**ANENG ST181**

# ANENG Digital Clamp Meter Multimeter Tester

Model: ST181

Brand: ANENG

## Introduction

This instruction manual provides detailed guidance for the safe and effective use of the ANENG Digital Clamp Meter Multimeter Tester, Model ST181. This versatile tool is designed for electrical measurements in various applications, offering high accuracy and multiple functions.

## Safety Information

- Always adhere to local and national safety codes.
- Do not attempt to measure current on circuits exceeding the meter's specified limits.
- Ensure the meter is set to the correct function and range before making measurements.
- Avoid contact with live circuits. Use appropriate personal protective equipment (PPE).
- Do not use the meter if it appears damaged or is operating abnormally.
- Replace batteries promptly when the low battery indicator appears to ensure accurate readings.

## Package Contents

The ANENG Digital Clamp Meter package includes the following items:

- 1 x ANENG Digital Clamp Meter (ST181)
- 2 x AAA Batteries
- 1 x Combination Lead (includes 4 connection sockets, 2 PVC cables, 2 copper needles, 2 U-shaped

inserts, 2 meter pens, 2 alligator clips, 2 puncture needles)

- 1 x Multimeter Test Lead
- 1 x Instruction Manual
- 1 x Storage Bag

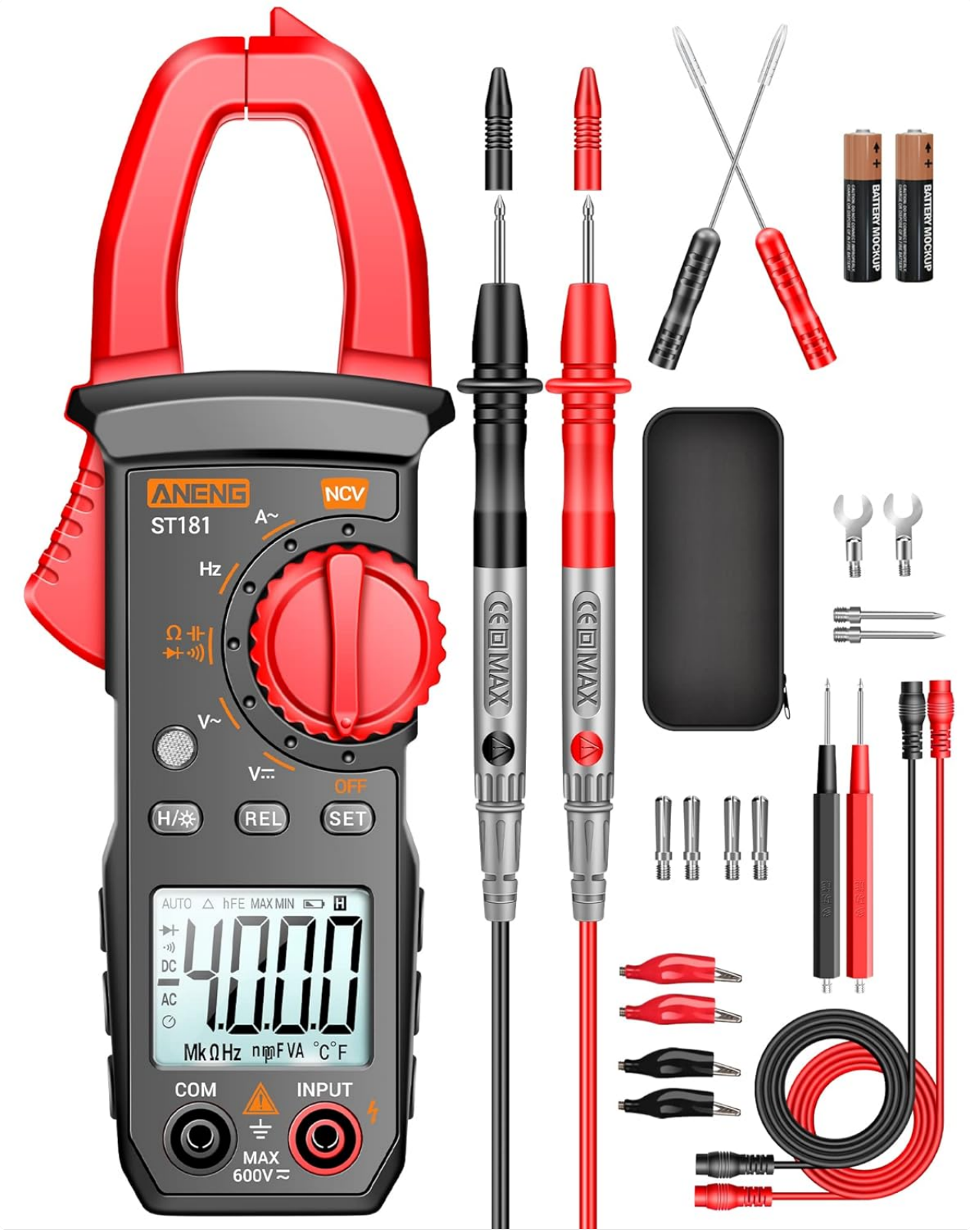


Figure 1: ANENG ST181 Digital Clamp Meter with all included accessories, neatly arranged on a white background.

