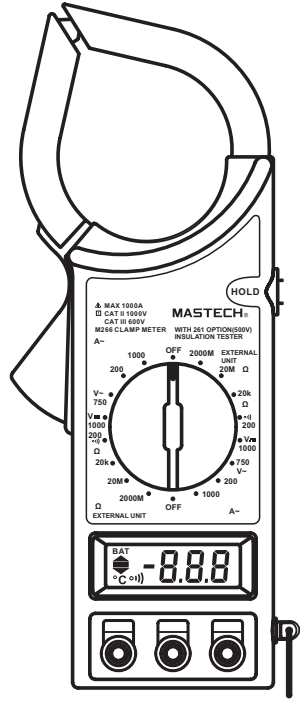


MASTECH®

M266SERIES

DIGITAL CLAMP MULTIMETER

OPERATOR'S INSTRUCTION MANUAL



01

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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 rugged structure, good feeling held in operator's hand and convenient use.

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.
- 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.

01

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2. Description

Never perform resistance measurements on live circuits.

Always is careful when working with voltage above 60V dc or 30V ac rms. Keep fingers behind the probe barriers while measuring.

1.3 Symbols

⚠ Important safety information .refer to the operating manual.

⚡ Dangerous voltage may be present.

⏏ Earth ground

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.

02

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2.1 Function and range selector

FUNCTION	M266	266F	266C
ACV DCV	✖	✖	✖
ACA	✖	✖	✖
Ω	✖	✖	✖
→		✖	
o  )	✖	✖	
INSULATION	✖	✖	✖
TEMPERATURE			✖
FREQUENCY		✖	

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.

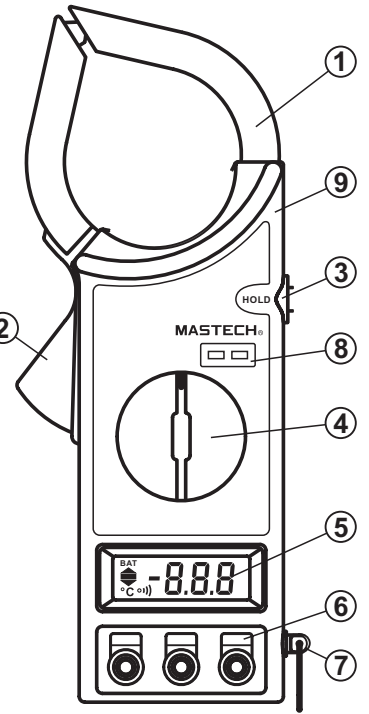
During use connect the black test lead to COM jack and connect red test lead to V jack. The red test lead is depended on function selected.

The EXT jack is used for accept insulation tester unit EXT banana Plugs, when measurement insulation resistance.

03

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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

04

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3. Operating instruction

3.1 Measuring current








- 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.
- When only the figure" 1 "displayed, it indicates overrange situation and the higher range have to be selected.

3.2 Insulation Test

(Option 500V insulation tester unit)

- Connect the insulation tester unit VΩ; COM; EXT three banana plugs to the clamp meter VΩ; COM; EXT.
- Set the rotary switch of clamp meter at 2000MΩ position.
- Set the insulation tester unit range switch to the 2000MΩ position.
- Uses the insulation tester unit of the test leads connects its L; E input connect to being tested installations. (Test installation's must be power OFF)
- Set the insulation tester power switch to the ON position.

