UNI-T

# UT207/208
## Operating Manual

## Digital Clamp Multimeters

### Overview

This Operating Manual covers information on safety and cautions. Please read the relevant information carefully and observe all the **Warnings** and **Notes** strictly.

**⚠ Warning**

**To avoid electric shock or personal injury, read the "Safety Information" carefully before using the Meter.**

Model UT207 and UT208 are 3 5/6 digit AC&DC digital clamp multimeters ( hereafter referred to as "the Meter" ) characterized with stable performance, high reliability and novel structure. They are designed with large-scale integrated circuits and dual integral A/D converter as its core and offer full-range overload protection.

The Meter can measure AC/DC Voltage, AC/DC Current, Frequency, Duty Cycle, Resistance, Diodes, Continuity, Surge Current and etc.

UT208 has an extra temperature feature.

### Unpacking Inspection

Open the package case and take out the Meter. Check the following items carefully for any missing or damaged part:

| Item | Description | Qty |
|---|---|---|
| 1 | English Operating Manual | 1 pc |
| 2 | Test Lead | 1 pair |
| 3 | Point Contact Temperature Probe (Only UT208) (This included point contact temperature probe can only be used up to 230˚C. For any measurement is higher than that, the rod type temperature probe must be used) | 1 pair |
| 4 | Tool box | 1 pc |
| 5 | 9V Battery (NEDA1604A or 6LF22) | 1 pc |

In the event you find any missing or damaged part, please contact your dealer immediately.

### Safety Information

This Meter complies with IEC61010-1, IEC61010-2-032, Pollution Degree 2, Overvoltage Category(CAT. Ⅱ 600V, CAT Ⅲ 300V) and Double Insulation standards.

CAT. II: Local level, appliance, PORTABLE EQUIPMENT etc., with smaller transient overvoltages than CAT. III.
CAT. III: Distribution level, fixed installation, with smaller transient overvoltages than CAT. IV

Use the Meter only as specified in this operating manual, otherwise the protection provided by the Meter may be impaired.

In this manual, a **Warning** identifies conditions and actions that pose hazards to the user, or may damage the Meter or the equipment under test.

A **Note** identifies the information that user should pay attention to.

**⚠ Warning**

**To avoid possible electric shock or personal injury, and to avoid possible damage to the Meter or to the equipment under test, adhere to the following rules:**

- **Before using the Meter inspect the case. Do not use the Meter if it is damaged or the case (or part of the case) is removed. Look for cracks or missing plastic. Pay attention to the insulation around the connectors.**
- **Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads with identical model number or electrical specifications before using the Meter.**
- **Do not apply more than the rated voltage, as marked on the Meter , between the terminals or between any terminal and grounding. If the value to be measured is unknown, use the maximum measurement position and reduce the range step by step until a satisfactory reading is obtained.**
- **When measurement has been completed, disconnect the connection between the test leads and the circuit under test, remove the testing leads away from the input terminals of the Meter and turn the Meter power off.**
- **The rotary switch should be placed in the right position and no any changeover of range shall be made during measurement toprevent damage of the Meter.**
- **Do not carry out the measurement when the Meter's back case and battery compartment are not closed to avoid electric shock.**
  **Do not input higher than 600V between the two Meter's input terminal to avoid electric shock and damage to the Meter.**
- **When the Meter is working at an effective voltage over 70V in DC or 33V rms in AC, special care should be taken for there is danger of electric shock.**
- **Use the proper terminals, function, and range for your measurements.**
- **Do not use or store the Meter in an environment of high temperature, humidity, explosive, inflammable and strong magnetic field. The performance of the Meter may deteriorate after dampened.**
- **When using the test leads, keep your fingers behind the finger guards.**
- **To avoid electric shock, do not touch the bare wires, connectors, unused input terminals or the tested circuit during measurement.**
- **Disconnect circuit power and discharge all high-voltage capacitors before testing resistance, continuity and diode.**
- **Replace the battery as soon as the battery indicator appears. With a low battery, the Meter might produce false readings that can lead to electric shock and personal injury.**
- **When servicing the Meter, use only the replacement parts with the same model or identical electrical specifications.**
- **The internal circuit of the Meter shall not be altered at will to avoid damage to the Meter and any accident.**
- **Soft cloth and mild detergent should be used to clean the surface of the Meter when servicing. No abrasive and solvent should be used to prevent the surface of the Meter from corrosion, damage and accident.**
- **The Meter is suitable for indoor use.**
- **Turn the Meter off when it is not in use and take out the battery when not using for a long time.**
- **Constantly check the battery as it may leak when it has been using for some time, replace the battery as soon as leaking appears. A leaking battery will damage the Meter.**

