ENERDRIVE | DOMETIC

12v-400W

INVERTER

Gen2 TRUE SINE WAVE

User Manual

Gen2 12V 400W INVERTER

Rev. 1.5

Please Keep This Manual For Future Reference

For safe and optimum performance, the Enerdrive Gen2 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 Gen2 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 - Gen2 Inverter Series

EN1104S-12V	Gen2 Inverter 400W 12V

Enerdrive Gen 2 Inverter Owner's Manual Rev. 1.5. This Manual applicable to all units with serial number prefix EPI.

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Table Of Contents

1. Introduction 4
IMPORTANT SAFETY INFORMATION: 4

2. Product Description 5

3. Features 6
Understanding the unit features: 6

4. Installing the Inverter System 7
Material Preparation for Installation 7
Inverter Installation: 8
Inverter DC Input Connection: 10

5. Testing the Power Inverter: 11

6. Unit Operation 11
Turn ON and OFF the unit 11
Understanding the 'Status' indicator & the unit warning & fault alarm 11
Understanding the fan operation 12
AC Load on Power Inverter 12
Remote Switch (optional) Connection: 12
Use of the Ignition Start Function on unit: 12
Estimate Run time on Load 13

7. Troubleshooting 13

8. Specifications 14

9. Warranty 15
5 Year Warranty: 15

1. Introduction

Thank you for purchasing the Enerdrive Gen2 Inverter. With our state of the art, easy to use design, this product will offer you reliable service for providing AC power for your home, boat, caravan, 4WD or commercial vehicle. The Enerdrive Gen2 Inverter can run many AC powered appliances when you need AC power anywhere. 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 Gen2 Inverter. Each time, before using the Enerdrive Gen2 Inverter, READ ALL instructions and cautionary markings on or provided with the inverter, and all appropriate sections of this guide. The Enerdrive Gen2 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 Gen2 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

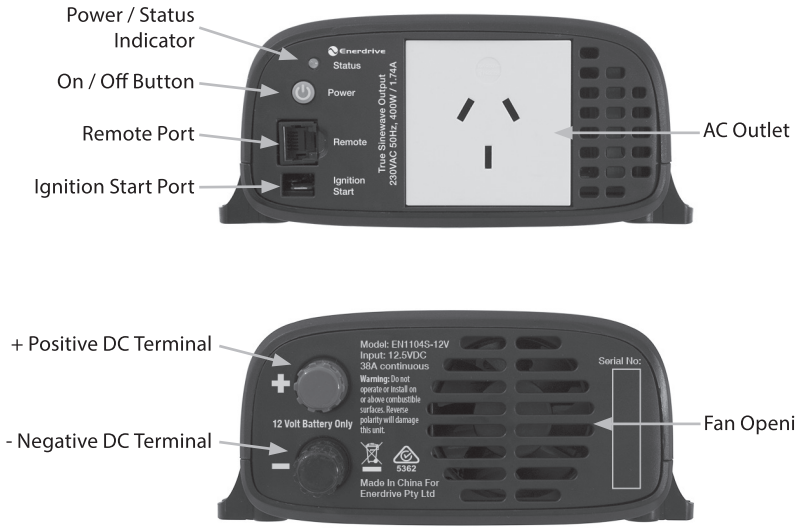
The Enerdrive Gen2 Inverter package includes the items list below.

- Gen2 Inverter
- Owner's manual
- DC Input cable accessories

3. Features

Understanding the unit features:

Image below shows unit features:



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 swtich 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.

WARNING

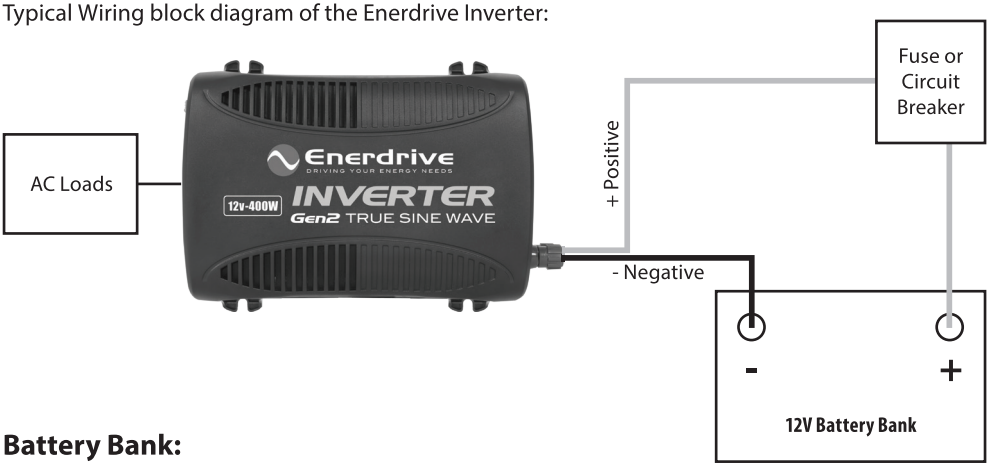
- Enerdrive recommends that all wiring be done by a certified technician or electrician to ensure adherence to the applicable electrical safety wiring regulations and installation codes. Failure to follow these instructions can damage the unit and could also result in personal injury or loss of life.

