insulated. Where equipment under test has exposed conductive parts, be especially careful to avoid the hazard of possible shorting.
- Never attempt to use the instrument if its surface or your hand is wet.
- Do not exceed the maximum allowable input of any measurement range.
- Never open the battery compartment cover when making measurement.

⚠WARNING

- Never attempt to make any measurement if any abnormal conditions are noted, such as broken case, cracked test leads and exposed metal part.
- Do not turn the function selector switch with plugged in test leads connected to the circuit under test.
- Do not install substitute parts or make any modification to the instrument. Return the instrument to your distributor for repair or recalibration.
- Do not try to replace the batteries if the surface of the instrument is wet.
- Always switch off the instrument before opening the battery compartment cover for battery replacement.

⚠CAUTION

- Make sure that the function selector switch is set to the appropriate position before making measurement.
- Always make sure to insert each plug of the test leads fully into the appropriate terminal on the instrument.
- Make sure to remove the test leads from the instrument before making current measurement.
- Do not expose the instrument to the direct sun, extreme temperatures or dew fall.
- Be sure to set the function selector switch to the "**OFF**" position after use. When theinstrument will not be in use for a long period of time, place it in storage after removing the battery.
- Use a damp cloth and detergent for cleaning the instrument. Do not use abrasives or solvents.

3. Specifications

Measuring Ranges and Accuracy (at 23±5˚C, 45-75% relative humidity)

AC Current (A)

Range	Measuring Range	Accuracy
40A	0-39.99A	±2.0%rdg±6dgt (50/60Hz)
400A	0-399.9A	

AC Voltage (V) Auto-ranging

Range	Measuring Range	Accuracy
400V	0-399.9V	±2.0%rdg±5dgt (50/60Hz)
600V	150-599V	

DC Voltage (V) Auto-ranging

Range	Measuring Range	Accuracy
400V	0-399.9V	±1.5%rdg±5dgt
600V	150-599V	

Resistance (Ω/Continuity) Auto-ranging (Buzzer beeps below 50±35Ω)

Range	Measuring Range	Accuracy
400Ω	0-399.9 Ω	±2.0%±5dgt
4000Ω	150-3999 Ω	

- **EMC (IEC61000-4-3):**
  RF electromagnetic field<1V/m;
  total accuracy=specified accuracy
  RF electromagnetic field=3V/m;
  total accuracy=specified accuracy
  +2% of range
- **Operating System:**
  Dual Integration
- **Display:**
  Liquid crystal display (maximum count: 3999)
- **Low Battery Warning:**
  "**BAT**" is shown on the display
- **Overrange Indication:**
  "OL" is shown on the display
- **Response Time:**
  Approx. 2 seconds
- **Sample Rate:**
  About 2.5 times per second
- **Temperature and Humidity for Guaranteed Accuracy:**
  23±5°C, relative humidity up to 85% without condensation
- **Operating Temperature and Humidity:**
  0~40˚C, relative humidity up to 85% without condensation
- **Storage Temperature and Humidity:**
  -20~60˚C, relative humidity up to 85% without condensation
- **Power Source:**
  Two R03 or equivalent (DC1.5V) batteries
- **Current Consumption:**
  Approx. 2.5mA max.
- **Sleep Function:**
  Automatically powered down in about 10 minutes after the last switch operation (power consumption in the sleep mode is about 20μA).
- **Standards:**
  IEC61010-1
  CAT.III 300V, pollution degree 2
  CAT.II 600V, pollution degree 2
  IEC61010-2-031
  IEC61010-2-032
- **Overload Protection:**
  AC current ranges: 480A AC/DC for 10sec
  AC voltage ranges: 720V AC/DC for 10sec
  Resistance ranges: 300V AC/DC for 10sec
- **Altitude up to 2000M:**
  Indoor use
- **Withstand Voltage:**
  3700VAC (RMS,50/60Hz) for 1 minute between electrical circuit and housing case
- **Insulation Resistance**
  10MΩ or greater at 1000V between electrical circuit and housing case
- **Conductor Size:**
  Approx. 30mm diameter max

- **Dimensions:**
  184(L) x 44(W) x 27(D)mm
- **Weight:**
  Approx. 190g (including batteries)
- **Accessories:**
  Test leads
  Two R03 AAA batteries
  Instruction manual

4. Preparation for Measurement

4-1 Checking Battery Voltage

Set the function selector switch to any position other than "**OFF**". When the display is clear without "**BAT**" showing, proceed to measurement. When the display blanks or "**BAT**" is indicated, replaces the batteries according to the instructions described in section 7 (Battery Replacemen)t.

NOTE

The sleep feature automatically turns the instrument off in a certain period of time after the last switch operation. Therefore, the display may be blank with the function selector switch set to a position other than "**OFF**". To operate the instrument in this case, set the switch back to the "**OFF**" position, then to the desired position, or press any switch. If the display still blanks, the batteries are exhausted. Replace the batteries.

