RENOGY 24V Hybrid Inverter 3000W

RENOGY 24V Hybrid Inverter 3000W User Manual

Model: 24V Hybrid Inverter 3000W

1. Introduction

The RENOGY 24V Hybrid Solar Inverter is an all-in-one unit designed to integrate solar energy storage, charging, and AC pure sine wave output. It features high-efficiency MPPT technology to maximize solar energy harvesting and offers multiple charging and output modes to suit various application requirements. This inverter is suitable for AC loads such as home appliances, power tools, industrial equipment, and electronic audio/video devices, providing comprehensive electronic protection for a safe and stable system.

2. Safety Information

Please read all instructions and warnings carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or serious injury. Keep this manual for future reference.

- Installation must be performed by qualified personnel.
- Ensure all wiring is correctly connected and securely fastened.
- Do not expose the inverter to rain, snow, or liquids.
- Do not disassemble or attempt to repair the inverter yourself. Contact customer support for assistance.
- Ensure proper ventilation around the inverter to prevent overheating.
- Always disconnect power sources before performing any maintenance or wiring.

3. Product Overview and Dimensions

The RENOGY 24V Hybrid Inverter combines a 60A MPPT solar charge controller, a 2500-3000W pure sine wave inverter, and a 100A hybrid maximum charging current. Its compact design allows for efficient power management.

