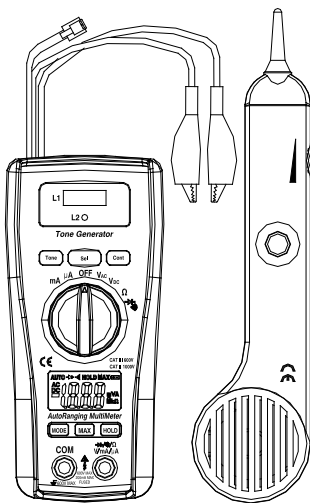


Instruction Manual

2in1 Wire/Cable Tester & Multimeter

Model: LA-1014



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Introduction

2 in 1 Wire/Cable Tester & Multimeter is a innovative tester that allows the user easy to measure DC/AC Voltage/Current, Resistance, Continuity, diode and verify the cable continuity, quickly trace and identify cables or wires within a group and also check the operation of phone lines . The Wire/Cable Tester included Tone generator and Amplifier probe. Proper use and care of this meter will provide years of reliable service.

Features

- 2in1- Wire/Cable Tester & Multimeter
- Measures DC/AC Voltage, DC/AC Current, Resistance, Continuity ,diode and Wire/Cable tester
- 3-1/2 digit (2000 count) LCD display for multimeter functions
- LED Displays the operation of phone cable lines
Low battery indication
Selectable continuous or variable tone generation
AND alligator clips, RJ45/RJ11 modular
- CATIII 600V; CATII 1000V
- Provides easy to read continuity and fault status display
- Tests include wire trace, continuity test, clear/busy/ringing

line test and tip/ring identification

- Wire/Cable tester has the function of 220V High voltage protection
- Autoranging with auto power off for multimeter functions

Safety

International Safety Symbols



This symbol, adjacent to another symbol or terminal, indicates the user must refer to the manual for further information.



This symbol, adjacent to a terminal, indicates that, under normal use, hazardous voltages may be present.



Double insulation

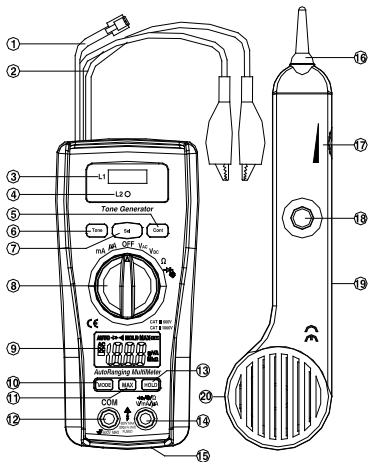
Safety Precautions

1. Improper use of this meter can cause damage, shock, injury or death. Read and understand this users manual before operating the meter.
2. Make sure any covers or battery doors are properly closed and secured.
3. Always disconnect the test leads from any voltage source before replacing the battery or fuses.
4. Do not exceed the maximum rated input limits.

Input Limits	
Function	Maximum Input
V DC or V AC	600V DC/AC
μ A AC/DC	200mA/250V fast acting Fuse
Resistance, Diode & Continuity Test	600V DC/AC

5. Always discharge capacitors and remove power from the device under test before performing Diode, Resistance or Continuity tests.
6. Remove the battery from the meter if the meter is to be stored for long periods.

Meter Description



Wire/Cable tester part Description (1~7&16~20) :

1. Modular connectorRJ11
2. test leads
3. Led display for telephone cable line condition
4. Led display for low battery of Tone Generator
5. Cont Switch for continuity test
6. Tone Switch for tones generating
7. Sel Switch for tones selecting
16. probe tip
17. Volume/Sensitivity control
18. Power button
19. battery compartment(rear)
20. headphone jack

Digital multimeter part Description (8~15) :

8. Function switch
9. 3 1/2 Digit (2000 count)LCD display for DMM functions
10. MODE button
11. MAX Hold button
12. COM input jack
13. Data Hold button
14. V, Ω , μ A, mA input jack
15. Battery Compartment(rear)

Specifications**Electrical Specifications**

Function	Range	Accuracy
DC Voltage	200mV,	$\pm(0.5\% \text{ rdg} + 3d)$
	2.000V, 20.00V,	$\pm(1.0\% \text{ rdg} + 3d)$
	200.0V, 600V	$\pm(1.0\% \text{ rdg} + 3d)$

