Dawnice DWPF-LCT5N

Dawnice 5kwh Solar Storage Lithium Battery User Manual

Model: DWPF-LCT5N
Brand: Dawnice

1. Introduction

This manual provides essential information for the safe and efficient operation of your Dawnice 5kwh Solar Storage Lithium Battery. This high-performance LiFePo4 battery is designed for home solar electric systems, offering reliable energy storage and backup power. Please read this manual thoroughly before installation and use to ensure proper functionality and longevity of the product.

Figure 1.1: Front and side view of the Dawnice 5kwh Solar Storage Lithium Battery.

2. Safety Information

Always adhere to the following safety guidelines to prevent injury or damage to the battery and connected equipment:

- **Qualified Personnel:** Installation and maintenance should only be performed by qualified and trained personnel.
- **Electrical Safety:** Ensure all power sources are disconnected before installation or servicing. Use appropriate personal protective equipment (PPE).
- **Ventilation:** Ensure adequate ventilation around the battery to prevent overheating.
- **Avoid Short Circuits:** Do not short-circuit the battery terminals. Use insulated tools.
- **Temperature:** Operate the battery within the specified temperature range. Avoid extreme heat or cold.
- **Water Exposure:** While the unit has an IP54 rating for water resistance, avoid direct exposure to heavy rain or submersion.
- **Physical Damage:** Do not drop, puncture, or disassemble the battery. If damaged, do not use.

- **Disposal:** Dispose of the battery according to local regulations for lithium-ion batteries.

3. Product Features

The Dawnice 5kwh Solar Storage Lithium Battery incorporates advanced features for optimal performance and user convenience:

- **High-Capacity LiFePo4 Cells:** Utilizes 51.2V 100Ah A-grade LiFePo4 battery cells, offering high safety, long cycle life (6000+ cycles at 80% DOD), and excellent charge/discharge capabilities.
- **Integrated BMS:** A built-in 100A Battery Management System (BMS) provides comprehensive protection against overcharging, over-discharging, over-current, overheating, and short circuits.
- **Scalable Power:** Designed to expand capacity, capable of powering a wide range of household appliances.
- **Flexible Installation:** Supports both wall-mounted and ground-mounted configurations.
- **Smart LED Touchscreen:** An intuitive touchscreen display allows for easy monitoring of battery status, parameters, and system information.
- **Mobile Control:** Connect via Bluetooth, WiFi, or a dedicated app for remote monitoring and control.
- **Durable Design:** Features an IP54 water-resistant enclosure, providing protection against dust and splashing water.

Figure 3.1: Key features of the Dawnice battery, including its smart LED touchscreen, removable bracket, and freewheeling casters for easy movement.

Figure 3.2: The LED touchscreen interface, displaying the Smart Battery Management System (BMS) with options for cell info, status, protocol, system, parameters, and history.

Figure 3.3: A closer look at the touchscreen, allowing users to view detailed battery information, current status, communication protocols, and system settings.

Figure 3.4: An overview of the energy storage system's benefits, including broad compatibility with inverters, OEM support, plug-and-play installation, 24/7 uninterrupted power, long lifespan, and multi-protection from the self-developed BMS.

Water Resistance Demonstration

Video 3.1: This video demonstrates the IP54 water resistance of the Dawnice battery, showing it withstands water exposure, and highlights its 10-year warranty and touchscreen functionality even when wet.

4. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your battery. Consult a qualified electrician or solar installer for assistance.

4.1. Unpacking and Inspection

- Carefully remove the battery from its wooden boxing packaging.
- Inspect the battery for any signs of physical damage during transit. Report any damage to your supplier immediately.

- Verify all components listed in the packing list are present.

4.2. Mounting Options

The Dawnice battery supports both wall-mounted and ground-mounted installations. Choose a location that is:

- Dry, well-ventilated, and protected from direct sunlight and extreme temperatures.
- Accessible for maintenance and inspection.
- Structurally sound to support the battery's weight (55 kg / 121 pounds).

Figure 4.1: Example of a wall-mounted installation, demonstrating the compact design suitable for various spaces.

Figure 4.2: A different perspective of the wall-mounted setup, emphasizing the secure and space-saving design.

4.3. Electrical Connections

Connect the battery to your solar inverter and smart meter according to the system diagram. Ensure all connections are secure and correctly polarized (positive to positive, negative to negative).

