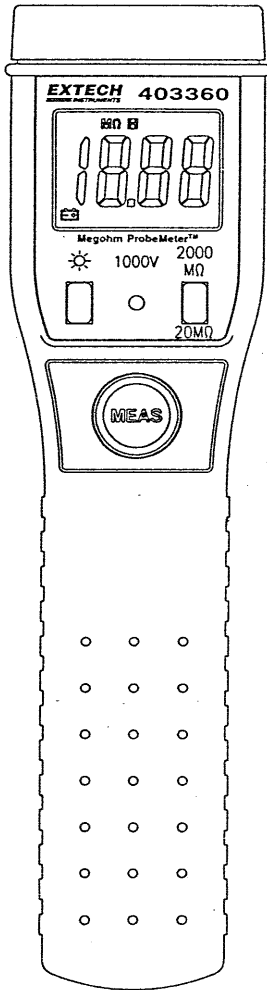


# OPERATING INSTRUCTIONS

## EXTECH 403360 CE

### MEGOHMMETER



## INTRODUCTION

This instrument is a portable easy use 3 1/2 digit, compact-sized digital megohmmeter designed for simplicity one hand operation. Provides 1000V to test insulation. Meter with Backlit LCD display, Auto-hold function and auto power off (15 seconds approx.) feature after releasing MEAS button to extend battery life with external power supply input jack (DC 6V).

## SAFETY INFORMATION

It is recommended that you read the safety and operation instructions before using the megohmmeter.

**WARNING**

Remove power from circuit under test.

**WARNING**

To avoid electrical shock remove test leads before opening case or battery cover. Do not operate with battery cover open.

The  $\Delta$  symbol on the instrument indicates that the operator must refer to an explanation in this manual.

## OPERATION

### Check of internal battery (E,L terminals open)

1. Depress the MEAS button.
2. The 1000V on LED lamp should light, indicating normal operation from the internal batteries.
3. If the 1000V on LED fails to light shown the batteries are completely worn or batteries are not installed in the meter. Since either of those conditions are possible, remove the battery cover and insert a set of four type AAA cells.
4. If the 1000V on LED lights (weakly) but the "E" LCD display lights, the batteries are near the end of their life and should be replaced immediately with new batteries.
5. To remove the battery cover, remove the centrally located case mounting screw and replace batteries.
6. After battery check is completed, releasing MEAS button.

### Insulation resistance measurements

1. Remove test tip and test lead from E,L terminals. (terminals open)
2. Depress MEAS button to turn on 1000V on LED lamp, check the display resistance range is 20MΩ range or 2000MΩ range. If resistance is 20MΩ range, releasing MEAS button then press range button one time to selected 2000MΩ range.
3. Connect the test tip to the "L" terminal and the clip lead to the "E" terminal of the meter.
4. Connect the clip to one end of the circuit to be measured, and the test tip to the other end.

## SPECIFICATIONS

### GENERAL

**Display:**  
3 1/2 digit liquid crystal display (LCD) with maximum reading of 1999

**Overrange:** (OL) or (-OL) is displayed

**Low battery indication:** the "E" is displayed when the battery voltage drops below the operating level

**Measurement rate:** 2.5 times per second, nominal.

**Operating Environment:** 0°C to 40°C at < 70% relative humidity

**Storage Temperature:** -20°C to 60°C, 0 to 80% R.H. with battery removed from meter

**For Indoor use only**

**Altitude:** UP to 2000m

**Safety:** According to EN61010-1 protection class II over-voltage category (CAT II 600V) pollution degree 2.

**Auto power off:** 15 seconds approx

**Standby consume current:** < 1μA

**External power:**  
6VDC 1A

**Battery:**  
4 pcs 1.5V (AAA size) UM-4 R03

**Battery Life:**  
4 hours (continuity) typical with alkaline battery (@20MΩ range test 10MΩ resistor)

**Dimensions:**  
170mm(H) x 44mm(W) x 40mm(D)

**Weight:** 160g including batteries

5. Depress the MEAS button. The 1000V pilot LED lamp will light and the resistance value will be displayed in the meter. When display reading stable, releasing MEAS button, the meter will automatically hold the display reading then turns off automatically after 15 seconds.
6. For open circuits or values of resistance over 2000MΩ, the meter will treat the resistance value as infinite and display a "OL" only.
7. When measuring values of resistance below 20MΩ on the 2000MΩ range, measurement error is great. Releasing MEAS button then press range button one time to selected 20MΩ range, re-depress the MEAS button.
8. When measuring values of resistance below 5MΩ on any range. The 500V on LED will fail to light or lights weakly.

This is due to the large power consumed when measuring such small resistances.

## PRECAUTIONS

### E and L terminars

If one point of the circuit to be measured is connected to ground, connect that part of the circuit to the E side measurement lead. This is a safety measure. In general, however, either terminal of the meter may be used for the ground side connection.

When the 1000V on LED is lighted, 1000V is present between the E and L terminals. Please be caution when handling the instrument in this condition.

## ELECTRICAL

**Range:** 20MΩ, 2000MΩ  
**Resolution:** 10KΩ on 20MΩ range  
1MΩ on 2000MΩ range

### Accuracy:

20MΩ range:  $\pm(2\% \text{rdg} + 2\text{dpts})$   
2000MΩ range:  $< 500\text{M}\Omega \pm(4\% \text{rdg} + 2\text{dpts})$   
 $> 500\text{M}\Omega \pm(5\% \text{rdg} + 2\text{dpts})$

**Rated voltage:** DC-DC converter to 1000VDC  
**Accuracy temperature:** 23°C  $\pm$  5°C less than 70%RH  
**Temperature Coefficient:** 0.1X (specified accuracy)/°C (< 18°C or > 28°C)

## OPERATING INSTRUCTIONS

### Push buttons

#### \* Display Back-Light Button

Releasing MEAS button then pressing "\*" button to toggle between turn on and turn off the Back-Light. When releasing MEAS button Back-Light will turn off automatically after 15 seconds to extend battery life.

### Range Select Button

Releasing MEAS button then press 20MΩ, 2000MΩ range select button to toggle between 20MΩ and 2000MΩ ranges.

### MEAS (MEASURE) Button

Depress MEAS button to turn on 1000VDC (red LED lighted) for measure insulation resistance. Releasing MEAS button to turn off 1000VDC and automatically hold the display reading, the meter turns off automatically after 15 seconds.

### The Low battery alarm

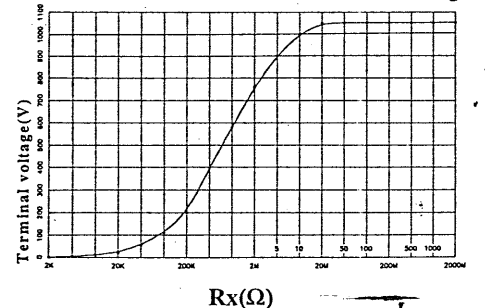
The battery alarm, the "E" is displayed when measuring very low values of resistance (below 500KΩ). This is due to the large power consumed when measuring such small resistances. When subsequent resistance measurements of high values result in the "E" disappearing, the meter batteries should be assumed to be normal.

If the 1000V on LED lights (weakly) but the "E" LCD display lights, the batteries are near the end of their life and should be replaced immediately with new batteries.

### Cleaning

Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.

### Insulation Resistance Measurement Terminal Voltage



	DANGEROUS VOLTAGE		SEE EXPLANATION IN MANUAL
	AC-ALTERNATING CURRENT		DOUBLE INSULATION (Protection ClassII)
	DC-DIRECT CURRENT		GROUND

International Electrical Symbols