AC Voltage 50-60Hz	2.000V, 20.00V	$\pm(1.0\% \text{ rdg} + 5d)$
	200.0V, 600V	$\pm(1.5\% \text{ rdg} + 10d)$
DC Current	200.0 μ A, 2000 μ A	$\pm(1.5\% \text{ rdg} + 3d)$
	20.00mA, 200.0mA	$\pm(2.0\% \text{ rdg} + 3d)$
AC Current	200.0 μ A, 2000 μ A	$\pm(1.8\% \text{ rdg} + 8d)$
	20.00mA, 200.0mA	$\pm(2.5\% \text{ rdg} + 8d)$
Resistance	200.0 Ω	$\pm(0.8\% \text{ rdg} + 5d)$
	2.000k Ω , 20.00k Ω , 200.0k Ω	$\pm(1.2\% \text{ rdg} + 3d)$
	2.000M Ω	$\pm(2.0\% \text{ rdg} + 5d)$
	20.00M Ω	$\pm(5.0\% \text{ rdg} + 8d)$

Max input voltage

600V AC/DC

Diode Test

Test current 1mA max., open circuit voltage of 1.5V typical

Continuity Check

Audible signal if the resistance is <150 Ω

Display

2000 count 3 -1/2 digit LCD

Over range indication

LCD displays "OL"

Polarity

Minus (-) sign for negative polarity.

Low Battery Indication

"BAT" symbol

indicates low battery condition.

Input Impedance

>7.5M Ω (VDC & VAC)

AC Response

Average responding

ACV Bandwidth	50Hz to 60Hz
Auto Power Off	15 minutes (approximately)
Fuse	mA, μ A ranges; 0.2A/250V fast acting Fuse
Tone output	continuity: 800 – 860Hz Wobble: 800-1050HZ
Batteries	two 9V batteries and two “AAA” batteries
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	14°F to 122°F (-10°C to 50°C)
Weight	328g
Size	162x74.5x44.0mm
Standard	IEC61010-1 CAT III-600V Pollution degree II, CE Approved

Operation

AutoRanging Multimeter

AC/DC VOLTAGE MEASUREMENTS

CAUTION: Do not measure AC/ DC voltages if a motor on the circuit is being switched ON or OFF. Large voltage surges may occur that can damage the meter.

1. Insert the black test lead into the negative COM terminal and the red test lead into the positive V terminal.
2. Set the function switch to VAC or VDC position.
3. Connect the test leads in parallel to the circuit under test.
4. Read the voltage measurement on the LCD display.

AC/DC CURRENT MEASUREMENTS

1. Set the function switch to the μ A/mA position.

2. Insert the black test lead into the negative COM terminal and the red test lead into the positive $\mu\text{A}/\text{mA}$ terminal.
3. For current measurements up to $2000\mu\text{A}$ DC/AC, set the function switch to the **mA** position
4. Press the MODE button to indicate “DC” / “AC” on the display.
5. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
6. Touch the black test probe tip to the negative side of the circuit.
Touch the red test probe tip to the positive side of the circuit.
7. Apply power to the circuit.
8. Read the current in the display




RESISTANCE MEASUREMENT

WARNING: To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any resistance measurements. Remove the batteries and unplug the line cords.



1. Set the function switch to the Ω position.
2. Insert the black test lead into the negative COM terminal and the red test lead into the positive Ω terminal.
3. Touch the test probe tips across the circuit or part under test. It is best to disconnect one side of the part under test so the rest of the circuit will not interfere with the resistance reading.
4. Read the resistance in the display

CONTINUITY CHECK

WARNING: To avoid electric shock, never measure continuity on circuits or wires that have voltage on them.

1. Set the function switch to the  position.
2. Insert the black test lead into the negative COM terminal and the red test lead into the positive Ω terminal.
3. Press the MODE button to indicate   on the display
4. Touch the test probe tips to the circuit or wire you wish to check.
5. If the resistance is less than approximately 150Ω , the audible signal will sound. If the circuit is open, the display will indicate "OL".

DIODE TEST

1. Set the function switch to the  position.
2. Press the MODE button to Touch the test probes to the diode indicate  on the display. under test. Forward voltage will typically indicate 0.400 to 0.700V. Reverse voltage will indicate "OL". Shorted devices will indicate near 0V and an open device will indicate "OL" in both polarities

MAX Hold button

To hold the highest reading on the LCD

1. Press the MAX hold button. The meter reading will not change as readings change
2. Press the MAX hold button again to return to normal

operation.

