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› Ingco DM7502 Digital Multimeter User Manual

Ingco DM7502

Ingco DM7502 Digital Multimeter User Manual

Model: DM7502

1. INTRODUCTION

The Ingco DM7502 is a 600V Digital Multimeter designed for precise electrical measurements. It features a 6000-count display and can measure AC/DC voltage, AC/DC current, resistance, capacitance, frequency, and temperature. This device offers stable performance, high accuracy, a large LCD backlight screen, and low power consumption, making it suitable for laboratory, factory, and home use.



Figure 1.1: The Ingco DM7502 Digital Multimeter, including its test leads and two AAA batteries.

2. SAFETY INFORMATION

WARNING: To avoid electric shock or personal injury, read all safety information before using this product.

- Always ensure the test leads are in good condition and properly connected before making any measurements.
- Do not apply more than the rated voltage, as marked on the multimeter, 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.
- Always turn off the circuit power and discharge all high-voltage capacitors before measuring resistance, continuity, diodes, or capacitance.
- Do not use the multimeter if it appears damaged or if the case is open.
- Replace the batteries as soon as the low battery indicator appears to ensure accurate readings.
- Adhere to local and national safety codes.

3. PRODUCT OVERVIEW

3.1. Components

The Ingco DM7502 multimeter consists of the main unit, test leads (red and black), and batteries. Key components include:

- **LCD Display:** Shows measurement readings, units, and various indicators.
- **Rotary Switch:** Used to select measurement functions.
- **Function Buttons:** For specific mode selections, data hold, and backlight control.
- **Input Jacks:** For connecting test leads.
- **Non-Contact Voltage (NCV) Sensor:** Located at the top of the device.
- **Flashlight:** Integrated for illumination in dark environments.

3.2. Display Features

The multimeter features a large 2.9-inch LCD backlit display, providing clear visibility even in low-light conditions. It offers a 6000-count resolution for precise measurements.

Large 2.9" LCD Backlit Display

Easy to Use in Darkness



Figure 3.1: Detailed view of the multimeter's large LCD backlit display, showing its dimensions and various indicators.

The display also supports dual readings, and the backlight color changes to orange when voltage exceeds 80V or current exceeds 1A, indicating potentially hazardous conditions.

Dual Readings

Change to Orange Backlight When Volt > 80V or Current >1A

Volt > 80V or Current >1A



Figure 3.2: The multimeter display illustrating the change to an orange backlight when high voltage or current is detected.

With 6000 counts, the meter provides high-precision measurements.

