RUIXU Lithi2-16

RUIXU Lithi2-16 Lifepo4 Battery Energy Storage System User Manual

Model: Lithi2-16 | Brand: RUIXU

1. Introduction

Welcome to the RUIXU Lithi2-16 Lifepo4 Battery Energy Storage System. This manual provides essential information for the safe and efficient installation, operation, and maintenance of your 51.2V 314Ah 16kWh battery system. Please read this manual thoroughly before use to ensure proper handling and to maximize the lifespan and performance of your product.

2. Safety Information

Always prioritize safety when handling and operating the Lithi2-16 battery system. Failure to follow these instructions may result in injury, damage to the product, or property damage.

2.1 General Safety

- Always follow local electrical codes and safety regulations during installation and operation.
- Installation and maintenance should only be performed by qualified and trained personnel.
- Do not expose the battery to open flames, excessive heat, or corrosive substances.

2.2 Electrical Safety

- The Lithi2-16 features all-pole, dual protection through a fuse (negative terminal) and a micro circuit breaker (positive terminal) for enhanced safety.
- Quick plugs are designed to provide 250A continuous overcurrent capacity and ensure secure, tool-less connections. Ensure all connections are firm before operation.
- Do not attempt to open the battery casing or modify internal components unless specifically instructed for maintenance by RUIXU support.

2.3 Fire Safety

- A perfluorohexane module is integrated within the battery pack to enhance fire protection, safeguarding both electrical lines and individual cells.
- In case of fire, use a Class D fire extinguisher. Do not use water.

2.4 Environmental Safety

- The electro-coated battery case provides excellent rust prevention, making it suitable for outdoor use.
- Ensure proper ventilation around the unit, especially if installed indoors, to prevent heat buildup.

2.5 Handling

- The battery weighs approximately 145kg (320lb). Use appropriate lifting equipment or utilize the integrated FUMA wheels for safe movement.
- Avoid dropping or subjecting the battery to severe impacts.

3. Product Overview

The RUIXU Lithi2-16 is a high-capacity 51.2V 314Ah (16.07kWh) Lifepo4 battery designed for robust energy storage applications. It offers a long cycle life of over 9,500 cycles at 80% Depth of Discharge (DOD), ensuring reliable, long-term performance.

3.1 Key Features

- **5-inch Capacitive Touch Screen:** Provides real-time battery information and allows intuitive adjustment of settings.
- **Self-Heating Function:** Ensures optimal performance and charging in cold temperatures.
- **Intelligent Balancing:** A double equilibrium approach calculates capacity differences and extends balancing time for efficient cell balancing.
- **FUMA Wheels and Wall Mounted Fixation:** Four concealed heavy-duty wheels for mobility and an anti-tipping mount for secure wall anchoring.
- **Electro-Coating Battery Case:** Provides superior rust prevention for outdoor installations.
- **Inspection Port:** Located on the side for access to the BMS and fuse for maintenance.

