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ECO-WORTHY 40KWH 10000W 48V Solar Power Complete Kit Instruction Manual

Model: US-L02M195-NK5KWUSL800-52

1. OVERVIEW

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your ECO-WORTHY 40KWH 10000W 48V Solar Power Complete Kit. This comprehensive system is designed to provide reliable power for homes and sheds, featuring high-efficiency solar panels, advanced hybrid inverters, and durable lithium batteries.

The system offers a 10KW maximum AC output power and is capable of generating approximately 40KWH of electricity daily. It supports an expandable battery bank up to 10.24KWH and allows for parallel operation of up to six inverter units for increased capacity and flexibility.



Figure 1.1: System's 10KW AC output power supporting various household appliances.

10KW SOLAR SOLUTION FOR ALL YOUR ENERGY NEEDS

- 10KW maximum power output with **40KWH** daily output.
- Able to converted into a split-phase power system of **240V output**, for high-power electrical appliances
- Support **single-phase or two-phase** connection with different output voltages for appliances.



CORE PART OF THE SYSTEM(2PCS)

- The controller and inverter are two-in-one, using advanced MPPT technology to control the entire system and convert DC power into AC power with an efficiency as high as 99.9%.
- It has multiple protection functions, with an LCD display to make operation and display more intelligent.

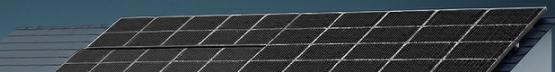
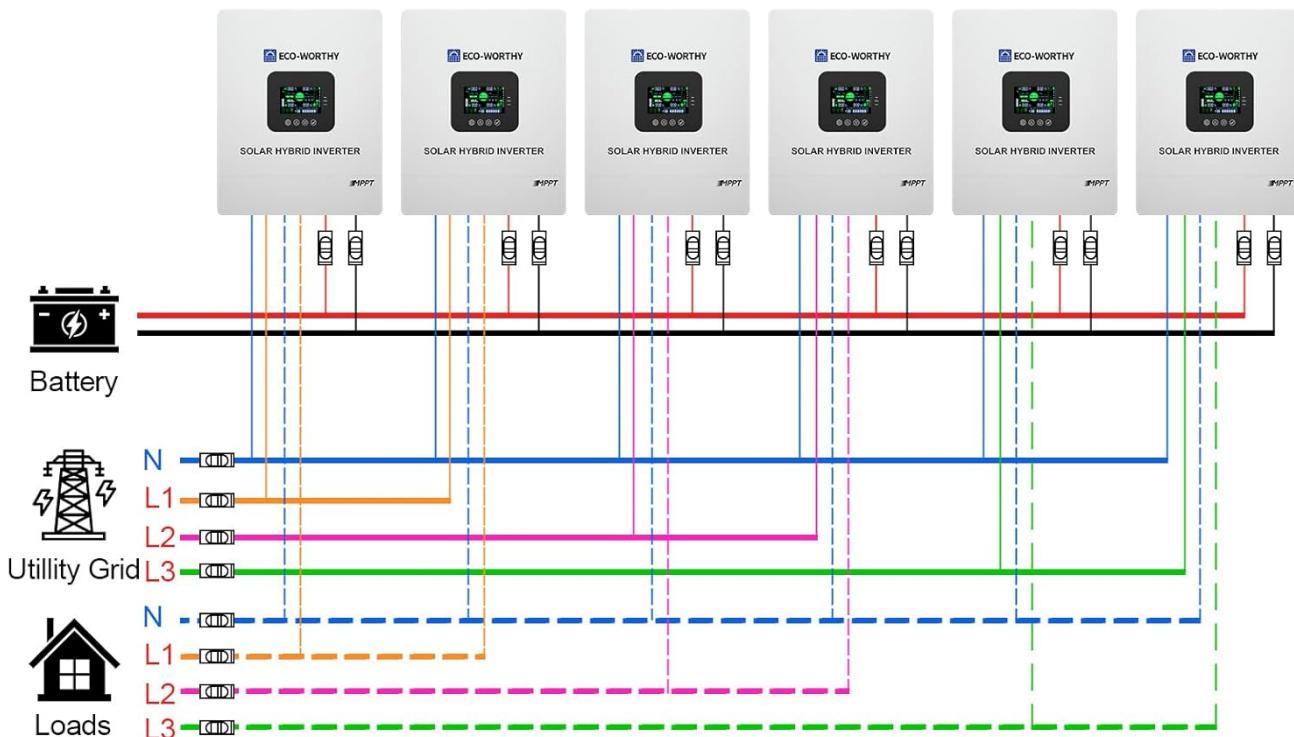