- Connect solar panels to the hybrid solar inverter.
- Connect the battery to the hybrid solar inverter.
- Connect the smart meter between the inverter and your household appliances.
- Ensure proper grounding of the system.

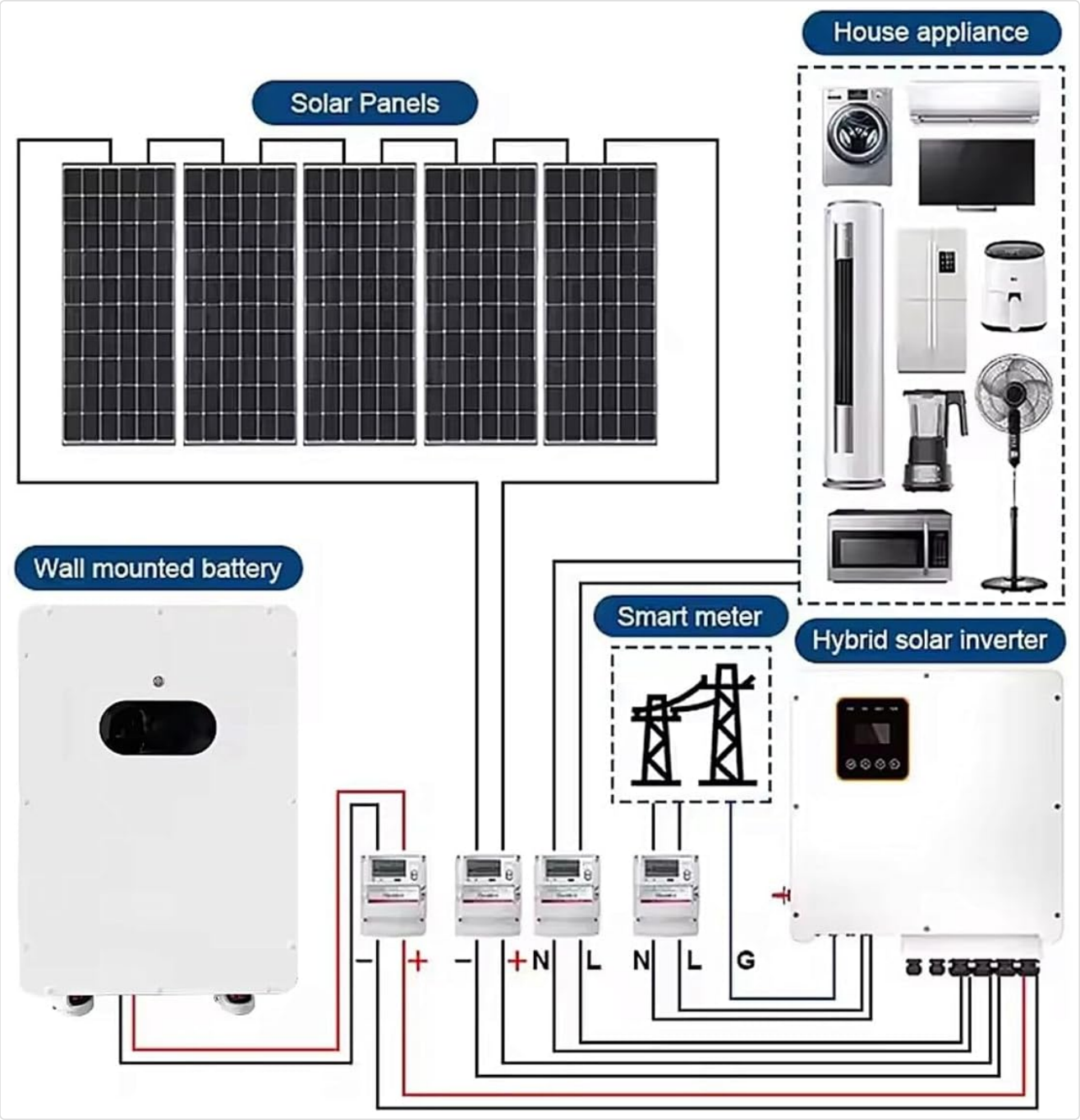

Figure 4.3: A comprehensive diagram illustrating the electrical connections for a typical home solar electric system using the Dawnice battery.

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 4.4: Detailed view of the battery's external components, including the battery switch, touchscreen, removable brackets, handle, Fuma wheels, and the signal communication panel with various ports (CAN, RS232, RS485) and the battery power interface (DC+ and DC-).

