

DIGITAL CLAMP METER



IMPORTANT: before using your digital clamp meter , read and understand this owner's guide.

INSTRUCTION MANUAL

SPECIFICATIONS

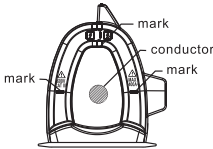
General Specifications

Safety rating	CAT III 600V, pollution degree 2
Max. op erating altitude	2000 m
Operating temperature	0~40°C, <80% RH
Storage temperature	-10~60°C, <70% RH (battery removed)
Temperature coefficient	0.1 accuracy/°C (<18°C or >28°C)
Max. voltage between terminals and ground	600V DC or AC rms
Sample rate	approx. 3 times/sec
Display	3 ½ digit LCD (Max. display: 1999)
Over-range indication	display only shows "1"
Low battery indication	when battery voltage drops below operating voltage, "  " symbol appears on the display
Polarity indication	automatically displays "-"
Power	3 x 1.5V AAA batteries
Dimensions	198 x 79 x 43.8 mm
Weight	approx. 260 g (with battery)
Max. jaw opening	26 mm

SPECIFICATIONS

Technical Specifications

Accuracy: ±(% of reading + digits), 1 year warranty.
Ambient temp: 18°~28°C, humidity: <75%.
Temperature coefficient: 0.1 accuracy/°C (0°~18°C or 28°~40°C)



For AC current measurement, keep the conductor in the center of the clamp; otherwise the reading can deviate as much as 1.5% of actual measurement.

DC Voltage

Measuring Range	Resolution	Accuracy
600V	1V	±(1.0% reading +3 dgt)

- Input impedance: 10M
- Overload protection: 600V DC or AC rms
- Max. input voltage: 600V DC

AC Voltage

Measuring Range	Resolution	Accuracy
600V	1V	±(1.5% reading +10 dgt)

- Overload protection: 600V DC or AC rms
- Max. input voltage: 600V AC rms
- Frequency range: 50 Hz~60 Hz
- Response: Average; calibrated to rms sine wave

SPECIFICATIONS

AC Current

Measuring Range	Resolution	Accuracy
2 mA	0.001 mA	±(2.0% reading +10 dgt)
20 mA	0.01 mA	
400 mA	0.1 mA	±(2.0% reading +5 dgt)

- Frequency range: 50Hz~60Hz
- Max. input current: up to 120% of full scale for no more than 60 seconds.
- Response: Average; calibrated to rms sine wave.

Resistance

Measuring Range	Resolution	Accuracy
2kΩ	1Ω	±(1.0% reading +5 dgt)

- Open circuit voltage: approx. 2.0V
- Overload protection: 250V DC or AC rms

Diode Test

Function	Resolution	Description
	0.001V	Shows approx. forward biased voltage drop

- Forward DC current: approx. 1mA
- Reverse DC voltage: approx. 2.7V
- Overload protection: 250V DC or AC rms

Continuity

Function	Description
	If the measured resistance is less than 50Ω, the meter's buzzer will sound.

- Open circuit voltage: approx. 2.7V
- Overload protection: 250V DC or AC rms

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model no. 052-0729-4 | contact us 1-800-689-9928

SAFETY INSTRUCTIONS

Introduction



WARNING

Make sure to read and follow all safety procedures to avoid electric shock and/or injury. **If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.**

The meter is a safe, reliable, yet small handheld 3 ½ digital clamp meter. Capable of measuring AC current, AC/DC voltage, resistance and continuity, it's ideal for both home users and professionals.

Safety instructions

The meter is designed and manufactured according to safety requirements of EN 61010-1:2010, EN 61010-2-032:2012, EN 61010-2-033:2012 on electronic measuring instrument and hand held digital multipurpose meter. And conforms to UL STD.61010-1,61010-2-032, 61010-2-033, Certified to CSA STD.C22.2 NO.61010-1, 61010-2-032, 61010-2-033.The product meets with the requirements of 600V CAT III and pollution degree 2.

- All safety guidelines outlined should be followed otherwise the protection provided by the instrument may be impaired.
- Warning symbols in the manual alert users of potential dangerous situations.
- Precautions are to prevent the user from damaging the instrument or the test object.



