MAYILON HT113C

MAYILON HT113C Digital Multimeter User Manual

Model: HT113C

1. Introduction

The MAYILON HT113C is a versatile digital multimeter designed for accurate and safe electrical measurements. It features a 6000-count auto-ranging display and can measure AC/DC voltage, DC current, resistance, continuity, frequency, capacitance, and diode. Additionally, it includes a Type K thermocouple for temperature measurements, Non-Contact Voltage (NCV) detection, and Live Wire detection. This advanced tester is suitable for automotive, industrial, and household electrical diagnostics.

Figure 1: MAYILON HT113C Digital Multimeter with included accessories.

2. Safety Information

Always adhere to safety precautions when using any electrical testing equipment. Failure to do so may result in injury or damage to the device.

- This multimeter is certified IEC CAT III 600V, CE, and RoHS, ensuring compliance with safety standards.
- Features anti-burn protection with double fuses and overload protection across all ranges.
- Do not attempt to measure AC current with this device, as it is designed for DC current measurement only.
- Ensure the rotary switch is set to the correct range before connecting test leads to a circuit.
- Avoid contact with live circuits when changing functions or connecting/disconnecting test leads.
- Always inspect test leads for damage before use. Replace if any insulation is compromised.
- Do not operate the multimeter if it appears damaged or is not functioning correctly.

3. Product Overview

Familiarize yourself with the components and display of your MAYILON HT113C Digital Multimeter.

Figure 2: Labeled components of the HT113C Multimeter.

Key Components:

- **NCV Probe:** For non-contact voltage detection.
- **Flashlight:** Illuminates the work area.
- **Red/Green Light:** Status indicator, especially for NCV and Live detection.
- **LCD Display:** Shows measurement readings, units, and function indicators (6000 counts).
- **Function Keys:** Buttons for specific features like FUNC, HOLD, MAX, Backlight/Flashlight.
- **Function Knob:** Rotary switch to select measurement modes (OFF, V~, V, Hz%, Ω/°C/°F/Capacitance, mA, A, NCV/Live).
- **COM Input Socket:** Common (negative) input for test leads.
- **Other Measurement Input Socket:** Positive input for most measurements (Voltage, Resistance, etc.).
- **10A Current Input Socket:** Positive input for high current (up to 10A) measurements.

Figure 3: Display icons indicating various functions and modes.

4. Setup

4.1. Battery Installation

The MAYILON HT113C requires two AAA batteries (included). To install or replace batteries:

1. Ensure the multimeter is turned OFF.
2. Carefully remove the protective rubber outer case.
3. Locate the battery compartment cover on the back of the device.
4. Unscrew the retaining screw(s) and remove the cover.
5. Insert two AAA batteries, observing the correct polarity (+/-).
6. Replace the battery compartment cover and secure it with the screw(s).
7. Re-attach the protective rubber outer case.

4.2. Connecting Test Leads

Always connect the test leads correctly for accurate and safe measurements.

- Insert the black test lead into the **COM** (Common) input socket.
- For most measurements (Voltage, Resistance, Continuity, Diode, Frequency, Capacitance, Temperature), insert the red test lead into the input socket labeled with VΩHz%.
- For current measurements up to 600mA, insert the red test lead into the input socket labeled with mAμA.
- For high current measurements (up to 10A), insert the red test lead into the input socket labeled with 10A.

5. Operating Instructions

This section details how to perform various measurements with your MAYILON HT113C Multimeter.

5.1. General Measurement Procedure

1. Ensure the multimeter has fresh batteries and test leads are properly connected.
2. Turn the function knob to the desired measurement mode.
3. Connect the test leads to the circuit or component being measured.
4. Read the measurement value on the LCD display.
5. After measurement, disconnect the test leads and turn the function knob to OFF.

Figure 4: Example of a real-time measurement using the multimeter.

