

LIBODD HT208A

LIBODD HT208A Digital Clamp Meter User Manual

Model: HT208A

1. INTRODUCTION

Thank you for choosing the LIBODD HT208A Digital Clamp Meter. This instrument is a high-performance, true RMS digital multimeter designed for professional and home use. It integrates various measurement functions including AC current, AC/DC voltage, frequency, duty ratio, resistance, capacitance, temperature, diode, continuity, NCV (Non-Contact Voltage), VFD (Variable Frequency Drive), and inrush current. This manual provides essential information for safe and effective operation, setup, maintenance, and troubleshooting of your device.

2. SAFETY INFORMATION

To ensure safe operation and service of the meter, please read this manual carefully before use. Failure to observe safety warnings can result in electric shock, fire, or damage to the meter.

- Always adhere to local and national safety codes.
- Do not use the meter if it appears damaged or if the insulation is compromised.
- Do not apply more than the rated voltage, as marked on the meter, between the terminals or between any terminal and earth ground.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Keep fingers behind the probe barriers during measurements.
- Replace the battery as soon as the low battery indicator appears to avoid incorrect readings.
- Do not operate the meter in explosive gas, vapor, or dust environments.
- Ensure the rotary switch is in the correct position for the desired measurement before connecting to the circuit.

3. PRODUCT OVERVIEW

The LIBODD HT208A is a versatile clamp multimeter designed for a wide range of electrical testing. Its robust design and comprehensive features make it suitable for various applications.



Figure 3.1: Front view of the LIBODD HT208A Digital Clamp Meter, showing the display, rotary dial, function buttons, and clamp jaw.

Key Features:

- **Clamp Multimeter:** Measures inrush current, VFD current/voltage, AC/DC current, AC/DC voltage, frequency, duty ratio, resistance, continuity, diode, capacitance, temperature, non-contact AC voltage (NCV) detection, and live detection.
- **Wide Opening Jaw:** The jaw capacity is 40mm, allowing for current measurement without disturbing the circuit.
- **NCV Sensor:** Provides audible and visual alarms upon detecting electromagnetic signals.
- **Additional Functions:** Includes data hold, flashlight, low battery display, Celsius/Fahrenheit degree selection, Max./Min./Relative value measurement, and a Zero (reset) key.
- **True RMS:** Ensures accurate measurements of non-sinusoidal waveforms.



Figure 3.2: Overview of key features including Capacitance, Resistance, Temperature, NCV, True RMS, and Flashlight/Backlight.

4. SETUP

4.1 Battery Installation

The LIBODD HT208A requires two 1.5V AAA alkaline batteries (not included). To install or replace batteries:

1. Ensure the meter is turned OFF.
2. Locate the battery compartment cover on the back of the meter.
3. Use a screwdriver to loosen the screw on the battery cover.
4. Remove the cover and insert the two AAA batteries, observing the correct polarity (+ and -).
5. Replace the battery cover and secure it with the screw.

4.2 Automatic Shutdown

To conserve battery life, the instrument features an automatic shutdown function. If there is no operation within 15 minutes after startup, the meter will automatically power off. To restart the instrument after an automatic shutdown, press any key.

AUTOMATIC SHUTDOWN

If there is no operation within **15 minutes** after startup, the instrument will automatically shut down to save battery energy. After automatic shutdown, press any key to start the instrument.