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<div>MASTECH®</div> <div>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.</div> <div>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.</div> <div>3.3 Measuring voltage</div> <div>1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.</div> <div>2. Set the rotary switch at the desired V  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.</div> <div>3. When only the figure“ 1 ”is displayed, it indicates overrange situation and the higher range has to be selected.</div> <div>3.4 Measuring resistance</div> <div>1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.</div> <div>2. Set the rotary switch at desired Ω position and connect test leads across the resistor under measurement.</div> <div>NOTE:</div> <div>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.</div> <div>2. When checking in - circuit resistance, be sure the circuit under test has all power removed and that all capacitors have been discharged fully.</div>		<div>MASTECH®</div> <div>3.5 Testing diode</div> <div>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“ + ”)</div> <div>2. Set the rotary switch at  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.</div> <div>3.6 Continuity test</div> <div>1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.</div> <div>(The polarity of the red lead is positive“ + ”)</div> <div>2. Set the rotary switch at  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.</div> <div>3.7 Measuring temperature</div> <div>1. Set the rotary switch at °C or °F position and the LCD display will show the current environment temperature.</div> <div>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.</div> <div> Warning</div> <div>To avoid electric shock, be sure the thermocouple has been removed before changing to another function measurement.</div> <div>3.8 Measuring frequency</div>		<div>MASTECH®</div> <div>1. Connect the black test lead to the COM jack and the red test lead to the VΩ jack.</div> <div>2.Set the rotary switch at Hz position and connect test leads across the source or load under measurement.</div> <div>NOTE:</div> <div>1. Reading is possible at input voltage above 10V rms, but the accuracy is not guaranteed.</div> <div>2. In noisy environment, it is preferable to use shield cable for measuring small signal.</div> <div>4. Specifications</div> <div>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%.</div> <div>4.1 General</div> <table><tr><td>Display</td><td>3 1/2 digit LCD, with automatic polarity indication</td></tr><tr><td>Terminals and earth ground</td><td>1000V dc or 750V rms ac (sine)</td></tr><tr><td>Measuring Method</td><td>Dual-slope integration A-D converter</td></tr><tr><td>Overrange Indication</td><td>“1” Figure only in the display</td></tr><tr><td>Polarity indication</td><td>“-” displayed for negative polarity</td></tr><tr><td>Operating Temperature</td><td>0°C to 40°C (32°F to 104°F)</td></tr><tr><td>Storage Environment</td><td>-10°C to 50°C (14°F to 122°F)</td></tr><tr><td>Power</td><td>9V alkaline or carbon-zinc battery (NEDA 1604 )</td></tr><tr><td>Accessories</td><td>Operating manual ,set of test leads</td></tr><tr><td>Low Battery Indication</td><td>“BAT” to left of display</td></tr><tr><td>Optional Accessories</td><td>Thermocouple ( K type )</td></tr><tr><td>Dimension</td><td>90(W) X 230(D) X 43(H) mm</td></tr><tr><td>Weight</td><td>320g( including battery )</td></tr></table>		Display	3 1/2 digit LCD, with automatic polarity indication	Terminals and earth ground	1000V dc or 750V rms ac (sine)	Measuring Method	Dual-slope integration A-D converter	Overrange Indication	“1” Figure only in the display	Polarity indication	“-” displayed for negative polarity	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 )	<div>MASTECH®</div> <div>4.2 AC Current</div> <table><tr><th>Range</th><th>Resolution</th><th>Accuracy</th><th>Note</th></tr><tr><td>20A</td><td>10mA</td><td>±5.0% of rdg ±5digits</td><td></td></tr><tr><td>200A</td><td>100mA</td><td>±2.5% of rdg ±5digits</td><td></td></tr><tr><td>400A</td><td>1A</td><td>±2.5% of rdg ±5digits</td><td>≤ 600A</td></tr><tr><td>1000A</td><td>1A</td><td>±3.0% of rdg ±5digits</td><td>&gt;600A</td></tr></table> <div>Frequency Range: 50Hz to 60Hz Response: Average, Calibrated in rms of sine wave Overload protection: 