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› [Temank PowMr 10000W 48V Split-Phase Solar Inverter Instruction Manual, Model US-POW-SunSmart 10KP-NYF](#)

Temank US-POW-SunSmart 10KP-NYF

Temank PowMr 10000W 48V Split-Phase Solar Inverter Instruction Manual

Model: US-POW-SunSmart 10KP-NYF

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Temank PowMr 10000W 48V Split-Phase Solar Inverter. Please read this manual thoroughly before installation and use, and retain it for future reference. The inverter is a multifunctional device integrating a solar energy storage inverter, utility charging, and AC sine wave output. It features dual MPPT solar charge controllers and supports parallel operation for capacity expansion.

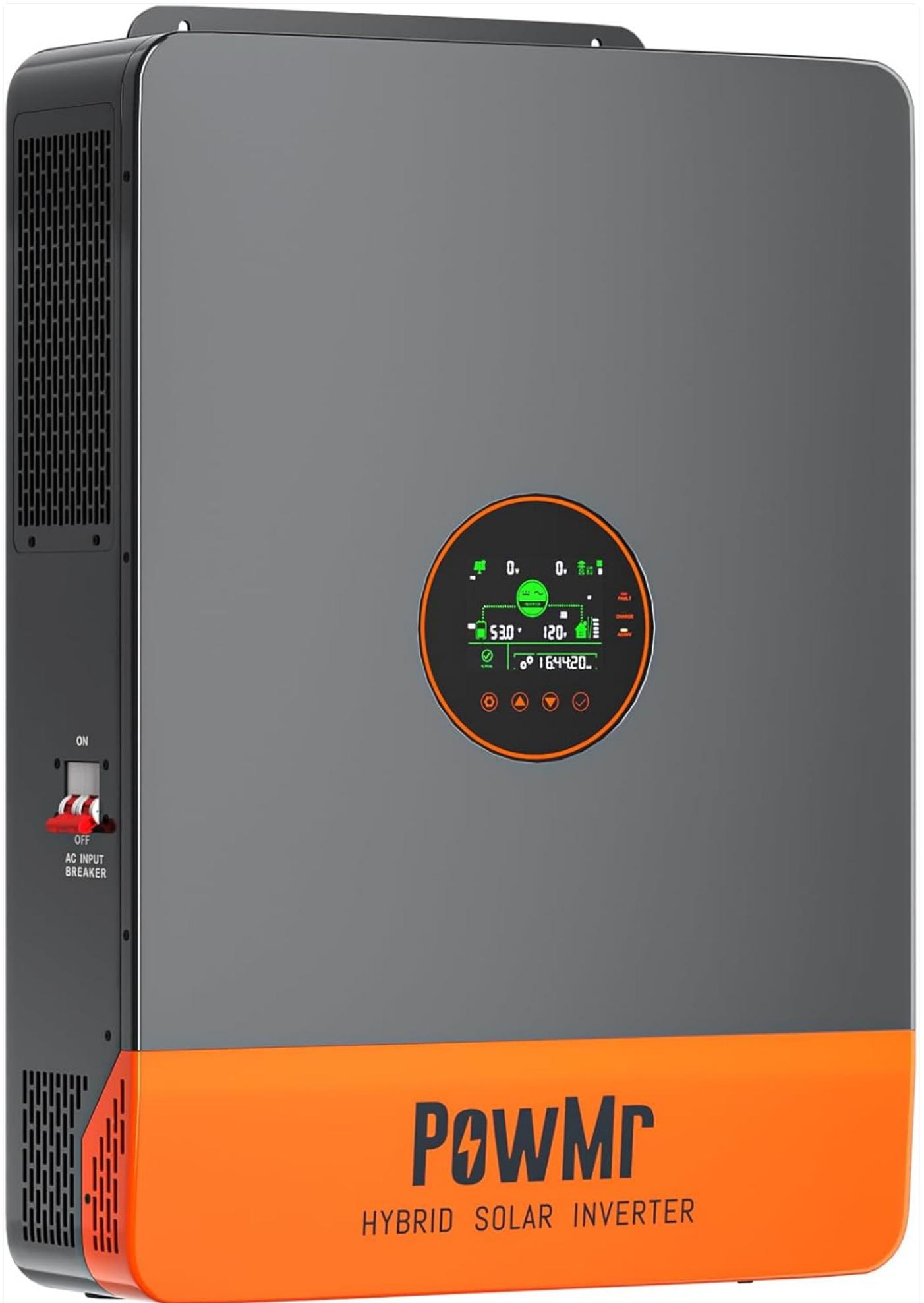


Image 1.1: Front view of the Temank PowMr 10000W Hybrid Solar Inverter. The inverter is gray and orange with a central LCD display and an AC input breaker switch on the side.

2. SAFETY INFORMATION

Adherence to safety precautions is crucial during installation, operation, and maintenance. Failure to follow these instructions may result in electric shock, fire, or severe injury.

- Installation must be performed by qualified personnel.
- Ensure all power sources are disconnected before performing any wiring or maintenance.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- The inverter generates high voltage. Avoid contact with internal components.
- Ensure proper grounding of the unit.
- Install in a well-ventilated area, away from flammable materials and moisture.
- This inverter is compatible only with single crystalline and polycrystalline PV modules.
- Do not connect the positive or negative terminal of the solar panel to the ground.

