ANENG A3005B

ANENG A3005B Digital Pen Multimeter User Manual

Model: A3005B | Brand: ANENG

1. Introduction

The ANENG A3005B is a versatile pen-type digital multimeter designed for electrical testing and maintenance. It offers a range of functions including AC/DC voltage measurement, resistance, diode testing, continuity, non-contact voltage (NCV) detection, and live wire detection. Its compact design, backlit display, and built-in flashlight make it suitable for various environments, including low-light conditions.

2. Safety Information

Always observe basic safety precautions when using this multimeter to avoid personal injury or damage to the device. Read all instructions carefully before use.

- Do not exceed the maximum input values specified for each measurement range.
- Exercise extreme caution when working with live circuits.
- Ensure the test leads are properly connected and in good condition before making any measurements.
- Do not use the multimeter if it appears damaged or if the battery cover is not properly closed.
- Always disconnect power to the circuit and discharge high-voltage capacitors before measuring resistance, continuity, or diodes.
- Keep fingers behind the finger guards on the test probes during measurements.
- Replace batteries promptly when the low battery indicator appears to ensure accurate readings.

3. Product Overview

Familiarize yourself with the components of your ANENG A3005B Digital Pen Multimeter.



Figure 3.1: ANENG A3005B Multimeter Components

- **Probe socket:** Connection point for the negative test lead.
- **Penholder:** For convenient carrying.
- **Power switch button:** Short press for data retention, long press to turn on backlight.
- **NCV/LIVE/AUTO switch:** Short press to cycle through NCV, LIVE, and AUTO modes. Long press to activate the flashlight.
- **Indicator light:** Provides visual feedback during NCV and LIVE detection.
- **Backlit display:** For clear readings in various lighting conditions.
- **Flashlight:** Illuminates the work area.
- **Pen tip test positive:** The positive test probe.
- **Silica shell & Pen tip protective case:** For durability and safety.



Figure 3.2: ANENG A3005B Multimeter Dimensions

4. What's in the Box

Your ANENG A3005B Digital Pen Multimeter package includes the following items:

- Pen Multimeter (A3005B) x 1
- Test Lead x 1 (Negative probe with banana tip)
- Lengthened nickel-plated copper needle x 1
- Banana tip x 1
- Nickel-plated copper needle x 2
- Conical needle (different) x 2
- U-shaped insert x 1
- Alligator clip x 1
- User Manual x 1

Note: 2x AAA batteries are required and are not included in the package.

5. Setup

5.1 Battery Installation

The multimeter requires two AAA batteries for operation. Follow these steps to install them:

1. Locate the battery compartment on the back of the multimeter.
2. Use a screwdriver to open the battery compartment cover.
3. Insert two AAA batteries, ensuring correct polarity (+ and -).
4. Securely close the battery compartment cover with the screw.



Figure 5.1: Battery Installation

5.2 Connecting Test Leads

Connect the negative test lead (black) to the probe socket at the top of the multimeter. The positive test lead is the integrated pen tip.

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Video 5.1: Demonstrates battery installation and connecting the test lead.

6. Operating Instructions

6.1 Power On/Off and Basic Controls

To power on the multimeter, press and hold the power button. The device will automatically enter AUTO mode. To power off, press and hold the power button again.

- **Power Button (Red):** Short press for data retention (HOLD function). Long press to turn on/off the backlight.

- **Function Button (Yellow):** Short press to cycle between NCV, LIVE, and AUTO measurement modes. Long press to turn on/off the flashlight.

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Video 6.1: Demonstrates power on, function switching, data retention, and flashlight operation.

6.2 Automatic Measurement (AUTO Mode)

In AUTO mode, the multimeter automatically recognizes the type of measurement (AC/DC voltage, resistance, continuity) and displays the reading. Simply contact the test probes to the circuit or component.

- **Battery Voltage:** Contact the positive and negative electrodes of a battery. The multimeter will display the DC voltage.
- **AC Voltage:** Contact the test probes to the AC voltage source. The multimeter will display the AC voltage.
- **Resistance:** Contact the test probes to both ends of a resistor. The multimeter will display the resistance value.
- **Continuity:** If the circuit is continuous, the multimeter will beep and flash a red light.

