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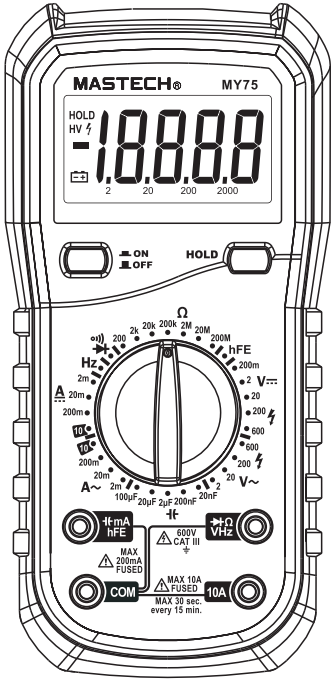
**MY75**

# DIGITAL MULTIMETER
## OPERATION MANUAL




CAT.III
600V

CE

# CONTENTS

**Limited Warranty And Limitation Of Liability....1**
Out of the Box ....1
Accessories ....1
Safety Information ....2
Certification ....5

**Introduction ....5**
Overview ....5
Figures and Components....6
Buttons and Components ....7
Display Description....7

**Using the Meter ....9**
Preparation ....9
DC/AC Voltage Measurement ....9
DC/AC Current Measurement ....11
Resistance Measurement....12
Diode ....13
Continuity ....13

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CONTENTS

Capacitance ....14
Frequency Measurement ....14
Transistor Gain ....15

**Specifications ....16**
General Specification ....16
Technical Specifications ....17

**Maintenance....21**
Replacing Batteries ....21
Replacing Fuse ....21
Test Leads Replacement....22
Cleaning and Decontamination....22

## Limited Warranty And Limitation Of Liability

This instrument will be free from defects in workmanship and material for three years from the Date of original purchase. This warranty does not cover defects resulting from damage caused by the user such as drops, neglect, misuse, unauthorized alteration, usage outside of specified conditions, contamination, or improper repair/maintenance. To receive service on the instrument if it becomes necessary during the warranty period, contact your nearest authorized service center. The above warranty in its entirety is inclusive and no other warranties, written or oral, are expressed or implied.

### Out of the Box

Check the Meter and accessories thoroughly before using the Meter. Contact your local distributor if the Meter or any components are damaged or malfunction.

### Accessories

| | |
|---|---|
| • Test Leads | 1set |
| • Multi-function Socket | 1pc |
| • 9V Battery | 1pc |
| • User's Manual | 1pc |



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### Safety Information

**⚠ WARNING**

**TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK, PRODUCT DAMAGE OR PERSONAL INJURY, PLEASE FOLLOW THE SAFETY INSTRUCTIONS DESCRIBED IN THE USER MANUAL. READ THE USER MANUALS BEFORE USING THE METER.**

**⚠ WARNING**

**TO ENSURE SAFE OPERATION AND LIFE OF THE METER, DO NOT PLACE THE METER IN ANY ENVIRONMENT WITH HIGH PRESSURE, HIGH TEMPERATURE, DUST, EXPLOSIVE GAS OR VAPOR.**

- Avoid shaking, dropping or any kind of impacts when using or transporting the Meter.
- To avoid electric shock or personal injury, repairs or servicing not covered in this manual should be performed only by qualified personnel.
- Avoid direct exposure to sunlight to ensure extended life of the Meter.

- Do not place Meter in a strong magnetic field; this may cause false readings.
- Use only the batteries indicated in the Technical Spec.
- Avoid exposing batteries to humidity. Replace batteries as soon as the low battery indicator appears.
- Please keep the original packing for future shipping purposes (ex. Calibration)
- After opening the box, check for any damage during delivery.

