DXQ LV6048

LV6048 MPP Solar Inverter User Manual

Brand: DXQ | **Model:** LV6048

1. Introduction

The LV6048 is a 6000W/48Vdc grid-optional solar inverter designed for power systems in regions utilizing 110/120V single phase, 208V/240V split phase, or 208V 3-phase loads. This model is suitable for off-grid applications in the US, Canada, Puerto Rico, and other regions where 120V/240V split phase power is standard, eliminating the need for an external step-down transformer.
Each unit includes two dual 80A max MPPT solar chargers and supports up to three units in parallel (parallel kit built-in). The inverter offers high programmability via its LCD menu and supports both 50Hz and 60Hz operation, as well as dual AC or DC priority modes. It also features a generator starter dry contact and comes with the WatchPower monitoring program.

Figure 1.1: Front view of the LV6048 MPP Solar Inverter, showcasing its compact design and integrated display panel.

2. Key Features

- **Output Versatility:** Capable of producing 110V/120V Single Phase, 120V/240V Split Phase, 208V Split Phase, and 208V 3-Phase output.
- **High Power Output:** Max continuous 6000W 48Vdc battery-based pure sine wave solar inverter.
- **Integrated MPPT Chargers:** Built-in dual 2x 80A 3-stage MPPT solar chargers, supporting up to 8KW PV array in total with a max PV input of 145V open circuit.

- **Operational Modes:** Dual AC and DC priority modes allow operation as a UPS or battery/solar inverter with backup options.
- **Frequency Support:** Supports both 50Hz and 60Hz load through LCD programming.
- **Generator Compatibility:** Built-in genset starter dry contact feature for use with generators (inverter-type generators with remote start function required).
- **Monitoring Software:** Bundled monitoring software compatible with Windows, Mac, and Linux operating systems.
- **Parallel Capability:** Supports up to 3 units in parallel with built-in parallel kit.

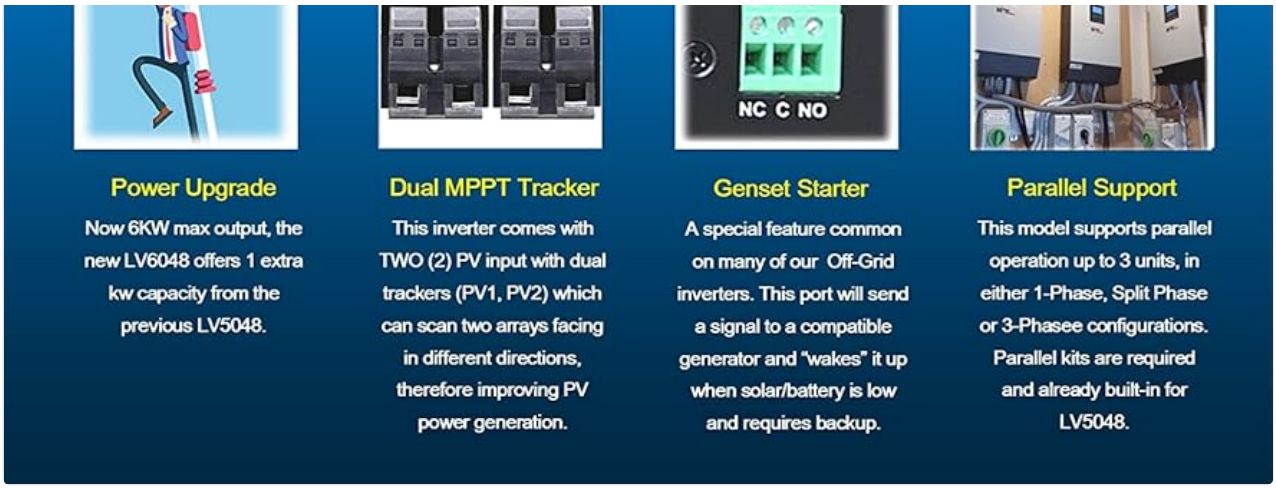


Figure 2.1: Diagram highlighting key features such as max 6kW output, 48VDC system, 60A utility charger, dual 80A MPPT, and parallel capability.