5.2. Specific Measurement Functions

- **AC/DC Voltage Measurement (V~ / V):**
  Turn the function knob to V~ for AC voltage or V for DC voltage. Connect the test leads in parallel to the circuit.
- **DC Current Measurement (mA / A):**
  Turn the function knob to mA or A. Connect the multimeter in series with the circuit**Note: This device cannot measure AC current.**
- **Resistance (Ω), Continuity, Diode, Capacitance, Frequency (Hz%), Temperature (°C/°F) Measurement:**
  Turn the function knob to the corresponding symbol. Use the FUNC button to cycle through different sub-functions if needed. For temperature, connect the Type K thermocouple. The thermocouple can measure temperatures up to 250 degrees Celsius.
- **Non-Contact Voltage (NCV) Detection:**
  Turn the function knob to NCV. Bring the NCV probe (top of the multimeter) close to the suspected voltage source. The device will emit an audible alarm and the red/green light will illuminate if voltage is detected.

Figure 5: Non-Contact Voltage (NCV) measurement in progress.

- **Live Wire Detection:**
  Turn the function knob to NCV/Live. Insert the red test lead into the 'Live' input socket and touch it to the suspected live wire. The screen will display '---H' and turn red, accompanied by an audible alarm, if a live wire is detected.

Figure 6: Live Wire Detection indicating a live circuit.

- **Data Hold (HOLD):**
  Press the 'HOLD' button to freeze the current reading on the display. Press again to release.
- **Maximum/Minimum Value (MAX):**
  Press the 'MAX' button to display the maximum or minimum value recorded during a measurement session.
- **Backlight / Flashlight:**
  Press the backlight/flashlight button to activate the display backlight or the integrated flashlight. This feature enhances visibility in dimly lit environments.

