Victron Energy PIN243020100

Victron Energy Phoenix 24/3000 Pure Sine Wave Inverter

Model: PIN243020100

1. Product Overview

The Victron Energy Phoenix 24/3000 Pure Sine Wave Inverter is engineered for professional applications, offering a reliable solution for various power needs. This inverter delivers a pure sine wave output, high peak power, and high efficiency, combining high-frequency and line-frequency technologies for optimal performance. Its design ensures compact dimensions and light weight, capable of supplying power to any load without issues.
Key features include:

- **Pure Sine Wave Output:** Ensures compatibility with sensitive electronics.
- **High Peak Power:** Capable of starting demanding loads like refrigeration compressors and electric motors.
- **High Efficiency:** Optimized energy conversion for reduced power loss.
- **Hybrid HF Technology:** Provides a robust and compact design.
- **Automatic Transfer Switch:** For seamless load transfer to another AC source (on larger Phoenix inverters).
- **Parallel and 3-Phase Operation:** Allows for increased power output and flexible system configurations.

WARNING

DANGER OF ELECTRICAL SHOCK

The product is used in combination with a permanent energy source (battery). Even if the equipment is switched off, a dangerous electrical voltage can occur at the input and/or output terminals. Always switch the AC power off and disconnect the battery before performing maintenance.

The product contains no internal user-serviceable parts. Do not remove the front panel and do not put the product into operation unless all panels are fitted. All maintenance should be performed by qualified personnel.

Never use the product at sites where gas or dust explosions could occur. Refer to the specifications provided by the manufacturer of the battery to ensure that the battery is suitable for use with this product. The battery manufacturer's safety instructions should always be observed.

Image 1.1: The Victron Energy Phoenix 24/3000 Pure Sine Wave Inverter, highlighting its robust design and capabilities.

2. Safety Information

DANGER OF ELECTRICAL SHOCK

This product operates with a permanent energy source (battery). Even when the equipment is switched off, a dangerous electrical voltage can be present at the input and/or output terminals. Always switch the AC power off and disconnect the battery before performing any maintenance or installation procedures.
The product contains no internal user-serviceable parts. Do not remove the front panel and do not operate the product unless all panels are securely fitted. All maintenance should be performed by qualified personnel.
Never use the product in environments where gas or dust explosions could occur. Refer to the specifications provided by the manufacturer to ensure the battery is suitable for use with this product. The battery manufacturer's safety instructions must always be observed.

Image 2.1: Safety warning regarding electrical shock and the importance of professional installation and adherence to safety guidelines.

3. Setup

Incorrect installation can be hazardous. It is strongly recommended to consult a licensed professional and follow all applicable electrical codes during installation.

3.1 Mounting

The inverter is designed for simple mounting and configuration. Ensure the mounting location is dry, well-ventilated, and free from explosive gases or dust. Allow adequate space around the unit for proper airflow and cooling.

Image 3.1: Visual representation of the inverter's features, including simple mounting and configuration.

3.2 Wiring

Connect the DC input wires (+/-) from your battery bank to the inverter. Connect the AC output wires (L/N/G) to your load distribution. Always use appropriately sized wires and fuses as specified in the detailed product manual or by a qualified electrician to prevent overheating and ensure safe operation.

4. Operating the Inverter

Once properly installed, the inverter is ready for operation. It provides a stable 120V AC pure sine wave output from a 24-Volt DC source.

4.1 Powering On/Off

Refer to the physical controls on the inverter for specific power on/off procedures. Ensure all connections are secure before powering on.

4.2 Automatic Energy Saver (AES) Function

The AES function helps reduce the inverter's standby power consumption. Inverters consume power even when no load is connected, as they continuously produce a sine wave. The AES function can significantly lower this consumption.

- **Modified Sine Wave Mode:** Reduces power consumption by approximately 20% by lowering the frequency of FET switching. This results in a less perfect sine wave.
- **Search Mode:** Changes the frequency to 1 Hz, meaning the inverter switches only once per second, producing one sine wave per second. This mode uses approximately 70% less energy than normal

consumption. When a load is applied, the inverter will return to normal operation.

Be aware that using AES modes, especially search mode, can affect certain appliances. For example, search mode might slow down the clock on a microwave, and modified sine wave could result in lower output from a light bulb. The AES function can be configured via VictronConnect for smart inverters or VE.Configure for other models.

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Video 4.1: This video explains how to reduce the power consumption of an inverter in standby mode using the Automatic Energy Saver (AES) function.

4.3 Monitoring and Configuration (VictronConnect & VRM Portal)

For smart inverters, the VictronConnect app allows you to configure, monitor, update, and diagnose your Victron product via Bluetooth, USB, WiFi, LAN, or the internet. The VRM (Victron Remote Management) portal provides comprehensive remote monitoring and management capabilities for your system, allowing you to check system performance and manage devices from anywhere.

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Video 4.2: This video demonstrates the VictronConnect App for monitoring and configuring your Victron Energy products.

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Video 4.3: This video provides an overview of the VRM (Victron Remote Management) portal for remote system monitoring and management.

5. Maintenance

The Victron Energy Phoenix Inverter is designed for durability and requires minimal user maintenance. As stated in the safety section, there are no internal user-serviceable parts. All maintenance should be performed by qualified personnel.
Regularly inspect the inverter for any signs of damage, loose connections, or excessive dust accumulation. Keep the ventilation openings clear to ensure proper cooling. Clean the exterior with a dry cloth as needed.

