



12v-1000W

12v-2000W

INVERTER

TRUE SINE WAVE



User Manual

12v-1000W / 12v-2000W INVERTER

Rev. 1.2



Please Keep This Manual For Future Reference

For safe and optimum performance, the Enerdrive Inverter must be used properly. Carefully read and follow all instructions and guidelines in this manual and give special attention to the CAUTION and WARNING statements.

Disclaimer

While every precaution has been taken to ensure the accuracy of the contents of this guide, Enerdrive assumes no responsibility for errors or omissions. Note as well that specifications and product functionality may change without notice.

Important

Please be sure to read and save the entire manual before using your Enerdrive Inverter. Misuse may result in damage to the unit and/or cause harm or serious injury. Read manual in its entirety before using the unit and save manual for future reference.

Product Numbers - Inverter Series

EN1110S	Inverter 1000W 12V
EN1120S	Inverter 2000W 12V

Inverter Owners Manual Rev. 1.2

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Reminds you that if this manual is in any language other than English although steps have been taken to maintain the accuracy of the translation, the accuracy cannot be guaranteed

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Table Of Contents

1. Introduction 4

2. Product Description 5

3. Features 6

4. Installing the Inverter System 7

5. Troubleshooting 11

6. Specifications 12

7. Warranty..... 13

1. Introduction

Thank you for purchasing the Enerdrive Inverter. With our state of the art, easy to use design, this product will offer you reliable service for providing AC power and 5V USB power for your home, boat, caravan, 4WD or commercial vehicle. The Enerdrive Inverter can run many AC powered appliances when you need AC power anywhere. The 5V USB power can charge many USB powered devices. This manual will explain how to use this unit safely and effectively. please read and follow these instructions and precautions carefully.

IMPORTANT SAFETY INFORMATION:

This section contains important safety information for the Enerdrive Inverter. Each time, before using the Enerdrive Inverter, READ ALL instructions and cautionary markings on or provided with the inverter and all appropriate sections of this guide. The Enerdrive Inverter contains no user serviceable parts. See Warranty section for how to handle product issues.



WARNING

FIRE AND/OR CHEMICAL BURN HAZARD

- Do not cover or obstruct any cooling fins and/or install in a zero-clearance compartment.



WARNING

SHOCK HAZARD. KEEP AWAY FROM CHILDREN!

- Avoid moisture ingress. Never expose the unit to snow, water, etc
- Unit provides 230 VAC, treat the AC output socket the same as regular wall AC sockets at home..



WARNING: EXPLOSION HAZARD!

- DO NOT use the Enerdrive Inverter in the vicinity of flammable fumes or gases (such as gas bottles or large engines).
- AVOID covering the ventilation openings. Always operate unit in an open area.
- Prolonged contact to high heat or freezing temperatures will decrease the working life of the unit.



WARNING

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN DEATH OR SERIOUS INJURY

- When working with electrical equipment or lead acid batteries, have someone nearby in case of an emergency.
- Study and follow all the battery manufacturer's specific precautions when installing, using and servicing the battery connected to the inverter.
- Wear eye protection and gloves.
- Avoid touching your eyes while using this unit.
- Keep fresh water and soap on hand in the event battery acid comes in contact with eyes. If this occurs, cleanse right away with soap and water for a minimum of 15 minutes and seek medical attention.
- Batteries produce explosive gases. DO NOT smoke or have an open spark or fire near the system.
- Keep unit away from moist or damp areas.
- Avoid dropping any metal tool or object on the battery. Doing so could create a spark or short circuit which goes through the battery or another electrical tool that may create an explosion.



LIMITATIONS OF USE

- Do not use in connection with life support systems or other medical equipment or devices.
- Inverter is not to be used by persons with reduced physical or mental capabilities or lack of knowledge and experience. Not to be operated or used by children.

2. Product Description

The Enerdrive Inverter package includes the items listed below.

- Inverter base unit
- Owner's manual

3. Features



WARNING

- Enerdrive recommends that all wiring be done by a certified technician or electrician to ensure adherence to the applicable electrical safety wiring regulations and installation codes. Failure to follow these instructions can damage the unit and could also result in personal injury or loss of life.



