



# UNI-T UT255D High Voltage Clamp Ammeters Instruction Manual

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**UNI-T UT255D High Voltage Clamp Ammeters**



## Safety Precautions

- High voltage! DANGER! The operation must be performed by a trained certified personnel.
- Please fully understand the user manual before performing on-site test.
- Insulation rod must be used if the circuit voltage under test exceeds 600V.
- It is forbidden to test bare conductor or bus bar with voltage over 35kV. It is allowed to test bare conductor or bus bar with voltage equal to or lower than 60kV, or to test sheath-insulated cable with voltage lower than 110kV.
- The maximum outer diameter of conductor or cable the ammeter can test is 168mm, and the maximum size of bus bar the ammeter can test is 168mmx245mm.
- Please use dedicated insulation rod to connect the ammeter.
- After the ammeter is connected to stretched insulation rod, please handle it with care to avoid impact with the ground.
- Do not place and keep the detector in places with high temperature, high humidity, dew and direct sunlight.
- If the ammeter is not used for long, please charge the battery regularly or remove the battery. Please note the polarity when replacing battery. If battery replacement cannot be performed, please contact the manufacturer.
- Disassembly and repair of the ammeter should be operated by authorized qualified personnel, and the ammeter should be maintained regularly.
- It is forbidden to use if the ammeter and other components are damaged.
- If safety risk occurs due to the detector, please stop using the detector and seal it, then send it to authorized body for maintenance.
- It is recommended that insulation strength test shall be performed for the insulation rod once a year at least (With AC 110kV/rms insulation rod totally stretched, between the two ends).
- Method of inspecting leakage current of multicore cable: Hook the detector onto the cable, and then perform inspection alongside the cable. If a large current displayed on the receiver is changed to a small or zero current suddenly, then the inspected point on the cable is subject to current leakage.

## Introduction

UT255 High Voltage Hook Ammeter consists of large-aperture hook ammeter, wireless receiver and stretchable insulation rod. The iron core of ammeter is made by new materials: portable, high-precision, wide measurement range and good linearity. When the ammeter is connected to extensible insulation rod, it can test leakage current, current, frequency and load of bare conductor or bus bar under 35kV, or cable with safe insulation sheath under 11 0kV. Besides, it is particularly suitable for inspecting leakage current of multicore thick cables underground and outdoors, and inspecting transformer load. The straight-line distance to receive wireless data is 150m, the measureable alternating current range is between 0A to 6000A or 0A to 20000A, the maximum outer diameter of conductor or cable the ammeter can measure is 168mm, and the maximum size of the bus bar the ammeter can measure is 168mmx245mm. The ammeter can be hanged onto the line to carry out tests, which saves physical effort. The receiver adopts 3.5-inch true-color LCD, providing intuitive and clear image interface display. The insulation rod is portable and characterized by moisture resistance, high-temperature resistance, impact resistance, high insulation and extensibility. In addition, the ammeter has multiple functions such as data hold, data store and so on, applied widely in current detection and outdoor electrical operations in substations, power generation plants, industrial and mining enterprises, detection stations and electrical maintenance departments.

## Models

| Model  | Current measurement range | Remark              |
|--------|---------------------------|---------------------|
| UT255D | AC 0~6000A                | /                   |
| UT255E | AC 0~20000A               | Wider current range |

## Technical Specifications

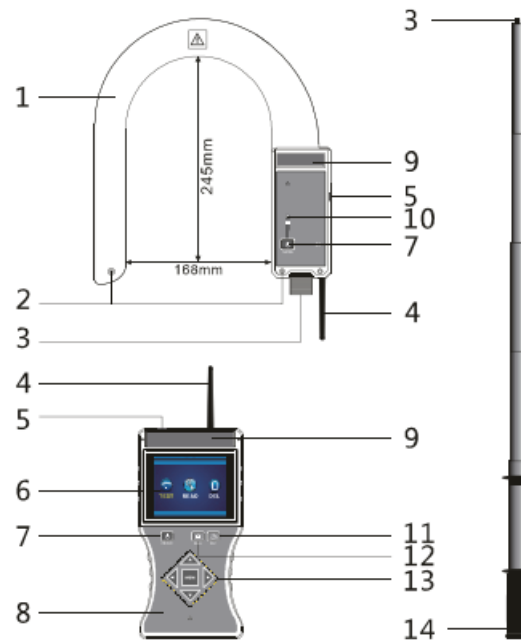
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| Function | Perform test for High/low voltage leakage current, current, frequency, grounding current of iron core, transformer load, inspect leakage current of multicore cable outdoors or underground. |
|----------|--|

