

EARTH  
VOLTAGE

200k $\Omega$

1000V  
DC

750V  
AC

## **Introduction**

Congratulations on your purchase of the Extech 382252 Earth Ground Resistance Tester Kit. This device can measure Earth Ground Resistance (in 3 ranges), Earth Voltage and Resistance (up to 200k $\Omega$ ), and AC and DC voltage. This device was designed to meet EN61010-1 safety standards. Careful care and use of this meter will provide years of reliable service.

## **Safety**

Please read the following safety information carefully before attempting to operate the meter and use the meter only as specified in this manual.

### **Environmental safety information**

- Do not use meter outdoors when precipitation is likely
- Installation Category III
- Pollution degree 2
- Altitude: 2000 meters max.
- Ambient conditions: 32 to 104°F (0 to 40°C); RH: 80% max
- Observe the following international safety warning symbols

### **Safety Symbols**



Caution: Refer to this manual before using this meter



Dangerous Voltages



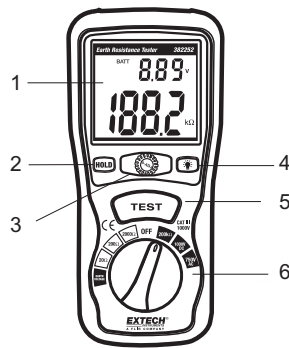
Meter is protected throughout by double or reinforced insulation

### **Organizations that provide rules and guidelines for proper grounding**

- The National Electrical Code (NEC)
- Underwriters Laboratories (UL)
- National Fire Protection Association (NFPA)
- American National Standards Institute (ANSI)
- Occupational Safety Health Administration (OSHA)
- Telecommunications Industry Standard (TIA)

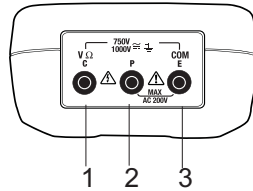
## Meter Description

1. Digital Display – See Display Description below
2. HOLD key – Freezes measurement value on display
3. 0 ADJ control- Adjusts Zero value on display
4. Backlight key – Turns on Backlight
5. TEST key – Enables Earth Resistance and Earth Voltage Tests
6. Function Selector switch – Selects desired range and function



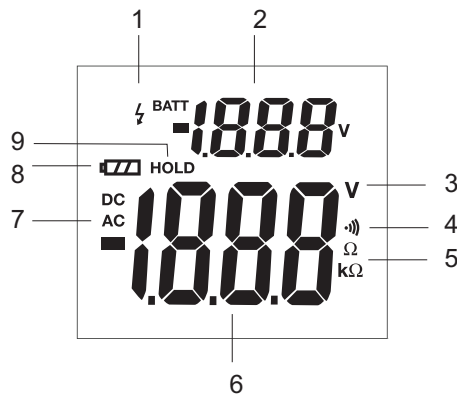
## Top View

1. V $\Omega$ /C Input
2. P Input
3. COM/E Input



## Display Description

1. Test status Icon
2. Battery Charge indicator -
3. Voltage Unit indicator
4. Audible Signal Icon
5.  $\Omega$ /k $\Omega$  Units Indicators
6. Measurement Value
7. AC/DC Voltage Indicators
8. Low Battery Icon
9. HOLD Icon



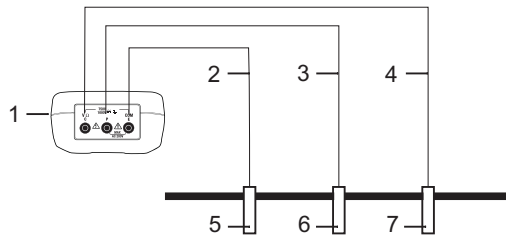
## Operation

### 0 Adjustment

1. Connect the test leads to the meter as follows:
  - a. Green lead to the 'E' terminal
  - b. Yellow lead to the 'P' terminal
  - c. Red lead to the 'C' terminal
2. Set the function selector switch to the desired measurement range.
3. Short the 3 test leads together.
4. Press the TEST key.
5. Use the 0 Adjust knob to adjust the displayed reading to  $0\Omega$ .
6. Press to TEST key again to end the 0 adjustment process.

### Test Connection Diagram

1. 382252 Meter
2. Green Test Lead
3. Yellow Test Lead
4. Red Test Lead
5. Existing Ground
6. P1 Auxiliary Earth Bar
7. C1 Auxiliary Earth Bar




### Test Preparation and Setup

1. Connect the test leads to the meter (1) as follows:
  - Green lead (2) to the 'E' terminal
  - Yellow lead (3) to the 'P' terminal
  - Red lead (4) to the 'C' terminal
2. Drive the Auxiliary Earth Bars P1 (6) & C1 (7) into the ground. Align the bars equidistant to the existing Earth ground connection and in a straight line as shown in the diagram above. If the auxiliary bars are placed in close proximity to the ground stake, measurement inaccuracies will result.
3. Connect the clamp ends of the test leads to the Earth bars and existing ground connection as shown above:
  - Green lead (2) to the existing ground (5)
  - Yellow lead (3) to Earth Bar P1 (6)
  - Red lead (4) to the Earth Bar C1 (7)

### Earth Voltage Test

1. Set the function on the selector's switch to the EARTH VOLATAGE position.
2. Confirm that the voltage measurement is less than 10V AC; otherwise accurate Earth resistance measurements cannot be made. If voltage is present (higher than 10V AC), the source of the voltage must be found and corrected before testing can continue.
3. Press to TEST key to end the test. Note the LCD reading.

