

ZICO Zi-9330

Pen-type Digital Multimeter User Manual

1. Safety Instructions

This meter has been designed for safe use, but must be operated with caution. The rules listed below must be carefully followed for safe operation.

- **NEVER** apply voltage or current to the meter that exceeds the specified maximum:

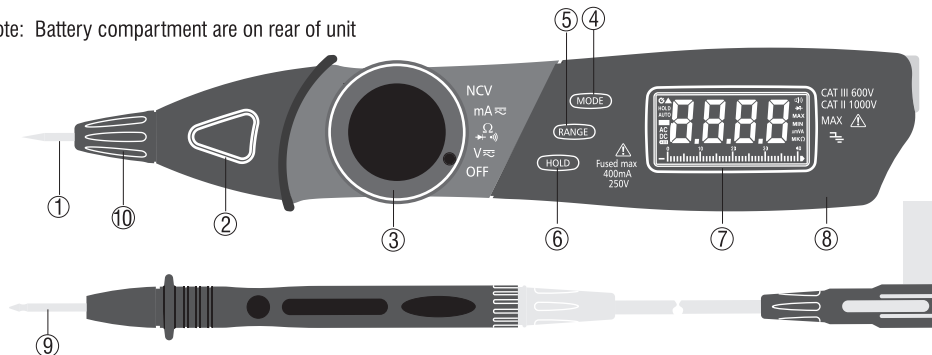
Input Limits	
Function	Maximum Input
VAC	600V DC/AC
V DC or V AC	600V DC/AC, 200Vrms on 200mV range
mA DC	200mA 250V fast acting fuse
Resistance Continuity	250Vrms for 15sec max

- **USE EXTREME CAUTION** when working with high voltages.
- **DO NOT** measure voltage if the voltage on the "COM" input jack exceeds 500V above earth ground.
- **NEVER** connect the meter leads across a voltage source while the function switch is in the current, resistance, or diode mode. Doing so can damage the meter.
- **ALWAYS** discharge filter capacitors in power supplies and disconnect the power when making resistance or diode tests.
- **ALWAYS** turn off the power and disconnect the test leads before opening the doors to replace the fuse or batteries.
- **NEVER** operate the meter unless the back cover and the battery and fuse doors are in place and fastened securely.

2. Controls And Jacks

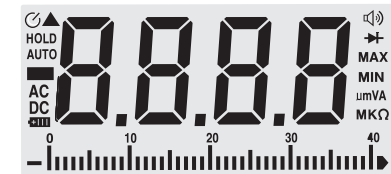
- 1-V/mA/Ω input
- 2-NCV indication
- 3-Function Switch
- 4-Mode button
- 5-Range button
- 6-Hold button
- 7-Large digital LCD display with bargraph
- 8-Battery cover
- 9-COM input
- 10-Nut

Note: Battery compartment are on rear of unit



3. Symbols And Annunciators

- ⏏ :Continuity
- m:milli (10^{-3}) (volts, amps)
- k:kilo (10^3) (ohms)
- :Diode test
- M:mega (10^6) (ohms)
- 🔋 :Battery status
- AC:Alternating current
- DC: Direct current
- 🌙 :Auto Power OFF
- A:Amps
- V:Voltage



4. Safety



- This symbol adjacent to another symbol, terminal or operating device indicates that the operator must refer to an explanation in the Operating Instructions to avoid personal injury or damage to the instrument.
- This symbol advises the user that the terminal(s) so marked must not be connected to a circuit point at which the voltage with respect to earth ground exceeds (in this case) 600 VAC or VDC.
- This instrument has been designed for safe use, but must be operated with caution. The rules listed below must be carefully followed for safe operation.
- **NEVER** apply voltage or current to the meter that exceeds the specified maximum:
- **USE EXTREME CAUTION** when working with high voltages.
- **DO NOT** measure voltage if the voltage on the "COM" input jack exceeds 1000V above earth ground.
- **ALWAYS** turn off the power and disconnect the test leads before opening the covers to replace the fuse or batter
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

5. Electrical Characteristics

DC Voltage (Auto-ranging)

Range	Resolution	Accuracy
400.0mV	0.1mV	+/-1.2% of rdg ± 2 digits
4.000V	1mV	
40.00V	10mV	
600.0V	100mV	+/-1.5% of rdg ± 4 digits

Input Impedance: 10MΩ.

Maximum Input: 600V dc or 600V ac rms.

AC Voltage (Auto-ranging and Manual-ranging)

Range	Resolution	Accuracy
400.0mV	0.1mV	+/-1.5% of rdg ± 10 digits
4.00V	1mV	+/-1.2% of rdg ± 4 digits
40.0V	10mV	+/-2% of rdg ± 4 digits
600V	100mV	

Input Impedance: 10MΩ.

