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Aninerel ANJ-3600W-LVP

Aninerel 3.6kW Hybrid Solar Inverter (48V DC to 110V AC) Instruction Manual

Model: ANJ-3600W-LVP

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1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Aninerel 3.6kW Hybrid Solar Inverter. Please read this manual thoroughly before installation and use, and retain it for future reference. This inverter is designed to convert 48V DC power to 110V AC pure sine wave power, suitable for various on-grid and off-grid applications.

SINGLE-PHASE HYBRID INVERTER

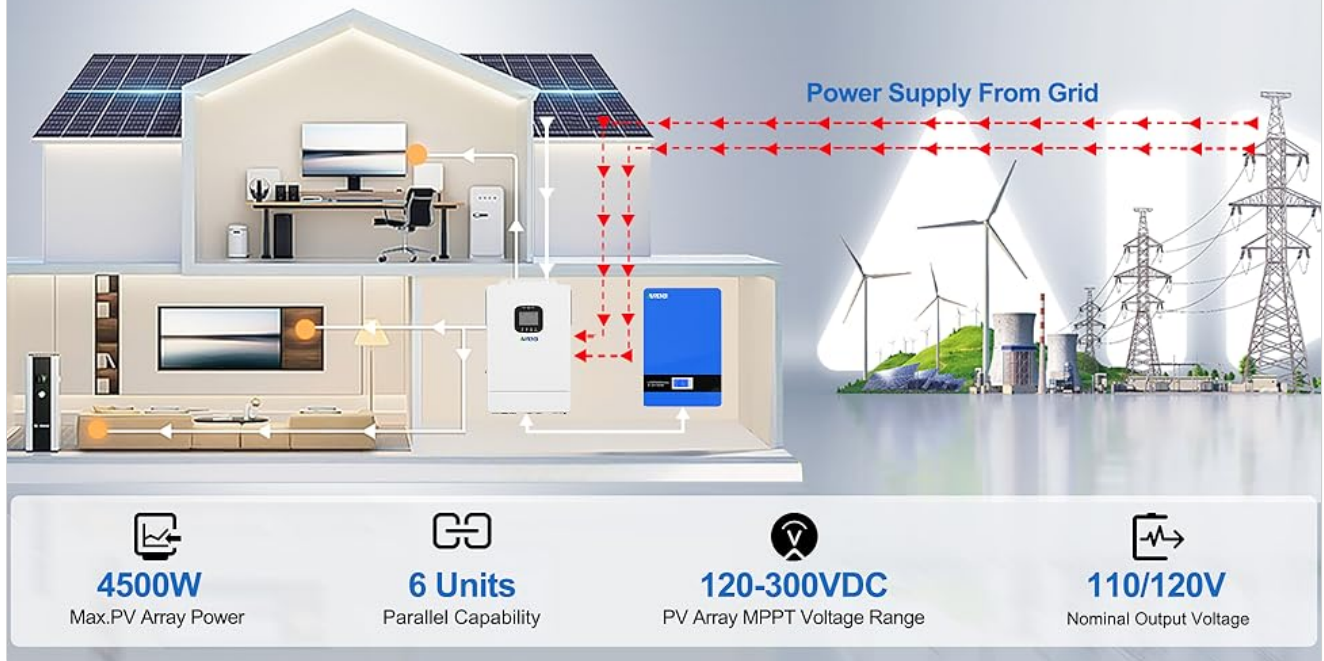


Image 1: Overview of the Aninerel 3.6kW Hybrid Solar Inverter, showcasing its main features including battery compatibility, grid connection, power scaling, versatile design, flexible settings, and wireless communication.

2. SAFETY INSTRUCTIONS

Always observe the following safety precautions to reduce the risk of electric shock, fire, or injury:

- **Qualified Personnel:** Installation and maintenance should only be performed by qualified personnel.
- **Indoor Use:** This product is designed for indoor use. It is forbidden to use it outdoors.
- **Ventilation:** Ensure adequate ventilation around the inverter. Maintain at least 8 inches of clear space on all sides for proper airflow.
- **Battery Connection:** Always connect the battery to the inverter first before connecting solar panels or AC input.
- **Grounding:** Ensure the inverter is properly grounded to prevent electrical hazards.
- **Emergency Shutdown:** Familiarize yourself with the emergency shutdown procedures.
- **Overload Protection:** The inverter includes built-in protections against overvoltage, undervoltage, reverse polarity, and short circuits.

