a-TroniX AX 5.0kW-3ph Hybrid Inverter and 17.28kWh Storage System

a-TroniX AX 5.0kW-3ph Hybrid Inverter and 17.28kWh Storage System User Manual

Model: AX 5.0kW-3ph Hybrid Inverter and 17.28kWh Storage System

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of the a-TroniX AX 5.0kW-3ph Hybrid Inverter and the accompanying 17.28kWh Storage System. This integrated solution is designed to efficiently manage solar energy for residential and commercial applications, ensuring reliable power supply and optimal energy utilization.
Please read this manual thoroughly before installation and operation to ensure safe and efficient use of the system. Keep this manual for future reference.

2. Safety Information

Important Safety Instructions:

- Installation must be performed by qualified personnel in accordance with local electrical codes and regulations.
- Do not attempt to open or repair the inverter or battery modules. Refer all servicing to qualified service personnel.
- Ensure proper grounding of all components.
- Keep children and unauthorized persons away from the system.
- Avoid contact with live electrical parts. High voltage is present.
- Do not install the system in areas with flammable materials, explosive gases, or excessive dust.
- Ensure adequate ventilation around the inverter and battery modules to prevent overheating.

3. Product Overview

The a-TroniX AX system combines a powerful hybrid inverter with a high-capacity battery storage solution, designed for seamless integration with photovoltaic installations.

3.1 System Components

Figure 3.1: Overview of the a-TroniX AX Hybrid Inverter and Battery Storage System. This image displays both the inverter unit (left) and the stackable battery modules (right), illustrating the compact and integrated design of the complete energy solution.

Figure 3.2: The a-TroniX AX 5.0kW-3ph Hybrid Inverter. This image shows the main inverter unit from an angled perspective, highlighting its robust casing and the a-TroniX branding.

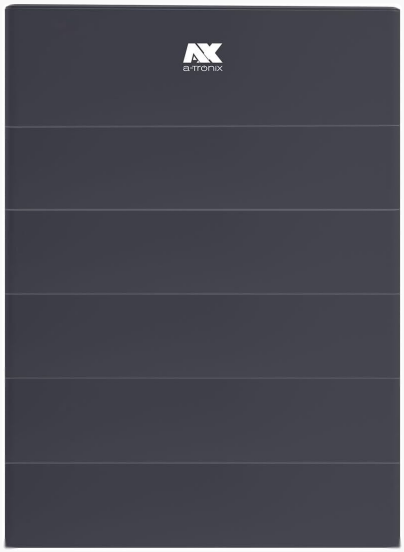

Figure 3.3: The a-TroniX AX 17.28kWh Stackable Battery Storage. This image focuses on the battery stack, demonstrating its modular and space-saving design.

3.2 Inverter Features

- Max. Output Power: 5,000W
- Compatible with PV systems up to 8kWp
- Max. Efficiency: 98%
- European Efficiency: 97.3%
- Equipped with 2 MPP Trackers for optimized solar energy harvesting.
- Black Start Capability, allowing the system to restart without grid power.
- Integrated Smart Meter for precise energy monitoring.
- Interfaces: 2x RS485, DRM, Ripple Control, USB.

Figure 3.4: Front panel of the a-TroniX AX Inverter. This view highlights the display screen and control buttons, providing user interface access.

3.3 Storage System Features

- Total Capacity: 17.28 kWh.
- Operating Voltage: 291.6 ~ 392.2 V.
- Composed of 5 Battery Slaves (each 2.88 kWh) and 1 Battery Master (2.88 kWh capacity).
- Stackable Modules for flexible installation and space efficiency.
- Interfaces: CAN, RS485.

Figure 3.5: Bottom view of an a-TroniX AX Battery Module. This image shows the base of a single battery unit, indicating its robust construction.

4. Setup and Installation

The a-TroniX AX system is designed for **Plug & Play** installation, simplifying the setup process. The battery modules are **stackable**, allowing for flexible configuration based on available space.

4.1 Pre-installation Checklist

- Verify all components are present: 1 Hybrid Inverter, 1 Battery Master with BMS, 5 Battery Slaves, Smart Meter, Wi-Fi Dongle.
- Ensure the installation site meets environmental requirements (temperature, humidity, ventilation).
- Confirm the electrical infrastructure is compatible with the system's power requirements.
- Have all necessary tools and safety equipment ready.

4.2 Installation Steps (General)

1. **Mount the Inverter:** Securely mount the inverter unit in a well-ventilated area, away from direct sunlight and moisture.