AC Response: 50 Hz to 400Hz

Maximum Input: 600V dc or 600V ac rms.

DC Current (Auto-ranging)

Range	Resolution	Accuracy
40.00mA	10uA	+/-1.2% of rdg \pm 3digits
400.0mA	100uA	+/-1.5% of rdg \pm 3digits

Overload Protection: 500mA/250V Fuse.
Maximum Input: 400mA dc on mA range

AC Current (Auto-ranging)

Range	Resolution	Accuracy
40.00mA	10uA	+/-1.5% of rdg \pm 3digits
400.0mA	100uA	+/-1.5% of rdg \pm 3digits

Overload Protection: 500mA/250V Fuse.
AC Response: 50 Hz - 400Hz.
Maximum Input: 400mA ac rms on mA.

Resistance [Ω] (Auto-ranging)

Range	Resolution	Accuracy
400.0 Ω	0.1 Ω	+/-1.2% of rdg \pm 4 digits
4.000k Ω	1 Ω	
40.00k Ω	10 Ω	
400.0k Ω	100 Ω	+/-3% of rdg \pm 8digits
4.000M Ω	1k Ω	
40.00M Ω	10k Ω	

Input Protection: 250V dc or 250V ac rms.

Diode Test

Open circuit voltage: MAX. 2V dc
Overload protection: 250V dc or ac rms.

Audible continuity

Audible threshold: Less than 30 Ω Test current MAX. 0.3mA
Overload protection: 250V dc or ac rms.

Non-contact Voltage (NCV)

The NCV function works on any rotary switch position.

- Test the detector on a known live circuit before use.
- Hold the top of the meter very close to the voltage source as shown.
- If voltage is present, the back light will flash a bright red.

6. Operating Instructions

Nut Function

Rotate the nut, the metal probes can hide in the head of the instrument.

Button function

Mode button: Chose DC/AC when you Measure voltage or Current, Chose resistance, diode, continuity when you measure resistance, diode, continuity.

Range button: manual change range or Auto change range.

Hold button: Freeze the current test value.

Power OFF

Rotate the function switch to the character "OFF" on the instrument for Turning off the power.

7. DC/AC Voltage Measurements

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

Rotate the function switch to the character " V_{\approx} " on the instrument, press Mode Button to choose DC or AC Voltage, Touch the black test probe tip to the negative side of the circuit. Touch the metal probe tip to the positive side of the circuit. Read the voltage in the display.

8. Resistance Measurements

Rotate the function switch to the character " Ω " on the instrument

- Press the MODE button to change " Ω ", " \rightarrow ", " \leftarrow " on the display.
- If the resistance is less than approximately 30 Ω , the audible signal will sound.
- Touch the test probes to the diode 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.

9. DC/AC Current Measurements

Caution: Do not make more than 400mA current measurements for longer time. it will damage the instruction.

Rotate the function switch to the character " mA_{\approx} " on the instrument, press Mode Button to choose DC or AC Current, Touch the black test probe tip to the negative side of the circuit. Touch the metal probe tip to the positive side of the circuit. Read the voltage in the display.

10. NON-contact Voltage

Rotate the function switch to the character "NCV" on the instrument, let the head of the instrument near the meaused matter, if the voltage of the matter more than 50V, the NCV indication will light.

Auto Power Off

- When the function switch isn't rotated and the button of the instrument isn't pressed after 15 minutes, the instrument will turn off the power (in the sleeping). In this mode if you press any button or rotate the function switch, the instrument will work (be awaking).
- When you rouate the function switch to turn on the power, the auto power off symbols " ⏻ " will show the LCD display. Before instrument will auto power off, it announce you by sound five beep.

Battery replace

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

- Turn power off and disconnect the test leads from the meter.
- Open the rear battery cover by removing one screw using a screwdriver.
- Insert the battery into battery holder, observing the correct polarity.
- Put the battery cover back in place. Secure with the screws.

Warning: To avoid electric shock, do not operate the meter until the battery cover is in place and fastened securely.

Note: If your meter does not work properly, check the fuses and batteries to replace.

Replacing the fuses

Warning: To avoid electric shock, disconnect the test leads from any source of voltage before removing the meter cover. make sure that they are still good and that they are properly inserted.

- Gently remove the old fuse and install the new fuse into the holder.
- Always use a fuse of the proper size and value (0.5A/250V fast blow for the 400mA range).
- Replace and secure the rear cover, battery and battery cover.

Warning: To avoid electric shock, do not operate your meter until the fuse cover is in place and fastened securely.