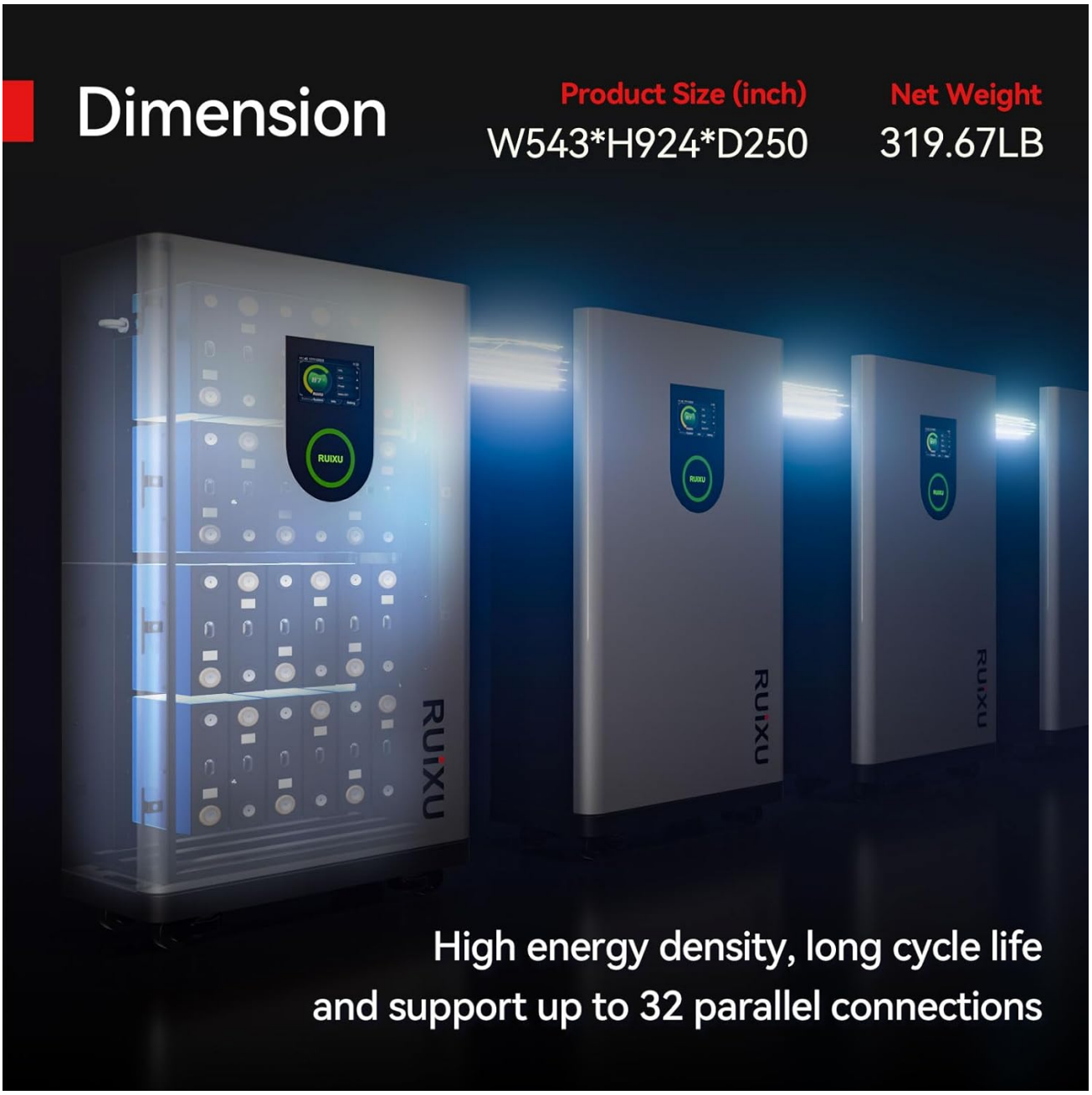

Figure 3.1: The RUIXU Lithi2-16 battery unit, highlighting its dimensions (W543*H924*D250 mm) and net weight (319.67 LB). It also shows several units connected, emphasizing high energy density and support for up to 32 parallel connections.