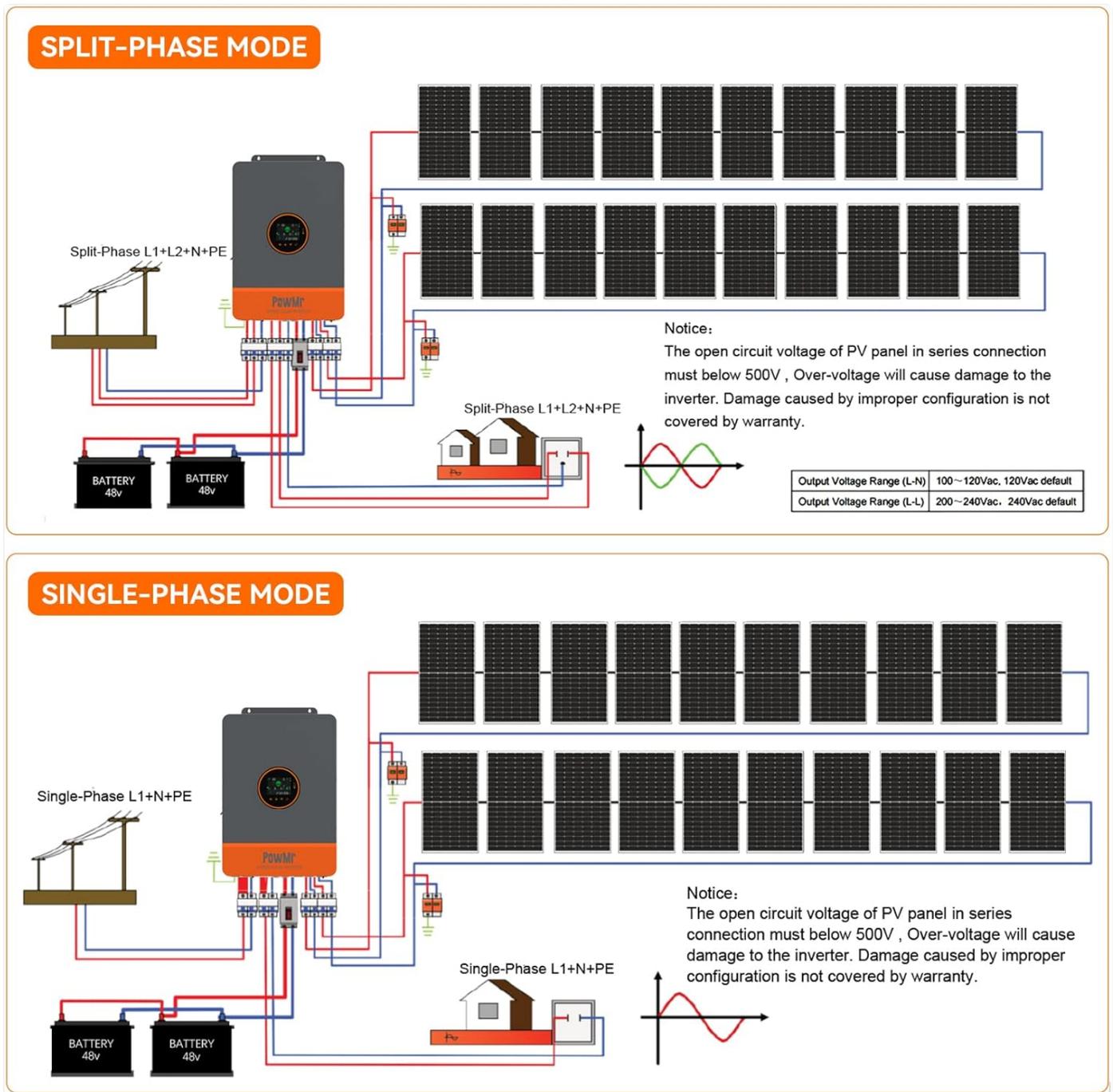


Image 2.1: Diagram illustrating the 360-degree protection features of the Temank PowMr inverter, including short circuit, over-current, over-

voltage, under-voltage, overload, backfill, over-temperature, and over-charge protection.

3. SETUP AND INSTALLATION

3.1 Unpacking and Inspection

Upon receiving the inverter, carefully unpack and inspect it for any damage. The package should include:

- 10000W solar inverter
- Parallel communication cable
- 2 x Battery Terminal Lugs
- 2 x M5 screws
- Instruction manual

3.2 Mounting the Inverter

Mount the inverter vertically on a sturdy wall in a clean, dry, and well-ventilated area. Ensure adequate clearance around the unit for proper heat dissipation.

