

## Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

› [Temank](#) /

› [PowMr 5000W Solar Inverter User Manual](#)

## Temank POWLVM

# PowMr 5000W Solar Inverter User Manual

Model: POWLVM

Brand: Temank

## PRODUCT OVERVIEW

---

The PowMr 5000W Solar Inverter is a pure sine wave power inverter designed for off-grid solar energy systems. It features a built-in 80A MPPT charge controller and supports both 48V lead-acid and lithium batteries. This inverter is capable of handling a maximum PV input of 5500W, 500V, and 22A, providing a 5000W output. It offers multiple charging and load output modes to suit various application requirements, including utility, generator, and solar charging.



此产品为户内产品，禁止在户外使用。  
The product is indoor product.  
It is forbidden to use it outdoors.

All-in-one solar charge inverter

Model Name	IP20-1200W-40-12
Color	White and Black
Operating Temperature Range	-10-50°C
IP Grade	IP20
Factory Class	1
AC Output	5000VA/2000W
Rated Power	1200W/60A
Voltage	120V/110V/230V/240V
Adjustable Voltage Level	47.5A
Rated Current	40-60A/DC
Battery Input	40-60V/DC
Voltage Range	40V/DC
Rated Voltage	48V/DC
AC Input	80-140VAC
Voltage Range	50-140V/AC
Frequency	50/60Hz
Max. AC Output Current	60A
Max. AC Charge Current	60A
PV Input	5000W
Max. Open Voltage	330V
MPPT Input Voltage Range	120-450V/DC
Max. Input Current	16A
PV Output	5000W
Max. Power	5000W
Max. Charge Current	60A

SN: IP201200W-40-12-001

RoHS COMPLIANT

WARNING FIRE HAZARD:  
SUITABLE FOR MOUNTING ON CONCRETE  
OR OTHER NON-COMBUSTIBLE SURFACE ONLY.  
CAUTION: THE DC AND AC BREAKERS MUST  
HAVE BEEN TURNED OFF BEFORE SERVICING.  
MADE IN CHINA

Figure 1: Front view of the PowMr 5000W Solar Inverter, showcasing the LCD display and control buttons.

Key features include full digital voltage and current double closed-loop control, advanced SPWM technology for pure sine wave output, and an intelligent variable speed fan for efficient heat dissipation. The unit is equipped with an LCD display and three LED indicators for dynamic system data and operating status display.

# 5000W OFF-GRID SOLAR INVERTER

- Pure Sine Wave Inverter built in 80A MPPT Controller
- Max.PV Array Input 5500W, 500V VDC, 22A
- Compatible with Lead-acid, Lithium batteries
- Supports Solar, Utility, or Generator Power to Charge the Battery