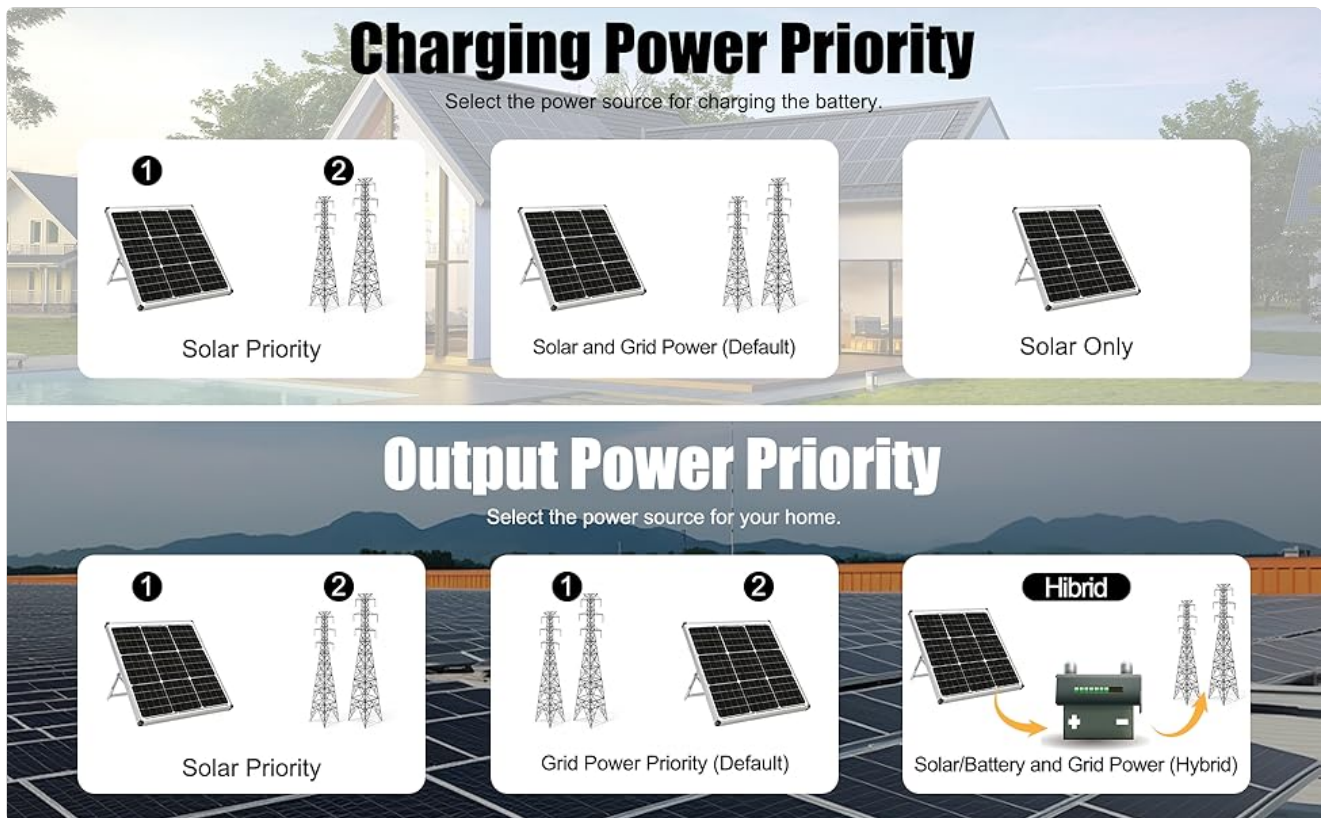


Image 2: A warning label emphasizing that the inverter is an indoor product and should not be used outdoors.