3.3 Wiring Connections

All wiring must comply with local and national electrical codes. Use appropriate wire gauges for all connections.

3.3.1 Battery Connection

Connect the 48V battery bank to the inverter's battery terminals. Ensure correct polarity. The inverter supports AGM, Gel, Lead-acid, Lithium-ion, and LiFePO4 batteries, and can operate without batteries.

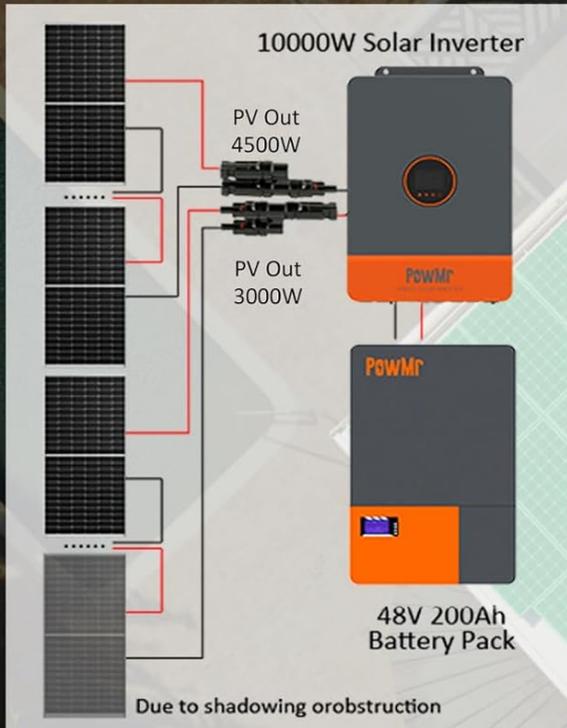
3.3.2 PV Input Connection

Connect the solar panels to the PV input terminals. The inverter features dual MPPT trackers, supporting two independent solar inputs. Max PV input power is 11KW (5500W per input), with a maximum PV input voltage of 500Vdc and starting voltage > 150V. PV wire gauge: 10AWG.

