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› ZLPOWER 10000W 48V Hybrid Solar Inverter Charger (Model ZLP-PVT-10KW) User Manual

ZLPOWER ZLP-PVT-10KW

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For Whole Home Backup and Off-Grid Systems

1. PRODUCT OVERVIEW

The ZLPOWER 10000W 48V Hybrid Solar Inverter Charger is a high-performance device designed to provide reliable power for both off-grid and backup systems. It integrates a powerful 200A maximum charging current with dual MPPT controllers, ensuring efficient energy harvesting from solar panels. This inverter delivers a stable 120V/240V AC output, suitable for a wide range of household appliances, and supports various battery types including LiFePO4, Lithium-ion, AGM, and Gel batteries. Its flexible operating modes and scalable design make it an ideal solution for diverse energy needs.

8KW Hybrid Solar Charge Inverter

Split phase:AC Input:240V,AC Output: 120V/240V
Single Phase:AC Input:120V,AC Output: 120V



11000W

Max.PV array power



500V

Max. Open Circuit Voltage



100A

Max.AC Charging



44A

Max.Input Current



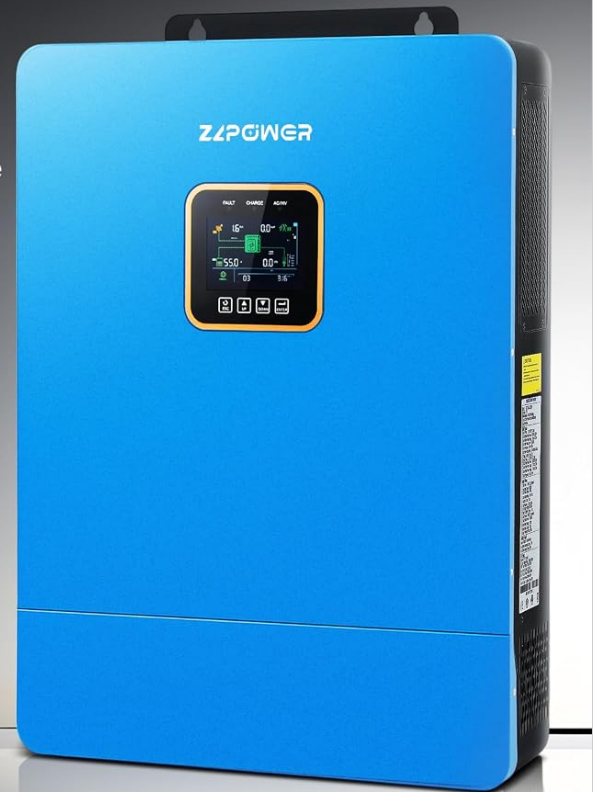
180A

Max.AC Charging



180A

Max.AC+PV
Charging Current



- 1.Support Single phase/split phase/ three phase Output 120V/240V-AC
- 2.Off grid & On-grid Solar Inverter,Parallel up to 6 inverters
- 3.Pure Sine Wave Hybrid Inverter built-in Dual MPPT
- 4.Max.PV Array Power 11KW, 500V VOC, 44A
- 5.Compatible with Lead-acid, Lithium batteries and Batteryless

Figure 1: ZLPOWER 10000W 48V Hybrid Solar Inverter Charger

2. KEY FEATURES

- **Ultra-Fast 200A Charging & Dual MPPT:** Features a 200A maximum charging current and dual MPPT controllers (11,000W Max PV Input) for rapid energy harvesting and battery charging.
- **True Split Phase 120V/240V Output:** Provides stable 120V/240V AC output for heavy-duty appliances, seamlessly switching between Single Phase and Split Phase operation.
- **Smart Time-of-Use & 4 Working Modes:** Offers a "Time-of-Use" function for optimized charging/discharging and 4 charging modes (Solar/Utility/Hybrid/Priority) with 3 output modes (SBU/Solar/Grid).
- **Batteryless Operation & Broad Compatibility:** Supports operation without batteries, running loads directly from solar or grid. Compatible with LiFePO4, Lithium-ion, AGM, and Gel batteries with RS485/CAN/USB BMS communication.
- **Scalable Power up to 60KW:** Allows parallel connection of up to 6 units, expanding the system capacity to 60KW for larger residential or commercial setups.
- **Comprehensive Protection System:** Incorporates a 14-tier intelligent protection system against PV input current limit,