6000 Counts

High-Precision Display
Precise Measurement

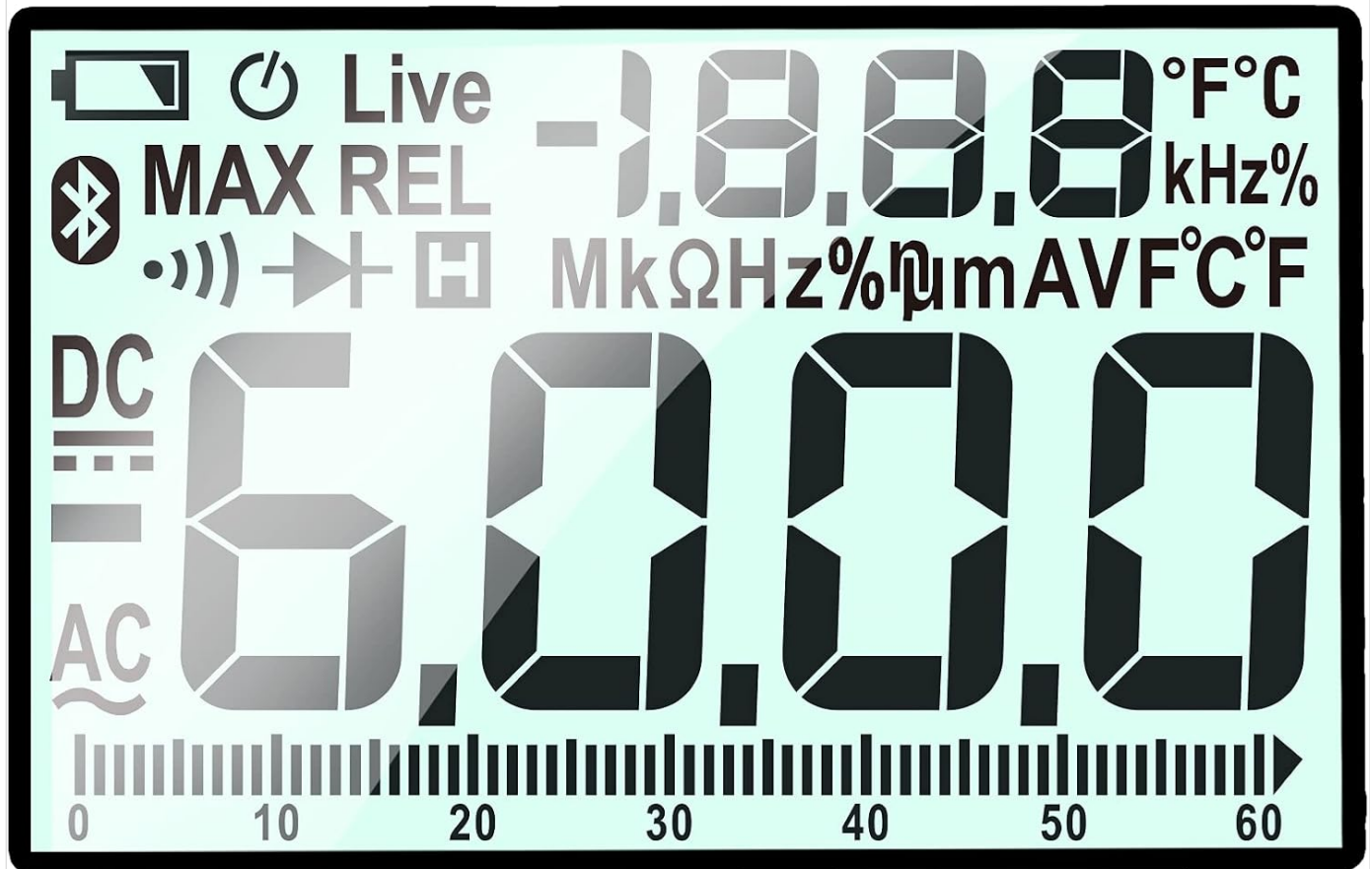


Figure 3.3: The 6000-count display, emphasizing the multimeter's high precision measurement capability.

The device also includes a built-in flashlight for convenience in dimly lit work areas.

Automatic Range Turntable Design



Figure 3.4: The Ingco DM7502 multimeter with its integrated flashlight active, providing illumination.

4. SETUP

4.1. Battery Installation

1. Ensure the multimeter is turned off.
2. Locate the battery compartment cover on the back of the device.
3. Unscrew the retaining screw(s) and remove the cover.
4. Insert two AAA batteries, observing the correct polarity (+ and -).
5. Replace the battery compartment cover and secure it with the screw(s).

4.2. Connecting Test Leads

1. Insert the black test lead into the "COM" (common) input jack.
2. For most measurements (voltage, resistance, capacitance, frequency, temperature), insert the red test lead into the "VΩHz%" input jack.

3. For current measurements (mA/ μ A), insert the red test lead into the "mA/ μ A" input jack.
4. For high current measurements (10A), insert the red test lead into the "10A" input jack.

5. OPERATING INSTRUCTIONS

The Ingco DM7502 features an automatic range turntable design, simplifying measurement selection.