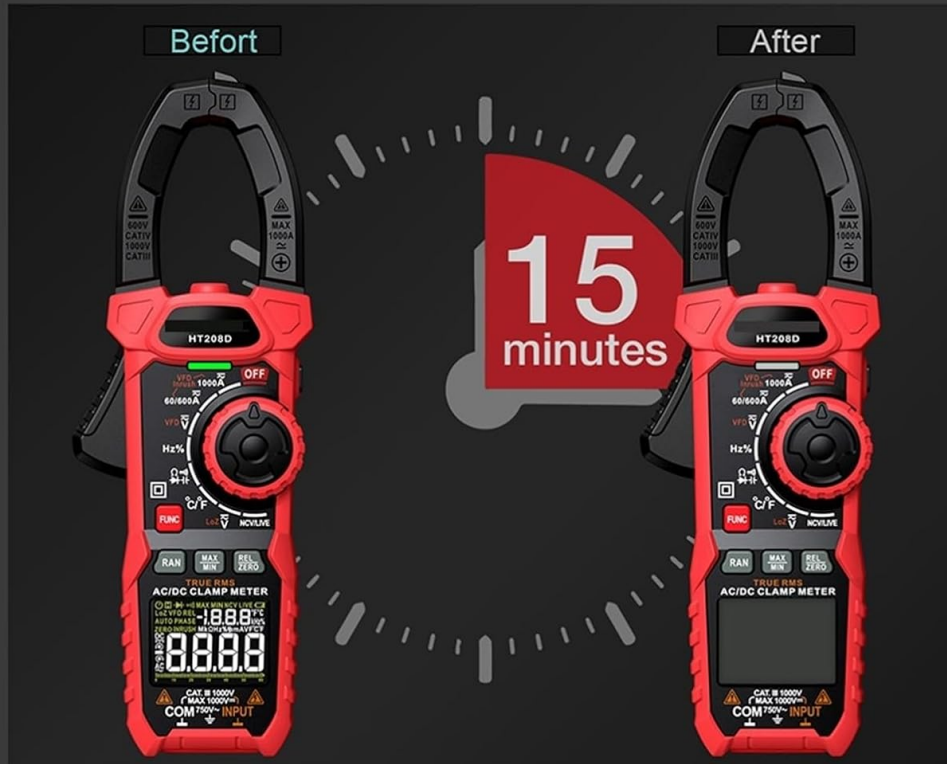


Figure 4.1: Illustration of the 15-minute automatic shutdown feature for battery saving.

5. OPERATING INSTRUCTIONS

Before taking any measurements, ensure the meter is in good working condition and the test leads are properly connected (if applicable).

5.1 Function Selection

Turn the rotary dial to select the desired measurement function. The display will show the corresponding mode. Use the 'FUNC' button to cycle through sub-functions within a mode (e.g., AC/DC voltage, diode/continuity).

5.2 Non-Contact Voltage (NCV) Detection

The NCV function allows for detection of AC voltage without direct contact. Rotate the dial to the NCV position. Bring the top of the clamp meter near the conductor. When a strong electromagnetic field is sensed, the display will show an 'H' character, a beep will emit, and the red LED indicator will light up.



NCV Non-Contact Voltage Detection

When a strong electromagnetic field signal is sensed, the "- H" character is displayed, a beep emits a quick beep prompt, and the red LED indicator lights up.

PATENT DESIGN OF TONG HEAD STRUCTURE

HT208 series digital clamp meter is the product of meticulous research and development, culminating in a practical patented design.



Figure 5.1: NCV detection in progress, showing the meter near a power outlet. Also highlights the patented tong head design which extends to 36mm.

5.3 Single Probe Live Wire Detection (LIVE)

For live wire detection, ensure only the red test lead is connected. Remove the black test lead. Select the LIVE function on the rotary dial. Insert the red probe into the live terminal of an outlet or touch it to a live wire. The meter will indicate the presence of a live wire. *Note: Detection accuracy may be affected if both test leads are connected.*

5.4 Frequency and Duty Ratio Measurement

To measure frequency (Hz) or duty ratio (%), turn the rotary dial to the Hz/% position. Connect the test leads to the circuit. The meter will display the frequency or duty ratio. Before use, it is recommended to test with a known voltage or current source to confirm proper function.



FREQUENCY DUTY RATIO MEASUREMENT

Before use, use an instrument to test the known voltage or current to confirm that the instrument functions properly.

Figure 5.2: Top image shows single probe live wire detection. Bottom image shows frequency and duty ratio measurement using test leads.

5.5 Temperature Measurement

The HT208A comes with a K-type thermocouple for temperature measurement. Connect the thermocouple to the meter's input terminals, observing polarity. Select the temperature function (°C/°F) on the rotary dial. Place the thermocouple probe at the point where temperature needs to be measured. The display will show the temperature in Celsius or Fahrenheit.

WATER TEMPERATURE MEASUREMENT

The factory is equipped with a K-type thermocouple temperature probe as standard Contactable temperature measurement



Figure 5.3: The clamp meter connected to a K-type thermocouple, measuring the temperature of water in a container.

5.6 Other Measurement Functions

- **AC Current:** Clamp the jaw around a single conductor. Select the AC current range.
- **AC/DC Voltage:** Connect test leads to the circuit. Select ACV or DCV range.
- **Resistance (Ω):** Ensure the circuit is de-energized. Connect test leads across the component.
- **Capacitance:** Ensure the capacitor is discharged. Connect test leads across the capacitor.
- **Diode/Continuity:** Select the diode/continuity function. Use test leads to check diodes or circuit continuity.
- **Data Hold:** Press the 'HOLD' button to freeze the current reading on the display. Press again to release.
- **Max/Min/Relative Value:** Use the respective buttons to capture maximum, minimum, or relative measurements.
- **Flashlight:** Press the flashlight button to illuminate the work area.

6. MAINTENANCE

6.1 Cleaning

Wipe the meter's case with a damp cloth and a mild detergent. Do not use abrasives or solvents. Ensure the meter is completely dry before use.

6.2 Battery Replacement

Refer to Section 4.1 for battery replacement instructions. Replace batteries promptly when the low battery indicator appears on the display.

6.3 Storage

If the meter is not used for an extended period, remove the batteries to prevent leakage and damage. Store the meter in a cool, dry place away from direct sunlight.

7. TROUBLESHOOTING

If the meter does not function correctly, check the following points before seeking service:

- **No display or dim display:** Check battery installation and replace batteries if necessary.
- **Incorrect readings:** Ensure the rotary dial is set to the correct function and range. Check test lead connections. Verify the circuit is de-energized for resistance or capacitance measurements.
- **No response from NCV:** Ensure the NCV sensor is positioned correctly near the AC voltage source.
- **Meter shuts off unexpectedly:** The automatic shutdown feature may have activated. Press any button to restart.