3. Product Overview and Components

The LV6048 inverter features a clear LCD display for status monitoring, LED indicators for AC/INV, CHG, and FAULT, and intuitive function keys (ESC, UP, DOWN, ENTER) for navigation and settings adjustment.

PRODUCT SPECIFICATION

Split Phase LV SERIES	LV6048
STANDARD RATING	
Continuous Output	6000W
System DC Volt	48VDC
AC Input Voltage	110 / 120VAC (Phase - Neutral)
Maximum Parallel	Up to 3 units
PV INPUT / SOLAR CHARGING	
Max PV Input Power	8000W (4000W each input)
Max PV Input Volt	145VDC (open circuit Voc)
MPPT Range	60 - 110VDC
Number of PV Input	2
Max Charging Current	160A (80A X 2)
OUTPUT MODE	
Output Waveform	Pure Sine Wave
AC Output Mode	120V L-N / 240V L1-L2 / 208V L1-L2 3-Phase
Frequency	50 / 60Hz, auto-sensing
Max Bypass Current	40A
Max Efficiency	>90%
Max Utility Charging	60A
Max Utility + Solar Charging	220A
Max Bulk/Float Charge	58.4V
ENVIRONMENTAL / MECHANICAL SPECIFICATIONS	
Communication Port	USB / RS232 / Dry Contact
Operating Temp.	0 - 50°C
Operating Humidity	0 - 90% RH (No Condensing)
Dimension	623*610*130mm
Net Weight	30Kg

