

## Pikasola 1000W24V-01

# Pikasola 1000W 24V Wind Turbine Generator User Manual

Model: 1000W24V-01

## 1. INTRODUCTION

This manual provides essential information for the safe installation, operation, and maintenance of your Pikasola 1000W 24V Wind Turbine Generator. This wind generator is designed for efficient power generation in various applications, including marine, RV, and home hybrid solar-wind systems.

Key features of this wind turbine include:

- **Low Start-up Speed:** Designed to begin generating power at low wind speeds, maximizing energy capture.
- **High Wind Energy Utilization:** Optimized blade design for efficient conversion of wind energy.
- **Durable Blades:** Features 37.4-inch nylon carbon fiber blades that are waterproof, corrosion-resistant, and lightweight.
- **Efficient Generator:** Equipped with a three-phase permanent magnet synchronous motor and a high-performance NdFeB permanent magnet AC generator.
- **Automatic Yaw Adjustment:** The rotating aluminum alloy body includes a yaw adjustment system and an aerodynamically designed tail fin to automatically orient the rotor for maximum wind energy capture.

## 2. SAFETY INFORMATION

Please read and understand all safety warnings and instructions before installing or operating the wind turbine. Failure to follow these instructions may result in serious injury, property damage, or electric shock.

- **Electrical Hazard:** The wind turbine generates electricity. Ensure all electrical connections are made by qualified personnel and follow local electrical codes. Disconnect all power sources before performing any maintenance or installation.
- **Rotating Parts:** The turbine blades rotate at high speeds. Keep hands, tools, and loose clothing away from rotating parts. Never approach the turbine when it is operating.
- **Falling Hazard:** Installation often requires working at heights. Use appropriate safety equipment, such as harnesses and fall protection.
- **Heavy Equipment:** The turbine components can be heavy. Use proper lifting techniques and equipment to prevent

injury.

- **Environmental Conditions:** Do not install or operate the turbine during severe weather conditions, including high winds, lightning storms, or heavy precipitation.
- **Secure Mounting:** Ensure the mounting pole and foundation are robust enough to withstand the forces exerted by the wind turbine in all expected weather conditions.

### 3. PRODUCT COMPONENTS

The Pikasola 1000W 24V Wind Turbine Generator kit typically includes the following components:



Image: All components of the Pikasola 1000W Wind Turbine Generator kit, including the generator body, blades, tail fin, nose cone, charge controller, mounting hardware, and an anemometer.

- **Wind Turbine Generator Body:** Contains the permanent magnet synchronous motor.
- **Wind Turbine Blades (3x):** Nylon carbon fiber blades for wind capture.
- **Tail Fin:** Guides the turbine to face the wind.
- **Nose Cone:** Covers the blade hub.

- **Charge Controller:** Manages the power output from the turbine to the battery bank.
- **Mounting Hardware:** Bolts, nuts, and an Allen wrench for assembly.
- **Anemometer:** A device for measuring wind speed (may be included as an accessory).



Image: The fully assembled Pikasola 1000W Wind Turbine Generator, shown with its charge controller and an anemometer.

## 4. SITE SELECTION

Proper site selection is crucial for maximizing the performance and safety of your wind turbine. Consider the following factors:

- **Wind Availability:** Install the wind turbine in an area with consistent and strong wind flow.
- **Obstruction Clearance:** Avoid areas with tall buildings, trees, or other obstacles that can create wind turbulence. If obstacles are present, position the turbine as far as possible from them, or ensure the installation height is at least 20 feet higher than the top of the obstructions to utilize clean wind.
- **Elevated Locations:** Hills or elevated areas can benefit from a 'growth effect' where wind speed increases over the

terrain, making them good locations for turbine placement.

- **Avoid Turbulent Regions:** Do not install near cliffs or in areas known for highly turbulent wind patterns, as this can reduce efficiency and increase wear on the turbine.



Image: A diagram showing various scenarios for wind turbine placement, indicating good, fair, and poor locations based on proximity to obstacles and terrain features like hills and cliffs.

## 5. SETUP AND INSTALLATION

This section outlines the general steps for assembling and installing your wind turbine. Always refer to the detailed diagrams and instructions provided in the packaging for precise assembly.