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 Gen2 Inverter in corrosive environments.
- When placing the unit, allow a minimum of 75mm of space around the unit for optimal ventilation.

Material Preparation for Installation

Typical Wiring block diagram of the Enerdrive Inverter:



Battery Bank:

- The use of a deep cycle battery is highly recommended for power inverter applications
- For battery capacity, you need to identify how long you wish to operate the load(s). Enerdrive does recommend that you purchase as much battery capacity as possible. See more on "Estimated Run time and Load" in Section 6.

Fuse or Circuit Breaker:

- DC-rated fuse or DC-rated circuit breaker connected along the DC positive line is required.
- Select a fuse or circuit breaker with 60A/16V minimum rating for the 12V DC Input Inverter(s).
- Based on the size of the battery bank chosen, 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.

DC Input Cable:

- Use of low resistance wire is required for all the DC connections between the inverter and the battery bank.
- Use minimum 16mm2 cable with a maximum length of 1.5m for 12VDC inverter.

Inverter Installation:

- Choose an appropriate mounting location.
- For indoor use only, 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 on the following page 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.


134 mm
140 mm
152 mm
218 mm
Enerdrive
DRIVING YOUR ENERGY NEEDS
12v-400W
INVERTER
Gen2 TRUE SINE WAVE

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 the warranty.

Hardwired Direct Connection:

- Make sure the main fuse is not connected or breaker is switched off.
- Attach a positive (+) DC terminal (red) cable on the power inverter.
- Attach a negative (-) DC terminal (black) cable on the power inverter.
- Tighten the nut on each DC terminal.
- Connect the other end of the positive DC input cable to one of the terminals of the fuse holder or circuit breaker switch.
- Connect a DC positive input cable between the other terminals of the fuse holder or circuit breaker switch to the battery positive terminal.
- Connect the DC negative cable from the inverter to the negative post of the battery.
- Install the selected fuse to the fuse holder or switch on the circuit breaker.
- Unit is ready for use.

12v Lighter Plug Connection:

- Attach the red ring-type connector to the positive (+) DC terminal (red) on the power inverter.
- Attach the black ring type connector to the negative (-) DC terminal (black) on the Power inverter.
- Tighten the nut on each DC terminal.
- Insert the light plug of this cable to the fused 12V lighter plug socket.
- Make sure your load is not greater than the 120W while using the 12V lighter plug.

Connect unit with optional accessories using the Battery clips cable:

- Attach the red ring-type connector to the positive (+) DC terminal (red) on the power inverter.
- Attach the black ring type connector to the negative (-) DC terminal (black) on the Power inverter.
- Attach the negative (black) clip to the negative (-) battery terminal.
- Attach the positive (red) clip to the load side of the fuse or circuit breaker of the 12V battery bank as indicated on “Typical Wiring block diagram of the Power Inverter” on page 5.
- Unit is ready for use.

CAUTION: Please be sure all the connections are tight before the use of the unit.

5. Testing the Power Inverter:

- Turn unit on by using the On/Off button on the unit. The 'Power' light turns on indicating the Enerdrive Power Inverter is ON. AC output is now available.
- Plug in a small AC load like a 25W table lamp or small appliance to the AC socket to verify AC is available.
- The unit is successfully installed and functioning properly.

6. Unit Operation

WARNING: RISK OF EQUIPMENT DAMAGE

- Do not connect an AC power source like utility power or generator to the unit AC outlets.

Turn ON and OFF the unit

- Press the power switch to turn the unit on. "Power" indicator LED will turn green.
- 'Power' indicator will turn green.
- AC Output is available at the AC output socket.
- Press the power switch to turn the unit off. "Power" indicator LED will turn off.

Understanding the 'Status' indicator & the unit warning & fault alarm

Status' indicator:

- Illuminated in green indicates unit is ON. AC is available at the AC Output Socket.
- Illuminated in green and alarm is beeping once every 2 second indicates a warning signal from the unit. The unit is close to shutdown with one or more of the following warning conditions:

Over Temperature Warning: Unit internal temperature is high. Unit requires better ventilation

DC Over Voltage Warning: DC Input Voltage is high and close to the unit over voltage shutdown limit. Check the battery voltage.