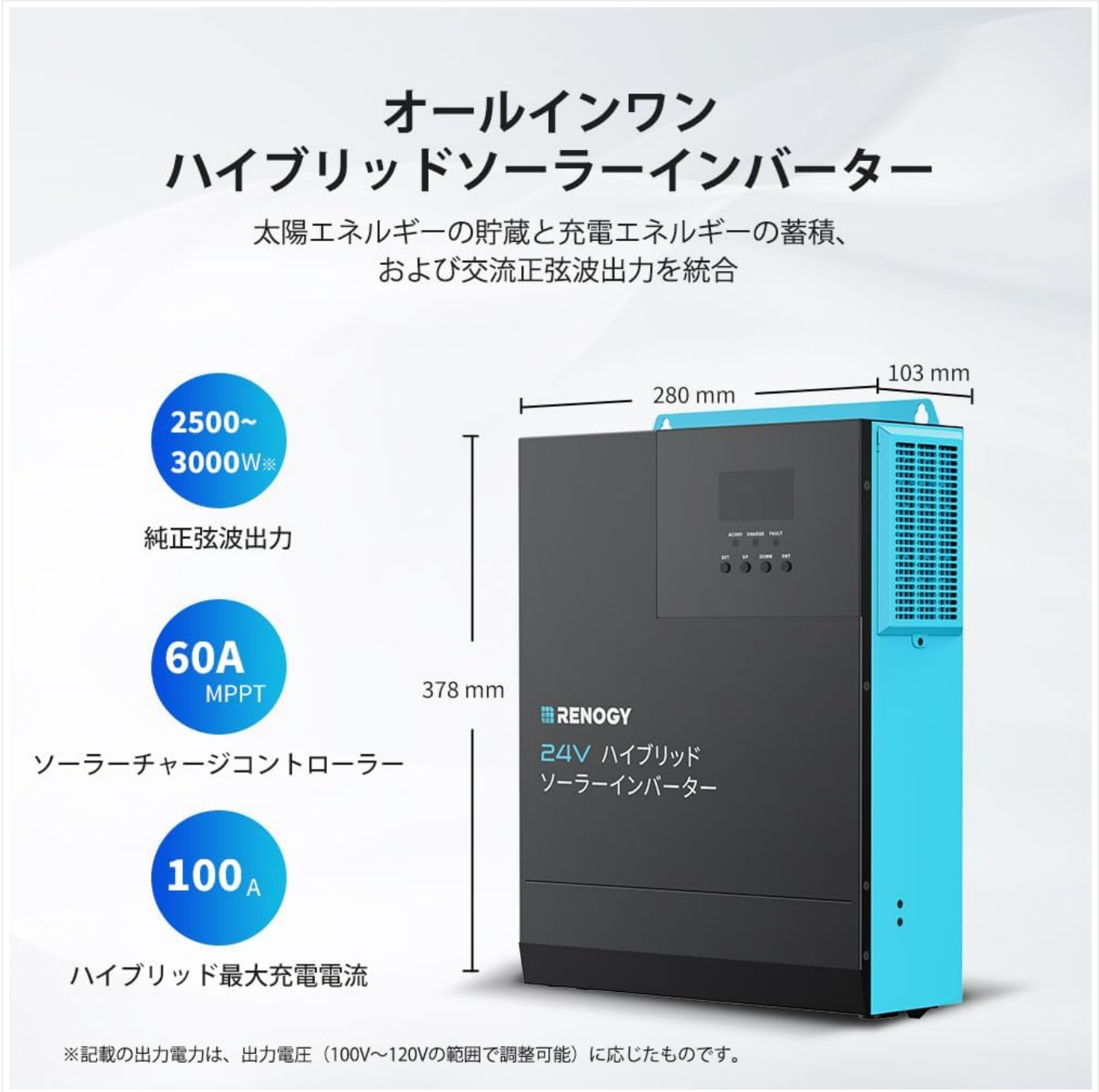

Image: Front view of the RENOGY 24V Hybrid Inverter, showing its dimensions (378mm height, 280mm width, 103mm depth) and highlighting its 2500-3000W pure sine wave output, 60A MPPT, and 100A hybrid maximum charging current.

Component Identification

Familiarize yourself with the various ports and controls on the inverter for proper installation and operation.

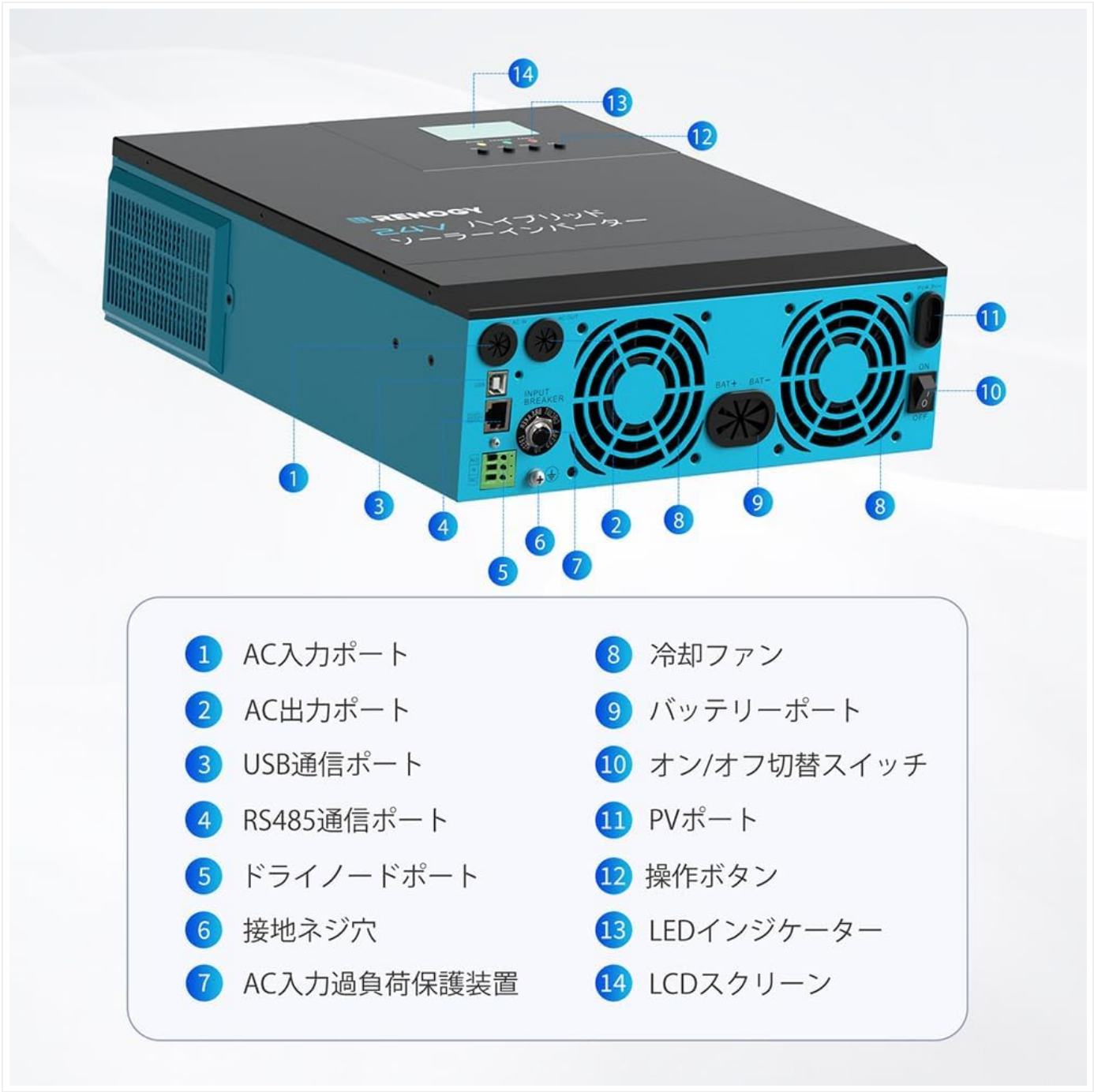

Image: Top-down view of the inverter with numbered labels indicating: 1. AC Input Port, 2. AC Output Port, 3. USB Communication Port, 4. RS485 Communication Port, 5. Dry Node Port, 6. Grounding Screw Hole, 7. AC Input Overload Protection Device, 8. Cooling Fan, 9. Battery Port, 10. On/Off Switch, 11. PV Port, 12. Operation Buttons, 13. LED Indicators, 14. LCD Screen.

