Dawnice DWPF-LCT16N

Dawnice 16kWh 48V 314Ah LiFePO4 Lithium Battery User Manual

Model: DWPF-LCT16N (A-16kwh)

Introduction

This manual provides essential information for the safe and efficient operation of your Dawnice 16kWh 48V 314Ah LiFePO4 Lithium Battery. This high-capacity deep cycle battery is designed for various applications including home energy storage, RV power, solar systems, and off-grid installations. It features a built-in 16S 150A Battery Management System (BMS) and supports CAN and RS485 communication interfaces.
Please read this manual thoroughly before installation and use to ensure optimal performance and longevity of your battery.

Safety Instructions

- Always wear appropriate personal protective equipment (PPE) during installation and maintenance.
- Ensure the battery is installed in a well-ventilated area, away from flammable materials.
- Do not short-circuit the battery terminals.
- Do not disassemble, puncture, or damage the battery.
- Keep the battery away from water, fire, and extreme temperatures.
- This product must be used with a compatible inverter. Consult the inverter's manual for proper connection procedures.
- Only qualified personnel should perform installation and wiring.

Product Overview

The Dawnice 16kWh LiFePO4 battery is a robust energy storage solution. Key features include:

- **High Capacity:** 16kWh (51.2V, 314Ah) for substantial energy storage.

- **Long Cycle Life:** 6000+ cycles, providing over 15 years of lifespan.
- **Integrated BMS:** Built-in 150A BMS protects against overcharging, over-discharging, over-current, overheating, and short circuits.
- **Communication Interfaces:** Supports CAN and RS485 for seamless integration with compatible inverters and monitoring systems.
- **Scalability:** Up to 15 units can be connected in parallel for increased capacity.
- **Durable Design:** IP54 rating for environmental protection.

Figure 1: Front and side view of the Dawnice 16kWh LiFePO4 Lithium Battery, showcasing its compact design and integrated display.

Figure 2: Key features of the Dawnice LiFePO4 battery, highlighting its capacity, cycle life, warranty, scalability, and integrated BMS with Grade A cells.

Setup and Installation

1. Unpacking and Inspection

- Carefully remove the battery from its packaging.
- Inspect the battery for any signs of physical damage during transit. Report any damage to your supplier immediately.
- Verify that all included components (e.g., battery, manual) are present.

2. Site Selection

- Install the battery in a cool, dry, and well-ventilated area.
- Avoid direct sunlight, heat sources, and moisture.
- Ensure the installation surface is stable and can support the battery's weight (approximately 282 pounds or 128 kg).
- Maintain adequate clearance around the battery for ventilation and maintenance access.

Figure 3: Overall dimensions of the 16kWh battery, indicating its physical size and weight for installation planning.

3. Electrical Connections

Important: This battery must be connected to a compatible inverter. Refer to your inverter's manual for specific wiring diagrams and safety precautions.

- Ensure all power sources are disconnected before making any electrical connections.
- Connect the positive (+) and negative (-) terminals of the battery to the corresponding terminals on the inverter. Use appropriately sized cables and connectors.
- Connect the communication cables (CAN/RS485) between the battery and the inverter for BMS data exchange.
- If connecting multiple batteries in parallel, ensure all batteries are of the same model and capacity. Follow the manufacturer's guidelines for parallel connection, including proper cabling and communication setup. Up to 15 units can be connected in parallel.