6. Troubleshooting

If you encounter issues with your inverter, consider the following general troubleshooting steps:

- **No Output Power:** Check DC input voltage from the battery. Ensure the inverter is switched on. Verify AC output connections.
- **Overload Indication:** Reduce the load connected to the inverter. Ensure the total wattage of connected appliances does not exceed the inverter's capacity.
- **Low Battery Voltage:** Recharge your battery bank. The inverter may shut down to protect the battery from deep discharge.
- **Overheating:** Ensure adequate ventilation around the inverter. Clear any obstructions from the cooling fins.

For persistent issues or complex problems, contact a licensed professional or Victron Energy support for assistance. Do not attempt to open or repair the inverter yourself.

7. Specifications

The following table outlines the key specifications for the Victron Energy Phoenix 24/3000 Pure Sine Wave

Inverter:

Feature	Specification
Model Name	Phoenix Inverter
Item Model Number	PIN243020100
Product Dimensions	8.6 x 10.2 x 14.3 inches (218 x 258 x 362 mm)
Item Weight	46.5 pounds (21.1 kg)
Power Source	Battery Powered
Wattage	3000 watts
Battery Capacity (Example)	1,300,000 Milliamp Hours (1300 Ah)
Operating Temperature Range	-40 to +65°C (-40 to 150°F)
Humidity	Max. 95%

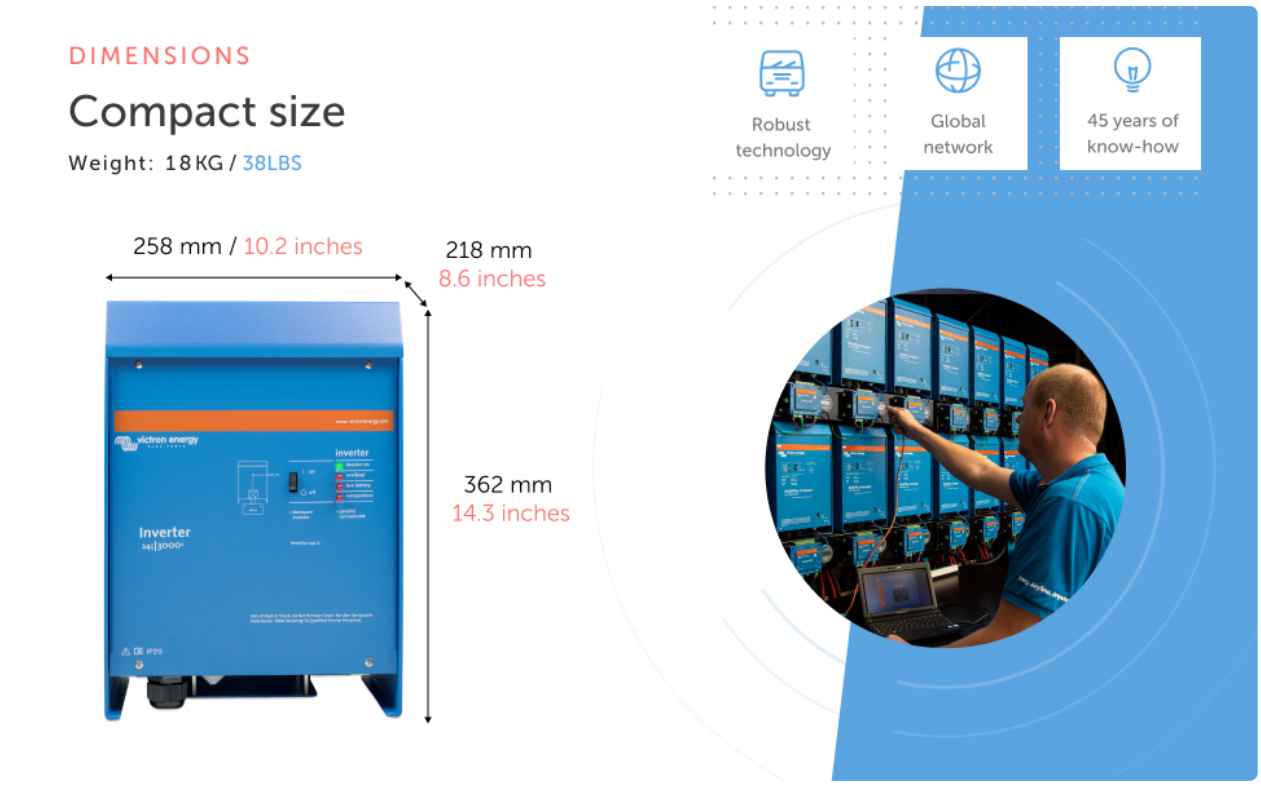

Image 7.1: Detailed dimensions of the Victron Energy Phoenix Inverter.

Image 7.2: Overview of the inverter's protection features and operational capabilities.

8. Accessories

Victron Energy offers various accessories to enhance the functionality and monitoring of your inverter system:

- **Color Control GX:** Provides local and remote monitoring and control via the VRM Portal.
- **MK3-USB VE.Bus to USB interface:** Connects the inverter to a computer for configuration and monitoring.
- **VE.Bus to NMEA 2000 interface:** Integrates the device into an NMEA2000 marine electronics network.
- **Phoenix Inverter Control:** A dedicated panel for monitoring inverter status, including overload, low battery, and temperature.

Image 8.1: Various accessories available for computer-controlled operation and monitoring of Victron Energy products.

9. Warranty and Support

Victron Energy products typically come with a manufacturer's warranty. For specific warranty details and duration, please refer to the official Victron Energy website or the documentation included with your product. A review mentions a 5-year warranty for this product.
For technical support, service, or warranty claims, please contact your authorized Victron Energy dealer or a licensed professional. You can also find extensive resources and support documentation on the official Victron Energy website.