4. Setup and Installation

This section outlines the steps for setting up your RENOGY 24V Hybrid Inverter. Proper installation is crucial for optimal performance and safety.

System Wiring Diagram

The inverter can be integrated into a comprehensive solar power system, connecting solar panels, batteries, and household loads, with an option for AC grid or generator input.

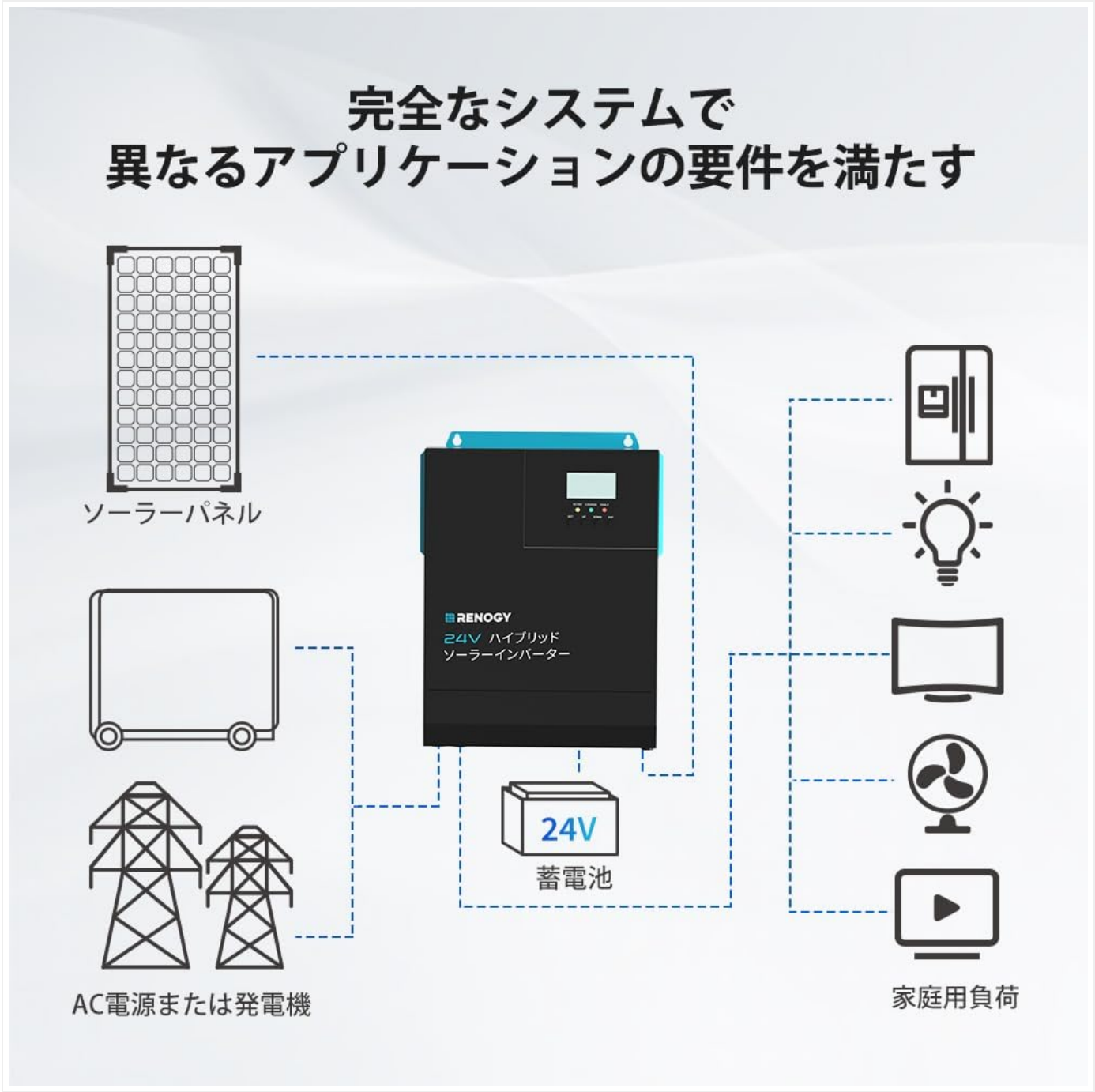

Image: A system diagram illustrating the connection of solar panels, the hybrid solar inverter, a 24V battery, AC power or generator, and various household loads (e.g., refrigerator, light, fan, TV).

