LSLSL VAT1200

LSLSL VAT1200 Wireless Ammeter Voltmeter User Manual

Battery Capacity Monitoring Coulomb Counter

1. Introduction

The LSLSL VAT1200 is a wireless color screen coulomb meter designed for measuring DC voltage, current, power, charge-discharge capacity, watt-hour, time, and temperature. This instrument is composed of two main parts: a measurement module and a display module. The display module features a 1.8-inch high-definition color LCD, making it highly suitable for monitoring electric vehicle battery capacity and the operational status of various DC circuits.

When the measurement module is connected in series with a relay, it gains advanced protection functions including over-voltage, over-current, and under-voltage protection for the circuit. Please note that VAT series models, including the VAT1200, do not typically include relays, except for the VAT1030 model.

The device allows for clearing of amp-hour, watt-hour, and time data during measurement without affecting subsequent measurements. It also supports setting different communication addresses in wireless mode, enabling multiple units to operate simultaneously without interference.

2. Product Features

- **Advanced Display Module:** The display module casing utilizes sandblasting oxidation technology for a refined appearance. It incorporates highly sensitive touch buttons for extended service life.
- **Flexible Data Transmission:** The measurement module connects in series to the circuit under test, sending data to the display module. Data transmission can occur via a 1-meter USB cable or wirelessly through the built-in wireless module, offering a wireless range of up to 10 meters.
- **Bi-directional Current Detection:** The measuring module accurately detects current in both directions, eliminating the need to change wiring during battery charging and discharging. A "-" sign precedes the current value during charging to differentiate it from discharge mode.
- **Self-Calibration Function:** Includes a self-calibration feature to mitigate zero drift, ensuring sustained

accuracy of current and capacity readings even after prolonged operation.

- **Multiple Display Interfaces:** Offers three distinct display interfaces. The default is a large font mode showing key parameters like voltage, current, capacity, and temperature. Pressing any key switches to a full-function display mode, where parameters can be set. A black display on white mode is also available for enhanced visibility in sunlight.

3. Safety Information

Please read and understand all safety instructions before installing or operating the VAT1200. Failure to follow these instructions may result in electric shock, fire, or damage to the device or other equipment.

- **Power Disconnection:** Always disconnect power from the circuit before performing any installation, wiring, or maintenance.
- **Proper Wiring:** Ensure all wiring connections are secure and correctly polarized according to the wiring diagrams. Incorrect wiring can cause damage.
- **Voltage and Current Limits:** Do not exceed the specified voltage (100V) and current (200A) ratings of the device.
- **Environmental Conditions:** Avoid exposing the device to moisture, extreme temperatures, or corrosive environments.
- **Professional Installation:** If you are unsure about any aspect of the installation, consult a qualified electrician or technician.
- **Insulation:** Ensure all exposed terminals and wires are properly insulated after installation.

4. Package Contents

Verify that all items are present and undamaged upon opening the package:

- VAT1200 Display Module
- VAT1200 Measurement Module
- USB Communication Cable (1 meter)
- Temperature Sensor
- User Manual (this document)

Figure 4.1: Complete VAT1200 Product Kit. This image shows the display module, the measurement module, a USB cable, and a temperature sensor, representing the typical contents of the product package.

5. Specifications

Parameter	Value
Model Number	VAT1200 (Item model number: 32866573650)
Voltage Range	Up to 100V (Supports 12V, 24V, 48V systems)
Current Range	Up to 200A
Display Type	1.8-inch High-Definition Color LCD
Wireless Transmission Distance	Up to 10 meters
Data Measurement	Voltage, Current, Power, Charge-Discharge Capacity, Watt-Hour, Time, Temperature
Protection Functions (with optional relay)	Over-voltage, Over-current, Under-voltage
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	1.76 ounces