|                                       |   |
|---------------------------------------|---|
| <b>Power supply</b>                   | DC 3.7V rechargeable lithium battery<br>Designed with USB charging port<br>Working time: 10 hours approximately |
| <b>Testing mode</b>                   | Hook-type CT (can be used to hang onto the conductor to perform test)   |
| <b>Transmission mode</b>              | Wireless transmission at frequency of 433MHz  |
| <b>Transmission distance</b>          | About 150m (Straight-line distance)   |
| <b>Display mode</b>                   | 3.5-inch true-color LCD display<br>Press $\uparrow$ $\downarrow$ button to adjust the backlight.                |
| <b>Measureable conductor diameter</b> | $\Phi$ 168mm conductor, or 168mm×245mm bus bar  |
| <b>Measurement range</b>              | Current: AC 0~6000A or AC 0~20.0kA (50/60Hz, automatically)   |
|                                       | Frequency: 45Hz~75Hz  |
| <b>Resolution</b>                     | 10mA; 0.1Hz   |
| <b>Current accuracy</b>               | 0.00A~99.9A: $\pm 2\% \pm 5 \text{dgt}$<br>(23°C $\pm 5^\circ\text{C}$ , <80%RH)                                |
|                                       | 100A~6000A: $\pm 3\% \pm 5 \text{dgt}$<br>(23°C $\pm 5^\circ\text{C}$ , <80%RH)                                 |
|                                       | 6.00kA~20.0kA: $\pm 4\% \pm 5 \text{dgt}$<br>(23°C $\pm 5^\circ\text{C}$ , <80%RH)                              |
| <b>Frequency</b>                      | $\pm 1 \text{Hz}$   |

|                       |  |
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| precision             |  |
| Mode switching        | Automatic switching  |
| Insulation rod length | Extended length: 5m approximately<br>Retracted length: 1m approximately (5 rods)   |
| Data storage          | 9999 groups  |
| Sample frequency      | 2 times/s  |
| Dimension             | Ammeter: 310×270×52mm(L*W*H)<br>Receiver: 250×100×40mm (L*W*H)   |
| Circuit voltage       | Bare conductor with voltage under 35KV;<br>Sheath-insulated cable with voltage under 110kV (With insulation rod installed) |
| Data hold             | Under testing mode, press HOLD button to hold data, press again to disable data hold.                                      |
| Exit function         | Press ESC button to exit from current interface  |
| Position error        | No position error in Area A<br>About 0.2% increase in Area B<br>about 2% increase in Area C                                |
| Data viewing          | After entering data viewing mode, press arrow button to read the stored data.  |
| Over range display    | The symbol “OL A” is displayed.  |
| No-signal             | If the receiver does not receive transmission  |

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|------------------------------|---|
| Indication                   | signal, it will display the symbol “----” dynamically.  |
| Auto power off               | About 15 minutes after startup, the ammeter will power off automatically to reduce battery consumption.   |
| Battery voltage              | When the battery voltage is lower than 3.2V, the low battery voltage symbol will be displayed to indicate charging the battery.   |
| Weight                       | <b>Ammeter:</b> 496g (including battery)<br><b>Receiver:</b> 395g (including battery)<br><b>Insulation rod:</b> 1.45kg<br><b>Total weight:</b> 11.5kg (including ammeter box) |
| Working humidity temperature | -10°C~40°C; below 80%RH   |
| Storage humidity temperature | -10°C~60°C; below 70%RH   |
| Interference                 | No co-channel interference to the frequency of 433MHz   |
| Insulation intensity         | <b>Insulation rod:</b> AC 110kV/rms (between both ends, with 5 rods extended)<br><b>Ammeter:</b> 2000V/rms (between the connector of insulation rod and the top of            |
|                              | ammeter)<br><b>Receiver:</b> 2000V/rms (before the front and back ends of the casing)   |
| Structure                    | Anti-leak Type II   |

## Structure



1. Ammeter
2. Fastening hole
3. Insulation rod connector
4. Antenna
5. Charging port
6. LCD
7. POWER button
8. Receiver
9. Model number area
10. Indicator light
11. ESC button
12. HOLD button
13. Arrow button & ENTER button
14. Insulation rod handle