**5KW**  
AC Output Power

**40A**  
Max.AC Charging

**80A**  
Max.Hybrid  
Charging Current

**150V**  
Starting Voltage

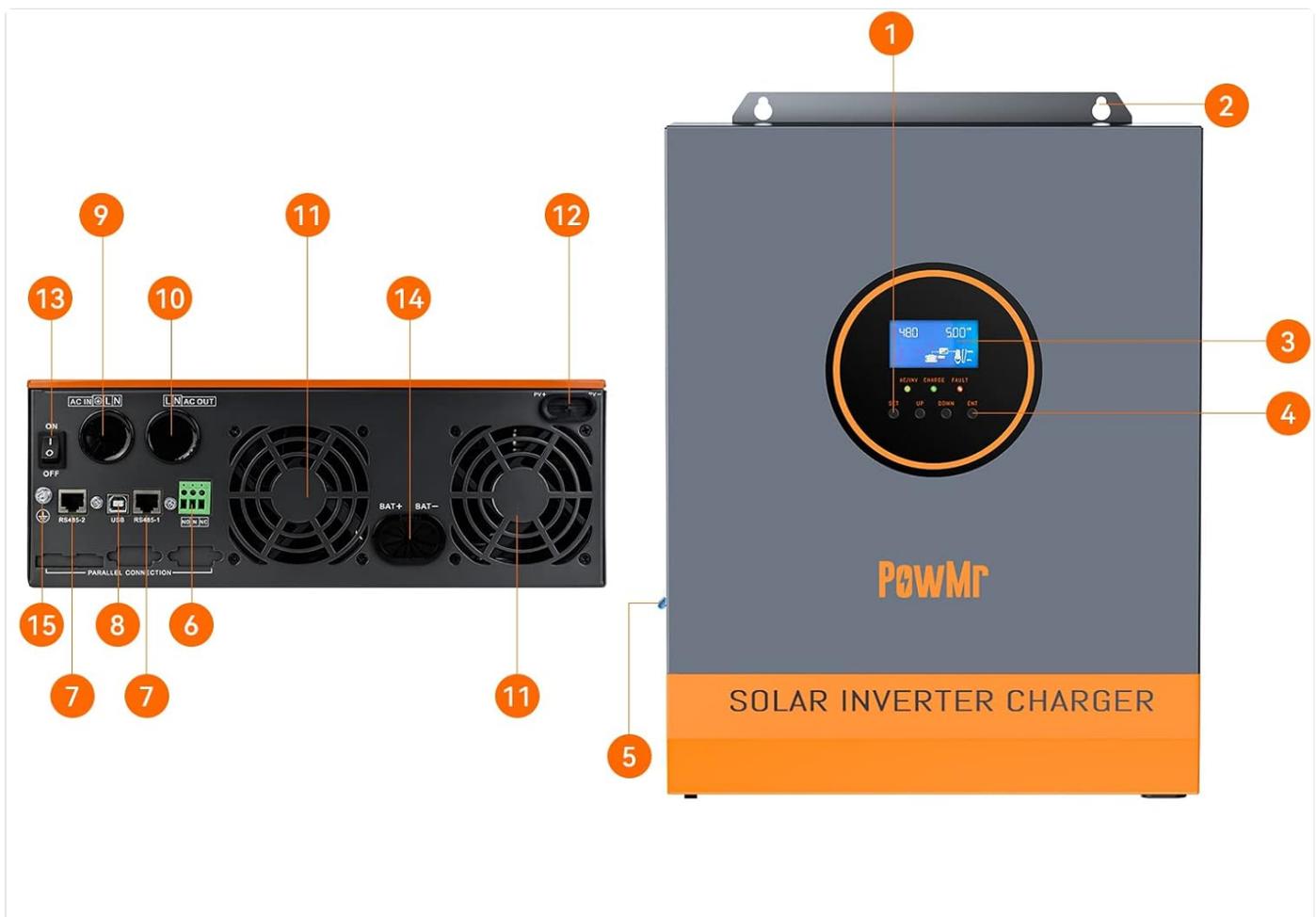


Figure 2: Overview of the 5000W Off-Grid Solar Inverter's main specifications and capabilities, including 5KW AC output, 40A Max AC Charging, 80A Max Hybrid Charging Current, and 150V Starting Voltage.

## SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your solar inverter. Ensure all connections are secure and follow local electrical codes. The inverter package includes the inverter unit and an instruction manual. Additional components such as WiFi modules, batteries, adapters, plugs, wires, and cables are not included and must be purchased separately.