### Safety Symbols on the Meter

| | |
|---|---|
|  | Important safety information, please refers to the user manual |
|  | High voltage |
|  | Earth ground |
|  | Indicates compliance with requirements for double insulation |
|  | Possibility of high voltage |
|  | Fuse must be replaced with ratings specified in the manual. |





### ⚠ Important Safety Information

- Never use the Meter to measure voltages that might exceed 600V DC/600V AC above earth ground.
- Always be careful when working with voltages above 60V DC or 30VACRMS. Keep fingers behind the probe barriers while measuring.
- Never connect the Meter leads across a voltage source while the rotary switch is in the resistance, diode or continuity mode. Doing so can damage the Meter.
- Do not perform resistance, diode and continuity measurements on powered circuits.
- Never connect the Meter leads across a current source above 200mA while the test leads are in the mA-COM terminals. Doing so can damage the Meter
- Avoid direct exposure to sunlight to ensure extended life of the Meter.
- Inspect test leads and probes for cracks, breaks or crazes on the insulation before using the Meter.
- Before measuring current, check the Meter's fuses and turn off power to the circuit before connecting the meter to the circuit.
- Repair or maintenance should be implemented by trained personnel.

## Certification

- **CAT III:** This meter has meet En61010-1 standard with an overvoltage category (600V CAT III) and pollution degree 2.

CE The Meter is compiled to EMC requirements.

## Introduction

### Overview

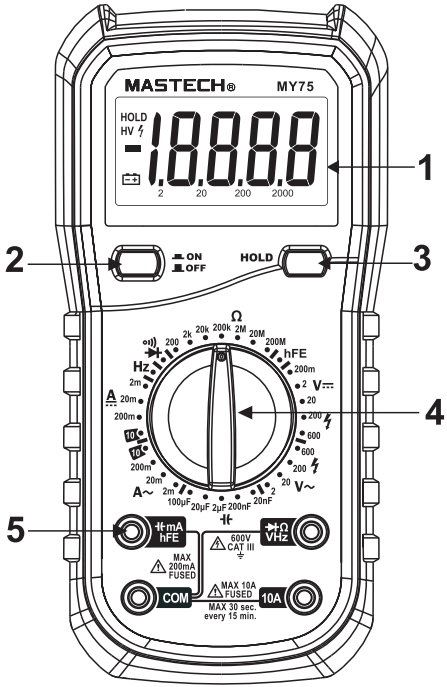
This manual is used for the Digital Multimeter (DMM). This Meter is designed to meet En61010-1 & CAT III 600V over voltage category and double insulation. The meter's holster is designed to give a high resistance against the shock of a drop. These operating instructions cover information on safety and cautions; please read relevant information carefully and observe all warnings.The DMM as general purpose measurement tool and is ideal for both professionals and hobbyists.





## Figures and Components

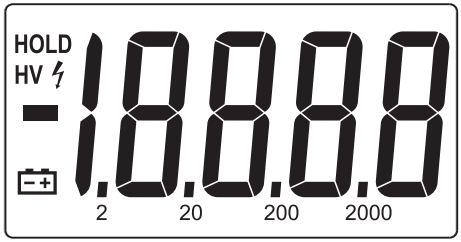
### Front Panel



## Buttons and Components

1. **Display:** 4 1/2 digit, (2000 count) LCD.
2. **Power Button**
3. **Hold Button:** to hold the last reading.
4. **Rotary switch:** to select functions and desired ranges.
5. **Input Sockets**

## Display Description



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## Table 1 Display Symbols

| Symbols | Indication |
|---|---|
| | Low battery.<br>⚠ To avoid wrong readings causing electric shock or personal injury, when the low battery symbol appears, the battery should be replaced immediately. |
| − | Negative input polarity indication |
| HOLD | Keep the current measurement value |

## Table 2 Input Socket

| Input Socket | Description |
|---|---|
| COM | All common input ends to be measured are connected with common output socket of black test probe or dedicated multifunction test socket. |
| V, Ω,Hz | Positive input end of voltage, resistance, frequency, diode, buzzer measurement (connected with the red test probe). |
| mA, hFE | Positive input end of current mA, capactiance and triode hFE (connected with output socket of black test probe or dedicated multifunction test socket). |
| 10A | Positive input end of 10A (connected with the red test probe). |

## Using the Meter

### Preparation

- Switch on the power by turning the rotary switch. If the battery voltage is lower than 7V, the" ⊟+ "symbol will appear and the batteries should be replaced.
- The "⚠"symbol next to the input lead shows that the input voltage or current should not exceed the specified value in order to protect the internal circuit from damage.
- Turn the rotary switch to the required function and range to be measured.
- Choose the highest range when the value to be measured is unknown.
- When making connection, connect the common test lead first and then the powered test lead.
- Removed the charged test lead first when disconnecting.