Detailed Wiring Example

For a typical setup, connect your solar panels to the PV input, the 24V battery to the battery terminals, and your AC loads to the AC output. Ensure all connections are secure and follow local electrical codes.

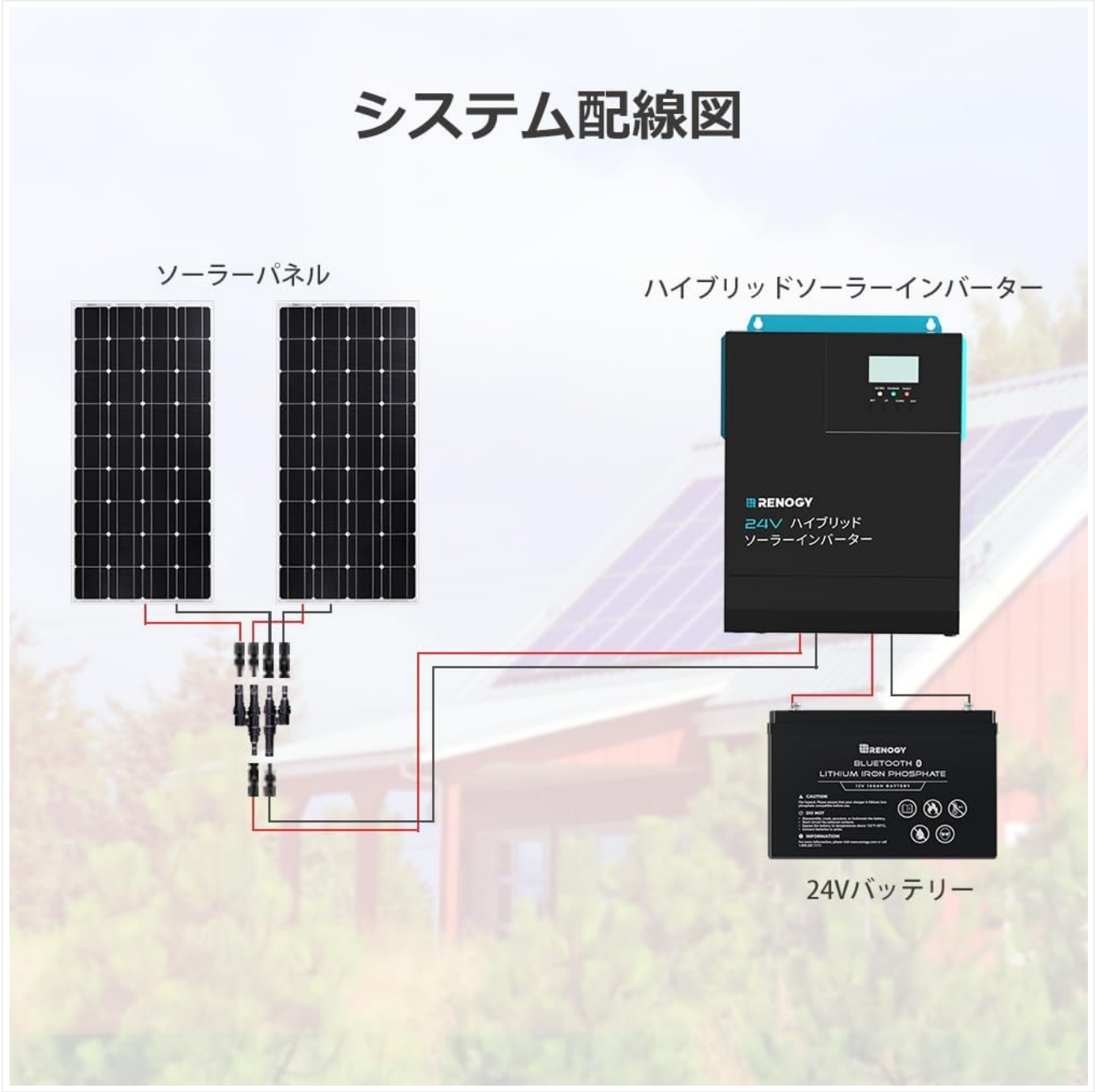

Image: A detailed system wiring diagram showing two solar panels connected in series/parallel to the hybrid solar inverter, which is then connected to a 24V battery. This illustrates a common off-grid solar power setup.

Battery Compatibility

The inverter is designed to be compatible with multiple types of deep cycle batteries, allowing flexibility in your energy storage solution.