### Component Identification



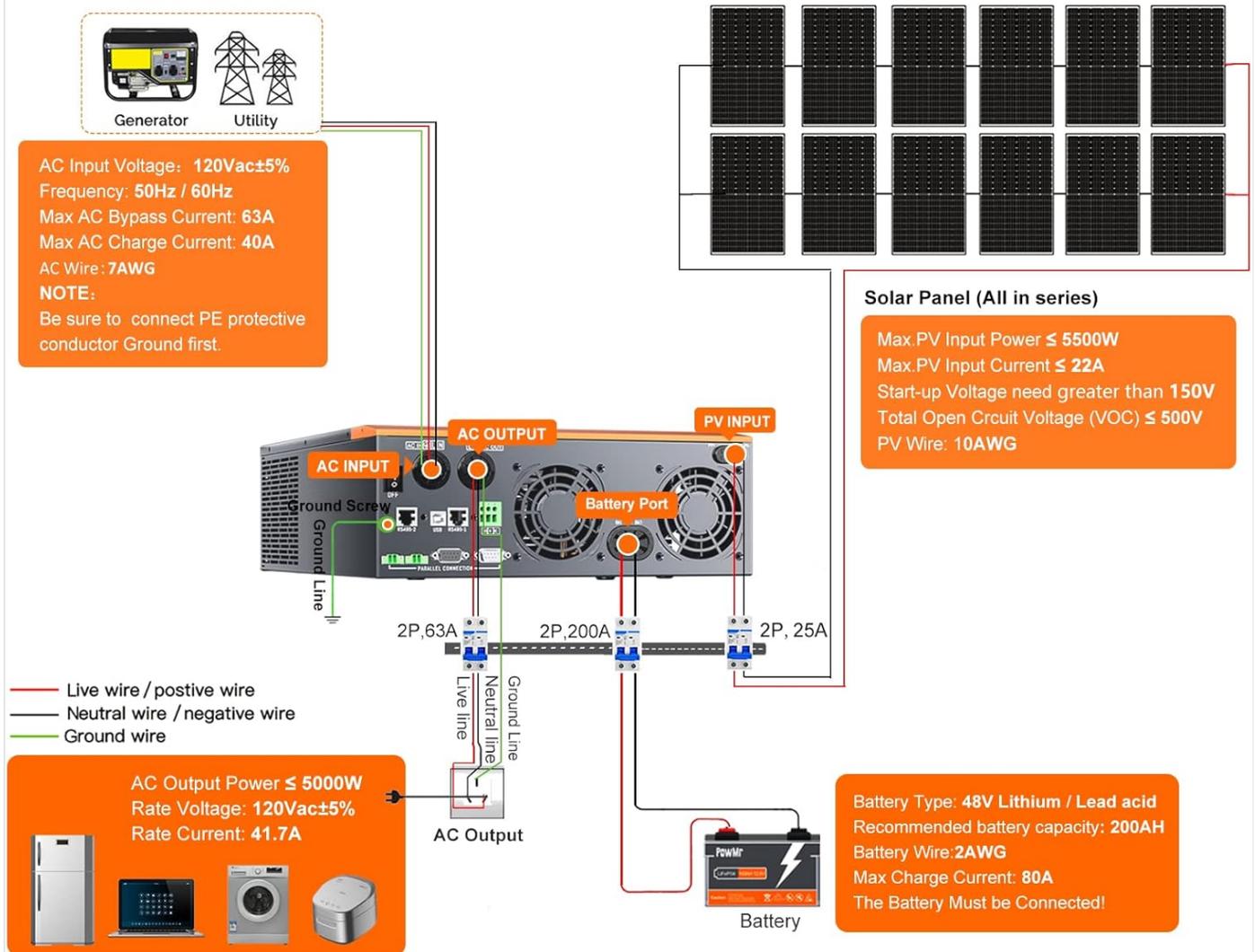
1	LCD Buttons	6	Dry Contact Port	11	Cooling Fans
2	Mounting Holes	7	RS485 Communication Port	12	PV Input Terminal
3	LCD Screen	8	USB Debugging Port (Internal Use)	13	Main On/Off Power Switch
4	LED Indicators	9	AC Input Terminal	14	Battery Input Terminal
5	AC Input Breaker	10	AC Output Terminal	15	Grounding Lug

Figure 3: Detailed diagram identifying the various ports and components of the PowMr Solar Inverter, including LCD buttons, mounting holes, LCD screen, LED indicators, AC input breaker, dry contact port, RS485 communication port, USB debugging port, AC input terminal, AC output terminal, cooling fans, PV input terminal, main On/Off power switch, battery input terminal, and grounding lug.