### Readings Hold

- Press **"HOLD"** button to hold the readings of current measurement.
- Press **"HOLD"** button again to release the hold.

### DC/AC Voltage Measurement

> ⚠ **WARNING**
>
> **USE CAUTION WHEN MEASUREING HIGH VOLTAGE CIRCUITS TO AVOID ELECTRICAL SHOCK AND INJURY. DO NOT TEST VOLTAGES HIGHER THAN 600V DC/600V AC.**



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- Plug the black test lead into the **"COM"** jack and the red test lead into the **"VΩ⊣◀Hz"** jack.
- Set the rotary switch to the **"V⎓"**position for DC measurement and **"V~"** for AC measurement and at the proper range.
- Connect the test leads to the voltage source or load for measurement.
- Read the value on the main indicator of the LCD. The polarity symbol denotes the polarity of the end connected by the red test lead.

### NOTE:

- At small voltage ranges, unsteady readings will appear before the test leads make contact with the circuit. This is normal since the Meter is highly sensitive. When the test leads are connected to the circuit, the true reading will be shown.
- When"1"is shown on the LCD, it means the measurement has exceeded the allowable range. A higher range should be selected.
- When the scale of the value to be measured is unknown, select the highest range first and lower the range accordingly.

## DC/AC Current Measurement

> ⚠ **WARNING**
>
> **USE CAUTION WHEN MEASUREING HIGH VOLTAGE CIRCUITS TO AVOID ELECTRICAL SHOCK AND INJURY. DO NOT TEST VOLTAGES HIGHER THAN 600V DC/AC.**

> ⚠ **WARNING**
>
> **TO AVOID ELECTRICAL SHOCK AND INJURY POWER OFF THE CIRCUIT AND DISCHARGE THE CAPACITANCE BEFORE MEASURING CURRENT.**

- Plug the black test lead into the **"COM"** jack.
- When the current to be measured is under 200mA, plug the red test lead into the **"mA"**jack; when the current to be measured is over 200mA but under 10A, plug the red test lead into the **"10A"** jack.
- Set the rotary switch to the **"A⎓"**position for DC measurement and **"A~"** for AC measurement and at the proper range.
- Connect the test leads to the circuit.
- Read the value on the display.
- The polarity symbol denotes the polarity of the red test lead.



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## NOTE:

- When '1' is shown on the LCD, it means the measurement has exceeded the allowable range; a higher range should be selected.
- When the scale of the value to be measured is unknown, select the highest range first and then lower the range accordingly.
- "⚠" indicates the maximum current of the mA jack is 200mA and the maximum current of the 10A jack is10A.At either jack, current exceeding the limit will blow the fuse.

## Resistance Measurement

> ⚠ **WARNING**
>
> **TO AVOID ELECTRICAL SHOCK AND INJURY POWER OFF THE CIRCUIT AND DISCHARGE THE CAPACITANCE BEFORE MEASURING RESISTANCE.**

- Plug the black test lead into the **"COM"** jack and the red test lead into the **"VΩ⊣◀⊢Hz "** jack.
- Set the rotary switch to the **"Ω"** position and at the proper range.
- Connect the test leads to the ends of the resistor or circuit.
- Read the value on the LCD.

**NOTE:**

When the input is open,“1”is displayed on the LCD to indicate overload. For measuring resistance above 1MΩ, it may take a few seconds to get a steady reading. This is normal for high resistance measurement.

### Diode

- Plug the black test lead into the **”COM”** jack and the red test lead into the **“VΩ→⊣Hz”** jack.
- Set the rotary switch to the “ →⊣ ”position
- Connect the red test lead to the anode and the black test lead to the cathode of the diode for testing.
- Read the value on the LCD.

