

METRAVI DT-5250

Metravi DT-5250 Digital AC/DC Clamp Meter Instruction Manual

Model: DT-5250 | Brand: METRAVI

1. INTRODUCTION

This instruction manual provides detailed guidance for the safe and effective operation of the Metravi DT-5250 Digital AC/DC Clamp Meter. The DT-5250 is a versatile True RMS (TRMS) clamp meter designed for measuring AC/DC voltage, AC/DC current up to 1000A, resistance, capacitance, temperature, and frequency. It also includes diode and continuity test functions. Featuring a 3-3/4 digit LCD with 3999 counts and a 30mm jaw size, this instrument is suitable for various electrical testing applications. Please read this manual thoroughly before use to ensure proper functionality and safety.

2. SAFETY INFORMATION

Always adhere to basic safety precautions when using electrical testing equipment to prevent potential electric shock, personal injury, or damage to the meter or equipment under test.

- Ensure the meter is in good working condition before use. Inspect for any damage to the casing, test leads, or jaw.
- Do not apply voltage or current that exceeds the maximum rated limits specified for the meter.
- Always use the correct function and range for your measurement.
- Exercise extreme caution when working with live circuits. Wear appropriate personal protective equipment (PPE).
- Avoid using the meter in wet environments or in the presence of explosive gases or dust.
- Disconnect power to the circuit and discharge all high-voltage capacitors before performing resistance, continuity, diode, or capacitance measurements.
- Replace batteries promptly when the low battery indicator appears to ensure accurate readings.
- The meter conforms to CE, IEC 61010, CAT-III 600V safety standards.

3. PRODUCT OVERVIEW

The Metravi DT-5250 Digital AC/DC Clamp Meter is designed for ease of use and reliability. Below are images

illustrating the meter and its components.



Figure 3.1: Front View of the Metravi DT-5250 Clamp Meter. This image displays the main body of the clamp meter, including the jaw, rotary switch, LCD display, function buttons (HOLD, MODE, PEAK, DC ZERO), and input terminals. The display shows "AC/DC TRMS CLAMP METER" at the bottom.



Figure 3.2: Metravi DT-5250 Clamp Meter with Accessories. This image shows the clamp meter alongside its instruction manual, test leads (red and black), a K-type thermocouple for temperature measurement, and a 9V battery. These are the standard components included in the product package.



Figure 3.3: Metravi DT-5250 Clamp Meter in Carrying Case. The clamp meter, test leads, and temperature probe are neatly stored within a protective black carrying case, indicating portability and protection for the instrument.



Figure 3.4: Metravi DT-5250 Clamp Meter Product Packaging. This image displays the retail box of the Metravi clamp meter, highlighting key features and specifications on its sides.

3.1 Key Components

- **Current Clamp Jaw:** For non-contact AC/DC current measurement.
- **Rotary Switch:** To select measurement functions (Voltage, Current, Resistance, Capacitance, Temperature, Frequency, Diode, Continuity).
- **LCD Display:** 3-3/4 digits, 3999 counts with backlight for clear readings.
- **Function Buttons:**
 - **HOLD:** Freezes the current display reading.
 - **MODE:** Toggles between AC/DC, or other sub-functions within a range.
 - **PEAK:** Captures peak values.
 - **DC ZERO:** Used for zeroing DC current readings.
- **Input Terminals:** For connecting test leads for voltage, resistance, capacitance, temperature, diode, and continuity measurements.

4. SETUP

4.1 Battery Installation

The Metravi DT-5250 requires one 9V battery (included).

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(s) securing the battery cover.
4. Remove the cover and connect the 9V battery to the battery clip, observing correct polarity.
5. Place the battery into the compartment and replace the cover, securing it with the screw(s).

4.2 Connecting Test Leads

For voltage, resistance, capacitance, temperature, diode, and continuity measurements, connect the test leads as follows:

- Insert the red test lead into the V- Ω -CAP-Temp-Hz input terminal.
- Insert the black test lead into the COM (common) input terminal.
- Ensure connections are secure before taking measurements.

5. OPERATING INSTRUCTIONS

This section details how to perform various measurements using the Metravi DT-5250.

5.1 AC/DC Current Measurement (Clamp Jaw)

1. Turn the rotary switch to the desired AC A or DC A range (40A, 400A, or 1000A).
2. For DC current, press the **DC ZERO** button to zero the display before measurement.
3. Open the clamp jaw and enclose only one conductor of the circuit. Ensure the jaw is fully closed.
4. Read the current value on the LCD display.

5.2 AC/DC Voltage Measurement

1. Connect the test leads as described in Section 4.2.
2. Turn the rotary switch to the V (Voltage) position.
3. Press the **MODE** button to select between AC V or DC V.
4. Connect the test leads in parallel to the circuit or component under test.
5. Read the voltage value on the LCD display.

5.3 Resistance Measurement

1. Connect the test leads as described in Section 4.2.
2. Turn the rotary switch to the Ω (Resistance) position.
3. Ensure the circuit or component under test is de-energized.
4. Connect the test leads across the component.
5. Read the resistance value on the LCD display.