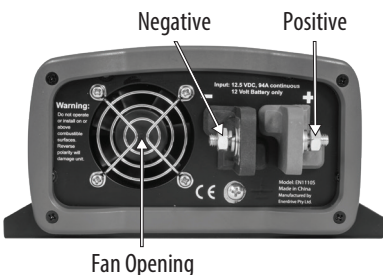
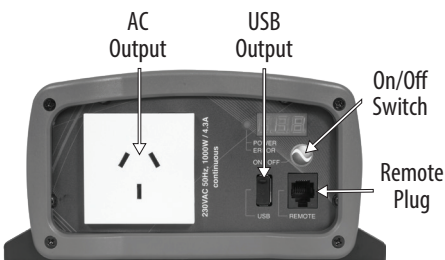
CAUTION

- Before Beginning Your Unit Installation, Please Consider The Following:
- The unit should be used or stored in an indoor area away from direct sunlight, heat, moisture or conductive contaminants. Do not install the Inverter in corrosive environments.
- When placing the unit, allow a minimum of 75mm of space around the unit for optimal ventilation.

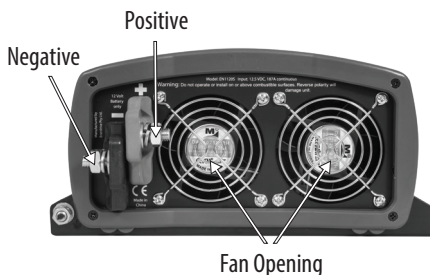
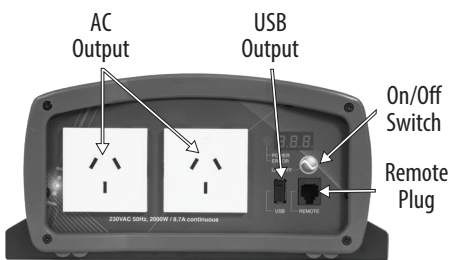
Understanding the unit features:

Image below shows unit features:

EN1110S:



EN1120S:



4. Installing the Inverter System



WARNING: ELECTRICAL SHOCK HAZARD

- The unit 'On/Off' switch does not disconnect the DC power from the battery. To turn off the DC power to the inverter either remove the main DC fuse or switch off the circuit breaker to disconnect the DC power from the inverter before working on any circuits connected to the unit. Failure to follow these instructions can result in death or serious injury.

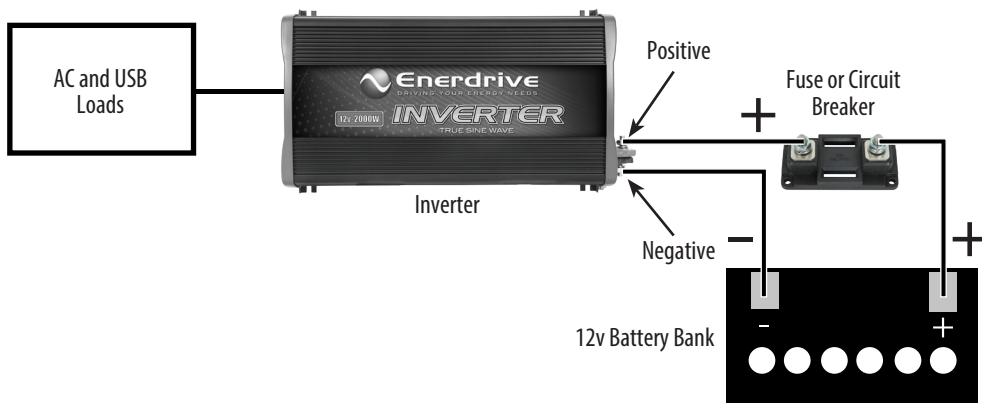


CAUTION

- Reversing the DC Input terminal will damage the unit and cannot be repaired. Damage caused by reverse polarity connection is not covered by the warranty.

Material Preparation for Installation:

Typical Wiring block diagram of the Enerdrive Inverter:



12v Battery Bank:

- The use of deep cycle battery is highly recommended for power inverter application
- For battery size, you need to identify how much you will be using them between chargers. Enerdrive recommends you purchase as much battery capacity as possible. See more on Battery Run Time and load in Section 4.