power overvoltage, battery overvoltage, connection issues, overload, PV input overvoltage, undervoltage, overheat, PV reverse, battery overcurrent, AC short, AC high/low volt, and bypass overcurrent.



Figure 2: 14-Tier Intelligent Protection System

3. UNBOXING AND COMPONENTS

Upon receiving your ZLPOWER inverter, carefully unbox the unit and verify all components are present and undamaged. The package typically includes the inverter charger, an instruction manual, necessary cables, and a WiFi module.

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Video 1: Unboxing and Accessory Display of the ZLPOWER PVT Inverter

Dimensions and Accessories

Net Weight:
57.3lbs



Figure 3: Inverter Dimensions and Included Accessories

Included Accessories:

- Inverter Charger Unit
- Instruction Manual (for single inverter use)
- Parallel Inverter Instruction Manual
- Mini USB Cable
- Network Cable (for Lithium battery communication)
- RS232 Control Line
- WiFi Module

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your ZLPOWER inverter. Always ensure the power supply is cut

off before beginning any installation procedures. Refer to the detailed instructions in the provided manual for specific wiring diagrams and safety guidelines.

4.1 Port Introduction

Familiarize yourself with the various ports and interfaces on the inverter:

Port Introduction

1.LCD screen

2.LED Indicators

3.Touchable key

4.ON/OFF Rocker Switch

5.PV INPUT (1/1)

6.BAT INPUT (+)

7.BAT INPUT (-)

8.Dry contact

9.CAN/RS485 port

10.WIFI port

11.USB-B port

12.Grounding Screw

13.AC OUT (L+L+N)

14.AC IN (L+L+N)

