



HANDHELD DIGITAL CLAMP MULTIMETER
M266 Series



Users Manual



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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 according to IEC61010 concerning electronic measuring instruments with an over-voltage category (CATIII) 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.
- * 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 taking 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).

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.

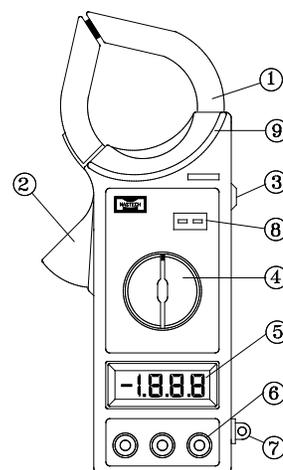
* Do not use abrasives or solvents on the meter, use a damp cloth and mild detergent only.

2 DESCRIPTION

This meter is one of a series handheld 3½ 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 provide. Following table shows function of the series of multimeter.

FUNCTION	266	266F	266C	266A
ACV	※	※	※	※
DCV				
ACA	※	※	※	※
Ω	※	※	※	※
		※		※
	※	※		※
INSULATI ON	※	※	※	
TEMP			※	
FREQ		※		
PEAK HOLD				※

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



2.1 FUNCTIONS 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 V Ω 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.

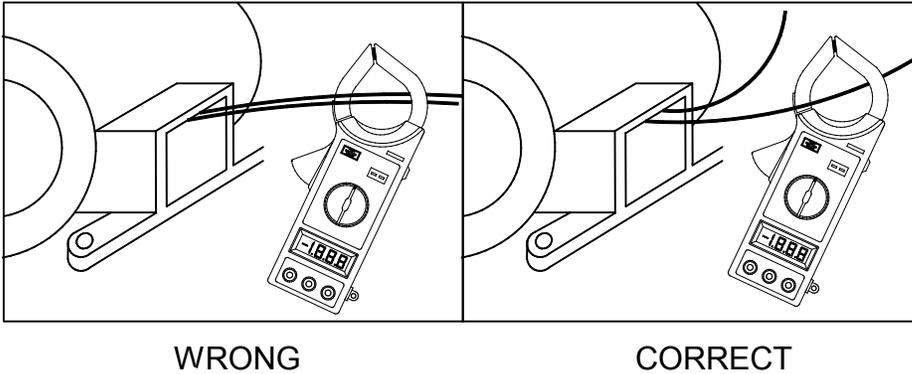


Fig1

3.2 INSULATION TEST

(Option 500V insulation tester unit)

1. Connect the insulation tester unit V Ω 、COM、EXT three banana plugs to the clamp meter V Ω 、COM、EXT.
2. Set the rotary switch of clamp meter at 2000M Ω position.
3. Set the insulation tester unit range switch to the 2000M Ω 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 19M Ω , change clamp meter and insulation tester unit to 20M Ω 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 V_{Ω} jack.
2. Set the rotary switch at the desired V_{-} or V_{\sim} 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.

3.4 MEASURING RESISTANCE

1. Connect the black test lead to the COM jack and the red test lead to the V_{Ω} 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 V_{Ω} jack. (The polarity of red lead is “ + ”)
2. Set the rotary switch at Ω 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 V_{Ω} jack. (The polarity of the red lead is positive “ + ”)
2. Set the rotary switch at Ω 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.

3.7 MEASURING TEMPERATURE

1. Set the rotary switch at $^{\circ}C$ or $^{\circ}F$ 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 V_{Ω} 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 10Vrms, 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	: 3½ digit LCD, with automatic polarity indication
Measuring Method	: Dual-slope integration A-D converter system.
Overrange Indication	: "1" Figure only in the display.
Max. Voltage Between Terminals And Earth Ground	: CAT II 600V
Operating Temperature	: 5°C to 35°C (21° F to 95° 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)×230(D)×43(H) mm
 Weight : 320g (including battery)

4.2 AC CURRENT

Range	Resolution	Accuracy	Note
20A	10mA	± 5.0% of rdg ± 5 digits	
200A	100mA	± 2.5% of rdg ± 5 digits	
600A	1A	± 2.5% of rdg ± 5 digits	≤ 600A
1000A	1A	± 3.0% of rdg ± 5 digits	> 600A

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
20M Ω	10K Ω	± 2.0% of rdg ± 2 digits	
2000M Ω	1M Ω	± 4.0% of rdg ± 2 digits ± 5.0% of rdg ± 2 digits	≤ 500M Ω > 500M Ω

4.4 AC VOLTAGE

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

Input Impedance: ≥ 9M Ω on all ranges

Overload protection: 600V AC/DC 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	$\pm 0.5\%$ of rdg ± 1 digit
2V	1mV	$\pm 0.5\%$ of rdg ± 1 digit
20V	10mV	$\pm 0.5\%$ of rdg ± 1 digit
200V	0.1V	$\pm 0.5\%$ of rdg ± 1 digit
600V	1V	$\pm 0.8\%$ of rdg ± 2 digits

Input Impedance: $\geq 9M \Omega$

Over protection: 600V AC/DC on all ranges.

4.6 RESISTANCE

Range	Resolution	Accuracy
200 Ω	0.1 Ω	$\pm 1.0\%$ of rdg ± 3 digits
2K Ω	1 Ω	$\pm 1.0\%$ of rdg ± 1 digit
20K Ω	10 Ω	$\pm 1.0\%$ of rdg ± 1 digit
200K Ω	100 Ω	$\pm 1.0\%$ of rdg ± 1 digit
2M Ω	1K Ω	$\pm 1.0\%$ of rdg ± 1 digit

Over protection: 600V AC/DC on all ranges.

Open circuit voltage: 700mV

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	$\pm 1.0\%$ of rdg ± 3 digits	$\pm 2.0\%$ to rdg ± 1 digit
32°F to 1382 °F	1 °F		

4.8 FREQUENCY

Range	Resolution	Accuracy
2KHz	1Hz	$\pm 1.5\%$ of rdg ± 5 digits

5 ACCESSORIES

5.1 SUPPLIED WITH THE MULTIMETER

Test Leads

Battery

Operating Manual

5.2 OPTIONAL ACCESSORY

“K” type thermocouple

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.

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