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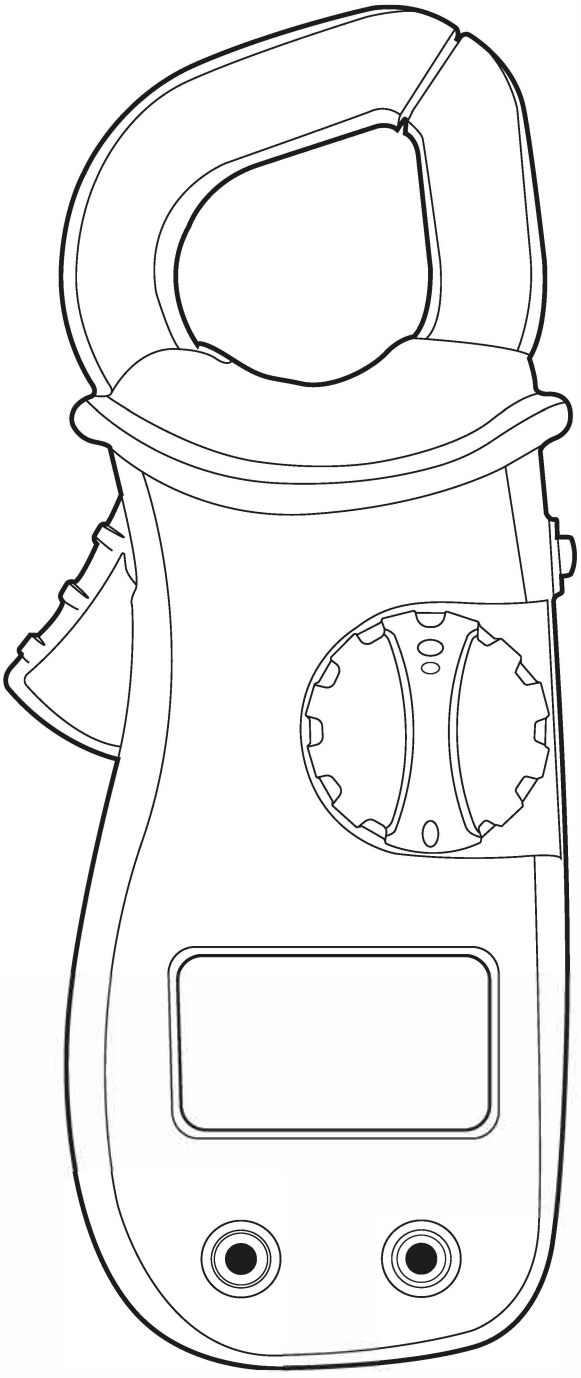


Mini Clamp Meter

User Manual

Read this manual thoroughly before use

INTRODUCTION

A clamp meter is an electrical test tool that combines a basic digital multimeter with a current sensor. Easy to operate small and light enough to fit in a pocket, this meter features a compact 3 1/2-digit digital display screen that will perform, DC and AC voltage, AC current, resistance, diode and continuity tests with an audible warning. The hinged jaw allows the user to clamp the jaws around a wire, cable or other conductor at any point in an electrical system, then measure the current without disconnecting it. The meter also features a polarity and low battery indication. Ideal test tool for basic circuit testing whilst on the move.

FEATURES

1. Compact unit to fit in your pocket
2. Large LCD display screen
3. Hinged jaw
4. Complete with detachable test leads
5. Conforms to EN 61010-1 safety requirements
6. Measure - AC and DC Voltage, DC Current, Resistance, Diode and Continuity

