6. Replace the cover of battery and secure the screws.
5. Install a new 9V battery.
4. Remove the old battery.
3. Lift and remove the battery cover.
2. Remove the screw of the battery cover.
1. Turn the power off with new battery.

When the low battery symbol is displayed in LCD, replace the old battery.

IX. BATTERY REPLACEMENT

WARNING: If jaws are damaged in any way, please stop operating this clamp, and return it to qualified personnel for repair.

Provided by the clamp meter may be impaired.
Not specified by the manufacturer, the protection
provided by the clamp meter may be impaired.

WARNING: If the clamp meter is used in a manner
Equipment in hazardous installations
Energy-consuming equipment to be supplied from the fixed
E2/71 07 02
E2/71 07 02

OVER-VOLTAGE CATEGORY III (CAT III):

Double Insulation
Caution: Risk of Electric Shock

Definition of Symbols:
Pollution Degree 2
CAT III 3000V, CAT II 600V
EN 61010-2-032
Data Logging Interval: 1 to 255 seconds
Data Logging Capacity: 111 records
Accuracy of Resistance Calibration Plate: ±0.5%

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy of Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>±20% ± 0.02 A</td>
<td>A 0.00 A</td>
<td>±0.03 A</td>
</tr>
<tr>
<td>±20% ± 0.01 A</td>
<td>A 0.00 A</td>
<td>±0.05 A</td>
</tr>
</tbody>
</table>

Ground Leakage Current (50/60 Hz, True RMS Current Factor > 3.0)

<table>
<thead>
<tr>
<th>Current (mA)</th>
<th>Resolution</th>
<th>Accuracy of Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>±20% ± 0.01 A</td>
<td>A 0.00 A</td>
<td>±0.03 A</td>
</tr>
<tr>
<td>±20% ± 0.005</td>
<td>A 0.00 A</td>
<td>±0.05 A</td>
</tr>
</tbody>
</table>

High and Low Alarm

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>O - 150mA</td>
<td>Low Alarm</td>
</tr>
<tr>
<td>O - 150mA</td>
<td>High Alarm</td>
</tr>
</tbody>
</table>

Ground Resistance (Vv x Vv) = 0.017

1. Loop resistance noninductive external field > 50 A/m, external electric field 20% ± 0.5% of 600 ± 1000 Vv

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>O - 150mA</td>
<td>Low Alarm</td>
</tr>
<tr>
<td>O - 150mA</td>
<td>High Alarm</td>
</tr>
</tbody>
</table>

II. FEATURES DESCRIPTION

1. Use of under ground is a good safety practice even if the equipment is properly operated and grounded.
2. Only use the external ground around energized equipment.
3. Do not extrapolate the ground tester to twist of the ground.
4. Do not extrapolate the ground tester to twist of the equipment.
5. All metal objects or wires connected to the electrical system should be disconnected from the equipment being grounded.
6. Always close the ground resistor in the electrical system.

VI. ELECTRICAL SPECIFICATION

II. WARNING
1. Jaws Assembly. Enclose electrode or ground rod. No air gap is allowed between two hall jaws.

2. Hold button. Press this button to hold the value in LCD.

3. Ready switch. Turn power on and select function.

4. LCD.

5. REC button. When one of the functions is selected by FUNC.

6. Button. To decrement value, press this button.


8. Button. To increment value, press this button.

9. FUNC button. Press this button to select function of HI/LO alarm.

10. LOW alarm, SEC (seconds), or no alarm (read).

11. PANEL DESCRIPTION
I. Principle of Operation

Respect to the ground resistance to be measured, the equivalent resistance is negligible with respect to the circuit in which the equipment is employed. The equation is as follows:

\[ R_{eq} = \frac{R_1 + R_2 + \ldots + R_n}{n} \]

\[ R = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \ldots + \frac{1}{R_n}} \]

In this example, we can see that as long as the number of multiple resistors is high enough, the equivalent resistance is negligible with respect to the circuit in which the equipment is employed.

**Example:**

\[ R_{eq} = \frac{R_1 + R_2 + \ldots + R_n}{n} \]

By calculation equals:

\[ R_{eq} = \frac{10 + 10 + 1}{3} = \frac{21}{3} = \frac{7}{1} = 7 \text{ Ohms} \]

If all \( R_i \) are all 10 \( \Omega \) respectively and \( n = 200 \), then \( R_{eq} \approx 0 \Omega \). Thus, \( R_{eq} \) is much less than \( R_i \) and may be approximated as zero.

\[ R_{eq} = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \ldots + \frac{1}{R_n}} \]

where

\[ R_{eq} = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \ldots + \frac{1}{R_n}} \]

When the battery voltage is lower than required, this symbol will be shown in LCD.

When the jaw is open during measurement, this symbol will be shown in LCD.

When ground resistance tester senses noise existed in the ground electrode or ground rod, this symbol will be shown in LCD.

Display ground resistance tested in mA or \( \Omega \).

Display current selected function or current record number.