CERTIFICATION

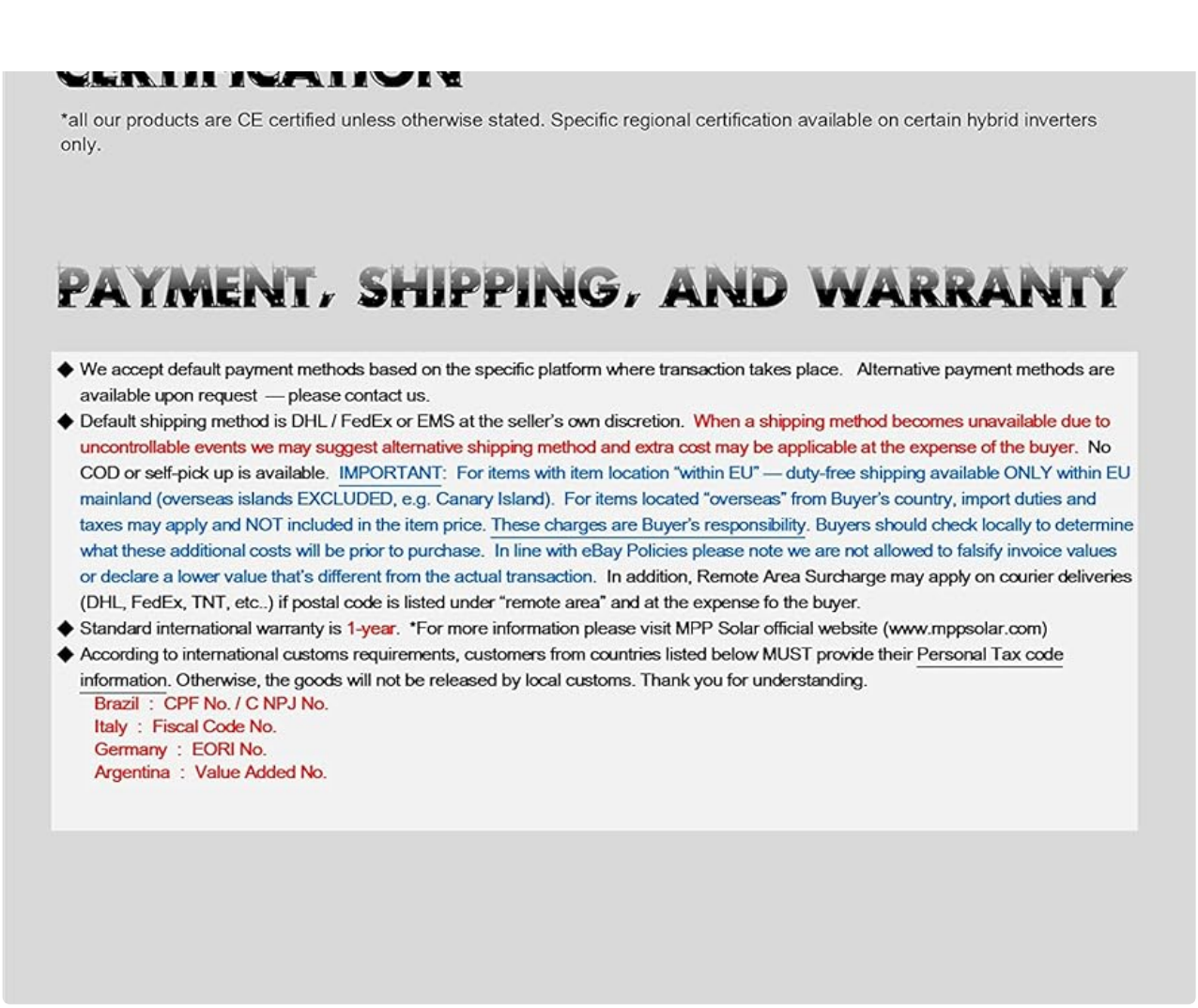