## Product Overview and Features

The ANENG ST181 is a compact and robust digital clamp meter designed for various electrical measurements. Its key features include:

- **AC Current Measurement:** Capable of measuring AC current up to 400A without interrupting the circuit, ideal for troubleshooting.
- **AC/DC Voltage Measurement:** Measures both AC and DC voltage for comprehensive electrical testing.
- **Resistance, Capacitance, Diode, and Frequency:** Provides functions for measuring resistance, capacitance, testing diodes, and frequency (Hz).
- **Continuity Test:** Features a buzzer for quick continuity checks.
- **NCV (Non-Contact Voltage) Detection:** Safely detects AC voltage without physical contact, enhancing user safety.
- **Double Open Clamp Design:** The clamp jaw opens up to 36mm (1.42 inches), accommodating various wire sizes.
- **HD Backlit Display:** Ensures clear readability in low-light conditions.

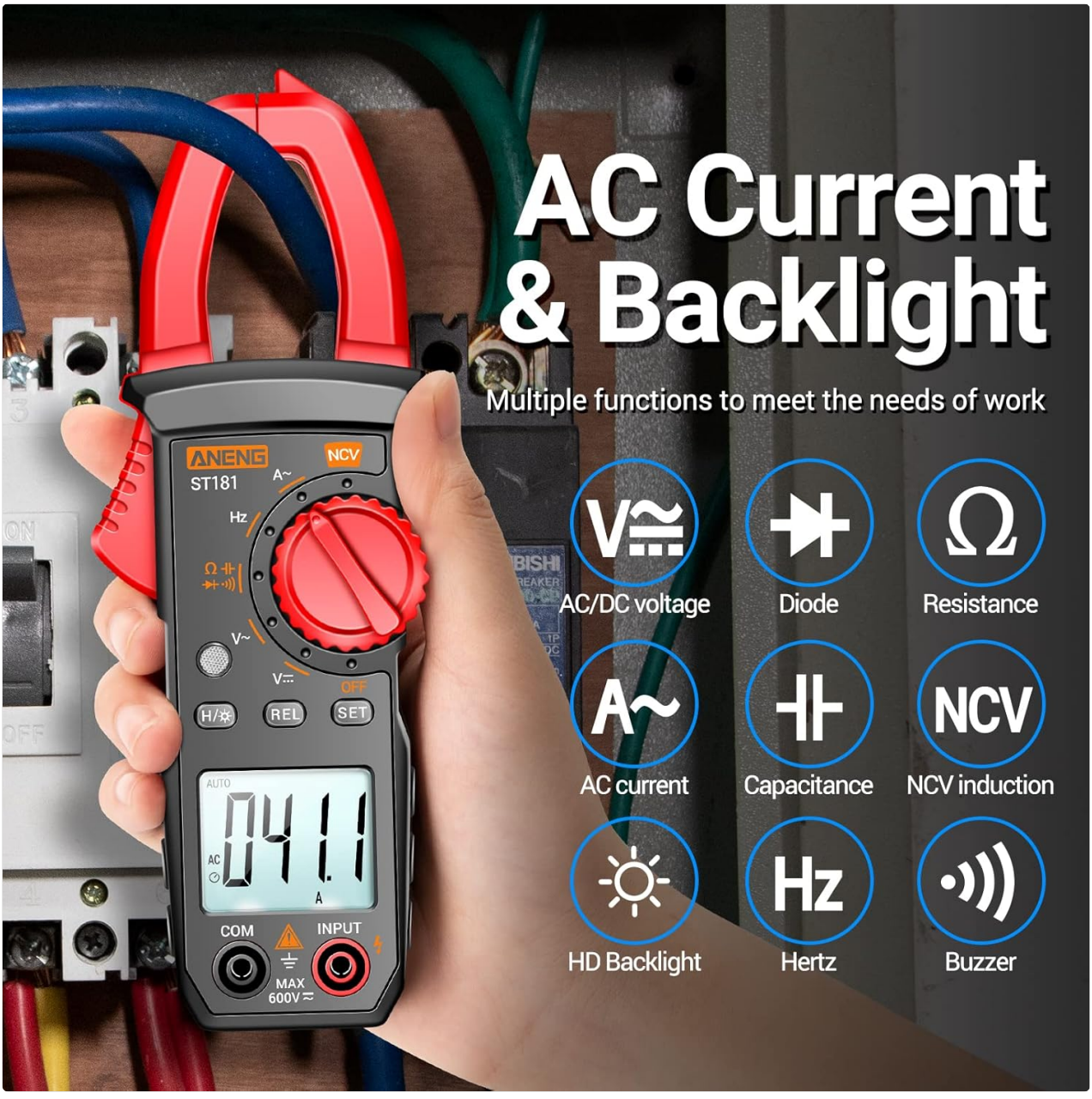

Figure 2: Overview of the ANENG ST181's measurement capabilities, including AC/DC voltage, diode, resistance, AC current, capacitance, NCV induction, Hertz, and buzzer function, with a bright backlit display.

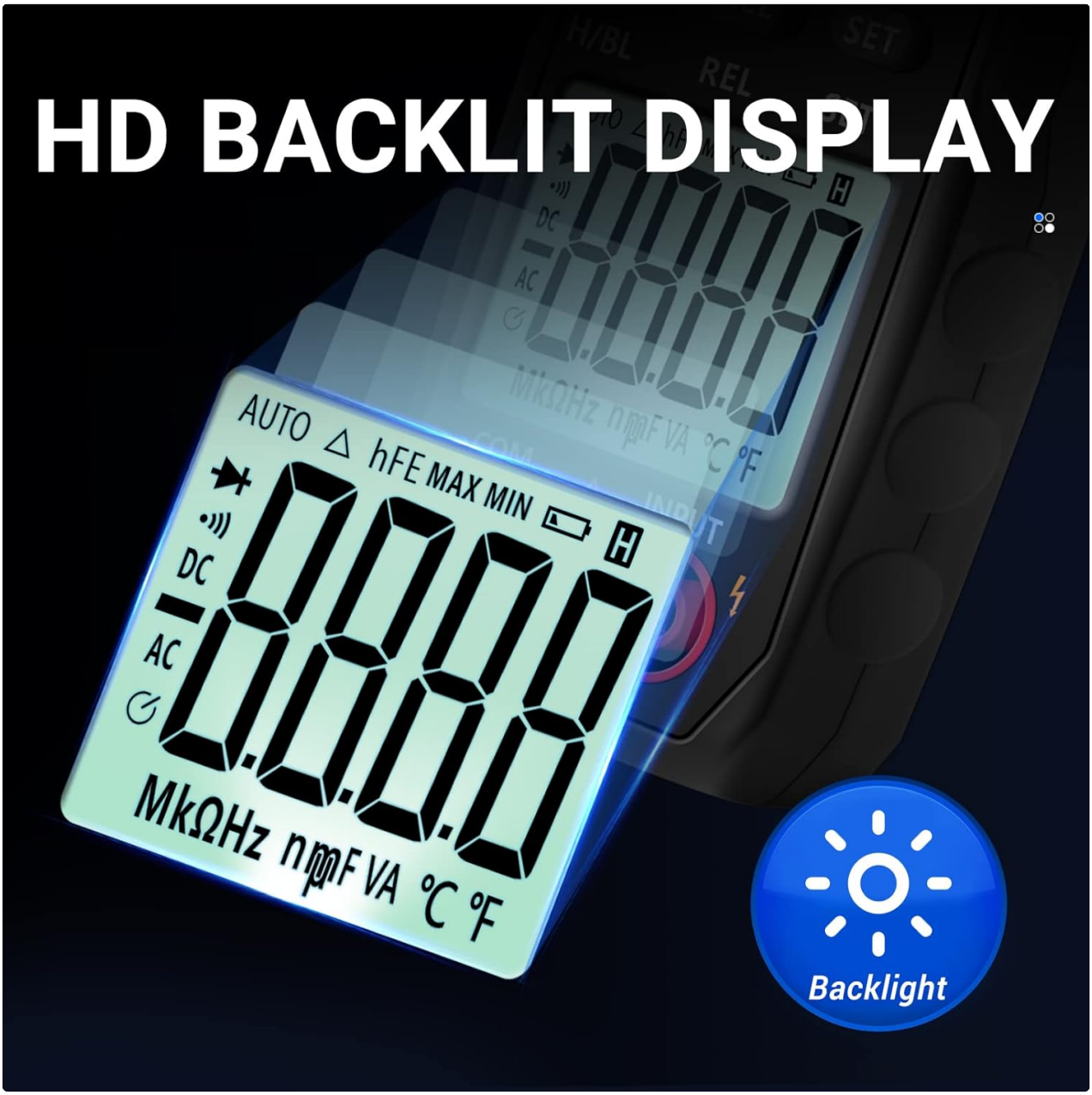


Figure 3: Detailed view of the ANENG ST181's HD backlit display, showing clear digital readings and function indicators.

