

enjoy solar EZHI-EMEA

APsystems EZHI Single-Phase Hybrid Micro-Inverter and Solar Storage System

Model: EZHI-EMEA | Brand: enjoy solar

1. INTRODUCTION

The APsystems EZHI is a compact, single-phase hybrid micro-inverter system designed for balcony power plants and DIY solar installations. This innovative solution integrates energy generation and storage, allowing users to maximize self-consumption of solar energy. It efficiently stores excess energy produced during the day for use during periods of low sunlight or at night, significantly reducing electricity costs and enhancing energy independence.

Key features include independent MPPT channels for high-performance modules, fast charging capabilities, ultra-quiet fanless operation, and a rapid UPS-level switchover time for uninterrupted power supply. The system is built with robust IP65 protection, ensuring durability and reliability in various environmental conditions.

2. SAFETY INFORMATION

Always read and understand all safety instructions before installing, operating, or maintaining the EZHI system. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **Electrical Safety:** Installation must be performed by qualified personnel in accordance with local electrical codes and regulations. Ensure the system is disconnected from all power sources before performing any work.
- **Environmental Protection:** The EZHI unit has an IP65 protection rating, making it dust-tight and protected against water jets. However, avoid submerging the unit or exposing it to extreme conditions beyond its operating specifications.
- **Battery Handling:** The solar storage battery (Phylion BDB-2.76L) is a Lithium Iron Phosphate (LiFePO₄) battery. Handle with care. Do not puncture, disassemble, or expose to fire or extreme temperatures.
- **Ventilation:** Ensure adequate ventilation around the unit to prevent overheating, although the EZHI is designed for fanless operation.
- **Isolation:** The high and low voltage isolation topology contributes to maximum operational safety. Do not bypass or modify safety features.

3. PRODUCT OVERVIEW

The EZHI system comprises the hybrid micro-inverter unit and the solar storage battery, designed to work seamlessly together for efficient energy management.

3.1 Components

LIEFERUMFANG



PHYLION x 1



EZHI x 1



Kurzanleitung für die Installation x 1



Wandhalterung x 1
Montagehalterung x 2



M6-Spreizbolzen x 4
M4 x 6mm Schraube x 4
M4 x 14mm Schraube x 1



EU-Netzkabel x 1



Ausgangskabel für netzunabhängigen Betrieb x 1



Entriegelungs-Werkzeug x 1
Entriegelungsschlüssel x 1

Figure 3.1: Scope of Delivery

This image displays the complete package contents. It includes the APsystems EZHI hybrid micro-inverter, the Phylion BDB-2.76L solar storage battery, wall mounting brackets, installation screws (M6, M4), an EU power cable, an output cable for off-grid operation, and release tools. A quick installation guide is also included.



The image shows a detailed view of the EZHI micro-inverter unit. It is a black rectangular device with the APstorage logo in the center. On the left side, there are two AC connectors labeled 'ON-GRID' and 'OFF-GRID'. Below the logo, there is a status indicator panel with three lights. At the bottom, there are two PV inputs labeled 'PV1' and 'PV2', and a battery input labeled 'BAT'.

Figure 3.2: EZHI Micro-Inverter Unit

This image shows a detailed view of the EZHI micro-inverter. It features ON-GRID and OFF-GRID AC connectors, battery input (BAT), and two PV inputs (PV1, PV2). Status indicator lights for power, Wi-Fi, and Bluetooth are visible on the front panel, along with the APstorage logo.



Figure 3.3: Phylion Solar Storage Battery

This image provides a close-up of the Phylion BDB-2.76L solar storage battery. It is a black, rectangular unit with the "PHYLION" branding vertically on the side. Indicator lights are visible on the top left, and a label with technical specifications is on the right side.