### International Electrical Symbols

| | |
|---|---|
| ~ | AC (Alternating Current) |
| ⎓ | DC (Direct Current) |
| ≂ | AC or DC |
| ⏚ | Grounding |
| ▣ | Double Insulated |
| ⚠ | Warning. Refer to the Operating Manual |
| | Low Battery Indication |
| •)) | Continuity Test |
| ⊣⊢ | Diode |
| | Danger of High Voltage |
| CE | Conforms to Standards of European Union |

### The Meter Structure (See Figure 1)

1. Hand Guards: to protect user's hand from touching the dangerous area.
2. Trigger: press the lever to open the transformer jaws. When the pressure on the lever is released, the jaws will close.
3. Functional Buttons
4. Input Terminals
5. LCD Display
6. Rotary Switch
7. Transformer Jaw: designed to pick up the AC and DC current flowing through the conductor. It could transfer current to voltage. The tested conductor must vertically go through the Jaw center.

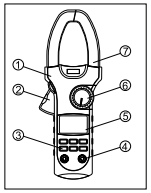

Figure 1

### Functional Buttons

Below table indicated for information about the functional button operations.

| Button | Operation Performed |
|---|---|
| SELECT | Press **SELECT** button to select the alternate functions including V≂, •))⊣⊢Ω, %Hz, A~ and ˚C ˚F (UT208 only). |
| MAX/MIN | Starts recording of maximum and minimum values.<br>Press to step the display through high (MAX) and low (MIN) readings at any mode.<br>● Press and hold for one second to exit MAX/MIN mode. |
| ☼ | ● Press to turn on the backlight, repress to turn it off, otherwise it will automatically off after 1 minute. |
| HOLD | ● Press **HOLD** to enter the Hold mode in any mode, the Meter beeps.<br>● Press **HOLD** again to exit the Hold mode to return to measurement mode, the Meter beeps.<br>● Turning the rotary switch or pressing **SELECT** button can also exit Hold mode.<br>● Press **HOLD** button for 2 seconds when turning on the Meter to display full icon. |
| ⇳Hz | When the Meter is at %Hz, V≂ and A~, press ⇳Hz to measure frequency and duty cycle. |
| ZERO | Press **ZERO** to zeroing the display before measuring DC current. |

### The Effectiveness of Functional Buttons

Not every functional buttons can be used on every rotary switch positions. Below table describe on which rotary switch position the functions of buttons are available.

| Rotary Switch Positions | Functional Buttons | | | | | |
|---|---|---|---|---|---|---|
| | SELECT | MAX/MIN | ☼ | HOLD | ⇳Hz | ZERO |
| V≂ | ● | ● | ● | ● | ● | N/A |
| •))⊣⊢Ω | ● | ● | ● | ● | N/A | N/A |
| %Hz | N/A | ● | ● | ● | ● | N/A |
| 66A⎓ | N/A | ● | ● | ● | N/A | ● |
| 1000A⎓ | N/A | ● | ● | ● | N/A | ● |
| 66A~ | ● | ● | ● | ● | ● | N/A |
| 1000A~ | ● | ● | ● | ● | ● | N/A |
| ˚C ˚F | ● | ● | ● | ● | N/A | N/A |