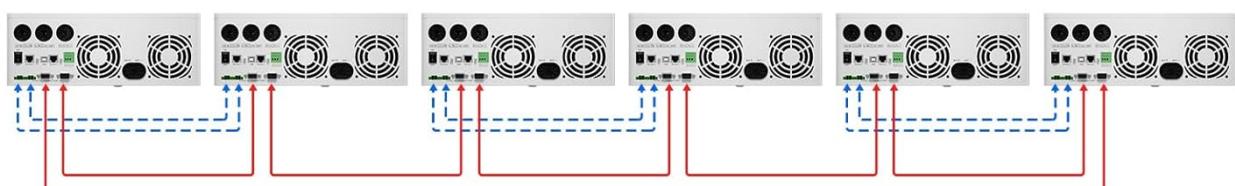
Figure 1.2: Expandable battery bank up to 10.24KWH, supporting 4p1s configuration.

UP TO 6 UNITS OPERATE IN PARALLEL

Parallel operation can be single phase/split phase



Communication Connection



★ More parallel possibility please learn from the User Manual

Figure 1.3: Diagram showing parallel operation of up to six inverter units for single or split-phase systems.

2. PRODUCT COMPONENTS

2.1 Solar Panels

The kit includes 52 pieces of 195W monocrystalline solar panels. These panels are designed for high efficiency and durability, featuring:

- **Plug&Play Connectors:** For easy and secure connections.
- **IP65 Junction Box:** Provides protection against dust and water jets.
- **IP67 Sealed Tempered Glass:** Ensures robust protection against environmental elements.
- **Preserved Mounting Holes:** Facilitates straightforward installation.



Figure 2.1: Key features of the ECO-WORTHY solar panels.

2.2 Hybrid Inverters

The system includes two 5000W 48V Split Phase MPPT Solar Hybrid Inverters. These inverters combine the functions of a charge controller and an inverter, utilizing advanced MPPT technology for efficient DC to AC power conversion. They offer multiple protection functions and an LCD display for intelligent operation monitoring.

2.3 Lithium Batteries

The kit comes with four 48V 50AH Lithium Batteries (10KWH total). These batteries are built with Class A cells, offering over 3000 deep cycles and a lifespan of 10+ years. They feature a durable metal case and integrated Battery Management System (BMS) for comprehensive protection.

- **3000+ Deep Cycles:** Ensures long-term reliability and use for over a decade.
- **Metal Case:** Provides enhanced durability and protection.
- **Safe BMS Protection:** Includes safeguards against overcharge, over-discharge, short circuit, over current, and high temperature.
- **Class A Cells:** High-quality cells for optimal performance and longevity.