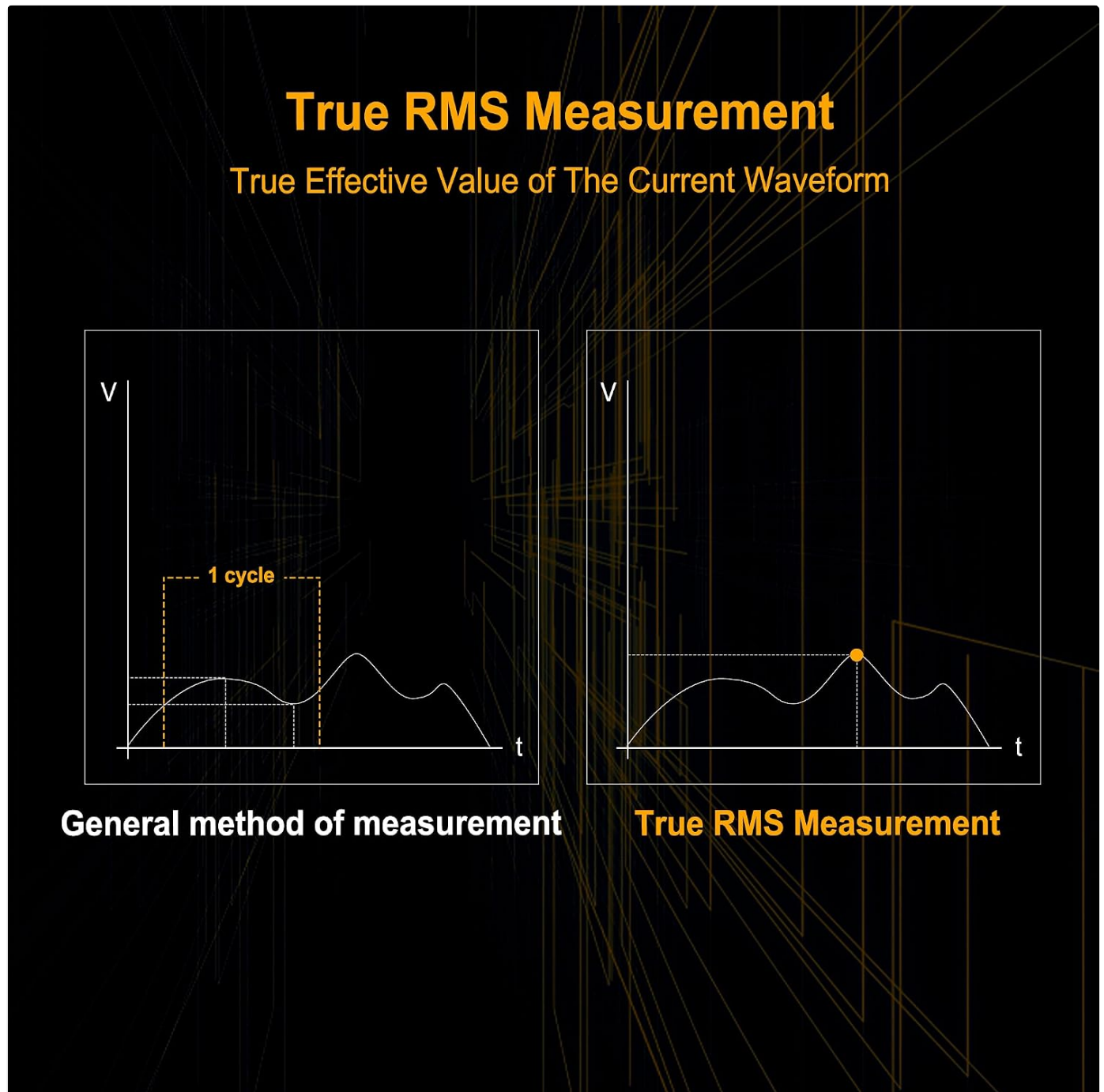


Figure 5.1: The rotary switch of the Ingco DM7502, highlighting its automatic range selection capabilities for various measurement types.

5.1. Selecting Measurement Functions

Turn the rotary switch to the desired measurement function. The multimeter will automatically select the appropriate range for most measurements (Auto-Ranging).

5.2. Common Measurements

- AC/DC Voltage Measurement (V~ / V-):

Turn the rotary switch to the V~ (AC Voltage) or V- (DC Voltage) position. Connect the test leads in parallel to the circuit or component being measured. The display will show the voltage reading.



Figure 5.2: Demonstrating voltage measurement using the multimeter on an electrical outlet.

- **AC/DC Current Measurement (A~ / A-):**

Turn the rotary switch to the A~ (AC Current) or A- (DC Current) position. Ensure the red test lead is in the correct current input jack (mA/μA or 10A). Connect the multimeter in series with the circuit. **Caution:** Never connect the multimeter in parallel for current measurement, as this can damage the device and the circuit.

- **Resistance Measurement (Ω):**

Turn the rotary switch to the Ω position. Ensure the circuit is de-energized. Connect the test leads across the component to measure its resistance.

- **Capacitance Measurement (F):**

Turn the rotary switch to the F position. Ensure the capacitor is fully discharged before connecting the test leads across it.

- **Frequency Measurement (Hz):**

Turn the rotary switch to the Hz position. Connect the test leads to the signal source to measure its frequency.

- **Temperature Measurement (°C/°F):**

Turn the rotary switch to the °C/°F position. Use the included temperature probe (if applicable) and place it on the object whose temperature is to be measured.

- **Non-Contact Voltage (NCV) Measurement:**

Turn the rotary switch to the NCV position. Hold the top of the multimeter near a live AC voltage source. The device will indicate the presence of AC voltage with an audible beep and visual indicator lights (green for weak signal, red for strong signal).

NCV Non-Contact Measurement



Figure 5.3: Illustration of the NCV function, showing how the multimeter detects AC signals and indicates strength with different colored lights.