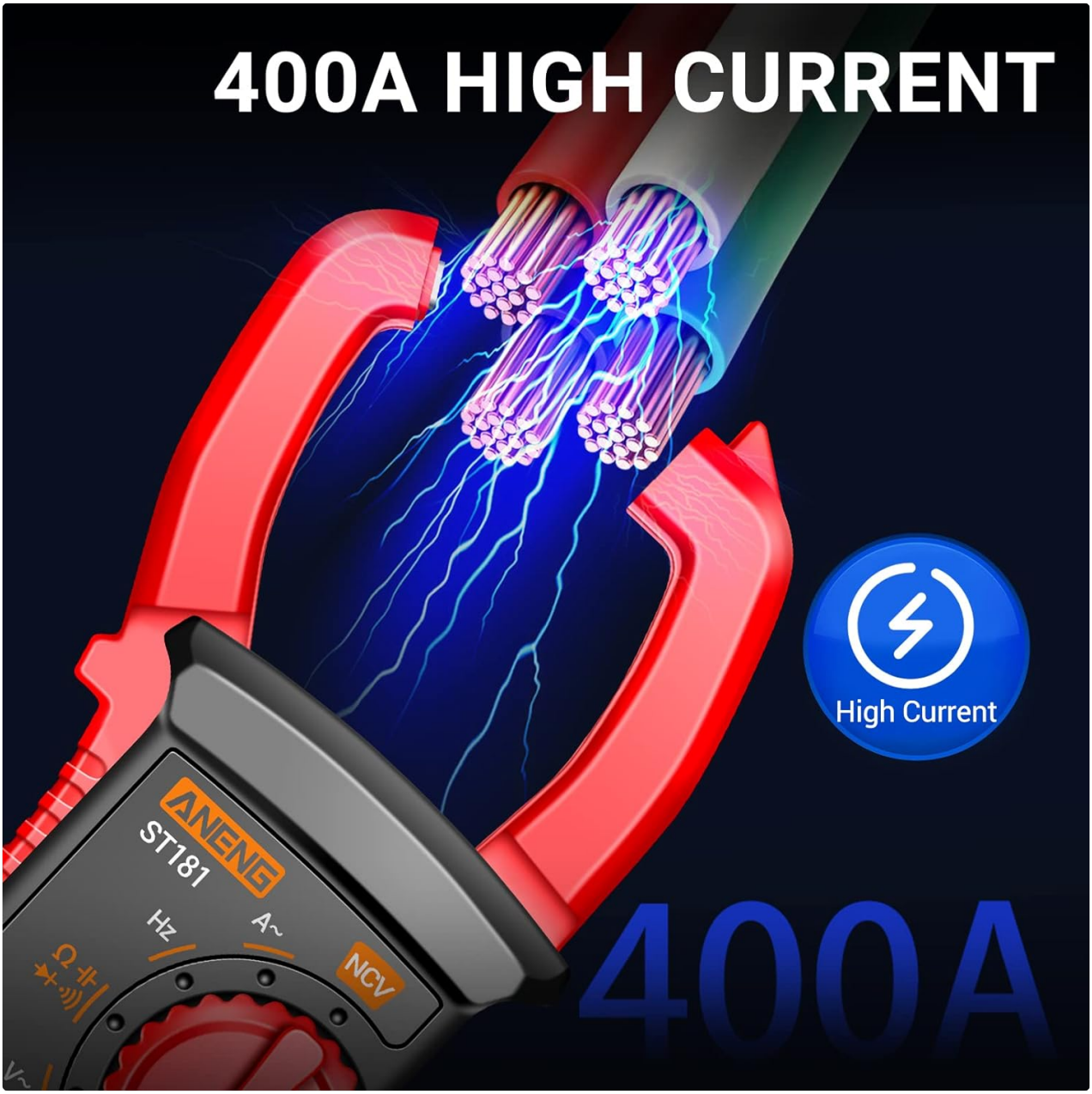


Figure 4: The ANENG ST181 clamp meter demonstrating its ability to measure high AC current (up to 400A) by clamping around multiple electrical wires.

