Dawnice DW-HD-XT16

Dawnice 11KW Hybrid Grid Home Solar Power System User Manual

Model: DW-HD-XT16

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Dawnice 11KW Hybrid Grid Home Solar Power System. This system is designed to provide reliable solar energy for residential applications, integrating solar panels, a hybrid inverter, and a LiFePO4 battery for energy storage.

Included Components:

- 20 x Bificial 550W Solar Panels
- 1 x 12KW Solar Hybrid Inverter (120/240Vac)
- 1 x 48V 314Ah 16KWh LiFePO4 Battery
- Solar Cables (100m black + 100m red)
- Connection Accessories

Figure 1: Overview of the Dawnice Hybrid Solar System Kit components.

2. Safety Information

Read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **Qualified Personnel:** Installation and maintenance must be performed by qualified and trained personnel.
- **Electrical Hazard:** Solar panels generate electricity when exposed to light. The inverter and battery contain high voltage. Always disconnect all power sources before servicing.
- **Battery Safety:** LiFePO4 batteries are powerful. Do not short-circuit, puncture, or expose to extreme temperatures. Ensure proper ventilation.
- **Grounding:** Ensure all components are properly grounded according to local electrical codes.
- **Environmental Conditions:** Do not install components in areas with flammable materials, explosive gases, or excessive moisture.

3. Setup and Installation

This section outlines the general steps for setting up your solar power system. Consult detailed component manuals for specific wiring diagrams and mounting instructions.

3.1 Component Overview

Figure 2: Dawnice 12KW Solar Hybrid Inverter.

The 12KW Solar Hybrid Inverter features advanced MPPT technology for up to 99.9% efficiency, pure sine wave AC output, and comprehensive safety protections. It supports Li-ion battery BMS communication and offers time-slot functions for optimized energy usage.

Figure 3: Dawnice 16KWh LiFePO4 Battery.

The 16KWh LiFePO4 Battery (51.2V 314Ah) utilizes Grade A cells, offering high safety, long cycle life (8000+ cycles), and a built-in 150A BMS. It is designed for wall-mounted or ground-mounted installation.

Figure 4: Dawnice 550W Bificial Solar Panels.

The 550W Bificial Solar Panels feature M10-182mm wafers, IP68 waterproof rating, aluminum frames, mono solar cells for high efficiency, and tempered glass for extreme weather resistance.

3.2 Installation Steps

1. **Mount Solar Panels:** Securely mount the 20 solar panels in an optimal location for maximum sun exposure, following local building codes and manufacturer guidelines.
2. **Connect Solar Panels to Inverter:** Wire the solar panels in series and/or parallel configurations as specified by the inverter manual to the PV input terminals of the 12KW Hybrid Inverter. Ensure correct polarity.
3. **Connect Battery to Inverter:** Connect the 16KWh LiFePO4 battery to the battery terminals of the inverter. Verify correct voltage and polarity.
4. **Connect Inverter to Grid and Load:** Connect the AC output of the inverter to your home's electrical panel (load) and, if applicable, to the utility grid for hybrid operation. This step requires a licensed electrician.
5. **Grounding:** Ensure all components, including panels, inverter, and battery, are properly grounded.
6. **Initial Power-Up:** Follow the inverter's specific power-up sequence. Typically, this involves turning on the battery breaker first, then the PV array breaker, and finally the AC output breaker.