Fuse or Circuit Breaker

- DC rated fuse or DC rated circuit breaker connected along the DC positive line is required
- For EN1110S, select a fuse or circuit breaker with a minimum of 150 Adc
- For EN1120S, select a fuse or circuit breaker with a minimum of 250 Adc
- Based on the size of the battery bank chosen on the 12V Battery Bank above, determine the overall short circuit current rating of the battery bank from the battery manufacturer. The fuse or circuit breaker chosen has to be able to withstand the short circuit current that may be generated by the battery bank

Disconnect Switch:

- Select a Disconnect Switch with the same or higher the rating of the selected fuse or circuit breaker from the above
- The Disconnect Switch is used to disconnect the DC power between the inverter and the battery bank during service, maintenance or trouble shooting

DC Input and Grounding Cable:

- Use of low resistance wire is required for all the DC connections between the inverter and the battery bank
 - For EN1110S, uses minimum 35mm² wire with maximum cable length of 1.5 meters
 - For EN1120S, uses minimum 70mm² wire with maximum cable length of 1.5 meters
 - Important: The unit is grounded through the ground stud of the unit located near the DC Input terminal
- For the grounding cable connected between the Inverter chassis to the earth ground, use a matching cable size as used on the DC Input Cable section

Installing the Enerdrive Inverter System

WARNING: Electrical Shock Hazard

- The unit 'On/Off' switch does not disconnect the DC power from the battery. Use the DC Disconnect Switch or disconnect the DC input cables connection to disconnect the DC power from the battery before working on any circuits connected to the unit. Failure to follow these instructions can result in death or serious injury

Inverter Installation:

- Choose an appropriate mounting location
- For indoor use, the orientation of the unit can be mounted in any direction except with the DC Input panel facing downwards
- For RV installation, the unit has to be mounted horizontally
- Use mounting template below to mark the positions of the mounting screws
- Drill the 4 mounting holes and place the inverter in position and fasten the inverter to the mounting surface



Inverter Chassis Grounding Connection:

DANGER: The Inverter chassis is to be grounded properly. Never operate the Inverter without proper grounding. Failure to do so will result in death or serious injury.

- Connect the grounding cable's ring terminal to the unit ground screw
- Connect the other side of the cable to the common grounding point

Inverter DC Input Connection:

CAUTION: Reversing the DC Input terminal will damage the unit and cannot be repaired. Damage caused by reverse polarity connection is not covered by warranty.

- Connect one end of the negative DC input cable to the Inverter DC negative terminal
- Connect the other end of the negative DC input cable to the battery negative terminal
- Make sure the Disconnect Switch is in the OFF position
- Connect one end of the positive DC Input cable to the Inverter DC positive terminal
- Connect the other end of the positive DC input cable to one of the terminals of the Disconnect Switch
- Connect a DC Input cable between the other terminal of the Disconnect Switch and one side of the terminal of the fuse holder
- Connect a DC input cable between the other terminal of the fuse holder and the battery positive terminal
- Install the selected fuse to the fuse holder
- Turn Disconnect Switch to ON position

Remote Switch (optional) Connection:

- Insert the Remote Switch to the RJ11 Remote Port located at the Front AC panel of the Inverter. Please note polarity

Test the Inverter connection:

- Turn unit on by pressing and holding the On/Off button on the main unit for about a second until 2 beep sounds occur
- The 'Status' light turns on indicating the Enerdrive Inverter is ON
- Check the digital display shows measured battery voltage and output power alternatively. AC output and 5V USB is now available. If the display shows USB, only the 5V USB is on. Read operation section to learn how to turn unit ON in detail
- Plug in a small AC load like a 40W table lamp or small appliance to the AC socket to verify AC is available
- The unit is successfully installed and functioning properly

UNIT OPERATION**Turn ON & OFF the USB only (if USB power is not required)**

- Press and hold the "Power/Select" button for 1 second until a single beep is sound. Display will show USB. Status LED will turn green. 5V is available at the USB port and AC is not available at the AC socket. This mode is used to save battery power if AC power is not required
- Press "Power/Select" button to turn unit off

Turn ON & OFF the 230 VAC and USB

- Press and hold the "Power/Select" button for 2 seconds until the 2 beeps are sounded. Display will show the measured battery voltage and output power alternatively. Status LED will turn green
- 5V USB and 230 VAC is available at the AC socket
- Press "Power/Select" button to turn unit off

Remote ON/OFF (Optional)

- If optional remote is used, the Remote ON/OFF momentary switch connected in parallel with the "Power/Select" button on the unit. Same procedure applies to ON and OFF the unit

Understanding the Display & Status LED

Display:

USB	Indicate only the USB is ON and 230 VAC is not available at the AC Socket
12.5	Display shows measured battery voltage
0.80	Display shows total output AC power in kW (800W as shown)
E01	Display shows error or warning code. See trouble shooting section in details

Status LED:

Green	Unit operation is normal
Amber	Warning is detected, unit will shutdown at any time. Please check error code to troubleshoot the unit
Red	Error is detected and unit has shutdown. Please check error code to troubleshoot the unit