WARNING

The measurement category of a combination of a PROBE ASSEMBLY and an accessory is the lower of the measurement categories of the PROBE ASSEMBLY and of the accessory. (CAN/CSA-C22.2 NO. 61010-031)

Precautions

To avoid possible electric shock, personal injury or damage to the meter, please observe the following:

- Before using the meter, check the meter for damage during transport.
- Check the test leads for damage to the insulation or wires before use.
- Ensure the meter works properly by testing a known voltage first. If not working properly, have the meter serviced before using.

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SAFETY INSTRUCTIONS

- Never exceed the protection limit values indicated in the specifications for each range of measurement.
- Always use caution when making voltage measurements above 60V DC or 30V AC rms.
- Make sure to use the correct input jack, function and range when measuring.
- Do not place the meter in any environment with dust, explosive gas or vapour.
- Always keep fingers behind the probe barriers.
- Connect the common test lead first, then the hot lead. Disconnect in reverse order.
- Turn off power and discharge capacitors before measuring resistance, diodes or continuity.
- Failure to follow safety guidelines may prevent the meter's built in protection from working properly.
- To avoid damage or incorrect readings, check for AC voltage present before making DC voltage measurements.
- Do not use the meter with the battery cover not securely in place.
- When the "  " symbol appears, replace the batteries to avoid incorrect readings.
- Before opening the case, always disconnect test leads from all energized circuits.
- Only use the test leads provided with the meter. Replace only with similar leads with matching specifications.
- Do not touch input jacks during measurement to avoid electric shock.
- Before switching functions, remove test leads from a circuit.

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SAFETY INFORMATION

Safety symbols

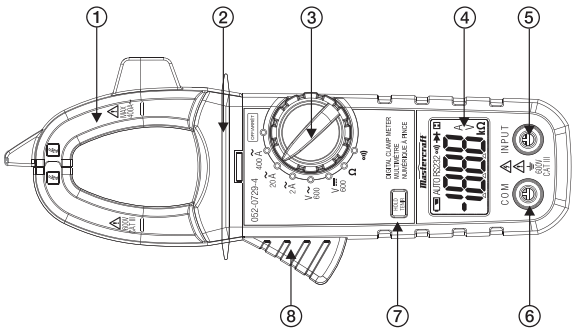
	Important safety information. See manual for details.
	Application around and removal from UNINSULATED HAZARDOUS LIVE conductors is permitted.
	Caution when testing on live conductors.
	Equipment protected throughout by double insulation or reinforced insulation.
	Conforms to UL STD. 61010-1, 61010-2-030, 61010-2-033, 61010-031; Certified to CSA STD C22.2 NO. 61010-1,61010-2-030, 61010-031, IEC STD.61010-2-033
	Complies with European Union (EU) standards
	Earth ground
	Direct current
	Alternating current

CAT III: MEASUREMENT CATEGORY III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.

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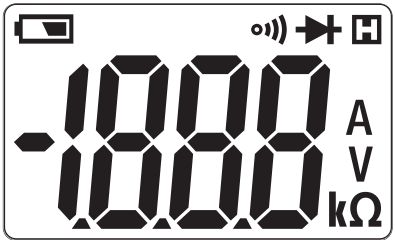
KEY PARTS DIAGRAM

Front pannel



No.	Description	
1	Current Clamp	For measuring AC current.
2	Safety barrier	Help to keep hands from touching conductors while measuring current.
3	Rotary Switch	Used to select function and range.
4	Display	Max. display value: 1999
5	Input Jack	Connection for the live (red) test lead for voltage, resistance, diode and continuity.
6	COM Jack	Connection for the common (black) test lead.
7	Hold Button	Press the "HOLD" button and the display will keep the reading on the screen. The "  " symbol appears on the display. Press the "HOLD" button again to return the display to normal.
8	Clamp Trigger	Press the trigger to open the clamp jaw; release to close.

Display



	Low Battery
	Volts (Voltage)
	Amps (Current)
	kilohms (Resistance)
	Continuity
	Diode
	Display Hold
	Polarity Indicator (Negative)

Data Hold

- The data hold function will keep the current reading on the display. To activate data hold:
- Press the “HOLD” button and the reading will be held on the display. The “” symbol appears.
 - Press “HOLD” again to release the hold.

DC Voltage

- Insert the red test lead in the “INPUT” jack and the black lead in the “COM” jack.
- Move the rotary switch to the “ 600” position. Connect the test leads across the circuit or load to be measured.
- Read measured voltage on the display.