Parameter	Value
Manufacturer	LSLSL

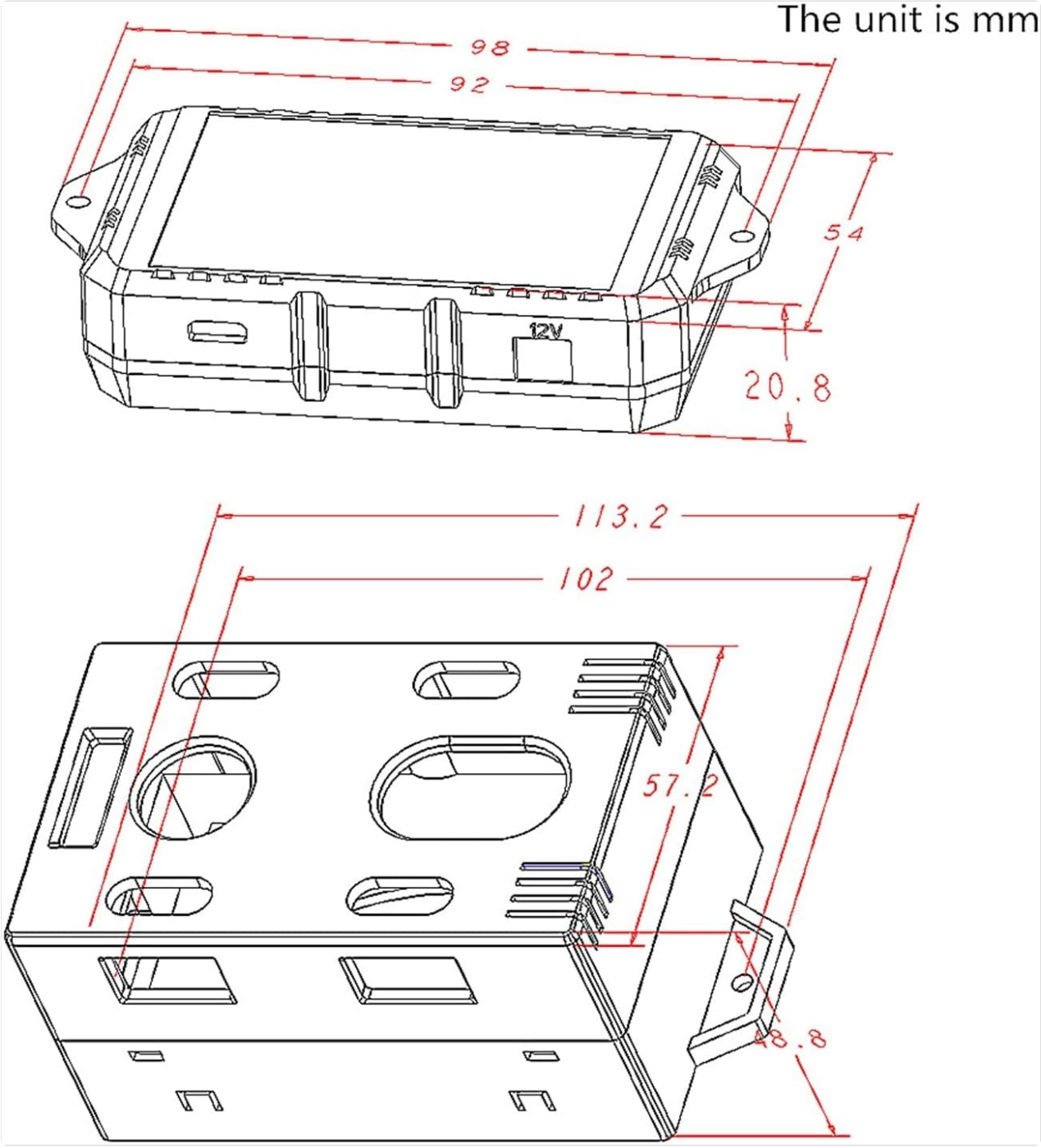

Figure 5.1: Dimensional Drawing. This illustration provides the physical dimensions of both the display and measurement modules in millimeters, aiding in installation planning.

6. Setup and Installation

Proper installation is crucial for accurate readings and safe operation. Follow these steps carefully:

6.1 Measurement Module Wiring

The measurement module must be connected in series with the DC circuit you intend to monitor. This means

the entire current flowing through the circuit must pass through the measurement module.

1. **Disconnect Power:** Ensure all power to the circuit is disconnected before beginning any wiring.
2. **Identify Current Path:** Determine the positive (+) and negative (-) lines of the DC circuit where you want to measure current.
3. **Series Connection:** Cut the positive or negative line (depending on your setup) and connect the two ends to the input and output terminals of the measurement module. Ensure correct polarity as indicated on the module.
4. **Voltage Connection:** Connect the voltage sensing wires from the measurement module to the points across which you want to measure voltage.
5. **Temperature Sensor:** Connect the temperature sensor to its designated port on the measurement module.

