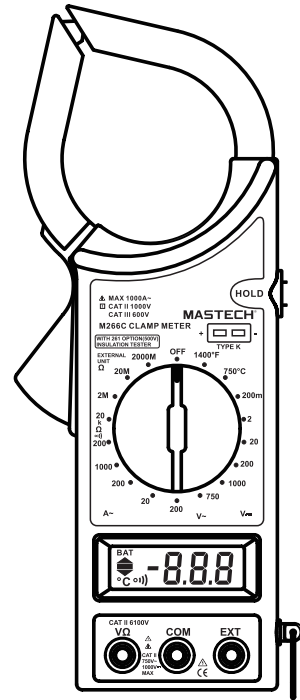


MASTECH®

M266C

**DIGITAL CLAMP MULTIMETER  
OPERATOR'S INSTRUCTION MANUAL****MASTECH®****1. Safety Information**

The meter is completely portable, LCD, 3 1/2 digit clamp meter with insulation test function ( with option 500V insulation tester unit ). It has been designed according to IEC-1010 concerning electronic measuring instruments with an overvoltage category( CATII 1000V CAT III 600V ) and pollution 2 and safety requirements for hand-held current clamps for electrical measurement and test. Follow all safety and operating instructions to ensure that the meter is used safely and is kept in good operating condition.

**1.1 Preliminary**

- \* When using this meter, the user must observe all normal safety rules concerning:
  - Protection against the dangers of electronic current.
  - Protection of the meter against misuse.
- \* Full compliance with safety standards can be guaranteed only if used with test leads supplied. If necessary, they must be replaced with the same model or same electronic ratings. Measuring leads must be in good condition.

**1.2 During Use**

- \* Never exceed the protection limit values indicated in specifications for each range of measurement.
- \* When the meter is linked to measurement circuit, do not touch unused terminals.
- \* When the value scale to be measured is unknown beforehand, set the range selector at the highest position.
- \* Before rotating the range selector to change function, disconnect test leads from the circuit under test.

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- \* When carrying out measurements on TV or switching power circuits, always remember that there may be high amplitude voltage pulses at test points which can damage the meter.
- \* Never perform resistance measurements on live circuits.
- \* Always be careful when working with voltage above 60V dc or 30V ac rms. Keep fingers behind the probe barriers while measuring.
- \* When the jaw opening and to the conductor under test, your fingers must keep behind the barrier indicator . The barrier or tactile indicator shall warn the operator of the limit of safe access.
- \* Never ground yourself when talking electrical measurement ,do not touch exposed metal pipes , outlets, fixtures, etc., which might be at ground potential. Keep your body isolated from ground by using dry clothing, rubber shoes ,or any approved insulating material.
- \* components should not be connect the temperature measuring socket when making voltage measurement with test leads.

**1.3 Symbols**

- ⚠ Important safety information .refer to the operating manual.
- ⚡ Dangerous voltage may be present.
- ⏚ Earth ground
- ☐ Double insulation ( Protection class II ).

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**MASTECH®****1.4 Maintenance**

- \* Before opening the meter, always disconnect test leads from all sources of electric current.
- \* If any faults or abnormalities are observed, the meter can not be used any more and it has to be checked out.
- \* Never use the meter unless the back cover and the battery cover are in place and fastened fully.
- \* Do not use abrasives or solvents on the meter, use a damp cloth and mild detergent only.

**2. Description**

This meter is one of a series portable 3 1/2 digital clamp meter for measuring DC and AC Voltage, AC current, resistance, continuity test and insulation test. Some models also provide frequency or temperature test. Full overload protection. Low battery indication and over-range indication are providing. Following table shows function of the series of clamp meter.

FUNCTION	M266	M266F	M266C
ACV DCV	※	※	※
ACA	※	※	※
Ω	※	※	※
→		※	
o  )	※	※	※
INSULATION	※	※	※
TEMP			※
FREQ		※	

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**MASTECH®****2.1 FUNCTION AND RANGE SELECTOR**

A rotary switch is used to measurement Functions and Ranges. When the switch is set to OFF position, the meter does not operate.

**2.2 TRANSFORMER JAWS**

Pick up the AC current flowing through the conductor. Press the TRIGGER to open the transformer jaws. When the finger press on the TRIGGER is released, the jaws will close again.

