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Extech 382252

Extech 382252 Earth Ground Resistance Tester Kit User Manual

1. INTRODUCTION

The Extech 382252 is a comprehensive Earth Ground Resistance Tester Kit designed for accurate measurement of earth ground resistance. This kit provides three selectable ranges for earth ground resistance: 20 Ohms (Ω), 200 Ohms (Ω), and 2000 Ohms (Ω). Beyond earth ground testing, the device also functions as a multimeter, capable of measuring AC/DC Voltage, Resistance, and Continuity. It features automatic zero adjustment for ease of use. This manual provides detailed instructions for the safe and effective operation, maintenance, and troubleshooting of your Extech 382252.

2. SAFETY INFORMATION

Warning: Improper use of this meter can cause damage, shock, injury, or death. Read and understand all safety information and operating instructions before using this instrument. Always adhere to local and national safety codes.

- Do not exceed the maximum input limits for any function.
- Exercise extreme caution when working with live electrical circuits.
- Ensure the meter is in good working condition and free from damage before use.
- Always use the correct function and range for measurements.
- Replace batteries when the low battery indicator appears to ensure accurate readings.
- Keep hands and fingers away from test probe tips when making measurements.
- Do not operate the meter in explosive atmospheres or in the presence of flammable gases or dust.

3. PACKAGE CONTENTS

Verify that all items are present and undamaged upon unpacking:

- Extech 382252 Earth Ground Resistance Tester
- Test Leads (set)
- Auxiliary Earth Bars (2 pieces)
- Carrying Case
- Protective Rubber Holster
- 1.5V AA Batteries (6 pieces)



Image 1: The Extech 382252 Earth Ground Resistance Tester Kit, showing the main unit, test leads, two auxiliary earth bars, and the carrying case.

4. PRODUCT FEATURES

The Extech 382252 offers the following key features:

- Earth Ground Resistance measurement in three ranges: 20Ω , 200Ω , and 2000Ω .

- AC/DC Voltage measurement capabilities.
- Resistance and Continuity testing functions.
- Automatic zero adjustment for accurate readings.
- Large, easy-to-read LCD display.
- Data Hold function to freeze displayed readings.
- Backlight for visibility in low-light conditions.
- Durable protective rubber holster.



Image 2: Front view of the Extech 382252 Earth Ground Resistance Tester, highlighting its display, function dial, and control buttons.

5. SETUP

5.1 Battery Installation

1. Ensure the meter is powered off.
2. Locate the battery compartment cover on the rear of the meter.
3. Use a screwdriver to remove the screw(s) securing the cover.
4. Insert six (6) 1.5V AA batteries, observing correct polarity (+/-).
5. Replace the battery compartment cover and secure it with the screw(s).

5.2 Connecting Test Leads

Connect the test leads to the appropriate input jacks on the meter for the desired measurement function. For earth ground resistance testing, specific connections involving the auxiliary earth bars will be detailed in the operating instructions.

6. OPERATING INSTRUCTIONS

6.1 Power On/Off

Rotate the function dial from the 'OFF' position to any desired measurement function to power on the meter. To power off, rotate the dial back to the 'OFF' position.

6.2 Automatic Zero Adjustment

The meter features automatic zero adjustment. When selecting a resistance range, the meter will automatically adjust to zero, compensating for lead resistance. Ensure test leads are not shorted or open during this process for accurate zeroing.

6.3 Data Hold Function

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

6.4 Backlight Function

Press the backlight button (often indicated by a light bulb icon) to illuminate the display for better visibility in dark environments. Press it again to turn off the backlight.

7. EARTH GROUND RESISTANCE MEASUREMENT

The Extech 382252 uses the 3-wire (or Fall-of-Potential) method for earth ground resistance measurements. This method requires the use of the two auxiliary earth bars provided.

7.1 Measurement Procedure (3-Wire Method)

1. **Preparation:** Ensure the circuit under test is de-energized and safely isolated.
2. **Placement of Auxiliary Earth Bars:**
 - Drive the first auxiliary earth bar (P) into the ground at a suitable distance from the earth electrode (E) being tested.
 - Drive the second auxiliary earth bar (C) into the ground at a further distance from P, ensuring all three points (E, P, C) are in a straight line. Typical distances are 5-10 meters (15-30 feet) between E and P, and P and C, but may vary based on soil conditions and electrode size.
3. **Connecting Test Leads:**

- Connect the 'E' terminal of the meter to the earth electrode under test.
- Connect the 'P' terminal of the meter to the first auxiliary earth bar (P).
- Connect the 'C' terminal of the meter to the second auxiliary earth bar (C).

