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› OFAPLFKUR 12V 24V MPPT Hybrid Solar Inverter User Manual (Models POW-HVM2H-12V-N, POW-HVM3.2H-24V-N)

OFAPLFKUR POW-HVM2H-12V-N, POW-HVM3.2H-24V-N

OFAPLFKUR 12V/24V MPPT Hybrid Solar Inverter User Manual

Models: POW-HVM2H-12V-N, POW-HVM3.2H-24V-N

1. INTRODUCTION

This user manual provides comprehensive instructions for the installation, operation, and maintenance of the OFAPLFKUR 12V/24V MPPT Hybrid Solar Inverter. This device integrates a solar charge controller, inverter, and battery charger into one unit, offering uninterruptible power support in a compact size. It is designed for various applications, including off-grid solar systems.

This manual covers the following models: **POW-HVM2H-12V-N** (12V system, 1KW/1.6KW) and **POW-HVM3.2H-24V-N** (24V system, 3KW). Please read this manual thoroughly before installation and operation to ensure proper use and safety.

Always observe all safety warnings and precautions detailed in this manual.

2. IMPORTANT SAFETY INSTRUCTIONS

Please save this manual for future reference. This section contains important safety instructions for the OFAPLFKUR Hybrid Solar Inverter. Read and keep this manual for proper operation and maintenance.

- Before using the unit, read all instructions and cautionary markings on the unit, the batteries, and all appropriate sections of this manual.
- **CAUTION:** To reduce the risk of injury, charge only deep-cycle lead-acid or lithium-ion type rechargeable batteries. Other types of batteries may burst, causing personal injury and damage.
- Do not disassemble the unit. Take it to a qualified service center when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- To reduce the risk of electric shock, disconnect all wiring before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- Never charge a frozen battery.
- This equipment is for indoor use only. Do not expose the unit to rain, snow, or liquids of any type.
- The inverter is a high-voltage device. Ensure all connections are secure and properly insulated.

Observe the "CAUTION ELECTRIC SHOCK HAZARD ENERGY HAZARDOUS" label on the unit, indicating potential

electrical shock and energy hazards.

3. PRODUCT OVERVIEW

The OFAPLFKUR Hybrid Solar Inverter is a versatile power solution designed to efficiently manage solar power, battery power, and utility power. It features a Pure Sine Wave output, ensuring compatibility with sensitive electronics, and an 80A MPPT (Maximum Power Point Tracking) solar charger for optimized solar energy harvesting.



Figure 3.1: Front view of the OFAPLFKUR MPPT Hybrid Solar Inverter.

The image displays the front panel of the OFAPLFKUR MPPT Hybrid Solar Inverter. It features a digital display screen at the top, showing operational status and parameters. Below the screen are four control buttons: ESC, UP, DOWN, and ENTER, used for navigation and setting adjustments. The main body of the inverter is dark gray, with a distinct orange section at the bottom. A 'CAUTION ELECTRIC SHOCK HAZARD ENERGY HAZARDOUS' label is visible on the lower left of the orange section, indicating important safety information.

4. SETUP AND INSTALLATION

4.1 Unpacking

Before installation, carefully unpack the unit and inspect it for any damage. Ensure all items listed below are included in the package:

- Hybrid Solar Inverter Unit
- User Manual
- Communication Cable (if applicable)

4.2 Mounting the Inverter

Choose a suitable location for mounting the inverter, considering the following:

1. Mount on a solid surface capable of supporting the inverter's weight.

2. Ensure adequate ventilation around the unit to prevent overheating. Maintain at least 20 cm clearance from other objects.
3. Avoid direct sunlight, moisture, and dust.
4. Mount the inverter vertically to allow for proper heat dissipation.

4.3 Wiring Connections

All wiring must be performed by a qualified electrician in accordance with local electrical codes and regulations. Incorrect wiring can cause damage to the unit, personal injury, or fire.

- **Battery Connection:** Connect the battery bank to the inverter's battery terminals. Ensure correct polarity (+ to + and - to -). The inverter supports 12V or 24V DC input.
- **PV Array Connection:** Connect the solar panel array to the PV input terminals. Observe the correct polarity and ensure the PV array voltage is within the specified MPPT range (30V - 400Vdc).
- **AC Input Connection:** Connect the utility grid or generator AC input to the inverter's AC input terminals.
- **AC Output Connection:** Connect your AC loads to the inverter's AC output terminals.
- **Grounding:** Ensure the inverter is properly grounded to prevent electrical hazards.

