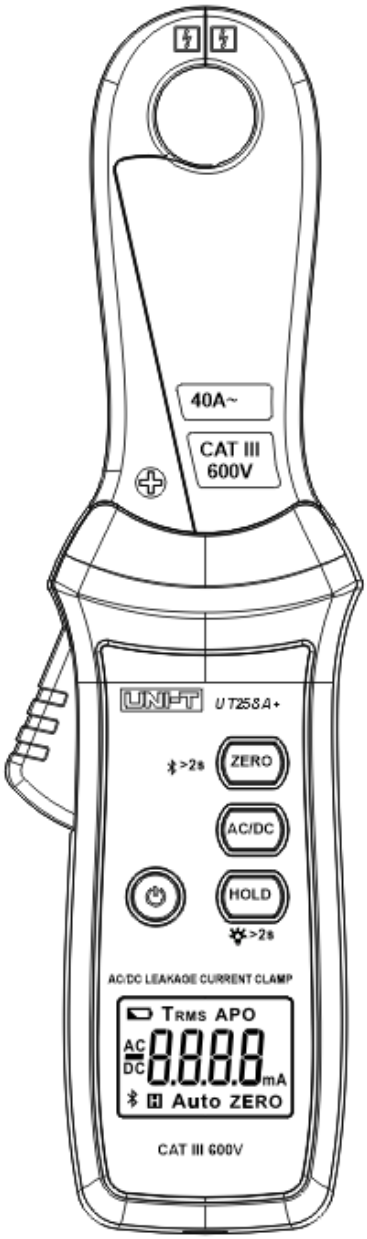
UT258A+

Leakage Current Clamp



Preface

Thank you for purchasing a new Uni-Trend product. To ensure proper use, please read the entire manual carefully before use, especially the "Safety Information" section.

After reading this manual, please keep it properly, either with the Meter or somewhere easily accessible, for future reference.

Limited Warranty and Limitation of Liability

Uni-Trend warrants that this product will be free from any defects in materials and workmanship for a period of one year from the date of purchase. This warranty does not apply to damage caused by accident, negligence, misuse, modification, contamination and abnormal operation or handling. The distributors are not entitled to any other warranties on behalf of Uni-Trend. If warranty service is required during the warranty period, please contact the nearest authorized service center to obtain the product return authorization information, and then send the product to the service center with a description of the product problem.

This warranty is your sole remedy. Otherwise, Uni-Trend disclaims all warranties, express or implied, such as those applicable to a particular purpose. Uni-Trend shall not be liable for any special, indirect, incidental or consequential damages or losses arising from any cause or presumption, and the above limitations and provisions of liability may not apply to you because some states or countries do not allow limitations on implied warranties and incidental or consequential damages.

1. Overview

UT258A+ is a stable, safe and reliable 40A AC/DC True RMS digital leakage clamp meter (hereinafter referred to as the Leakage Current Clamp). The overall circuit design is centered on a large-scale integrated integrating A/D converter. Full-range overload protection circuit and a unique appearance design make it a superior and practical new-generation electrical measuring instrument. The clamp jaw opening is ϕ20mm. This series of meters can be used to measure AC/DC current, and features multiple functions such as data hold, Bluetooth data transmission, low battery indication, backlight, and auto power-off.

It can be used in the production and maintenance of new energy vehicles, tracking the source of grounding leakage current, testing leakage current of grounding wires or grounding systems, identifying intermittent tripping of leakage protection devices without shutting down equipment, checking for electrical insulation faults in UPS systems, detecting ampere-level currents in power distribution cabinets of data centers, measuring small currents in industrial control systems, and testing low/medium power devices or circuits in R&D departments. Applications also include substations, power plants (such as hydro, wind, and thermal power plants), transmission stations, and power companies for testing and verifying grounding leakage and transformer winding grounding leakage, among other scenarios.

2. Features

1） Lightweight and compact body for easy one-handed operation and portability.

2） Small and elongated clamp jaw that fits into tight spaces, such as new energy vehicle maintenance.

3） Bluetooth 5.0 (BLE) communication.

4） High resolution: 1 mA resolution (AC & DC).