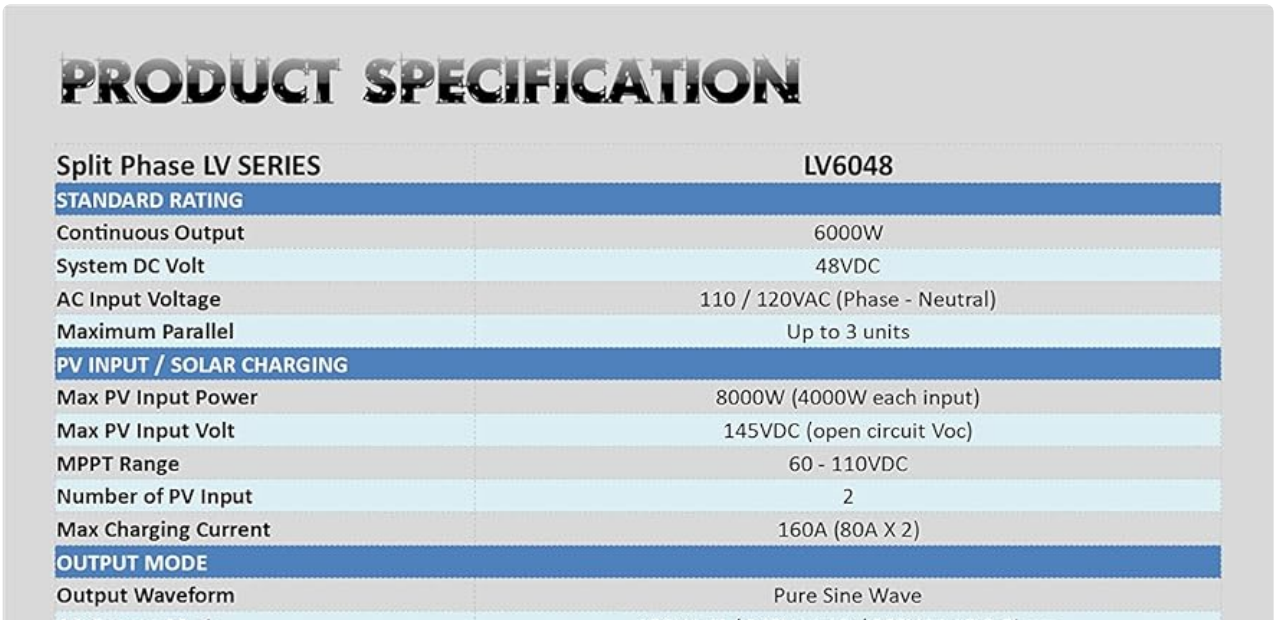
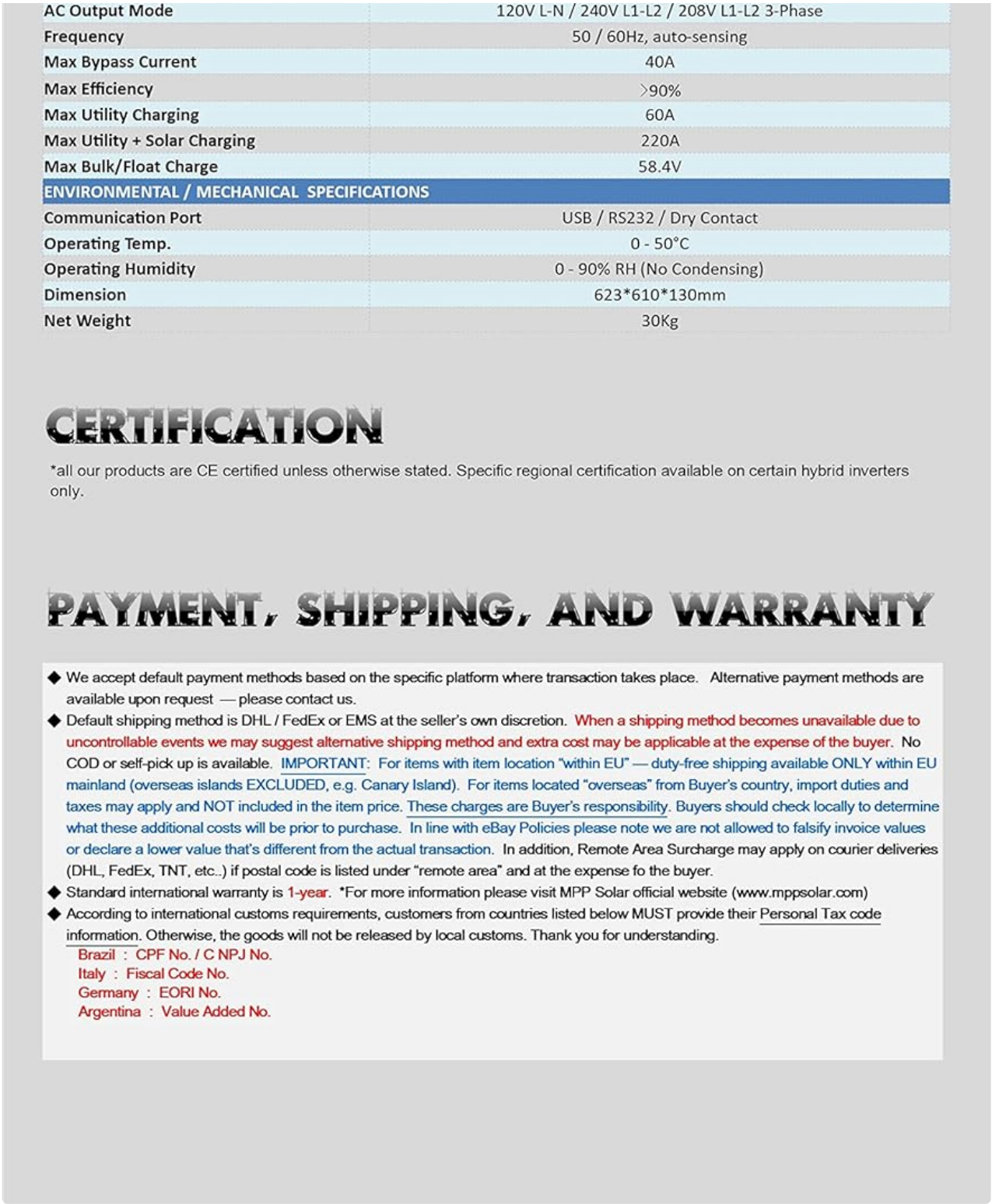