3.2 Key Features

- **Energy Storage Optimization:** Stores excess solar energy for later use, maximizing self-consumption and reducing grid dependency.
- **UPS Functionality:** Provides backup power for essential loads during power outages with a rapid switchover time of less than 10 milliseconds.
- **High Performance:** Features 2 independent MPPT channels with high input current and output power (up to 2x 600W input).
- **Advanced Technology:** Utilizes modern GaN technology for continuous fast charging up to 40A.
- **Silent Operation:** Fanless design ensures ultra-quiet performance.
- **Robust Design:** IP65 protection class ensures reliable operation in dusty and wet environments.
- **Smart Energy Management:** 24-hour energy management system with real-time monitoring via the AP EasyPower app (Wi-Fi and Bluetooth).
- **Flexibility:** Compatible with various battery brands and supports capacity expansion with multiple battery packs. Allows AC coupling with other micro-inverters.
- **Long Battery Lifespan:** Smart charging technology extends battery life, with the Phylion battery rated for 6000 cycles.

4. SETUP AND INSTALLATION

The EZHI system is designed for easy Plug & Play installation. Follow these steps for a successful setup.

4.1 System Diagram

Anweisungen zum Einbau

EZHI-Serie Balkonenergiespeichersystem

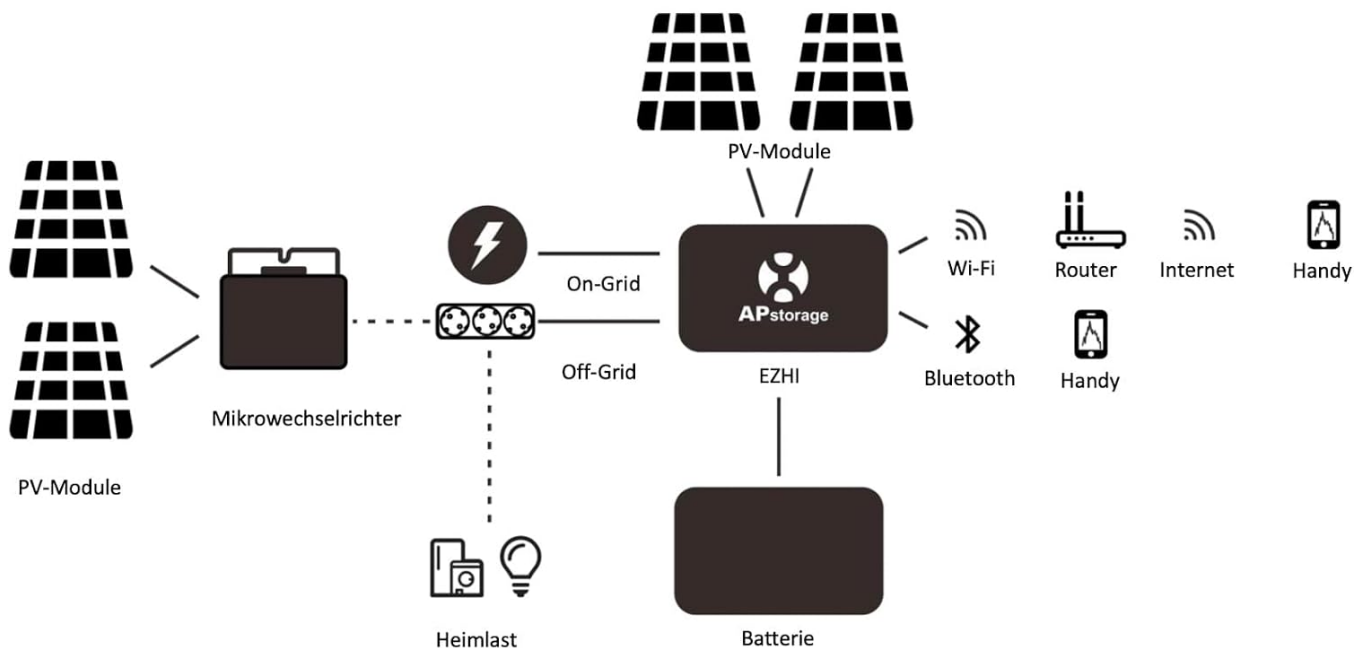


Figure 4.1: EZHI System Installation Diagram

This diagram illustrates the typical setup of the EZHI balcony energy storage system. It shows PV modules connected to the EZHI unit, which then connects to the grid (On-Grid) and can also power home loads (Off-Grid) and charge the battery. The system can be monitored and controlled via Wi-Fi and Bluetooth using a smartphone.

