

# MASTECH®

## Operating Instructions

### DC Voltage Measurement

1. Connect the red test lead to the “V” jack and the black lead to the “COM” jack.
2. Set rotary switch at desired 1000V  $\overline{\text{V}}$  position.
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display along with the polarity of the red lead connection.

### AC Voltage Measurement

1. Connect the red test lead to “V~” jack and the black test lead to the “COM” jack.
2. Set the rotary switch at desired 750V~ position.
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display.

### AC Current Measurement

1. Set the rotary switch at desired A~ position.
2. Press the trigger to open transformer jaw and to clamp one conductor only, making sure that the jaw is firmly closed around the conductor.
3. Read current value on LCD display.
4. When only the figure “1” is displayed, it indicates overrange situation and the higher range has to be selected.

### Resistance Measurement

1. Connect the red test lead to “ $\Omega$ C” jack and black test lead to the “COM” jack (The polarity of red lead is positive “+”).
2. Set the rotary switch at desired “ $\Omega$ ” range position.

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3. Connect test leads across the resistor to be measured and read LCD display.
4. If the resistance being measured is connected to a circuit, turn off power and discharge all capacitors before applying test probes.

### NOTE:

1. If the resistance being measured exceeds the maximum value of the range selected or the input is not connected, an overrange indication “1” will be displayed.
2. When checking in-circuit resistance, be sure the circuit under test has all power removed and that all capacitors have been discharged fully.

### Audible Continuity Test

1. Connect red test lead to “ $\Omega$ C” jack, black test lead to “COM” jack.
2. Set range switch to “ $\overline{\text{C}}$ ” position.
3. Connect test leads to two points of circuit to be tested. If continuity exists, built-in buzzer will sound.

### Measuring Temperature

1. Set the rotary switch at 750C position.
2. Connect the red lead of “K” type thermocouple into the “ $\Omega$ C” jack and the black lead of “K” type thermocouple into the “COM” jack. The LCD display will show the current environment temperature.
3. Contacting the object be measured with the thermocouple probe.
4. Read temperature value on the LCD display.

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## Specifications

Accuracy is specified for a period of one year after calibration and at 18°C to 28°C (64°F to 82°F) with relative humidity to 80%.

### General

Maximum voltage between terminals and earth ground	CAT II 1000V and CAT III 600V
Display	LCD, 1999 counts, updates 2-3/ sec.
Polarity indication	“-” displayed for negative polarity.
Overrange Indication	Only figure “1” on the display.
Jaw opening capability	42mm (Max conductor size)
Power	9V battery, NEDA 1604 6F22 006P.
Low battery indication	“ $\overline{\text{L}}$ ” Appears on the display.
Operating Environment	0 to 40°C
Storage temperature	-10°C to 50°C
Temperature coefficient	0.1×specified accuracy) / °C (<18°C or >28°C)
Altitude	2000m
Size	250mm×99mm×43mm
Weight	Approx. 416g.

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## DC Voltage

Range	Resolution	Accuracy
1000V	1V	±1.0% of rdg ± 2 digits

Input Impedance: 10M $\Omega$

## AC Voltage

Range	Resolution	Accuracy
750V	1V	±1.0% of rdg ± 5 digits

Input Impedance: 10M $\Omega$

Frequency range: 40Hz to 400Hz. Response: Average responding, calibrated in rms. of a sine wave.

## AC Current

Range	Resolution	Accuracy
20A	0.01A	± 2.0% of rdg ± 5 digits
200A	0.1A	± 2.0% of rdg ± 5 digits
1000A	1A	± 2.0% of rdg ± 7 digits

Overload Protection: 1200A for 60 seconds maximum. Frequency range: 50Hz to 60Hz.

## Resistance

Range	Resolution	Accuracy
200 $\Omega$	0.1 $\Omega$	± 1.0% of rdg ± 3 digits
2000 $\Omega$	1 $\Omega$	± 1.0% of rdg ± 3 digits

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## Continuity

Range	Description
$\overline{\text{C}}$ )	If continuity exists (about less than 60 $\Omega$ ), built-in buzzer will sound.

## Temperature

Range	Resolution	Accuracy
400°C~750°C	1°C	±1.0% of rdg ± 5 digits
0°C~400°C	1°C	±1.0% of rdg ± 3 digits
-40°C~0°C	1°C	±1.0% of rdg ± 6 digits

## Replacing The Battery

### ⚠ WARNING

Before attempting to open the case of battery, always be sure that test leads have been disconnected from measurement circuits. Close case and tighten screws completely before using the meter to avoid electrical shock hazard.

If “ $\overline{\text{L}}$ ” appears on display, it indicates that the battery should be replaced. Use the following procedure to replacing the battery:

1. Disconnect test leads from any live source and remove the test leads from the input terminals of the meter. Push the ON/OFF switch to OFF.
2. The battery cover is secured to the bottom case by a screw. Using a screwdriver, remove the screw from the battery cover and remove the battery cover.

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3. Remove battery and replace with a new equivalent 9 volt battery.
4. Replace the battery cover and reinstall the screw.

## Accessories

- Operator's instruction manual
- Set of test leads
- “K” type thermocouple
- Gift box
- 9 volt battery. NEDA 1604 6F22 006P type.

### ⚠ CAUTION:

Using this appliance in an environment with a strong radiated radio-frequency electromagnetic field (approximately 3V/m), may influence its measuring accuracy. The measuring result can be strongly deviating from the actual value.



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