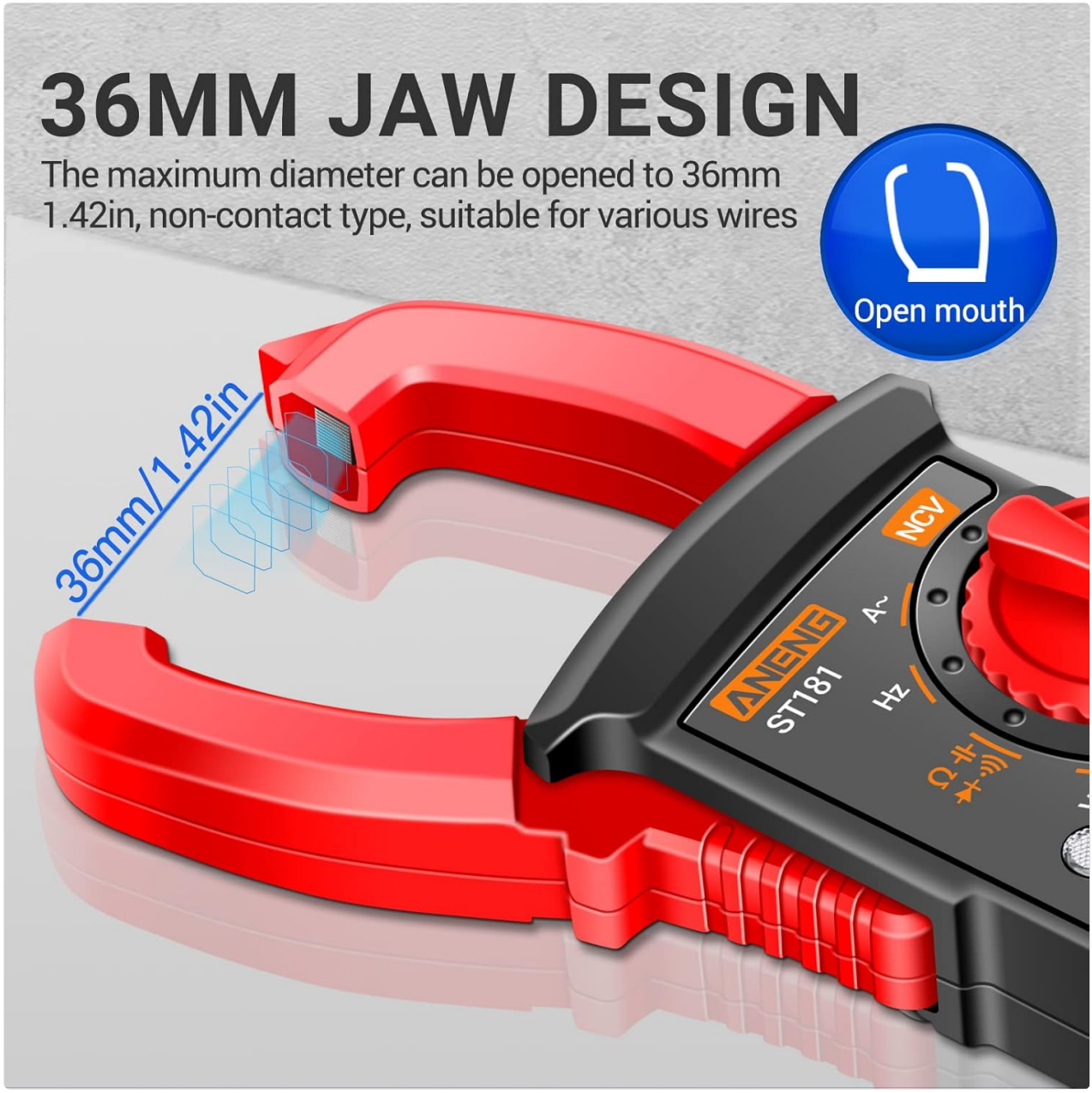


Figure 5: Illustration of the ANENG ST181's 36mm (1.42 inches) jaw opening, highlighting its non-contact measurement capability suitable for various wire types.