Built-in Dual MPPT

PV1 and PV2 can be connected to solar panels of different orientations, quantities, and specifications

Received PV Watt = 4500W+3000W



Benefits of Dual MPPT:

Improved Efficiency: Dual MPPT allows simultaneous tracking of the maximum power points (MPPs) of two solar PV arrays. This enhances generation efficiency by optimizing output even in shaded or partially shaded conditions.

Flexibility: It provides flexibility by independently controlling different orientations or sections of solar panels within the same inverter. This versatility optimizes performance across varying installation conditions.

Reduced Impact: Dual MPPT reduces the impact of shading or other issues affecting one part of the array, as the other MPPT can continue maximizing output from unaffected sections.

Enhanced System Reliability: It increases system reliability and stability. In case of issues with one MPPT, the system can still partially operate, minimizing downtime and maximizing overall energy production.

Image 3.1: Illustration of the inverter's built-in dual MPPT functionality, showing two separate solar panel arrays connected to PV1 and PV2 inputs, allowing for independent tracking and optimized power generation even with shading or different panel specifications.

3.3.3 AC Input/Output Connection

Connect the utility grid or generator to the AC input. Connect your loads to the AC output. The inverter supports 120V/240V split-phase and single-phase output. AC cable gauge: 8-6 AWG.

SPLIT-PHASE CONNECTION DIAGRAM

Note:

- This inverter is only compatible with PV module types of single crystalline and poly crystalline.
- Do not connect the positive or negative terminal of the solar panel to the ground.
- If a single-phase 120V output is required, only a single live wire L1 or L2 needs to be connected to the input and output terminals.