### Display Symbols (See Figure 2)

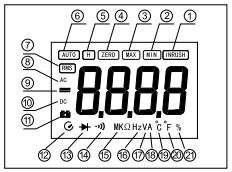


Figure 2

| Number | Symbol | Meaning |
|---|---|---|
| 1 | INRUSH | Indicator for Surge current |
| 2 | MIN | Minimum reading displayed |
| 3 | MAX | Maximum reading displayed |
| 4 | ZERO | Indicator for zeroing |
| 5 | H | Data hold is active |
| 6 | AUTO | The Meter is in the auto range mode in which the Meter automatically selects the range with the best resolution. |
| 7 | RMS | True RMS indicator |
| 8 | AC | Indicator for AC voltage or current |
| 9 | − | Indicates negative reading |
| 10 | DC | Indicator for DC voltage or current |
| 11 | | The battery is low.<br>⚠ **Warning: To avoid false readings, which could lead to possible electric shock or personal injury, replace the battery as soon as the battery indicator appears.** |
| 12 | | Sleep mode is on |
| 13 | ⊣⊢ | Test of diode |
| 14 | •)) | The continuity buzzer is on |
| 15 | Ω,KΩ,MΩ | Ω: Ohm. The unit of resistance.<br>kΩ:Kilohm. 1x10³ or 1000 ohms<br>MΩ:Megohm. 1x10⁶ or 1,000,000 ohms |
| 16 | Hz, kHz, MHz | Hz: Hertz. The unit of frequency.<br>KHz: Kilohertz. 1x10³ or 1000 hertz.<br>MHz: Meghertz. 1x10⁶ or1,000,000 hertz. |
| 17 | mV, V | Volts. The unit of voltage.<br>mV: Millivolt. 1x10⁻³ or 0.001 volts |
| 18 | A | Amperes (amps). The unit of current. |
| 19 | ˚C | The unit of temperature:<br>˚C: Centigrade temperature |
| 20 | ˚F | The unit of temperature:<br>˚F: Fahrenheit temperature |
| 21 | % | Duty cycle measurement |

### Measurement Operation

**A. Measuring DC/AC** ( See Figure 3 )

**⚠ Warning**

**To avoid harm to you or damage to the Meter from eletric shock, do not attempt to measure voltages higher than 600V AC/DC, although readings may be obtained.**

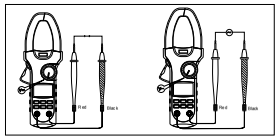

Figure 3

The DC Voltage ranges are: 6.6V, 66V and 600V

The AC Voltage ranges are: 6.6V, 66V and 600V

To measure DC/AC voltages, connect the Meter as follows:

1. Insert the red test lead into the **VΩHz** terminal and black test lead into the **COM** terminal.
2. Set the rotary switch to **V≂**. DC measurement mode and auto ranging is a default. Press **SELECT** to switch to AC measurement mode.
3. Press ⇳**Hz** button to measure frequency or duty cycle, but the frequency or duty cycle readings obtained from this range is only for reference.
4. Connect the test leads across with the object being measured.
   The measured value shows on the display.

**Note**

- When DC/AC voltage measurement has been completed, disconnect the connection between the testing leads and the circuit under test and remove testing leads from the input terminals.

**B. Measuring Resistance** (See Figure 4)

**⚠ Warning**

**To avoid damage to the Meter or to the devices under test, disconnect circuit power and discharge all the high-voltage capacitors before measuring resistance.**

The resistance ranges are:
660Ω, 6.6kΩ, 66kΩ, 660kΩ, 6.6MΩ and 66MΩ

To measure resistance, connect the Meter as follows:

1. Insert the red test lead into the **VΩHz** terminal and black test lead into the **COM** terminal.
2. Set the rotary switch to •))⊣⊢Ω. Resistance measurement is a default or press **SELECT** to switch to Ω measurement mode.
3. Connect the test leads across with the object being measured.
   The measured value shows on the display.

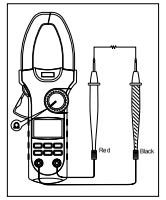


Figure 4

**Note**

- To obtain a more precise reading, you could remove the objects being tested from the circuit during measurement.
- When resistance measurement has been completed, disconnect the connection between the testing leads and the circuit under test and remove testing leads from the input terminals.

**C. Testing Diodes** (See Figure 5)

**⚠ Warning**

**To avoid damage to the Meter or to the devices under test, disconnect circuit power and discharge all the high-voltage capacitors before testing diodes.**

Use the diode test to check diodes, transistors, and other semiconductor devices. The diode test sends a current through the semicondutor junction, then measure the voltage drop across the junction. A good silicon junction drops between 0.5V and 0.8V.