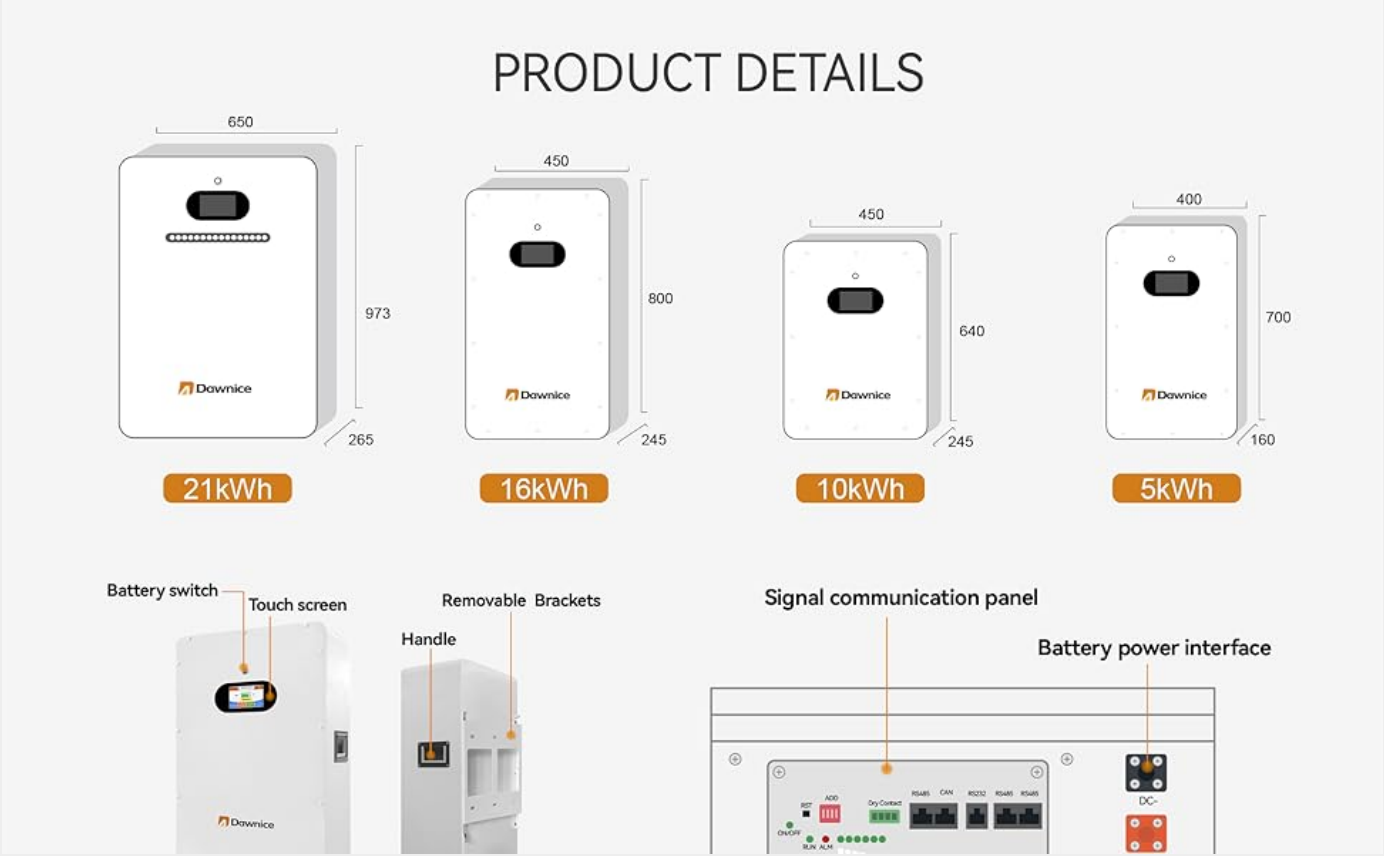

Figure 4: Example system diagram illustrating the connection of solar panels, battery, inverter, and household appliances.

Figure 5: Detailed view of the battery's interfaces, including the battery switch, touch screen, communication ports (CAN, RS485), and power terminals.

Operating Instructions

1. Powering On/Off

- To power on the battery, press the main power switch located on the front panel. The LED indicators will illuminate.
- To power off, press and hold the main power switch until the indicators turn off.

2. BMS Management System

The integrated 150A BMS actively monitors and manages the battery's state to ensure safety and optimize performance. It provides protection against:

- Overcharging
- Over-discharging

- Over-current
- Overheating
- Short circuits

Figure 6: The LED touch screen interface for managing and monitoring the battery's condition, including State of Charge (SOC), voltage, current, and capacity.

3. Monitoring and Communication

The battery features a touch screen display for direct monitoring of key parameters. Additionally, it supports CAN and RS485 communication protocols, allowing integration with external monitoring systems or inverters for advanced data logging and control.

Some models may offer mobile control via Bluetooth or Wi-Fi, allowing remote monitoring through a dedicated application.