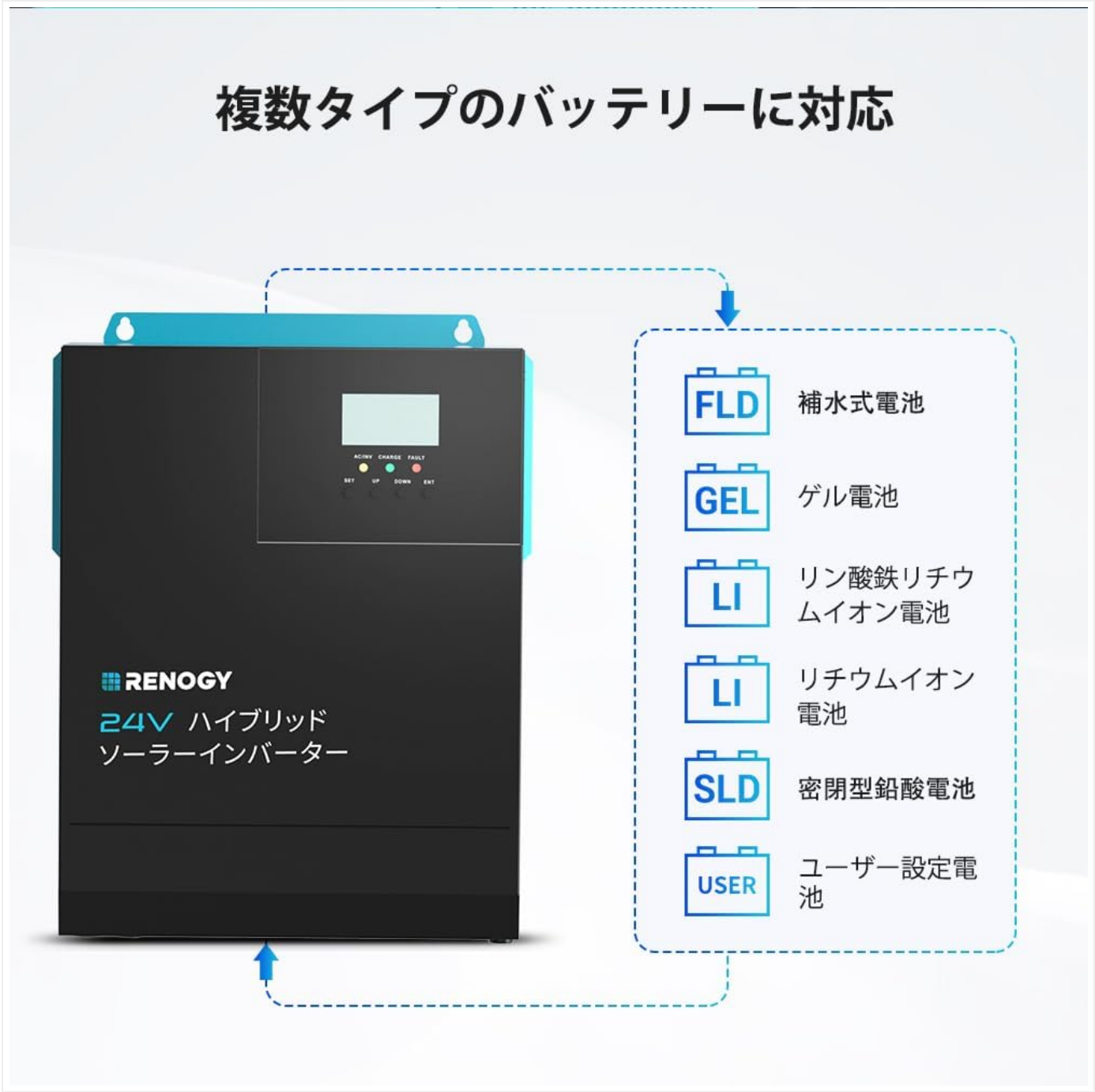

Image: A diagram showing the inverter's compatibility with various battery types, including Flooded (FLD), Gel (GEL), Lithium Iron Phosphate (LI), Lithium Ion (LI), Sealed Lead-Acid (SLD), and User-defined (USER) battery settings.

5. Operating Modes

The RENOGY Hybrid Inverter offers diverse operating modes, allowing you to customize system settings based on your specific needs and power availability.