4.4. Initial Power-Up

- After all connections are made and verified, turn on the battery switch.
- Observe the LED indicators and the touchscreen for initial status.
- Follow the inverter's instructions for system commissioning.

5. Operating Instructions

The Dawnice battery is designed for largely automatic operation within a solar energy system. User interaction primarily involves monitoring and occasional adjustments via the touchscreen or mobile app.

5.1. Touchscreen Operation

The integrated LED touchscreen provides real-time data and control options:

- **Home Screen:** Displays an overview of the battery's status.
- **CELLS_INFO:** View individual cell voltage and temperature.
- **STATUS:** Check the State of Charge (SOC), voltage, current, and capacity.
- **PROTOCOL:** Configure communication protocols with the inverter.
- **SYSTEM:** Access system settings and information.
- **Parameter:** Adjust specific operating parameters (consult advanced manual or support).
- **History:** Review historical data and event logs.

5.2. Mobile App Monitoring

For convenient remote monitoring, download the dedicated mobile application (details provided with product documentation or by contacting support). The app allows you to:

- View current battery data (SOC, voltage, current).
- Monitor energy flow within your solar system.
- Receive alerts and notifications.

6. Maintenance

Regular maintenance helps ensure the long-term performance and safety of your Dawnice battery.

6.1. Routine Checks

- **Visual Inspection:** Periodically inspect the battery for any signs of damage, corrosion, or loose connections.
- **Cleaning:** Keep the battery surface clean and free of dust. Use a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Ventilation:** Ensure that the ventilation openings are not blocked to allow for proper airflow.

6.2. BMS Monitoring

The built-in BMS continuously monitors the battery's health. Regularly check the status on the touchscreen or mobile app for any warnings or error codes. This helps identify potential issues early.

7. Troubleshooting

If you encounter issues with your Dawnice battery, refer to the following basic troubleshooting steps. For complex problems, contact customer support.

7.1. Common Issues

- **Battery Not Powering On:**
  - Check if the main battery switch is in the 'ON' position.
  - Verify all DC connections are secure and correctly polarized.
  - Check external circuit breakers or fuses in the system.
- **No Output Power:**
  - Check the battery's State of Charge (SOC) on the touchscreen. If too low, the battery may have entered protection mode.
  - Verify connections to the inverter and household loads.
  - Check for any error codes displayed on the battery or inverter.
- **Error Code Displayed:**

- Note down the specific error code.
- Refer to the advanced manual (if provided) or contact customer support with the error code for diagnosis.

7.2. Contacting Support

If troubleshooting steps do not resolve the issue, please contact Dawnice customer support. Provide your model number (DWPF-LCT5N), a detailed description of the problem, and any error codes displayed.

8. Specifications

The following table outlines the key technical specifications for the Dawnice 5kwh Solar Storage Lithium Battery (Model DWPF-LCT5N):

Figure 8.1: Detailed performance and mechanical specifications for various Dawnice battery models, including the 5kwh variant.

Figure 8.2: Dimensional drawings for various Dawnice battery capacities, providing precise measurements for installation planning.

Specification	Value
Model	DWPF-LCT5N
Battery Type	LiFePo4
Nominal Voltage	51.2 Volts
Capacity	100 Ah
Rated Energy	5.12 KWh
Maximum Power	5.12E+3 Watts (5.12 KW)
Max. Charge/Discharge Current	100 A
Cycle Life	≥6000 Cycles (at 25°C, 80% DOD)
Design Life	≥15 Years (at 25°C)
Product Dimensions (L x W x H)	15.75" x 6.3" x 27.56" (400mm x 204mm x 700mm)
Item Weight	55 Kilograms (121 pounds)
IP Grade	IP54
Installation Mode	Wall / Ground Mounted
Communication	CAN / RS485
Connector Type	MC4

9. Warranty and Support

9.1. Warranty Information

The Dawnice 5kwh Solar Storage Lithium Battery comes with a**10-year manufacturer's warranty**. This warranty covers defects in materials and workmanship under normal use and service conditions.

9.2. Customer Support

For any questions regarding pre-sales, installation, operation, maintenance, or troubleshooting, please contact the Dawnice US Store. Our team is available to provide assistance and ensure your satisfaction with the product.
You can typically reach customer support through the platform where you purchased the product or via the contact information provided in your purchase documentation.