

## greatlong 200A Watt Meter Power Analyzer

# Watt Meter Power Analyzer User Manual

Model: 200A Watt Meter Power Analyzer

Brand: greatlong

## 1. INTRODUCTION

The greatlong High Precision Watt Meter and Power Analyzer is a versatile tool designed for measuring various electrical parameters in DC power systems. It provides real-time readings of voltage, current, power, charge, and energy, making it indispensable for analyzing, testing, and troubleshooting DIY DC power projects, RC applications, and more.

This manual provides detailed instructions for the safe and effective use of your Watt Meter Power Analyzer, including setup, operation, specifications, and troubleshooting.

## 2. SAFETY PRECAUTIONS

Please read and understand all safety instructions before operating the device. Failure to do so may result in damage to the device, connected equipment, or personal injury.

- **Voltage and Current Limits:** Do not exceed the maximum rated voltage of 60V or the maximum continuous current of 135A. While the device is rated for 200A peak, continuous loads above 135A can cause damage to the meter and connected wiring.
- **Proper Connections:** Ensure all connections are secure and correctly polarized (Source to power source, Load to device being powered). Incorrect wiring can lead to short circuits or damage.
- **Wire Gauge:** The device uses 12 AWG wires. Ensure that your application's wiring is appropriate for the current levels being measured to prevent overheating.
- **Environmental Conditions:** Avoid exposing the device to extreme temperatures, moisture, or direct sunlight, especially for prolonged periods, as this can affect display readability and device performance.
- **Ventilation:** Ensure the cooling holes on the back of the device are not obstructed during operation to prevent

overheating.

### 3. PRODUCT OVERVIEW

The greatlong Watt Meter Power Analyzer features a compact design with a clear digital LCD screen for easy reading of measurements. It includes integrated wires for direct connection into your DC circuit.

#### 3.1. Components

- **Digital LCD Screen:** Displays real-time electrical readings.
- **Source Wires:** Connect to the power source (e.g., battery). Typically red for positive and black for negative.
- **Load Wires:** Connect to the device or circuit being powered (e.g., motor, ESC). Typically red for positive and black for negative.
- **Cooling Vents:** Located on the back of the unit to dissipate heat.

#### 3.2. Physical Appearance



Figure 3.1: Front view of the Watt Meter Power Analyzer displaying voltage, current, and power readings.

## The Hole For Cooling



Figure 3.2: Detail of the 12 AWG silicone wires for source and load connections.



Figure 3.3: Rear view of the Watt Meter, highlighting the cooling vents for heat dissipation.

## 4. SETUP AND CONNECTION

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The Watt Meter is designed for simple inline connection. No configuration or programming is required for basic operation.

1. **Identify Connections:** The meter has clearly labeled "SOURCE" and "LOAD" sides. The "SOURCE" side connects to your power supply (e.g., battery, power adapter), and the "LOAD" side connects to the device you wish to power and measure (e.g., motor, ESC, charger).
2. **Connect to Source:** Connect the wires from the "SOURCE" side of the Watt Meter to your DC power source. Ensure correct polarity: red wire to positive (+), black wire to negative (-).
3. **Connect to Load:** Connect the wires from the "LOAD" side of the Watt Meter to your DC load. Again, ensure correct polarity: red wire to positive (+), black wire to negative (-).
4. **Auxiliary Power (Optional):** The meter operates from 4.8V to 60V. For measurements below 4.8V (down to 0V), an optional auxiliary battery (4.0V ~ 60V) can be connected to power the meter's display. This is typically not required for most applications within the standard operating range.

Once connected, the LCD screen will illuminate and begin displaying real-time measurements.

## 5. OPERATION AND READINGS

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The Watt Meter provides continuous real-time readings of various electrical parameters, updated every 0.4 seconds. The digital LCD screen displays the following measurements:

- **Current (A):** Instantaneous current flow in Amperes.
- **Voltage (V):** Instantaneous voltage in Volts.
- **Watts (W):** Instantaneous power consumption in Watts ( $V \times A$ ).
- **Amp-hours (Ah):** Total charge consumed over time in Amp-hours.
- **Watt-hours (Wh):** Total energy consumed over time in Watt-hours.
- **Peak Amps (Ap):** The highest current recorded during the measurement period.
- **Minimum Volts (Vm):** The lowest voltage recorded during the measurement period (useful for monitoring battery sag).
- **Peak Watts (Wp):** The highest power recorded during the measurement period.

The meter automatically cycles through these readings or displays them simultaneously depending on the screen layout. No user input is typically required to view these values.

## 6. SPECIFICATIONS

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Parameter	Value
Working Voltage Range	0 - 60 Volts (4.8V - 60V self-powered, 0V with auxiliary battery)
Current Test Range	0 - 200 Amps (Resolution: 0.01A)
Active Power Test Range	0 - 6554 Watts (Resolution: 0.1W)
Energy Test Range	0 - 6554 Watt-hours (Resolution: 0.1Wh)
Charge Test Range	0 - 65 Amp-hours (Resolution: 0.001Ah)
In Circuit Resistance	0.001 Ohms
Operation Current	7 mA
Measurement Update Period	400 mS (0.4 seconds)
Signal Sampling Rate	Sample/second
Data Queue Sequence Time	2 seconds
Display Screen	1602 STN LCD (Blue Backlit)
Dimensions (L x W x H)	8.3cm x 4.7cm x 2cm (3.27in x 1.85in x 0.79in)
Weight	Approximately 4.8 ounces
Material	ABS

## 7. TROUBLESHOOTING

- **Display is dim or unreadable:**

- Ensure sufficient voltage (at least 4.8V) is supplied to the meter.
- If operating below 4.8V, connect an auxiliary power source (4.0V - 60V).
- Avoid direct strong sunlight, which can make the LCD difficult to read.
- Check for even backlighting; if uneven, contact support.

- **No readings or incorrect readings:**

- Verify all connections are secure and correctly polarized (Source to source, Load to load, red to positive, black to negative).
- Ensure the circuit is complete and current is flowing.
- Check if the load is drawing current. The meter only measures current flowing from Source to Load.

- **Device overheating or wires getting hot:**

- Ensure the current draw does not continuously exceed 135 Amps. While rated for 200A peak, sustained high currents can cause overheating.
- Verify that the cooling vents on the back of the unit are not obstructed.
- Confirm that the wire gauge of your application is adequate for the current levels.

- **Wires appear too short for application:**

- The integrated wires are of a standard length. If longer wires are needed, professional extension or adaptation may be required, ensuring proper wire gauge and secure connections.

## 8. MAINTENANCE

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The greatlong Watt Meter Power Analyzer requires minimal maintenance.

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Inspection:** Periodically inspect the wires and connections for any signs of wear, fraying, or damage. Replace if necessary.

## 9. WARRANTY AND SUPPORT

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greatlong is committed to customer satisfaction and product quality.

- **30-Day Satisfaction Guarantee:** If you are not satisfied with the item for any reason within 30 days of purchase, you are eligible for a full refund of the purchase price.
- **One-Year Quality Warranty:** The product is covered by a one-year warranty for any quality problems. During this period, greatlong will provide free maintenance or replacement after-sales service.

For support or warranty claims, please contact greatlong customer service through your purchase platform or the official greatlong website.