Figure 3.1: Detailed product overview showing the LCD display, LED indicators, function keys, and rear panel connections including AC input, AC output, parallel ID, RS232 port, PV input, genset starter, power switch, battery input, circuit breaker, and USB port. Dimensions are approximately 623mm (height) x 610mm (width).

4. Installation and System Wiring Concept

Proper installation is crucial for the safe and efficient operation of the LV6048 inverter. The system is designed to integrate with solar panels, batteries, utility grid, and a generator to provide power to home appliances.





AC Output Mode	120V L-N / 240V L1-L2 / 208V L1-L2 3-Phase
Frequency	50 / 60Hz, auto-sensing
Max Bypass Current	40A
Max Efficiency	>90%
Max Utility Charging	60A
Max Utility + Solar Charging	220A
Max Bulk/Float Charge	58.4V
ENVIRONMENTAL / MECHANICAL SPECIFICATIONS	
Communication Port	USB / RS232 / Dry Contact
Operating Temp.	0 - 50°C
Operating Humidity	0 - 90% RH (No Condensing)
Dimension	623*610*130mm
Net Weight	30Kg

Figure 4.1: Conceptual diagram illustrating the wiring of the solar power system, including solar panels, inverter, battery bank, utility grid connection, generator, and household loads. This diagram provides a high-level overview of component interconnection.

4.1. Operation Voltage Configurations

The LV6048 inverter supports various output voltage configurations to suit different regional power standards:

- **Single Phase L1-N/L2-N = 120V:** Standard 120V output.
- **Split Phase L1-L2 = 208V:** For 208V split phase applications.
- **Split Phase L1-L2 = 240V:** For 240V split phase applications.

OPERATION VOLTAGE

Single Phase L1-N / L2-N = 120V

Split Phase / 3-Phase L1-L2 = 208V

Split Phase L1-L2 = 240V

LCD MENU PROGRAM

28	AC output mode *This setting is able to set up only when the inverter is in standby mode. Be sure that on/off switch is in "OFF" status.	Parallel output in single phase. Output voltage is 120V. 	Support L1 phase output on 3-Phase application. Output voltage is 120V. 
28	AC output mode *This setting is able to set up only when the inverter is in standby mode. Be sure that on/off switch is in "OFF" status.	Support L2 phase output on 3-Phase application. Output voltage is 120V. 	Support L3 phase output on 3-Phase application. Output voltage is 120V. 
		Support L1/L2 phase output on split phase application with L1 to L2 output voltage in 208V. 	Support L1/L2 phase output on split phase application with L1 to L2 output voltage in 240V. 

Figure 4.2: Diagrams illustrating the grid input and grid output configurations for 120V single phase, 208V split phase, and 240V split phase operations, showing voltage relationships between L1, L2, and Neutral.

5. LCD Menu Program

The inverter's LCD menu allows for comprehensive configuration and monitoring. Settings can be adjusted when the inverter is in standby mode and the on/off switch is in the "OFF" status.

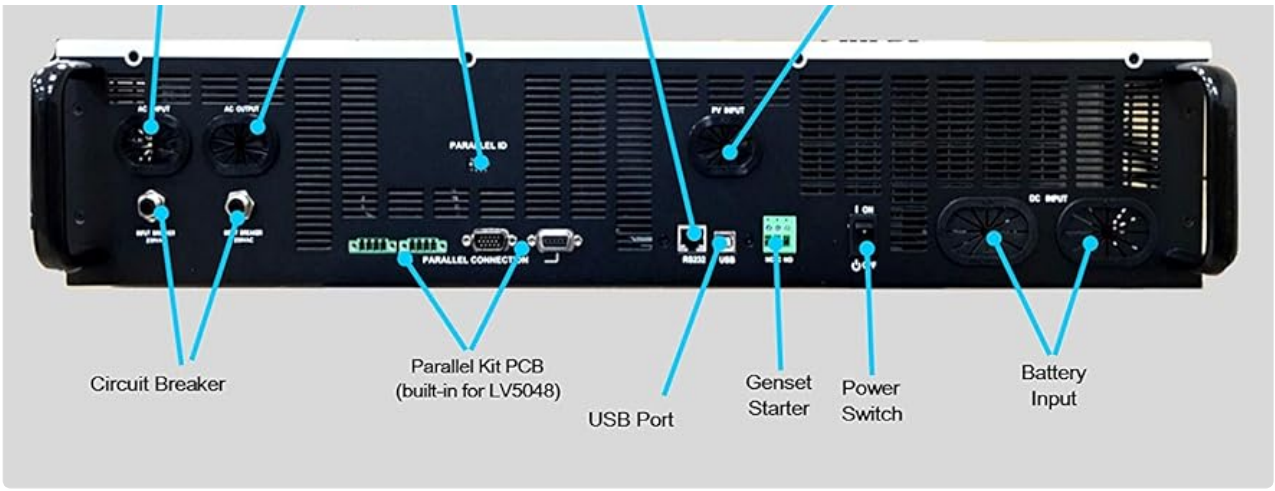


Figure 5.1: Examples of LCD menu settings, including AC output mode (setting 28) for parallel output in single phase (120V), 3-phase (120V), and split phase (208V, 240V) configurations. These settings are crucial for adapting the inverter to specific power requirements.