3. KEY FEATURES

- **3600W Hybrid Solar Inverter:** Converts DC 48V to pure sine wave AC 110V, delivering 3,600W continuous and 7,200W peak output. Supports up to 4,500W PV input with 80A MPPT solar charging, maximum DC voltage 300V. Features 40A max AC input, 50/60Hz output frequency, starting voltage above 125VDC, and 80A maximum PV charging current.
- **Built-in 80A MPPT Solar Charging Controller:** Maximizes solar energy harvesting, boosting charging efficiency by up to 30%. Compatible with high-voltage PV arrays (up to 300VDC).
- **Parallel Support:** Supports parallel connection of up to 6 units for increased power (up to 21.6KW). Offers 120V single-phase, 120V/240V split-phase, and 208V three-phase output configurations.
- **Smart LCD Screen with Real-Time Monitoring:** Responsive LCD screen and indicator LEDs for real-time monitoring of power input/output, battery status, and system alerts. Intuitive control buttons for system settings.
- **Flexible Charging & Output Modes:** Four charging modes (Solar Only, AC Priority, Solar Priority, Hybrid Charging) and three output modes (Mains Priority, PV Priority, Inverter Output).
- **48V Battery & No-Battery Operation:** Compatible with AGM, GEL, Lead-acid, Li-ion, and LiFePO4 48V batteries. Supports no-battery mode for direct solar-to-load applications.
- **Rugged IP65 Dustproof & Durable Design:** Built to withstand harsh environments with IP65-rated enclosure for indoor or semi-outdoor use. Features smart cooling with a variable speed fan.
- **Wide Range of Applications:** Suitable for RVs, camping boats, home emergency situations, powering various appliances.

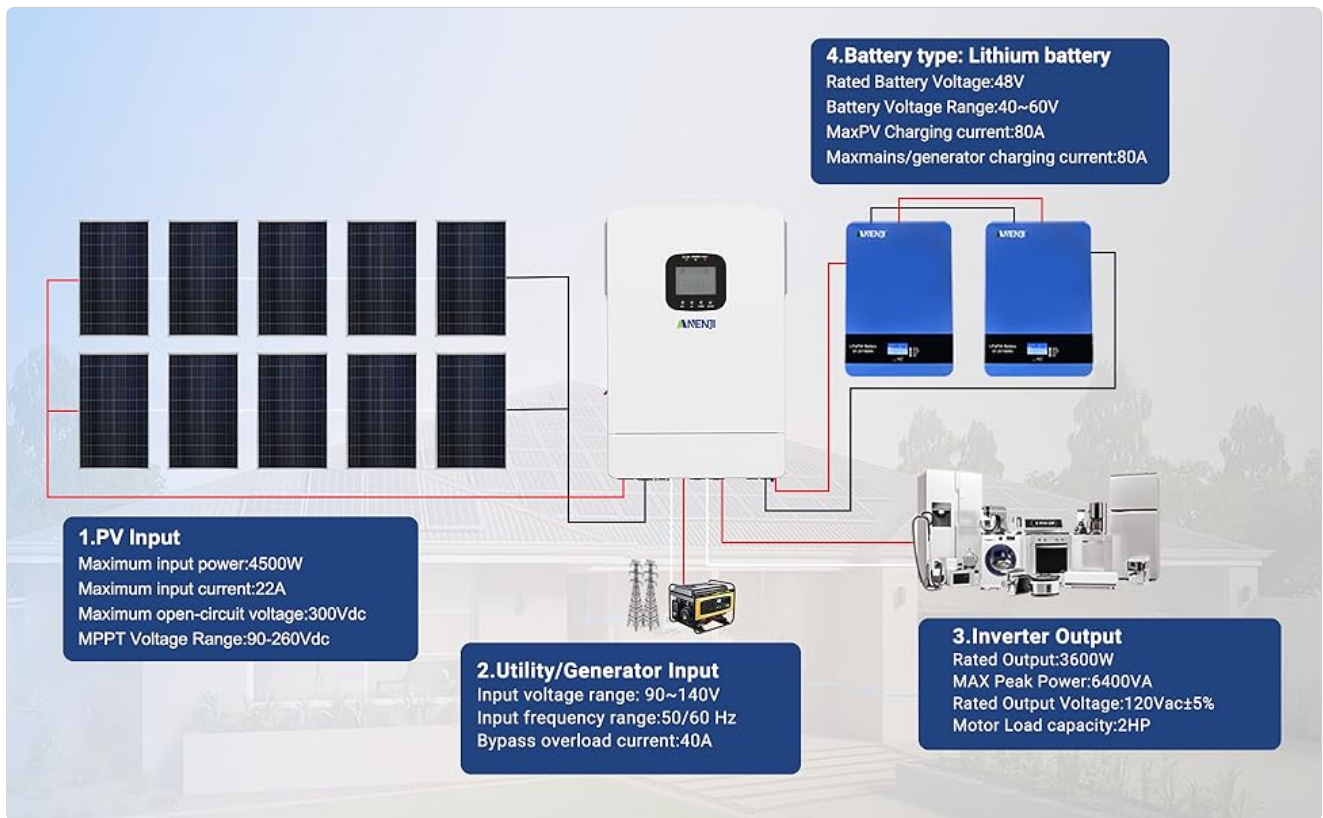


Image 3: Visual representation of the inverter's versatile design, showing single-phase, split-phase, and three-phase parallel connection options for up to six units.