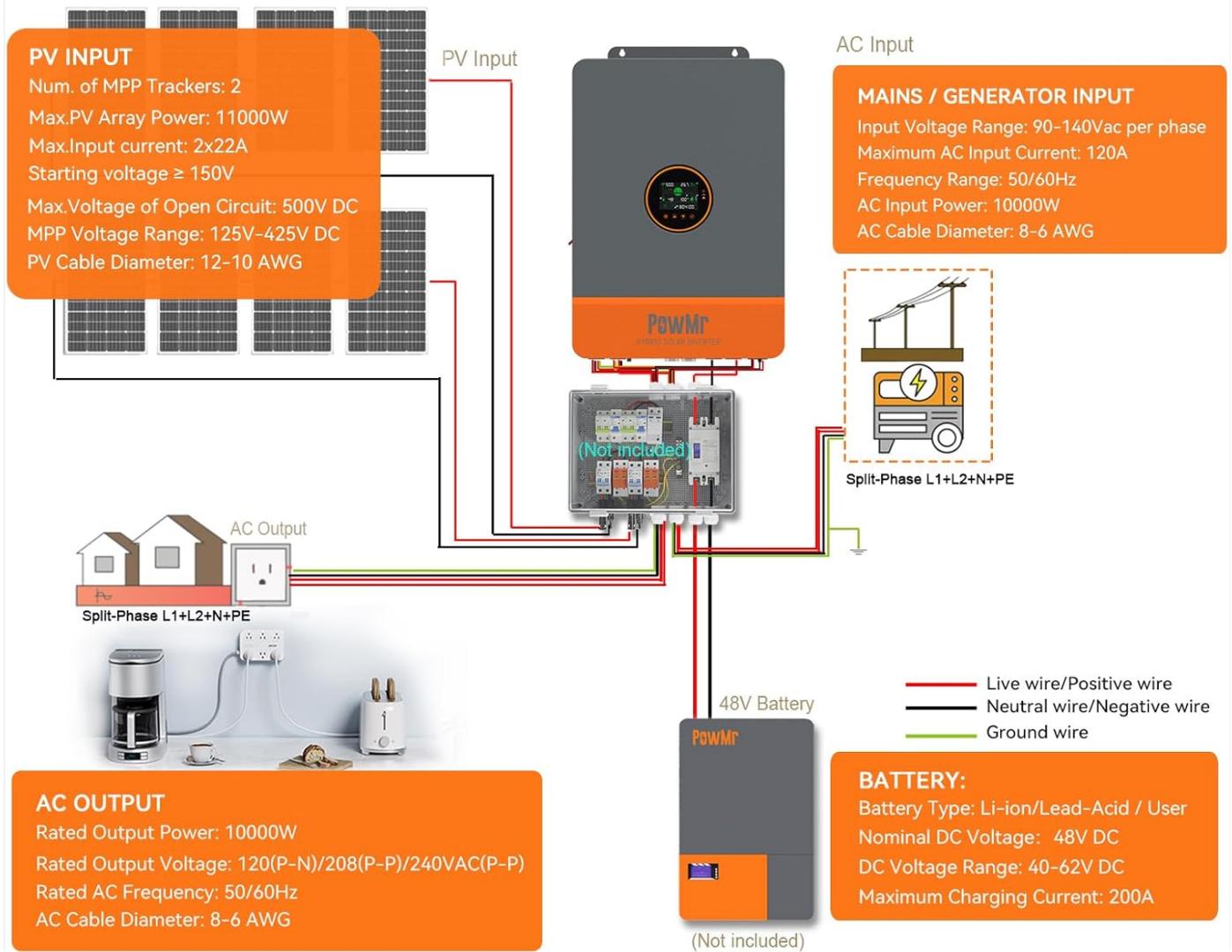


Image 3.2: Detailed wiring diagram for split-phase connection of the Temank PowMr inverter, showing connections for PV input, mains/generator input, AC output to loads, and battery. It highlights the L1+L2+N+PE configuration for split-phase systems.

COMPATIBLE WITH 48V LEAD-ACID AND LITHIUM BATTERIES, AND CAN RUN BATTERYLESS

Battery charging current setting range:0~200A.



With a dual activation function when the li-ion battery is dormant; either mains/photovoltaic power supply access can trigger the activation of the li-ion battery

Batteryless support: the inverter can power the loads from PV array / ac grid without battery connected

Image 3.3: Comparison of split-phase and single-phase wiring modes for the Temank PowMr inverter, illustrating how solar panels, batteries, and household loads are connected in each configuration. Important notices regarding PV open circuit voltage are included.

3.3.4 Parallel Operation

The inverter supports parallel operation for capacity expansion, allowing up to 6 units to be connected for a maximum of 60kW. This enables 120V and 240V output simultaneously. Use the provided parallel communication cable for interconnection.