AC Voltage

- Insert the red test lead in the “INPUT” jack and the black lead in the “COM” jack.
- Move the rotary switch to the “ 600” position. Connect the test leads across the circuit or load to be measured.
- Read measured voltage on the display.

WARNING

- Do not attempt to measure voltages above 600V DC and AC to prevent injury or damage to the meter.
- Use extra caution when measuring high voltages to avoid electric shock or damage.

AC Current

- Move the rotary switch to the “ 10A” position with the proper range.
- Press the trigger to open the clamp and insert one conductor inside the jaws. Only clamp one conductor; multiple conductors with different current directions will cancel out readings.
- Read measured current on the display.

CAUTION

- If the current range is not known before hand, set the range to the highest range and adjust down as necessary.
- When measuring bare wires, use extra caution to avoid electric shock.

Resistance

- Turn off all power and discharge capacitors on the circuit under test.
- Insert the red test lead in the “INPUT” jack and the black lead in the “COM” jack.
- Move the rotary switch to the “ 20k” position. Connect the test leads across the circuit to be measured.
- Read measured resistance on the display.

Tips for measuring resistance:

- Sometimes the resistor value and measured resistance differ. This is due to the meter’s output test current goes through all possible paths between leads.
- For low resistance measurements, short the test leads and record the resistance displayed. Then connect to the circuit and subtract the recorded resistance from the measurement for the most accurate results.

WARNING

- To avoid injury or damage to the meter, make sure to turn off all power and discharge all capacitors before measuring resistance.

Continuity

- Turn off all power and discharge capacitors on the circuit under test.
- Insert the red test lead in the “INPUT” jack and the black lead in the “COM” jack.
- Move the rotary switch to the “ ” position. Connect the test leads across the circuit to be measured.
- Read measured resistance on the display. If the measured resistance is less than 50Ω, the meter’s buzzer will sound.

WARNING

- To avoid injury or damage to the meter, make sure to turn off all power and discharge all capacitors before measuring continuity.

Diode Test

- Turn off all power and discharge capacitors on the circuit under test.
- Insert the red test lead in the “INPUT” jack and the black lead in the “COM” jack.
- Move the rotary switch to the “ ” position. Connect the test leads across the circuit to be measured.
- Read the measured forward biased voltage drop on the display. If the leads are reversed, only “1” is displayed.

WARNING

- To avoid injury or damage to the meter, make sure to turn off all power and discharge all capacitors before measuring diodes.

Maintenance



WARNING

- Protection impairment if used in a manner not specified by the manufacturer.

General Maintenance

This section provides basic maintenance principles, including cleaning and battery replacement. Do not attempt to do any repair or calibration to the meter unless you are experienced maintenance personnel.



WARNING

- Remove test leads from meter before opening the battery cover to avoid damage or injury.

Use a damp cloth and a small amount of detergent to clean the meter regularly. Do not use abrasives or chemical solvents. Dirty or wet input jacks can affect readings.

To clean the input jacks:

- Turn off meter and remove test leads.
- Wipe any debris off input jacks.
- Use a cotton swab with a cleaner/lubricant (i.e. WD-40) to clean jacks.
- Use a new swab for each jack to prevent cross contamination.

Replacing the Batteries



WARNING

- To avoid false reading that can lead to injury or damage to the meter, replace the battery as soon as the low battery symbol “ ” appears.
- Remove test leads and disconnect from all circuits before opening the battery cover.
- Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable (ni-cad, ni-mh, etc) batteries.

To replace the batteries:

- Power Supply: 3 x 1.5V AAA batteries.
- Turn off the meter and remove test leads.
- Unscrew the battery cover.
- Replace the used batteries with new ones. Be sure to observe polarity when replacing batteries.
- Replace battery cover and tighten before use.

Replacing Test Leads



WARNING

- Use meet EN 61010-031 standard, rated CAT III 600V or better test leads.



WARNING

- When replacing test leads, only use similar leads or leads with same specs as those provided. Lead specs: 600V, 10A

Replace test leads if leads become damaged or worn.

Accessories

ITEM	QUANTITY
User's manual	1 piece
Test leads	1 pair
Carry case	1 piece
AAA batteries (1.5V)	3 pieces

WARRANTY

This Mastercraft product carries a one (1) year warranty against defects in workmanship and materials. This product is not guaranteed against wear or breakage due to misuse and/or abuse.

Made in China

Imported by Mastercraft Canada Toronto, Canada M4S 2B8