## Wiring Diagram

The following diagram illustrates the typical wiring connections for the inverter. Always ensure the PE protective conductor (ground) is connected first for safety.

# WIRING DIAGRAM AND TECHNICAL SPECIFICATIONS



This diagram is for reference only, and the wiring method is determined by the actual situation.

Figure 4: Comprehensive wiring diagram for the PowMr Solar Inverter, showing connections for solar panels (PV input), battery, AC input (from utility or generator), and AC output to household loads. It also details wire gauges and maximum current ratings.

- **AC Input:** Connect to utility grid or generator. Voltage range: 90-140V.
- **PV Input:** Connect to solar panel array. Max input power: 5500W, voltage range: 120-500Vdc. Starting voltage >150V.
- **Battery Connection:** Connect to 48V lead-acid (Seal, AGM, Gel, Flooded) or lithium batteries. Recommended battery capacity: 200AH.
- **AC Output:** Connect to household and office loads (refrigerators, lamps, televisions, fans, air conditioning, etc.). Max output power: 5000W.

## OPERATING MODES

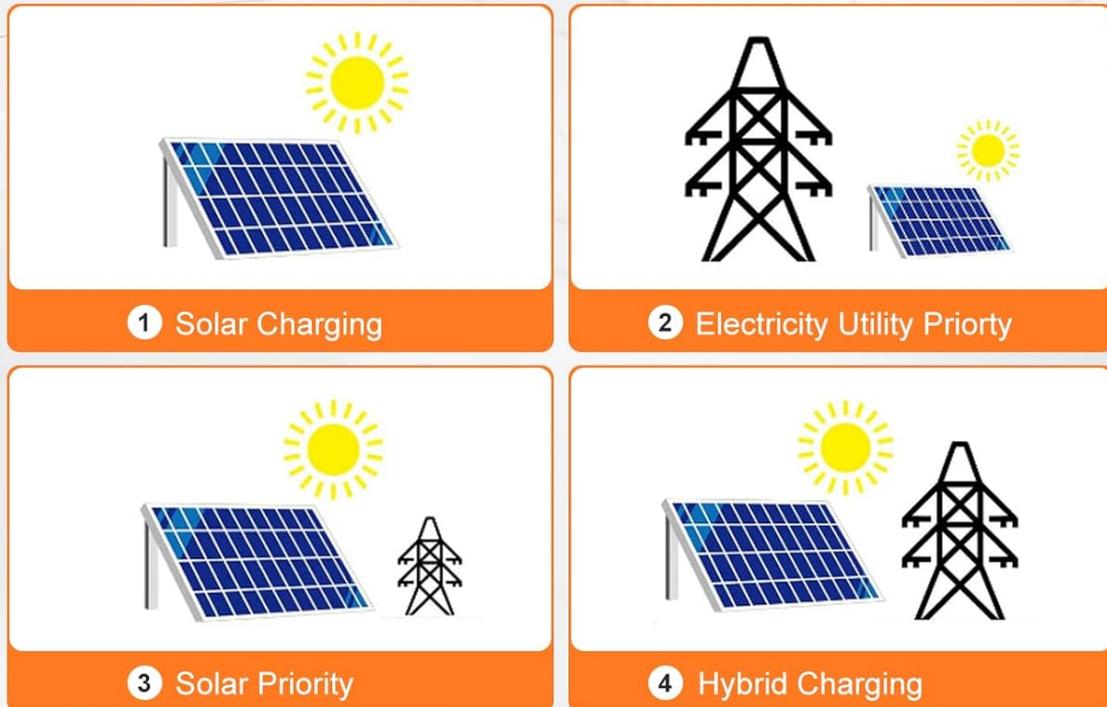
The inverter offers flexible charging and load output modes to optimize energy usage based on your preferences and available power sources.

### Charging Modes

There are four selectable battery charging modes:

# GIVES YOU THE ULTIMATE CONTROL

## 4 CHARGING MODES



## 3 LOAD OUTPUT WORKING MODES



Figure 5: Visual representation of the four battery charging modes: Solar Charging, Electricity Utility Priority, Solar Priority, and Hybrid Charging.