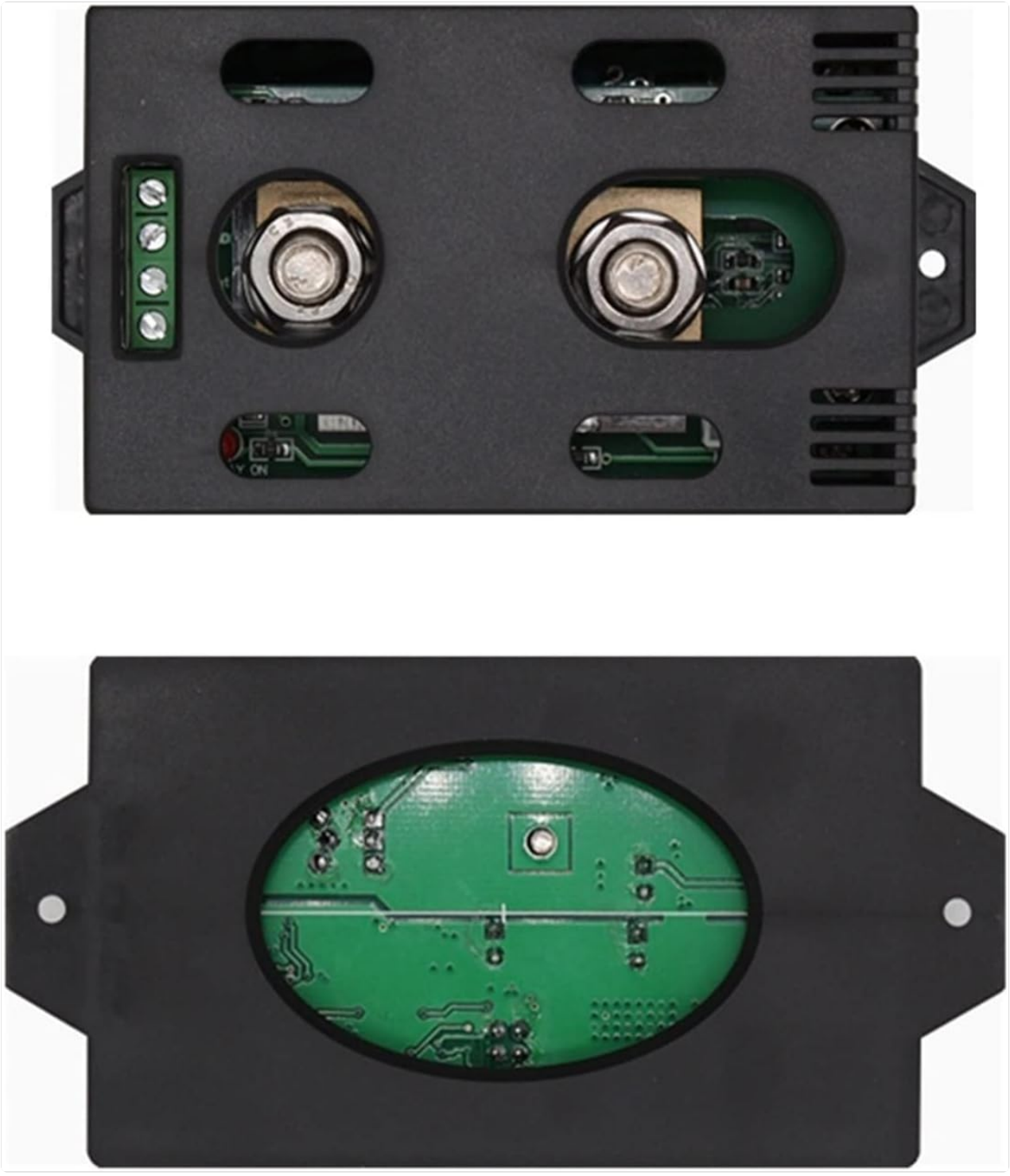

Figure 6.1: Measurement Module Internal View. This image displays the internal components of the measurement module,

including the large terminals for series current connection and smaller terminals for voltage sensing.

Figure 6.2: Measurement Module External Views. Various angles of the measurement module are shown, highlighting its external ports, mounting tabs, and overall compact design.

6.2 Display Module Connection

The display module can communicate with the measurement module either wirelessly or via a USB cable.

- **Wireless Connection:** The modules are typically pre-paired. Power on both modules, and they should automatically establish a wireless connection. Ensure they are within the 10-meter wireless range.
- **USB Connection:** For a wired connection, use the provided USB cable to connect the display module to the measurement module. This connection also powers the display module.