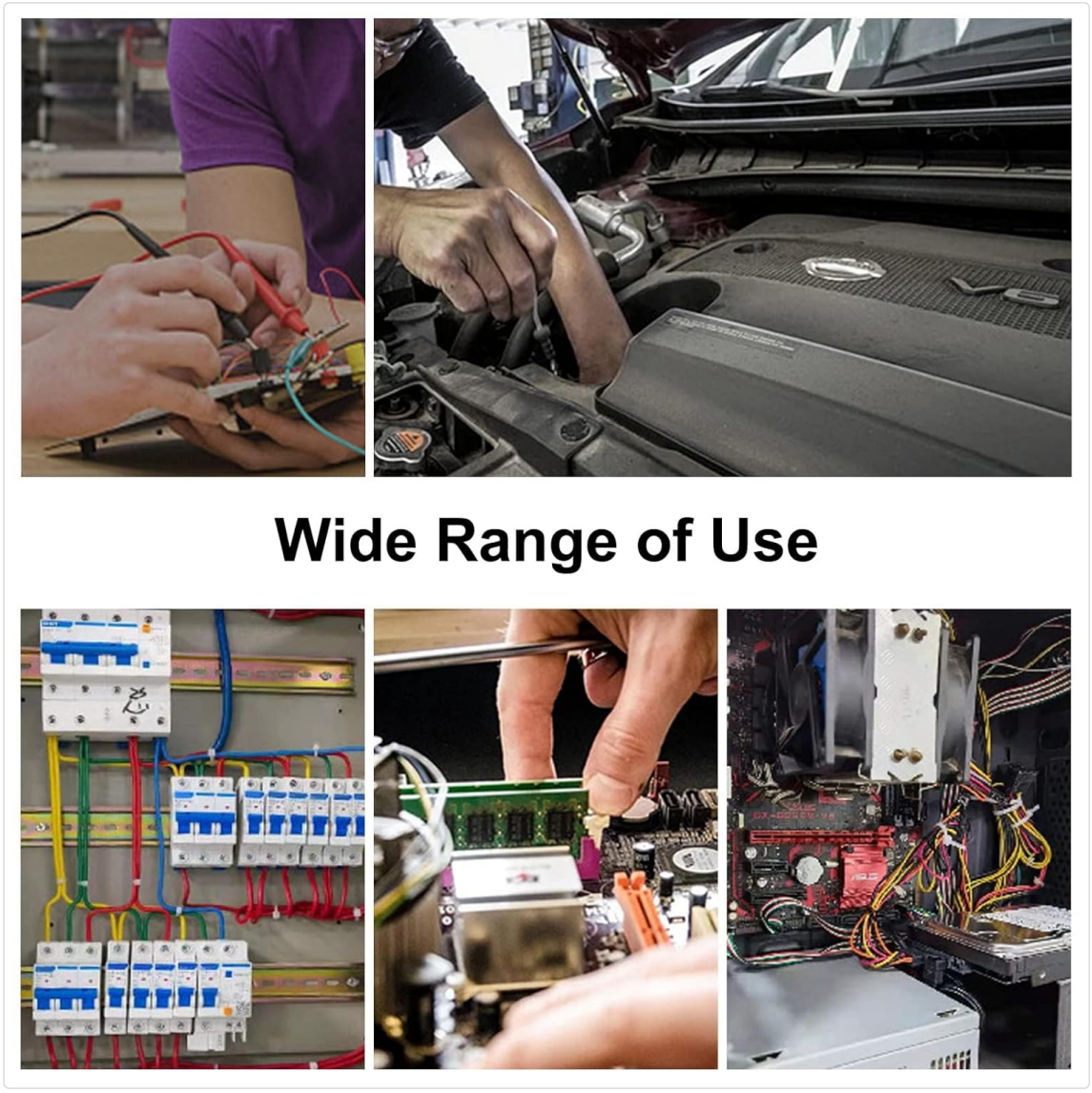

Figure 7: Backlight and Flashlight in use for improved visibility.

5.3. Application Scenarios

The MAYILON HT113C is suitable for a wide range of applications, including:

- Electrical circuit testing and troubleshooting.
- Automotive electrical system diagnostics.
- Home appliance repair and maintenance.
- Industrial electrical fault finding.
- Electronic component testing.

Figure 8: Wide range of applications for the MAYILON HT113C Multimeter.

6. Maintenance

- **Cleaning:** Use a soft, damp cloth to clean the multimeter's casing. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace batteries when the low battery indicator appears on the display to ensure accurate readings. Refer to Section 4.1 for instructions.
- **Storage:** Store the multimeter in a dry, cool place, away from direct sunlight and extreme temperatures. If storing for extended periods, remove the batteries to prevent leakage.
- **Test Leads:** Regularly inspect test leads for any signs of wear, cuts, or damaged insulation. Replace damaged leads immediately.

7. Troubleshooting

If you encounter issues with your multimeter, refer to the following common troubleshooting steps:

- **No Display or Faint Display:** Check battery installation and replace batteries if necessary.
- **Incorrect Readings:**
  - Ensure the function knob is set to the correct measurement mode and range.
  - Verify that test leads are properly connected to the correct input sockets.
  - Check test leads for damage or poor connection.
  - Ensure the component or circuit being tested is functioning correctly.
- **Overload Indication (e.g., 'OL'):** The measured value exceeds the selected range. Switch to a higher range or a different measurement function if applicable.
- **Continuity Beeper Not Working:** Ensure the multimeter is in continuity mode and test leads are making good contact. Check for battery issues.

If the problem persists after following these steps, contact customer support.

8. Specifications

Feature	Specification
Brand	MAYILON
Model Number	HT113C
Display	6000 Counts Digital Display
Power Source	2 x AAA Batteries (included)
Dimensions (L x W x H)	1 x 1 x 1 cm; 360 grams (Product)
Safety Rating	IEC CAT III 600V
Certifications	CE, RoHS
Temperature Measurement	Type K Thermocouple, up to 250°C
Features	Auto-ranging, Data Hold, Max/Min, Backlight, Flashlight, NCV, Live Wire Detection, Overload Protection, Low Battery Indication

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact MAYILON customer service through their official channels. Keep your purchase receipt as proof of purchase.