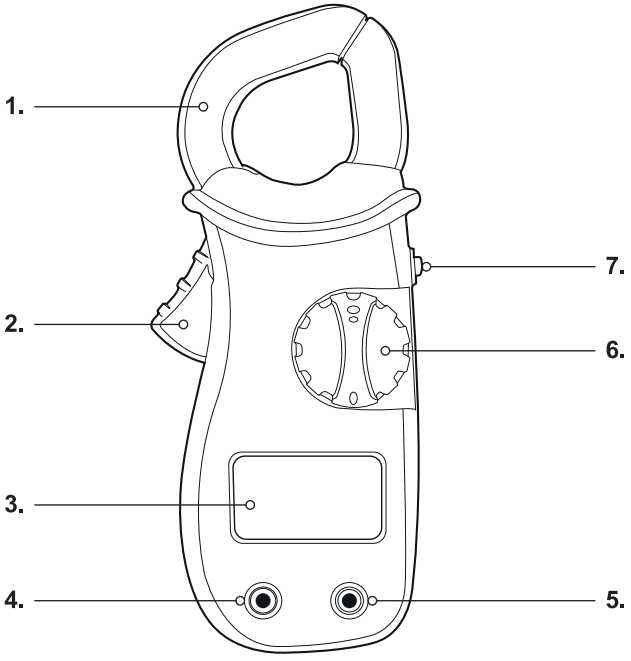
IMPORTANT SAFETY INFORMATION

It is essential that you read and understand the instructions contained in this manual before using the mini clamp meter for the first time. Failure to follow these instructions could result in an electrical shock or possible damage to the meter or to the equipment under test. This manual should be stored safely for future reference.

This series clamp meters have been designed according to IEC 61010 concerning electronic measuring instruments with a measurement category (CAT III 300 V) and Pollution degree 2.

CAT III - Measurement Category III is for taking measurements and performing checks in a building's electrical installation. Examples are measurements on distribution boards, circuit breakers, wiring, including cables, bus-bars, junction boxes, switches, socket-outlets in the fixed installation, and equipment for industrial use and some other equipment, for example, stationary motors with permanent connection to the fixed installation. Do not use the meter for measurements within measurement categories IV.

DIAGRAM



STRUCTURE

1. Hinged Jaw
Used to clamp the conductor to be measured. To get a more accurate reading, the conductor should be in the center of the jaws.

2. Jaw Trigger
used to open and close the jaws for AC current measurement.

3. LCD Display
$3^1/_2$ digital display LCD, with a max. reading of 1999

4. "COM" Jack Socket
Plug-in jack for the Black (Negative) test lead.

5. "V Ω ⇥" Jack Socket
Plug-in jack for the Red (Positive) test lead.

6. Rotary Function Switch
Used to select desired function & range as well as to turn meter on/off.

7. "HOLD" Button
Press this HOLD button to hold the present reading on the display. "HOLD" appears on the display as an indicator. To exit Data Hold mode, just press this button again. "HOLD" disappears.

General Specifications

Display max reading:	1999
Negative polarity indication:	Negative sign "-" shown on LCD display
Inproper position error:	1% of reading
Jaw opening capacity:	27mm
Sampling Rate:	~3 times per second
Battery:	3V battery, CR2032
Low battery indication:	"LOBT" or " "
Operation environment:	0°C to 40°C, <75%RH
Storage temperature:	-20°C ~ 60°C, <85%RH
Size / weight:	151 x 65 x 34mm / 127g

ACCURACY

Accuracy is specified for a period of one year after calibration and at 18°C - 28°C, with relative humidity up to 75%. Accuracy specifications take the form of: ± [(% of Reading) + (Number of Least Significant Digits)]

CAUTION PRIOR TO USE

To avoid possible damage to the meter or to the equipment under test, follow these guidelines.

Disconnect circuit power and discharge all capacitors before carrying out a resistance, diode or continuity test.

Use the appropriate function for the measurement you wish to make. Before measuring current turn off the power to the circuit before connecting the meter to the circuit.

Before turning the rotary switch to change functions, disconnect test leads from the circuit under test and remove the clamp jaws from the clamped conductor.

NOTE:

When making connections, connect the Black test lead before you connect the Red test lead. When you disconnect test leads, disconnect the Red test lead first.