6. Specifications

Detailed technical specifications for the LV6048 inverter are provided below:

Category	Parameter	Value
General	Model Name	LV6048
	Brand	DXQ
Output (AC)	Standard Rating	6000W
	Continuous Output	6000W
	Output Waveform	Pure Sine Wave
	AC Output Mode	120V L-N / 240V L1-L2 / 208V L1-L2 3-Phase
	Frequency	50 / 60Hz, auto-sensing
Input (AC)	AC Input Voltage	110 / 120VAC (Phase - Neutral)
	Max Bypass Current	40A
PV & Charging	System DC Voltage	48Vdc
	Max PV Input Power	8000W (4000W each input)
	Max PV Input Voltage	145Vdc (open circuit Voc)
	MPPT Range	60 - 110Vdc
	Number of PV Input	2
	Max Charging Current	160A (80A x 2)
	Max Utility Charging	90A

Category Battery Charging	Parameter	Value
	Max Utility + Solar Charging	220A
	Max Bulk/Float Charge	58.4V
Physical & Environmental	Dimensions (H*W*D)	623 x 610 x 130 mm
	Net Weight	30kg (66.14 lbs)
	Communication Port	USB / RS232 / Dry Contact
	Operating Temperature	0 - 50°C
	Operating Humidity	0 - 90% RH (Non-Condensing)

Figure 6.1: Official product specification sheet for the LV6048 series, detailing standard rating, continuous output, system DC voltage, AC input voltage, maximum parallel units, PV input power, MPPT range, output waveform, and environmental conditions.

7. Monitoring Software and Optional Accessories

The LV6048 inverter comes with bundled monitoring software and supports various optional accessories to enhance functionality.

7.1. Monitoring Software

The inverter includes monitoring software, typically provided on a CD, which allows users to monitor system performance via a computer. Connection is usually made via USB or RS232 (bundled cable included).

7.2. Optional Accessories

- **Remote LCD Display:** For convenient monitoring from a distance (up to 15m). Note: Only specific models are supported.
- **SNMP Box/Card:** Enables inverter to be visible through network. Requires purchase of IP from ISP.
- **WiFi Box:** Allows inverter to be accessed via WiFi through AP mode (access point) or STA mode (station mode).
- **WiFi Module:** Enables inverter data to be transmitted to WiFi for monitoring via iOS/Android smartphone apps.
- **Parallel Kit:** Required accessory for systems with parallel operation. Note: Only identical models can be paralleled together. (Standard Built-in for LV6048)