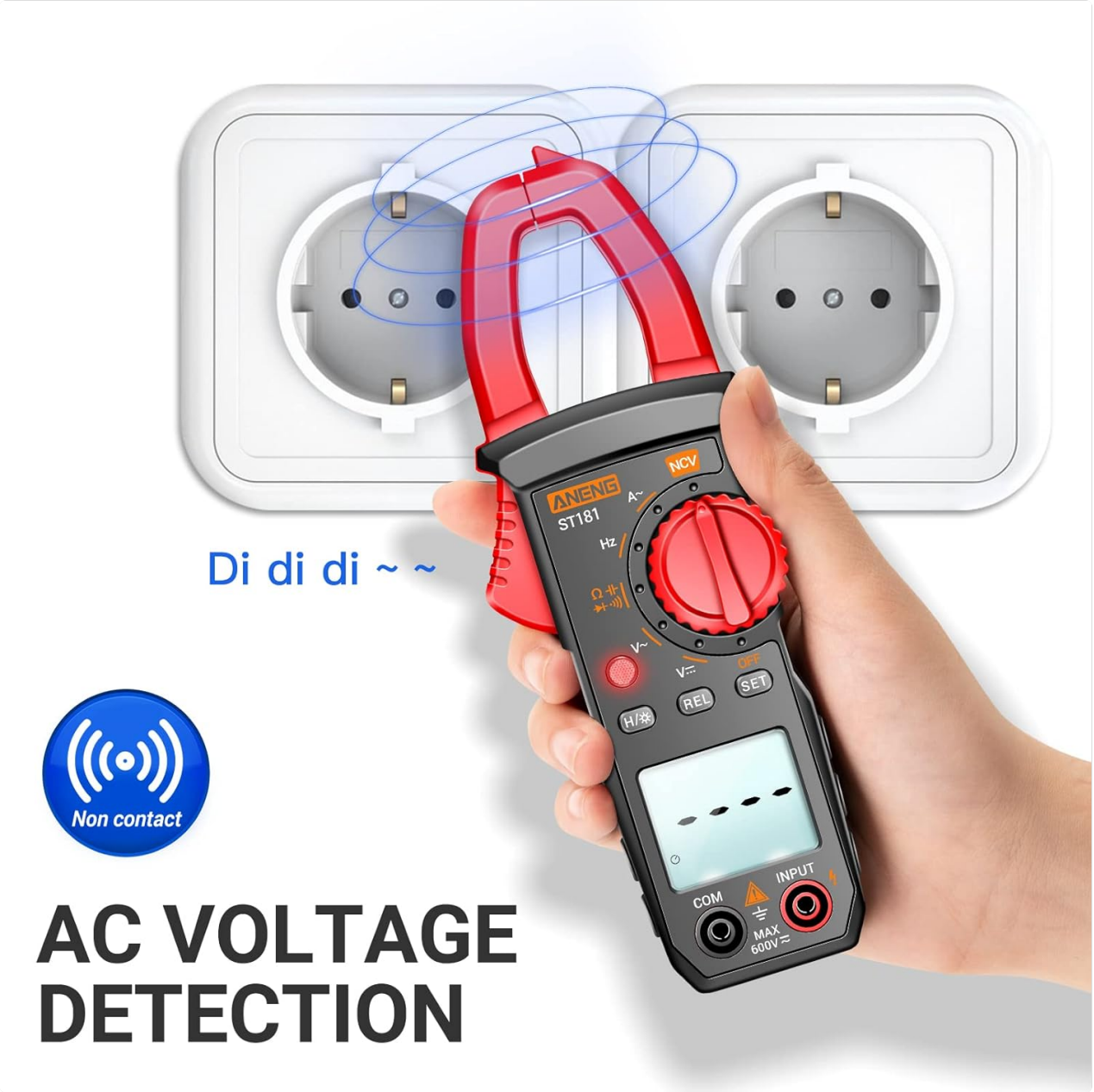


Figure 6: The ANENG ST181 clamp meter in use, demonstrating its Non-Contact Voltage (NCV) detection function near an electrical outlet, indicating voltage presence with an audible alert.

## Setup

### Battery Installation

The ANENG ST181 requires two AAA batteries for operation. To install or replace batteries:

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

### Test Lead Connection

For most measurements, connect the test leads to the meter as follows:

- Insert the black test lead into the "COM" (Common) input jack.
- Insert the red test lead into the "INPUT" (Voltage, Resistance, Capacitance, Diode, Frequency) input jack.

