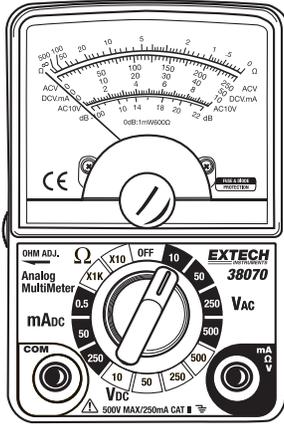


## User's Guide



### Analog Multimeter Model 38070



## Introduction

Congratulations on your purchase of the Extech model 38070 Analog Multimeter. This device measures AC/DC Voltage, DC Current, Resistance, and dB, displaying measurements in analog format. Properly used, this meter will provide many years of reliable service.



#### Support line (781) 890-7440

Technical support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

#### Product specifications subject to change without notice

For the latest version of this User's Guide, Software updates, and other up-to-the-minute product information, visit our website: www.extech.com  
Extech Instruments Corporation, 285 Bear Hill Rd., Waltham, MA 02451

#### WARNING: USE EXTREME CAUTION IN THE USE OF THIS DEVICE.

Improper use of this device can result in injury or death. Follow all safeguards suggested in this manual in addition to the normal safety precautions used in working with electrical circuits. DO NOT service this device if you are not qualified to do so.

## Safety Instructions

This meter has been designed for safe use, but must be operated with caution. The rules listed below must be carefully followed for safe operation.

- NEVER** apply voltage or current to the meter that exceeds the specified maximum:
- | Input Protection Limits |                |
|-------------------------|----------------|
| Function                | Maximum Input  |
| V DC or V AC            | 500V AC and DC |
| mA DC                   | 500mA DC       |
| Resistance              | 50V DC/AC      |
- USE EXTREME CAUTION** when working with high voltages.
  - DO NOT** measure voltage if the voltage on the "COM" input jack exceeds 500V above earth ground.
  - NEVER** connect the meter leads across a voltage source while the function switch is in the current or resistance mode. Doing so can damage the meter.
  - ALWAYS** discharge filter capacitors in power supplies and disconnect the power when making resistance tests.
  - ALWAYS** turn off power and disconnect test leads before opening the covers to replace the fuse or battery.
  - NEVER** operate the meter unless the back cover and the battery and fuse covers are in place and fastened securely.
  - If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

## Safety Symbols



This symbol adjacent to another symbol, terminal or operating device indicates that the operator must refer to an explanation in the Operating Instructions to avoid personal injury or damage to the meter.



This **WARNING** symbol indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.



This **CAUTION** symbol indicates a potentially hazardous situation, which if not avoided, may result damage to the product.



This symbol advises the user that the terminal(s) so marked must not be connected to a circuit point at which the voltage with respect to earth ground exceeds 500V.



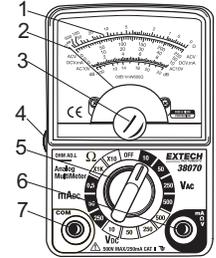
This symbol adjacent to one or more terminals identifies them as being associated with ranges that may, in normal use, be subjected to particularly hazardous voltages. For maximum safety, the meter and its test leads should not be handled when these terminals are energized.



This symbol indicates that a device is protected throughout by double insulation or reinforced insulation.

## Controls and Jacks

- Scale
- Pointer
- Scale zero adjust
- Ohms zero adjust
- Rotary function switch
- Positive V, mA and  $\Omega$  input jack
- COM input jack



## Specifications

Function	Range	Accuracy
DC Voltage	500V	± 4% of full scale
	250V	
	50V	
	10V	
AC Voltage (50/60Hz)	500V	± 5% of full scale
	250V	
	50V	
	10V	
DC Current	250mA	± 4% of full scale
	50mA	
	0.5mA	
Resistance	Rx10 (10,000 $\Omega$ )	± 5% of full scale
	Rx1k (1,000,000 $\Omega$ )	
Decibels	-10 to +56 dB (4 ranges)	0dB=1mW in 600 $\Omega$

<b>Max input voltage</b>	500V AC/DC
<b>Input Sensitivity,</b>	2k $\Omega$ /V
<b>Frequency Range</b>	50/60Hz
<b>Battery</b>	One (1) 1.5V AA battery
<b>Fuse</b>	500mA/250 fast blow (5mmx20mm)
<b>Operating Temperature</b>	41°F to 104°F (5°C to 40°C)
<b>Storage Temperature</b>	14°F to 122°F (-10°C to 50°C)
<b>Operating Humidity</b>	Max 80% up to 87°F (31°C) decreasing linearly to 50% at 104°F (40°C)
<b>Storage Humidity</b>	<80%
<b>Operating Altitude</b>	7000ft. (2000meters) maximum.
<b>Weight</b>	3.88oz (110g)
<b>Size</b>	3.82x3.34x1.3" (97x65x33mm)
<b>Safety</b>	For indoor use and in accordance with the requirements for double insulation to IEC1010-1 (1995); EN61010-1 (1995) Overvoltage Category II 500V, Pollution Degree 2. UL, CE Approved

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## ***Battery Installation***

**WARNING:** To avoid electric shock, always turn off the power and disconnect the test leads before opening the back to replace the fuse or battery.

1. Remove the screws securing the rear cover using a Phillips head screwdriver.
2. Lift the cover off and replace the battery observing the correct polarity.
3. Insert the new battery into the battery holder.

Replace the rear cover and secure with the screws. **WARNING:** To avoid electric shock, do not operate the meter until the battery cover is in place and fastened securely.

**NOTE:** If your meter does not work properly, check the fuses and battery to make sure that they are still good and that they are properly inserted.

## ***Operat***