4.2 Connection Steps

1. **Mounting:** Securely mount the EZHI micro-inverter and the Phylion battery using the provided wall mounting brackets and screws. Ensure the mounting location is suitable for the IP65 rating and allows for proper cable routing.
2. **PV Module Connection:** Connect your solar PV modules to the PV1 and PV2 inputs on the EZHI unit. Ensure correct polarity.
3. **Battery Connection:** Connect the Phylion solar storage battery to the BAT input on the EZHI unit.
4. **Grid Connection (On-Grid):** Connect the EZHI unit to your household electrical grid using the ON-GRID AC connector and the provided EU power cable. This allows the system to feed excess power back into your home's electrical system.
5. **Off-Grid Connection (Optional):** For backup power functionality, connect essential loads to the OFF-GRID 3-pole AC bus connection using the dedicated output cable.

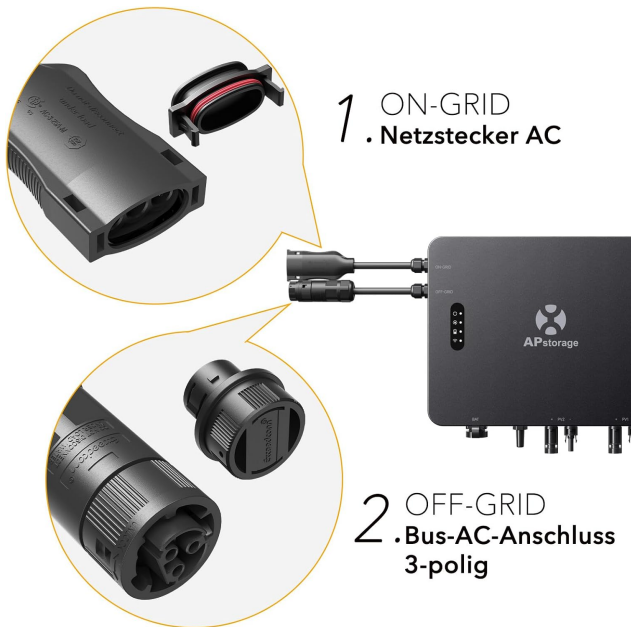


Figure 4.2: ON-GRID and OFF-GRID Connections

This image highlights the two main AC connection points on the EZHI inverter: the ON-GRID AC power plug for grid connection and the OFF-GRID 3-pole AC bus connection for powering essential loads during outages.



Figure 4.3: Plug & Play Balcony Power Plant Setup

This image illustrates a typical "Plug & Play" balcony power plant setup. The EZHI inverter and battery are mounted on a balcony wall, connected to solar panels. This setup emphasizes the ease of installation for home users.

AC-Kopplung mit anderen Wechselrichtern



Figure 4.4: AC Coupling with Other Inverters

This diagram demonstrates the EZHI system's capability for AC coupling with other inverters. It shows multiple solar panel arrays and inverter setups, indicating the EZHI can be integrated into existing or larger solar energy systems for enhanced flexibility.

5. OPERATING THE SYSTEM

Once installed, the EZHI system operates largely automatically, managing energy flow between solar panels, battery, and your home. Monitoring and control are primarily done through the AP EasyPower mobile application.

5.1 AP EasyPower App



Figure 5.1: AP EasyPower App Interface

This image shows the EZHI inverter and Phylion battery next to a smartphone displaying the AP EasyPower app. The app allows users to remotely monitor their system, track energy production, manage storage, and optimize energy usage via Wi-Fi or Bluetooth connection.

The AP EasyPower app is available for both Wi-Fi and Bluetooth connections, providing a user-friendly interface for:

- **Real-time Monitoring:** View current energy production, consumption, and battery status.
- **Energy Flow Analysis:** Analyze system performance and operational status over time.
- **Remote Control:** Adjust settings and manage energy flow as needed.
- **Firmware Updates:** Receive notifications and perform updates for optimal system performance.

5.2 UPS Functionality

Umschaltzeit auf UPS-Pegel weniger als 10 ms.



Figure 5.2: UPS Level Switchover

This image visually represents the EZHI's UPS functionality. It depicts a seamless transition from grid power to battery backup, ensuring continuous operation of connected devices like a television during a power interruption. The switchover time is less than 10 milliseconds.