2. **Install Battery Modules:** Stack the battery modules (1 Master, 5 Slaves) in the designated location. Ensure proper interconnections between modules.
3. **Electrical Connections:** Connect the PV array, grid, and battery system to the inverter according to the wiring diagram provided in the detailed installation guide (not included in this general manual).
4. **Smart Meter and Wi-Fi Dongle:** Install the Smart Meter for energy monitoring and connect the Wi-Fi dongle for remote access and system updates.
5. **System Commissioning:** Follow the inverter's display prompts or the detailed commissioning guide to power on and configure the system.

Note: *For detailed wiring diagrams and specific installation procedures, please refer to the dedicated installation manual provided with your product.*

5. Operating the System

Once installed and commissioned, the a-TroniX AX system operates largely automatically, managing energy flow between the solar panels, batteries, grid, and your home's loads.

5.1 Inverter Display and Controls

The inverter features a display screen and control buttons (refer to Figure 3.4) to monitor system status, view energy production/consumption, and adjust basic settings. Common display indicators include:

- **PV Power:** Current power generated by solar panels.
- **Battery State of Charge (SOC):** Percentage of battery capacity remaining.
- **Grid Status:** Indicates connection to the utility grid.
- **Load Consumption:** Power being used by household appliances.
- **System Status:** Operational mode (e.g., Normal, Fault, Standby).

5.2 Wi-Fi Monitoring

The included Wi-Fi dongle enables remote monitoring of your system via a dedicated mobile application or web portal. This allows you to track performance, view historical data, and receive alerts from anywhere with an internet connection. ***Note:*** *Refer to the Wi-Fi dongle's specific manual for instructions on connecting to your network and setting up the monitoring application.*

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your a-TroniX AX system. Always disconnect power before performing any maintenance.

6.1 Routine Checks

- **Visual Inspection (Monthly):** Check the inverter and battery modules for any visible damage, loose connections, or signs of overheating. Ensure ventilation openings are clear of dust and debris.
- **Performance Monitoring (Weekly/Daily):** Regularly check the system's performance via the inverter display or monitoring app to ensure it is operating within expected parameters.
- **Cleaning (As needed):** Gently clean the exterior of the inverter and battery modules with a dry, soft cloth. Do not use liquid cleaners or solvents.

6.2 Professional Servicing

It is recommended to have the system inspected by a qualified technician annually to ensure all electrical connections are secure and components are functioning correctly.

7. Troubleshooting

This section provides guidance on common issues you might encounter. For problems not listed here, or if issues persist, please contact a-TroniX customer support.

Problem	Possible Cause	Solution
Inverter not powering on	No AC input from grid; DC input from PV or battery too low; Emergency stop engaged.	Check grid connection; Verify PV and battery connections and voltage; Disengage emergency stop button.
Low power output	Insufficient sunlight; Dirty PV panels; PV string issue; Inverter derating due to high temperature.	Check weather conditions; Clean PV panels; Inspect PV string connections; Ensure adequate ventilation around inverter.
Battery not charging/discharging	Battery connection issue; BMS fault; Temperature outside operating range.	Check battery cable connections; Monitor battery temperature; Contact support if BMS fault persists.
Communication error (Wi-Fi)	Wi-Fi signal weak; Incorrect network settings; Dongle fault.	Relocate Wi-Fi dongle or router; Reconfigure network settings; Contact support if dongle is faulty.

8. Technical Specifications

8.1 Inverter Specifications (a-TroniX AX 5.0kW-3ph)

- Max. Output Power: 5,000 W
- Max. PV Array Size: 8 kWp
- Phases: 3-phase
- Max. Efficiency: 98%
- European Efficiency: 97.3%
- MPP Trackers: 2
- Protection Class: IP65
- Features: Black Start Capability, Integrated Smart Meter, Wi-Fi Dongle included.
- Interfaces: 2x RS485, DRM, Ripple Control, USB.

8.2 Battery Storage Specifications (a-TroniX AX 17.28kWh)

- Total Capacity: 17.28 kWh
- Operating Voltage: 291.6 ~ 392.2 V
- Module Configuration: 1 Battery Master (2.88 kWh) + 5 Battery Slaves (each 2.88 kWh)
- Installation: Plug & Play, Stackable Modules
- Interfaces: CAN, RS485

9. Warranty and Support

a-TroniX is a German manufacturer specializing in battery and accumulator technology, with a strong focus on energy

storage and renewable energies. We are committed to providing reliable products and excellent customer service.
For any questions regarding your a-TroniX AX system, including technical support, troubleshooting assistance, or warranty claims, please do not hesitate to contact our experienced team. We are available to assist you before and after your purchase.
Please refer to your purchase documentation for specific warranty terms and conditions.

Contact Information:

Brand: a-TroniX

Website: Visit the a-TroniX Store on Amazon (for general inquiries and product information)

For direct technical support, please refer to the contact details provided in your product packaging or official a-TroniX website.