- Select Range:** Rotate the function dial to the desired Earth Ground Resistance range (20Ω , 200Ω , or 2000Ω). Start with the highest range if the resistance value is unknown.
- Perform Test:** Press the 'TEST' button. The meter will inject a current and measure the voltage drop to calculate the earth ground resistance.
- Read Measurement:** The resistance value will be displayed on the LCD.
- Verify Accuracy:** For critical measurements, it is recommended to repeat the test with the auxiliary earth bars placed at slightly different distances to ensure the reading is stable and accurate.

8. OTHER MEASUREMENTS

8.1 AC/DC Voltage Measurement

- Connect the red test lead to the 'V' input jack and the black test lead to the 'COM' input jack.
- Rotate the function dial to the desired ACV (750V AC) or DCV (1000V DC) range.
- Connect the test probes across the circuit or component to be measured.
- Read the voltage value on the display.

8.2 Resistance Measurement

- Ensure the circuit or component is de-energized.
- Connect the red test lead to the 'V' input jack and the black test lead to the 'COM' input jack.
- Rotate the function dial to the desired Resistance range (e.g., 200Ω , $20k\Omega$, $200k\Omega$).
- Connect the test probes across the component.
- Read the resistance value on the display.

8.3 Continuity Test

- Ensure the circuit or component is de-energized.
- Connect the red test lead to the 'V' input jack and the black test lead to the 'COM' input jack.
- Rotate the function dial to the Continuity position (often indicated by a speaker icon).
- Connect the test probes across the component or wire.
- An audible beep indicates continuity (low resistance). The display will show the resistance value.

9. MAINTENANCE

9.1 Cleaning

Wipe the meter with a dry, soft cloth. Do not use abrasives or solvents. Periodically clean the test leads and probes to ensure good electrical contact.

9.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries promptly to maintain measurement accuracy. Refer to Section 5.1 for battery installation instructions.

9.3 Storage

If the meter is to be stored for an extended period, remove the batteries to prevent leakage and damage. Store the meter

in its carrying case in a cool, dry environment, away from direct sunlight and extreme temperatures.

10. TROUBLESHOOTING

- **No Display/Meter Not Powering On:** Check battery installation and ensure batteries are fresh. Verify the function dial is not in the 'OFF' position.
- **Inaccurate Readings:** Ensure test leads are properly connected and not damaged. Check battery level. For earth ground resistance, verify proper placement and connection of auxiliary earth bars and ensure good contact with the ground.
- **No Continuity Beep:** Check if the circuit is truly continuous. Ensure test leads are making good contact.
- **Display Shows 'OL' (Overload):** The measured value exceeds the selected range. Switch to a higher range.

If issues persist after following these steps, contact customer support.

11. SPECIFICATIONS

Specification	Value
Brand	Extech
Model Number	382252
Earth Ground Resistance Ranges	20Ω, 200Ω, 2000Ω
AC Voltage Range	Up to 750V AC
DC Voltage Range	Up to 1000V DC
Resistance Ranges	20Ω, 200Ω, 20kΩ, 200kΩ (typical, check device for full ranges)
Measurement Accuracy	+/-0.5% (for certain functions, refer to product manual for specifics)
Power Source	6 x 1.5V AA Batteries
Item Weight	0.69 Kilograms (1.52 pounds)
Product Dimensions (L x W x H)	7.9 x 3.6 x 2 inches
Included Components	Test leads, 2 earth bars, carrying case, holster, six 1.5V AA batteries
Safety Rating	CAT III 1000V, CE

12. WARRANTY

The Extech 382252 Earth Ground Resistance Tester Kit typically comes with a **1-year limited warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage resulting from misuse, accident, unauthorized repair, or modification. Please retain your proof of purchase for warranty claims.

13. SUPPORT

For technical assistance, calibration services, or further information regarding your Extech 382252, please refer to the official Extech website or contact their customer support department. Contact details can usually be found on the

manufacturer's website or in the documentation included with your product.

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