Figure 6.3: Display Module Front View. This image shows the display module with its vibrant color screen, displaying various parameters, and the touch-sensitive control buttons on the right side.

7. Operating Instructions

7.1 Powering On and Initial Display

Once the measurement module is correctly wired and power is applied to the circuit, the display module will power on (if connected via USB) or can be powered on separately (if using wireless communication). The default display mode is the large font interface, showing primary parameters like voltage, current, capacity, and temperature.

7.2 Navigating Display Modes

Press any of the touch buttons on the display module to switch from the large font mode to the full-function display interface. In this mode, you can access and adjust various settings. Another press may cycle to the black display on white mode for improved outdoor visibility.

7.3 Understanding Readings

- **Voltage (V):** Displays the measured DC voltage.
- **Current (A):** Displays the measured DC current. A "-" sign indicates charging current, while a positive value indicates discharge current.
- **Power (W):** Calculated power (Voltage x Current).

- **Capacity (AH):** Accumulated amp-hours, representing charge/discharge capacity.
- **Watt-Hour (WH):** Accumulated watt-hours, representing energy consumption/generation.
- **Time:** Elapsed time of measurement or operation.
- **Temperature (°C/°F):** Measured temperature from the sensor.

7.4 Parameter Settings

In the full-function display interface, use the navigation buttons (Up, Down, OK) to access and modify settings such as:

- **Over-voltage Protection (OVP):** Set the maximum allowable voltage.
- **Under-voltage Protection (UVP):** Set the minimum allowable voltage.
- **Over-current Protection (OCP):** Set the maximum allowable current.
- **Communication Address (ADR):** Adjust the wireless communication address if multiple units are used to prevent interference.
- **Capacity Reset (CLA):** Clear accumulated capacity data.
- **Watt-Hour Reset (CLW):** Clear accumulated watt-hour data.
- **Time Reset (CLT):** Clear elapsed time data.

Refer to the on-screen prompts and the detailed PDF manual (link provided in product description) for specific navigation and setting procedures.

8. Maintenance

Regular maintenance ensures the longevity and accuracy of your VAT1200.

- **Cleaning:** Use a soft, dry cloth to clean the display module and measurement module. Avoid using abrasive cleaners or solvents that could damage the casing or screen.
- **Connection Checks:** Periodically inspect all wiring connections to ensure they remain tight and free from corrosion.
- **Environmental Protection:** Keep the device in a clean, dry environment. Protect it from direct sunlight, excessive heat, and moisture.
- **Self-Calibration:** The built-in self-calibration function helps maintain accuracy. No user intervention is typically required for calibration.
- **Storage:** If storing the device for an extended period, ensure it is powered off and stored in a protective container to prevent physical damage.

9. Troubleshooting

If you encounter issues with your VAT1200, refer to the following common problems and solutions:

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Display Module Not Powering On	No power supply (USB or internal battery dead); Loose connection.	Check USB cable connection; Ensure measurement module is powered if using wireless; Charge internal battery if applicable.
No Readings on Display	Measurement module not powered; Wireless connection lost; Incorrect wiring.	Verify power to measurement module; Re-establish wireless connection (power cycle both units); Check all wiring for correct series connection and polarity.
Inaccurate Readings	Incorrect wiring; Device operating outside specified limits; Interference.	Double-check wiring against diagrams; Ensure voltage/current are within 100V/200A; Minimize electromagnetic interference.
Wireless Connection Issues	Out of range; Interference; Mismatched communication addresses.	Move modules closer (within 10m); Avoid obstacles; Check and set correct communication addresses (ADR setting).
Protection Function Not Triggering	Relay not connected; Protection parameters set too high/low.	Ensure an external relay is correctly wired (if desired); Adjust OVP, UVP, OCP settings to appropriate values.

10. Warranty and Support

For warranty information, please refer to the specific terms and conditions provided by your retailer or the manufacturer at the time of purchase. Typically, warranty covers manufacturing defects for a specified period. For technical support, troubleshooting assistance, or further inquiries, please contact the seller or manufacturer. You may also find additional resources and community support through the official WhatsApp Technology Group: https://chat.whatsapp.com/CBXHIjh1CdpE5OBwUfchLi
An official PDF user manual with more detailed diagrams and instructions can be downloaded from: https://manuals.plus/m/a69a52adcebdd033c5207feec2eaad12152e3b48e5e8ac3a590460b7cb4d8d57