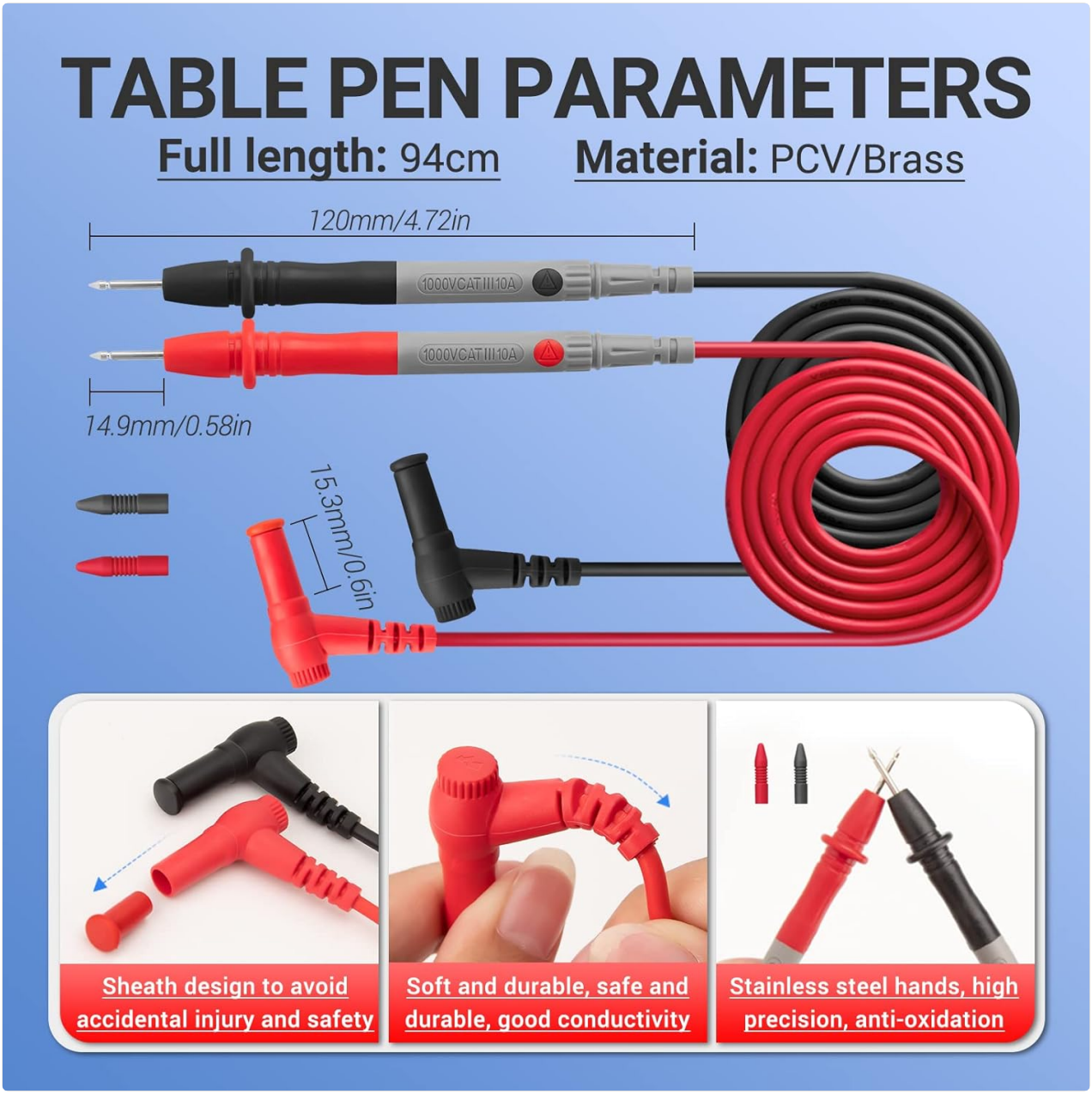


Figure 7: Detailed diagram illustrating the test lead connections to the multimeter and various interchangeable probe tips and alligator clips for different measurement needs.

## Operating Instructions

### General Operation

The meter is operated using a rotary dial to select the desired measurement function and buttons for additional settings.

- **Rotary Dial:** Turn the dial to select functions like AC Current (A~), AC/DC Voltage (V~, V-), Resistance (Ω), Capacitance (nF), Diode/Continuity, and Frequency (Hz).
- **H/* Button:** Press to hold the current reading on the display. Long press for backlight.

- **REL Button:** Used for relative measurement. For current measurement, press to zero out the meter if needed.
- **SET Button:** Used to switch between sub-functions within a dial setting (e.g., AC/DC voltage, Diode/Continuity).

## Measurement Modes

Below are instructions for common measurement types:

### AC Current Measurement

1. Set the rotary dial to "A~" (AC Current).
2. Press the "REL" button to zero out the meter if needed.
3. Open the clamp jaw and enclose a single live conductor. Ensure no other wires are inside the clamp.
4. Read the AC current value on the display.

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Video 1: Demonstration of AC current measurement using the ANENG ST181 clamp meter. The video shows the meter being used to measure current in a live electrical panel, highlighting the non-contact method.