15.AC INPUT breaker

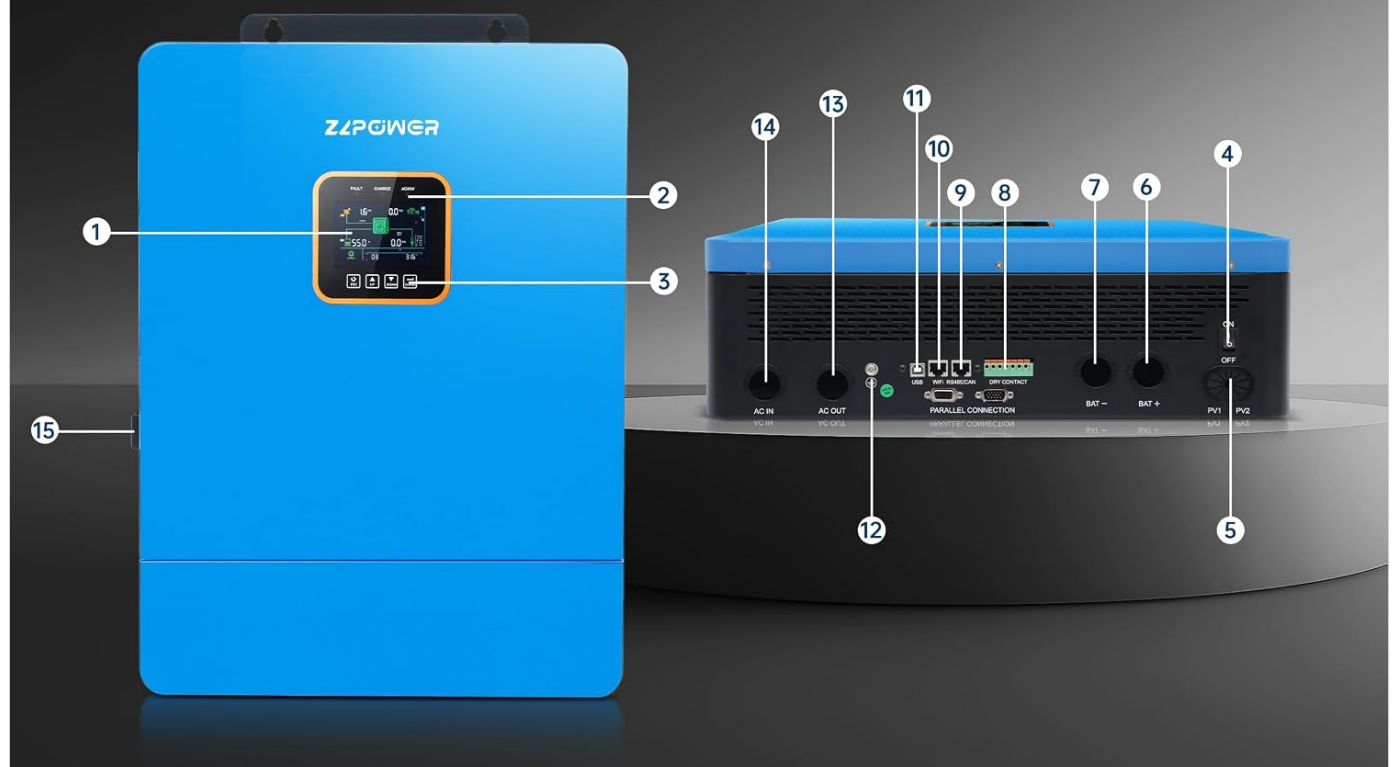


Figure 4: Rear Panel Port Layout

1. LCD Screen
2. LED Indicators
3. Touchable Keypad
4. ON/OFF Rocker Switch
5. PV Input (1/1)
6. BAT Input (+)
7. BAT Input (-)
8. Dry Contact

9. CAN/RS485 Port
10. WiFi Port
11. USB-B Port
12. Grounding Screw
13. AC OUT (L+L+N)
14. AC IN (L+L+N)
15. AC Input Breaker

4.2 Electrical Connections

Connect the solar panels to the PV input terminals (PV1, PV2). Connect the battery bank to the BAT+ and BAT- terminals. Ensure correct polarity. The AC input and output connections should be made to the respective AC IN and AC OUT ports. Use the grounding screw for proper system grounding. For parallel operation, connect multiple inverters using the dedicated parallel connection ports.

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Video 2: Introduction to Interface Settings and Connections