To test the diode out of a circuit, connect the Meter as follows:

1. Insert the red test lead into the **VΩHz** terminal and black test lead into the **COM** terminal.
2. Set the rotary switch to •))⊣⊢Ω. Press **SELECT** to switch to ⊣⊢ measurement mode.
3. For forward voltage drop readings on any semiconductor component, place the red test lead on the component's anode and place the black test lead on the component's cathode.

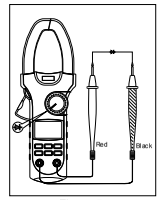


Figure 5

**Note**

- To obtain a more precise reading, you could remove the objects being tested from the circuit during measurement.
- When diode testing has been completed, disconnect the connection between the testing leads and the circuit under test and remove testing leads from the input terminals.

**D. Testing for Continuity** (See Figure 6)

**⚠ Warning**

**To avoid damag to the Meter or to the devices under test, disconnect circuit power and discharge all the high-voltage capacitors before measuring continuity.**

To test for continuity, connect the Meter as follows:

1. Insert the red test lead into the **VΩHz** terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to •))⊣⊢Ω and press **SELECT** button to select •)) measurement mode.
3. The buzzer sounds if the resistance of a circuit under test is less than 30Ω.
   The buzzer may or may not sound if the resistance of a circuit under test is between 30Ω to 100Ω.
   The buzzer does not sound if the resistance of a circuit under test is higher than 100Ω.

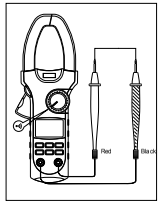


Figure 6

**Note**

- When continuity testing has been completed, disconnect the connection between the testing leads and the circuit under test and remove testing leads from the input terminals.

**E. Measuring Frequency** (See Figure 7)

**⚠ Warning**

**To avoid harm to you or damage to the Meter from eletric shock, do not attempt to measure voltages higher than 600V AC/DC, although readings may be obtained.**

The frequency ranges are:
660Hz, 6.6kHz, 66kHz, 660kHz, 6.6MHz and 66MHz.

To measure frequency, connect the Meter as follows:

1. Insert the red test lead into the **VΩHz** terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to **%Hz**. Frequency measurement mode is a default or press **SELECT** to switch to **Hz** measurement mode.
3. Connect the test leads across with the object being measured.
   The measured value shows on the display.

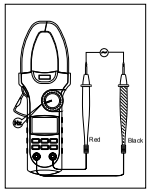


Figure 7

**Note**

- When frequency measurement has been completed, disconnect the connection between the testing leads and the circuit under test, and remove the testing leads away from the input terminals of the Meter.

**F. Measuring Duty Cycle** (See Figure 8)

⚠ **Warning**

**To avoid harm to you or damage to the Meter from eletric shock, do not attempt to measure voltages higher than 600V AC/DC, although readings may be obtained.**

The duty cycle range is: 0.1%~99.9%.

To measure duty cycle, connect the Meter as follows:

1. Insert the red test lead into the **VΩHz** terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to **%Hz**. Press **SELECT** to switch to **%** measurement mode.
3. Connect the test leads across with the object being measured.
   The measured value shows on the display.

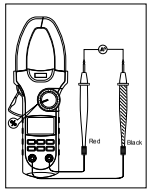

Figure 8

**Note**

- When duty cycle measurement has been completed, disconnect the connection between the testing leads and the circuit under test, and remove the testing leads away from the input terminals of the Meter.

**G. Measuring DC Current** (See Figure 9)

The DC current ranges are: 66A ⎓ and 1000A ⎓.

To measure current, do the following:

1. Set the rotary switch to 66A ⎓ or 1000A ⎓.
2. .Press the lever to open the transformer jaw, hold it tight and don't release. The built-in components are very sensitive not only to the magnet but also to heat and mechanical force. Any shock will cause change to the reading in the short time.
3. Center the conductor within the transformer jaw, then release the Meter slowly until the trasnformer jaw is completely closed. Make sure the conductor to be tested is placed at the center of the transformer jaw, otherwise it will casue deviation. The Meter can only measure one conductor at a time, to measure more than one condutor at a time will cause deviation.