Hold Button

The Data Hold function allows the meter to “freeze” a measurement for later reference

1. Press the “**DATA HOLD**” button to “freeze” the display, the “**HOLD**” indicator will appear.
2. Press the “**DATA HOLD**” button to return to normal operation.

AUTO POWER OFF

The auto off feature will turn the meter off after 15 minutes.

REPLACING THE BATTERY

1. Remove the bottom cover and secure the screw.
2. Replace old battery with fresh Two 1.5V AAA & 9V type battery.
3. Replace the bottom cover and secure the screw.

REPLACING THE FUSES

WARNING: To avoid electric shock, disconnect the test leads from any source of voltage before removing the fuse cover.

1. Disconnect the test leads from the meter.
2. Remove the protective rubber holster.
3. Remove the battery cover (two “B” screws) and the battery.
4. Remove the four “A” screws securing the rear cover.
5. Lift the center circuit board straight up from the

- connectors to gain access to the fuse holders.
6. Gently remove the old fuse and install the new fuse into the holder.
 7. Always use a fuse of the proper size and value (0.2A/250V fast blow for the 200mA range).
 8. Align the center board with the connectors and gently press into place.
 9. Replace and secure the rear cover, battery and battery cover.

Wire/Cable tester (Tone generator and Amplifier probe)Operation

Note: Make sure the battery power is sufficient. Insufficient battery power will lead to dimmed LEDs and incorrect results.

Cable/Wire tracing

1. Connect the tone generator to the cable
 - a) For cables terminated at one end, connect the red alligator clip to a wire and the black alligator clip to equipment ground
 - b) For unterminated cables, connect the red alligator clip to one wire and the black alligator clip to another wire.
 - c) For cables with modular connectors, plug the RJ11 connectors directly into the matching cable connectors.
2. Set the Tone Switch on(the Tone switch on down positon).
3. On the amplifier probe, press and hold the side on/off button.

4. Hold the insulated probe tip against the wire in question to pick up the signal generated by the tone generator.
5. Rotate the volume/sensitivity control on the top of the probe for the appropriate level and sensitivity to identify and trace the wire.
6. The tone will be the loudest on the wires connected to the tone generator.

Note: A headphone jack is located on the bottom of the probe.

Identifying telephone cable Tip and Ring – Using Alligator Clips

1. Switch the tone generator to the OFF position(the Tone,Sel,Cont switch on up position)
2. Connect the red test lead to one line and the black lead to the other line.
3. The LED color indicates the connection to the RED test lead as:
GREEN = Ring side, RED = Tip side.

Identifying telephone cable Tip and Ring – Using the RJ-11 Connectors

1. Switch the tone generator to the OFF position(the Tone,Sel,Cont switch on up position)
2. Connect the RJ-11 connector mating cable connector.
3. The LED color indicates the condition of the telephone jack wiring.
GREEN = Jack wired properly, RED = Jack wired with reversed polarity.

Identifying telephone cable Line Condition

1. Switch the tone generator to the OFF position(the

- Tone,Sel,Cont switch on up position)
2. Connect the red test lead to the RING side and the black test lead to the TIP side.
 3. The LED will indicate line condition by:
GREEN = CLEAR , OFF = BUSY, Flickering YELLOW = RINGING
 4. Switch the tone generator's Cont switch to down position to terminate the call.

Continuity testing

NOTE: To avoid electric shock ,before testing for continuity,check line polarity to ensure that the line is not powered.

1. Connect the test leads to the wire pair .
2. Switch the Cont Switch to down position.
3. The LED will glow bright GREEN for a low resistance or continuity. The LED will glow less brightly as the resistance increases and will extinguish at approximately 10,000ohms.

Tone selection

The output of the tone generator can be set to continuous or wobble. Use the Sel Switch on the Tone-generator to change the tone of output to “continuity”(down position)or “wobble”(up position)

Low battery indicator

When a low battery condition is detected.Low battey LED will light up.

Battery replacement

1. The tone generator and Amplifier Probe require one standard/Alkaline 9 Volt battery for operation.
2. slide back the battery cover to replace new battery.

Caution:

1. When the test over, keep the all Switches to off position(up position).
2. Leaving the battery in the tester for long periods of time without use could drain power from the battery