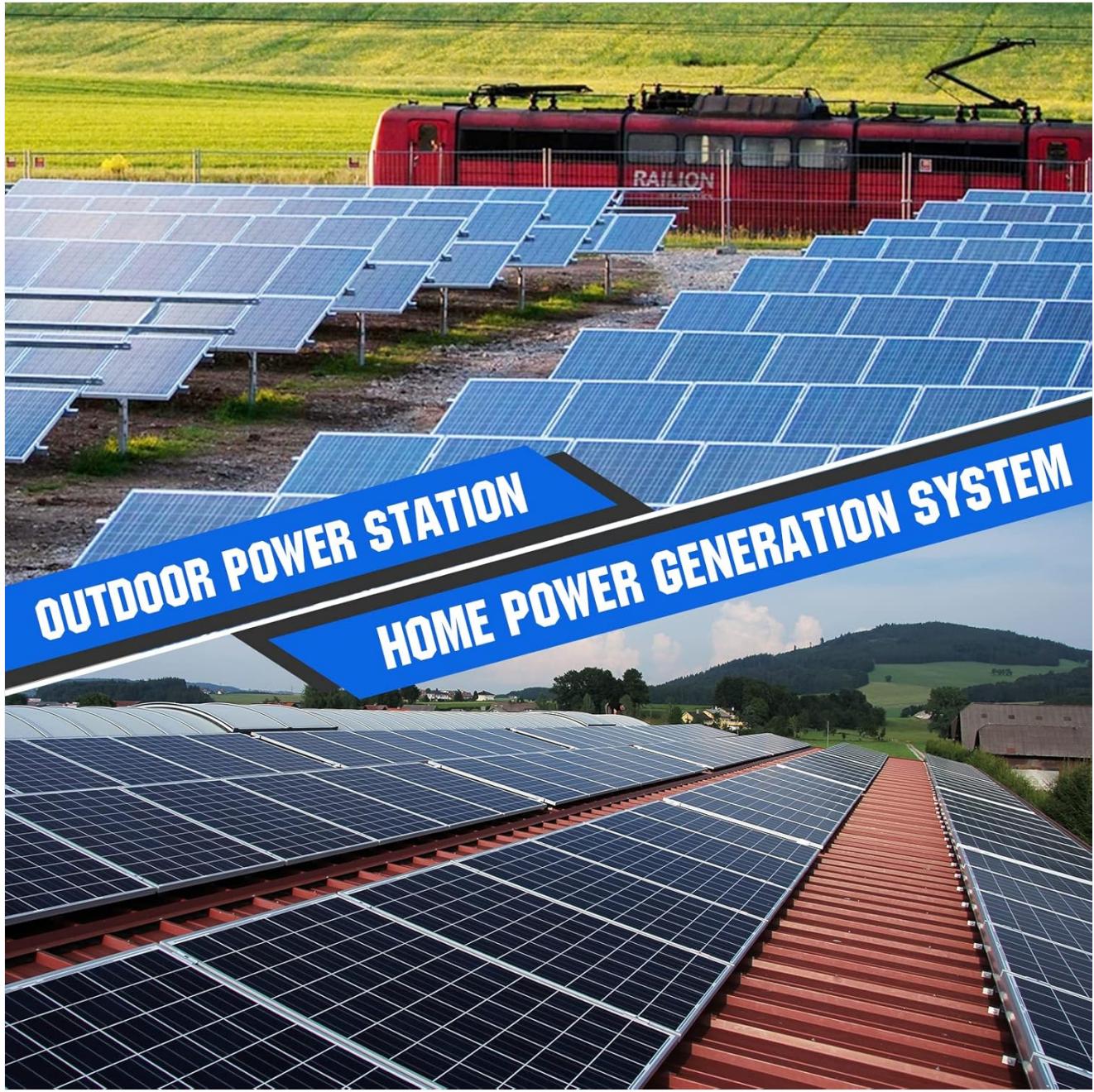


Figure 2.2: Internal structure of the lithium battery highlighting its 3000+ deep cycles.

3000+ CYCLES

Grade A Cells & 10+ Years Life Time



Overcharge Protection



Over-Discharge Protection



Short Circuit Protection



Over Current Protection



High Temp Protection



Figure 2.3: Battery Management System (BMS) protection features.

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Video 2.1: An overview of the ECO-WORTHY 48V 50Ah LiFePO4 Battery, highlighting its features and benefits.

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Video 2.2: Detailed presentation of the ECO-WORTHY 48V 50Ah Metal Case LiFePO4 Battery, showcasing its design and construction.

3. SPECIFICATIONS

Feature	Specification
Brand	ECO-WORTHY
Model Number	US-L02M195-NK5KWUSL800-52
Material	Metal (for battery case)

Feature	Specification
Product Dimensions (Solar Panel)	59.84" L x 28.35" W x 2.2" H
Solar Panel Efficiency	High Efficiency
AC Adapter Current	80 Amps
Maximum Voltage	48 Volts
Maximum Power (per panel)	195 Watts
Total Solar Panels	52 pieces
Inverter Type	5000W 48V Split Phase MPPT Solar Hybrid Inverter (2 pieces)
Battery Type	48V 50AH Lithium Battery (4 pieces, 10KWH total)

4. SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and safety of your solar power system. It is recommended that installation be performed by qualified personnel.

4.1 Solar Panel Installation

Mount solar panels in a location that receives maximum sunlight throughout the day, free from shading. Utilize the preserved mounting holes for secure attachment. Connect panels using the Plug&Play connectors, ensuring correct polarity.

4.2 Inverter and Battery Connection

Connect the solar panels to the hybrid inverters. Then, connect the lithium batteries to the inverters. Ensure all connections are secure and follow the wiring diagrams provided in the full user manual for specific configurations, especially for split-phase or parallel operations.