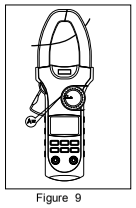
Figure 9

**Note**

- If the Meter does not display 00.00 when it is at 66A ⎓ range, press **ZERO** to zeroing. After zeroing, it allows 10 digits bouncing reading.
- When the Meter is at 1000A ⎓, it displays 0 and it is not allowed to press **ZERO** to zeroing.
- When current measurement has been completed,remove the conductor away from the transformer jaw of the Meter.

**H. Measuring AC Current** (See Figure 10)

⚠ **Warning**

The AC current ranges are: 66.00A ∼ and 1000A ∼.

To measure AC current, do the following:

1. Set the rotary switch to 66A ∼ or 1000A ∼.
2. Press the lever to open the transformer jaw, hold it tight and don't release. The built-in components are very sensitive not only to the magnet but also to heat and mechanical force. Any shock will cause change to the reading in the short time.
3. Center the conductor within the transformer jaw, then release the Meter slowly until the trasnformer jaw is completely closed. Make sure the conductor to be tested is placed at the center of the transformer jaw, otherwise it will casue deviation. The Meter can only measure one conductor at a time, to measure more than one condutor at a time will cause deviation.
5. When the measuring current >1A, press **Hz** button to step through AC current, frequency and duty cycle measurement mode. But the frequency or duty cycle readings obtained from this range is only for reference.
6. Press **SELECT** to carry out surge current measurement.

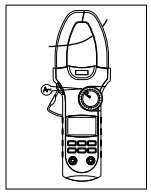
Figure 10

To measure surge current measurement, do the following:

1. Set the rotary switch to 1000A ∼.
2. Press **SELECT** when the Meter displays the minimum readings. The Meter then displays "----" means it is ready to carry out surge current measurement.
3. Turn on the electrical equipments at that time to measure the moment start up current.
4. Press and hold **SELECT** for one second to exit surge current measurement mode.
5. When the Meter is at surge current measurement, it is locked to the highest measurement range.

**Note**

- When current measurement has been completed, remove the conductor away from the transformer jaw of the Meter.

**I. Measuring Temperature** (UT208 Only, See Figure 11)

The temperature measurement range: -40˚C~1000˚C and -40˚F~1832˚F.

To measure temperature measurement, connect the Meter as follows:

1. Insert the red temperature probe into the **VΩHz** terminal and the black temperature probe into the **COM** terminal.
2. Set the rotary switch to ˚C˚F. Press **SELECT** to switch between ˚C and ˚F measurement mode.
3. Place the temperature probe to the object being measured.
   The measured value shows on the display.

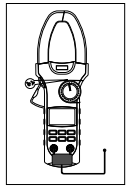
Figure 11

**Note**

- When the Meter is at ˚C˚F range, it beeps to remind user to insert temperature probe.
- The Meter automatically displays the room temperature when the temperature probe is inserted but without any input.
- The included point contact temperature probe can only be used up to 230˚C. For any measurement is higher than that, the rod type temperature probe must be used.
- When the temperature measurement has been completed, disconnect the connection between the temperature probe and the object under test, and remove the temperature probe away from the input terminals of the Meter.

## Sleep Mode

To preserve battery life, the Meter automatically turns off if you do not turn the rotary switch or press any button for around 15 minutes.

The Meter beeps 3 times in one minute before entering Sleep Mode and long beep one time just before entering Sleep Mode.

The Meter can be activated by turning the rotary switch or pressing the button based on "**The Effectiveness of Functional Buttons**" section.

If the Meter is activated by pressing button, the Meter will keep the measurement value before entering Sleep Mode.

Pressing **MAX/MIN, LIGHT** or **Hz** to turn on the Meter can disable the Sleep Mode feature.