5） Compatible app developed for Android, iOS, and HarmonyOS.

6） Non-invasive AC and DC current measurement.

7） Automatic power-saving circuit design; consumption in auto power-off mode <50uA.

Please carefully read the relevant contents regarding "Safety" and "Warning" in this manual, and strictly follow all the precautions in the warnings.

⚠ **WARNING**: Before using the Meter, please carefully read the "Safety Information" in the manual.

3. Unpack to Check

This user manual includes relevant safety information and warnings. Please read the relevant content carefully and strictly follow all warnings and precautions. When opening the packaging box and taking out the Meter, please carefully check whether the following accessories are missing or damaged. If any item is missing or damaged, please contact your supplier immediately.

1. User Manual	1 pc
2. 9V 6LR61 Battery	1 pc

4. Safety Information

Please pay attention to the 'Warning Labels and Warning Information'. Warnings indicate situations or actions that pose a danger to the user or may cause damage to the Meter or the device being tested.

The Meter is designed in accordance with the safety standards of IEC/EN 61010-1, IEC/EN 61010-2-032, and the EMC standard EN 61326-1. It complies with double insulation, CAT III 600 V, pollution degree 2, and is intended for indoor use. If the Meter is not used in accordance with the operating instructions, the protection provided by the Meter may be impaired or lost.

1. Before use, check the Meter and test leads for any damage or abnormal conditions. If any abnormalities are found—such as exposed test leads, damaged casing, an LCD that does not display or displays incorrectly, etc.—do not use it.
2. Do not use the Meter if the cover is not properly in place, as there is a risk of electric shock.
3. Damaged test leads must be replaced, and only test leads of the same model or with the same electrical specifications should be used.
4. While the Meter is measuring, do not touch exposed wires, connectors, unused input terminals, or the circuit being measured.
5. When measuring voltages higher than 30V DC or 30V AC, be extremely careful, and be sure not to let your fingers exceed the protective finger guard on the test leads to prevent electric shock.
6. When the range of the measured value is unknown, the Meter must be set to the maximum range.
7. Never apply voltages or currents exceeding those indicated on the Meter between terminals, or between any terminal and ground.
8. During measurement, the functional switch must be in the correct position. Before changing the functional switch, disconnect the test leads from the circuit being measured. Do not change

the range while measuring to prevent damage to the Meter.

9. Before performing online measurements of resistance, diodes, or circuit continuity, you must first cut off all power supplies in the circuit of the device under test and discharge all residual charges in the capacitors.
10. Do not use the low-pass filter function to verify the presence of dangerous voltages, as voltages exceeding the indicated value may exist. First, measure the voltage without selecting the filter to check for the presence of dangerous voltages. Then select the filter function.
11. Only use test leads that have the same rated voltage, frequency, category, and rated current as the Meter, and that are approved by safety certification authorities.
12. Before opening the battery cover, remove the test leads from the Meter.
13. When using the probe, fingers should be held behind the probe finger guard.
14. Do not store or use the Meter in high temperature, high humidity, flammable, explosive, or strong electromagnetic field environments.
15. Do not change the internal wiring of the Meter without authorization to avoid damaging the Meter and endangering safety.
16. When the "" symbol shows on the display, the batteries should be replaced promptly to ensure measurement accuracy.
17. Turn off the power immediately after measurement. If not used for a long time, remove the battery.
18. Before use, please measure the known intrinsic voltage or current of the product to ensure the product is working properly.
19. Use test leads compliant with IEC/EN/UL 61010-031 and with equal or higher electrical specifications.
20. Do not exceed the rated frequency.

5. Electrical Symbols

	Do not place equipment and its accessories in trash. Items must be properly disposed of in accordance with		Battery

	local regulations.		
~	AC (Alternating Current)	⎓	DC (Direct Current)
≂	AC (Alternating Current)/DC (Direct Current)	⚠	Warning
⚡	High Voltage Warning	⏚	Earth Ground
⧈	Double Insulated	▭	Low Battery
CAT III	It is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.		
CAT IV	It is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.		
CE	Compliant with EU directives		
c ETL us Intertek 4007682	Complies with UL 61010-1 and 61010-2-032. Certified to CSA C22.2 No. 61010-1 and 61010-2-032.		