4. SETUP & INSTALLATION

4.1 Unpacking and Inspection

Carefully unpack the inverter and all accessories. Inspect for any damage during transit. The package should include the inverter, instruction manual, installation toolkit, current sharing detection line, parallel cable, anti-reverse current CT, and WiFi module.

Versatile Design

Choose from up to 15 different configurations to connect up to six inverters to match any of your power needs for either residential or commercial use. Configure your inverters to work in single phase, split phase, or 3-phase for any of your needs.

Max.6 Parallel Connection

Suitable for 120V single-phase/240V split-phase residential systems, delivering up to 21,6 kilowatts of power.

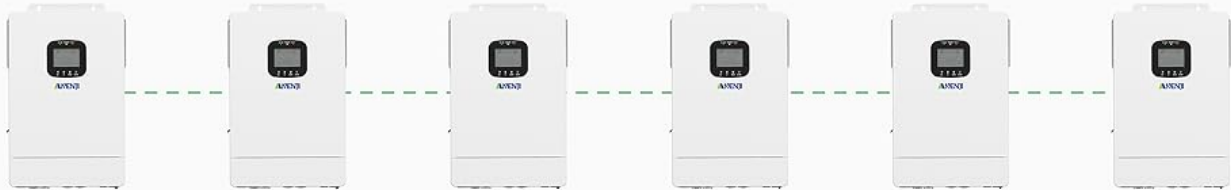


Image 4: Contents of the product package, including the inverter, manual, installation toolkit, various cables, and a WiFi module.

4.2 Component Identification

Familiarize yourself with the inverter's external components and connection points:

1. Indicator light
2. LCD screen
3. Touch key
4. Overload protector
5. Grounding screw hold
6. AC output port
7. WiFi port (optional)
8. AC input port
9. RS485-2 communication port
10. RS485-1 communication port
11. USB communication port
12. Cooling fan
13. ON/OFF rocker switch
14. Dry contact port
15. Current sharing port (parallel module only)
16. Parallel communication port (parallel module only)
17. Battery port
18. PV port

Low-noise operation

Adopting noise reduction technology, it is quiet and does not disturb sleep.



Image 5: Detailed diagram identifying all external ports and features of the inverter.

4.3 Wiring Connections

Follow these steps for safe and correct wiring:

1. **Battery Connection:** Connect the 48V battery to the designated battery ports (BAT+ and BAT-). Ensure correct polarity.
2. **PV Input:** Connect your solar panel array to the PV ports (PV+ and PV-). Ensure the PV voltage is within the specified range (90-260Vdc MPPT range, max 300Vdc open circuit).
3. **AC Input/Output:** Connect AC input from the grid or generator to the AC IN ports. Connect your loads to the AC OUT ports.
4. **Grounding:** Connect the grounding wire to the grounding screw hold.

| MODEL | ANJ-3600W-LVP-WIFI |
|--------------------------------------|---|
| Rated Output Power | 3600VA/3600W |
| Max.Peak Power | 7200VA |
| Rated Output Voltage | 120Vac±5% |
| Load Capacity of Motors | 2HP |
| Rated AC Frequency | 50Hz/60Hz |
| Parallel capacity | 1~6 |
| Output Voltage Waveform | Pure sine wave |
| Overload | (102%<load<125%)+10%: report error, turn off the output after 5 minutes; (125%<load<150%)+10%: report error, turn off the output after 10 seconds; load>150%+10%: report error,turn off the output after 5 seconds; |
| Battery Type | Lithium/lead-acid batteries |
| Rated Battery Voltage | 48V (Min. start voltage 44V) |
| Mains/Generator Input Range | (90Vac~140Vac)+2% |
| Max.MPPT Charging Current | 80A |
| Max.Mains/Generator Charging Current | 80A |
| Max.Hybrid Charging Current | 80A |
| Num. of MPP Trackers | 1 |
| Max.PV array power | 4000W |
| Max.input current | 22A |
| Max.Voltage of Open Circuit | 300Vdc |
| MPPT Voltage Range | 90-260Vdc |
| Bypass Overload Current | 40A |
| MPPT Tracking Efficiency | 95% |
| Support Communication | WiFi Modules/RS485/CAN/USB/Dry contact |
| Dimensions | 16*11*4 IN |
| Weight | 7.8KG/17.2LB |

Image 6: A comprehensive wiring diagram showing connections for PV input, utility/generator input, battery, and inverter output.