- **Live Wire Detection:**

Turn the rotary switch to the "Live" position. Use the red test lead to touch the suspected live wire. The multimeter will indicate if the wire is live.

5.3. Function Buttons

- **FUNC:** Toggles between different modes within a single rotary switch position (e.g., AC/DC in voltage/current, diode/continuity).
- **HOLD:** Freezes the current reading on the display. Press again to release.

- **MAX/MIN:** Records the maximum and minimum readings during a measurement session. Press to cycle through MAX, MIN, and current readings.
- **Backlight/Flashlight Button:** Press briefly to turn on/off the display backlight. Press and hold to activate/deactivate the integrated flashlight.

6. MAINTENANCE

6.1. Cleaning

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

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 measurements and proper device function.

6.3. Test Lead Inspection

Regularly inspect test leads for any damage to the insulation or connectors. Replace damaged leads immediately to prevent electric shock hazards.

7. TROUBLESHOOTING

- **No Display / Faint Display:**
Check battery installation and charge level. Replace batteries if necessary.
- **Incorrect Readings:**
Ensure the correct measurement function is selected. Verify test lead connections. Check battery level. Ensure the circuit is de-energized for resistance/continuity measurements.
- **"OL" or "OVER" on Display:**
Indicates an overload or out-of-range measurement. Select a higher range (if manual ranging) or ensure the measured value is within the device's specifications.
- **No NCV Detection:**
Ensure the NCV function is selected and the sensor is held close enough to the AC source. Verify the AC source is live.

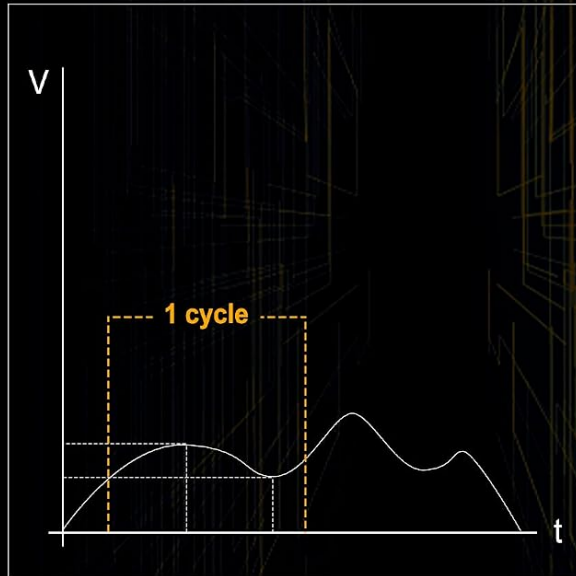
8. SPECIFICATIONS

Feature	Specification
Model	DM7502
Display	6000 Counts, Large LCD Backlight
Max Voltage	600V (AC/DC)
Max Current	10A (AC/DC)
Resistance	Yes

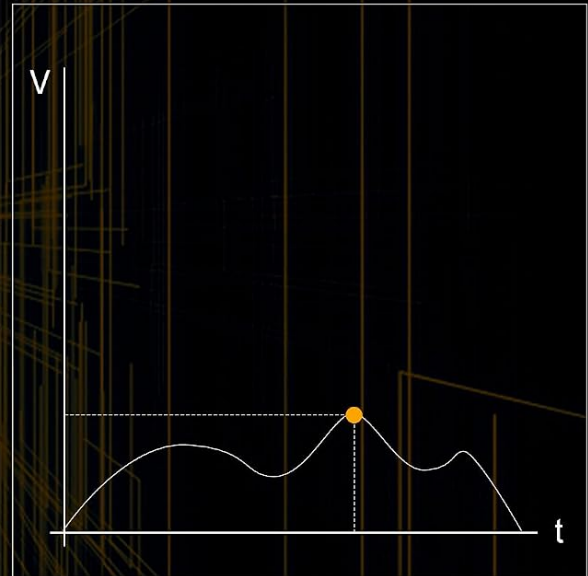
Feature	Specification
Capacitance	Yes
Frequency	Yes
Temperature	Yes
Non-Contact Voltage (NCV)	Yes
Live Wire Detection	Yes
True RMS Measurement	Yes
Power Source	2 x AAA Batteries (included)
Item Weight	572 g (0.57 kg)
Product Dimensions	23 x 11.7 x 4.9 cm

True RMS Measurement

True Effective Value of The Current Waveform



General method of measurement



True RMS Measurement

Figure 8.1: The rotary switch indicating various measurement functions and automatic range capability.