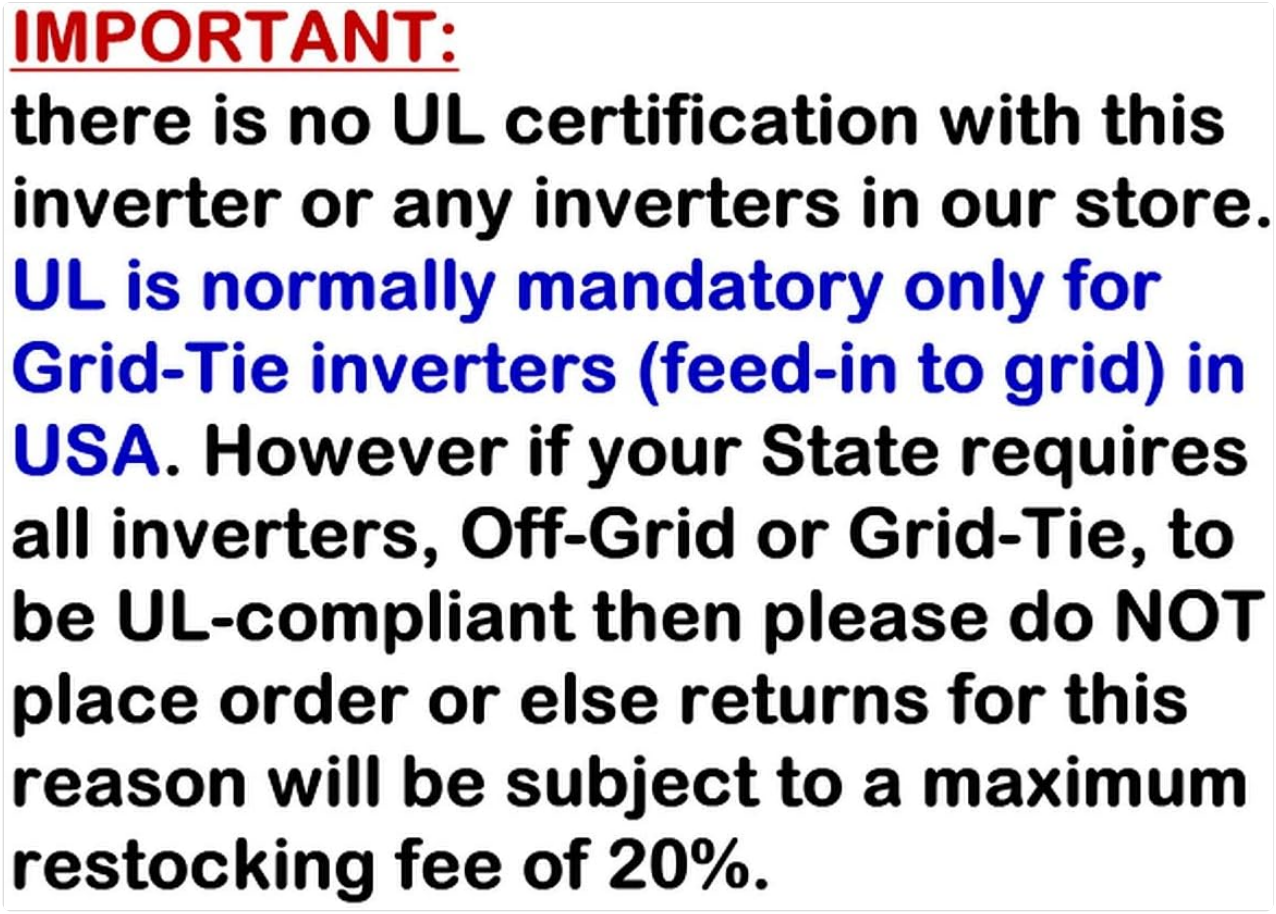


Figure 7.1: Visual representation of the monitoring software setup with an inverter and laptop, along with images of various optional accessories such as remote LCD display, SNMP box, WiFi box, and WiFi module. Also shows the standard built-in parallel kit.

8. Technical Support and Warranty

For technical assistance and warranty claims, please follow the procedure outlined below.

8.1. Technical Support Procedure

1. **Problem Found:** Identify the issue with the inverter.
2. **Email Tech Support:** Contact technical support via email.
3. **Technical Evaluation and Solution:** Support will evaluate the problem and provide a solution.
4. **Send Replacement Hardware (if needed):** If a replacement is necessary and no return is required, hardware will be sent.
5. **Return Required (RMA):** If a return is required, obtain a Return Merchandise Authorization (RMA) number.
6. **Ship Package:** Ship the package to the designated service facility (e.g., in Taiwan).
7. **Service or Refund:** The unit will be serviced, or a refund will be processed.

8.2. Warranty Information

The product comes with an International 1 Year Warranty. Please refer to the official MPP Solar website for detailed warranty terms and conditions.