Figure 5: Inverter Compatibility with Various Battery Types

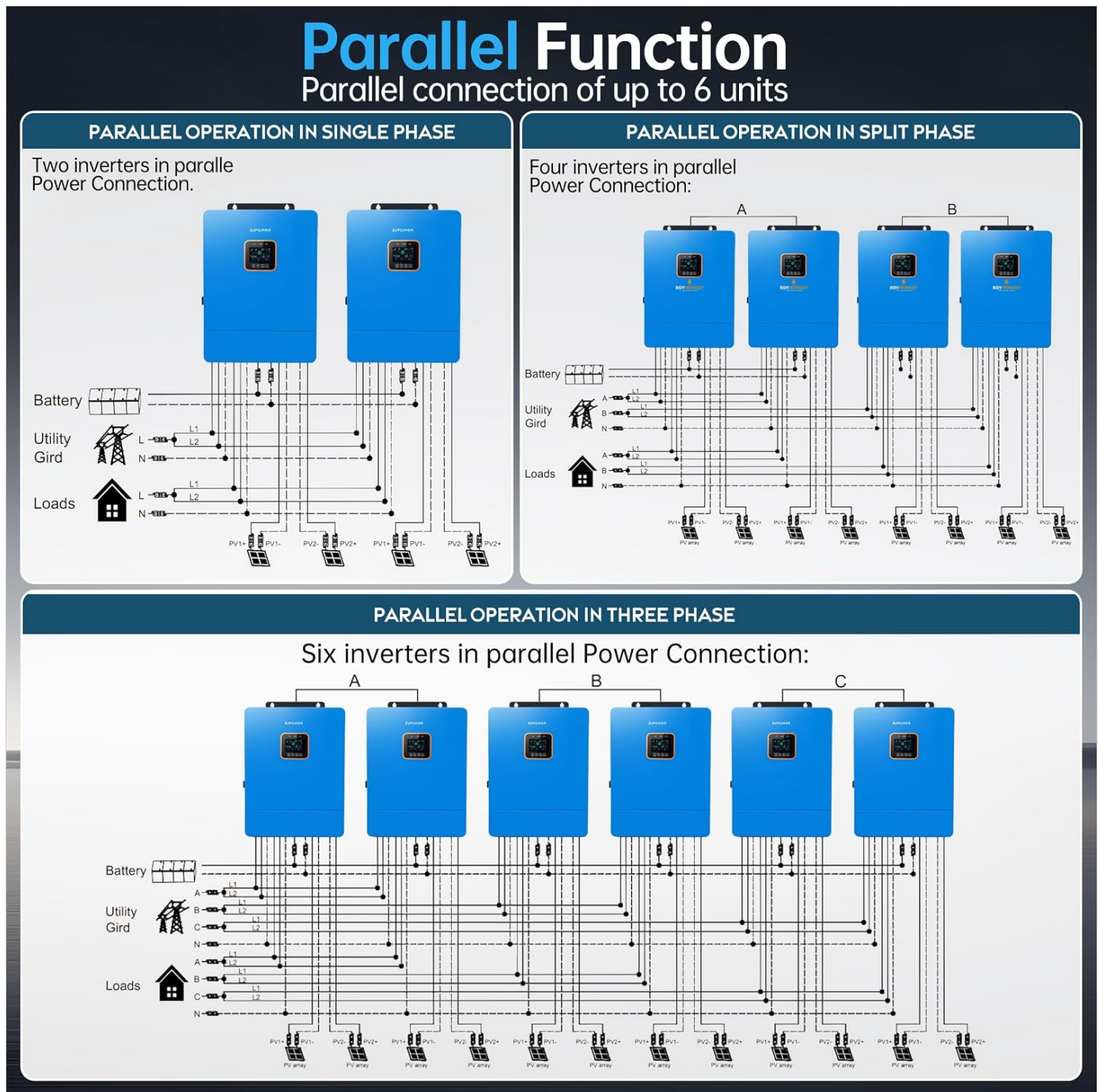


Figure 6: Parallel Connection Diagrams for Single, Split, and Three-Phase Systems

5. OPERATING INSTRUCTIONS

The inverter features an intuitive LCD screen and touchable keys for monitoring and configuration. After ensuring all connections are secure, press the ON/OFF rocker switch to power on the inverter.

5.1 Display and Navigation

The LCD screen displays real-time system status, including PV input, battery voltage, AC input/output, and charging/discharging information. Use the UP, DOWN, ESC, and ENTER buttons to navigate through menus and adjust settings.

5.2 Working Modes

The inverter offers flexible working modes to optimize energy usage:

- **Charging Modes:** Solar Priority, Utility Priority, Solar and Utility, Only Solar.
- **Output Modes:** Solar-Battery-Utility (SBU), Solar First, Grid First.

Configure these modes via the LCD interface to match your specific energy requirements and local utility rates, especially utilizing the 'Time-of-Use' function for cost savings.