### Earth Resistance Test


1. Set the meter's function switch to the desired resistance range.
2. Press the TEST button. . The “” icon will flash and the audible signal will sound.
3. Note the displayed reading.
4. If high resistance is detected, note the value and take appropriate steps to correct the ground connection if necessary.
5. Press to TEST key to end the test.
6. Readings of “1”...Ω are typical when the test leads are not connected to the meter.

### HOLD Function

The Hold function freezes the latest measurement reading on the LCD.

1. Press the HOLD key to freeze the reading on the LCD
2. Press the HOLD key again to exit the HOLD function.
3. The HOLD function does not retain measurement data if the meter is turned off.

### Backlight

1. Press the “” key to turn on the backlight.
2. The backlight will turn off after approximately 15 seconds.

### 200kΩ Resistance Measurement

1. Connect the red test lead to the VΩ connector and the black test lead to the COM connector.
2. Set the function selector switch to the 200kΩ position.
3. Connect the test probes to the circuit or component under test.
4. Note the displayed Resistance value.

### AC Voltage Measurement

1. Connect the red test lead to the VΩ connector and the black test lead to the COM connector.
2. Set the function selector switch to the 750V AC position.
3. Connect the test probes to the circuit under test.
4. Note the displayed Voltage value.


### DC Voltage Measurement

1. Connect the red test lead to the VΩ connector and the black test lead to the COM connector.
2. Set the function selector switch to the 1000V DC position.
3. Connect the test probes to the circuit under test.
4. Note the displayed Voltage value.

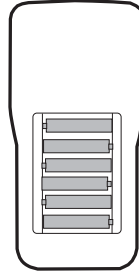
## Maintenance

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### Battery Replacement

When the low battery icon '  ' appears on the LCD, the meter's batteries must be changed.

1. Remove power and disconnect the test leads from the meter.
2. Remove the tilt stand from the rear of the meter.
3. Remove the 4 battery compartment screws with a Phillips head screwdriver.
4. Remove the battery compartment cover and replace the six 1.5V 'AA' batteries.
5. Affix compartment cover and tighten screw.
6. Reattach the tilt stand.




### Cleaning and Storage

Periodically wipe the meter's case with a damp cloth and mild detergent; do not use abrasives or solvents. If the meter is not to be used for a period longer than 60 days, remove the batteries and store them separately.

## Specifications

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### General Specifications

Measurements	Earth Ground Resistance (in 3 ranges), Earth Voltage, AC Voltage to 750V and DC Voltage to 1000V
Display	Large LCD with dual display
Sampling Time	2.5 times per second
Test lead length	Red lead: 50' (15m), Yellow: 33' (10m), Green: 16' (5m)
Over-range indication	'1' displayed as most significant digit
Power supply	Six 1.5V 'AA' batteries (included)
Low battery indication	LCD displays  icon
Auto Power Off	After approximately 15minutes of use
Safety	EN-61010-1 category III
Weight	24.7oz. (700g) with batteries
Dimensions	7.9 x 3.62 x 2" (200 x 92 x 50 mm)
Supplied accessories	Multimeter Test leads (2), Earth Ground test leads (3), auxiliary earth bars (2), six 'AA' batteries, and carrying case
Operating Conditions	32°F to 104°F (0°C to 40°C), with < 80% RH
Storage Conditions	14°F to 140°F (-10°C to 60°C), with < 70% RH

### Measurement Specifications

Measurement	Range	Resolution	Accuracy
<b>Earth Ground Resistance</b>	20 $\Omega$	0.01 $\Omega$	$\pm$ (2% reading + 10 digits)
	200 $\Omega$	0.1 $\Omega$	$\pm$ (2% reading + 3 digits)
	2000 $\Omega$	1 $\Omega$	
<b>Earth Voltage</b> Frequency: 40 to 500Hz	0 to 200VAC	0.1V	$\pm$ (3% reading +3digits)
<b>Resistance</b>	0 to 200k $\Omega$	0.1k $\Omega$	$\pm$ (1% reading +2 digits)
	<b>Overload Protection:</b> 250 Vrms		
<b>AC Voltage</b> 40 Hz to 400Hz	0 to 750V	1V	$\pm$ (1.2% reading +10 digits)
	<b>Overload Protection:</b> 750 Vrms, Input Impedance: 10M $\Omega$		
<b>DC Voltage</b>	0 to 1000V	1V	$\pm$ (0.8% reading +3 digits)
	<b>Overload Protection:</b> 1000 Vrms, Input Impedance: 10M $\Omega$		

## Warranty


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**EXTECH INSTRUMENTS CORPORATION** (A FLIR COMPANY) warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website [www.extech.com](http://www.extech.com) for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

## Calibration and Repair Services

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**Extech offers repair and calibration services** for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.



**Support line (781) 890-7440**  
Technical support: Extension 200; E-mail: [support@extech.com](mailto:support@extech.com)  
Repair & Returns: Extension 210; E-mail: [repair@extech.com](mailto:repair@extech.com)  
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Extech Instruments Corporation, 285 Bear Hill Road, Waltham, MA 02451

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more info for Extech 382252

Phone: 01235 838 555

Email: [cs@airconcern.co.uk](mailto:cs@airconcern.co.uk)

Web: [www.airconcern.co.uk](http://www.airconcern.co.uk)

Air Concern Ltd, Building 173 Curie Avenue Harvell Didcot, Oxfordshire