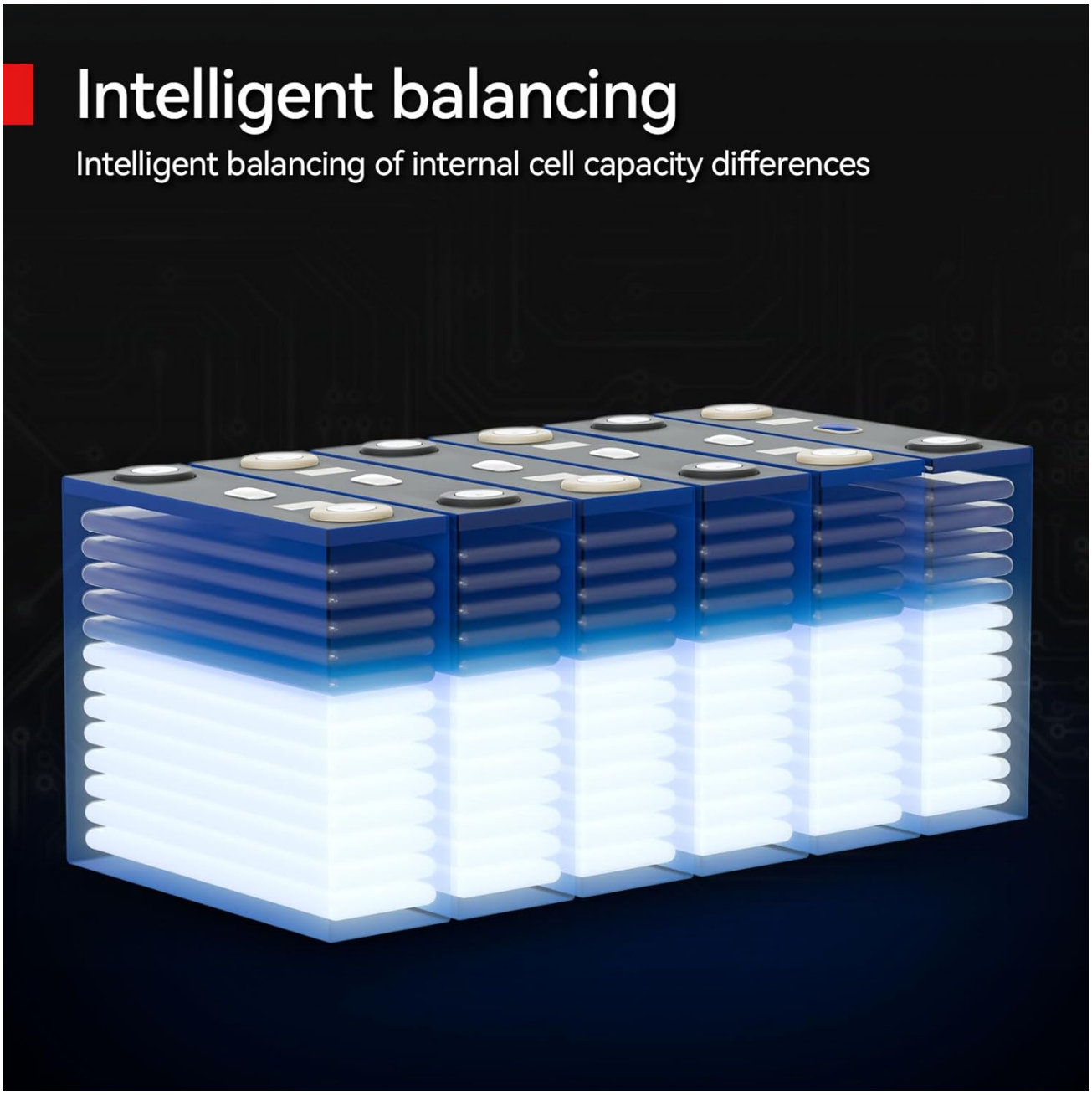

Figure 3.2: This diagram visually explains the intelligent balancing mechanism, which optimizes the internal cell capacity differences for improved battery efficiency and longevity.