The EZHI's integrated UPS (Uninterruptible Power Supply) function ensures that essential appliances remain powered during grid outages. When a power interruption is detected, the system automatically switches to battery power within milliseconds, providing a reliable backup supply.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your APsystems EZHI system.

- **Cleaning:** Periodically clean the exterior of the EZHI unit and battery with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure all connectors are free from dust and debris.
- **Visual Inspection:** Regularly inspect all cables and connections for any signs of wear, damage, or corrosion. Ensure all mounting hardware is secure.
- **Software Updates:** Keep the AP EasyPower app and the EZHI firmware updated to the latest versions to benefit from performance improvements and new features.
- **Battery Health:** The system's smart charging technology helps prolong battery life. Monitor battery health and performance through the AP EasyPower app. The Phylion battery is designed for 6000 cycles at 80% Depth of Discharge (DOD).
- **Professional Check:** It is recommended to have a qualified technician perform a comprehensive system check annually.

7. TROUBLESHOOTING

This section provides guidance on common issues you might encounter. For more complex problems, refer to the detailed troubleshooting guide in the full user manual or contact customer support.

Problem	Possible Cause	Solution
System not producing power.	No sunlight; PV modules disconnected or damaged; EZHI unit off or in fault mode.	Check sunlight conditions. Verify PV module connections. Check EZHI status indicators and app for error codes. Ensure AC connection to grid is secure.
Battery not charging.	Insufficient solar input; Battery disconnected or faulty; Charging disabled in app settings.	Ensure sufficient solar generation. Check battery cable connection. Verify charging settings in the AP EasyPower app.
No power during grid outage (UPS function not working).	Battery charge too low; Off-grid loads not connected correctly; EZHI in fault mode.	Check battery charge level. Ensure off-grid loads are connected to the correct port. Consult app for system status.
Cannot connect to AP EasyPower app.	Wi-Fi/Bluetooth off; Incorrect network settings; App outdated.	Ensure Wi-Fi/Bluetooth is enabled on EZHI and smartphone. Re-enter network credentials. Update the app to the latest version. Restart EZHI unit.

8. TECHNICAL SPECIFICATIONS

Feature	Specification
Brand	enjoy solar
Model Name	EZHI-EMEA
Model Number	9101200-APsystems
Power Source	Solar Energy
Max Input Power	2 x 600 W

Feature	Specification
Operating Voltage Range	12 V - 60 V
MPPT Voltage Range	12 V - 48 V
Max Input Current	17 A x 2
Rated AC Voltage / Frequency	230 V / 50 Hz
Max Continuous Output Current	5.22 A
Max Continuous Output Power	1200 W
Battery Capacity (Phylion)	54 Ah (2760 Wh)
Battery Voltage (Phylion)	51.2 V
Battery Cycle Life (Phylion)	6000 cycles @ 0.5C, 25°C, 80% DOD
Product Dimensions (L x W x H)	26.9 x 4.7 x 35.1 cm
Item Weight	8 kg
Protection Class	IP65
UPS Switchover Time	Less than 10 ms
Certifications (EZHI)	EN 62109-1/-2; EN 62477-1; EN IEC 61000-6-1/-2/-3/-4; EN 62920; VDE-AR-N 4105; EN 303 645
Certifications (Solar Storage)	IEC62619/CE/UN38.3

9. WARRANTY AND SUPPORT

9.1 Warranty Information

The APsystems EZHI micro-inverter comes with a standard **12-year warranty**. The Phylion BDB-2.76L solar storage battery is also covered by its respective manufacturer's warranty, ensuring long-term reliability and performance. Please retain your proof of purchase for warranty claims. The warranty covers defects in materials and workmanship under normal use and service conditions. It does not cover damage resulting from improper installation, misuse, abuse, unauthorized modification, or natural disasters.

9.2 Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact your authorized dealer or APsystems customer support. You can also utilize the AP EasyPower app for system monitoring and basic diagnostics. For the most up-to-date support information and resources, please visit the official APsystems website or the website of your product supplier, enjoy solar.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question