8. SPECIFICATIONS

The following table outlines the general and measurement specifications for the LIBODD HT208A Digital Clamp Meter.

HT208A/D

DIGITAL CLAMP METER



| Specifications | Range | HT208A | HT208D |
|------------------------------|---|-------------|-------------|
| DC Voltage | 600mV/6V/60V/600V/1000V | ±(0.5%+3) | ±(0.5%+3) |
| AC Voltage | 600mV/6V/60V/600V/750V | ±(0.8%+3) | ±(0.8%+3) |
| DC Current (Only for HT208D) | 60A/600A/1000A | | ±(2.5%+5) |
| AC Current | 60A/600A/1000A | ±(2.5%+5) | ±(2.5%+5) |
| Resistance | 600Ω/6kΩ/60kΩ/600kΩ/6MΩ/60MΩ | ±(0.8%+3) | ±(0.8%+3) |
| Capacitance | 10nF/100nF/1μF/10μF/100μF/1mF/10mF/100mF | ±(3.0%+3) | ±(3.0%+3) |
| Frequency | 10Hz/100Hz/1kHz/10kHz/100kHz/1MHz/10MHz | ±(0.5%+5) | ±(0.5%+5) |
| Duty | 1%~99% | ±(1.0%+2) | ±(1.0%+2) |
| Temperature | -40°C~1000°C | ±(1.0%+2) | ±(1.0%+2) |
| (°C/°F) | -40°F~1832°F | ±(1.0%+2) | ±(1.0%+2) |
| Counts | | 6000 | 6000 |
| Auto/Manual Range | | Auto | Auto |
| Continuity | | ✓ | ✓ |
| Diode | | ✓ | ✓ |
| Data Hold | | ✓ | ✓ |
| NCV | | ✓ | ✓ |
| Back Light | | ✓ | ✓ |
| Flashlight | | ✓ | ✓ |
| DCA Zero | | | ✓ |
| Low Battery Indication | | ✓ | ✓ |
| Auto Power Off | | ✓ | ✓ |
| True RMS | | ✓ | ✓ |
| VFD | | ✓ | ✓ |
| Inrush | | ✓ | ✓ |
| Max/Min | | ✓ | ✓ |
| Rel | | ✓ | ✓ |
| Low-Z | | ✓ | ✓ |
| VA—LED | | ✓ | ✓ |
| Product Weight | | Approx.326g | Approx.317g |
| Power Supply | 3x1.5V AAA batteries (The battery is not included in the product) | | |
| Product Size | 240X85X47mm | | |
| Safety Rating | EN61010-1,-2-030; EN61010-2-033; EN61326-1 CAT III 1000V, CAT IV 600V | | |

Figure 8.1: Detailed specifications for HT208A and HT208D models. Note that HT208A does not include DC Voltage measurement.

LIBODD HT208A Key Specifications

| Specification | Range (HT208A) | Accuracy (HT208A) |
|---------------|--|-------------------|
| DC Voltage | N/A (Only for HT208D) | N/A |
| AC Voltage | 600mV/6V/60V/600V/750V | ±(0.8%+5) |
| AC Current | 60A/600A/1000A | ±(2.5%+5) |
| Resistance | 600Ω/6kΩ/60kΩ/600kΩ/6MΩ/60MΩ | ±(0.8%+3) |
| Capacitance | 10nF/100nF/1μF/10μF/100μF/1mF/10mF/100mF | ±(3.0%+3) |
| Frequency | 10Hz/100Hz/1kHz/10kHz/100kHz/1MHz/10MHz | ±(0.5%+5) |
| Duty | 1%~99% | ±(1.0%+2) |
| Temperature | -40°C~1000°C / -40°F~1832°F | ±(1.0%+2) |
| Counts | 6000 | |

| Specification | Range (HT208A) | Accuracy (HT208A) |
|------------------------|--|-------------------|
| Auto/Manual Range | Auto | |
| Continuity | ✓ | |
| Diode | ✓ | |
| Data Hold | ✓ | |
| Back Light | ✓ | |
| Flashlight | ✓ | |
| Low Battery Indication | ✓ | |
| Auto Power Off | ✓ | |
| True RMS | ✓ | |
| VFD | ✓ | |
| Inrush | ✓ | |
| Max/Min | ✓ | |
| Rel | ✓ | |
| Low-Z | ✓ | |
| VA-LED | ✓ | |
| Product Weight | Approx. 326g | |
| Power Supply | 3x1.5V AAA batteries | |
| Product Size | 240x85x47mm | |
| Safety Rating | EN61010-1, -2-030; EN61010-2-033; EN61326-1 CAT III 1000V, CAT IV 600V | |

General Specifications:

- **Brand:** LIBODD
- **Model:** 1005005703405239
- **Item Weight:** 10 Grams (meter only)
- **Unit Count:** 1.0 Count

9. WARRANTY AND SUPPORT

For warranty information or technical support, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