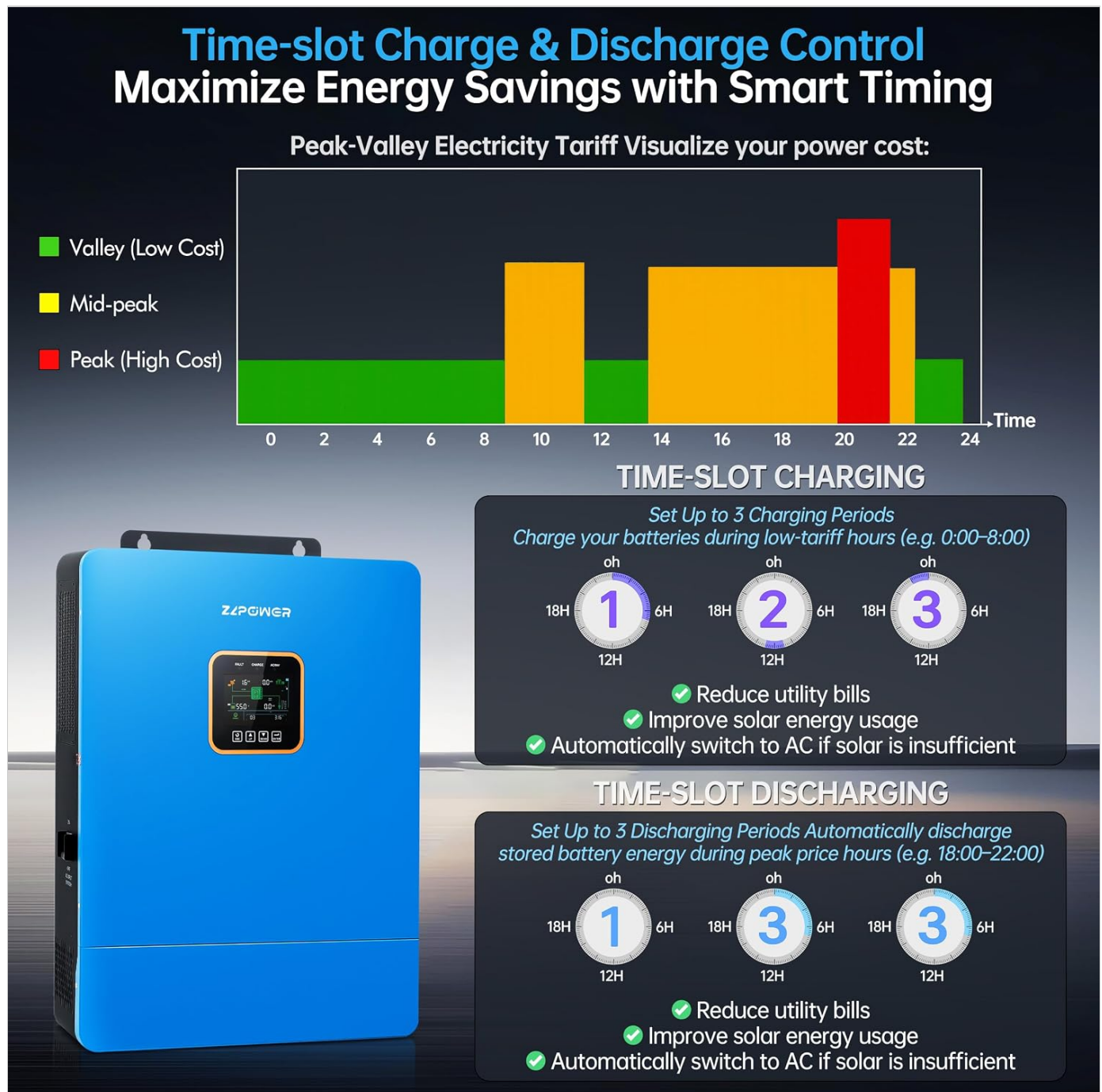


Figure 7: Time-Slot Charge and Discharge Control for Energy Savings



Figure 8: Overview of Charging and Discharge Modes

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your inverter. Keep the unit clean and free from dust. Ensure proper ventilation around the inverter to prevent overheating. Periodically check all electrical connections for tightness and signs of wear or corrosion. Consult the manual for specific cleaning instructions and recommended inspection intervals.