DC Under Voltage Warning: DC Input Voltage is low and is close to the unit under voltage shutdown limit. Check battery voltage or battery connection.

Illuminated in red and alarm is beeping once every second indicates AC Output has shut down due to the following conditions:

Over Temperature Shutdown: Reduce the AC load connected to the unit and provide more ventilation to the unit. AC Output will automatically restart when the internal temperature cools down.

DC Over Voltage Shutdown / DC Under Voltage Shutdown: Check the battery voltage. In the first 30 seconds, AC Output will resume when battery voltage is within the unit's operating range. If the battery voltage shutdown condition is ignored, the unit will switch OFF completely after 30 seconds and to restart the unit, use the green 'On/Off' button after the battery voltage has been corrected.

AC Output Overload Shutdown: Check AC Load connected to the unit. AC Output is short circuited or AC Power draw by the load is beyond the unit's limit. The indicator and alarm will beep for approx 30 seconds before it switched OFF completely. Restart the unit using the green 'On/Off' button is required after the AC Load condition is corrected.

Understanding the fan operation

The fan on the unit will automatically turn on when it senses the internal temperature of the unit reach its preset level.

AC Load on Power Inverter

Although the Power Inverter can provide high surge power, some appliances may still trigger on the inverter protection system. A higher power inverter is required for those appliances.

Remote Switch (optional) Connection:

The unit comes with a Remote port and an optional 'Remote Switch' accessory (EN1104-REM) can be used to turn unit On and OFF remotely. To install the 'Remote Switch', just connect the switch's RJ12 plug to the RJ12 'Remote' port located on the Front AC panel of the inverter. Please note polarity when connecting the plug.

The Power On/Off push button on the remote shares the same function as the green 'On/Off' button on the main unit.

Use of the Ignition Start Function on unit:

An 'Ignition Start' port is located on the Front AC Panel of the unit using a ¼" width spade terminal. This port is used for turning the unit On and OFF using a +12V signal. An insulated female connector is required to connect to the port.

Connecting to +12V will turn ON the unit and removing the +12V signal will turn OFF the unit.

Estimate Run time on Load

The following run times are an estimate based on using a 12V-120AH battery bank for 12V systems. Actual run time may vary.

Load	Consumption	Estimate Run time
Cordless Phone	5W	150 hrs
Clock/Radio	8W	100 hrs
Table Lamp	40W / 60W	27 hrs/ 18 hrs
Freezer (249 Litre)	80W	15 hrs
20" LCD TV	100W	11.5 hrs
Sump Pump (1/2 hp)	350W	Not applicable (surge too high)

7. Troubleshooting

Problem	Symptom	Solution
No AC output and 'Status' light is OFF	The unit is off	Turn unit ON
	No power to inverter	Check fuse / circuit breaker is either blown or turned OFF
'Status' indicator is in green (alarm beeps every 2 seconds)	Unit has detected a warning and is going to shutdown	Verify the warning condition and make adjustment. See "Understanding the 'Status' indicator and the unit warning and fault alarm in this manual
'Status' indicator is in red (alarm beeps every second)	AC Output has shutdown	Check unit condition and make correction. See "Understanding the 'Status' indicator and the unit warning and fault alarm" in this manual

8. Specifications

Specifications	EN1104S-12V
AC Output Power	400 Watt
AC Output Current	1.74A
AC Output Voltage	230Vac / 50Hz
AC Output Waveform	True Sinewave (<5% THD)
DC Input Voltage	12.5 VDC
No Load Current	< 0.8 A
DC Operating Range	10.5 – 15.9 VDC
Under Voltage Alarm	11.0 VDC
Under Voltage Alarm Recovery	11.3 VDC
Under Voltage Shutdown	10.5 VDC
Under Voltage Recovery	12.0 VDC
Over Voltage Shutdown	15.9 VDC
Over Voltage Recovery	15.0 VDC
Display	
Power Indicator	Yes (Green)
Warning and Fault Indicator	Yes (Red)
Accessories	
Lighter Plug Cable	2.5mm^2 (2 conductors) use for load < 120W
Battery Clips Cable	10mm^2 (2 conductors)
Safety and Environmental	
Operating Temp.	0ºc to 40ºc
Storage Temp.	-20ºc to 60ºc
Relative Humidity	5 - 90% non-condensing
Weights and Dimensions	
Weights	1.1 kg
Dimensions	218 x 152 x 66 mm

Note: Specifications are subject to change without notices.

9. Warranty

5 Year Warranty

In the unlikely event that a technical issue arises with an Enerdrive 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.

Enerdrive 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/

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