Recommended Wire Sizes:

| Connection | Recommended Wire Diameter | Max Current |
|---------------|---------------------------|---------------------------------|
| AC Input | 10mm ² /7AWG | 40A |
| Battery Input | 25mm ² /3AWG | 120A (Charge) / 85A (Discharge) |
| AC Output | 10mm ² /7AWG | 30A (Inverter) / 40A (Bypass) |

4.4 Parallel Installation (Optional)

For increased power, up to 6 units can be connected in parallel. Refer to the detailed wiring diagrams for single-phase, split-phase, and three-phase configurations in the full manual. Ensure all units are properly synchronized.

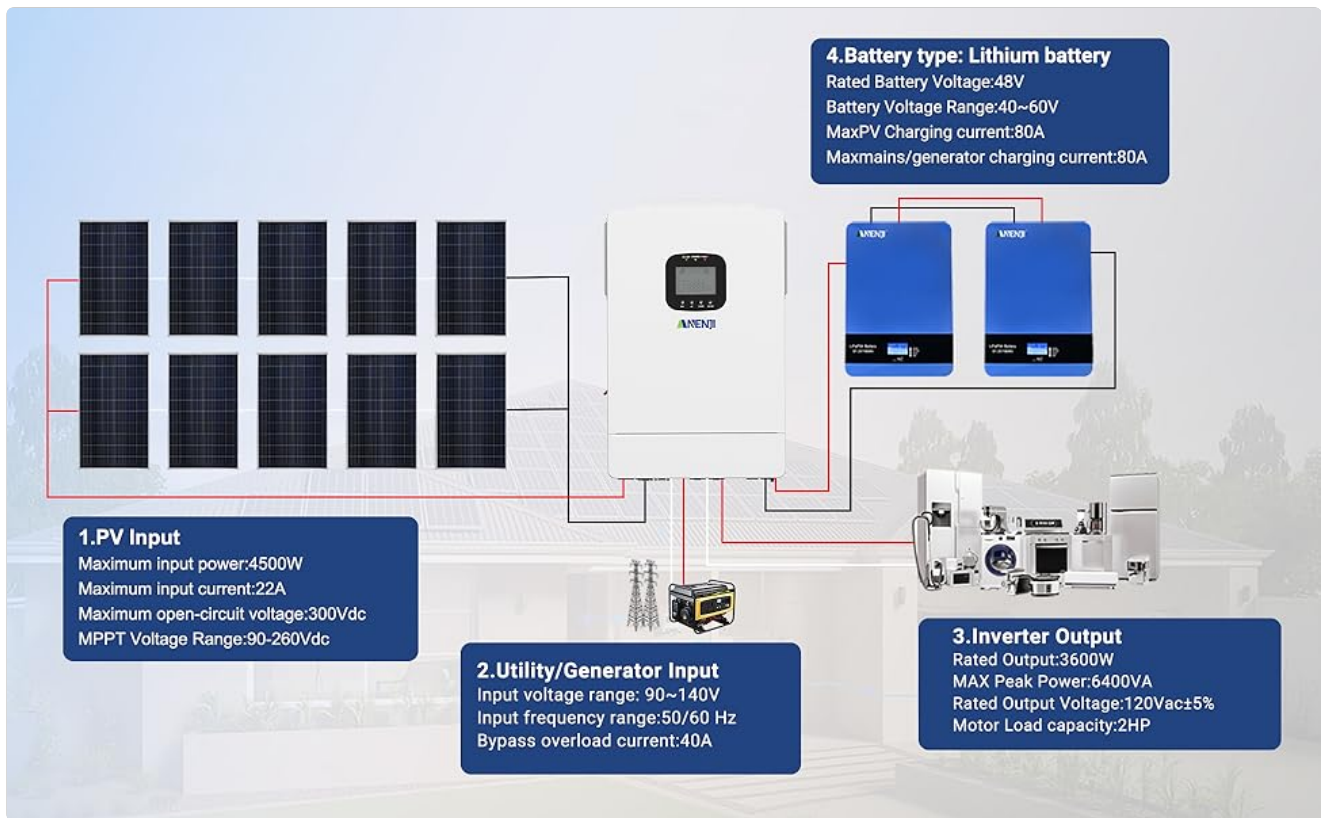


Image 7: Detailed illustration of single-phase, split-phase, and three-phase parallel connection setups for multiple inverters.

