Walfront HT118A

Walfront HT118A Handheld Digital Multimeter User Manual

Model: HT118A

1. Introduction

The Walfront HT118A is a versatile, handheld digital multimeter designed for accurate measurement of various electrical parameters. It features a 6000-count display, True RMS capability, and a range of functions including AC/DC voltage, AC/DC current, resistance, capacitance, frequency, diode test, continuity test, and Non-Contact Voltage (NCV) detection. Equipped with an LCD backlight and a flashlight, it is suitable for use in various environments. This manual provides detailed instructions for the safe and effective operation and maintenance of your HT118A multimeter.



Figure 1.1: Walfront HT118A Digital Multimeter with included test leads and thermocouple.

2. Safety Information

To ensure safe operation and service of the meter, please read all safety warnings and operating instructions carefully before use. Failure to observe these warnings can result in severe injury or death.

- Always adhere to local and national safety codes.
- Do not use the meter if it appears damaged or if the insulation on the test leads is compromised.
- Verify the meter's operation by measuring a known voltage or current before use.
- Do not apply more than the rated voltage, as marked on the meter, between the terminals or between any terminal and earth ground. The meter is rated for CAT III 1000V and CAT IV 600V.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Keep your fingers behind the probe barriers during measurements.
- Disconnect the circuit power and discharge all high-voltage capacitors before testing resistance, continuity, diodes, or

capacitance.

- Remove the test leads from the meter before opening the battery cover.
- Replace the batteries immediately when the low battery indicator appears.
- Do not operate the meter in explosive gas, vapor, or dust environments.

3. Product Overview

Familiarize yourself with the components of your HT118A Digital Multimeter.



Figure 3.1: Front panel layout and key components of the HT118A Multimeter.

3.1. Components

- **LCD Display:** Shows measurement readings, units, and function indicators. Features dual-color backlight.
- **Function Knob:** Rotary switch to select measurement functions.
- **Function Keys:** Buttons for specific operations like FUNC, HOLD, MAX/MIN, Backlight/Flashlight.

- **Input Sockets:**
  - **COM:** Common input jack for all measurements.
  - **VΩHz%Live°C/°F:** Input jack for voltage, resistance, frequency, capacitance, diode, continuity, temperature, and Live wire detection.
  - **mA/µA:** Input jack for milliampere and microampere current measurements (max 600mA/250V).
  - **10A:** Input jack for 10A current measurements (max 10A/250V).
- **NCV Probe:** For Non-Contact Voltage detection.
- **Flashlight:** Integrated light for illuminating dark work areas.
- **Red/Green Light:** Indicator for NCV and Live wire detection.

4. Setup

4.1. Battery Installation

The HT118A multimeter requires two 1.5V AAA batteries (not included).

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment on the back of the meter.
3. Use a screwdriver to loosen the screw securing the battery cover.
4. Remove the battery cover.
5. Insert two 1.5V AAA batteries, observing the correct polarity (+ and -) as indicated inside the compartment.
6. Replace the battery cover and tighten the screw securely.



Figure 4.1: Rear view of the HT118A Multimeter, showing the battery compartment.

4.2. Connecting Test Leads

Always use the provided test leads for measurements.

1. Insert the black test lead into the **COM** (common) input jack.
2. Insert the red test lead into the appropriate input jack for your desired measurement:
    - For voltage, resistance, capacitance, frequency, diode, continuity, and temperature measurements, insert the red lead into the **VΩHz%Live°C/°F** jack.
    - For current measurements up to 600mA, insert the red lead into the **mA/µA** jack.
    - For current measurements up to 10A, insert the red lead into the **10A** jack.



Figure 4.2: Included test leads and thermocouple.

5. Operating Instructions

5.1. Power ON/OFF

Turn the function knob from the OFF position to any desired measurement function to power on the meter. To power off, turn the function knob back to the OFF position.

5.2. Automatic Shutdown

The meter will automatically shut down after approximately 15 minutes of inactivity to conserve battery life. Press any button or turn the function knob to resume operation.

5.3. LCD Backlight and Flashlight

Press the **LIGHT/HOLD** button briefly to toggle the LCD backlight ON/OFF. Press and hold the**LIGHT/HOLD** button for approximately 2 seconds to turn the flashlight ON/OFF.



Figure 5.1: The HT118A's clear backlight LCD display for easy reading in various lighting conditions.