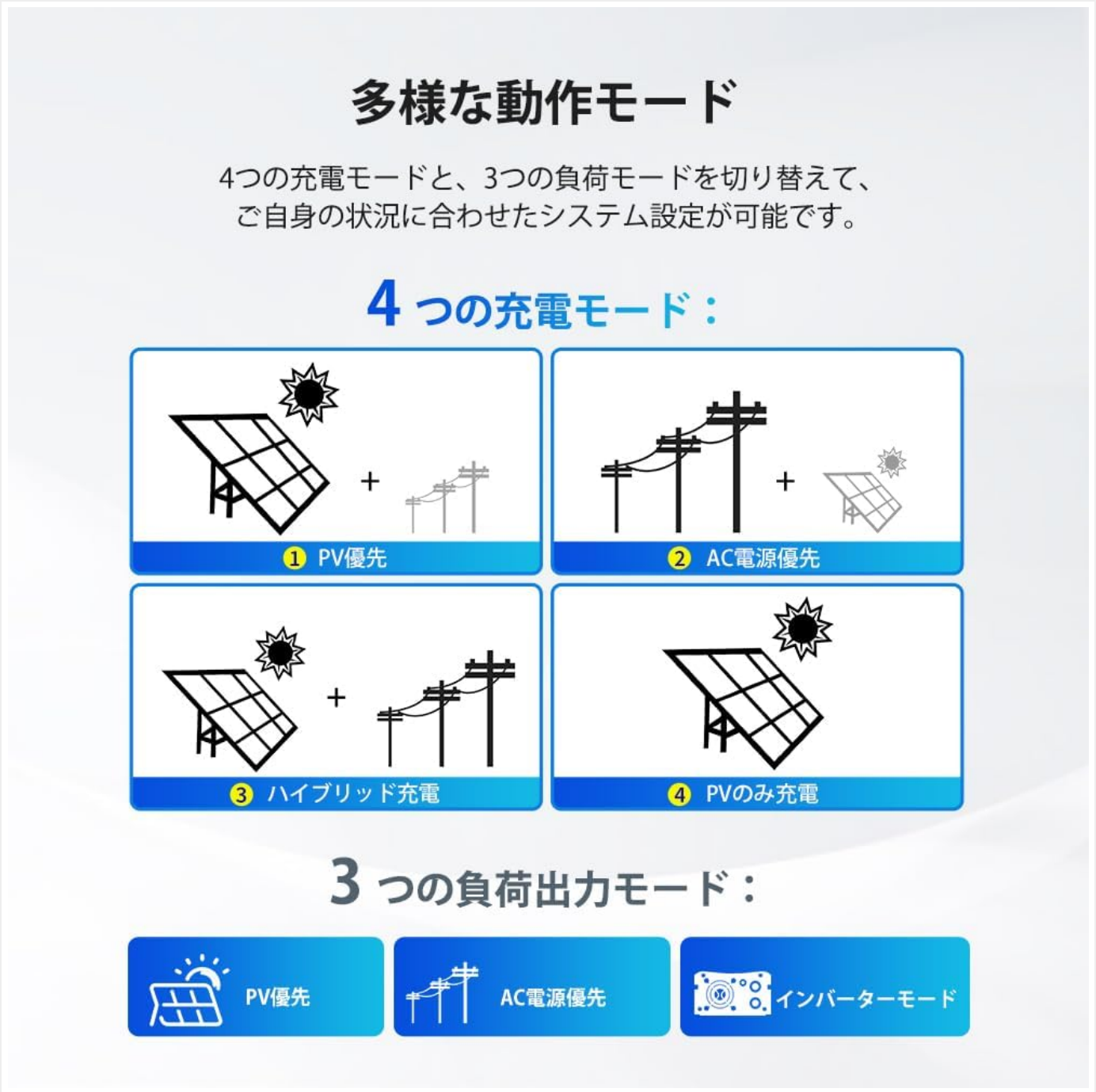

Image: A visual representation of the inverter's diverse operating modes. It shows four charging modes: 1. PV Priority, 2. AC Power Priority, 3. Hybrid Charging, 4. PV Only Charging. It also displays three load output modes: PV Priority, AC Power Priority, and Inverter Mode.

Charging Modes:

- **Solar Only Mode:** Prioritizes solar power for charging.
- **Utility Priority Mode:** Prioritizes grid power for charging, with solar as a supplement.
- **Solar Priority Mode:** Prioritizes solar power for charging, with grid power as a supplement.
- **Solar & Utility Hybrid Mode:** Utilizes both solar and grid power for charging.

Output Modes:

- **Inverter Mode (24V to 100V):** Provides AC power from the battery.
- **Utility Mode:** Provides AC power directly from the grid.

UPS Functionality

The inverter features an Uninterruptible Power Supply (UPS) function, providing a powerful bypass capability to ensure continuous power during outages with a transfer time of approximately 10ms.