**NOTE:**

- The Meter will show approximate forward voltage drop of the diode.
- When the test leads are reversed or opened, '1' will appear on the LCD.

### Continuity

> ⚠ **WARNING**
>
> **TO AVOID ELECTRICAL SHOCK AND INJURY POWER OFF THE CIRCUIT AND DISCHARGE THE CAPACITANCE BEFORE TESTING CONTINUITY.**



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- Plug the black test lead into the **“COM”** jack and the red test lead into the **“VΩ→⊣Hz”**jack.
- Set the rotary switch to the “ ”position.
- Connect the test leads to two ends of the circuit. If resistance of the circuit is less than 50Ω the built-in buzzer will sound. .

### Capacitance

> ⚠ **WARNING**
>
> **TO AVOID ELECTRICAL SHOCK AND INJURY POWER OFF THE CIRCUIT AND DISCHARGE THE CAPACITANCE BEFORE TESTING CAPACITANCE.**

- Plug the black test lead into the **“COM”** jack and the red test lead into the **“hFE ⊣⊢ mA”** jack.
- Set the rotary switch to the “ ⊣⊢ ”position and at the proper range.
- Connect the test leads to two ends of the circuit/ capacitor and read the value on the LCD.

### Frequency Measurement

- Plug the black test lead into the**”COM”** jack and thered test lead into the **“VΩ→⊣Hz”**jack.
- Set the rotary switch to the**“Hz”**position.
- Connect test leads to the two ends of the circuit for measurement.
- Read the value on the LCD.

### Transistor Gain

**⚠ WARNING**

**TO AVOID ELECTRICAL SHOCK AND INJURY DO NOT TESTWITH VOLTAGES HIGHER THAN 250V DC/AC.**

- Plug the multi-function socket with the **"IN"** end in the **"hFE mA"** jack and the **"COM"** end in the **"COM"** jack.
- Set the rotary switch to the **"hFE"** position and at the proper range.
- Determine if the transistor to be testes is either and NPN or PNP type, then insert the three pins of the transistor into the corresponding holes of the multi-function socket.
- Read the approximate transistor gain on the LCD.



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## Specifications

### General Specification

- Overload protection is provided for all modes (CAT II 1000V, CAT III 600V,pollution grade 2).
- Maximum voltage between terminals and earth ground: 600V DC/600V AC
- Display: LCD
- Maximum value display: 1999
- Polarity indication: automatic; "-"for negative polarity.
- Overload indication: "1"
- Auto power off time: 20min
- Resettable fuse: F1 400mA/600V (quick acting)
- Fuse protection: F2 10A/600V (quick acting)
- Power Supply : 9V batteries
- Battery low indication: "🔋"on LCD
- Operating Temperature: 0°C to 40°C (32°F to 104°F)
- Storage Temperature: 0°C to 60°C (32°F to 140°F)
- Dimension: 188×93×50mm (7.4x3.7x1.9in.)
- Weight: approximate 380g (13oz) including batteries

## Technical Specifications

### DC Voltage

| Range | Resolution | Accuracy |
|---|---|---|
| 200mV | 0.01mV | ±(0.05% of reading + 3digits) |
| 2V | 0.1mV | ±(0.1% of reading + 3digits) |
| 20V | 1mV | |
| 200V | 10mV | |
| 600V | 0.1V | ±(0.15% of reading + 3digits) |

- Max input voltage: 250V DC at 200mV range, 600V DC elsewhere.
- Input impedance: 10MΩ

**NOTE:**

- At small voltage ranges, unsteady readings will appear before the test leads make contact with the circuit. This is normal since the meter is highly sensitive. When the test leads connect to the circuit, the true reading will be shown.

### AC Voltage

| Range | Resolution | Accuracy |
|---|---|---|
| 2V | 0.1mV | ±(0.5% of reading +3digits) |
| 20V | 1mV | ±(0.8% of reading + 10digits) |
| 200V | 10mV | |
| 600V | 0.1V | ±(1.0% of reading +15 digits) |



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- Max input voltage: 250V AC at 200mV range, 600V AC elsewhere.
- Input impedance: 10MΩ
- Frequency response: 200Hz at 600V range, 40-400Hzelsewhere
- Response: Average (RMS of sine wave)

**NOTE:**

- At small voltage ranges, unsteady readings will appear before the test leads make contact with the circuit. This is normal since the meter is highly sensitive. When the test leads connect to the circuit, the true reading will be shown.