Dawnice MODULE INTRODUCTION

PERFORMANCE SPECIFICATIONS				
Model	HZEB - LCT - 5	HZEB - LCT - 10	HZEB - LCT - 16	HZEB - LCT - 20
Nominal Voltage	51.2V	51.2V	51.2V	51.2V
Cell model/Configuration	3.2V100Ah/16S1P	3.2V205Ah/16S1P	3.2V314Ah/16S1P	3.2V205Ah/16S2P
Capacity(Ah)	100Ah	205Ah	314Ah	410Ah
Rated Energy(kWh)	5.12kWh	10.55kWh	16.08kWh	20.992kWh
Max.Charge/Discharge Current(A)	100A	100A	150A	200A
Voltage Range(V)	44.8~57.6V			
Scalability	Up to 15 parallel			
Communication	CAN/RS485			
Cycle Life(@25℃, 80%DOD)	≥6000Cycles	≥6000Cycles	≥8000Cycles	≥6000Cycles
Design Life	≥15Years(25℃)			
MECHANICAL SPECIFICATIONS				
Weight(kg)	55kg	98kg	128kg	180kg
Dimension(L/D/H)(mm)	400*204*700mm	460*288*640mm	460*288*800mm	265*650*965mm
Installation Mode	Wall / Ground Mounted(20kWh battery ground-mounted only)			
IP Grade	IP54	IP54	IP54	IP21

Figure 7: Overview of advanced features such as mobile control, self-developed BMS, and IP54 protection.

Maintenance

- **Regular Inspection:** Periodically check the battery for any visible damage, loose connections, or corrosion.
- **Cleaning:** Keep the battery clean and free from dust and debris. Use a dry, soft cloth for cleaning. Do not use solvents or abrasive cleaners.
- **Temperature Control:** Ensure the operating environment remains within the recommended temperature range to maximize battery lifespan.
- **Firmware Updates:** If applicable, check with Dawnice support for any available firmware updates for the BMS or communication modules.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50% State of Charge (SOC) and stored in a cool, dry place.

Troubleshooting

Problem	Possible Cause	Solution
Battery not powering on	Main switch off, low battery voltage, internal BMS fault.	Ensure main switch is on. Check battery voltage. If voltage is very low, attempt to charge with a compatible charger. Contact support if issue persists.
No power output	Over-discharge protection, BMS fault, loose connections, inverter issue.	Check battery SOC on display. Verify all cable connections are secure. Check inverter status.

Problem	Possible Cause	Solution
Communication error with inverter	Incorrect wiring, incompatible protocol, communication port fault.	Verify CAN/RS485 wiring. Ensure inverter and battery are configured for the same communication protocol. Consult both manuals.
Overheating warning	Poor ventilation, high ambient temperature, excessive load.	Ensure adequate airflow around the battery. Reduce load if possible. Relocate battery to a cooler environment if necessary.

For issues not listed here or if troubleshooting steps do not resolve the problem, please contact Dawnice customer support.

Specifications

Feature	Detail
Model	DWPF-LCT16N (A-16kwh)
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Nominal Voltage	51.2V
Nominal Capacity	314Ah
Rated Energy	16kWh
Max. Charge/Discharge Current	150A
Voltage Range	44.8V - 57.6V
Cycle Life	≥6000 Cycles (@25°C, 80% DOD)
Design Life	≥15 Years (@25°C)
Scalability	Up to 15 units in parallel
Communication	CAN / RS485
BMS	Built-in 16S 150A Smart BMS
Product Dimensions (L x W x H)	460mm x 288mm x 800mm (18.11"L x 11.33"W x 31.5"H)
Item Weight	128 kg (282 pounds)
IP Grade	IP54
Installation Mode	Wall/Ground Mounted
Included Components	Battery

Warranty Information

The Dawnice 16kWh LiFePO4 Lithium Battery comes with a**10-year manufacturer's warranty**. This warranty covers defects in materials and workmanship under normal use and service conditions.
For warranty claims or detailed terms and conditions, please refer to the official Dawnice warranty policy document or

contact customer support.

Customer Support

If you have any questions, require technical assistance, or need to report an issue, please contact Dawnice customer support:

- **Online Support:** Visit the official Dawnice website or Amazon store page for FAQs and support resources.
- **Email/Phone:** Refer to your product packaging or the official website for current contact information.

When contacting support, please have your product model (DWPF-LCT16N) and purchase date available.