 12v DC current from a battery, or other power supply and provides 230-240v AC current.
Special attention should be made to **'Caution'** statements in this user manual.
'Caution' statements identify conditions or practices that could result in damage to your PowerSource or to equipment that you are using with it.

CAUTION! RISK OF ELECTRIC SHOCK: Before removing any cables from the battery or regulated power supply that are supplying the PowerSource ensure all accessories are unplugged and that the switch on the inverter is left ON.

Although the PowerSource is unplugged, internal capacitors will continue to hold a charge of power, by leaving the switch ON this ensures that this additional power is discharged via the PowerSource circuits.

Output Waveform

The output waveform is referred to as 'Square wave' or 'Modified sine wave'. It is a stepped waveform designed to have characteristics similar to the sine wave shape of utility power. A waveform of this nature is suitable for most appliances.
Caution!

- When connecting the PowerSource directly to a battery or other power supply ensure that you observe correct polarity (Ensure the red (+) positive lead is clamped to the positive battery terminal and the black (-) negative lead is attached to the negative battery terminal.
- Do not exceed the maximum input voltage (15 volts DC).
- Do not remove the protective cover under any circumstances, only by a qualified electrician.
- Improper use of the PowerSource can cause damage to property and possible harm to the user.

Power Supply

The battery or power supply must provide between 10.5 and 14.5 volts DC (a car battery will usually provide this) and must be able to provide sufficient current to operate the load (the item you require to power).
The power supply used may be a battery or a regulated DC power supply. In order to find out if your power supply is large enough, divide the power consumption of the load (in watts) by the voltage (12v in the case of the PowerSource) this will give you the current (in amps) that the power supply must deliver.

Example: Load is rated at 100 watts.

Power supply: 100 / 12v = 8.3 Amps.

Caution! THE RINV1000 AND RINV2000 MUST ONLY BE CONNECTED TO BATTERIES OR REGULATED POWER SUPPLIES WITH A NOMINAL DC OUTPUT VOLTAGE OF 12 VOLTS. THE POWERSOURCE WILL NOT OPERATE ABOVE 15v.

Caution! DO NOT USE WITH POSITIVE GROUND ELECTRICAL SYSTEMS IF USING DIRECTLY FROM A VEHICLE BATTERY.

The majority of modern cars have negative ground electrical systems. If you are in any doubt, please check with a qualified auto electrician or your local vehicle main dealer.

Connecting to your power supply

RINV1000

Switch off the RINV1000 PowerSource. The RINV1000 PowerSource comes complete with x 1 positive connecting cable and x 1 negative connecting cable that are to be connected onto the back of the PowerSource using the sockets. Do not over tighten and check no wires are exposed. Observe correct polarity. (Red (+) positive, Black (-) negative). The other end of the cable is to be attached directly to the battery terminals again be sure to observe the correct polarity.

RINV2000

Switch off the RINV2000 PowerSource. The RINV2000 PowerSource comes complete with x 2 positive connecting cables and x 2 negative connecting cables that are to be connected onto the back of the PowerSource using the sockets. Do not over tighten and check no wires are exposed. Observe correct polarity. (Red (+) positive, Black (-) negative). The other end of the cable is to be attached directly to the battery terminals again be sure to observe the correct polarity

Connecting your PowerSource

Connect the Powersource input to the vehicle/leisure battery using the cables supplied. Ensure the load requirements are within the parameters of the PowerSource output; plug your appliance into the socket of the PowerSource. Ensure the PowerSource is switched off prior to plugging any accessories and connecting to battery or power supply.
Caution! Some rechargeable products have a charger that is designed to be plugged directly into mains sockets. These can damage the PowerSource. When first using a rechargeable product, monitor its temperature for 10 minutes to ensure overheating does not occur.
Caution! Do not operate the Inverter without connecting to ground.

Fuse replacement

RINV1000 - 30amp (x 4) internal blade fuses.

RINV2000 - 30amp (x 8) internal blade fuses.
Please consult a qualified electrician to replace any fuses.

Positioning of PowerSource

The following points should be noted -:

- The PowerSource is not waterproof.
- The PowerSource should be placed on a ventilated flat surface.
- Do not put the PowerSource on or near sources of direct heat or expose to sunlight.
- Do not place the PowerSource in or around flammable environments.

Operating tips

Note! The PowerSource is not designed to run products that provide heat, such as hair dryers, heaters and irons.
Note! If several loads are to be operated by the inverter, turn them on separately, after the Inverter has been turned on. This will ensure that the Inverter does not have to deliver the peak starting current required for all loads at once.