

# HT Instruments M70 Digital Multimeter

## User Manual

### 1. INTRODUCTION

This manual provides essential information for the safe and effective use of the HT Instruments M70 Digital Multimeter. The M70 is a versatile instrument designed for electrical measurements, including insulation resistance testing at 250V, 500V, and 1000V. Please read this manual thoroughly before operating the device and retain it for future reference.

### 2. SAFETY INFORMATION

**WARNING: Failure to follow these safety instructions may result in electric shock, fire, or damage to the meter or the equipment under test.**

- Always inspect the meter, test leads, and accessories for damage before use. Do not use if damaged.
- Do not apply more than the rated voltage, as marked on the meter, between terminals or between any terminal and earth ground.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Always disconnect the test leads from the circuit before changing functions or ranges.
- Ensure the battery compartment is securely closed before operation.
- Do not operate the meter in explosive gas, vapor, or dust environments.
- Adhere to local and national safety codes.

### 3. PRODUCT OVERVIEW

The HT Instruments M70 is a robust digital multimeter capable of performing various electrical measurements, with a key feature being its insulation resistance testing capabilities at multiple voltage levels. Its compact design and clear digital display make it suitable for professional use.



**Figure 1:** Front view of the HT Instruments M70 Digital Multimeter, showing the display, rotary switch, and input jacks.

## 4. SETUP

### 4.1. Battery Installation

The M70 requires 4 AA batteries (included). To install or replace batteries:

1. Ensure the meter is turned off and disconnect all test leads.
2. Locate the battery compartment cover on the rear of the meter.
3. Unscrew the retaining screw(s) and remove the cover.
4. Insert the 4 AA batteries, observing correct polarity (+/-).
5. Replace the cover and secure it with the screw(s).

### 4.2. Connecting Test Leads

Connect the test leads to the appropriate input jacks on the multimeter based on the measurement function you intend to use. For most measurements, the black lead connects to the 'COM' jack and the red lead connects to the 'VΩmA' or '10A' jack, as indicated by the function selected.

## 5. OPERATING INSTRUCTIONS

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### 5.1. Powering On/Off

To power on the M70, rotate the function switch from the 'OFF' position to the desired measurement function. To power off, rotate the switch back to 'OFF'.

### 5.2. Function Selection

The large rotary switch on the front panel allows you to select various measurement functions, including:

- Voltage (AC/DC)
- Current (AC/DC)
- Resistance
- Continuity
- Diode Test
- Capacitance
- Frequency
- Insulation Resistance (250V, 500V, 1000V)

### 5.3. Insulation Resistance Measurement

The M70 offers insulation resistance testing at 250V, 500V, and 1000V. Follow these general steps:

1. Ensure the circuit under test is completely de-energized and safely isolated.
2. Select the desired insulation test voltage (250V, 500V, or 1000V) using the rotary switch.
3. Connect the test leads to the appropriate terminals of the device or circuit to be tested.
4. Press and hold the 'TEST' button to initiate the insulation test. The test voltage will be applied.
5. Read the insulation resistance value displayed on the screen.
6. Release the 'TEST' button to stop the test. The circuit will be discharged.
7. Always wait for the discharge to complete before disconnecting the test leads.

## 6. MAINTENANCE

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### 6.1. Cleaning

Wipe the meter's case 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 battery indicator appears on the display, replace the batteries as described in Section 4.1. Remove batteries if the meter is not used for extended periods to prevent leakage.

## 7. TROUBLESHOOTING

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- **No Display:** Check battery installation and charge. Replace batteries if necessary.
- **Incorrect Readings:** Ensure test leads are correctly connected, the function switch is set to the appropriate measurement, and the circuit under test is properly prepared.

- **Meter Does Not Respond:** Turn the meter off and then on again. If the issue persists, remove and reinsert batteries.
- **Insulation Test Fails:** Verify the circuit is de-energized. Check test lead connections. Ensure the 'TEST' button is held down firmly.

If problems persist, contact customer support.

## 8. SPECIFICATIONS

| Feature                        | Specification                              |
|--------------------------------|--|
| Brand                          | HT   |
| Model Number                   | M70  |
| Manufacturer                   | HT Instruments                             |
| Insulation Test Voltages       | 250V, 500V, 1000V                          |
| Power Source                   | Manual operation                           |
| Batteries                      | 4 AA (included)                            |
| Product Dimensions (L x W x H) | 24 x 11 x 5 cm (9.45 x 4.33 x 1.97 inches) |
| Item Weight                    | 997.9 grams (2.2 pounds)                   |
| ASIN                           | B003VNGT2G                                 |

## 9. WARRANTY

The HT Instruments M70 Digital Multimeter is covered by the manufacturer's standard warranty. Please refer to the warranty card included with your product or visit the HT Instruments official website for detailed warranty terms and conditions.

## 10. SUPPORT

For technical assistance, service, or further information regarding your HT Instruments M70, please contact HT Instruments customer support. Contact details can typically be found on the manufacturer's website or in the product packaging.