5.4. Data Hold (HOLD)

Press the **HOLD** button to freeze the current reading on the display. Press it again to release the hold and resume live readings.

5.5. Maximum/Minimum Value (MAX/MIN)

Press the **MAX/MIN** button to enter MAX/MIN recording mode. The meter will display the maximum value measured. Press again to display the minimum value. Press a third time to exit MAX/MIN mode.

5.6. Measurement Functions

Select the desired function using the rotary knob. The meter is auto-ranging, meaning it automatically selects the appropriate range for the measurement.

- **DC Voltage (V=):** Connect test leads in parallel to the DC voltage source.
- **AC Voltage (V~):** Connect test leads in parallel to the AC voltage source.

- **DC Current (A=):** Connect test leads in series with the DC circuit. Ensure correct input jack (mA/µA or 10A).
- **AC Current (A~):** Connect test leads in series with the AC circuit. Ensure correct input jack (mA/µA or 10A).
- **Resistance (Ω):** Disconnect power from the circuit. Connect test leads across the component.
- **Capacitance (F):** Disconnect power from the circuit and discharge the capacitor. Connect test leads across the capacitor.
- **Frequency (Hz):** Connect test leads in parallel to the signal source.
- **Diode Test:** Disconnect power from the circuit. Connect the red lead to the anode and the black lead to the cathode of the diode.
- **Continuity Test:** Disconnect power from the circuit. Connect test leads across the circuit or component. A buzzer will sound if continuity is detected (resistance below approx. 50Ω).
- **Non-Contact Voltage (NCV):** Turn the knob to NCV. Place the NCV probe near the AC voltage source. The red/green light and buzzer will indicate voltage presence.
- **Temperature (°C/°F):** Insert the thermocouple into the VΩHz%Live°C/°F and COM jacks, observing polarity. Place the thermocouple tip on the object to be measured.

6. Maintenance

6.1. Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the input terminals free of dirt or moisture.

6.2. Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in Section 4.1. Prompt battery replacement ensures accurate readings and proper meter function.

6.3. Storage

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

7. Troubleshooting

If the meter does not function properly, check the following common issues before seeking service.

Problem	Possible Cause	Solution
Meter does not power on.	Dead or incorrectly installed batteries.	Check battery polarity or replace batteries.
"OL" (Overload) displayed.	Input value exceeds the selected range or meter's maximum capacity.	Select a higher range (if manual ranging) or ensure the input is within the meter's specifications. For resistance, ensure the circuit is de-energized.
Inaccurate readings.	Low battery, incorrect function selected, poor test lead connection.	Replace batteries, verify function knob setting, ensure test leads are securely connected.

Problem	Possible Cause	Solution
No continuity beep.	Circuit resistance is too high, or circuit is open.	Verify the circuit is closed and resistance is below 50Ω.



Figure 7.1: The 'OL' display indicates an overload condition or an open circuit.

8. Specifications

Detailed technical specifications for the Walfront HT118A Digital Multimeter.

- **Display Count:** 6000
- **DC Voltage:** 60mV/600mV/6V/60V/600V/1000V
- **AC Voltage:** 60mV/600mV/6V/60V/600V/750V
- **DC Current:** 600µA/6000µA/60mA/600mA/6A/10A

- **AC Current:** 600µA/6000µA/60mA/600mA/6A/10A
- **Resistance:** 600Ω/6kΩ/60kΩ/600kΩ/6MΩ/60MΩ
- **Capacitance:** 10nF/100nF/1µF/10µF/100µF/1mF/10mF/100mF
- **Frequency:** 10Hz/100Hz/1kHz/10kHz/100kHz/1MHz/10MHz
- **Sampling Rate:** Approximately 3 times/second
- **Low Battery Indication:** Yes
- **Automatic Shutdown:** Yes
- **Diode Test:** Yes
- **Continuity Buzzer Test:** Yes
- **Battery Type:** 2 x 1.5V AAA batteries (NOT included)
- **Working Environment:** 0~40°C, <80% RH
- **Storage Environment:** -10~60°C, <70% RH
- **Product Dimensions:** 3.94 x 3.94 x 3.94 inches
- **Item Weight:** 0.49 Kilograms (1.08 Pounds)

9. Warranty and Support

For warranty information and technical support regarding your Walfront HT118A Digital Multimeter, please refer to the documentation provided at the time of purchase or contact Walfront customer service directly. You may also visit the official Walfront store on Amazon for more information: Walfront Amazon Store.

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