6000 Counts

High-Precision Display
Precise Measurement

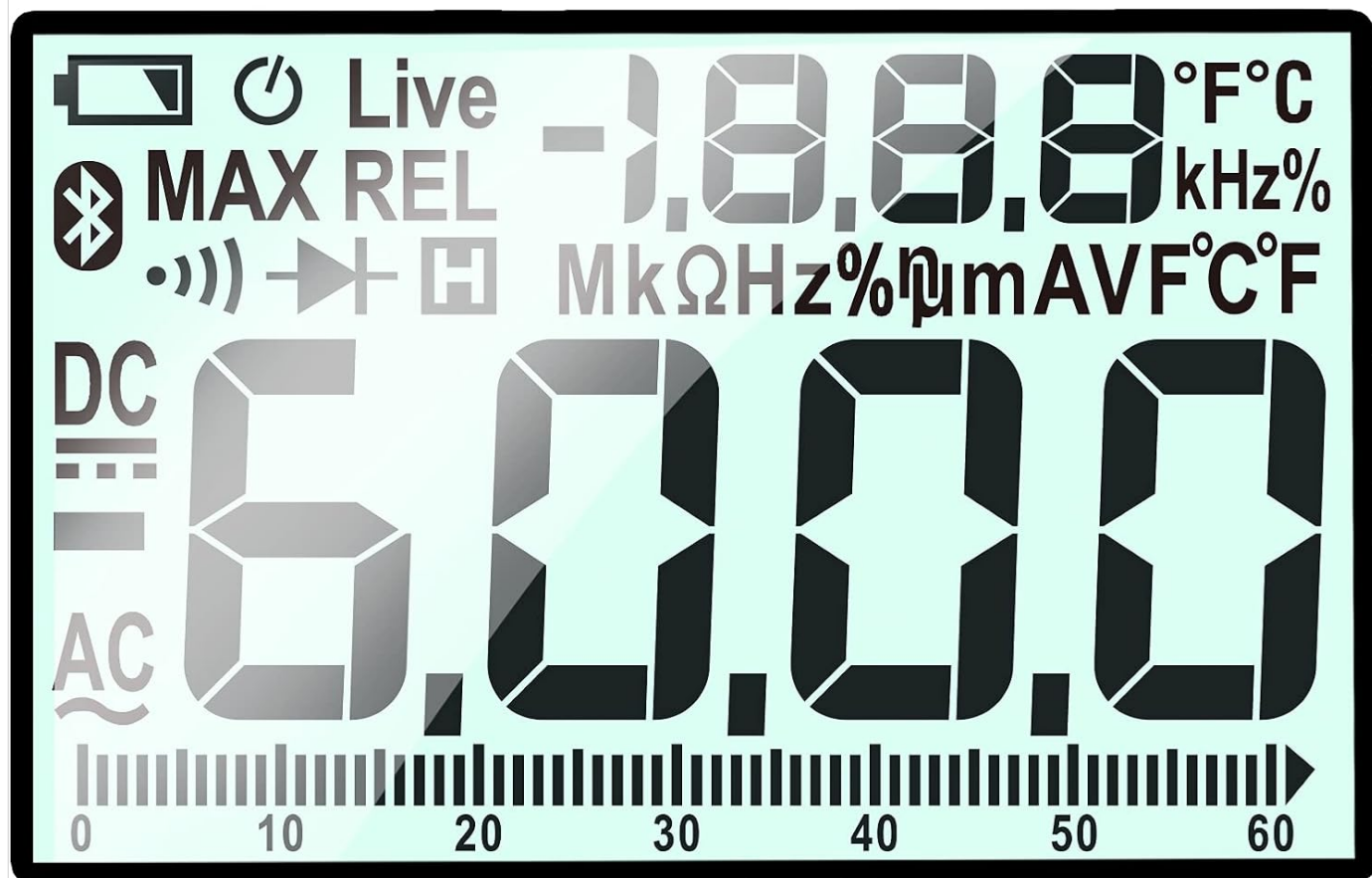


Figure 8.2: The 6000-count display, a key specification for measurement precision.



Figure 8.3: A diagram explaining the concept of True RMS measurement, which accurately measures non-sinusoidal waveforms.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official Ingco website or contact your local distributor. Keep your purchase receipt as proof of purchase for any warranty claims.

Manufacturer: INGCO TOOLS

Model Number: DM7502

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

Answered questions about this manual

How do I measure DC current using the Ingco DM7502 Digital Multimeter?

To measure DC current with the Ingco DM7502, follow these steps: Connect the Test Leads: Insert the black test lead into the COM jack. For measurements up to 600mA, insert the red lead into the...

[Read full answer](#)