### DC Current

| Range | Resolution | Accuracy |
|---|---|---|
| 2mA | 0.1μA | ±(0.5% of reading + 50digits) |
| 20mA | 1μA | |
| 200mA | 10μA | ±(0.8% of reading + 50digits) |
| 10A | 1mA | ±(2.0% of reading + 10digits) |

- Overload protection:
  mA ranges: resettable fuse
  F1, 400mA/600V (quick acting)
  10A range: F2, 10A/600V fuse (quick acting).
- Max input current:
  mA jack (mA range): 200 mA
  10A jack: 10A

### AC Current

| Range | Resolution | Accuracy |
|---|---|---|
| 2mA | 0.1μA | ±(0.8% of reading + 50digits) |
| 20mA | 1μA | |
| 200mA | 10μA | ±(1.2% of reading + 50digits) |
| 10A | 1mA | ±(2.5% of reading + 10digits) |

- Overload protection:
  mA ranges: resettable fuse
  F1, 400mA/600V (quick acting).
  10A range: F2, 10A/600V fuse (quick acting).
- Max input current:
  mA jack (mA range): 200 mA
  10A jack: 10A
- Frequency response: 40-400Hz
- Response: Average (RMS of sine wave)

### Resistance

| Range | Resolution | Accuracy |
|---|---|---|
| 200Ω | 0.01Ω | ±(0.5% of reading + 10digits) |
| 2kΩ | 0.1Ω | ±(0.3% of reading + 3digits) |
| 20kΩ | 1Ω | ±(0.3% of reading + 1digits) |
| 200kΩ | 10Ω | |
| 2MΩ | 100Ω | |
| 20MΩ | 1kΩ | |
| 200MΩ | 10kΩ | ±(5.0% of reading + 10digits) |



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- Overload protection: 250V DC/AC
- Open circuit voltage: DC≈2.8V

### Diode Test

| | Resolution | Function |
|---|---|---|
|  | 0.1mA | Displaying approximate forward voltage of diode |

### Continuity Test

| | Function |
|---|---|
|  | Built-in buzzer will sound if resistance is lower than 60Ω. |

### Frequency

| Range | Resolution | Accuracy |
|---|---|---|
| 20kHz | 1Hz | ±(1.5% of reading + 5 digits) |

### Capacitance

| Range | Resolution | Accuracy |
|---|---|---|
| 20nF | 1pF | ±(4.0% of reading + 20 digits) |
| 200nF | 10pF | |
| 2μF | 0.1nF | |
| 20μF | 1nF | |
| 100μF | 100nF | |

### Transistor

| Range | Description | Test Condition |
|---|---|---|
| **hFE** | hFEapproximation (0-1000) | Base current 10μA Vce is about DC 2.8V |

## Maintenance

### Replacing Batteries

Follow these steps to replace batteries:
- Turn off the Meter.
- Unscrew battery cover and open
- Remove the batteries and replace the batteries with new batteries.
- Reattach the battery compartment door to the case bottom and tighten the screws.

### Replacing Fuse

Fuses rarely need replacement. Almost all blows are the result of operation error.
- Remove protective cover from meter
- Unscrew the screws located in the back of the Meter.
- Remove back cover of meter
- Replace the blown fuse with one at the specified rating.
- Put the back cover and protective cover back on and tighten the screws.



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### Test Leads Replacement

> ⚠ **WARNING**
>
> **REPLACE THE TEST LEADS WITH IDENTICAL OR COMPATIBLE LEADS. LEAD SPEC: 1000V 10A.**

Replace new leads if the current leads are worn.

### Cleaning and Decontamination

- The meter can be cleaned with a soft cloth to remove any oil, grease or grime.
- Do not use liquid solvent or detergent