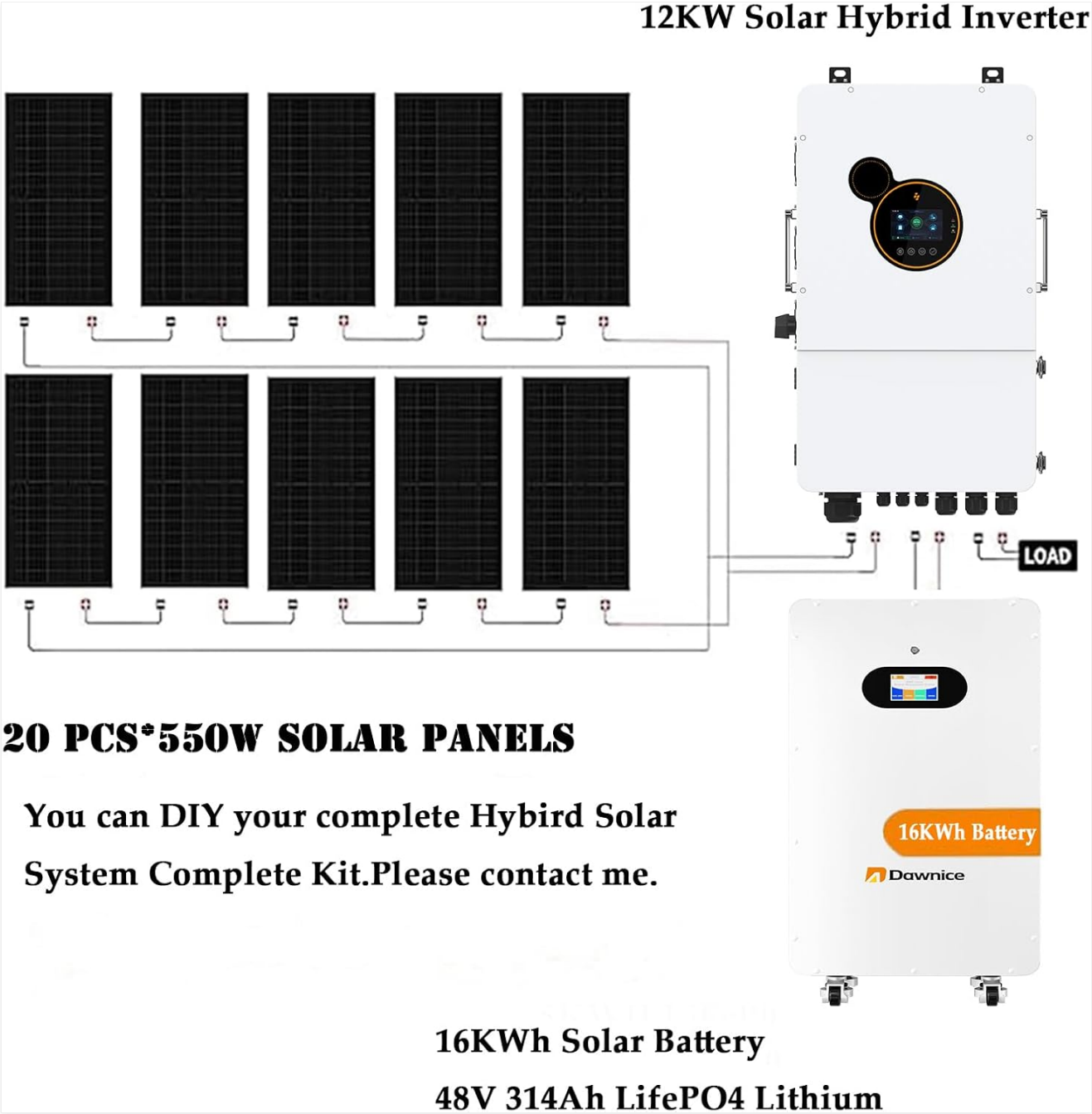

Figure 5: System Wiring Diagram.

4. Operating Instructions

Once installed, your Dawnice Hybrid Solar Power System is designed for automated operation. However, understanding its functions and monitoring capabilities is crucial.

4.1 System Start-Up and Shut-Down

- **Start-Up:** After installation, ensure all connections are secure. Turn on the battery breaker, then the PV array breaker, and finally the AC output breaker. The inverter will initiate its self-test and begin operation.
- **Shut-Down:** To safely shut down the system, first turn off the AC output breaker, then the PV array breaker, and finally the battery breaker.

4.2 Monitoring and Mobile Control

The system can be monitored via the inverter's display and through a mobile application.