**2.3 DATA HOLD**

A push switch( Push ON,Push OFF. All ACA, ACV, DCV, HZ ranges with this feature )

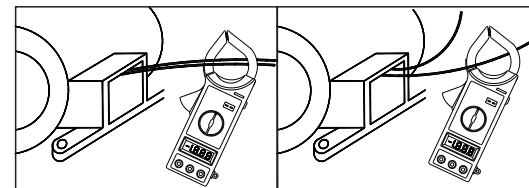
**2.4 INPUT JACKS**

This meter has three input jacks that are protected against overload to the limits shown. During use connect the black test lead to COM jack and connect red test lead to VΩ jack. The red test lead is depended on function selected. The EXT jack is used for accept insulation tester unit EXT banana plugs, when measurement insulation resistance.

**3. Operating Instruction****3.1 Measuring Current**

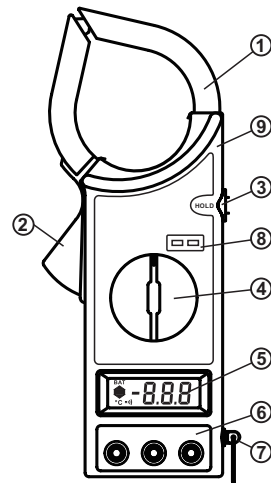
1. Set the rotary switch at desired A~ range position. Press the trigger to open the transformer jaws and clamp onto one conductor only( Fig1 ), The transformer jaws pick up the AC current flowing through the conductor.
2. When only the figure " 1 "displayed,it indicates overrange situation and the higher range has to be selected.

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WRONG

CORRECT

**FRONT PANEL**

1. TRANSFORMER JAWS
2. TRIGGER
3. DATA HOLD SWITCH
4. ROTARY SWITCH
5. LCD DISPLAY
6. INPUT JACKS
7. DROP - PROOF WRIST STRAP
8. TEMPERATURE MEASURING SOCKET
9. BARRIER OR TACTILE INDICATOR

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### 3.2 Insulation Test

( Option 500V insulation tester unit )

1. Connect the insulation tester unit VΩ;COM;EXT three banana plugs to the clamp meter VΩ;COM;EXT.
2. Set the rotary switch of clamp meter at 2000MΩ position.
3. Set the insulation tester unit range switch to the 2000MΩ position.
4. Use the insulation tester unit of the test leads connect its L;E input connect to being tested installation's. ( Test installation's must be power OFF.)
5. Set the insulation tester power switch to the ON position.
6. Depress the PUSH 500V push-push switch, the 500V on red LED lamp will light. Clamp meter display reading is the insulation resistance value. If the reading is below 19MΩ, change clamp meter and insulation tester unit to 20MΩ range, can be increase the accuracy.
7. If the insulation tester unit is not use, the power switch must shift to power OFF position, and the test leads must leave the E. L input connect. That can be increase battery life and prevent electrical shock hazard.

### 3.3 Measuring Voltage

1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.
2. Set the rotary switch at the desired V $\overline{\sim}$  or V~range position and connect test leads across the source or load under measurement.  
The polarity of the red lead connection will be indicated along with the voltage value when making DC voltage measurement.
3. When only the figure “ 1 ”is displayed,it indicates overrange situation and the higher range has to be selected.

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### 3.4 Measuring Resistance

1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.
2. Set the rotary switch at desired Ω position and connect test leads across the resistor under measurement.

#### 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.

### 3.5 Testing Diode

1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack. (The polarity of red lead is“ + ”)
2. Set the rotary switch at  $\rightarrow$  position and connect red lead to the anode, black lead to the cathode of the diode under testing. The meter will show the approx. forward voltage of the diode. If the lead connection is reversed, only figure“ 1 ”displayed.

### 3.6 Continuity Test

1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.  
(The polarity of the red lead is positive“ + ”)
2. Set the rotary switch at  $\rightarrow$  position and connect test leads across two points of the circuit under testing.  
If continuity exists (i.e., resistance less than about 50Ω), built -in buzzer will sound.

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### 3.7 Measuring Temperature

1. Set the rotary switch at °C or °F position and the LCD display will show the current environment temperature.
2. Insert“ K ”type thermocouple into the temperature measuring socket on the front panel and contact the object to be measured with the thermocouple probe.  
Read LCD display.