DC VOLTAGE

Range	Resolution	Accuracy	Overrange Indication
300V	1V	± (1.0% + 2)	[1]

Input impedence: 9MΩ
Max. permitted input voltage: 300V RMS
[1]: If the voltage being measured is >300V, the display may show the value of the voltage; but the measurement is dangerous.

AC VOLTAGE

Range	Resolution	Accuracy	Overrange Indication
300V	1V	± (1.2% + 3)	———————— [1]

Input impedence: 9MΩ

Response: Average, calibrated in RMS of sine wave

Frequency range: 40Hz ~ 400Hz

Max. permitted input voltage: 300V RMS

[1]: If the voltage being measured is >300V, the display may show the value of the voltage; but the measurement is dangerous.

AC CURRENT

Range	Resolution	Accuracy	Overrange Indication
2A	1mA	± (5.0% + 5)	"1" shown on display
20A	10mA	± (3.0% + 5)	"1" shown on display
200A	100mA	± (2.5% + 5)	"1" shown on display
400A	1A	± (2.5% + 5)	———————— [1]

Response: Average, calibrated in RMS of sine wave.

Frequency range: 50Hz ~ 60Hz

Max. allowable input current: 400A

[1]: If the current being measured is >400A, the display may show the value of the current; but the measurement is dangerous.

RESISTANCE

Range	Resolution	Accuracy	Overrange Indication
2000Ω	1Ω	± (1.2% + 2)	"1" shown on display
200kΩ	100Ω	± (1.5% + 2)	"1" shown on display

AUDIBLE CONTINUITY

Range	Resolution	Description
•))	1Ω	The built-in buzzer will sound if the resistance is less than 30Ω.

DIODE TEST

Range	Resolution	Description
→|+	1mV	Approx. forward voltage drop will be shown. Open circuit voltage is 3V.

MEASURING DC VOLTAGE

1. Insert the plug of the Black test lead to the "COM" jack, the plug of the Red test lead to the "VΩ→|+" jack.
2. Set the rotary switch to "300V⎓" position
3. Connect the test leads across the source or circuit to be tested.
4. Read the reading on the LCD display. The polarity of the Red test lead connection will be indicated as well.

MEASURING AC VOLTAGE

1. Insert the plug of the Black test lead to the "COM" jack, the plug of the Red test lead to the "VΩ→|+" jack.
2. Set the rotary switch to "300V~" position.
3. Connect the test leads across the source or circuit to be tested.
4. Read the voltage value on the LCD display.

MEASURING AC CURRENT

1. Set the rotary switch to the desired AC current range position.
2. Press the trigger and clamp the jaws around the conductor to be measured.
3. Read the measurement on the LCD display.
4. For an accurate reading the conductor should be in the center of the fully closed jaws.

NOTE:

A. Only one conductor should be clamped at any time.

B. The conductor should be positioned in the center of the jaws in order to get an accurate reading.

C. Do not touch the conductor with your hand or skin.

MEASURING RESISTANCE

1. Insert the plug of the Black test lead to the "COM" jack, the plug of the Red test lead to the "VΩ→|+" jack.
2. Set the rotary switch to the desired resistance range position ("2000Ω" or "200kΩ")
3. Connect the test leads across the object to be tested.
4. Read the reading on LCD display

NOTE:

The built-in buzzer will sound when the resistance being measured is less than approx. 30Ω with the rotary switch in "2000Ω" position. Before you do in-circuit resistance measurement, make sure that the power of the circuit has been disconnected and all the capacitors have been discharged.

DIODE TEST

1. Insert the plug of the Black test lead to the "COM" jack, the plug of the Red test lead to the "VΩ→|+" jack.
2. Set the rotary switch to the "→|+" position.
3. Connect the Red test lead to the anode of the diode to be tested and the Black test lead to the cathode of the diode. Read the approximate forward voltage on LCD. (Reading's unit is "mV")

CONTINUITY TEST

1. Insert the plug of the black test lead to the "COM" jack, the plug of the red test lead to the "VΩ→|+" jack.
2. Set the rotary switch to the "•)) " position.
3. Connect the test leads across the circuit to be tested.
4. When the resistance being measured is less than approximately 30Ω, the built-in buzzer will sound.