### 5.1. Mechanical Assembly

1. **Attach Tail Fin:** Secure the tail fin to the generator body using the provided hardware. Ensure it is firmly attached and correctly oriented.
2. **Install Blades:** Mount the three blades onto the hub of the generator. Ensure each blade is securely fastened with the appropriate bolts and nuts.
3. **Attach Nose Cone:** Place the nose cone over the blade hub and secure it.
4. **Mount Generator to Pole:** Secure the assembled generator head to a sturdy mounting pole (not included) using the provided flange and bolts. Ensure the pole has an outer diameter of approximately 2.8 inches (+/- 0.08 inches) for proper fit.



Image: A detailed view of the Pikasola wind turbine generator head, showing its connection point to the mounting pole, highlighting the robust attachment mechanism.

## 5.2. Electrical Connections

All electrical work should be performed by a qualified electrician. Incorrect wiring can damage the system or cause injury.

1. **Connect Turbine to Charge Controller:** Connect the three output wires from the wind turbine generator to the corresponding input terminals on the charge controller. Ensure correct phase connection if specified.
2. **Connect Charge Controller to Battery:** Connect the positive (+) and negative (-) terminals of the charge controller to your 24V battery bank. Observe correct polarity.
3. **Connect Charge Controller to Load (Optional):** If your charge controller has a load output, connect your DC loads to these terminals, observing polarity.
4. **Grounding:** Ensure the entire system, including the mounting pole and generator, is properly grounded according to local electrical codes.



Image: The Pikasola wind generator charge controller, showing its input and output terminals for connecting to the wind turbine and battery bank.

## 6. OPERATING INSTRUCTIONS

Once installed and connected, the Pikasola 1000W 24V Wind Turbine Generator operates automatically. It will begin generating power when wind speeds are sufficient and the charge controller will regulate the output to charge your 24V battery bank.

- **Monitoring:** Regularly monitor your battery voltage and the charge controller's indicators to ensure proper operation.
- **Braking System:** The charge controller typically includes an automatic braking system to protect the turbine in high winds. Understand how to manually activate any emergency brake if available.
- **Noise:** The turbine operates with low vibration. Any unusual noises should be investigated immediately.

## 7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your wind turbine.

- **Visual Inspection (Monthly):** Check for any loose bolts, damaged blades, frayed wires, or corrosion. Ensure the tail fin moves freely.
- **Blade Cleaning (Annually or as needed):** Clean the blades to remove dirt, debris, or ice buildup that can reduce efficiency. Use a soft cloth and mild detergent.
- **Electrical Connections (Annually):** Inspect all electrical connections for tightness and signs of corrosion. Clean and re-tighten as necessary.
- **Bearing Check (Every 2-3 Years):** Listen for unusual noises from the generator head, which may indicate worn bearings. Consult a professional for bearing replacement if needed.
- **Pole Stability:** Periodically check the stability of the mounting pole and its foundation.

**Always disconnect power and ensure the turbine is safely braked or secured before performing any maintenance.**

## 8. TROUBLESHOOTING

This table provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No power output	Low wind speed Loose electrical connections Charge controller fault Turbine brake engaged	Wait for higher wind speeds Check and tighten all wiring Consult charge controller manual or contact support Disengage brake if safe to do so
Low power output	Insufficient wind Dirty or damaged blades Turbine not facing wind Battery bank issues	Check wind conditions Clean or replace blades Check tail fin and yaw mechanism Inspect battery health and connections
Unusual noise or vibration	Loose components Damaged blades Worn bearings	Inspect and tighten all bolts Check blades for cracks or damage; replace if necessary Contact support for bearing inspection/replacement
Charge controller error	Over-voltage/current Wiring fault Internal malfunction	Check system voltage/current limits Verify all wiring connections Consult charge controller manual or contact support

## 9. SPECIFICATIONS

The following are the technical specifications for the Pikasola 1000W 24V Wind Turbine Generator (Model: 1000W24V-01):

- **Rated Power:** 1000W
- **System Voltage:** 24V
- **Product Dimensions:** 41.3 x 7.5 x 17.3 inches (Generator body and tail)
- **Item Weight:** 23.4 pounds
- **Rotor Diameter (Blade Span):** Approximately 75 inches
- **Mounting Pole Diameter:** Approximately 2.8 inches (+/- 0.08 inches)
- **Blade Material:** Nylon Carbon Fiber
- **Generator Type:** Three-phase permanent magnet synchronous motor