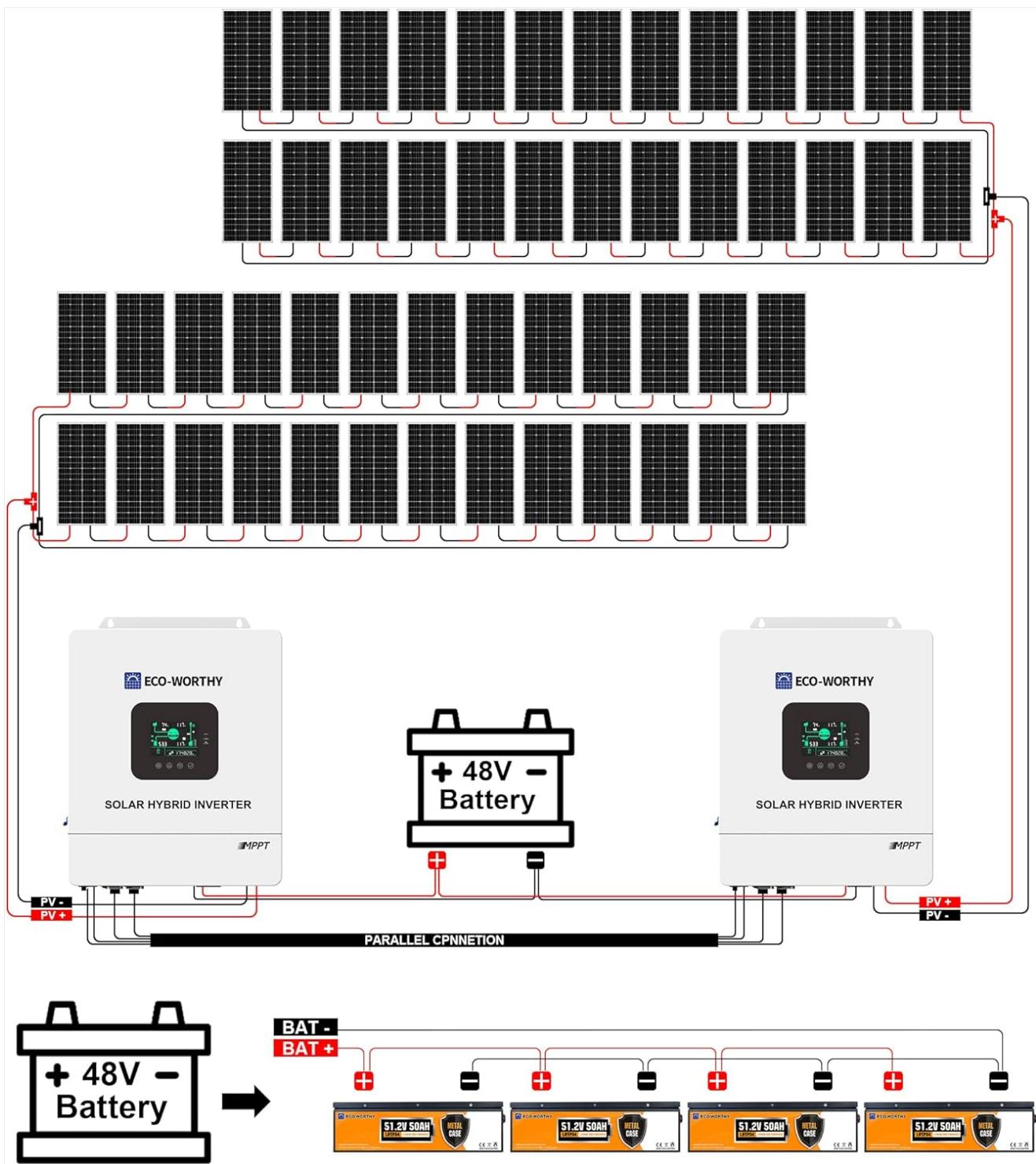


Figure 4.1: Example wiring diagram for solar panels, inverters, and battery bank.



Figure 4.2: The core components of the 10KW solar solution, including the hybrid inverter.

5. OPERATION

Once installed, the system operates automatically to convert solar energy into usable electricity. The hybrid inverters manage power flow, charging the batteries and supplying AC power to your home or shed.

5.1 Daily Power Generation and Storage

The system is designed for a daily power generation of approximately 40KWH, with a continuous output of 1.7KW for 24 hours. It also provides a daily storage capacity of 1.2KW overnight, ensuring power availability even without sunlight.