NOTE:

Before test, disconnect all power to the circuit to be tested and discharge all capacitors thoroughly.

GENERAL MAINTENANCE

Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Dirt or moisture in the jacks can affect readings.

- Make sure that no object is clamped in the jaws
- Turn the meter off and remove all test leads
- Shake out any dirt that may be in the jacks
- Soak a new swab with alcohol and work around each jack.

BATTERY REPLACEMENT

When the symbol " / " appears on the LCD display, the batteries are low and should be replaced immediately. Remove the screw on the back cover and remove the cover. Replace the exhausted batteries with new ones of the same type (3 x 3V button cell, CR2032 or equivalent) ensure the polarity connections are correct the plus marks ("+") on the batteries should face up towards the battery cover (see the indication on the bottom of each button cell and the battery compartment cover). Reinstall the back cover and replace the screw

⚠ WARNING

- Do not use the meter if it is damaged. Before you use the meter, inspect the case. Play particular attention to the insulation surrounding the connectors.
- Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads before you use the meter.
- Do not use the meter if it operates abnormally. Protection may be impaired. When in doubt, have the meter serviced.
- Do not operate the meter where explosed gas, vapor or dust is present.
- Do not apply more than the rated voltage as marked on the meter, between the probes or between any probe and earth ground.
- Before use, verify the meter's operation by measuring a known voltage.
- When measuring current, turn off circuit power before connecting the meter in the circuit. Remember to place the meter in series with the circuit.
- When servicing the meter, use only specified replacement parts.
- Use caution when working with voltage above 30V AC RMS, 42V peak, or 60V DC. Such voltages pose a shock hazard.

- When using the probes, keep your fingers behind the finger guards.
- Connect the common test lead before you connect the live test lead. When you disconnect test leads, disconnect the live test lead first.
- Remove the test leads from the meter and remove the clamp jaws from any clamped object before you open the battery cover or the case.
- Do not operate hte meter with the battery door or portions of the case removed or loosened.
- To avoid false readings, which could lead to possible electric shock or personal injury, replace the batteries as soon as the low battery indicator appears.
- Before using the clamp jaws to clamp the conductor to be measured, make sure that all the test leads have been removed from the meter.
- To avoid electric shock, do not touch any naked conductor with hand or skin.
- When an input terminal is connected to dangerous live potential it is to be noted that this voltage can occur at all other terminals.
- CAT III - Measurement category III is for measurements performed in the building installation. Examples are measurements on distribution boards, circuit breakers, wiring, including cables, bus-bars, junction boxes, switches, socket-outlets in the fixed installation, and equipment for industrial use and some other equipment, for example, stationary motors with permanent connection to the fixed installation. Do not use the meter for measurements within measurement categories IV.

ELECTRICAL SYMBOLS

~ Alternating Current.

⚠ Caution, risk of electric shock.

⧈ The equipment is protected throughtout by double insulation or reinforced insulation.

⚠ Caution, risk of danger. Refer to the instructions sheet before use.

CE Conforms to European Union directives.

⎓ Direct current

≂ Both direct and alternating current

⚠ Caution, risk of electric shock

⏚ Earth (ground) terminal

NOTE

1. This manual is subject to change without notice.
2. Faithfull tools take no responsibility for any personal injury, loss or damage caused by the impropriate or misuse of this product.
3. The contents of this manual cannot be used as the reason to use the meter for any other special application.

Every Faithfull electrical product is guaranteed for a period of one year, subject to the same exceptions as mentioned above. In the case of electrical products used for hire, the guarantree period is restricted to three months.

DISPOSAL OF THIS ARTICLE

Dear Customer,
If you at some point intend to dispose of this article, then please keep in mind that many of its components consist of valuable materials, which can be recycled. Please do not dispose of this product it in the household waste bin, but check with your local council for recycling facilities in your area.

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