5. OPERATION

5.1 Powering On/Off

After all connections are secure, turn on the battery. Then, use the ON/OFF rocker switch on the inverter to power it on. The LCD screen will illuminate, displaying system status. To power off, reverse the process: turn off the inverter first, then disconnect the battery.

5.2 LCD Display and Settings

The LCD screen provides real-time data and allows configuration of various parameters. Use the control buttons (SET, UP, DOWN, ENTER) to navigate menus and adjust settings.

- **Charging Priority:** Control how the battery bank is charged from different power sources (Solar Priority, Solar and AC input, Solar Only).
- **Load Priority:** Control how appliances are powered to prevent power interruptions (Solar Priority, AC Priority, DC Priority).

SINGLE-PHASE HYBRID INVERTER

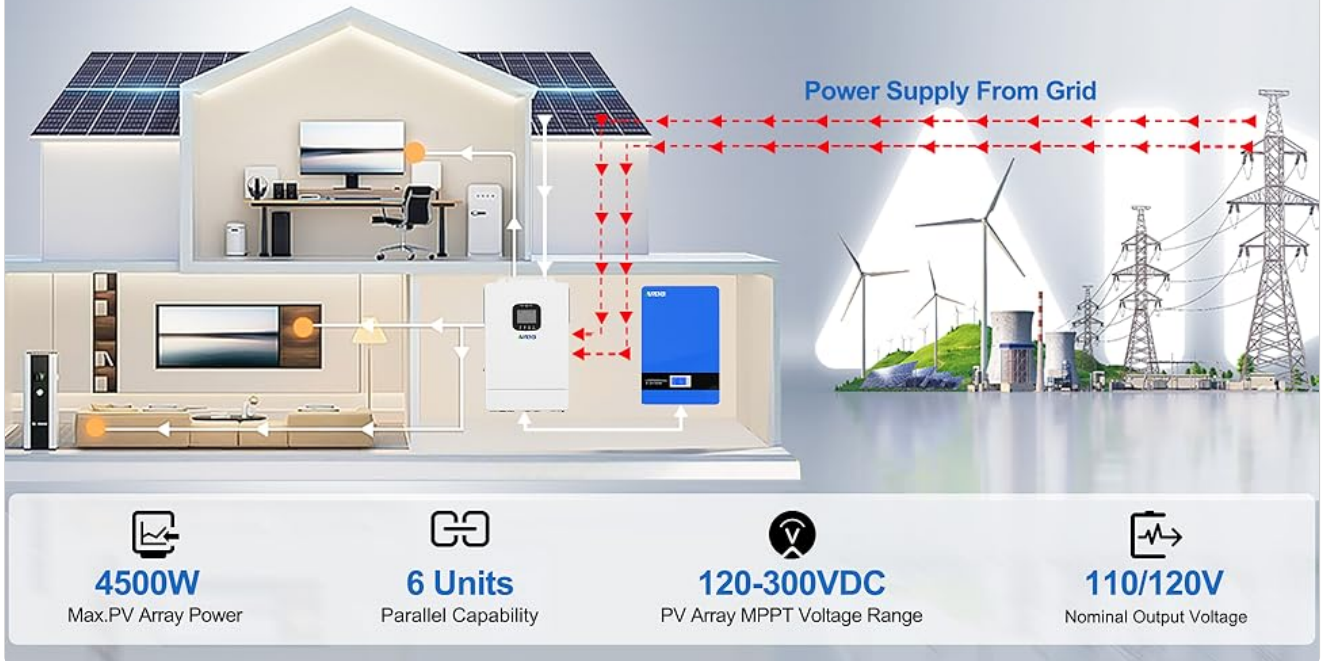


Image 8: The inverter's LCD screen showing options for Charging Priority and Load Priority settings.