## Technical Specifications

**A. General Specifications:**

- Maximum Voltage between any terminals and grounding: Refer to different range input protection voltage.
- Display: 3 5/6 digits LCD display, Maximum display 6666.
- Polarity: Auto
- Overloading: Display **OL** or **–OL**.
- Battery Deficiency: Display .
- Sampling: 3 times per second.
- Measurement Deviation: If the conductor being measured is not placed in the center of the jaw during AC/DC current measurement, it will cause extra ±1% deviation based on the stated accuracy.
- Drop Test: 1 meter drop test passed.
- Max. Jaw Opening: 55mm diameter.
- Max. Current conductor size: 45mm diameter.
- Electro-Magnetic: When carrying out measurement near the electro-magnetic, it may cause unstable or wrong reading.
- Power: 1 x 9V battery (6LF22 1604A)
- Battery Life: typically 150 hours (alkaline battery)
- Dimensions: 285.3mm x 105mm x 44.5mm
- Weight: Approximate 533g (battery included)

**B. Environmental Requirements**

- The Meter is suitable for indoor use.
- Altitude: Operating: 2000m
  Storage: 10000m
- Safety/ Compliances: IEC61010-1; IEC61010-2-032. CAT.II 600V, CAT.III 300V Double Insulation and Pollution Degree 2.
- Temperature and humidity:
  - Operating:
    0˚C~30˚C (≤80%R.H)
    30˚C~40˚C (≤75%R.H)
    40˚C~50˚C (≤45%R.H)
  - Storage:
    -20˚C~+60˚C (≤80%R.H)

## Accuracy Specifications

Accuracy: ± (a% reading + b digits), guarantee for 1 year.
Operating temperature: 23˚C ± 5˚C
Relative humidity: ≤80%R.H
Temperature coefficient: 0.1x(specified accuracy)/1˚C

**A. DC Voltage**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| 6.600V | 1mV | ± (0.8%+1) | 600V DC/AC |
| 66.00V | 10mV | | |
| 600.0V | 100mV | | |

Remark: Input Impedance: 10MΩ

**B. AC Voltage**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| 6.600V | 1mV | ± (1.2%+5) | 600V DC/AC |
| 66.00V | 10mV | | |
| 600.0V | 100mV | | |

Remarks:

- Input Impedance: 10MΩ
- Frequency Response: 40Hz~400Hz
- AC Conversion:
  It is AC-coupled and True RMS responded. Input sine wave to adjust. Non sine wave must follow the below data to adjust:
  Peak factor: 1.4~2.0, add 1.0% on the stated accuracy
  Peak factor: 2.0~2.5, add 2.5% on the stated accuracy
  Peak factor: 2.5~3.0, add 4.0% on the stated accuracy.

**C. Resistance**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| 660.0Ω | 0.1Ω | ± (1.2%+2) | 250VAC |
| 6.600kΩ | 1Ω | ± (1%+2) | |
| 66.00kΩ | 10Ω | | |
| 660.0kΩ | 100Ω | | |
| 6.600MΩ | 1kΩ | ± (1.2%+2) | |
| 66.00MΩ | 10kΩ | ± (1.5%+2) | |

**D. Diode Test**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| ⊣⊢ | 1mV | 0.5V~0.8V (Open circuit voltage approx. 3.0V) | 250VAC |

**E. Continuity Test**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| •)) | 0.1Ω | Around ≤10Ω,the buzzer beeps. (Open circuit voltage approx. –0.47V) | 250VAC |

Remark:

- The buzzer may or may not beeps when the resistance of a circuit under test is between 10Ω~100Ω.
- The buzzer does not beep when the resistance of a circuit under test is > 100Ω

**F. Frequency**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| 660.0Hz | 0.1Hz | ± (0.1%+3) | 250VAC |
| 6.600kHz | 0.001kHz | | |
| 66.00kHz | 0.01kHz | | |
| 660.0kHz | 0.1kHz | | |
| 6.600MHz | 0.001MHz | | |
| 66.00MHz | 0.01MHz | | |

Remarks:
Input Sensitivity (a) as follows:
When a ≤10Hz: the Meter does not response
When 10Hz < a ≤100kHz: ≥300mV rms
When a >100kHz: ≥600mV rms
Input amplitude (b): 300mV ≤ (b) ≤ 30V rms

**G. Duty Cycle**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| 0.1%~99.9% | 0.1% | For reference only | 250VAC |