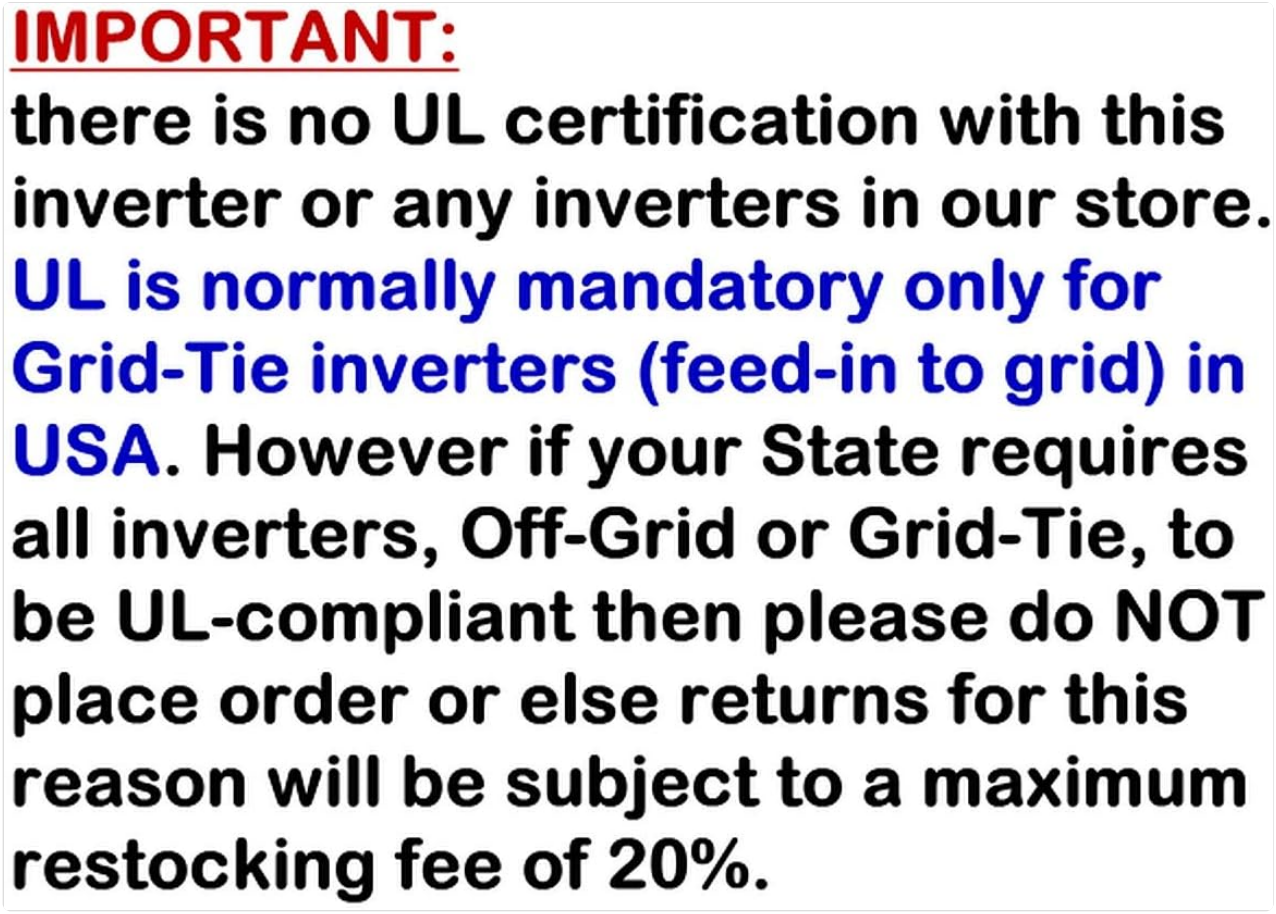


Figure 8.1: Flowchart detailing the technical support and RMA (Return Merchandise Authorization) process, from problem identification to service or refund, including steps for obtaining RMA and shipping.

9. Important Notes and Disclaimers

There is no UL certification with this inverter. UL certification is typically mandatory only for Grid-Tie inverters (feed-in to grid) in the USA. However, if your State requires all inverters, whether Off-Grid or Grid-Tie, to be UL-compliant, then this product may not be suitable. Please verify local regulations before purchase, as returns for this reason may be subject to a maximum restocking fee of 20%.

This unit is not designed for use in countries utilizing 220-240V type power standards, such as Europe or Africa.