1200A within 60 seconds. Jaw Opening: 2" (5cm)</div> <div>4.3 Insulation test</div> <div>(With option 500V insulation tester unit)</div> <table><tr><th>Range</th><th>Resolution</th><th>Accuracy</th><th>Note</th></tr><tr><td>20MΩ</td><td>1kΩ</td><td>±2.0% of rdg ±2digits</td><td></td></tr><tr><td rowspan="2">2000MΩ</td><td rowspan="2">1MΩ</td><td>±4.0% of rdg ±2digits</td><td>≤ 500MΩ</td></tr><tr><td>±5.0% of rdg ±2digits</td><td>&gt;500MΩ</td></tr></table> <div>4.4 AC Voltage</div> <table><tr><th>Range</th><th>Resolution</th><th>Accuracy</th></tr><tr><td>200V</td><td>0.1V</td><td>±1.0% of rdg ±4digits</td></tr><tr><td>750V</td><td>1V</td><td>±1.0% of rdg ±4digits</td></tr></table> <div>Input Impedance: ≥9M on all ranges Overload protection: 1000V DC or 750V AC on all ranges Frequency Range: 50Hz to 500Hz Response: Average, calibrated in rms of sine wave</div>		Range	Resolution	Accuracy	Note	20A	10mA	±5.0% of rdg ±5digits		200A	100mA	±2.5% of rdg ±5digits		400A	1A	±2.5% of rdg ±5digits	≤ 600A	1000A	1A	±3.0% of rdg ±5digits	>600A	Range	Resolution	Accuracy	Note	20MΩ	1kΩ	±2.0% of rdg ±2digits		2000MΩ	1MΩ	±4.0% of rdg ±2digits	≤ 500MΩ	±5.0% of rdg ±2digits	>500MΩ	Range	Resolution	Accuracy	200V	0.1V	±1.0% of rdg ±4digits	750V	1V	±1.0% of rdg ±4digits	<div>MASTECH®</div> <div>4.5 DC Voltage</div> <table><tr><th>Range</th><th>Resolution</th><th>Accuracy</th></tr><tr><td>200mV</td><td>0.1mV</td><td>±5.0% of rdg ±1digit</td></tr><tr><td>2V</td><td>1mV</td><td>±5.0% of rdg ±1digit</td></tr><tr><td>20V</td><td>10mV</td><td>±5.0% of rdg ±1digit</td></tr><tr><td>200V</td><td>0.1V</td><td>±5.0% of rdg ±1digit</td></tr><tr><td>1000V</td><td>1V</td><td>±0.8% of rdg ±2digits</td></tr></table> <div>Input Impedance: ≥9MΩ Over protection: 250Vrms AC for 200mV range 1000V DC or 750V AC for other range</div> <div>4.6 Resistance</div> <table><tr><th>Range</th><th>Resolution</th><th>Accuracy</th></tr><tr><td>200Ω</td><td>0.1Ω</td><td>±1.0% of rdg ±3digits</td></tr><tr><td>2kΩ</td><td>1Ω</td><td>±1.0% of rdg ±1digit</td></tr><tr><td>20kΩ</td><td>10Ω</td><td>±1.0% of rdg ±1digit</td></tr><tr><td>200kΩ</td><td>100Ω</td><td>±1.0% of rdg ±5digits</td></tr><tr><td>2MΩ</td><td>1kΩ</td><td>±1.0% of rdg ±5digits</td></tr></table> <div>Overload protection: 250V DC or 250Vrms AC on all ranges. Open circuit voltage: 700mV</div> <div>4.7 Temperature</div> <table><tr><th rowspan="2">Range</th><th rowspan="2">Resolution</th><th colspan="2">Accuracy</th></tr><tr><th>0°C to 400°C (32°F to 752°F)</th><th>400°C to 750°C (752°F to 1382°F)</th></tr><tr><td>0°C to 750°C</td><td>1°C</td><td rowspan="2">±1.0% of rdg ±3digits</td><td rowspan="2">±2.0% of rdg ±1digit</td></tr><tr><td>32°F to 1382°F</td><td>1°F</td></tr></table>		Range	Resolution	Accuracy	200mV	0.1mV	±5.0% of rdg ±1digit	2V	1mV	±5.0% of rdg ±1digit	20V	10mV	±5.0% of rdg ±1digit	200V	0.1V	±5.0% of rdg ±1digit	1000V	1V	±0.8% of rdg ±2digits	Range	Resolution	Accuracy	200Ω	0.1Ω	±1.0% of rdg ±3digits	2kΩ	1Ω	±1.0% of rdg ±1digit	20kΩ	10Ω	±1.0% of rdg ±1digit	200kΩ	100Ω	±1.0% of rdg ±5digits	2MΩ	1kΩ	±1.0% of rdg ±5digits	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 ±3digits	±2.0% of rdg ±1digit	32°F to 1382°F	1°F	<div>MASTECH®</div> <div>4.8 Frequency</div> <table><tr><th>Range</th><th>Resolution</th><th>Accuracy</th></tr><tr><td>2kHz</td><td>1Hz</td><td>±1.5% of rdg ±5digits</td></tr></table> <div>5. Accessories</div> <div>5.1 Supplied with the multimeter</div> <table><tr><td>Test Leads</td><td>HYTL- 266</td></tr><tr><td>Battery</td><td>9V NEDA 1604 or 6F22</td></tr><tr><td>Operating Manual</td><td>HYS004249A1</td></tr></table> <div>5.2 Optional accessory</div> <table><tr><td>“K”type thermocouple</td><td>HYTP - 010</td></tr><tr><td>INSULATION TESTER UNIT</td><td>261</td></tr></table> <div>6. Battery replacement</div> <div>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.</div> <div> Warning</div> <div>Before attempting to open the battery cover, be sure that test leads have been disconnected from measurement circuits to avoid electric shock hazard.</div> <div></div>		Range	Resolution	Accuracy	2kHz	1Hz	±1.5% of rdg ±5digits	Test Leads	HYTL- 266	Battery	9V NEDA 1604 or 6F22	Operating Manual	HYS004249A1	“K”type thermocouple	HYTP - 010	INSULATION TESTER UNIT	261
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