**H. DC Current**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| 66.00A | 0.01A | ± (2%+40) | 250VAC |
| 1000A | 1A | ± (2%+8) | |

⚠ **Warning**

**The operating temperature must be 0˚C ~ 40˚C when measuring current.**

**Remarks:**

- If the reading is positive, the current direction is from bottom to up. See figure 10, the front case face up while the bottom case face down. Hold the Meter tight, do not release. The Hall components are very sensitive not only to the magnet but also to heat and machines reaction force. Any shock will cause change to the reading in the short time. Follow the below procedure to measure current will be more precise:
  1. Turn off the current of tested conductor.
  2. Hold the Meter tight and press the lever to open the transformer jaw. Center the conductor within the transformer jaws, then release the Meter slowly until the transformer jaw is completely closed. Make sure the conductor to be tested is placed at the center of the transformer jaw, otherwise it will cause +1.0% deviation based on the stated accuracy.
  3. Press **ZERO** button **to** display zero.
  4. Turn on the current of tested conductor and read the stable value of clamp meter.
     The obtained reading will be more precise.

**I. AC Current**

| Range | Resolution | Accuracy | Frequency Response | Overload protection |
|---|---|---|---|---|
| 66.00A | 0.01A | ± (2%+40) | 50Hz ~ 60Hz | 250VAC |
| 1000A | 1A | ± (2%+8) | | |

⚠ **Warning**

The operating temperature must be 0˚C ~40˚C when measuring current.

**Remarks:**

- It may have unstable or wrong sensed readings, it will not affect measurement result.
- Hold the Meter tight, do now release. The Hall components are very sensitive not only to the magnet but also to heat and machines reaction force. Any shock will cause change to the reading in the short time.
- AC Conversion
  It is AC-coupled and True RMS responded. Input sine wave to adjust.
  Non sine wave must follow the below data to adjust:
  Peak factor: 1.4~2.0, add 1.0% on the stated accuracy.
  Peak factor: 2.0~2.5, add 2.5% on the stated accuracy
  Peak factor: 2.5~3.0, add 4.0% on the stated accuracy.

**J. Temperature (UT208 only)**

| Range | Resolution | Accuracy | Overload protection |
|---|---|---|---|
| 40˚C~1000˚C | 1˚C | -40˚C~0˚C: ±(3%+4) | 250VAC |
| | | 0˚C~400˚C: ±(1%+3) | |
| | | 400˚C~1000˚C: ±(2%+10) | |
| -40˚F~1832˚F | 1˚F | -40˚F~32˚F: ±(3%+8) | |
| | | 32˚F~752˚F: ±(1%+6) | |
| | | 752˚F~1832˚F: ±(2%+18) | |

## Maintenance

This section provides basic maintenance information including battery replacement instruction.

⚠ **Warning**

**Do not attempt to repair or service your Meter unless you are qualified to do so and have the relevant calibration, performance test, and service information.**

**To avoid electrical shock or damage to the Meter, do not get water inside the case.**

**A. General Service**

- Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.
- To clean the terminals with cotton bar with detergent, as dirt or moisture in the terminals can affect readings.
- Turn the Meter power off when it is not in use.
- Take out the battery when it is not using for a long time.
- Do not use or store the Meter in a place of humidity, high temperature, explosive, inflammable and strong magnetic field.

**B. Replacing the Battery** (See Figure 12)

⚠ **Warning**

**To avoid false readings, which could lead to possible electric shock or personal injury, replace the battery as soon as the battery indicator " " appears.**

**Make sure the transformer jaw and the tets leads are disconected from the circuit being tested before opening the case bottom.**

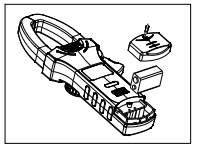
Figure 12

To replace the battery:

1. Turn the Meter off and remove all the connections from the input terminals
2. Turn the Meter's front case down.
3. Remove the screw from the battery compartment, and separate the battery compartment from the case bottom.
4. Take out the old battery and replace with a new 9V battery (6LF22, 1604A).
5. Rejoin the case bottom and the battery compartment, and reinstall the screw.

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