## Operating Instructions

### Basic Operation

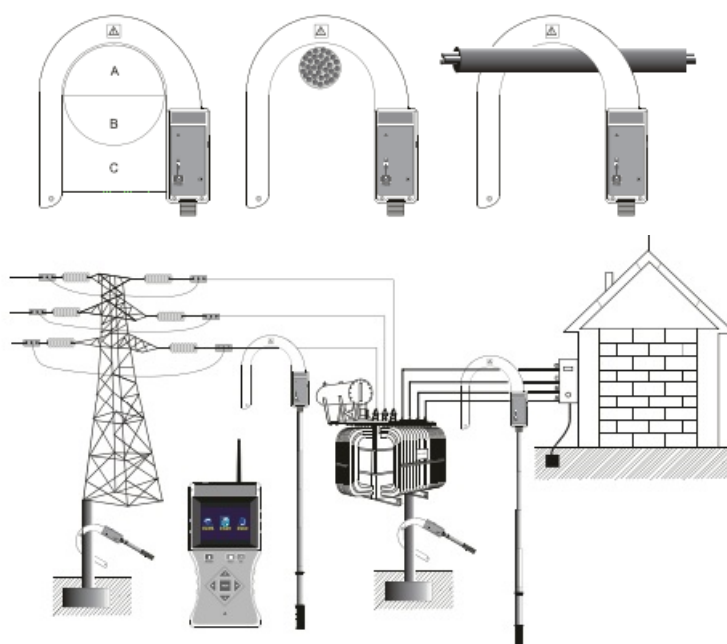
- Press POWER button to power on/off the receiver and ammeter.
- After the ammeter is powered on, the LED indicator light is lit up and the ammeter enters testing mode. If LED flashes slowly after startup, that indicates low battery, please charge the battery, the LED flashes quickly during charging. After the ammeter is turned on for 15 minutes, the LED will keep flashing slowly to indicate that the ammeter will powers off automatically, in such situation, if POWER button is pressed, the ammeter can keep working.
- After the receiver is turned on, press up or down button to adjust LCD backlight. After the receiver is turned on for 15 minutes, the LCD will flash to indicate that the receiver will power off automatically, in such situation, if POWER button is pressed, the receiver can keep working.

- Press HOLD button to lock and store the data. HOLD symbol is displayed when locking data. The receiver can store up to 9999 groups of data.
- Press Arrow buttons to move the cursor or view the data, press right or left button to select stepping value as 5, 10, 100 and 1000. Press up or down button to read the stored data.
- Press ENTER button to confirm carrying out current operation.
- Press ESC button to exit from current directory.
- In data deletion mode, select “Yes” and press ENTER button to confirm deleting all the stored data. Please note that the deleted data cannot be recovered.

## Testing

|   |  |
|---|--|
|  | <p>Danger! High voltage! The operation must be performed by authorized trained personnel, the operator must observe the safety regulation. Otherwise there will be electric shock hazard, which may cause personal injury.</p> |
|   | <p>Danger! It is forbidden to test bare conductor or bus rod over 35kV. Otherwise there will be electric shock hazard, which will cause personal injuries or equipment damages.</p>  |

Hang the ammeter onto the conductor and set the conductor at Area A of the ammeter as shown in the figure below. No position error in Area A; about 0.2% increase in Area B; about 2% increase in Area C. Method of inspecting leakage current of multicore cable: Hook the ammeter onto the cable, and then perform inspection alongside the cable. If a large current displayed on the receiver is changed to a small or zero current suddenly, then the inspected point on the cable is subject to current leakage.



- Hook the neutral and live wires together to measure single-phase leakage current of electrical appliance.



- Hook a grounding wire to measure the leakage current of the grounding wire of the equipment.
- Hook four three-phase wires together to test the total leakage current.
- Hook a main line to measure the current of the main circuit.

## Battery Charging and Replacement

- Charge the battery once every three months if the ammeter is not used for long.
- Warning! It is forbidden to perform test if the battery cover is not closed well. Otherwise, it may cause danger.
- Please pay attention to the battery polarity when replacing battery, if the polarity is incorrect, it may cause damage to the ammeter.
  1. When the battery voltage is lower than 3.2V, please charge the battery timely, it takes about 4 hours to charge the battery fully.
  2. Please be sure that the ammeter is in shutdown status before replacing battery, the replacement steps are as follows:
    - Loosen the screw of battery cover.
    - Open the battery cover and replace with new battery (Note the battery specification and polarity)
    - Rejoin the battery cover and tighten the screws.
  3. Press POWER button to check if the ammeter can be powered on normally, if not, please repeat Step 2.


## Packaging List

|                                      |       |
|--------------------------------------|-------|
| Ammeter                              | 1set  |
| Receiver                             | 1set  |
| Antenna                              | 2pcs  |
| Extensible insulation rod            | 1pcs  |
| Tool box                             | 1pcs  |
| USB charging adaptor                 | 1pcs  |
| USB charging cable                   | 1pcs  |
| Lithium battery (inside the ammeter) | 2pcs  |
| User manual                          | 1 pcs |

### Note:

The company is not responsible for other losses caused by use. The content of this user manual cannot be used as a reason for using the product for special purposes. The company reserves the right to modify the contents of the user manual. If there are changes, no further notice will be given.

## Documents / Resources

|   |   |
|---|---|
|  | <a href="#">UNI-T UT255D High Voltage Clamp Ammeters</a> [pdf] Instruction Manual<br>UT255D, High Voltage Clamp Ammeters, Clamp Ammeters, High Voltage Ammeters, Ammeter<br>s |
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