Understanding the Error Code

Code	Condition	Corrective Action
E01	Unit has sensed input under voltage and has shutdown	Recharge battery immediately and restart unit
E02	Unit has sensed input over voltage and has shutdown	Check battery voltage or if any external charger is connected to the battery bank
E03	Unit output has sensed overload or short circuit and has shutdown	Check load connected to the output. Reduce load and restart the unit
E04	Unit has sensed internal temperature was high and has shutdown	Turn unit off and wait for 15 minutes before restarting. Check if any object has blocked the air flow of the unit
E05	Unit has sensed input voltage is low and warning occurs	Recharge battery as unit will shutdown shortly
E06	Unit has sensed load connected is close to overload shutdown limit	Reduce load
E07	Unit has sensed internal temperature is high and is close to thermal shutdown limit	Reduce load and check if any ventilation of the unit is blocked

AC Load on the Inverter

Although the Inverter can provide high surge power up to two times the rated output power, some appliances may still trigger on the inverter protection system. A higher power inverter is required for those appliances.

Estimate Run Time on Load

Following run time is an estimate based on using a 12V-240AH battery bank for reference (Depth of discharge to 50%). Actual run time may vary.

Load	Consumption	Estimate Run time
Cordless Phone	5W	80 hrs
Clock/Radio	8W	65 hrs
Table Lamp	40W/60W	22 hrs/ 15 hrs
Freezer (8.8 cu. ft.)	80W	12 hrs
20" LCD TV	100W	10.5 hrs
Refrigerator (18 cu. ft.)	120W	8.3 hrs
Microwave (mid-size)	1000W	44 min
Coffee Maker	1200W	35 min
Vacuum Cleaner	1400W	28 min

5. Troubleshooting

To troubleshoot unit, please note the error code display on the main unit and review the "Understanding the Error Codes" in Section 4.

Problem	Symptom	Solution
No output voltage. And Status LED is off.	The unit is off	Turn unit ON by following the instruction in Section 4 to turn unit ON
	No power to inverter	Check fuse or the Disconnect switch (if installed) is either blown or turn OFF
No AC output. Status LED is Green	Display shows USB	Only the USB output is turned ON. Follow instruction in Section 4 to turn AC power ON
No Output. Status LED is in Amber	Check error code on display	Verify the error condition and make correction

6. Specifications

Note: Specifications are subject to change without notice.

Specifications: True Sine Wave Series		
Inverter	1000	2000
AC Output Power	1000W	2000W
AC Output Current	4.3A	8.7A
AC Surge Power (Peak)	2000W	4000W
AC Output Voltage	230 VAC / 50 Hz	230 VAC / 50 Hz
AC Output Waveform	True Sine Wave	True Sine Wave
AC Output Socket	1 outlet	2 outlets
Nominal DC Input Voltage	12.5 VDC	12.5 VDC
No Load battery draw	< 1.2 ADC	< 1.2 ADC
DC Input Voltage operating range	10.5 – 15.5 VDC	10.5 – 15.5 VDC
Under Voltage Alarm	11.2 VDC	11.2 VDC
Under Voltage Shutdown	10.5 VDC	10.5 VDC
Under Voltage Recovery	11.8 VDC	11.8 VDC
Over Voltage Shutdown	15.5 VDC	15.5 VDC
USB	5V, 750 mA	5V, 750 mA
Safety and Environmental		
Conformance	All required Australian Standards	
Agency Markings	RCM	
Operating Temperature	0°C to 40°C	
Storage Temperature	-20°C to 60°C	
Relative Humidity	5-90% non-condensing	
Operating Altitude	Up to 3000 meters above sea level	
Weights and Dimensions		
Weight	2.9kg	5.5kg
Dimensions (W x L x H)	185 x 319 x 90mm	240 x 420 x 115mm

7. Warranty



5 Year Warranty

In the unlikely event that a technical issue arises with an Dometic Power & Control (Enerdrive) Pty Ltd product, customers are encouraged to initially contact the Enerdrive Support Team on 1300 851 535 or support@enerdrive.com.au for immediate and efficient expertise and first class product support.

Important Note: Consumer Protections

If you have purchased your product in Australia, you should be aware that:

This warranty is provided in addition to other rights and remedies held by a consumer at law. 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.

Dometic Power & Control (Enerdrive) Pty Ltd warrants that its Products will be free from defects in materials and workmanship (subject to limits, and in normal conditions, as described in the complete Enerdrive Warranty Policy) for up to 5 years from the date of purchase.

For full terms, conditions and claim process, refer to the Enerdrive website.
<https://enerdrive.com.au/warranty/>



ENERDRIVE



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