MAX 6 INVERTER PARALLEL

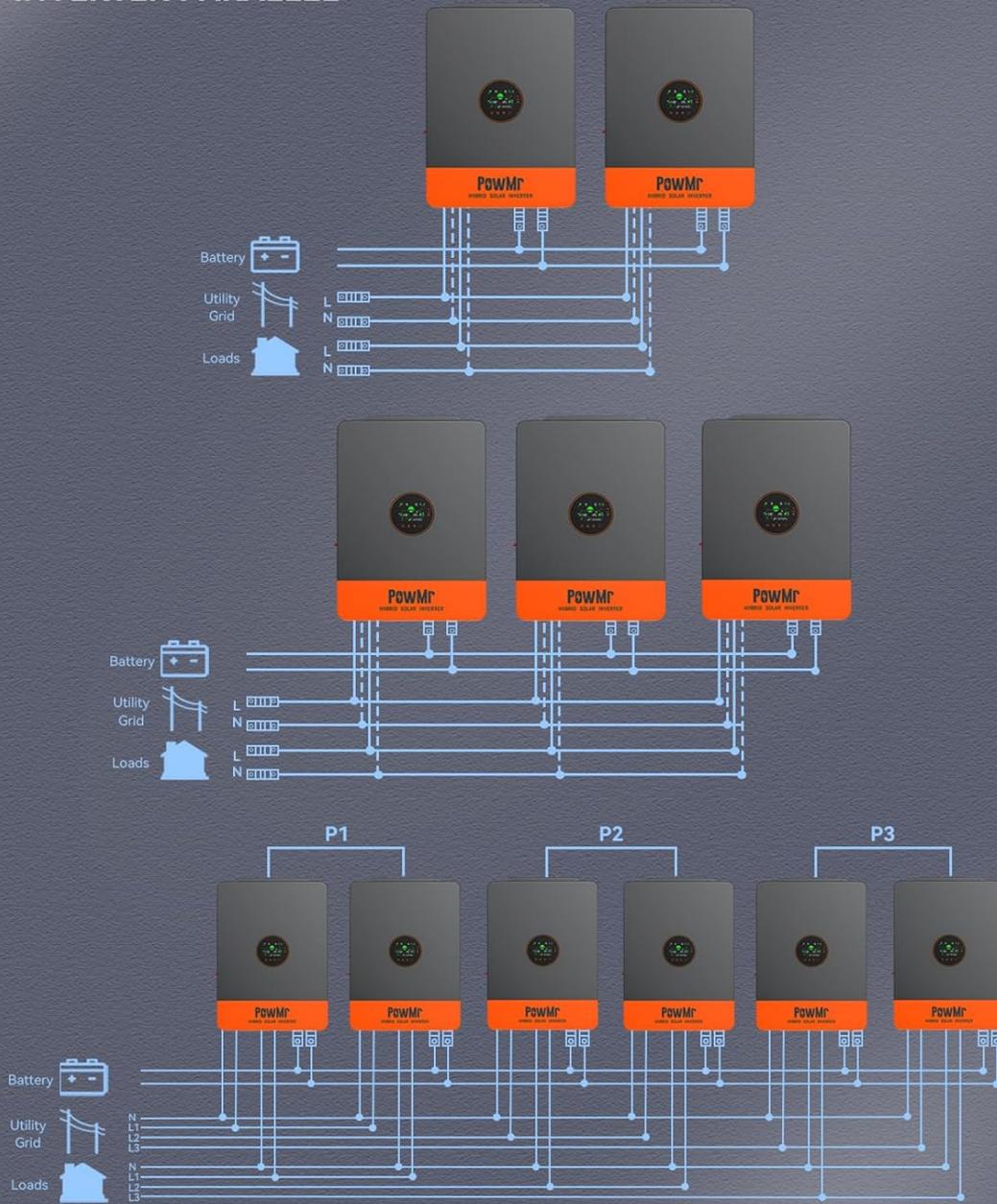


Image 3.4: Diagram illustrating various parallel connection configurations for the Temank PowMr inverter, showing setups for two, three, and six inverters to achieve higher power output and split-phase operation.

4. OPERATION

4.1 Powering On/Off

1. **Power On:** Ensure all connections are secure. Switch on the AC input breaker, then the DC battery breaker (if applicable), and finally the inverter's ON/OFF rocker switch.
2. **Power Off:** Reverse the power-on sequence. First, switch off the inverter's ON/OFF rocker switch, then the DC battery breaker, and finally the AC input breaker.

4.2 LCD Display and Settings

The LCD screen provides real-time monitoring of photovoltaic system operating data. Use the touchable keys to navigate menus and adjust settings.



Image 4.1: Various screens of the LCD display on the Temank PowMr inverter, showing real-time data such as PV input, battery status, AC output, and system parameters.