Before making any connections, ensure all power sources (PV, battery, AC input) are disconnected.

5. OPERATING INSTRUCTIONS

5.1 Initial Power-Up

1. After all wiring is complete and verified, connect the battery breaker.
2. Connect the PV array breaker.
3. Connect the AC input breaker (if using utility/generator).
4. Turn on the inverter's power switch. The LCD display should illuminate, and the unit will begin its self-test sequence.

5.2 LCD Display and Control Buttons

The LCD display provides real-time operational data, status indicators, and fault codes. The four control buttons allow for navigation and parameter adjustments:

- **ESC:** Exits the current menu or setting without saving changes.
- **UP:** Navigates upwards through menu options or increases a parameter value.
- **DOWN:** Navigates downwards through menu options or decreases a parameter value.
- **ENTER:** Confirms a selection, enters a menu, or saves a parameter change.

5.3 Operating Modes

The inverter supports various operating modes to suit different power management needs. These modes can typically be configured via the LCD display:

- **Utility Priority Mode:** AC input (utility/generator) is the primary power source. Solar and battery provide backup.
- **Solar Priority Mode:** Solar power is the primary source. Battery and utility provide backup.
- **Battery Priority Mode:** Battery power is the primary source. Solar charges the battery, and utility provides backup when battery is low.

5.4 Parameter Settings

The inverter allows users to customize various parameters, such as output voltage, charging current, battery type, and operating mode. Refer to the detailed menu structure in the full manual for specific parameter settings. Use the UP/DOWN buttons to navigate and ENTER to select/confirm.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your OFAPLFKUR Hybrid Solar Inverter. Always disconnect all power sources before performing any maintenance.

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Ensure ventilation openings are free from dust and debris.
- **Connection Checks:** Annually inspect all wiring connections (battery, PV, AC input/output) for tightness and corrosion. Tighten any loose connections.
- **Ventilation:** Ensure the area around the inverter remains clear to allow for proper airflow and heat dissipation.
- **Battery Inspection:** If using lead-acid batteries, check electrolyte levels and terminal condition as per battery manufacturer guidelines.

7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter. For problems not listed here, please contact customer support.

Problem	Possible Cause	Solution
Inverter does not power on.	Battery disconnected or voltage too low. Power switch off.	Check battery connections and voltage. Ensure battery is charged. Turn on power switch.
No AC output.	Overload condition. Inverter in fault mode. AC output breaker tripped.	Reduce connected load. Check LCD for fault codes and clear. Reset AC output breaker.
PV input error/no charging.	PV array disconnected or shaded. PV voltage outside MPPT range.	Check PV connections and ensure panels are not shaded. Verify PV array voltage.
High temperature warning.	Insufficient ventilation. Overload.	Ensure clear space around inverter. Reduce load. Check fan operation.

8. SPECIFICATIONS

Technical specifications for the OFAPLFKUR Hybrid Solar Inverter models POW-HVM2H-12V-N and POW-HVM3.2H-24V-N.

Feature	Description
Model Numbers	POW-HVM2H-12V-N (12V), POW-HVM3.2H-24V-N (24V)
Output Power (Rated)	1KW / 1.6KW (12V model), 3KW (24V model)

Feature	Description
Output Type	Single Phase
Output Frequency	50Hz/60Hz (Auto sensing)
Output Voltage Waveform	Pure Sine Wave
Nominal AC Input Voltage	220V / 230V / 240V
PV Array MPPT Voltage Range	30V - 400Vdc
DC Input Voltage (Battery)	12V (for POW-HVM2H-12V-N), 24V (for POW-HVM3.2H-24V-N)
Max. PV Array Power	2000W (for 12V model), 3000W (for 24V model)
Charging Current	MPPT 80A
Application	Home solar system
Item Weight	1.76 ounces
Wattage	1 kWh (Note: This likely refers to 1KW capacity for the smaller model)

9. WARRANTY AND SUPPORT

OFAPLFKUR products are manufactured to high-quality standards. This product is covered by a limited warranty against defects in materials and workmanship from the date of purchase. Please refer to your purchase documentation for specific warranty terms and duration.

For technical support, troubleshooting assistance, or warranty claims, please contact your authorized dealer or OFAPLFKUR customer service. When contacting support, please have your model number (POW-HVM2H-12V-N or POW-HVM3.2H-24V-N) and purchase information readily available.

Contact information (example - please refer to your product packaging or official website for actual contact details):

Email: support@ofaplfkur.com

Website: www.ofaplfkur.com

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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