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Video 6.2: Demonstrates automatic recognition for battery voltage, AC voltage, resistance, and continuity.

6.3 Non-Contact Voltage (NCV) Detection

The NCV function allows for safe detection of AC voltage without direct contact. This is useful for identifying live wires or checking for voltage in cables.

1. Press the Function button until NCV mode is activated.
2. Bring the tip of the multimeter close to the conductor or cable.
3. If AC voltage is detected, the indicator light will flash red, and the multimeter will beep with varying rhythms depending on the signal strength.



Figure 6.3: NCV Induction Measurement

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Video 6.3: Demonstrates NCV detection on a live circuit.

6.4 Live Wire Detection

The LIVE mode helps distinguish between live (firewire) and neutral (zero line) wires.

1. Press the Function button until LIVE mode is activated.
2. Insert the pen tip into the voltage hole or touch the wire.
3. If it's a live wire, the indicator light will turn red, the display will show "---H", and a fast beep will sound.
4. If it's a neutral wire, the display will show "LIVE", the indicator light will not respond, and there will be no beep.



Figure 6.4: Live Wire Detection

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Video 6.4: Demonstrates live wire and zero line detection.

6.5 Line Breakpoint Detection

In NCV detection mode, the multimeter can help locate breakpoints in a live single-stranded wire.

1. Switch to NCV mode.
2. Move the pen tip along the live single-stranded wire.
3. The multimeter will indicate voltage presence (flashing light, beeping) up to the breakpoint. Beyond the breakpoint, the indication will stop.



Figure 6.5: Line Breakpoint Detection

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Video 6.5: Demonstrates line breakpoint detection in NCV mode.

6.6 Diode Test

The diode test function allows you to check the forward voltage drop of a diode.

1. Switch to Diode mode (usually part of AUTO or a specific function selection).
2. Contact the positive test probe (pen tip) to the anode of the diode and the negative test lead to the cathode.
3. The display will show the forward voltage drop. If the probes are reversed or the diode is open, it may show "OL" (Overload).

Note: This multimeter can only measure diodes with a forward voltage drop below 2V and cannot drive LEDs to light up.

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Video 6.6: Demonstrates diode testing.

7. Specifications

Feature	Specification
Model Number	HK201701-A3005B

Display	4000 Counts VA Reverse Display
AC Voltage Range	0.8V - 600V
DC Voltage Range	0.8V - 600V
Resistance Range	0.1Ω - 40MΩ
Diode Test	Yes (measures below 2V)
Continuity Test	Yes
NCV Detection	Yes
Live Wire Detection	Yes
Flashlight	Yes
Backlight	Yes
Power Source	2 x AAA Batteries (not included)
Dimensions (L x W x H)	3.94 x 1.18 x 1.18 inches (approx.)
Item Weight	3.53 ounces (approx.)

8. Maintenance

Proper maintenance ensures the longevity and accuracy of your multimeter.

- **Cleaning:** Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.
- **Battery Replacement:** Replace batteries when the low battery indicator appears. Remove batteries if the device will not be used for an extended period.
- **Storage:** Store the multimeter in a dry, clean environment, away from direct sunlight and extreme temperatures.
- **Probe Inspection:** Regularly inspect test leads and probes for any damage, cracks, or frayed insulation. Replace damaged leads immediately.

9. Troubleshooting

If you encounter issues with your multimeter, refer to the following common problems and solutions:

- **No Power:** Check if batteries are correctly installed and have sufficient charge. Replace if necessary.
- **Inaccurate Readings:** Ensure test leads are properly connected. Check battery level. Ensure you are in the correct measurement mode.
- **"OL" Display:** This usually indicates an overload or an open circuit. For resistance, it means the resistance is too high to measure. For diode test, it might mean the diode is open or probes are reversed.
- **NCV/LIVE Not Detecting:** Ensure the multimeter is in the correct NCV or LIVE mode. The signal might be too weak or too far from the source.

10. Warranty and Support

For warranty information or technical support, please refer to the documentation provided with your purchase or contact the retailer/manufacturer directly. Keep your purchase receipt as proof of purchase.