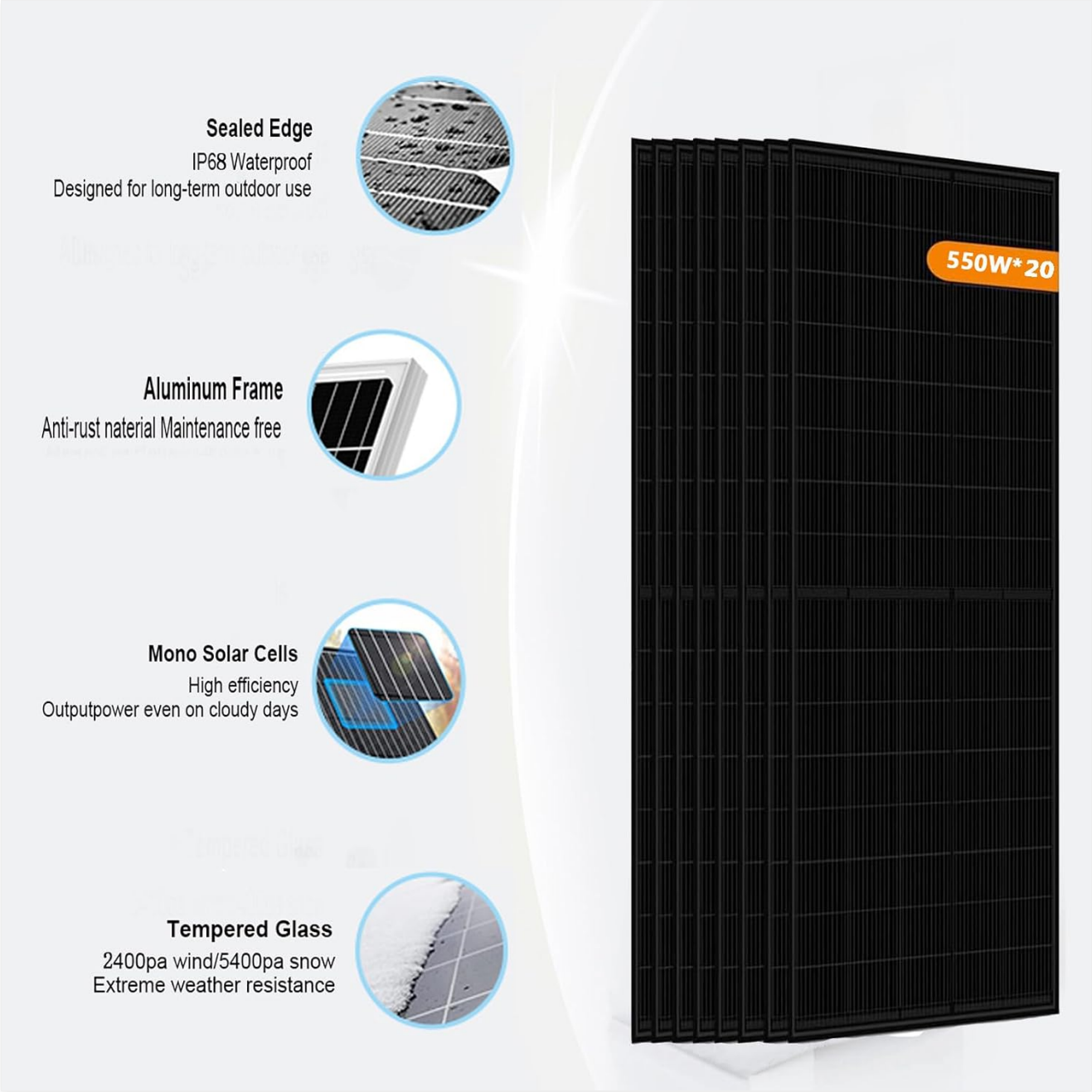

Figure 6: Mobile Control Features.

- **Inverter Display:** The inverter features a display that shows real-time operational data, including power generation, battery status, and load consumption.
- **Mobile App:** Download the official Dawnice mobile application. Connect to the inverter via Bluetooth or WiFi to monitor system performance remotely, view historical data, and adjust settings.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your solar power system.

- **Solar Panels:** Periodically inspect panels for dirt, debris, or shading. Clean panels with water and a soft brush as needed. Check for any physical damage or loose connections.
- **Battery:** Monitor battery health via the inverter display or mobile app. Ensure the battery area is well-ventilated and free from obstructions. Check battery terminals for corrosion and ensure they are tight.
- **Inverter:** Keep the inverter's ventilation openings clear of dust and debris. Ensure the inverter is not exposed to direct sunlight or excessive heat. Check for any error codes on the display.
- **Cabling and Connections:** Annually inspect all cables and connections for wear, damage, or loosening.

Tighten any loose connections.

6. Troubleshooting

This section provides solutions for common issues. For complex problems, contact Dawnice customer support.

Problem	Possible Cause	Solution
No power output from inverter	Inverter off, battery low, PV input issue, AC breaker tripped	Check inverter status, battery charge, PV connections, and AC breakers.
Low power generation	Shading on panels, dirty panels, faulty panel/connection	Inspect panels for shading/dirt, clean panels, check panel connections.
Battery not charging	PV input issue, inverter fault, battery BMS error	Verify PV input, check inverter error codes, consult battery manual.
Inverter displaying error code	Specific system fault	Refer to the inverter's detailed manual for error code definitions and solutions.

7. Specifications

7.1 General System Specifications

- **System Type:** Hybrid Grid Home Solar Power System
- **Total PV Power:** 11KW (20 x 550W Bificial Solar Panels)
- **Daily Power Generation:** Up to 44KWh (under 4 hours full sunshine)
- **AC Output Voltage:** 120V/240V

7.2 12KW Solar Hybrid Inverter

- **Rated Output Power:** 12000VA
- **Inverter Type:** Pure Sine Wave with MPPT Charger Controller
- **Efficiency:** Up to 99.9% (MPPT)
- **PV Input Current:** Up to 25A*2
- **Protection Degree:** IP65

7.3 16KWh LiFePO4 Battery

- **Capacity:** 16KWh (51.2V 314Ah)
- **Cell Type:** Grade A LiFePO4
- **Cycle Life:** 8000+ cycles
- **BMS:** Built-in 150A BMS
- **Installation:** Wall-mounted / Ground-mounted

7.4 550W Bificial Solar Panels

- **Power Output:** 550W per panel
- **Quantity:** 20 pieces
- **Wafer Size:** M10-182mm
- **Waterproof Rating:** IP68
- **Static Loading (Front/Rear):** 5400pa / 2400pa

8. Warranty Information

The Dawnice 16KWh LiFePO4 Battery is designed for a long operational life, with an expected lifetime of up to 15 years and over 6000 charge/discharge cycles. For detailed warranty terms and conditions for all system components, please refer to the specific warranty documentation provided with your purchase or contact Dawnice customer support.

9. Customer Support

For technical assistance, troubleshooting, or warranty claims, please contact Dawnice Energy customer support.

- **Online Support:** Visit the Dawnice Energy store on Amazon or your purchase platform to send a message to the seller.
- **Email Support:** For after-sales service, you may contact Dawnice directly via email. (Specific email address not provided in source data, please refer to product packaging or official website).
- **24/7 Client Support:** (Contact details for 24/7 support not provided in source data, please refer to product packaging or official website).