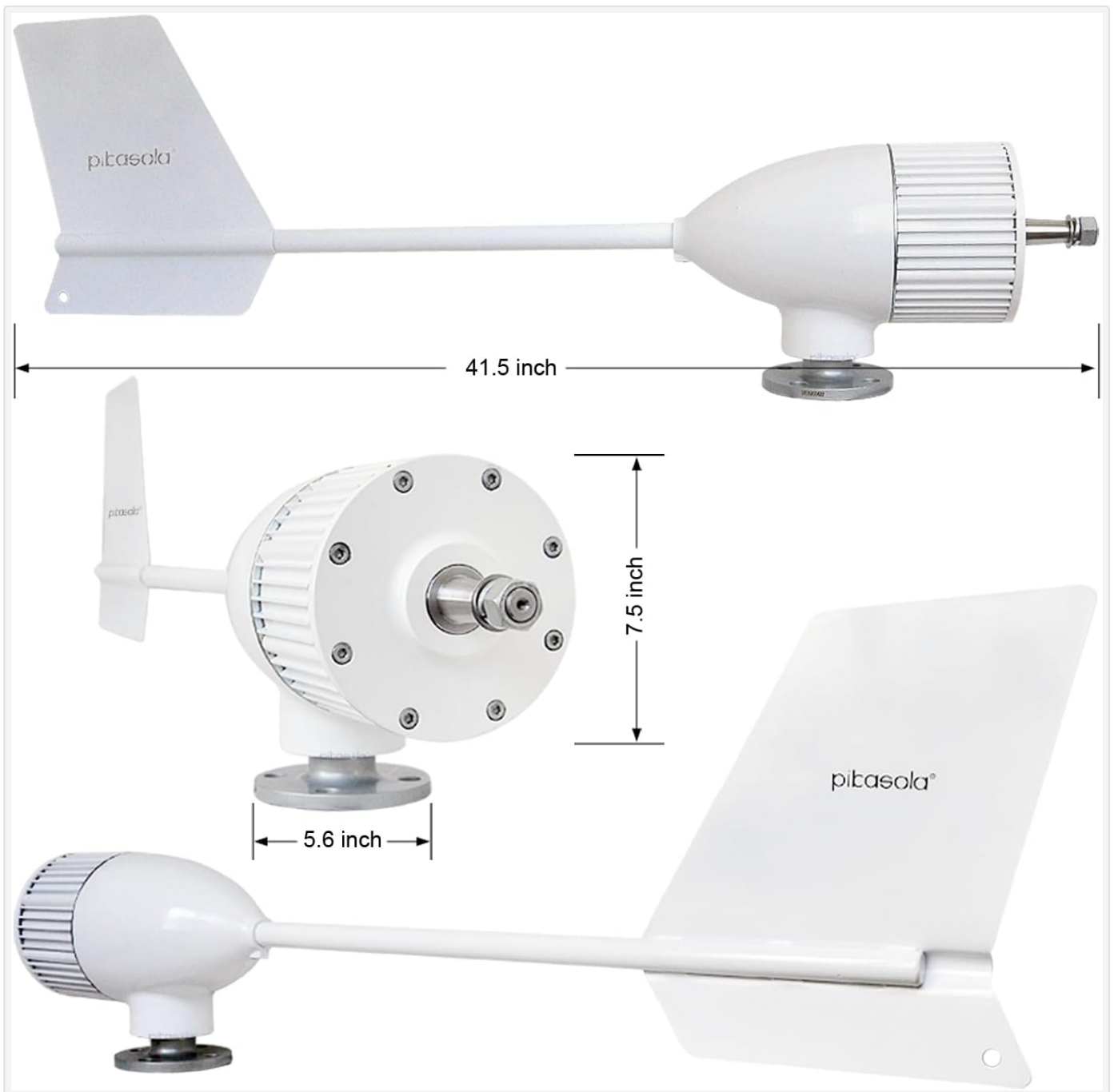


Image: A diagram illustrating the dimensions of the Pikasola wind turbine generator body and tail fin, including length and height measurements.



Image: A diagram showing the overall dimensions of the assembled Pikasola wind turbine, specifically highlighting the 75-inch rotor diameter (blade span) and the mounting pole diameter.

## 10. WARRANTY AND SUPPORT

For warranty information, technical support, or replacement parts, please refer to the documentation included with your purchase or contact Pikasola customer service through their official channels. Keep your purchase receipt as proof of purchase for warranty claims.