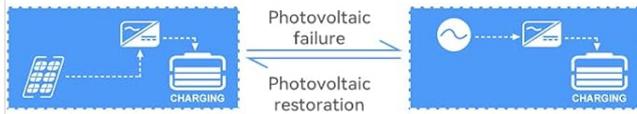
1. **Only Solar:** Battery is charged exclusively by solar power.
2. **Utility Priority:** Utility power is prioritized for charging; solar charges only when utility is unavailable.
3. **Solar Priority:** Solar power is prioritized for charging; utility charges only when solar is insufficient.
4. **Utility & Solar Hybrid Charging:** Both utility and solar power are used for charging.

### Load Output Working Modes

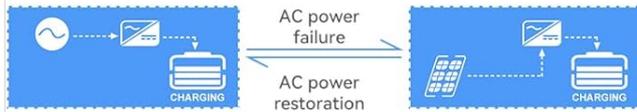
Three load output working modes are available:

## Charge Mode

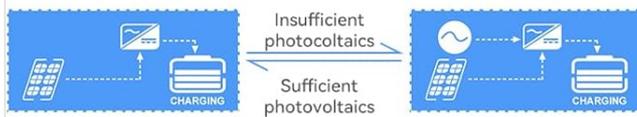
**1. Photovoltaic priority:** In photovoltaic priority charge mode, mains charge is started only when photovoltaics is out of work.



**2. Mains supply priority:** Mains supply is to charge the battery preferentially and the photovoltaic charge can be started only when the mains supply is invalid.



**3. Mixed charge:** With mixed charge through photovoltaics and mains supply, photovoltaic MPPT charge is used preferentially. In case of insufficient (not invalid) photovoltaic energy, the mains supply is used for supplement. In case of sufficient photovoltaic energy, mains supply stops charge.

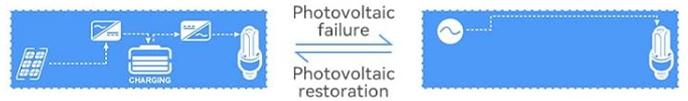


**4. Only solar:** Only photovoltaic charge is used, no mains supply is started. This way can save the energy at most. The electric energies of battery are all from solar energy.

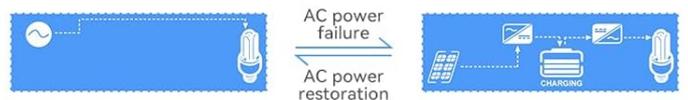


## Output Mode

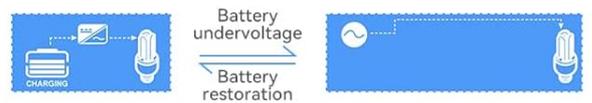
**1. Photovoltaic priority mode:** Photovoltaic and battery supply power to the load. With diversified charge mode and optional output mode, when photovoltaic priority mode is selected, green solar energy can be used as far as possible so as to achieve energy conservation and emission reduction. It switches to mains supply when the photovoltaics is invalid. With this mode, solar energy can be used maximally and electric quantity can be maintained at the same time.



**2. Mains supply priority:** It only switches to the inverter for power supply when the mains supply is invalid, equivalent to a backup UPS.



**3. Inverter priority mode:** It only switches to mains supply in case of undervoltage of battery. With the mode, DC electric energy is used maximally.



**4. Mixed functions mode:** When the battery is not available or the battery is fully charged, the load is provided by PV and commercial power, PV maximum output power output.

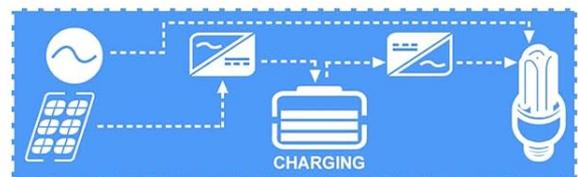


Figure 6: Detailed diagrams illustrating both charge modes (Photovoltaic priority, Mains supply priority, Mixed charge, Only solar) and output modes (Photovoltaic and battery supply, Mains supply priority, Inverter priority, Mixed functions mode).