4-2 Checking Switch Setting and Operation

Make sure that the function selector switch is set to the correct position and the data hold switch is deactivated. Otherwise, desired measurement cannot be made.

5.Measurement

5-1 AC Current Measurement

⚠WARNING

- Do not make measurement on a circuit with a voltage higher than 600 VAC. Otherwise, shock hazard or damage to the instrument or equipment under test may result.
- Transformer jaw tips are designed to minimize the possibility of shorting conductors in the circuit under test. If equipment under test has exposed conductive parts, however, extra precaution should be taken to avoid possible shorting.
- Do not make measurement with the battery compartment cover removed.
- Do not make current measurement with the test leads connected to the instrument.

1. Set the function selector switch to the "40Ã" or "400Ã" position.
2. Press the trigger to open the transformer jaws and clamp onto one conductor only.
3. Take the reading on the display.

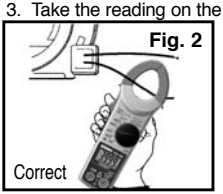

Fig. 2

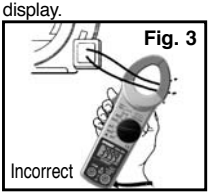

Fig. 3

NOTE

- During current measurement, keep the transformer jaws fully closed. Otherwise, accurate measurement cannot be made. The maxi-mum conductor size is 30 mm in diameter.
- When measuring a larger current, the transformer jaws may buzz. This does not affect the instrument's accuracy.

5-2 AC Voltage Measurement

⚠DANGER

- Never use the instrument on a circuit with a voltage higher than 600 VAC. Otherwise,electric shock hazard or damage to the instrument or the circuit under test may result.
- Do not make measurement with the battery compartment cover removed.

1. Set the function selector switch to the "600V̄" position.
2. Plug the red test lead into the V/Ω terminal and the black test lead into the COM terminal.
3. Connect the test lead prods to the circuit under test and take the reading on the display.

5-3 DC Voltage Measurement

⚠DANGER

- Never use the instrument on a circuit with a voltage higher than 600VDC. Otherwise,
- electric shock hazard or damage to the instrument or the circuit under test may result.
- Do not make measurement with the battery compartment cover removed.

1. Set the function selector switch to the " 600V̄ " position.
2. Plug the red test lead into the V/Ω terminal and the black test lead into the COM terminal.
3. Connect the test lead prods to the circuit under test and take the reading on the display.

5-4 Resistance Measurement

⚠DANGER

- Always make sure that the circuit under test is powered off.
- Do not make measurement with the battery compartment cover removed.

1. Set the function selector switch to the "Ω/•)))" position.
2. Plug the red test lead into the V/Ω terminal and the black te st lead into the COM terminal.
3. Check that the display reads OL with the test lead prods shorted together, also check that the buzzer beeps and the display reads 0.
4. Connect the test lead prods to the circuit under test and take the reading on the display. The buzzer beeps the reading is below 50±35 Ω.

NOTE

- When shorting the test lead prods together, the display may show a very small resistance instead of "0". This is the resistance of the test leads.
- If one of the test leads has an open, the display reads "OL".

6. Other Functions

6-1 Sleep Function

NOTE

The instrument still consumes small amount of battery power in the sleep mode. Make sure to set the function selector switch to the "**OFF**" position after use.

(1) Sleep Mode

This is a function to prevent the instrument from being left powered on in order to conserve battery life. This function causes the instrument to automatically enter the sleep (powered down) mode about 10 minutes after the last switch or button operation. To exit the sleep mode, turn the function selector switch back to "**OFF**", then to any other position, or press any button.

(2) How to disable the sleep mode

To disable the sleep mode, Power the instrument on with the data hold switch pressed. "P.**OFF**" is shown on the display for about 3 seconds after the instrument is powered on.
To enable the sleep mode, power the instrument off, then power it on without pressing the data hold switch.

6-2 Data Hold Function

This is a function used to freeze the measured value on the display. Press the data hold switch to freeze the reading. The reading will be held regardless of subsequent changes in input 'H' is shown on the upper left corner of the display while the instrument is in the data hold mode.
To exit the data hold mode, press the data hold switch again.

NOTE

If the instrument in the data hold mode enters the sleep mode, the data hold mode will be cancelled.

7. Battery Replacement

To avoid electric shock hazard, make sure to set the function selector switch to "**OFF**" and remove the test leads from the instrument before trying to replace the batteries.

CAUTION

Do not mix new and old batteries
Make sure to install battery in correct polarity as indicated inside the battery compartment.

When "**BAT**" is shown on the display, replace the batteries. Note that when the battery is completely exhausted, the display blanks without "**BAT**" shown.

1 Set the function selector switch to the "**OFF**" position.
2 Unscrew and remove the battery compartment on the bottom of the instrument.
3 Replace the batteries observing correct polarity. Use two new R03 or equivalentbatteries.
4 Mount and screw the battery compartment cover.