6. General Characteristics

1. Maximum voltage between the signal input terminal and the COM terminal: See the input protection voltage description for each range.
2. Display count: 4200
3. The display updates approximately 2～3 times per second.
4. Range: Auto
5. Polarity display: Auto
6. Overrange indication: Displays "OL"
7. Low battery indication: ≤7.5 V approximately
8. Power supply: One 6LR61 9V battery
9. Auto power-off function: The Meter will automatically power off if no button is pressed within about 15 minutes. This function can also be turned off if needed.
10. Operating temperature: 0℃～40℃ (32℉～104℉)
11. Storage temperature: -10℃～60℃ (14℉～140℉)

12. Relative humidity: ≤75% (0℃～30℃ below); ≤50% (30℃～40℃)
13. Altitude: Not exceeding 2000m
14. Electromagnetic Compatibility: In accordance with EN61326-1 and EN61326-2-2
15. Weight: 233 g
16. Safety standard: IEC 61010-1: CAT III 600V
17. Pollution Degree: 2

7. External Structure (Figure 1)

1. Clamp jaw
2. Function buttons
3. POWER ON/OFF button
4. LCD display
5. Retaining screw for battery compartment

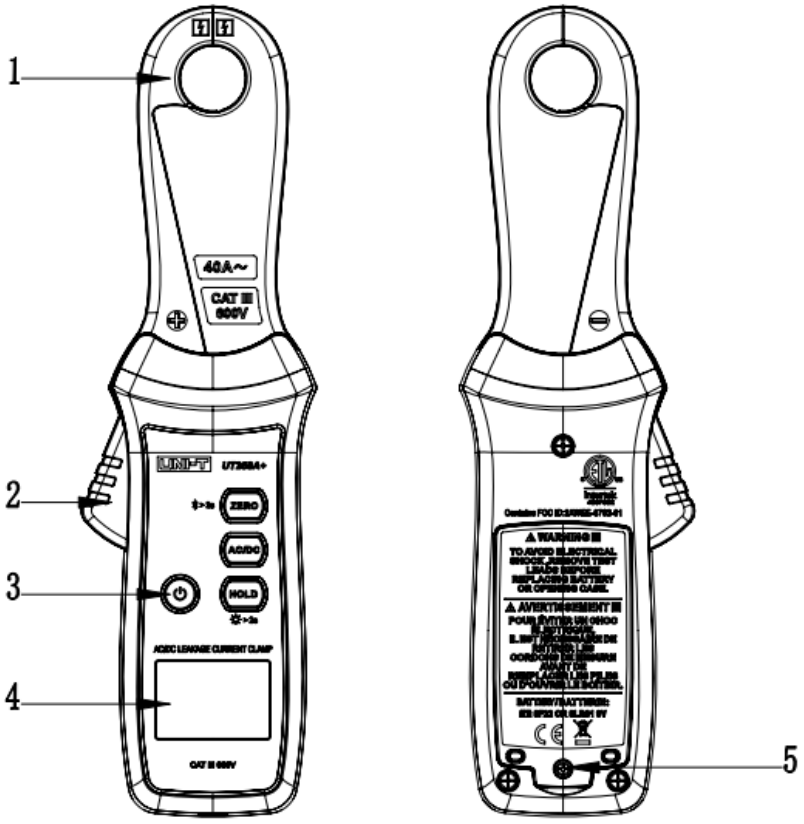


Figure 1

8. LCD Display (Figure 2)

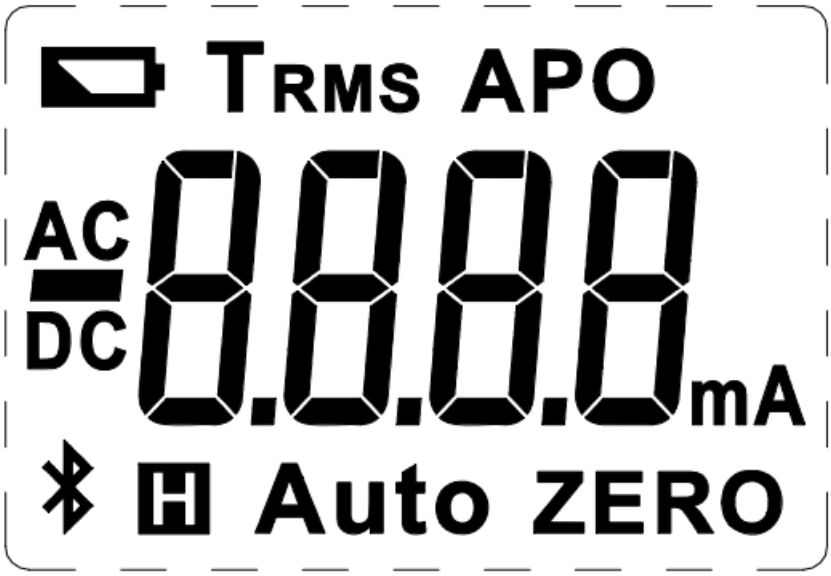


Figure 2

Symbol	Description
	Displayed when Bluetooth is turned on
H	Data hold
TRMS	True RMS
—	Negative reading
AC	AC measurement
DC	DC measurement
	Low battery
AUTO	Auto range
APO	Auto power-off
mA	Units of current: mA, A
ZERO	Zero offset clearing

9. Button Functions

Button Description:

Short press: Press the button and hold for less than 2 seconds.

Long press: Press the button and hold for 2 seconds or more.

1. Power Button

   1）Long press to power on/off the Meter.

2. AC/DC Button

3. Short press: Select ACA or DCA measurement (defaults to ACA).

4. ZERO/ Button

   1）In DCA mode: Short press to enter or exit the zero offset clearing function.