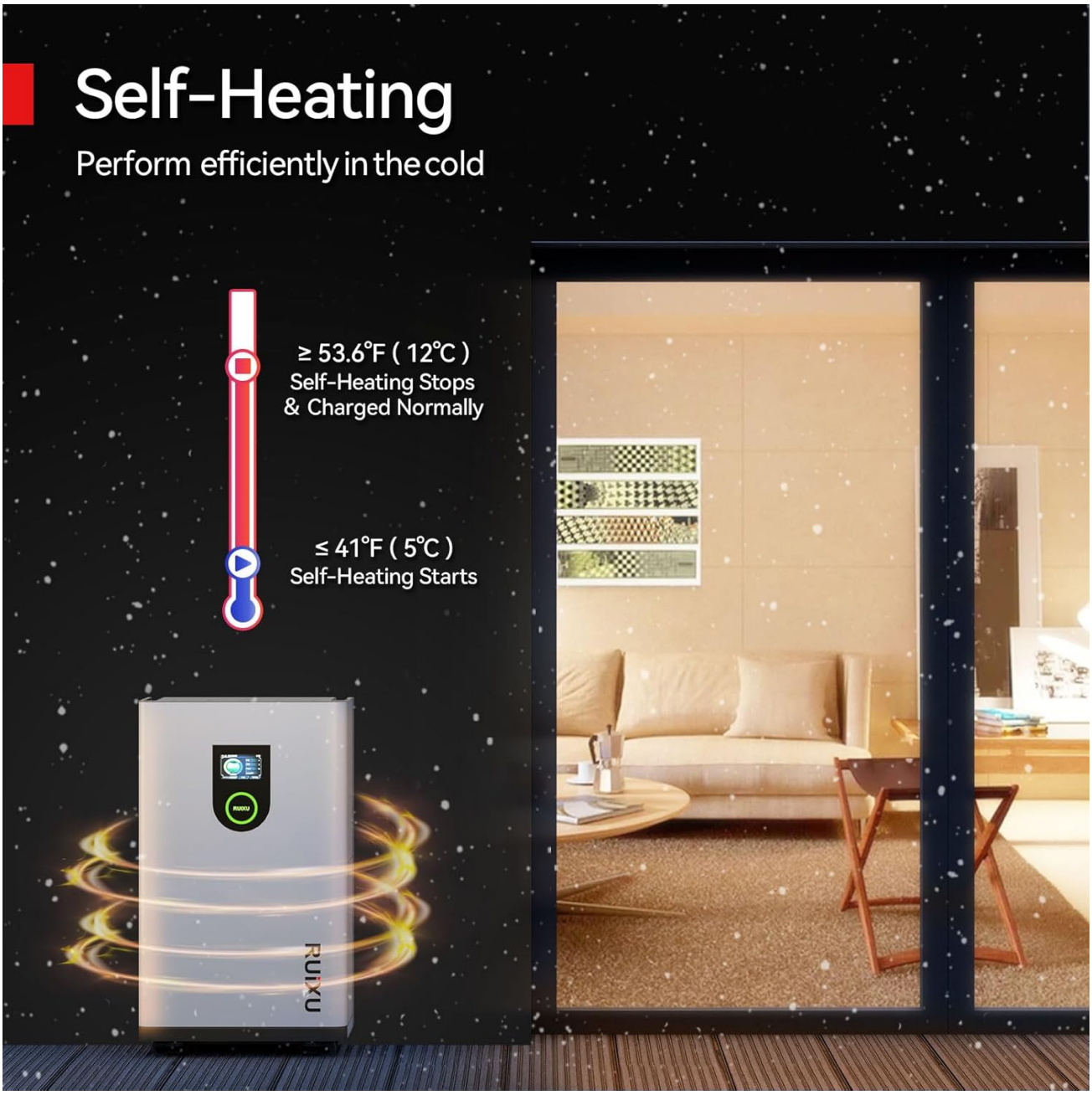

Figure 3.3: This image demonstrates the self-heating feature, indicating that heating starts below 41°F (5°C) and stops when the temperature reaches 53.6°F (12°C), allowing normal charging in cold environments.