1. **PV Priority:** Solar power is prioritized to supply the load.
2. **Utility Priority:** Utility power is prioritized to supply the load.
3. **Inverter Mode:** The inverter supplies power from the battery.

## LCD Display and Indicators

The LCD display and LED indicators provide real-time system data and operational status. Users can access and modify over 20 programmable parameters, including input/output voltage range, battery charging current, battery type, and charging/discharging priority.

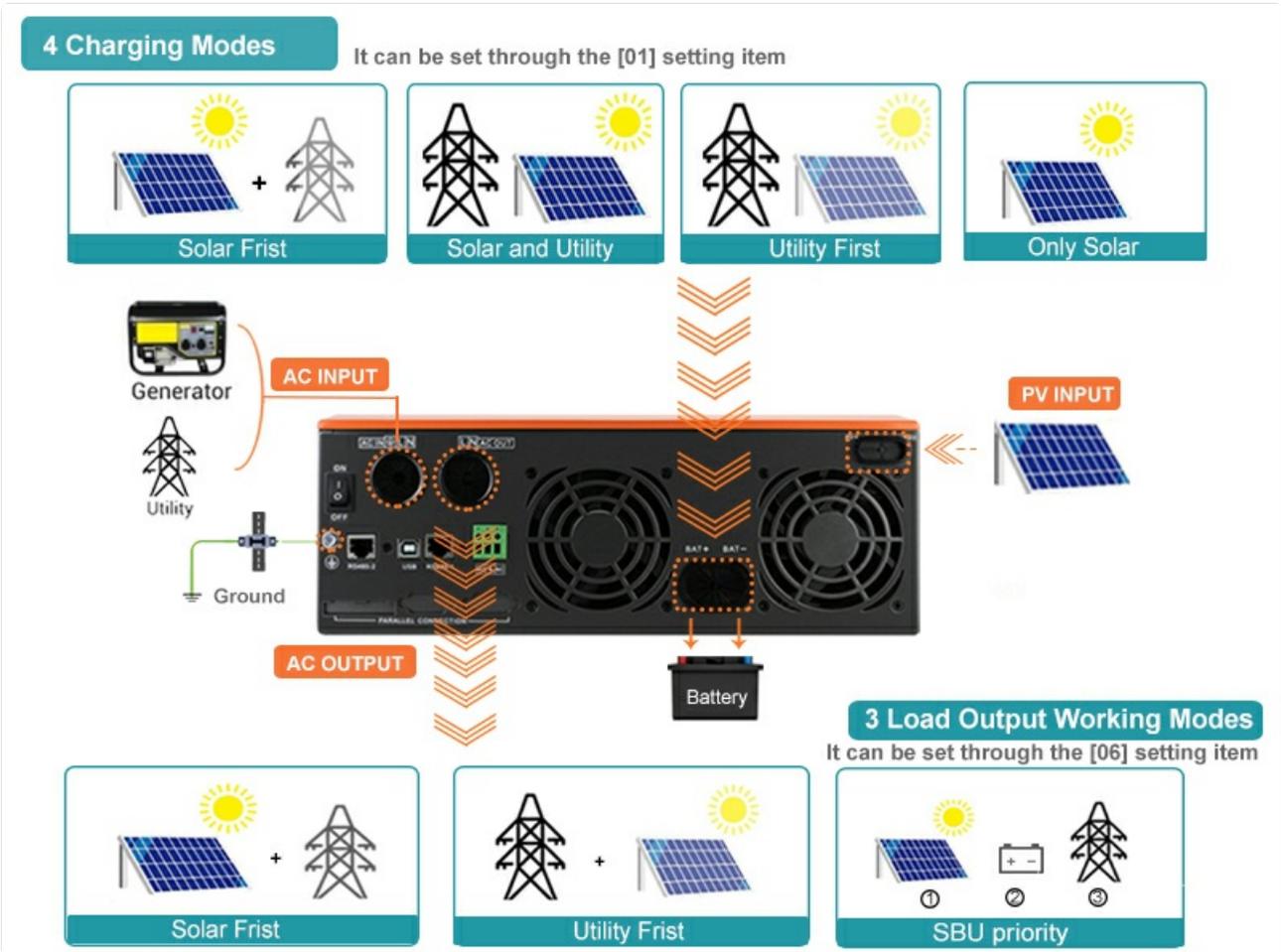


Figure 7: Close-up view of the inverter's LCD display, showing various operational parameters and system status indicators.

**Smart App Monitoring (Optional)**

For enhanced monitoring and control, an optional Wi-Fi/GPRS data acquisition module can be purchased separately. This module allows you to monitor the inverter's performance via a smartphone application available on the App Store and Google Play.

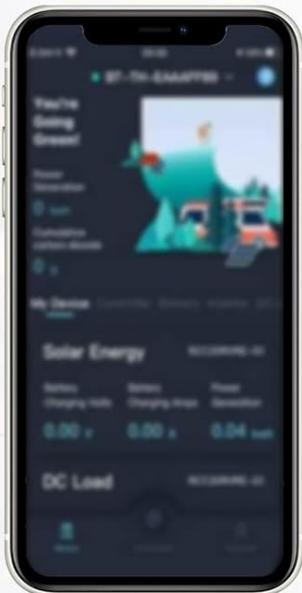
# MONITOR AND CONTROL VIA **SMARTESS** APP



Download on the  
**APP Store**



Get it on  
**Google Play**



Optional

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



Figure 8: Illustration of the optional SmartESS app connectivity for monitoring and controlling the inverter, showing a smartphone displaying energy data and the Wi-Fi module connection point.

## Load Compatibility

The inverter is compatible with a variety of household and office loads, including refrigerators, lamps, televisions, fans, and air conditioning units. Always ensure the total power consumption of connected devices does not exceed the inverter's rated output.