   2) Pressing the ZERO button still maintains auto ranging (in HOLD mode, the ZERO button is non-functional)

   3) Long press: Turn Bluetooth on or off.

5. HOLD/Backlight Button

   1）Short press: Enter or exit Data Hold. When Bluetooth is connected, triggering HOLD also triggers a single record in the app.

   2）Long press: Turn the backlight on or off.

10. Operating Instructions

1. Please check the built-in 6LR61 9V battery. If the battery power is insufficient when the Meter is turned on, an "" symbol will appear on the display. In this case, the battery must be replaced in time before use.

2. AC/DC Current Measurement

1) Switch the function to the AC current mode or DC current mode (defaults to the AC current mode when powered on).
2) Open the clamp jaw, place it around the current conductor, and then close the jaw. (See Figure 4.1)
3) The Meter can only measure one current conductor at a time. If two or more current conductors are measured simultaneously, the measurement reading will be incorrect. (See Figure 4.2)
4) The current measurement has ranges of 4000mA and 40.00A, and the Meter automatically switches ranges.

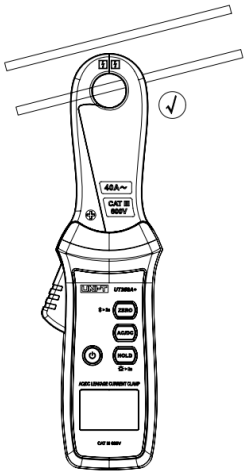


Figure 4.1

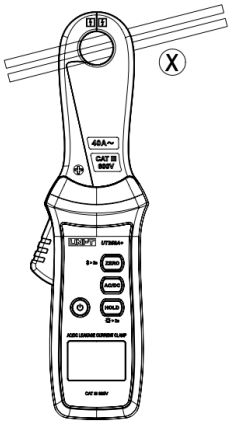


Figure 4.2

⚠ **WARNING**:

*. The current measurement function must be operated between 0℃ and 40℃.The Meter is sensitive to mechanical stress to varying degrees during measurement, and impacts can cause temporary changes in readings.

*. If the Meter display shows “OL”, avoid continuing the test, as prolonged testing may damage the Meter. In this case, use a meter with a higher range for the measurement.

*. If there are hazardous moving parts that can be touched in the device being measured, personal protective equipment should be used.