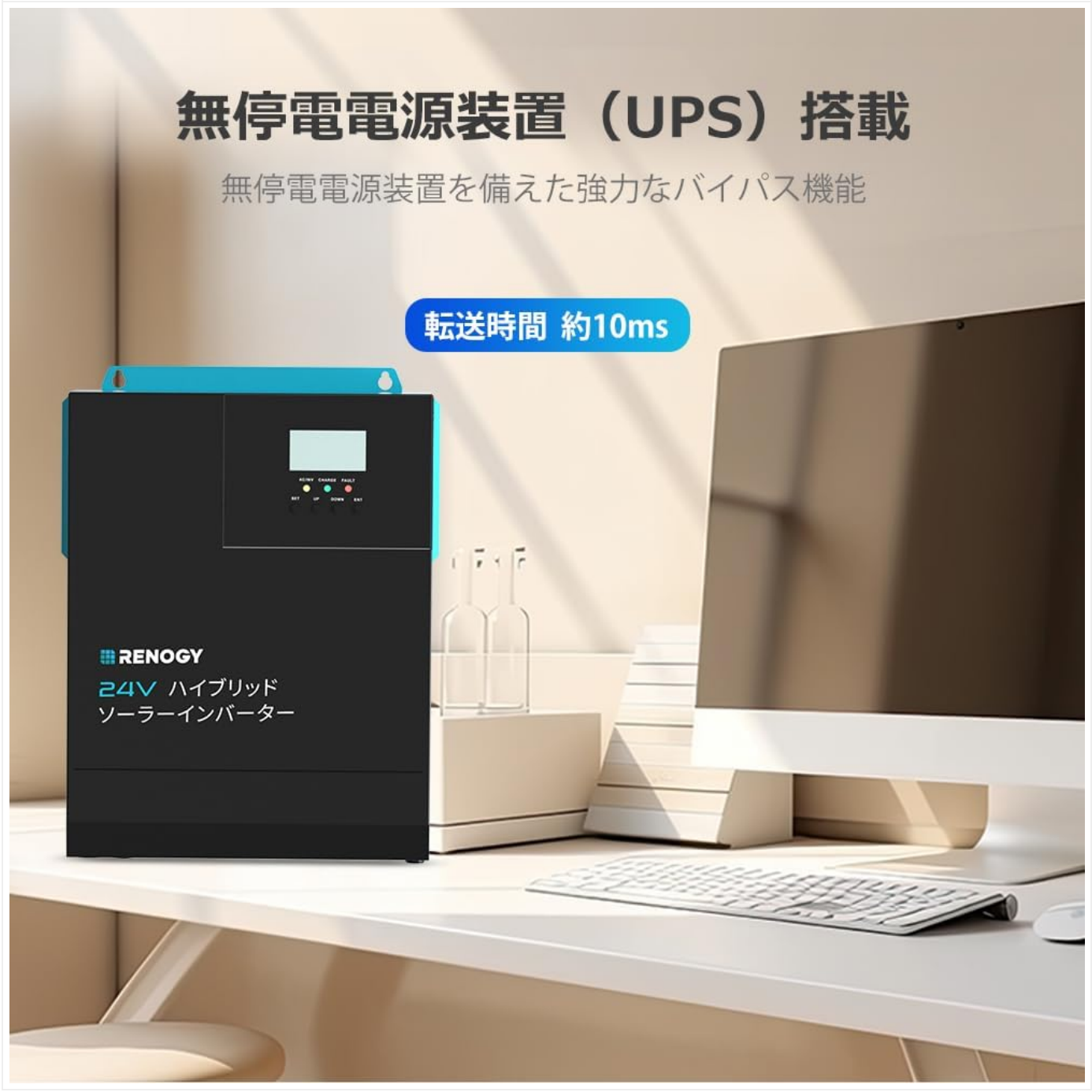

Image: The RENOGY Hybrid Inverter shown in a home office environment, illustrating its UPS function for uninterrupted power to devices like a computer monitor, with a note indicating a transfer time of approximately 10ms.

Monitoring and Display

The LCD screen and intelligent LED indicators provide important system information at a glance, allowing you to monitor parameters and identify potential issues.