# COMPATIBLE WITH A VARIETY OF DAILY APPLIANCES



**⚠ Note:** Different types of loads have different starting impulse currents. **The following values are for reference ONLY!** Customers need to select the appropriate inverter model according to the actual equipment power, current, and load characteristics.

## The corresponding selection model of load power and inverter

S/N	Load Type	Load Rated Power	Start impact coefficient $\eta$	The minimum continuous output power of the inverter is recommended	For Example
1	Resistive load	P	1	$S = P * \eta$	Electric Soldering iron, Resistance Stove, Oven, Water Heater, Disinfection Cabinet, Rice Cooker etc.
2	Inductive load		3-10		Electric motors, Refrigerators, Transformers, Air conditioners, Electric drills, Lawn mowers, Range hoods, Vacuum cleaners, Washing machines, etc.
3	Resistive load		3-5		TV, Computer host, Display projector, etc.
4	Mixed load		1.5-3		Induction cookers, Hair dryers, Microwave ovens, etc.

Figure 9: Examples of daily appliances compatible with the PowMr Solar Inverter, such as washing machines, TVs, refrigerators, drills, air conditioners, water pumps, laptops, and kettles.

## MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your PowMr Solar Inverter. Perform the following checks periodically:

- **Cleaning:** Keep the inverter's ventilation openings clear of dust and debris to ensure proper airflow and cooling. Use a soft, dry cloth for cleaning the exterior.
- **Connection Checks:** Periodically inspect all electrical connections (PV input, battery, AC input/output) for tightness and signs of corrosion. Loose connections can lead to overheating and performance issues.
- **Environmental Conditions:** Ensure the inverter is installed in a well-ventilated area, away from direct sunlight, moisture, and flammable materials. Maintain the recommended operating temperature range.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or address known issues.

## TROUBLESHOOTING

This section provides guidance on common issues you might encounter with your solar inverter. For complex problems, contact technical support.