4.3 Charging Modes

The inverter offers four charging modes:

- **Solar Only:** Charges batteries exclusively from solar power.
- **Mains Priority:** Charges batteries primarily from the utility grid, with solar as a supplement.
- **Solar Priority:** Charges batteries primarily from solar, with the utility grid as a supplement.
- **Mixed Mains/PV Charging:** Utilizes both utility and PV power for charging.

4.4 Output Modes

The inverter supports two output modes:

- **Utility Bypass:** Loads are powered directly by the utility grid.
- **Inverter Output:** Loads are powered by the inverter (from solar or battery).

4.5 Time-Slot Charging/Discharging

The inverter features a time-slot charging and discharging function, allowing users to set specific periods for charging and discharging based on local electricity tariffs. This optimizes energy usage and can reduce costs.

Note: Before using this function, set the local time in parameters 54 and 55, then configure the time slots.

MONITOR AND CONTROL VIA SMARTESS APP

Download on the **APP Store** | Get it on **Google Play**

Optional | Optional

WiFi modules available in both old and new versions

⚠️ The Wi-Fi/GPRS data acquisition module need to be purchased separately.

Image 4.2: Graphic explaining the time-slot charging and discharging function, showing how users can define periods for utility/PV charging and battery discharging to optimize energy costs based on peak-valley electricity tariffs.

4.6 Power Saving Mode

Enable power saving mode to conserve energy. If the load power drops below 50W, the inverter will switch off after a 5-minute delay. When the load exceeds 50W, the inverter automatically restarts.

5. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your inverter.

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Ensure ventilation openings are free from dust and debris. The inverter features a detachable insect-proof screen for easy cleaning.
- **Connections:** Annually inspect all electrical connections for tightness and signs of corrosion.
- **Environment:** Ensure the installation environment remains within specified temperature and humidity ranges.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates.



Image 5.1: Close-up views highlighting the detachable insect-proof screen for easy cleaning and the intelligent cooling fans designed for efficient heat dissipation within the Temank PowMr inverter.

6. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Inverter not powering on	No AC input, battery disconnected, or ON/OFF switch off.	Check AC input, battery connections, and ensure the ON/OFF switch is in the 'ON' position.
No AC output	Overload, short circuit, or low battery voltage.	Reduce load, check for short circuits, or charge batteries.
Low PV charging power	Shaded panels, incorrect PV wiring, or dirty panels.	Check for shading, verify PV wiring, and clean solar panels.
Error code on LCD	Specific system fault.	Refer to the detailed error code list in the full manual (if available) or contact support.

7. TECHNICAL SPECIFICATIONS

Feature	Specification
Model Number	US-POW-SunSmart 10KP-NYF
Rated Output Power	10000W (Continuous), 20000W (Surge)
Rated Output Voltage	120/240Vac (Split-phase/Single-phase)
AC Input Voltage Range	90-140Vac per phase
Max. PV Input Power	11KW (5500W * 2)
Max. PV Input Voltage	500Vdc
Max. PV Input Current	22A
MPPT Voltage Range	125-425Vdc
Battery Voltage	48Vdc
Max. Charging Current	200A (MPPT + AC Charger)
Waveform	Pure Sine Wave
Switch Time	10ms
Operating Temperature	5-131°F (-15-55°C)
Dimensions (L*W*D)	25.67" x 17.52" x 5.24" (652 x 445 x 133mm)
Weight	59.5 lbs (27 kg)
Communication	CAN, USB, RS485



Image 7.1: A table summarizing the technical specifications of the Temank PowMr 10000W inverter, including input/output voltages, power ratings, battery compatibility, and communication interfaces.

8. SUPPORT AND WARRANTY

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact Temank customer support. Refer to your purchase documentation for specific warranty terms and contact information.

You can also monitor and control the inverter via the SmartESS App. Download the app from the App Store or Google Play. Note that Wi-Fi/GPRS data acquisition modules are optional and need to be purchased separately.



Image 8.1: Screenshots of the SmartESS mobile application, demonstrating its interface for monitoring and controlling the solar inverter

system, with options to download from App Store and Google Play.

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