#### Warning

To avoid electric shock, be sure the thermocouple has been removed before changing to another function measurement.

### 3.8 Measuring Frequency

1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.
2. Set the rotary switch at Hz position and connect test leads across the source or load under measurement.

#### NOTE:

1. Reading is possible at input voltage above 10V rms, but the accuracy is not guaranteed.
2. In noisy environment, it is preferable to use shield cable for measuring small signal.

### 4. 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%.

### 4.1 General

Display	3 1/2 digit LCD, with automatic polarity indication
Measuring Method	dual-slope integration A-D converter system.
Overrange Indication	“1” Figure only in the display

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Max. Voltage Between Terminals And Earth Ground	CAT II 1000V CAT III 600V
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Environment	-10°C to 50°C (14°F to 122°F)
Power	9V alkaline or carbon-zinc battery (NEDA 1604 )
Accessories	Operating manual ,set of test leads
Low Battery Indication	“BAT” to left of display
Optional Accessories	Thermocouple ( K type )
Dimension	90(W) X 230(D) X 43(H) mm
Weight	320g( including battery )

### 4.2 AC Current

Range	Resolution	Accuracy
20A	0.01A	±4.0% of rdg ±5dgts
200A	0.1A	±2.5% of rdg ±5dgts
1000A	1A	±3.0% of rdg ±5dgts

Frequency Range: 50Hz to 60Hz Response: Average,  
Calibrated in rms of sine wave  
Overload protection: 1200A within 60 seconds. Jaw  
Opening: 2" (5cm)

### 4.3 Insulation Test

(With option 500V insulation tester unit)

Range	Resolution	Accuracy	Note
20MΩ	10kΩ	±2.0% of rdg ±2dgts	
2000MΩ	1MΩ	±4.0% of rdg ±2dgts ±5.0% of rdg ±2dgts	≤ 500MΩ >500MΩ

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### 4.4 AC Voltage

Range	Resolution	Accuracy
200V	0.1V	±1.0% of rdg ±4dgts
600V	1V	±1.2% of rdg ±4dgts

Input Impedance: ≥9MΩ on all ranges  
Overload protection:600V peak or 600Vrms AC  
on all ranges.  
Frequency Range: 50Hz to 500Hz  
Response: Average, calibrated in rms of sine wave

### 4.5 DC Voltage

Range	Resolution	Accuracy
200mV	0.1mV	±0.5%of rdg ±1 digit
2V	1mV	±0.5% of rdg ±3digit
20V	10mV	±0.5% of rdg ±3digit
200V	0.1V	±0.5% of rdg ±3digit
600V	1V	±0.8% of rdg ±3digits

Input Impedance: ≥9MΩ  
Over protection:250Vrms AC for 200mV range.  
600V peak or 600V rms AC for other range

### 4.6 Resistance

Range	Resolution	Accuracy
200Ω	0.1Ω	±1.0%of rdg±5 digits
2kΩ	1Ω	±1.0% of rdg ±8digit
20kΩ	10Ω	
200kΩ	100Ω	
2MΩ	1kΩ	

Overload protection:250V DC OR 250Vrms AC on all ranges.  
Open circuit voltage: 700mV

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### 4.7 Temperature

Range	Resolution	Accuracy	
		0°C to 400°C (32°F to 752°F)	400°C to 750°C (752°F to 1382°F)
0°C to 750°C	1°C	±1.0% of rdg 3 digits	±2.0% to rdg 3 digit
32°F to 1382°F	1°F		

### 4.8 Frequency

Range	Resolution	Accuracy
2kHz	1Hz	±2.0%of rdg±5 digits

### 5. Accessories

#### 5.1 Supplied with the multimeter

Test Leads	HYTL- 266
Battery	9V NEDA 1604 or 6F22
Operating Manual	HYS007037

#### 5.2 Optional accessory

“K”type thermocouple	HYTP - 010
INSULATION TESTER UNIT	261

### 6. Battery replacement

If the sign“BAT”appears on the LCD display, it indicates that battery should be replaced. Remove the battery cover of case. Replace the exhausted battery with a new one.

#### Warning

Before attempting to open the battery cover, be sure that test leads have been disconnected from measurement circuits to avoid electric shock hazard.