**Display Menu:**

- **NOISE:**
  - 6. Noise
  - 5. Manual
  - 3. Ohm
  - 2. Digit

**Display Format:**

- 1. Display
  - 10.97
  - 9.98
  - 8.76
  - 7.65
  - 6.54
  - 5.43
  - 4.32
  - 3.21
  - 2.10
  - 1.09

**Display Indicators:**

- Low battery
- Batteries in progress
- Indicate the read function
- Indicate data logging is in progress
- Indicate symbol is displayed in LCD

**Display Indicators:**

- 11. AP
- 10. REC
- 9. NO.
- 8. LOW BATTERY
- 7. OPEN JAW
- 6. NOISE
- 5. MANUAL
- 4. MANUAL
- 3. OHM
- 2. DIGIT
- 1. FUNCTION
V. OPERATION INSTRUCTION

5. Ground Resistance Measurement

1. Open the door of the sample resistance measurement device.
2. Open the ground resistance measurement device.
3. Select the desired resistance measurement range.
4. Place the test leads on the sample resistance measurement device.
5. Record the measured value.

6. Clear Data Memory

1. Press the CLEAR button until the display shows "0000.
2. Press the CLEAR button again to confirm the clearing of memory.

7. Read the Data Stored in Memory

1. Press the MEMORY button to display the stored data.
2. Use the UP or DOWN button to scroll through the stored data.

Note: If the display shows "NO," the memory is empty.

8. Cancel the Auto Power Off

1. Press and hold the RST button for 5 seconds to cancel the auto power-off function.

II. SYMBOLOLOGY

- symbol of AP will not be displayed in LCD.
- symbol of NO will not be displayed in LCD.
- symbol of Device will not be displayed in LCD.
- symbol of "NO" will be displayed in LCD.
- symbol of "AP" will be displayed in LCD.

Note: If the display shows "NO," the memory is empty.

Note: If the display shows "AP," the memory is full.

Note: The display will show "NO" if the memory is empty.

Note: The display will show "AP" if the memory is full.

Note: The display will show "NO" if the memory is full.

Note: The display will show "AP" if the memory is empty.

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Note: The display will show "NO" if the memory is full.

Note: The display will show "AP" if the memory is empty.

Note: The display will show "NO" if the memory is full.
The record number is also displayed for about 1 second.

No letters. 4. Press the FUNC button several times until the upper row LCD show

4. Press the FUNC button several times until the upper row LCD show

3. Press the ▲ or ▼ button to increment/decrement the value by 1 second. The unit shows the current sampling interval in seconds.

2. The unit shows the current sampling interval in seconds.

1. Press the FUNC button until letter 'SEC' are shown in the upper row LCD.

NOTE: If the sampling interval is set to 0 seconds, only one data is recorded. To record next data, user can press the REC button again.

Condition of low battery or the REC button is pressed again.

Data logging will be stopped if the memory is full or the unit detects the power failure, sampling interval.

Symbol of REC will be shown in LCD. Data will be recorded at the symbol of REC will be shown in LCD. Data will be recorded at the symbol of REC will be shown in LCD.

The unit will start data logging if the REC button is pressed, and a data logging icon will be shown in LCD.

5. Setting the sampling interval

<table>
<thead>
<tr>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
</tr>
</thead>
<tbody>
<tr>
<td>R5</td>
<td>R6</td>
<td>R7</td>
<td>R8</td>
</tr>
</tbody>
</table>

5-5. Data Logging
NOTE: The values for the high and low alarm are stored in the memory. They are restored when the power is turned on.

NOTE: If the data logging is progressing, sound of beeping will be heard. The upper row of LCD will show "HI" or "LO"...

NOTE: The HI value can't be smaller than the LOW value and the LO value can't be larger than the HI value. HI value will be displayed to LO value plus 1 when rollover occurs. The maximum value of LO value is value plus 1 when rollover occurs.

NOTE: If the HI value is set at "OL", or the LO value is set at "OL", the alarm function will not be performed. So they are marked to disable.

1. Set the rotary switch to the "H" or "L" alarm.
2. Press the FUNC button to select the "HI" or "LO" alarm. The current value of HI of alarm will be shown in the upper row of LCD.
3. Press the button of ▲ or ▼ to increment/decrement the value.
4. Once the value is set, press the FUNC button several times until the upper row of LCD show no letters.
5. When the rotary switch is set at the "ALRM" position, the unit will beep and show "HI" in the upper row of LCD. If the current measurement is larger than HI value, the unit will beep and compare the current value with the high and low values. If the current measurement is smaller than LO value, the unit will beep and compare the current value with the low values. If the current measurement is between HI and LO value, the unit will beep and display the current measurement.

- If LOW value is OL...
- If HI value is OL...

- If HI value is OL...
- If LOW value is OL...

- If HI value is OL...
- If LOW value is OL...

- If HI value is OL...
- If LOW value is OL...

- If HI value is OL...
- If LOW value is OL...

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- If HI value is OL...
- If LOW value is OL...