3. Other Functions

1) Auto Power-Off: If there is no operation for 15 minutes during measurement, the Meter will automatically power off to enter an energy-saving state. When a Bluetooth connection is established, the auto power-off function is disabled (this does not apply to the waiting-for-connection state). When Bluetooth is disconnected, the auto power-off function resumes. To turn the Meter back on from the auto power-off state, long press the “ON/OFF” button. To disable the auto power-off function, press and hold the “HOLD” button while turning on the Meter, and release the “HOLD” button after all segments appear on the LCD. The auto power-off function will then be disabled, and the “APO” symbol will not show on the LCD. The auto power-off function will be restored upon the next power-on.
2) Low Voltage Detection: When the battery voltage is ≤ approximately 7.5 V, the low battery symbol "▭" is displayed.

3) Under Voltage Power-Off: When the battery voltage is ≤ approximately 6.8 V, the low battery symbol "" is displayed and the Meter automatically powers off.

11. Technical Specifications

Accuracy: ± (a% of reading + b counts), 1-year warranty

Ambient temperature: 0℃～40℃ (32℉～104℉)

Relative humidity: ≤75%

⚠ **WARNING:**

- The temperature condition for accuracy is 18°C to 28°C, with environmental temperature fluctuations kept stable within ±1°C. When the temperature is <18°C or >28°C, the additional temperature coefficient error is: 0.2 x (specified accuracy)/°C

1. AC Current Measurement

Range	Resolution	Accuracy
4000mA	1mA	±（1.5%+5）
40.00A	0.01A	±（1.3%+5）

*. Frequency response: 40 Hz to 400 Hz

*. Overload protection: Not specified

*. Accuracy guaranteed range: 5% to 100% of the range

*. Offset without input at the jaw: ≤5 counts

2. DC Current Measurement

Range	Resolution	Accuracy
4000mA	1mA	±（1.5%+5）
40.00A	0.01A	±（1.3%+5）

*. Offset: ≤80 counts. Before each measurement, press the ZERO button to zero the reading (the LCD displays “ZERO”), and keep the Meter’s orientation as consistent as possible with the orientation during zeroing.

*. The jaw is a precision sensor component. Open and close the jaw gently, and avoid violent shocks or impacts.

*. Overload protection: Not specified

*. Offset without input at the jaw: ≤5 counts

12. Maintenance and Repair (Figure 5)

⚠**WARNING**: Before opening the Meter's back cover or battery cover, make sure the power is off and the test leads are disconnected from the input terminals and the measured circuit.

1. General maintenance and repair

- For maintenance, please clean the Meter casing with a damp cloth and mild detergent. Do not use abrasives or solvents.
- If any abnormalities are found in the Meter, stop use immediately and send it for repair.
- When calibration or repair of the Meter is necessary, it should be done by qualified professional maintenance personnel or designated service centers.

2. Battery installation and replacement

The built-in battery of the Meter is specified as: 9V 6LR61 battery

When the low battery symbol appears on the LCD, replace the built-in battery immediately; otherwise, measurement accuracy will be affected.

Please install or replace the battery in the following order:

a. Turn off the Meter and remove the test leads connected to the input terminals.

b. Place the Meter with the panel facing down, loosen the battery compartment screws, remove the battery cover, take out the battery, and install a new battery according to the polarity indication.

c. After installing a new battery, put the battery cover back on and fasten the screws.

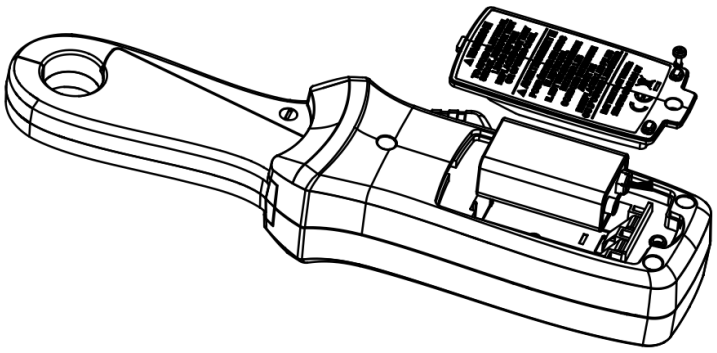


Figure 5

For maintenance and battery replacement, please refer to the user manual.