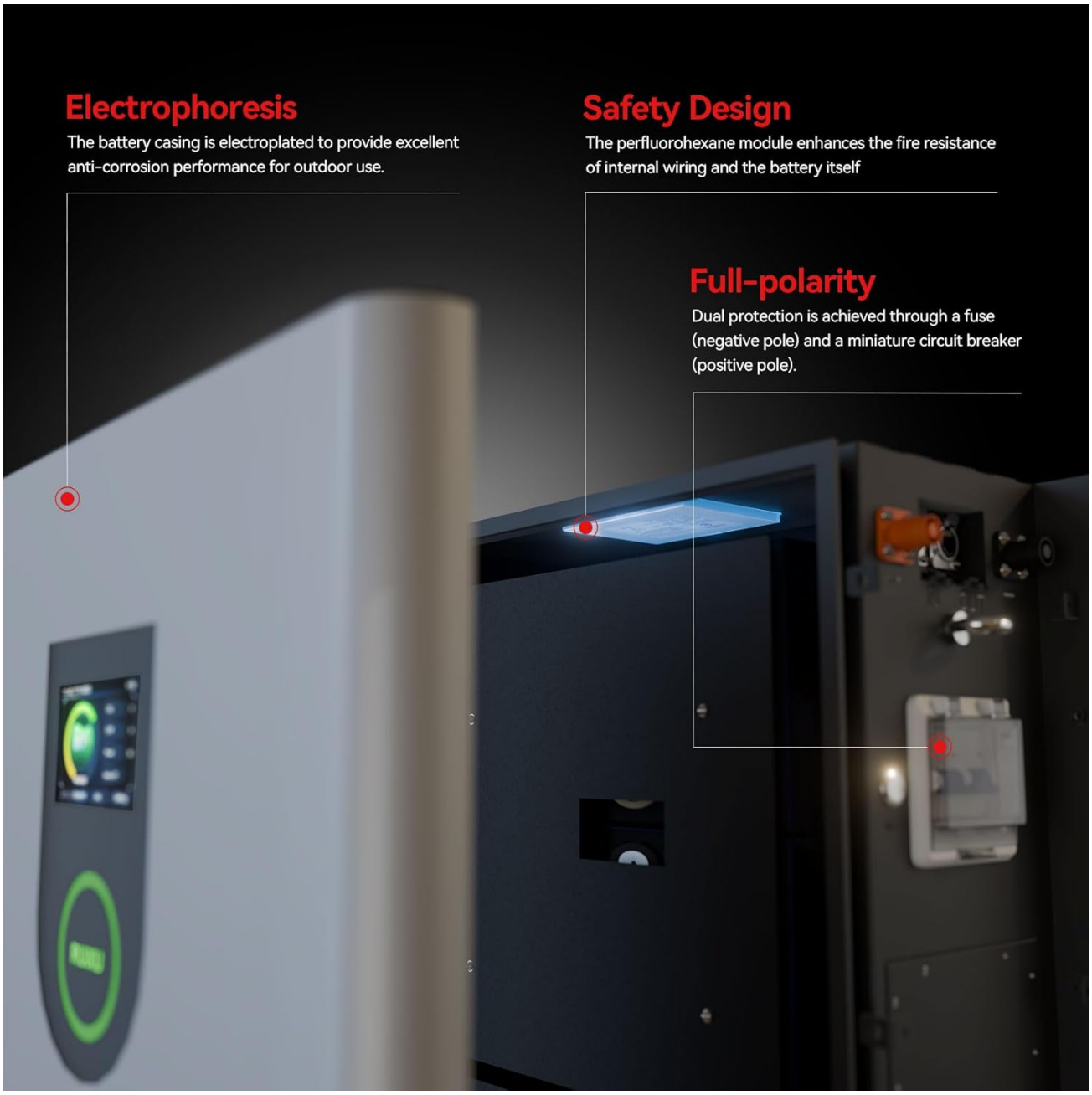

Figure 3.4: This image highlights two key aspects: the electro-coating (electrophoresis) on the battery casing for anti-corrosion performance, and the internal safety design, including the perfluorohexane module for fire resistance and full-polarity protection via fuse and circuit breaker.

4. Setup

Proper setup is crucial for the safe and efficient operation of your Lithi2-16 battery system.

4.1 Unpacking and Inspection

- Carefully remove the battery from its packaging.
- Inspect the unit for any visible damage that may have occurred during shipping. Contact your supplier immediately if damage is found.

4.2 Placement

- The battery can be easily moved using its four concealed heavy-duty FUMA wheels.
- For permanent installation, utilize the anti-tipping mount on the back to securely anchor the battery to a wall.
- Ensure adequate ventilation around the unit to prevent overheating. Avoid direct sunlight and extreme temperatures.

4.3 Electrical Connections

- **RS485 Communication Cable:** Connect the provided RS485 Communication Cable to your compatible inverter or monitoring system.
- **Ground Cable:** Connect the Ground Cable to a suitable and verified ground point.
- **Parallel Connections:** If multiple units are used, connect them in parallel using the provided set of 1/0 AWG OP140 cables. Refer to the system diagram for correct parallel wiring.
- **Power Cables:** The quick plugs facilitate easy, tool-less connection for main power cables. Ensure these connections are fully seated and secure.

4.4 Initial Power-Up

- Once all physical and electrical connections are complete, follow the instructions displayed on the 5-inch touch screen for initial setup and configuration.
- Ensure all circuit breakers are in the correct position before powering on.