Problem	Possible Cause	Solution
Inverter not turning on / No display	No DC input from battery or PV; loose battery connections; AC input breaker tripped.	Check battery voltage and connections. Ensure PV input is sufficient. Reset AC input breaker.
No AC output	Overload; short circuit; low battery voltage; inverter in fault mode.	Reduce load. Check for short circuits. Charge battery. Check LCD for fault codes and refer to manual.
Battery not charging	PV input too low; AC input unavailable (if utility charging); incorrect charging mode setting.	Ensure sufficient solar irradiance. Verify AC input. Check and adjust charging mode settings (e.g., "Only Solar", "Utility Priority").
Fan noise / Fan error	Normal operation under load; obstructed fan; internal wiring issue.	Fan noise is normal during high load or high temperature. Check for obstructions. If persistent error, contact support.
Inverter frequently switches between modes	Incorrect battery voltage setpoints for mode switching.	Review and adjust "Battery Power to Utility Setpoint" ([04]) and "Utility to Battery Power Setpoint" ([05]) in the inverter settings. Ensure "Battery Undervoltage Alarm" ([14]) is set appropriately.

## TECHNICAL SPECIFICATIONS

Below are the detailed technical specifications for the PowMr 5000W Solar Inverter.

Technical Specifications	
AC Input Voltage Range	90-140Vac
AC Input/Output Frequency	50Hz/ 60Hz
Load Capacity of Motors	4HP
Waveform	Pure Sine Wave
Rated Output Power	5000W
Rated Output Voltage	120V
Battery Type	48V Li-ion / Lead-Acid / User Defined
Max.AC Charging Current	40A
Safety	CE(IEC62109)/CETL(UL 1741 C22.2 NO.107.1) /FCC/SAA
Noise	≤60dB
Battery Voltage Range	40-60Vdc
Weight	25.3 lbs /11.5kg
Max.PV Input Power	5500W
Maximum Output Power	5000W
Max.PV Input Current	22A
Max. MPPT Charging Current	80A
Max.PV Open Circuit Voltage	500V
MPPT Voltage Range	125-425 Vdc
Hybrid Charger Max Current	80A --AC Charger+PV Charger
Operating Temperature Range	14~131°F
EMC authentication grade	EN61000
PV/AC Wire Diameter	PV: 10 ; AC: 7 AWG
Battery Wire Diameter	2 AWG
Size (L*W*D)	426mm*322mm*126mm (16.77*12.684.96 in.)

Figure 10: A table summarizing the technical specifications of the inverter, including AC input/output, PV input, battery parameters, and physical dimensions.

Parameter	Value
-----------	-------

Parameter	Value
Model Name	POWLVM
Rated Output Power	5000W
Rated Output Voltage	120V
Waveform	Pure Sine Wave
Max. PV Input Power	5500W
Max. PV Input Current	22A
Max. MPPT Charging Current	80A
Max. PV Open Circuit Voltage	500V
Battery Type	48V Li-ion / Lead-Acid / User Defined
AC Input Voltage Range	90-140Vac
AC Input/Output Frequency	50Hz/60Hz
Item Weight	28.5 pounds (12.9 kg)
Dimensions (L*W*D)	16.77 x 12.68 x 4.88 inches (426mm*322mm*124mm)

## WARRANTY AND SUPPORT

For information regarding product warranty, please refer to the documentation included with your purchase or visit the official Temank website. For technical support, troubleshooting assistance beyond this manual, or to inquire about replacement parts, please contact Temank customer service.

An official user manual in PDF format is available for download: [Download User Manual \(PDF\)](#).

© 2024 Temank. All rights reserved.

### Related Documents - POWLVM

	<p><a href="#">Temank PVSC-70A/30A Solar Charge Controller User Manual</a> User manual for Temank PVSC-70A and PVSC-30A PWM solar charge controllers, covering features, system connection, operation, specifications, and troubleshooting for solar power systems.</p>
---	---