Figure 5.1: System's maximum AC output and daily power capabilities.

5.2 Low Temperature Performance

The ECO-WORTHY lithium batteries are engineered to perform reliably even in cold conditions. They can discharge normally at temperatures as low as -20°C (-4°F) without significant capacity attenuation, ensuring consistent power supply in various climates.

6. MAINTENANCE

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

- **Solar Panels:** Periodically clean the surface of the solar panels to remove dust, dirt, and debris that can reduce efficiency. Inspect for any physical damage or loose connections.
- **Batteries:** Monitor battery performance via the inverter display. Ensure proper ventilation around the battery bank.
- **Inverters:** Check the inverter display for any error codes or warnings. Keep the inverter's ventilation openings clear.
- **Wiring:** Regularly inspect all wiring and connections for signs of wear, corrosion, or loosening.

7. TROUBLESHOOTING

If you encounter issues with your solar power system, refer to the following general troubleshooting steps. For detailed diagnostics, consult the full user manual or contact customer support.

- **No Power Output:** Check all circuit breakers and fuses. Verify battery connections and charge level. Ensure solar panels are receiving adequate sunlight.
- **Inverter Error Codes:** Refer to the inverter's specific manual section for explanations of error codes displayed on the LCD.
- **Reduced Performance:** Inspect solar panels for shading or dirt. Check battery health and capacity.
- **Unusual Noises/Smells:** Immediately disconnect the system and contact technical support.

8. WARRANTY AND SUPPORT

ECO-WORTHY is committed to providing high-quality products and customer satisfaction. For warranty information, technical assistance, or any inquiries, please contact our customer support team.

Our dedicated support team is available to assist you with any questions or concerns regarding your solar power kit.

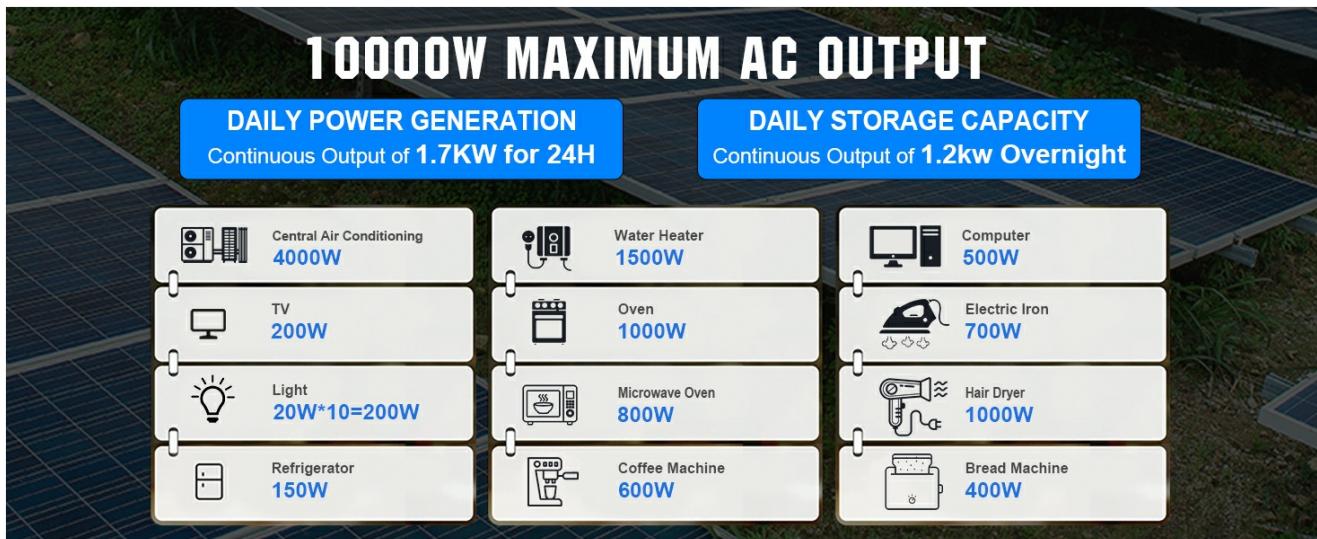


Figure 8.1: ECO-WORTHY customer support is available to assist you.

LOCAL WAREHOUSE



Figure 8.2: ECO-WORTHY maintains local warehouses for efficient service.