7. TROUBLESHOOTING

If you encounter any issues with your ZLPOWER inverter, refer to the troubleshooting section in the comprehensive user manual. Common issues and their solutions are typically outlined there. For persistent problems or complex technical support, please contact ZLPOWER customer service.

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Video 3: Safety Reminder for Inverter Installation and Operation

8. SPECIFICATIONS

Below are the detailed technical specifications for the ZLPOWER 10000W 48V Hybrid Solar Inverter Charger (Model ZLP-PVT-10KW):

Category	Specification	Value
Brand	Manufacturer	ZLPOWER (NETSOLAR)
Inverter Output	Rated Output Power	10000 Watts
	Peak Output Power	20000 Watts
	Output Voltage	120V/240V AC (Split Phase)
	Electrical Output Waveform	Pure Sine Wave
	Frequency	60 Hz
Battery	Rated Battery Voltage	48 Volts
	Max. Charging Current	200A
	Compatibility	LiFePO4, Lithium-ion, AGM, Gel
PV Input	Max. PV Array Power	11000W (Dual MPPT)
	Max. Open Circuit Voltage	500V DC
	MPPT Voltage Range	125-430Vdc
General	Model Number	ZLP-PVT-10KW
	Display Type	LCD

MODEL	PVT8K-48-SP		PVT10K-48-SP	PVT12K-48-SP
INVERTER OUTPUT				
Parallel capacity	YES,6 units			
Rated Output Power	8,000W	1,0000W	1,2000W	
Max. Peak Power	1,6000W	2,0000W	2,4000W	
Rated Output Voltage	120Vac (single phase L+N+PE) / 240Vac (split phase L1+L2+N+PE)			
Load Capacity of Motors	5HP	6HP	7HP	
Rated AC Frequency	50/60 Hz			
Conversion time	Pure Sine Wave			
Waveform	10 ms (typical)			
Output Mode	Off-Grid (default) / Hybrid			
BATTERY				
Battery Type	LiFePO4 / Lead-Acid / User Defined			
Rated Battery Voltage	48VDC			
Voltage Range	40~60Vdc			
Max.PV Charging Current	180A	200A	210A	
Max.AC Charging Current	100A	120A	120A	
Max.AC+PV Charging Current	180A	200A	210A	
PV INPUT				
Number of MPP Trackers	Dual MPPT			
Max.PV array power	11000W (5,500W×2)			
Max.input current	44A (22A×2)			
Max.Voltage of Open Circuit	500Vdc			
MPPT Voltage Range	125~430Vdc			
AC INPUT				
Input Voltage Range	90~140Vac (single phase, L+N) / 180~280Vac (split phase, L1+L2+N)			
Frequency Range	50Hz(47Hz~55Hz); 60Hz(57Hz~65Hz);			
Bypass Overload Current	63A	63A	80A	
EFFICIENCY				
MPPT Tracking Efficiency	99.9%			
Max.Battery Inverter Efficiency	92%			
COMMUNICATION				
Embedded Interfaces	RS485 / CAN / USB / Dry contact			
External Modules (Optional)	Wi-Fi / GPRS			
GENERAL				
Protection Degree	IP20, Indoor Only			
Operating Temperature Range	-15~55°C, >45°C derating. (5~131°F, >113°F derating.)			

Figure 9: Detailed Specifications Table for ZLPOWER PVT Series Inverters

9. WARRANTY AND SUPPORT

The ZLPOWER 10000W 48V Hybrid Solar Inverter Charger is backed by a 60-month (5-year) manufacturer's warranty and lifetime technical support. For any issues or technical assistance, please contact ZLPOWER customer service. Our professional team is available to provide comprehensive and considerate service.

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Video 4: ZLPOWER Company Introduction and Commitment to Support

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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.

Submit question