5.4 Capacitance Measurement

1. Connect the test leads as described in Section 4.2.
2. Turn the rotary switch to the CAP (Capacitance) position.
3. Ensure the capacitor is fully discharged before connecting the test leads.
4. Connect the test leads across the capacitor terminals.
5. Read the capacitance value on the LCD display.

5.5 Temperature Measurement

1. Connect the K-type thermocouple to the V-Ω-CAP-Temp-Hz and COM input terminals, observing polarity.
2. Turn the rotary switch to the Temp (Temperature) position.
3. Place the thermocouple probe on or near the object whose temperature is to be measured.
4. Read the temperature value on the LCD display. Press **MODE** to switch between Celsius and Fahrenheit if available.

5.6 Frequency Measurement

1. Connect the test leads as described in Section 4.2.
2. Turn the rotary switch to the Hz (Frequency) position.
3. Connect the test leads in parallel to the circuit where frequency is to be measured.
4. Read the frequency value on the LCD display.

5.7 Diode Test and Continuity Test

1. Connect the test leads as described in Section 4.2.
2. Turn the rotary switch to the Diode/Continuity position.
3. Press the **MODE** button to toggle between Diode Test and Continuity Test.
4. For Diode Test: Connect the red lead to the anode and the black lead to the cathode. The display will show the forward voltage drop. Reverse the leads to check for open circuit.
5. For Continuity Test: Connect the test leads across the circuit or component. An audible beep indicates continuity (low resistance).

5.8 Special Functions

- **Data Hold:** Press the **HOLD** button to freeze the current reading on the display. Press again to release.
- **Auto Power Off:** The meter features an auto power-off function to conserve battery life. It will automatically turn off after a period of inactivity.
- **Backlit LCD:** The display has a backlight for improved visibility in dimly lit conditions.
- **TRMS (True RMS):** The meter measures True RMS for AC voltage and current, providing accurate readings for non-sinusoidal waveforms.

6. MAINTENANCE

6.1 Cleaning

Wipe the meter's casing 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

When the low battery indicator appears on the display, replace the 9V battery as described in Section 4.1. Remove the battery if the meter is not to be used for an extended period to prevent leakage.

6.3 Calibration

For optimal accuracy, periodic calibration by qualified personnel is recommended.

7. TROUBLESHOOTING

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

- **No Display / Meter does not turn on:**

- Check if the battery is correctly installed and has sufficient charge. Replace if necessary.
- Ensure the rotary switch is not in the OFF position.

- **Incorrect Readings:**

- Verify that the correct function and range are selected for the measurement.
- Ensure test leads are properly connected and not damaged.
- For current measurements, ensure only one conductor is within the clamp jaw.
- For DC current, perform a DC ZERO adjustment.

- **"OL" or "OVER" displayed:**

- This indicates an overload or out-of-range condition. Select a higher range or ensure the measured value is within the meter's specifications.

8. SPECIFICATIONS

Parameter	Specification
Display	3-3/4 Digits, 3999 Counts, Backlit LCD
Jaw Size	30mm
DC Voltage Range	0 – 400m/4/40/400/600V
DC Voltage Accuracy	±0.8%
AC Voltage Range (TRMS)	0 – 400m/4/40/400/600V
AC Voltage Accuracy (TRMS)	±1.0%
DC Current Range	0 – 40/400/1000A
DC Current Accuracy	±2.8%
AC Current Range (TRMS)	0 – 40/400/1000A
AC Current Accuracy (TRMS)	±2.8%
Resistance Range	0 – 400/4k/40k/400k/4M/40M Ohms
Resistance Accuracy	±1.0%
Temperature Range	-40°C to 1000°C / -40°F to 1832°F
Temperature Accuracy	±2.5%
Frequency Range	0 – 4KHz
Frequency Accuracy	±1.5%
Capacitance Range	0 – 4n/40n/400n/4u/40u/400u/4m/40mF
Capacitance Accuracy	±3.0%
Diode Test	Yes

Parameter	Specification
Continuity Test	Yes
Auto Power Off	Yes
Data Hold	Yes
Power Source	1 x 9V Battery
Dimensions	16.2 x 6.3 x 2.8 cm
Weight	450 g
Safety Rating	CE, IEC 61010, CAT-III 600V

9. WARRANTY AND SUPPORT

All Metravi Instruments carry a **1-year warranty** against manufacturing defects.

For any usage issues, product issues, replacements, or warranty claims, please contact Metravi support.



Figure 9.1: Metravi Customer Support Information. This image provides contact details for Metravi support, including email and WhatsApp number, for assistance with product usage, issues, replacements, and warranty. It reiterates the 1-year warranty against manufacturing defects.

- **Email:** online_sales@metravi.com
- **SMS / WhatsApp:** 9073384641

Note: Replacements will be done only in case of the wrong item shipped or any manufacturing defect reported, which should be replicated at our end upon receiving the product back.