5.3 Wi-Fi Monitoring

The inverter is equipped with a Wi-Fi module for real-time monitoring via a mobile application. Search for "Smart Value" in your app store to download and install the application. This allows remote monitoring of the inverter's operating status.

Versatile Design

Choose from up to 15 different configurations to connect up to six inverters to match any of your power needs for either residential or commercial use. Configure your inverters to work in single phase, split phase, or 3-phase for any of your needs.

Max.6 Parallel Connection

Suitable for 120V single-phase/240V split-phase residential systems, delivering up to 21,6 kilowatts of power.



Image 9: Illustration of the Wi-Fi module connection and the availability of the "Smart Value" mobile application for real-time monitoring.

6. MAINTENANCE

- **Regular Cleaning:** Keep the inverter clean and free from dust. Ensure ventilation openings are not blocked.
- **Connection Checks:** Periodically check all electrical connections for tightness and signs of corrosion.
- **Battery Health:** Monitor battery status via the LCD or mobile app. Ensure batteries are maintained according to their manufacturer's guidelines.
- **Firmware Updates:** Check for available firmware updates to ensure optimal performance and access to new features.

7. TROUBLESHOOTING

This section provides solutions to common issues. For more complex problems, contact customer support.

- **No Power Output:** Check battery connections, PV input, and AC input. Ensure the inverter is powered on and not in fault mode.
- **Fault Indicator On:** Refer to the LCD display for specific fault codes and consult the detailed troubleshooting section in the full manual.
- **Battery Not Charging:** Verify PV panel connections and sunlight availability. Check charging mode settings.
- **Overload Protection:** If an overload occurs, the inverter will shut down. Reduce the load and restart the inverter.

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Video 1: This video demonstrates how to communicate with the battery and computer for the 5000W Solar Inverter. While the model differs slightly, the communication principles for battery and computer interaction are similar and can aid in troubleshooting.

8. SPECIFICATIONS

| Aninerel ANJ-3600W-LVP Hybrid Solar Inverter | |
|--|--------------|
| Rated Output Power | 3600VA/3600W |
| Max. Peak Power | 7200VA |

| Aninerel ANJ-3600W-LVP Hybrid Solar Inverter | |
|---|---|
| Rated Output Voltage | 120Vac \pm 5% |
| Load Capacity of Motors | 2HP |
| Rated AC Frequency | 50Hz/60Hz |
| Parallel capacity | 1~6 |
| Output Voltage Waveform | Pure sine wave |
| Overload Protection | (102%~load<125%) \pm 10%: report error, turn off the output after 5 minutes; (125%~load<150%) \pm 10%: report error, turn off the output after 10 seconds; load \geq 150% \pm 10%: report error, turn off the output after 5 seconds; |
| Battery Type | Lithium/Lead-acid batteries |
| Rated Battery Voltage | 48V (Min. start voltage 44V) |
| Mains/Generator Input Range | (90Vac~140Vac) \pm 2% |
| Max. MPPT Charging Current | 80A |
| Max. Mains/Generator Charging Current | 80A |
| Max. Hybrid Charging Current | 80A |
| Num. of MPPT Trackers | 1 |
| Max. PV array power | 4000W |
| Max. Input current | 22A |
| Max. Voltage of Open Circuit | 300Vdc |
| MPPT Voltage Range | 90-260Vdc |

| Aninerel ANJ-3600W-LVP Hybrid Solar Inverter | |
|--|--|
| Bypass Overload Current | 40A |
| MPPT Tracking Efficiency | 95% |
| Support Communication | WiFi Modules/RS485/CAN/USB/Dry contact |
| Dimensions | 16*11*4 in |
| Weight | 7.8KG/17.2LB |

| MODEL | ANJ-3600W-LVP-WIFI |
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| Bypass Overload Current | 40A |
| MPPT Tracking Efficiency | 95% |
| Support Communication | WiFi Modules/RS485/CAN/USB/Dry contact |
| Dimensions | 16*11*4 IN |
| Weight | 7.8KG/17.2LB |

Image 10: A table summarizing the technical specifications of the inverter, including power ratings, voltage, current, and communication features.

9. WARRANTY & SUPPORT

For warranty information and technical support, please refer to the official Aninerel website or contact your authorized dealer. Keep your purchase receipt as proof of purchase.

Protection plans are available for extended coverage:

- 2-Year Protection Plan
- 3-Year Protection Plan
- Complete Protect: One plan covers all eligible past and future purchases