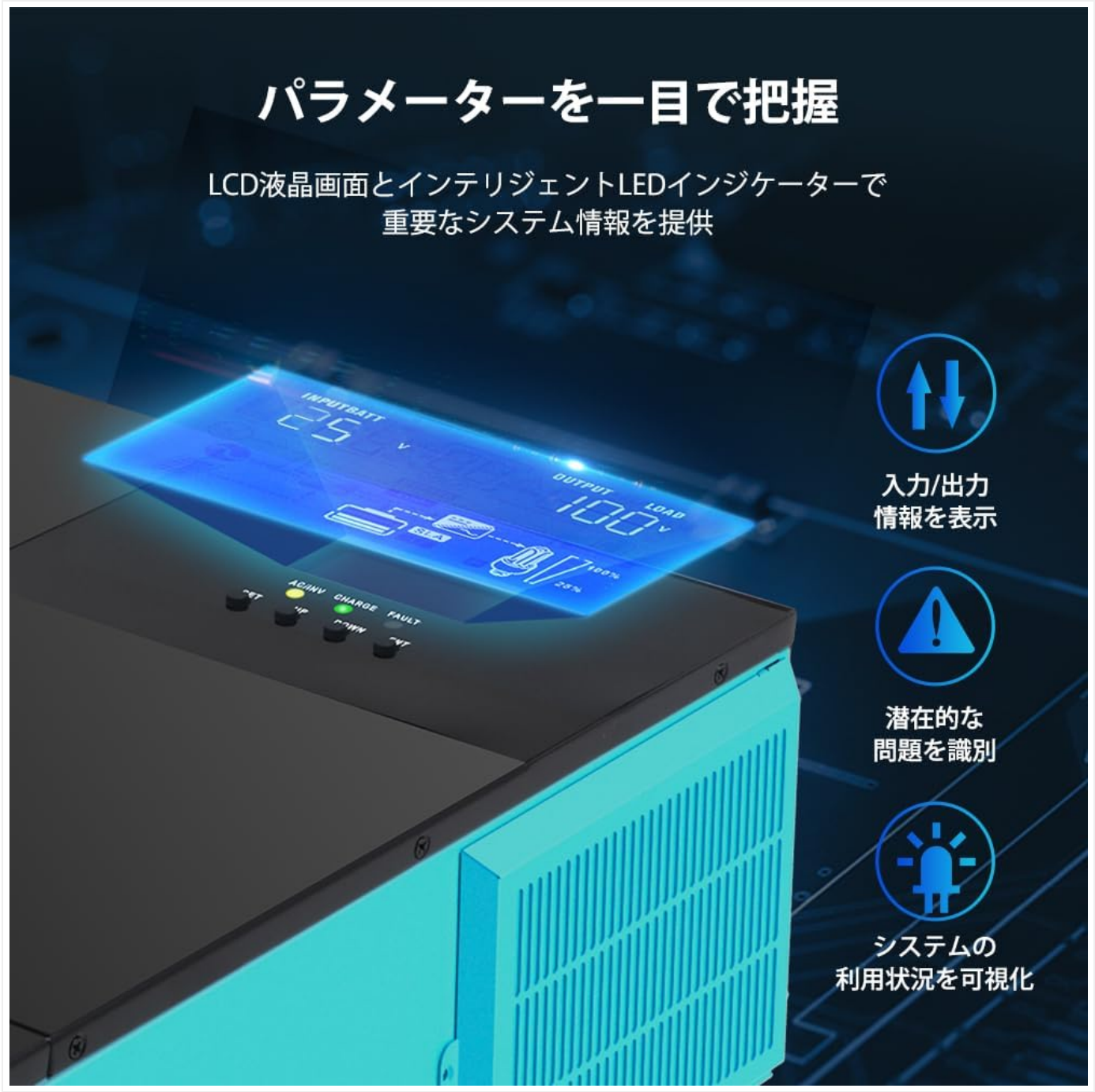

Image: A close-up of the inverter's LCD screen and LED indicators. The screen displays input/output information (e.g., input battery voltage, output load percentage), while the LEDs indicate AC/INV, CHARGE, and FAULT status, helping to visualize system usage and identify potential problems.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your RENOGY Hybrid Inverter.

- Keep the inverter clean and free from dust.
- Ensure adequate airflow around the unit; do not block ventilation openings.
- Periodically check all electrical connections for tightness and corrosion.
- Inspect cables for any signs of damage or wear.
- Monitor the LCD display for any error codes or unusual readings.

7. Troubleshooting

This section provides guidance for common issues you might encounter. For complex problems, contact customer support.

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection, low battery voltage, power switch off	Check battery connections, ensure battery voltage is within operating range, turn on the power switch.
No AC output	Overload, short circuit, inverter fault	Reduce load, check for short circuits, restart the inverter. If problem persists, contact support.
Error code displayed	Specific system fault (e.g., over-temperature, over-voltage)	Refer to the inverter's display for the specific error code and consult the full manual or contact support for detailed solutions.
Cooling fan constantly running or noisy	High internal temperature, dust accumulation	Ensure proper ventilation, clean dust from vents. If noise is excessive or persistent, contact support.

8. Specifications

Feature	Specification
Brand	RENOGY
Model	24V Hybrid Inverter 3000W
Continuous Output Power	2500W
Peak Output Power	5000W
Output Voltage	100V AC
Frequency	50/60 Hz (Switchable)
Efficiency	92%
MPPT Solar Charge Controller Current	60A
Battery Charger Current	40A
Certifications	ETL
UPC	840315234055
ASIN	B0DM1Q8CYX

9. Warranty and Support

Warranty Information

This RENOGY product comes with a **1-year warranty** against manufacturer defects. Please retain your proof of purchase for warranty claims.

Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact RENOGY customer support through their official website or the contact information provided with your product. Always provide your product model and serial number when seeking support.