### AC/DC Voltage Measurement

1. Set the rotary dial to "V~" for AC Voltage or "V-" for DC Voltage.
2. Connect the test leads to the circuit points you wish to measure.
3. Read the voltage value on the display.

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Video 2: Illustrates AC and DC voltage measurement using the ANENG ST181 multimeter. The video shows the meter connected to various power sources to demonstrate accurate voltage readings.

### NCV (Non-Contact Voltage) Detection

1. Set the rotary dial to "NCV".
2. Bring the top end of the meter near the conductor or outlet.
3. The meter will beep and the NCV indicator will light up if AC voltage is detected.

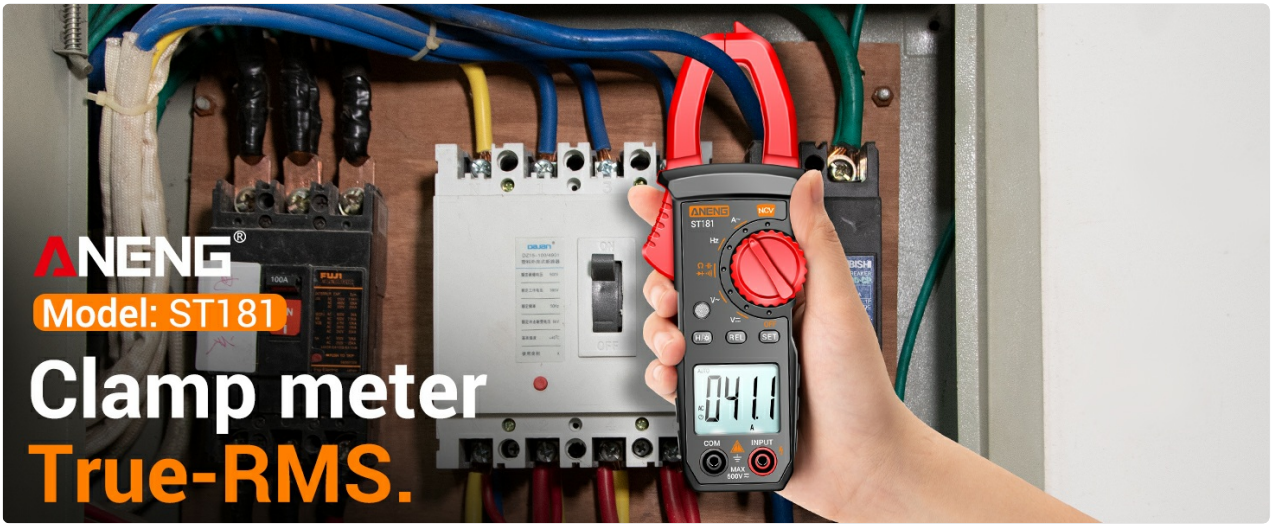


Figure 8: A comprehensive visual guide demonstrating various measurement functions of the ANENG ST181, including AC voltage, DC voltage, diode, resistance, capacitance, buzzer, AC current, NCV detection, zero line, and firewire detection.

## Maintenance

- **Cleaning:** Use a dry, soft cloth to clean the meter. Do not use abrasives or solvents.
- **Storage:** Store the meter in a cool, dry place away from direct sunlight and extreme temperatures. If storing for extended periods, remove the batteries.
- **Battery Replacement:** Replace batteries as soon as the low battery indicator appears to prevent inaccurate readings or damage to the meter.

## Troubleshooting

| Problem | Possible Cause | Solution |
|---|---|---|
| No display or dim display | Low batteries or incorrect battery installation. | Replace batteries with new AAA batteries, ensuring correct polarity. |
| Inaccurate readings | Incorrect function/range selection, poor test lead contact, or external interference. | Verify dial setting, ensure firm contact with test points, and minimize electromagnetic interference. |
| No NCV detection | No AC voltage present, or meter not close enough to the conductor. | Confirm voltage presence with another method, and ensure the NCV sensor is close to the live wire. |

## Specifications

| Attribute | Value |
|---|---|
| Brand | ANENG |
| Model | ST181 |
| Style | 4000 Counts AC Current |
| Product Dimensions | 3.94 x 3.94 x 0.79 inches |
| Item Weight | 0.6 Grams |
| Power Source | Battery Powered (2 AAA batteries required) |
| Color | Multi-color |
| Manufacturer | ANENG |

## Warranty and Support

ANENG provides service and technical support for this electrical tester. For specific warranty details or technical assistance, please refer to the contact information provided in the product packaging or visit the official ANENG website.