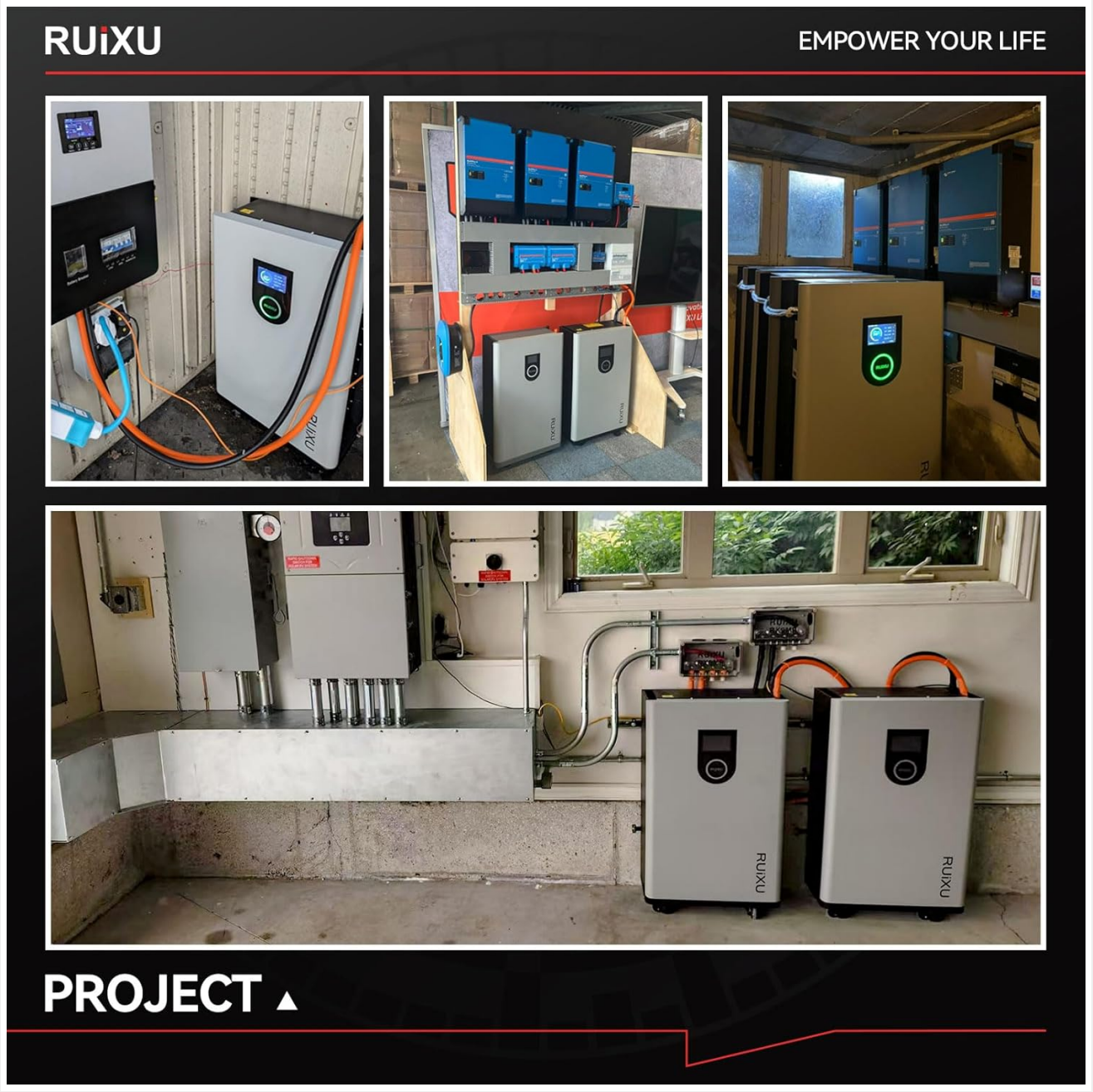

Figure 4.1: This image displays several real-world installations of the RUIXU Lithi2-16 battery, demonstrating its versatility in different energy storage projects, including single and multiple unit setups.

5. Operating Instructions

This section details how to operate your Lithi2-16 battery system and utilize its intelligent features.

5.1 Touch Screen Interface

- The 5-inch capacitive touch screen serves as the primary interface for monitoring and controlling the battery.
- It displays critical battery information such as voltage, current, state of charge (SOC), temperature, and cycle count.
- Navigate through menus to view detailed data, adjust operational parameters, and check system status.

5.2 Communication Protocols

The Lithi2-16 supports various communication protocols for integration with different inverter brands:

- **Canbus:** Compatible with Victron, SMA, Studer Innotec, Sofar, Solark, Solis, Goodwe, Deye, Growatt, SAJ, LUXPOWER, Megarevo, INVT, Sermatec, TBB, MUST, Sunsynk, Schneider.
- **RS485:** Compatible with MPP, Voltronic, RCT, Alpha Outback.
- Refer to your specific inverter's manual for detailed communication setup procedures and ensure compatibility settings are correctly configured.

5.3 Self-Heating Function

- The battery automatically activates its self-heating feature when internal temperatures drop below 41°F (5°C).
- Heating deactivates once the temperature reaches 53.6°F (12°C), allowing for efficient charging and optimal performance even in cold climates.
- This function ensures the battery operates within its safe temperature range, protecting its lifespan and efficiency.

6. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your Lithi2-16 battery system.

6.1 Routine Checks

- **Visual Inspection:** Periodically inspect the battery casing for any signs of physical damage, corrosion, or unusual swelling.
- **Connection Checks:** Ensure all cable connections (power, communication, ground) are secure, clean, and free from corrosion. Loose connections can lead to poor performance or safety hazards.
- **Ventilation:** Verify that ventilation openings are not obstructed and that there is adequate airflow around the battery.

6.2 Inspection Port

- An inspection port located on the side of the battery provides access to the Battery Management System (BMS) and fuse.
- **Warning:** Access to these internal components should only be performed by qualified personnel following RUIXU's service guidelines. Unauthorized access may void your warranty and pose safety risks.

6.3 Cleaning

- Clean the exterior of the battery with a soft, dry cloth.
- Do not use abrasive cleaners, solvents, or harsh chemicals, as these can damage the electro-coating or other components.

7. Troubleshooting

This section provides guidance for common issues you might encounter. For problems not listed here or if issues persist, please contact RUIXU customer support.

7.1 Battery Not Charging

- **Check Connections:** Ensure all power cables between the battery and the charger/inverter are securely connected.
- **Inverter/Charger Status:** Verify that your inverter or charger is functioning correctly and is configured for Lifepo4 batteries.
- **Error Messages:** Check the battery's touch screen for any error messages or fault codes. Consult the manual for specific code meanings.
- **Temperature:** Ensure the ambient temperature is within the battery's operating range. The self-heating function should activate in cold conditions.

7.2 Battery Not Discharging

- **Load Connection:** Verify that the load is properly connected to the inverter and functioning.
- **Protective Shutdown:** The battery may have entered a protective shutdown state due to low voltage, overcurrent, or high/low temperature. Check the touch screen for indicators.
- **Inverter Status:** Ensure the inverter is active and requesting power from the battery.

7.3 Communication Issues

- **Cable Integrity:** Check the RS485 or Canbus communication cable for damage and ensure it is securely connected at both ends.
- **Settings Mismatch:** Verify that the inverter's communication settings (e.g., baud rate, protocol type) match the battery's requirements.
- **Inverter Manual:** Consult your inverter's manual for specific troubleshooting steps related to battery communication.

7.4 Temperature Warnings

- **High Temperature:** Ensure adequate ventilation around the battery. Remove any obstructions blocking airflow.
- **Low Temperature:** Confirm the self-heating function is active if the ambient temperature is below 41°F (5°C). If it's not activating, contact support.

8. Specifications

The following table outlines the technical specifications for the RUIXU Lithi2-16 Lifepo4 Battery.

Specification	Value
Nominal Voltage	51.2V
Nominal Capacity @ 0.2C	314 Ah
Minimum Capacity @ 0.2C	314 Ah
Nominal Energy	16.07 kWh
Dimensions (W*D*H)	924 (with wheels) * 543 * 250 mm | 36.3 (with wheels) * 21.3 * 10 inch
Weight	~145 kg (320 lb)
Cycle Life @ 80% DOD	≥9500 cycles
Continuous Overcurrent Capacity (Quick Plugs)	250A

Specification	Value
Battery Cell Composition	Lithium Iron Phosphate (Lifepo4)
Recommended Uses	Solar Devices
Amperage	250 Amps
Unit Count	1.0 Count
Battery Cell Type	Lithium Iron Phosphate (Lifepo4)

9. Warranty Information

The RUIXU Lithi2-16 Lifepo4 Battery comes with a **3-year warranty** from the date of purchase. Please retain your proof of purchase for all warranty claims.
This warranty covers defects in materials and workmanship under normal use and service conditions. It does not cover damage resulting from:

- Improper installation or wiring.
- Misuse, abuse, or negligence.
- Unauthorized modifications or repairs.
- Operating the battery outside of its specified environmental or electrical parameters.
- Natural disasters or external forces.

For detailed warranty terms and conditions, please refer to the official RUIXU website or contact customer support.

10. Support

For technical assistance, warranty claims, or any further inquiries regarding your RUIXU Lithi2-16 Lifepo4 Battery Energy Storage System, please contact RUIXU customer support.
You can typically find contact information, FAQs, and additional resources on the official RUIXU website. Please have your product model and serial number ready when contacting support to expedite assistance.